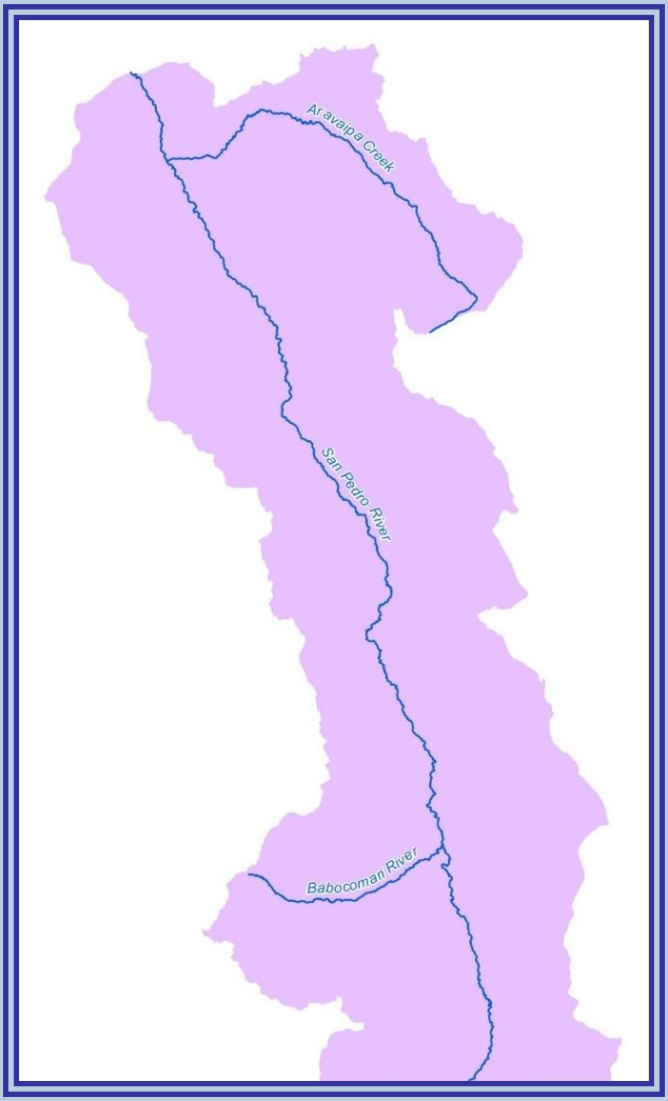
SUPPLEMENT TO 2014 SUBFLOW ZONE DELINEATION REPORT FOR THE SAN PEDRO RIVER WATERSHED

In re The General Adjudication of the Gila River System and Source



ARIZONA DEPARTMENT OF WATER RESOURCES

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CHAPTER 1: INTRODUCTION

CHAPTER 1: INTRODUCTION

The Arizona Department of Water Resources ("Department" or "ADWR") prepared this supplemental report titled "Supplement to 2014 Subflow Zone Delineation Report" ("Supplemental Subflow Report") at the request of the Court for the Gila River General Stream Adjudication ("Gila River Adjudication").[1] Pursuant to A.R.S. §§ 45-251 to 264, the Court must determine the nature, extent and relative priority of the rights of persons to use waters of the Gila River system and source, which includes all appropriable water under state law and water subject to claims based on federal law. Appropriable water includes surface water and certain subsurface water known as subflow.

1.1 2014 SUBFLOW REPORT

This report supplements a report filed by ADWR on April 1, 2014 entitled "Revised Subflow Zone Delineation Report for the San Pedro River Watershed" ("2014 Subflow Report"). In the 2014 Subflow Report, ADWR presented information and a series of maps that delineate certain hydrogeologic features, known as subflow zones, for the San Pedro River, the Babocomari River, and Aravaipa Creek within the San Pedro River watershed, which is located within the Gila River system and source.

The 2014 Subflow Report is the fifth report that ADWR has prepared since 2002 related to the identification of subflow zones in the San Pedro River watershed. In the 2014 Subflow Report, ADWR described each of the preceding four reports as well as the Court decisions related to those reports and the 2014 Subflow Report. Copies of these

[1] *In re the General Adjudication of All Rights to Use Water in the Gila River System and Source*, W-1, W-2, W-3, W-4 (Consolidated), Contested Case No. 103 (Maricopa County Superior Court).

Court decisions were provided in Appendix A to the 2014 Subflow Report. Copies of ADWR's prior reports can be found at ADWR's web site.[2]

Both the 2014 Subflow Report and this Supplemental Subflow Report are based on the Court's October 12, 2012 Order ("2012 Order") in which the Court directed ADWR to revise a subflow zone delineation report that it issued in 2009 ("2009 Subflow Report"). In the 2014 Subflow Report, ADWR described its implementation of the Court's 2012 Order. That implementation is further explained in this Supplemental Subflow Report.

1.2 2012 COURT ORDER

In the 2012 Order, the Court directed ADWR to comply with certain requirements in the 2014 Subflow Report. Although the Court agreed with and adopted certain portions of the 2009 Subflow Report and found that the Arizona Geological Survey ("AZGS") had appropriately mapped the surficial geology along the San Pedro River, the Court also found that ADWR's analysis understated the extent of the floodplain because it did not take into account the existence of alluvial fans that cover much of the floodplain and adjacent basin fill. 2012 Order at p. 2, ¶¶ 6, 9; pp. 3-4 ¶ 19. The Court stated that the revised subflow zone delineation must have the following features:

a. result in a continuous subflow zone;

b. result in a stable geologic feature;

c. include the entire current active channel of each watercourse;

d. include the Historical Composite Active Floodplain (1935-2007) for each watercourse;

e. accurately reflect the full extent of the FHA [Floodplain Holocene Alluvium]; and

[2] http://www.azwater.gov/AzDWR/SurfaceWater/Adjudications/default.htm.

f. to the extent possible, interpret judicial pronouncements in a manner consistent with scientific fact.

2012 Order at p. 5, ¶ 2.

In determining what areas to include within the subflow zone, the Court directed ADWR to use its professional judgment and consider, "as and to the extent appropriate," a combination of the following:

(a) Arizona Geological Survey mapping to identify the surface exposure of the boundary between either bedrock or Pleistocene and Tertiary basin fill and Holocene alluvium;[3]

(b) topographic slope breaks (which may be considered, when appropriate, the edge of the subflow zone);

(c) vegetation patterns; and

(d) aerial photographs to determine the boundary between basin fill or bedrock and Holocene alluvium where alluvial fans and channel deposits are deposited on the floodplain.

Id. at p. 5, ¶ 3. In order to comply with the 2012 Order, ADWR contracted with AZGS to consult on geologic settings and geomorphologic processes applicable to Holocene river alluvium, and to conduct investigations of sedimentary relationships at numerous sites along the San Pedro River, which ADWR used to delineate the lateral extent of the FHA. This process is described in Chapter 2 of the 2014 Subflow Report.

The Court also gave ADWR direction on the application of setbacks. The Court directed ADWR to apply them only in those instances where a hydraulic connection exists between the subflow zone and the surrounding material. *Id.* at p. 5, ¶ 4. The Court stated:

[3] "Pleistocene," "Tertiary," and "Holocene" are terms of art that refer to certain geologic periods of time.

> When a hydraulic connection exists between the underground flow associated with tributary and surface flow of the primary watercourse, the following adjustments are permitted:
>
> a. Apply 100-foot setbacks everywhere except for large ephemeral streams that have relatively frequent surface and underground flow.
>
> b. Modify the setbacks to include the active river channel.
>
> c. When setbacks cross or where basin fill is adjacent to the active channel, continue the subflow zone using the active channel.
>
> d. Evaluate disturbed ground based upon the likely underlying geologic unit.

Id. at p. 4, ¶ 22.

> Two-hundred (200) foot setback assumptions may not be used in locations where thin veneers of tributary alluvium overlie the FHA. Except at the mouths of larger ephemeral streams or washes (those which have relatively frequent surface and underground flow), the setbacks shall be one hundred (100) feet from the edge of the FHA. Setback assumptions shall not be used in bedrock canyons.

Id. at p. 4, ¶ 21. As described in Chapter 3 of the 2014 Subflow Report, ADWR developed a methodology for applying setbacks that was consistent with the 2012 Order and resulted in a continuous subflow zone.

1.3 SUPPLEMENTAL SUBFLOW REPORT

After ADWR issued the 2014 Subflow Report, several parties filed comments and/or objections, which were discussed at a hearing before the Court on November 6, 2014. During that hearing, ADWR indicated that it believed that providing additional information regarding the analyses presented in the 2014 Subflow Report would be of assistance to the Court and the parties.

This Supplemental Subflow Report further explains the analyses that ADWR used to implement the 2012 Order. Chapter 2 of this report describes ADWR's geomorphological inferences that ADWR used to determine the lateral extent of the FHA. Chapter 3 of this report presents segment-by-segment descriptions of procedures followed and information used to determine the lateral extent of the FHA, as well as the application of setbacks to determine the lateral extent of the subflow zone. The lateral extent of the subflow zone presented in the 2014 Subflow Report has been corrected to include the entire Historical Composite Active Floodplain.

As explained in Chapter 2 of this report, ADWR followed the directives of the 2012 Order by applying professional judgment to draw the necessary geomorphological inferences to determine the lateral extent of the FHA. "Professional Judgment" refers to judgment or opinion made in accordance with sound reasoning. The type of reasoning applied depends on the nature of the problem being solved. ADWR applied geomorphological reasoning based on the mapped geologic landforms of each watercourse's inner valley. In some locations, ADWR supplemented its geomorphological inferences by applying additional geologic or hydrologic reasoning based on other available information.

It is an accepted scientific principle that all geomorphological inferences have an inherent limit to their certainty. ADWR applied procedures intended to maximize certainty in determining the lateral extent of the FHA. ADWR's procedures are based on accepted principles of geology and geomorphology, and are supported by AZGS mapping as well as the other factors identified by the Court in the 2012 Order.

The inherent limit in the certainty of predictions made using the geomorphological inferences required to delineate the subflow zones in the San Pedro River watershed have been recognized by both the trial court for the Gila River Adjudication and Arizona Supreme Court. Even in 1994, when the trial court first concluded that the "weight of the evidence points to the saturated floodplain Holocene alluvium as the most credible 'subflow' zone," the trial court also noted that there is a frequent lack of data and many

assumptions which cannot be fully proven. See June 30, 1994 Order at p. 58. The trial court stated:

> However, there are questions in the mind of this Court after hearing long periods of evidence over the last fourteen years. They are whether the quality of geologic or hydrologic opinion, **the frequent lack of data, and the many assumptions** which cannot be fully proven support a requirement that the property owner or objectors should have to overcome a clear and convincing level of burden of proof.

Id. at pp. 63-64 (emphasis added).[4]

Upon review of the trial court's 1994 Order, the Arizona Supreme Court also acknowledged that "defining subflow in any particular area is a relative endeavor." The Court cautioned that prior court decisions defining subflow should not serve as straitjackets that prevent conformance to hydrologic reality, and that the line between surface and groundwater is to some extent, artificial and fluid. The Court stated:

> As the groundwater users correctly observe, this court "adopted [Kinney's] narrow definition [of subflow] in *Southwest Cotton*," *Gila River II*, 175 Ariz. at 390, 857 P.2d at 1244, and again characterized subflow as "a narrow concept" in *Gila River II*. *Id*. at 391, 857 P.2d at 1245. Although those abstract, general statements hold true, we also observed in *Gila River II* that variations may affect where the line is drawn between subflow and nonappropriable percolating water, "depending on the volume of stream flow and other variables." *Id*. **Thus, defining subflow in any particular area is a relative endeavor, "not an all-or-nothing proposition." *Id*. And, although "the line between surface and groundwater … is, to some extent, artificial and fluid," *id*. at 392, 857 P.2d at 1246, our various descriptions of subflow in *Gila River II* and *Southwest Cotton* should not serve as a straitjacket that restricts us from reaching in the direction of the facts and, so far as possible under those decisions, conforming to hydrological reality.**

[4] The trial court's order followed a ten-day evidentiary hearing with testimony from ten experts in geology and hydrology, two days traveling almost 600 miles and visiting 13 sites in the San Pedro River watershed, accompanied by counsel and experts, with a supplemental two-day hearing four months later. And yet, there remained limitations due to lack of data that could not be overcome.

In re the General Adjudication of All Rights to Use Water in the Gila River System and Source, 198 Ariz. 330, 340, 9 P.3d 1069, 1079 (emphasis added, brackets and ellipses in original).

In remarks made at the close of the three-day evidentiary hearing preceding the 2012 Order, the trial court acknowledged the inherent uncertainty in delineating the lateral extents of the FHA and the subflow zones. The Court stated:

> **Uncertainty in the delineated lateral extents of the FHA and the subflow zone cannot be avoided**, but they must be defensible at each location.

Transcript of proceedings at pp. 10-17 (emphasis added). In recognition of these limitations, the trial court directed ADWR to use its professional judgment to delineate the subflow zones in the San Pedro River watershed.

In order to delineate the FHA and the subflow zones of the San Pedro River, Babocomari River and Aravaipa Creek, ADWR made geomorphologic inferences based on scientific reality and professional judgment, which both the trial court and the Arizona Supreme Court have recognized are necessary parts of the process. This Supplemental Subflow Report explains in more detail the basis for the inferences that were made. Objections to the Supplement Subflow Report are due by April 2, 2015.

1.4 REISSUED REPORT

This report, initially issued in February 2015, is being reissued in order to correct certain computer-generated information described in Chapter 3. Chapter 3 of the February 2015 report described and summarized certain information that was presented in Table 3-1 and inset tables on 17 map sheets included in Appendix A. The information presented in the inset tables has been corrected and is now presented in a new **Table 3-1** and summarized in **Table 3-2**. The inset tables on the 17 map sheets have been removed.

Chapter 3 text has been updated to reflect information contained in the new Tables 3-1 and 3-2.

CHAPTER 2: ANALYSES USED TO DETERMINE THE LATERAL EXTENT OF THE FHA AND SUBFLOW ZONE

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2.1 INTRODUCTION

This chapter expands on descriptions provided in Chapters 2 and 3 of the 2014 Subflow Report and provides greater explanation of the analyses used by ADWR. In order to comply with the 2012 Order, ADWR determined the lateral extent of the FHA using the AZGS geology mapping, applying professional judgment in the form of geomorphological reasoning, and to the extent appropriate, considering the factors identified in the 2012 Order.

2.2 GEOMORPHOLOGICAL REASONING AND INFERENCE

ADWR contracted with the Arizona Geological Survey ("AZGS") to obtain information that ADWR could use as a basis for applying geomorphological reasoning to infer the lateral extent of the FHA. The information produced by the AZGS is contained in a report entitled, *Geology and Geomorphology of the San Pedro River*. In this report, the AZGS discusses the geologic setting and the geomorphological development and evolution within the San Pedro River watershed during the Holocene and Pleistocene epochs, including the physical setting of Holocene river deposits within the inner river valleys. This report is summarized in Chapter 2 of the 2014 Subflow Report, and the full document is included in Appendix B to the 2014 Subflow Report.

Based on the AZGS mapping and other factors described in the 2012 Order, ADWR used geomorphological reasoning and inference to delineate the lateral extent of the FHA. Such reasoning and inference was necessary due to the scale and complexity of the landforms characteristic of the inner river valleys of the San Pedro River watershed.

Victor R. Baker,[1] renowned geomorphologist and University of Arizona Regents' Professor of Hydrology and Water Resources, explained that geomorphological reasoning relies heavily on inference, which reasons from real effects to real causes, eventually bringing together facts under a conceptual scheme (hypothesis). Causative processes are inferred retroductively for geomorphological indices, such as landforms and sediments. Baker observed that controlled experiments are not possible in much of the Earth sciences, including geomorphology, due to the complexity of the system.

> Shamos (1995, p. 96) makes the point this way: ... In general, as a science matures, it passes first through a purely descriptive stage, then proceeds to an experimental stage, and finally, as meaningful patterns are seen to emerge, to a theoretical stage, where one usually finds it highly productive to use the language of science (mathematics) to describe natural phenomena and uncover new knowledge. Physics and chemistry are already at this final stage; biology and Earth science, involving as they do far more **complex systems**, have been slower to mature to this level.
>
> ***
>
> Controlled experiments, at least for the most interesting phenomena, are not possible in much of the Earth sciences, including geomorphology. Instead of the detached objectivity of sterile laboratories, **the geomorphologist must be concerned with the open problem of the field, in which nature is 'taken as it is**.'

Baker (1996, pp. 59, 80) (emphasis added, ellipses supplied.) The development and evolution of differing geologic landforms over long periods of time are examples of these "far more complex systems," and it is those systems, taken as they are, that ADWR was required to analyze to determine the lateral extent of the FHA.

ADWR applied geomorphological reasoning based on well-understood cause-effect relationships and designed certain procedures intended to maximize certainty

[1] Baker, V.R., 1996, Chapter 4 - Hypotheses and Geomorphological Reasoning, *The Scientific Nature of Geomorphology: Proceedings of the 27th Binghamton Symposium in Geomorphology*, edited by Bruce L. Rhoads and Colin E. Thorn, pp. 57-85.

in determining the lateral extent of the FHA. ADWR's approach is rooted in fundamental physical processes and allows depositional patterns of the FHA to be efficiently inferred at the spatial scale of the landforms shaped by these processes.

The geomorphological principle of "equifinality" suggests that similar landforms might have evolved or developed from different initial conditions in different ways by possibly different processes. A consequence of this principle is that some unavoidable limitation in inference and prediction is common to all geomorphological hypotheses (Beven, 1996).[2] For example, the locations of the lines of contact shown on the geologic mapping are limited in accuracy by the AZGS to plus or minus 25, 50, or 250 feet, depending on how distinct, gradual or obscured the topographic feature marking the transition. In addition, delineating the lateral extent of the FHA is limited by the prevalence of mapped non-FHA alluvium at certain locations. Inference of the extent of this non-FHA alluvium is unavoidable due to lack of information regarding the number of potential facts that Baker (1996) described as "presumed to be endless in number and bewildering in complexity."[3] These limitations are inherent and cannot be eliminated, although they can be reduced through use of geomorphological inferences drawn from certain well-conceived cause-effect relationships.

As directed by the 2012 Order, ADWR exercised professional judgment and drew geomorphological inferences from the depositional history of the alluvial deposits in the San Pedro River watershed based on accepted principles of geology and geomorphology. ADWR delineated the lateral extent of the FHA as a stable geologic feature that includes the full extent of known or inferred deposits of FHA.

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[2] Beven, K., Chapter 12 - Equifinality and Uncertainty in Geomorphological Modelling, *The Scientific Nature of Geomorphology: Proceedings of the 27th Binghamton Symposium in Geomorphology*, edited by Bruce L. Rhoads and Colin E. Thorn, pp. 289-313.

[3] Baker (1996, p. 58).

2.3 DETERMINING THE LATERAL EXTENT OF THE FHA

ADWR determined the lateral extent of the FHA using the AZGS surface geology mapping, geomorphological reasoning based on the eroded form of the pre-Holocene bounding topography, and to the extent appropriate, considering certain factors identified by the Court in the 2012 Order. ADWR determined the lateral extent of the FHA in three steps, as follows:

Step 1. *Identification of FHA where observed to be deposited directly against pre-Holocene bounding topography (Section 2.3.1).* This step applies to locations where surface exposures of the FHA are deposited directly against pre-Holocene bounding topography and no tributary Holocene alluvium ("THA") deposits are present. At these locations, ADWR determined the lateral extent of the FHA using the AZGS geology mapping alone.

Step 2. *Identification of FHA where river erosion and deposition predominates (Section 2.3.2).* This step applies to locations where the lateral extent of the FHA is obscured by THA, lateral river erosion and deposition have been the predominant processes shaping the pre-Holocene bounding topography, and effects of tributary erosion and deposition have been relatively minor. At these locations, ADWR determined the lateral extent of the FHA using the AZGS geology mapping coupled with geomorphological reasoning based on the width, linearity and degree of crenulation of the pre-Holocene bounding topography.

Step 3. *Identification of FHA where tributary erosion and deposition is significant (Section 2.3.3).* This step applies to locations where the lateral extent of the FHA is obscured by THA, and tributary erosion and deposition have significantly shaped the evolved landforms. At these locations, ADWR determined the lateral extent of the FHA using the AZGS geology mapping coupled with geomorphological reasoning based on the form and character of

the pre-Holocene bounding topography and supplemented with geologic and/or hydrologic reasoning based on factors identified by the Court in the 2012 Order.

The delineation of the FHA using these three steps is depicted on map sheets in **Appendix A** to this report.

2.3.1 Step 1 - FHA Deposited Against Pre-Holocene Topography

In this first step, ADWR determined the lateral extent of the FHA at locations where surface exposures of the FHA are deposited directly against pre-Holocene bounding topography and no THA deposits are present.

A. ADWR determined that the lateral extent of the FHA coincides with mapped lines of contact between FHA and bounding topography; or where the historic composite active floodplain (1935-2007) establishes such contact during recent history.

B. These delineations are commonly associated with a distinct topographic feature for which the mapped location is estimated to be accurate by the AZGS to within 50 feet (+/- 25 feet).

2.3.2 Step 2 - Lateral River Erosion and Deposition Predominates

In this second step, ADWR determined the lateral extent of the FHA at locations where lateral erosion and deposition by the river has been the predominant process while tributary erosion and deposition have played a relatively minor role in shaping the bounding topography. These locations commonly exhibit one, both or some combination of the following characteristics:

A. Narrow, well-defined inner valley with linear to curvilinear alignment that parallels the general trend of the river course; steep topographic slope breaks form the margins of the inner valley with small and narrow tributary valleys; and fringes of THA deposits and visible alluvial fans along the margins of the inner valley.

(1) ADWR reasoned that during the past 10,000 years of the Holocene epoch, the river has shaped the bounding topography and deposited FHA directly against it. THA has since been deposited on top and buried the FHA.

(2) ADWR determined that the lateral extent of the FHA coincides with AZGS mapped lines of contact between THA and pre-Holocene bounding topography.

(3) ADWR expected some deviations in form and character of the bounding topography and determined that the FHA delineation smoothly bridges these deviations, when they do occur. These delineations are commonly associated with a distinct topographic feature for which the mapped location is estimated to be accurate by the AZGS to within 50 feet (+/- 25 feet).

B. Less narrow and defined inner valley formed by exposures of eroded ridges, spines or knobs with linear to curvilinear alignment that parallels the general trend of the river course; less steep topographic slope breaks set back in places from the margins of the inner valley forming relatively small tributary valleys and making the bounding somewhat crenulated.

(1) ADWR reasoned that during the past 10,000 years of the Holocene epoch, the river has shaped and deposited FHA directly against much if not all of the bounding topography.

(2) ADWR reasoned that tributary erosion and deposition has contributed to widening the inner valley and eroding pre-Holocene bounding topography thereby creating ridges, spines or knobs in the bounding deposits.

(3) ADWR reasoned that during the past 10,000 years of the Holocene epoch, alluvium deposited along the margins of the inner valley are formed by dynamic interaction between river and tributary processes and likely consist of a complex inter-fingering of FHA and THA.

(4) ADWR reasoned that there is a potential for a limited extent of bounding topography to be buried by only a thin mantle of THA deposits along the outer edge of the widened inner valley.

(5) ADWR reasoned that if tributary erosion and deposition has contributed to widening the inner valley and there are eroding ridges, spines or knobs in the bounding deposits, then there is a potential that a limited extent of bounding topography is buried beneath a thin mantle of THA deposits at the outer edge of the widened inner valley.

(6) In order to account for the potential of a limited extent of bounding topography buried beneath a thin mantle of THA deposits at the outer edge of the widened inner valley, ADWR determined that the lateral extent of the FHA should be limited to coincide with a smooth line drawn tangent to mapped inward-leading exposures of ridges, spines or knobs of the pre-Holocene bounding topography.

(7) These delineations are most commonly associated with a distinct topographic feature for which the mapped location is estimated to be accurate by the AZGS to within 50 feet (+/- 25 feet), but in some locations the feature may be more gradual for which the mapped location is estimated to be accurate by the AZGS to within 100 feet (+/- 50 feet).

2.3.3 Step 3 – Tributary Erosion and Deposition is Significant

In this third and final step, ADWR determined the lateral extent of the FHA at the remaining locations where tributary erosion and deposition have significantly contributed to the form and character of the inner valley. At these locations, in addition to the AZGS geology mapping coupled with geomorphological reasoning, ADWR reviewed and analyzed other available information to supplement ADWR's determination of the lateral

extent of the FHA with additional geologic and hydrologic reasoning. These locations commonly exhibit one, both or some combination of the following characteristics:

A. The bounding topography has been carved back or embayed from the inner valley forming relatively wide tributary valleys and large crenulations in the bounding topography surrounded by mantles of THA deposits. For much of the watershed, these locations are minor river segments appearing as small gaps in the delineations already completed in the first two steps.

(1) ADWR reasoned that during the past 10,000 years of the Holocene epoch, the river has made substantial lateral incursions and deposited FHA into these areas.

(2) ADWR reasoned that a combination of river and tributary processes has embayed or carved the bounding topography back from the inner valley and has formed eroded ridges, spines or knobs in the geologic deposits that may not be exposed.

(3) ADWR reasoned that tributary erosion and deposition has incised tributary valleys into bounding deposits making the topography more crenulated and that deposits within these tributary valleys are predominately THA.

(4) ADWR reasoned that during the past 10,000 years of the Holocene epoch, alluvium deposited along the margins of the inner valley are formed by dynamic interaction between river and tributary processes and likely consist of a complex inter-fingering of FHA and THA.

(5) ADWR determined that the lateral extent of the FHA extends beyond the inner valley but may not fully extend to a smooth line drawn tangent to mapped inward-leading exposures of ridges, spines or knobs of the pre-Holocene bounding topography.

(6) ADWR determined that the lateral extent of the FHA transverses THA deposits between fixed end-points established by adjacent

delineations in Steps 1 and 2. The lateral extent of the FHA follows a path inferred from: (1) location-specific width, linearity and crenulation of the bounding deposits; (2) findings of site-investigations in tributary drainages; (3) width, orientation and pattern of adjacent delineations; (4) review of photo-imagery and riparian vegetation growth patterns; and (5) analysis of soil lithology logs, if available.

(7) These delineations are most commonly associated with a gradual topographic feature for which the mapped location is estimated to be accurate by the AZGS to within 100 feet (+/- 50 feet), but in some locations the feature may be more obscured for which the mapped location is estimated to be accurate by the AZGS to within 500 feet (+/- 250 feet).

B. The bounding topography has been eroded or embayed far back from the inner valley and is separated from the FHA deposits by a wide, spatially-complex mantle of THA deposits. These locations cover extensive reaches of the river near the Towns of Benson and St. David.

(1) ADWR reasoned that during the past 10,000 years of the Holocene epoch, the river did not directly shape the bounding topography by lateral erosion in these areas.

(2) ADWR reasoned that tributary processes were predominant, eroding or embaying the bounding topography far back from the inner valley, and forming eroded ridges, spines or knobs in the geologic deposits, if any deposits are exposed above the mantle of THA deposits.

(3) ADWR reasoned that tributary erosion and deposition has incised wide tributary valleys into bounding deposits making the topography more crenulated and that deposits within these tributary valleys are predominately THA.

(4) ADWR determined that the lateral extent of the FHA extends beyond the inner valley but almost certainly does not fully extend to a smooth line drawn tangent to mapped inward-leading exposures of ridges, spines or knobs of the pre-Holocene bounding topography.

(5) ADWR further determined that the lateral extent of the FHA transverses THA deposits (between fixed end-points established by adjacent delineations) following a path inferred from: (1) location-specific width, linearity and crenulation of the bounding deposits; (2) findings of site-investigations in tributary drainages; (3) width, orientation and pattern of adjacent delineations; (4) review of photo-imagery and riparian vegetation growth patterns and (5) analysis of soil lithology logs, selected well driller logs and water levels in wells.

(6) These delineations are commonly associated with an obscured topographic feature for which the mapped location is estimated to be accurate by the AZGS to within 500 feet (+/- 250 feet).

2.4 VERIFICATION OF ADWR'S GEOMORPHOLOGICAL INFERENCES

The inferences drawn from ADWR's geomorphological reasoning are verified by findings of field geology investigations in the AZGS report entitled, *Site Investigation of Tributary Drainages to the San Pedro River* ("AZGA Site Investigation Report"). A copy of this report is provided in Appendix B-3 to the 2014 Subflow Report.

The AZGS Site Investigation Report, produced by the same experienced geologists who mapped the surface geology, presents stratigraphic interpretations of the exposed sedimentary relationships from sites of exposed tributary channel deposits along the boundary with the active river. The investigation included 25 sites located in both the upper and Lower San Pedro River valleys, with the majority located in the upper valley

where the bounding topography of inner valley is, in general, less well-defined. ADWR accompanied the AZGS during the investigations of 12 sites. The locations of the sites investigated are depicted on the map sheets in **Appendix A**.

Tables 2-1A and **2-1B** in this Supplemental Subflow Report describe findings at the 25 sites investigated along the right and left margins (looking downstream) of the San Pedro River. The number of sites investigated was limited by time and difficulty of access in many places.

The far right column of each table analyzes whether the reported findings support or do not support the inferences drawn from ADWR's geomorphological reasoning. Results of the verification analysis can be summarized as follows:

- Support for ADWR's inferences is found at 12 sites where exposed alluvial deposits are identified as FHA.
- Consistency with ADWR's inferences is found at 4 sites where exposed alluvial deposits are identified as being consistent with FHA and/or THA.
- There were inconclusive findings at 9 sites where no observations were made due to lack of exposed alluvial deposits.

At every site where observations could be made, the findings of field investigations are consistent with the inferences drawn from ADWR's reasoning and three-quarters of those sites provide direct support for those inferences. None of the investigated site showed findings inconsistent with the geomorphological inferences made by ADWR.

2.5 ANALYSES OF SOIL LITHOLOGY AND DRILLER'S LOGS

In compliance with the 2012 Order, ADWR reviewed and analyzed soil lithology data from wells and other borings. The soil lithology data was used to further support ADWR's geomorphological inferences at locations where erosion and deposition by the river has predominately shaped the bounding topography (Step 2 from Section 2.3).

Where tributary deposition and erosion has been more significant in shaping the bounding topography (Step 3 from Section 2.3), available data supplemented geology mapping and geomorphological reasoning. To a limited extent, in the vicinity of four river segments, ADWR also analyzed driller's logs.

2.5.1. Professional-level Lithology Logs

As described in the 2014 Subflow Report, ADWR utilized information from soil lithology logs prepared by individuals trained in soil identification and classification techniques. ADWR distinguished these "professional-level lithology logs" from generally less-reliable "driller's logs" based on either (1) statements of qualification or (2) the logged entries indicative of trained individuals. A listing of 167 professional-level lithology logs reviewed by ADWR is provided in Appendix D-1 to the 2014 Subflow Report.

ADWR divided the lithology logs into three groupings based on location and mapped geologic deposits, as follows:

- One-hundred and twenty-four (124) lithology logs at locations mapped as FHA ("FHA-Logs");
- Twenty-nine (29) lithology logs at locations mapped as THA within the inner river valley ("THA-Logs"); and
- Fourteen (14) lithology logs at locations outside the inner river valley.

ADWR limited its analysis to the groupings of FHA-Logs and THA-Logs, which describe similar lithologies common to alluvial deposits that are characterized by inter-bedded layers of sands, gravels, silts and clays. However, both sets of logs lacked detailed information regarding changes in soil particle angularity and degree of carbonate cementation, and therefore could not be used to directly distinguish FHA from THA nor Holocene from latest Pleistocene river alluvium at depth. Typically, basin-fill deposits, when encountered were logged as thick deposits of clay described by their red color, dense hardness and high plasticity.

Tables 2-2A and **2-2B** in this Supplemental Subflow Report show results of ADWR's analysis of FHA-Logs for wells drilled in the upper and lower San Pedro River valleys, respectively. In the upper San Pedro River valley, **Table 2-2A** lists a total of 93 logs. Of those, 55 logs show alluvial deposits between 25 and 70 feet thick, 27 logs with less than 25 feet, and 11 logs show 70 feet or more. Only three of the drillings, each with more than 70 feet of alluvium, logged the contact with basin-fill deposits. The remaining 90 FHA-Logs for wells drilled in the upper San Pedro River valley were stopped short of reaching basin-fill and represent minimum thicknesses of alluvium.

In the lower San Pedro River valley, **Table 2-2B** lists a total of 31 logs. Of those, 16 logs show alluvial deposits less than 25 feet, 9 logs between 25 and 70 feet thick, and 6 logs with 70 feet or more. Only two of the drillings, each with more than 70 feet of alluvium, logged the contact with basin-fill deposits. The remaining 29 FHA-Logs for wells drilled in the lower San Pedro River valley were stopped short of reaching basin-fill and therefore represent minimum alluvial thicknesses.

Tables 2-3A and **2-3B** in this Supplemental Subflow Report show results of ADWR's analysis of THA-Logs drilled in the upper and lower San Pedro River valleys, respectively. In the upper San Pedro River valley, **Table 2-3A** lists a total of 10 logs. Of these, 5 logs show alluvial deposits between 25 and 70 feet thick, 3 logs with 70 feet or more, and 2 logs show less than 25 feet. Only three of the drillings, two with more than 70 feet of alluvium and one with 47 feet, logged the contact with basin-fill deposits. The remaining seven THA-Logs for wells drilled in the upper San Pedro River valley were stopped short of reaching basin-fill and represent minimum thicknesses of alluvium.

In the lower San Pedro River valley, **Table 2-3B** lists a total of 19 logs. Of these, 9 logs show alluvial deposits with more than 70 feet of alluvium, 6 logs show between 25 and 70 feet, and 4 logs less than 25 feet. Only three of the drillings, each with more than 70 feet of alluvium, logged the contact with basin-fill deposits. The remaining 16

lithology logs in the lower San Pedro River valley were stopped short of reaching basin-fill and therefore represent minimum alluvial thicknesses.[4]

The locations of the wells where ADWR analyzed professional-level FHA-Logs and THA-Logs are depicted on the map sheets in **Appendix A**. Copies of the FHA-Logs and THA-Logs are provided in **Appendix B**.

2.5.2. Well Driller's Logs

As described in the 2014 Subflow Report, ADWR also analyzed data from selected driller's logs for wells completed in locations mapped as THA deposits near four short segments of the river where the bounding topography is far back from the inner valley and separated from the FHA by a wide mantle of THA deposits. These segments are located in the vicinity of river miles 112 to 109, 106 to 104, 99 to 96, and 89 to 86. Although the reliability of driller's logs generally is less than that of professional-level lithology logs in determining the lateral extent of the FHA, well driller's logs are useful in certain locations. A listing of 273 driller logs reviewed by ADWR is provided in Appendix D-2 to the 2014 Subflow Report.

Tables 2-4A through **2-4D** in this Supplemental Subflow Report show results of ADWR's analysis of driller's logs for wells completed in mapped THA deposits in the vicinities of river miles 112 to 109, 106 to 104, 99 to 96, and 89 to 86, respectively.

For river miles 112 to 109, a total of 14 driller logs were identified for wells completed in locations mapped as THA. **Table 2-4A** lists 13 logs showing 70 feet or more, one log with less than 25 feet, and no logs showing alluvial deposits between 25 and 70 feet thick. Ten of the drillings, 9 of which had more than 70 feet of alluvium, logged the contact with basin-fill deposits. The remaining 4 logs were stopped short of reaching basin-fill and represent minimum thicknesses of alluvium.

[4] For example, THA-Log No. 124 drilled near River Mile 29 shows alluvial deposits to a drilled depth of 1,410 feet and no contact with basin-fill deposits.

For river miles 106 to 104, a total of 100 driller logs were identified for wells completed in locations mapped as THA. **Table 2-4B** lists 49 logs showing 70 feet or more, 29 logs showing alluvial deposits between 25 and 70 feet thick, and 20 logs with less than 25 feet. Two of these driller logs were not legible so the thickness of alluvium could not be determined. A total of 90 of the drillings logged the contact with basin-fill deposits. The remaining eight logs were stopped short of reaching basin-fill and represent minimum thicknesses of alluvium.

For river miles 99 to 96, a total of 40 driller logs were identified for wells completed in locations mapped as THA. **Table 2-4C** lists 18 logs showing alluvial deposits between 25 and 70 feet thick, 14 logs showing 70 feet or more, and 7 logs with less than 25 feet. One of these driller logs was not legible so the thickness of alluvium could not be determined. A total of 25 of the drillings logged the contact with basin-fill deposits. The remaining 14 logs were stopped short of reaching basin-fill and represent minimum thicknesses of alluvium.

For river miles 89 to 86, a total of 21 driller logs were identified for wells completed in locations mapped as THA. **Table 2-4D** lists 10 logs showing 70 feet or more, 6 logs showing alluvial deposits between 25 and 70 feet thick, and 5 logs with less than 25 feet. A total of 18 of the drillings logged the contact with basin-fill deposits. The remaining three logs were stopped short of reaching basin-fill and represent minimum thicknesses of alluvium.

The locations of the wells where ADWR analyzed well driller logs are depicted on the map sheets in **Appendix C**.[5] Copies of these logs are provided in **Appendix D**.

[5] Well locations in ADWR's wells registry are described as centroids of 10-acre squares. If more than one well is drilled within the same 10-acre area, they will plot at the same location when mapped. Wells shown on these figures are identified by "Location ID Nos." listed in **Tables 2-4A through 2-4D**, which in some cases identify more than one well.

2.6 ANALYSES OF WATER LEVELS IN WELLS

The depositional history of alluvial deposits can be evaluated through consideration of the hydrologic properties for alluvium having different depositional histories. The direction and magnitude of flowing water is related to the gradient in potential energy and the resistance to flow provided by the aquifers of porous media.

In order to identify the flow gradients characteristic of the aquifer-units, ADWR analyzed water levels measured at wells along the lowest 32-mile reach of the upper San Pedro River valley. Between river miles 114 and 82, the inner valley is characterized by frequent and extensive reaches of the bounding topography separated from the FHA by a wide mantle of spatially-complex THA. In this area there are fewer locations available where the general trend of the inner valley and FHA deposits can be inferred directly from exposed geologic contacts and the form of the bounding topography (Steps 1 and 2 from Section 2.3). This section provides further description of the datasets selected and procedures followed by ADWR.

ADWR reviewed available data and considered several factors in selecting the input data, including:

- Number of wells;
- Spatial coverage of wells;
- Duration of time between measurements;
- Influence of seasonal pumping; and
- Selection of multiple time-frames.

Using these factors, ADWR selected the following three datasets based on data collected during 1990, 2006, and 1998:

1. 1990 Dataset: water levels measured at 75 wells between 11/26/1990 and 11/29/1990.
    a. 29 FHA-Wells.
    b. 13 THA-Wells on the west side of the river.
    c. 33 THA-Wells on the east side of the river.

2. 2006 Dataset: water levels measured at 53 wells between 11/27/2006 and 12/14/2006.
    a. 20 FHA-Wells.
    b. 9 THA-Wells on the west side of the river.
    c. 24 THA-Wells on the east side of the river.
3. 1998 Dataset: water levels measured at 33 wells between 03/01/1968 and 04/03/1968.
    a. 12 FHA-Wells.
    b. 3 THA-Wells on the west side of the river.
    c. 18 THA-Wells on the east side of the river.

In the subflow report prepared by ADWR in 2012, ADWR explains that in some locations there are too few measurements; the measurements that do exist are too widely spaced; and the flow properties of FHA, THA and latest Pleistocene river alluvium are too similar to discern locations of geologic contacts via calculation of flow gradients using measured water levels. For those areas, ADWR used a comparative analysis, which is described in the 2014 Subflow Report.

For each of the three datasets described above, ADWR first calculated the effective downstream gradient using best-fit linear regression on the water levels measured only in the FHA-Wells. Statistical measures of the 50, 75 and 95 percent confidence intervals were also computed for each regression. For each dataset, the FHA-Well data values were plotted with regression best-fit and confidence interval lines. Next, ADWR plotted the THA-Well data values on the best-fit and confidence intervals lines derived from the FHA-Wells. **Appendix E** to this Supplemental Subflow Report provides the following information for the 1990, 2006 and 1968 data analyses, respectively:

- Locations of FHA-Wells and THA-Wells;
- GWSI Site IDs for FHA-Wells and THA-Wells;
- Measured water level elevations for FHA-Wells and THA-Wells;

- Best-fit regression line with 50%, 75% and 95% confidence intervals based on FHA-Well data points, plotted separately with:
    - FHA-Well data points,
    - THA-Well data points on west side of river, and
    - THA-Well data point on east side of river.

The regression best-fit line represents the overall downstream gradient of the saturated FHA predicted using only measurements at wells completed in areas mapped as FHA. The confidence interval lines estimate expected variations in the accuracy of that prediction for statistical significance levels of 50, 25 and 5 percent. By comparing the FHA-Well and THA-Well data separately on the identical plots, ADWR was able to identify trends in similarities or differences between the frequency and magnitude of variation in flow gradients characteristic of the aquifer-units sampled independently by wells drilled in areas mapped as FHA versus those drilled in the THA on the west and east sides of the river. Copies of spreadsheets documenting the linear regression analyses are provided in **Appendix F** to this report.

2.7 APPLYING SETBACKS TO THE LATERAL EXTENT OF THE FHA TO DELINEATE THE LATERAL EXTENT OF THE SUBFLOW ZONE

In compliance with the 2012 Order, ADWR delineated the lateral extent of the subflow zone by applying certain setbacks to the lateral extent of the FHA using the analyses previously described. The 2014 Subflow Report describes the application of setbacks. ADWR did not apply setbacks at locations where the lateral extent of FHA shares a contact with mapped bedrock. At all other locations, ADWR performed the following series of steps:

1. Draw the 100-foot setback line;
2. Draw the 200-foot setback line;

3. At their confluences with the San Pedro River, project the lateral extents of the twelve largest ephemeral tributary drainages inward where they intersect both the 100-foot and 200-foot setback lines;
4. Draw the initial subflow line by following the transitions between the 100-foot and 200-foot setback lines projected in Step 3;
5. Truncate the initial subflow line as needed to include every part of the Historic Composite Active Floodplain (HCAF); and
6. Use straight-line transitions to close any gaps at bedrock-lined or truncated setbacks.

Figure 2-1 illustrates the process ADWR used to apply the 100-foot and 200-foot setbacks. Applications of setbacks to determine the lateral extent of the subflow zone are described in Chapter 3 of this report. The delineation of the lateral extent of the subflow zone is presented on the map sheets included in **Appendix G** to this report.

CHAPTER 3:
LATERAL EXTENT OF THE FHA AND SUBFLOW ZONE

CHAPTER 3: LATERAL EXTENT OF THE FHA AND SUBFLOW ZONE

3.1 INTRODUCTION

In Chapter 2, ADWR described the analyses that were used to determine the lateral extent of the FHA and subflow zone in the San Pedro River watershed. This chapter presents the results of those analyses.

3.2 ANALYSES RESULTS FOR FHA DELINEATION

Using Steps 1, 2, and 3 described in Chapter 2, ADWR analyzed approximately 394 miles along the San Pedro River, the Babocomari River, and Aravaipa Creek. In **Table 3-1,** ADWR lists river segments for three watercourses within the San Pedro River watershed and the Steps that were used to analyze those segments for the delineation of the lateral extent of FHA. In **Table 3-2**, ADWR totals the FHA segment lengths by watercourse and calculates the percentage of the total for each Step, which is described below.

ADWR applied Step 1 of its analyses and identified [129.7] miles (33%) where FHA deposits touch the bounding pre-Holocene topography. These are the only locations in the watershed where the lateral extent of the FHA is observable on the surface and include both river valley sides.

ADWR applied Step 2 of its analyses and identified [190.2] miles (48%) where the lateral extent of the FHA is not observable on the surface, but where ADWR could infer the extent of FHA deposits from the development and evolution of landscapes represented on the geology maps.

ADWR applied Step 3 of its analyses and identified [73.7] miles (19%) where the lateral extent of the FHA is not observable on the surface, and where ADWR could not infer the extent of FHA deposits from the development and evolution of landscapes

represented on the geology maps. As part of the Step 3 analysis, ADWR used the fixed end-points and end-slopes from adjacent locations of FHA deposits that were delineated in Steps 1 and 2 and examined other available data and information, which is described in Chapter 2.

Table 3-2 demonstrates that approximately 81% of the lateral extent of FHA for all three watercourses was delineated in either Step 1 (33%) or Step 2 (48%). ADWR delineated the remaining 19% of the lateral extent of FHA using Step 3.

3.3 PRESENTATION OF THE LATERAL EXTENT OF THE FHA

ADWR's delineations of the lateral extent of the FHA are presented in 17 FHA map sheets covering the watershed as follows:

- FHA Map Sheet No. 1 (San Pedro River Miles 157 to 143);
- FHA Map Sheet No. 2 (San Pedro River Miles 143 to 131);
- FHA Map Sheet No. 3 (San Pedro River Miles 131 to 118);
- FHA Map Sheet No. 4 (San Pedro River Miles 118 to 104);
- FHA Map Sheet No. 5 (San Pedro River Miles 104 to 91);
- FHA Map Sheet No. 6 (San Pedro River Miles 91 to 77);
- FHA Map Sheet No. 7 (San Pedro River Miles 77 to 63);
- FHA Map Sheet No. 8 (San Pedro River Miles 63 to 50);
- FHA Map Sheet No. 9 (San Pedro River Miles 50 to 37);
- FHA Map Sheet No. 10 (San Pedro River Miles 37 to 24);
- FHA Map Sheet No. 11 (San Pedro River Miles 24 to 11);
- FHA Map Sheet No. 12 (San Pedro River Miles 11 to 0);
- FHA Map Sheet No. 13 (Aravaipa Creek Miles 37 to 26);
- FHA Map Sheet No. 14 (Aravaipa Creek Miles 26 to 8);
- FHA Map Sheet No. 15 (Aravaipa Creek Miles 8 to 0);
- FHA Map Sheet No. 16 (Babocomari River Miles 22 to 7); and
- FHA Map Sheet No. 17 (Babocomari River Miles 7 to 0).

Appendix A provides ANSI D[1] map sheets with information and data displayed at a resolution of 1:24,000 for each of the 17 FHA map sheets. Each FHA Map Sheet displays the following information, as applicable:

- Segments of the FHA lines color-coded to identify locations where the FHA determinations were completed in Steps 1 (green), 2 (red) or 3 (yellow).
- 2010 National Agriculture Imagery Program (NAIP) photo-imagery;
- 2009 AZGS geology mapping;
- 2011 ADWR historical composite active floodplain (1935-2007) (HCAF);
- 2014 AZGS tributary investigation sites;
- U.S. Fish & Wildlife Service riparian vegetation growth data for cottonwood/willow trees and mesquite/salt cedar trees; and
- The locations of wells drilled in locations mapped as FHA or THA within the inner river valley that have professional-level soil lithology logs.

An example of one of the FHA Map Sheets is presented in **Figure 3-1** for illustrative purposes.

Additional information is presented on map sheets in **Appendix C** and **Appendix E**. **Appendix C** provides ANSI D sheets with information and data for the driller logs mapped as THA within the inner valley between San Pedro River miles 112 to 86 as described in Section 2.5.2. **Appendix E** provides ANSI D sheets with information and data for water levels in wells between San Pedro River miles 114 to 82 as described in Section 2.6.

3.4 PRESENTATION OF THE LATERAL EXTENT OF THE SUBFLOW ZONE

Appendix G also provides ANSI D sheets with information and data for the subflow zone displayed at a resolution of 1:24,000 for each of the 17 map sheets. Each Subflow Zone Map Sheet displays the following information, as applicable:

[1] 22 inches x 34 inches.

- Lateral extent of the FHA based on the FHA Map Sheets (black);
- 2010 NAIP Photo-Imagery;
- 2009 AZGS geology mapping;
- 2011 ADWR HCAF;
- Large tributary drainages where 200-foot setbacks were applied; and
- Lateral extent of the subflow zone (red).

An example of one of the Subflow Zone Map Sheets is presented in **Figure 3-2** for illustrative purposes.

The subflow zone presented on the Subflow Zone Map Sheets reflects corrections made by ADWR at locations where certain areas of the HCAF were unintentionally excluded in the 2014 Subflow Report. This process, as well as the process of applying setbacks, resulted in some angular reaches in the subflow zone, which could be smoothed out in future mapping.

3.5 SUMMARY

In the majority of the locations, ADWR was able to rely solely on AZGS geology mapping and reasoning based on that mapping to identify FHA deposits (Steps 1 and 2). In the remaining areas, ADWR used its professional judgment in interpreting other available information and data (Step 3). This process involved geomorphological reasoning and inference, which by their nature had inherent limitations due to the complexity of landforms in the San Pedro River watershed.

TABLES

TABLE 2-1A: TRIBUTARY DRAINAGE SITE INVESTIGATION VERIFICATION RESULTS ALONG RIGHT MARGIN OF SRP INNER VALLEY, LOOKING DOWNSTREAM (EAST)

Table 2-1A. Tributary Drainage Site Investigation Verification Results Along Right Margin of SPR Inner Valley, Looking Downstream (East)

Sub-watershed	River Segment	River Mile	AZGS Site No.	AZGS Notes	Verification Result
Upper San Pedro	157 - 143	153	1	It seems clear the Holocene San Pedro eroded into older deposits as far from the modern channel as the topographic expression of basin fill bluffs lining the east side of the modern San Pedro trough. Today the river is incised into its own Holocene floodplain deposits but earlier in the Holocene the active channel carved a path through basin fill alluvium at this location. Recent archaeological studies (Ballenger, 2010) indicate all exposed sediment in Palominas Arroyo may be Holocene in age. Holocene San Pedro deposits exposed in Palominas Arroyo are located as much as 2,200 ft outside mapped Holocene river deposits on AZGS surficial maps. Because this location corresponds with the topographic surface expression of nearby basin fill deposits which predate the Holocene San Pedro River it is likely this exposure offers the best known example of otherwise buried Holocene San Pedro channel deposits adjacent to basin fill bluffs outside the modern channel.	Support
		148.5	2	The arroyo was not well incised, exposing only the uppermost few feet of tributary alluvium. No exposures of underlying sedimentary relationships were observed. No observations were made at this location due to lack of exposure.	Inconclusive
		148	3	No observations were made at this location due to lack of exposure.	Inconclusive
		147	5	No observations were made at this location due to lack of exposure.	Inconclusive
	143 - 131	136	10	No observations were made at this location due to lack of exposure.	Inconclusive
	131 - 118	121.5	11	The well sorted, finer-grained beds resemble deposits commonly associated with Holocene San Pedro River floodplain deposition. It is also possible that the fine grained beds may be attributed to reworking of fine grained basin fill alluvium by Walnut Gulch. Because either mode of deposition could result in fine-grained deposition at this location, the origin of the fine grained layers cannot be conclusively determined based on field examination of these exposures.	Consistent
		119	12	No observations were made at this location due to a lack of exposure of San Pedro and tributary sedimentary relationships at the surface.	Inconclusive
	118 - 104	112	14	The lower, well-sorted, fine-grained alluvium resembles deposits commonly associated with Holocene San Pedro River floodplain deposition. It is also possible that the fine grained beds may be attributed to reworking of fine grained basin fill alluvium by Clifford Wash. Well-eroded basin fill hills are located upstream along Clifford Wash to the east. Because either mode of deposition could result in fine-grained deposition at this location, the origin of the fine grained layers cannot be conclusively determined based on field examination of these exposures.	Consistent
		108	15	Exposures of San Pedro deposits extend upstream in the arroyo for approximately 20-30 ft where they become buried. Upstream of this point the exposed deposits consist entirely of tributary alluvium.	Support
		107	16	In this location, close to the mapped boundary of the toe of tributary fans overlying fine grained Holocene San Pedro River deposits, it seems reasonable to associate the finer grained layers with dominant deposition by the San Pedro River.	Support
	118 - 104	105	18	The uppermost very poorly sorted deposits are interpreted to be derived from prograding tributary alluvial fans. These deposits overlie possible interbedded deposits of tributary and river alluvium. The finer grained interbeds could also have been deposited by lower energy splays or sheetflow in a distributary alluvial fan environment. The lowermost fine-grained, well-sorted deposits resemble deposits commonly associated with Holocene San Pedro River floodplain deposition. It is also possible that the fine grained beds may be attributed to reworking of fine grained basin fill alluvium by local drainages. Well-eroded basin fill hills are located upstream along the unnamed arroyo to the east. Because either mode of deposition could result in fine-grained deposition at this location, the origin of the fine grained layers cannot be conclusively determined based on field examination of these exposures.	Consistent
	104 -91	99.5	22	The finer grained, well sorted, banded alluvial deposits present below the angular clast-bearing deposit may have been deposited by low energy distal fan deposition. These deposits also resemble fine grained river floodplain deposits but the position in the landscape and proximity to tall, well-dissected basin fill bluffs to the east which provide a continuous source of fine-grained sediment suggest these deposits were more likely emplaced in a tributary channel or fan environment. Although, because either mode of deposition could result in fine-grained deposition at this location, the origin of the fine grained layers cannot be conclusively determined based on field examination of these exposures.	Consistent
Lower San Pedro	77 - 63	69.5	29	Although AZGS surficial mapping depicts tributary fan alluvium throughout this area at the surface, this exposure exhibits interfingering and concurrent deposition of Teran Wash and San Pedro River sediment in an aggrading distal fan/river floodplain environment up to 425 ft farther from the river than depicted on AZGS maps.	Support
		66	30	Holocene river alluvium is exposed in the banks of Hot Springs Wash up to 350 ft outside the boundary depicted on AZGS surficial geologic maps.	Support
	37 - 24	32	35	Holocene river alluvium is exposed in arroyo walls of James Wash up to 600 ft outside mapped boundaries of Holocene River alluvium on AZGS surficial geologic maps.	Support

TABLE 2-1B: TRIBUTARY DRAINAGE SITE INVESTIGATION VERIFICATION RESULTS ALONG LEFT MARGIN OF SRP INNER VALLEY, LOOKING DOWNSTREAM (WEST)

Table 2-1B. Tributary Drainage Site Investigation Verification Results Along Left Margin of SPR Inner Valley, Looking Downstream (West)

Sub-watershed	River Segment	River Mile	Site ID No.	AZGS Notes	Verification Result
Upper San Pedro	157 - 143	148	4	No observations were made at these locations due to lack of exposure.	Inconclusive
		143	6	The poorly sorted alluvium containing calcium carbonate nodules is interpreted as tributary alluvium composed mainly of reworked basin fill sediments. This deposit overlies a much better sorted, fine-grained deposit consistent with floodplain deposition by the San Pedro River. These exposures of fine grained floodplain alluvium are located up to 300 ft outside the mapped boundary of Holocene river alluvium on AZGS surficial maps. These fine-grained San Pedro deposits become buried a short distance upstream and are no longer exposed in the arroyo wall so the maximum lateral extent of these deposits is not visible.	Support
	143 - 131	141.5	7	The poorly sorted alluvium containing angular clasts and abundant calcium carbonate nodules is interpreted to be tributary alluvium dominantly composed of reworked basin fill sediment. These tributary deposits overlie a much better sorted, fine-grained deposit consistent with floodplain deposition by the San Pedro River. The gray soil layers in the floodplain alluvium are apparent in other exposures of San Pedro floodplain and channel deposits to the south (Site 6) and may reflect a period of regional landscape stability along the San Pedro River prior to burial by progradation of tributary alluvial fans. These exposures of fine grained floodplain alluvium are located up to 175 ft outside the mapped boundary of Holocene river alluvium on AZGS surficial maps. These fine-grained San Pedro deposits become buried a short distance upstream and are no longer exposed in the arroyo wall so the maximum lateral extent of these deposits is not visible.	Support
		140.5	8	No observations were made due to lack of exposure and difficulty of access.	Inconclusive
	118 - 104	112	13	The poorly sorted beds containing angular to sub angular clasts are interpreted to be tributary alluvial deposits while the well-sorted, fine-grained alluvium strongly resembles floodplain deposits exposed in the channel walls of the San Pedro to the east. The uppermost layer at the top of the sequence exhibits little to no soil development and appears to have been deposited recently, probably in historical times prior to widespread incision along the San Pedro River. Deposits exposed along California Wash record alternating deposition of Holocene tributary and San Pedro River alluvium prior to deposition of young prograding tributary fan alluvium at the surface (uppermost unit). These exposures of Holocene San Pedro River alluvium are located up to 275 ft outside mapped deposits of Holocene river alluvium on AZGS surficial geologic maps.	Support
	104 - 91	96	23	Laterally continuous exposures of multiple buried soils indicate punctuated landscape stability sufficient for soil development throughout a period of net aggradation in the Holocene. Widespread fine-grained deposition could have been achieved by broad, repeated, low energy floodplain deposition by the San Pedro. Coarser, poorly sorted tributary piedmont deposits overlying these fine-grained beds later prograded across these extensive floodplain deposits. This process repeated through time resulting in the alternating fine-coarse interbedding with soil development exposed in the arroyo today. It is possible the fine grained beds could also have been deposited by lower energy distal tributary fan progradation but the uniform particle size, excellent sorting, and laterally continuous buried soil layers seem more likely to result from widespread, low energy floodplain deposition by the San Pedro River. Probable Holocene river floodplain deposits are exposed in this arroyo up to 2,600 ft outside the mapped surficial boundary of Holocene river alluvium on AZGS geologic maps.	Support
	91 - 77	89.5	25	The poorly sorted alluvium with angular gravels exposed at the top of the arroyo wall is interpreted as tributary channel and fan deposits. These deposits overlie finer-grained, well-sorted sandy to silty alluvium with well-rounded cobble lenses representing Holocene San Pedro floodplain and channel deposits with discontinuous tributary alluvial interbeds resulting from interfingering tributary and river deposition at this location in the Holocene. The buried soil near the top of the fine unit indicated a period of landscape stability occurred prior to latest Holocene fan progradation atop Holocene river floodplain deposits. The tributary sand to gravel cap becomes noticeably thinner near the modern San Pedro channel, indicating thinning tributary fan deposition atop laterally extensive and thick Holocene San Pedro floodplain deposits. Holocene river floodplain deposits are exposed in this arroyo up to 820 ft outside the mapped surficial boundary of Holocene river alluvium on AZGS geologic maps.	Support
		89.5	26	The same interpretations described for photo SPR89.5W_A are applicable here although fewer poorly sorted tributary channel interbeds are present within the predominantly well-sorted fine-grained river floodplain deposits. This trend indicates increasing dominance of deposition by the San Pedro nearer the modern channel. Most of the tributary alluvium evident at this location is the thinning alluvial deposit at the top of the exposure. The vast majority of sediment exposed in cross section here is interpreted as Holocene river deposits while surficial mapping shows this area as Holocene tributary (Qy2) deposits. The surface is dominated by tributary alluvium at this location which is depicted in surficial AZGS geologic mapping yet it seems clear Holocene river deposits extends farther from the river in the subsurface than the surficial maps indicate.	Support
Lower San Pedro		79	27	No observations were made at this location due to lack of exposure of sedimentary relationships.	Inconclusive
	37 - 24	32.5	34	No observations were made at this location due to lack of sedimentary exposures.	Inconclusive

TABLE 2-2A:
UPPER SAN PEDRO WATERSHED PROFESSIONAL-LEVEL LITHOLOGY LOGS IN MAPPED FHA

Table 2-2A. Upper San Pedro Watershed Professional-level Lithology Logs in Mapped FHA

River Segment	River Mile	Log No.[1]	Log Indentifier[2]	Thickness Alluvium [ft]		
				≤ 25	25-70	≥ 70
157 -143	155	1	55- 588973	18		
	155	2	55- 588975	20		
	154	3	55- 588968			73
	154	4	55- 588969		37	
	154	5	55- 588970		34	
	154	6	55- 588971		34	
	154	7	55- 588972	21		
	154	8	55- 588974	16		
	153	10	Test Hole 1		40	
	153	11	Test Hole 2		32	
	153	12	Test Hole 3	19		
	153	13	Test Hole 4		27	
	153	14	Test Hole 5		27	
	153	15	Test Hole 6		38	
	150	16	55- 588965	20		
	150	17	55- 588966	20		
	150	18	55- 588967	19		
	148	19	B-1		50	
	148	20	B-2		60	
	148	21	B-3		60	
	148	22	B-4		50	
	147	23	55- 522010	9		
	146	24	55- 588950		28	
	146	25	55- 588951		59	
	146	26	55- 588952	12		
	146	27	55- 588953	24		
	146	28	55- 588954	20		
	146	29	55- 588955		27	
	146	30	Hereford No. 1		40	
	146	31	Hereford No. 2		63	
	146	32	Hereford No. 3		65	
	143	34	55- 588962	15.5		
	143	35	55- 588963	18.5		
	143	36	55- 588964	16		
	140	37	55- 588943	24		
	140	38	55- 588944		68	
	140	39	55- 588945		58	
143 - 131	137	40	55- 219444			125
	137	42	55- 588947	23		
	137	43	Test Hole 1		60	
	137	44	Test Hole 2		40	
	137	45	Test Hole 3		34	
	137	46	Test Hole 4		41	
	137	47	Test Hole 5		41	
	137	48	Test Hole 6		47	
	135	49	1LS		58	
	135	50	2LS		40	
	135	51	4LS		40	
	135	52	5LS		40	
	135	53	6LS		41	
	135	54	LS-A			120
	132	56	55- 588930		26.5	
	132	57	55- 588931	12		
	132	58	55- 588932	22		
	132	59	55- 588933		33	
	132	60	55- 588934	21		

Table 2-2A. Upper San Pedro Watershed Professional-level Lithology Logs in Mapped FHA

River Segment	River Mile	Log No.[1]	Log Indentifier[2]	Thickness Alluvium [ft]		
				≤ 25	25-70	≥ 70
131 - 118	131	61	Boring 3CH		32	
	131	62	Boring 4CH		60	
	131	63	Boring 5CH		32	
	131	65	Boring CH-A			135
	131	66	Boring CH-B			115
	131	67	Boring CH-C			90
	127	68	55- 590131		40	
	127	69	55- 590132		30	
	127	70	55- 590133		40	
	126	71	55- 588936	13		
	124	72	55- 588958	14.33		
	124	74	55- 590606	15.5		
	121	76	55- 590609	25		
118 - 104	117	77	55- 588956	20		
	117	78	55- 588957	16		
	106	88	55- 579872			130[3]
	106	89	55- 579874			160[3]
	106	90	55- 579877			130[3]
104 - 91	104	92	No. 1		50	
	104	93	No. 1A		50	
	104	94	No. 2		36	
	104	95	No. 4		34	
	104	96	No. 5	21		
	104	97	No. 6		44	
	104	98	No. 7		52	
	104	99	No. 8		36	
	101	100	55- 215011		70	
	99	102	1WB		60	
	99	103	2AEB		60	
	99	104	2EB		30	
	99	105	5WB			118
	99	106	7EB		30	
	99	107	No. 2A		60	
	99	108	No. 7		30	
	99	109	No. 1		60	
	99	110	No. 5			108
91 - 77	83	111	55- 215009		70	

[1] 2014 Subflow Report Appendix D-1

[2] Well Registration Number or other Indentifier

[3] Contact with Basin-fill logged at base of alluvial deposits

TABLE 2-2B:
LOWER SAN PEDRO WATERSHED PROFESSIONAL-LEVEL LITHOLOGY LOGS IN MAPPED FHA

Table 2-2B. Lower San Pedro Watershed Professional-level Lithology Logs in Mapped FHA

River Segment	River Mile	Log No.[1]	Log Indentifier[2]		Thickness Alluvium [ft]		
					≤ 25	25-70	≥ 70
37 - 24	32	117	55-	530124			80[3]
24 - 11	14	128	55-	912804		30	
	14	129	55-	912807			185
	13	130	55-	912805			125[3]
	13	131	55-	912806		30	
	13	132	55-	912838		35	
	11	133	55-	912835	25		
	11	134	55-	912836			90
	11	135	55-	912837		30	
11 - 0.0	6	138	55-	569977	18		
	6	139	55-	569978		27	
	6	140	55-	569984	18		
	6	141	55-	569986	17		
	6	142	55-	569990	15		
	6	143	55-	570118			81
	6	144	55-	570461	15		
	6	145	55-	570462	10		
	6	146	55-	570463	15		
	6	147	55-	570464	15		
	6	148	55-	570465	16		
	5	152	55-	569982	22		
	4	157	55-	569983	20		
	4	158	55-	569987	21		
	4	160	55-	569991		32	
	2	161	55-	569968		50	
	2	162	55-	569988		28	
	2	163	55-	569992		37	
	1	164	55-	569974	20		
	1	165	55-	570466	10		
	1	166	55-	570467	10		
	0	167	55-	541149			125

[1] 2014 Subflow Report Appendix D-1

[2] Well Registration Number or other indentifier

[3] Contact with Basin-fill logged at base of alluvial deposits

TABLE 2-3A: UPPER SAN PEDRO WATERSHED PROFESSIONAL-LEVEL LITHOLOGY LOGS IN MAPPED THA

TABLE 2-3A. UPPER SAN PEDRO WATERSHED PROFESSIONAL-LEVEL LITHOLOGY LOGS IN MAPPED THA

River Segment	River Mile	Log No.[1]	Log Indentifier[2]	Thickness Alluvium [ft]		
				≤ 25	25-70	≥ 70
157 - 143	153	**9**	55- 588939		50	
	143	**33**	55- 588961		31	
143 - 131	137	**41**	55- 588946	24		
	135	**55**	Lewis Springs Bridge (LS-B)			130
131 - 118	122	**75**	55- 588929		47[3]	
118 -104	114	**79**	55- 588940		37	
	112	**80**	Saint David Test Hole			88[3]
	106	**87**	55- 213889			88.5[3]
	105	**91**	55- 579875	11		
104 - 91	99	**101**	55- 911548		30	

[1] 2014 Subflow Report Appendix D-1

[2] Well Registration Number or other Indentifier

[3] Contact with Basin-fill logged at base of alluvial deposits

TABLE 2-3B:
LOWER SAN PEDRO WATERSHED PROFESSIONAL-LEVEL LITHOLOGY LOGS IN MAPPED THA

TABLE 2-3B. LOWER SAN PEDRO WATERSHED PROFESSIONAL-LEVEL LITHOLOGY LOGS IN MAPPED THA

River Segment	River Mile	Log No.[1]	Log Indentifier[2]	Thickness Alluvium [ft]		
				≤ 25	25-70	≥ 70
50 - 37	38	**112**	55- 912839			90
37 - 24	34	**114**	55- 909430			105[3]
	34	**115**	55- 909431			105[3]
	34	**116**	55- 909432			105[3]
	31	**119**	55- 557296			250
	29	**124**	55- 624620			1410
11 - 0.0	24	**125**	55- 528575			75
	24	**126**	55- 528576			78
	24	**127**	55- 528577			78
	6	**136**	55- 569971		40	
	6	**137**	55- 569976	20		
	5	**149**	55- 569970		53	
	5	**150**	55- 569980		30	
	5	**151**	55- 569981		27	
	5	**153**	55- 569985	22		
	5	**154**	55- 569993		35	
	4	**155**	55- 569973		52	
	4	**156**	55- 569979	25		
	4	**159**	55- 569989	25		

[1] 2014 Subflow Report Appendix D-1

[2] Well Registration Number or other Indentifier

[3] Contact with Basin-fill logged at base of alluvial deposits

TABLE 2-4A:
DRILLER LITHOLOGY LOGS IN MAPPED THA BETWEEN SAN PEDRO RIVER MILES 112-109

Table 2-4a. Driller Lithology Logs in Mapped THA between San Pedro River Miles 112 to 109

River Segment	Log No.[1]	Location ID No.	Log Indentifier[2]	Thickness Alluvium [ft]		
				≤ 25	25-70	≥ 70
118 - 104	253	123	55- 523768	0[3]		
	254	124	55- 501888			107[3]
	255	125	D18021028AAC			160[3]
	256	126	55- 505837			100[3]
	257		D18021028ABA			140[3]
	258		55- 610357			520[3]
	259	127	55- 501646			125[3]
	260		55- 503187			146[3]
	262	128	55- 557667			360
	263	129	55- 208281			320
	267	130	D18021033CAD			100
	268	131	55- 623663			100[3]
	270	132	D-18-21 28DBD3			102[3]
	271	133	55- 609171			100

[1] 2014 Subflow Report Appendix D-2

[2] Well Registration Number or other Indentifier

[3] Contact with Basin-fill logged at base of alluvial deposits

TABLE 2-4B:
DRILLER LITHOLOGY LOGS IN MAPPED THA BETWEEN SAN PEDRO RIVER MILES 106-104

Table 2-4B. Driller Lithology Logs in Mapped THA between San Pedro River Miles 106 to 104

River Segment	Log No.[1]	Location ID No.	Log Indentifier[2]	Thickness Alluvium [ft]		
				≤ 25	25-70	≥ 70
91 - 104 and 104 - 118	1	47	D17020035DCB		28[3]	
	2	48	55- 637519		41[3]	
	3	49	55- 217844		45[3]	
	4	50	55- 646492			85[3]
	5		55- 214953		30[3]	
	6	51	55- 545449			105[3]
	7		55- 545451			135[3]
	8	52	55- 508401			140[3]
	9	53	55- 200246		61[3]	
	10		55- 205946	18[3]		
	11	54	55- 578675			120[3]
	12	55	55- 085110	2[3]		
	13	56	55- 544251			160[3]
	14	57	55- 204222		30[3]	
	15		55- 805150	2[3]		
	16	58	55- 518592			109
	17	59	55- 204536			125[3]
	18		55- 553774		65[3]	
	19	60	55- 215849			125[3]
	135	61			65[3]	
	136	62	55- 594823			153[3]
	137	63	55- 217960	20[3]		
	138	64	55- 220929			133[3]
	139	65	55- 594574			135[3]
	140	66	55- 642081			85[3]
	141	67	D17021032DCC	Log Not Legible		
	142	68	55- 505755			140[3]
	143	69	55- 607860			132[3]
	144	70	55- 611467		65[3]	
	145	71	D-17-21 31DCC			108[3]
	146	72	55- 607858			125[3]
	147	73	D-17-21 32CCD3			100[3]
	148	74	D-17-21 32CDC1			80[3]
	153	75	55- 558877	0[3]		
	149	76	55- 906201	21[3]		
	154		55- 542381	0[3]		
	155		55- 214791		45[3]	
	156	77	55- 542260			145[3]
	157		55- 556575		55[3]	
	158	78	55- 611425			90[3]
	159	79	55- 512182			130[3]
	160	80	55- 205876		69[3]	

Table 2-4B. Driller Lithology Logs in Mapped THA between San Pedro River Miles 106 to 104

River Segment	Log No.[1]	Location ID No.	Log Indentifier[2]	Thickness Alluvium [ft]		
				≤ 25	25-70	≥ 70
91 - 104 and 104 - 118	161	81	55- 520286	20[3]		
	162	82	55- 520285			120[3]
	163		55- 520248	20[3]		
	164	83	55- 213248			71[3]
	165	84	55- 572047		26[3]	
	168	85	55- 537790	25[3]		
	169	86	55- 569101		30[3]	
	170		55- 568461	0[3]		
	171	87	55- 502962	0[3]		
	172		55- 539559		30[3]	
	173		D18021004CCC	3[3]		
	174	88	55- 602193			95[3]
	175	89	D18021005ABA	15[3]		
	176	90	55- 532134		45[3]	
	177	91	D18021005BA0			75[3]
	178		D18021005BA0			215
	179	92	55- 547720	20		
	180	93	D18021005CAA	Log Not Legible		
	181	94	55- 538522			85[3]
	182		55- 503019			130[3]
	183	95	D18021005DDD		60[3]	
	184		55- 532133		45[3]	
	185	96	55- 594360		45[3]	
	186		55- 206932			121[3]
	187	97	D18021006AAD	0[3]		
	188	98	55- 596097			112[3]
	189		55- 576951			120[3]
	191	99	55- 200763			120[3]
	194	100	55- 524041			140[3]
	197	101	55- 577270			110[3]
	207	102	55- 530042			180[3]
	208		55- 204298		66[3]	
	209		55- 530043			120[3]
	210	103	55- 528021		40	
	211	104	55- 594007		66[3]	
	212		55- 528022		62[3]	
	213	105	55- 528008		53	
	214		55- 528009		62	
	215		55- 579875	11[3]		
	221	106	55- 527753	20.5[3]		
	222	107	55- 503725			115[3]
	223	108	D18021008AA0		40[3]	
	224	109	D18021008AAA			258
	225		D18021008AAA		40[3]	

Table 2-4B. Driller Lithology Logs in Mapped THA between San Pedro River Miles 106 to 104

River Segment	Log No.[1]	Location ID No.	Log Indentifier[2]	Thickness Alluvium [ft]		
				≤ 25	25-70	≥ 70
91 - 104 and 104 - 118	**226**	**110**	55- 503968		65[3]	
	227	**111**	55- 514443			72[3]
	228		55- 580914			105[3]
	229	**112**	55- 612032			105[3]
	234	**113**	55- 542261			113[3]
	235	**114**	D-18-20 01BBA			114[3]
	236	**115**	55- 625589		50[3]	
	237	**116**	55- 632942	0[3]		
	238	**117**	55- 633154			85[3]
	239	**118**	D-18-21 06ADA3			104[3]
	240	**119**	D-18-21 06ADA3			99
	241	**120**	55- 513537			240
	249	**121**	55- 513988	8[3]		
	250	**122**	D-18-21 09BBB1			315[3]

[1] 2014 Subflow Report Appendix D-2

[2] Well Registration Number or other Indentifier

[3] Contact with Basin-fill logged at base of alluvial deposits

TABLE 2-4C:
DRILLER LITHOLOGY LOGS IN MAPPED THA BETWEEN SAN PEDRO RIVER MILES 99-96

Table 2-4C. Driller Lithology Logs in Mapped THA between San Pedro River Miles 99 to 96

River Segment	Log No.[1]	Location ID No.	Log Indentifier[2]	Thickness Alluvium [ft]		
				≤ 25	25-70	≥ 70
104 - 91	35	18	55- 202860		50[3]	
	36	19	55- 549707	20[3]		
	37	20	D17020002BCA			88[3]
	38	21	55- 564240	0[3]		
	39		55- 572156	24[3]		
	44	22	55- 627407	15[3]		
	46	23	55- 513059		38[3]	
	47	24	D17020004DAA	0[3]		
	48	25	55- 644365			85[3]
	52	26	55- 617948			100[3]
	67	27	D17020010D00		50[3]	
	68	28	D17020010DD0			124[3]
	69	29	55- 588497		40	
	70		55- 588498		40	
	71		55- 588499		40	
	72		55- 546393		30	
	73		55- 546394		40	
	74		55- 546395		46	
	75		55- 546396		49	
	76		55- 546392		50	
	77		55- 551634		45	
	78		55- 551635		45	
	79		55- 570165		50	
	80	30	D17020011ABA	Log Not Legible		
	81	31	55- 217753			160[3]
	85	32	D17020011DDD			98[3]
	90	33	55- 501466	2[3]		
	91	34	55- 622190	15[3]		
	92	35	55- 600743			80[3]
	95	36	D17020015AA0			75[3]
	96	37	D-17-20 02ACC		60[3]	
	97	38	D-17-20 02BAA		65[3]	
	98	39	D-17-20 02BAD1			150[3]
	99	40	55- 610353			123
	100	41	D-17-20 03AAD			112[3]
	101	42	55- 530046			120
	103	43	55- 521867		50[3]	
	104	44	55- 506220		50[3]	
	108	45	D-17-20 11ACD			127
	110	46	55- 515181			90[3]

[1] 2014 Subflow Report Appendix D-2

[2] Well Registration Number or other Indentifier

[3] Contact with Basin-fill logged at base of alluvial deposits

TABLE 2-4D:
DRILLER LITHOLOGY LOGS IN MAPPED THA BETWEEN SAN PEDRO RIVER MILES 89-86

Table 2-4D. Driller Lithology Logs in Mapped THA between San Pedro River Miles 89 to 86

River Segment	Log No.[1]	Location ID No.	Log Indentifier[2]	Thickness Alluvium [ft]		
				≤ 25	25-70	≥ 70
91 - 77	1	1	55- 641754			180[3]
	2	2	55- 502650			150[3]
	3	3	55- 503013			115[3]
	4		55- 520514		70[3]	
	5		D15020031CAD		50[3]	
	6	4	55- 532685			510
	7	5	55- 548257	0[3]		
	9	6	55- 600470			125[3]
	10		55- 600473		58[3]	
	11	7	55- 617962			124
	12	8	55- 600471			115
	14	9	55- 556314		50[3]	
	15	10	55- 568894	13[3]		
	16		55- 597667	9[3]		
	17	11	55- 565388	25[3]		
	18	12	55- 584760		28[3]	
	23	13	55- 583307			80[3]
	24	14	55- 562813	14[3]		
	25	15	55- 534449		40[3]	
	26	16	55- 521742			75[3]
	32	17	D-16-20 08BAB			107[3]

[1] 2014 Subflow Report Appendix D-2

[2] Well Registration Number or other Indentifier

[3] Contact with Basin-fill logged at base of alluvial deposits

TABLE 3-1:
LENGTHS OF FHA DETERMINED FROM STEPS 1, 2, AND 3

Table 3-1. Lengths of FHA Determined from Steps 1, 2, and 3

San Pedro - Left			
FHA Step	Length (ft)	Length (mi)	Approx. River Mile
Step 2	2,084.11	0.39	157
Step 3	6,210.68	1.18	157
Step 1	5,532.25	1.05	155
Step 2	4,529.64	0.86	154
Step 3	9,469.13	1.79	153
Step 1	1,241.87	0.24	151
Step 2	2,788.35	0.53	151
Step 3	4,098.58	0.78	150
Step 2	56,994.77	10.79	149
Step 1	2,736.25	0.52	136
Step 2	1,408.92	0.27	136
Step 1	806.89	0.15	135
Step 2	4,137.62	0.78	135
Step 1	351.32	0.07	134
Step 2	2,108.30	0.40	134
Step 1	10,943.93	2.07	134
Step 2	2,470.42	0.47	132
Step 1	6,467.20	1.22	132
Step 3	4,779.36	0.91	131
Step 2	1,303.16	0.25	130
Step 1	7,060.48	1.34	130
Step 2	848.87	0.16	128
Step 1	168.48	0.03	128
Step 2	3,152.24	0.60	128
Step 1	6,069.06	1.15	127
Step 2	477.94	0.09	126
Step 1	35.32	0.01	126
Step 2	761.22	0.14	126
Step 1	3,711.56	0.70	126
Step 3	5,935.39	1.12	125
Step 2	436.62	0.08	125
Step 1	104.81	0.02	125
Step 2	8,175.35	1.55	125
Step 1	1,421.97	0.27	123
Step 2	897.03	0.17	123
Step 1	157.43	0.03	123
Step 2	3,848.58	0.73	122
Confluence with Babocomari River			
Step 1	2,407.23	0.46	121
Step 2	1,324.76	0.25	121
Step 1	15,699.92	2.97	121

San Pedro - Right			
FHA Step	Length (ft)	Length (mi)	Approx. River Mile
Step 2	23,549.62	4.46	157
Step 1	2,836.25	0.54	152
Step 2	32,098.45	6.08	151
Step 1	5.75	0.00	144
Step 2	16,773.93	3.18	144
Step 1	3,332.08	0.63	140
Step 2	1,226.56	0.23	139
Step 1	880.61	0.17	139
Step 2	4,041.50	0.77	138
Step 1	24.84	0.00	138
Step 2	1,558.35	0.30	138
Step 1	2,311.62	0.44	137
Step 2	1,728.46	0.33	137
Step 1	2,605.17	0.49	137
Step 3	5,024.99	0.95	136
Step 2	4,676.46	0.89	135
Step 1	378.88	0.07	135
Step 2	982.17	0.19	134
Step 1	2,848.08	0.54	134
Step 2	3,900.56	0.74	134
Step 1	199.33	0.04	133
Step 2	2,868.83	0.54	133
Step 1	22,939.10	4.34	132
Step 2	6,640.36	1.26	128
Step 1	123.41	0.02	126
Step 2	1,118.21	0.21	126
Step 3	1,782.27	0.34	126
Step 1	12,236.96	2.32	126
Step 2	3,269.51	0.62	124
Step 1	252.42	0.05	123
Step 3	1,725.39	0.33	123
Step 2	1,297.71	0.25	123
Step 1	2,546.65	0.48	122
Step 3	6,516.41	1.23	122
Step 2	3,918.08	0.74	120
Step 1	1,223.02	0.23	120
Step 2	1,965.38	0.37	119
Step 1	1,424.94	0.27	119
Step 2	526.88	0.10	119
Step 1	1,252.32	0.24	119
Step 2	588.98	0.11	119

Table 3-1. Lengths of FHA Determined from Steps 1, 2, and 3

San Pedro - Left			
FHA Step	Length (ft)	Length (mi)	Approx. River Mile
Step 2	1,061.82	0.20	118
Step 1	4,385.91	0.83	118
Step 2	2,267.93	0.43	117
Step 1	1,491.70	0.28	116
Step 2	5,226.46	0.99	116
Step 1	767.61	0.15	115
Step 2	1,302.05	0.25	115
Step 1	165.71	0.03	115
Step 2	2,635.66	0.50	114
Step 1	77.93	0.01	114
Step 2	676.16	0.13	114
Step 1	179.39	0.03	114
Step 3	5,509.55	1.04	113
Step 2	8,564.01	1.62	112
Step 1	2,555.14	0.48	111
Step 3	7,631.74	1.45	110
Step 2	4,271.17	0.81	108
Step 3	5,053.49	0.96	107
Step 2	1,940.45	0.37	106
Step 1	1,238.82	0.23	106
Step 2	593.17	0.11	106
Step 1	581.69	0.11	105
Step 2	3,781.07	0.72	105
Step 1	179.51	0.03	104
Step 2	451.77	0.09	104
Step 1	50.83	0.01	104
Step 3	9,574.90	1.81	104
Step 2	24,279.81	4.60	102
Step 3	11,637.88	2.20	97
Step 2	1,273.96	0.24	95
Step 1	1,711.89	0.32	95
Step 3	7,777.69	1.47	94
Step 2	17,398.79	3.30	92
Step 3	12,133.10	2.30	88
Step 2	5,344.10	1.01	86
Step 3	5,648.79	1.07	84
Step 2	5,899.57	1.12	83
Step 1	1,665.10	0.32	82
Step 2	1,162.30	0.22	82
Step 1	4,043.76	0.77	81
Step 2	3,930.57	0.74	81

San Pedro - Right			
FHA Step	Length (ft)	Length (mi)	Approx. River Mile
Step 1	2,314.72	0.44	119
Step 2	1,147.53	0.22	118
Step 1	2,001.86	0.38	118
Step 3	1,950.57	0.37	117
Step 2	850.31	0.16	117
Step 1	4,515.18	0.86	117
Step 2	960.65	0.18	115
Step 3	2,554.05	0.48	115
Step 2	4,882.86	0.92	114
Step 3	27,822.80	5.27	113
Step 2	1,946.41	0.37	107
Step 3	13,274.66	2.51	106
Step 2	4,590.25	0.87	103
Step 1	2,237.70	0.42	103
Step 2	34.81	0.01	103
Step 3	6,653.15	1.26	102
Step 2	5,724.74	1.08	101
Step 3	25,317.03	4.79	99
Step 2	26,489.53	5.02	94
Step 1	4,810.96	0.91	87
Step 2	1,764.10	0.33	86
Step 1	406.73	0.08	86
Step 2	732.15	0.14	86
Step 3	5,306.62	1.01	85
Step 2	573.59	0.11	84
Step 1	1,313.80	0.25	84
Step 2	1,451.89	0.27	84
Step 3	9,066.03	1.72	83
Step 1	630.83	0.12	82
Step 2	11,388.70	2.16	81
Step 3	5,712.75	1.08	79
Step 2	10,818.38	2.05	77
Step 3	7,362.71	1.39	75
Step 2	2,060.93	0.39	74
Step 3	7,732.08	1.46	73
Step 2	9,189.91	1.74	72
Step 1	1,081.39	0.20	70
Step 2	1,907.33	0.36	70
Step 3	4,342.30	0.82	70
Step 1	6,688.72	1.27	69
Step 3	8,367.08	1.58	67

Table 3-1. Lengths of FHA Determined from Steps 1, 2, and 3

San Pedro - Left			
FHA Step	Length (ft)	Length (mi)	Approx. River Mile
Step 1	1,687.04	0.32	80
Step 3	8,298.79	1.57	80
Step 1	241.05	0.05	78
Step 3	5,408.16	1.02	78
Step 2	1,587.27	0.30	77
Step 1	2,983.91	0.57	77
Step 2	3,477.29	0.66	76
Step 1	345.12	0.07	76
Step 3	7,467.57	1.41	75
Step 2	5,069.96	0.96	74
Step 1	1,296.95	0.25	73
Step 2	10,901.82	2.06	73
Step 1	184.43	0.03	71
Step 2	920.74	0.17	71
Step 1	137.99	0.03	71
Step 2	7,927.43	1.50	70
Step 1	344.20	0.07	69
Step 2	6,829.22	1.29	69
Step 1	767.36	0.15	67
Step 2	2,952.50	0.56	67
Step 1	1,698.85	0.32	66
Step 2	1,168.60	0.22	66
Step 1	580.78	0.11	66
Step 3	8,181.35	1.55	65
Step 2	1,696.94	0.32	64
Step 1	348.66	0.07	64
Step 2	885.99	0.17	64
Step 1	114.08	0.02	64
Step 2	1,912.71	0.36	64
Step 1	213.32	0.04	63
Step 2	7,862.39	1.49	63
Step 1	218.90	0.04	62
Step 2	2,279.15	0.43	62
Step 3	3,413.43	0.65	61
Step 1	2,052.16	0.39	61
Step 2	1,903.48	0.36	60
Step 1	233.10	0.04	60
Step 2	1,604.42	0.30	60
Step 1	11,748.63	2.23	59
Step 3	2,999.51	0.57	57
Step 1	433.30	0.08	57

San Pedro - Right			
FHA Step	Length (ft)	Length (mi)	Approx. River Mile
Step 1	9,299.11	1.76	65
Step 2	14,417.36	2.73	64
Step 1	3,290.05	0.62	61
Step 3	6,623.85	1.25	60
Step 1	15,201.44	2.88	59
Step 2	14,379.30	2.72	56
Step 1	3,203.89	0.61	54
Step 3	2,673.34	0.51	53
Step 1	7,266.02	1.38	53
Step 2	4,991.77	0.95	51
Step 3	2,890.13	0.55	51
Step 2	2,671.96	0.51	50
Step 3	6,056.24	1.15	49
Step 1	1,890.97	0.36	48
Step 2	4,721.01	0.89	48
Step 1	779.70	0.15	47
Step 2	1,808.33	0.34	47
Step 3	4,928.74	0.93	46
Step 1	394.56	0.07	45
Step 2	12,791.81	2.42	45
Step 1	1,146.10	0.22	42
Step 2	2,315.02	0.44	42
Step 3	5,155.80	0.98	41
Step 2	115,282.09	21.83	40
Step 1	553.00	0.10	14
Step 2	2,029.63	0.38	14
Confluence with Aravaipa Creek			
Step 2	4,282.84	0.81	13
Step 1	1,939.56	0.37	12
Step 2	37,572.61	7.12	11
Step 1	665.44	0.13	4
Step 2	621.36	0.12	4
Step 3	8,917.20	1.69	3
Step 1	136.04	0.03	2
Step 2	5,701.54	1.08	2
Step 1	138.09	0.03	0
TOTAL RIGHT	729,914.14	138.24	

Table 3-1. Lengths of FHA Determined from Steps 1, 2, and 3

San Pedro - Left			
FHA Step	Length (ft)	Length (mi)	Approx. River Mile
Step 2	8,478.94	1.61	56
Step 1	585.69	0.11	55
Step 2	11,043.87	2.09	55
Step 1	2,744.25	0.52	53
Step 3	932.16	0.18	53
Step 1	4,666.72	0.88	52
Step 2	5,147.22	0.97	51
Step 1	3,319.11	0.63	50
Step 2	7,785.40	1.47	50
Step 1	3,736.42	0.71	48
Step 2	14,993.57	2.84	47
Step 1	5,453.57	1.03	43
Step 2	1,817.01	0.34	42
Step 1	1,292.84	0.24	42
Step 2	21,755.23	4.12	41
Step 1	1,099.87	0.21	37
Step 2	41,354.23	7.83	36
Step 1	3,786.72	0.72	27
Step 2	8,091.04	1.53	26
Step 3	3,907.04	0.74	25
Step 1	231.98	0.04	24
Step 2	7,352.12	1.39	24
Step 1	1,062.35	0.20	23
Step 2	3,763.26	0.71	22
Step 1	2,333.41	0.44	21
Step 2	4,213.72	0.80	21
Step 1	2,264.44	0.43	20
Step 2	16,579.19	3.14	19
Step 1	72.51	0.01	15
Step 2	1,093.36	0.21	15
Step 1	558.15	0.11	15
Step 2	12,293.21	2.33	15
Step 1	212.57	0.04	12
Step 2	2,747.46	0.52	12
Step 1	709.14	0.13	11
Step 2	3,625.59	0.69	11
Step 3	12,207.22	2.31	10
Step 2	3,451.00	0.65	8
Step 1	4,091.73	0.77	7
Step 2	29,122.58	5.52	6
TOTAL LEFT	749,634.39	141.98	

Table 3-1. Lengths of FHA Determined from Steps 1, 2, and 3

Aravaipa - Left			
FHA Step	Length (ft)	Length (mi)	Approx. River Mile
Step 2	7,861.85	1.49	36
Step 1	495.49	0.09	35
Step 3	5,633.37	1.07	35
Step 2	851.86	0.16	34
Step 1	113.36	0.02	34
Step 2	4,228.60	0.80	34
Step 1	144.48	0.03	33
Step 2	6,049.04	1.15	33
Step 3	11,199.03	2.12	32
Step 1	3,594.33	0.68	29
Step 2	913.05	0.17	29
Step 1	3,215.27	0.61	28
Step 2	1,325.51	0.25	28
Step 1	8,677.00	1.64	28
Step 3	732.77	0.14	26
Step 1	95,319.42	18.05	26
Step 2	1,486.90	0.28	7
Step 1	11,628.50	2.20	7
Step 2	526.81	0.10	5
Step 1	51.37	0.01	5
Step 2	710.17	0.13	5
Step 3	3,044.11	0.58	4
Step 1	6,233.34	1.18	4
Step 2	7,472.80	1.42	3
Step 1	4,125.28	0.78	1
TOTAL LEFT	185,633.71	35.16	

Aravaipa - Right			
FHA Step	Length (ft)	Length (mi)	Approx. River Mile
Step 2	2,940.47	0.56	36
Step 3	5,088.32	0.96	36
Step 1	721.31	0.14	35
Step 2	2,310.96	0.44	34
Step 1	1,202.51	0.23	34
Step 2	13,076.74	2.48	34
Step 3	12,971.87	2.46	31
Step 2	47.84	0.01	29
Step 1	12,502.26	2.37	29
Step 3	1,203.67	0.23	27
Step 1	2,658.79	0.50	26
Step 2	766.21	0.15	26
Step 1	290.34	0.05	26
Step 2	765.27	0.14	26
Step 1	524.91	0.10	26
Step 2	1,502.57	0.28	25
Step 1	322.47	0.06	25
Step 2	892.62	0.17	25
Step 1	4,041.42	0.77	25
Step 2	1,033.33	0.20	24
Step 1	19,576.93	3.71	24
Step 3	1,024.27	0.19	20
Step 1	76,897.15	14.56	20
Step 2	475.92	0.09	5
Step 1	4,221.19	0.80	5
Step 3	1,729.95	0.33	4
Step 2	210.04	0.04	4
Step 1	983.95	0.19	4
Step 2	2,755.36	0.52	4
Step 1	142.05	0.03	3
Step 2	700.77	0.13	3
Step 1	3,230.06	0.61	3
Step 2	581.77	0.11	3
Step 3	3,224.17	0.61	2

Table 3-1. Lengths of FHA Determined from Steps 1, 2, and 3

Aravaipa - Right			
FHA Step	Length (ft)	Length (mi)	Approx. River Mile
Step 2	1,559.71	0.30	2
Step 1	832.31	0.16	2
Step 2	293.27	0.06	2
Step 1	7.13	0.00	2
Step 2	2,521.23	0.48	1
Step 3	1,797.48	0.34	1
Step 2	999.62	0.19	1
Step 1	2,443.28	0.46	0
TOTAL RIGHT	191,071.48	36.19	

Table 3-1. Lengths of FHA Determined from Steps 1, 2, and 3

Babocomari - Left			
FHA Step	Length (ft)	Length (mi)	Approx. River Mile
Step 1	2,598.80	0.49	21
Step 2	2,476.34	0.47	21
Step 1	387.56	0.07	20
Step 2	953.84	0.18	20
Step 1	13,655.43	2.59	20
Step 3	1,339.95	0.25	18
Step 1	26,556.41	5.03	17
Step 2	7,647.42	1.45	12
Step 1	6,316.66	1.20	11
Step 2	18,486.97	3.50	9
Step 1	27,435.20	5.20	5
Step 2	373.18	0.07	0
Step 1	65.23	0.01	0
Step 2	1,632.30	0.31	0
TOTAL LEFT	109,925.30	20.82	

Babocomari - Right			
FHA Step	Length (ft)	Length (mi)	Approx. River Mile
Step 1	5,212.70	0.99	21
Step 2	1,698.60	0.32	20
Step 3	1,806.91	0.34	20
Step 1	7,042.15	1.33	20
Step 3	1,458.26	0.28	18
Step 1	2,034.64	0.39	18
Step 3	1,512.46	0.29	18
Step 1	12,441.00	2.36	17
Step 3	4,214.74	0.80	15
Step 2	20,385.88	3.86	14
Step 1	1,186.70	0.22	10
Step 2	7,669.81	1.45	10
Step 1	15,128.36	2.87	8
Step 3	2,943.49	0.56	5
Step 2	1,840.19	0.35	5
Step 1	15,945.69	3.02	4
Step 3	2,109.43	0.40	2
Step 1	7,510.83	1.42	1
TOTAL RIGHT	112,141.85	21.24	

Differences in calculated totals may be observed due to rounding.

TABLE 3-2:
SUMMARY OF LENGTHS OF FHA DETERMINED FROM STEPS 1, 2, AND 3

Table 3-2. Summary of Lengths of FHA Determined from Steps 1, 2, and 3

Watercourse	Step 1 [mi]		Step 2 [mi]		Step 3 [mi]		Totals [mi]
	Left	Right	Left	Right	Left	Right	
San Pedro River	28.00	24.49	85.89	80.08	28.08	33.67	**280.22**
Aravaipa Creek	25.30	24.73	5.95	6.33	3.90	5.12	**71.35**
Babocomari River	14.59	12.60	5.98	5.98	0.25	2.66	**42.06**
Totals [mi]	**129.72**		**190.22**		**73.69**		**393.62**
	33.0%		**48.3%**		**18.7%**		

Differences in calculated totals may be observed due to rounding.

FIGURES

FIGURE 2-1:
EXAMPLE APPLICATION OF 100-FT AND 200-FT SETBACKS

FIGURE 2-1. Example Application of 100-foot and 200-foot Setbacks

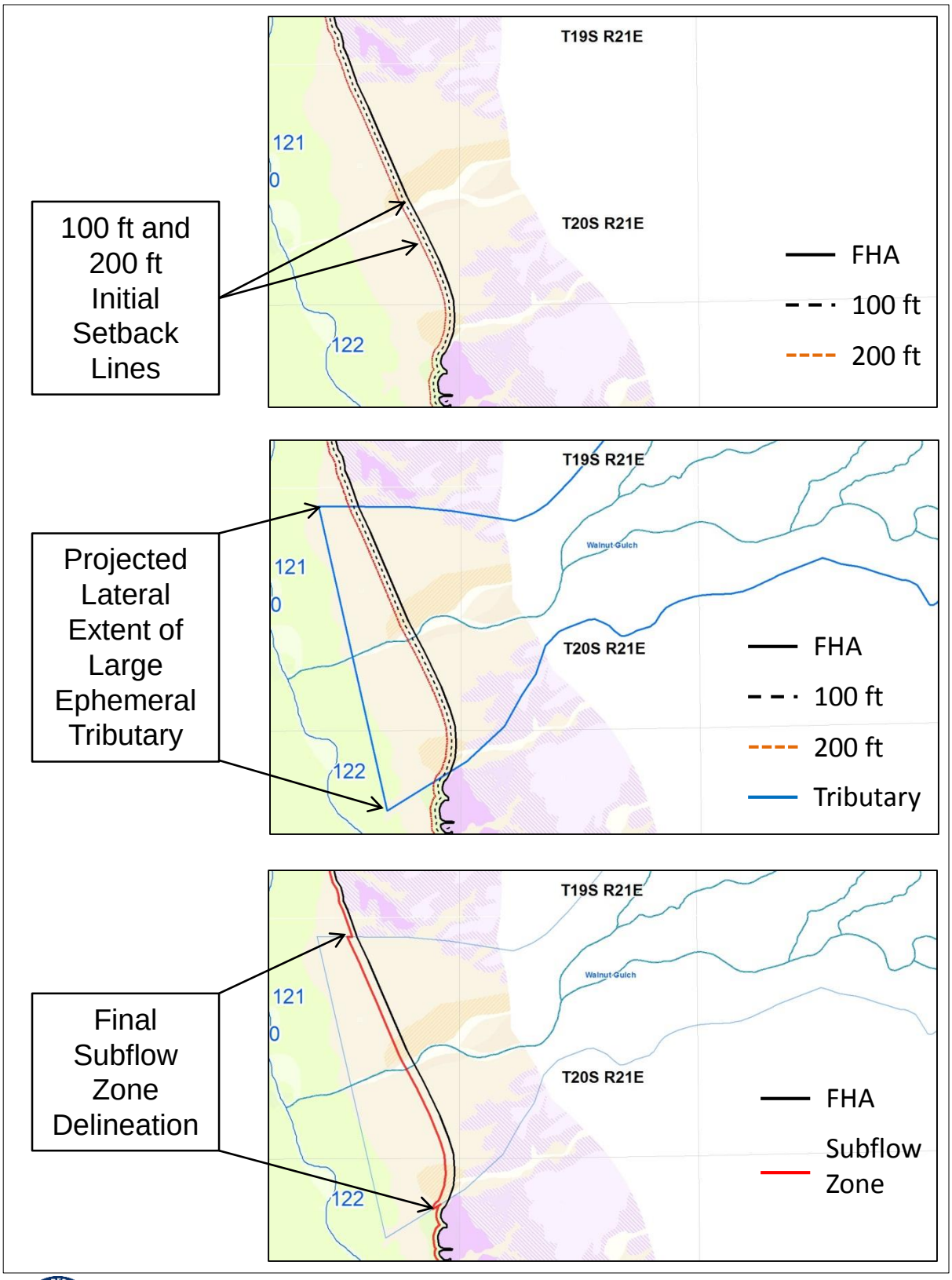
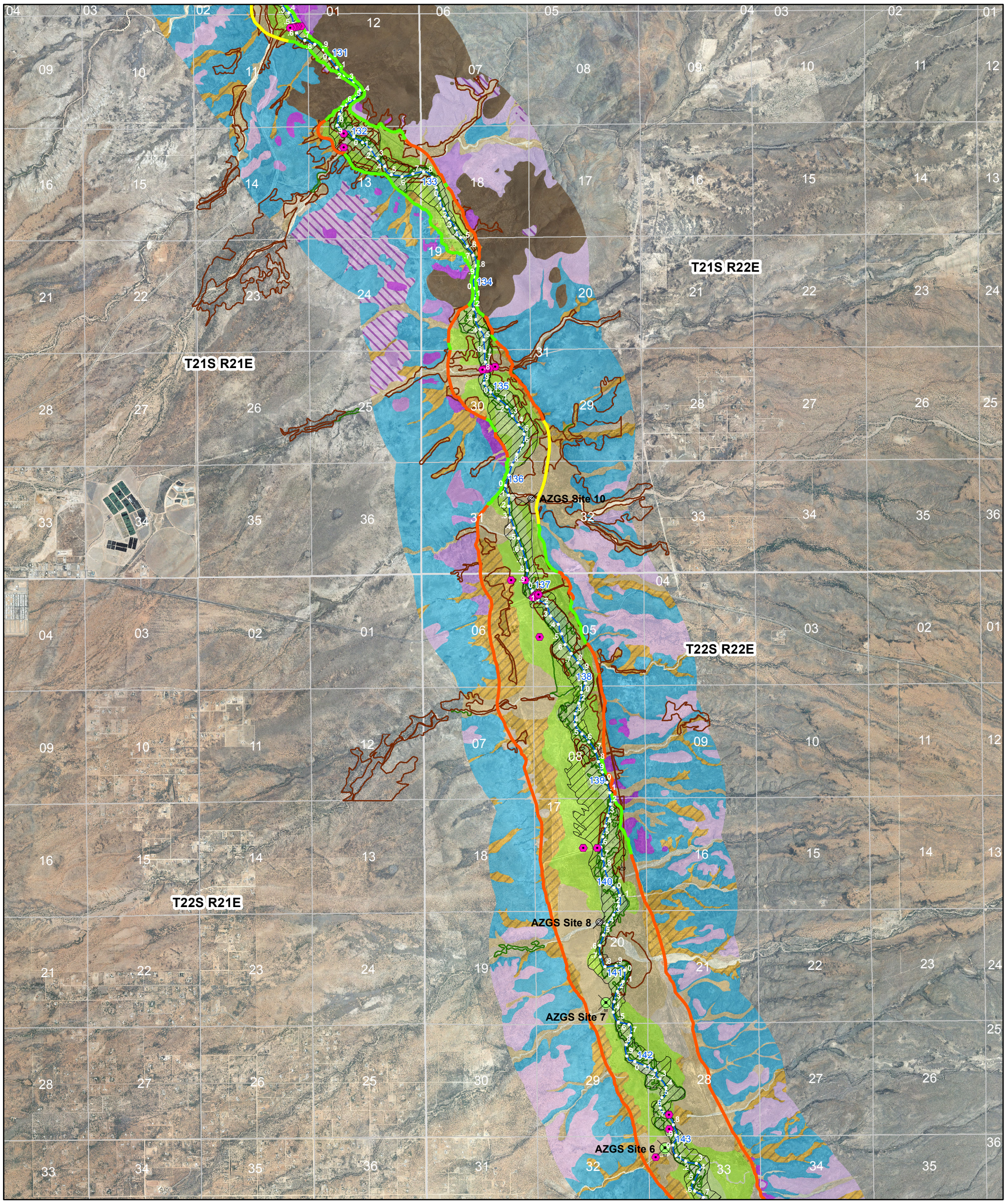


FIGURE 3-1:
EXAMPLE OF FHA DELINEATION MAP SHEET



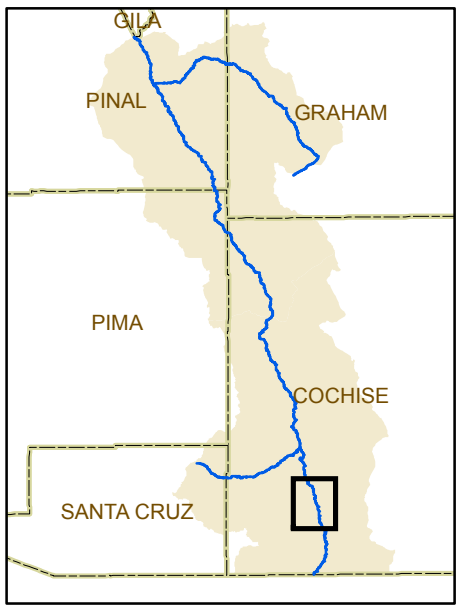


Figure 3-1

Example of FHA Delineation Map Sheet

2015 Supplemental Subflow Report

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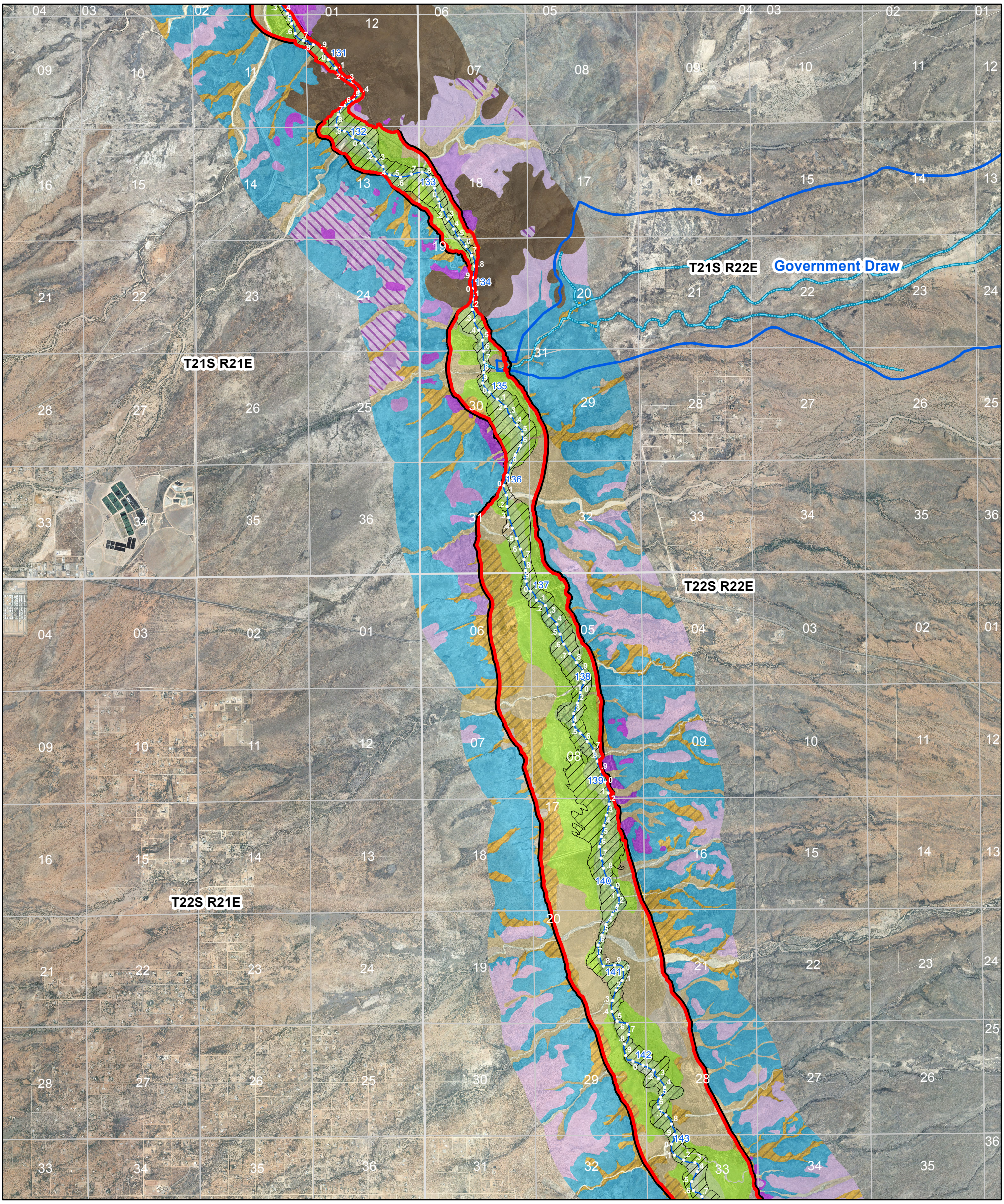
FIGURE 3-2:
EXAMPLE OF SUBFLOW ZONE DELINEATION MAP SHEET



Legend

- FHA Line
- Updated Subflow Zone
- Townships
- Sections
- Holocene Composite Active Floodplain
- Major Tributaries (>50 sqmi)
- Tributary Washes
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:54,052

0 5,100 10,200 15,300
Feet

N

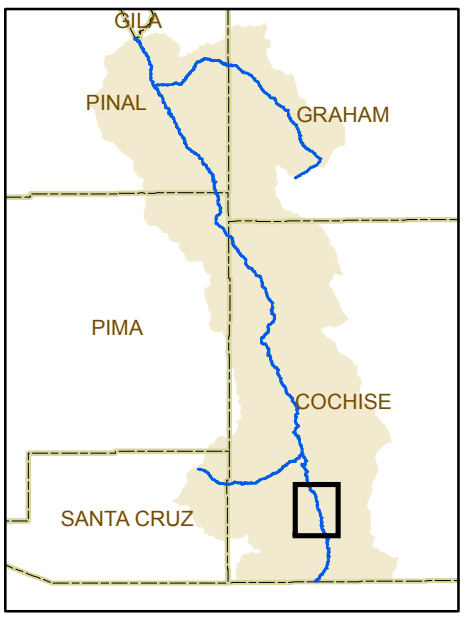


Figure 3-2

Example of Subflow Zone Delineation Map Sheet

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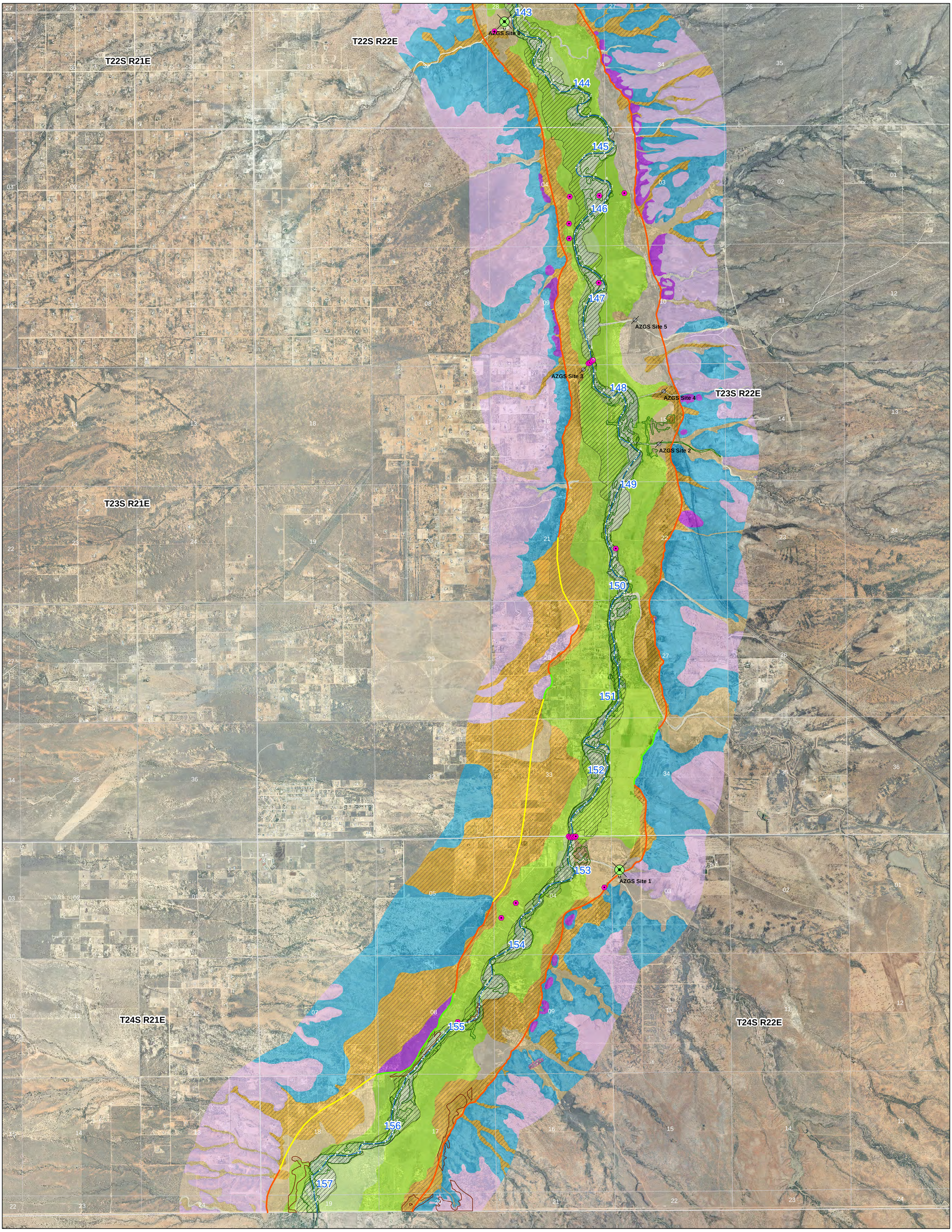
APPENDIX A:
FHA DELINEATION MAP SHEETS



Legend

- Professional Well Logs
- AZGS Sites
  - Support
  - Consistent
  - Inconclusive
- Cottonwood-Willow
- Mesquite-Salt Cedar
- Holocene Composite Active Floodplain
- FHA Delineation Step 1
- FHA Delineation Step 2
- FHA Delineation Step 3
- Townships
- Sections
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

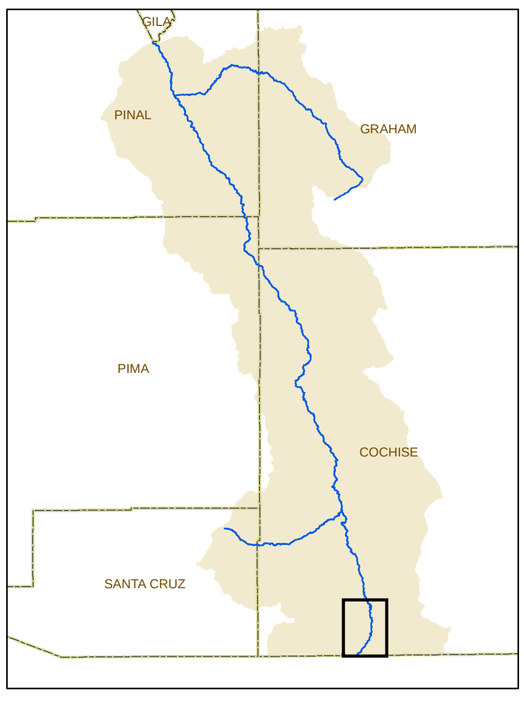
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

0 5,000 10,000 15,000
Feet



Appendix A
FHA Delineation Map Sheets

San Pedro River: RM 157-143

Map 1 of 17

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Subflow Report

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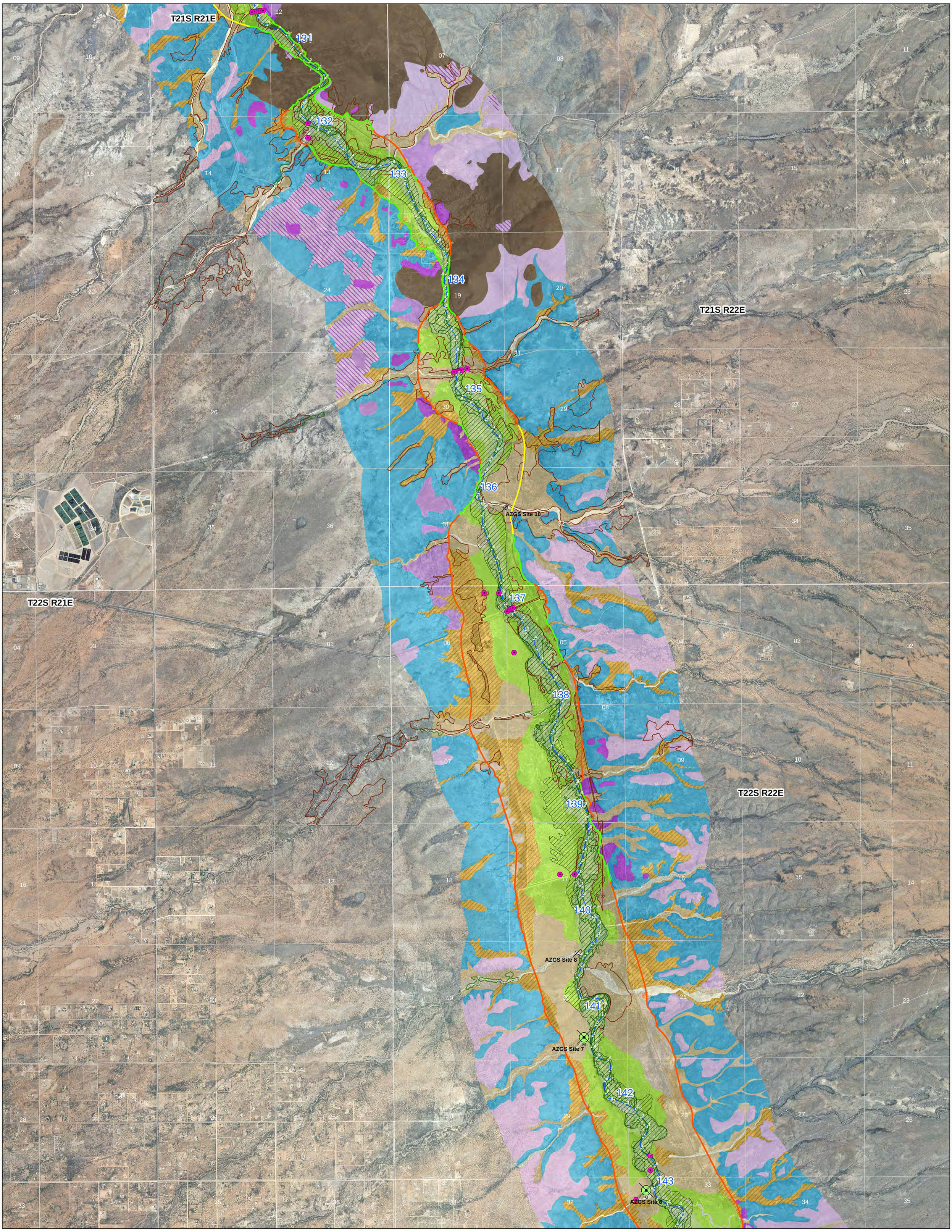


Legend

- Professional Well Logs
- AZGS Sites
  - Support
  - Consistent
  - Inconclusive
- Cottonwood-Willow
- Mesquite-Salt Cedar
- Holocene Composite Active Floodplain
- FHA Delineation Step 1
- FHA Delineation Step 2
- FHA Delineation Step 3
- Townships
- Sections
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

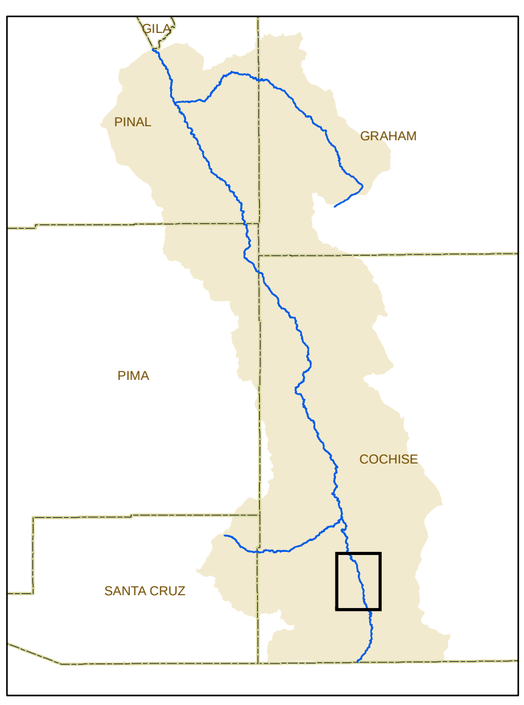
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

0 5,000 10,000 15,000
Feet



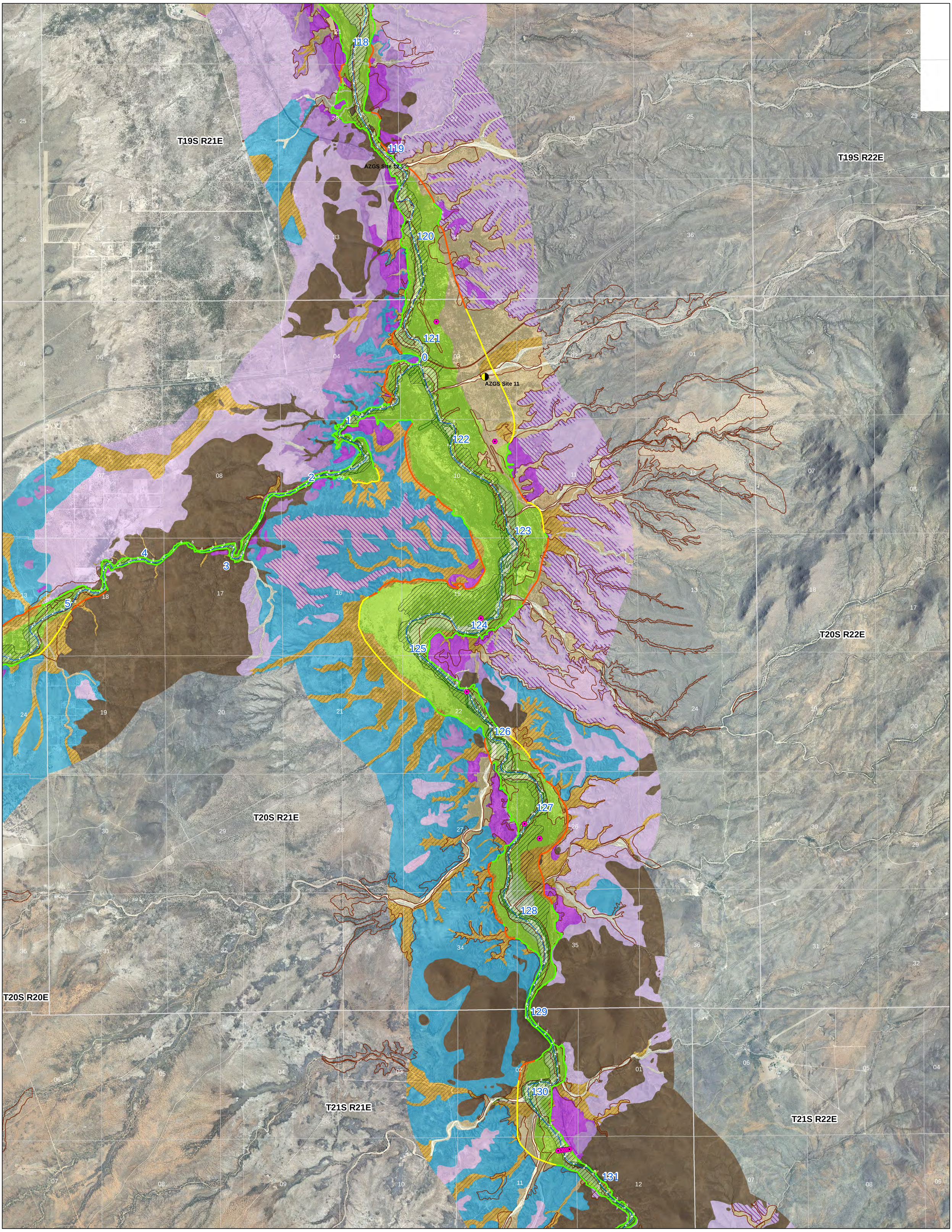
Appendix A
FHA Delineation Map Sheets

San Pedro River: RM 143-131

Map 2 of 17

2015 Supplemental
Subflow Report

Reissued May 2015



Legend

- Professional Well Logs

AZGS Sites

- Support
- Consistent
- Inconclusive
- Cottonwood-Willow
- Mesquite-Salt Cedar
- Holocene Composite Active Floodplain
- FHA Delineation Step 1
- FHA Delineation Step 2
- FHA Delineation Step 3
- Townships
- Sections
- River

Holocene River Alluvium

- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium

- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands

- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium

- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

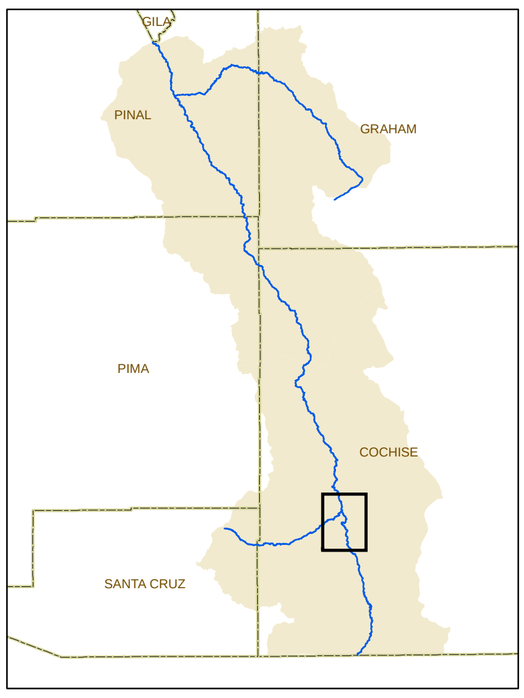
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

0 5,000 10,000 15,000
Feet



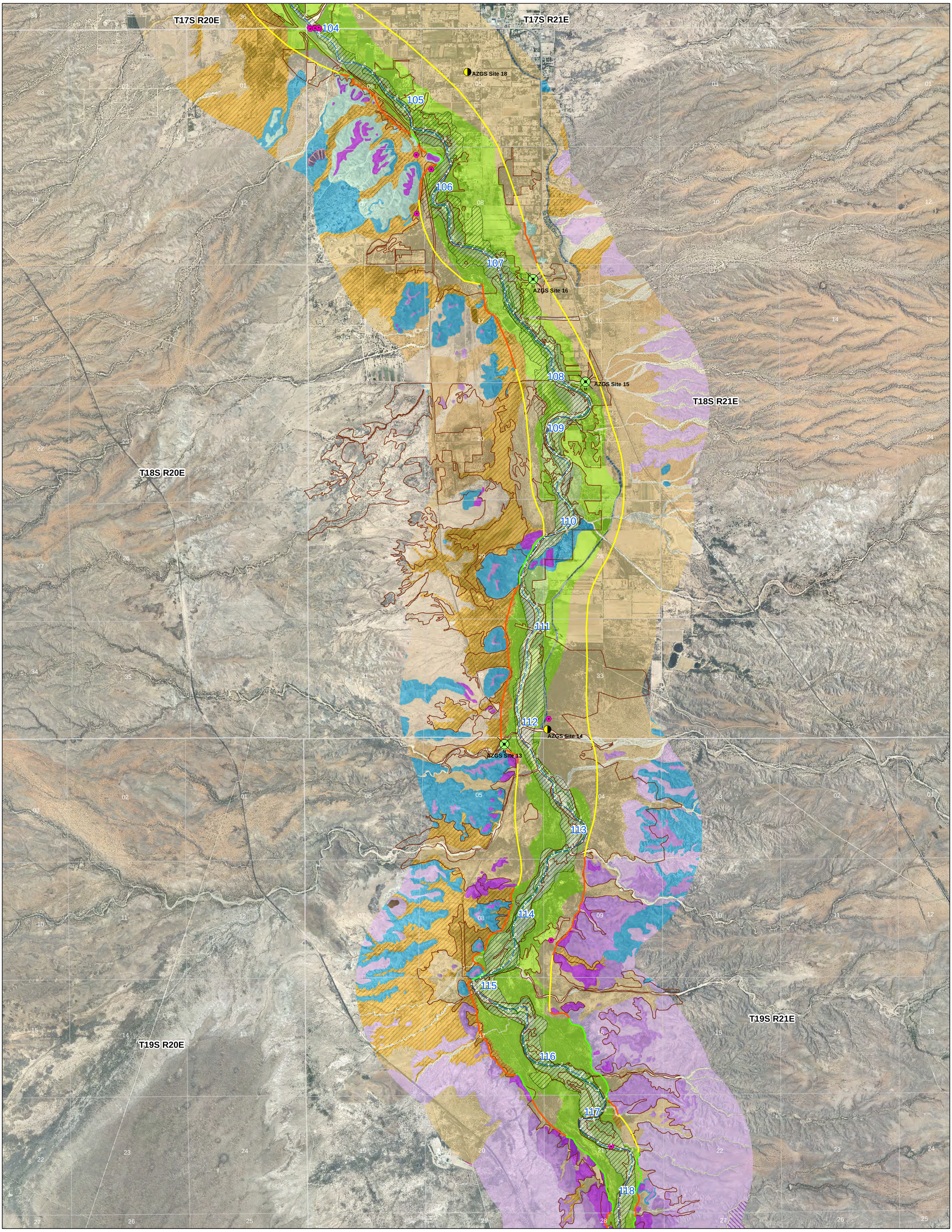
Appendix A
FHA Delineation Map Sheets

San Pedro River: RM 131-118

Map 3 of 17

2015 Supplemental
Subflow Report

Reissued May 2015



Legend

- Professional Well Logs
- AZGS Sites
  - Support
  - Consistent
  - Inconclusive
- Cottonwood-Willow
- Mesquite-Salt Cedar
- Holocene Composite Active Floodplain
- FHA Delineation Step 1
- FHA Delineation Step 2
- FHA Delineation Step 3
- Townships
- Sections
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

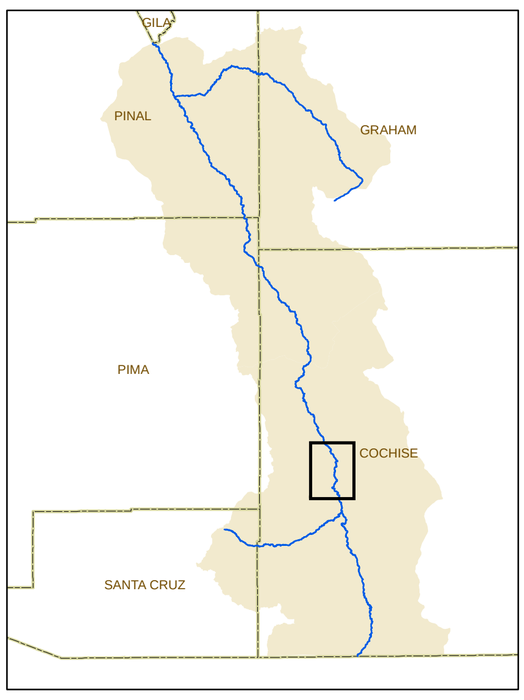
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

0 5,000 10,000 15,000
Feet



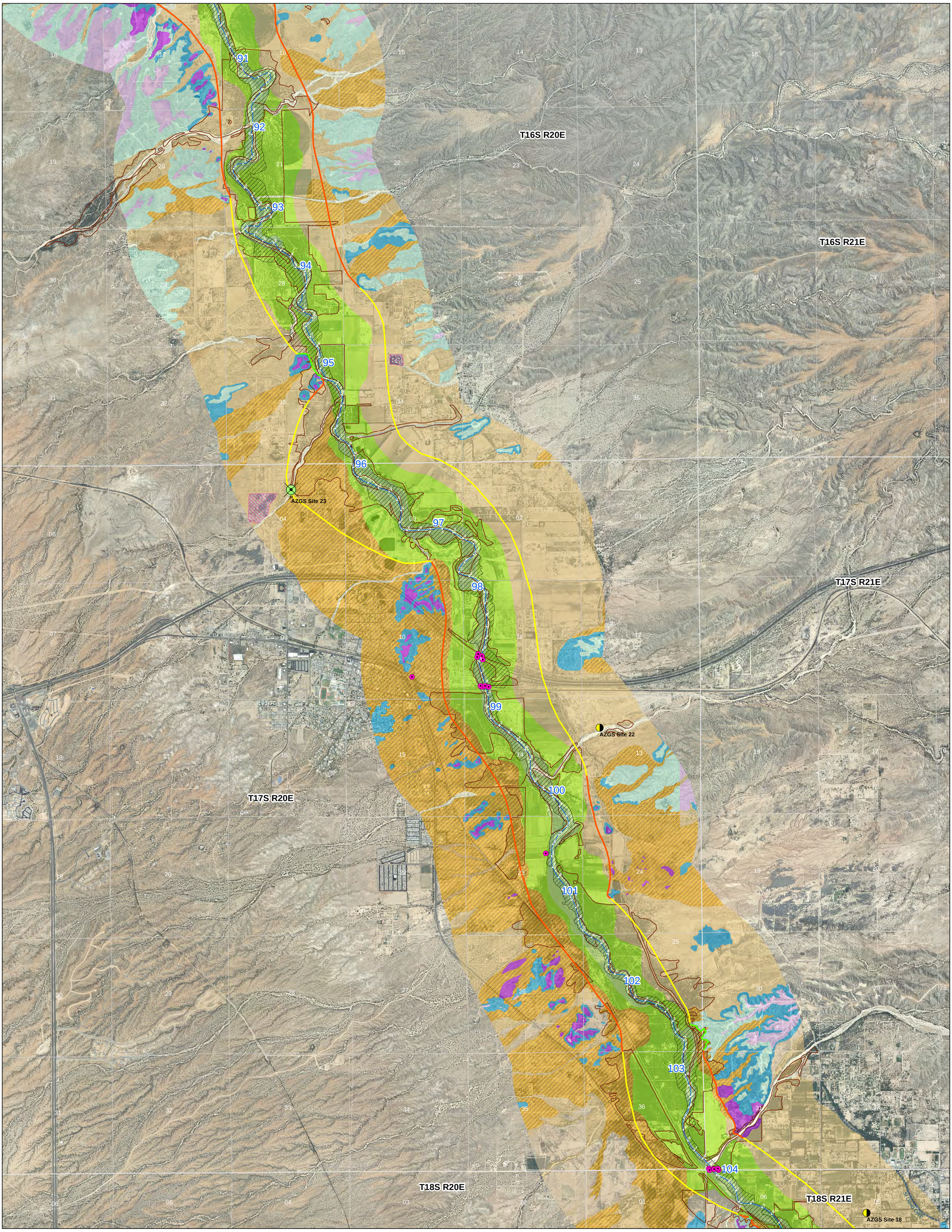
Appendix A
FHA Delineation Map Sheets

San Pedro River: RM 118-104

Map 4 of 17

2015 Supplemental
Subflow Report

Reissued May 2015



Legend

- Professional Well Logs
- AZGS Sites
  - Support
  - Consistent
  - Inconclusive
- Cottonwood-Willow
- Mesquite-Salt Cedar
- Holocene Composite Active Floodplain
- FHA Delineation Step 1
- FHA Delineation Step 2
- FHA Delineation Step 3
- Townships
- Sections
- River

Holocene River Alluvium

- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium

- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands

- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium

- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

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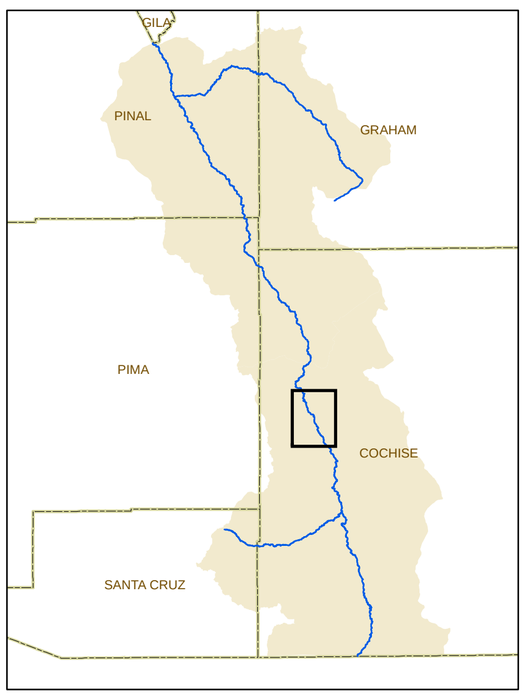
Feet



Appendix A
FHA Delineation Map Sheets

San Pedro River: RM 104-91

Map 5 of 17

2015 Supplemental
Subflow Report

Reissued May 2015

T14S R19E
T14S R20E
T15S R19E
T15S R20E
T16S R19E
T16S R20E
AZGS Site 27
AZGS Site 25
AZGS Site 26
77
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79
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83
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85
86
87
88
89
90
91

Legend

- Professional Well Logs
- AZGS Sites
  - Support
  - Consistent
  - Inconclusive
- Cottonwood-Willow
- Mesquite-Salt Cedar
- Holocene Composite Active Floodplain
- FHA Delineation Step 1
- FHA Delineation Step 2
- FHA Delineation Step 3
- Townships
- Sections
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

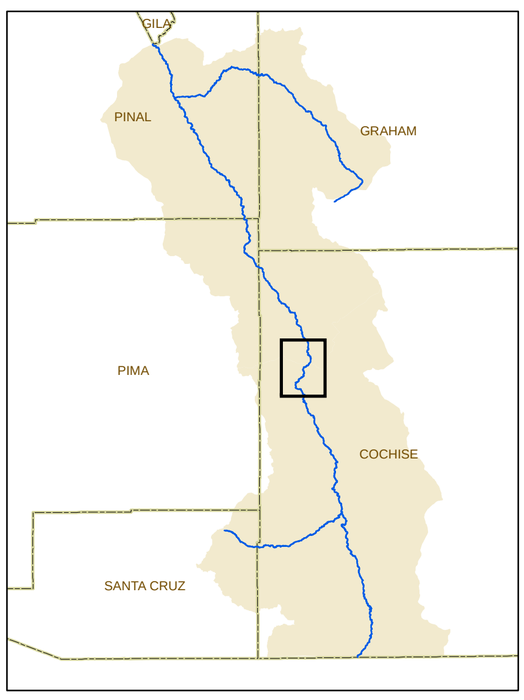
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

0 5,000 10,000 15,000
Feet



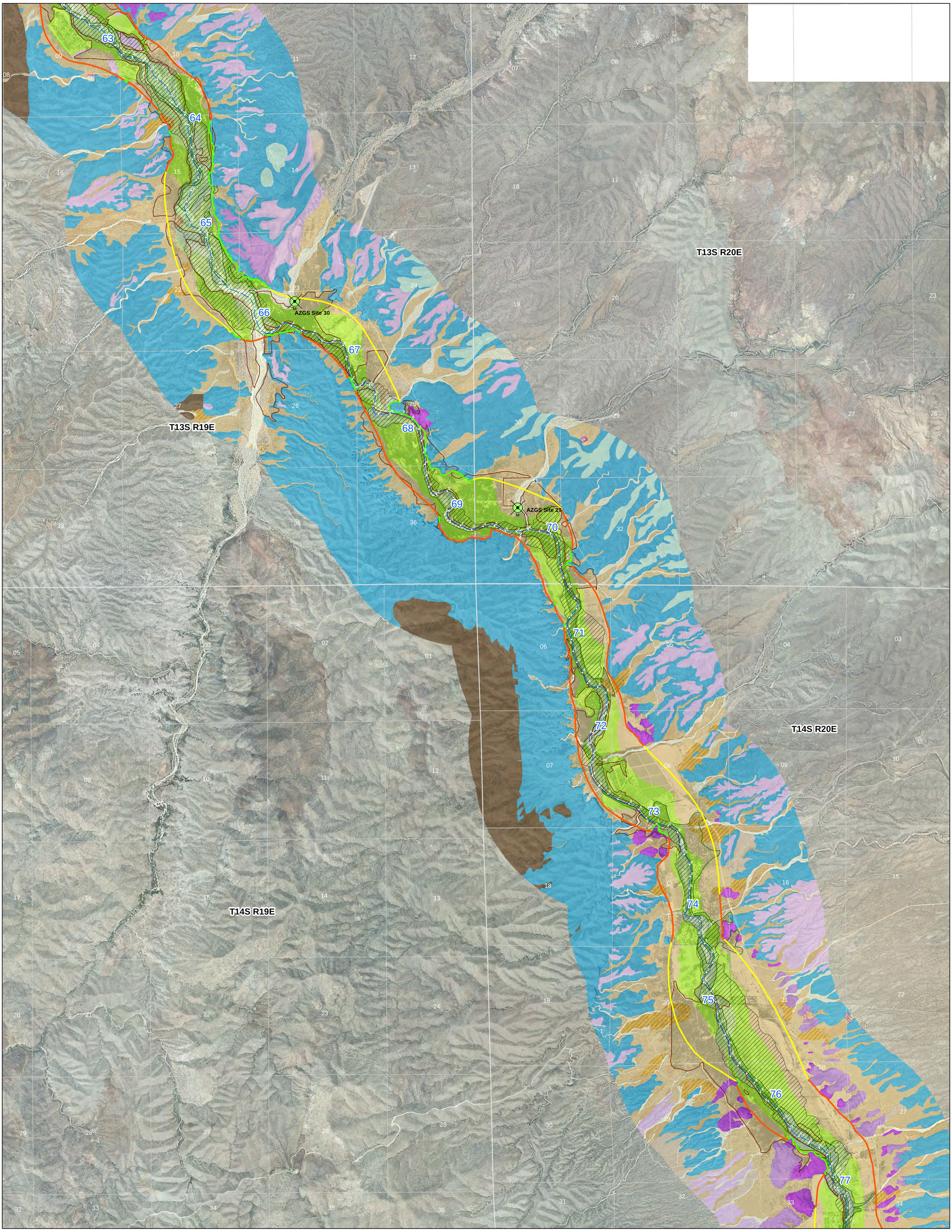
Appendix A
FHA Delineation Map Sheets

San Pedro River: RM 91-77

Map 6 of 17

2015 Supplemental
Subflow Report

Reissued May 2015



Legend

- Professional Well Logs
- AZGS Sites
  - Support
  - Consistent
  - Inconclusive
- Cottonwood-Willow
- Mesquite-Salt Cedar
- Holocene Composite Active Floodplain
- FHA Delineation Step 1
- FHA Delineation Step 2
- FHA Delineation Step 3
- Townships
- Sections
- River

Holocene River Alluvium

- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium

- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands

- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium

- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

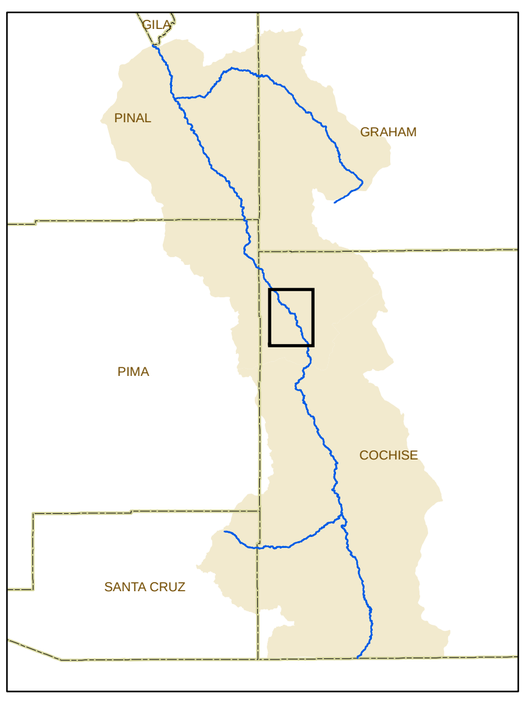
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

0 5,000 10,000 15,000
Feet



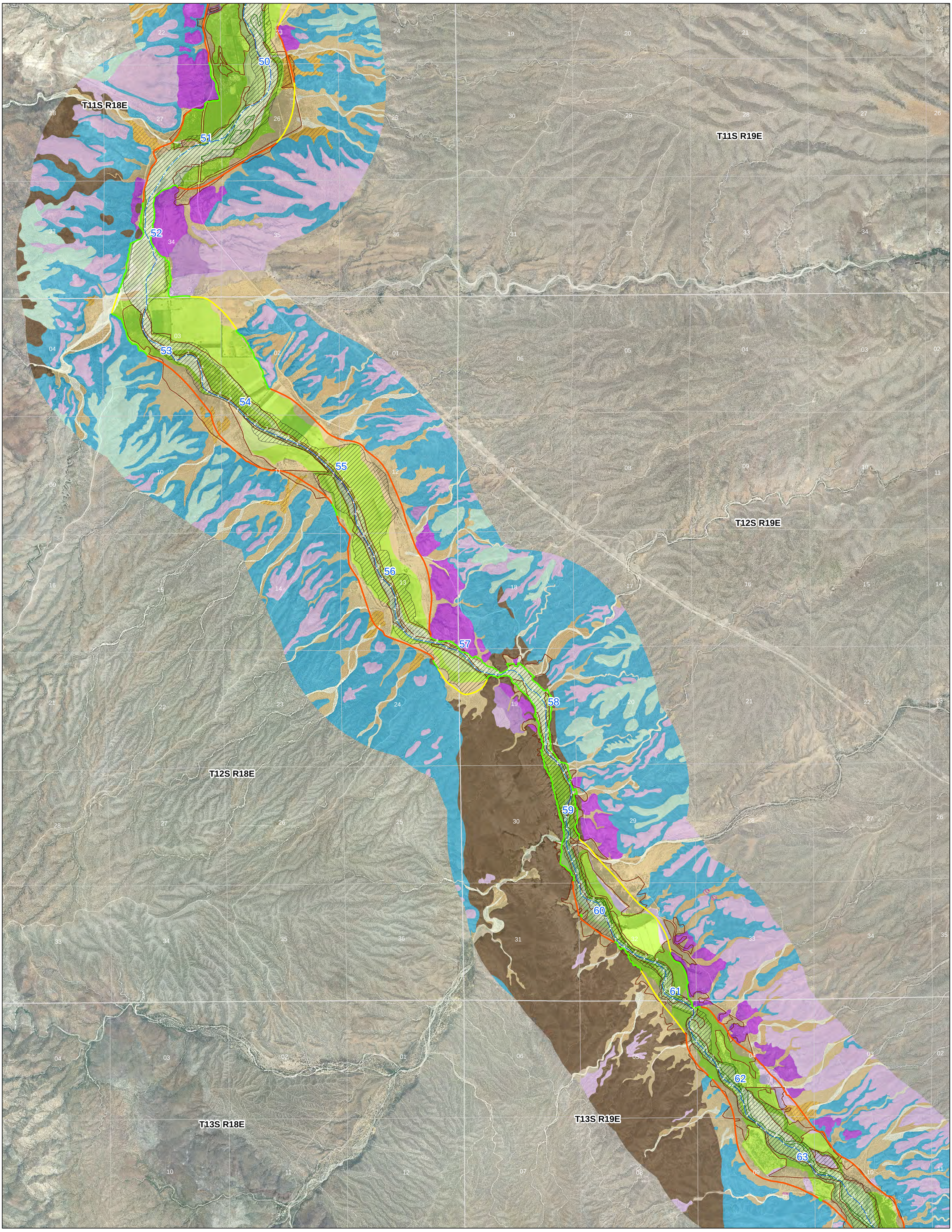
Appendix A
FHA Delineation Map Sheets

San Pedro River: RM 77-63

Map 7 of 17

2015 Supplemental
Subflow Report

Reissued May 2015



Legend

- Professional Well Logs
- AZGS Sites
  - Support
  - Consistent
  - Inconclusive
- Cottonwood-Willow
- Mesquite-Salt Cedar
- Holocene Composite Active Floodplain
- FHA Delineation Step 1
- FHA Delineation Step 2
- FHA Delineation Step 3
- Townships
- Sections
- River

Holocene River Alluvium

- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium

- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands

- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium

- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

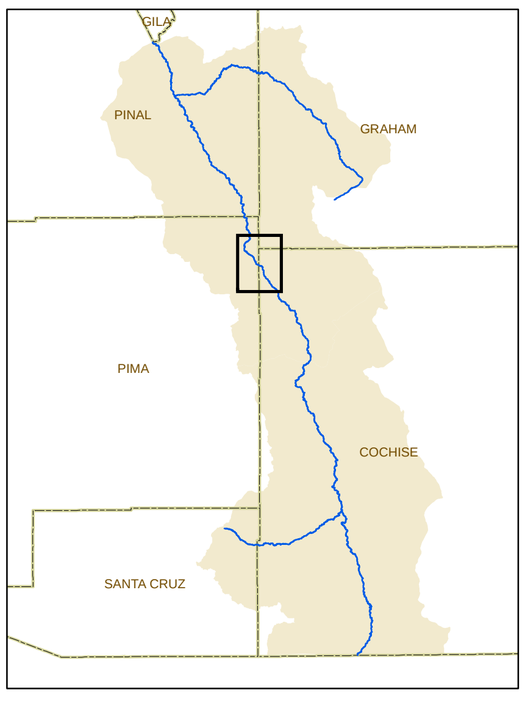
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

0 5,000 10,000 15,000
Feet



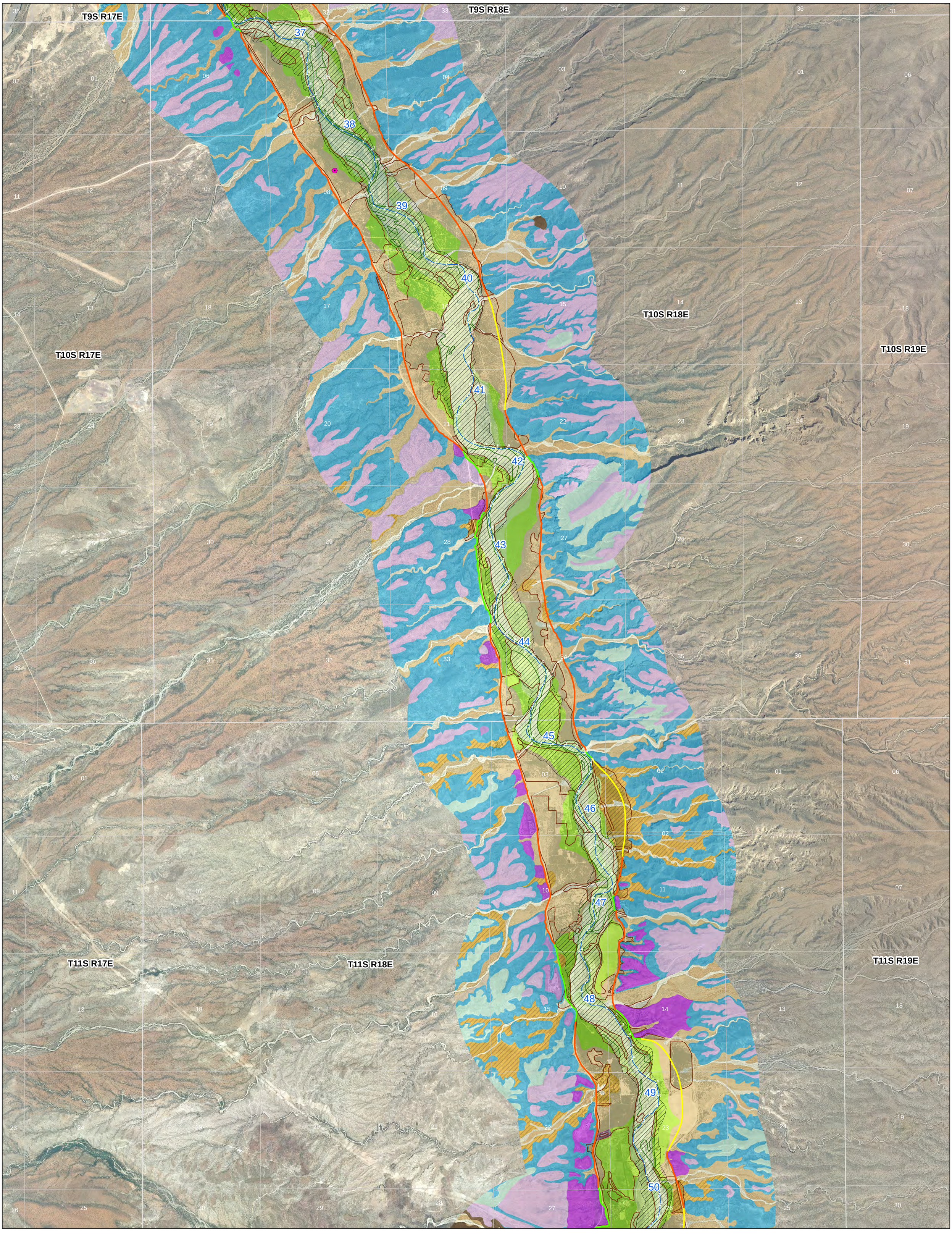
Appendix A
FHA Delineation Map Sheets

San Pedro River: RM 63-50

Map 8 of 17

2015 Supplemental
Subflow Report

Reissued May 2015



Legend

- Professional Well Logs

AZGS Sites

- Support
- Consistent
- Inconclusive
- Cottonwood-Willow
- Mesquite-Salt Cedar
- Holocene Composite Active Floodplain
- FHA Delineation Step 1
- FHA Delineation Step 2
- FHA Delineation Step 3
- Townships
- Sections
- River

Holocene River Alluvium

- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium

- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands

- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium

- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

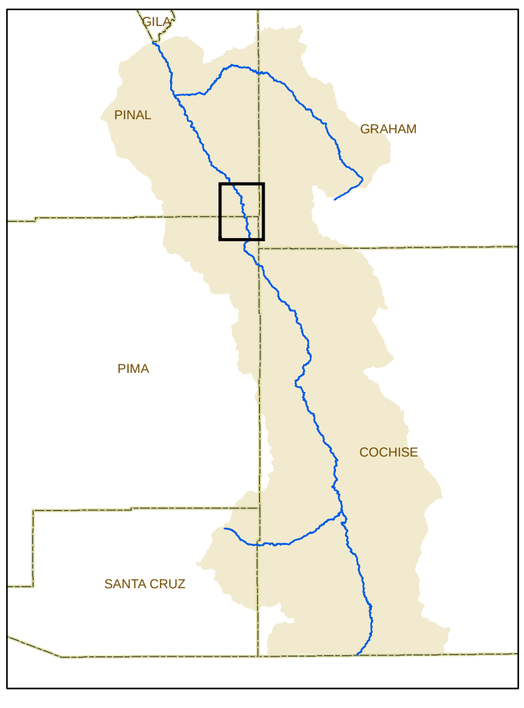
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

0 5,000 10,000 15,000
Feet



Appendix A
FHA Delineation Map Sheets

San Pedro River: RM 50-37

Map 9 of 17

2015 Supplemental
Subflow Report

Reissued May 2015

T8S R17E
T8S R18E
T9S R18E
T9S R17E
T10S R17E
T10S R18E
AZGS Site 35
AZGS Site 34

Legend

- Professional Well Logs
- AZGS Sites
  - Support
  - Consistent
  - Inconclusive
- Cottonwood-Willow
- Mesquite-Salt Cedar
- Holocene Composite Active Floodplain
- FHA Delineation Step 1
- FHA Delineation Step 2
- FHA Delineation Step 3
- Townships
- Sections
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

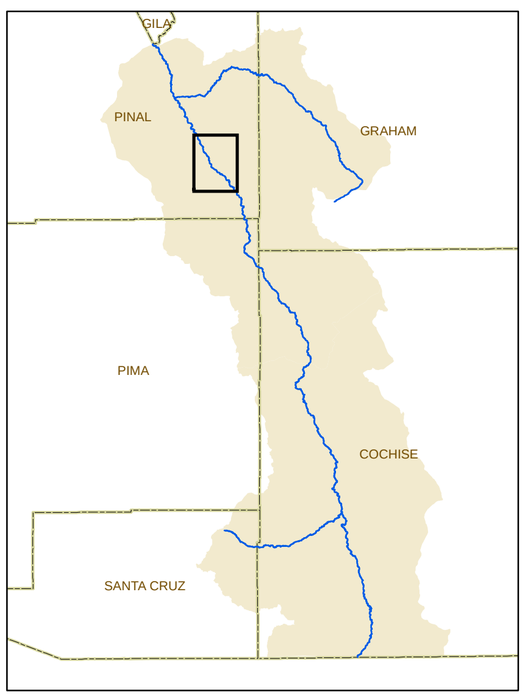
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

0 5,000 10,000 15,000
Feet



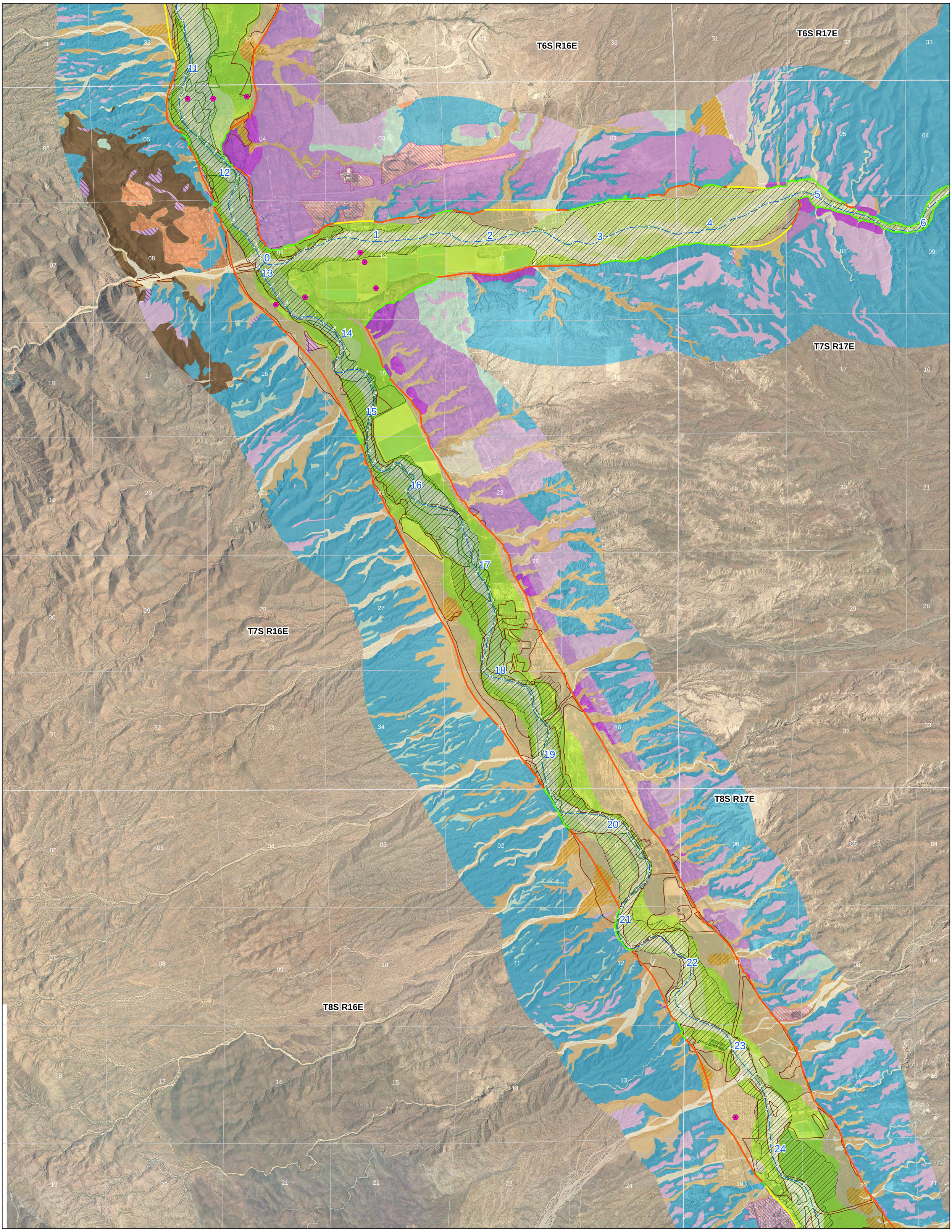
Appendix A
FHA Delineation Map Sheets

San Pedro River: RM 37-24

Map 10 of 17

2015 Supplemental
Subflow Report

Reissued May 2015



Legend

- Professional Well Logs

AZGS Sites

- Support
- Consistent
- Inconclusive
- Cottonwood-Willow
- Mesquite-Salt Cedar
- Holocene Composite Active Floodplain
- FHA Delineation Step 1
- FHA Delineation Step 2
- FHA Delineation Step 3
- Townships
- Sections
- River

Holocene River Alluvium

- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium

- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands

- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium

- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

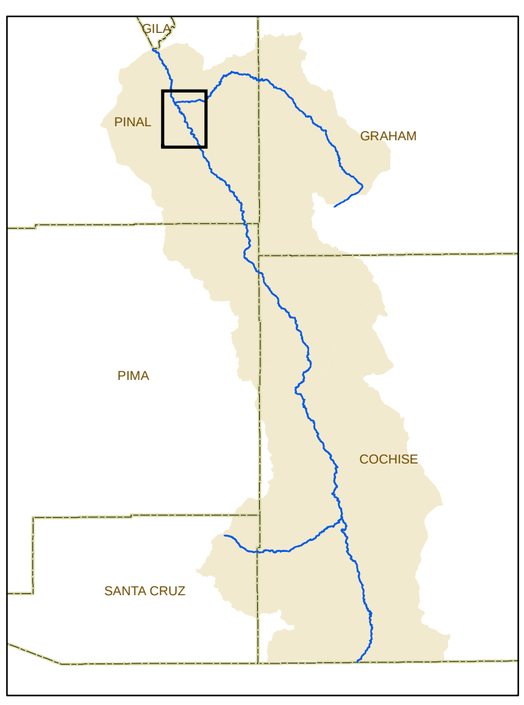
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

0 5,000 10,000 15,000
Feet



Appendix A
FHA Delineation Map Sheets

San Pedro River: RM 24-11

Map 11 of 17

2015 Supplemental
Subflow Report

Reissued May 2015

T5S R15E
T5S R16E
T6S R15E
T6S R16E
T7S R15E
T7S R16E

Legend

- Professional Well Logs
- AZGS Sites
  - Support
  - Consistent
  - Inconclusive
- Cottonwood-Willow
- Mesquite-Salt Cedar
- Holocene Composite Active Floodplain
- FHA Delineation Step 1
- FHA Delineation Step 2
- FHA Delineation Step 3
- Townships
- Sections
- River

Holocene River Alluvium

- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium

- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands

- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium

- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

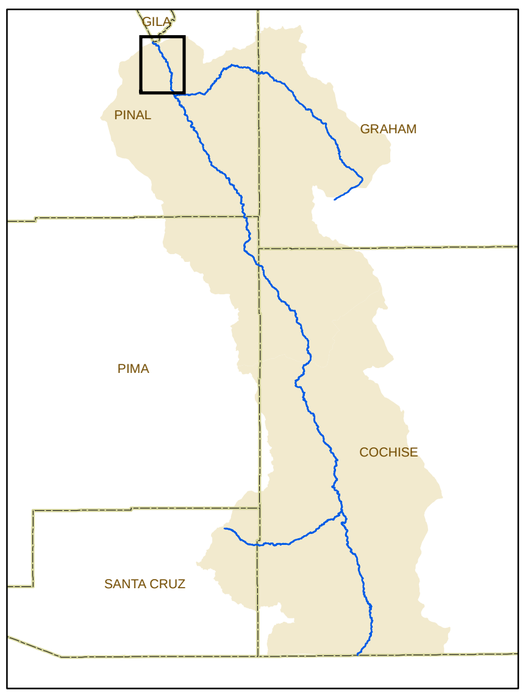
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

0 5,000 10,000 15,000
Feet



Appendix A
FHA Delineation Map Sheets

San Pedro River: RM 11-0

Map 12 of 17

2015 Supplemental
Subflow Report

Reissued May 2015

T6S R19E
T6S R20E
T7S R19E
T7S R20E
T8S R19E
T8S R20E

Legend

- Professional Well Logs

AZGS Sites

- Support
- Consistent
- Inconclusive
- Cottonwood-Willow
- Mesquite-Salt Cedar
- Holocene Composite Active Floodplain
- FHA Delineation Step 1
- FHA Delineation Step 2
- FHA Delineation Step 3
- Townships
- Sections
- River

Holocene River Alluvium

- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium

- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands

- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium

- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

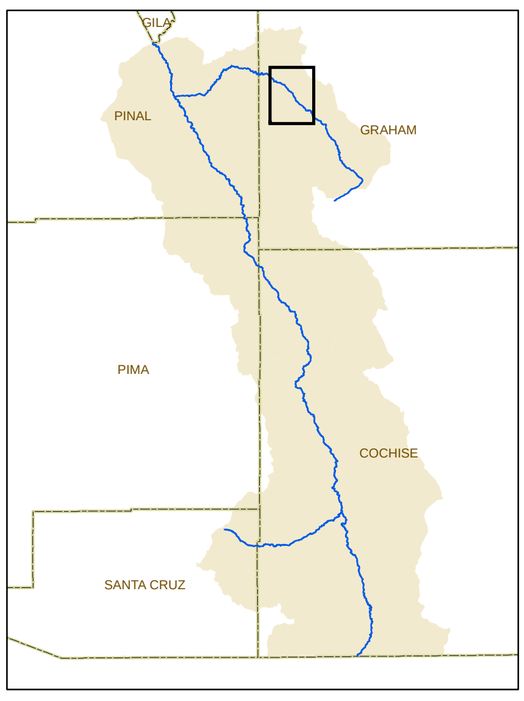
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

0 5,000 10,000 15,000
Feet



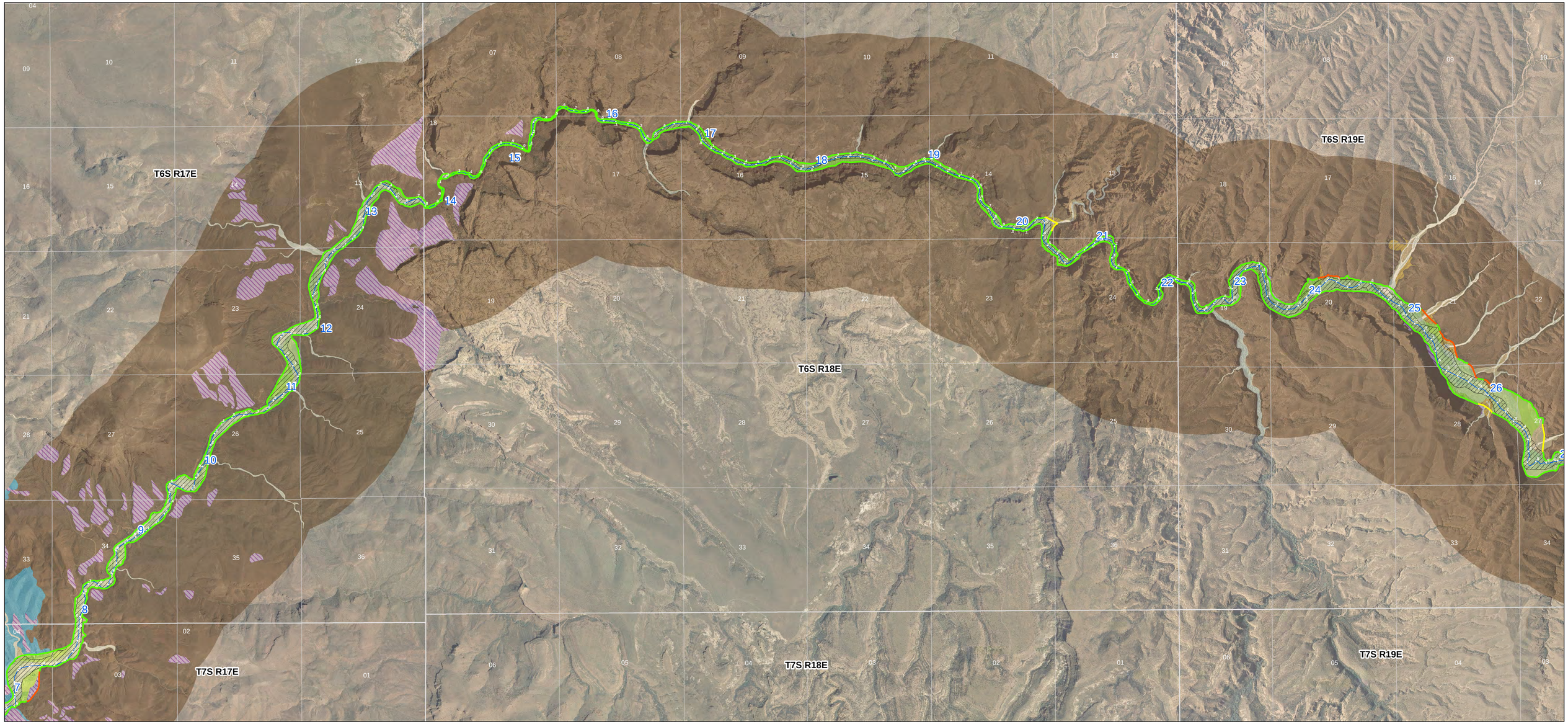
Appendix A
FHA Delineation Map Sheets

Aravaipa Creek: RM 37-26

Map 13 of 17

2015 Supplemental
Subflow Report

Reissued May 2015



Legend

- Professional Well Logs

AZGS Sites

- Support
- Consistent
- Inconclusive
- Cottonwood-Willow
- Mesquite-Salt Cedar
- Holocene Composite Active Floodplain
- Townships
- Sections
- River
- FHA Delineation Step 1
- FHA Delineation Step 2
- FHA Delineation Step 3

Holocene River Alluvium

- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium

- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands

- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium

- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

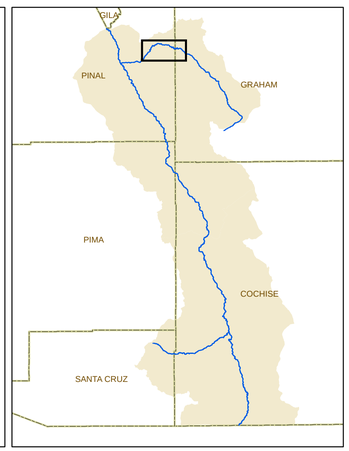
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

0 5,000 10,000 15,000
Feet

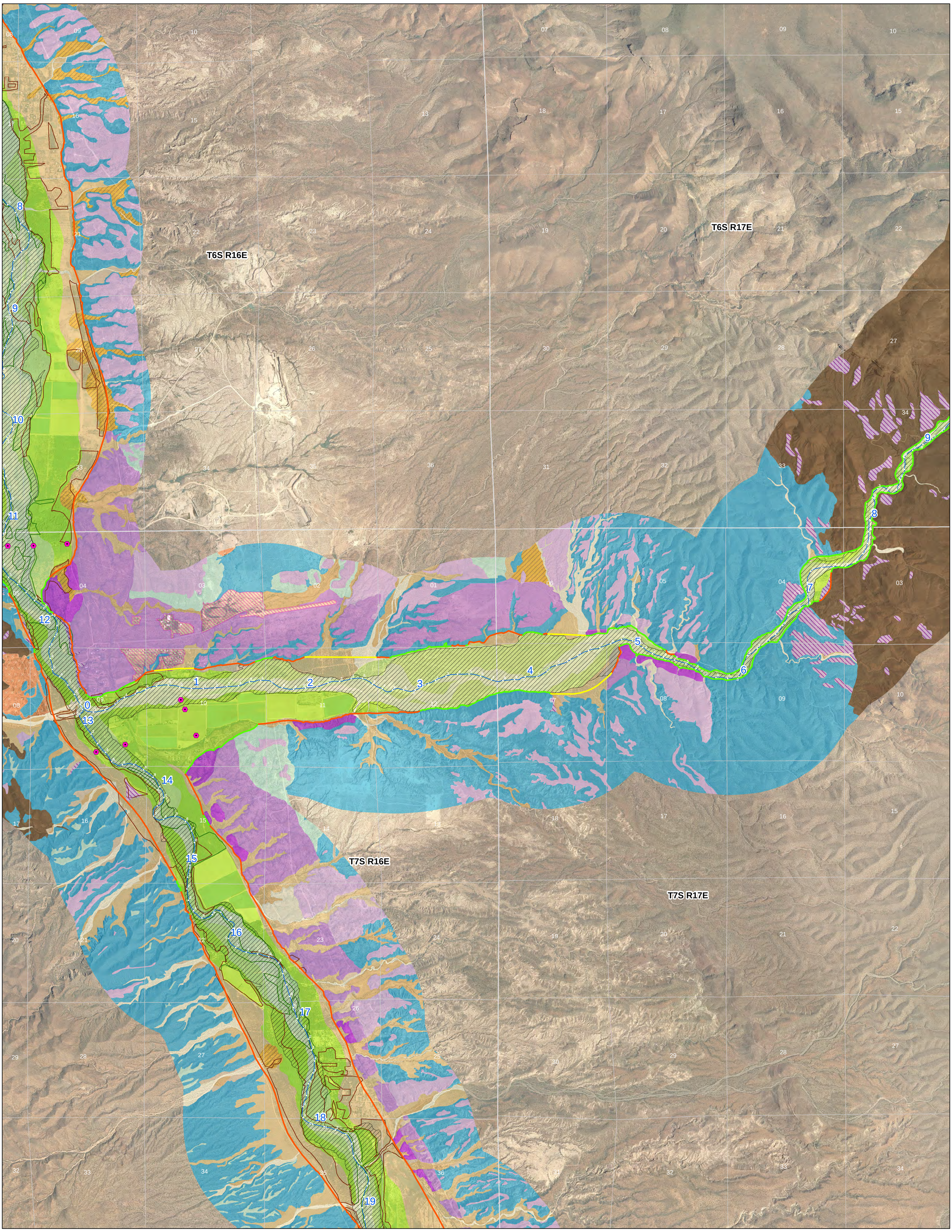


Appendix A
FHA Delineation Map Sheets
Aravaipa Creek: RM 26-8

Map 14 of 17

2015 Supplemental
Subflow Report

Reissued May 2015



Legend

- Professional Well Logs

AZGS Sites

- Support
- Consistent
- Inconclusive
- Cottonwood-Willow
- Mesquite-Salt Cedar
- Holocene Composite Active Floodplain
- FHA Delineation Step 1
- FHA Delineation Step 2
- FHA Delineation Step 3
- Townships
- Sections
- River

Holocene River Alluvium

- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium

- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands

- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium

- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

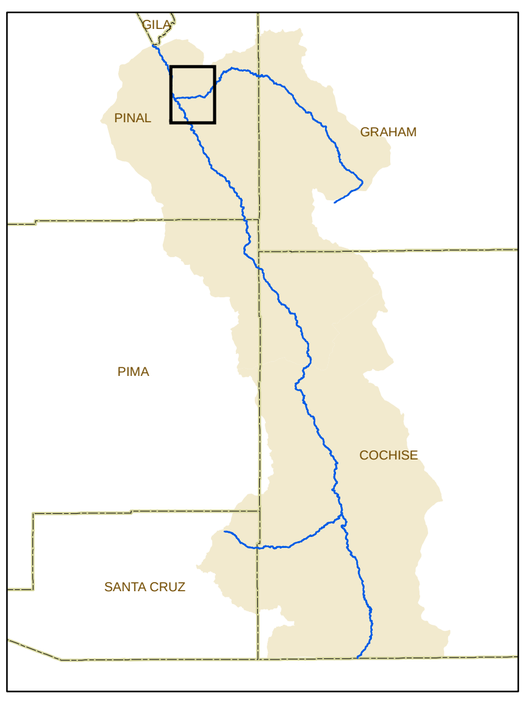
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

0 5,000 10,000 15,000
Feet



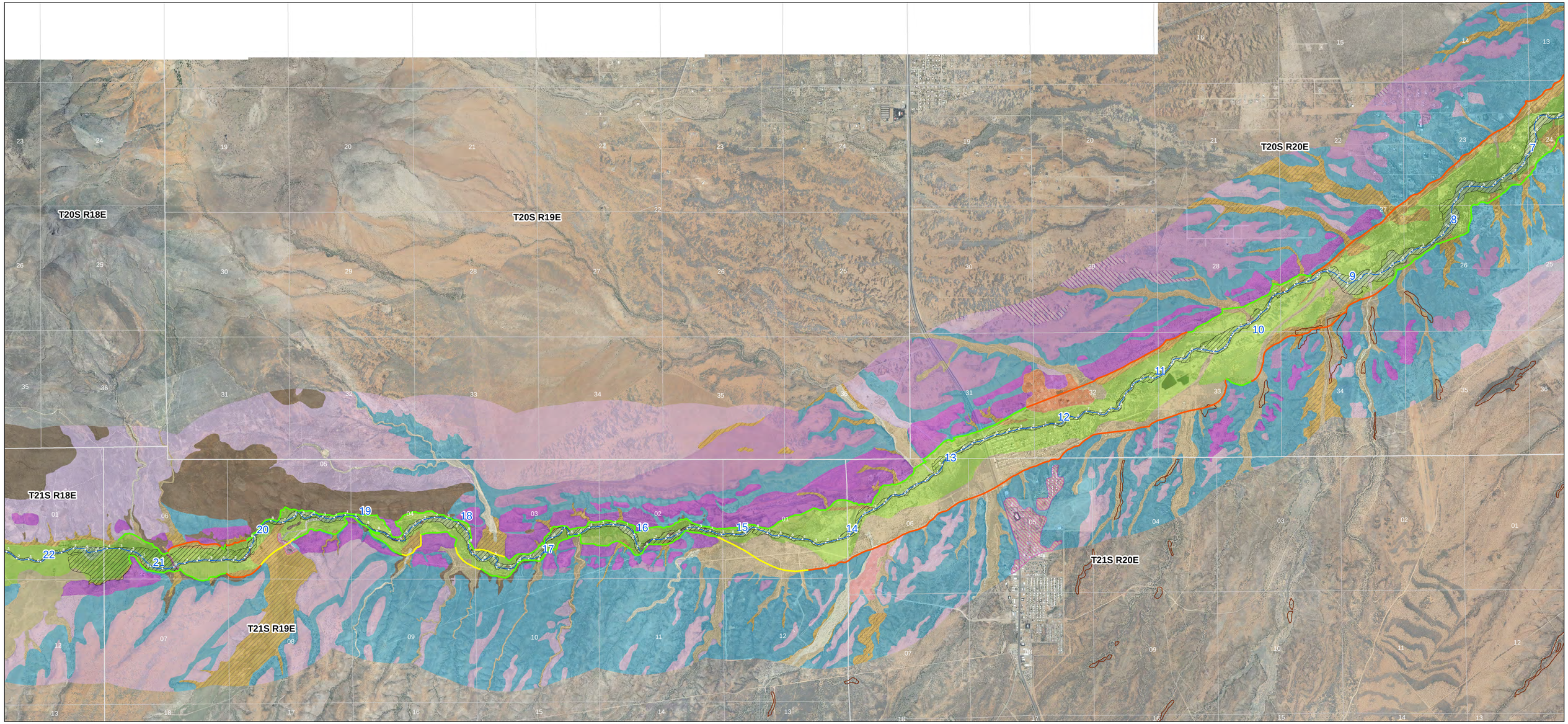
Appendix A
FHA Delineation Map Sheets

Aravaipa Creek: RM 8-0

Map 15 of 17

2015 Supplemental
Subflow Report

Reissued May 2015



Legend

- Professional Well Logs

AZGS Sites

- Support
- Consistent
- Inconclusive
- Cottonwood-Willow
- Mesquite-Salt Cedar
- Holocene Composite Active Floodplain
- Townships
- Sections
- River
- FHA Delineation Step 1
- FHA Delineation Step 2
- FHA Delineation Step 3

Holocene River Alluvium

- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium

- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands

- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium

- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

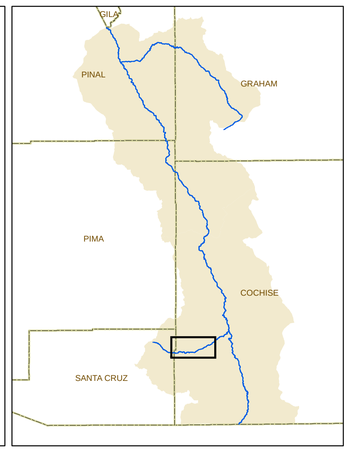
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

0 5,000 10,000 15,000
Feet

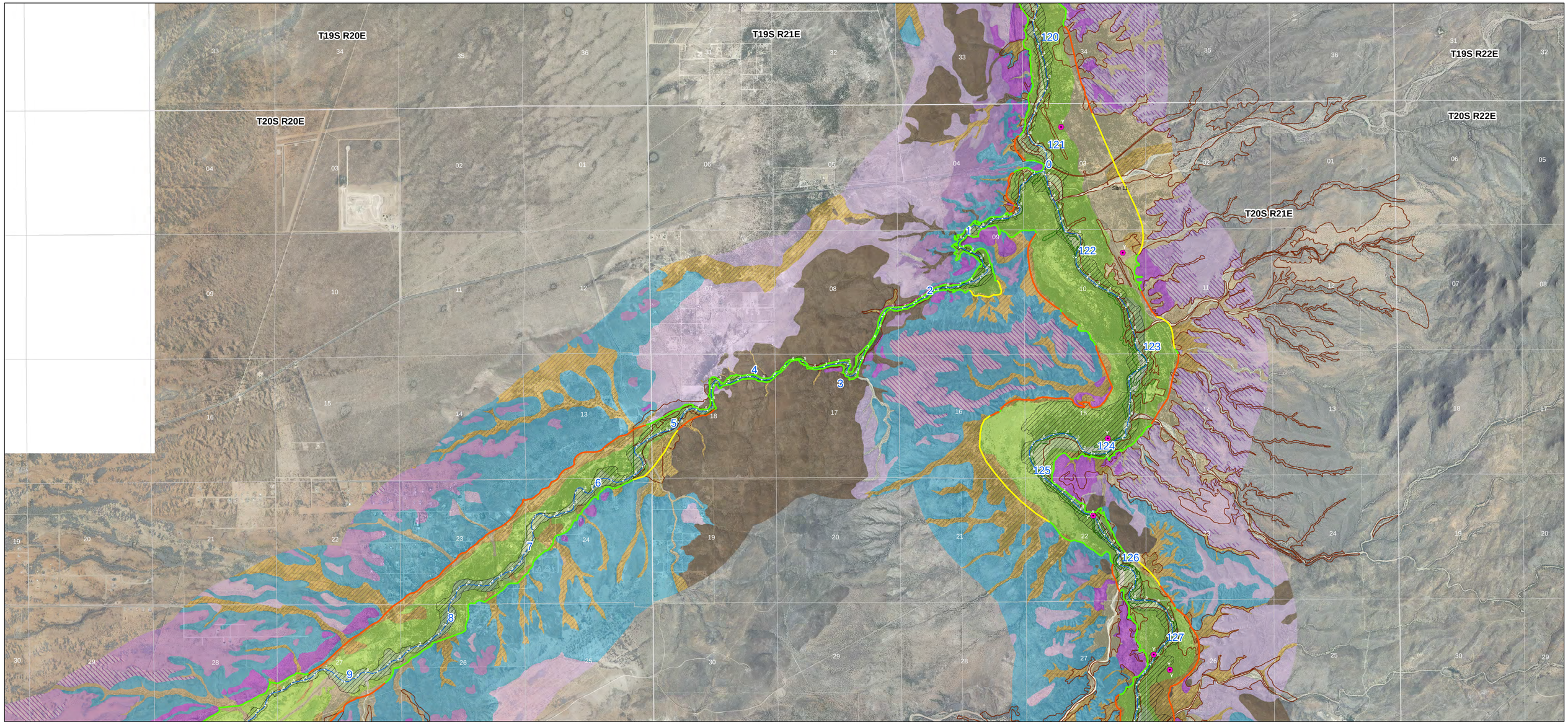


Appendix A
FHA Delineation Map Sheets
Babocomari River: RM 22-7

Map 16 of 17

2015 Supplemental
Subflow Report

Reissued May 2015



Legend

- Professional Well Logs

AZGS Sites

- Support
- Consistent
- Inconclusive
- Cottonwood-Willow
- Mesquite-Salt Cedar
- Holocene Composite Active Floodplain
- Townships
- Sections
- River
- FHA Delineation Step 1
- FHA Delineation Step 2
- FHA Delineation Step 3

Holocene River Alluvium

- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium

- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands

- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium

- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

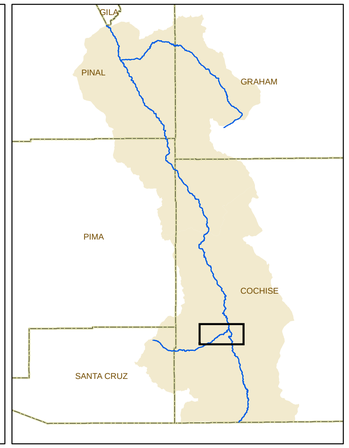
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

0 5,000 10,000 15,000
Feet



Appendix A
FHA Delineation Map Sheets
Babocomari River: RM 7-0

Map 17 of 17

2015 Supplemental
Subflow Report

Reissued May 2015

APPENDIX B: PROFESSIONAL-LEVEL LOGS IN FHA AND THA

Log # 1

(D-24-22)8DBA

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave. (Street) Tucson (City) AZ (State) 85719 (Zip) (520) 670-6671 (Telephone Number)
2. Drilling Firm: USGS- Geoprobe
   Address: 5338 Montgomery Blvd (Street) Albuquerque (City) NM (State) 87109 (Zip) (505) 830-7900 (Telephone Number)
3. Location: NE ¼ (10 Acre) NW ¼ (40 Acre) SE ¼ (160 Acre) of Section 08 Township 24 S Range 22 E
4. Well Registration No. 55-588973 (Required) 6a. **Latitude** 31 21 . 27 "
5. Permit No. _____ (If issued) 6b. **Longitude** 110 07 . 31 "

DESCRIPTION OF WELL

7. Total Depth of Hole 17 ft 8. Type of Casing(s): Surface Seal steel Well PVC
9. Diameter and length of casing(s) 1.5 inches from -3.75 to 8.25, 1 inches from -3.6 to 12
10. Method of sealing at reduction points no reduction points.
11. Perforated from 12 to 17 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 5 feet. Diameter 1 inches. Type Slotted .020 PVC
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: X (Check One) Geoprobe
15. Date started 04 (Month) 16 (Day) 2001 (Year)
16. Date completed 04 (Month) 16 (Day) 2001 (Year)
17. Depth to water 8.3 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured down from lip of outer galvanized casing at 3.75 ft above land surface.
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
2.5	4	core - mostly sand
	6	Saturation
8	8	Core shoe - sandy gravel, saturated
10.75	12	Core - sandy gravel, saturated
14	16	core - fine to medium fluidized sand, saturated
16.	18	core - sand with clay at 18', saturated
		Saturation from ~ 6' BLS to bottom of hole.
		Unconsolidated sediments

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey

Signature of Qualifying Party: Frederick S. Hebbard 1-28-02
Date

5338 Montgomery Blvd.
Street

Albuquerque NM 87109
City State Zip

DWR 55-55 (Rev 1/99)

Log # 2

(D-24-22) 8DBA

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave. (Street) Tucson (City) AZ (State) 85719 (Zip) (520) 670-6671 (Telephone Number)
2. Drilling Firm: USGS- Geoprobe
   Address: 5338 Montgomery Blvd (Street) Albuquerque (City) 87109 (State) (505) 830-7900 (Zip, Telephone Number)
3. Location: NE ¼ (10 Acre) NW ¼ (40 Acre) SE ¼ (160 Acre) of Section 08 Township 24 S Range 22 E
4. Well Registration No. 55- 588975 (Required) 6a. **Latitude** 31 21 27
5. Permit No. _____ (If issued) 6b. **Longitude** 110 07 33

DESCRIPTION OF WELL

7. Total Depth of Hole 19 ft
8. Type of Casing(s): Surface Seal Steel Well PVC
9. Diameter and length of casing(s) 1.5 inches from -4.25 to 7.5, 1 inches from -4 to 14
10. Method of sealing at reduction points no reduction points
11. Perforated from 14 to 19 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 5 feet. Diameter 1 inches. Type Slotted .020 PVC
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven ___ Sonic ___ Hand Dug ___ Other: X (Check One)
15. Date started 04 (Month) 16 (Day) 2001 (Year)
16. Date completed 04 (Month) 16 (Day) 2001 (Year)
17. Depth to water 13.6 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured down from lip of galvanized outer casing at 4.25 ft above land surface.
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	3	U. soft sand
3	4	core – soft medium sand, moist
8	8	core shoe – sandy gravel, moist
	11	Sataration
16	16	Core shoe – soft coarse sand, saturated
16	18	core – coarse sand and gravel, saturated
18	19	core – sandy silt, saturated
19	20	core – clay, moist
		Saturated from 11' BLS to bottom of hole although clay at bottom was only moist.

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey

Signature of Qualifying Party: Judith E. Gebhardt Date: 1-28-02

Street: 5338 Montgomery Blvd

City: Albuquerque State: NM Zip: 87109

DWR 55-55 (Rev 1/99)

Log # 3

(U-24-22)4CBC
PALUWD

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave. (Street) Tucson (City) AZ (State) 85719 (Zip) (520) 670-6671 (Telephone Number)
2. Drilling Firm: USGS - Central Region
   Address: Box 25046 Denver Fed. Ctr. (Street) Denver (City) CO (State) 80225 (Zip) (303) 236-5900 (Telephone Number)
3. Location: SW (10 Acre) ¼ NW (40 Acre) ¼ SW (160 Acre) ¼ of Section 04 Township 24 S Range 22 E
4. Well Registration No. 55-588968 (Required) 6a. **Latitude** 31 22 14
5. Permit No. _____ (If issued) 6b. **Longitude** 110 07 16

DESCRIPTION OF WELL

7. Total Depth of Hole 68 ft
8. Type of Casing(s): Surface Seal PVC Well PVC
9. Diameter and length of casing(s) 6 inches from -1.4 to 4.2 inches from -1.13 to 63
10. Method of sealing at reduction points no reduction points
11. Perforated from 63 to 68 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 5 feet. Diameter 2 inches. Type Slotted .020 PVC
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering X Jet/Driven ___ Sonic ___ Hand Dug ___ Other: ___ (Check One)
15. Date started 03 (Month) 08 (Day) 2001 (Year)
16. Date completed 03 (Month) 09 (Day) 2001 (Year)
17. Depth to water 18.3 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured down from Measure point on inner PVC casing at 1.13 ft above land surface.
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
2	2	Some cobbles and rocks
2	4	Heavy gravels
4	8	Probably gravel
8	50	Soft material, probably saturated clays and flowing sand
		Saturation at about 24' BLS
	60	Slight gravel layer
61	62.5	Sandy gravel
63	64	Core - Medium sand to gravel
64	66	Core - Clay
66	68	Core - V. Fine sand and clay
68	73	Core - Sandy clay grading to partly indurated sand
		Saturated sediments between ~ 24' BLS and bottom of hole.

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey - Central Region

Signature of Qualifying Party: [signature] Date: 1/22/02

Street: Box 25046 MS 406 DFC

City: Denver State: CO Zip: 80225

DWR 55-55 (Rev 1/99)

Log # 4

(D-24-22)4CBC

PALEWS

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
RESOURCES MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave. (Street) Tucson (City) AZ (State) 85719 (Zip) (520) 670-6671 (Telephone Number)
2. Drilling Firm: USGS - Central Region
   Address: Box 25046 Denver Fed Ctr (Street) Denver (City) CO (State) 80255 (Zip) (303) 236-5900 (Telephone Number)
3. Location: SW ¼ (10 Acre) NW ¼ (40 Acre) SW ¼ (160 Acre) of Section 04 Township 24 S Range 22 E
4. Well Registration No. 55-588969 (Required) 6a. **Latitude** 31 22 14 "
5. Permit No. _____ (If issued) 6b. **Longitude** 110 07 16 "

DESCRIPTION OF WELL

7. Total Depth of Hole 36 ft
8. Type of Casing(s): Surface Seal PVC Well PVC
9. Diameter and length of casing(s) 6 inches from -1.4 to 4.2 inches from -1.17 to 26
10. Method of sealing at reduction points no reduction points
11. Perforated from 26 to 31 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 5 feet. Diameter 2 inches. Type slotted .020 PVC
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering X Jet/Driven ___ Sonic ___ Hand Dug ___ Other: ___ (Check One)
15. Date started 03 (Month) 08 (Day) 2001 (Year)
16. Date completed 03 (Month) 08 (Day) 2001 (Year)
17. Depth to water 14.4 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured down from measure point on inner PVC casing at 1.17 ft above land surface.
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	5	clayey gravel and cobbles
5	14	Poorly sorted gravel and cobble
14	15	Clay
15	16	Sandy clay
16	39	wet sand and gravel
		Attempted core at 39' but fluidized sand filled
		auger stems.
		Saturated sediments from about 20' BLS to bottom of
		hole.

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey - Central Region

Signature of Qualifying Party: [signature] 1/22/02 Date

Box 25046 MS 406 DFC
Street

Denver, CO 80225
City State Zip

DWR 55-55 (Rev 1/99)

Log # 5

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

PAL-LO

RECEIVED
MAR 13 2002
RECORDS MGT.

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave. (Street) Tucson (City) A.Z. (State) 85719 (Zip) (520) 670-6671 (Telephone Number)
2. Drilling Firm: USGS - Geoprobe
   Address: 5338 Montgomery Blvd (Street) Albuquerque (City) NM (State) 87109 (Zip) (505) 830-7900 (Telephone Number)
3. Location: NE ¼ (10 Acre) NW ¼ (40 Acre) SW ¼ (160 Acre) of Section 04 Township 24 S Range 22 E
4. Well Registration No. 55-588970 (Required) 6a. **Latitude** 31 22 . 08 "
5. Permit No. _____ (If issued) 6b. **Longitude** 110 07 . 05 "

DESCRIPTION OF WELL

7. Total Depth of Hole 24.6 ft 8. Type of Casing(s): Surface Seal none Well Steel
9. Diameter and length of casing(s) _____ inches from _____ to _____ 1.5 inches from -4.4 to 23.6
10. Method of sealing at reduction points no reduction points
11. Perforated from 23.6 to 24.6 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 1 feet. Diameter 1 inches. Type Steel
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: X (Check One) Geoprobe
15. Date started 05 (Month) 22 (Day) 2000 (Year)
16. Date completed 05 (Month) 22 (Day) 2000 (Year)
17. Depth to water 10.7 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured down from lip of galv. casing at 4.2 ft above land surface
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

OWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at wh
encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	4	Core - silty sand, moist
4	8	Core - Silty sand, saturated at bottom
8	12	Core - sandy gravel, saturated
12	16	Core - sand, saturated
16	20	Core - Sand, saturated
20	24	Core - Sand, saturated
24	27	Core - sand, saturated
28	34	Core - Sand, saturated
		Saturated from about 8' BLS through to bottom
		of hole. All loose unconsolidated sediments.

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey

Signature of Qualifying Party: Frederick E. Hubbard 1-28-02
Date

5338 Montgomery Blvd
Street

Albuquerque NM 87109
City State Zip

DWR 55-55 (Rev 1/99)

Log # 6

-1-22/4CBA

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

PAL-UD

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave. (Street) Tucson (City) A.Z. (State) 85719 (Zip) (520) 670-6671 (Telephone Number)
2. Drilling Firm: USGS - Geoprobe
   Address: 5338 Montgomery Blvd. (Street) Albuquerque (City) NM (State) 87109 (Zip) (505) 820-7900 (Telephone Number)
3. Location: NE ¼ (10 Acre) NW ¼ (40 Acre) SW ¼ (160 Acre) of Section 04 Township 24 S Range 22 E
4. Well Registration No. 55- 588971 (Required) 6a. **Latitude** 31 22 . 07 "
5. Permit No. _____ (If issued) 6b. **Longitude** 110 07 . 07 "

DESCRIPTION OF WELL

7. Total Depth of Hole 32.04 ft 8. Type of Casing(s): Surface Seal none Well Steel
9. Diameter and length of casing(s) _____ inches from _____ to _____, 1.5 inches from -.96 to 31.04
10. Method of sealing at reduction points no reduction points
11. Perforated from 31.04 to 32.04 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 1 feet. Diameter 1 inches. Type Steel
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: X (Check One) Geoprobe
15. Date started 05 (Month) 23 (Day) 2000 (Year)
16. Date completed 05 (Month) 23 (Day) 2000 (Year)
17. Depth to water 16.6 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured down from lip of galv. casing at 0.96 ft above land surface
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	4	core - poorly sorted gravel to clay, dry
4	8	core - gravelly clay, dry
8	11	core - gravel, sand, and silt
12	16	core - clayey sand, moist
16	20	core - sandy clay, moist
20	34	core - sand, saturated.
		Saturated from about 18' BLS to bottom of hole.
		Unconsolidated sediments.

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey

Signature of Qualifying Party: [illegible] 1-28-02
Date

5338 Montgomery Blvd.
Street

Albuquerque NM 87109
City State Zip

DWR 55-55 (Rev 1/99)

Log # 7

(D-24-22) 4 CBA

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave. (Street) Tucson (City) AZ (State) 85719 (Zip) (520) 620-6671 (Telephone Number)
2. Drilling Firm: USGS – Geoprobe
   Address: 5338 Montgomery Blvd. (Street) Albuquerque (City) NM (State) 87109 (Zip) (505) 830-7900 (Telephone Number)
3. Location: NE ¼ (10 Acre) NW ¼ (40 Acre) SW ¼ (160 Acre) of Section 04 Township 24 S Range 22 E
4. Well Registration No. 55-588972 (Required) 6a. **Latitude** 31 22 . 07 "
5. Permit No. _____ (If issued) 6b. **Longitude** 110 07 . 07 "

DESCRIPTION OF WELL

7. Total Depth of Hole 21.25 ft 8. Type of Casing(s): Surface Seal none Well Steel
9. Diameter and length of casing(s) _____ inches from _____ to _____, 1.5 inches from -.75 to 20.25
10. Method of sealing at reduction points no reduction points
11. Perforated from 20.25 to 21.25 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 1 feet. Diameter 1 inches. Type Steel
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven ___ Sonic ___ Hand Dug ___ Other: X (Check One) Geoprobe
15. Date started 05 (Month) 23 (Day) 2000 (Year)
16. Date completed 05 (Month) 23 (Day) 2000 (Year)
17. Depth to water 16.5 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured down from lip of galvanized casing at 0.75 ft above land surface
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	4	core - poorly sorted gravel to clay, dry
4	8	core - gravelly clay, dry
8	11	core - clayey sand and silt
12	16	core - clayey sand, moist
16	20	core - sandy clay, saturated
20	21	core - sand, saturated
		saturated from about 18' BLS to bottom of hole. Unconsolidated sediments

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey

Signature of Qualifying Party: Fredrick E. Gebhardt 1-28-02
Date

5338 Montgomery Blvd
Street

Albuquerque NM 87109
City State Zip

DWR 55-55 (Rev 1/99)

Log # 8

(V-24-22) 4CBA

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave. (Street) Tucson (City) AZ (State) 85719 (Zip) (520) 670-6671 (Telephone Number)
2. Drilling Firm: USGS - Geoprobe
   Address: 5338 Montgomery Blvd (Street) Albuquerque (City) NM (State) 87109 (Zip) (505) 830-7900 (Telephone Number)
3. Location: NE ¼ (10 Acre) NW ¼ (40 Acre) SW ¼ (160 Acre) of Section 04 Township 24 S Range 22 E
4. Well Registration No. 55-588974 (Required) 6a. **Latitude** 31 22 . 08 "
5. Permit No. _____ (If issued) 6b. **Longitude** 110 07 . 05 "

DESCRIPTION OF WELL

7. Total Depth of Hole 16.3 ft 8. Type of Casing(s): Surface Seal none Well Steel
9. Diameter and length of casing(s) _____ inches from _____ to _____, 1.5 inches from -4.7 to 15.3
10. Method of sealing at reduction points _____
11. Perforated from 15.3 to 16.3 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 1 feet. Diameter 1 inches. Type Steel
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: X (Check One) Geoprobe
15. Date started 05 (Month) 22 (Day) 2000 (Year)
16. Date completed 05 (Month) 22 (Day) 2000 (Year)
17. Depth to water 11.3 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured down from lip of galvanized casing at 4.7 ft above land surface
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	4	core - silty sand, moist
4	8	core - silty sand, saturated at bottom
8	12	core - sandy gravel, saturated
12	16	core - sand, saturated
		saturated from 8' BLS to bottom of hole.
		All loose sediments.

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US GEOLOGICAL SURVEY

Signature of Qualifying Party: Frederick E. Hetherwick 1-28-02
Date

5338 Montgomery Blvd
Street

Albuquerque NM 87109
City State Zip

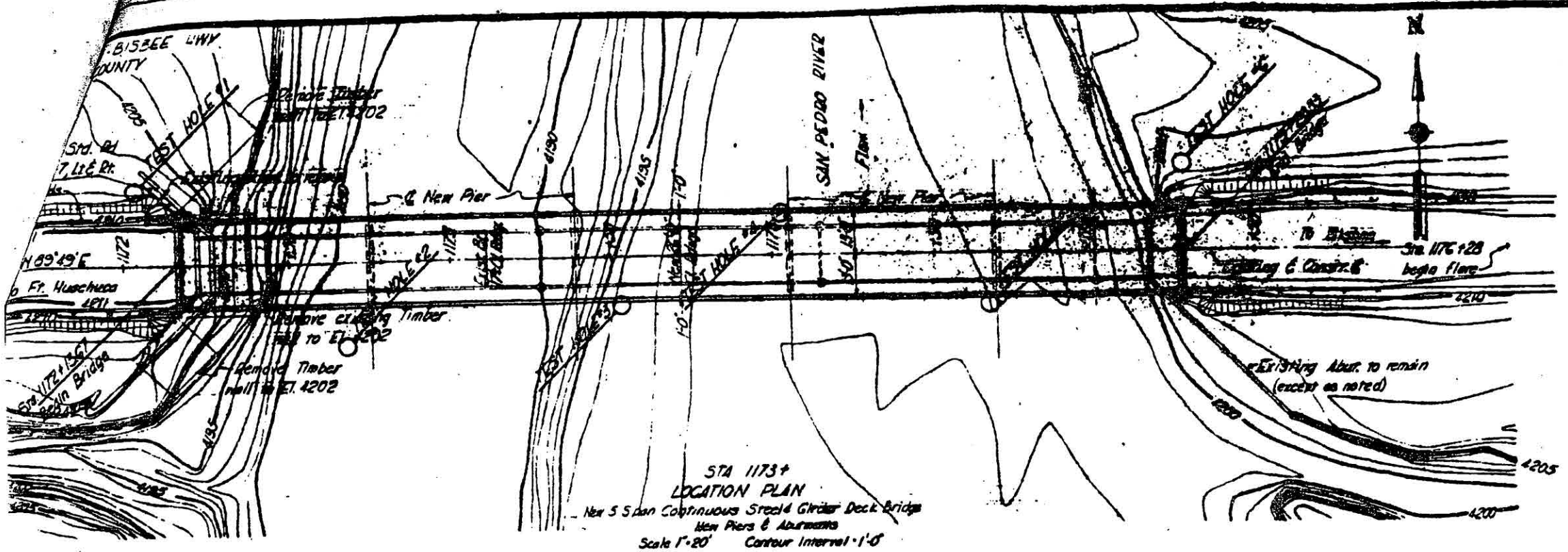
DWR 55-55 (Rev 1/99)

Logs # 10-15

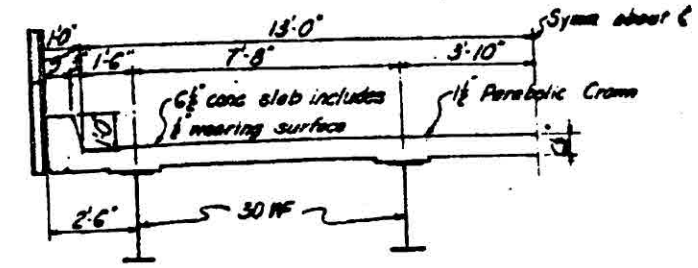
STR 449

1		F 133(4)	3A		

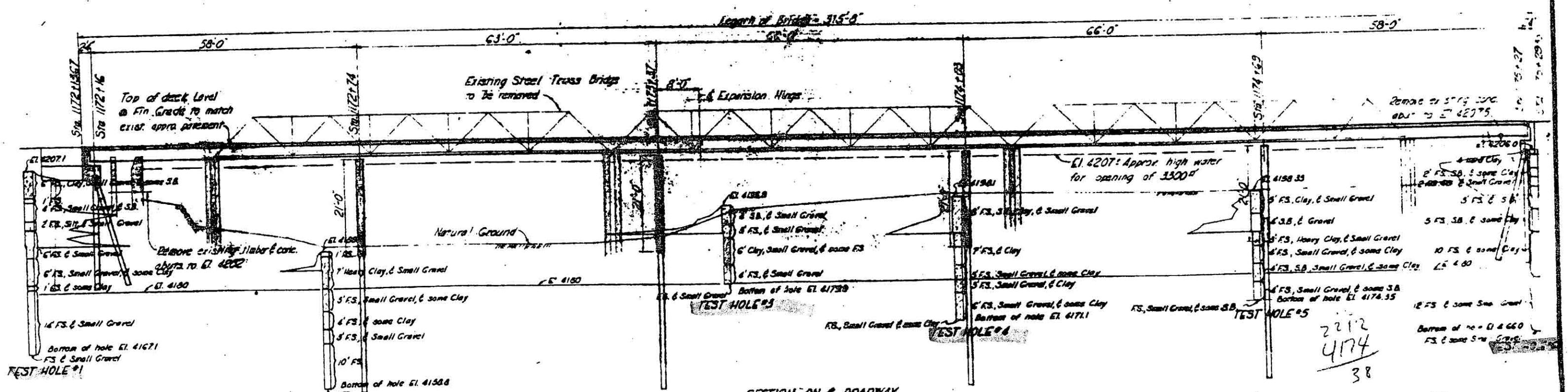
REDUCED SIZE
DO NOT SCALE.



STA 1173+
LOCATION PLAN
New 5 Span Continuous Steel Girder Deck Bridge
New Piers & Abutments
Scale 1"=20' Contour Interval 1'-0"

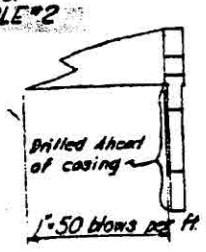


DECK HALF SECTION
Scale ⅜"=1'-0"



SECTION ON ℄ ROADWAY
Scale 1"=10'

LEGEND
F.S. - Fine Sand
Clay - Clay
Silt - Silt
S.B. - Small Boulders
Small Gravel - Small Gravel



1"=50 blows per ft. required to drive casing

4212
4174
38

4212
4.166
46

THIS IS NOT A CONTRACT DRAWING

ALL CONCRETE CLASS A

	LEM		ARIZONA HIGHWAY DEPARTMENT BRIDGE DIVISION
	NDL		STA 1173+
	OP		PALOMINAS 32 XGE
	RKG		FOUNDATION DATA
	2A - 6		

Log # 16

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 570 N Park Ave. (Street) Tucson (City) A.Z. (State) 85719 (Zip) (520)-670-6671 (Telephone Number)
2. Drilling Firm: USGS - Geoprobe
   Address: 5338 Montgomery Blvd. (Street) Albuquerque (City) NM (State) 87109 (Zip) (505)-830-7900 (Telephone Number)
3. Location: NW ¼ (10 Acre) NW ¼ (40 Acre) SW ¼ (160 Acre) of Section 22 Township 23 S Range 22 E
4. Well Registration No. 55-588965 (Required) 6a. **Latitude** 31 24 . 53 "
5. Permit No. _____ (If issued) 6b. **Longitude** 110 06 . 14 "

DESCRIPTION OF WELL

7. Total Depth of Hole 20 ft 8. Type of Casing(s): Surface Seal Steel Well PVC
9. Diameter and length of casing(s) 1.5 inches from -4.25 to 10.75 1 inches from -3.95 to 15
10. Method of sealing at reduction points no reduction points
11. Perforated from 15 to 20 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 5 feet. Diameter 1 inches. Type Slotted .020 PVC
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: X (Check One) Geoprobe
15. Date started 04 (Month) 19 (Day) 2001 (Year)
16. Date completed 04 (Month) 19 (Day) 2001 (Year)
17. Depth to water 12.7 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured down from lip of galv. outer casing at 4.1 ft above land surface.
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
2	4	Core - V. fine to fine sand, moist
5.25	8	Core - Coarse sand, moist
9.15	12	Core - Coarse sand, saturated
18.6	20	Core - Coarse sand, saturated
20.2	24	Core - V. coarse sand, saturation
		Saturation from about 9' BLS to bottom of hole

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey

Signature of Qualifying Party: Judith E. Gebhardt Date: 1-28-02

Street: 5338 Montgomery Blvd

City: Albuquerque State: NM Zip: 87109

DWR 55-55 (Rev 1/99)

Log # 17

KOL-DO

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: U.S. Geological Survey
   Address: 520 N. Park Ave. (Street) Tucson (City) AZ (State) 85719 (Zip) (520)-670-6671 (Telephone Number)
2. Drilling Firm: USGS - Geoprobe
   Address: 5338 (Street) Montgomery Blvd. (City) Albuquerque (State) NM (Zip) 87109 (505)-830-7900 (Telephone Number)
3. Location: NW ¼ (10 Acre) NW ¼ (40 Acre) SW ¼ (160 Acre) of Section 22 Township 23 S Range 22 E
4. Well Registration No. 55-588966 (Required) 6a. **Latitude** 31 24 53 "
5. Permit No. _____ (If issued) 6b. **Longitude** 110 06 13 "

DESCRIPTION OF WELL

7. Total Depth of Hole 20 ft 8. Type of Casing(s): Surface Seal Steel Well PVC
9. Diameter and length of casing(s) 1.5 inches from -4.10 to 7.75, 1 inches from -3.85 to 15
10. Method of sealing at reduction points no reduction points
11. Perforated from 15 to 20 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 5 feet. Diameter 1 inches. Type Slotted .020 PVC
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: X (Check One) Geoprobe
15. Date started 04 (Month) 19 (Day) 2001 (Year)
16. Date completed 04 (Month) 19 (Day) 2001 (Year)
17. Depth to water 12.4 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured down from lip of galv. outer casing at 4.1' above land surface.
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at whi
encountered, and depth to which it rose in well.

From (feet)	To (feet)	
4	4	Core Shoe - Clay, moist
6.5	8	Core - Fine to v. fine sand and clay, saturated
	12	Core shoe - sandy gravel, saturated
14.1	16	Core - Coarse sand, saturated
20	20	Core shoe - sandy gravel, saturated
21	24	Core - Coarse sand, saturated
		Saturation occured at about 8' BLS and was
		saturated to bottom of hole.

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey

Signature of Qualifying Party: Frederick E. Gebhardt 1-28-02
Date

5338 Montgomery Blvd.
Street

Albuquerque NM 87109
City State Zip

DWR 55-55 (Rev 1/99)

Log # 18

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION
P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: U.S. Geological Survey
   Address: 520 N. Park Ave. (Street) Tucson (City) A.Z. (State) 85719 (Zip) (520)-670-6671 (Telephone Number)
2. Drilling Firm: USGS-Tucson
   Address: 520 N. Park Ave. (Street) Tucson (City) A.Z. (State) 85719 (Zip) (520)-670-6671 ext. 278 (Telephone Number)
3. Location: NW ¼ (10 Acre) NW ¼ (40 Acre) SW ¼ (160 Acre) of Section 22 Township 23 S Range 22 E
4. Well Registration No. 55-588967 (Required) 6a. **Latitude** 31 24 53 "
5. Permit No. _____ (If issued) 6b. **Longitude** 110 06 11 "

DESCRIPTION OF WELL

7. Total Depth of Hole 16 ft
8. Type of Casing(s): Surface Seal steel Well PVC
9. Diameter and length of casing(s) 1.5 inches from -4.15 to 10.85. 1 inches from -4 to 11
10. Method of sealing at reduction points no reduction points
11. Perforated from 11 to 16 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 5 feet. Diameter 1 inches. Type Slotted .020 PVC
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: ✓ (Check One) Geoprobe
15. Date started 04 (Month) 19 (Day) 2001 (Year)
16. Date completed 04 (Month) 19 (Day) 2001 (Year)
17. Depth to water 14.0 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured down from lip of galv. casing at 4.15 ft above land surface.
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	8	Clay, moist
8	8	core shoe - sandy clay, moist
12	12	Core shoe - Coarse Sand, saturated
16	16	Core shoe - Gravelly sand, saturated
19	19	Core shoe - clay, moist

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey

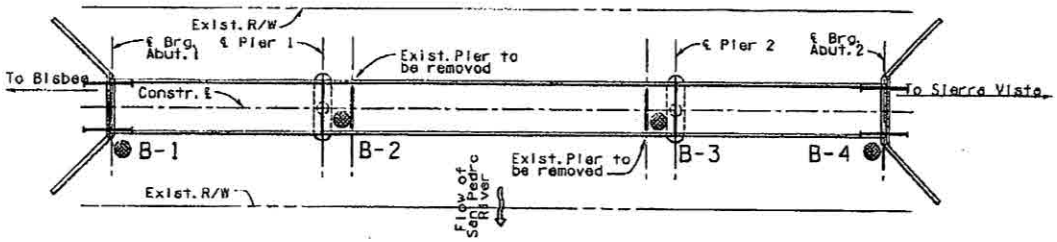
Signature of Qualifying Party: Frederick E. Hubbard 1-28-02
Date

5338 Montgomery Blvd.
Street

Albuquerque NM 87109
City State Zip

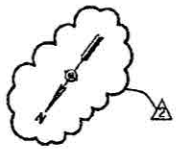
DWR 55-55 (Rev 1/99)

Logs # 19-22



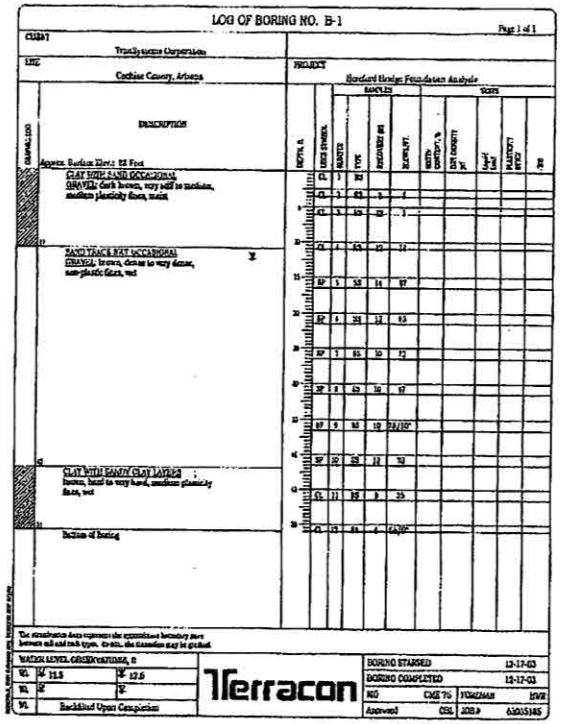
Note:

● Indicates approximate boring location and identification number. See Foundation Data Sheets for boring logs.



BORING LOCATION PLAN

1" = 20'-0"



LOG OF BORING NO. B-1

Page 1 of 1

CLIENT: TransSystems Corporation

SITE: Cochise County, Arizona

PROJECT: Hereford Bridge Foundation Analysis

DESCRIPTION

Approx. Surface Elev: 88 Feet

CLAY WITH SAND OCCASIONAL GRAVEL: dark brown, very stiff to medium, medium plasticity fines, moist

SAND TRACE FAT OCCASIONAL GRAVEL: brown, dense to very dense, non-plastic fines, wet

CLAY WITH SANDY CLAY LAYERS: brown, hard to very hard, medium plasticity fines, wet

Bottom of boring

WATER LEVEL OBSERVATIONS, ft

WL	▽ 11.5	▽ 12.5	
WL	▽	▽	
WL	Backfilled Upon Completion		

Terracon

BORING STARTED	12-17-03
BORING COMPLETED	12-17-03
RIG	CME 75
FOREMAN	
Approved	

	NAME	DATE
DESIGN	JERRY CARMEN	9/05
DRAWN	DAN CARDONEAU	9/05
CHECKED	JERRY CARMEN	9/05

Terracon

–	–	10597
ROUTE	SUBPROJECT	STRUCTURE NO.

4	Miscellaneous Plan Revisions	12/15/05

COCHISE COUNTY
PUBLIC WORKS DEPARTMENT

HEREFORD ROAD BRIDGE
OVER SAN PEDRO RIVER
FOUNDATION DATA

LOCATION: COCHISE COUNTY, ARIZONA

SHEET 4 OF 14

Notes:

1. Information contained on the Foundation Data sheets is made available to prospective bidders for information purposes only and is not to be considered part of the contract documents.
2. Information is developed as accurately as possible by the methods utilized. However, Cochise Country, Terracon, and TranSystems accept no responsibility for any conditions encountered which may be at variance from information contained herein.
3. The boring logs were prepared by Terracon, the Geotechnical Engineer for the project. For additional information, see the Geotechnical Report, Job no. 6203185, dated January 15, 2004.
4. The absence of ground water indication does not constitute a representation that ground water will not be present during construction. Ground water is indicated herein only when found during the foundation investigation and represents that condition only on the date of the investigation.
5. Classification of Materials is in accordance with the Unified Soil Classification System (ASTM D2487), is based upon field inspection, and is not to be construed to imply mechanical analysis.

263-1100
1-800-STAKE-IT
(ARIZONA ONLY)

LOG OF BORING NO. B-2

Page 1 of 1

CLIENT: TransSystems Corporation

SITE: Cochise County, Arizona

PROJECT: Hereford Bridge Foundation Analysis

DESCRIPTION	DEPTH, ft	SOIL PROFILE	SAMPLES: NO.	TYPE	RECOVERY (%)	BLOWS/FT	WATER CONTENT, %	DRY DENSITY, pcf	TESTS: Liquid Limit	Plasticity Index	-200
Approx. Surface Elev.: 87 Feet											
CLAYEY SAND OCCASIONAL GRAVEL ; light brown to medium dense, non-plastic fines, moist		CL	1	BS					34	12	61
		SM	2	SS	15	7	14	115			
	5	SM	3	SS	15	13	7	95			
GRAVELLY SAND TRACE SILT OCCASIONAL CLAY LAYERS ; brown, dense to very dense, non-plastic fines, wet		SM	4	SS	8	31					
	15	SP	5	SS	12	50					
		SP	6	SS	12	49					
	20	SP	7	SS	8	36/11"					
		SP	8	SS	1	35/6"					
	25	SP	9	SS	8	37/9"					
CLAY ; tan to light brown, very hard, medium plasticity fines, wet		CL	10	SS	14	71/9"					
	30	CL	11	SS	14	97/8"					
		CL	12	SS	12	97/11"					
	35	CL	13	SS	13	85/10"			27	8	39
Bottom of Boring	40.5	CL	14	SS	4	50/4"					

The stratification lines represent the approximate boundary lines between soil and rock types. In situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft

WL	▽ ?	▽ ?
WL	▽	▽
WL	Backfilled Upon Completion	

Terracon

BORING STARTED 12-16-03
BORING COMPLETED 12-16-03
RIG CME 75 FOREMAN BWR
Approved GEL JOB # 63035155

LOG OF BORING NO. B-3

Page 1 of 1

CLIENT: TransSystems Corporation

SITE: Cochise County, Arizona

PROJECT: Hereford Bridge Foundation Analysis

DESCRIPTION	DEPTH, ft	SOIL PROFILE	SAMPLES: NO.	TYPE	RECOVERY (%)	BLOWS/FT	WATER CONTENT, %	DRY DENSITY, pcf	TESTS: Liquid Limit	Plasticity Index	-200
Approx. Surface Elev.: 87 Feet											
GRAVELLY SAND WITH SILT ; dark brown, medium dense, non plastic fines, moist		SP	1	SS							
		SP	2	SS	15	15	3	113			
		SP	3	SS	3	15					
	5	CL	4	SS	3	11					
		SP	5	SS	13	50/5"	15	119			
CLAY ; brown, hard, low plasticity fines, wet	10.5										
SAND WITH GRAVEL TRACE SILT ; brown, very dense, non-plastic fines, wet		SP	6	SS	12	50/11"					
		SP	7	SS	1	32					
	20	SP	8	SS	1	50/8"					
		SP	9	SS	1	50/6"					
	25	CL	10	SS	12	94/10"					
CLAY TRACE SAND OCCASIONAL GRAVEL; brown, very hard, low plasticity fines, moist		CL	11	SS	14	97			27	6	62
	30	CL	12	SS	12	97/11"					
SANDY CLAY ; brown, very hard, medium plasticity fines, wet		CL	13	SS	14	91/8"					
CLAY TRACE SAND OCCASIONAL GRAVEL; very hard, medium plasticity fines, moist	35.5										
Bottom of Boring	36.5	CL	14	SS	3	50/6"					

The stratification lines represent the approximate boundary lines between soil and rock types. In situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft

WL	▽ ?	▽ ?
WL	▽	▽
WL	▽	▽
WL	Backfilled Upon Completion	

Terracon

BORING STARTED 12-15-03
BORING COMPLETED 12-15-03
RIG CME 75 FOREMAN BWR
Approved GEL JOB # 63035155

LOG OF BORING NO. B-4

Page 1 of 1

CLIENT: TransSystems Corporation

SITE: Cochise County, Arizona

PROJECT: Hereford Bridge Foundation Analysis

DESCRIPTION	DEPTH, ft	SOIL PROFILE	SAMPLES: NO.	TYPE	RECOVERY (%)	BLOWS/FT	WATER CONTENT, %	DRY DENSITY, pcf	TESTS: Liquid Limit	Plasticity Index	-200
Approx. Surface Elev.: 87 Feet											
CLAY WITH SAND TRACE GRAVEL ; brown, moist		CL	1	SS							
		CL	2	SS	15	16					
SAND WITH ORGANIC ; dark brown to black, wet		CL	3	SS	1	3					
SAND WITH GRAVEL TRACE SILT ; brown, wet		SP	4	SS	3	11					
		SP	5	SS	1	13					
	20	SP	6	SS	18	50/11"					
Bottom of Boring		SP	7	SS	8	54					
		SP	8	SS	12	50/9"					
	25	SP	9	SS	8	50/7"					
CLAY WITH GYPSUM ; light brown, very hard, medium plasticity fines, wet		CL	10	SS	13	77/11"					
		CL	11	SS	5	46					
SAND WITH GRAVEL TRACE SILT	30	SP	12	SS	13	93/10"					

The stratification lines represent the approximate boundary lines between soil and rock types. In situ, the transition may be gradual.

WATER LEVEL OBSERVATIONS, ft

WL	▽ ?	▽ ?
WL	▽	▽
WL	▽	▽
WL	Backfilled Upon Completion	

Terracon

BORING STARTED 12-16-03
BORING COMPLETED 12-16-03
RIG CME 75 FOREMAN BWR
Approved GEL JOB # 63035155

CALL THE ARIZONA BLUE STAKE, INC. BEFORE YOU DIG
263-1100
1-800-STAKE-IT
OUTSIDE MARICOPA COUNTY

	NAME	DATE
DESIGN	JERRY EDWARDS	9/05
DRAWN	ERAN GINSCHMANN	9/05
CHECKED	JERRY EDWARDS	9/05

Terracon

COCHISE COUNTY
PUBLIC WORKS DEPARTMENT

HEREFORD ROAD BRIDGE
OVER SAN PEDRO RIVER
FOUNDATION DATA

ROUTE — MILEPOST — STRUCTURE NO. 10597

LOCATION: COCHISE COUNTY, ARIZONA

SHEET 5 OF 14

OF

E:\TC03\0603\Bridge\As Bore\2006-05-15\bb0603a02b02.shl 5/15/2006

Log # 23

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

RECEIVED APR 21 1989 DEPT. OF WATER RESOURCES

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner BLM - Safford District
Name
425 E 4th St Safford, Az 85546
Mailing Address

2. Driller Same as above
Name

Mailing Address

3. Location of well: ~~SENE, Sec. 9, T.23S., R22E.~~ NE SE NE Sec 9 Hereford ~~North~~ #1

4. Permit No. (if issued) None 55-522010 M

DESCRIPTION OF WELL

5. Total depth of hole 9 ft.

6. Type of casing Galvanized Steel

7. Diameter and length of casing 1.25 in. from 0 to 7, ____ in from ____ to ____.

8. Method of sealing at reduction points Compacted earth

9. Perforated from N/A to ____, from ____ to ____, from ____ to ____.

10. Size of cuts N/A Number of cuts per foot ____

11. If screen was installed: Length 2 ft. Diam 1.25 in. Type 10 slot

12. Method of construction Hand-driven
drilled, dug, driven, bored, jetted, etc.

13. Date started 1/22/87
Month Day Year

14. Date completed 1/22/87
Month Day Year

15. Depth to water 5.7 ft. (If flowing well, so state.)

16. Describe point from which depth measurements were made, and give sea-level elevation if available ____

17. If flowing well, state method of flow regulation: ____

18. Remarks: ____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

REG. NO. ____

File No. ____ ENTERED APR 25 1989

Entered ____ By ____

DWR-55-6-Rev. 8/85

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	9	Silty Alluvial material

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Del Molitz
Name

425 E 4th St
Address

Safford Az 85546
City State Zip

Date 4/20/89

Log # 24

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

HEC UWS

MAR 1 3 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave. (Street) Tucson (City) AZ (State) 85719 (Zip) (520) 670-6671 (Telephone Number)
2. Drilling Firm: US G-S - Central Region
   Address: Box 25046 Denver Fed. Ctr. (Street) Denver (City) CO (State) 80225 (Zip) (303) 236-5900 (Telephone Number)
3. Location: NE ¼ (10 Acre) SW ¼ (40 Acre) SE ¼ (160 Acre) of Section 04 Township 23 S Range 22 E
4. Well Registration No. 55-588950 (Required) 6a. **Latitude** 31 27 17 "
5. Permit No. _____ (If issued) 6b. **Longitude** 110 06 35 "

DESCRIPTION OF WELL

7. Total Depth of Hole 58 ft 8. Type of Casing(s): Surface Seal PVC Well PVC
9. Diameter and length of casing(s): 6 inches from -1.44 to _____ 2 inches from -2.5 to 25
10. Method of sealing at reduction points _____
11. Perforated from 25 to 30 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 5 feet. Diameter 2 inches. Type Slotted .020 PVC
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering X Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: ___ (Check One)
15. Date started 03 (Month) 09 (Day) 2001 (Year)
16. Date completed 03 (Month) 07 (Day) 2001 (Year)
17. Depth to water 14.1 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured from Measure point on PVC inner casing at 0.75 ft above land surface
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 1 3 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	2	Surface Sediment
2	4	Gravel - hard drilling, but unconsolidated
4	6	Softer material w/ sand matrix
6	12	Gravel to 70mm, hard drilling
12	23	V. soft. Probably saturated flowing sands
23	28	Soft, probably sand.
		Saturated muds drawn to surface by auger at 23' but probably hit saturation shallower than that

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey - Central Region

Signature of Qualifying Party: [signature] 1/22/02 Date

Box 25046 MS 406 DFC
Street

Denver CO 80225
City State Zip

DWR 55-55 (Rev 1/99)

Log # 25

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave. (Street) Tucson (City) AZ (State) 85719 (Zip) (520) 670-6671 (Telephone Number)
2. Drilling Firm: USGS- Central Region
   Address: Box 25046 Denver Fed. Ctr. (Street) Denver (City) CO (State) 80225 (Zip) (303) 236-5900 (Telephone Number)
3. Location: NE ¼ (10 Acre) SW ¼ (40 Acre) SE ¼ (160 Acre) of Section 04 Township 23 S Range 22 E
4. Well Registration No. 55- 588951 (Required) 6a. Latitude 31 27 17 "
5. Permit No. _____ (If issued) 6b. Longitude 110 06 35 "

DESCRIPTION OF WELL

7. Total Depth of Hole 58 ft 8. Type of Casing(s): Surface Seal PVC Well PVC
9. Diameter and length of casing(s) 6 inches from -1.44 to 2 inches from -.71 to 48
10. Method of sealing at reduction points _____
11. Perforated from 48 to 53 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 5 feet. Diameter _____ inches. Type Slotted .020 PVC
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering X Jet/Driven ___ Sonic ___ Hand Dug ___ Other: ___ (Check One)
15. Date started 03 (Month) 09 (Day) 2001 (Year)
16. Date completed 03 (Month) 09 (Day) 2001 (Year)
17. Depth to water 14.2 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured from measure point on inner PVC casing at 0.7 ft above land surface.
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	2	Surface sediment
2	4	Gravel - hard drilling but unconsolidated
4	6	Softer material w/ sand matrix
6	12	Gravel to 70 mm, hard drilling
12	23	v. soft probably saturated flowing sand
23	23	Harder layer. Saturated muds flowing out of hole due to augering action.
23	28	Soft, probably sand.
30	35	Possibly top of basin fill deposits
35	40	Softer sand again
39.5	44	Core - Mostly clay and silt w/ caliche nodules
44	47	Core - Mostly clay to v. fine sand.
47	48	Core - Coarse gravel and sand
48	49	Core - clay and sand
49	54	Core - soft to somewhat indurated sand
54	59	Interbedded silt and sand
	Recorded	Saturation at 23' DLS but may have occurred
	in the	12'-23' range.

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey - Central Region Drillers

Signature of Qualifying Party: [signature] Date: 1/22/02

Street: Box 25046 MS 406 DFC

City: Denver State: CO Zip: 80225

DWR 55-55 (Rev 1/99)

Log # 26

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave Tucson AZ 85719 (520) 670-6671
   Street / City / State / Zip / Telephone Number
2. Drilling Firm: USGS - Geoprobe
   Address: 5338 Montgomery Blvd Albuquerque NM 87109 (505) 830-7900
   Street / City / State / Zip / Telephone Number
3. Location: SE ¼ SW ¼ SE ¼ of Section 04 Township 23 S Range 22 E
   10 Acre / 40 Acre / 160 Acre
4. Well Registration No. 55-589952 (Required) 6a. **Latitude** 31 27 16
5. Permit No. _____ (If issued) 6b. **Longitude** 110 06 32

DESCRIPTION OF WELL

7. Total Depth of Hole 12.8 ft 8. Type of Casing(s): Surface Seal _____ Well Galv. Steel
9. Diameter and length of casing(s) 1.5 inches from -4.2 to 11.8, _____ inches from _____ to _____
10. Method of sealing at reduction points _____
11. Perforated from 11.8 to 12.8 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 1 feet. Diameter _____ inches. Type drilled steel
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: X (Check One) Geoprobe
15. Date started 05 (Month) 14 (Day) 2000 (Year)
16. Date completed 05 (Month) 14 (Day) 2000 (Year)
17. Depth to water 6.7 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured from lip of casing at 4.2 ft above land surface
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	4	Core - Silty sand
4	8	Core - Silty clay. Saturation at about 5 ft BGS
8	12	Core - Sand

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey

Signature of Qualifying Party: [signature] 1-28-02
Date

5338 Montgomery Blvd
Street

Albuquerque NM 87109
City State Zip

DWR 55-55 (Rev 1/99)

Log # 27

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave (Street) Tucson (City) AZ (State) 85719 (Zip) (520) 670-6671 (Telephone Number)
2. Drilling Firm: USGS - Geoprobe
   Address: 5338 Montgomery Blvd (Street) Albuquerque (City) NM (State) 87109 (Zip) (505) 830-7900 (Telephone Number)
3. Location: SE ¼ (10 Acre) SW ¼ (40 Acre) SE ¼ (160 Acre) of Section 04 Township 23 S Range 22 E
4. Well Registration No. 55- 588953 (Required) 6a. **Latitude** 31 27 . 16 "
5. Permit No. _____ (If issued) 6b. **Longitude** 110 06 . 32 "

DESCRIPTION OF WELL

7. Total Depth of Hole 21.25 ft 8. Type of Casing(s): Surface Seal _____ Well Galv. Steel
9. Diameter and length of casing(s) 1.5 inches from -3.75 to 20.25 inches from _____ to _____
10. Method of sealing at reduction points _____
11. Perforated from 20.25 to 21.25 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 1 feet. Diameter 1 inches. Type drilled steel
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: X (Check One) Geoprobe
15. Date started 05 (Month) 14 (Day) 2000 (Year)
16. Date completed 05 (Month) 14 (Day) 2000 (Year)
17. Depth to water 7.1 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured From lip of casing at 3.75 ft above land surface
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	4	Core - silty sand
4	8	Core - silty clay. Saturation at about 5 ft BLS.
8	12	Core - sand
12	16	Core - gravelly sand
20	24	Core - sandy gravel

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey

Signature of Qualifying Party: Frederick E. Bekhendt 1-28-02
Date

5338 Montgomery Blvd
Street

Albuquerque NM 87109
City State Zip

DWR 55-55 (Rev 1/99)

Log # 28

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave. (Street) Tucson (City) AZ (State) 85719 (Zip) (520) 670-6671 (Telephone Number)
2. Drilling Firm: USGS - Geoprobe
   Address: 5338 Montgomery Blvd (Street) Albuquerque (City) NM (State) 87109 (Zip) (505) 830-7400 (Telephone Number)
3. Location: SE ¼ (10 Acre) SW ¼ (40 Acre) SE ¼ (160 Acre) of Section 04 Township 23 S Range 22 E
4. Well Registration No. 55-588954 (Required) 6a. **Latitude** 31 27 . 16 "
5. Permit No. _____ (If issued) 6b. **Longitude** 110 06 . 33 "

DESCRIPTION OF WELL

7. Total Depth of Hole 20.04 ft 8. Type of Casing(s): Surface Seal _____ Well Galv. Steel
9. Diameter and length of casing(s) 1.5 inches from -0.96 to 19.04 inches from _____ to _____
10. Method of sealing at reduction points _____
11. Perforated from 19.04 to 20.04 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 1 feet. Diameter 1 inches. Type drilled pipe
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: ∞ (Check One) Geoprobe
15. Date started 05 (Month) 14 (Day) 2000 (Year)
16. Date completed 05 (Month) 14 (Day) 2000 (Year)
17. Depth to water 8.3 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured from lip of casing at 0.96 ft above land surface.
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	4	Core - Very fine silt and clay
4	8	Core - Clay
8	12	Core - clay
12	16	Core - clay
16	20	Core - Sand and silt. First saturated soil at 16'
		water rose to about 7 ft BLS.

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey

Signature of Qualifying Party: Frederick E. Gelhardt 1-28-02
Date

5338 Montgomery Blvd
Street

Albuquerque NM 87109
City State Zip

DWR 55-55 (Rev 1/99)

Log # 29

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave (Street) Tucson (City) AZ (State) 85719 (Zip) (520) 670-6671 (Telephone Number)
2. Drilling Firm: USGS - Geoprobe.
   Address: 5338 Montgomery Blvd (Street) Albuquerque (City) NM (State) 87109 (Zip) (505) 830-7400 (Telephone Number)
3. Location: SE (10 Acre) ¼ SW (40 Acre) ¼ SE (160 Acre) ¼ of Section 04 Township 23 S Range 22 E
4. Well Registration No. 55- 588455 (Required) 6a. **Latitude** 31 27 . 16 "
5. Permit No. _____ (If issued) 6b. **Longitude** 110 06 . 33 "

DESCRIPTION OF WELL

7. Total Depth of Hole 25.8 ft 8. Type of Casing(s): Surface Seal _____ Well Galv. Steel
9. Diameter and length of casing(s) 1.5 inches from -3.2 to 24.8 inches from _____ to _____
10. Method of sealing at reduction points _____
11. Perforated from 24.8 to 25.8 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 1 feet. Diameter 1 inches. Type drilled
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: X (Check One) Geoprobe
15. Date started 05 (Month) 14 (Day) 2000 (Year)
16. Date completed 05 (Month) 14 (Day) 2000 (Year)
17. Depth to water ~~[illegible]~~ ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured to lip of casing at 3.2 ft above land surface
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	4	Core - Very fine silt and clay
4	8	core - Clay
8	12	core - clay
12	16	Core - clay
16	20	Core - Sand and silt. First saturated soil at 16'
20	27	Core - Sandy gravel.
		Water rose to about 7 ft BLS

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey

Signature of Qualifying Party: Frederick E. Gebhardt 1-28-02
Date

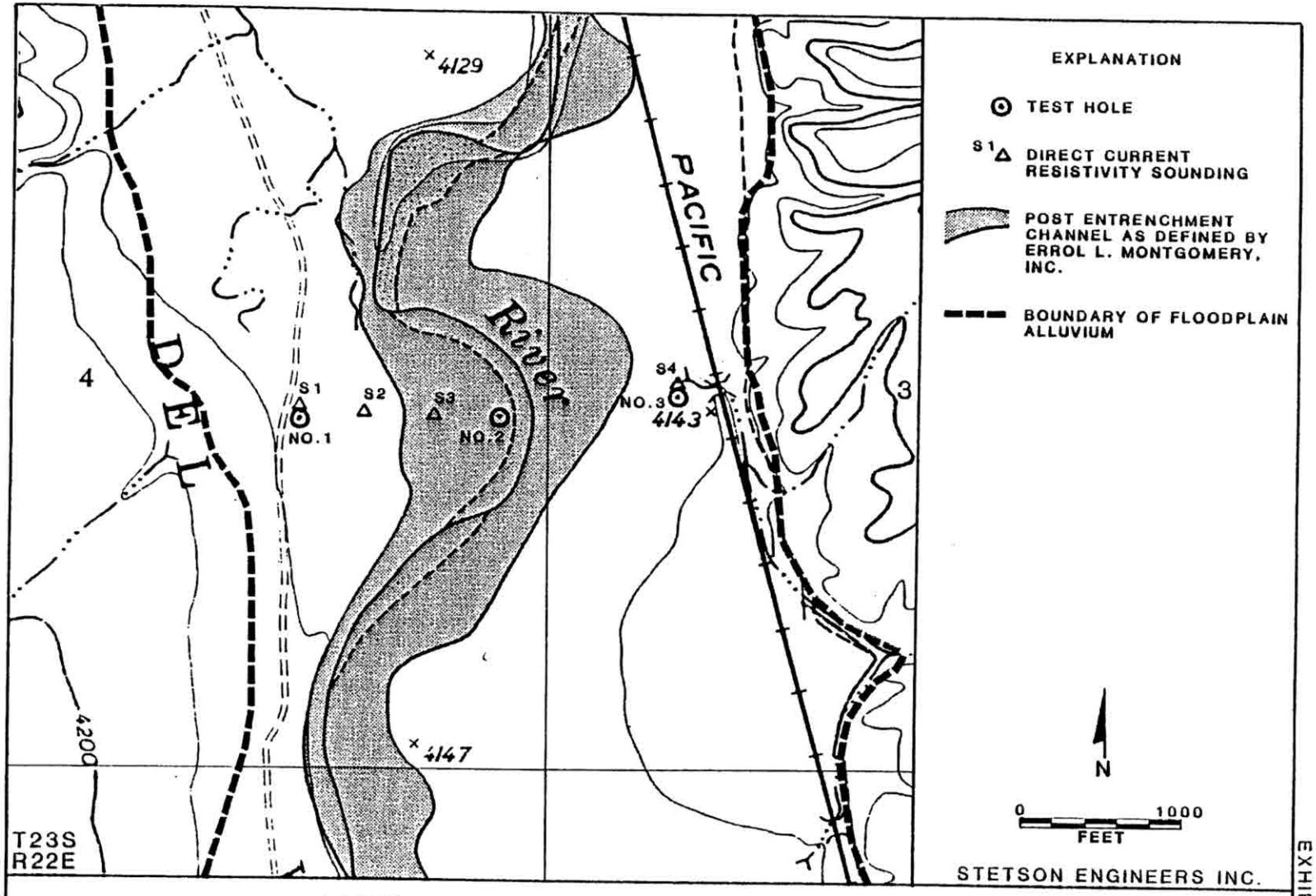
5338 Montgomery Blvd
Street

Albuquerque NM 87109
City State Zip

DWR 55-55 (Rev 1/99)

Log # 30

Exhibit SRP036

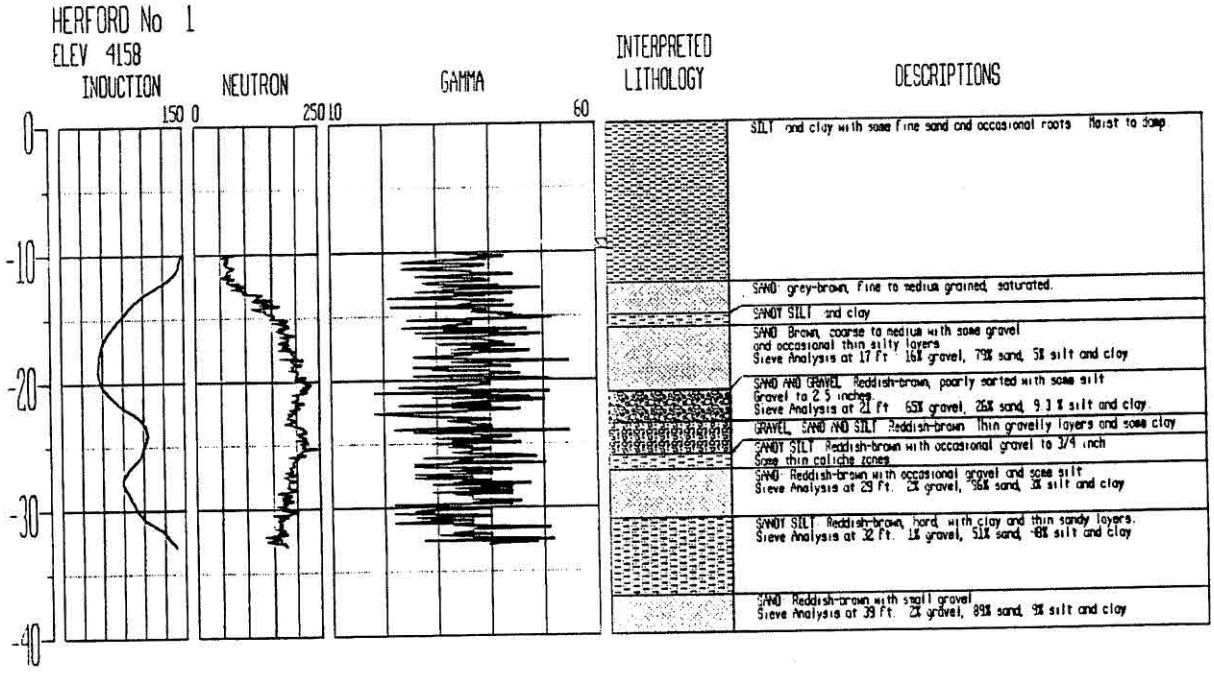


LOCATION OF THE HEREFORD EXPLORATION AREA

EXHIBIT 1

Exhibit SRP036

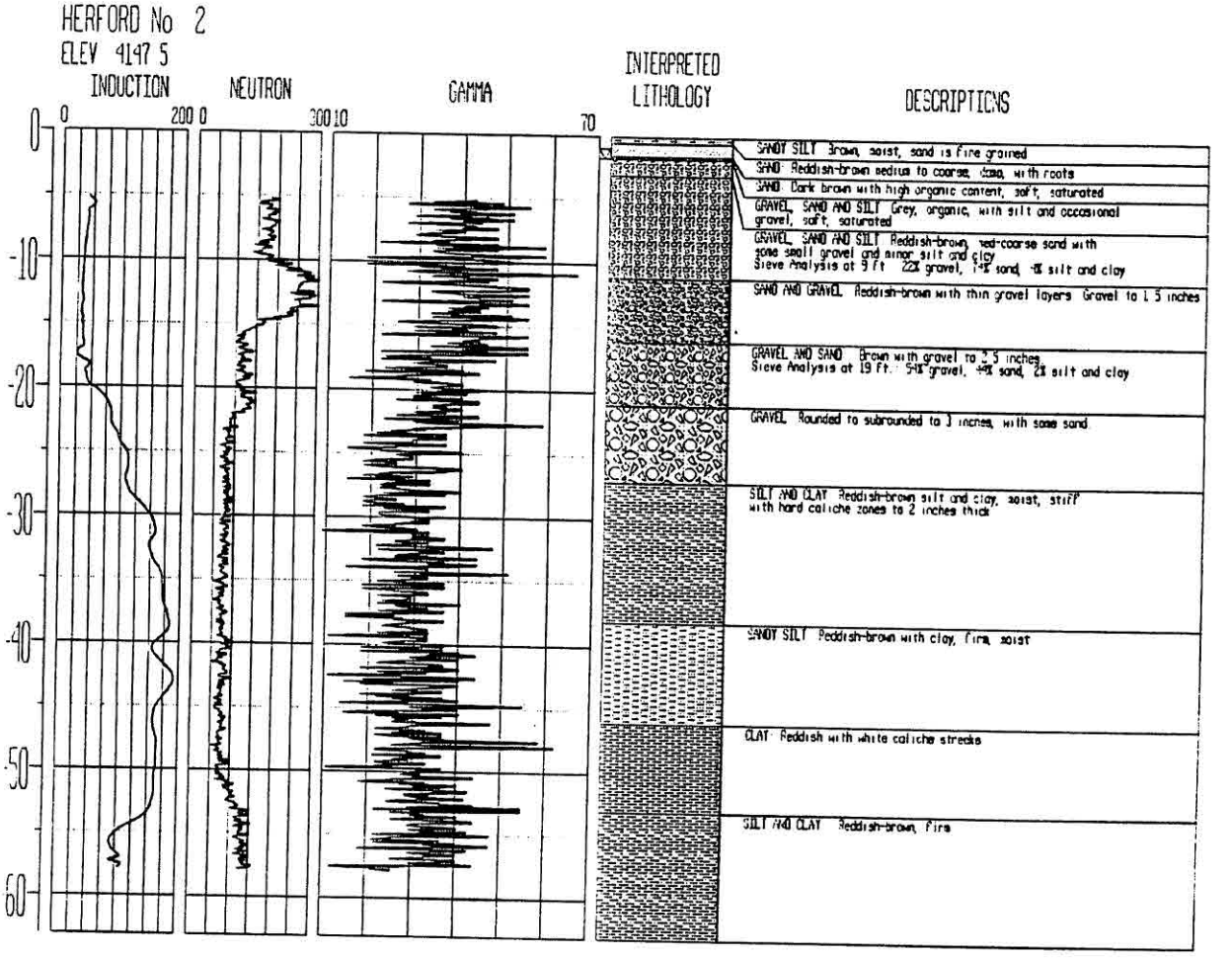
EXHIBIT 2



Log # 31

Exhibit SRP036

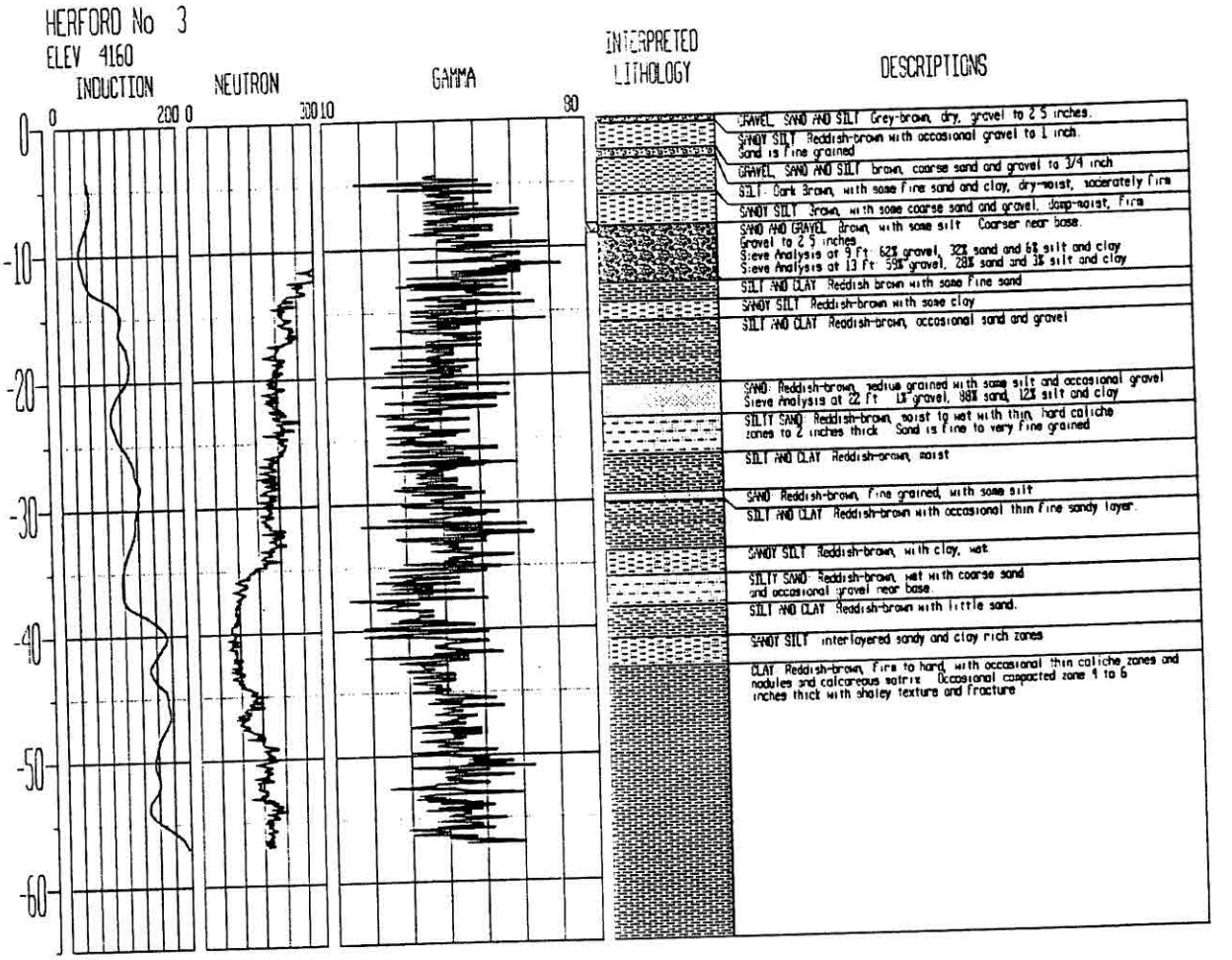
EXHIBIT 3



Log # 32

Exhibit SRP036

EXHIBIT 4



Log # 34

(D-22-22) 28CCA1

HUN-L1

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave. (Street) Tucson (City) AZ (State) 85719 (Zip) 520-670-6671 (Telephone Number)
2. Drilling Firm: USGS - Geoprobe
   Address: 5838 Montgomery Blvd. (Street) Albuquerque (City) NM (State) 87107 (Zip) 505 830-7900 (Telephone Number)
3. Location: NE ¼ (10 Acre) SW ¼ (40 Acre) SW ¼ (160 Acre) of Section 28 Township 22S Range 22E
4. Well Registration No. 55-588962 (Required) 6a. **Latitude** 31 28 . 59 "
5. Permit No. _____ (If issued) 6b. **Longitude** 110 07 . 06 "

DESCRIPTION OF WELL

7. Total Depth of Hole 14 ft 8. Type of Casing(s): Surface Seal galv. steel Well PVC
9. Diameter and length of casing(s) 1.5 inches from -4.2' to 7.8', 1.0 inches from -4' to 9'
10. Method of sealing at reduction points no reduction points
11. Perforated from 9' to 14' from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 5 feet. Diameter 1 inches. Type Slotted 0.020" PVC
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: X (Check One) Geoprobe
15. Date started 04 (Month) 17 (Day) 2001 (Year)
16. Date completed 04 (Month) 17 (Day) 2001 (Year)
17. Depth to water 7.9' ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measurements made to lip of galvanized casing at 4.2' above land surface
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
1.75	4	Core shoe - V. coarse sand and gravel. Saturated
	8	Core shoe - Med. to fine sand. Saturated
9.5	12	Core - Fine sand to coarse gravel. Saturated
	15.5	Core shoe - Clay and silt. Moist
		Saturated from about 4' BLS to 15' BLS

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey

Signature of Qualifying Party: Fredrick E. Hetherwick 1-28-02
Date

5338 Montgomery Blvd
Street

Albuquerque NM 87109
City State Zip

DWR 55-55 (Rev 1/99)

Log # 35

HUW-LO

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: USGS
   Address: 520 N. Park Ave. Tucson AZ 85719 520-670-6671
   Street City State Zip Telephone Number
2. Drilling Firm: USGS - Geoprobe
   Address: 5338 Montgomery Blvd, Albuquerque NM 87109 (505) 830-7900
   Street City State Zip Telephone Number
3. Location: NE ¼ SW ¼ SW ¼ of Section 28 Township 22S Range 22E
   10 Acre 40 Acre 160 Acre
4. Well Registration No. 55- 588963 (Required) 6a. **Latitude** 31 29 . 00 "
5. Permit No. _____ (If issued) 6b. **Longitude** 110 07 . 10 "

DESCRIPTION OF WELL

7. Total Depth of Hole 15 ft 8. Type of Casing(s): Surface Seal Steel Well PVC
9. Diameter and length of casing(s) 1.5 inches from -4.27' to 8' 1.0 inches from -4 to 10
10. Method of sealing at reduction points _____
11. Perforated from 10 to 15 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 5 feet. Diameter 1 inches. Type slotted 0.020" PVC pipe
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: X (Check One) Geoprobe/hammer
15. Date started 04 17 2001
    Month Day Year
16. Date completed 04 17 2001
    Month Day Year
17. Depth to water 8.5 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Depth measured from lip of galvanized surface casing at 4.27' above land surface
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
4	4	core shoe - V. Fine sand and silt, moist
8	8	core shoe - medium sand, saturated
12	12	core shoe - v. fine sand and silt, saturated
16	16	core shoe - fine sand, saturated
18.5	18.5	core shoe - silt, moist
		Saturated from about 8' BLS to bottom of hole.
		Unconsolidated sediments

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey

Signature of Qualifying Party: Judith E. Gathmann 1-28-02
Date

5338 Montgomery Blvd
Street

Albuquerque NM 87109
City State Zip

DWR 55-55 (Rev 1/99)

Log # 36

(U-22-22) 28CCD 1

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: USGS
   Address: 520 N. Park Ave (Street) Tucson (City) AZ (State) 85719 (Zip) (520) 670-6671 (Telephone Number)
2. Drilling Firm: USGS- Geoprobe
   Address: 5338 Montgomery Blvd. (Street) Albuquerque (City) NM (State) 87109 (Zip) (505) 830-7900 (Telephone Number)
3. Location: SE (10 Acre) ¼ SW (40 Acre) ¼ SW (160 Acre) ¼ of Section 28 Township 22S Range 22E
4. Well Registration No. 55-588964 (Required) 6a. **Latitude** 31 28 53
5. Permit No. _____ (If issued) 6b. **Longitude** 110 07 04

DESCRIPTION OF WELL

7. Total Depth of Hole 15 ft 8. Type of Casing(s): Surface Seal galvanized Well PVC
9. Diameter and length of casing(s) 1.5 inches from -4.3' to 4.2' 1.0 inches from -4' to 10'
10. Method of sealing at reduction points no reduction points
11. Perforated from 10' to 15' from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 5 feet. Diameter 1 inches. Type 0.020" slotted PVC
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: X (Check One) Geoprobe
15. Date started 04 (Month) 17 (Day) 2001 (Year)
16. Date completed 04 (Month) 17 (Day) 2001 (Year)
17. Depth to water 8.2' ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measurements made to lip of galvanized casing at 4.3' above land surface
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
4	4	Core shoe - silty clay
5.9	8	Core - coarse sand, saturated
12	12	Core shoe - V. fine sand and silt, saturated
16	16	Core shoe - V. coarse sand, saturated
		Saturated between 4' BLS and bottom of hole

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey

Signature of Qualifying Party: Judith E. Gebhardt Date: 1-28-02

Street: 5338 Montgomery Blvd.

City: Albuquerque State: NM Zip: 87109

DWR 55-55 (Rev 1/99)

Log # 37

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION
P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave. (Street) Tucson (City) AZ (State) 85719 (Zip) (520) 670-6671 (Telephone Number)
2. Drilling Firm: US G-S- Central Region
   Address: Box 25046 Denver Fed. Ctr. (Street) Denver (City) CO (State) 80225 (Zip) (303) 236-5900 (Telephone Number)
3. Location: SE ¼ (10 Acre) SE ¼ (40 Acre) NW ¼ (160 Acre) of Section 17 Township 22 S Range 22 E
4. Well Registration No. 55- 588943 (Required) 6a. Latitude 31 31 . 08 "
5. Permit No. _____ (If issued) 6b. Longitude 110 07 . 52 "

DESCRIPTION OF WELL

7. Total Depth of Hole 24 ft 8. Type of Casing(s): Surface Seal PVC Well PVC
9. Diameter and length of casing(s) 6 inches from -1.96 to 4.2 inches from -1.56 to 14
10. Method of sealing at reduction points _____
11. Perforated from 14 to 19 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 5 feet. Diameter 2 inches. Type 0.020" slotted PVC
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering X Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: ___ (Check One)
15. Date started 03 (Month) 06 (Day) 2001 (Year)
16. Date completed 03 (Month) 07 (Day) 2001 (Year)
17. Depth to water 13.2 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured below lip of water PVC casing at -1.56 ft above land surface
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	2.5	auger cuttings - surface overbank deposits
2.5	4	auger cuttings - caliche
4	12.5	auger cuttings - less caliche, more sand + gravels but partly indurated
12.3	13	auger cuttings - coarse sand and gravel, saturated
13	15	auger cuttings - clay, wet
15	22	auger cuttings - coarse sand and gravel
22	24	auger cuttings - sandy
		Saturation first observed at about 13' BLS,
		Static water level in well is at about 11' BLS. This
		screen may be in a perched zone.
		Sediments are basin fill deposits

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey - Central Region

Signature of Qualifying Party: [signature] Date: 1/22/02

Street: Box 25046 MS 406 DFC

City: Denver State: CO Zip: 80225

DWR 55-55 (Rev 1/99)

Log # 38

(V-22-22/11 BVD)

COTUWD

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave (Street) Tucson (City) AZ (State) 85719 (Zip) (520) 670-6671 (Telephone Number)
2. Drilling Firm: USGS - Central Region
   Address: Box 25046 Denver Fed. Ctr. (Street) Denver (City) CO (State) 80225 (Zip) (303) 236-5900 (Telephone Number)
3. Location: SE ¼ (10 Acre) SE ¼ (40 Acre) NW ¼ (160 Acre) of Section 17 Township 22 S Range 22 E
4. Well Registration No. 55- 588944 (Required) 6a. **Latitude** 31 31 08 "
5. Permit No. _____ (If issued) 6b. **Longitude** 110 07 52 "

DESCRIPTION OF WELL

7. Total Depth of Hole 68 ft 8. Type of Casing(s): Surface Seal PVC Well PVC
9. Diameter and length of casing(s) 6 inches from -1.96 to 4.2 inches from -1.63 to 58
10. Method of sealing at reduction points _____
11. Perforated from 58 to 63 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 5 feet. Diameter 2 inches. Type Slotted (0.020") PVC
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering X Jet/Driven ___ Sonic ___ Hand Dug ___ Other: ___ (Check One)
15. Date started 03 (Month) 07 (Day) 2001 (Year)
16. Date completed 03 (Month) 07 (Day) 2001 (Year)
17. Depth to water 3.3 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured down from measuring point on inner PVC casing at 1.96 ft above land surface
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	2.5	auger cuttings - surface overbank deposits
2.5	4	auger cuttings - caliche
4	12.5	auger cuttings - less caliche, more sand + gravels but partly indurated
12.5	13	auger cuttings - coarse sand + gravel, Saturated
13	15	auger cuttings - clay, wet
15	22	auger cuttings - Coarse sand and gravel
22	24	auger cuttings - Sandy
24	29	Core - Saturated
29	49	auger cuttings - calcic sandy clay, Saturated
49	54	core - abrupt change to dry caliche at 53.5 ft
54	54.5	core - sandy clay
54.5	54.6	core - thin saturated caliche
54.6	56	core - sandy clay
56	57.8	core - caliche, Saturated
57.8	59	core - sandy clay, unsaturated
59	64	core - sandy to gravelly clay
		Saturation state varied in this hole. First saturation was observed at about 12.5' BLS. Static water level is close to ground surface. Generally, the sand and gravel stringers were saturated and the tighter clays and caliche layers were dry.
		These are probably all basin fill deposits

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey - Central Region

Signature of Qualifying Party: [signature] Date: 1/22/02

Street: Box 25046 MS 406 DFC

City: Denver State: CO Zip: 80225

DWR 55-55 (Rev 1/99)

Log # 39

(V-22-22) 1 1 ACC

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave (Street) Tucson (City) AZ (State) 85719 (Zip) (520) 670-6671 (Telephone Number)
2. Drilling Firm: USGS - Central Region
   Address: Box 25046 Denver Fed. Ctr. (Street) Denver (City) CO (State) 80225 (Zip) (303) 236-5900 (Telephone Number)
3. Location: SW ¼ (10 Acre) SW ¼ (40 Acre) NE ¼ (160 Acre) of Section 17 Township 22 S Range 22 E
4. Well Registration No. 55-588945 (Required) 6a. Latitude 31 31 . 05 "
5. Permit No. _____ (If issued) 6b. Longitude 110 07 . 45 "

DESCRIPTION OF WELL

7. Total Depth of Hole 58 ft 8. Type of Casing(s): Surface Seal PVC Well PVC
9. Diameter and length of casing(s) 6 inches from -1.88 to 4.2 inches from -1.5 to 48
10. Method of sealing at reduction points no reduction points
11. Perforated from 48 to 53 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 5 feet. Diameter _____ inches. Type Slotted .020 PVC
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering X Jet/Driven ___ Sonic ___ Hand Dug ___ Other: ___ (Check One)
15. Date started 03 (Month) 07 (Day) 2001 (Year)
16. Date completed 03 (Month) 07 (Day) 2001 (Year)
17. Depth to water 1.6 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured down from measure point on inner PVC casing at 1.5 ft above land surface.
19. If flowing well, state method of flow regulation: Contained by head of casing stickup.
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at wh encountered, and depth to which it rose in well.

From (feet)	To (feet)	
		Interbedded sands, gravels and confining clay
		layers from top to bottom of hole.
		Saturation first encountered at about 15' BLS, but
		water rose to above land surface by next day.
		Clays were typically fairly dry while sands
		and gravels were saturated.

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey - Central Region

Signature of Qualifying Party: [signature] 1/22/02
Date

Box 25046 MS 406 DFC
Street

Denver CO 80225
City State Zip

DWR 55-55 (Rev 1/99)

Log # 40

Arizona Department of Water Resources
Information Management Unit
P.O. Box 33589 Phoenix, Arizona 85067-3589
(602) 771-8627 • (800) 352-8488
www.azwater.gov

RECEIVED
JAN 14 2010
WATER MGMT

Well Driller Report and Well Log

DSK

THIS REPORT MUST BE FILED WITHIN **30 DAYS** OF COMPLETING THE WELL.

PLEASE PRINT CLEARLY USING BLACK OR BLUE INK.

FILE NUMBER: D(22-22) 5CAB
WELL REGISTRATION NUMBER: 55 - 219444
PERMIT NUMBER (IF ISSUED):

SECTION 1. DRILLING AUTHORIZATION

Drilling Firm

Mail To:

NAME: Crux Subsurface, Inc.	DWR LICENSE NUMBER: 628
ADDRESS: 16707 E Euclid Avenue	TELEPHONE NUMBER: 509-892-9409
CITY / STATE / ZIP: Spokane Valley, WA 99216	FAX: 509-892-9408

SECTION 2. REGISTRY INFORMATION

Well Owner

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: Arizona Dept. of Transportation

MAILING ADDRESS: 205 S. 17th Ave., MD 613 E

CITY / STATE / ZIP CODE: Phoenix, AZ 85007-3212

CONTACT PERSON NAME AND TITLE: William Harmon, Safford District Engineer

TELEPHONE NUMBER: 602-712-7481

FAX:

WELL NAME (e.g., MW-1, PZ-3, Lot 25 Well, Smith Well, etc.): BR-1

Location of Well

WELL LOCATION ADDRESS (IF ANY):

TOWNSHIP (N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE
22S	22E	5	SW ¼	NW ¼	NW ¼

LATITUDE			LONGITUDE		
31 ° Degrees	33 ' Minutes	6.59 "N Seconds	110 ° Degrees	8 ' Minutes	19.8 "W Seconds

METHOD OF LATITUDE/LONGITUDE (CHECK ONE): ☒ *GPS: Hand-Held ☐ *GPS: Survey-Grade

LAND SURFACE ELEVATION AT WELL: 6064' Feet Above Sea Level

METHOD OF ELEVATION (CHECK ONE): ☒ *GPS: Hand-Held ☐ *GPS: Survey-Grade

*GEOGRAPHIC COORDINATE DATUM (CHECK ONE): ☒ NAD-83 ☐ Other *(please specify)*:

COUNTY: Cochise

ASSESSOR'S PARCEL ID NUMBER: BOOK | MAP | PARCEL

SECTION 3. WELL CONSTRUCTION DETAILS

Drill Method

CHECK ALL THAT APPLY
- ☐ Air Rotary
- ☐ Bored or Augered
- ☐ Cable Tool
- ☐ Dual Rotary
- ☒ Mud Rotary
- ☐ Reverse Circulation
- ☐ Driven
- ☐ Jetted
- ☐ Air Percussion / Odex Tubing
- ☐ Other *(please specify)*:

Method of Well Development

CHECK ALL THAT APPLY
- ☐ Airlift
- ☐ Bail
- ☐ Surge Block
- ☐ Surge Pump
- ☐ Other *(please specify)*:

Method of Sealing at Reduction Points

CHECK ONE
- ☐ None
- ☐ Packed
- ☐ Swedged
- ☐ Welded
- ☐ Other *(please specify)*:

Condition of Well

CHECK ONE
- ☐ Capped
- ☐ Pump Installed

Construction Dates

DATE WELL CONSTRUCTION STARTED: 12/2/2009

DATE WELL CONSTRUCTION COMPLETED: 12/4/2009

I state that this notice is filed in compliance with A.R.S. § 45-596 and is complete and correct to the best of my knowledge and belief.

SIGNATURE OF QUALIFYING PARTY:

DATE: 12/22/2009

Well Driller Report and Well Log

JAN 14 2010

WELL REGISTRATION NUMBER
55- 219 444

SECTION 4 WELL CONSTRUCTION DESIGN (Attach additional pages if needed)

Depth

DEPTH OF BORING	DEPTH OF COMPLETED WELL
125' Feet Below Land Surface	Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
19 Feet Below Land Surface	12-4-2009	7:30 AM	☐ Valve ☐ Other:

Borehole / Installed Casing

Borehole: DEPTH FROM SURFACE FROM (feet)	Borehole: DEPTH FROM SURFACE TO (feet)	BOREHOLE DIAMETER (inches)	Installed Casing: DEPTH FROM SURFACE FROM (feet)	Installed Casing: DEPTH FROM SURFACE TO (feet)	OUTER DIAMETER (inches)	MATERIAL TYPE (T): STEEL	MATERIAL TYPE (T): PVC	MATERIAL TYPE (T): ABS	MATERIAL TYPE (T): IF OTHER TYPE, DESCRIBE	PERFORATION TYPE (T): BLANK OR NONE	PERFORATION TYPE (T): WIRE WRAP	PERFORATION TYPE (T): SHUTTER SCREEN	PERFORATION TYPE (T): MILLS KNIFE	PERFORATION TYPE (T): SLOTTED	PERFORATION TYPE (T): IF OTHER TYPE, DESCRIBE	SLOT SIZE IF ANY (inches)
0	125	5.0														

Installed Annular Material

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	ANNULAR MATERIAL TYPE (T): NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	BENTONITE: GROUT	BENTONITE: CHIPS	BENTONITE: PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	FILTER PACK: SAND	FILTER PACK: GRAVEL	FILTER PACK: SIZE
0	125			x								

BR-1

Well Driller Report and Well Log

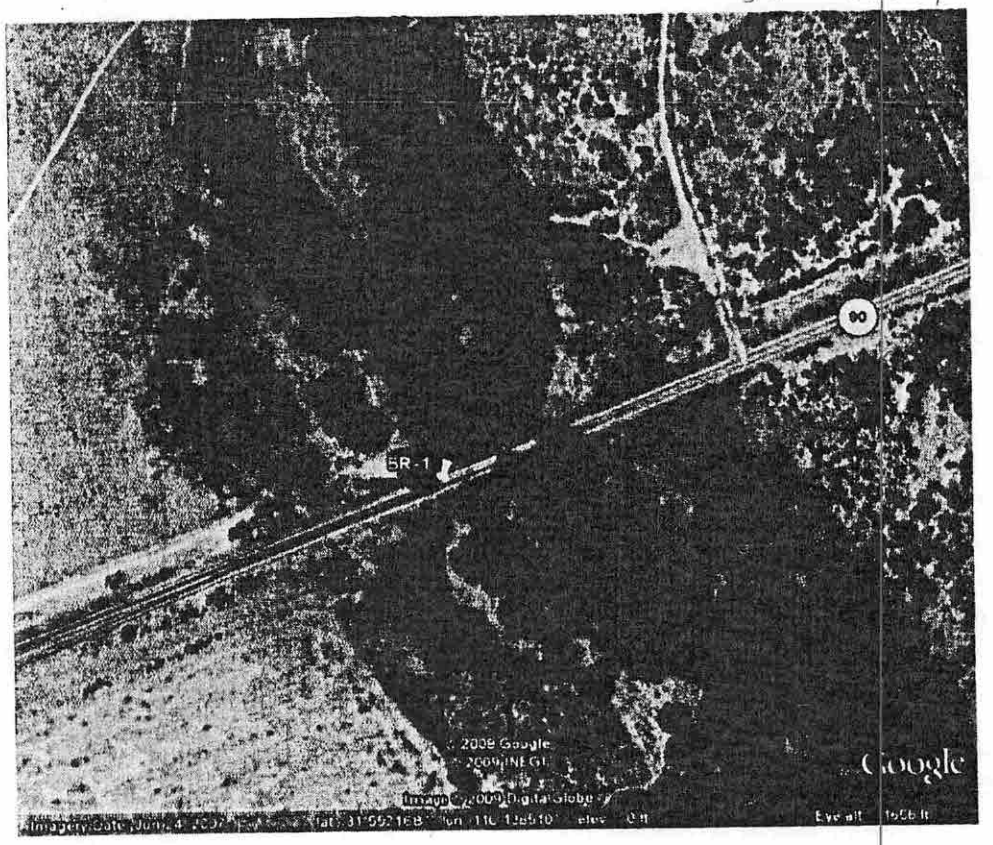
JAN 14 2010

WELL REGISTRATION NUMBER
55-219444

SECTION 5. GEOLOGIC LOG OF WELL WATER MGMT

DEPTH FROM SURFACE FROM (feet)	TO (feet)	Description Describe material, grain size, color, etc.	Check (T) every interval where water was encountered (if known)
0	10	Wet/Hard Silty Sand Trace clay, predominately fine grained sand/ brown to dark brown.	
10	19	Wet/very stiff sand, occasional fine grained gravel, trace silt, predominately med to fine grained sand/ brown. Trace clay	
19	25	Wet/Hard gravel & cobbles.	
25	31	Wet/Hard gravel & cobbles. very small amount of sand to fine grained gravel	
31	35	Moist/Very Firm clay. Trace fine sand. Tan	
35	41	Moist/Moderately firm sand, trace clay, fine grained sand, brown	
41	56	Moist/ firm to hard. Sandy clay	
56	62	Moist firm clayey sand. trace fine grained gravel, predominately fine grained sand, brown	
62	66	very firm moist clay with sand. occasional fine grained gravel, predominately fine grained sand. brown	
66	75	moist firm to very firm clayey sand. predominately fine grained sand, brown	
75	86	Moist/ hard sand with gravel. some fine grained gravel and medium grained sand. brown	
86	96	Moist firm to hard clayey sand. Occasional fine grained gravel and sand, brown	
96	102	Wet hard sand. Occasional fine grained gravel, trace clay pockets, predominately fine grained sand. brown	
102	106	Wet hard gravel. Trace clay, trace sand and fine grained gravel, Brown & green.	
106	122	Moist hard sandy clay. Predominately fine grained sand. Brown. At 110" sand increases in clay content to hard clay.	
122	125	Wet hard sand with gravel. trace clay some fine grained gravel. Brown	

55-219444



RECEIVED
JAN 14 2010
WATER MGMT

Log # 42

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave. (Street) Tucson (City) AZ (State) 85719 (Zip) (520) 670-6671 (Telephone Number)
2. Drilling Firm: USGS- Geo probe
   Address: 5338 Montgomery Blvd (Street) Albuquerque (City) NM (State) 87109 (Zip) (505) 830-7900 (Telephone Number)
3. Location: NE ¼ (10 Acre) NE ¼ (40 Acre) NE ¼ (160 Acre) of Section 06 Township 22 S Range 22 E
4. Well Registration No. 55- 588947 (Required) 6a. Latitude 31 33 . 10 "
5. Permit No. _____ (If issued) 6b. Longitude 118 08 . 17 "

DESCRIPTION OF WELL

7. Total Depth of Hole 19 ft 8. Type of Casing(s): Surface Seal _____ Well Galv. steel
9. Diameter and length of casing(s) 1.5 inches from -6' to 18' inches from _____ to _____
10. Method of sealing at reduction points _____
11. Perforated from 18 to 19 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 1 feet. Diameter 1 inches. Type drilled pipe
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: x (Check One) Geoprobe
15. Date started 05 (Month) 15 (Day) 2000 (Year)
16. Date completed 05 (Month) 15 (Day) 2000 (Year)
17. Depth to water 10.2 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured down from lip of galv. casing at 6 ft above land surface
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	4	Core - silt and clay
4	8	Core - gravelly sand - saturated at ~ 5 ft BLS
8	12	Core - sandy gravel
12	16	Core - sandy gravel
16	20	Core - sand
20	23	Core - clay
		Saturated sediments from 5' BLS to bottom of hole.

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey

Signature of Qualifying Party: Frederick E. Hebbard 1-28-02
Date

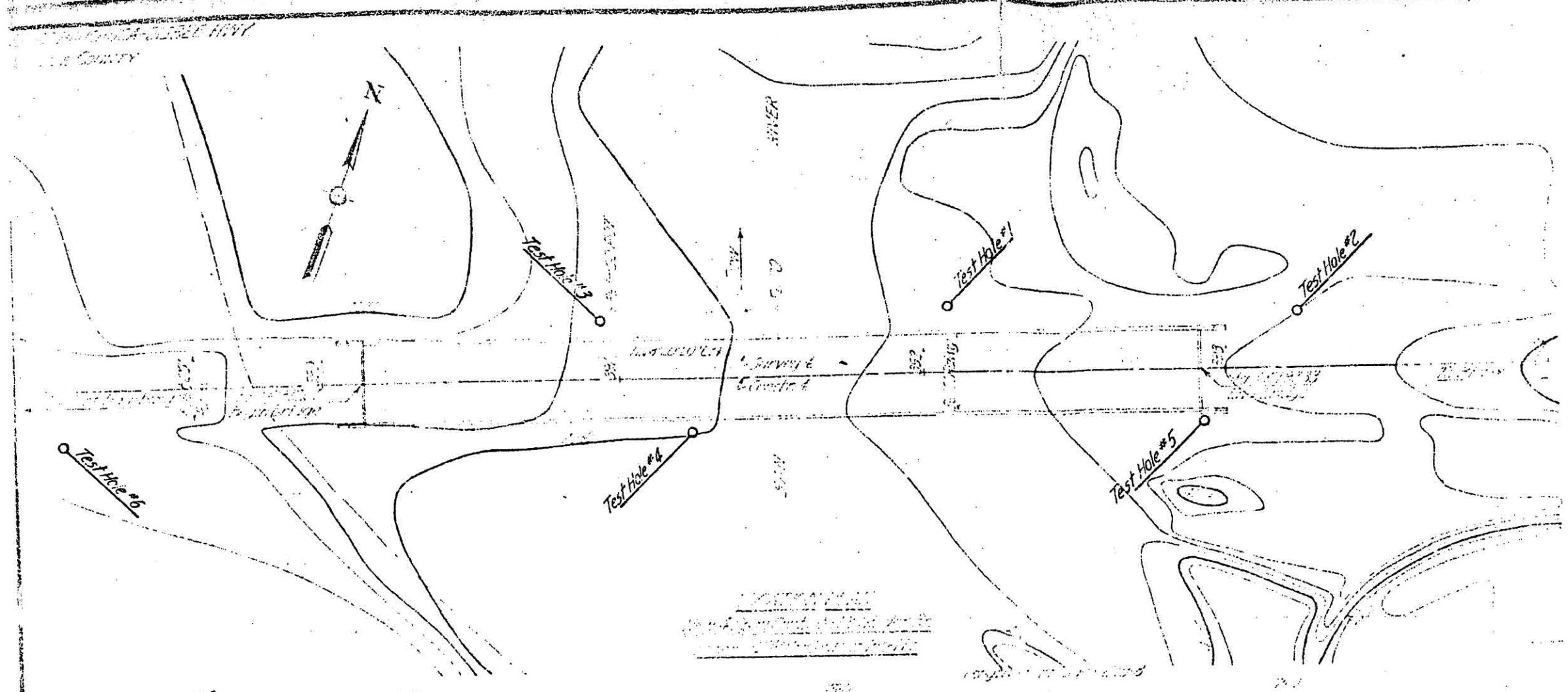
5338 Montgomery Blvd.
Street

Albuquerque NM 87109
City State Zip

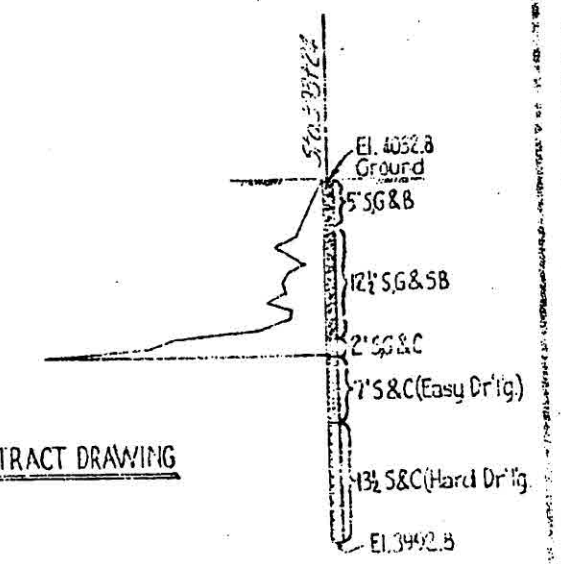
DWR 55-55 (Rev 1/99)

Logs # 43-48

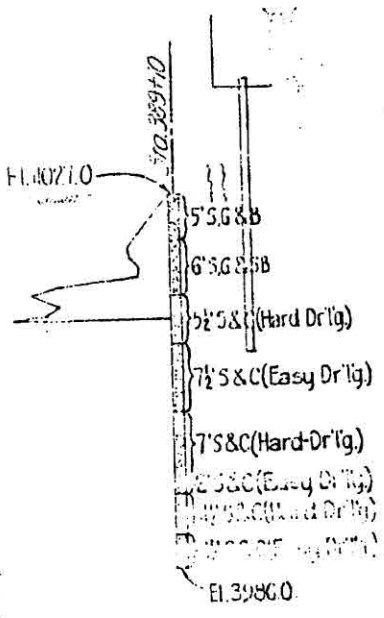
STR 425



NOT A CONTRACT DRAWING



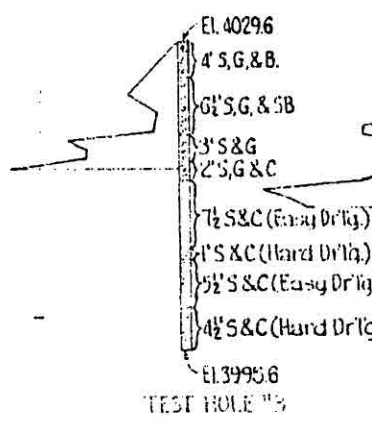
TEST HOLE #2



TEST HOLE #6

LEGEND

C - Clay
S - Sand
G - Gravel
SB - Small Boulders
B - Boulders



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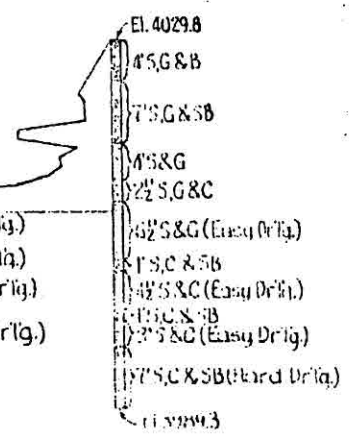
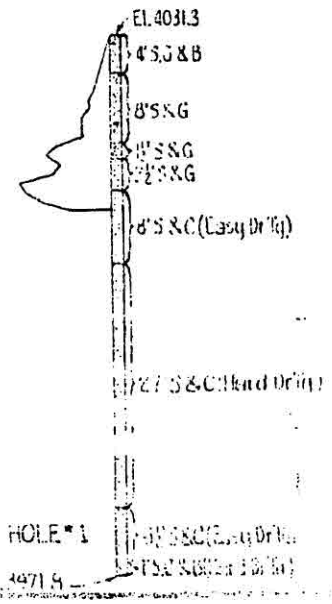
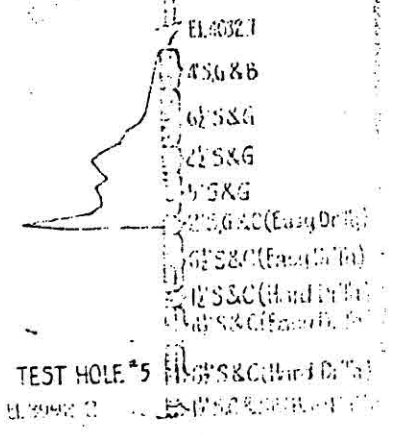


TEST HOLE #4



TEST HOLE #1



TEST HOLE #5

FOUNDATION DATA

Logs # 49-54

EXPLANATION

SIEVE SIZE ANALSIS RISULTS

SAND %

CLAY AND SILT % — GRAVEL %

PERMEABILITY (FT/DAY)
(HYDRAULIC CONDUCTIVITY)

LINES OF CORRELATION
BETWEEN GEOLOGIC UNITS
(NOT ALL UNITS SHOWN)

INFERRED BOTTOM OF
SATURATED STREAM ALLUVIUM
(DRILLING NOT REACHED
BOTTOM)

WATER TABLE

THE EAST CHANNEL IS
CROSSED SATURATED
STREAM ALLUVIUM FILLING
NOT CONFINED OR ONE
WAY IN THICKNESS)

NOTE: SAMPLES LOGGED BY D. MCGRANE GROUND WATER GEOLOGIST FOR LEONARD RICE CONSULTING WATER ENGINEERS, INC.

SAN PEDRO RIVER		
LEWIS SPRINGS GEOLOGIC CROSS SECTION		
LEONARD RICE CONSULTING WATER ENGINEERS, INC 2821 Erlanger Street, Suite 100 Austin, Texas 78705-1144 U.S.A. (512) 451-9248		
JAN: [illegible]	DATE: 7/22/94	SCALE: [illegible]

Log # 56

(D-21-21) 13 BAC

MoSwAs

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave. (Street) Tucson (City) AZ (State) 85719 (Zip) (520) 670-6671 (Telephone Number)
2. Drilling Firm: USGS - Geoprobe
   Address: 5338 Montgomery Blvd. (Street) Albuquerque (City) NM (State) 87109 (Zip) (505) 830-7900 (Telephone Number)
3. Location: SW ¼ (10 Acre) NE ¼ (40 Acre) NW ¼ (160 Acre) of Section 13 Township 21 S Range 21 E
4. Well Registration No. 55-588930 (Required) 6a. Latitude 31 36 38 "
5. Permit No. _____ (If issued) 6b. Longitude 110 09 59 "

DESCRIPTION OF WELL

7. Total Depth of Hole 24.2 ft
8. Type of Casing(s): Surface Seal none Well 1.5" galv. steel
9. Diameter and length of casing(s) 1.5 inches from -4.8 to 23.2 inches from -4.8 to 23.2
10. Method of sealing at reduction points _____
11. Perforated from 23.2 to 24.2 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 1 feet. Diameter 1 inches. Type drilled steel pipe
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven ___ Sonic ___ Hand Dug ___ Other: X (Check One) Geoprobe
15. Date started 05 (Month) 25 (Day) 2000 (Year)
16. Date completed 05 (Month) 25 (Day) 2000 (Year)
17. Depth to water 17.3 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured down from lip of well casing at 4.8 ft above land surface.
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

WR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at wh[illegible] encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	4	core - Sandy gravel, dry
4	8	core - silty sand, dry
8	12	core - gravel,
12	16	core - clay, moist
16	20	core - sandy gravel, wet
20	24	core - gravely sand, saturated
24	26.5	core - gravel, saturated
		Probably hit saturation at 16 to 20 ft interval. Sediments
		were saturated from that level to the bottom of the
		hole. All sediments were loose recent alluvium

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey

Signature of Qualifying Party: Frederick G. Gebhardt 1-28-02
Date

5338 Montgomery Blvd
Street

Albuquerque NM 87109
City State Zip

DWR 55-55 (Rev 1/99)

Log # 57

(D-21-21) 13 BAB

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave. (Street) Tucson (City) AZ (State) 85719 (Zip) (520) 670-6671 (Telephone Number)
2. Drilling Firm: USGS-Geoprobe
   Address: 5338 Montgomery Blvd (Street) Albuquerque (City) NM (State) 87109 (Zip) (505) 830-7900 (Telephone Number)
3. Location: NW ¼ (10 Acre) NE ¼ (40 Acre) NW ¼ (160 Acre) of Section 13 Township 21 S Range 21 E
4. Well Registration No. 55-588431 (Required) 6a. **Latitude** 31 36 . 43 "
5. Permit No. _____ (If issued) 6b. **Longitude** 110 10 . 01 "

DESCRIPTION OF WELL

7. Total Depth of Hole 12.7 ft
8. Type of Casing(s): Surface Seal none Well galv. steel
9. Diameter and length of casing(s) ~~1.5~~ inches from _____ to _____, 1.5 inches from -4.3 to 11.7
10. Method of sealing at reduction points _____
11. Perforated from 11.7 to 12.7 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 1 feet. Diameter 1 inches. Type drilled steel pipe
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: X (Check One) Geoprobe
15. Date started 05 (Month) 25 (Day) 2000 (Year)
16. Date completed 05 (Month) 25 (Day) 2000 (Year)
17. Depth to water 9.6 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured down from lip of well casing at 4.3 ft above land surface.
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ **By** ___
Entered _____ **By** ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	4	Core - muddy sand, dry
4	8	Core - sandy gravel, moist
8	12	Core - gravelly sand, saturated
		Saturation occured in The 8 to 12' BLS interval
		All loose recent alluvium

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey

Signature of Qualifying Party: Judith E. Gebhardt 1-28-02
Date

5338 Montgomery Blvd
Street

Albuquerque NM ~~87119~~ 87109
City State Zip

DWR 55-55 (Rev 1/99)

Log # 58

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION
P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave. Tucson AZ 85719 (520) 620-6671
   Street City State Zip Telephone Number
2. Drilling Firm: US G.S. - Geoprobe
   Address: 5338 Montgomery Blvd Albuquerque NM 87109 (505) 830-7900
   Street City State Zip Telephone Number
3. Location: NW ¼ NE ¼ NW ¼ of Section 13 Township 21 S Range 21 E
   10 Acre 40 Acre 160 Acre
4. Well Registration No. 55- 588932 (Required) 6a. **Latitude** 31 36 42 "
5. Permit No. _____ (If issued) 6b. **Longitude** 110 10 01 "

DESCRIPTION OF WELL

7. Total Depth of Hole 20.2 ft 8. Type of Casing(s): Surface Seal none Well galv. steel
9. Diameter and length of casing(s) _____ inches from _____ to _____, 1.5 inches from -4.8 to 19.2
10. Method of sealing at reduction points _____
11. Perforated from 19.2 to 20.2 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 1 feet. Diameter _____ inches. Type drilled steel pipe
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: X (Check One) Geoprobe
15. Date started 05 (Month) 25 (Day) 2000 (Year)
16. Date completed 05 (Month) 25 (Day) 2000 (Year)
17. Depth to water 13.3 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made. and give sea-level elevation if available Measured down from lip of galvanized well casing at 4.8 ft above land surface.
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	4	core - Lost
4	8	core - silty sand, moist
8	12	core - muddy sand, wet
12	16	— Lost
16	20	core - sandy, gravelly mud, saturated
20	22	core - muddy sand, saturated
		Saturation probably occured at about 12' BLS.
		Sediments saturated from 12' BLS to bottom of hole.
		All loose recent Alluvium

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey

Signature of Qualifying Party: Frederick T. Gottschalk 1-28-02
Date

5338 Montgomery Blvd.
Street

Albuquerque NM 87109
City State Zip

DWR 55-55 (Rev 1/99)

Log # 59

(D-21-21) 13 BAC

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave. Tucson AZ 85719 (520) 670-6671
   Street City State Zip Telephone Number
2. Drilling Firm: USGS - Geoprobe
   Address: 5338 Montgomery Blvd. Albuquerque NM 87109 (505) 830-7900
   Street City State Zip Telephone Number
3. Location: SW ¼ NE ¼ NW ¼ of Section 13 Township 21 S Range 21 E
   10 Acre 40 Acre 160 Acre
4. Well Registration No. 55-588933 (Required) 6a. **Latitude** 31 36 40
5. Permit No. _____ (If issued) 6b. **Longitude** 110 10 00

DESCRIPTION OF WELL

7. Total Depth of Hole 32.1 ft 8. Type of Casing(s): Surface Seal none Well galv. steel
9. Diameter and length of casing(s) _____ inches from _____ to _____, 1.5 inches from -.92 to 31.1
10. Method of sealing at reduction points _____
11. Perforated from 31.1 to 32.1 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 1 feet. Diameter _____ inches. Type drilled steel pipe
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: X (Check One) Geoprobe
15. Date started 05 (Month) 25 (Day) 2000 (Year)
16. Date completed 05 (Month) 25 (Day) 2000 (Year)
17. Depth to water 20.6 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured down from lip of well casing at 0.9 ft above land surface.
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

R-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at whi[illegible] encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	4	core - silty sand, dry
4	8	core - silty sand, slightly moist
8	12	core - gravelly sand, slightly moist
12	16	core - sandy mud/clay slightly moist
16	20	core - clay, slightly moist
20	24	core - sandy clay, moist
24	28	core - clayey sand, saturated
28	32	core - gravelly sand, saturated
32	33	core - gravelly sand, saturation.
		Saturation first noted at about 24' BLS. Static
		water level is higher so clay above was probably
		confining somewhat.
		All loose sediments.

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey

Signature of Qualifying Party: Frederick F. Gehrels 1-28-02
Date

5338 Montgomery Blvd.
Street

Albuquerque NM 87109
City State Zip

DWR 55-55 (Rev 1/99)

Log # 60

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave. (Street) Tucson (City) AZ (State) 85719 (Zip) (520)670-6671 (Telephone Number)
2. Drilling Firm: USGS- Geoprobe
   Address: 5338 Montgomery Blvd (Street) Albuquerque (City) NM (State) 87109 (Zip) (505) 830-7900 (Telephone Number)
3. Location: NW ¼ (10 Acre) NE ¼ (40 Acre) NW ¼ (160 Acre) of Section 13 Township 21 S Range 21 E
4. Well Registration No. 55-588934 (Required) 6a. **Latitude** 31 36 . 43 "
5. Permit No. _____ (If issued) 6b. **Longitude** 110 10 . 01 "

DESCRIPTION OF WELL

7. Total Depth of Hole 20.6 ft
8. Type of Casing(s): Surface Seal none Well galv. steel
9. Diameter and length of casing(s) _____ inches from _____ to _____, 1.5 inches from -4.4 to 19.6
10. Method of sealing at reduction points _____
11. Perforated from 19.6 to 20.6 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 1 feet. Diameter 1 inches. Type drilled steel pipe
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: X (Check One) Geoprobe
15. Date started 05 (Month) 25 (Day) 2000 (Year)
16. Date completed 05 (Month) 25 (Day) 2000 (Year)
17. Depth to water 9.6 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured down from lip of well casing at 4.4 ft above land surface.
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ **By** ___
Entered _____ **By** ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	4	core - muddy sand, dry
4	8	core - sandy gravel, moist
8	12	core - gravelly sand, saturated
12	16	core - muddy sand, saturated
16	20	core - sandy gravel
20	21	core - muddy sand, saturated
		Saturation of sediments was observed in the
		8-12' BLS interval and remained through to
		bottom of hole.
		All loose recent alluvium

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey

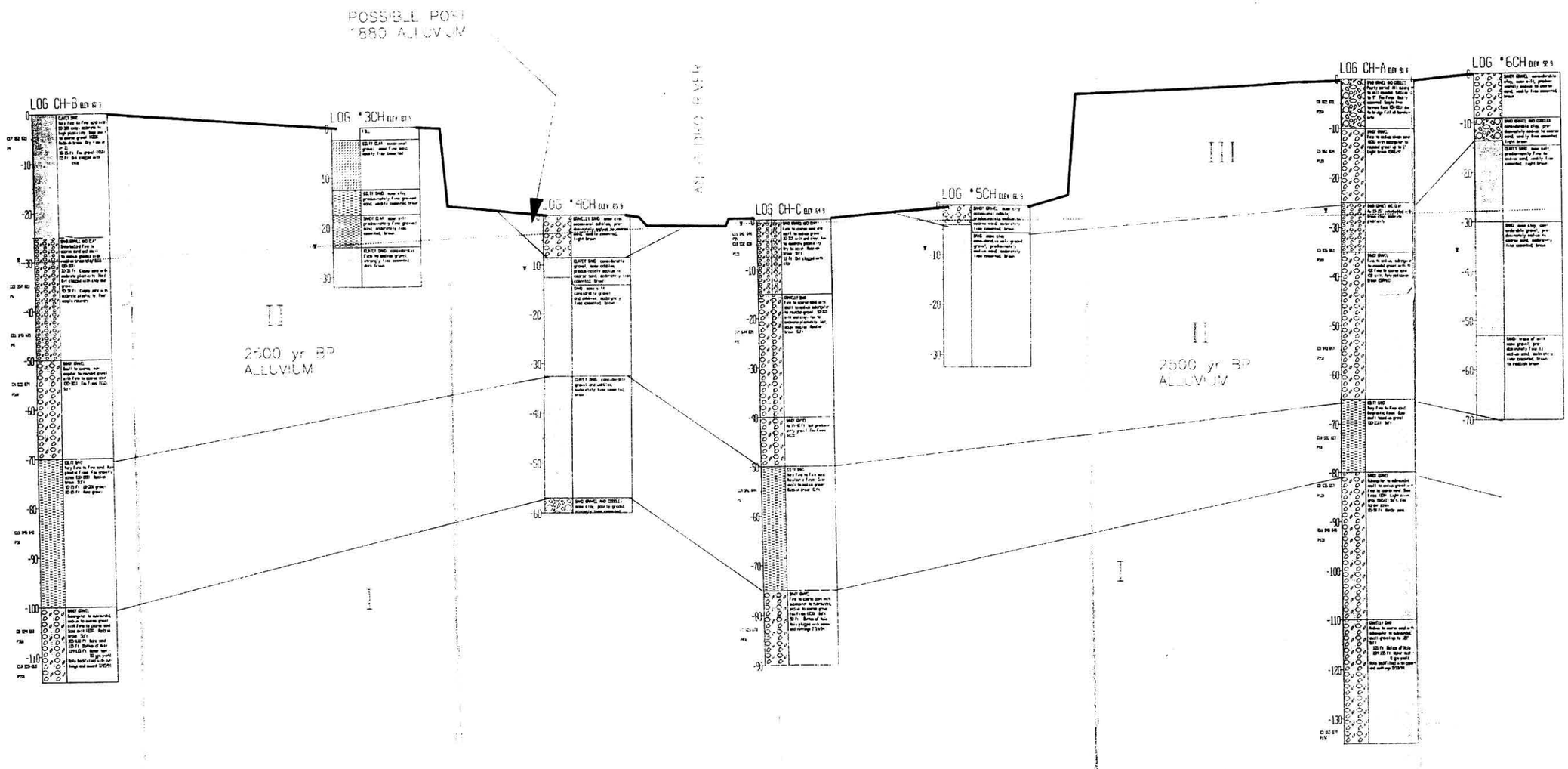
Signature of Qualifying Party: Fredrick E. Gebhardt 1-28-02
Date

5338 Montgomery Blvd
Street

Albuquerque NM 87109
City State Zip

DWR 55-55 (Rev 1/99)

Logs # 61-67



EXPLANATION

SIEVE SIZE ANALYSIS RESULTS

SAND %

CLAY AND SILT % — GRAVEL %

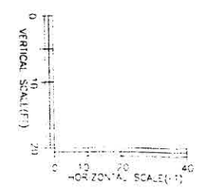
PERMEABILITY (FT/DAY) (HYDRAULIC CONDUCTIVITY)

LINES OF CORRELATION BETWEEN GEOLOGIC UNITS (NOT ALL LINES SHOWN)

INFERRED BASE OF SATURATED STREAM ALLUVIUM

WATER TABLE (2/94)

PRE 1880 CHANNEL FILL DEPOSITS IN SATURATED STREAM ALLUVIUM (OTHERWISE NOT IDENTIFIED BY DRILLING MAY BE PRESENT)



NOTE: HOLES WITH NUMERIC DESIGNATION WERE DRILLED BY ADOT PRIOR TO BRIDGE CONSTRUCTION.

HOLES WITH ALPHA DESIGNATION WERE DRILLED BY SRP IN 2/94 AND SAMPLES LOGGED BY D. MCGRANE GROUND WATER GEOLOGIST FOR LEONARD RICE CONSULTING WATER ENGINEERS, INC.

SAN PEDRO RIVER

CHARLESTON BRIDGE
GEOLOGIC CROSS SECTION

LEONARD RICE CONSULTING WATER ENGINEERS, INC
2401 Fifteenth Street, Suite 300
Denver, Colorado 80202-1143 U.S.A.
(303) 455-9589

DWN: JRF	DATE: 2/22/94	FIGURE: D

Log # 68

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 26 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: USDA-ARS
   Address: 2000 E. Allen Rd (Street) Tucson (City) AZ (State) 85719 (Zip) 520.670.6380 (Telephone Number)
2. Drilling Firm: USDA-ARS
   Address: 2000 E. Allen Rd (Street) Tucson (City) AZ (State) 85719 (Zip) 520.670.6380 (Telephone Number)
3. Location: NE ¼ (10 Acre) NW ¼ (40 Acre) SW ¼ (160 Acre) of Section 26 Township 20 Range 21
4. Well Registration No. 55-590131 (Required) 6a. **Latitude** 31 39 . 50 "
5. Permit No. _____ (If issued) 6b. **Longitude** 110 10 . 42 "

DESCRIPTION OF WELL

7. Total Depth of Hole 40 ft 8. Type of Casing(s): Surface Seal none Well Steel
   Diameter and length of casing(s) 1.5" inches from -2 to 40', _____ inches from _____ to _____
10. Method of sealing at reduction points NA
11. Perforated from -30' to 40' from _____ to _____ from _____ to _____
12. Size of cuts 3" Number of cuts per foot 2
13. If screen was installed: Length NA feet. Diameter _____ inches. Type _____
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering X Jet/Driven ___ Sonic ___ Hand Dug ___ Other: ___ (Check One)
15. Date started April / 2001 (Month / Day / Year)
16. Date completed April / 2001 (Month / Day / Year)
17. Depth to water 33 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available
    Top of casing
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-590131
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 26 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	40	Unconsolidated Alluvium

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: USDA - ARS

Signature of Qualifying Party: [signature] 03/19/02
Date

2000 E. Allen Road
Street

Tucson AZ 85719
City State Zip

DWR 55-55 (Rev 1/99)

Log # 69

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 26 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: USDA-ARS
   Address: 2000 E. Allen Rd Tucson AZ 85719 520 670 6380
   Street City State Zip Telephone Number
2. Drilling Firm: SAME AS ABOVE
   Address:
   Street City State Zip Telephone Number
3. Location: SW ¼ SW ¼ NW ¼ of Section 26 Township 26 Range 21
   10 Acre 40 Acre 160 Acre
4. Well Registration No. 55-590132 (Required) 6a. **Latitude** 31 39 57 "
5. Permit No. (If issued) 6b. **Longitude** 110 10 42 "

DESCRIPTION OF WELL

7. Total Depth of Hole 30 ft 8. Type of Casing(s): Surface Seal NONE Well Steel
9. Diameter and length of casing(s) 1.5" inches from 6 to 30' inches from to
10. Method of sealing at reduction points NA
11. Perforated from 20' to 30' from to from to
12. Size of cuts 5" slots in steel casing Number of cuts per foot 1
13. If screen was installed: Length feet. Diameter inches. Type
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering X Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: ___ (Check One)
15. Date started APRIL / 2001
    Month Day Year
16. Date completed APRIL / 2001
    Month Day Year
17. Depth to water 24 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Top of casing
19. If flowing well, state method of flow regulation:
20. Remarks:

ANSWERED MAR 26 2002

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-590132
File No.
Received By
Entered By

DWR-55-55 (Rev 1/99)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	30	unconsolidated Alluvium

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: USDA-ARS

Signature of Qualifying Party: [signature] Date: 3/18/02

Street: 2000 E. Allen Rd

City: Tucson State: AZ Zip: 85719

DWR 55-55 (Rev 1/99)

Log # 70

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 26 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: USDA-ARS
   Address: 2000 E. Allen Tucson AZ 85719 5206706380
   Street City State Zip Telephone Number
2. Drilling Firm: SAMEAS ABOVE
   Address:
   Street City State Zip Telephone Number
3. Location: SW ¼ SW ¼ NW ¼ of Section 26 Township 20 Range 21
   10 Acre 40 Acre 160 Acre
4. Well Registration No. 55-590133 (Required) 6a. **Latitude** 31 39 . 57 "
5. Permit No. (If Issued) 6b. **Longitude** 110 10 . 42 "

DESCRIPTION OF WELL

7. Total Depth of Hole 40 ft 8. Type of Casing(s): Surface Seal NA Well Steel
9. Diameter and length of casing(s) 1.5" inches from 0 to 40' inches from to
10. Method of sealing at reduction points NA
11. Perforated from 38 to 40' from to from to
12. Size of cuts 5" Number of cuts per foot 2
13. If screen was installed: Length feet. Diameter inches. Type
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering X Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: ___ (Check One)
15. Date started APRIL 8 1 2001
    Month Day Year
16. Date completed APRIL 2 2001
    Month Day Year
17. Depth to water 24' ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available
    TOP of CASING
19. If flowing well, state method of flow regulation:
20. Remarks:

ANSWERED MAR 26 2002

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-590133
File No.
Received By
Entered By

DWR-55-55 (Rev 1/99)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	40	unconsolidated alluvium

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: USDA-ARS

Signature of Qualifying Party: _____ Date

SAME AS ABOVE

Street

City State Zip

DWR 55-55 (Rev 1/99)

Log # 71

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave. (Street) Tucson (City) AZ (State) 85719 (Zip) (520) 670-6671 (Telephone Number)
2. Drilling Firm: USGS - Geoprobe
   Address: 5338 Montgomery (Street) Albuquerque (City) NM (State) 87109 (Zip) (505) 830-7900 (Telephone Number)
3. Location: NW ¼ (10 Acre) SW ¼ (40 Acre) NE ¼ (160 Acre) of Section 22 Township 20 S Range 21 E
4. Well Registration No. 55-588936 (Required) 6a. **Latitude** 31 40 . 58 "
5. Permit No. _____ (If issued) 6b. **Longitude** 110 11 . 19 "

DESCRIPTION OF WELL

7. Total Depth of Hole 16 ft 8. Type of Casing(s): Surface Seal none Well steel
9. Diameter and length of casing(s) _____ inches from _____ to _____, 1.5 inches from -3.92 to 12.08
10. Method of sealing at reduction points _____
11. Perforated from 12.08 to 13.08 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 1 feet. Diameter _____ inches. Type steel, drilled
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: X (Check One) Geoprobe
15. Date started 05 (Month) 19 (Day) 2001 (Year)
16. Date completed 05 (Month) 19 (Day) 2001 (Year)
17. Depth to water 14 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured down from lip of well casing at 39 ft above land surface.
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	4	core - silty sand, dry
4	8	core - silty sand, dry
8	10	core - silty clay, moist
10	13	core - lost
		Saturation occured at around 12 ft BLS. May have been
		saturated shallower, but clay obscured this.
		All sediments are recent alluvium

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US- Geological Survey

Signature of Qualifying Party: [signature] 1-28-02
Date

5338 Montgomery Blvd
Street

Albuquerque NM 87109
City State Zip

DWR 55-55 (Rev 1/99)

Log # 72

(D-20-21)15 [illegible]

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave. (Street) Tucson (City) AZ (State) 85719 (Zip) (520)-670-6671 (Telephone Number)
2. Drilling Firm: USGS- Geoprobe
   Address: 5338 Montgomery Blvd. (Street) Albuquerque (City) NM (State) 87109 (Zip) (505) 830-7900 (Telephone Number)
3. Location: SE ¼ (10 Acre) NW ¼ (40 Acre) SE ¼ (160 Acre) of Section 15 Township 20 S Range 21 E
4. Well Registration No. 55- 588958 (Required) 6a. Latitude 31 41 . 26 "
5. Permit No. _____ (If issued) 6b. Longitude 110 11 . 05 "

DESCRIPTION OF WELL

7. Total Depth of Hole 15.33 ft 8. Type of Casing(s): Surface Seal _____ Well Galv. steel
9. Diameter and length of casing(s) 1 inches from -3.67 to 14.33 inches from _____ to _____
10. Method of sealing at reduction points no reduction points
11. Perforated from 14.33 to 15.33 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 1 feet. Diameter _____ inches. Type _____
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: X (Check One) hand powered
15. Date started 05 (Month) 16 (Day) 01 (Year)
16. Date completed 05 (Month) 16 (Day) 01 (Year)
17. Depth to water 1.20 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Corrected to below land surface
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at w encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	14.33	Unconsolidated alluvium
		Saturation at about 10' BLS

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey

Signature of Qualifying Party: James Leenhouts

Date

570 N. Park Ave

Street

Tucson AZ 85719

City State Zip

DWR 55-55 (Rev 1/99)

Log # 74

*

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North 3rd Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED MAY - 7 2002 RECORDS MGT

1. U.S. GEOLOGICAL SURVEY - DENVER
BOX 25046 MS 403 DFC
DENVER, CO 80225-0046

2. Owner Name: USGS
Address: Tucson (City) AZ (State) 85719 (Zip)

3. Location: 20 (Township) N/S 21 (Range) E/W 15 (Section) ¼ SE (10-acre) ¼ NW (40-acre) ¼ SE (160-acre)

4. Well Registration No. 55-590606 (Required)

5. Permit No. _____ (If Issued)

DESCRIPTION OF WELL

6. Total depth of hole 15.5 ft.
7. Type of casing Galvanized steel
8. Diameter and length of casing 1.5 in. from -3.5 to 4.5, 1.0 in from 4.5 to 14.5
9. Method of sealing at reduction points _____
10. Perforated from 14.5 to 15.5, from _____ to _____ from _____ to _____
11. Size of cuts 1/8" drilled holes Number of cuts per foot _____
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction Hand powded
(drilled, dug, driven, bored, jetted, etc)
14. Date started 04 (Month) 10 (Day) 2002 (Year)
15. Date completed 04 (Month) 10 (Day) 2002 (Year)
16. Depth to water about 10' BLS ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea_level elevation if available
Measured from lip at top of galvanized casing
18. If flowing well, state method of flow regulation: _____
19. Remarks: _____

DO NOT WRITE IN THIS SPACE OFFICE RECORD
Registration No. 55- 590606
File No. D(20-21) 15 DBD
Received _____ By _____
Entered _____ By _____

DWR-55-55-7/95 (Rev.)

ENTERED

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	10	loose well sorted point-bar sand
10	15.5	Tight-cohesive clay

I hereby certify that this well was drilled by me (or under by supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: U.S. GEOLOGICAL SURVEY - DENVER

BOX 25046 MS 403 DFC
Street

DENVER, CO 80225-0046 303-236-7779
City State Zip Phone No.

4/29/02
Signature of Driller Date

Log # 76

RECEIVED
JUL 25 2002
RECORDS MGT

FBK-10

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North 3rd Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. U.S. GEOLOGICAL SURVEY - DENVER
BOX 25046 MS 403 DFC
DENVER, CO 80225-0046

2. Owner Name: USGS
Address: Tucson (City) AZ (State) 85719 (Zip)

3. Location: 20 (Township) N/S 21 (Range) E/W 03 (Section) ¼ SW (10-acre) ¼ NE (40-acre) ¼ NW (160-acre)

4. Well Registration No. 55-590609 (Required)

5. Permit No. _____ (If Issued)

DESCRIPTION OF WELL

6. Total depth of hole 23 ft.
7. Type of casing PVC well casing, galvanized steel surface casing
8. Diameter and length of casing 1 in. from -2.75' to 17.75', _____ in from _____ to _____
9. Method of sealing at reduction points _____
10. Perforated from _____ to /, from _____ to _____ from _____ to _____
11. Size of cuts _____ Number of cuts per foot _____
12. If screen was installed: Length 5 ft. Diam 1" in. Type slotted
13. Method of construction augered
(drilled, dug, driven, bored, jetted, etc)
14. Date started 06 (Month) 06 (Day) 02 (Year)
15. Date completed 06 (Month) 06 (Day) 02 (Year)
16. Depth to water 13.84' BLS ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea_level elevation if available
Measurements made to lip of surface casing and corrected to land surface
18. If flowing well, state method of flow regulation: _____
19. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55- 590609
File No. D(20-21) 3 BAC
Received _____ By _____
Entered _____ By _____

DWR-55-55-7/95 (Rev.)

COMPLETED JUL 31 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	25	Sandy/silty alluvial deposits. Very few cobbles.
		Water first observed at ~ 20' and rose to
		13.84' BLS

I hereby certify that this well was drilled by me (or under by supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: U.S. GEOLOGICAL SURVEY - DENVER

BOX 25046 MS 403 DFC
Street

DENVER, CO 80225-0046 303-236-7779
City State Zip Phone No.

Signature of Driller 7/15/02
Date

Log # 77

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave (Street) Tucson (City) AZ (State) 85719 (Zip) (520) 670-6671 (Telephone Number)
2. Drilling Firm: USGS - Geoprobe
   Address: 5338 Montgomery Blvd. (Street) Albuquerque (City) NM (State) 87109 (Zip) (505) 830-7900 (Telephone Number)
3. Location: SW ¼ (10 Acre) SW ¼ (40 Acre) NE ¼ (160 Acre) of Section 21 Township 19 S Range 21 E
4. Well Registration No. 55-588956 (Required) 6a. **Latitude** 31 46 . 01 "
5. Permit No. _____ (If issued) 6b. **Longitude** 110 12 . 09 "

DESCRIPTION OF WELL

7. Total Depth of Hole 32 ft 8. Type of Casing(s): Surface Seal Steel Well PVC
9. Diameter and length of casing(s): 1.5 inches from -3.54 to 8.46 1 inches from -3.37 to 27
10. Method of sealing at reduction points no reduction points
11. Perforated from 27 to 32 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 5 feet. Diameter 1 inches. Type Slotted .020 PVC
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: X (Check One) Geoprobe
15. Date started 04 (Month) 20 (Day) 2001 (Year)
16. Date completed 04 (Month) 20 (Day) 2001 (Year)
17. Depth to water 6.9 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Corrected to below land surface
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	32	All unconsolidated Alluvium
14	14	Core shoe - Gravel. Saturated
16	26	Core - Gravel. Saturated
		Saturation at about 7' BLS

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey

Signature of Qualifying Party: Frederick E. Hebrenbo 1-28-02
Date

5338 Montgomery Blvd
Street

Albuquerque NM 87109
City State Zip

DWR 55-55 (Rev 1/99)

Log # 78

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION
P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

CON-LI

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: VS Geological Survey
   Address: 520 N. Park Ave (Street) Tucson (City) AZ (State) 85719 (Zip) (520) 670-6671 (Telephone Number)
2. Drilling Firm: VSGS- Geoprobe
   Address: 5338 Montgomery Blvd (Street) Albuquerque (City) NM (State) 87109 (Zip) (505) 830-7900 (Telephone Number)
3. Location: SW ¼ (10 Acre) SW ¼ (40 Acre) NE ¼ (160 Acre) of Section 21 Township 19 S Range 21 E
4. Well Registration No. 55- 588957 (Required) 6a. Latitude 31 46 . 01 "
5. Permit No. _____ (If issued) 6b. Longitude 110 12 . 09 "

DESCRIPTION OF WELL

7. Total Depth of Hole 15 ft 8. Type of Casing(s): Surface Seal Steel Well PVC
9. Diameter and length of casing(s) 1.5 inches from -4.23 to 7.77, 1 inches from -3.94 to 10
10. Method of sealing at reduction points no reduction points
11. Perforated from 10 to 15 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 5 feet. Diameter 1 inches. Type Slotted .020 PVC
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: x (Check One) Geoprobe
15. Date started 04 (Month) 18 (Day) 2001 (Year)
16. Date completed 04 (Month) 18 (Day) 2001 (Year)
17. Depth to water 6.0 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Corrected to below land surface
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
1.8	4	Core - V. coarse sand and gravel, poorly sorted
4.8	8	Core - Gravel and V. coarse sand, mod. sorted
9.4	12	Core - Gravel and V. coarse sand, V. poorly sorted. Saturated
14.25	16	Core - Gravel and V. coarse sand. Saturated
		Saturation at about 6' BLS

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey

Signature of Qualifying Party: Jim Leenhouts 1-7-2
Date

520 N. Park Ave
Street

Tucson AZ 85719
City State Zip

DWR 55-55 (Rev 1/99)

Log # 88

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North 3rd Street
Phoenix, Arizona 85004

RECEIVED
JUN 30 2000
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. WATER DEVELOPMENT CORP. DBA WDC EXPLORATION
1202 EAST KENTUCKY AVENUE
WOODLAND, CA 95776-5906

2. Owner Name: Apache Nitrogen Products
Address: PoB 700 Benson, AZ 85602
City State Zip

3. Location: 18 N/S 21 E/W 8 ¼ SW ¼ NW ¼ NW
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55-579872 (Required)

5. Permit No. _____ (If Issued)

DESCRIPTION OF WELL

6. Total depth of hole 130 ft.
7. Type of casing PVC SCH 40
8. Diameter and length of casing 4 in. from 0 to 86.9, _____ in from _____ to _____
9. Method of sealing at reduction points _____
10. Perforated from _____ to _____, from _____ to _____ from _____ to _____
11. Size of cuts _____ Number of cuts per foot _____
12. If screen was installed: Length 15 ft. Diam 4 in. Type PVC SCH40
13. Method of construction Deilled
(drilled, dug, driven, bored, jetted, etc)
14. Date started 5 15 00
Month Day Year
15. Date completed 6 15 00
Month Day Year
16. Depth to water _____ ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea_level elevation if availabl
18. If flowing well, state method of flow regulation: _____
19. Remarks: _____

ANSWERED JUL 07 2000

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55- 579872
File No. D(18-21) 8 BBC
Received _____ By _____
Entered _____ By _____

DWR-55-55-7/95 (Rev.)

LITHOLOGIC LOG FOR MONITOR WELL MW-26 (EXB-5)
ADWR Registration Number 55-579872

DEPTH INTERVAL (feet below land surface)	SOIL TYPE	GROUP SYMBOL(a)	DESCRIPTION OF MATERIALS
0-30	SILTY FAT CLAY	CH	Dusky yellowish brown (10 YR 2/2); trace fine sand; strong HCl reaction; medium plasticity; very stiff; damp.
30-36	SILTY FAT CLAY	CH	Moderate yellowish brown (10 YR 5/4); trace fine sand; strong HCl reaction; medium plasticity; very stiff; damp (slight increase in water content).
36-37	CLAYEY SANDY GRAVEL	GW/GC	Moderate brown (5 YR 4/4); fine to coarse, well graded, subangular to rounded sand; fine to medium, medium graded, subrounded gravel; silty clay matrix; moderate HCl reaction; loose; damp.
37-49	SANDY SILTY CLAY	CH	Moderate brown (5 YR 4/4); fine to coarse, well graded, subangular to subrounded sand; trace rounded gravel to ½"; weak HCl reaction; low plasticity; soft; damp.
49-80	SILTY CLAY (weakly cemented)	CL	Moderate brown (5 YR 4/4); trace fine sand; chips of weakly cemented silty clay in soft silty clay matrix (interlayered?); strong HCl reaction; low plasticity; soft/firm; damp.
80-87	SILTY CLAY	CL	Moderate brown (5 YR 4/4); trace fine sand; trace weakly cemented silty clay in soft silty clay matrix; strong HCl reaction; low plasticity; soft/very stiff; damp.
87-108	SILTY CLAY (weakly cemented)	CL	Light brown (5 YR 6/4); trace fine sand; weakly cemented silty clay in minor soft silty clay matrix; increase in soft silty clay matrix below 100 feet bls; moderate HCl reaction; non- plastic; hard; groundwater enters drive casing at 90 ft bls.
108-130	FAT CLAY (St. David Clay)	CH	Moderate brown (5 YR 4/4); fine, poorly graded sand; strong HCl reaction; low to medium plasticity; hard; damp.

TOTAL DEPTH OF BOREHOLE = 130 FEET

ANSWERED JUL 0 7 2000

(a) United Soil Classification System ASTM D2488

MW-26 litho log.xls

HARGIS + ASSOCIATES, INC.

Log # 89

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North 3rd Street
Phoenix, Arizona 85004

RECEIVED
JUN 30 2000
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. WATER DEVELOPMENT CORP. DBA WDC EXPLORATION
1202 EAST KENTUCKY AVENUE
WOODLAND, CA 95776-5906

2. Owner Name: Apache Nitrogen Products
Address: PO B 700 Benson, AZ 85602
City State Zip

3. Location: 18 N/S 21 E/W 8 ¼ SW ¼ NW ¼ NW
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55-579874 (Required)

5. Permit No. _____ (If Issued)

DESCRIPTION OF WELL

6. Total depth of hole 160 ft.
7. Type of casing PVC SCH 40
8. Diameter and length of casing 4 in. from 0 to 852, _____ in from _____ to _____
9. Method of sealing at reduction points _____
10. Perforated from _____ to _____, from _____ to _____ from _____ to _____
11. Size of cuts _____ Number of cuts per foot _____
12. If screen was installed: Length 15 ft. Diam 4 in. Type PVC SCH 40
13. Method of construction Drilled
(drilled, dug, driven, bored, jetted, etc)
14. Date started 5 15 00
Month Day Year
15. Date completed 6 15 00
Month Day Year
16. Depth to water _____ ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea_level elevation if availabl
_____
18. If flowing well, state method of flow regulation: _____
19. Remarks: _____

ANSWERED JUL 07 2000

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55- 579874
File No. D(18-21) 8 BBC
Received _____ By _____
Entered _____ By _____

DWR-55-55-7/95 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
		See attached Brelog

I hereby certify that this well was drilled by me (or under by supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: WATER DEVELOPMENT CORP. DBA WDC EXPLOR

1202 EAST KENTUCKY AVENUE
Street

WOODLAND, CA 95776-5906
City State Zip Phone No.

Signature of Driller

6/28/00
Date

LITHOLOGIC LOG FOR MONITOR WELL MW-25 (EXB-6)
ADWR Registration Number 55-579874

DEPTH INTERVAL (feet below land surface)	SOIL TYPE	GROUP SYMBOL(a)	DESCRIPTION OF MATERIALS
0-14	SILTY FAT CLAY	CH	Dusky yellowish brown (10 YR 2/2); trace fine sand; strong HCl reaction; medium plasticity; very stiff; damp.
14-21	SANDY CLAY	CL	Moderate yellowish brown (10 YR 5/4); fine, poorly sorted sand; strong HCl reaction; loose; low plasticity; soft; damp/dry.
21-30	SAND	SW	Pale yellowish brown (10 YR 6/2); fine to medium, medium graded, angular to subrounded sand; trace silt/clay; moderate HCl reaction; loose; soft; damp to 24 ft/saturated 24-30 ft.
30-42	CLAYEY SAND	SC	Moderate brown (5 YR 3/4); fine to medium, poorly graded, subangular sand; moderate HCl reaction; low plasticity; firm; damp.
42-57	SANDY SILTY CLAY	CL	Moderate brown (5 YR 4/4); fine, poorly graded sand; strong HCl reaction; low plasticity; stiff; damp.
57-60	SILTY CLAY	CL	Moderate brown (5 YR 4/4); trace fine sand; moderate HCl reaction; sticky; medium plasticity; soft; damp.
60-119	SILTY CLAY (weakly cemented)	CL	Moderate brown (5 YR 4/4); trace fine sand; weak HCl reaction; low plasticity; very stiff; damp, except groundwater enters drive casing at 90 and 110 ft bls.
119-131	SILTY CLAY (weakly cemented)	CL	Moderate brown (5 YR 4/4); weakly cemented silty clay in soft silty clay matrix (interlayered?); trace fine sand; weak HCl reaction; low plasticity; soft/very stiff; damp.
131-160	FAT CLAY (St. David Clay)	CH	Moderate brown (5 YR 4/4); fine, poorly graded sand; strong HCl reaction; medium plasticity; hard; damp.

TOTAL DEPTH OF BOREHOLE = 160 FEET

ANSWERED JUL 0 7 2000

(a) United Soil Classification System ASTM D2488
MW-25 litho log.xls

HARGIS + ASSOCIATES, INC.

Log # 90

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North 3rd Street
Phoenix, Arizona 85004

RECEIVED
JUN 30 2000
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. WATER DEVELOPMENT CORP. DBA WDC EXPLORATION
1202 EAST KENTUCKY AVENUE
WOODLAND, CA 95776-5906

2. Owner Name: Apache Nitrogen Products
Address: _____
City State Zip

3. Location: 18 N/S 21 E/W 8 ¼ SW ¼ NW ¼ NW
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55-579877 (Required)

5. Permit No. _____ (If Issued)

DESCRIPTION OF WELL

6. Total depth of hole 130 ft.
7. Type of casing PVC SCH 40
8. Diameter and length of casing 4 in. from 0 to 83.8, _____ in from _____ to _____
9. Method of sealing at reduction points _____
10. Perforated from _____ to _____, from _____ to _____ from _____ to _____
11. Size of cuts _____ Number of cuts per foot _____
12. If screen was installed: Length 15 ft. Diam 4 in. Type PVC SCH 40
13. Method of construction Drilled
(drilled, dug, driven, bored, jetted, etc)
14. Date started 5 15 00
Month Day Year
15. Date completed 6 15 00
Month Day Year
16. Depth to water _____ ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea_level elevation if availabl
_____
18. If flowing well, state method of flow regulation: _____
19. Remarks: _____

ANSWERED JUL 07 2000

DO NOT WRITE IN THIS SPACE OFFICE RECORD
Registration No. 55- 579877
File No. D(18-21) 8 BBC
Received _____ By _____
Entered _____ By _____

DWR-55-55-7/95 (Rev.)

LITHOLOGIC LOG FOR MONITOR WELL MW-27 (EXB-4)
ADWR Registration Number 55-579877

DEPTH INTERVAL (feet below land surface)	SOIL TYPE	GROUP SYMBOL(a)	DESCRIPTION OF MATERIALS
0-28	SILTY FAT CLAY	CH	Dusky yellowish brown (10 YR 2/2); trace fine to medium, poorly graded sand; strong HCl reaction; medium plasticity; very stiff; damp.
28-34	SANDY GRAVEL	GW	Moderate brown (5 YR 4/4); fine to coarse, well graded, rounded sand; fine to medium, medium graded, rounded gravel; trace silt/clay; some rounded cobbles to 3"; moderate HCl reaction; loose; damp.
34-51	CLAYEY SANDY GRAVEL	GW/GC	Moderate brown (5 YR 4/4); fine to coarse, well graded, subrounded to rounded sand; fine to medium, medium graded, rounded gravel; silty clay matrix; moderate HCl reaction; loose; damp to 40 ft bls, moist below.
51-65	SANDY SILTY CLAY	CL	Light brown (5 YR 6/4); minor fine, poorly graded, subangular to subrounded sand; minor gravel stringers; weak HCl reaction; sticky; low plasticity; soft; damp.
65-80	SANDY SILTY CLAY WITH MINOR GRAVEL	CL	Light brown (5 YR 6/4); fine to medium, medium graded, subangular to subrounded sand; minor fine, subrounded gravel; strong HCl reaction; sticky; low plasticity; soft; damp.
80-82	SILTY FAT CLAY	CH	Light brown (5 YR 6/4); trace fine sand; weak HCl reaction; medium plasticity; soft; damp.
82-90	SILTY FAT CLAY(?)	CH(?)	NO RETURNS
90-100	SANDY CLAY (weakly cemented)	CL	Light brown (5 YR 6/4); trace fine sand; minor chips of weakly cemented sandy clay in soft silty clay matrix; weak HCl reaction; low plasticity; soft/firm (interlayers?); some water enters drive casing at 90 ft bls.

ANSWERED JUL 0 7 2000

(a) United Soil Classification System ASTM D2488
MW-27 litho log.xls

HARGIS + ASSOCIATES, INC.

LITHOLOGIC LOG FOR MONITOR WELL MW-27 (EXB-4)
ADWR Registration Number 55-579877

100-108	SANDY CLAY (weakly cemented)	CL	Light brown (5 YR 6/4); trace fine sand; increased minor chips of weakly cemented sandy clay in soft silty clay matrix; weak HCl reaction; low plasticity; soft/firm (interlayers?); some water enters drive casing at 90 ft bls.
108-130	FAT CLAY (St. David Clay)	CH	Moderate brown (5 YR 4/4); fine, poorly graded sand; strong HCl reaction; medium plasticity; very stiff; damp.

TOTAL DEPTH OF BOREHOLE = 130 FEET

ANSWERED JUL 0 7 2000

(a) United Soil Classification System ASTM D2488
MW-27 litho log.xls

HARGIS + ASSOCIATES, INC.

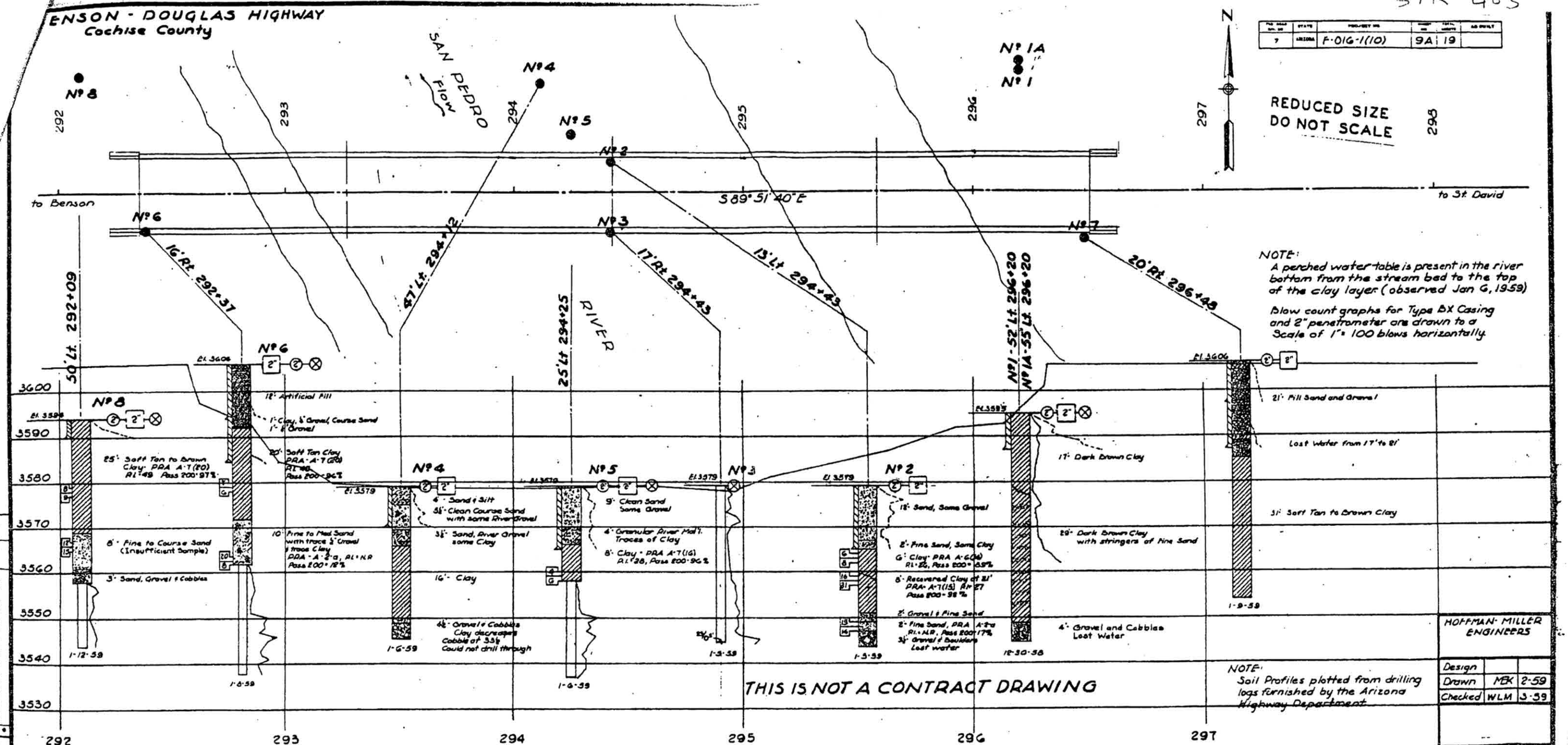
Logs # 92-99

STR 403

BENSON - DOUGLAS HIGHWAY
Cochise County

FED. ROAD DIV. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	NO. ON HAND
9	ARIZONA	F-016-1(10)	9A	19	

REDUCED SIZE
DO NOT SCALE



HOFFMAN-MILLER ENGINEERS

Design		
Drawn	MBK	2-59
Checked	WLM	3-59

CLASSIFICATION OF MATERIAL BASED ON STANDARD GRADE SIZE LIMITS

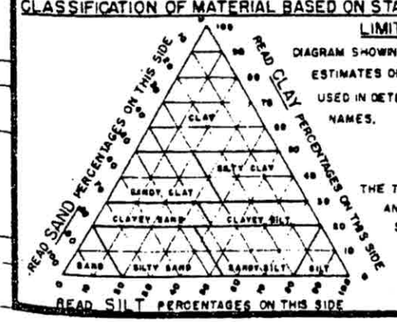


DIAGRAM SHOWING THE BASIS FOR ESTIMATES OF GRADE SIZE DISTRIBUTION USED IN DETERMINATION OF CLASS NAMES.

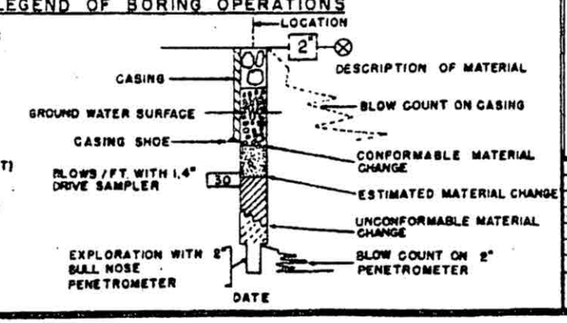
THE TERMS "COARSE, MEDIUM, AND FINE" REFER TO STANDARD GRADE SIZE LIMITS.

LEGEND OF EARTH MATERIALS

- COBBLES OR BOULDERS
- GRAVEL
- SAND
- SILT
- CLAY
- CALICHE
- FILLED MATERIAL
- IGNEOUS ROCK
- SEDIMENTARY ROCK
- METAMORPHIC ROCK

LEGEND OF BORING OPERATIONS

- PLAN OF ANY BORING
- 2" PENETROMETER
- CASING
- ROTARY BORING (WET)
- AUGER BORING (DRY)
- CORE BORING
- TEST PIT



NOTES

CLASSIFICATION OF EARTH MATERIALS AS SHOWN ON THIS SHEET IS BASED UPON FIELD INSPECTION AND IS NOT TO BE CONSTRUED TO IMPLY MECHANICAL ANALYSIS.

NX CASING IS DRIVEN WITH 342# HAMMER, 30" FREE FALL, NO CUSHION.

BX CASING AND 2" PENETROMETER IS DRIVEN WITH 140# HAMMER, 30" FREE FALL, NO CUSHION.

	DATE
LAYOUT	
DESIGN	
ARCHITECTURE	
GROUPS	
TRACED	
CHECKED	

ARIZONA HIGHWAY DEPARTMENT
BRIDGE DIVISION

STA 294+
FOUNDATION DATA SHEET
ST. DAVID BRIDGE

Registered Professional Engineer (Civil & Sanitary) CERTIFICATE EXPIRES DEC. 31, 19 MARTIN TONEY ARIZONA, U.S.A.

SHEET 1A - 11

F-016-1(10) 58025-8

Log # 100

USGS

(D-17-20) 23ACA

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 215011

SECTION 4: WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

Depth

DEPTH OF BORING	DEPTH OF COMPLETED WELL
55 Feet Below Land Surface	55 Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
10.31 Feet Below Land Surface	6-8-07	1036	☐ Valve ☐ Other:

Borehole			Installed Casing													
DEPTH FROM SURFACE		BOREHOLE DIAMETER (inches)	DEPTH FROM SURFACE		OUTER DIAMETER (inches)	MATERIAL TYPE (T)				PERFORATION TYPE (T)						SLOT SIZE IF ANY (inches)
FROM (feet)	TO (feet)		FROM (feet)	TO (feet)		STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	
0	50	4	0	50	2		X			X						
50	55	4	50	55	2		X							X		

Installed Annular Material

DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (T)								FILTER PACK		
						BENTONITE						
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
0	5							X				
5	55	X							filter pack is in situ natural material			

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 215011

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	Description Describe material, grain size, color, etc.	Check ( ) every interval where water was encountered (if known)
0	5	Very fine to coarse sand and brown silt. Sand is subangular to subrounded.	
5	10	Very fine to coarse sand and brown silt. Sand is subangular to subrounded.	X
10	15	Medium to coarse subrounded to subangular sand	X
15	20	Medium to coarse subrounded to subangular sand	X
20	25	Medium to coarse subrounded to subangular sand	X
25	30	Medium to coarse subrounded to subangular sand, gravel up to 20 mm	X
30	35	Coarse to very coarse subrounded to subangular sand, gravel up to 20 mm	X
35	40	Fine to very coarse sand, subrounded to subangular, poorly sorted, gravel up to 6 mm	X
40	45	Strong brown clay and silt, and very fine to fine sand, subangular to subrounded.	X
45	50	Brown clay	X
50	55	Fine to medium subangular to subrounded sand, moderately sorted	X
55	60	Brown clay	X
60	65	Reddish brown clay and medium to coarse sand, subrounded to subangular	X
65	70	Brown clay and fine to medium sand	X

Logs # 102-106

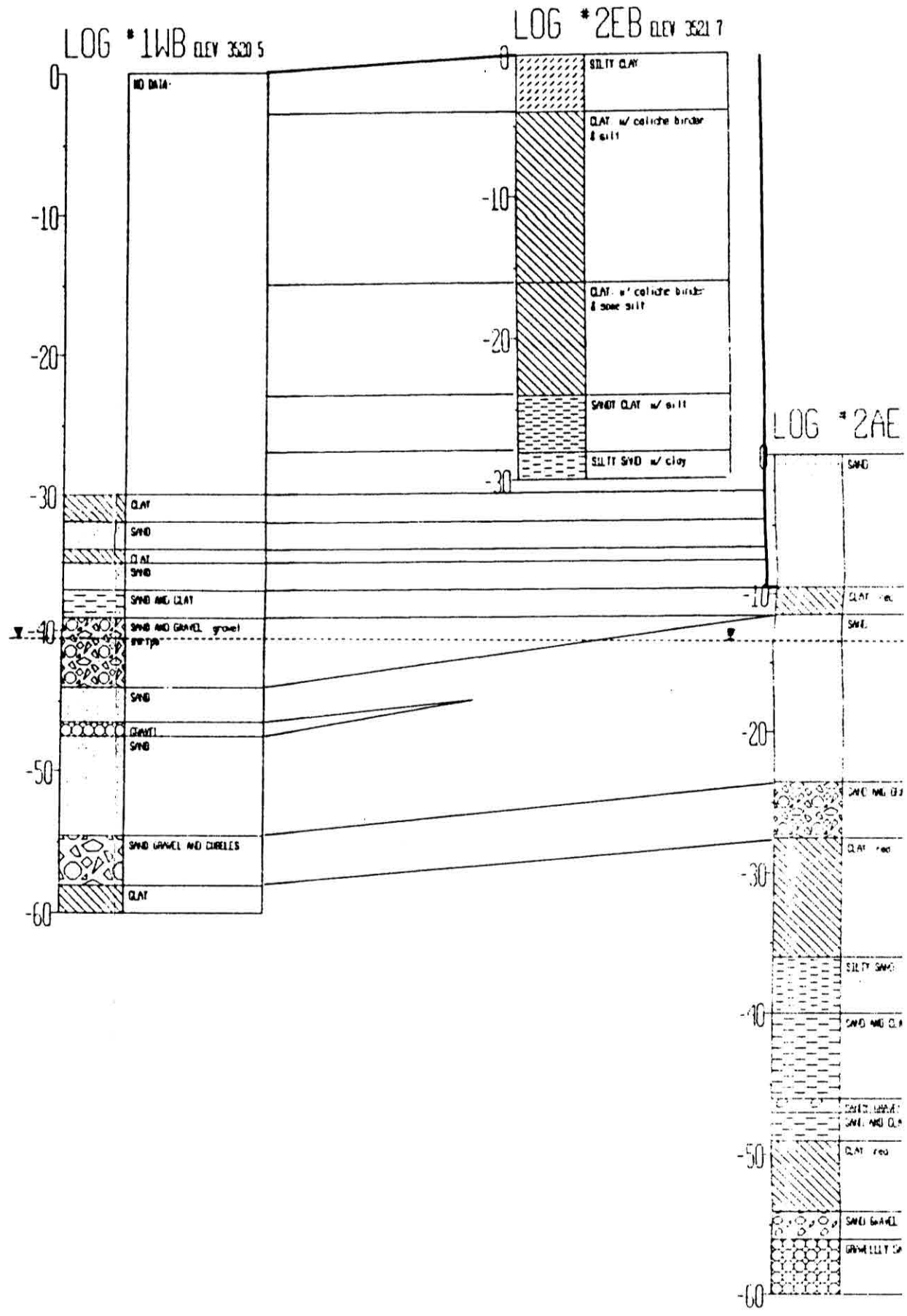
SAN PEDRO RIVER

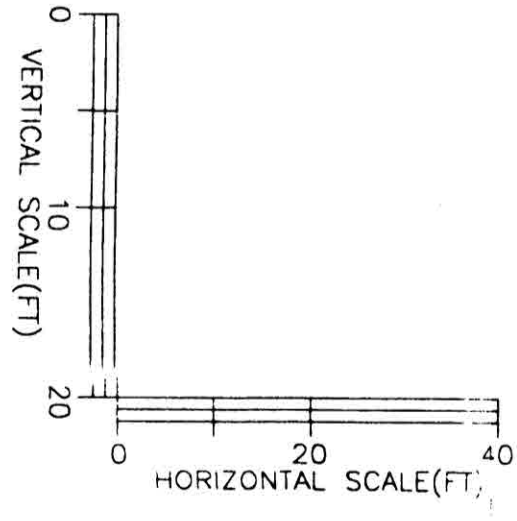
BENSON BRIDGE
GEOLOGIC CROSS SECTION

LEONARD RICE CONSULTING WATER ENGINEERS, INC
2401 Fifteenth Street, Suite 300
Denver, Colorado 80202-1143 U.S.A.
(303) 455-9589

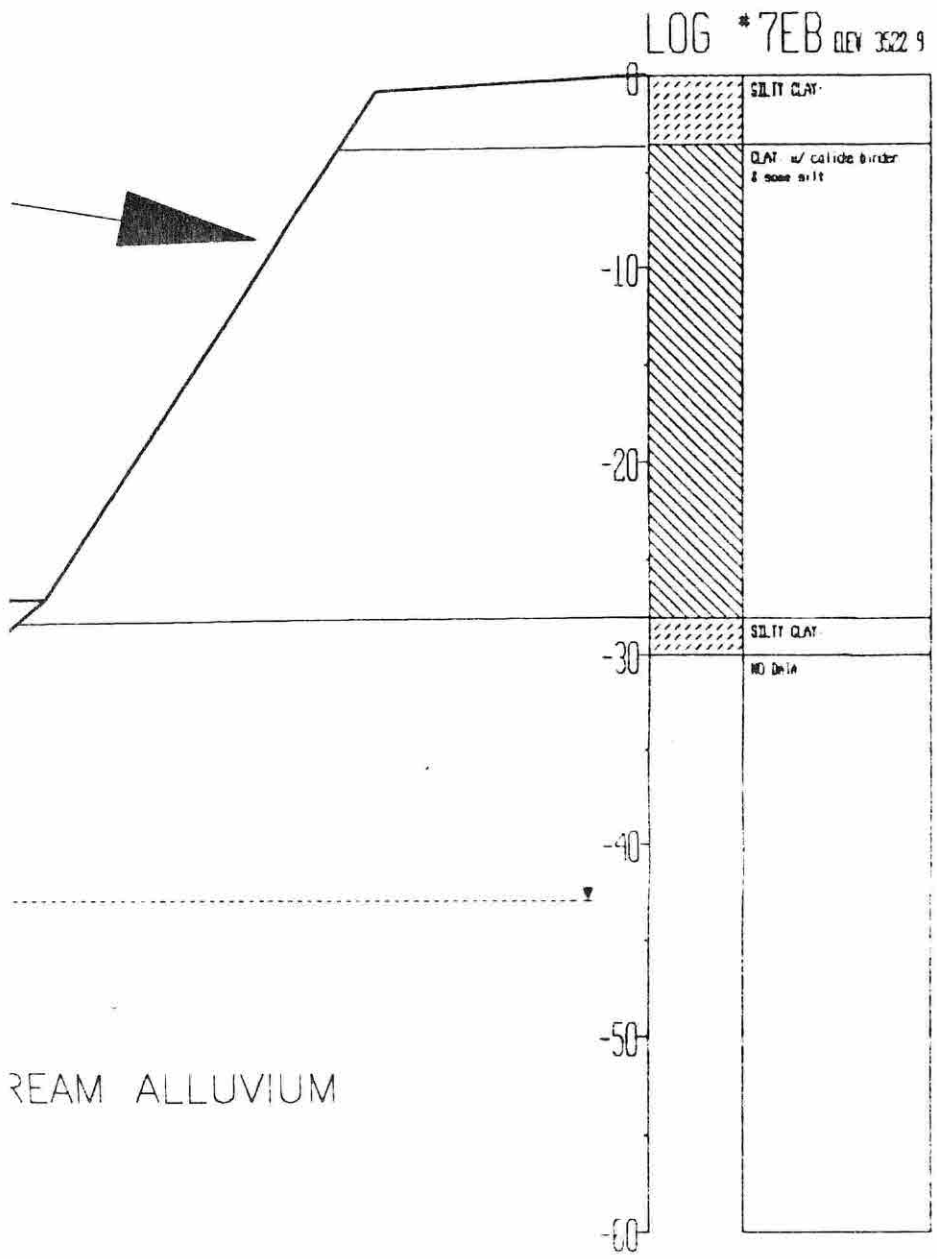
DWN: JRF	DATE: 2/22/94	FIGURE: **E**

WEST


LOG #1WB ELEV 3520.5
NO DATA
CLAY
SAND
CLAY
SAND
SAND AND CLAY
SAND AND GRAVEL gravel
SAND
GRAVEL
SAND
SAND GRAVEL AND CIRCLES
CLAY
LOG #2EB ELEV 3521.7
SILTY CLAY
CLAY w/ caliche binder & silt
CLAY w/ caliche binder & some silt
SANDY CLAY w/ silt
SILTY SAND w/ clay
LOG #2AE
SAND
SILTY SAND
0
-10
-20
-30
-40
-50
-60


VERTICAL SCALE(FT)
0
10
20
HORIZONTAL SCALE(FT)
0
20
40

EAST



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GEOLOGIC
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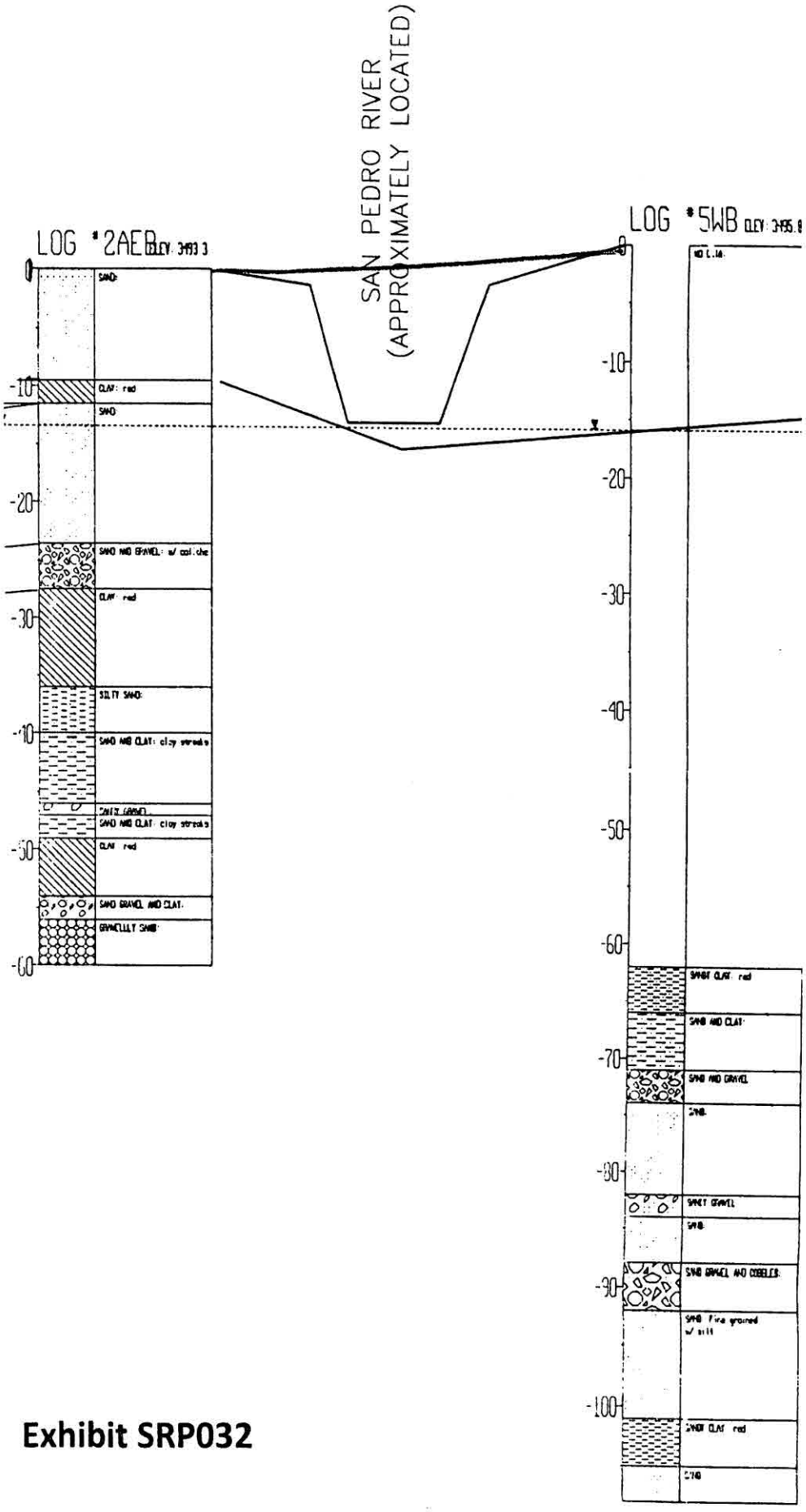
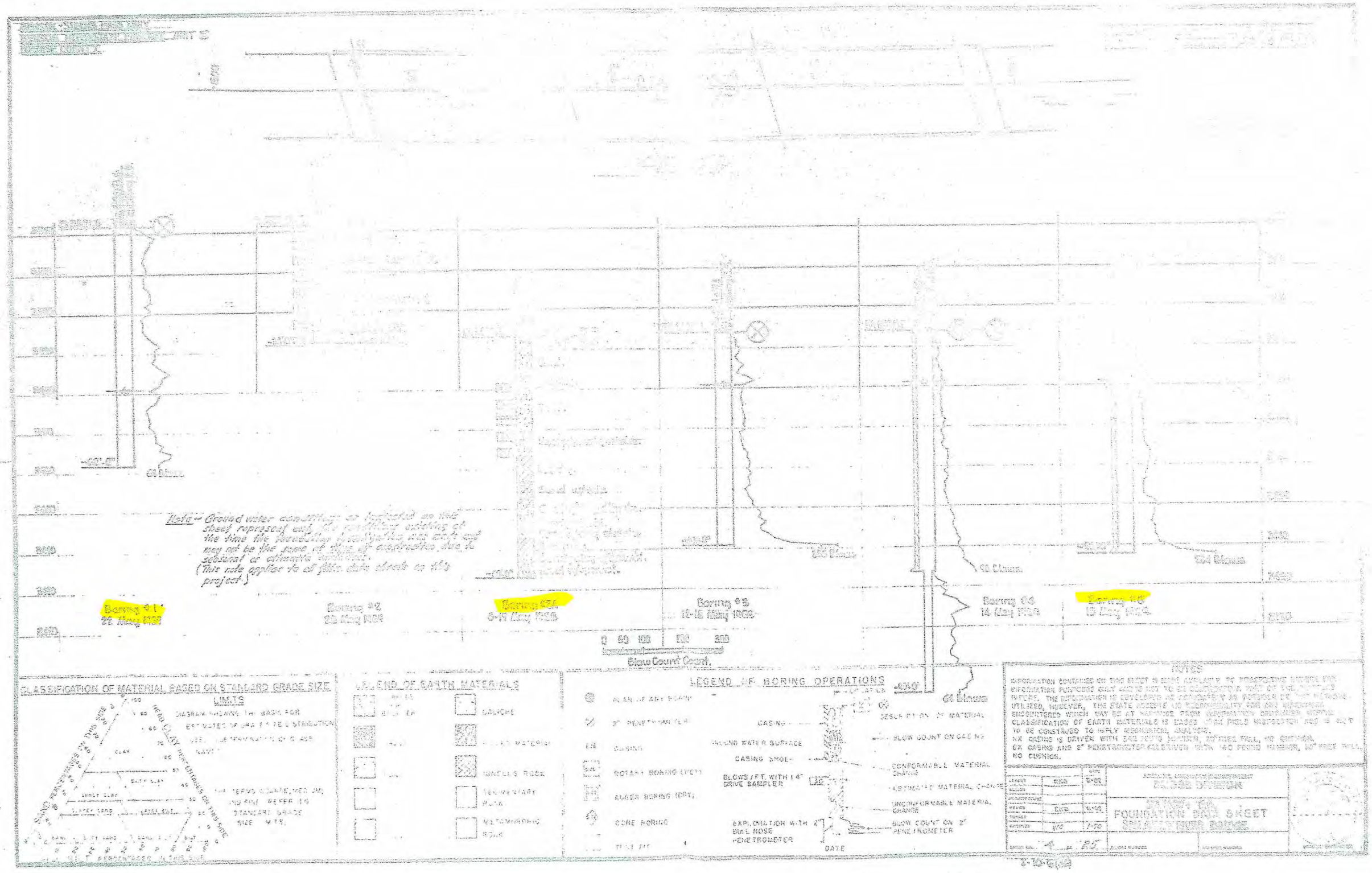


Exhibit SRP032

Logs # 107-110

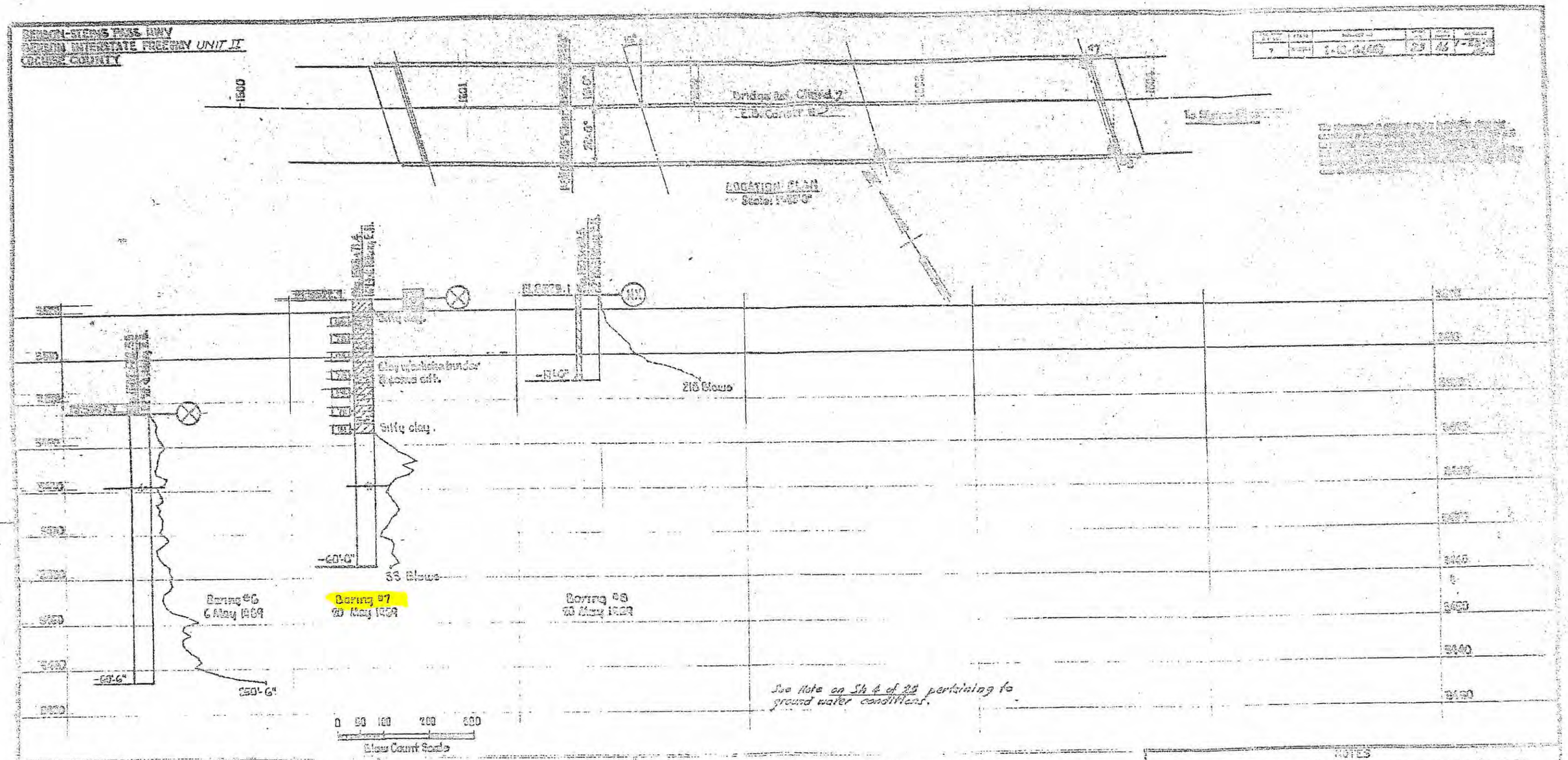
STR 1530 (1 of 2)



STK 1530 (2 of 2)

DENISON-SHERMAN TRANS. HWY
DENISON INTERSTATE FREEWAY UNIT II
GRAYSON COUNTY

7		I-10-6(48)			



CLASSIFICATION OF MATERIAL BASED ON STANDARD GRADE SIZE LIMITS

LEGEND OF EARTH MATERIALS

LEGEND OF BORING OPERATIONS

NOTES

INFORMATION CONTAINED ON THIS SHEET IS MADE AVAILABLE TO PROSPECTIVE BIDDERS FOR INFORMATION PURPOSES ONLY AND IS NOT TO BE CONSIDERED A PART OF THE CONTRACT PAPERS. THE INFORMATION IS DEVELOPED AS ACCURATELY AS POSSIBLE BY THE METHODS UTILIZED, HOWEVER, THE STATE ACCEPTS NO RESPONSIBILITY FOR ANY CONDITIONS ENCOUNTERED WHICH MAY BE AT VARIANCE FROM INFORMATION CONTAINED HEREIN. CLASSIFICATION OF EARTH MATERIALS IS BASED UPON FIELD INSPECTION AND IS NOT TO BE CONSTRUED TO IMPLY MECHANICAL ANALYSIS.
NX CASING IS DRIVEN WITH 340 POUND HAMMER, 30" FREE FALL, NO CUSHION.
BX CASING AND 2" PENETROMETER ARE DRIVEN WITH 140 POUND HAMMER, 30" FREE FALL, NO CUSHION.

DESIGNED	RMC	3-69	TEXAS HIGHWAY DEPARTMENT BRIDGE DIVISION
CHECKED			
ARCHITECTURE			GRAYSON COUNTY FOUNDATION DATA SHEET SAN FELIPE RIVER BRIDGE
DRAWN	RMB	3-69	
TRACED			
CHECKED	JD	1-70	
SHEET NO. 5 OF 25			

I-10-6(48)

Log # 111

(D-15-20) 21CAB

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 215009

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

Depth

DEPTH OF BORING	DEPTH OF COMPLETED WELL
85 Feet Below Land Surface	85 Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
18.07 Feet Below Land Surface	6-8-07	1450	☐ Valve ☐ Other:

Borehole			Installed Casing													
DEPTH FROM SURFACE			DEPTH FROM SURFACE			MATERIAL TYPE (T)				PERFORATION TYPE (T)						
FROM (feet)	TO (feet)	BOREHOLE DIAMETER (inches)	FROM (feet)	TO (feet)	OUTER DIAMETER (inches)	STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	SLOT SIZE IF ANY (inches)
0	70	4	0	70	2		X			X						
70	75	4	70	75	2		X							X		
75	85	4	75	85	2		X			X						

Installed Annular Material

DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (T)								FILTER PACK		
						BENTONITE						
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
0	5							X				
5	85	X							filter pack is in situ natural material			

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 215009

SECTION 6. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	Description Describe material, grain size, color, etc.	Check ( ) every interval where water was encountered (if known)
0	5	Very fine to coarse sand, subangular to subrounded, very well to well sorted; 40% quartz, 55 % feldspar, 5 % lithic fragments	
5	10	Brown clay and very fine light gray sand. Sand is 50% quartz, 45% feldspar, 5% lithic fragments	
10	15	Dark grayish brown clay, pinkish gray silt, very fine to very coarse sand.	
15	20	Grayish brown clay and angular to subrounded coarse to very coarse sand and gravel. Poorly sorted. Coarse sand is 50% quartz, 30% feldspar, 20 % lithic fragments	X
20	25	Very coarse sand and gravel, subangular to subrounded. Sand is 60 % quartz, 30% feldspar, 10% lithic fragments.	X
25	30	Very coarse sand and small gravel up to 5 mm diameter. Sand and gravel are subangular to subrounded	X
30	35	Coarse and very coarse sand and gravel; angular to subrounded sand and gravel	X
35	40	Medium to very coarse sand, subrounded to subangular. Sand is 50% quartz, 40% feldspar, 5% biotite, 5% black and red lithic fragments	X
40	45	Coarse and very coarse sand and gravel; subangular to subrounded. Sand is 50% quartz, 45% feldspar, 5% black lithic fragments	X
45	50	Coarse to very coarse sand and gravel, subangular to subrounded. Sand is 65% quartz, 30% feldspar, 5% black lithic fragments	X
50	55	Coarse to very coarse sand, well sorted	X
55	58	Medium to very coarse grayish brown sand, well sorted, 80% quartz, 20% feldspar, trace of black lithic fragments	X
58	60	Brown clay	X
60	65	Coarse to very coarse sand and small gravel up to 6 mm. Sand is 50% quartz, 40% feldspar, 10% lithic fragments	X
65	66	Very coarse sand and gravel, subangular to subrounded; gravel up to 20 mm diameter. Sand is 60% quartz, 35% feldspar, 5% lithic fragments	X
66	70	Brown clay, fine to very coarse sand, gravel up to 3 mm diameter. Poorly sorted	X

Log # 117

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner *Magma Copper Company*
   Name
   P.O. Box M, San Manuel, AZ 85631-0460
   Mailing Address
2. Driller *B-J Drilling Company Inc.*
   Name
   P.O. Box 815, Benson, AZ 85602
   Mailing Address
3. Location of well: *Twp.9S, Rge 17E, Section 23: NE¼,SW¼,NW¼*
4. Permit No. *55-530124*
   (If issued)

DESCRIPTION OF WELL

5. Total depth of hole *1000'* ft.
6. Type of casing *Steel*
7. Diameter and length of casing *10 3/4* in. from *+1'* to *20'*, *6 5/8"* in from *+1'* to *310'*, *4 1/2" from +1' to 999'*
8. Method of sealing at reduction points *Cemented*
9. Perforated from *285'* to *1000'*, from____ to____, from____ to____.
10. Size of cuts *.125 x 3"* Number of cuts per foot *12*
11. If screen was installed: Length____ ft. Diam____ in. Type____
12. Method of construction *drilled*
    drilled, dug, driven, bored, jetted, etc
13. Date started *1/28/91*
    Month Day Year
14. Date completed *2/08/91*
    Month Day Year
15. Depth to water *172.82'* ft. (If flowing well, so state)
16. Describe point from which depth measurements were made, and give sea-level elevation if available *top of casing*
17. If flowing well, state method of flow regulation:
18. Remarks:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
REG. No. 55-530124
File No. D(9-17)23bca
Entered ENTERED APR 22 1991

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DWR-55-55-2/89

ERROL L. MONTGOMERY & ASSOCIATES, INC.

FIGURE A-1. LITHOLOGIC DESCRIPTIONS FOR CONFINED AQUIFER MONITOR WELL (D-9-17)23bca2[CAM-1] MAGMA COPPER COMPANY SAN MANUEL DIVISION PRODUCTION WELLFIELD PINAL COUNTY, ARIZONA

DEPTH (feet)	DESCRIPTION
0-10	**GRAVELLY SILTY SAND**; tan; fine to coarse-grained subangular to subrounded sand 50%, silt and clay 40%, gravel 10%; unconsolidated. Gravel fraction: quartz 50%, granitic fragments 40%, k-feldspar 10%. Reaction to acid: strong. Some tan to white caliche. Dry.
10-20	**SILTY SAND**; tan; fine to coarse-grained subangular to subrounded sand 55%, silt and clay 40%, gravel 5%; unconsolidated. Gravel fraction: quartz 30%, granitic fragments 50%, k-feldspar 20%, some volcanic fragments. Reaction to acid: strong. Some tan to white caliche. Moist.
20-30	**SILTY SANDY GRAVEL**; tan to pink; subangular to angular gravel 70%, subangular to subrounded coarse-grained sand 20%, silt and clay 10%; unconsolidated. Gravel fraction: quartz 30%, granitic fragments 50%, volcanic fragments 10% limestone, sandstone, and chert 10% Reaction to acid: moderate. Begin mud-rotary drilling method at 20 feet.
30-40	**SANDY GRAVEL**; tan to pink; subangular to angular gravel 75%, subangular to subrounded coarse-grained sand 20%, silt and clay 5%; unconsolidated. Gravel fraction: quartz 30%, granitic fragments 50%, volcanic fragments 10% limestone, sandstone, and chert 10% Reaction to acid: weak.
40-50	**SILTY SANDY GRAVEL**; brown to pink; subangular to angular gravel 50%, subangular to subrounded medium to coarse-grained sand 40%, silt and clay 10%; unconsolidated. Gravel fraction: quartz 30%, granitic fragments 50%, volcanic fragments 10% limestone, sandstone, and chert 10% Reaction to acid: weak. Sandy red clay 49-50 feet.
50-60	**SILTY SANDY GRAVEL**; brown to pink; subangular to angular gravel 70%, subangular to subrounded medium to coarse-grained sand 20%, silt and clay 10%; unconsolidated (trace of cemented conglomerate). Gravel fraction: quartz 20%, granitic fragments 20%, volcanic fragments 60% (pink, red, and black rhyolite, andesite, and ignimbrite (?). Reaction to acid: weak. Sandy red clay 49-50 feet.

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DEPTH (feet)	DESCRIPTION
60-70	**SANDY GRAVEL**; brown to pink; angular gravel 90%, subangular to subrounded coarse-grained sand 10%; unconsolidated. Gravel fraction: quartz 20%, granitic fragments 20%, volcanic fragments 60% (pink, red, and black rhyolite, andesite, and ignimbrite (?). Reaction to acid: weak. Sandy red clay 49-50 feet.
70-80	**SILTY CLAY**; brown; angular gravel 20%, silt and clay 80; poorly consolidated. Reaction to acid: moderate. Drilling action indicates base of sandy gravel at 75 feet.
80-90	**CLAY**; brown; silt and clay 100% (predominantly clay); poorly consolidated. Reaction to acid: moderate.
90-100	**CLAY**; brown; silt and clay 100% (predominantly clay); poorly consolidated. Reaction to acid: moderate.
100-110	**CLAY**; brown; silt and clay 100% (predominantly clay); poorly consolidated. Reaction to acid: moderate.
110-120	**CLAY**; brown; silt and clay 100% (predominantly clay); poorly consolidated. Reaction to acid: moderate.
120-130	**CLAY**; brown; silt and clay 100% (predominantly clay); poorly consolidated. Reaction to acid: moderate.
130-140	**CLAY**; brown; silt and clay 100% (predominantly clay); poorly consolidated. Reaction to acid: moderate.
140-150	**CLAY**; brown; silt and clay 100% (predominantly clay); poorly consolidated. Reaction to acid: moderate.
150-160	**CLAY**; brown; silt and clay 100% (predominantly clay); poorly consolidated. Reaction to acid: moderate.
160-170	**CLAY**; brown; silt and clay 100% (predominantly clay); poorly consolidated. Reaction to acid: moderate.
170-180	**SANDY CLAY**; brown; silt and clay 90% (predominantly clay), fine to medium-grained sand 10%; poorly consolidated. Reaction to acid: moderate.
180-190	**SANDY CLAY**; brown; silt and clay 90% (predominantly clay), fine to medium-grained sand 10%; poorly consolidated. Reaction to acid: moderate.

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FIGURE A-1. LITHOLOGIC DESCRIPTIONS FOR CONFINED AQUIFER MONITOR WELL (D-9-17)23bca2[CAM-1] MAGMA COPPER COMPANY SAN MANUEL DIVISION PRODUCTION WELLFIELD PINAL COUNTY, ARIZONA

DEPTH (feet)	DESCRIPTION
190-200	**SANDY CLAY**; brown; silt and clay 90% (predominantly clay), fine to medium-grained sand 10%; poorly consolidated. Reaction to acid: moderate.
200-210	**SANDY CLAY**; brown; silt and clay 95% (predominantly clay), fine to medium-grained sand 5%; poorly consolidated. Reaction to acid: moderate.
210-220	**SILTY CLAY**; brown; silt and clay 100% (clay 80%, silt 20%); poorly consolidated. Reaction to acid: moderate.
220-230	**SILTY CLAY**; brown; silt and clay 100% (clay 80%, silt 20%); poorly consolidated. Reaction to acid: moderate.
230-240	**SANDY SILTY CLAY**; brown; silt and clay 100% (clay 60%, silt 40%), fine to medium-grained sand 20%, trace gravel; poorly consolidated. Reaction to acid: moderate.
240-250	**GRAVELLY SANDY SILTY CLAY**; brown to tan; silt and clay 50% (predominantly clay), gravel 30%, fine to medium-grained sand 20%; poorly to moderately consolidated. Reaction to acid: moderate.
250-260	**GRAVELLY SANDY SILTY CLAY**; brown to tan; silt and clay 50% (predominantly clay), gravel 30%, fine to medium-grained sand 20%; poorly to moderately consolidated. Reaction to acid: moderate.
260-270	**SANDY CLAYEY GRAVEL**; brown to tan; gravel 50%, silt and clay 30%, medium to coarse-grained sand 20%; poorly to moderately consolidated. Gravel fraction: quartz 50%, granitic fragments 50%. Reaction to acid: weak.
270-280	**GRAVELLY SANDY CLAY**; brown to tan; silt and clay 60% (predominantly clay), medium to coarse-grained sand 30%; gravel 10%. poorly to moderately consolidated. Gravel fraction: quartz 50%, granitic fragments 50%. Reaction to acid: weak.
280-290	**GRAVELLY SANDY CLAY**; brown to tan; silt and clay 60% (predominantly clay), medium to coarse-grained sand 30%; gravel 10%. poorly to moderately consolidated. Gravel fraction: quartz 50%, granitic fragments 50%. Reaction to acid: weak.

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FIGURE A-1. LITHOLOGIC DESCRIPTIONS FOR CONFINED AQUIFER MONITOR WELL (D-9-17)23bca2[CAM-1] MAGMA COPPER COMPANY SAN MANUEL DIVISION PRODUCTION WELLFIELD PINAL COUNTY, ARIZONA

DEPTH (feet)	DESCRIPTION
290-300	**GRANITIC CONGLOMERATE**; brown to tan; gravel 40%, silt and clay 40% (predominantly clay), medium to coarse-grained sand 20%. moderately consolidated. Gravel fraction: quartz 30%, granitic fragments 60%, volcanic fragments 10%. Reaction to acid: weak. Silt and clay interpreted to be from above.
300-310	**GRANITIC CONGLOMERATE**; brown to tan; gravel 70%, medium to coarse-grained sand 20% silt and clay 10%. moderately consolidated. Gravel fraction: quartz 30%, granitic fragments 60%, volcanic fragments 10%. Reaction to acid: moderate.
310-320	**GRANITIC CONGLOMERATE**; tan, white, pink, black; gravel 70%, angular to subrounded fine to coarse-grained sand 20% silt and clay 10%. moderately consolidated. Gravel fraction: quartz 30%, granitic fragments 60%, volcanic fragments 10%. Reaction to acid: weak.
320-330	**GRANITIC CONGLOMERATE**; tan, white, pink, black, brown; gravel 55%, subangular to subrounded fine to coarse-grained sand 30% silt and clay 15%. moderately consolidated. Gravel fraction: quartz 30%, granitic fragments 60%, volcanic fragments 10%. Volcanic fragments up to 2 cm. with weathered surfaces. Trace epidote. Reaction to acid: weak.
330-340	**GRANITIC CONGLOMERATE WITH CLAYEY SAND INTERBEDS**; tan and brown; gravel 50%, subangular to subrounded fine to coarse-grained sand 30% silt and clay 20%. moderately consolidated. Gravel fraction: quartz 30%, granitic fragments 60%, volcanic fragments 10%. Reaction to acid: weak.
340-350	**GRANITIC CONGLOMERATE WITH CLAYEY SAND INTERBEDS**; tan and brown; gravel 50%, subangular to subrounded fine to coarse-grained sand 30% silt and clay 20%. moderately consolidated. Gravel fraction: quartz 30%, granitic fragments 60%, volcanic fragments 10%. Reaction to acid: weak.
350-360	**GRANITIC CONGLOMERATE**; tan, white, pink, black; gravel 75%, subangular to subrounded fine to coarse-grained sand 20% silt and clay 5%. moderately consolidated. Gravel fraction: quartz 30%, granitic fragments 60%, volcanic fragments 10%. Volcanic fragments up to 3 cm. with weathered surfaces. Reaction to acid: weak.

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FIGURE A-1. LITHOLOGIC DESCRIPTIONS FOR CONFINED AQUIFER MONITOR WELL (D-9-17)23bca2[CAM-1] MAGMA COPPER COMPANY SAN MANUEL DIVISION PRODUCTION WELLFIELD PINAL COUNTY, ARIZONA

DEPTH (feet)	DESCRIPTION
360-370	**GRANITIC CONGLOMERATE**; tan, white, pink, black; gravel 80%, subangular to subrounded medium to coarse-grained sand 20%. moderately consolidated. Gravel fraction: quartz 30%, granitic fragments 60%, volcanic fragments 10%. Volcanic fragments up to 3 cm. with weathered surfaces. Reaction to acid: weak.
370-380	**GRANITIC CONGLOMERATE WITH SANDY CLAY INTERBEDS**; tan, white, pink, black; gravel 70%, subangular to subrounded medium to coarse-grained sand 20%, silt and clay 10%. Moderately consolidated. Gravel fraction: quartz 30%, granitic fragments 60%, volcanic fragments 10%. Some quartz chips up to 2 cm. Calcareous rind on some chips. Reaction to acid: weak.
380-390	**GRANITIC CONGLOMERATE WITH SANDY CLAY INTERBEDS**; tan, white, pink, black; gravel 60%, subangular to subrounded medium to coarse-grained sand 30% silt and clay 10%. moderately consolidated. Gravel fraction: quartz 30%, granitic fragments 60%, volcanic fragments 10%. Reaction to acid: weak.
390-400	**GRANITIC CONGLOMERATE WITH CLAYEY SAND INTERBEDS**; tan, white, pink, black; gravel 60%, subangular to subrounded medium to coarse-grained sand 30%, silt and clay 10%. moderately consolidated. Gravel fraction: quartz 30%, granitic fragments 60%, volcanic fragments 10%. Reaction to acid: weak.
400-410	**GRANITIC CONGLOMERATE WITH SANDY CLAY MATRIX AND INTERBEDS**; tan, white, pink, black; gravel 80%, angular to subrounded medium to coarse-grained sand 15% silt and clay 5%. moderately consolidated. Gravel fraction: quartz 30%, granitic fragments 60%, volcanic fragments 10%. Reaction to acid: weak.
410-420	**GRANITIC CONGLOMERATE WITH SANDY CLAY MATRIX AND INTERBEDS**; tan, white, pink, black; gravel 60%, angular to subrounded fine to coarse-grained sand 20%, silt and clay 20%. moderately consolidated. Gravel fraction: quartz 30%, granitic fragments 60%, volcanic fragments 10%. Reaction to acid: weak.
420-430	**GRANITIC CONGLOMERATE WITH SANDY CLAY MATRIX AND INTERBEDS**; tan, white, pink, black; gravel 70%, angular to subrounded fine to coarse-grained sand 20%, silt and clay 10%. moderately to well consolidated. Gravel fraction: quartz 40%, granitic fragments 50%, volcanic fragments 10%. Reaction to acid: weak.

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FIGURE A-1. LITHOLOGIC DESCRIPTIONS FOR CONFINED AQUIFER MONITOR WELL (D-9-17)23bca2[CAM-1] MAGMA COPPER COMPANY SAN MANUEL DIVISION PRODUCTION WELLFIELD PINAL COUNTY, ARIZONA

DEPTH (feet)	DESCRIPTION
430-440	**CLAYEY SAND AND GRAVEL**; brown; gravel 50%, angular to subrounded fine to coarse-grained sand 30%, silt and clay 20%. poorly to moderately consolidated. Gravel fraction: quartz 40%, granitic fragments 50%, volcanic fragments 10%, in clayey sand matrix. Reaction to acid: weak.
440-450	**CLAYEY SAND AND GRAVEL**; brown; gravel 50%, angular to subrounded fine to coarse-grained sand 30%, silt and clay 20%. poorly to moderately consolidated. Gravel fraction: quartz 40%, granitic fragments 50%, volcanic fragments 10%, in clayey sand matrix. Reaction to acid: weak.
450-460	**CLAYEY SAND AND GRAVEL**; brown; gravel 40%, subangular to subrounded fine to medium-grained sand 40%, silt and clay 20%. poorly to moderately consolidated. Gravel fraction: quartz 40%, granitic fragments 50%, volcanic fragments 10%, in clayey sand matrix. Reaction to acid: weak.
460-470	**CLAYEY SAND AND GRAVEL**; brown; gravel 50%, subangular to subrounded fine to medium-grained sand 30%, silt and clay 20%. poorly to moderately consolidated. Gravel fraction: quartz 40%, granitic fragments 50%, volcanic fragments 10%, in clayey sand matrix. Reaction to acid: weak.
470-480	**CLAYEY SAND AND GRAVEL**; brown; gravel 50%, angular to subrounded fine to medium-grained sand 30%, silt and clay 20%. poorly to moderately consolidated. Gravel fraction: quartz 40%, granitic fragments 50%, volcanic fragments 10%. Reaction to acid: weak.
480-490	**CLAYEY SAND AND GRAVEL**; brown; gravel 50%, angular to subrounded fine to medium-grained sand 30%, silt and clay 20%. poorly to moderately consolidated. Gravel fraction: quartz 40%, granitic fragments 50%, volcanic fragments 10%. Reaction to acid: weak.
490-500	**CLAYEY SAND WITH SANDY CLAY AND CLAY INTERBEDS**; brown; gravel 30%, subangular to subrounded fine to medium-grained sand 40%, silt and clay 30%. poorly to moderately consolidated. Gravel fraction: quartz 40%, granitic fragments 50%, volcanic fragments 10%. Reaction to acid: weak.

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FIGURE A-1. LITHOLOGIC DESCRIPTIONS FOR CONFINED AQUIFER MONITOR WELL (D-9-17)23bca2[CAM-1] MAGMA COPPER COMPANY SAN MANUEL DIVISION PRODUCTION WELLFIELD PINAL COUNTY, ARIZONA

DEPTH (feet)	DESCRIPTION
500-510	**SANDY CLAY WITH CLAYEY SAND AND GRAVEL**; brown and black; gravel 20%, subangular to subrounded fine to medium-grained sand 30%, silt and clay 50%. poorly to moderately consolidated. Gravel fraction: black and red volcanic fragments 70%, quartz 10%, granitic fragments 20%. Reaction to acid: weak.
510-520	**SANDY CLAY WITH CLAYEY SAND AND GRAVEL**; brown and black; gravel 20%, subangular to subrounded fine to medium-grained sand 30%, silt and clay 50%. poorly to moderately consolidated. Gravel fraction: black and red volcanic fragments 70%, quartz 10%, granitic fragments 20%. Reaction to acid: weak.
520-530	**CLAYEY SAND AND GRAVEL**; brown, black, and red; gravel 40%, subangular to subrounded fine to medium-grained sand 40%, silt and clay 30%. poorly to moderately consolidated. Gravel fraction: black and red volcanic fragments 70%, quartz 10%, granitic fragments 20%. Reaction to acid: weak.
530-540	**CLAYEY SAND AND GRAVEL**; brown, black, and red; gravel 40%, subangular to subrounded fine to coarse-grained sand 30%, silt and clay 30%. poorly consolidated. Gravel fraction: gray volcanic fragments 70%, black and red volcanic fragments 30%. Some weathered volcanic surfaces. Clay more red than above. Reaction to acid: weak.
540-550	**VOLCANIC CONGLOMERATE**; brown, black, and red; gravel 70%, subangular to subrounded fine to coarse-grained sand 10%, silt and clay 20%. poorly consolidated. Gravel fraction: gray volcanic fragments 40%, red volcanic fragments 60%. Reaction to acid: weak.
550-560	**VOLCANIC CONGLOMERATE**; black and red; gravel 75%, subangular to subrounded fine to coarse-grained sand 15%, silt and clay 10%. poorly consolidated. Gravel fraction: gray volcanic fragments 40%, red volcanic fragments 60%. Reaction to acid: weak.
560-570	**VOLCANIC CONGLOMERATE**; black and red; gravel 70%, subangular to subrounded fine to coarse-grained sand 15%, silt and clay 15%. poorly consolidated. Gravel fraction: gray volcanic fragments 40%, red volcanic fragments 60%. Reaction to acid: weak.

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FIGURE A-1. LITHOLOGIC DESCRIPTIONS FOR CONFINED AQUIFER MONITOR WELL (D-9-17)23bca2[CAM-1] MAGMA COPPER COMPANY SAN MANUEL DIVISION PRODUCTION WELLFIELD PINAL COUNTY, ARIZONA

DEPTH (feet)	DESCRIPTION
570-580	**CLAYEY SILTY GRAVEL**; black and red; gravel 50%, subangular to subrounded very fine to medium-grained sand 10%, silt and clay 40%. poorly consolidated. Gravel fraction: gray volcanic fragments 40%, red volcanic fragments 60%. Reaction to acid: weak.
580-590	**CLAYEY SILTY GRAVEL**; black, red, and gray; gravel 50%, subangular to subrounded very fine to medium-grained sand 10%, silt and clay 40%. poorly consolidated. Gravel fraction: gray volcanic fragments 40%, red volcanic fragments 60%. Some gray clay. Reaction to acid: weak.
590-600	**SANDY SILTY CLAY AND GRAVEL**; black, red, and gray; gravel 40%, subangular to subrounded very fine to medium-grained sand 20%, silt and clay 40%. poorly consolidated. Gravel fraction: gray volcanic fragments 40%, red volcanic fragments 60%. Increasing amounts of gray clay, some yellow limonitic clay. Reaction to acid: weak.
600-610	**CLAYEY SANDY GRAVEL**; red and brown; gravel 50%, subangular to subrounded very fine to medium-grained sand 10%, silt and clay 40%. poorly consolidated. Gravel fraction: gray volcanic fragments 40%, red volcanic fragments 60%. Reaction to acid: weak.
610-620	**CLAYEY SANDY GRAVEL**; red and brown; gravel 30%, subangular to subrounded very fine to medium-grained sand 10%, silt and clay 60%. poorly consolidated. Gravel fraction: gray volcanic fragments 40%, red volcanic fragments 60%. Some sub-rounded gravel fragments in sandy clay matrix. Reaction to acid: weak.
620-630	**CLAYEY SANDY GRAVEL**; red and brown; gravel 30%, subangular to subrounded very fine to medium-grained sand 10%, silt and clay 60%. poorly consolidated. Gravel fraction: gray volcanic fragments 40%, red volcanic fragments 60%. Some sub-rounded gravel fragments in sandy clay matrix. Reaction to acid: weak.
630-640	**SANDY SILTY CLAY**; red, brown, and gray; gravel 10%, sand 10%, silt and clay 80%. poorly consolidated. Reaction to acid: weak. Dramatic color change (more gray). clay is sticky.
640-650	**SANDY SILTY CLAY**; brown and gray; very fine to medium-grained sand 15%, silt and clay 85%. poorly consolidated. Reaction to acid: weak.

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DEPTH (feet)	DESCRIPTION
650-660	**SILTY SANDY CLAY WITH CLAY INTERBEDS**; brown and gray; very fine to medium-grained sand 15%, silt and clay 85%. poorly consolidated. Reaction to acid: weak.
660-670	**SILTY SANDY CLAY WITH CLAY INTERBEDS**; brown and gray; very fine to medium-grained sand 15%, silt and clay 85%. poorly consolidated. Reaction to acid: weak.
670-680	**SILTY SANDY CLAY WITH SILTY CLAY INTERBEDS**; brown and gray; very fine to medium-grained sand 20%, silt and clay 80%. poorly consolidated. Reaction to acid: weak.
680-690	**SILTY SANDY CLAY WITH SILTY CLAY INTERBEDS**; brown and gray; very fine to medium-grained sand 10%, silt and clay 90%. poorly consolidated. Reaction to acid: weak. Trace of gypsum (?).
690-700	**SILTY SANDY CLAY WITH SILTY CLAY INTERBEDS**; brown and gray; very fine to medium-grained sand 10%, silt and clay 90%. poorly consolidated. Reaction to acid: weak.
700-710	**SANDY SILTY CLAY**; tan and brown; medium to coarse-grained sand 40%, silt and clay 60%. poorly to moderately consolidated. Reaction to acid: moderate.
710-720	**SANDY SILTY CLAY**; tan and brown; medium to coarse-grained sand 30%, silt and clay 70%. poorly to moderately consolidated. Reaction to acid: moderate.
720-730	**SILTY SANDY CLAY WITH SILTY CLAYEY SAND INTERBEDS**; tan and brown; gravel 10%, medium to coarse-grained sand 30%, silt and clay 60%. poorly to moderately consolidated. Reaction to acid: moderate. Gravel is contamination from tripping in.
730-740	**SILTY CLAY WITH SANDY SILTY CLAY INTERBEDS**; brown and gray; gravel 5%, medium to coarse-grained sand 15%, silt and clay 80%. poorly to moderately consolidated. Reaction to acid: moderate.
740-750	**SILTY CLAY WITH SANDY SILTY CLAY INTERBEDS**; brown and gray; gravel 5%, medium to coarse-grained sand 15%, silt and clay 80%. poorly to moderately consolidated. Some moderately lithified clayey sandy siltstone. Reaction to acid: moderate.

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DEPTH (feet)	DESCRIPTION
750-760	**SANDY SILTY CLAY WITH CLAYEY SILTSTONE AND CLAYEY SILTY SANDSTONE INTERBEDS**; brown and gray; gravel 10%, fine to coarse-grained sand 30%, silt and clay 60%. poorly to moderately consolidated. Some moderately lithified clayey siltstone and clayey silty sandstone. Reaction to acid: moderate.
760-770	**SANDY SILTY CLAY**; brown and gray; fine to medium-grained sand 20%, silt and clay 80%. poorly consolidated. No visible lithified chips. Reaction to acid: moderate.
770-780	**GRAVELLY SANDY SILTY CLAY WITH CLAYEY SILTSTONE AND CLAYEY SILTY SANDSTONE INTERBEDS**; brown and gray; gravel 10%, fine to medium-grained sand 20%, silt and clay 70%. poorly to moderately consolidated. Some moderately lithified clayey siltstone and clayey silty sandstone. Reaction to acid: moderate.
780-790	**GRAVELLY SANDY SILTY CLAY WITH CLAYEY SILTSTONE AND CLAYEY SILTY SANDSTONE INTERBEDS**; brown and gray; gravel 5%, fine to medium-grained sand 25%, silt and clay 70%. poorly to moderately consolidated. Some moderately lithified clayey siltstone and clayey silty sandstone. Reaction to acid: moderate.
790-800	**SANDY SILTY CLAY**; brown and gray; fine to medium-grained sand 30%, silt and clay 70%. poorly consolidated. No visible lithified chips. Reaction to acid: moderate.
800-810	**SANDY SILTY CLAY**; brown and gray; fine to medium-grained sand 30%, silt and clay 70%. poorly to moderately consolidated. Trace of red silty sandstone, trace of gypsum. Reaction to acid: moderate.
810-820	**SANDY SILTY CLAY**; brown and gray; fine to medium-grained sand 20%, silt and clay 80%. poorly to moderately consolidated. Reaction to acid: moderate.
820-830	**GRAVELLY SANDY SILTY CLAY**; brown and gray; gravel 10%, fine to medium-grained sand 20%, silt and clay 70%. poorly to moderately consolidated. Reaction to acid: moderate.
830-840	**SANDY CLAYEY GRAVEL AND GRAVELLY SANDY SILTY CLAY**; brown and gray; gravel 20%, fine to medium-grained sand 30%, silt and clay 50%. poorly to moderately consolidated. Reaction to acid: moderate.

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DEPTH (feet)	DESCRIPTION
840-850	**SANDY CLAYEY GRAVEL AND GRAVELLY SANDY SILTY CLAY**; brown and gray; gravel 20%, fine to medium-grained sand 30%, silt and clay 50%. poorly to moderately consolidated. Reaction to acid: moderate.
850-860	**GRAVELLY SANDY SILTY CLAY WITH SANDY SILTSTONE AND SILTY SANDSTONE INTERBEDS**; brown and gray; gravel 20%, fine to medium-grained sand 30%, silt and clay 50%. poorly to moderately consolidated. Gravel fraction: granitic fragments 25%, red and black volcanics 25%, siltstone 50%. Reaction to acid: moderate.
860-870	**GRAVELLY SANDY SILTY CLAY WITH SANDY SILTSTONE AND SILTY SANDSTONE INTERBEDS**; brown and gray; gravel 20%, fine to medium-grained sand 30%, silt and clay 50%. poorly to moderately consolidated. Gravel fraction: granitic fragments 25%, red and black volcanics 25%, siltstone 50%. Reaction to acid: moderate.
870-880	**CLAYEY SANDSTONE**; brown and gray; gravel 10%, medium to coarse-grained sand 60%, silt and clay 30%. moderately consolidated. Poorly sorted, well compacted, contains some white calcareous caliche-like material. Reaction to acid: moderate.
880-890	**GRAVELLY CLAYEY SANDSTONE**; brown and gray; gravel 20%, medium to coarse-grained sand 60%, silt and clay 30%. moderately consolidated. Poorly sorted, well compacted, contains some white calcareous caliche-like material. Reaction to acid: moderate.
890-900	**SANDY CLAY**; brown and gray; gravel 5%, medium to coarse-grained sand 35%, silt and clay 60%. moderately consolidated. Contains gypsum laths and white amorphous gypsum. Reaction to acid: moderate.
900-910	**GRAVELLY SANDY CLAY**; brown and gray; gravel 30%, medium to coarse-grained sand 20%, silt and clay 50%. poorly to moderately consolidated. Trace of red clay. Reaction to acid: moderate.
910-920	**GRAVELLY SANDY CLAY WITH CLAYEY SANDSTONE AND SILTSTONE INTERBEDS**; brown and gray; gravel 10%, medium to coarse-grained sand 20%, silt and clay 70%. poorly to moderately consolidated. Reaction to acid: Moderate.

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FIGURE A-1. LITHOLOGIC DESCRIPTIONS FOR CONFINED AQUIFER MONITOR WELL (D-9-17)23bca2[CAM-1] MAGMA COPPER COMPANY SAN MANUEL DIVISION PRODUCTION WELLFIELD PINAL COUNTY, ARIZONA

DEPTH (feet)	DESCRIPTION
920-930	CLAYEY SILTSTONE, CLAYEY SANDSTONE AND CLAYSTONE; brown and gray; medium to coarse-grained sand 30%, silt and clay 70%. moderately to well consolidated. Reaction to acid: moderate. Some gypsum cement.
930-940	CLAYEY SILTSTONE, CLAYEY SANDSTONE AND CLAYSTONE; brown and gray; medium to coarse-grained sand 30%, silt and clay 70%. moderately to well consolidated. Reaction to acid: moderate. Some gypsum cement.
940-950	CLAYEY SILTSTONE AND CLAYSTONE; pink, brown and gray; medium to coarse-grained sand 20%, silt and clay 80%. moderately to well consolidated. Reaction to acid: moderate.
950-960	CLAYEY SILTSTONE, CLAYEY SANDSTONE AND CLAYSTONE; brown and gray; gravel 10%, medium to coarse-grained sand 20%, silt and clay 70%. moderately to well consolidated. Reaction to acid: moderate.
960-970	CLAYEY SILTSTONE, CLAYEY SANDSTONE AND CLAYSTONE; pink, brown and gray; gravel 10%, medium to coarse-grained sand 20%, silt and clay 70%. moderately to well consolidated. Reaction to acid: moderate.
970-980	CLAYEY SILTSTONE, CLAYEY SANDSTONE AND CLAYSTONE; pink, brown and gray; gravel 10%, medium to coarse-grained sand 20%, silt and clay 70%. moderately to well consolidated. Reaction to acid: moderate. Some gypsum laths.
980-990	CLAYEY SILTSTONE, CLAYEY SANDSTONE AND CLAYSTONE; pink, brown and gray; gravel 10%, medium to coarse-grained sand 20%, silt and clay 70%. poorly to moderately consolidated. Reaction to acid: moderate.
990-1,000	CLAYEY SILTSTONE, CLAYEY SANDSTONE AND CLAYSTONE; pink, brown and gray; gravel 10%, fine to coarse-grained sand 30%, silt and clay 60%. poorly to moderately consolidated. Reaction to acid: moderate.

TOTAL DEPTH DRILLED: 1,000 FEET BELOW LAND SURFACE

RECEIVED
APR 17 1991

Log # 128

(D-7-16) 10CAD

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 912804

SECTION 1: WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

Depth

DEPTH OF BORING: 30' Feet Below Land Surface

DEPTH OF COMPLETED WELL: 30' Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
23.39' Feet Below Land Surface	1-3-11		Valve Other:

Borehole

DEPTH FROM SURFACE FROM (feet)	TO (feet)	BOREHOLE DIAMETER (inches)
0	30	2"

Installed Casing

DEPTH FROM SURFACE FROM (feet)	TO (feet)	OUTER (inches)	MATERIAL TYPE (T): STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	PERFORATION TYPE (T): BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	SLOT SIZE (inches)
0	20	1"		X			X						
20	30	1"		X							X		.010"

Installed Annular Material

DEPTH FROM SURFACE FROM (feet)	TO (feet)	ANNULAR MATERIAL TYPE (T): NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	BENTONITE: GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	FILTER PACK: SAND	GRAVEL	SIZE
0	8			X								
8	10							X				
10	30									X		10x20

ACTIVITY AND GEOLOGIC DRILL HOLE LOG

Well ID: BF PZ East

Location: Black Farm near Mammoth, AZ

ADWR well reg. #: 55-912804

Land surface elevation: 2177'

TD: 30'

Depth to water: 23.39'

Date: 1/3/2011 (0' - 30')

Personnel: Steve Westwood, (SRP)

Drilling Co.: GSI

Driller: Mike, Jimmy & Oscar

Rig/Method: Air Hammer/Rotary

Drill fluid: None/Water

Sample type: Grab/Split Spoon

Est. Time and Interval Sampled	Description [Basic description includes rock type, color, grain size %'s (gravel, sand, silt, clay), cementation, gravel fraction (rounding, color, size, lithology %'s), acid reaction (weak, moderate, strong)]
11:00	Begin drilling using CME 95 Air Rotary; sampling with Drive Sample (DS) clear tubing
11:25 8'	Fine grained silt - light brown; 10% clay content (DS)
	Light brown with sub rounded sand and gravel to (0.5cm); caliche present
13'	Fine grained silt - light brown; 10% clay content (DS)
	Light brown fines, cakes with moisture present; caliche present
17'	Fine grained silt - light brown; 10% clay content (DS)
	Light brown fines, cakes with moisture present; caliche present
20'	Fine grained silt - light brown; 10% clay content (DS)
	Light brown well sorted fines - increasing clay, elastic , becoming moist;
swl ~23.39'	
25'	Fine grained silty clay - dark brown; saturated at 24', 60% clay content (DS)
30'	Fine grained silty clay - dark brown; saturated horizon 65% clay content, 10% fines,
	25% sub rounded gravel to (1 cm) (DS)
	Total Depth of piezometer is 30'. Screened from 30-20' with 010 PVC and blank casing.

Log # 129

(D-7-16) 9DDB

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 912807

SECTION 4: WELL CONSTRUCTION DESIGN AS BUILT (attach additional pages if needed)

Depth

DEPTH OF BORING: 185' Feet Below Land Surface

DEPTH OF COMPLETED WELL: 185' Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
20.65' Feet Below Land Surface	1-10-11		Valve Other:

Borehole

DEPTH FROM SURFACE FROM (feet)	TO (feet)	BOREHOLE DIAMETER (inches)
0	185	5"

Installed Casing

DEPTH FROM SURFACE FROM (feet)	TO (feet)	OUTER (inches)	MATERIAL TYPE (T): STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	PERFORATION TYPE (T): BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	SLOT SIZE (inches)
0	165	2		X		Sch 80	X						
165	185	2		X		Sch 80					X		.010"

Installed Annular Material

DEPTH FROM SURFACE FROM (feet)	TO (feet)	ANNULAR MATERIAL TYPE (T): NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	BENTONITE: GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	FILTER PACK: SAND	GRAVEL	SIZE
0	13			X								
13	15						X	X				
15	185									X		10x20

ACTIVITY AND GEOLOGIC DRILL HOLE LOG

Well ID: Black Farm Observation Well #1
Location: Black Farm near Mammoth, AZ
(Closest to Highway)
ADWR well reg. #: 55-912807
Land surface elevation: 2157'
TD: 185'
Depth to water: 20.65' at 13:06 1/10/2011

Date: 1/7/2011
Personnel: Steve Westwood, Ruth Valencia, Angie Bond (SRP)
Drilling Co.: GSI
Driller: Mike, Jimmy & Oscar
Rig/Method: Air Hammer
Drill fluid: None
Sample type: Grab

Time and Interval Sampled		Description [Basic description includes rock type, color, grain size %'s (gravel, sand, silt, clay), cementation, gravel fraction (rounding, color, size, lithology %'s), acid reaction (weak, moderate, strong)]
8:00		On site- warm up/mob CME 195 (semi mounted rig)
8:45	5'	5' grab sample (bagged but not in chip tray) loamy soil
9:27	25'	25' split spoon (first chip tray)- moisture in sample. Fine silty clay; cohesive, low plasticity. strong reaction with acid
9:38-9:50	40'	40' grab sample. Gooey chocolate brown clay/mud. resembles chocolate pudding. Trace fine silts, silty clay; not much in chip tray (check bagged sample). strong reaction with acid * clay sticking between drill stem and casing. Sample may be more representative of 30'. Driller wanted to punch through clay (no samples between 25-40'
9:59-10:03	45'	45' grab sample. Gravels coated with clay (probably from upper formations) poorly sorted subangular to subrounded gravels & sands. Grain sizes range from 1mm subrounded quartz sands to 2.5 cm variety of compositions; quartz, red conglomerate, greenstone. Matrix effervesces with acid

ACTIVITY AND GEOLOGIC DRILL HOLE LOG

Well ID: 55-912807; BF OW #1 Date: 1/7/2011

Interval sampled (feet)	Description [Basic description includes rock type, color, grain size %'s (gravel, sand, silt, clay), cementation, gravel fraction (rounding, color, size, lithology %'s), acid reaction (weak, moderate, strong)]
10:14 55'	55' grab sample gravelly sand
	35% fine to medium subangular gravels. Variety of purple, grey, and red
	volcanic and chert grains.
	65% medium to coarse sand *matrix effervesces with acid
10:17 to 10:20	60' grab sample- gravelly sand
60'	subangular to angular gravels. 1-3.5 cm
	Same composition and ratios as 55' *matrix effervesces with acid
10:23-10:31	65' grab sample -gravelly clayey silty sand
65'	trace gravels
	15%silty sands with some clay and moisture (binds together)
	85% fine to coarse sand biotite rich in fines; brownish fines.
	*reacts with acid
10:32-10:37	70' grab sample- gravelly silty sand-similar to above with less moisture
70'	(trace clay component) more fine gravel; angular white and grey granite; red
	conglomerate up to 2 cm poorly sorted fine to coarse sands 85%
	Silts ~10% * reacts with acid
10:44 75'	75' grab sample- Gravelly sand
	20% gravel angular quartizite, conglomerate and quartz clast up to 3 cm.
	Poorly sorted sand 75%, trace silts
	not a strong reaction to acid; some grains and fines react
	variety of rock types from red conglomerate to olivine rich mafics

ACTIVITY AND GEOLOGIC DRILL HOLE LOG

Well ID: 55-912807; BF OW #1 Date: 1/7/2011

Interval sampled (feet)		Description [Basic description includes rock type, color, grain size %'s (gravel, sand, silt, clay), cementation, gravel fraction (rounding, color, size, lithology %'s), acid reaction (weak, moderate, strong)]
10:50	80'	80' grab sample-gravelly sand
		medium to coarse sand abundant, more quartz
		15% gravel
		85% sand
10:57	85'	85' grab sample - same as 80' varying fines
	90'	90' grab sample- same as 80' varying fines
11:15		* had to field a phone call (not there for 85 & 90' samples)
11:20	95'	95' grab sample- gravelly sand
		same compositions and clasts as 75-90'
		20% gravel up to 4cm; 80% poorly sorted sand
11:21	100'	100' grab sample- gravelly sand
		same compositions and clasts as 75-95'
		10% angular gravel up to 3cm; 85% poorly sorted sand; trace fines
11:25	105'	105' grab sample- gravelly sand
		same compositions and clasts as 75-100' (maybe small increased mafic content)
		15% gravel; 85% poorly sorted sand * some matrix reaction with acid
11:33	110'	110' grab sample- silty gravelly sand
		increased fine content;
		15% subangular gravel purple quartzite, white, black and pink granite, red chert
		80% poorly sorted sands; trace fines
		* poor acid reaction

ACTIVITY AND GEOLOGIC DRILL HOLE LOG

Well ID: 55-912807; BF OW #1 Date: 1/7/2011 and 1/10/2011

Interval sampled (feet)		Description [Basic description includes rock type, color, grain size %'s (gravel, sand, silt, clay), cementation, gravel fraction (rounding, color, size, lithology %'s), acid reaction (weak, moderate, strong)]
11:38	115'	115; grab sample- silty gravelly sand same as 110' with increased fines 10% fines; 15% gravel; 75% poorly sorted sand *poor acid reaction
11:43	120'	120' grab sample- silty gravelly sand - same as 110-115' 5% fines; 15% gravel; 80% poorly sorted sand * poor acid reaction
11:50	125'	125' gray sample- gravelly sand 15% gravel; 85% sand poor acid reaction
		End of outer casing. Will begin Monday (1/10/11) with more pipe
Begin		*January 10, 2011 Logged by Ruth Valencia (review by Steve Westwood)*
9:02	130'	130' grab sample: gravelly sand, angular to sub-angular gravel (1 to 1.5 cm); 15% gravel; 85% sand - light brown, wet and unconsolidated
9:11	135'	135' grab sample: gravelly sand, angular to sub-angular gravel (1 to 2 cm); 15% gravel; 85% sand - dark brown, wet and unconsolidated
9:18	140'	140' grab sample: gravelly sand, angular to sub-angular gravel (1.5 to 3 cm); 25% gravel; 75% sand - dark brown, wet and unconsolidated
9:27	145'	145' grab sample: silty sand, gravels, sub-angular/rounded gravel (1 to 2 cm); 10% gravel; 80% sand; 10% silt - dark brown, wet and unconsolidated
9:38	150'	150' grab sample: silty sand, gravels, sub-angular/rounded gravel (1 to 2 cm); 10% gravel; 80% sand; 10% silt - dark brown, wet and unconsolidated

ACTIVITY AND GEOLOGIC DRILL HOLE LOG

Well ID: 55-912807; BF OW #1 Date: 1/10/2011

Interval sampled (feet)		Description [Basic description includes rock type, color, grain size %'s (gravel, sand, silt, clay), cementation, gravel fraction (rounding, color, size, lithology %'s), acid reaction (weak, moderate, strong)]
9:48	155'	155' grab sample: silty sand, gravels, sub-angular/rounded gravel (1 to 3 cm); 10% gravel; 80% sand; 10% silt - dark brown, wet and unconsolidated
9:57	160'	160' grab sample: sandy gravels, sub-angular gravel (1 to 2 cm); 20% gravel; 75% sand; 5% silt - dark brown (red), wet and unconsolidated
10:07	165'	165' grab sample: sandy gravels, sub-angular gravel (1 to 2 cm); 20% gravel; 75% sand; 5% silt - dark brown (red), wet and unconsolidated
10:18	170'	170' grab sample: sandy gravels, angular to sub-angular gravel (0.5 to 1.5 cm); 15% gravel; 80% sand; 5% silt - dark brown (red), wet and unconsolidated
10:30	175'	175' grab sample: sandy gravels, angular to sub-angular gravel (0.5 to 1.0 cm); 15% gravel; 80% sand; 5% silt - dark brown (red), wet and unconsolidated
10:44	180'	180' grab sample: fine grained sand -minor silt and gravels sub-rounded (< 1 cm); 5% gravel; 90% fine sand; 5% silt - dark brown (dark gray), wet cohesive
11:29	185'	185' grab sample: coarse sand and gravels, sub-angular gravel (1 to 3.5 cm); 25% gravel; 70% sand; 5% silt - dark brown (red), wet and unconsolidated
	TD'	Called total depth.
		complete well construction with PVC .010 perforated screen 185'-165' and blank casing to surface plus 36".

Log # 130

Arizona Department of Water Resources
Information Management Unit
P.O. Box 36020 • Phoenix, Arizona 85067-3589
(602) 771-8627 • (800) 352-8488
www.water.az.gov

MAR 18 2011

Well Driller Report and Well Log

FILE NUMBER
D(7-16)10 CAB
WELL REGISTRATION NUMBER
55 - 912805
PERMIT NUMBER (IF ISSUED)

THIS REPORT MUST BE FILED WITHIN **30 DAYS** OF COMPLETING THE WELL.

PLEASE PRINT CLEARLY USING BLACK OR BLUE INK

SECTION 1 - DRILLING AUTHORIZATION

Drilling Firm — Mail To:

NAME: GEOMECHANICS SOUTHWEST, INC.	DWR LICENSE NUMBER: 498
ADDRESS: 5839 S. BELVEDERE AVE	TELEPHONE NUMBER: 520-252-0559
CITY / STATE / ZIP: TUCSON, AZ, 85706	FAX:

SECTION 2 - REGISTRATION INFORMATION

Well Owner

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: Salt River Project Agricultural Improv - Attn: Ruch Valenci

MAILING ADDRESS: PO Box 52025

CITY / STATE / ZIP: Phoenix, AZ, 85072-2025

CONTACT PERSON NAME AND TITLE:

TELEPHONE NUMBER: 602 236-2830 FAX:

WELL NAME (e.g. MW-1, PZ-3, lot 25 Well, Smith Well, etc.): BF OW 2

Location of Well

WELL LOCATION ADDRESS (IF ANY): Black Farm, near Mammoth, AZ

TOWNSHIP (N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE
7S	16E	10	SW 1/4	NE 1/4	NW 1/4

LATITUDE			LONGITUDE		
°	'	"N	°	'	"W

METHOD OF LATITUDE/LONGITUDE (CHECK ONE): USGS Quad Map; Conventional Survey; *GPS: Hand-Held; *GPS: Survey-Grade

LAND SURFACE ELEVATION AT WELL: Feet Above Sea Level

METHOD OF ELEVATION (CHECK ONE): USGS Quad Map; Conventional Survey; *GPS: Hand-Held; *GPS: Survey-Grade

*IF GPS WAS USED, GEOGRAPHIC COORDINATE DATUM (CHECK ONE): NAD-83; Other (please specify)

COUNTY: Pinal

ASSESSOR'S PARCEL ID NUMBER (MOST RECENT): BOOK 300; MAP 34; PARCEL 010A

SECTION 3 - WELL CONSTRUCTION DETAILS

Drilling Method (CHECK ONE)
- Air Rotary
- Bored or Augered
- Cable Tool
- Dual Rotary
- Mud Rotary
- Reverse Circulation
- Driven
- Jetted
- X Air Percussion / Odex Tubing
- Other (please specify)

Method of Well Development (CHECK ONE)
- Airlift — GSI did not develop
- Bail
- Surge Block
- Surge Pump
- Other (please specify)

Method of Sealing at Reduction Points (CHECK ONE)
- X None
- Packed
- Swedged
- Welded
- Other (please specify)

Condition of Well (CHECK ONE)
- Capped — N/A
- Pump Installed

Construction Dates

DATE WELL CONSTRUCTION STARTED: 1-4-11

DATE WELL CONSTRUCTION COMPLETED: 1-6-11

I state that this notice is filed in compliance with A.R.S. § 45-596 and is complete and correct to the best of my knowledge and belief.

SIGNATURE OF QUALIFYING PARTY: Sandia Monroe for Greg Jones

DATE: 2-23-11

SYM

GSI Job # 12-11P

WELL REGISTRATION NUMBER
55 - 912805

Well Driller Report and Well Log

SECTION 4 WELL CONSTRUCTION DESIGN AS BUILT (attach additional page if needed)

Depth

DEPTH OF BORING: 150' Feet Below Land Surface

DEPTH OF COMPLETED WELL: 90' Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL: 19.35' Feet Below Land Surface

DATE MEASURED: 1-6-11

TIME MEASURED:

IF FLOWING WELL, METHOD OF FLOW REGULATION: Valve Other:

Borehole

DEPTH FROM SURFACE FROM (feet)	TO (feet)	BOREHOLE DIAMETER (inches)
0	150	5"

Installed Casing

DEPTH FROM SURFACE FROM (feet)	TO (feet)	OUTER (inches)	MATERIAL TYPE (T): STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	PERFORATION TYPE (T): BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE DESCRIBE	SLOT SIZE (inches)
0	70	2		X		Sch 80	X						
70	90	2		X		Sch 80					X		.010"

Installed Annular Material

DEPTH FROM SURFACE FROM (feet)	TO (feet)	ANNULAR MATERIAL TYPE (T): NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	BENTONITE: GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	FILTER PACK: SAND	GRAVEL	SIZE
0	22			X								
22	25						X	X		X		10X20
25	150											

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 912805

SECTION E. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	**Description** Describe material, grain size, color, etc.	Check (T) every interval where water was encountered (if known)
		See attached Activity + Geologic Drill Hole Log	

ACTIVITY AND GEOLOGIC DRILL HOLE LOG

Well ID: Black Farm Observation Well #2

Location: Black Farm near Mammoth, AZ

ADWR well reg. #: 55-912805

Land surface elevation: 2170'

TD: 150' (back filled to 90')

Depth to water: 19.35'

Date: 1/4/2011 (0' - 65')

Personnel: Steve Westwood, Ruth Valencia, (SRP)

Drilling Co.: GSI

Driller: Mike, Jimmy & Oscar

Rig/Method: Air Hammer/Rotary

Drill fluid: None/Water

Sample type: Grab/Split Spoon

Est. Time and Interval Sampled		Description [Basic description includes rock type, color, grain size %'s (gravel, sand, silt, clay), cementation, gravel fraction (rounding, color, size, lithology %'s), acid reaction (weak, moderate, strong)]
13:00		Start drilling using CME 95 Air Rotary; first split spoon at 25'
13:25	7'	Fine grained silt - light brown; 10% clay content (GS)
13:50	10'	Silty sand, light brown with pea sized sub angular to sub rounded gravel to (1.5cm) 70% fine grained sand, 20% silt, and 10% gravels - unconsolidated (GS)
14:05	15'	Fine grained silt matrix with light brown to gray sub angular gravels (1 cm- 3 cm) 70% fine grained silt, 30% gravels - unconsolidated; moist soil(GS)
14:30	20'	Fine grained silt matrix with light brown, gray, red, sub angular gravels (1 cm- 3 cm) 60% fine grained silt, 40% gravels - unconsolidated; wet soil (first water @19.35')
14:45	25'	25' split spoon sample. Sandy gravelly deposits; well sorted and unconsolidated Angular to sub angular (1 to 3.5 cm), gray, red tan gravels; 0.5" of clay at 24.5', wet sample saturated from 20' to 25'; blow count 11, 14, 13
15:00	30'	Grab sample. Well sorted sand and gravel; river alluvium Sub angular (1 to 3 cm), gray, red, light brown gravels; wet.
15:07	35'	Split spoon sample. Sub angular to rounded gravels 1 cm to 4 cm, minor sand water bearing, light brown, gray, orange, red, gravels: Blow counts: 3, 16, 21
15:15	40'	Light brown silty sand and angular gravels, saturated, unconsoidated - liquid 35% poorly sorted coarse sands, 55% gravels, 20% clay rich silt - 'Chocolate milk' Grab Sample at 40'

ACTIVITY AND GEOLOGIC DRILL HOLE LOG

Well ID: 55-912805; BF OW #2 Date: 1/4/2011

Interval sampled (feet)	Description [Basic description includes rock type, color, grain size %'s (gravel, sand, silt, clay), cementation, gravel fraction (rounding, color, size, lithology %'s), acid reaction (weak, moderate, strong)]
15:30 45' 85'	45' Split spoon sample. Fine grained sands with subangular, light brown, black, gray, and red-orange metamorphosed banded gravels. Fractured and hydrothermally altered angular conglomerate cobble fragments (1 to 3 cm) Blow Counts: 30, 16 20
15:50 50'	Light brown silty sand and angular gravels, saturated, unconsoidated, wet liquid 25% poorly sorted coarse sands, 70% gravels, 5% silty clay - 'Chocolate milk'
15:55-14:10	Bore hole heaved at 55' - lower formation wet and underpressure Driller making adjustments to keep the bore hole open. No samples between 50'-60'
16:25 65'	Grab sample and Split Spoon Sample taken at 65': unconsolidated angular to sub angular sand and gravels - unconsolidated river channel deposits. Light brown to gray sand matrix. Gravels 2cm to 3.5 cm in white, red, green, gray, dark red, yellow *Seems like more color and compositional variety in this grab
16:35 65'	End drilling for the day (January 4, 2011) Begin on Wednesday January 5th at Black Farm 0800

ACTIVITY AND GEOLOGIC DRILL HOLE LOG

Well ID: Black Farm Observation Well #2

Location: Black Farm near Mammoth, AZ

ADWR well reg. #: 55-912805

Land surface elevation: 2170'

TD: 150' (back filled to 90')

Depth to water: 19.35'

Date: 1/5/2011 (70' -150')

Personnel: Steve Westwood, Ruth Valencia, Angie Bond (SRP)

Drilling Co.: GSI

Driller: Mike, Jimmy & Oscar

Rig/Method: Air Hammer / Mud Rotary

Drill fluid: None/Water

Sample type: Grab/Split Spoon

Time and Interval Sampled	Description [Basic description includes rock type, color, grain size %'s (gravel, sand, silt, clay), cementation, gravel fraction (rounding, color, size, lithology %'s), acid reaction (weak, moderate, strong)]
9:40	Restart drilling from previous day at 65'
9:42 70'	70' grab sample. Gravelly sand with trace silts
	20% subangular to angular gravels up to 4cm diameter
	70% poorly sorted fine to coarse sands
	10% or less fines (silts and clays)
9:47 75'	75' split spoon sample. Sandy gravelly cobbles
	40% or more of broken, angular cobble fragments up to 6cm
	composed of grey and white granitic, olivine, chert, red
	conglomerate
	30% of fine to coarse gravels (may be cobble remains) up to 1cm
	20% medium to coarse sands
	10% or less fines (silts and clays)
	Blow counts: 17-24-20
10:11 to 10:17	80' grab sample. Gravelly sand with trace silts.
80'	15% subangular to angular gravels up to 4cm diameter
	75% poorly sorted fine to coarse sands
	10% or less fines (silts and clays)

ACTIVITY AND GEOLOGIC DRILL HOLE LOG

Well ID: 55-912805; BF OW #2 Date: 1/5/2011

Interval sampled (feet)	Description [Basic description includes rock type, color, grain size %'s (gravel, sand, silt, clay), cementation, gravel fraction (rounding, color, size, lithology %'s), acid reaction (weak, moderate, strong)]
10:25-10:28	85' Split spoon sample. Gravelly sands.
85'	25% mafic, metamorphosed, green, purple, and red .
	conglomerate cobble fragments (rounded on one side,
	fractured on another) and gravels up to 6 cm
	60% fine to coarse mafic sands and quartz abundant sands
	15% silty black and grey fines
	* overall more binding than in previous samples, gypsum
	present, and more mafic matrix
	Blow counts: 24-32-42
10:59-11:04	90' Grab sample. Gravelly sands.
90'	20% broken cobbles and subrounded gravels of quartz, olivine,
	gneiss, chert up to 3cm.
	70% fine to coarse sands
	trace silts (<10%)
	*Seems like more color and compositional variety in this grab
11:14-11:24	95' split spoon sample. Silty clay.
95'	brown micaceous sugary clay, noncohesive, low plasticity
	retains shape of split spoon but crumbles when broken
	Blow counts: 27-50 for 5 minutes (refusal)
12:00pm	* decision point- air hammer will not continue, if we want to
95'	continue, it must be w/ mud rotary and not casing advance-
	ment, Jimmy leaves to get water from San Pedro Preserve

ACTIVITY AND GEOLOGIC DRILL HOLE LOG

Well ID: 55-912805; BF OW #2 Date: 1/5/2011

Interval sampled (feet)	Description [Basic description includes rock type, color, grain size %'s (gravel, sand, silt, clay), cementation, gravel fraction (rounding, color, size, lithology %'s), acid reaction (weak, moderate, strong)]
14:09-14:41	102' split spoon sample. Clay
102'	Low silt content, high plasticity and highly cohesive brown
	clay. Forms sticky, hard clay nodules/balls. Drill sample did
	not collect full sample.
	Blow counts: 54 for 5
	More water needed
15:20-15:48	107' have to stop for more water
107'	
16:34-17:05	115' Need more water, stop for the day, continue tomorrow
115'	

ACTIVITY AND GEOLOGIC DRILL HOLE LOG

Well ID: 55-912805; BF OW #2 Date: 1/6/2011

Interval sampled (feet)	Description [Basic description includes rock type, color, grain size %'s (gravel, sand, silt, clay), cementation, gravel fraction (rounding, color, size, lithology %'s), acid reaction (weak, moderate, strong)]
8:00 115'	115' Split spoon sample. Silty clay. Brown silty clay, cohesive, low to medium plasticity varying in sample Blow Counts: 25-49-50 for 5
8:58-9:21 125'	125' Split spoon sample. Silty Clay. silty brown clay with some fine blackish sands. Grey and black streaks in clay. Sugary texture in higher silt/sand areas varying to hard clay nodules with little silt. Cohesive low to medium plasticity. * sample bagged but not included in chip tray Blow Counts: 27-49-50 for 2 min * Will continue drilling (capability with current set-up is 150') Call to Jon Ford and Craig Sommers Clay is likely Tertiary and prolific in the stratigraphy of the San Pedro valley. For our purposes drilling should halt at clay
10:45 141'	Will continue to 150 and grab sample
12:40 150'	150' split spoon sample. Silty clay with white clay horizon clay varies in silt content but mostly non cohesive, non plastic silty brittle clay. White clay horizon roughly 5" thick (see photos) of uniform non silty clay. White clay has brittle behavior of playdough but not as soft. Kaolinite or gypsum? *sample bagged but not included in chip tray Blow Counts: 24-47-50 for 4 END

Log # 131

(D-7-16)10 BDB

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 912806

SECTION A WELL CONSTRUCTION DESIGN (AS-BUILT) (Attach additional pages if needed)

Depth

DEPTH OF BORING		DEPTH OF COMPLETED WELL	
30'	Feet Below Land Surface	30'	Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL		DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION	
20.17'	Feet Below Land Surface	1-4-11		Valve	Other:

Borehole

DEPTH FROM SURFACE FROM (feet)	TO (feet)	BOREHOLE DIAMETER (inches)
0	30	8"

Installed Casing

DEPTH FROM SURFACE FROM (feet)	TO (feet)	OUTER (inches)	MATERIAL TYPE (T): STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	PERFORATION TYPE (T): BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	SLOT SIZE (inches)
0	20	1"		X			X						
20	30	1"		X							X		.010"

Installed Annular Material

DEPTH FROM SURFACE FROM (feet)	TO (feet)	ANNULAR MATERIAL TYPE (T): NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	BENTONITE: GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	FILTER PACK: SAND	GRAVEL	SIZE
0	8			X								
8	10							X				
10	30									X		10X20

ACTIVITY AND GEOLOGIC DRILL HOLE LOG

Well ID: BF PZ West

Location: Black Farm near Mammoth, AZ along the South bank of Aravaipa Creek

ADWR well reg. #: 55-912806

Land surface elevation: 2173'

TD: 30'

Depth to water: 20.17' (1/5/2011)

Date: Jan. 3-4, 2011

Personnel: Steve Westwood
Ruth Valencia assisting on Jan. 4, 2011.

Drilling Co.: GSI

Driller: Mike, Jimmy, Oscar

Rig/Method: CME Air Hammer/Rotary

Drill fluid: None/water

Sample type: Drive (DS)/Split Spoon (SS)

Est. Time and Interval Sampled	Description [Basic description includes rock type, color, grain size %'s (gravel, sand, silt, clay), cementation, gravel fraction (rounding, color, size, lithology %'s), acid reaction (weak, moderate, strong)]
13:00	Begin drilling using CME 95 Air Rotary; sampling with Drive Sample (DS) clear tubing
13:25 5'	Fine grained sand/silt - light brown; compacts easy, well sorted, some veg.,(DS)
13:45 10'	Sub rounded to angular gravels up to 2 cm, (15%) in coarse to fine grained sand (85%); active riverchannel deposits on terrace in gray, white, and light pink, no veg., (DS)
14:10 14'	Sub rounded/angular gravels (35%) in coarse to fine grained sand (65%) - light brown, gray, black, white, and light pink gravel to 3.5 cm, sand; no water present, (DS)
14:15	Unconsolidated formation; change method to hollow stem auger
14:45 20'	Wet; dark brown silty with clay sand with gravels to 2.5 cm. Unconsolidated, free water - at 17', 35% gravels, 50% sand, 15% fines and clay - first water bearing horizon (SS)
15:30 End	Stopped drilling for the day; will need water for drilling beginning January 4, 2011
1/4/2011	Begin drilling using hollow stem auger and split spoon sampling, water used.
10:20 25' *swl ~20.17'*	Coarse grained, brown, red,gray sand (70%), subangular gravel (20%) to 2.5 cm.; fines 10%, fines mostly clay, saturated at 24', increasing dark red sands (SS) Blow Count: 17, 24, 30
10:50 30'	Coarse grained sand - dark brown to dark gray with reddish gravels (meta-granite); angular to subangular gravels to 3.5 cm, granite - basalt, mechanically modified. Blow Count: 17, 24, 34 at 30' SS sample
TD 12:23	Total Depth of piezometer is 30'. Screened from 30-20' with 010 PVC and blank casing. swl test after construction 20.28' (before settlement)

Log # 132

(D-7-16)9DCB

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 912838

SECTION 4 WELL CONSTRUCTION DESIGN (AS-BUILT) (Attach additional page if needed)

Depth

DEPTH OF BORING: 35' Feet Below Land Surface

DEPTH OF COMPLETED WELL: 35' Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
15.49' Feet Below Land Surface	1-12-11		Valve Other:

Borehole

DEPTH FROM SURFACE FROM (feet)	TO (feet)	BOREHOLE DIAMETER (inches)
0	35	8"

Installed Casing

DEPTH FROM SURFACE FROM (feet)	TO (feet)	OUTER (inches)	MATERIAL TYPE (T): STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	PERFORATION TYPE (T): BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	SLOT SIZE (inches)
0	25	1"		X			X						
25	35	1"		X							X		.010"

Installed Annular Material

DEPTH FROM SURFACE FROM (feet)	TO (feet)	ANNULAR MATERIAL TYPE (T): NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	BENTONITE: GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	FILTER PACK: SAND	GRAVEL	SIZE
0	3			X								
3	5							X				
5	35									X		10x20

ACTIVITY AND GEOLOGIC DRILL HOLE LOG

Well ID: Stillinger PZ

Location: Stillinger Preserve, south of Black Farm along the West bank of San Pedro River (old Camp Grant)

ADWR well reg. #: 55-912838

Land surface elevation: 2157'

TD: 35'

Depth to water: 15.49' (1/13/2011)

Date: 1/12/2011 (0' - 35')

Personnel: Steve Westwood, SRP

Drilling Co.: GSI

Driller: Mike, Jimmy & Oscar

Rig/Method: CME 95 Air Hammer/Rotary

Drill fluid: None/Water

Sample type: Drive (DS)/Split Spoon (SS)

Est. Time and Interval Sampled		Description [Basic description includes rock type, color, grain size %'s (gravel, sand, silt, clay), cementation, gravel fraction (rounding, color, size, lithology %'s), acid reaction (weak, moderate, strong)]
12:00		Begin drilling using CME 95 Air Rotary; sampling with Drive Sample (DS) clear tubing
12:10	10'	(SS)Fine grained silt - brown with much organics and vegetation; Blow Count: 5, 8, 12 and dry
12:20	15'	Fine grained sand from 11' to 12' ; well sorted gray - light brown becoming a dense/fine grained dark brown clay (elastic) at 13' to 15' Blow Count: 3, 4, 16 and Dry
12:30	20'	Fine grained silty clay, dark brown, moist - not wet. Roots/vegetation in sample Blow Count: 2, 4, 6
14:45	25'	Fine grained silty clay, dark brown, very sticky. Sandy layer 7" thick at 23' Blow Count: 3, 5, 5 moist not wet - no free water.
10:20	30'	Dark brown, dark gray clay; highly elastic and cohesive moist throughout. free water at 27'. Minor gravels (5%) at 30' Blow Count: 1, 1, 3 Advance another five feet for discovery.
13:10	35'	Dark brown, dark gray clay; highly elastic and cohesive wet throughout. Organic odor to clay sample Blow Count: 1, 1, 3
TD		Total Depth of piezometer is 35'. Screened from 35-25' with 010 PVC and blank casing. * water in borehole is under pressure, rising water level: first water at 27', at last sample the water level had risen to 14.9'; at well construction/completion the water was at surface elevation. On January 13th (24 hour recovery) the static water level had settled to 15.49'. END

Log # 133

(D-7-16) 4 BAC

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 912835

SECTION A WELL CONSTRUCTION DESIGN AS BUILT (attach additional page if needed)

Depth

DEPTH OF BORING: 25' Feet Below Land Surface

DEPTH OF COMPLETED WELL: 18' Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
7.87' Feet Below Land Surface	1-11-11		Valve Other:

Borehole

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	BOREHOLE DIAMETER (inches)
0	25	8"

Installed Casing

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	OUTER (inches)	MATERIAL TYPE (T): STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	PERFORATION TYPE (T): BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	SLOT SIZE (inches)
0	3	1"		X			X						
3	18	1"		X							X		.010"

Installed Annular Material

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	ANNULAR MATERIAL TYPE (T): NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	BENTONITE: GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	FILTER PACK: SAND	GRAVEL	SIZE
0	3			X								
3	5						X					
5	25									X		16x20

ACTIVITY AND GEOLOGIC DRILL HOLE LOG

Well ID: Adobe PZ East
Location: PZ Ranch (Adobe)
near Mammoth, AZ
ADWR well reg. #: 55-912835
Land surface elevation: 2127' hand held gps
TD: Twenty five (25')
Depth to water: 7.87'

Date: 1/11/2011
Personnel Steve Westwood (SRP),
Dan Wolgast (TNC observer)
Drilling Co.:GSI
Driller: Mike, Jimmy & Oscar
Rig/Method:CME 750Ht
Drill fluid: None
Sample type:Split Spoon (SS)

Time and Interval Sampled	Description [Basic description includes rock type, color, grain size %'s (gravel, sand, silt, clay), cementation, gravel fraction (rounding, color, size, lithology %'s), acid reaction (weak, moderate, strong)]
9:30	
9:35 5'	Brown silty fine grained soil, some clay (10%)
9:42 10'	Light brown silty sand some clay (20%) with angular to subrounded gravel to 3.5 cm, wet. hit first water at 7.87'
9:51 15'	Gradation from 14'-15' of fine clay with organics - fine silt and fine well sorted sand. chips of unconsolidated gravels to 5 cm in silty sand matrix, clay (15-20%) light brown. Blow Count: 6, 12, 12 Shift to Hollow stem auger method due to large gravels.
10:14 20'	Split spoon sample variable; gradation at 16' to 18'of fine silty sand with organic matter, 18'-18.5' unconsolidated coarse sand with gravels ranging from 1 cm to 5 cm, and 18.5' to 20' consisting of brown fine clay, well sorted, caked - hard/dry. Blow Count: 28, 38, 46.
10:49 25'	Light brown fine clays, minor fine sand (10%) with some minor gravels (10%); dry. Blow Count: 22, 32, 50 for 6 minutes.
25'	TD
	Well constuction: back fill hole to 18', screened using .010 PVC 1" screen from 18'-8' and 1" blank PVC casing to ground surface elevation plus 36" for ground monument. filter pack was #45 silica sand, sealing material was bentonite chip then concrete (3,500 psi) to surface seal and well apron.

END

Log # 134

(D-7-16) 4 BBC

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 912836

SECTION 1. WELL CONSTRUCTION DESIGN (USE BLOCK 7 FOR ADDITIONAL DATA IF NEEDED)

Depth

DEPTH OF BORING: 90' Feet Below Land Surface

DEPTH OF COMPLETED WELL: 90' Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
10.75' Feet Below Land Surface	1-13-11		Valve Other:

Borehole

DEPTH FROM SURFACE FROM (feet)	TO (feet)	BOREHOLE DIAMETER (inches)
0	90	5"

Installed Casing

DEPTH FROM SURFACE FROM (feet)	TO (feet)	OUTER (inches)	MATERIAL TYPE (T): STEEL	PVC	ABS	IF OTHER TYPE DESCRIBE	PERFORATION TYPE (T): BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE DESCRIBE	SLOT SIZE (inches)
0	70	2		X			X						
70	90	2		X							X		.010"

Installed Annular Material

DEPTH FROM SURFACE FROM (feet)	TO (feet)	ANNULAR MATERIAL TYPE (T): NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	BENTONITE: GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	FILTER PACK: SAND	GRAVEL	SIZE
0	3			X								
3	5						X					
5	90									X		10 x 20

ACTIVITY AND GEOLOGIC DRILL HOLE LOG

Well ID: Adobe Observation Well
Location: Adobe Farm near Mammoth, AZ

ADWR well reg. #: 55-912836
Land surface elevation: 2143'
TD: 90'
Depth to water: 10.75' (After construction 1/13/11)

Date: 1/13/2011
Personnel: Ruth Valencia
Angie Bond (SRP)
Drilling Co.: GSI
Driller: Mike, Jimmy & Oscar
Rig/Method: Air Hammer
Drill fluid: None
Sample type: Grab/Split Spoon

Time and Interval Sampled		Description [Basic description includes rock type, color, grain size %'s (gravel, sand, silt, clay), cementation, gravel fraction (rounding, color, size, lithology %'s), acid reaction (weak, moderate, strong)]
8:00		Arrive on site. Rig-up
9:00		Begin drilling
9:05-9:06	5'	Grab sample 5'.
		dry soil * strong reaction to HCL
9:06-9:13	10'	Grab sample 10'.
		Moist soil * strong reaction to HCL
9:15-9:17	15'	15' No sample (clay) * strong reaction to HCL
9:26		Static water level 14.3'- clays hydrating (soil moist at 10')
9:30-9:31	20'	Grab sample 20'. Silty sandy mud
		Very wet and runny grayish brown mud. Grasses and stems present
		*no reaction with HCL
9:36-9:38	25'	Grab sample 25'- Silty sandy mud
		like a gritty chocolate mousse, very wet
		*no reaction with HCL
9:46-9:48	30'	Grab sample 30'- Clayey gravelly sand
		subrounded fine to medium gravels, mostly 1-2 cm, but up to 6cm elongated
		prolates. Washed samples indicate quartz, pink granite, purple quartzite
		green olivine, and black volcanic composition of grains.
		15% brown clay; 30% fine to medium gravel; 55% poorly sorted rounded to
		subrounded sands *no reaction with HCL

ACTIVITY AND GEOLOGIC DRILL HOLE LOG

Well ID: 55-912836; Adobe OW

Date: 1/13/2011

Interval sampled (feet)		Description [Basic description includes rock type, color, grain size %'s (gravel, sand, silt, clay), cementation, gravel fraction (rounding, color, size, lithology %'s), acid reaction (weak, moderate, strong)]
10:01-10:04	35'	Grab Sample 35'- Gravelly sand
		more quartz in small gravels. Subangular to angular quartzite, mafics, and
		conglomerate grains.
		Trace fines; 30% fine to medium gravel; 70% poorly sorted sand
		abundant water in this zone.
	35'	Split spoon 35' 6-8-12 blow counts
		layers 6" of silty clayey sandy gravel, 5" of clean sorted fine gravel and sands, 5"
		of sands and up to 8cm' angular gravels. Up to 10 cm rounded granite cobbles
		water heaving into drill pipe and casing
		*no reaction with HCL
23-10:24	40'	Grab sample 40'- Silty sand
		fine to medium sands, quartz and biotite dominant
		*no reaction with HCL
10:28-10:30	45'	Grab sample (w/ shovel) 45'- Gravelly sand
		10% gravels up to 1.5cm; 90% poorly sorted subrounded to rounded sands
		*no reaction with HCL
10:33-10:34	50'	Grab sample 50'- Gravelly sand
		40% subangular to subrounded gravel up to 4cm, sandstone appears;
		60% poorly sorted sands
		heaving prevented split spoon sample at 50'; abandon split spoon samples
		*no reaction with HCL
10:52-10:54	55'	Grab sample 55'- Gravelly sand
		same as 50'- coarser sands more dominant
		*no reaction with HCL
11:06-11:08	60'	Grab sample 60'- Gravelly sand
		same as 50-55- few cobbles sized fragments
		*no reaction with HCL
11:11-11:13	65'	Grab sample 65'- Gravelly sand
		20% gravel; 80% sand
		quartz and granite fragments appear more rounded
		*no reaction with HCL

ACTIVITY AND GEOLOGIC DRILL HOLE LOG

Well ID: 55-912836; Adobe OW Date: 1/13/2011

Interval sampled (feet)	Description [Basic description includes rock type, color, grain size %'s (gravel, sand, silt, clay), cementation, gravel fraction (rounding, color, size, lithology %'s), acid reaction (weak, moderate, strong)]
11:15-11:18 65'	Tripping in split spoon b/c driller thought felt a change in
	lithology. Cobble sized fragments of granite, but mostly gravel and sand
	some clay binding to grains.
11:38-11:40 70'	Grab sample 70' Gravelly sand
	Same as 65'; sands more clear quartz. Some subangular white granite
	pink volcanics
	*no reaction with HCL
11:45-11:48 75'	Grab sample 75'- Gravelly sand
	30: gravel; 70% sand trace silt in the water
	poorly sorted angular mafic gravels; granite and quartz subrounded
	*no reaction with HCL
11:53-11:57 80'	Grab sample 80'- Gravelly sand
	increasing gravel rounded quartz, angular quartzite
	40% gravel; 60% poorly sorted sand
	*no reaction with HCL
12:01-12:04 85'	Grab sample 85'- Gravelly sand
	Same as 80'
	*minor reaction with HCL
12:07-12:12 90'	Grab sample 90' Gravelly sand
	equal parts sand and gravel. Mixed subrounded to subangular up to 5cm in size
	*no reaction with HCL
90'	Total depth of the well
	installed 20' of screen from 70-90'
	static measured after construction 10.75'
	Composition of grains did not vary much in gravel and sandy samples.

Log # 135

Arizona Department of Water Resources
Information Management Unit
P.O. Box 36020 • Phoenix, Arizona 85067-3580
(602) 771-8627 • (800) 352-8488
www.water.az.gov

MAR 18 2011

Well Driller Report and Well Log

THIS REPORT MUST BE FILED WITHIN **30 DAYS** OF COMPLETING THE WELL.

PLEASE PRINT CLEARLY USING BLACK OR BLUE INK

FILE NUMBER
D(7-16)5 AAD
WELL REGISTRATION NUMBER
55 - 912837
PERMIT NUMBER (IF ISSUED)

SECTION 1 - DRILLING AUTHORIZATION

Drilling Firm — Mail To:

NAME: GEOMECHANICS SOUTHWEST, INC.	DWR LICENSE NUMBER: 498
ADDRESS: 5839 S. BELVEDERE AVE	TELEPHONE NUMBER: 520-252-0559
CITY / STATE / ZIP: TUCSON, AZ, 85706	FAX:

SECTION 2 - REGISTRY INFORMATION

Well Owner

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: Salt River Project Agricultural Improv ATTN: Ruth Valencia

MAILING ADDRESS: PO Box 52025

CITY / STATE / ZIP: Phoenix, AZ, 85072-2025

CONTACT PERSON NAME AND TITLE:

TELEPHONE NUMBER: 602 236-2830 FAX:

WELL NAME (e.g., MW-1, PZ-3, lot 25 Well, Smith Well, etc.): Adobe PZ W

Location of Well

WELL LOCATION ADDRESS (IF ANY): Adobe PZ West

TOWNSHIP (N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE
7S	16E	5	NE 1/4	NE 1/4	SE 1/4

LATITUDE: ° ' "N LONGITUDE: ° ' "W

METHOD OF LATITUDE/LONGITUDE (CHECK ONE): USGS Quad Map; Conventional Survey; *GPS: Hand-Held; *GPS: Survey-Grade

LAND SURFACE ELEVATION AT WELL: Feet Above Sea Level

METHOD OF ELEVATION (CHECK ONE): USGS Quad Map; Conventional Survey; *GPS: Hand-Held; *GPS: Survey-Grade

*IF GPS WAS USED, GEOGRAPHIC COORDINATE DATUM (CHECK ONE): NAD-83; Other (please specify)

COUNTY: Pinal

ASSESSOR'S PARCEL ID NUMBER (MOST RECENT): BOOK 300 MAP 31 PARCEL 006A

SECTION 3 - WELL CONSTRUCTION DETAILS

Drilling Method (CHECK ONE)
- Air Rotary
- X Bored or Augered
- Cable Tool
- Dual Rotary
- Mud Rotary
- Reverse Circulation
- Driven
- Jetted
- Air Percussion / Odex Tubing
- Other (please specify)

Method of Well Development (CHECK ONE)
- Airlift
- Bail
- Surge Block
- Surge Pump
- Other (please specify)

GSI did not develop

Method of Sealing at Reduction Points (CHECK ONE)
- X None
- Packed
- Swedged
- Welded
- Other (please specify)

Condition of Well (CHECK ONE)
- Capped
- Pump Installed

N/A

Construction Dates

DATE WELL CONSTRUCTION STARTED: 1-11-11

DATE WELL CONSTRUCTION COMPLETED: 1-11-11

I state that this notice is filed in compliance with A.R.S. § 45-596 and is complete and correct to the best of my knowledge and belief.

SIGNATURE OF QUALIFYING PARTY: Sandra Monroe for Greg Jones

DATE: 2-23-11

SYM

GSI Job # 12-11P

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 912837

SECTION 1 WELL CONSTRUCTION DESIGN (AS BUILT) (Attach additional pages if needed)

Depth

DEPTH OF BORING: 30' Feet Below Land Surface

DEPTH OF COMPLETED WELL: 30' Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL: 11.9' Feet Below Land Surface

DATE MEASURED: 1-11-11

TIME MEASURED:

IF FLOWING WELL, METHOD OF FLOW REGULATION: Valve Other:

Borehole

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	BOREHOLE DIAMETER (inches)
0	30	5

Installed Casing

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	OUTER (inches)	MATERIAL TYPE (T): STEEL	PVC	ABS	IF OTHER TYPE DESCRIBE	PERFORATION TYPE (T): BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE DESCRIBE	SLOT SIZE (inches)
0	20	1"		X			X						
20	30	1"		X							X		.010"

Installed Annular Material

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	ANNULAR MATERIAL TYPE (T): NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	BENTONITE: GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL DESCRIBE	FILTER PACK: SAND	GRAVEL	SIZE
0	3			X								
3	5							X				
5	30									X		10x20

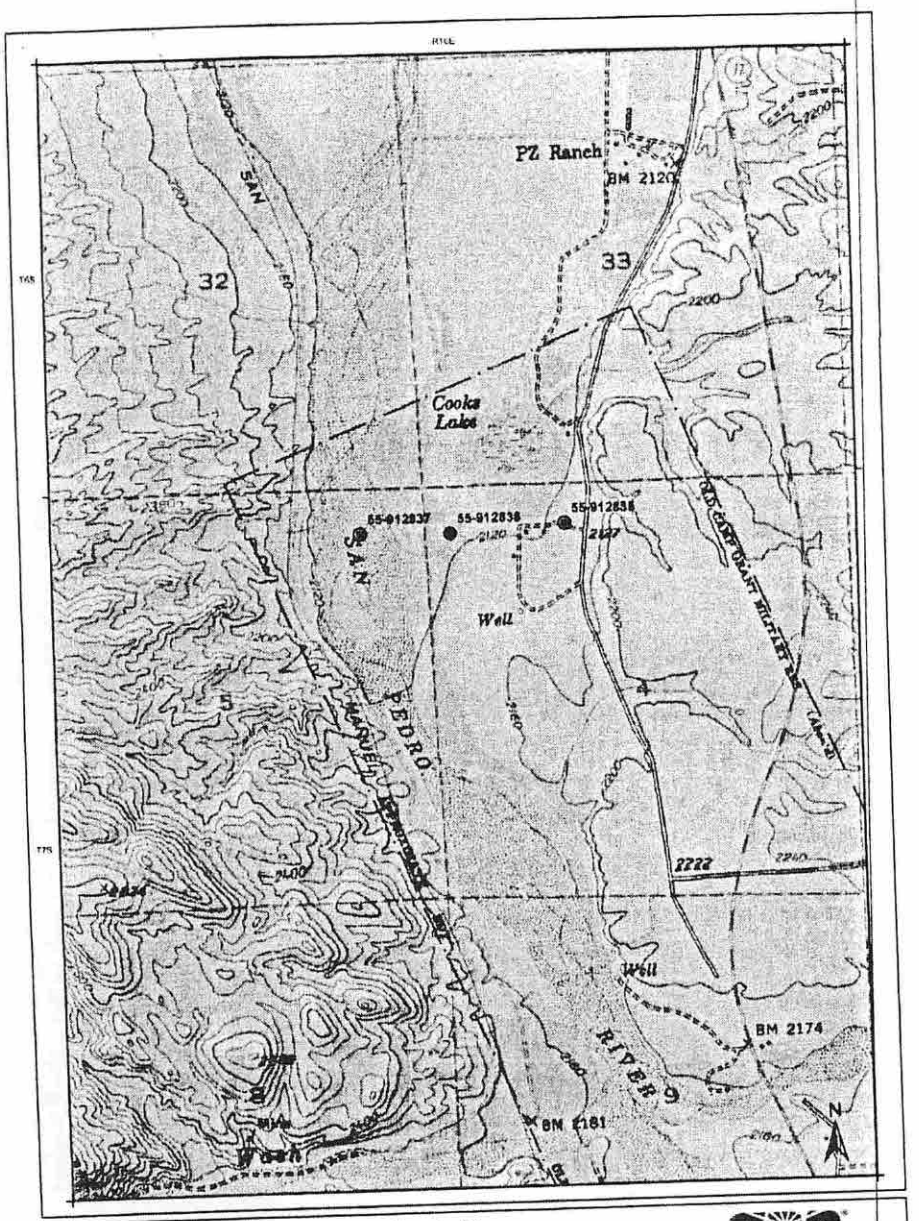
ACTIVITY AND GEOLOGIC DRILL HOLE LOG

Well ID: Adobe PZ West
Location: PZ Ranch (Adobe) near Mammoth, AZ

ADWR well reg. #: 55-912837
Land surface elevation: 2115'
TD: Thirty (30')
Depth to water: 11.9'

Date: 1/11/2011
Personnel: Steve Westwood (SRP), Dan Wolgast (TNC observer)
Drilling Co.: GSI
Driller: Mike, Jimmy & Oscar
Rig/Method: CME 750HT
Drill fluid: None
Sample type: Split Spoon (SS)

Time and Interval Sampled	Description [Basic description includes rock type, color, grain size %'s (gravel, sand, silt, clay), cementation, gravel fraction (rounding, color, size, lithology %'s), acid reaction (weak, moderate, strong)]
13:54 10'	Coarse grained sand and gravel to 2cm in fine silt as minor matrix, subrounded, reddish, gray, yellow, tan, white gravels: unconsolidated. Blow count 2, 6, 6 (split spoon sample)
swl 11.9'	
15'	Very coarse gravels to 5 cm; reddish gray subangular sand with silty fines; wet. From 14' to 15' sample had black organics in clay rich consolidated silt layered with fine sands: Blow Count 2, 4, 4 (split spoon)
20'	Very coarse gravels to 4 cm in coarse sand and silty matrix; sub rounded to sub-angular granitic and metamorphic gravels in deep red and gray color. Blow count: 7, 7, 10 (wet).
25'	From 20' to 22' fine grained organic rich silty sands; wet. At 23' horizon a 30% clay rich silty matrix with fine grained sand and sub-angular gravels to 3 cm (wet); 24' to 25' light brown clay matrix with angular gravels to 3 cm, deep red, gray and white, (wet). Blow Count: 13, 15, 25 (split spoon)
30'	25'- 26' fine grained sand with black organic rich silt sized particles; ubiquitous. 26' - 29' unconsolidated sand and gravels in light brown clay rich 'soup'; gravels of olivine, chert, metamorphic rock - (wet) 30' very coarse unconsolidated gravels 5 cm to 7 cm in size, consisting of gabbro,
15:05	granite and chert. Blow Count: 20, 31, 30 (wet)
END	



San Pedro Locations: Map 1 of 3

Piezometer

Observation Well

Log # 138

ARIZONA DEPARTMENT OF WATER RESOURCES D(6-16)8 CBA
500 North Third Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED SEP 21 1998 RECORDS MGT

1. HEBER MINING & EXPLORATION COMPANY
22010 NORTH 21ST AVENUE
PHOENIX, AZ 85027-0026

2. Owner Name: ARIZONA NATURE CONSERVANCY
Address: 300 E. University Blvd. #230 Tucson, Az. 85705
City State Zip

3. Location: 6 N/(S) 16 (E)/W 8 ¼ NE ¼ NW ¼ SW
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55--569977 (Required)

5. Permit No. NA (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 18' ft.
7. Type of casing Steel & PVC
8. Diameter and length of casing 2 in. from +2 to 5', 2 in from 5' to 18'
9. Method of sealing at reduction points NA
10. Perforated from 8' to 18', from ____ to ____ from ____ to ____
11. Size of cuts .020 Number of cuts per foot 125
12. If screen was installed: Length 10 ft. Diam 2 in. Type PVC
13. Method of construction drilled w/ 4¼ in. I.D. hollow stem auger
(drilled, dug, driven, bored, jetted, etc)
14. Date started Aug 25 1998
Month Day Year
15. Date completed Aug 25 1998
Month Day Year
16. Depth to water 10 ft. While Drilling ft. (If flowing well, so state)

17. Describe point from which depth measurements were made, and give sea-level elevation if available
Existing ground near the well
18. If flowing well, state method of flow regulation: NA

19. Remarks: Set casing to 18', filter pack to 8', bentonite seal to 7', then cement grouted to the surface with steel locking casing 2ft (+-) above grade.

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-569977
File No. D(6-16)8 CBA
Received ____ By ____
Entered ____ By ____

DWR-55-55-7/95 (Rev.) ANSWERED SEP 21 1998

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	10'	Brn. Sandy SILT & CLAY, Uncemented
10'	18'	Brn. SAND, Uncemented
		Bottom of Boring @ 18 ft
		Groundwater @ 10' While Drilling

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: HEBER MINING & EXPLORATION

COMPANY

22010 NORTH 21ST AVENUE
Street

PHOENIX, AZ 85027-0026 602-780-0023
City State Zip Phone No.

#269 9-11-98
Signature of Driller Date

Log # 139

D(6-16)7 ADA

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED SEP 21 1998 RECORDS MGT

1. HEBER MINING & EXPLORATION COMPANY
22010 NORTH 21ST AVENUE
PHOENIX, AZ 85027-0026

2. Owner Name: ARIZONA NATURE CONSERVANCY
Address: 300 E. University Blvd. #230 Tucson, Az. 85705
City State Zip

3. Location: 6 N(S) 16 (E)W 7 ¼ NE ¼ SE ¼ NE
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55--569978 (Required)

5. Permit No. NA (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 27' ft.
7. Type of casing Steel & PVC
8. Diameter and length of casing 2 in. from +2 to 8.5', 2 in from 8.5' to 27'
9. Method of sealing at reduction points NA
10. Perforated from 17' to 27', from ____ to ____ from ____ to ____
11. Size of cuts .020 Number of cuts per foot 125
12. If screen was installed: Length 10 ft. Diam 2 in. Type PVC
13. Method of construction drilled w/ 4¼ in. I.D. hollow stem auger
(drilled, dug, driven, bored, jetted, etc)
14. Date started 8 (Month) 27 (Day) 1998 (Year)
15. Date completed 8 (Month) 27 (Day) 1998 (Year)
16. Depth to water 17' While Drilling ft. (If flowing well, so state)

17. Describe point from which depth measurements were made, and give sea-level elevation if available
Existing ground near the well
18. If flowing well, state method of flow regulation: NA

19. Remarks: Set casing to 27', filter pack to 14.5', bentonite seal to 12.75', then cement grouted to the surface with steel locking casing 2ft (+-) above grade.

DO NOT WRITE IN THIS SPACE!
OFFICE RECORD

Registration No. 55-569978
File No. D(6-16)7 ADA
Received ____ By ____
Entered ____ By ____

DWR-55-55-7/95 (Rev.)

ANSWERED SEP 21 1998

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	2'	Brn. dry Sandy Gravelly SILT & CLAY
2'	8'	Brn dry Sandy SILT & CLAY, Uncemented
8'	13'	Brn dry coarse Sandy SILT & CLAY
		Uncemented
13'	17'	Brn Sandy SILT & CLAY, Uncemented
17'	25'	Brn. Wet Sandy SILT & CLAY, Uncemented
25'	27'	Brn Wet Coarse Sandy SILT & CLAY,
		Uncemented
		Bottom of Boring @ 27'
		Groundwater @ 17' While Drilling

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: HEBER MINING & EXPLORATION COMPANY

22010 NORTH 21ST AVENUE
Street

PHOENIX, AZ 85027-0026 602-780-0023
City State Zip Phone No.

#269 9-11-98
Signature of Driller Date

Log # 140

D(6-16)7ADA

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED SEP 21 1998 RECORDS MGT

1. HEBER MINING & EXPLORATION COMPANY
22010 NORTH 21ST AVENUE
PHOENIX, AZ 85027-0026

2. Owner Name: ARIZONA NATURE CONSERVANCY
Address: 300 E. University Blvd. #230 Tucson, Az. 85705
City State Zip

3. Location: 6 N(S) 16 (E)W 7 ¼ NE ¼ SE ¼ NE
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55--569984 (Required)

5. Permit No. NA (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 18' ft.
7. Type of casing Steel & PVC
8. Diameter and length of casing 2 in. from +2 to 5', 2 in from 5' to 18'
9. Method of sealing at reduction points NA
10. Perforated from 8' to 18', from ____ to ____ from ____ to ____
11. Size of cuts .020 Number of cuts per foot 125
12. If screen was installed: Length 10 ft. Diam 2 in. Type PVC
13. Method of construction drilled w/ 4¼ in. I.D. hollow stem auger
(drilled, dug, driven, bored, jetted, etc)
14. Date started Aug 25 1998
Month Day Year
15. Date completed Aug 25 1998
Month Day Year
16. Depth to water 11' While Drilling ft. (If flowing well, so state)

17. Describe point from which depth measurements were made, and give sea-level elevation if available
Existing ground near the well
18. If flowing well, state method of flow regulation: NA

19. Remarks: Set casing to 18', filter pack to 6', bentonite seal to 5', then cement grouted to the surface with steel locking casing 2ft (+-) above grade.

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-569984
File No. D(6-16) 7 ADA
Received ____ By ____
Entered ____ By ____

DWR-55-55-7/95 (Rev.) ANSWERED SEP 21 1998

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	7'	Brn. Silty Clayey SAND Uncemented
7'	11'	Brn Sandy SILT & CLAY Uncemented
11'	18'	Brn Gravelly SAND Uncemented
		Bottom of Boring @ 18'
		Groundwater @ 11 ft. While Drilling

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: HEBER MINING & EXPLORATION

COMPANY

22010 NORTH 21ST AVENUE
Street

PHOENIX, AZ 85027-0026 602-780-0023
City State Zip Phone No.

#269 9-11-98
Signature of Driller Date

Log # 141

D(6-16)8 BCD

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED SEP 21 1998 RECORDS MGT

1. HEBER MINING & EXPLORATION COMPANY
22010 NORTH 21ST AVENUE
PHOENIX, AZ 85027-0026

2. Owner Name: ARIZONA NATURE CONSERVANCY
Address: 300 E. University Blvd. #230 Tucson, Az. 85705
City State Zip

3. Location: 6 N(S) 16 (E)W 8 ¼ SE ¼ SW ¼ NW
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55--569986 (Required)

5. Permit No. NA (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 17 ft.
7. Type of casing Steel & PVC
8. Diameter and length of casing 2 in. from +2' to 5', 2 in from 5' to 17'
9. Method of sealing at reduction points NA
10. Perforated from 7' to 17', from ____ to ____ from ____ to ____
11. Size of cuts .020 Number of cuts per foot 125
12. If screen was installed: Length 10 ft. Diam 2 in. Type PVC
13. Method of construction drilled w/ 4¼ in. I.D. hollow stem auger
(drilled, dug, driven, bored, jetted, etc)
14. Date started 8 (Month) 25 (Day) 1998 (Year)
15. Date completed 8 (Month) 25 (Day) 1998 (Year)
16. Depth to water 9' While Drilling ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
Existing ground near the well
18. If flowing well, state method of flow regulation: NA
19. Remarks: Set casing to 17', filter pack to 6', bentonite seal to 5', then cement grouted to the surface with steel locking casing 2ft (+-) above grade.

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-569986
File No. D(6-16)8 BCD
Received ____ By ____
Entered ____ By ____

DWR-55-55-7/95 (Rev.)

ANSWERED SEP 21 1998

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	7'	Brn. SILT & CLAY Uncemented
7'	16'	Brn. Gravelly SAND w/ Cobbles Uncemented
16'	17'	Brn. SAND, Uncemented
		Bottom of Boring @ 17'
		Groundwater @ 9' While Drilling

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: HEBER MINING & EXPLORATION

COMPANY

22010 NORTH 21ST AVENUE
Street

PHOENIX, AZ 85027-0026 602-780-0023
City State Zip Phone No.

#269 9-11-98
Signature of Driller Date

Log # 142

ARIZONA DEPARTMENT OF WATER RESOURCES D(6-16)8 CBA
500 North Third Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED SEP 21 1998 RECORDS MGT

1. HEBER MINING & EXPLORATION COMPANY
22010 NORTH 21ST AVENUE
PHOENIX, AZ 85027-0026

2. Owner Name: ARIZONA NATURE CONSERVANCY
Address: 300 E. University Blvd. #230 Tucson, Az. 85705
City State Zip

3. Location: 6 N/S 16 E/W 8 ¼ NE ¼ NW ¼ SW
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55--569990 (Required)

5. Permit No. NA (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 15' ft.
7. Type of casing Steel & PVC
8. Diameter and length of casing 2 in. from +2 to 5.5, 2 in from 5.5' to 15'
9. Method of sealing at reduction points NA
10. Perforated from 5.5' to 15', from ____ to ____ from ____ to ____
11. Size of cuts .020 Number of cuts per foot 125
12. If screen was installed: Length 10 ft. Diam 2 in. Type PVC
13. Method of construction drilled w/ 4¼ in. I.D. hollow stem auger
(drilled, dug, driven, bored, jetted, etc)
14. Date started 8 25 1998
Month Day Year
15. Date completed 8 25 1998
Month Day Year
16. Depth to water 8' While Drilling ft. (If flowing well, so state)

17. Describe point from which depth measurements were made, and give sea-level elevation if available
Existing ground near the well
18. If flowing well, state method of flow regulation: NA

19. Remarks: Set casing to 15', filter pack to 5', bentonite seal to 4', then cement grouted to the surface with steel locking casing 2ft (+-) above grade.

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-569990
File No. D(6-16) 8 CBA
Received ____ By ____
Entered ____ By ____

DWR-55-55-7/95 (Rev.) ANSWERED SEP 21 1998

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	8'	Brn. Sandy Silty CLAY, Uncemented
8'	12'	Brn Coarse SAND Uncemented
12'	15'	Brn. Gravelly SAND, Uncemented
		Bottom of Boring @ 15'
		Groundwater @ 8' While Drilling

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: HEBER MINING & EXPLORATION COMPANY

22010 NORTH 21ST AVENUE
Street

PHOENIX, AZ 85027-0026 602-780-0023
City State Zip Phone No.

#269 9-11-98
Signature of Driller Date

Log # 143

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED SEP 23 1998 RECORDS MGT

1. DRILLING SERVICES
12030 EAST RIGGS ROAD
CHANDLER, AZ 85249

2. Owner Name: ARIZONA NATURE CONSERVANCY
Address: _____
City State Zip

3. Location: 6 S N/S (Township) 16 E E/W (Range) 8 (Section) ¼ NE (10-acre) ¼ NW (40-acre) ¼ SW (160-acre)

4. Well Registration No. 55--570118 (Required)

5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 81 ft.
7. Type of casing Sch 40 PVC
8. Diameter and length of casing 4 in. from 0 to 81, _____ in from _____ to _____
9. Method of sealing at reduction points N/A
10. Perforated from 21 to 81, from _____ to _____ from _____ to _____
11. Size of cuts .020 Number of cuts per foot 240
12. If screen was installed: Length 60 ft. Diam 4 in. Type Mill Slot
13. Method of construction Drilled
(drilled, dug, driven, bored, jetted, etc)
14. Date started 8 (Month) 20 (Day) 98 (Year)
15. Date completed 8 (Month) 20 (Day) 98 (Year)
16. Depth to water 10 ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
Ground Surface
18. If flowing well, state method of flow regulation: _____
19. Remarks: MW-1

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-570118
File No. D(6-16) 8 CBA
Received _____ By _____
Entered _____ By _____
ANSWERED SEP 24 1998

DWR-55-55-7/95 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	81	Sand Gravel Cobbles

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: DRILLING SERVICES

12030 EAST RIGGS ROAD
Street

CHANDLER, AZ 85249
City State Zip Phone No.

9-21-98
Signature of Driller Date

Log # 144

(D-6-16)8 BCA
PZE

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED OCT 20 1998 RECORDS MGT

RECEIVED OCT - 8 1998 RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: Arizona Nature Conservancy
   Address: 300 E. University, Tucson, AZ 85705 520-622-3861
   Street City State Zip Telephone Number
2. Drilling Firm: GeoSystems Analysis, Inc.
   Address: 100 N. Stone, 405, Tucson, AZ 85701 520-628-9330
   Street City State Zip Telephone Number
3. Location: NE ¼ SW ¼ NW ¼ of Section 8 Township 6 S Range 16 E
   10 Acre 40 Acre 160 Acre
4. Well Registration No. 55- 570461 (Required) 6a. Latitude 32 55 . 41.4 "
5. Permit No. D(6-16)8BCA (If issued) 6b. Longitude 110 44 . 43.5 "

DESCRIPTION OF WELL

7. Total Depth of Hole 15 ft 8. Type of Casing(s) Steel
9. Diameter and length of casing(s) 1¼ inches from 0 to 15' inches from ____ to ____
10. Method of sealing at reduction points none
11. Perforated from 13' to 15' from ____ to ____ from ____ to ____
12. Size of cuts ____ Number of cuts per foot ____
13. If screen was installed: Length 2 feet. Diameter 1¼ inches. Type 0.020 wire-wrap
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven X
    Sonic ___ Hand Dug ___ Other: ___ (Check One)
15. Date started September 18 1998
    Month Day Year
16. Date completed September 18 1998
    Month Day Year
17. Depth to water 7 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available ground surface, elevation 1984
19. If flowing well, state method of flow regulation: ____
20. Remarks: hand driven to 15 feet, with steel locking casing 2 feet above grade

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. ____
File No. ____
Received ____ By ____
Entered ____ By ____
ANSWERED OCT 20 1998

DWR-55-55 (Rev 7/98)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	15	silt, sand and gravel, no samples were possible during driving

Driller - Vaughnee Written Okay ed by AL

No Driller #

Piezometer

Drill cuttings on ward (2nd floor)

ASAP

Call Don at 780-0023 when ready

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: GeoSystems Analysis, Inc.

Signature of Qualifying Party: James P. Lombard Date: 9-29-98

Street: 100 N. Stone Suite 405

City: Tucson State: AZ Zip: 85701

DWR 55-55 (Rev2/98)

Log # 145

PZ-C (D-6-16) 8BDB

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED OCT 20 1998 RECORDS MGT

RECEIVED OCT - 8 1998 RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: Arizona Nature Conservancy
   Address: 300 E. University, Tucson, AZ 85705 520-622-3861
   Street City State Zip Telephone Number
2. Drilling Firm: GeoSystems Analysis, Inc.
   Address: 100 N. Stone, 405, Tucson, AZ 85701 520-628-9330
   Street City State Zip Telephone Number
3. Location: NW ¼ SE ¼ NW ¼ of Section 8 Township 6 S Range 16 E
   10 Acre 40 Acre 160 Acre
4. Well Registration No. 55- 570462 (Required) 6a. Latitude 32° 55' 40.3"
5. Permit No. D(6-16)8BDB (If issued) 6b. Longitude 110 44 12.8"

DESCRIPTION OF WELL

7. Total Depth of Hole 10 ft 8. Type of Casing(s) Steel
9. Diameter and length of casing(s) 1¼ inches from 0' to 10', inches from to
10. Method of sealing at reduction points none
11. Perforated from 8' to 10' from to from to
12. Size of cuts Number of cuts per foot
13. If screen was installed: Length 2 feet. Diameter 1¼ inches. Type 0.020 wire-wrap
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven X
    Sonic ___ Hand Dug ___ Other: ___ (Check One)
15. Date started September 18 1998
    Month Day Year
16. Date completed September 18 1998
    Month Day Year
17. Depth to water 7 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available ground surface, elevation 1987 feet
19. If flowing well, state method of flow regulation:
20. Remarks: hand driven to 10 feet, with steel locking casing 2 feet above grade

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No.
File No.
Received By
Entered By
ANSWERED OCT 20 1998

DWR-55-55 (Rev 7/98)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	10	silt, sand, and gravel, no samples were possible during driving

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: GeoSystems Analysis, Inc.

Signature of Qualifying Party: James P. Lombard Date: 9-29-98

Street: 100 North Stone, suite 405

City: Tucson State: AZ Zip: 85701

DWR 55-55 (Rev2/98)

Log # 146

PZB

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED OCT 20 1998 RECORDS MGT

RECEIVED OCT - 8 1998 RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: Arizona Nature Conservancy
   Address: 300 E. University, Tucson, AZ 85705 520-622-3861
   Street City State Zip Telephone Number
2. Drilling Firm: GeoSystems Analysis, Inc.
   Address: 100 N. Stone, 405, Tucson, AZ 85701 520-628-9330
   Street City State Zip Telephone Number
3. Location: NW ¼ (10 Acre) SE ¼ (40 Acre) NW ¼ (160 Acre) of Section 8 Township 6 S Range 16 E
4. Well Registration No. 55-570463 (Required) 6a. Latitude 32 55 . 40.0 "
5. Permit No. D(6-16)8BDB (If issued) 6b. Longitude 110 44 . 3.8 "

DESCRIPTION OF WELL

7. Total Depth of Hole 15 ft 8. Type of Casing(s) steel
9. Diameter and length of casing(s) 1 1/4 inches from 0 to 15' inches from ____ to ____
10. Method of sealing at reduction points none
11. Perforated from 13' to 15' from ____ to ____ from ____ to ____
12. Size of cuts ____ Number of cuts per foot ____
13. If screen was installed: Length 2 feet. Diameter 1 1/4 inches. Type 0.020 wire-wrap
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven X
    Sonic ___ Hand Dug ___ Other: ___ (Check One)
15. Date started September (Month) 18 (Day) 1998 (Year)
16. Date completed September (Month) 18 (Day) 1998 (Year)
17. Depth to water 10 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available ground surface, elevation 1990 feet
19. If flowing well, state method of flow regulation: ____
20. Remarks: hand driven to 15 feet, with steel locking casing 2 feet above grade

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. ____
File No. ____
Received ____ By ____
Entered ____ By ____
ANSWERED OCT 20 1998

DWR-55-55 (Rev 7/98)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered and depth to which it rose in well.

From (feet)	To (feet)	
0	15	silt, sand, and gravel, no samples were possible during driving

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: GeoSystems Analysis, Inc.

Signature of Qualifying Party: James P. Lambard Date: 9-30-98

Street: 100 N. Stone, Suite 405

City: Tucson State: AZ Zip: 85701

DWR 55-55 (Rev2/98)

Log # 147

PZ-A

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED OCT 20 1998 RECORDS MGT

RECEIVED OCT - 8 RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: Arizona Nature Conservancy
   Address: 300 E. University, Tucson, AZ 85705 520-622-3861
   (Street, City, State, Zip, Telephone Number)
2. Drilling Firm: GeoSystems Analysis, Inc.
   Address: 100 N. Stone, 405, Tucson AZ 85701 520-628-9330
   (Street, City, State, Zip, Telephone Number)
3. Location: SE ¼ (10 Acre) SE ¼ (40 Acre) NW ¼ (160 Acre) of Section 8 Township 6 S Range 16 E
4. Well Registration No. 55-570464 (Required) 6a. Latitude 32 55 . 33.6 "
5. Permit No. D(6-16)8BDD (If issued) 6b. Longitude 110 44 . 56.8 "

DESCRIPTION OF WELL

7. Total Depth of Hole 15 ft 8. Type of Casing(s) Steel
9. Diameter and length of casing(s) 1 1/4 inches from 0 to 15' inches from ____ to ____
10. Method of sealing at reduction points none
11. Perforated from 13' to 15' from ____ to ____ from ____ to ____
12. Size of cuts ____ Number of cuts per foot ____
13. If screen was installed: Length 2 feet. Diameter 1 1/4 inches. Type 0.020 wire-wrap
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven X
    Sonic ___ Hand Dug ___ Other: ___ (Check One)
15. Date started September (Month) 18 (Day) 1998 (Year)
16. Date completed September (Month) 18 (Day) 1998 (Year)
17. Depth to water 6 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available ground surface, elevation 1989 feet
19. If flowing well, state method of flow regulation: ____
20. Remarks: hand driven to 15 feet, with steel locking casing 2 feet above grade

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. ____
File No. ____
Received ____ By ____
Entered ____ By ____
ANSWERED OCT 20 1998

DWR-55-55 (Rev 7/98)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	15	silt, sand, and gravel; no samples were possible during driving

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: Geo Systems Analysis, Inc.

Signature of Qualifying Party: James P. Lombard Date: 9-30-98

Street: 100 North Stone Suite 405

City: Tucson State: AZ Zip: 85701

DWR 55-55 (Rev2/98)

Log # 148

P2-D

RECEIVED OCT 20 1998 RECORDS MGT

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED OCT - 8 1998 RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: Arizona Nature Conservancy
   Address: 300 E. University, Tucson, AZ 85705 520-622-3861
   (Street, City, State, Zip, Telephone Number)
2. Drilling Firm: Geo Systems Analysis, Inc.
   Address: 100 N. Stone, 405, Tucson, AZ 85701 520-628-9330
   (Street, City, State, Zip, Telephone Number)
3. Location: SW ¼ (10 Acre) SE ¼ (40 Acre) NW ¼ (160 Acre) of Section 8 Township 6 S Range 16 E
4. Well Registration No. 55- 570465 (Required) 6a. Latitude 32 55 33.8 "
5. Permit No. D(6-16)8BDC (If issued) 6b. Longitude 110 44 14.5 "

DESCRIPTION OF WELL

7. Total Depth of Hole 16 ft 8. Type of Casing(s) Steel
9. Diameter and length of casing(s) 1¼ inches from 0 to 16, inches from to
10. Method of sealing at reduction points none
11. Perforated from 14' to 16' from to from to
12. Size of cuts Number of cuts per foot
13. If screen was installed: Length 2 feet. Diameter 1¼ inches. Type 0.020 wire-wrap
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven X
    Sonic ___ Hand Dug ___ Other: ___ (Check One)
15. Date started September (Month) 18 (Day) 1998 (Year)
16. Date completed September (Month) 18 (Day) 1998 (Year)
17. Depth to water 10 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available ground surface, elevation 1990 feet
19. If flowing well, state method of flow regulation:
20. Remarks: hand driven to 16 feet, with steel locking casing 2 feet above grade

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No.
File No.
Received By
Entered By
ANSWERED OCT 20 1998

DWR-55-55 (Rev 7/98)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered and depth to which it rose in well.

From (feet)	To (feet)	
0	3	sand
3	16	sand and gravel, no samples were possible during driving

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: GeoSystems Analysis, Inc.

Signature of Qualifying Party: James P. Lombard Date: 9-29-98

100 North Stone, Suite 405
Street

Tucson, AZ 85701
City State Zip

DWR 55-55 (Rev2/98)

Log # 152

D(6-16) 7 AAD

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED SEP 21 1998 RECORDS MGT

1. HEBER MINING & EXPLORATION COMPANY
22010 NORTH 21ST AVENUE
PHOENIX, AZ 85027-0026

2. Owner Name: ARIZONA NATURE CONSERVANCY
Address: 300 E. University Blvd. #230 Tucson, Az. 85705
City State Zip

3. Location: 6 N/(S) 16 (E)/W 7 ¼ SE ¼ NE ¼ NE
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55--569982 (Required)

5. Permit No. NA (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 22' ft.
7. Type of casing Steel & PVC
8. Diameter and length of casing 2 in. from +2' to 5', 2 in from 5' to 22'
9. Method of sealing at reduction points NA
10. Perforated from 12' to 22', from ____ to ____ from ____ to ____
11. Size of cuts .020 Number of cuts per foot 125
12. If screen was installed: Length 10 ft. Diam 2 in. Type PVC
13. Method of construction drilled w/ 4¼ in. I.D. hollow stem auger
(drilled, dug, driven, bored, jetted, etc)
14. Date started Aug 28 1998
Month Day Year
15. Date completed Aug 28 1998
Month Day Year
16. Depth to water 13' While Drilling ft. (If flowing well, so state)

17. Describe point from which depth measurements were made, and give sea-level elevation if available
Existing ground near the well
18. If flowing well, state method of flow regulation: NA

19. Remarks: Set casing to 22', filter pack to 11.5', bentonite seal to 10', then cement grouted to the surface with steel locking casing 2ft (+-) above grade.

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-569982
File No. D(6-16) 7 AAD
Received ____ By ____
Entered ____ By ____

DWR-55-55-7/95 (Rev.)

ANSWERED SEP 21 1998

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	8'	Brn Dry Sandy SILT & CLAY, Uncemented
8'	13'	Brn. Moist Sandy SILT & CLAY, Uncemented
13'	22'	Brn. Wet Sandy SILT & CLAY, Uncemented
		Bottom of Boring @ 22'
		Groundwater @ 13' While Drilling

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: HEBER MINING & EXPLORATION

COMPANY

22010 NORTH 21ST AVENUE
Street

PHOENIX, AZ 85027-0026 602-780-0023
City State Zip Phone No.

#269 7-11-98
Signature of Driller Date

Log # 157

D(5-16)31 CCC

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED SEP 21 1998 RECORDS MGT

1. HEBER MINING & EXPLORATION COMPANY
22010 NORTH 21ST AVENUE
PHOENIX, AZ 85027-0026

2. Owner Name: ARIZONA NATURE CONSERVANCY
Address: 300 E. University Blvd. #230 Tucson, Az. 85705
City State Zip

3. Location: 5 N(S) 16 (E)W 31 ¼ SW ¼ SW ¼ SW
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55--569983 (Required)

5. Permit No. NA (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 20' ft.
7. Type of casing Steel & PVC
8. Diameter and length of casing 2 in. from +2 to 5', 2 in from 5' to 20'
9. Method of sealing at reduction points NA
10. Perforated from 10' to 20', from ____ to ____ from ____ to ____
11. Size of cuts .020 Number of cuts per foot 125
12. If screen was installed: Length 10 ft. Diam 2 in. Type PVC
13. Method of construction drilled w/ 4¼ in. I.D. hollow stem auger
(drilled, dug, driven, bored, jetted, etc)
14. Date started SEP 3 1998
Month Day Year
15. Date completed SEP 3 1998
Month Day Year
16. Depth to water 10' While Drilling ft. (If flowing well, so state)

17. Describe point from which depth measurements were made, and give sea-level elevation if available
Existing ground near the well
18. If flowing well, state method of flow regulation: NA

19. Remarks: Set casing to 20', filter pack to 6', bentonite seal to 5', then cement grouted to the surface with steel locking casing 2ft (+-) above grade.

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-569983
File No. D(5-16)31 CCC
Received ____ By ____
Entered ____ By ____

DWR-55-55-7/95 (Rev.)

ANSWERED SEP 21 1998

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	3'	Brn. SILT & CLAY
3'	6'	Brn Silty Clayey SAND & GRAVEL
6'	9'	Brn SAND
9'	12'	Brn SAND & GRAVEL w/ Cobbles
12'	15'	Brn Gravelly SAND
15'	20'	Brn. Silty Clayey SAND & GRAVEL
		Bottom of Boring @ 20'
		Groundwater @ 10' While Drilling

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: HEBER MINING & EXPLORATION

COMPANY

22010 NORTH 21ST AVENUE
Street

PHOENIX, AZ 85027-0026 602-780-0023
City State Zip Phone No.

#269 9-11-98
Signature of Driller Date

Log # 158

D(6-16)6 DBB

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED SEP 21 1998 RECORDS MGT

1. HEBER MINING & EXPLORATION COMPANY
22010 NORTH 21ST AVENUE
PHOENIX, AZ 85027-0026

2. Owner Name: ARIZONA NATURE CONSERVANCY
Address: 300 E. University Blvd. #230 Tucson, Az. 85705
City State Zip

3. Location: 6 N(S) 16 (E)W 6 ¼ NW ¼ NW ¼ SE
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55-569987 (Required)

5. Permit No. NA (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 21' ft.
7. Type of casing Steel & PVC
8. Diameter and length of casing 2 in. from +2' to 5', 2 in from 5' to 21'
9. Method of sealing at reduction points NA
10. Perforated from 11' to 21', from ____ to ____ from ____ to ____
11. Size of cuts .020 Number of cuts per foot 125
12. If screen was installed: Length 10 ft. Diam 2 in. Type PVC
13. Method of construction drilled w/ 4¼ in. I.D. hollow stem auger
(drilled, dug, driven, bored, jetted, etc)
14. Date started 8 27 1998
Month Day Year
15. Date completed 8 27 1998
Month Day Year
16. Depth to water 15.5' While Drilling ft. (If flowing well, so state)

17. Describe point from which depth measurements were made, and give sea-level elevation if available
Existing ground near the well
18. If flowing well, state method of flow regulation: NA

19. Remarks: Set casing to 21', filter pack to 10', bentonite seal to 8.5', then cement grouted to the surface with steel locking casing 2ft (+-) above grade.

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-569987
File No. D(6-16) 6 DBB
Received ____ By ____
Entered ____ By ____

DWR-55-55-7/95 (Rev.) ENTERED SEP 21 1998

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	2'	Brn SAND, SILT & CLAY, Uncemented
2'	13'	Brn Moist Silty Clayey SAND, Uncemented
13'	21'	Brn Wet Silty Clayey SAND, Uncemented
		Bottom of Boring @ 21'
		Groundwater @ 15.5' While Drilling

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: HEBER MINING & EXPLORATION

COMPANY

22010 NORTH 21ST AVENUE
Street

PHOENIX, AZ 85027-0026 602-780-0023
City State Zip Phone No.

#269 9-11-98
Signature of Driller Date

Log # 160

ARIZONA DEPARTMENT OF WATER RESOURCES D(6-16)6 BAC
500 North Third Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED SEP 21 1998 RECORDS MGT

1. HEBER MINING & EXPLORATION COMPANY
22010 NORTH 21ST AVENUE
PHOENIX, AZ 85027-0026

2. Owner Name: ARIZONA NATURE CONSERVANCY
Address: 300 E. University Blvd. #230 Tucson, Az. 85705
City State Zip

3. Location: 6 N/(S) 16 (E)/W 6 ¼ SW ¼ NE ¼ NW
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55--569991 (Required)

5. Permit No. NA (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 32' ft.
7. Type of casing Steel & PVC
8. Diameter and length of casing 2 in. from +2' to 5.5', 2 in from 5.5' to 32'
9. Method of sealing at reduction points NA
10. Perforated from 22' to 32', from ____ to ____ from ____ to ____
11. Size of cuts .020 Number of cuts per foot 125
12. If screen was installed: Length 10 ft. Diam 2 in. Type PVC
13. Method of construction drilled w/ 4¼ in. I.D. hollow stem auger
(drilled, dug, driven, bored, jetted, etc)
14. Date started 9 (Month) 1 (Day) 1998 (Year)
15. Date completed 9 (Month) 1 (Day) 1998 (Year)
16. Depth to water 24' While Drilling ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
Existing ground near the well
18. If flowing well, state method of flow regulation: NA
19. Remarks: Set casing to 32', filter pack to 21.5', bentonite seal to 20', then cement grouted to the surface with steel locking casing 2ft (+-) above grade.

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-569991
File No. D(6-16)6 BAC
Received ____ By ____
Entered ____ By ____

DWR-55-55-7/95 (Rev.)

ANSWERED SEP 21 1998

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	13'	Brn. Dry SILT & CLAY Uncemented
13'	24'	Brn. Moist SILT & CLAY Uncemented
24'	32'	Brn Wet SILT & CLAY Uncemented
		Bottom of Boring @ 32'
		Groundwater @ 24' While Drilling

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: HEBER MINING & EXPLORATION

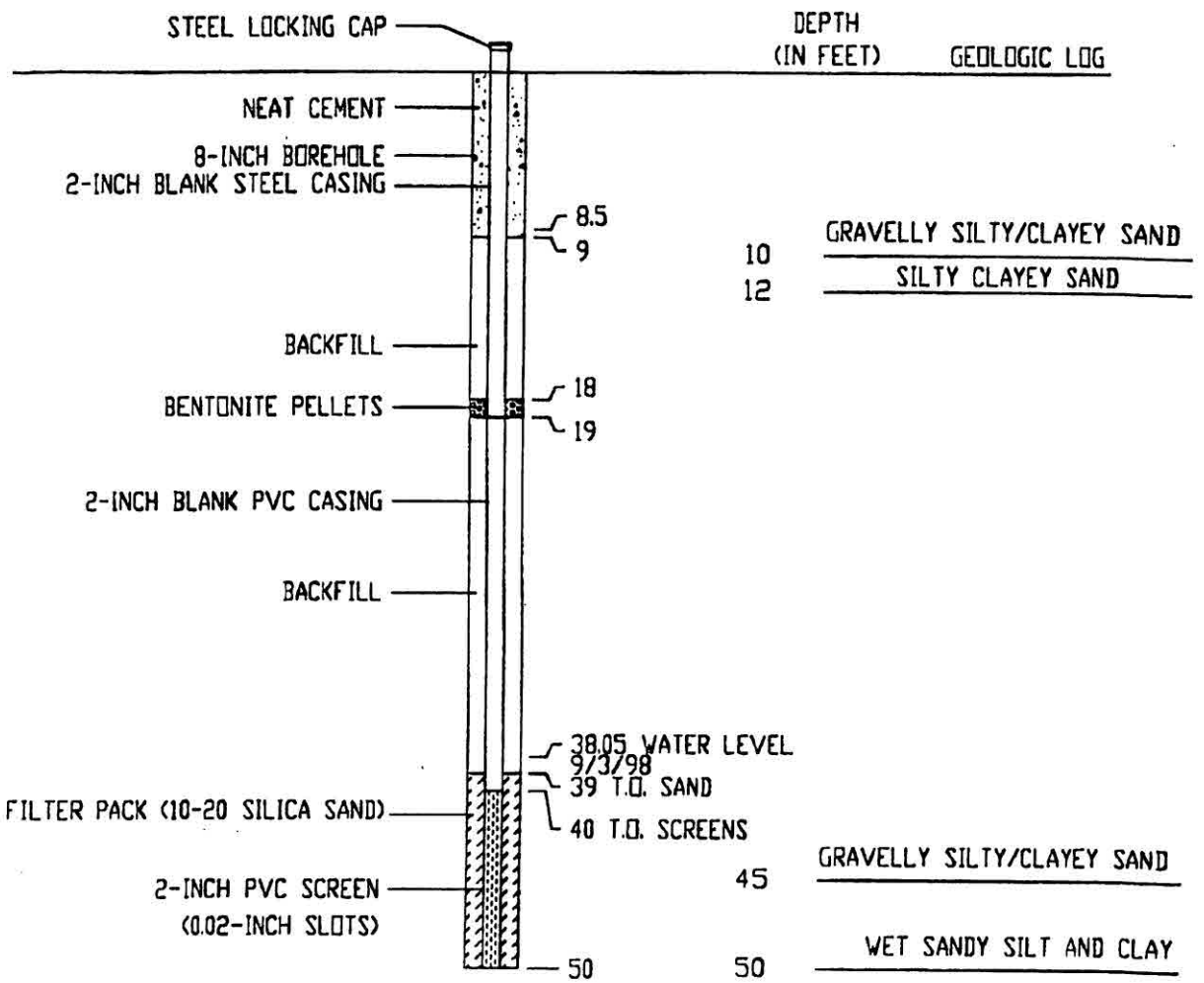
COMPANY

22010 NORTH 21ST AVENUE
Street

PHOENIX, AZ 85027-0026 602-780-0023
City State Zip Phone No.

#269 9-11-98
Signature of Driller Date

Log # 161



JOB No.: 9808	DRAWN: KMJ	GeoSystems Analysis, Inc. Tucson, AZ	CLIENT/PROJECT: THE NATURE CONSERVANCY	
REVISION:	CHECKED: JPL			
	APPROVED:			
LAST UPDATED: 10-28-99	DATE: 9-7-99		TITLE: WELL LOG FOR PZ-BB (D-5-16) 26AAC, 55-569968	FIGURE: 27
ACAD FILE NAME: 9808-WELLS	SCALE: INCH = 10 FT			

Log # 162

ARIZONA DEPARTMENT OF WATER RESOURCES D(5-16)26 ADA
500 North Third Street
Phoenix, Arizona 85004
(D-5-15)26ABA?

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED SEP 21 1998 RECORDS MGT

1. HEBER MINING & EXPLORATION COMPANY
22010 NORTH 21ST AVENUE
PHOENIX, AZ 85027-0026

2. Owner Name: ARIZONA NATURE CONSERVANCY
Address: 300 E. University Blvd. #230 Tucson, Az. 85705
City State Zip

3. Location: 5 N/S 15 ~~16~~ E/W 26 ¼ NE ¼ SE ¼ NE
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55-569988 (Required)

5. Permit No. NA (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 28' ft.
7. Type of casing Steel & PVC
8. Diameter and length of casing 2 in. from +2 to 8.5', 2 in from 8.5' to 28'
9. Method of sealing at reduction points NA
10. Perforated from 18' to 28', from ____ to ____ from ____ to ____
11. Size of cuts .020 Number of cuts per foot 125
12. If screen was installed: Length 10 ft. Diam 2 in. Type PVC
13. Method of construction drilled w/ 4¼ in. I.D. hollow stem auger
(drilled, dug, driven, bored, jetted, etc)
14. Date started 8 (Month) 26 (Day) 1998 (Year)
15. Date completed 8 (Month) 26 (Day) 1998 (Year)
16. Depth to water 18' While Drilling ft. (If flowing well, so state)

17. Describe point from which depth measurements were made, and give sea-level elevation if available
Existing ground near the well
18. If flowing well, state method of flow regulation: NA

19. Remarks: Set casing to 28', filter pack to 18', bentonite seal to 14', then cement grouted to the surface with steel locking casing 2ft (+-) above grade.

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-569988
File No. D(5-16)26 ADA
Received ____ By ____
Entered ____ By ____

DWR-55-55-7/95 (Rev.)

ANSWERED SEP 21 1998

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	10'	Brn Sandy SILT & CLAY Uncemented
10'	26'	Brn. SILT & CLAY, Uncemented
26'	28'	Brn Fine SAND SILT & CLAY
		Bottom of Boring @ 28'
		Groundwater @ 18' while Drilling

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: HEBER MINING & EXPLORATION

COMPANY

22010 NORTH 21ST AVENUE
Street

PHOENIX, AZ 85027-0026 602-780-0023
City State Zip Phone No.

#269 9-11-98
Signature of Driller Date

Log # 163

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004

D(5-16)26 AAD
(D-5-15)25 BAD?

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED SEP 21 1998 RECORDS MGT

1. HEBER MINING & EXPLORATION COMPANY
22010 NORTH 21ST AVENUE
PHOENIX, AZ 85027-0026

2. Owner Name: ARIZONA NATURE CONSERVANCY
Address: 300 E. University Blvd. #230 Tucson, Az. 85705
City State Zip

3. Location: 5 N/(S) 15 (E)/W 26 ¼ SE ¼ NE ¼ NE
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55--569992 (Required)

5. Permit No. NA (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 37' ft.
7. Type of casing Steel & PVC
8. Diameter and length of casing 2 in. from +2 to 8.5', 2 in from 8.5' to 37'
9. Method of sealing at reduction points NA
10. Perforated from 27' to 37', from ____ to ____ from ____ to ____
11. Size of cuts .020 Number of cuts per foot 125
12. If screen was installed: Length 10 ft. Diam 2 in. Type PVC
13. Method of construction drilled w/ 4¼ in. I.D. hollow stem auger
(drilled, dug, driven, bored, jetted, etc)
14. Date started 9 (Month) 2 (Day) 1998 (Year)
15. Date completed 9 (Month) 2 (Day) 1998 (Year)
16. Depth to water 10' While Drilling ft. (If flowing well, so state)

17. Describe point from which depth measurements were made, and give sea-level elevation if available
Existing ground near the well
18. If flowing well, state method of flow regulation: NA

19. Remarks: Set casing to 37', filter pack to 24.75', bentonite seal to 23.25', then cement grouted to the surface with steel locking casing 2ft (+-) above grade.

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-569992
File No. D(5-16)26 AAD
Received ____ By ____
Entered ____ By ____

DWR-55-55-7/95 (Rev.)

ANSWERED SEP 21 1998

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	6'	Brn dry SILT & CLAY Uncemented
6'	28'	Brn Moist SILT & CLAY Uncemented
28'	32'	Brn Moist/Wet Sandy SILT & CLAY, Uncemented
32'	37'	Brn Wet Sandy SILT & CLAY Uncemented
		Bottom of Boring @ 37'
		Groundwater @ 10' After Development

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

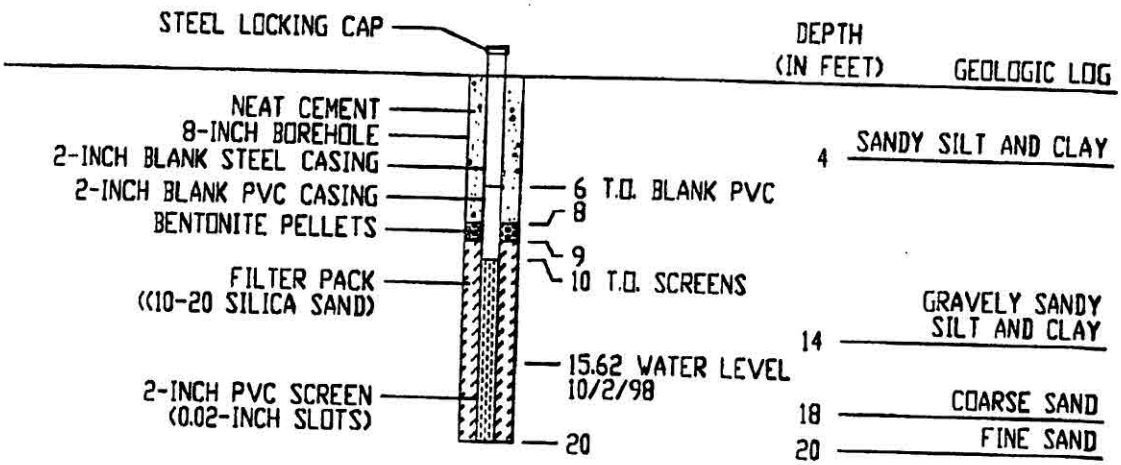
Driller Name: HEBER MINING & EXPLORATION COMPANY

22010 NORTH 21ST AVENUE
Street

PHOENIX, AZ 85027-0026 602-780-0023
City State Zip Phone No.

#269 9-11-98
Signature of Driller Date

Log # 164



JOB No.: 9808	DRAWN: KMJ	GeoSystems Analysis, Inc. Tucson, AZ	CLIENT/PROJECT: THE NATURE CONSERVANCY	
REVISION:	CHECKED: JPL			
	APPROVED:			
LAST UPDATED: 10-28-98	DATE: 9-7-98		TITLE: WELL LOG FOR PZ-GG (D-5-16) 23 CCC, 55-569974	FIGURE: 30
ACAD FILE NAME: 9808-WELLS	SCALE: 1INCH = 10 FT			

Log # 165

(D-5-15) 23 D1
P2EE

RECEIVED
OCT 20 1998
RECORDS MGT

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
OCT - 8 1998
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: Arizona Nature Conservancy
   Address: 300 E. University Blvd, Tucson, AZ 85705 520-622-3861
   (Street, City, State, Zip, Telephone Number)
2. Drilling Firm: GeoSystems Analysis, Inc.
   Address: 100 N. Stone, 405, Tucson, AZ 85701 520-628-9330
   (Street, City, State, Zip, Telephone Number)
3. Location: NE ¼ (10 Acre) NE ¼ (40 Acre) NE ¼ (160 Acre) of Section 26 Township ~~5E~~ 15 S Range 16 E
4. Well Registration No. 55- 570466 (Required)
5. Permit No. D(5-16)26AAA (If issued)

6a. Latitude 32 58 . 33.5 "
6b. Longitude 110 46 . 40.6 "

DESCRIPTION OF WELL

7. Total Depth of Hole 10 ft
8. Type of Casing(s) Steel
9. Diameter and length of casing(s) 1 1/4 inches from 0' to 10' inches from ____ to ____
10. Method of sealing at reduction points none
11. Perforated from 8' to 10' from ____ to ____ from ____ to ____
12. Size of cuts ____ Number of cuts per foot ____
13. If screen was installed: Length 2 feet. Diameter 1 1/4 inches. Type 0.020 wire-wrap
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven X
    Sonic ___ Hand Dug ___ Other: ___ (Check One)
15. Date started October (Month) 2 (Day) 1998 (Year)
16. Date completed October (Month) 2 (Day) 1998 (Year)
17. Depth to water 3.5 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available ground surface, elevation 1905 feet
19. If flowing well, state method of flow regulation: ____
20. Remarks: hand driven to 10 feet with steel locking casing 2 feet above grade

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. ____
File No. ____
Received ____ By ____
Entered ____ By ____
ANSWERED OCT 20 1998

DWR-55-55 (Rev 7/98)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	10	silt, sand, gravel; no samples were possible during driving

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: Geo Systems Analysis, Inc.

Signature of Qualifying Party: James P. Lambard Date: 10-5-98

Street: 100 North Stone, Suite 405

City: Tucson State: AZ Zip: 85701

DWR 55-55 (Rev2/98)

Log # 166

(D-5-15) 24CCC
PZ-HH

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED OCT 20 1998 RECORDS MGT

RECEIVED OCT - 8 1998 RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: Arizona Nature Conservancy
   Address: 300 E. University, Tucson, AZ 85705 520-622-3861
   (Street, City, State, Zip, Telephone Number)
2. Drilling Firm: GeoSystems Analysis, Inc.
   Address: 100 N. Stone, 405, Tucson, AZ 85701 520-628-9330
   (Street, City, State, Zip, Telephone Number)
3. Location: SW ¼ (10 Acre) SE ¼ (40 Acre) SE ¼ (160 Acre) of Section 23 Township 5 S Range 16 E
4. Well Registration No. 55-570467 (Required) 6a. Latitude 32 58 . 39.7 "
5. Permit No. D(5-16)23DDC (If issued) 6b. Longitude 110 46 . 21.4 "

DESCRIPTION OF WELL

7. Total Depth of Hole 10 ft 8. Type of Casing(s) Steel
9. Diameter and length of casing(s) 1 1/4 inches from 0' to 10', ____ inches from ____ to ____
10. Method of sealing at reduction points none
11. Perforated from 8' to 10' from ____ to ____ from ____ to ____
12. Size of cuts ____ Number of cuts per foot ____
13. If screen was installed: Length 2' feet. Diameter 1 1/4 inches. Type 0.020 wire-wrap
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven X
    Sonic ___ Hand Dug 2 Other: ___ (Check One)
15. Date started October (Month) 2 (Day) 1998 (Year)
16. Date completed October (Month) 2 (Day) 1998 (Year)
17. Depth to water 3.5 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available ground surface, elevation 1900 feet
19. If flowing well, state method of flow regulation: ____
20. Remarks: hand driven to 10 feet, with steel locking casing 2 feet above grade

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. ____
File No. ____
Received ____ By ____
Entered ____ By ____
ANSWERED OCT 20 1998

DWR-55-55 (Rev 7/98)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	10	silt, sand, and gravel; no samples were possible during driving

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: GeoSystems Analysis, Inc.

Signature of Qualifying Party: James P. Lombard Date: 10-5-98

Street: 100 North Stone, Suite 405

City: Tucson, State: AZ Zip: 85701

DWR 55-55 (Rev2/98)

Log # 167

(D-5-15)23

ARIZONA DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

DEPARTMENT OF WR
NOV 18 1994
OPERATIONS DIV

Boring No. B-6

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Name: Pinal County Highway Department
   Address: 30 North Florence Street (Street) Florence (City) Arizona (State) 85232 (Zip)
2. Driller Name: AGRA Earth & Environmental, Inc. (formerly SHB AGRA, Inc.)
   Address: 3232 West Virginia Avenue (Street) Phoenix (City) Arizona (State) 85009 (Zip)
3. Location: 5 N/S (Township) 15 E/W (Range) 23 (Section) ___ 1/4 (10-acre) ___ 1/4 (40-acre) ___ 1/4 (160-acre)
4. Well Registration No. 55-541149 (Required)
5. Permit No. N/A (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 150 ft.
7. Type of Casing N/A
8. Diameter and length of casing N/A in. from ___ to ___, ___ in from ___ to ___.
9. Method of sealing at reduction points N/A
10. Perforated from N/A to ___, from ___ to ___, from ___ to ___.
11. Size of cuts N/A Number of cuts per foot ___
12. If screen was installed: Length N/A ft. Diam ___ in. Type ___
13. Method of construction 6 5/8" Hollow Stem Augers
    (drilled, dug, driven, bored, jetted, etc)
14. Date started 10 (Month) 12 (Day) 1994 (Year)
15. Date completed 10 (Month) 15 (Day) 1994 (Year)
16. Depth of water 8.5 ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
    Ground Surface
18. If flowing well, state method of flow regulation: N/A
19. Remarks:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. ___
File No. ___
Received ___ By ___
Entered ENTERED NOV 22 1994 By ___

DWR-55-55-6/94 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	20	SAND, brown
20	34	SAND & GRAVEL, dark brown
34	63	GRAVELLY SAND, brown
63	74	SAND, GRAVEL & COBBLES, brown
74	125	CLAYSTONE interbedded with SILTSTONE
		Groundwater encountered at 8.5 feet.

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: [signature]

AGRA Earth & Environmental, Inc. (formerly SHB AGRA, Inc.)

3232 West Virginia Avenue

Street

Phoenix — Arizona — 85009

City — State — Zip

Date November 15, 1994

Log # 9

(D-24-22) 4 ADD

ARIZONA DEPARTMENT OF WATER RESOURCES

GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave. (Street) Tucson (City) AZ (State) 85719 (Zip) (520) 670-6671 (Telephone Number)
2. Drilling Firm: USGS - Western Region
   Address: 345 Middlefield Rd. (Street) Menlo Park (City) CA (State) 94025 (Zip) (650) 853-8300 (Telephone Number)
3. Location: SE (10 Acre) ¼ SE (40 Acre) ¼ NE (160 Acre) ¼ of Section 04 Township 24 S Range 22 E
4. Well Registration No. 55-588939 cd (Required) 6a. **Latitude** 31 22 . 28 "
5. Permit No. _____ (If issued) 6b. **Longitude** 110 06 . 21 "

DESCRIPTION OF WELL

7. Total Depth of Hole 49 ft 8. Type of Casing(s): Surface Seal PVC Well PVC
9. Diameter and length of casing(s) 6 inches from -.92 to 2.2 inches from -4.2 to 44
10. Method of sealing at reduction points _____
11. Perforated from 44 to 49 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 5 feet. Diameter 2 inches. Type Slotted 0.020" PVC
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering X Jet/Driven ___ Sonic ___ Hand Dug ___ Other: ___ (Check One)
15. Date started 05 (Month) 25 (Day) 2001 (Year)
16. Date completed 05 (Month) 25 (Day) 2001 (Year)
17. Depth to water 32.5 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Below land surface
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-588939
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at whi
encountered, and depth to which it rose in well.

From (feet)	To (feet)	
	4	Core shoe - silty sand, dry
	8	Core shoe - silty clay, dry
8	20	auger cuttings - brown silty clay, dry
20	23	auger cuttings - darker brown clay, dry
	23	auger cuttings - some clay but becomming Moist
23	33	auger cuttings - some clay, moist to wet
	33'	possible saturation
38	38.5	Core - gravelly clay, moist
38.5	48	auger cuttings - mostly sandy clay, moist
48		Saturation
48	50	core - muddy sand, saturated
		Obvious saturation did not occur until the water bearing
		sands were penetrated at 48' BLS, but static water
		level rose to about 32' BLS.
		Sediments not indurated, but not recent alluvium either

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey - Western Region

Signature of Qualifying Party: Robert C. Rach Date 2/13/02

6770 South Paradise Rd.
Street

Las Vegas Nevada 89109
City State Zip

DWR 55-55 (Rev 1/99)

Log # 33

(D-22-22)33BBC

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave. (Street) Tucson (City) AZ (State) 85719 (Zip) 520-670-6671 (Telephone Number)
2. Drilling Firm: US Geological Survey
   Address: 520 N. Park Ave. (Street) Tucson (City) AZ (State) 85719 (Zip) 520-670-6671 (Telephone Number)
3. Location: SW ¼ (10 Acre) NW ¼ (40 Acre) NW ¼ (160 Acre) of Section 33 Township 22S Range 22E
4. Well Registration No. 55- 588961 (Required) 6a. Latitude 31 28 . 43 "
5. Permit No. _____ (If issued) 6b. Longitude 110 07 . 08 "

DESCRIPTION OF WELL

7. Total Depth of Hole 31 ft 8. Type of Casing(s): Surface Seal Galv. steel Well PVC
9. Diameter and length of casing(s) 1.5 inches from -1.8' to 6.2', 1.0 inches from -1.5 to 26
10. Method of sealing at reduction points _____
11. Perforated from 26 to 31 from _____ to _____ from _____ to _____
12. Size of cuts 0.020" Number of cuts per foot _____
13. If screen was installed: Length 5 feet. Diameter 1.0 inches. Type Slotted 0.020" PVC
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering X Jet/Driven ___ Sonic ___ Hand Dug ___ Other: ___ (Check One)
15. Date started 06 (Month) 06 (Day) 2001 (Year)
16. Date completed 06 (Month) 06 (Day) 2001 (Year)
17. Depth to water 26.9' below measure pt. ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Depths to water measured below lip of galvanized surface casing at 1.8' above land surface
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

DWR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	4	Primarily fine silty deposits
4	15	mixed gravel and silt
15	20	heavy thick clays
20	31	looser deposits, probably silty sands. Water encountered at about 25' BLS

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey

Signature of Qualifying Party: Larry Leenhouts 1-9-1
Date

520 N. Park Ave
Street

TUCSON AZ 85715
City State Zip

DWR 55-55 (Rev 1/99)

Log # 41

(D-22-22) 6AAB

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave. (Street) Tucson (City) AZ (State) 85719 (Zip) (520) 670-6671 (Telephone Number)
2. Drilling Firm: USGS - Geoprobe
   Address: 5338 Montgomery Blvd (Street) Albuquerque (City) NM (State) 87109 (Zip) (505) 830-7900 (Telephone Number)
3. Location: NW ¼ (10 Acre) NE ¼ (40 Acre) NE ¼ (160 Acre) of Section 06 Township 22 S Range 22 E
4. Well Registration No. 55-5869416 (Required) 6a. Latitude 31 33 16
5. Permit No. _____ (If issued) 6b. Longitude 110 08 29

DESCRIPTION OF WELL

7. Total Depth of Hole 20 ft 8. Type of Casing(s): Surface Seal _____ Well Galv. steel
9. Diameter and length of casing(s): 1.5 inches from -4.7' to 19' inches from _____ to _____
10. Method of sealing at reduction points _____
11. Perforated from 19' to 20' from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 1 feet. Diameter _____ inches. Type drilled pipe
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering ___ Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: r (Check One) Geoprobe
15. Date started 05 (Month) 26 (Day) 2000 (Year)
16. Date completed 05 (Month) 26 (Day) 2000 (Year)
17. Depth to water 14.4 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured down from lip of galv. casing at 4.7 ft above land surface
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

WR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at wh
encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	4	Core - silty clay, dry
4	8	Core - silty clay, dry
8	12	Core - clay, moist
12	16	Core - sandy clay - saturated
16	20	core - sand - saturated
20	24	Core - Gravel - saturated.
		Hole was saturated from about 12 ft BLS to bottom.

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey

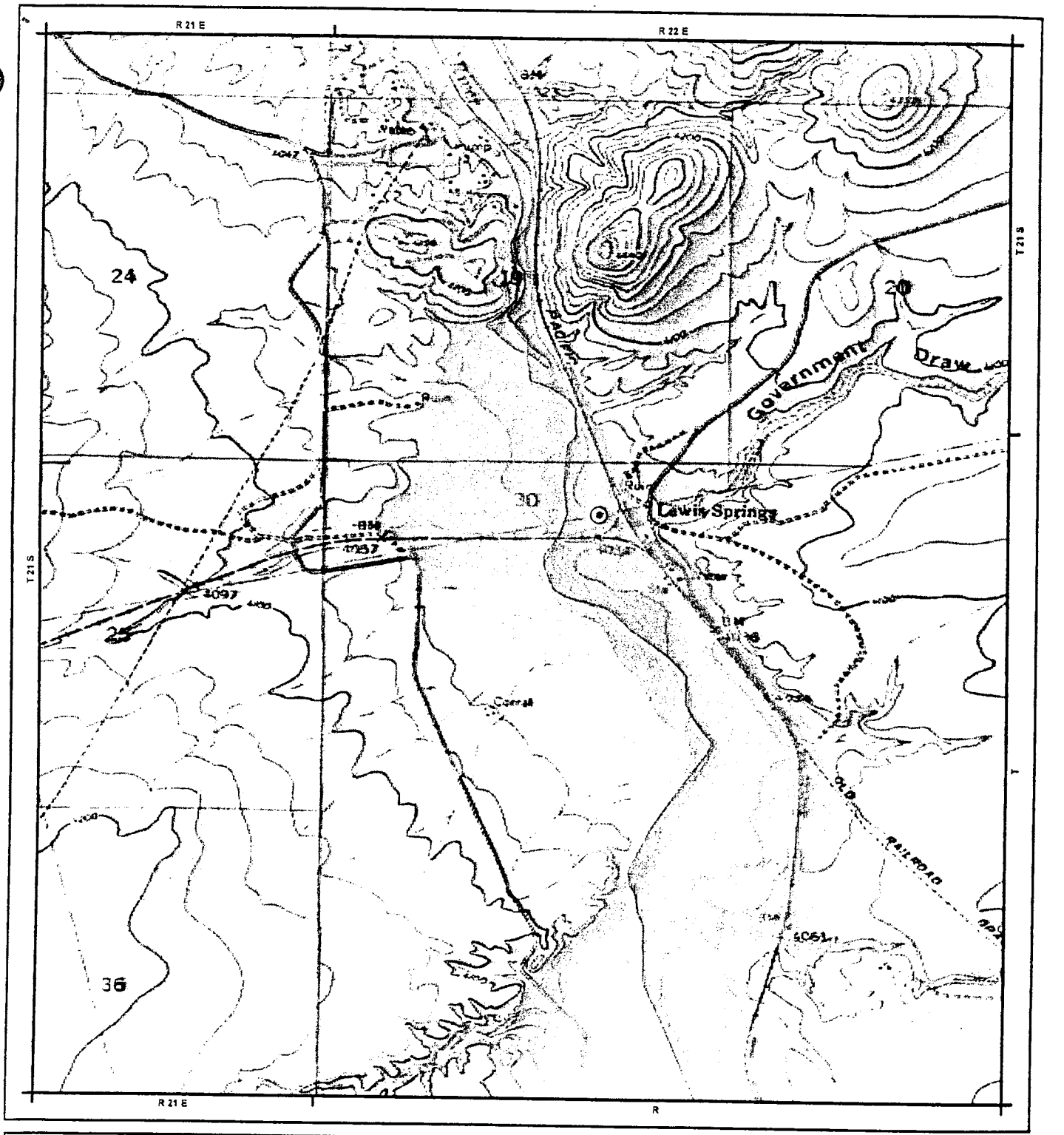
Signature of Qualifying Party: Frederick T. Gebhardt 1-28-02
Date

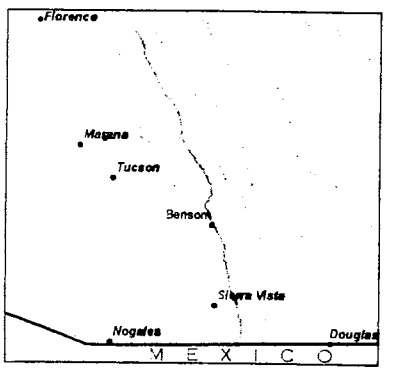
5338 Montgomery Blvd
Street

Albuquerque NM 87109
City State Zip

DWR 55-55 (Rev 1/99)

Log # 55





Borehole Location

LRE San Pedro River Subflow 2009

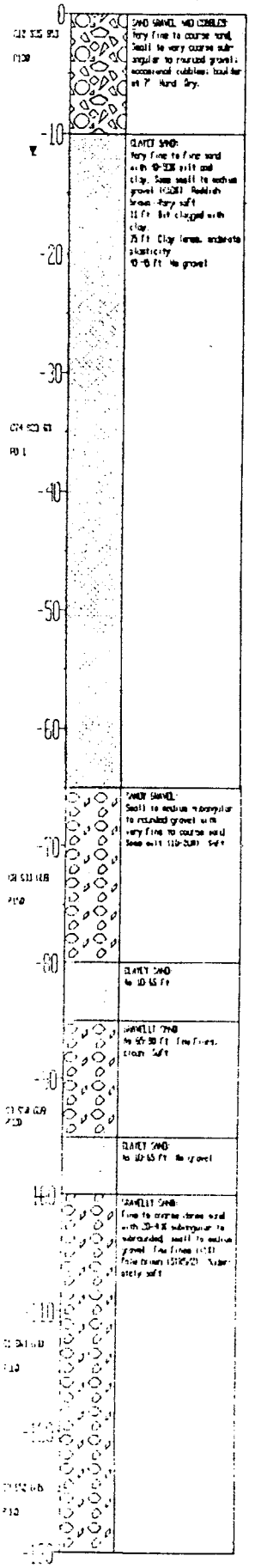
0 0.2 0.4 0.8 Miles

EXHIBIT SRP030
LOCATION OF LEWIS SPRING BOREHOLE LS-B

LeonardRice

6955LW01
FEBRUARY 2011

LOG LS-B


0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
SAND GRAVEL AND COBBLES:
Very fine to coarse sand. Small to very coarse sub-angular to rounded gravel; occasional cobbles; boulder at 7' Hard Dry.
CLAYEY SAND:
Very fine to fine sand with 10-20% silt and clay. Some small to medium gravel (<2cm). Reddish brown. Very soft
11 ft Bit clogged with clay.
25 ft Clay lenses, moderate plasticity
10-15 ft No gravel
SANDY GRAVEL:
Small to medium sub-angular to rounded gravel with very fine to coarse sand
Some silt (10-20%) Soft
CLAYEY SAND
to 10-15 ft
SANDY SAND
to 55-60 ft Few fines. Brown Soft
CLAYEY SAND:
to 10-15 ft No gravel
SANDY SAND:
Fine to coarse lenses sand with 20-40% sub-angular to subrounded, small to medium gravel. Few fines (<1%)
Fine brown (5YR5/2) Moderately soft

RP 30

Log # 75

(D-20-21)10AAC

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED MAR 13 2002 RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave. (Street) Tucson (City) AZ (State) 85719 (Zip) (520) 620-6671 (Telephone Number)
2. Drilling Firm: USGS – Western Region
   Address: 345 Middlefield Rd (Street) Menlo Park (City) CA (State) 94025 (Zip) (650) 853-8300 (Telephone Number)
3. Location: SW ¼ (10 Acre) NE ¼ (40 Acre) NE ¼ (160 Acre) of Section 10 Township 20 S Range 21 E
4. Well Registration No. 55-589924 (Required) 6a. Latitude 31 42 . 48 "
5. Permit No. _____ (If issued) 6b. Longitude 110 10 . 59 "

DESCRIPTION OF WELL

7. Total Depth of Hole 49 ft
8. Type of Casing(s): Surface Seal PVC Well PVC
9. Diameter and length of casing(s) 2 inches from -2.08 to 39.2 inches from -1.75 to 39
10. Method of sealing at reduction points •
11. Perforated from 39 to 44 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 5 feet. Diameter _____ inches. Type 0.020" slotted PVC
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering X Jet/Driven ___ Sonic ___ Hand Dug ___ Other: ___ (Check One)
15. Date started 05 (Month) 17 (Day) 2001 (Year)
16. Date completed 05 (Month) 17 (Day) 2001 (Year)
17. Depth to water 33.5 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured down from measure point on the inner PVC casing at 1.75 ft above land surface.
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

WR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	8	Soft loamy soil
8	10	Core - loamy soil with layers of gravel
10	20	rocky soil - tough augering
20	21	Soft soil again
21	23	rocky soil
23	28	soft soil → easy push
	28	Rocks at 28'
28	33	Softer soil, easy push for augers
	33	Saturation
33	35	Core - poorly sorted mix of clay to gravel
35	47	Fairly soft soils with clays
47	48	Basin fill deposit → Tough indurated silty deposit
		Saturation from 33 ft BLS to bottom of hole.

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US - Geological Survey - Western Region

Signature of Qualifying Party: Robert C. Reeh Date: 2/13/02

6770 South Paradise Rd.
Street

Las Vegas — Nevada — 89119
City — State — Zip

DWR 55-55 (Rev 1/99)

Log # 79

(D-19-21) 9CBC
SUM-UP

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED
MAR 13 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well

1. Owner's Name: US Geological Survey
   Address: 520 N. Park Ave. Tucson AZ 85719 (520) 670-6671.
   Street City State Zip Telephone Number
2. Drilling Firm: USGS- Western Region
   Address: 345 Middlefield Rd Menlo Park CA 94025 (650) 853-8300
   Street City State Zip Telephone Number
3. Location: SW ¼ NW ¼ SW ¼ of Section 09 Township 19 S Range 21 E
   10 Acre 40 Acre 160 Acre
4. Well Registration No. 55-588940 (Required) 6a. **Latitude** 31 47 . 37 "
5. Permit No. _____ (If issued) 6b. **Longitude** 110 12 . 49 "

DESCRIPTION OF WELL

7. Total Depth of Hole 37.5 ft 8. Type of Casing(s): Surface Seal PVC Well PVC
9. Diameter and length of casing(s) 6 inches from -0.95 to 0.4 . 2 inches from -1.67 to 32.5
10. Method of sealing at reduction points _____
11. Perforated from 32.5 to 37.5 from _____ to _____ from _____ to _____
12. Size of cuts _____ Number of cuts per foot _____
13. If screen was installed: Length 5 feet. Diameter 2 inches. Type 0.020" Slotted PVC
14. Constructed by: Air Rotary ___ Mud Rotary ___ Reverse Rotary ___ Cable Tool ___ Boring/Augering X Jet/Driven ___
    Sonic ___ Hand Dug ___ Other: ___ (Check One)
15. Date started 05 (Month) 18 (Day) 2001 (Year)
16. Date completed 05 (Month) 19 (Day) 2001 (Year)
17. Depth to water 23.4 ft. (If flowing well, so state).
18. Describe point from which depth measurements were made, and give sea-level elevation if available Measured down from lip of inner PVC well casing at +1.67 ft above land surface.
19. If flowing well, state method of flow regulation: _____
20. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. _____
File No. _____
Received _____ By ___
Entered _____ By ___

WR-55-55 (Rev 1/99)

ANSWERED MAR 13 2002

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	2	auger cuttings - clay, dry
2	3	auger cuttings - sandy clay, dry
3	4	auger cuttings - gravelly sand, dry
4	6	auger cuttings - gravel, dry
6	10	auger cuttings - sandy gravel, dry
10	15	auger cuttings - gravel, tough drilling, dry
15	18	auger cuttings - sandy gravel, dry
18	21	auger cuttings - sandy gravel w/ clay, dry
21	24	auger cuttings - clayey sand, moist
24	30	auger cuttings - gravelly sand, saturated
30	34	auger cuttings - sand, saturated
34	37	auger cuttings - gravelly sand, saturated
		Saturation from about 24' BLS to bottom of hole.

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: US Geological Survey - Western Region

Signature of Qualifying Party: Robert C. Roch Date 2/13/02

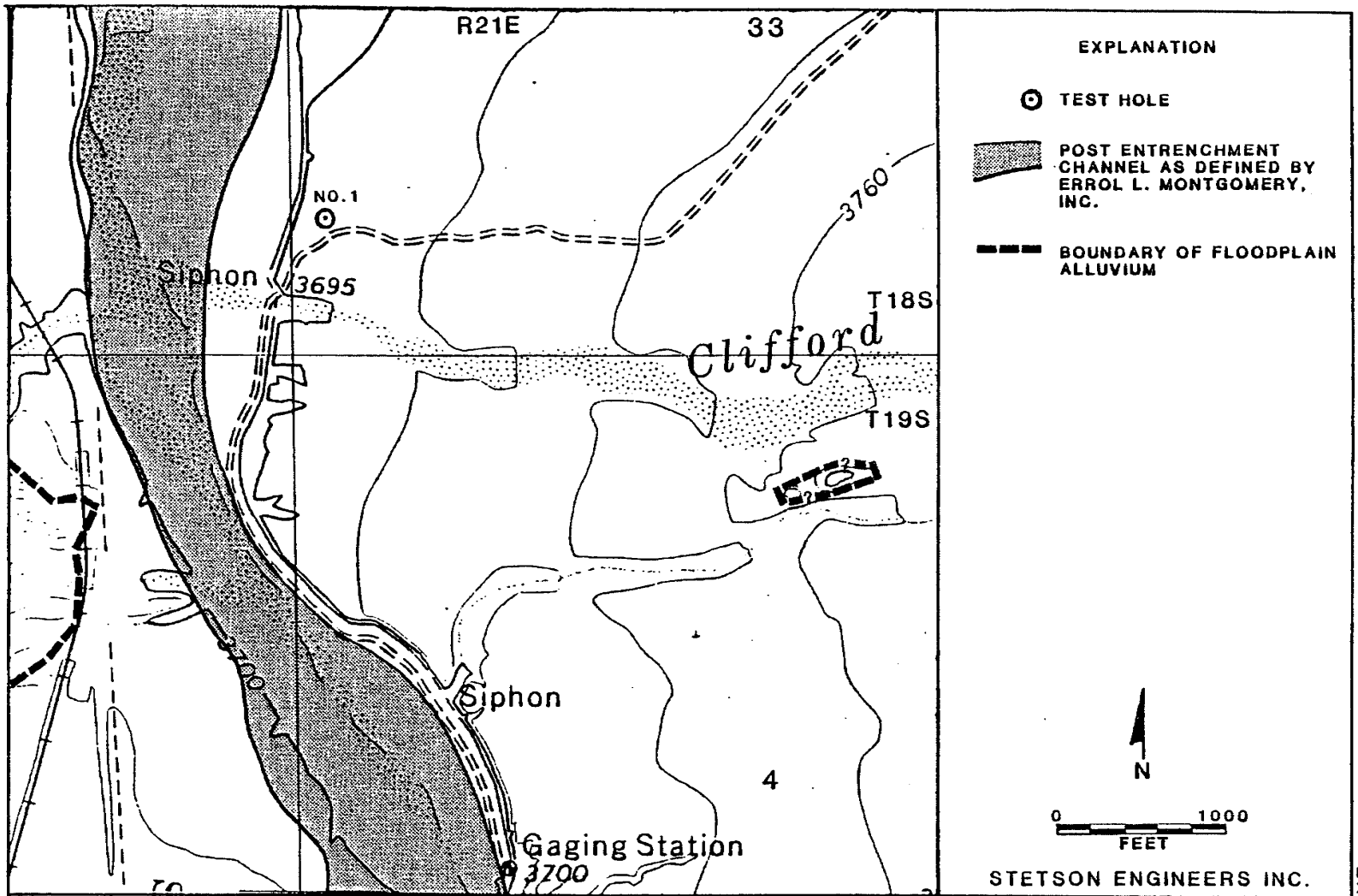
6770 South Paradise Rd.
Street

Las Vegas — Nevada — 89119
City — State — Zip

DWR 55-55 (Rev 1/99)

Log # 80

Exhibit SRP035



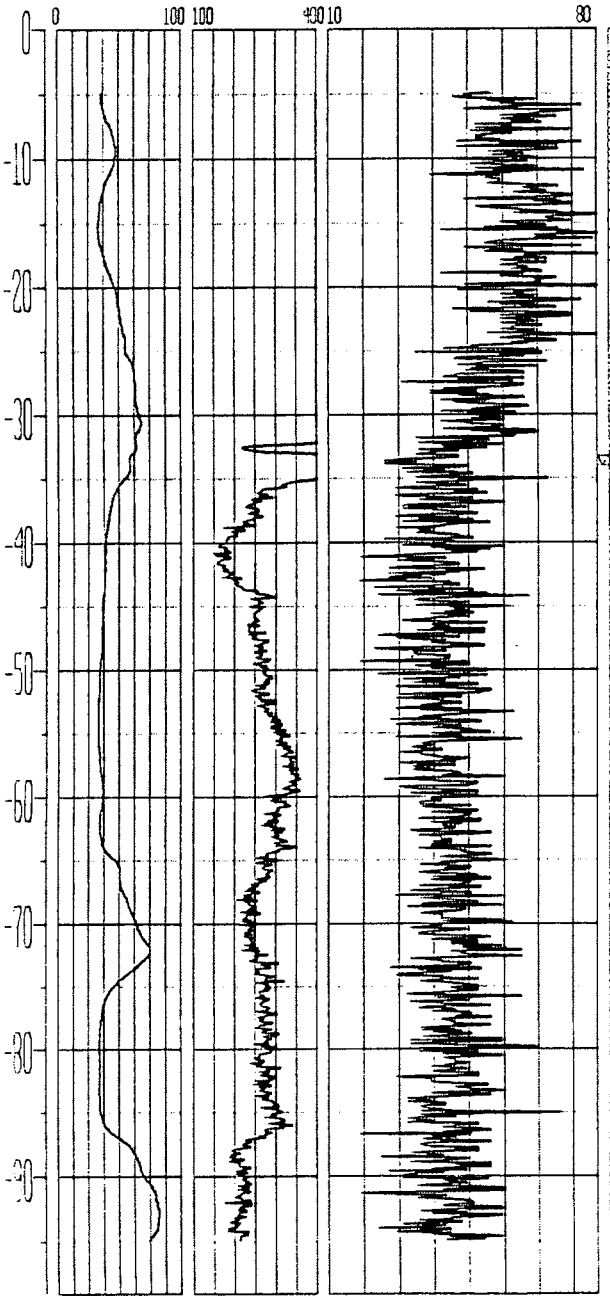
LOCATION OF THE SAINT DAVID EXPLORATION AREA

EXHIBIT 5

Exhibit SRP035

EXHIBIT 6

SAINT DAVID AREA
ELEV 3705



INTERPRETED LITHOLOGY

DESCRIPTIONS

SANDY SILT Dry with some coarse sand and gravel to 1/2 inch
Thin 12 inch coarse sand layer a 1 0 ft depth.

SILT AND CLAY Grey-brown, dry, little or no sand

SILT AND CLAY: with some fine sand and occasional gravel to 1/4 inch
Dry, fire-hard with occasional thin pure clay layer

SILT Brown, with sand, clay and occasional gravel Fine, dry friable
Occasional roots to 1/16 inch in diameter

SILT AND CLAY Stiff-hard, dry-moist, some very fine sandy layers
to 1-2 inches thick

SANDY SILT Brown, with some clay.

SILTY SAND Light brown, fine, moist, primarily fine sand with
some coarse sand and gravel layers to 3 inches thick
Gravel to 3/4 inch Occasional thin silt layer

SANDY SILT Light brown, moist, with some clay and occasional layer
of cleaner fine sand Sandy layers are dry
Sieve Analysis at 20 ft 1% gravel, 23% sand, 76% silt and clay.

SILTY SAND Brown, very coarse sand with occasional gravel
to 1 5 inches, dry

CLAY Brown with occasional thin coarse sand and small gravel layer, moist

SILT AND CLAY Brown, moist, interlayered clay and sandy silt.

SAND AND GRAVEL Grey-brown, wet, predominantly coarse grained with
occasional gravel
Sieve Analysis at 34 ft 24% gravel, 68% sand, 8% silt and clay 8%

SAND Brown, predominately fine grained with some silt and clay

SAND AND GRAVEL Brown, predominantly coarse grained.
Gravel to 1/4 inch

GRAVEL up to 1 5 inches determined from drilling and material on drill bit

SAND AND GRAVEL Brown, with little fine sand and silt Gravel to 1 5 inches
Sieve Analysis at 54 ft 40% gravel, 58% sand, 2% silt and clay

SILTY SAND Reddish-brown with some gravel

GRAVEL to 1/4 inch in diameter, some coarse sand.

SAND AND GRAVEL Brown, coarse, with some fine sand and minor silt
Sieve Analysis at 70 ft 38% gravel, 56% sand, 6% silt and clay

SILT AND CLAY Interlayered light brown sandy silt and dark brown clay

SAND AND GRAVEL Brown primarily medium to very coarse grained with
gravel to 1 5 inches
Sieve Analysis at 94 ft 18% gravel, 72% sand, 10% silt and clay

CLAY Red, hard to very hard, with occasional sand and gravel

Log # 87

(D-18-21) 7 DAA?

ARIZONA DEPARTMENT OF WATER RESOURCES
Information Management Unit
P.O. Box 458, Phoenix, Arizona 85001-0458
(602) 771-8527 * (800) 352-8488
www.water.az.gov

Well Driller Report and Well Log

3-8-07 INPUT m.o.

This report should be prepared by the driller in detail and filed with the Department within 30 days following completion of the well.

** PLEASE PRINT CLEARLY **

RECEIVED FEB 14 2007 INFO MGMT

FILE NUMBER: D(18-21) 7 DAA
WELL REGISTRATION NUMBER: 55-213889
PERMIT NUMBER (IF ISSUED):

SECTION 1. DRILLING AUTHORIZATION

Mail To:

Drilling Firm

NAME: BOART LONGYEAR COMPANY	DWR LICENSE NUMBER: 83
ADDRESS: 7773 WEST SELDON LANE	TELEPHONE NUMBER: 623-486-1881
CITY/STATE/ZIP: PEORIA, AZ 85345-7980	FAX: 623-486-1885

SECTION 2. REGISTRY INFORMATION

Well Owner

FULL NAME OF COMPANY, ORGANIZATION OR INDIVIDUAL: QUENTIN MILLER
MAILING ADDRESS: 1376 S LEE
CITY / STATE / ZIP: ST DAVID, AZ 85630
CONTACT PERSON NAME AND TITLE: SAME AS ABOVE
TELEPHONE NUMBER: 520-400-1350
FAX:
WELL NAME (e.g., MW-1, PZ-3, Lot 25 Well, Smith Well, etc.): EXB-18

Location of Well

WELL LOCATION ADDRESS (IF ANY): APACHE POWDER ROAD

TOWNSHIP (N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE
18S	21E	07	SE 1/4	NE 1/4	NE 1/4

LATITUDE Degrees	Minutes	Seconds "N	LONGITUDE Degrees	Minutes	Seconds "W
°	'		°	'	

METHOD OF LATITUDE / LONGITUDE (CHECK ONE): ☐ *GPS: Hand-Held ☒ USGS Quad Map ☐ Conventional Survey ☐ *GPS: Survey-Grade

LAND SURFACE ELEVATION AT WELL: Feet Above Sea Level

METHOD OF ELEVATION (CHECK ONE): ☐ *GPS: Hand-Held ☐ USGS Quad Map ☐ Conventional Survey ☐ *GPS: Survey-Grade

*IF GPS WAS USED, GEOGRAPHIC COORDINATE DATUM (CHECK ONE): ☐ NAD-83 ☐ Other (please specify):

COUNTY: COCHISE

ASSESSOR'S PARCEL ID NUMBER: BOOK 0 MAP 0 PARCEL

SECTION 3. WELL CONSTRUCTION DETAILS

Drill Method

CHECK ONE
- ☐ Air Rotary
- ☐ Bored or Augered
- ☐ Cable Tool
- ☐ Dual Rotary
- ☐ Mud Rotary
- ☐ Reverse Circulation
- ☐ Driven
- ☐ Jetted
- ☐ Air Percussion / Odex Tubing
- ☒ Other (please specify): Sonic

Method of Well Development

CHECK ONE
- ☐ Airlift
- ☐ Bail
- ☐ Surge Back
- ☐ Surge Pump
- ☐ Other (please specify)

Method of Sealing at Reduction Points

CHECK ONE
- ☐ None
- ☐ Packed
- ☐ Swedged
- ☐ Welded
- ☐ Other (please specify)

Condition of Well

CHECK ONE
- ☐ Capped
- ☐ Pump Installed

Construction Dates

DATE WELL CONSTRUCTION STARTED: 1/8/07
DATE WELL CONSTRUCTION COMPLETED: 1/9/07

I state that this notice is filed in compliance with A.R.S. § 45-596 and is complete and correct to the best of my knowledge and belief.

DRILLING FIRM	SIGNATURE OF QUALIFYING PARTY	DATE
BOART LONGYEAR	[signature]	2-7-07

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 213889

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

DEPTH OF BORING	DEPTH OF COMPLETED WELL
108 Feet Below Land Surface	Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
Feet Below Land Surface			☐ Valve ☐ Other:

Borehole			Installed Casing														
DEPTH FROM SURFACE		BOREHOLE DIAMETER (inches)	DEPTH FROM SURFACE		OUTER DIAMETER (inches)	MATERIAL TYPE (X)				PERFORATION TYPE (X)						SLOT SIZE IF ANY (inches)
FROM (feet)	TO (feet)		FROM (feet)	TO (feet)		STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	
0	88	8														
88	108	6														

Installed Annular Material											
DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (X)								FILTER PACK		
						BENTONITE						
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
2	5		X									
5	108				X				BOREHOLE ABANDONED			

LOG OF BORING NO. EXB-18 p1 of 3

Project ANP Job No. 130.12 6

Elev. Top of Hole _____ Datum _____ Prepared By KMM Date 1-8-07

Type/Size of Boring 8in Rig Type Rotosonic Driller Boart (Phil) Reviewed By _____ Date _____

Depth (ft.)	Blow Count	Recovery	Sample Type	Soil Classification	SOIL TYPE DESCRIPTION (Modifier, Color, Density, Moisture, etc.)	Max. Size	Particle Size Distribution %				Grad-ation			Grain Shape				Relative Density				Plasticity				Consistency				
							Boulders/Cobbles	Gravel	Sand	Silt & Clay	Well	Medium	Poor	Angular	Subangular	Subrounded	Rounded	Loose	Med. Dense	Dense	Very Dense	None	Low	Medium	High	Soft	Firm	Stiff	Very Stiff	Hard
1					0-3 ft Silt					100			X					X					X			X				
2					Dry, brown; roots present																									
3					trace amt of sand.																									
4					strong rxn HCl 7.5YR 5/6																									
5									80	20			X		X	X		X					X			X				
6					3-4 silt with sandy gravel																									
7					Dry; strong rxn HCl 7.5YR 4/4																									
8																														
9					4-18 Clay																									
0					Dry; strong rxn to HCl 7.5YR 5/4					100			X					X					X			X	X			
1					trace amount of silt in some portions,																									
2					some portions are softer than others																									
3					more broken up)																									
4																														
5					18-20.5 Silty Clay					100			X					X	X				X			X	X			
6					Dry, brown, strong rxn to HCl 7.5YR 5/4																									
7																														
8																														
9					20.5-32 Clay																									
0					Dry; brown; strong rxn to HCl					100			X					X	X	X			X			X	X	X		
1					silty clay stringer @ 24-25'																									
2					some portions are denser, firmer than																									
3					others. Nine dense portions are rare																									
4																														
5					32-33 Clayey Silt					100			X					X					X			X				
6					Dry; brown, strong rxn HCl 7.5YR 5/4																									
7																														
8					33-36 Silty sand / Sandy silt				60	40		X			X	X		X				X				X				
9					Dry; brown; sand is moth colored +																									
0					fine to medium grained 7.5YR 5/4																									

trace pea-sized gravel; strong rxn to HCl
large gravel at 35.5-36'

Groundwater Conditions

Date _____ No Groundwater Encountered

Date _____ Time _____ Depth _____

Date _____ Time _____ Depth _____

LOG OF BORING NO. EXB-18 P 2 of 3

Project ANP Job No. 130.126

Elev. Top of Hole _____ Datum _____ Prepared By KMM Date 1-8-07

Type/Size of Boring 8in Rig Type Robosonic Driller Boart (Phil) Reviewed By _____ Date _____

Depth (ft.)	Blow Count	Recovery	Sample Type	Soil Classification	SOIL TYPE DESCRIPTION (Modifier, Color, Density, Moisture, etc.)	Max. Size	Particle Size Distribution % Boulders/Cobbles	Gravel	Sand	Silt & Clay	Grad-ation Well	Medium	Poor	Grain Shape Angular	Subangular	Subrounded	Rounded	Relative Density Loose	Med. Dense	Dense	Very Dense	Plasticity None	Low	Medium	High	Consistency Soft	Firm	Stiff	Very Stiff	Hard
1					36-38 Clayey Silt					100			X					X					X			X				
2					Dry, brown 7.5YR 5/6																									
3					strong rxn to HCl																									
4								20	60	20		X			X			X				X				X	X			
5					38-48 silty sand w/gravel/cobbles																									
6					cobbles are subangular (multi-colored)																									
7					Dry to slightly moist, roots are present																									
8					7.5YR 5/6 med to strong rxn to HCl																									
9					silty clay stringers ↑ moist w/depth																									
0								30	60	10		X			X	X		X				X				X				
1					48-55 sand w/ gravel + cobbles																									
2					saturated 7.5YR 4/6																									
3					silty clay stringers present																									
4					sand is fine to coarse; med rxn to HCl																									
5									10	90			X												X		X			
6					55-56 Clay w/ sand																									
7					moist to saturated																									
8					sand is fine & multicolored 7.5YR 4/6																									
9					strong rxn to HCl																									
0								20	70	10		X			X	X		X				X				X				
1					56-63 Sand w/ gravel + cobbles																									
2					saturated																									
3					sand is fine to coarse																									
4					some areas are more silty; med rxn to HCl																									
5										100			X						X						X		X			
6					63-65.5 Clay w/ trace sand 5YR 5/4																									
7					moist to saturated																									
8					strong rxn to HCl																									
9																														
0																														

Groundwater Conditions

Date _____ No Groundwater Encountered

Date _____ Time _____ Depth _____

Date _____ Time _____ Depth _____

LOG OF BORING NO. EXB-18 P30

Project ANP Job No. 130.126

Elev. Top of Hole _____ Datum _____ Prepared By KMM Date 1-8-07

Type/Size of Boring 8in Rig Type Rotosonic Driller Boart (Phil) Reviewed By _____ Date _____

Depth (ft.)	Blow Count	Recovery	Sample Type	Soil Classification	SOIL TYPE DESCRIPTION (Modifier, Color, Density, Moisture, etc.)	Max. Size	Particle Size Distribution % Boulders/Cobbles	Gravel	Sand	Silt & Clay	Grad-ation Well	Medium	Poor	Grain Shape Angular	Subangular	Subrounded	Rounded	Relative Density Loose	Med. Dense	Dense	Very Dense	Plasticity None	Low	Medium	High	Consistency Soft	Firm	Stiff	Very Stiff	Hard
1					88.5																									
2					65.5 - Sand w/ gravel																									
3					fines present 5YR 5/4			12	70	22		X			X	X		X	X			X	X			X	X			
4					saturated																									
5					med to strong rxn w/ HCl																									
6					has silty stringers																									
7					sand is coarse to fine																									
8																														
9																														
0					88.5 - 108 Red Clay 5YR 4/4																									
1					Dry; dense; firm					100			X							X	X			X					X	
2					strong rxn to HCl																									
3																														
4																														
5																														
6																														
7																														
8																														
9																														
0																														
1																														
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														
0																														

Groundwater Conditions

Date _____ No Groundwater Encountered

Date _____ Time _____ Depth _____

Date _____ Time _____ Depth _____

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 213889

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	DESCRIPTION Describe material, grain size, color, etc.	Check (X) every interval where water was encountered
0	3	SILT	
3	4	SILT W/ SAND & GRAVEL	
4	18	CLAY W/ TRACES OF SILT	
18	20.5	SILTY CLAY BROWN	
20.5	32	CLAY BROWN	
32	33	CLAY SILT BROWN	
33	36	SILTY SAND/SANDY SILT BROWN	
36	38	CLAY SILT BROWN	
38	48	SILTY SAND W/ GRAVEL/COBBLES	
48	55	SAND W/ GRAVEL & COBBLES	
55	56	CLAY W/SAND MULTI-COLORED	X
56	63	SAND/GRAVEL & COBBLES	X
63	65.5	CLAY W/ TRACE SAND	X
65.5	88.5	SAND W/ GRAVEL - SILTY STRINGERS	X
88.5	108	RED CLAY - DRY/DENSE/FIRM	

Log # 91

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North 3rd Street
Phoenix, Arizona 85004

RECEIVED
JUN 30 2000
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. WATER DEVELOPMENT CORP. DBA WDC EXPLORATION
1202 EAST KENTUCKY AVENUE
WOODLAND, CA 95776-5906

2. Owner Name: Apache Nitrogen Products
Address: PoB 700 Benson AZ 85602
City State Zip

3. Location: 18 N/S 21 E/W 7 ¼ NE ¼ NE ¼ NE
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55-579875 (Required)

5. Permit No. _____ (If Issued)

DESCRIPTION OF WELL

6. Total depth of hole 27 ft.
7. Type of casing _____
8. Diameter and length of casing _____in. from_____to_____,_____in from_____to_____
9. Method of sealing at reduction points _____
10. Perforated from_____to_____, from_____to_____from_____to_____
11. Size of cuts_____ Number of cuts per foot_____
12. If screen was installed: Length_____ft. Diam_____in. Type_____
13. Method of construction_____
(drilled, dug, driven, bored, jetted, etc)
14. Date started 5 00
Month Day Year
15. Date completed 6 00
Month Day Year
16. Depth to water_____ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea_level elevation if availabl
_____
18. If flowing well, state method of flow regulation:_____
19. Remarks:_____

ANSWERED JUL 07 2000

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55- 579875
File No. D(18-21) 7 AAA
Received_____By_____
Entered_____By_____

DWR-55-55-7/95 (Rev.)

LITHOLOGIC LOG FOR EXPLORATORY BORING EXB-7
ADWR Registration Number 55-579875

DEPTH INTERVAL (feet below land surface)	SOIL TYPE	GROUP SYMBOL(a)	DESCRIPTION OF MATERIALS
0-6	CLAYEY SILTY SAND	SM-SC	Pale yellowish brown (10 YR 6/2); fine to coarse, medium graded, subangular to subrounded sand; trace fine, rounded gravel; trace clay; strong HCl reaction; loose; soft; dry to damp.
6-11	SANDY GRAVEL	GW	Pale yellowish brown (10 YR 6/2); fine to ¾", medium graded, subrounded to rounded gravel; fine to coarse, well graded, subangular to subrounded sand; minor silt/clay; strong
11-27	FAT CLAY (St. David Clay)	CH	Moderate brown (5 YR 4/4); fine, poorly graded sand; strong HCl reaction; medium plasticity; very stiff to hard; damp.

TOTAL DEPTH OF BOREHOLE = 27 FEET

ANSWERED JUL 0 7 2000

(a) United Soil Classification System ASTM D2488

EXB-7 litho log.xls

HARGIS + ASSOCIATES, INC.

Log # 101

(D-17-20) 10 DCB

Well Driller Report and Well Log

JAN 20 2010

WELL REGISTRATION NUMBER *
55 - 911548

SECTION A WELL CONSTRUCTION DESIGN (AS BUILT) [illegible]

Depth

DEPTH OF BORING: MW-2 25 Feet Below Land Surface

DEPTH OF COMPLETED WELL: 25 Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL: N/A Feet Below Land Surface

DATE MEASURED: 1-7-2010

TIME MEASURED: pm

IF FLOWING WELL, METHOD OF FLOW REGULATION: Valve Other: N/A

Borehole

DEPTH FROM SURFACE FROM (feet)	TO (feet)	BOREHOLE DIAMETER (inches)
0	25	10

Installed Casing

DEPTH FROM SURFACE FROM (feet)	TO (feet)	OUTER (inches)	MATERIAL TYPE (T): STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	PERFORATION TYPE (T): BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	SLOT SIZE (inches)
0	10	4		X			X						
10	25	4		X							X		.020

Installed Annular Material

DEPTH FROM SURFACE FROM (feet)	TO (feet)	ANNULAR MATERIAL TYPE (T): NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	BENTONITE: GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	FILTER PACK: SAND	GRAVEL	SIZE
0	6			X								
6	8							X				
8	25									X		8/12

JAN 20 2010

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 911548

SECTION 3: GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	Description Describe material, grain size, color, etc.	Check (T) every interval where water was encountered (if known)
0	5	SILTY CLAYS	
5	10	CLAY	
10	15	SANDY SILTS	
15	20	GRAVELY SAND	
20	25	SANDY CLAY	
25	30	PLASTIC CLAY	

Log # 112

Arizona Department of Water Resources
Information Management Unit
P.O. Box 36020 • Phoenix, Arizona 85067-3589
(602) 771-8627 • (800) 352-8488
www.water.az.gov

MAR 18 2011

Well Driller Report and Well Log

THIS REPORT MUST BE FILED WITHIN **30 DAYS** OF COMPLETING THE WELL.

PLEASE PRINT CLEARLY USING BLACK OR BLUE INK

FILE NUMBER
D(10-18)8 ACB
WELL REGISTRATION NUMBER
55 - 912839
PERMIT NUMBER (IF ISSUED)

SECTION 1: DRILLING AUTHORIZATION

Drilling Firm — Mail To:

NAME: GEOMECHANICS SOUTHWEST, INC.	DWR LICENSE NUMBER: 498
ADDRESS: 5839 S. BELVEDERE AVE	TELEPHONE NUMBER: 520-252-0559
CITY / STATE / ZIP: TUCSON, AZ, 85706	FAX:

SECTION 1: REGISTRY INFORMATION

Well Owner

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: Salt River Project Agricultural Improv ATTN: Ruth Valencia

MAILING ADDRESS: PO Box 52025

CITY / STATE / ZIP: Phoenix, AZ. 85072-2025

CONTACT PERSON NAME AND TITLE:

TELEPHONE NUMBER: 602 236-2830 FAX:

WELL NAME (e.g., MW-1, PZ-3, lot 25 Well, Smith Well, etc.): Spirit Hollow PZ Hybrid

Location of Well

WELL LOCATION ADDRESS (IF ANY): Along Reddington Rd in San Manuel

TOWNSHIP (N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE
10S	18E	8	NE 1/4	SW 1/4	NW 1/4

LATITUDE			LONGITUDE		
°	'	"N	°	'	"W

METHOD OF LATITUDE/LONGITUDE (CHECK ONE): USGS Quad Map; Conventional Survey; *GPS: Hand-Held; *GPS: Survey-Grade

LAND SURFACE ELEVATION AT WELL: Feet Above Sea Level

METHOD OF ELEVATION (CHECK ONE): USGS Quad Map; Conventional Survey; *GPS: Hand-Held; *GPS: Survey-Grade

*IF GPS WAS USED, GEOGRAPHIC COORDINATE DATUM (CHECK ONE): NAD-83; Other (please specify)

COUNTY: Pinal

ASSESSOR'S PARCEL ID NUMBER (MOST RECENT): BOOK 307; MAP 31; PARCEL 001

SECTION 3: WELL CONSTRUCTION DETAILS

Drilling Method — CHECK ONE

- Air Rotary
- Bored or Augered
- Cable Tool
- Dual Rotary
- Mud Rotary
- Reverse Circulation
- Driven
- Jetted
- X Air Percussion / Odex Tubing
- Other (please specify)

Method of Well Development — CHECK ONE

- Airlift
- Bail
- Surge Block
- Surge Pump
- Other (please specify)

GSI did not develop

Method of Sealing at Reduction Points — CHECK ONE

- X None
- Packed
- Swedged
- Welded
- Other (please specify)

Condition of Well — CHECK ONE

- Capped
- Pump Installed

N/A

Construction Dates

DATE WELL CONSTRUCTION STARTED: 1/14/11

DATE WELL CONSTRUCTION COMPLETED: 1/17/11

I state that this notice is filed in compliance with A.R.S. § 45-596 and is complete and correct to the best of my knowledge and belief.

SIGNATURE OF QUALIFYING PARTY: Sandra Monroe for Greg G. Jones

DATE: 2-23-11

SYM

GSI Job# 12-11P

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 912839

SECTION 4. WELL CONSTRUCTION DESIGN (ATTACH ADDITIONAL PAGES IF NEEDED)

Depth

DEPTH OF BORING: 90' Feet Below Land Surface

DEPTH OF COMPLETED WELL: 90' Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL: 57' Feet Below Land Surface

DATE MEASURED: 1-17-11

TIME MEASURED:

IF FLOWING WELL, METHOD OF FLOW REGULATION: Valve Other:

Boreholes

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	BOREHOLE DIAMETER (inches)
0	90	5"

Installed Casing

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	OUTER (inches)	MATERIAL TYPE (T): STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	PERFORATION TYPE (T): BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	SLOT SIZE (inches)
0	70	2		x			x						
70	90	2		x							x		.010"

Installed Annular Material

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	ANNULAR MATERIAL TYPE (T): NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	BENTONITE: GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	FILTER PACK: SAND	GRAVEL	SIZE
0	3			x								
3	5						x	x		x		10x20
5	90											

ACTIVITY AND GEOLOGIC DRILL HOLE LOG

Well ID:	Spirit Hollow PZ Hybrid	Date:	1/14-17/2011
Location:	Spirit Hollow Preserve T10S R18E, Sec 8	Personnel:	R.Valencia/A.Bond
Along Reddington Road in San Manuel		(SRP); log interpreted by Steve Westwood	
ADWR well reg. #:	55-912839	Drilling Co.:	GSI
Land surface elevation:	2606'	Driller:	Mike, Jimmy & Oscar
TD:	90'	Rig/Method:	Air Hammer
Depth to water:	57' (After construction 1/17/11)	Drill fluid:	None
		Sample type:	Split Spoon (SS)

Time and Interval Sampled		Description [Basic description includes rock type, color, grain size %'s (gravel, sand, silt, clay), cementation, gravel fraction (rounding, color, size, lithology %'s), acid reaction (weak, moderate, strong)]
		Meet at Black Farm - mobilize smaller CME track rig and water to Spirit hollow - set up to auger and split spoon sample.
9:28	0-5'	(SS) 5' dry soil, light brown, some sub-angular gravel, Blow Count: 4, 4, 4
9:38	10'	(SS) dry soil, light brown, fines and small gravel, sub rounded; Blow Count: 7, 10, 14
9:43	15'	(SS) poorly sorted san with gravel (5%) and angular cobble fragments (5%) - dry quartzite fragments, fine to med. grained sand dominant; Blow Count: 18, 13, 13
9:51	20'	(SS) dry gravelly sand, rounded to subrounded gravels (5%) and cobbles (5%), fine to medium grained sand dominant; Blow Count: 7, 9, 17
9:56	X	Hit refusal before 25' - rig shaking/bucking on stratigraphy; broke an auger tooth! Decision to advance with Air hammer.
10:45	X	Will back fill hole and move on Monday January 17, 2011 to a field fit location. It is necessary to bring in air hammer equipment form an offsite location.
N/R (AM)		1/17/2011 - restart effort to advance the piezometer from January 13, 2011 First 20' logged by A.Bond on 1/14/2011. Well stopped due to cobble layer that caused auger rejection. Log will begin at 25'. No time recorded in the field, Est. 0900-1500
	25'	(GS) Broken pieces of cobble intermixed with poorly sorted sand and gravel

(subrounded) quartzite with mica, angular chips. Sample horizon dry

ACTIVITY AND GEOLOGIC DRILL HOLE LOG

Well ID: Spirit Hollow PZ Hybrid 55-912839 Date: 1/17/2011

Interval sampled (feet)		Description [Basic description includes rock type, color, grain size %'s (gravel, sand, silt, clay), cementation, gravel fraction (rounding, color, size, lithology %'s), acid reaction (weak, moderate, strong)]
N/R	30'	(GS) silty fines / caliche nodules, (former evaporite?), moist/cohesive. Clumps to form hard clay like nodules 1 to 3 cm in size. White to light brown. No visible water present
	35'	(GS) silty fines / caliche nodules, (former evaporite), moist and cohesive. Light brown, clumps to form hard clay like nodules to 2 cm in size. No visible water present.
	40'	(GS) silty fines / smaller nodules, (former evaporite), well sorted , cohesive. Light brown, when ground up fines show mica and gritty clay. No visible water present.
	45'	(GS) silty fines / smaller nodules, (former evaporite), well sorted , cohesive. Light brown, cakes, when ground up fines show mica and gritty clay. No visible water present.
	50'	(GS) silty fines / smaller nodules, (former evaporite), well sorted , cohesive. Light brown, cakes, when ground up fines show mica and gritty clay. No visible water present.
	55'	(GS) silty fines / smaller nodules, (former evaporite), well sorted , cohesive. Light brown, cakes, when ground up fines show mica and gritty clay. No visible water present.
	60'	(GS) silty fines / caliche nodules, (former evaporite), moist and cohesive. Light brown, clumps to form hard clay like nodules to 2 cm in size. No visible water present.
	65'	(GS) silty fines / caliche nodules, (former evaporite), moist and cohesive. Light brown, clumps to form hard clay like nodules to 2 cm in size. No visible water present. increasing clay content cements the sample
	70'	(GS) silty fines / caliche, (former evaporite), wet and cohesive. Light brown, clumps to form gritty clay . Water present may be from upper formation. Increasing clay content (20%) cements the sample
	75'	(GS) silty fines / smaller nodules, (former evaporite), well sorted , cohesive. Light brown, cakes and crumbles; when ground up fines show mica and gritty clay. Wet. Minor fine grained sorted sands and mica in sample (5%)

ACTIVITY AND GEOLOGIC DRILL HOLE LOG

Well ID: 55-912839; Spirit Hollow PZ Hybrid Date: 1/17/2011

Interval sampled (feet)		Description [Basic description includes rock type, color, grain size %'s (gravel, sand, silt, clay), cementation, gravel fraction (rounding, color, size, lithology %'s), acid reaction (weak, moderate, strong)]
N/R	80'	(GS) silty fines / smaller nodules, (former evaporite), well sorted , weak cohesive, brown, cakes and crumbles; when ground up fines show mica and gritty clay. Wet. Minor fine grained sorted sands and mica in sample (3%)
	85'	(GS) silty fines / smaller nodules, (former evaporite), well sorted , weak cohesive, brown, cakes and crumbles; when ground up fines show mica and gritty clay. Wet. Minor fine grained sorted sands and larger mica in sample (5%)
TD	90'	(GS) silty fines / smaller nodules, (former evaporite), well sorted , weak cohesive, brown, cakes and crumbles; when ground up fines show mica and gritty clay. No free water. Minor fine grained sorted sands and larger mica in sample (8%)
		*similar samples found from 40' GS to 90' GS with minor variability. Well completed in 2" pvc, screened 20' from 90' to 70'.

Log # 114

(D-9-17) 25 DBB

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 909430

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

Depth

DEPTH OF BORING	DEPTH OF COMPLETED WELL
1013 Feet Below Land Surface	1000 Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
+152 Feet Below Land Surface	9-6-08		■ Valve ☐ Other:

Borehole

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	BOREHOLE DIAMETER (inches)
0	133	22
133	545	14 3/4
545	1015	9 5/8

Installed Casing

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	OUTER DIAMETER (inches)	MATERIAL TYPE (T): STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	PERFORATION TYPE (T): BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	SLOT SIZE IF ANY (inches)
0	133	16	✓				✓						
0	543	10 3/4	✓				✓						
0	622	5.563	✓				✓						
622	1000	5.563	✓								✓		1/16

Installed Annular Material

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	ANNULAR MATERIAL TYPE (T): NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT BENTONITE GROUT	BENTONITE: GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	FILTER PACK: SAND	GRAVEL	SIZE
0	560			✓								
560	579						✓			✓		#60 Sand
579	1013										✓	#8 Tacna

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 909430

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	Description Describe material, grain size, color, etc.	Check (T) every interval where water was encountered (if known)
0	105	Floodplain Alluvium - gravels	T
105	610	Lacustrine clay - with inter bedded silt stone/sand stone	T
610	1013	Basin fill deposits - sandy gravels & gravelly sand	T

Log # 115

(D-9-17) 25 DBB

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 909431

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

Depth

DEPTH OF BORING	DEPTH OF COMPLETED WELL
257 Feet Below Land Surface	250 Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
21.69 Feet Below Land Surface	9-6-08		☐ Valve ☐ Other:

Borehole			Installed Casing												
DEPTH FROM SURFACE		BOREHOLE DIAMETER (inches)	DEPTH FROM SURFACE		OUTER DIAMETER (inches)	MATERIAL TYPE (T)				PERFORATION TYPE (T)						SLOT SIZE IF ANY (inches)
FROM (feet)	TO (feet)		FROM (feet)	TO (feet)		STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	
0	257	9 5/8	0	200	5.563	✓				✓						
			200	250	5.563	✓								✓		1/16

Installed Annular Material												
DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (T)								FILTER PACK		
						BENTONITE						
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
0	173				✓							
173	178						✓					
178	257									✓		#60 Sand
											✓	#8 Tacna

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 909431

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	Description Describe material, grain size, color, etc.	Check (T) every interval where water was encountered (if known)
0	105	Floodplain Alluvium, medium - gravels	T
105	260	Lacustrine clay (confining unit) - homogenous clay with	T
		inter bedded siltstone and sandstone, presence of evaporites	

Log # 116

(D-9-17)25DBB

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 909432

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

Depth

DEPTH OF BORING	DEPTH OF COMPLETED WELL
111 Feet Below Land Surface	110 Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
28.4 Feet Below Land Surface	9-6-08		☐ Valve ☐ Other:

Borehole / Installed Casing

Borehole: DEPTH FROM SURFACE FROM (feet)	Borehole: DEPTH FROM SURFACE TO (feet)	Borehole: BOREHOLE DIAMETER (inches)	Installed Casing: DEPTH FROM SURFACE FROM (feet)	Installed Casing: DEPTH FROM SURFACE TO (feet)	OUTER DIAMETER (inches)	MATERIAL TYPE (T): STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	PERFORATION TYPE (T): BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	SLOT SIZE IF ANY (inches)
0	111	9 5/8	0	28.5	5.563	✓				✓						
			28.5	90	5.563	✓								✓		1/16

Installed Annular Material

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	ANNULAR MATERIAL TYPE (T): NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	BENTONITE: GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	FILTER PACK: SAND	GRAVEL	SIZE
0	23				✓							
23	26						✓					
26	111										✓	#8 Tacna

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 909432

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	Description Describe material, grain size, color, etc.	Check (T) every interval where water was encountered (if known)
0	105	Floodplain Alluvium, medium - course - gravels	T
105	110	Lacustrine clay (confining unit)	

Log # 119

Arizona Department of Water Resources
Information Management Unit
500 N. 3rd Street • Phoenix, Arizona 85004
(602) 417-2405 • (800) 352-8488
www.water.az.gov

Well Driller Report and Well Log

FILE NUMBER: N9-17 15 26b
WELL REGISTRATION NUMBER: 55 - 557296
PERMIT NUMBER (IF ISSUED):

THIS REPORT MUST BE FILED WITHIN **30 DAYS** OF COMPLETING THE WELL.

PLEASE PRINT CLEARLY USING BLACK OR BLUE INK.

RECEIVED FEB - 1 2005 Information Management

SECTION 1. DRILLING AUTHORIZATION

Drilling Firm

NAME: North American Drilling	DWR LICENSE NUMBER: 216
ADDRESS: 3232 W Virginia Ave	TELEPHONE NUMBER:
CITY / STATE / ZIP: Phoenix, Az 85009	FAX:

SECTION 2. REGISTRY INFORMATION

Well Owner

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: BHP Copper, Inc.
MAILING ADDRESS: 200S Veterans Memorial Blvd.
CITY / STATE / ZIP CODE: San Manuel, Az 85631
CONTACT PERSON NAME AND TITLE: John Kline, Manager Health, Safety, Environment, and Community Affairs
TELEPHONE NUMBER: 520-385-3122
FAX: 520-385-3810
WELL NAME: SMW-6

Location of Well

WELL LOCATION ADDRESS (IF ANY):

TOWNSHIP (N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE
9S	17E	15	NW ¼	SW ¼	SE ¼

LATITUDE			LONGITUDE		
32° Degrees	38' Minutes	47" N Seconds	110° Degrees	35' Minutes	37" W Seconds

METHOD OF LATITUDE / LONGITUDE (CHECK ONE): ☐ GPS: Hand-Held ☐ USGS Quad Map ☐ Conventional Survey ☐ GPS: Survey-Grade

LAND SURFACE ELEVATION AT WELL: 2,603.87 Feet Above Sea Level

METHOD OF ELEVATION (CHECK ONE): ☐ GPS: Hand-Held ☐ USGS Quad Map ☐ Conventional Survey ☐ GPS: Survey-Grade

ASSESSOR'S PARCEL ID NUMBER

COUNTY	BOOK	MAP	PARCEL

SECTION 3. WELL CONSTRUCTION DETAILS

Drill Method (CHECK ALL THAT APPLY)
- [x] Air Rotary
- [ ] Bored or Augered
- [ ] Cable Tool
- [ ] Dual Rotary
- [ ] Mud Rotary
- [ ] Reverse Circulation
- [ ] Driven
- [ ] Jetted
- [ ] Air Percussion / Odex Tubing
- [ ] Other *(please specify)*:

Method of Well Development (CHECK ALL THAT APPLY)
- [x] Airlift
- [ ] Bail
- [ ] Surge Block
- [ ] Surge Pump
- [ ] Other *(please specify)*:

Method of Sealing at Reduction Points (CHECK ONE)
- [x] None
- [ ] Packed
- [ ] Swedged
- [ ] Welded
- [ ] Other *(please specify)*:

Condition of Well (CHECK ONE)
- [ ] Capped
- [x] Pump Installed

Construction Dates
DATE WELL CONSTRUCTION STARTED: 8/1996
DATE WELL CONSTRUCTION COMPLETED: 9/7/1996

I state that this notice is filed in compliance with A.R.S. § 45-596 and is complete and correct to the best of my knowledge and belief.

SIGNATURE OF QUALIFYING PARTY: [signature] DATE: 1/28/2005

ENTERED FEB - 2 2005

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 557296

SECTION 4: WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

DEPTH OF BORING	DEPTH OF COMPLETED WELL
247.9' Feet Below Land Surface	241.3' Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
Feet Below Land Surface			☐ Valve ☐ Other:

Borehole

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	BOREHOLE DIAMETER (Inches)
L.S.	128.6'	8.0"
128.6'	247.9'	6 7/8"

Installed Casing

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	OUTER DIAMETER (inches)	MATERIAL TYPE (✓) STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	PERFORATION TYPE (✓) BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	SLOT SIZE IF ANY (Inches)
+1.0'	19.0'	4.5	X										
19.0'	180.7'	4.5		X									
180.7'	241.3'	4.5		X							X		0.020

Installed Annular Material

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	ANNULAR MATERIAL TYPE (✓) NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	BENTONITE GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	FILTER PACK SAND	GRAVEL	SIZE
L.S.	37'		X						Portland Type IV			
37'	152'					X			Volclay Grout			
152'	162'								Founding Sand	X		#60
162'	247.9'								Colorado Silica Sand	X		#10-20

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 557296

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	Description Describe material, grain size, color, etc.	Check (✓) every interval where water was encountered (if known)
0	10	SILTY SAND WITH GRAVEL - Brown, sand, fine to medium-grained, subangular; silt, nonplastic; gravel, medium-grained, subangular; loose, moist. At 5 feet, color of sand changes to light yellowish-brown.	
10	15	SANDY SILT WITH GRAVEL - Pale brown, sand, subangular; dry, moderate reaction to HCL.	
15	25	SILTY SAND, TRACE GRAVEL - Brown with multicolored grains, sand, medium to fine-grained; silt, nonplastic; moist, reacts to HCL. At 20 feet, color of sand changes to light yellowish-brown.	
25	30	GRAVELLY, SANDY SILT - Brown to light brown with multi-colored grains, sand, medium to coarse-grained, sub-angular to rounded; gravel, medium-grained; dry, reacts to HCL. At 28 feet, coarse-grained gravel, cobbles.	
30	40	SILTY SAND, TRACE GRAVEL - Light brown to brown with multicolored grains, sand, fine to medium-grained, subangular to subrounded; silt, dry, reacts to HCL.	
40	50	GRAVELLY SAND WITH SILT - Brown with multicolored grains, sand, fine to medium-grained, subangular to sub-rounded; gravel, coarse-grained; moist, reacts to HCL, contains magnetite. At 42 feet, gravel stringer.	
50	55	SILTY SAND AND GRAVEL - Brown with multicolored grains, sand, subangular to subrounded; silt, nonplastic; gravel, subrounded to rounded; moist, reacts to HCL,	

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 557296

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	Description Describe material, grain size, color, etc.	Check (✓) every interval where water was encountered (if known)
55	60	GRAVELLY, SANDY SILT - Brown with multicolored grains, silt, nonplastic; sand, fine-grained, subrounded to rounded; gravel, medium-grained; moist.	
60	69	GRAVELLY SAND, TRACE SILT - Brown with multicolored grains, sand, medium-grained, subangular to subrounded; gravel, subrounded to rounded; dry. At 63 feet, hard clay with fine-grained sand. At 69 feet, hard clay, medium-grained sand fraction increasing with depth.	
69	75	SILTY SAND, TRACE GRAVEL - Brown with multicolored grains, sand, medium-grained, subrounded; silt, nonplastic; moist, contains gravel fragments. At 71 feet, gravel and cobble fragments. At 73 feet, increase in silt fraction.	
75	105	SILTY, GRAVELLY SAND - Brown with multicolored grains, sand, coarse-grained, subangular to subrounded; gravel, fine-grained, subangular to subrounded; moist.	
105	115	GRAVELLY, SILTY SAND - Brown with multicolored grains, sand, fine to coarse-grained, subrounded to rounded; silt, nonplastic; gravel, medium-grained, subrounded to rounded; moist.	
115	125	SILTY SAND - Brown with multicolored grains, sand, medium-grained, subangular to subrounded; silt, nonplastic; moist.	
125	130	SILTY, GRAVELLY SAND - Brown with multicolored grains, sand, fine to coarse-grained, subrounded to rounded;	

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 557296

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	Description Describe material, grain size, color, etc.	Check (✓) every interval where water was encountered (if known)
		gravel, fine to medium-grained, subrounded to rounded; silt, nonplastic, moist.	
130	145	SILTY SAND, TRACE GRAVEL - Brown with multicolored grains, sand, medium-grained, subangular to subrounded; silt, nonplastic; moist.	
145	155	SILTY GRAVELLY SAND - Same as at 124-130 feet, decreasing gravel fraction and increasing silt fraction. At 155 feet, interbedded, fine-grained sand/silt lenses.	
160	185	SILTY SAND - Brown with multicolored grains, sand, subrounded to rounded; silt, nonplastic; moist.	
185	190	SANDY SILT - Brown with multicolored grains, silt, non-plastic, sand, fine to coarsed-grained, subangular to subrounded; moist. At 195 feet, saturated	
190	205	SILTY SAND - Brown with multicolored grains, sand, fine to medium-grained, subangular to subrounded; silt, nonplastic; saturated. At 210 feet; silty sand with gravel. At 215 feet; gravelly, silty sand.	
225	250	GRAVELLY, SILTY SAND - Multicolored grains, sand, medium to coarse-grained, subangular to subrounded; silt, nonplastic; gravel, medium to coarse-grained, sub-angular; saturated	

Log # 124

Arizona Department of Water Resources
Information Management Unit
500 N. 3rd Street • Phoenix, Arizona 85004
(602) 417-2405 • (800) 352-8488
www.water.az.gov

Well Driller Report and Well Log

FILE NUMBER: A(9-17) 9acb
WELL REGISTRATION NUMBER: 55 - 624620
PERMIT NUMBER (IF ISSUED):

THIS REPORT MUST BE FILED WITHIN **30 DAYS** OF COMPLETING THE WELL.

PLEASE PRINT CLEARLY USING BLACK OR BLUE INK.

RECEIVED MAR 14 2005 Information Management

SECTION 1. DRILLING AUTHORIZATION

Drilling Firm

NAME: unknown	DWR LICENSE NUMBER:
ADDRESS:	TELEPHONE NUMBER:
CITY / STATE / ZIP:	FAX:

SECTION 2. REGISTRY INFORMATION

Well Owner

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: BHP Copper Inc.
MAILING ADDRESS: 200 South Veterans Memorial Blvd.
CITY / STATE / ZIP CODE: San Manuel AZ 85631
CONTACT PERSON NAME AND TITLE: John Kline, Manager Health, Safety, Environment and Community Affairs
TELEPHONE NUMBER: 520-385-3122
FAX: 520-385-3810
WELL NAME: P-10

Location of Well

WELL LOCATION ADDRESS (IF ANY):

TOWNSHIP (N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE
9S	17E	9	NE ¼	SW ¼	NW ¼

LATITUDE			LONGITUDE		
° Degrees	' Minutes	"N Seconds	° Degrees	' Minutes	"W Seconds

METHOD OF LATITUDE / LONGITUDE (CHECK ONE) ☐ GPS: Hand-Held ☐ USGS Quad Map ☐ Conventional Survey ☐ GPS: Survey-Grade
LAND SURFACE ELEVATION AT WELL: 2,449.52 Feet Above Sea Level
METHOD OF ELEVATION (CHECK ONE) ☐ GPS: Hand-Held ☐ USGS Quad Map ☐ Conventional Survey ☐ GPS: Survey-Grade
ASSESSOR'S PARCEL ID NUMBER

COUNTY	BOOK	MAP	PARCEL

SECTION 3. WELL CONSTRUCTION DETAILS

Drill Method

CHECK ALL THAT APPLY
- ☐ Air Rotary
- ☐ Bored or Augered
- ☐ Cable Tool
- ☐ Dual Rotary
- ☐ Mud Rotary
- ☐ Reverse Circulation
- ☐ Driven
- ☐ Jetted
- ☐ Air Percussion / Odex Tubing
- ☐ Other *(please specify)*: unknown

Method of Well Development

CHECK ALL THAT APPLY
- ☐ Airlift
- ☐ Bail
- ☐ Surge Block
- ☐ Surge Pump
- ☐ Other *(please specify)*: unknown

Condition of Well

CHECK ONE
- ☐ Capped
- ☒ Pump Installed

Method of Sealing at Reduction Points

CHECK ONE
- ☐ None
- ☐ Packed
- ☐ Swedged
- ☐ Welded
- ☐ Other *(please specify)*: unknown

Construction Dates

DATE WELL CONSTRUCTION STARTED:
DATE WELL CONSTRUCTION COMPLETED: 8/1969

I state that this notice is filed in compliance with A.R.S. § 45-596 and is complete and correct to the best of my knowledge and belief.

SIGNATURE OF QUALIFYING PARTY: [signature] DATE: 3-11-05

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55-1,024,020

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

DEPTH OF BORING: 1,435 Feet Below Land Surface

DEPTH OF COMPLETED WELL: 1,415' Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL: Feet Below Land Surface

DATE MEASURED:

TIME MEASURED:

IF FLOWING WELL, METHOD OF FLOW REGULATION: ☐ Valve ☐ Other:

Borehole / Installed Casing

Borehole: DEPTH FROM SURFACE FROM (feet)	Borehole: DEPTH FROM SURFACE TO (feet)	BOREHOLE DIAMETER (inches)	Installed Casing: DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	OUTER DIAMETER (inches)	MATERIAL TYPE (✓): STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	PERFORATION TYPE (✓): BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	SLOT SIZE IF ANY (inches)
			0'	210'	24" I.D.	X				X						
			0'	1,280'	20" I.D.	X				X						
			1,265'	1,415'	18" I.D.	X				X						
			210	1,265'	20" I.D.	X									perforated	
			1,265'	1,415	18" I.D.	X									perforated	

Installed Annular Material

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	ANNULAR MATERIAL TYPE (✓): NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	BENTONITE: GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	FILTER PACK: SAND	GRAVEL	SIZE

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55-624620

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	Description: Describe material, grain size, color, etc. Clay	Silt	Fine Sand	Med. Sand	Coarse Sand	Gravel	Check (✓) every interval where water was encountered (if known)
140	170	-	5	5	20	70	-	
170	180	-	5	5	60	30	-	
180	190	-	5	5	30	60	-	
190	210	-	5	5	50	40	-	
210	230	-	5	5	35	50	5	
230	290	-	5	5	10	70	10	
290	340	-	5	5	80	10	-	
340	350	2	5	5	75	13	-	
350	450	-	5	5	70	20	-	
450	470	-	5	5	40	40	5	
470	580	-	5	5	60	25	5	
580	590	-	5	5	75	15	-	
590	660	-	5	5	50	40	-	
660	740	-	5	5	60	30	-	
740	920	-	5	5	50	40	-	
920	940	-	5	15	70	10	-	
940	1000	-	5	5	60	30	-	
1000	1010	-	5	25	50	10	-	
1010	1100	-	5	5	60	30	-	
1100	1110	5	5	5	50	35	-	
1110	1130	-	5	5	50	40	-	
1130	1140	-	5	5	80	10	-	
1140	1150	-	5	5	60	30	-	
1150	1160	-	5	5	20	60	10	

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 624620

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	Description: Describe material, grain size, color, etc. Clay	Silt	Fine Sand	Med Sand	Coarse Sand	Gravel	Check (✓) every interval where water was encountered (if known)
1160	1170	-	5	5	80	10	-	
1170	1180	-	5	5	60	30	-	
1180	1190	-	5	5	80	10	-	
1190	1220	-	5	5	35	50	5	
1220	1250	-	5	5	60	30	-	
1250	1260	-	5	5	50	40	-	
1260	1280	-	5	5	60	30	-	
1280	1300	-	5	5	40	40	10	
1300	1360	5	10	10	40	25	5	
1360	1370	10	10	20	50	10	-	
1370	1380	20	10	20	40	10	-	
1380	1390	90	-	-	-	-	10	
1390	1400	30	20	20	20	10	-	
1400	1410	90	-	5	5	-	-	

Log # 125

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Charles Benaglio
Name
PO Box 151 Mammoth, Az 85618
Mailing Address

2. Driller Sergent Hauskins Beckwith
Name
3232 West Virginia Phoenix, Az 85009
Mailing Address

3. Location of well: Chevron station, Highway 77, MW-1 WEST, MAMMOTH, AZ 85618

4. Permit No. 55-528576
(If issued)

DESCRIPTION OF WELL

5. Total depth of hole 75 ft.
6. Type of casing PVC
7. Diameter and length of casing 4 in. from 0 to 75, ____ in from ____ to ____.
8. Method of sealing at reduction points Bentonite
9. Perforated from 75 to 65, from ____ to ____, from ____ to ____.
10. Size of cuts 0.02" Number of cuts per foot 410
11. If screen was installed: Length 10 ft. Diam 4 in. Type 4" PVC thread joint
12. Method of construction HSA
drilled, dug, driven, bored, jetted, etc
13. Date started 7 (Month) 30 (Day) 90 (Year)
14. Date completed 7 (Month) 31 (Day) 90 (Year)
15. Depth to water 71.65' ft. (If flowing well, so state)
16. Describe point from which depth measurements were made, and give sea-level elevation if available TOP OF CASING
17. If flowing well, state method of flow regulation: ____
18. Remarks: ____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
REG. No. 55-528575
File No. D(8-17)18cda
Entered ____ By ____
ENTERED FEB 06 1991

RECEIVED
FEB - 4 1991
OPERATIONS DIV.

DWR-55-55-2/89

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Richard T. McKenney
Name

716 S MAIN ST
Address

Cottonwood ID 83526
City State Zip

Date 1-29-91

U.S. TANK MANAGEMENT INC. - LOG OF WELL - FORM 101D

To be used for all type drilling & excavation zones where applicable.
Note any groundwater encountered and any fluid rise in borehole under Formation Description.

JOB NAME: Benaglio Enterprises JOB LOCATION: Chevron Station, Mammoth, Az

SEC. 18 T 8S -R 17E

MONITOR WELL # 1 SOIL BORE # _____ EXCAVATION ONLY _____

Depth (ft) From	To	Formation Description	HNU Reading This Interval	Soil Sample Yes	Soil Sample No	Soil Sample Results	Field Notes
0'	5'	coarse sand, some pebbles in matrix brown, moist	Ø ▲		✓		Drilling initiated 7-20-90 11:55 AM
5	10	"	Ø		✓		
10	15	"	4 ppm		✓		
15	20	"	1 ppm		✓		
20	25	medium size cobbles interspersed	2 ppm		✓		
25	30	sand with small cobbles in matrix	1 ppm		✓		
30	35	"	8 ppm		✓		
35	40	sand	20 ppm		✓		
40	45	sand with small cobbles	2 ppm		✓		
45	50	clay/sand	Ø (return to hot)		✓		difficult drilling
50	55	clay/sand	"		✓		add H_2O to aid drilling
55	60	clay/sand	20 ppm		✓		
60	65	clay **	20 ppm		✓		** matrix influenced by addition of H_2O
65	70	water sand/small cobbles - groundwater encountered	Ø		✓		slight odor of gas
70	75	water sand/small cobbles	Ø	✓*		80 ppm *	HNU at return ~ 50 ppm

* WATER SAMPLE - headspace analysis with HNU

▲ Ø - monitor returns; no evidence of hydrocarbons

FEB - 4 1991
...TANS DIV.

Log # 126

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Charles Benaglio
Name
PO Box 151 Mammoth, Az 85618
Mailing Address

2. Driller Sergent Hauskins Beckwith
Name
3232 West Virginia Phoenix, Az 85009
Mailing Address

3. Location of well: Chevron station, Highway 77, MW-1 West, Mammoth, Az 85618

4. Permit No. 55-528576
(If issued)

DESCRIPTION OF WELL

5. Total depth of hole 75 ft.

6. Type of casing PVC

7. Diameter and length of casing 4 in. from 0 to 75, ____ in from ____ to ____.

8. Method of sealing at reduction points Bentonite

9. Perforated from 75 to 65, from ____ to ____, from ____ to ____.

10. Size of cuts 0.02" Number of cuts per foot 410

11. If screen was installed: Length 10 ft. Diam 4 in. Type 4" PVC thread joint

12. Method of construction HSA
drilled, dug, driven, bored, jetted, etc

13. Date started 7 (Month) 30 (Day) 90 (Year)

14. Date completed 7 (Month) 31 (Day) 90 (Year)

15. Depth to water 71.65' ft. (If flowing well, so state)

16. Describe point from which depth measurements were made, and give sea-level elevation if available TOP OF CASING

17. If flowing well, state method of flow regulation: ____

18. Remarks: ____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
REG. No. 55-528575
File No. D(8-17)18cda
Entered ____ By ____
ENTERED FEB 06 1991

RECEIVED FEB - 4 1991 OPERATIONS DIV.

DWR-55-55-2/89

U.S. TANK MANAGEMENT INC. - LOG OF WELL - FORM 101D

o be used for all type drilling & excavation zones where applicable.
ote any groundwater encountered and any fluid rise in borehole under Formation Description.

OB NAME: Benaglio Enterprises JOB LOCATION: Chevron Station, Mammoth, AZ

SEC. 18 T 8S -R 17E

ONITOR WELL # 2 SOIL BORE # EXCAVATION ONLY

epth (ft) rom	To	Formation Description	HNU Reading This Interval	Soil Sample Yes	Soil Sample No	Soil Sample Results	Field Notes
0	5'	coarse sand medium brown	Ø ▲		✓		Drilling initiated 7-31-90 8:30AM
5	10'	Course sand/some pebbles in matrix	Ø		✓		
10	15	"	Ø		✓		
15	20	"	Ø		✓		
20	25	"	Ø		✓		
25	30	"	Ø		✓		
30	35	"	Ø		✓		
35	40	course sand/small cobbles in matrix	Ø		✓		
40	45	"	Ø		✓		
45	50	"	Ø		✓		
50	55	"	Ø		✓		
55	60	"	10 ppm		✓		slight smell of h.c.
60	65	"	20 ppm		✓		med. smell of h.c.
65	70	"	35 ppm		✓		"
70	75	water sand/small Cobbles - ground water encountered ▲▲	Ø		✓		
75	78*	water sand/small cobbles	Ø	✓ ▲▲		300 ppm ▲▲	

FEB - 4 1991 OPERATIONS DIV

* TOTAL DEPTH DRILLED

▲▲ water sample - head space analysis (turpentine smell to water)

▲ monitor returns - no evidence of hydrocarbons

▲▲ well sound - top of drill stem to water 70'6"

Log # 127

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Charles Beraglio
Name
PO Box 157 Mammoth, Az 85618
Mailing Address

2. Driller Sergent Hauskins Blackwell
Name
3232 West Virginia Phoenix, Az 85009
Mailing Address

3. Location of well: Chevron Station, Highway 77 MW-2 South Mammoth, Az 85618

4. Permit No. 55-528577
(If issued)

DESCRIPTION OF WELL

5. Total depth of hole 78 ft.
6. Type of casing PVC
7. Diameter and length of casing 4 in. from 0 to 78, ____ in from ____ to ____.
8. Method of sealing at reduction points Bentonite
9. Perforated from 75 to 65, from ____ to ____, from ____ to ____.
10. Size of cuts 0.02" Number of cuts per foot 410
11. If screen was installed: Length 10 ft. Diam 4" in. Type 4" PVC threaded joint
12. Method of construction HSA
drilled, dug, driven, bored, jetted, etc
13. Date started 8 (Month) 1 (Day) 90 (Year)
14. Date completed 8 (Month) 1 (Day) 90 (Year)
15. Depth to water 70.83' ft. (If flowing well, so state)
16. Describe point from which depth measurements were made, and give sea-level elevation if available Top of Casing
17. If flowing well, state method of flow regulation: ____
18. Remarks: ____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
REG. No. 55-528576
File No. D(8-17)18cda
Entered ____ By ____
ENTERED FEB 06 1991

RECEIVED
FEB - 4 1991

DWR-55-55-2/89

U.S. TANK MANAGEMENT INC. - LOG OF WELL - FORM 101D

o be used for all type drilling & excavation zones where applicable.
ote any groundwater encountered and any fluid rise in borehole under Formation Description.

OB NAME: Benaglio Enterprises JOB LOCATION: Chevron Station, Mammoth, Az

SEC. 18 T 8S -R 17E

IONITOR WELL # 2 SOIL BORE # _____ EXCAVATION ONLY _____

epth (ft) rom	To	Formation Description	HNU Reading This Interval	Soil Sample Yes	Soil Sample No	Soil Sample Results	Field Notes
0	5'	coarse sand medium brown	Ø ▲		✓		Drilling initiated 7-31-90 8:30AM
5	10'	Course sand/some pebbles in matrix	Ø		✓		
10	15	"	Ø		✓		
15	20	"	Ø		✓		
20	25	"	Ø		✓		
25	30	"	Ø		✓		
30	35	"	Ø		✓		
35	40	Course sand/small cobbles in matrix	Ø		✓		
40	45	"	Ø		✓		
45	50	"	Ø		✓		
50	55	"	Ø		✓		
55	60	"	10 ppm		✓		slight smell of h.c.
60	65	"	20 ppm		✓		med. smell of h.c.
65	70	"	35 ppm		✓		"
70	75	water sand/small Cobbles - ground water ▲▲	Ø		✓		
75	78*	water sand/small cobbles encountered	Ø	✓ ▲▲		300 ppm ▲▲	

FEB - 4 1991 OPERATIONS DIV

* TOTAL DEPTH DRILLED

▲▲ water sample - head space analysis (turpentine smell to water)

▲ monitor returns - no evidence of hydrocarbons

▲▲ well sound - top of drill stem to water 70'6"

Log # 136

D(6-16) 7 ADC

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED SEP 21 1998 RECORDS MGT

1. HEBER MINING & EXPLORATION COMPANY
22010 NORTH 21ST AVENUE
PHOENIX, AZ 85027-0026

2. Owner Name: ARIZONA NATURE CONSERVANCY
Address: 300 E. University Blvd. #230 Tucson, Az. 85705
City State Zip

3. Location: 6 N/S 16 E/W 7 ¼ SW ¼ SE ¼ NE
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55--569971 (Required)

5. Permit No. NA (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 40 ft. ft.
7. Type of casing Steel & PVC
8. Diameter and length of casing 2 in. from +2 to 19', 2 in from 19' to 40'
9. Method of sealing at reduction points NA
10. Perforated from 30' to 40', from ____ to ____ from ____ to ____
11. Size of cuts .020 Number of cuts per foot 125
12. If screen was installed: Length 10 ft. Diam 2 in. Type PVC
13. Method of construction drilled w/ 4¼ in. I.D. hollow stem auger
(drilled, dug, driven, bored, jetted, etc)
14. Date started Aug. 27 1998
Month Day Year
15. Date completed Aug 27 1998
Month Day Year
16. Depth to water 35' While Drilling ft. (If flowing well, so state)

17. Describe point from which depth measurements were made, and give sea-level elevation if available
Existing ground near the well
18. If flowing well, state method of flow regulation: NA

19. Remarks: Set casing to 40', filter pack to 20', bentonite seal to 18.5, then cement grouted to the surface with steel locking casing 2ft (+-) above grade.

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-569971
File No. D(6-16)7 ADC
Received ____ By ____
Entered ____ By ____

DWR-55-55-7/95 (Rev.)

ANSWERED SEP 21 1998

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	4'	Brn. Dry Sandy SILT & CLAY, Uncemented
4'	10'	Brn. Sandy Gravelly SILT & CLAY, Uncemented
10'	22'	Brn. Sandy SILT & CLAY, Uncemented
22'	30'	Brn Sandy SILT & CLAY, Uncemented
30'	40'	Brn. Wet Sandy SILT & Clay Uncemented
		Bottom of Boring @ 40'
		Groundwater @ 35' While
		Drilling

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: HEBER MINING & EXPLORATION COMPANY

22010 NORTH 21ST AVENUE
Street

PHOENIX, AZ 85027-0026 602-780-0023
City State Zip Phone No.

#269 9-11-98
Signature of Driller Date

Log # 137

D(6-16)7 ADD

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED SEP 21 1998 RECORDS MGT

1. HEBER MINING & EXPLORATION COMPANY
22010 NORTH 21ST AVENUE
PHOENIX, AZ 85027-0026

2. Owner Name: ARIZONA NATURE CONSERVANCY
Address: 300 E. University Blvd. #230 Tucson, Az. 85705
City State Zip

3. Location: 6 N/(S) 16 (E)/W 7 ¼ SE ¼ SE ¼ NE
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55--569976 (Required)

5. Permit No. NA (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 20' ft.
7. Type of casing Steel & PVC
8. Diameter and length of casing 2 in. from +2' to 8.5', 2 in from 8.5' to 20'
9. Method of sealing at reduction points NA
10. Perforated from 10' to 20', from ____ to ____ from ____ to ____
11. Size of cuts .020 Number of cuts per foot 125
12. If screen was installed: Length 10 ft. Diam 2 in. Type PVC
13. Method of construction drilled w/ 4¼ in. I.D. hollow stem auger
(drilled, dug, driven, bored, jetted, etc)
14. Date started Aug 27 1998
Month Day Year
15. Date completed Aug 27 1998
Month Day Year
16. Depth to water 11' While Drilling ft. (If flowing well, so state)

17. Describe point from which depth measurements were made, and give sea-level elevation if available
Existing ground near the well
18. If flowing well, state method of flow regulation: NA

19. Remarks: Set casing to 20', filter pack to 8.5', bentonite seal to 7.5', then cement grouted to the surface with steel locking casing 2ft (+-) above grade.

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-569976
File No. D(6-16)7 ADD
Received ____ By ____
Entered ____ By ____

DWR-55-55-7/95 (Rev.)

ANSWERED SEP 21 1998

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	9'	Brn. dry Sandy SILT & CLAY, Uncemented
9'	10'	Brn., Moist, Sandy SILT & CLAY, Uncemented
10'	12'	Brn. Sandy Gravelly SILT & CLAY, Uncemented
12'	20'	Brn. Sandy SILT & CLAY, Uncemented
		Bottom of Boring @ 20ft.
		Groundwater @ 11ft. While Drilling

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

COMPANY

Driller Name: HEBER MINING & EXPLORATION

22010 NORTH 21ST AVENUE
Street

PHOENIX, AZ 85027-0026 602-780-0023
City State Zip Phone No.

#269 9-11-98
Signature of Driller Date

Log # 149

D(6-16)6 DCB

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED SEP 21 1998 RECORDS MGT

1. HEBER MINING & EXPLORATION COMPANY
22010 NORTH 21ST AVENUE
PHOENIX, AZ 85027-0026

2. Owner Name: ARIZONA NATURE CONSERVANCY
Address: 300 E. University Blvd. #230 Tucson, Az. 85705
City State Zip

3. Location: 6 N/(S) 16 (E)/W 6 ¼ NW ¼ SW ¼ SE
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55--569970 (Required)

5. Permit No. NA (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 53 ft.
7. Type of casing Steel & PVC
8. Diameter and length of casing 2 in. from +2' to 19, 2 in from 19' to 53
9. Method of sealing at reduction points NA
10. Perforated from 43' to 53', from ____ to ____ from ____ to ____
11. Size of cuts .020 Number of cuts per foot 125
12. If screen was installed: Length 10 ft. Diam 2 in. Type PVC
13. Method of construction drilled w/ 4¼ in. I.D. hollow stem auger
(drilled, dug, driven, bored, jetted, etc)
14. Date started Aug 31 1998
Month Day Year
15. Date completed Aug 31 1998
Month Day Year
16. Depth to water 43ft. While Drilling ft. (If flowing well, so state)

17. Describe point from which depth measurements were made, and give sea-level elevation if available
Existing ground near the well
18. If flowing well, state method of flow regulation: NA

19. Remarks: Set casing to 53', filter pack to 39', bentonite seal to 19', then cement grouted to the surface with steel locking casing 2ft (+) above grade.

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-569970
File No. D (6-16) 6 DCB
Received ____ By ____
Entered ____ By ____

DWR-55-55-7/95 (Rev.)

ANSWERED SEP 21 1998

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	7'	Brn. Silty Clayey SAND & GRAVEL
7'	11'	Brn Sandy GRAVEL
11'	12'	COBBLES
12'	50'	Brn Silty Clayey Gravelly SAND
50'	53'	Brn SILT & CLAY
		Bottom of Boring @ 53'
		Groundwater @ 43' While
		Drilling

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: HEBER MINING & EXPLORATION COMPANY

22010 NORTH 21ST AVENUE
Street

PHOENIX, AZ 85027-0026 602-780-0023
City State Zip Phone No.

#269 9-11-98
Signature of Driller Date

Log # 150

ARIZONA DEPARTMENT OF WATER RESOURCES D(6-16)7 AAB
500 North Third Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED SEP 21 1998 RECORDS MGT

1. HEBER MINING & EXPLORATION COMPANY
22010 NORTH 21ST AVENUE
PHOENIX, AZ 85027-0026

2. Owner Name: ARIZONA NATURE CONSERVANCY
Address: 300 E. University Blvd. #230 Tucson, Az. 85705
City State Zip

3. Location: 6 N(S) 16 (E)W 7 ¼ NW ¼ NE ¼ NE
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55--569980 (Required)

5. Permit No. NA (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 30 ft.
7. Type of casing Steel & PVC
8. Diameter and length of casing 2 in. from +2 to 8.5, 2 in from 8.5 to 30
9. Method of sealing at reduction points NA
10. Perforated from 20' to 30', from ____ to ____ from ____ to ____
11. Size of cuts .020 Number of cuts per foot 125
12. If screen was installed: Length 10 ft. Diam 2 in. Type PVC
13. Method of construction drilled w/ 4¼ in. I.D. hollow stem auger
(drilled, dug, driven, bored, jetted, etc)
14. Date started 8 26 1998
Month Day Year
15. Date completed 8 26 1998
Month Day Year
16. Depth to water 20' While Drilling ft. (If flowing well, so state)

17. Describe point from which depth measurements were made, and give sea-level elevation if available
Existing ground near the well
18. If flowing well, state method of flow regulation: NA

19. Remarks: Set casing to 30', filter pack to 19.5', bentonite seal to 18', then cement grouted to the surface with steel locking casing 2ft (+-) above grade.

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-569980
File No. D(6-16)7 AAB
Received ____ By ____
Entered ____ By ____

DWR-55-55-7/95 (Rev.)

ANSWERED SEP 2 . 1998

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	13	Brn Dry Sandy SILT & CLAY Uncemented
13	22	Brn Moist Sandy SILT & CLAY Uncemented
22	30	Brn. Wet Sandy SILT & CLAY Uncemented
		Bottom of Boring @ 30'
		Groundwater @ 20' While Drilling

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: HEBER MINING & EXPLORATION

COMPANY

22010 NORTH 21ST AVENUE
Street

PHOENIX, AZ 85027-0026 602-780-0023
City State Zip Phone No.

#269 9-11-98
Signature of Driller Date

Log # 151

ARIZONA DEPARTMENT OF WATER RESOURCES D(6-16)7AAC
500 North Third Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED SEP 21 1998 RECORDS MGT

1. HEBER MINING & EXPLORATION COMPANY
22010 NORTH 21ST AVENUE
PHOENIX, AZ 85027-0026

2. Owner Name: ARIZONA NATURE CONSERVANCY
Address: 300 E. University Blvd. #230 Tucson, AZ. 85705
City State Zip

3. Location: 6 N(S) 16 (E)W 7 ¼ SW ¼ NE ¼ NE
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55--569981 (Required)

5. Permit No. NA (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 27 ft.
7. Type of casing Steel & PVC
8. Diameter and length of casing 2 in. from +2' to 8.5', 2 in from 8.5' to 27'
9. Method of sealing at reduction points NA
10. Perforated from 17' to 27', from ____ to ____ from ____ to ____
11. Size of cuts .020 Number of cuts per foot 125
12. If screen was installed: Length 10 ft. Diam 2 in. Type PVC
13. Method of construction drilled w/ 4¼ in. I.D. hollow stem auger
(drilled, dug, driven, bored, jetted, etc)
14. Date started Aug (Month) 28 (Day) 1998 (Year)
15. Date completed Aug (Month) 28 (Day) 1998 (Year)
16. Depth to water 18' While Drilling ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
Existing ground near the well
18. If flowing well, state method of flow regulation: NA
19. Remarks: Set casing to 27', filter pack to 16', bentonite seal to 14', then cement grouted to the surface with steel locking casing 2ft (+-) above grade.

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-569981
File No. D(6-16)7 AAC
Received ____ By ____
Entered ____ By ____

DWR-55-55-7/95 (Rev.)

ANSWERED SEP 21 1998

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	7'	Brn. Dry Sandy SILT & CLAY Uncemented
7'	11'	Brn Dry Gravelly Sandy SILT & CLAY Uncemented
11'	13'	Brn Moist Sandy SILT & CLAY Uncemented
13'	16'	Brn Moist Sandy SILT & CLAY Uncemented
16'	22'	Brn. Wet Sandy SILT & CLAY Uncemented
22'	27'	Brn. Cobbly Sandy SILT & CLAY
		Uncemented.
		Bottom of Boring @ 27'
		Groundwater @ 18' While Drilling

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: HEBER MINING & EXPLORATION COMPANY

22010 NORTH 21ST AVENUE
Street

PHOENIX, AZ 85027-0026 602-780-0023
City State Zip Phone No.

#269 9-11-98
Signature of Driller Date

Log # 153

ARIZONA DEPARTMENT OF WATER RESOURCES D(6-16) 6 DCA
500 North Third Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED SEP 21 1998 RECORDS MGT

1. HEBER MINING & EXPLORATION COMPANY
22010 NORTH 21ST AVENUE
PHOENIX, AZ 85027-0026

2. Owner Name: ARIZONA NATURE CONSERVANCY
Address: 300 E. University Blvd. #230 Tucson, Az. 85705
City State Zip

3. Location: 6 N(S) 16 (E)W 6 ¼ NE ¼ SW ¼ SE
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55--569985 (Required)

5. Permit No. NA (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 22 ft.
7. Type of casing Steel & PVC
8. Diameter and length of casing 2 in. from +2 to 5', 2 in from 5' to 22'
9. Method of sealing at reduction points NA
10. Perforated from 12' to 22', from ____ to ____ from ____ to ____
11. Size of cuts .020 Number of cuts per foot 125
12. If screen was installed: Length 10 ft. Diam 2 in. Type PVC
13. Method of construction drilled w/ 4¼ in. I.D. hollow stem auger
(drilled, dug, driven, bored, jetted, etc)
14. Date started Aug 28 1998
Month Day Year
15. Date completed Aug 28 1998
Month Day Year
16. Depth to water 15' While Drilling ft. (If flowing well, so state)

17. Describe point from which depth measurements were made, and give sea-level elevation if available
Existing ground near the well
18. If flowing well, state method of flow regulation: NA

19. Remarks: Set casing to 22', filter pack to 10.5', bentonite seal to 9', then cement grouted to the surface with steel locking casing 2ft (+-) above grade.

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-569985
File No. D(6-16) 6 DCA
Received ____ By ____
Entered ____ By ____

DWR-55-55-7/95 (Rev.) ANSWERED SEP 21 1998

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	8'	Brn. dry Sandy SILT & CLAY Uncemented
8'	10'	Brn Sh Moist Sandy SILT & CLAY Uncemented
10'	13'	Brn. Moist Sandy SILT & CLAY Uncemented
13'	22'	Brn. Wet Sandy SILT & CLAY Uncemented
		Bottom of Boring @ 22'
		Groundwater @ 15' While Drilling

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: HEBER MINING & EXPLORATION

COMPANY

22010 NORTH 21ST AVENUE
Street

PHOENIX, AZ 85027-0026 602-780-0023
City State Zip Phone No.

#269 9-11-98
Signature of Driller Date

Log # 154

D(6-16)7AAB

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED SEP 21 1998 RECORDS MGT

1. HEBER MINING & EXPLORATION COMPANY
22010 NORTH 21ST AVENUE
PHOENIX, AZ 85027-0026

2. Owner Name: ARIZONA NATURE CONSERVANCY
Address: 300 E. University Blvd. #230 Tucson, Az. 85705
City State Zip

3. Location: 6 N/S 16 E/W 7 ¼ NW ¼ NE ¼ NE
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55--569993 (Required)

5. Permit No. NA (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 35' ft.
7. Type of casing Steel & PVC
8. Diameter and length of casing 2 in. from +2 to 14', 2 in from 14' to 35'
9. Method of sealing at reduction points NA
10. Perforated from 25' to 35', from ____ to ____ from ____ to ____
11. Size of cuts .020 Number of cuts per foot 125
12. If screen was installed: Length 10 ft. Diam 2 in. Type PVC
13. Method of construction drilled w/ 4¼ in. I.D. hollow stem auger
(drilled, dug, driven, bored, jetted, etc)
14. Date started 8 28 1998
Month Day Year
15. Date completed 8 28 1998
Month Day Year
16. Depth to water 20' While Drilling ft. (If flowing well, so state)

17. Describe point from which depth measurements were made, and give sea-level elevation if available
Existing ground near the well
18. If flowing well, state method of flow regulation: NA

19. Remarks: Set casing to 35', filter pack to 24.25', bentonite seal to 22.75', then cement grouted to the surface with steel locking casing 2ft (+-) above grade.

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-569993
File No. D(6-16)7 AAB
Received ____ By ____
Entered ____ By ____

DWR-55-55-7/95 (Rev.)

ANSWERED SEP 21 1998

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	1	Brn Sandy SILT & CLAY Uncemented
1	5'	Brn dry coarse Gravelly Sandy SILT
		& CLAY Uncemented
5'	11'	Brn Silty Clayey coarse GRAVEL
		Uncemented
11'	18'	Brn. Coarse Gravelly Sandy SILT & CLAY
		Uncemented
18'	22'	Brn Sandy Silty Clayey Coarse GRAVEL Uncemented
22'	33'	Brn Gravelly Sandy SILT & CLAY Uncemented
33'	35'	Brn. Silty Clayey Coarse SAND Uncemented
		Bottom of Boring @ 35'
		Groundwater @ 29' While Drilling

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: HEBER MINING & EXPLORATION COMPANY

22010 NORTH 21ST AVENUE
Street

PHOENIX, AZ 85027-0026 602-780-0023
City State Zip Phone No.

#269 9-11-98
Signature of Driller Date

Log # 155

ARIZONA DEPARTMENT OF WATER RESOURCES D(6-16)6BBC
500 North Third Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED SEP 21 1998 RECORDS MGT

1. HEBER MINING & EXPLORATION COMPANY
22010 NORTH 21ST AVENUE
PHOENIX, AZ 85027-0026

2. Owner Name: ARIZONA NATURE CONSERVANCY
Address: 300 E. University Blvd. #230 Tucson, Az. 85705
City State Zip

3. Location: 6 N(S) 16 (E)W 6 ¼ SW ¼ NW ¼ NW
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55-569973 (Required)

5. Permit No. NA (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 52 ft.
7. Type of casing Steel & PVC
8. Diameter and length of casing 2 in. from +2 to 19', 2 in from 19' to 52'
9. Method of sealing at reduction points NA
10. Perforated from 42' to 52', from ____ to ____ from ____ to ____
11. Size of cuts .020 Number of cuts per foot 125
12. If screen was installed: Length 10 ft. Diam 2 in. Type PVC
13. Method of construction drilled w/ 4¼ in. I.D. hollow stem auger
(drilled, dug, driven, bored, jetted, etc)
14. Date started SEP. 1 1998
Month Day Year
15. Date completed SEP 1 1998
Month Day Year
16. Depth to water 42.5' While Drilling ft. (If flowing well, so state)

17. Describe point from which depth measurements were made, and give sea-level elevation if available
Existing ground near the well
18. If flowing well, state method of flow regulation: NA

19. Remarks: Set casing to 52', filter pack to 40', bentonite seal to 32', then cement grouted to the surface with steel locking casing 2ft (+-) above grade.

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-569973
File No. D(6-16) 6 BBC
Received ____ By ____
Entered ____ By ____

DWR-55-55-7/95 (Rev.) ANSWERED SEP 21 1998

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	20'	Brn. Dry Sandy SILT & CLAY, Uncemented
20'	32'	Brn. Gravelly Silty Clayey SAND, Uncemented
32'	40'	Brn. Coarse Gravelly Silty Clayey SAND, Uncemented
40'	45'	Brn. Gravelly Silty Clayey SAND Uncemented
45'	52'	Brn. SAND, SILT & CLAY Wet, Uncemented
		Bottom of Boring 52'
		Groundwater @ 42.5' While Drilling

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

COMPANY

Driller Name: HEBER MINING & EXPLORATION

22010 NORTH 21ST AVENUE
Street

PHOENIX, AZ 85027-0026 602-780-0023
City State Zip Phone No.

#269 9-11-98
Signature of Driller Date

Log # 156

ARIZONA DEPARTMENT OF WATER RESOURCES D(6-16)6 CAA
500 North Third Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED SEP 21 1998 RECORDS MGT

1. HEBER MINING & EXPLORATION COMPANY
22010 NORTH 21ST AVENUE
PHOENIX, AZ 85027-0026

2. Owner Name: ARIZONA NATURE CONSERVANCY
Address: 300 E. University Blvd. #230 Tucson, Az. 85705
City State Zip

3. Location: 6 N(S) 16 (E)W 6 ¼ NE ¼ NE ¼ SW
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55--569979 (Required)

5. Permit No. NA (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 25' ft.
7. Type of casing Steel & PVC
8. Diameter and length of casing 2 in. from +2 to 8.5', 2 in from 8.5' to 25'
9. Method of sealing at reduction points NA
10. Perforated from 15' to 25', from ____ to ____ from ____ to ____
11. Size of cuts .020 Number of cuts per foot 125
12. If screen was installed: Length 10 ft. Diam 2 in. Type PVC
13. Method of construction drilled w/ 4¼ in. I.D. hollow stem auger
(drilled, dug, driven, bored, jetted, etc)
14. Date started Aug 31 1998
Month Day Year
15. Date completed Aug 31 1998
Month Day Year
16. Depth to water 16' While Drilling ft. (If flowing well, so state)

17. Describe point from which depth measurements were made, and give sea-level elevation if available
Existing ground near the well
18. If flowing well, state method of flow regulation: NA

19. Remarks: Set casing to 25', filter pack to 15', bentonite seal to 14', then cement grouted to the surface with steel locking casing 2ft (+-) above grade.

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-569979
File No. D(6-16)6 CAA
Received ____ By ____
Entered ____ By ____

DWR-55-55-7/95 (Rev.)

ANSWERED SEP 21 1998

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	12	Brn. Fine Sandy SILT & CLAY
12'	16'	Brn. Damp SILT & CLAY
16'	25'	Brn. Wet SILT & CLAY
		Bottom of Boring @ 25'
		Groundwater @ 16 ft. While Drilling

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

COMPANY

Driller Name: HEBER MINING & EXPLORATION

22010 NORTH 21ST AVENUE
Street

PHOENIX, AZ 85027-0026 602-780-0023
City State Zip Phone No.

#269 9-11-98
Signature of Driller Date

Log # 159

D(6-16)6 BDD

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED SEP 21 1998 RECORDS MGT

1. HEBER MINING & EXPLORATION COMPANY
22010 NORTH 21ST AVENUE
PHOENIX, AZ 85027-0026

2. Owner Name: ARIZONA NATURE CONSERVANCY
Address: 300 E. University Blvd. #230 Tucson, Az. 85705
City State Zip

3. Location: 6 N(S) 16 E(W) 6 ¼ SE ¼ SE ¼ NW
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55--5699 89 (Required)

5. Permit No. NA (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 25' ft.
7. Type of casing Steel & PVC
8. Diameter and length of casing 2 in. from +2' to 8.5', 2 in from 8.5' to 25'
9. Method of sealing at reduction points NA
10. Perforated from 15' to 25', from ____ to ____ from ____ to ____
11. Size of cuts .020 Number of cuts per foot 125
12. If screen was installed: Length 10 ft. Diam 2 in. Type PVC
13. Method of construction drilled w/ 4¼ in. I.D. hollow stem auger
(drilled, dug, driven, bored, jetted, etc)
14. Date started 8 (Month) 27 (Day) 1998 (Year)
15. Date completed 8 (Month) 27 (Day) 1998 (Year)
16. Depth to water 20' While Drilling ft. (If flowing well, so state)

17. Describe point from which depth measurements were made, and give sea-level elevation if available
Existing ground near the well
18. If flowing well, state method of flow regulation: NA

19. Remarks: Set casing to 25', filter pack to 14', bentonite seal to 13', then cement grouted to the surface with steel locking casing 2ft (+-) above grade.

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-5699 89
File No. D(6-16)6 BDD
Received ____ By ____
Entered ____ By ____

DWR-55-55-7/95 (Rev.)

ANSWERED SEP 21 1998

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	20'	Brn SILT CLAY & SAND
20'	25'	Brn Silty Clayey SAND Uncemented
		Bottom of Boring @ 25'
		Groundwater @ 20' while Drilling

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

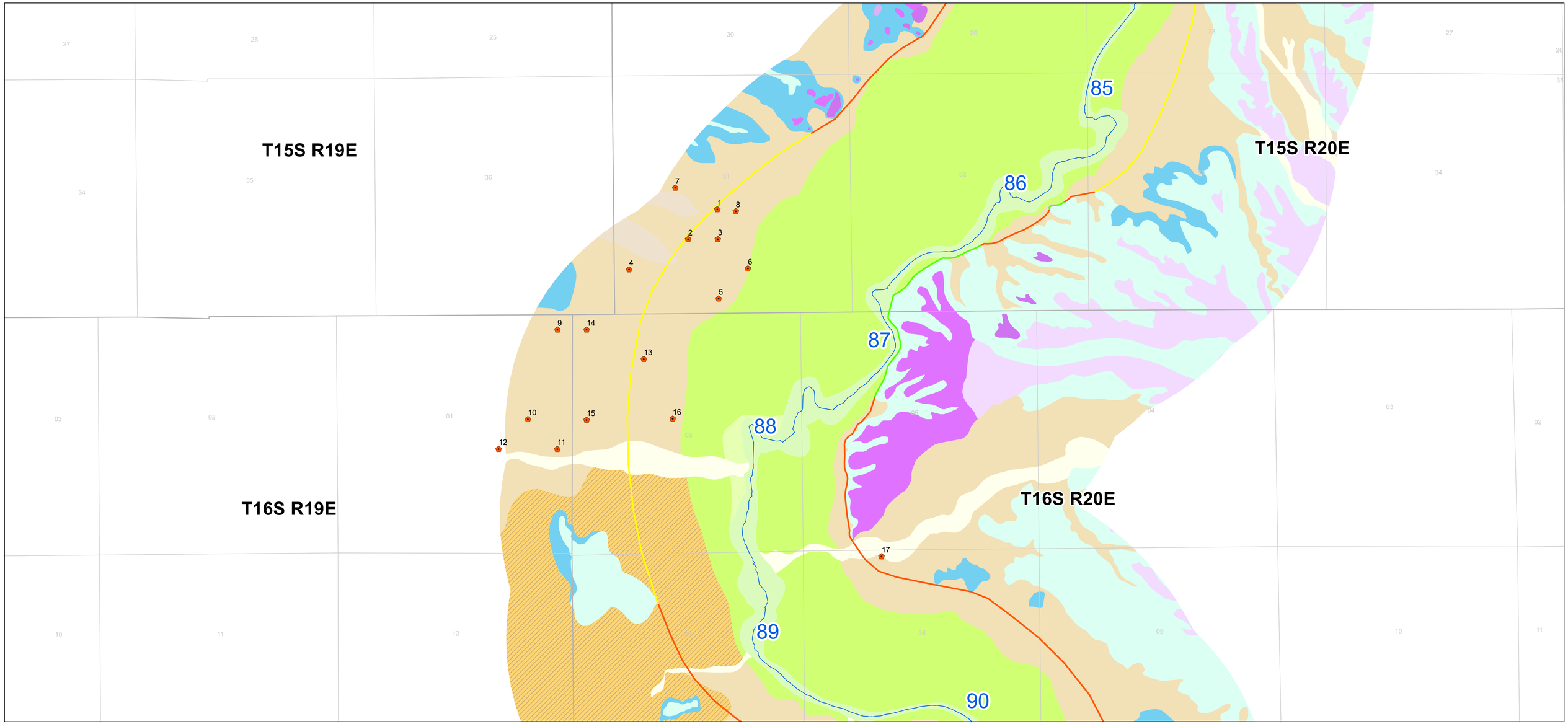
Driller Name: HEBER MINING & EXPLORATION COMPANY

22010 NORTH 21ST AVENUE
Street

PHOENIX, AZ 85027-0026 602-780-0023
City State Zip Phone No.

#269 9-11-98
Signature of Driller Date

APPENDIX C:
DRILLER LOGS MAPS



Legend

- Driller's Log with Location ID #
- FHA Delineation Step 1
- FHA Delineation Step 2
- FHA Delieation Step 3
- Townships
- Sections
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

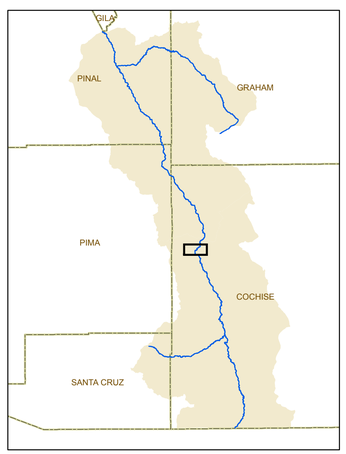
Tertiary Basin Fill Alluvium

Bedrock Units

Scale: 1:12,500

N

0 1,700 3,400 5,100
Feet



Appendix C
Drillers Logs in THA

San Pedro River: RM 89-86

2015 Supplemental
Subflow Report

Reissued May 2015

T16S R21E

T16S R20E

T17S R20E

T17S R21E

96

97

98

99

44 43 23 24 25 22 26 27 29 28 36 46 45 31 30 40 37 38 39 41 42 21 20 19 18 33 32 34 35

Legend

- Driller's Log with Location ID #
- FHA Delineation Step 1
- FHA Delineation Step 2
- FHA Delieation Step 3
- Townships
- Sections
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

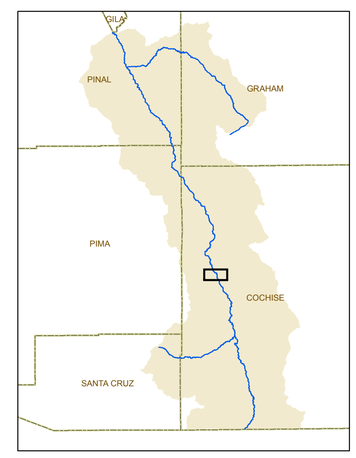
Tertiary Basin Fill Alluvium

Bedrock Units

Scale: 1:12,500

N

0 1,700 3,400 5,100
Feet

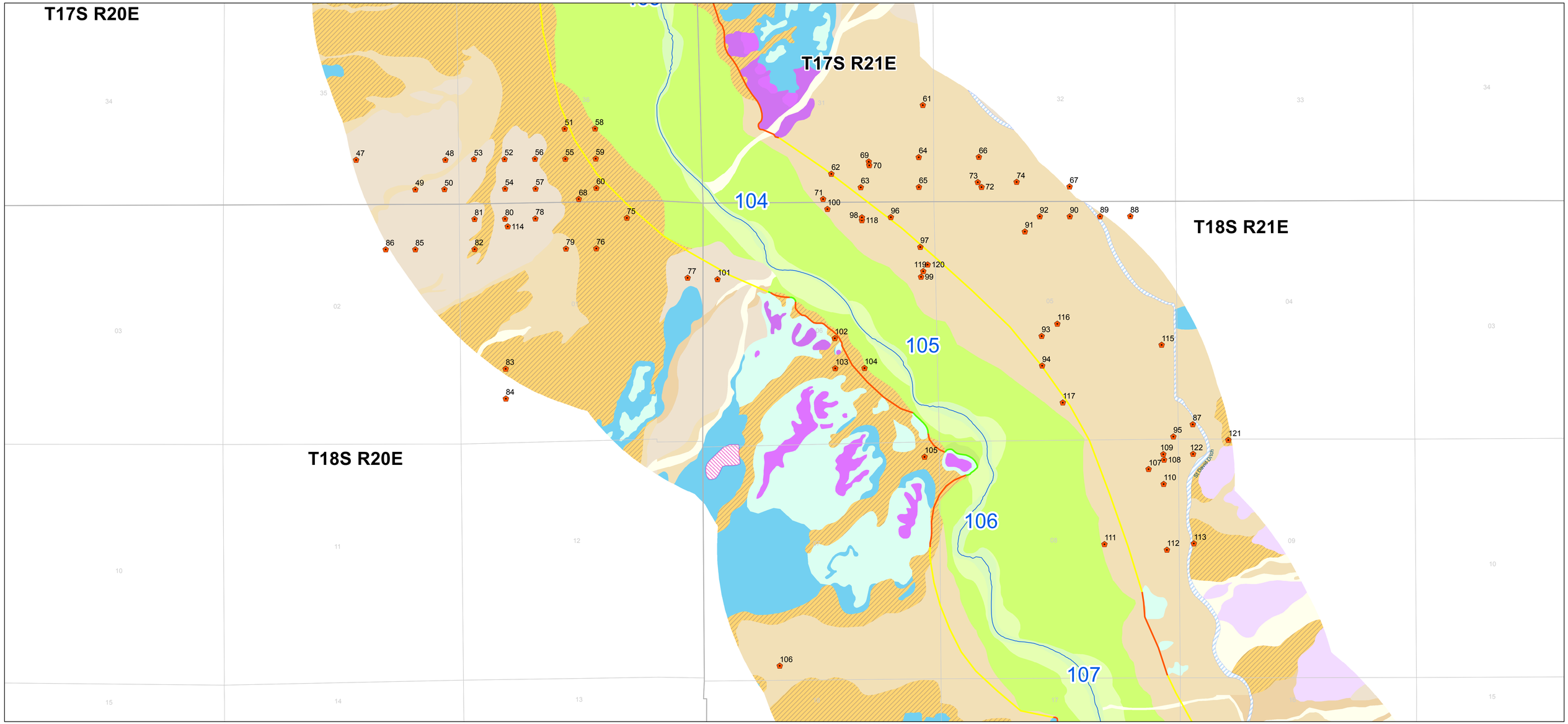


Appendix E
Drillers Logs in THA

San Pedro River: RM 99-96

2015 Supplemental
Subflow Report

Reissued May 2015



Legend

- Driller's Log with Location ID #
- FHA Delineation Step 1
- FHA Delineation Step 2
- FHA Delieation Step 3
- Townships
- Sections
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

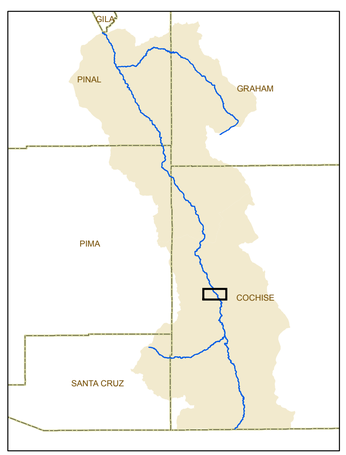
Tertiary Basin Fill Alluvium

Bedrock Units

Scale: 1:12,500

N

0 1,700 3,400 5,100
Feet

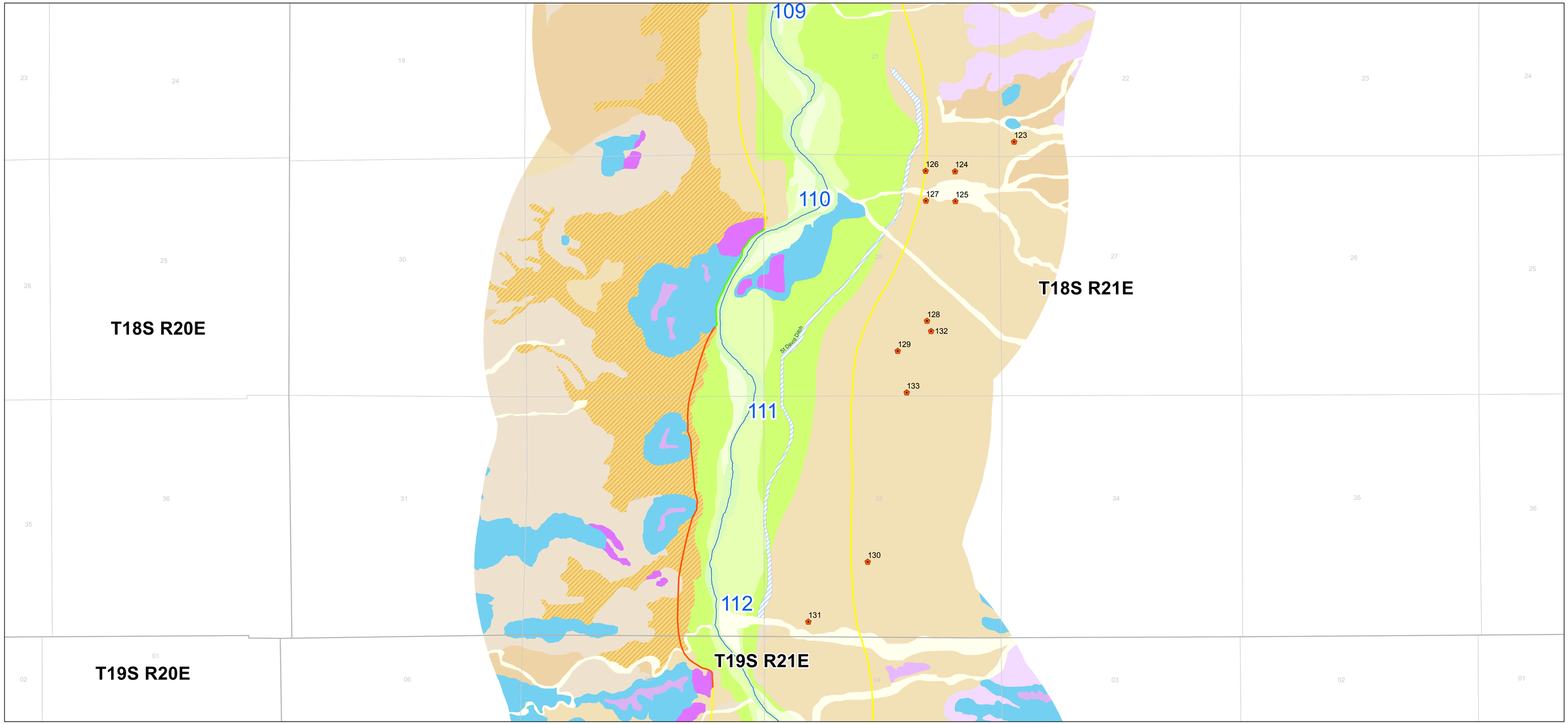


Appendix C
Drillers Logs in THA

San Pedro River: RM 106-104

2015 Supplemental
Subflow Report

Reissued May 2015



Legend

- Driller's Log with Location ID #
- FHA Delineation Step 1
- FHA Delineation Step 2
- FHA Delieation Step 3
- Townships
- Sections
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

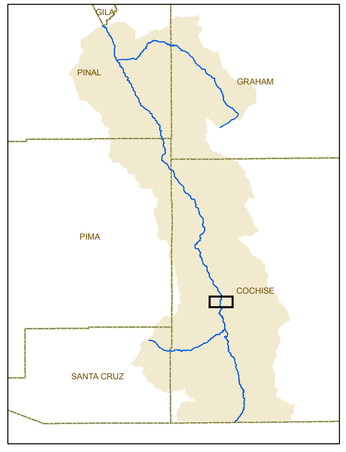
Tertiary Basin Fill Alluvium

Bedrock Units

Scale: 1:12,500

N

0 1,700 3,400 5,100
Feet



Appendix C
Drillers Logs in THA

San Pedro River: RM 112-109

2015 Supplemental
Subflow Report

Reissued May 2015

APPENDIX D:
DRILLER LOGS IN THA

Log # 1

STATE OF ARIZONA

ARIZONA WATER COMMISSION
WATER RIGHTS ADMINISTRATION

55-641754

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the Az. Water Commission following completion of the well.

1. OWNER Dorothy A. Tipton
Name
Bar B Ranch, P.O. Box 1880, Benson, Arizona 85602
Address

2. Lessee or Operator
Name
Address

3. DRILLER
Name
Address

4. Location of well: Twp. 15 S Rge. 20 Section 31 NE ¼ NE ¼ SW ¼
10-acre subdivision

5. Intention to Drill File No. Permit No.

DESCRIPTION OF WELL

6. Total depth of hole 380' ft.

7. Type of casing Steel & PVC

8. Diameter and length of casing 6 Steel in. from 0 to 205', 4 PVC in. from 200 to 380, in. from to

9. Method of sealing at reduction points

10. Perforated from 360 to 380, from to, from to, from to

11. Size of cuts 7/32 x 6 Number of cuts per foot 2

12. If screen was installed: Length ft. Diam. in. Type

13. Method of construction drilled
drilled, dug, driven, bored, jetted, etc.

14. Date started 11 (Month) 29 (Day) 80 (Year)

15. Date completed 12 (Month) 7 (Day) 80 (Year)

16. Depth to water 20' ft.
If flowing well, so state.

17. Describe point from which depth measurements were made, and give sea-level elevation if available

18. If flowing well, state method of flow regulation

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received by

Filed 2-18-81 by Pat

File No. D(15-20) 31 caa
83896

(Well Log to Appear on Reverse Side)

WD FORM G-301
REV. 4-27-53

FEB 1981
DEPARTMENT OF
WATER RESOURCES

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	50'	Dirt, Sand
50	120	Boulder & gravel
120	300	Clay
300	380	Sand Stone

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller John Cole
Name

Sh 12 Box 221 A Benson
Address

Log # 2

STATE OF ARIZONA

RECEIVED MAY 11 1982 DEPT. OF WATER RESOURCES

DEPARTMENT OF WATER RESOURCES

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Robert R. Bray (Name)
P. O. Box 1343 Benson, Arizona 85602 (Address)

2. Lessee or Operator _____ (Name)
_____ (Address)

3. Driller B-J DRILLING COMPANY (Name)
P.O. Box 815 Benson, Arizona 85602 (Address)

4. Location of well: Twp. 15S, Rge. 20E, Section 31, SW¼,NE¼,SW¼

5. Permit No. (if issued) 55-502650

DESCRIPTION OF WELL

6. Total depth of hole 400 ft.
7. Type of Casing Steel and P.V.C.
8. Diameter and length of casing 6 in. from 0 to 110, 4 in from 0 to 400.
9. Method of sealing at reduction points Cemented
10. Perforated from 360 to 400, from ____ to ____, from ____ to ____
11. Size of cuts 1/8 x 6 Number of cuts per foot 4 slots/ft.
12. If screen was installed: Length ____ ft. Diam ____ in. Type ____
13. Method of construction Drilled (drilled, dug, driven, bored, jetted, etc.)
14. Date started 5 (Month) 7 (day) 82 (year)
15. Date completed 5 (Month) 7 (day) 82 (year)
16. Depth to water 360 ft. (If flowing well, so state.)
17. Describe point from which depth measurements were made, and give sea-level elevation if available. Top of Casing
18. If flowing well, state method of flow regulation _____
19. REMARKS: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-502650
Received _____ By _____
Entered 5-11-82 By
File No. D(15-20)31 cac

(Well log to appear on Reverse side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	25	Sandy Clay
25	50	Clay and small gravel
50	75	Clay and gravel
75	100	Sandy clay
100	125	Sandy clay - Set and cement 110 ft. of 6"
125	150	Clay and gravel Steel Casing
150	175	Clay
175	200	Clay
200	225	Clay
225	250	Clay
250	275	Clay
275	300	Clay and small gravel
300	325	Clay
325	350	Clay
350	375	Clay and fine sand - First indication of water
375	400	Clay, sand, and gravel
		Cased hole with 400' of P.V.C. casing (4")
		Static Level at 80' (immediate flow)
		Air Developed at 10 gpm from 100 ft.

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief. B-J DRILLING COMPANY by:

Driller Robert R. Jackson
Name

P.O. Box 815 Benson, AZ 85602
Address

Date May 10, 1982

2-73

Log # 3

STATE OF ARIZONA

DEPARTMENT OF
WATER RESOURCES

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner George J Gollan
Name
9832 E. Watson Dr Tucson AZ 85730
Address

2. Lessee or Operator
Name
Address

3. Driller B-J DRILLING COMPANY
Name
P.O. Box 815 Benson, Arizona 85602
Address

4. Location of well: Twp. 15S, Rge. 20E, Section 31 SE¼, NE¼, SW¼

5. Permit No. (if issued) 55-503013

DESCRIPTION OF WELL

6. Total depth of hole 425 ft.

7. Type of Casing Steel and P.V.C.

8. Diameter and length of casing 6 in. from 0 to 140, 4 in from 0 to 410.

9. Method of sealing at reduction points Cemented

10. Perforated from 390 to 410, from ____ to ____, from ____ to ____

11. Size of cuts 1/8 x 6 Number of cuts per foot 4 slots/ft.

12. If screen was installed: Length ____ ft. Diam ____ in. Type ____

13. Method of construction Drilled
drilled, dug, driven, bored, jetted, etc.

14. Date started 11 (Month) 12 (day) 82 (year)

15. Date completed 11 (Month) 13 (day) 82 (year)

16. Depth to water 370 ft. (If flowing well, so state.)

17. Describe point from which depth measurements were made, and give sea-level elevation if available.
Top of Casing

18. If flowing well, state method of flow regulation

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-503013
Received ____ By ____
Entered 11-23-82 By ____
File No. D(15-20)31cad

(Well log to appear on Reverse side)

RECEIVED
NOV 17 1982
DEPT. OF
WATER RESOURCES

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	25	Sand - Set and cement 140' of 6" Steel Surface Casing.
25	50	Sand
50	75	Sand
75	100	Sand and clay
100	125	Sandy clay, Red Dense Clay at 115'
125	150	Red dense clay
150	175	Red dense clay
175	200	Red dense clay
200	225	Red dense clay
225	250	Red dense clay
250	275	Red dense clay
275	300	Red dense clay
300	325	Red dense clay
325	350	Red dense clay
350	375	Light brown, sandy clay - First water at 370', approx.
375	400	Coarse sand 10 gpm.
400	425	Sand and gravel
		Cased hole with 410 ft. of 4" P.V.C. casing.
		Immediate Static Level, approx. 20 ft.
		Hole acts like it will probably flow, welded cap
		with nipple and gate valve.
		Air Developed at approx. 25 gpm.

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

B-J DRILLING COMPANY, by:

Driller Robert L. Jackson
Name

P.O. Box 815 Benson, AZ 85602
Address

Date November 15, 1982

2-73

Log # 4

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Darrell + Lucille Garman
   Name
   P.O. Box 1863 Benson AZ 85602
   Mailing Address
2. Driller WEBER DRILLING RT. 1 BOX 276B ST. DAVID, AZ 85630 PHONE 586-4800
   Name
   Mailing Address
3. Location of well: Twp 15S Rge 20E Sec 31 SE¼ NE¼, SW¼
4. Permit No. (if issued) 55-520514

DESCRIPTION OF WELL

5. Total depth of hole 615 ft.
6. Type of casing Steel
7. Diameter and length of casing 8 in. from 0 to 84, 6 in from 0 to 615.
8. Method of sealing at reduction points Welded
9. Perforated from 575 to 615, from ____ to ____, from ____ to ____.
10. Size of cuts 1/8 x 8 Number of cuts per foot 4
11. If screen was installed: Length ____ ft. Diam ____ in. Type ____
12. Method of construction drilled
    drilled, dug, driven, bored, jetted, etc.
13. Date started 3 (Month) 14 (Day) 88 (Year)
14. Date completed 3 (Month) 16 (Day) 88 (Year)
15. Depth to water 575 ft. (If flowing well, so state.)
16. Describe point from which depth measurements were made, and give sea-level elevation if available Ground Level
17. If flowing well, state method of flow regulation: ____
18. Remarks: ____

55-520514
D(15-20)31 cad
Entered ENTERED JUN 07 1988 By ____

DWR-55-6-Rev. 8/85

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	70	Sand
70	575	Red Clay
575	615	Sand
		First Water 575
		Static 5'

RECEIVED JUN 2 1988 DEPT OF WATER RESOURCES

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Donald E. Weber
Name

WEBER DRILLING
RT. 1 BOX 276B
ST. DAVID, AZ. 85630
PHONE 586-4800

City State Zip

Date 5/30/88

Log # 5

5

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER Robert Sinard
Name
Address

2. Lessee or Operator
Name
Address

3. DRILLER Robert H Jackson - Dba B.J. Drilling Co
Name
P.O. Box 815 Benson, Ariz
Address

4. Location of well: Twp. 15S Rge. 20E Section 31 SE ¼ NE ¼ SW ¼
10-acre subdivision

5. Intention to Drill File No. D(15-20)31 Permit No. 36587

DESCRIPTION OF WELL

6. Total depth of hole 540 ft.

7. Type of casing

8. Diameter and length of casing 6 in. from 0 to 60, 4 in. from 0 to 540, in. from to

9. Method of sealing at reduction points

10. Perforated from 480 to 540, from to, from to, from to

11. Size of cuts 1/8 x 6 Number of cuts per foot 5

12. If screen was installed: Length ft. Diam. in. Type

13. Method of construction Rotary drilled
drilled, dug, driven, bored, jetted, etc.

14. Date started 4 (Month) 1 (Day) 76 (Year)

15. Date completed 4 (Month) 4 (Day) 76 (Year)

16. Depth of water 520 ft.
If flowing well, so state.

17. Describe point from which depth measurements were made, and give sea-level elevation if available
Collar of hole

18. If flowing well, state method of flow regulation

19. REMARKS: Overnite static 20' from surface

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 3-31-77 by p
Filed 4-21-77 by p
File No. D(15-20)31 cad
36587

(Well Log to Appear on Reverse Side)

RECEIVED
MAR 31 1977
STATE LAND DEPT.
28M

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	50	Sand & gravel
50	500	Red Clay
500	540	Clay & gravel
		Hit upper 20 gpm @ 426'
		" " 45 gpm @ 500-540
		Overnight Static - 20' from surface

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Robert K. Parker
Name

P.O. Box 515 Kingman Az 86401
Address

Date 4/4/76

2-73

Log # 6

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

AUG 13 1991

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Kyle Evenson
P.O. Box 2101 Benson, Az 85602
Name
Mailing Address

2. Driller WEBER DRILLING
RT. 1 BOX 276B
ST. DAVID, AZ 85630
Name
Mailing Address

3. Location of well: Twn: 15 S. Rng. 20E Sect. 31 NW1/4 SW1/4 SW 1/4

4. Permit No. 55-532685
(If issued)

DESCRIPTION OF WELL

5. Total depth of hole 510 ft.
6. Type of casing Steel
7. Diameter and length of casing 8 in. from 0 to 51, 6 in from 0 to 510.
8. Method of sealing at reduction points welded
9. Perforated from 464 to 510, from ____ to ____, from ____ to ____.
10. Size of cuts 1/8 x 8" Number of cuts per foot 4
11. If screen was installed: Length ____ ft. Diam ____ in. Type ____
12. Method of construction drilled
drilled, dug, driven, bored, jetted, etc
13. Date started 8 (Month) 5 (Day) 91 (Year)
14. Date completed 8 (Month) 7 (Day) 91 (Year)
15. Depth to water 410 ft. (If flowing well, so state)
16. Describe point from which depth measurements were made, and give sea-level elevation if available ground level
17. If flowing well, state method of flow regulation: 1 1/4 Gate Valve
18. Remarks:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

REG. No. 55-532685
File No. D(15-20)31 CCB
Entered ____

ENTERED AUG 13 1991

DWR-55-55-2/89

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
		First Water 410
		Flowing 10 gpm
		Hole Log.
0	39	Sand
39	410	Clay
410	412	Sand
412	435	clay
435	440	Sand
440	485	clay
485	500	Gravel
500	510	Clay

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Ronald R. Weber
Name

WEBER DRILLING
RT 1 BOX 276B
ST. DAVID, AZ. 85630
Address

City State Zip

Date 8/9/91

Log # 7

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004

*

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED MAY 27 1998 RECORDS MGT

1. B-J DRILLING COMPANY, INC.
P.O. BOX 815
BENSON, AZ 85602-0815

2. Owner Name: Larry D. Bingham
Address: P.O. Box 2494, Benson, AZ 85602
City State Zip

3. Location: 15 N/(S) 20 (E)/W 31 ¼ SE ¼ SE ¼ SW
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55- 548257 (Required)
5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 700 ft.
7. Type of casing Steel
8. Diameter and length of casing 6 in. from +1' to 200', 4½ in from +1' to 700'
9. Method of sealing at reduction points Cement
10. Perforated from 640 to 660, from 680 to 700 from _____ to _____
11. Size of cuts .125 x 4 Number of cuts per foot 12
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction Drilled
(drilled, dug, driven, bored, jetted, etc)
14. Date started May 11, 1995
Month Day Year
15. Date completed May 13, 1995
Month Day Year
16. Depth to water Flowing Artesian ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
Top of Casing
18. If flowing well, state method of flow regulation: Gate Valve
19. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-548257
File No. D(15-20)31CDD
Received _____ By _____
Entered _____ By _____
ANSWERED JUN 12 1998

DWR-55-55-7/95 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	210	Dense Clay
210	425	Red Clay
425	575	Mica With Sandstone, Interbeds throughout Dense Red Clay
575	600	Clay With Sandstone
600	613	Clay Zone Very Sticky
613	700	Clay With Sandstone
		Well Producing 1-2 gpm @ 475'/10-15 gpm @ 525'

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: B-J DRILLING COMPANY, INC.

P.O. BOX 815
Street

BENSON, AZ 85602-0815 520-586-3282
City State Zip Phone No.

Robert L. Jackson 5-21-98
Signature of Driller Date

Log # 9

9

55-600470

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER M. O. Grenier
Name
Address

2. Lessee or Operator
Name
Address

3. DRILLER George Parsley
Name
Box 296 Benson, Ariz
Address

4. Location of well: Twp. 15 South Rge. 20 East Section 31 NW ¼ SW ¼ SE ¼
10-acre subdivision

5. Intention to Drill File No. Permit No.

DESCRIPTION OF WELL

6. Total depth of hole 128 ft.

7. Type of casing Steel

8. Diameter and length of casing 8" in. from 1' to 128', in. from to, in. from to

9. Method of sealing at reduction points

10. Perforated from to, from 53' to 128', from to, from to

11. Size of cuts ⅛" X 8" Number of cuts per foot 5 rows

12. If screen was installed: Length ft. Diam. in. Type

13. Method of construction Drilled
drilled, dug, driven, bored, jetted, etc.

14. Date started Nov. 15, 1975
Month Day Year

15. Date completed Dec. 1, 1975
Month Day Year

16. Depth of water 52' ft.
If flowing well, so state.

17. Describe point from which depth measurements were made, and give sea-level elevation if available
Ground level

18. If flowing well, state method of flow regulation

10. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 11-17-76 by
Filed by
File No. D(15-20)31 dcb
35-33904

(Well Log to Appear on Reverse Side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0'	45'	dark sandy soil
45'	55'	dark mud
55'	62'	dark sandy shale & fine sand
62'		water
62'	70'	sand & gravel
70'	105'	sand & dark mud
105'	125'	sand & gravel
125'	130'	red clay

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller. G. L. Carder
Name

Box 296 Benson Ariz.
Address

Date. Dec. 14, 1975

RECEIVED NOV 16 1976 STATE LAND DEPT.

2-73

Log # 10

STATE LAND DEPARTMENT
GROUND WATER DIVISION
STATE OF ARIZONA

REGISTRATION OF WELL

1. OWNER M.O. Grenier
Name
850 Calle Milu, Tucson, Arizona
Address

2. LESSEE OR OPERATOR
Name
Address

3. DRILLER Cecil F. Perkins
Name
3005 West McDowell, Phoenix, Arizona
Address

4. LOCATION OF WELL: Twp. 15 S Rge. 20E Section 31 NW ¼ SW ¼ SE ¼
10-acre subdivision

DESCRIPTION OF WELL

5. Total depth of hole 50 ft.
6. Type of casing open well, 30 inch
7. Diameter and length of casing ..... in. from ..... to ....., ... in. from ..... to ....., ... in. from ..... to .....
8. Perforated from ..... to ....., from ..... to ....., from ..... to ....., from ..... to .....
9. Size of cuts ..... Number cuts per foot .....
10. If screen was installed: Length ..... ft. Diam. ..... in. Type .....
11. Date completed April (Month) 1960 (Year) Deepened ..... (Month) ..... (Year)
12. Depth of water when drilled 50 ft. If flowing well, so state .....
13. Present depth to water from land surface 50 ft. Date of measurement April, 1960
14. If flowing well, state method of flow regulation .....

DISCHARGE DATA

15. Well discharge .....
gal. per min. or cu. ft. per sec. or miner's inches.
16. Method of discharge measurement .....
weir, orifice, current meter, etc.
17. Drawdown ..... ft.
18. Annual discharge in acre-feet or number of hours pumped: 1944 ..... a.f. or ..... hrs. 1945 ..... a.f. or ..... hrs.
19. Purpose of use .....
20. Place of use: Twp. 15 S Rge. 20E Section 31 Acreage (Legal subdivision) Acres 160
(See 21)
Twp. ..... Rge. ..... Section .... (Legal subdivision) Acres .....
21. If well is part of irrigation system or Irrigation District, Association or Company, omit 20 and give name of project.
.....
Name of Project

EQUIPMENT DATA

22. Kind of pump .....
turbine, centrifugal, etc.
23. Kind of power .....
electric, natural gas, etc.
24. Horsepower rating of motor .....

DO NOT WRITE IN THIS SPACE

OFFICE RECORD

Received July 6, 1960 by Flood
Filed ..... by .....
File No. (D-15-20)31 dcb

G-302 Rev.—5M—2-57

(See Other Side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	12	soil
12	46	sand
46	58	clay
58		water

I hereby certify that I have read the foregoing statements, and that each and all of the items therein contained are true to the best of my knowledge and belief.

W. C. Greenlee
Owner, Operator or Driller

850 Calle Miler
Address

Tucson Arizona

Date July 1, 1960

Log # 11

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER Robert G. Fenn
Name
P. O. Box 787, Benson, Az 85602
Address

2. Lessee or Operator
Name
Address

3. DRILLER FREELAND E. DAVIS WELL DRILLING POMERENE ROAD BENSON, ARIZ. 85602
Name FREELAND WELL DR POMERENE BENSON, ARIZ. 85
Address

4. Location of well: Twp. 15 South Rge. 20 East Section 31 SE ¼ SW ¼ NW ¼
10-acre subdivision

5. Intention to Drill File No. D(15-20)31 bcd Permit No.

DESCRIPTION OF WELL

6. Total depth of hole 124 ft.

7. Type of casing 8 5/8" X .219

8. Diameter and length of casing 8 5/8 in. from 0 to 124, in. from to, in. from to

9. Method of sealing at reduction points None

10. Perforated from 76 ft to 121, from to, from to, from to

11. Size of cuts 3/16" Number of cuts per foot 6

12. If screen was installed: Length None ft. Diam. in. Type

13. Method of construction Drilled, cable tool rig
drilled, dug, driven, bored, jetted, etc.

14. Date started 8 (Month) 6 (Day) 70 (Year)

15. Date completed 8 (Month) 8 (Day) 70 (Year)

16. Depth of water 26 ft.
If flowing well, so state.

17. Describe point from which depth measurements were made, and give sea-level elevation if available Ground Level

18. If flowing well, state method of flow regulation

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 9-8-70 by fmr
Filed 9-8-70 by fmr
File No. D(15-20)31 bcd

(Well Log to Appear on Reverse Side)

WD FORM G-301
REV. 4-27-53

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	2	Sand
2	65	Granite fill with a little clay in it
65	85	Clay
85	102	Granite fill
102	114	Sand & gravel with water
114	124	Clay

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Freeland Lewis

Name FREELAND LEWIS WELL DRILLING YOMERE E. WOOD

Address BENSON, ARIZ. 85602

Date 8-10-70

RECEIVED SEP 8 1970 STATE LAND DEPT.

Log # 12

RECORDED

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

55-620471

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER M. O. Grenier (Name)
850 Calle Milu, Tucson, Arizona (Address)

2. Lessee or Operator ..... (Name)
..... (Address)

3. DRILLER Blaine Lord (Name)
6808 So. Tucson Blvd. Tucson, Arizona (Address)

4. Location of well: Twp. 15 S. Rge. 20 E. Section 31 NW ¼ NW ¼ SE ¼ (10-acre subdivision)

5. Intention to Drill File No. (D-15-20)31 dbb Permit No. .....

DESCRIPTION OF WELL

6. Total depth of hole 115 ft.

7. Type of casing Steel

8. Diameter and length of casing 16 in. from 0 to 115 Ft. in. from ..... to ....., ... in. from ..... to .....

9. Method of sealing at reduction points .....

10. Perforated from 70 to 115, from ..... to ....., from ..... to ....., from ..... to .....

11. Size of cuts 1/4 - 12 In. Number of cuts per foot 4

12. If screen was installed: Length ..... ft. Diam. ..... in. Type .....

13. Method of construction Drilled (drilled, dug, driven, bored, jetted, etc.)

14. Date started June (Month) 20 (Day) 1960 (Year)

15. Date completed June (Month) 29 (Day) 1960 (Year)

16. Depth of water 55 (If flowing well, so state.) ft.

17. Describe point from which depth measurements were made, and give sea-level elevation if available .....
Ground level

18. If flowing well, state method of flow regulation .....

19. REMARKS: Estimate well Will Pump 15 00 gal per Min as it was clean sand

Blaine J Lord Driller

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 7-12-60 by Ruf
Filed 7-26-60 by Ruf
File No. (D-15-20)31 dbb

(Well Log to Appear on Reverse Side)

WD FORM C-301
REV. 4-27-52

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	60	Layers of soil, sand, and clay
60	80	Silt, fine sand, water
80	90	Fine sand, some clay
90	110	Good sand, water, coarse sand
110	115	Clay, casing driven down tight in clay bottom

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller [illegible] Name

6808 S. [illegible] Address

Date July 5, 1960

ST OF TEXAS DEPT. 1960

99991

Log # 14

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

RECEIVED FEB 19 1997 RECORDS MGT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. B-J DRILLING COMPANY
PO BOX 815
BENSON AZ 85602

2. Owner Name: Dean & JoAnne Showers
Address: P.O. BOX 275 VAIL AZ 85641
Street City State Zip

3. Location: 16 N/S 19 E/W 1 ¼ NE ¼ NE ¼ NE
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55-556314 (Required)

5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

ENTERED MAR 12 1997

6. Total depth of hole 525 ft.
7. Type of casing Steel
8. Diameter and length of casing 6 in. from 0 to 63, 4½ in from 0 to 525 9.
Method of sealing at reduction points Portland Cement - 17 bags
10. Perforated from 484 to 525', from _____ to _____ from _____ to _____ 11.
Size of cuts 1/8 x 3 Number of cuts per foot 12 12.
If screen was installed: Length _____ ft. Diam _____ in. Type _____ 13.
Method of construction Drilled
(drilled, dug, driven, bored, jetted, etc)
14. Date started 10 (Month) 16 (Day) 96 (Year)
15. Date completed 10 (Month) 17 (Day) 96 (Year)
16. Depth to water Flowing ft. (If flowing well, so state)

17. Describe point from which depth measurements were made, and give sea-level elevation if available

18. If flowing well, state method of flow regulation: Welded cap w/ Nipple & gate valve

19. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-556314
File No. D(16-19)1 AAA
Received _____ By _____
Entered _____ By _____

DWR-55-55-7/95 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	23	Loose sand
23	50	Clay w occ. sand layers
50	375	RED Clay
375	390	Litebrown sandy clay
390	475	Alternating layers of sandstone (poorly cemented), & siltstone
		1st water encountered at 420'
475	525	Broken granitic conglomerate
		Airlift while drilling approx 100+ gpm.
		Well was flowing immediately upon completion

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name:

B.J. Drilling Co Inc
P.O.B 815
Benson, Ariz 85602
Robert L. Jackson 12/20/96

Signature of Driller Date

Log # 15

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED NOV 30 1998 RECORDS MGT

1. B-J DRILLING COMPANY, INC.
P.O. BOX 815
BENSON, AZ 85602-0815

2. Owner Name: KEVIN H & ANN P ROBERTS
Address: P.O. BOX 303 BENSON, AZ 85602
City State Zip

3. Location: 16 N/(S) 19 (E)/W 1 ¼ SW ¼ SE ¼ NE
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55- 568894 (Required)
5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 660 ft.
7. Type of casing Steel & PVC
8. Diameter and length of casing 7 in. from +1' to 40', _____ in from _____ to _____
9. Method of sealing at reduction points Cemented
10. Perforated from 610 to 650, from _____ to _____ from _____ to _____
11. Size of cuts .125 x 3 Number of cuts per foot 12
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction Drilled
(drilled, dug, driven, bored, jetted, etc)
14. Date started 9/25/98
Month Day Year
15. Date completed 9/25/98
Month Day Year
16. Depth to water 560' ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
Top of Casing
18. If flowing well, state method of flow regulation: Welded cap & Installed Gate Valve
19. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-568894
File No. D(16-19) 1 ADC
Received _____ By _____
Entered _____ By _____

DWR-55-55-7/95 (Rev.)

ANSWERED JAN 20 1999

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	13	Conglomerate
13	520	Red Clay
520	580	Sandy Clay -First water at 560'
580	600	Sandy Gravels
600	660	Gravels

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: B-J DRILLING COMPANY, INC.

P.O. BOX 815
Street

BENSON, AZ 85602-0815 520-586-3282
City State Zip Phone No.

Robert D. Jackson 11/20/98
Signature of Driller Date

Log # 16

(D-16-19) 1ADC

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 597667

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

Borehole

DEPTH FROM SURFACE FROM (feet)	TO (feet)	BOREHOLE DIAMETER (inches)
0	62	12
62	690	6½

Installed Casing

DEPTH FROM SURFACE FROM (feet)	TO (feet)	OUTER DIAMETER (inches)	MATERIAL TYPE (X): STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	PERFORATION TYPE (X): BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	SLOT SIZE IF ANY (inches)
+1	62.2	7	X				X						
0	660	5		X			X						
660	690	5		X							X		¼ X 6

Installed Annular Material

DEPTH FROM SURFACE FROM (feet)	TO (feet)	ANNULAR MATERIAL TYPE (X): NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	BENTONITE: GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	FILTER PACK: SAND	GRAVEL	SIZE
0	62			X								
									NO ANNULAR GRAVEL INSTALLED			

ANSWERED SEP 1 2 2003

DEPTH OF BORING	DEPTH OF COMPLETED WELL
690 Feet Below Land Surface	690 Feet Below Land Surface

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55-597667

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	Description Describe material, grain size, color, etc.	Check (X) every interval where water was encountered (if known)
0	6	BROWN CLAY	
6	9	GRAVELS	
9	23	RED CLAY W/SOME SAND	
23	26	GRAVELS	
26	40	RED CLAY	
40	540	RED CLAY W/INTERBEDS OF GYPSUM	
540	600	RED CLAY W/GRAVELS	
600	690	GRAVELS, TIGHTLY CEMENTED	X

Log # 17

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004
WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED
DEC - 3 1997
RECORDS MGT

1. WEBER DRILLING
ROUTE 1 BOX 276B
SAINT DAVID, AZ 85630-9721

2. Owner Name: DANIEL THOMAS CHANDLER
Address: TUCSON (City) AZ (State) 85719 (Zip)

3. Location: 16 (Township) N/S 19 (Range) E/W 1 (Section) ¼ NE (10-acre) ¼ NE (40-acre) ¼ SE (160-acre)

4. Well Registration No. 55- 565388 (Required)
5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 632 ft.
7. Type of casing STEEL
8. Diameter and length of casing 8 in. from 0 to 35, 6 in from 0 to 632
9. Method of sealing at reduction points WELDED
10. Perforated from 592 to 632, from _____ to _____ from _____ to _____
11. Size of cuts 1/8x8 Number of cuts per foot 4
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction DRILLED (drilled, dug, driven, bored, jetted, etc)
14. Date started NOV (Month) 25 (Day) 1997 (Year)
15. Date completed NOV (Month) 26 (Day) 1997 (Year)
16. Depth to water 555 ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
GROUND LEVEL
18. If flowing well, state method of flow regulation: _____
19. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-565388
File No. D(16-19) 1 DAA
Received _____ By _____
Entered _____ By _____
ENTERED DEC 04 1997

DWR-55-55-7/95 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	25	SAND
25	555	RED CLAY
555	632	DECOMPOSED GRANITE
		FIRST WATER 555'
		STATIC 5 GPM

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: WEBER DRILLING

ROUTE 1 BOX 276B
Street

SAINT DAVID, AZ 85630-9721 520-720-4800
City State Zip Phone No.

Donald E. Weber 12-1-97
Signature of Driller Date

Log # 18

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North 3rd Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED OCT 16 2001 RECORDS MGT

1. WEBER DRILLING
453 EAST MECHAM DRIVE
SAINT DAVID, AZ 85630-6235

2. Owner Name: TOBY L. SMITH
Address: BENSON (City) AZ (State) 85602 (Zip)

3. Location: 16 (Township) N/S 19 (Range) E/W 1 (Section) ¼ NE (10-acre) ¼ NW (40-acre) ¼ SE (160-acre)

4. Well Registration No. 55-584760 (Required)

5. Permit No. _____ (If Issued)

DESCRIPTION OF WELL

6. Total depth of hole 664 ft.
7. Type of casing STEEL
8. Diameter and length of casing 8 in. from 0 to 36, 6 in from 0 to 664
9. Method of sealing at reduction points WELDED
10. Perforated from 624 to 664, from _____ to _____ from _____ to _____
11. Size of cuts 1/8 x 8 Number of cuts per foot 4
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction DRILLED
(drilled, dug, driven, bored, jetted, etc)
14. Date started SEPT (Month) 22 (Day) 2001 (Year)
15. Date completed SEPT (Month) 25 (Day) 2001 (Year)
16. Depth to water 530 ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea_level elevation if available
GROUND LEVEL
18. If flowing well, state method of flow regulation: _____
19. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55- 584760
File No. D(16-19) 1 DBA
Received _____ By _____
Entered _____ By _____

DWR-55-55-7/95 (Rev.)

ANSWERED OCT 17 2001

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	28	SANDY CLAY
28	530	RED CLAY
[illegible]	600	RED CLAY W/SAND STREAKS
600	664	DECOMPOSED GRANITE
		FIRST WATER 530'
		STATIC FLOWS 20GPM

I hereby certify that this well was drilled by me (or under by supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: WEBER DRILLING

453 EAST MECHAM DRIVE
Street

SAINT DAVID, AZ 85630-6235 520-720-4800
City State Zip Phone No.

[illegible] 10/15/01
Signature of Driller Date

Log # 23

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North 3rd Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED FEB 22 2002 RECORDS MGT

1. B-J DRILLING COMPANY, INC.
P.O. BOX 815
BENSON, AZ 85602-0815

2. Owner Name: Tara DeVries
Address: 25165 N. Mutella RD Benson AZ 85602
City State Zip

3. Location: 16 N/S 20 E/W 6 ¼ SW ¼ NE ¼ NW
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55-583307 (Required)

5. Permit No. _____ (If Issued)

DESCRIPTION OF WELL

6. Total depth of hole 688 ft.
7. Type of casing Steel / PVC
8. Diameter and length of casing 7 in. from +1 to 19.5 in from 0 to 688
9. Method of sealing at reduction points Portland Cement.
10. Perforated from 588 to 628, from 648 to 688 from _____ to _____
11. Size of cuts 1/8x4 Number of cuts per foot 4
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction Drilled
(drilled, dug, driven, bored, jetted, etc)
14. Date started 9 05 00
Month Day Year
15. Date completed 9 05 00
Month Day Year
16. Depth to water flowing well ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea_level elevation if availabl
18. If flowing well, state method of flow regulation: Capped & pumped
19. Remarks:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55- 583307
File No. D(16-20) 6 BAC
Received _____ By _____
Entered _____ By _____

DWR-55-55-7/95 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	6	Clay - Brown
6	12	Sand
12	70	Clay
70	80	gravel
80	120	Dense Clay
120	465	Sandy Clay
465	480	Clay
480	688	Conglomerate fine grained
		1st Water Encounter at app 490'
		well flows 10 gpm
		Cap Welded on Completion

I hereby certify that this well was drilled by me (or under by supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: B-J DRILLING COMPANY, INC.

P.O. BOX 815
Street

BENSON, AZ 85602-0815
City State Zip Phone No.

Robert L. Jackson 9/12/01
Signature of Driller Date

Log # 24

D (16-20) 6 BBB

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004

RECEIVED
MAR 18 1998
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. STEPHENS DRILLING
PO BOX 925
DUNCAN AZ 85534-0925

2. Owner Name: Robert P. Antowick
Address: PO Box 488 Benson Az 85602
City State Zip

3. Location: 16 N(S) 20 E(W) 6 ¼ NW ¼ NW ¼ NW
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55-562813 (Required)
5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 605 ft.
7. Type of casing Steel
8. Diameter and length of casing 6 in. from 605 to Grnd, _____ in from _____ to _____
9. Method of sealing at reduction points None
10. Perforated from 605' to 525', from _____ to _____ from _____ to _____
11. Size of cuts Torch Cut Number of cuts per foot 10
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction drilled
(drilled, dug, driven, bored, jetted, etc)
14. Date started 10 (Month) 8 (Day) 97 (Year)
15. Date completed 01 (Month) 26 (Day) 98 (Year)
16. Depth to water 0 Flowing Well ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
Ground level
18. If flowing well, state method of flow regulation: None
19. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-562813
File No. D(16-20)6 BBB
Received _____ By _____
Entered _____ By _____

DWR-55-55-7/95 (Rev.)

ENTERED MAR 19 1998

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	8'	Clay & SAND
8'	14	SAND & gRAVel
14'	60'	CLAY - Red
60'	70'	RUNNING mud
70'	98'	CLAY - Red
98'	99'	gRANite
99'	546'	CLAY - RED
546'	548'	gRAVel - WATER
548'	560'	Red clay
560'	562'	SAND & gRAVel - WATER
562'	574'	CLAY - Red
574'	575'	SAND - WATER
575'	593'	CLAY - Red
593'	594	gRAVel - WATER
594'	595'	CLAY - Red
595'	597'	gRAVel - WATER
597	605	CLAY-Red

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: Stephens Drilling

PoBox 408
Street

Central AZ 85531 (520)428-7088
City State Zip Phone No.

William K Stephens 3-12-28
Signature of Driller Date

Log # 25

ARIZONA DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Name: James A. Sorensen
   Address: 1111 Avenida Jeanuine Tucson AZ 85715
   Street City State Zip
2. Driller Name: WEBER DRILLING
   Address: RT. 1 BOX 276B ST. DAVID, AZ. 85630
   Street City State Zip
3. Location: 16 N(S) 20 E(W) 6 SW 1/4 SW 1/4 NW 1/4
   Township Range Section 10-acre 40-acre 160-acre
4. Well Registration No. 55-534449 (Required)
5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 615 ft.
7. Type of casing Steel
8. Diameter and length of casing 8 in. from 0 to 62, 6 in from 0 to 615
9. Method of sealing at reduction points welded
10. Perforated from 575 to 615, from _____ to _____, from _____ to _____.
11. Size of cuts 1/8 x 8" Number of cuts per foot 4
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction Drilled
    (drilled, dug, driven, bored, jetted, etc)
14. Date started 6 16 92
    Month Day Year
15. Date completed 6 19 92
    Month Day Year
16. Depth to water 570' ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
    Ground Level
18. If flowing well, state method of flow regulation: Gate Valve
19. Remarks:

RECEIVED JUL 21 1992

DO NOT WRITE IN THIS SPACE

Reg
File 55-534449
Rec D(16-20)6BCC
Ent
ENTERED JUL 27 1992

DWR-55-55-7/91 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encounterd, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	40	Layered Fine Sand + Clay
40	570	Red Clay
570	615	Granet Sand + Gravel
		First water 570'
		Static Flowing 5gpm

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: Donald E. Weber

Street: ~~WEBER DRILLING~~ RT. 1 BOX 276B

City: ST. DAVID State: AZ Zip: 85630

Date: 7/22/92

Log # 26

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Bradley G. Roush
   Name
   HCR 6508 Benson, AZ 85602
   Mailing Address
2. Driller Farmers Pump Company
   Name
   800 E. Maley; Willcox, AZ 85643
   Mailing Address
3. Location of well: T16S R20E Sec. 6 SE 1/4 SE 1/4 NW 1/4
4. Permit No. (if issued) 55-521742

RECEIVED FEB 23 1993

DESCRIPTION OF WELL

5. Total depth of hole 120 ft.
6. Type of casing Steel
7. Diameter and length of casing 16 in. from 0 to 120, ____ in from ____ to ____.
8. Method of sealing at reduction points ____
9. Perforated from 60 to 100, from ____ to ____, from ____ to ____.
10. Size of cuts 1/4" x 10" Number of cuts per foot 8
11. If screen was installed: Length ____ ft. Diam ____ in. Type ____
12. Method of construction Drilled
    drilled, dug, driven, bored, jetted, etc.
13. Date started 08 (Month) 09 (Day) 88 (Year)
14. Date completed 08 (Month) 30 (Day) 88 (Year)
15. Depth to water 67' ft. (If flowing well, so state.)
16. Describe point from which depth measurements were made, and give sea-level elevation if available, ____
17. If flowing well, state method of flow regulation: ____
18. Remarks: ____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
REG. NO. 55-521742
File No. D(16-20)6bdd
Entered ENTERED FEB 23 1993 By ____

DWR-55-6-Rev. 8/85

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	47	Clay
47	75	Sand & Clay
75	120	Red Clay

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

RECEIVED
FEB 23 1993

Driller Farmers Pump Company
Name

800 E. Maley
Address

Willcox, AZ 85643
City State Zip

Date 02/10/93

Log # 32

320348110194001

(D-16-20) 8 BAB

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER: Walter E. Remmers
Name
Slash V Ranch, Pomerene, Az 85627
Address

2. Lessee or Operator
Name
Address

3. DRILLER
Name
Address

4. Location of well: Twp. 16 South Rge. 20 East Section 8 NW ¼ NE ¼ NW ¼
10-acre subdivision

5. Intention to Drill File No. D(16-20)8 bab Permit No.

DESCRIPTION OF WELL

6. Total depth of hole 110 ft.

7. Type of casing STEEL

8. Diameter and length of casing 16 in. from 0 to 110 in. from to , in. from to

9. Method of sealing at reduction points —

10. Perforated from 45 to 110, from to , from to , from to

11. Size of cuts ¼" x 8" Number of cuts per foot 9 Rows

12. If screen was installed: Length — ft. Diam. in. Type

13. Method of construction DRILLED
drilled, dug, driven, bored, jetted, etc.

14. Date started August (Month) 29 (Day) 1968 (Year)

15. Date completed October (Month) 31 (Day) 1968 (Year)

16. Depth of water 65 ft.
If flowing well, so state.

17. Describe point from which depth measurements were made, and give sea-level elevation if available
Ground level - About 3450

18. If flowing well, state method of flow regulation —

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 10-30-68 by fr
Filed 10-30-68 by fr
File No. D(16-20)8 bab

(Well Log to Appear on Reverse Side)

WD FORM G-301
REV. 4-27-53

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	110	SAND (ENCOUNTERED FIRST WATER AT 70 FT. RED CLAY 107 TO 110

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Pardee Well Drilling
Name

Box 296 Benson, Ariz.
Address

Date 12/1/68

Log # 35

(D-17-20) 1 BCC

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 202860

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

Borehole			Installed Casing														
DEPTH FROM SURFACE		BOREHOLE DIAMETER (inches)	DEPTH FROM SURFACE		OUTER DIAMETER (inches)	MATERIAL TYPE (X)				PERFORATION TYPE (X)						SLOT SIZE IF ANY (inches)
FROM (feet)	TO (feet)		FROM (feet)	TO (feet)		STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	
0	500	12	0	220	8		X									

Installed Annular Material											
DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (X)								FILTER PACK		
						BENTONITE						
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
0	220			X								

DEPTH OF BORING 500' Feet Below Land Surface

DEPTH OF COMPLETED WELL 500' Feet Below Land Surface

DWR-55-55B-10/01 (Rev.)

M1928

WELL REGISTRATION NUMBER
55-202860

Well Driller Report and Well Log

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	DESCRIPTION Describe material, grain size, color, etc.	Check (X) every interval where water was encountered
0	30	Top Soil	
30	50	Sand & Gravel	
50	85	Red Clay	
85	105	Sand & Small Gravel	
105	375	Red Clay	
375	500	Water Gravel & Sand	

M1928

Log # 36

ARIZONA DEPARTMENT OF WATER RESOURCES
Operations Division
500 North 3rd Street
Phoenix, Arizona 85004

RECEIVED AUG - 1 1995 RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Name: Kevin Stover
   Address: 976 E. Wildhorse Dr. Chandler AZ. 85349
   Street City State Zip
2. Driller Name: Titan Drilling
   Address: P.O. box 1912 Benson, AZ. 85602
   Street City State Zip
3. Location: 17S N/S (Township) 20E E/W (Range) 2 (Section) ¼ SE (10-acre) ¼ SE (40-acre) ¼ NE (160-acre)
4. Well Registration No. 55- 549707 (Required)
5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 510 ft.
7. Type of casing steel & pvc
8. Diameter and length of casing 8 in. from 0 to 20.5 in from 0 to 510
9. Method of sealing at reduction points concrete
10. Perforated from 400 to 510 from _____ to _____ from _____ to _____
11. Size of cuts .20x5 Number of cuts per foot 3
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction drilled
    (drilled, dug, driven, bored, jetted, etc)
14. Date started 7 (Month) 19 (Day) 95 (Year)
15. Date completed 7 (Month) 20 (Day) 95 (Year)
16. Depth to water 185 ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available _____
18. If flowing well, state method of flow regulation: _____
19. Remarks: _____

55-549707
D(17-20)2 ADD
Regis
File I
Recei _____ By _____
ENTERED AUG 4 1995
Entered _____ By _____

DWR-55-55-10/94 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	20	dirt & clay
20	380	clay
380	510	Artesian sand first water at 400ft

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: Titan Drilling

Street: P.O. box 1912

City: Benson AZ. State: 85602 Zip: Phone No.

Date: 7-28-95

Log # 37

FORM W-3 2M 8-49 JAHN-TYLER

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

Report of Well Driller is required to be made and filed with the State Land Commissioner as required by Section 7, Chapter 12, Senate Bill No. 3, Seventeenth Legislature, First Special Session, 1945. A separate report shall be made for each well and filed within 30 days after completion of the well.

1. Owner E. a. Lofgren
Name
Eloidge Arizona Box 1217
Address

2. Lessee or Operator
Name
Address

3. Driller G. L. Parker
Name
Benson Arizona
Address

4. Location of well: Twp. 17 S Rge. 20 E Section 2 NE¼ SW¼ NW¼
10-acre subdivision

DESCRIPTION OF WELL

5. Total depth of hole 95 ft.
6. Type of casing 16" 1/4" steel pipe
7. Diameter and length of casing 16 in. from 0 to 95 in. from to in. from to
8. Method of sealing at reduction points pipe drove into red clay
9. Perforated from 55 to 95 from to from to from to
10. Size of cuts 1/4" x 8' Number cuts per foot
11. If screen was installed: Length ft. Diam. in. Type
12. Method of construction drilled
drilled, dug, driven, bored, jetted, etc.
13. Date completed March 1952
Month Year
14. Depth to water 40 ft.
If flowing well, so state.
15. Describe point from which depth measurements were made, and give sea-level elevation if available
16. If flowing well, state method of flow regulation

DISCHARGE DATA

17. Well discharge No pump water
gal. per min. or cu. ft. per sec. or miner's inches.
18. Method of discharge measurement
weir, orifice, current meter, etc.
19. Drawdown ft.
20. Purpose of use
21. Place of use: Twp. Rge. Section Acres
(See 22) Legal subdivision

~~22. Purpose of use~~
Twp. Rge. Section Acres
Legal subdivision

22. If well is part of irrigation system of Irrigation District, Association or Company, omit 21 and give name of project.
Name of Project

EQUIPMENT DATA

23. Kind of pump
turbine, centrifugal, etc.
24. Kind of power
electric, natural gas, etc.
25. Horsepower rating of motor

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Received 6-20-52 by lec
Filed 6-20-52 by lec
File No. (D-17-20) 2 bca
Cross-referenced (Name) by
Cross-referenced (Basin) by
Cross-referenced by

(See Other Side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	12	topsoil
12	55	yellow sand clay
55	65	fine sand & little water
65	82	yellow sand clay
82	88	sand
88	95	red clay

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller G. L. Vardell
Name

Beaverton, Oregon
Address

Date January 7, 1952

Log # 38

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED DEC 17 1997 RECORDS MGT

1. B J DRILLING COMPANY INC
P O BOX 815
BENSON AZ 85602-0815

2. Owner Name: Raul Amado
Address: 1094 N. Pomerence Rd., Benson, AZ 85602
City State Zip

3. Location: 17 N/S 20 E/W 2 ¼ NW ¼ SW ¼ NW
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55- 564240 (Required)
5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 500 ft.
7. Type of casing Steel
8. Diameter and length of casing 6 in. from #1' to 20', 4 in from 0 to 492
9. Method of sealing at reduction points Cemented
10. Perforated from 452 to 492, from _____ to _____ from _____ to _____
11. Size of cuts .025 x 3 Number of cuts per foot 12/Ft.
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction Drilled
(drilled, dug, driven, bored, jetted, etc)
14. Date started 11/08/97
Month Day Year
15. Date completed 11/10/97
Month Day Year
16. Depth to water Static 21' ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
Top of casing
18. If flowing well, state method of flow regulation: _____
19. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-564240
File No. D(17-20) 2 BCB
Received _____ By _____
Entered _____ By _____
ENTERED DEC 18 1997

DWR-55-55-7/95 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	457	Reddish Brown Clay
457	500	Sand-Lower conglomerate- First water at 457

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: B-J Drilling Company Inc.

P.O. Box 815

Street

Benson Arizona 85602 520-586-3282

City State Zip Phone No.

Robert A. Jackson 12/13/97

Signature of Driller Date

Log # 39

D(17-20)2 BCB

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

P.O. Box 458 Phoenix, Arizona 85001-0458
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED FEB 19 1999 RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: JOYCE ANN FRICKERT

   Address: 2455 N. CAMPBELL (Street) TUCSON, ARIZONA (City, State) 85719 (Zip) (Telephone Number)

2. Drilling Firm: FARMERS PUMP COMPANY, INC.

   Address: 800 E. MALEY (Street) WILLCOX, ARIZONA (City, State) 85643 (Zip) (Telephone Number)

3. Location: NW ¼ (10 Acre) SW ¼ (40 Acre) NW ¼ (160 Acre) of Section 2 Township 17S Range 20E

4. Well Registration No. 55-572156 (Required) 6a. **Latitude** ____ ____' ____"

5. Permit No. ____ (If issued) 6b. **Longitude** ____ ____' ____"

DESCRIPTION OF WELL

7. Total Depth of Hole 400 ft 8. Type of Casing(s) ____

9. Diameter and length of casing(s) 8" inches from +2 to 40, inches from ____ to ____

10. Method of sealing at reduction points NA

11. Perforated from ____ to ____ from ____ to ____ from ____ to ____

12. Size of cuts ____ Number of cuts per foot ____

13. If screen was installed: Length ____ feet. Diameter ____ inches. Type ____

14. Constructed by: Air Rotary X Mud Rotary ____ Reverse Rotary ____ Cable Tool ____ Boring/Augering ____ Jet/Driven ____ Sonic ____ Hand Dug ____ Other: ____ (Check One)

15. Date started JANUARY (Month) 23 (Day) 1999 (Year)

16. Date completed JANUARY (Month) 26 (Day) 1999 (Year)

17 Depth to water DRY HOLE ft. (If flowing well, so state).

18. Describe point from which depth measurements were made, and give sea-level elevation if available

    GROUND LEVEL AT THE WELL SITE

19. If flowing well, state method of flow regulation: ____

20. Remarks: ____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. ____
File No. ____
Received ____ By ____
Entered ____ By ____

DWR-55-55 (Rev 7/98)

ANSWERED FEB 22 1999

55-572156

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	7	SAND AND GRAVEL
7	24	SANDY CLAY AND ROCKS
24	400	RED CLAY M.H.

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Drilling Firm: FARMERS PUMP CO., INC.

Signature of Qualifying Party: _____ Date

Street: 800 E. MALEY

City: WILLCOX, ARIZONA State: 85643 Zip

DWR 55-55 (Rev2/98)

Log # 44

LAND DEPARTMENT
MICROFILMED

REPORT OF WELL DRILLE

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER Josie Sorenson
Name
Address

2. Lessee or Operator
Name
Address

3. DRILLER FORSYTH DRILLING CO.
Name
BOX 103B, ST. DAVID, ARIZONA 85630
Address

4. Location of well: Twp. 17 South Rge. 20 East Section 3 NW ¼ SW ¼ SW ¼
10-acre subdivision

5. Intention to Drill File No. D(17-20)3 ccb Permit No. 30616

DESCRIPTION OF WELL

6. Total depth of hole 791' ft.

7. Type of casing STEEL WATER WELL CASING

8. Diameter and length of casing 8 5/8 in. from 0 to 171.1 6 5/8 in. from 0 to 509., 6 5/8 in. from 509 to 791

9. Method of sealing at reduction points WELDING

10. Perforated from 691' to 781', from to, from to, from to

11. Size of cuts 1/4" TO 3/8" Number of cuts per foot 1' (3 CUTS TO THE CIRCLE)

12. If screen was installed: Length ft. Diam. in. Type

13. Method of construction DRILLED
drilled, dug, driven, bored, jetted, etc.

14. Date started Feb. 5, 1975 (Month, Day, Year) DEEPENING: STARTED 7/7/75

15. Date completed MARCH 7, 1975 (Month, Day, Year) COMPLETED 9/29/75

16. Depth of water Flowing ft.
If flowing well, so state.

17. Describe point from which depth measurements were made, and give sea-level elevation if available 3646

18. If flowing well, state method of flow regulation VALVE

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Received 627407 by
Filed by
File No. D(17-20)3 ccb
30616

(Well Log to Appear on Reverse Side)

ENTERED AUG 12 1992

Log # 46

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

AUG 1986
DEPARTMENT OF WATER RESOURCES

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner M KARTCHNER
Name
3040 Bear Canyon Road, Tucson, AZ 85749
Mailing Address

2. Driller B-J Drilling Company, Inc.
Name
P.O. Box 815, Benson, AZ 85602
Mailing Address

3. Location of well: Twp17S., Rge20E., Section4, SE¼,SE¼,NE¼

4. Permit No. 55-513059
(if issued)

DESCRIPTION OF WELL

5. Total depth of hole 860 ft.

6. Type of casing Steel

7. Diameter and length of casing 10 in. from +1' to 42 , 8 in from +1½' to 860' .

8. Method of sealing at reduction points Cemented

9. Perforated from 745' to 860' , from ____ to ____ , from ____ to ____ .

10. Size of cuts .125 x3" Number of cuts per foot 60 slots/ft.

11. If screen was installed: Length ____ ft. Diam ____ in. Type ____

12. Method of construction Drilled
drilled, dug, driven, bored, jetted, etc.

13. Date started 2/12/86
Month Day Year

14. Date completed 2/17/86
Month Day Year

15. Depth to water 700' ft. (If flowing well, so state.)

16. Describe point from which depth measurements were made, and give sea-level elevation if available top of casing

17. If flowing well, state method of flow regulation: installed nipple & gate valve

18. Remarks: flowing approx. 24 GPM prior to installation of nipple & gate valve.

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-513059
Received ____ By ____
Entered ____ By ____
File No. D(17-20)4 add

ENTERED AUG 21 1986

DWR-55-6-Rev. 8/85

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	38	CLAYEY SAND
38	660	VERY STICKY CLAY
660	765	SANDY CLAY -FIRST WATER @ 700
765	775	SAND
775	860	HARD CONGLOMERATE-BEDROCK

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Robert A. Jackson
Name

B-J DRILLING COMPANY, INC.
P.O. BOX 815
Address

BENSON, AZ 85602
City State Zip

Date AUGUST 18, 1986

Log # 47

47

FORM W-3—2M—3-50—S.P.CO.

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

EXCERPT OF 1945 GROUNDWATER LAW

Report of Well Driller must be prepared by the driller in all detail and filed with the State Land Commissioner as required by Section 7, Chapter 12, Senate Bill No. 3, First Special Session, 1945. This report should be in the mail within 30 days following completion of the well. Section 8 of the law provides: "Any person (includes any individual, firm, public or private corporation, or governmental agency) who shall fail or refuse to make any of the reports, give the notices required, or fail to cooperate with the State Land Commissioner or his representative, under the provisions of this Act, shall be guilty of a misdemeanor and shall be fined a sum not exceeding One Hundred Dollars."

1. OWNER Mm. T. Griswold (Name)
   Route 6 Tucson, Arizona or Benson, Arizona (Address)
2. Lessee or Operator ..... (Name)
   ..... (Address)
3. DRILLER A.A. McDaniel (Name)
   1208 East Roger Road Tucson, Arizona (Address)
4. Location of well: Twp. 17S Rge. 20E Section 4 SE ¼ SE ¼ NE ¼ (10-acre subdivision)
5. Intention to Drill File No. (D-17-20) add — see c/d report

DESCRIPTION OF WELL

6. Total depth of hole 300 ft.
7. Type of casing Stovepipe
8. Diameter and length of casing 12 in. from 0 to 300 ..... in. from ..... to ....., ... in. from ..... to .....
9. Method of sealing at reduction points .....
10. Perforated from None to ....., from ..... to ....., from ..... to ....., from ..... to .....
11. Size of cuts ..... Number cuts per foot .....
12. If screen was installed: Length ..... ft. Diam. ..... in. Type .....
13. Method of construction Drilled (drilled, dug, driven, bored, jetted, etc.)
14. Date completed Dec. (Month) 1951 (Year)
15. Depth to water None (If flowing well, so state.) ft.
16. Describe point from which depth measurements were made, and give sea-level elevation if available .....
    Ground level
17. If flowing well, state method of flow regulation .....

18. REMARKS: This was a test well for shallow water. The intent being to drill the well deeper to an artesian flow if shallow water was not encountered. This has since been done by another driller.

DO NOT WRITE IN THIS SPACE

OFFICE RECORD

Received 1-6-53 by lec
Filed 1-6-53 by lec
File No. (D-17-20)4 ~~add~~ daa

(Well Log to Appear on Reverse Side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	300	Red Shale

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller [signature]
Name

1208 East Roger Road Tucson, Arizona
Address

Date 1/1/53

Log # 48

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER Oliver Lyon
Name
Address

2. Lessee or Operator
Name
Address

3. DRILLER Norris Well co
Name
Address

4. Location of well: Twp. 17S Rge. 20E Section 4 SE ¼ NE ¼ SE ¼
10-acre subdivision

5. Intention to Drill File No. Permit No.

DESCRIPTION OF WELL

6. Total depth of hole 915 ft.

7. Type of casing P.V.C.

8. Diameter and length of casing 6 in. from 0 to 700, in. from to, in. from to

9. Method of sealing at reduction points

10. Perforated from to, from to, from to, from to

11. Size of cuts none Number of cuts per foot

12. If screen was installed: Length ft. Diam. in. Type

13. Method of construction drilled
drilled, dug, driven, bored, jetted, etc.

14. Date started 11 (Month) 4 (Day) 76 (Year)

15. Date completed 11 (Month) 9 (Day) 76 (Year)

16. Depth of water Flowing ft.
If flowing well, so state.

17. Describe point from which depth measurements were made, and give sea-level elevation if available

18. If flowing well, state method of flow regulation 1"

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 11-19-76 by Ofs

Filed by

File No. D(17-20)4 dad
35-40879

(Well Log to Appear on Reverse Side)

RECEIVED
NOV 19 1976
STATE LAND DEPT.
3514

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	2	top soil
2	85	sand and clay
85	700	broad shale
700	915	cemented gravel

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Nevis Well Co
Name

H. C. Ore
Address

Date 11-9-76

2-73

Log # 52

MICROFILMED

617948
D(17-20)10 ABB

LOG OF WATER WELL DRILLED BY

Drilled for George Ettz of Benson, Arizona.

Location In Benson. Sec. 10, Twp. 17 S Rge 20 E.

Date Completed Total Depth 765 Ft.

Ft. of	3	Inch	Lb. or guage casing used	left in well.
Ft. of		Inch	Lb. or guage casing used	left in well.
Ft. of		Inch	Lb. or guage casing used	left in well.
Ft. of		Inch	Lb. or guage casing used	left in well.
Ft. of		Inch	Lb. or guage casing used	left in well.

Type of Perforator used: Not perforated.

Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch

Diameter of Perforations. Inches
Length of Perforations. Inches
Depth at which water was first found. Ft.
Standing water level before perforation. Ft. After perforation. Ft.
Change in water level while drilling.
Water level when first tested. Ft. Number of gallons per minute. 18.
Draw down from standing level. Ft.

Formation From Surface to Bottom of Well, Also Size of Gravel.

0	Ft. to	100	Ft.	Surface soil, some sand.	Ft. to	Ft.
100	Ft. to	750	Ft.	Clay, frequent streaks sand and gravel.	Ft.	
750	Ft. to	765	Ft.	Water strata.	Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.

Is well straight from top to bottom? Yes.
At what depth was pump set? No pump. Ft.
Was extra pump suction pipe used? How may feet?
Type of drill rig and number used Hydraulic, rotary.
Total cost of well and pump installed complete. $ 50 cts. per ft., drilling only.
Name and address of driller who drilled the well:

Date of this report January 27, 1938.

Additional information and comments:

ENTERED AUG 12 1992

Log # 67

(D-17-20) 10 D

wells 35

LOG OF WATER WELL DRILLED BY

Drilled for Mr. Sisk S.P. Signal man. of Benson, Arizona.

Location SE¼, Sec. 10, Twp. 17 S. Rge 20 E.

Date Completed Total Depth 680 ft.

40	Ft. of	2½	Inch	Lb. or guage casing used	left in well.
	Ft. of		Inch	Lb. or guage casing used	left in well.
	Ft. of		Inch	Lb. or guage casing used	left in well.
	Ft. of		Inch	Lb. or guage casing used	left in well.
	Ft. of		Inch	Lb. or guage casing used	left in well.

Type of Perforator used: Not perforated.

Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch

Diameter of Perforations. Inches
Length of Perforations. Inches
Depth at which water was first found. Ft.
Standing water level before perforation. Ft. After perforation Ft.
Change in water level while drilling.
Water level when first tested. Ft. Number of gallons per minute.
Draw down from standing level. Ft. " " " " "

Formation From Surface to Bottom of Well, Also Size of Gravel.

0	Ft. to	50	Ft.	Soil, gravel.	Ft. to	Ft.
50	Ft. to	650	Ft.	Red clay,	Ft. to	Ft.
650	Ft. to	680	Ft.	Sand, this layers of hardpan.	Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.

Is well straight from top to bottom? Yes.
At what depth was pump set? Ft.
Was extra pump suction pipe used? No pump. How many feet?
Type of drill rig and number used Hydraulic, rotary.
Total cost of well and pump installed complete. 50 cts. per foot, drilling only.
Name and address of driller who drilled the well: John Proffitt, Fumerene, Ariz.

Date of this report February 2, 1938.

Additional information and comments:

Artesian well.

(D-17-20) 10 d

Log # 68

(D-17-20)10DD
Wells 35

LOG OF WATER WELL DRILLED BY

Drilled for Southern Pacific Ry.Co. of Benson, Arizona.

Location Well No. 2. SE¼,SE¼, Sec. 10, Twp. 17 S. Rge. 20 E.

Date Completed Total Depth 707½ ft.

142	Ft. of 12	Inch	Lb. or guage casing used	all	left in well.
320	Ft. of 10	Inch Screw joint	guage casing used	"	left in well.
234	Ft. of 10	Inch Stove pipe	or guage casing used		left in well.
73½	Ft. of None	Inch	Lb. or guage casing used		left in well.
	Ft. of	Inch	Lb. or guage casing used		left in well.

Type of Perforator used:

Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch

Diameter of Perforations. Inches
Length of Perforations. Inches
Depth at which water was first found. Ft.
Standing water level before perforation. Ft. After perforation. Ft.
Change in water level while drilling.
Water level when first tested. Ft. Number of gallons per minute.
Draw down from standing level. Ft.

Formation From Surface to Bottom of Well, Also Size of Gravel.

"At 15 ft. struck water and cased it off"

0	Ft. to	42	Ft.	Clay,	Ft. to	Ft.
42	Ft. to	124	Ft.	Sand and coarse gravel	Ft. to	Ft.
~~124~~	Ft. to	500	Ft.	Artesian flow began here	Ft. to	Ft.
~~124~~	Ft. to	500	Ft.	Clay,	Ft. to	Ft.
500	Ft. to	699½	Ft.	Sandstone	Ft. to	Ft.
699½	Ft. to	707½	Ft.	Gravel.	Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.

Is well straight from top to bottom? Yes.
At what depth was pump set? Ft.
Was extra pump suction pipe used? How may feet?
Type of drill rig and number used
Total cost of well and pump installed complete. $
Name and address of driller who drilled the well:

Date of this report January 27, 1938.

Additional information and comments:

Artesian well, now being pumped.

(D-17-20)10DD

Log # 69

01.0820 P.

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North 3rd Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED FEB 25 2002 RECORDS MGT

1. YELLOW JACKET DRILLING
PMB 201, 1520 W WARNER RD #106
GILBERT, AZ 85233-7045

2. Owner Name: Tosco Marketing Co.
Address: Phoenix (City) AZ (State) 85072 (Zip)

3. Location: 17 (Township) N(S) 20 (Range) E(W) 10 (Section) ¼ NW (10-acre) ¼ SE (40-acre) ¼ SE (160-acre)

4. Well Registration No. 55-588497 (Required)

5. Permit No. _____ (If Issued)

DESCRIPTION OF WELL

6. Total depth of hole 40 ft.
7. Type of casing SCH 40 PVC
8. Diameter and length of casing 2 in. from 0 to 35, _____ in from 0 to 15
9. Method of sealing at reduction points Bentonite Seal
10. Perforated from 35 to 40, from 15 to 30 from _____ to _____
11. Size of cuts .020 Number of cuts per foot 100
12. If screen was installed: Length 5' + 15' ft. Diam 2 in. Type SCH 40 PVC
13. Method of construction Drilled w/HSA
(drilled, dug, driven, bored, jetted, etc)
14. Date started 10 (Month) 23 (Day) 01 (Year)
15. Date completed 10 (Month) 23 (Day) 01 (Year)
16. Depth to water 30 ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea_level elevation if available
From Ground Surface
18. If flowing well, state method of flow regulation: _____
19. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55- 588497
File No. D(17-20) 10 DDB
Received _____ By _____
Entered _____ By _____

DWR-55-55-7/95 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	40	SILTY, SANDY, GRAVEL

I hereby certify that this well was drilled by me (or under by supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: YELLOW JACKET DRILLING

PMB 201, 1520 W WARNER RD #106
Street

GILBERT, AZ 85233-7045
City State Zip Phone No.

Kwl Dr 2/15/02
Signature of Driller Date

Log # 70

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North 3rd Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED FEB 25 2002 RECORDS MGT

1. YELLOW JACKET DRILLING
PMB 201, 1520 W WARNER RD #106
GILBERT, AZ 85233-7045

2. Owner Name: TOSCO MARKETING CO
Address: PHOENIX (City) AZ (State) 85072 (Zip)

3. Location: 17 (Township) N/S 20 (Range) E/W 10 (Section) ¼ NW (10-acre) ¼ SE (40-acre) ¼ SE (160-acre)

4. Well Registration No. 55-588498 (Required)

5. Permit No. _____ (If Issued)

DESCRIPTION OF WELL

6. Total depth of hole 40 ft.
7. Type of casing SCH 40 PVC
8. Diameter and length of casing 2 in. from 0 to 35, _____ in from 0 to 15
9. Method of sealing at reduction points BENTONITE SEAL
10. Perforated from 35 to 40, from 15 to 30 from _____ to _____
11. Size of cuts 1020 Number of cuts per foot 100
12. If screen was installed: Length 5+15 ft. Diam 2 in. Type SCH 40 P.V.C.
13. Method of construction DRILLED W/HSA
(drilled, dug, driven, bored, jetted, etc)
14. Date started 10 (Month) 23 (Day) 01 (Year)
15. Date completed 10 (Month) 23 (Day) 01 (Year)
16. Depth to water 30 ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea_level elevation if available
FROM GROUND SURFACE
18. If flowing well, state method of flow regulation: _____
19. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55- 588498
File No. D(17-20) 10 DDB
Received _____ By _____
Entered _____ By _____

DWR-55-55-7/95 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	1/0	SILTY, SANDY, GRAVEL

I hereby certify that this well was drilled by me (or under by supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: YELLOW JACKET DRILLING

PMB 201, 1520 W WARNER RD #106

Street

GILBERT, AZ 85233-7045

City State Zip Phone No.

Signature of Driller Date

Log # 71

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North 3rd Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED FEB 25 2002 RECORDS MGT

1. YELLOW JACKET DRILLING
PMB 201, 1520 W WARNER RD #106
GILBERT, AZ 85233-7045

2. Owner Name: TOSCO MARKETING CO.
Address: PHOENIX (City) AZ (State) 85072 (Zip)

3. Location: 17 (Township) N/S 20 (Range) E/W 10 (Section) ¼ NW (10-acre) ¼ SE (40-acre) ¼ SE (160-acre)

4. Well Registration No. 55-588499 (Required)

5. Permit No. _____ (If Issued)

DESCRIPTION OF WELL

6. Total depth of hole 40 ft.
7. Type of casing SCH 40 PVC
8. Diameter and length of casing 2 in. from 0 to 35, _____ in from 0 to 15
9. Method of sealing at reduction points BENTONITE SEAL
10. Perforated from 35 to 40, from 15 to 30 from _____ to _____
11. Size of cuts .020 Number of cuts per foot 100
12. If screen was installed: Length 5'+15' ft. Diam 2 in. Type SCH 40 PVC
13. Method of construction DRILLED W/HSA
(drilled, dug, driven, bored, jetted, etc)
14. Date started 10 (Month) 22 (Day) 01 (Year)
15. Date completed 10 (Month) 22 (Day) 01 (Year)
16. Depth to water 30 ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea_level elevation if available
FROM GROUND SURFACE
18. If flowing well, state method of flow regulation: _____
19. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55- 588499
File No. D(17-20) 10 DDB
Received _____ By _____
Entered _____ By _____

DWR-55-55-7/95 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	40	SILTY, SANDY, GRAVEL

I hereby certify that this well was drilled by me (or under by supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: YELLOW JACKET DRILLING

PMB 201, 1520 W WARNER RD #106

Street

GILBERT, AZ 85233-7045

City State Zip Phone No.

Kwl D.

Signature of Driller

2/15/00

Date

Log # 72

ARIZONA DEPARTMENT OF WATER RESOURCES
Operations Division
500 North 3rd Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Name: Circle K Corp
   Address: 3003 N. Central (Street) Phoenix (City) Az (State) 85013 (Zip)
2. Driller Name: Boyles Bros Drilling Co
   Address: 6527 W. Northview (Street) Glendale (City) Az (State) 85301 (Zip)
3. Location: 17.0 N/(S) 20.0 (E)/W 10 (Section) ¼ NW (10-acre) ¼ SW (40-acre) ¼ SE (160-acre)
   (Township, Range)
4. Well Registration No. 55- 546393 (Required)
5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 30 ft.
7. Type of casing PVC
8. Diameter and length of casing 4 in. from 0 to 30, _____ in from _____ to _____
9. Method of sealing at reduction points _____
10. Perforated from 30 to 15, from _____ to _____ from _____ to _____
11. Size of cuts .010 Number of cuts per foot _____
12. If screen was installed: Length 15 ft. Diam 4 in. Type PVC
13. Method of construction Drilled Tubex
    (drilled, dug, driven, bored, jetted, etc)
14. Date started 1 (Month) 30 (Day) 95 (Year)
15. Date completed 1 (Month) 30 (Day) 95 (Year)
16. Depth to water ? ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
    Ground Level
18. If flowing well, state method of flow regulation: –
19. Remarks: VE-1 Vapor Extraction Well
    Well Set in Existing manhole 11' Deep

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-546393D
File No. D(17-20)10dcb
Received _____ By _____
Entered ENTERED MAR 6 1995 By _____

DWR-55-55-10/94 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	11	Existing Man Hole
11	28	Sandy Red Clay Damp
28	30	Silty Red Clay wet

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: Earl Maugum

6527 W. Northview
Street

Glendale Az 85301 944-1731
City State Zip Phone No.

2-3-95
Date

Log # 73

ARIZONA DEPARTMENT OF WATER RESOURCES
Operations Division
500 North 3rd Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Name: Circle K Corp
   Address: 3003 N. Central (Street) Phoenix (City) Az (State) 85013 (Zip)
2. Driller Name: Boyles Bros Drilling Co
   Address: 6527 W. Northview (Street) Glendale (City) Az (State) 85301 (Zip)
3. Location: 17.0 N/S (Township) 20.0 E/W (Range) 10 (Section) ¼ NW (10-acre) ¼ SW (40-acre) ¼ SE (160-acre)
4. Well Registration No. 55- 546394 (Required)
5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 40 ft.
7. Type of casing PVC
8. Diameter and length of casing 4 in. from 0 to 40, _____ in from _____ to _____
9. Method of sealing at reduction points _____
10. Perforated from 40 to 15, from _____ to _____ from _____ to _____
11. Size of cuts .010 Number of cuts per foot _____
12. If screen was installed: Length 25 ft. Diam 4 in. Type PVC
13. Method of construction Drilled Tubex
    (drilled, dug, driven, bored, jetted, etc)
14. Date started 2 (Month) 1 (Day) 95 (Year)
15. Date completed 2 (Month) 1 (Day) 95 (Year)
16. Depth to water ? ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
    Ground level
18. If flowing well, state method of flow regulation: -
19. Remarks: MW-4 Monitor Well

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-546394
File No. ~~D(17-20)10dcb~~
Received _____ By _____
Entered ENTERED MAR 6 1995 By _____

DWR-55-55-10/94 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	5	Silty Red Clay Damp
5	35	Sandy Clay Damp
35	40	Silty Red Clay Wet

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: Earl Marquum

6527 W. Northview
Street

Glendale Az 85301 944-1737
City State Zip Phone No.

2-3-95
Date

Log # 74

ARIZONA DEPARTMENT OF WATER RESOURCES
Operations Division
500 North 3rd Street
Phoenix, Arizona 85004

FEB 1 0 1995

OPERATIONS DIV.

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Name: Circle K Corp
   Address: 3003 N. Central (Street) Phoenix (City) Az (State) 85013 (Zip)
2. Driller Name: Boyles Bros Drilling Co
   Address: 6527 W. Northview (Street) Glendale (City) Az (State) 85301 (Zip)
3. Location: 1N (N/S) 2E (E/W) 10 (Section) ¼ NW (10-acre) ¼ SW (40-acre) ¼ SE (160-acre)
   (Township, Range)
4. Well Registration No. 55-546395 (Required)
5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 46 ft.
7. Type of casing PVC
8. Diameter and length of casing 4 in. from 0 to 46, _____ in from _____ to _____
9. Method of sealing at reduction points _____
10. Perforated from 46 to 16, from _____ to _____ from _____ to _____
11. Size of cuts .010 Number of cuts per foot _____
12. If screen was installed: Length 30' ft. Diam 4 in. Type PVC
13. Method of construction Drilled Tubex
    (drilled, dug, driven, bored, jetted, etc)
14. Date started 2 (Month) 2 (Day) 95 (Year)
15. Date completed 2 (Month) 3 (Day) 95 (Year)
16. Depth to water ? ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
    Ground Level
18. If flowing well, state method of flow regulation: _____
19. Remarks: MW-2 Monitor Well

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-546395
File No. ~~D(17-20)10dcb~~
Received _____ By _____
Entered ENTERED MAR 8 1995

DWR-55-55-10/94 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	12	Silty Red Clay Damp
12	35	Sandy Clay Dry
35	42	Sand minor Clay wet
42	46	Silty Red Clay Damp

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: Earl Mangum

6527 W. Northview
Street

Glendale Az 85301 944-173
City State Zip Phone No.

2-4-95
Date

Log # 75

ARIZONA DEPARTMENT OF WATER RESOURCES

Operations Division
500 North 3rd Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Name: Circle K Corp
   Address: 3003 N. Central (Street) Phoenix (City) Az (State) 85013 (Zip)
2. Driller Name: Boyles Bros Drilling Co
   Address: 6527 W. Northview (Street) Glendale (City) Az (State) 85301 (Zip)
3. Location: 17.0 (Township) N/S 20.0 (Range) E/W 10 (Section) ¼ NW (10-acre) ¼ SW (40-acre) ¼ SE (160-acre)
4. Well Registration No. 55-546396 (Required)
5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 49 ft.
7. Type of casing PVC
8. Diameter and length of casing 4 in. from 49 to 0, _____ in from _____ to _____
9. Method of sealing at reduction points _____
10. Perforated from 49 to 19, from _____ to _____ from _____ to _____
11. Size of cuts .010 Number of cuts per foot _____
12. If screen was installed: Length 30 ft. Diam 4 in. Type PVC
13. Method of construction Drilled Tubex (drilled, dug, driven, bored, jetted, etc)
14. Date started 2 (Month) 3 (Day) 95 (Year)
15. Date completed 2 (Month) 3 (Day) 95 (Year)
16. Depth to water 38 ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
    Ground Level
18. If flowing well, state method of flow regulation: _____
19. Remarks: MW-3 Monitor well

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-546396
File No. D(17-20)10dcb
Received _____ By _____
Entered ENTERED MAR 6 1995 By _____

DWR-55-55-10/94 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	15	Silty Red Clay Dry
15	35	Sandy Clay Dry
35	49	Silty Red Clay Wet

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: Earl Marquem

6527 W. Northview
Street

Glendale — Az — 85301 — 944-1731
City — State — Zip — Phone No.

2-4-95
Date

Log # 76

ARIZONA DEPARTMENT OF WATER RESOURCES
Operations Division
500 North 3rd Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Name: Circle K Corp.
   Address: 3003 N. Central (Street) Phoenix (City) Az (State) 85013 (Zip)
2. Driller Name: Boyles Bros Drilling Co
   Address: 6527 W. Northview (Street) Glendale (City) Az (State) 85301 (Zip)
3. Location: 17.0 (Township) N(S) 20.0 (Range) (E)W 10 (Section) ¼ NW (10-acre) ¼ SW (40-acre) ¼ SE (160-acre)
4. Well Registration No. 55-546392 (Required)
5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 50 ft.
7. Type of casing PVC
8. Diameter and length of casing 4 in. from 0 to 50, _____ in from _____ to _____
9. Method of sealing at reduction points _____
10. Perforated from 50 to 20, from _____ to _____ from _____ to _____
11. Size of cuts .010 Number of cuts per foot _____
12. If screen was installed: Length 30' ft. Diam 4 in. Type PVC
13. Method of construction Drilled Tubex
    (drilled, dug, driven, bored, jetted, etc)
14. Date started 2 (Month) 1 (Day) 95 (Year)
15. Date completed 2 (Month) 2 (Day) 95 (Year)
16. Depth to water 27 ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
    Ground Level
18. If flowing well, state method of flow regulation: —
19. Remarks: MW-1 Monitor Well

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-546392 D
File No. D(17-20)10dcb
Received _____ By _____
Entered ENTERED MAR By 6 1995

DWR-55-55-10/94 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	6	Silty Red Clay Damp
6	33	Sandy Clay Damp
33	50	Silty Red Clay Wet

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: Earl Mangum

6527 W. Northview
Street

Glendale — Az — 85301 — 944-1731
City — State — Zip — Phone No.

2-3-95
Date

Log # 77

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. THE VERDE COMPANIES
943 S. 48TH STREET
TEMPE, AZ 85281

2. Owner Name: ARCK K. CORPORATION #761
Address: 3033 North Central, Phx, ARIZONA 85012
Street City State Zip

3. Location: 17 N/S 20 E/W 10 ¼ NW ¼ SE ¼ SE
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55-551634 (Required)

5. Permit No. (If issued)

DEC 11 1995

DESCRIPTION OF WELL

6. Total depth of hole 45 ft.
7. Type of casing PVC Blank Sch 40
8. Diameter and length of casing 4 in. from 0 to 25, in from to
9. Method of sealing at reduction points bentonite seal
10. Perforated from 25 to 45, from to from to
11. Size of cuts .020 Number of cuts per foot 200
12. If screen was installed: Length 20 ft. Diam 4 in. Type Sch 40
13. Method of construction drilled
(drilled, dug, driven, bored, jetted, etc)
14. Date started 10 (Month) 23 (Day) 95 (Year)
15. Date completed 10 (Month) 23 (Day) 95 (Year)
16. Depth to water 30 ft ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
n/a
18. If flowing well, state method of flow regulation: n/a
19. Remarks:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-551634
File No. d(17-20)10DDB
Received By
Entered ENTERED DEC 14 1995 By

DWR-55-55-7/95 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	10	Clay, Hard
10	15	silty sand, coarse
15	20	Clay w/ course sand, dark brown
20	25	sand
25	30	Clayey sand, coarse, very moist
30	40	Clay w/ sand, graded, medium coarse, wet

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: Kirk Davis

3121 South Park Drive
Street

Tempe, Arizona 85282 438-1887
City State Zip Phone No.

K. Davis 12/6/95
Signature of Driller Date

Log # 78

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. THE VERDE COMPANIES
   943 S. 48TH STREET
   TEMPE, AZ 85281
2. Owner Name: Circle K Corporation #761
   Address: 3033 N. Central, Phoenix, Arizona 85012
   (Street, City, State, Zip)
3. Location: 17 N/S 20 E/W 10 ¼ NW ¼ SE ¼ SE
   (Township, Range, Section, 10-acre, 40-acre, 160-acre)
4. Well Registration No. 55-551635 (Required)
5. Permit No. _____ (If issued)

DEC 11 1995
RECORDS MGT

DESCRIPTION OF WELL

6. Total depth of hole 45 ft.
7. Type of casing PVC Sch 40
8. Diameter and length of casing 4 in. from 0 to 25, in from _____ to _____
9. Method of sealing at reduction points bentonite seal
10. Perforated from 25 to 45, from _____ to _____ from _____ to _____
11. Size of cuts .020 Number of cuts per foot 200
12. If screen was installed: Length 20 ft. Diam 4 in. Type Sch 40
13. Method of construction drilled
    (drilled, dug, driven, bored, jetted, etc)
14. Date started 10 (Month) 24 (Day) 95 (Year)
15. Date completed 10 (Month) 24 (Day) 95 (Year)
16. Depth to water 27 ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
    N/a
18. If flowing well, state method of flow regulation: N/a
19. Remarks:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-55-551635
File No. D(17-20)10DDB
Received _____ By _____
Entered ENTERED DEC 14 1995 By _____

DWR-55-55-7/95 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	20	Clay w/ coarse sand, dark brown
20	25	same
25	30	poorly loose sand, medium, very coarse, dense, v. moist
30	35	coarse sand, wet loose
35	45	same
		TD = 45

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: Kirk Davis

3121 South Park Drive
Street

Tempe Az 85282 438-1882
City State Zip Phone No.

K. Davis 12/6/95
Signature of Driller Date

Log # 79

RECEIVED
SEP 18 1998
RECORDS MGT

D(17-20) 10 DDB

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

1 of 10

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

Benson
(K) #00761

1. ENVIRO-DRILL, INC.
P.O. BOX 24189 3737 E BROADWAY ROAD
PHOENIX, AZ 85036-4189

2. Owner Name: Tosco Marketing Co dba Circle K Stores
Address: 3550 N. Central Ste. 400 Phoenix AZ 85012
City State Zip

3. Location: 17 N/S 20 E/W 10 ¼ NW ¼ SE ¼ SE
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55--570165 (Required)

5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 50 ft.
7. Type of casing PVC
8. Diameter and length of casing 4 in. from 0 to 50, _____ in from _____ to _____
9. Method of sealing at reduction points none
10. Perforated from — to _____, from _____ to _____ from _____ to _____
11. Size of cuts — Number of cuts per foot —
12. If screen was installed: Length 37-40 47-50 ft. Diam 4 in. Type .02
13. Method of construction drilled
(drilled, dug, driven, bored, jetted, etc)
14. Date started 9 2 98
Month Day Year
15. Date completed 9 2 98
Month Day Year
16. Depth to water 30 ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
surface
18. If flowing well, state method of flow regulation: static flow
19. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-570165
File No. D(17-20) 10 DDB
Received _____ By _____
Entered _____ By _____

DWR-55-55-7/95 (Rev.)

ANSWERED SEP 21 1998

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	30	Silty clay (medium)
30	33	Sandy
33	50	clay

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: ENVIRO-DRILL, INC.

P.O. BOX 24189 3737 E BROADWAY ROAD

Street

PHOENIX, AZ 85036-4189 437-1760

City State Zip Phone No.

Gabriel R Escamilla Jr 9/16/98

Signature of Driller Date

RECORDED

FEB 19 1998

Log # 80

FORM W-3 2M 8-46 JAHN-TYLER

W.L. 7991

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

RECEIVED MAY 26 1947 WATER DIVISION State Land Department

Report of Well Driller is required to be made and filed with the State Land Commissioner as required by Section 7, Chapter 12, Senate Bill No. 3, Seventeenth Legislature, First Special Session, 1945. A separate report shall be made for each well and filed within 30 days after completion of the well.

1. Owner Carl M. Brown
Queen Creek
Name
Address Chg

2. Lessee or Operator
Name
Address

3. Driller Hopp & Brown
Name
Willcox Ariz
Address

4. Location of well: Twp. 17 S Rge. 20 E Section 11 NE 1/4 NW 1/4 NE 1/4
10-acre subdivision

DESCRIPTION OF WELL

5. Total depth of hole 82 ft.
6. Type of casing 18"
7. Diameter and length of casing ____ in. from ____ to ____, ____ in. from ____ to ____, ____ in. from ____ to ____
8. Method of sealing at reduction points Welding
9. Perforated from 28' to ____, from ____ to ____, from ____ to ____, from ____ to ____
10. Size of cuts 1/4 — 6" Number cuts per foot ____
11. If screen was installed: Length ____ ft. Diam. ____ in. Type ____
12. Method of construction Jetted Cob.
drilled, dug, driven, bored, jetted, etc.
13. Date completed 1 — 14 — 47
Month Year
14. Depth to water ____ ft.
If flowing well, so state.
15. Describe point from which depth measurements were made, and give sea-level elevation if available ____
16. If flowing well, state method of flow regulation ____

RECEIVED JUN 7 1947 WATER DIVISION State Land Department

DISCHARGE DATA

17. Well discharge Well was a failure that pumped 2/24/50
gal. per min. or cu. ft. per sec. or miner's inches.
18. Method of discharge measurement ____
weir, orifice, current meter, etc.
19. Drawdown ____ ft.
20. Purpose of use ____
21. Place of use: Twp. ____ Rge. ____ Section ____ ____ Acres ____
(See 22) Legal subdivision
22. Purpose of use ____
Twp. ____ Rge. ____ Section ____ ____ Acres ____
Legal subdivision
22. If well is part of irrigation system of Irrigation District, Association or Company, omit 23 and give name of project.
Name of Project

(D-17-20)

EQUIPMENT DATA

23. Kind of pump None
turbine, centrifugal, etc.
24. Kind of power ____
electric, natural gas, etc.
25. Horsepower rating of motor ____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 6-7-47 by lj
Filed 6-26-47 by lj
File No. (D-17-20) 11 a. b-a
Cross-referenced (Name) ____ by ____
Cross-referenced (Basin) ____ by ____
Cross-referenced ____ by ____

(See Other Side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
Clay	5	Clay
5	7	Sand & Gravel (Water)
7	32	Clay

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Rupp & Fraser
Name

Wilford Ohio
Address

Date 1-1-47

Log # 81

(D-17-20)11 BAD

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 217753

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

DEPTH OF BORING	DEPTH OF COMPLETED WELL
500' Feet Below Land Surface	500' Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
Not Verified Feet Below Land Surface	N/A	N/A	☐ Valve ☐ Other: N/A

Borehole			Installed Casing													
DEPTH FROM SURFACE			DEPTH FROM SURFACE			MATERIAL TYPE (X)				PERFORATION TYPE (X)						
FROM (feet)	TO (feet)	BOREHOLE DIAMETER (inches)	FROM (feet)	TO (feet)	OUTER DIAMETER (inches)	STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	SLOT SIZE IF ANY (inches)
0	160	14 1/2	0	160	10		X									
160	500	9 7/8														

Installed Annular Material

DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (X)								FILTER PACK		
						BENTONITE						
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
0	160			X								
160	500								Anodes & Coke Breeze			

M2039

WELL REGISTRATION NUMBER
55- 217753

Well Driller Report and Well Log

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	DESCRIPTION Describe material, grain size, color, etc.	Check (X) every interval where water was encountered
0	5	Top Soil	
5	25	Soft Caliche	
25	95	Tan Clay	
95	140	Cemented boulders & Gravel	
140	160	Clay and Gravel	
160	450	Tan Clay	
450	500	Decomposed Granite (vert Porous & water laden)	

M2039

Log # 85

STATE OF ARIZONA

ARIZONA WATER COMMISSION
WATER RIGHTS ADMINISTRATION

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the Az. Water Commission following completion of the well.

1. OWNER Regina Imbruglia
Name
Address

2. Lessee or Operator
Name
Address

3. DRILLER Milton Olsen
Name
Rt 1 - Box 329 St Johns Ariz 85630
Address

4. Location of well: Twp. 17 S Rge. 20 E Section 11 SE ¼ SE ¼ SE ¼
10-acre subdivision

5. Intention to Drill File No. D (17-20) 11 ddd Permit No. 35-82463

DESCRIPTION OF WELL

6. Total depth of hole 100 ft.

7. Type of casing Metal

8. Diameter and length of casing 8 in. from 0 to 100, ____ in. from ____ to ____, ____ in. from ____ to ____

9. Method of sealing at reduction points none

10. Perforated from 95 to 95, from ____ to ____, from ____ to ____, from ____ to ____

11. Size of cuts 1/8 x 10 Number of cuts per foot 5

12. If screen was installed: Length None ft. Diam. ____ in. Type ____

13. Method of construction Drilled
drilled, dug, driven, bored, jetted, etc.

14. Date started Oct 10 79
Month Day Year

15. Date completed Nov. 13 79
Month Day Year

16. Depth to water 30 ft.
If flowing well, so state.

17. Describe point from which depth measurements were made, and give sea-level elevation if available
Ground level

18. If flowing well, state method of flow regulation

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received ____ by ____
Filed 12-3-80 by PG
File No. D(17-20)11 ddd
35-82463

(Well Log to Appear on Reverse Side)

WD FORM G-3C1
REV. 4-27-53

NOV 1980
DEPARTMENT OF
WATER RESOURCES

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	50	Brown Clay
50	83	Sand Rock Gravel + water
83	90	Red Clay Shale
90	98	Sand + Gravel
98	100	Red Clay

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Milli D. Curtis
Name

Rt 1 Box 327 St David Ariz
Address
85630

Log # 90

STATE OF ARIZONA

DEPARTMENT OF WATER RESOURCES

DEC 1981 DEPARTMENT OF WATER RESOURCES

WELL DRILLER REPORT

This report should be prepared by the driller in all det[illegible]ed with the Department within 30 days following completion of the well.

1. Owner Walter Swiers XX Ranch Star Rt 274
Name
Benson Ariz. 85602
Address

2. Lessee or Operator _____
Name
_____
Address

3. Driller _____
Name
_____
Address

4. Location of well: _____

5. Permit No. _____
(if issued)

DESCRIPTION OF WELL

6. Total depth of hole 500' ft.
7. Type of Casing PVC
8. Diameter and length of casing 6" in. from 0 to 500'; _____ in from _____ to _____.
9. Method of sealing at reduction points Cement
10. Perforated from 460 to 480, from — to _____, from _____ to _____
11. Size of cuts 1/8" Number of cuts per foot one
12. If screen was installed: Length — ft. Diam _____ in. Type _____
13. Method of construction Drilled
drilled, dug, driven, bored, jetted, etc.
14. Date started 12 (Month) 7 (day) 81 (year)
15. Date completed 12 (Month) 8 (day) 81 (year)
16. Depth to water 42' ft. (If flowing well, so state.)
17. Describe point from which depth measurements were made, and give sea-level elevation if available. Ground level
18. If flowing well, state method of flow regulation _____
19. REMARKS: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-501466
Received _____ By _____
Entered 1-4-82 By [illegible]
File No. D(17-20)12ccb

(Well log to appear on Reverse side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	2	Top
2	420'	Sticky red clay
420	500	Cemented gravel w/ water

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Lee's Well Drilling
P. O. Bx-4558
Huachuca City, AZ. 85616
Name

Address

Date 12-27-81

2-73

Log # 91

(D-17-20)13 BBA

55-622190

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER Daniel T. Huey (Name)
Po Box 457 Benson Ariz 85602 Airport Road (Address)

2. Lessee or Operator ..... (Name)
..... (Address)

3. DRILLER Pardee Well Drilling (Name)
Benson, Ariz 85602 (Address)

4. Location of well: Twp. 17S Rge. 20E Section 13 SW ¼ SW ¼ NW ¼ (10-acre subdivision)

5. Intention to Drill File No. D(17-20)13 bcc Permit No. 35-48205

DESCRIPTION OF WELL

6. Total depth of hole 410 ft.

7. Type of casing Steel

8. Diameter and length of casing 8 in. from 0 to 122' 6" in. from 115' to 405' in. from ..... to .....

9. Method of sealing at reduction points Red clay drilling mud from 122 to top of ground

10. Perforated from 340 to 400, from ..... to ....., from ..... to ....., from ..... to .....

11. Size of cuts 3/16" wide 9" long Number of cuts per foot 6 per 18"

12. If screen was installed: Length ..... ft. Diam. ..... in. Type .....

13. Method of construction drilled (drilled; dug, driven, bored, jetted, etc.)

14. Date started October (Month) 3 (Day) 1977 (Year)

15. Date completed November (Month) 7 (Day) 1977 (Year)

16. Depth of water 410 Flowing (If flowing well, so state.) ft.

17. Describe point from which depth measurements were made, and give sea-level elevation if available .....

RECEIVED OCT 31 1978 STATE LAND DEPT. 454

18. If flowing well, state method of flow regulation Run into a small pond for pumping for irrigation

19. REMARKS: .....

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 10-31-78 by jp
Filed 11-15-78 by jp
File No. D(17-20)13 bcc
35-48205

(Well Log to Appear on Reverse Side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	15	Sand and 3"to 8" Gravel Rocks
15	358	Red clay
358	405	1/2- 1/4" Gravel and Sand — water
405	410	Yellow clay

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller: Geo. Parsons Well Drilling
Name

Bunson Ore
Address

Date 10-15-78

2-73

Log # 92

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

55-600743

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER Reynald Hartmann
Name
Address
2. Lessee or Operator
Name
Address
3. DRILLER Herin's Well Co
Name
Address
4. Location of well: Twp. 17S Rge. 20E Section 14 NE ¼ SE ¼ NE ¼
10-acre subdivision
5. Intention to Drill File No. Permit No.

DESCRIPTION OF WELL

6. Total depth of hole 475 ft.
7. Type of casing plastic
8. Diameter and length of casing 6 in. from 0 to 465 in. from to , in. from to
9. Method of sealing at reduction points
10. Perforated from to , from to , from to , from to
11. Size of cuts Number of cuts per foot
12. If screen was installed: Length ft. Diam. in. Type
13. Method of construction drilled
drilled, dug, driven, bored, jetted, etc.
14. Date started 5 (Month) 2 (Day) 76 (Year)
15. Date completed 5 (Month) 4 (Day) 76 (Year)
16. Depth of water 465 ft.
If flowing well, so state.
17. Describe point from which depth measurements were made, and give sea-level elevation if available
18. If flowing well, state method of flow regulation

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Received 5-17-76 by Ktl
Filed by
File No. D(17-20)14 ada
37348

(Well Log to Appear on Reverse Side)

MAY 12 1976

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	12	Top soil
[illegible]	90	[illegible] clay
[illegible]	410	[illegible] clay
[illegible]	470	[illegible] gravel
470	475	Clay
		ground elevation is about 3575
		Artesian water, rose to 8' below
		ground elevation
		Reynold Hartman
		5/14/76

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller [illegible] Well Co
Name

[illegible]
Address

Date 5-6-76

2-73

Log # 95

(D-17-20)15 A

LOG OF WATER WELL DRILLED BY

Drilled for **Armitage.** of **Benson.** Arizona.

Location **NE¼,NE¼,** Sec **15,** Twp **17** S. Rge. **20** E.

Date Completed Total Depth **700 ft.**

Ft. of **2**	Inch	Lb.or guage casing used	left in well.
Ft. of	Inch	Lb.or guage casing used	left in well.
Ft. of	Inch	Lb.or guage casing used	left in well.
Ft. of	Inch	Lb.or guage casing used	left in well.
Ft. of	Inch	Lb.or guage casing used	left in well.

Type of Perforator used:

Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch

Diameter of Perforations. Inches
Length of Perforations. Inches
Depth at which water was first found. Ft.
Standing water level before perforation. Ft. After perforation Ft.
Change in water level while drilling.
Water level when first tested. Ft. Number of gallons per minute. **4.**
Draw down from standing level. Ft. " " " " "

Formation From Surface to Bottom of Well, Also Size of Gravel.

0	Ft. to **75**	Ft **Sand and gravel.**		Ft. to	Ft.
75	Ft. to **575**	Ft **Clay.**		Ft. to	Ft.
575	Ft. to **700**	Ft **Sand, gravel.**		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.

Is well straight from top to bottom? **Yes.**
At what depth was pump set? **No pump.** Ft.
Was extra pump suction pipe used? How many feet?
Type of drill rig and number used **Hydraulic.rotary.**
Total cost of well and pump installed complete. **50 cts.per foot,drilling only.**
Name and address of driller who drilled the well: **R. H. Martin, Tucson.**

Date of this report **February 8, 1938.**

Additional information and comments:
Artesian well.

(D-17-20)15 aa

Log # 96

MICROFILMED

621495
D(17-20)3 CC

LOG OF WATER WELL DRILLED BY

Drilled for George Ettz of Benson, Arizona.

Location Benson, North side. SW,¼, Sec. 3, Twp. 17 S. Rge. 20 E.

Date Completed Total Depth 800 ft.

Ft. of	3 Inch	Lb. or guage casing used		left in well.
Ft. of	Inch	Lb. or guage casing used		left in well.
Ft. of	Inch	Lb. or guage casing used		left in well.
Ft. of	Inch	Lb. or guage casing used		left in well.
Ft. of	Inch	Lb. or guage casing used		left in well.

Type of Perforator used: Not perforated.

Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch

Diameter of Perforations. Inches
Length of Perforations. Inches
Depth at which water was first found. Ft.
Standing water level before perforation. Ft. After perforation. Ft.
Change in water level while drilling.
Water level when first tested. Ft. Number of gallons per minute. 6.
Draw down from standing level. Ft.

Formation From Surface to Bottom of Well, Also Size of Gravel.

0	Ft. to 100	Ft.	Surface soil, some sand.	Ft. to	Ft.
100	Ft. to 770	Ft.	Yellowish clay.	Ft. to	Ft.
770	Ft. to 800	Ft.	Fine sand, fine and coarse gravel.	to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.

Is well straight from top to bottom? Yes.
At what depth was pump set? No pump. Ft.
Was extra pump suction pipe used? How may feet?
Type of drill rig and number used Hydraulic, rotary.
Total cost of well and pump installed complete. $ 50 cts. per ft., drilling only.
Name and address of driller who drilled the well:

Date of this report January 27, 1938.

Additional information and comments:

Artesian well.

ENTERED AUG 12 1992

Log # 97

STATE LAND DEPARTMENT
GROUND WATER DIVISION
STATE OF ARIZONA

REGISTRATION OF WELL

1. OWNER Homer Land
Name
POMERENE RT, BENSON ARIZONA
Address

2. LESSEE OR OPERATOR
Name
Address

3. DRILLER DAYTON E. HILL
Name
% M. C. Center, Casilla Correo No. 106 Asuncion, Paraguay South America
Address

4. LOCATION OF WELL: Twp. 17 S Rge. 20 E Section 2 SE ¼ NE ¼ NW ¼
10-acre subdivision

DESCRIPTION OF WELL

5. Total depth of hole 860 ft.
6. Type of casing 7" Wall to 200 ft., 5½ in. open hole from 200 ft. to 860
7. Diameter and length of casing 8 in. from 0 to 200 ft., in. from to, in. from to
8. Perforated from none, from to, from to, from to
9. Size of cuts Number cuts per foot
10. If screen was installed: Length ft. Diam. in. Type
11. Date completed July (Month) 1954 (Year) Deepened (Month) (Year)
12. Depth of water when drilled Unknown ft. If flowing well, so state
13. Present depth to water from land surface 50 ft. ft. Date of measurement July 31, 1958
14. If flowing well, state method of flow regulation

DISCHARGE DATA

15. Well discharge
gal. per min. or cu. ft. per sec. or miner's inches.
16. Method of discharge measurement
weir, orifice, current meter, etc.
17. Drawdown ft.
18. Annual discharge in acre-feet or number of hours pumped: 1944 a.f. or hrs. 1945 a.f. or hrs.
19. Purpose of use
20. Place of use: Twp. Rge. Section Acres.
(See 21) Legal subdivision
Twp. Rge. Section Acres.
Legal subdivision
21. If well is part of irrigation system or Irrigation District, Association or Company, omit 20 and give name of project.
MOD
Name of Project

EQUIPMENT DATA

22. Kind of pump none
turbine, centrifugal, etc.
23. Kind of power
electric, natural gas, etc.
24. Horsepower rating of motor

DO NOT WRITE IN THIS SPACE

OFFICE RECORD

Received August 5, 1958 by Flood
Filed August 15, 1958 by Flood
File No. (D-17-20) 2 bad

G-302 Rev.—5M—3-57

(See Other Side)

not producing.

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	6.5	Clay sand on gravel
6.5	505	clay
505	630	Layer of clay 4 to 10 ft ~~thick~~ layers of gravel 4 to 10 ft
630	690	clay
690	712	gravel
712	730	clay
730	760	gravel with 2 to 4 layer clay
760	785	clay
785	810	gravel & some clay
810	860	Boulders & clay

11965

RECEIVED AUG 5 1958 STATE LAND OFFICE

I hereby certify that I have read the foregoing statements, and that each and all of the items therein contained are true to the best of my knowledge and belief.

Homer F. Jack
Owner, ~~Operator or Driller~~

Address

Date Aug. 2, 1958

Log # 98

147✓

315922110162301

(D-17-20) 2 BAD.

LOG OF WATER WELL DRILLED BY

Drilled for **Ed Jones,** of **Pomerene.** Arizona.

Location S½,NW¼, Sec. **2.** Twp. **17 S.** Rge. **20 E.**

Date Completed Total Depth **580 ft.**

150	Ft. of **4**	Inch	Lb. or guage casing used	left in well.
540	Ft. of **1½**	Inch	Lb. or guage casing used	left in well.
	Ft. of	Inch	Lb. or guage casing used	left in well.
	Ft. of	Inch	Lb. or guage casing used	left in well.
	Ft. of	Inch	Lb. or guage casing used	left in well.

Type of Perforator used: **Not perforated.**

Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch

Diameter of Perforations. Inches
Length of Perforations. Inches
Depth at which water was first found. Ft.
Standing water level before perforation. Ft. After perforation Ft.
Change in water level while drilling.
Water level when first tested. Ft. Number of gallons per minute.
Draw down from standing level. Ft. " " " " "

Formation From Surface to Bottom of Well, Also Size of Gravel.

0	Ft. to **150**	Ft. **Soil, gravel.**		Ft. to	Ft.
150	Ft. to **555**	Ft. **Clay,**		Ft. to	Ft.
555	Ft. to **580**	Ft. **Sand, gravel.**		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.

Is well straight from top to bottom?
At what depth was pump set? **Windmill.** Ft.
Was extra pump suction pipe used? How many feet?
Type of drill rig and number used **Hydraulic, rotary.**
Total cost of well and pump installed complete. **50 cts. per foot, drilling only.**
Name and address of driller who drilled the well:

Date of this report **February 3, 1938.**

Additional information and comments:

Water came to within 7 ft. of the surface.

(D-17-20)2 b

Log # 99

DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

RECEIVED MAY 18 1982 DEPT. OF WATER RESOURCES

REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING
PRINT OR TYPE — FILE IN DUPLICATE

//

FOR OFFICE USE ONLY	
REGISTRATION NO. 55-	610353
FILE NO.	D(17-20)2 C a a
FILED (DATE)	5-18-82
AT (TIME)	9 am
INA	—
AMA	—

REGISTRATION FEE (CHECK ONE)	
EXEMPT WELL (NO CHARGE)	☐
NON-EXEMPT WELL – $10.00	☒

1. Name of Registrant:
   Matthews, Harold I.
   Star Route Box 13 (Address) Benson (City) Arizona (State) 85602 (Zip)

2. File and/or Control Number under previous groundwater law:
   _____ (File Number) 35- _____ (Control Number)

3. a. The well is located within the NE ¼ NE ¼ SW ¼, Section 2, of Township 17S N/S, Range 20E E/W, G & SRB & M, in the County of Cochise.
   b. If in a subdivision: Name of subdivision _____, Lot No. _____, Address _____.

4. The principal use(s) of water (Examples: irrigation - stockwater - domestic - municipal - industrial)
   irrigation, stockwater.

5. If for irrigation use, number of acres irrigated from well 185.506.

6. Owner of land on which well is located. If same as Item 1, check this box ☒
   _____ (Address) _____ (City) _____ (State) _____ (Zip)

7. Well data (If data not available, write N/A)
   a. Depth of Well 110 feet
   b. Diameter of casing 16 inches
   c. Depth of casing 110 feet
   d. Type of casing steel.
   e. Maximum pump capacity 1,000 gallons per minute.
   f. Depth to water 60 feet below land surface.
   g. Date well completed _____ (Month) _____ (Day) 1948 (Year).

8. The place(s) of use of water. If same as Item 3, check this box ☐.

NE ¼	SE ¼	SE ¼, Section	2	Township	17S	Range	20E
NW½ ¼	SW ¼	SE ¼, Section	2	Township	17S	Range	20E
all SW ¼			2		17S		20E

Attach additional sheet if necessary.

MICROFILMED

9. DATE 5/7/82 SIGNATURE OF REGISTRANT By Harold I. Matthews
   Wilford R. Richardson
   Wilford R. Richardson, Attorney

Log # 100

FORM W-9 2M 8-46 JAHN-TYLER

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

Report of Well Driller is required to be made and filed with the State Land Commissioner as required by Section 7, Chapter 12, Senate Bill No. 3, Seventeenth Legislature, First Special Session, 1948. A separate report shall be made for each well and filed within 30 days after completion of the well.

RECEIVED DEC 2 1948 STATE LAND DEPT. OF ARIZONA

1. Owner M. B. Naegle - Ok 13
Name
Pomerene, Arizona
Address

2. Lessee or Operator
Name
Address

3. Driller A. E. Jameson
Name
724 5th Ave. Safford, Arizona
Address

4. Location of well: Twp. 17 S Rge. 20 E Section 3 S.W ¼ N.E ¼ N.E ¼
10-acre subdivision

DESCRIPTION OF WELL

5. Total depth of hole 118 ft.

6. Type of casing Stove pipe

7. Diameter and length of casing 16 in. from 0 to 116, ___ in. from ___ to ___, ___ in. from ___ to ___

8. Method of sealing at reduction points

9. Perforated from 112' to 80', from 60' to 50', from ___ to ___, from ___ to ___

10. Size of cuts 5/8" Mills Knife Number cuts per foot 16 Holes to ft.

11. If screen was installed: Length ___ ft. Diam. ___ in. Type ___

12. Method of construction Drilled & Casing Driven
drilled, dug, driven, bored, jetted, etc.

13. Date completed November 25, 1948
Month Year

14. Depth to water 40 ft. ft.
If flowing well, so state.

15. Describe point from which depth measurements were made, and give sea-level elevation if available

16. If flowing well, state method of flow regulation

DISCHARGE DATA

17. Well discharge 1000 G.P.M.
gal. per min. or cu. ft. per sec. or miner's inches.

18. Method of discharge measurement Orifice
weir, orifice, current meter, etc.

19. Drawdown 60 ft. ft.

20. Purpose of use Irrigation of Farm Crops.

21. Place of use: Twp. ___ Rge. ___ Section ___ ___ Acres ___
(See 22) Legal subdivision

22. Purpose of use

Twp. ___ Rge. ___ Section ___ ___ Acres ___
Legal subdivision

22. If well is part of irrigation system of Irrigation District, Association or Company, omit 23 and give name of project.

Name of Project

(D-17-20) 3 aac

EQUIPMENT DATA

23. Kind of pump Turbine
turbine, centrifugal, etc.

24. Kind of power Natural Gas
electric, natural gas, etc.

25. Horsepower rating of motor 50

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 12-2-48 by lj
Filed 12-9-48 by lj
File No. (D-17-20)3 aac
Cross-referenced (Name) ___ by ___
Cross-referenced (Basin) ___ by ___
Cross-referenced ___ by ___

(See Other Side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	6	Top Soil
6	28	Clay
28	40	Sand
40	52	Blue Clay
52	61	Sand Gravel & Boulders
61	80	Red Mud
80	1 02	Sand & Gravel
102	105	Red Mud
105	112	Sand & Gravel
112	118	Red Clay

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller A. E. Jameson
Name

724 5th Avenue Safford, Arizona
Address

Date Nov. 15, 1948

Log # 101

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Eldon Barney
Name
P.O. Box 436 Pomerene, Az 85627
Mailing Address

2. Driller WEBER DRILLING
RT. 1 BOX 276B
ST. DAVID, AZ. 85630
Name
Mailing Address

3. Location of well: Twp 17S Rge. 20E, Sec. 3 SE¼, NE¼, NE¼

4. Permit No. 55-530046
(If issued)

JAN 2 2 1991
DIV.

DESCRIPTION OF WELL

5. Total depth of hole 130 ft.
6. Type of casing Steel
7. Diameter and length of casing 16 in. from 0 to 120, ____ in from ____ to ____.
8. Method of sealing at reduction points ←
9. Perforated from 60 to 120, from ____ to ____, from ____ to ____.
10. Size of cuts 3/16 x 3" Number of cuts per foot 24
11. If screen was installed: Length ____ ft. Diam ____ in. Type ____
12. Method of construction Drilled
drilled, dug, driven, bored, jetted, etc
13. Date started 11 (Month) 8 (Day) 90 (Year)
14. Date completed 11 (Month) 10 (Day) 90 (Year)
15. Depth to water 60 ft. (If flowing well, so state)
16. Describe point from which depth measurements were made, and give sea-level elevation if available Ground Level
17. If flowing well, state method of flow regulation: ____
18. Remarks: ____

DO NOT WRITE IN THIS SPACE

REG. No. 55-530046
File No. D(17-20)3 AAD
Entered ____ by ____

ENTERED MAR 01 1991

DWR-55-55-2/89

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	35	Clay
35	60	Sand
60	118	Gravels
118	120	Clay
		First water 60'
		Static 39'

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Donald E. Weber
Name

WEBER DRILLING
Address
RT. 1 BOX 276B
ST. DAVID, AZ. 85630
City State Zip

Date 1/12/91

Log # 103

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

RECEIVED AUG 29 1988 DEPT. OF WATER RESOURCES

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Chester W. Kreps
Name
P.O. Box 362, Benson, AZ 85602
Mailing Address

2. Driller WEBER DRILLING RT. 1 BOX 276B ST. DAVID, AZ 8563. PHONE 586-4800
Name
Mailing Address

3. Location of well: Twp 17S, Rge 20E, Sec. 4 NW¼, SW¼, NE¼

4. Permit No. 55-521867
(if issued)

DESCRIPTION OF WELL

5. Total depth of hole 1000 ft.

6. Type of casing Steel

7. Diameter and length of casing 8 in. from 0 to 60, 6 in from 0 to 1000.

8. Method of sealing at reduction points welded

9. Perforated from 940 to 1000, from ____ to ____, from ____ to ____.

10. Size of cuts 8" X 1/8" Number of cuts per foot 4

11. If screen was installed: Length ____ ft. Diam ____ in. Type ____

12. Method of construction drilled
drilled, dug, driven, bored, jetted, etc.

13. Date started 8 (Month) 1 (Day) 88 (Year)

14. Date completed 8 (Month) 4 (Day) 88 (Year)

15. Depth to water 930' ft. (If flowing well, so state.)

16. Describe point from which depth measurements were made, and give sea-level elevation if available Ground level

17. If flowing well, state method of flow regulation: Gate Valve

18. Remarks:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

REG. NO. 55-521867

File No. D(17-20)4acb

Entered ENTERED AUG 29 1988 By

DWR-55-6-Rev. 8/85

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
		First water 930' - flows 12 gpm
0	50	Sand
50	930	Clay
930	1000	decomposed granite

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Donald E. Weber
Name

WEBER DRILLING
RT. 1 BOX 276B
ST. DAVID, AZ 85630
PHONE 586-4800

City State Zip

Date 8/23/88

Log # 104

STATE OF ARIZONA

DEPARTMENT OF
WATER RESOURCES

AUG 1984
DEPARTMENT OF WATER RESOURCES

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner MATHIAS H. KONEN
Name
P.O. BOX 1642 BENSON AZ 85602
Address

2. Lessee or Operator
Name
Address

3. Driller B.J. DRILLING CO
Name
P.O. BOX 815 BENSON, ARIZ. 85602
Address

4. Location of well: Twp 17S Rge 20E Sec 4 SWXNEXNW

5. Permit No. 55-506220
(if issued)

DESCRIPTION OF WELL

6. Total depth of hole 1002 ft.

7. Type of Casing STEEL ASTM GR A-53

8. Diameter and length of casing 10 3/4" in. from +1 to 54, 8 5/8 in from +18" to 1002.

9. Method of sealing at reduction points PORTLAND GROUT

10. Perforated from 793 to 1002, from ____ to ____, from ____ to ____

11. Size of cuts .100 X 3 Number of cuts per foot 24

12. If screen was installed: Length NA ft. Diam ____ in. Type ____

13. Method of construction DRILLED - AIR ROTARY
drilled, dug, driven, bored, jetted, etc.

14. Date started 7 (Month) 23 (day) 84 (year)

15. Date completed 7 (Month) 27 (day) 84 (year)

16. Depth to water 620 - Flowing on completion - 5.7 G.P.M. ft. (If flowing well, so state.)

17. Describe point from which depth measurements were made, and give sea-level elevation if available.
Top of CASING

18. If flowing well, state method of flow regulation GATE VALVE

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-506220
Received ____ By ____
Entered 8-3-84 By SJ
File No. D(17-20)4bac

(Well log to appear on Reverse side)

DWR-6 5-83

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	10	Loose Sand
10	20	Clayey Sand
30	50	Sandy Clay
50	54	" "
54	280	Red Clay - Very Sticky
280	350	Red clay w thin sandstone lenses
350	620	Red clay w thin soft sand lenses, usally only a few inches thick - each sand layer below 560 producing small amts of water, total of app 5gpm at 620'
620	920	Lite Brown sandy clay
920	930	Clayey sand
930	1000	Very coarse sand to med gravel

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Robert R. Jackson
Name

B.J. Drilling Co. PO Box 815 Benson Az 85602
Address

Date 7/28/84

Log # 108

315817110160901
(D-17-20)11ACI

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER Arthur Barney
Name
Address

2. Lessee or Operator
Name
Address

3. DRILLER George Pardee
Name
Benson Arizona Box 296
Address

4. Location of well: Twp. 17 South Rge. 20 East Section 11 SE ¼ SW ¼ NE ¼
10-acre subdivision

5. Intention to Drill File No. D 17-20 11 acd Permit No.

DESCRIPTION OF WELL

6. Total depth of hole 127 ft.

7. Type of casing Steel Pipe

8. Diameter and length of casing 25 in. from 0 to 54, 16 in. from 0 to 127 in. from to

9. Method of sealing at reduction points Red Clay

10. Perforated from 50 to 127, from to, from to, from to

11. Size of cuts 1/4 in x 8 in Number of cuts per foot 12

12. If screen was installed: Length ft. Diam. in. Type

13. Method of construction Drilled
drilled, dug, driven, bored, jetted, etc.

14. Date started April (Month) 10 (Day) 1974 (Year)

15. Date completed April (Month) 25 (Day) 1974 (Year)

16. Depth of water 60 ft.
If flowing well, so state.

17. Describe point from which depth measurements were made, and give sea-level elevation if available

18. If flowing well, state method of flow regulation

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 6-9-75 by JMW

Filed by

File No. D(17-20)11 acd
27604

(Well Log to Appear on Reverse Side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	12	Top Soil
12	30	Yellow Sandy Shell
30	50	fine Crumy Sand
50	60	Clay
60	127	Sand & Gravel

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Pardee Well Drilling
Name

Box 296 Benson Ariz.
Address

Date May 1, 1974

2-73

Log # 110

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

RECEIVED SEP 24 1986 DEPT. OF WATER RESOURCES

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner C. Dean Karrchner
Name
Box 2288 Benson AZ 85602
Mailing Address

2. Driller WEBER DRILLING ~~RT. 1 BOX 276B~~ ST. DAVID, AZ 85630 PHONE 586-4800
Name
Mailing Address

3. Location of well: Twp 17S Rge 20E Sec 11 SE SE SW

4. Permit No. (if issued) 55-515181

DESCRIPTION OF WELL

5. Total depth of hole 600 ft.

6. Type of casing Steel

7. Diameter and length of casing 8 in. from 0 to 115.6 in from 0 to 600.

8. Method of sealing at reduction points welded

9. Perforated from ~~[illegible]~~ to ~~[illegible]~~, from 500 to 600, from ____ to ____.

10. Size of cuts 1/8 x 8 Number of cuts per foot 8

11. If screen was installed: Length ____ ft. Diam ____ in. Type ____

12. Method of construction drilled
drilled, dug, driven, bored, jetted, etc.

13. Date started 9 2 86
Month Day Year

14. Date completed 9 8 86
Month Day Year

15. Depth to water Flowing ft. (If flowing well, so state.)

16. Describe point from which depth measurements were made, and give sea-level elevation if available Ground Level

17. If flowing well, state method of flow regulation: Valved

18. Remarks:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-515181
Received ____ By ____
Entered ____ By ____
File No. D(17-20)11 cdd

DWR-55-6-Rev. 8/85

ENTERED SEP 30 1986

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	50	Clay
50	90	Sand + Gravel
90	470	Clay
470	600	Decomposed Granet Conglomerat
		First water 50'
		Artesian 470'

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Donald E. Weber
Name

WEBER DRILLING
RT. 1 BOX 276B
ST. DAVID, AZ 85630
PHONE 586-4800
Address

City State Zip

Date 9/22/86

Log # 111

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

(D)(17-20) 35 DC

wells 35

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER Leopol A Segura (Name)
Box 57 Rt 1 St. David Ariz 85630 (Address)

2. Lessee or Operator Same (Name)
(Address)

3. DRILLER Pardee Well Drilling (Name)
(Address)

4. Location of well: Twp. 8S Range Section 12 12430-7 ¼ 40 acres (10-acre subdivision)

5. Intention to Drill File No. Permit No.

DESCRIPTION OF WELL

6. Total depth of hole 618 ft.

7. Type of casing steel

8. Diameter and length of casing 8 in. from 0 to 120', 6" in. from 0 to 618' in. from to

9. Method of sealing at reduction points red clay

10. Perforated from 530 to 618, from to, from to, from to

11. Size of cuts ¼" X 8" Number of cuts per foot 5 rows per joint

12. If screen was installed: Length ft. Diam in. Type

13. Method of construction Drilled (drilled, dug, driven, bored, jetted, etc.)

14. Date started Aug (Month) 15 (Day) 1968 (Year)

15. Date completed Sept (Month) 30 (Day) 1968 (Year)

16. Depth of water Flowing (If flowing well, so state.) ft.

17. Describe point from which depth measurements were made, and give sea-level elevation if available

18. If flowing well, state method of flow regulation None flowing in pond

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 5-2-73 by Fur

Filed by

File No. D(17-20) 35 dcb

(Well Log to Appear on Reverse Side)

WD FORM G-201
REV. 4-27-53

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	28'	soil + sand
28	555	red clay
555	618	Water sand + Gravel

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Perdue Well Drilling
Name

Ronan Mt. Box 296
Address

Date April 30, 1973

RECEIVED
MAY 2 1973
STATE LAND
DEPT.

778

Log # 112

55-637519

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER Mrs. G. W. Stephens
Name
Address

2. Lessee or Operator
Name
Address

3. DRILLER Werns Well Co
Name
Huachuca City Ariz
Address

4. Location of well: Twp. 17S Rge. 20E Section 35 NE ¼ SE ¼ SE ¼
10-acre subdivision

5. Intention to Drill File No. B17-20 Permit No.

DESCRIPTION OF WELL

6. Total depth of hole 640 ft.

7. Type of casing plastic

8. Diameter and length of casing 6 in. from 0 to 640, in. from to, in. from to

9. Method of sealing at reduction points

10. Perforated from 680 to 640, from to, from to, from to

11. Size of cuts 4 Number of cuts per foot 3

12. If screen was installed: Length ft. Diam. in. Type

13. Method of construction bailled
drilled, dug, driven, bored, jetted, etc.

14. Date started 7 (Month) 21 (Day) 75 (Year)

15. Date completed 7 (Month) 30 (Day) 75 (Year)

16. Depth of water flowing ft.
If flowing well, so state.

17. Describe point from which depth measurements were made, and give sea-level elevation if available

18. If flowing well, state method of flow regulation line valve

ENTERED MAY -3 1993

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Received 8-4-75 by Fmr
Filed by
File No. D(17-20)35 dda
32987

(Well Log to Appear on Reverse Side)

MICROFILMED

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	5	top soil
5	41	sand
41	580	red clay
580	640	gravel

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller.....
Name

.....
Address

Date.....

RECEIVED AUG 4 1975 STATE LAND OFFICE

2-73

Log # 113

(D-17-20)35DDC

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55-217844

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

DEPTH OF BORING	DEPTH OF COMPLETED WELL
643 Feet Below Land Surface	643 Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
35 Feet Below Land Surface	5/28/08		☐ Valve ☐ Other:

Borehole			Installed Casing													
DEPTH FROM SURFACE		BOREHOLE DIAMETER (inches)	DEPTH FROM SURFACE		OUTER DIAMETER (inches)	MATERIAL TYPE (X)				PERFORATION TYPE (X)						SLOT SIZE IF ANY (inches)
FROM (feet)	TO (feet)		FROM (feet)	TO (feet)		STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	
0	100	12 1/4	0	100	8 5/8	✓				✓						
0	603	8	0	603	6 5/8	✓				✓						
603	643	8	603	643	6 5/8	✓								✓		1/8 x 8

Installed Annular Material											
DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (X)								FILTER PACK		
						BENTONITE						
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
0	100		✓									

WELL REGISTRATION NUMBER
55- 217844

Well Driller Report and Well Log

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	DESCRIPTION Describe material, grain size, color, etc.	Check (X) every interval where water was encountered
0	45	WEATHERED GRANITE	
45	540	SANDY RED CLAY	540'
540	600	SANDY RED CLAY W/ STREAKS OF GRAVELS	
600	643	DECOMPOSED GRANITE	

Log # 114

Reg. as (V-17-20)35 DDD
55-646492

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

Shaefer
Ex. 1.

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER Peter C. Moran
Name
Box 62 RR 1 St. David, Az. 85630
Address

2. Lessee or Operator
Name
Address

3. DRILLER Huachuca Pump Co. Inc.
Name
Hamel Road Huachuca City, Az. 85616
Address

4. Location of well: Twp. 17S Rge. 20E Section 35 SE ¼ SE ¼ SE ¼
10-acre subdivision

5. Intention to Drill File No. D(17-20) 35 ccc Permit No.

DESCRIPTION OF WELL

6. Total depth of hole 630 Ft. ft.

7. Type of casing 6" steel (0-95 ft. / 95-630 ft. 4" P.V.C. casing)

8. Diameter and length of casing 6" in. from 0 to 95 4" in. from 0 to 630 in. from to

9. Method of sealing at reduction points rubber-packer & cement grout

10. Perforated from 530 to 630, from to, from to, from to

11. Size of cuts 1/8" - 4" long Number of cuts per foot 3

12. If screen was installed: Length n/a ft. Diam. in. Type

13. Method of construction drilled
drilled, dug, driven, bored, jetted, etc.

14. Date started 6/1/80
Month Day Year

15. Date completed 6/2/80
Month Day Year

16. Depth of water 5 ft. from surface ft.
If flowing well, so state.

17. Describe point from which depth measurements were made, and give sea-level elevation if available surface

18. If flowing well, state method of flow regulation

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received by
Filed by
File No.
ENTERED MAY - 3 1983

(Well Log to Appear on Reverse Side)

MICROFILMED

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	3[illegible]	[illegible]
3.-	71.-	[illegible]
71	85	[illegible] (water)
85	365	Clay
365	38[illegible]	[illegible] (water)
380	530	Clay
530	630	[illegible] water

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller [illegible] Name

[illegible] Date

RECEIVED

2-73

Log # 115

(D-17-20)35DDD

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 214953

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

DEPTH OF BORING	DEPTH OF COMPLETED WELL
690 Feet Below Land Surface	690 Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
20 Feet Below Land Surface	5/9/07		☐ Valve ☐ Other:

Borehole			Installed Casing													
DEPTH FROM SURFACE		BOREHOLE DIAMETER (inches)	DEPTH FROM SURFACE		OUTER DIAMETER (inches)	MATERIAL TYPE (X)				PERFORATION TYPE (X)						SLOT SIZE IF ANY (inches)
FROM (feet)	TO (feet)		FROM (feet)	TO (feet)		STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	
0	80	12 1/4	0	80	8 5/8	✓				✓						
0	650	8	0	650	6 5/8	✓				✓						
650	680	8	650	680	6 5/8	✓								✓		1/8 X 6

Installed Annular Material											
DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (X)								FILTER PACK		
						BENTONITE						
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
0	80		✓									

WELL REGISTRATION NUMBER
55- 214953

Well Driller Report and Well Log

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	DESCRIPTION Describe material, grain size, color, etc.	Check (X) every interval where water was encountered
0	30	WEATHERED GRANITE	
30	500	SANDY RED CLAY	FIRST WATER 500'
500	580	SANDY RED CLAY W/ STREAKS OF WEATHERED GRANITE	
580	690	WEATHERED GRANITE	

Log # 116

ARIZONA DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

DEPARTMENT OF WR
SEP 2 8 1994
OPERATIONS DIV.

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Name: DAN VIVIAN
   Address: P.O. BOX 2347 (Street) BENSON (City) ARIZONA (State) 85602 (Zip)
2. Driller Name: RIVAL WATER WELL SPECIALTIES
   Address: P.O. BOX 80537 (Street) BAKERSFIELD (City) CALIF. (State) 93380-0537 (Zip)
3. Location: 17 N/S (Township) 20 E/W (Range) 36 (Section) SE 1/4 (10-acre) NE 1/4 (40-acre) SW 1/4 (160-acre)
4. Well Registration No. 55- 545449 (Required)
5. Permit No. — (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 520 ft.
7. Type of casing STEEL CONDUCTOR / PVC LINER
8. Diameter and length of casing 5 in. from 0 to 415, _____ in from _____ to _____.
9. Method of sealing at reduction points —
10. Perforated from 415 to 515, from _____ to _____, from _____ to _____.
11. Size of cuts _____ Number of cuts per foot _____
12. If screen was installed: Length 100 ft. Diam 5 in. Type 0.05"
13. Method of construction DRILLED
    (drilled, dug, driven, bored, jetted, etc)
14. Date started 09 (Month) 01 (Day) 94 (Year)
15. Date completed 09 (Month) 07 (Day) 94 (Year)
16. Depth to water FLOWING ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
    FROM LAND SURFACE
18. If flowing well, state method of flow regulation: HAND VALVE
19. Remarks: NONE

DO NOT WRITE IN THIS SPACE
ENTERED NOV 1 8 1994
55-545449
D(17-20)36CAD

DWR-55-55-7/91 (Rev.)

LOG OF WELL — VIVIAN

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encounterd, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	34	SILTY CLAY W/ ORGANIC MATERIAL
34	55	GRAVEL
55	70	CLAY
70	105	GRAVEL
105	375	CLAY
375	405	CLAY W/ SAND
405	440	CLAY & SAND - INTERBEDDED
440	520	SANDY GRAVEL
		ARTESIAN WATER REACHED THE SURFACE

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: RIVAL WATER WELL SPECIALIST.

P.O. BOX 80537
Street

BAKERSFIELD CA 93380
City **State** **Zip**

Date 09/22/94

Log # 117

ARIZONA DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

DEPARTMENT OF WR
SEP 29 1994
OPERATIONS DIV.

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Name: RITA CAROLYN MCCANN
   Address: RT 1 Box 48C-1 ST. DAVID ARIZONA 85630
   Street City State Zip
2. Driller Name: RIVAL WATER WELL SPECIALTIES
   Address: P.O. Box 80537 BAKERSFIELD CALIF 93380-0537
   Street City State Zip
3. Location: 17 N/S (Township) 20 E/W (Range) 36 (Section) SE 1/4 (10-acre) NE 1/4 (40-acre) SW 1/4 (160-acre)
4. Well Registration No. 55- 545451 (Required)
5. Permit No. ____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 560 ft.
7. Type of casing STEEL CONDUCTOR / PVC LINER
8. Diameter and length of casing 5 in. from 0 to 447, 10 3/8 OD in from 0' to 131'.
9. Method of sealing at reduction points n/a
10. Perforated from 447 to 547, from – to –, from – to –.
11. Size of cuts none Number of cuts per foot none
12. If screen was installed: Length 100 ft. Diam 5 in. Type 0.050 SLOT
13. Method of construction DRILLED
    (drilled, dug, driven, bored, jetted, etc)
14. Date started SEPTEMBER 14 1994
    Month Day Year
15. Date completed SEPTEMBER 21 1994
    Month Day Year
16. Depth to water FLOWING ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
    FROM LAND SURFACE
18. If flowing well, state method of flow regulation: HAND VALVE
19. Remarks: none

DO NOT WRITE
55-545451
D(17-20)36CAD
ENTERED OCT 21 1994
Entered ____ By ____

DWR-55-55-7/91 (Rev.)

LOG OF WELL – McCann

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encounterd, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	20	CLAYEY SILT
20	40	SILTY CLAY WITH SOME GRAVEL
40	50	CLAYEY SAND
50	60	SANDY CLAY WITH SOME GRAVE
60	90	SANDY GRAVEL
90	100	CLAYEY SAND
100	109	CLAYEY GRAVEL
109	135	CLAY WITH SOME GRAVEL
135	180	CLAY
180	220	CLAY WITH SOME SAND
220	280	SANDY CLAY
280	560	LOST CIRCULATION

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: RIVAL WATER WELL SPECIALTIES

P.O. BOX 80537
Street

BAKERSFIELD, CALIFORNIA 93380
City **State** **Zip**

Date 09/27/94

Log # 118

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

STATE OF ARIZONA

DEPARTMENT OF
WATER RESOURCES

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Leo E. Betancourt
Name
RT. 1 Box 112 ST David AZ 85630
Address

2. Lessee or Operator _____
Name
_____
Address

3. Driller WEBER DRILLING
RT. 1 BOX 276B
ST. DAVID, AZ 85630
PHONE 586-4800
Name
_____
Address

4. Location of well: Twp 17S Rge 20E Sec 36

5. Permit No. 55-508401
(if issued)

DESCRIPTION OF WELL

6. Total depth of hole 140' ft.
7. Type of Casing 8 5/8 x .188 Steel
8. Diameter and length of casing 8 5/8 in. from 0 to 140, _____ in from _____ to _____.
9. Method of sealing at reduction points —
10. Perforated from — to —, from _____ to _____, from _____ to _____
11. Size of cuts — Number of cuts per foot —
12. If screen was installed: Length — ft. Diam — in. Type —
13. Method of construction drilled
drilled, dug, driven, bored, jetted, etc.
14. Date started 7 (Month) 26 (day) 84 (year)
15. Date completed 8 (Month) 3 (day) 84 (year)
16. Depth to water 20' ft. (If flowing well, so state.)
17. Describe point from which depth measurements were made, and give sea-level elevation if available. Ground Level
18. If flowing well, state method of flow regulation —
19. REMARKS: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-508401
Received _____ By _____
Entered 9.21.84 By S
File No. D(17-20)36cca

(Well log to appear on Reverse side)

RECEIVED SEP 20 1984 DEPT. OF WATER RESOURCES

DWR-55-6-5/83 VERIFIED

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	20	Clay
20	25	Gravel First water
25	70	Clay
70	72	Gravel
72	130	Clay
130	140	Gravel

I hereby certify that this well was drilled by me (or under my supervison), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Ronald E. Weber
Name

WEBER DRILLING
RT. 1 BOX 276B
ST. DAVID, AZ 85630
PHONE 586-4800
Address

City State Zip

Date 8/9/84

Log # 119

(D-17-20)36CCB

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 200246

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

Borehole			Installed Casing													
DEPTH FROM SURFACE		BOREHOLE DIAMETER (inches)	DEPTH FROM SURFACE		OUTER DIAMETER (inches)	MATERIAL TYPE (X)				PERFORATION TYPE (X)						SLOT SIZE IF ANY (inches)
FROM (feet)	TO (feet)		FROM (feet)	TO (feet)		STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	
0	64'	15"	+1'	64'	10"	X				X						
64	630'	9 1/4"	+1'	530'	6"	X				X						
			530'	630'	6"	X								X		

Installed Annular Material											
DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (X)								FILTER PACK		
						BENTONITE						
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
0	64'			X								

DEPTH OF BORING 630' Feet Below Land Surface

DEPTH OF COMPLETED WELL 630' Feet Below Land Surface

DWR-55-55B-10/01 (Rev.)

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 200246

SECTION 5: GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	DESCRIPTION Describe material, grain size, color, etc.	Check (X) every interval where water was encountered
0	12'	RED SANDY CLAY	
12	51'	RED CLAY	
51	61'	SANDY CLAY & GRAVEL	
61	519'	RED CLAY	X
519	630	RED CLAY & SANDY STRIPS	X

Log # 120

(D-17-20)36CCB

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 205946

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

DEPTH OF BORING	DEPTH OF COMPLETED WELL
600 Feet Below Land Surface	600 Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
Flow 2gpm Feet Below Land Surface	4/2/05	—	☑ Valve ☐ Other:

Borehole			Installed Casing													
DEPTH FROM SURFACE		BOREHOLE DIAMETER (inches)	DEPTH FROM SURFACE		OUTER DIAMETER (inches)	MATERIAL TYPE (X)				PERFORATION TYPE (X)						SLOT SIZE IF ANY (inches)
FROM (feet)	TO (feet)		FROM (feet)	TO (feet)		STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	
0	140	12¼	0	140	8 5/8	X				X						
0	446	8	0	446	6 5/8	X				X						
446	600	6	440	560	4½	X				X						
			560	600	4½	X								X		1/8 x 8

Installed Annular Material

DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (X)								FILTER PACK		
						BENTONITE						
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
0	140			✓								

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 205946

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	DESCRIPTION Describe material, grain size, color, etc.	Check (X) every interval where water was encountered
0	18	WEATHERED GRANITE	
18	105	RED CLAY	105
105	110	SANDSTONE	
110	300	RED CLAY	
300	305	SANDSTONE	
305	480	RED CLAY	
480	520	RED CLAY W/GRAVEL STREAKS	
520	600	VOLCANIC CONGLOMORATE	

Log # 121

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North 3rd Street
Phoenix, Arizona 85004

RECEIVED
JUN 20 2002
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. B-J DRILLING COMPANY, INC.
P.O. BOX 815
BENSON, AZ 85602-0815

2. Owner Name: KRIS KNUDTSON
Address: 3411 SILVER SADDLE DR. LAKE HAVASU, AZ 86406
City State Zip

3. Location: 17 N/S 20 E/W 36 ¼ SE ¼ SW ¼ SW
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55-578675 (Required)

5. Permit No. _____ (If Issued)

DESCRIPTION OF WELL

6. Total depth of hole 585 ft.
7. Type of casing STEEL / PVC
8. Diameter and length of casing 7" in. from +1 to 115, 5" in from 0 to 585
9. Method of sealing at reduction points Portland Cement
10. Perforated from 525 to 585, from _____ to _____ from _____ to _____
11. Size of cuts 1/8 Number of cuts per foot 6
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction drilling
(drilled, dug, driven, bored, jetted, etc)
14. Date started 5/5/2000
Month Day Year
15. Date completed 5/5/2000
Month Day Year
16. Depth to water 86 ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea_level elevation if availabl
top of casing
18. If flowing well, state method of flow regulation: _____
19. Remarks: _____

ANSWERED AUG 5 2002

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55- 578675
File No. D(17-20) 36 CCD
Received _____ By _____
Entered _____ By _____

DWR-55-55-7/95 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	120	sandy clay
120	480	dense red clay
480	585	gravel
		water first encountered at 480'

I hereby certify that this well was drilled by me (or under by supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: B-J DRILLING COMPANY, INC.

P.O. BOX 815
Street

BENSON, AZ 85602-0815
City State Zip Phone No.

Robert R. Jackson 7/22/00
Signature of Driller Date

ANSWERED AUG 5 2002

Log # 122

STATE OF ARIZONA

DEPARTMENT OF
WATER RESOURCES

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Earl Kittleson (Name)
P. O. Box (Address) St. David, AZ 85630

2. Lessee or Operator _____ (Name)
_____ (Address)

3. Driller Huachuca Pump Co., Inc. (Name)
Hamel Rd., (Address) Huachuca City, AZ 85616

4. Location of well: NESESW 36T17SR20E

5. Permit No. _____
(if issued)

DESCRIPTION OF WELL

6. Total depth of hole 500 ft.
7. Type of Casing PVC
8. Diameter and length of casing 4 in. from 0 to 500, _____ in from _____ to _____.
9. Method of sealing at reduction points _____
10. Perforated from 420 to 500, from _____ to _____, from _____ to _____
11. Size of cuts 1/8 x 4 Number of cuts per foot 3
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction DRILLED
drilled, dug, driven, bored, jetted, etc.
14. Date started 7 (Month) 14 (day) 80 (year)
15. D te completed 7 (Month) 15 (day) 80 (year)
16. Depth to water FLOWING ft. (If flowing well, so state.)
17. Describe point from which depth measurements were made, and give sea-level elevation if available.
_____
18. If flowing well, state method of flow regulation VALVES
19. REMARKS: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-85110
Received _____ By _____
Entered 8-6-80 By Pat
File No. D(17-20)36 cda

(Well log to appear on Reverse side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	2	TOP SOIL
2	425	CLAY
425	500	SAND WITH WATER WELL is ARTESIAN AND Flowing

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Hunsaker Pump & Inc
Name

Hamel Rd Hc AZ 85616
Address

Date 7-16-80

RECEIVED AUG 6 1980 ARIZONA WATER COMMISSION

2-73

Log # 123

RECEIVED
JUL - 3 [redacted]
RECORDS MGT

ARIZONA DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Name: Don Callaway
   Address: P.O. Box 52C St. David AZ 85630
   Street City State Zip
2. Driller Name: WEBER DRILLING
   Address: RT. 1 BOX 276B ST. DAVID, AZ. 85630
   Street City State Zip
3. Location: 17 N/S Township; 20 E/W Range; 36 Section; NW 1/4 10-acre; SE 1/4 40-acre; SW 1/4 160-acre
4. Well Registration No. 55-544251 (Required)
5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 650 ft.
7. Type of casing Steel
8. Diameter and length of casing 6 in. from 550 to 650, 8 in from 0 to 550.
9. Method of sealing at reduction points welded
10. Perforated from 550 to 650, from _____ to _____, from _____ to _____.
11. Size of cuts _____ Number of cuts per foot _____
12. If screen was installed: Length 100 ft. Diam 6 5/8 in. Type .050
13. Method of construction Drilled (drilled, dug, driven, bored, jetted, etc)
14. Date started 9 (Month) 10 (Day) 94 (Year)
15. Date completed 9 (Month) 21 (Day) 94 (Year)
16. Depth to water Flows ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
    Ground Level
18. If flowing well, state method of flow regulation: _____
19. Remarks: Well cemented from 0-470'

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Re 55-544251 CDB
Fi D(17-20)36AAD
Re ENTERED JUL 5 1996
En

DWR-55-55-7/91 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encounterd, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	120	Silty Clay
120	160	Sandy Gravel
160	450	Clay
450	605	Clay w/ Sand streaks
605	650	Sandy Gravel
		First water 120'
		2nd water 450'
		Static Flows 3gpm

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: WEBER DRILLING

Street: RT. 1 BOX 276B

City: ST. DAVID, AZ. State: 85630 Zip:

X

Date: 9/21/94

Log # 124

(D-17-20)36CDC

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55-204222

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

Borehole			Installed Casing														
DEPTH FROM SURFACE		BOREHOLE DIAMETER (inches)	DEPTH FROM SURFACE		OUTER DIAMETER (inches)	MATERIAL TYPE (X)				PERFORATION TYPE (X)						SLOT SIZE IF ANY (inches)
FROM (feet)	TO (feet)		FROM (feet)	TO (feet)		STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	
0	218	12 1/4	0	218	8 5/8	X				X						
218	766	8	0	555	6 5/8	X				X						
			555	766	6 5/8	X								X		1/8 X P

Installed Annular Material											
DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (X)								FILTER PACK		
						BENTONITE						
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
0	218			X								

DEPTH OF BORING		DEPTH OF COMPLETED WELL	
766	Feet Below Land Surface	8/3/04	Feet Below Land Surface

DWR-55-55B-10/01 (Rev.)

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 204222

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	DESCRIPTION Describe material, grain size, color, etc.	Check (X) every interval where water was encountered
0	30	Weathered Granite	
30	50	Red Clay	
50	80	Volcanic Conglomerate	
80	140	Red Clay	
140	163	Volcanic Conglomerate	✓
163	455	Red Sand Clay	
455	530	Red Clay w/ Gravel Streaks	✓
530	766	Volcanic Conglomerate	✓

Log # 125

STATE OF ARIZONA

ARIZONA WATER COMMISSION
WATER RIGHTS ADMINISTRATION

55-805150

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the Az. Water Commission following completion of the well.

1. OWNER Eugene Adrian (Name)
St. David, Arizona 85630 (Address)

2. Lessee or Operator ..... (Name)
..... (Address)

3. DRILLER Huachuca Pump Co Inc (Name)
Hamer Rd Huachuca AZ 85616 (Address)

4. Location of well: Twp. 17 S Rge. 20 E Section 36 SW ¼ SE ¼ SW ¼ (10-acre subdivision)

5. Intention to Drill File No. D-(17-20) 36 cdc Permit No. 83897

DESCRIPTION OF WELL

6. Total depth of hole 630 ft.
7. Type of casing PVC
8. Diameter and length of casing 4 in. from 0 to 630 in. from ..... to ....., ... in. from ..... to .....
9. Method of sealing at reduction points .....
10. Perforated from 570 to 630 from ..... to ....., from ..... to ....., from ..... to .....
11. Size of cuts 1/8 X 4 Number of cuts per foot 3
12. If screen was installed: Length ..... ft. Diam. ..... in. Type .....
13. Method of construction Drilled (drilled, dug, driven, bored, jetted, etc.)
14. Date started 4 - 12 - 80 (Month Day Year)
15. Date completed 4 - 12 - 80 (Month Day Year)
16. Depth to water Flowing (If flowing well, so state.) ft.
17. Describe point from which depth measurements were made, and give sea-level elevation if available .....
18. If flowing well, state method of flow regulation Valves
19. REMARKS: .....

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received ..... by .....
Filed 6-24-80 by CJT
File No. D(17-20) 36 cdc 83897

(Well Log to Appear on Reverse Side)

WD FORM G-301
REV. 4-17-53

RECEIVED
JUN 23 1980
ARIZONA WATER
COMMISSION

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	2	Top Soil
2	570	Clay
570	630	Sand Gravel with Artesian Waters Flowing

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Huachuca Pump Co Inc
Name

Hamel Rd Huachuca City Az 85616
Address

Log # 126

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

RECEIVED AUG 26 1987 DEPT. OF WATER RESOURCES

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Russell Thompson
Name
Rt-1 Box 48C St. David, Az 85630
Mailing Address

2. Driller WEBER DRILLING RT. 1 BOX 276B ST. DAVID, AZ 85630 PHONE 586-4800
Name

Mailing Address

3. Location of well: Twp. 17S Rge. 20E Sec. 36 SW1/4, NW1/4, SE1/4

4. Permit No. 55-518592
(if issued)

DESCRIPTION OF WELL

5. Total depth of hole 109 ft.

6. Type of casing Steel

7. Diameter and length of casing 8 in. from 0 to 20, 6 in from 0 to 109.

8. Method of sealing at reduction points welded

9. Perforated from 89 to 109, from ____ to ____, from ____ to ____.

10. Size of cuts 8" x 1/8" Number of cuts per foot 4

11. If screen was installed: Length ____ ft. Diam ____ in. Type ____

12. Method of construction drilled
drilled, dug, driven, bored, jetted, etc.

13. Date started 8 (Month) 4 (Day) 87 (Year)

14. Date completed 8 (Month) 5 (Day) 87 (Year)

15. Depth to water ____ ft. (If flowing well, so state.)

16. Describe point from which depth measurements were made, and give sea-level elevation if available Ground Level

17. If flowing well, state method of flow regulation: ____

18. Remarks: ____

55-518592

D(17-20)36 dbc

ENTERED AUG 26 1987

Entered ____ By ____

DWR-55-6-Rev. 8/85

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	40	Silty Clay
40	65	Sand & gravel first water 40'
65	80	Clay STATIC 25'
80	109	Sand & gravel

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Donald E. Weber
Name

WEBER DRILLING
RT. 1 BOX 270B
ST. DAVID, AZ 85630
PHONE 586-4800

City State Zip

Date 8/20/89

Log # 127

(D-17-20)36 DCB

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 204536

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

DEPTH OF BORING	DEPTH OF COMPLETED WELL
540 Feet Below Land Surface	540 Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
44 Feet Below Land Surface	12/4/04		☒ Valve ☐ Other:

Borehole			Installed Casing													
DEPTH FROM SURFACE		BOREHOLE DIAMETER (inches)	DEPTH FROM SURFACE		OUTER DIAMETER (inches)	MATERIAL TYPE (X)				PERFORATION TYPE (X)						SLOT SIZE IF ANY (inches)
FROM (feet)	TO (feet)		FROM (feet)	TO (feet)		STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	
0	60	12¼	+1	61	8⅝	X				X						
61	525	6½	0	425	5		X			X						
			425	525	5		X							X		⅛ x 6

Installed Annular Material

DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (X)								FILTER PACK		
						BENTONITE						
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
0	61			X								
									No annular gravel installed			

DWR-55-55B-10/01 (Rev.)

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 204536

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	DESCRIPTION Describe material, grain size, color, etc.	Check (X) every interval where water was encountered
0	100	Gravel	X
100	125	Gravel, Large	
125	540	Clay	X

Log # 128

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004

RECEIVED JUL - 8 1996 RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. VERN PENSE DRILLING
RR 1 BOX 907
WILLCOX, AZ 85643

2. Owner Name: John Ritz
Address: _____
Street City State Zip

3. Location: 17 ~~N~~/S 20 E/~~W~~ 36 ¼ NW ¼ SW ¼ SE
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55- 553774 (Required)

5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 640 ft.
7. Type of casing steel
8. Diameter and length of casing 8 in. from 0 to 147.6 in from 0 to 398 5" 370 to 640
9. Method of sealing at reduction points cement grout
10. Perforated from 580 to 640 from _____ to _____ from _____ to _____
11. Size of cuts 3/16 Number of cuts per foot 8 rows
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction drilled
(drilled, dug, driven, bored, jetted, etc)
14. Date started 5 16 1996
Month Day Year
15. Date completed 7 3 1996
Month Day Year
16. Depth to water 0 ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
_____
18. If flowing well, state method of flow regulation: gate valve
19. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-553774
File No. D(17-02)36DCB
Received _____ By _____
Entered ENTERED JUL 11 1996 By _____

DWR-55-55-7/95 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	55	overburden
55	65	sand
65	250	clay
250	255	sand
255	625	clay
625	640	sand

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: Vern Pence

RR1 Box 907
Street

Weiser Or 83673 (520) 384-2601
City State Zip Phone No.

Signature of Driller Date

Log # 129

(D-17-20)36DCC

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55-215849

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

DEPTH OF BORING	DEPTH OF COMPLETED WELL
133 Feet Below Land Surface	128 Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
Feet Below Land Surface			☐ Valve ☐ Other:

Borehole			Installed Casing														
DEPTH FROM SURFACE		BOREHOLE DIAMETER (inches)	DEPTH FROM SURFACE		OUTER DIAMETER (inches)	MATERIAL TYPE (X)				PERFORATION TYPE (X)						SLOT SIZE IF ANY (inches)
FROM (feet)	TO (feet)		FROM (feet)	TO (feet)		STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	
0	133	8"	+2	20	4.5	X			Sch.40	X						
			20	115	4.5		X			X						
			115	128	4.5		X							X		.020

Installed Annular Material

DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (X)								FILTER PACK		
						BENTONITE						
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
133	128						X		3/8 hole plug			
128	105									X		8-12
105	102									X		#60
102	99						X		3/8 hole plug			
99	20					X						
20	0			X								

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 215849

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	DESCRIPTION Describe material, grain size, color, etc.	Check (X) every interval where water was encountered
0	4	Silty Sand With Clay - Fine gravel	
4	97	Sandy Clay. - Occasional Gravel	
97	118	Clayey Sand With Gravel	
118	120	Poorly graded. Silty Sand	
120	122.5	Sandy Clay	
122.5	125	Well graded Sand & Gravels	
125	131	Fat Clay (ST. David)	

Log # 135

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER George McRae
Name
Address

2. Lessee or Operator
Name
Address

3. DRILLER VERN'S WELL CO. BOX 4698 HUACHUCA CITY, ARIZ. 85616
Name
Address

4. Location of well: Twp. 17S Rge. 21E Section 31 SE ¼ NE ¼ SE ¼
10-acre subdivision

5. Intention to Drill File No. Permit No.

DESCRIPTION OF WELL

6. Total depth of hole 320 ft.

7. Type of casing P.V.C.

8. Diameter and length of casing 6 in. from 0 to 320 in. from to , in. from to

9. Method of sealing at reduction points

10. Perforated from 240 to 320, from to , from to , from to

11. Size of cuts 1/4 Number of cuts per foot 3

12. If screen was installed: Length ft. Diam. in. Type

13. Method of construction drilled
drilled, dug, driven, bored, jetted, etc.

14. Date started 7 20 77
Month Day Year

15. Date completed 7 22 77
Month Day Year

16. Depth of water 2 feet P M ft.
If flowing well, so state.

17. Describe point from which depth measurements were made, and give sea-level elevation if available
ground level

18. If flowing well, state method of flow regulation 1" valve

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received by
Filed by
File No. D(17-21)31 dad
35-46122

(Well Log to Appear on Reverse Side)

LOG OF WELL

RECEIVED
AUG 17 1977
STATE LAND DEPT.
163

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	5	Top soil
5	65	Sand
65	250	red Clay
250	320	sand and gravel

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller VERN'S WELL CO.
BOX 4858
HUACHUCA CITY, ARIZ. 85616
Address

Date 8-10-77

2-73

Log # 136

(D-17-21)31DCC

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 594823

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

Borehole			Installed Casing														
DEPTH FROM SURFACE		BOREHOLE DIAMETER (inches)	DEPTH FROM SURFACE		OUTER DIAMETER (inches)	MATERIAL TYPE (X)				PERFORATION TYPE (X)						SLOT SIZE IF ANY (inches)
FROM (feet)	TO (feet)		FROM (feet)	TO (feet)		STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	
0	20	14 1/4	0	20	10 5/8	✓				✓						
0	95	12 1/4	0	95	8 5/8	✓				✓						
95	155	12 1/4	95	155	8 5/8	✓								✓		1/8x8

Installed Annular Material											
DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (X)								FILTER PACK		
						BENTONITE						
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
0	20		✓									

DEPTH OF BORING		DEPTH OF COMPLETED WELL	
155	Feet Below Land Surface	155	Feet Below Land Surface

DWR-55-55B-10/01 (Rev.)

ANSWERED MAR - 7 2003

WELL REGISTRATION NUMBER
55- 594823

Well Driller Report and Well Log

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	DESCRIPTION Describe material, grain size, color, etc.	Check (X) every interval where water was encountered
0	15	BROWN CLAY	
15	18	SANDY GRAVEL	
18	35	BROWN CLAY	
35	37	SANDY GRAVEL	
37	80	BROWN CLAY	
80	153	WEATHERED GRANITE	
153	155	RED CLAY	

Log # 137

(D-17-21)31DCD

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 217960

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

DEPTH OF BORING	DEPTH OF COMPLETED WELL
436 Feet Below Land Surface	436 Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
70 Feet Below Land Surface	7/10/08		☐ Valve ☐ Other:

Borehole			Installed Casing													
DEPTH FROM SURFACE		BOREHOLE DIAMETER (inches)	DEPTH FROM SURFACE		OUTER DIAMETER (inches)	MATERIAL TYPE (X)				PERFORATION TYPE (X)						SLOT SIZE IF ANY (inches)
FROM (feet)	TO (feet)		FROM (feet)	TO (feet)		STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	
0	40	12 1/4	0	40	8 5/8	✓				✓						
0	370	8	0	370	6 5/8	✓				✓						
370	436	8	370	436	6 5/8	✓								✓		1/8x8

Installed Annular Material

DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (X)								FILTER PACK		
						BENTONITE						
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
0	40		✓									

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 217960

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	DESCRIPTION Describe material, grain size, color, etc.	Check (X) every interval where water was encountered
0	20	WEATHERED GRANITE	
20	340	SANDY RED CLAY	
340	400	DECOMPOSED GRANITE	340'
400	436	RED CLAY W/ STREAKS OF BROWN SANDSTONE	

Log # 138

(D-17-21)31 DDA

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 220929

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

DEPTH OF BORING	DEPTH OF COMPLETED WELL
380 Feet Below Land Surface	375 Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
40 ft Feet Below Land Surface	estimated		☐ Valve ☐ Other:

will file exact when pump is set.

Borehole			Installed Casing													
DEPTH FROM SURFACE		BOREHOLE DIAMETER (inches)	DEPTH FROM SURFACE		OUTER DIAMETER (inches)	MATERIAL TYPE (X)				PERFORATION TYPE (X)						SLOT SIZE IF ANY (inches)
FROM (feet)	TO (feet)		FROM (feet)	TO (feet)		STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	
0	20	8 3/4	0	20	5 9/16	x				x						
20	335	6 1/2	20	335			x			x						
335	375	6 1/2	335	375			x							x		1/8x6x4/ft

Installed Annular Material

DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (X)								FILTER PACK		
						BENTONITE						
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
0	20			x								

WELL REGISTRATION NUMBER
55- 220929

Well Driller Report and Well Log

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	DESCRIPTION Describe material, grain size, color, etc.	Check (X) every interval where water was encountered
0	110	SANDY CLAY	
110	133	SAND & GRAVEL	
133	330	CLAY	
330	380	SAND & GRAVEL	X

Log # 139

(D-17-21) 31 DDD

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 594574

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

Borehole			Installed Casing														
DEPTH FROM SURFACE		BOREHOLE DIAMETER (inches)	DEPTH FROM SURFACE		OUTER DIAMETER (inches)	MATERIAL TYPE (X)				PERFORATION TYPE (X)						SLOT SIZE IF ANY (inches)
FROM (feet)	TO (feet)		FROM (feet)	TO (feet)		STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	
0	140	17½	0	100	12¾	✓				✓						
			100	140	12¾	✓								✓		1/8x8

Installed Annular Material											
DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (X)								FILTER PACK		
						BENTONITE						
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
0	25		✓									
25	140										✓	

DEPTH OF BORING 140 Feet Below Land Surface

DEPTH OF COMPLETED WELL 140 Feet Below Land Surface

DWR-55-55B-10/01 (Rev.)

WELL REGISTRATION NUMBER
55- 594574

Well Driller Report and Well Log

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	DESCRIPTION Describe material, grain size, color, etc.	Check (X) every interval where water was encountered
0	105	BROWN SANDY CLAY	
105	135	WEATHERED GRANITE (GRAVELS)	
135	140	RED CLAY	

Log # 140

55-642081

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER Donovan S. Nelson - Box 145 - St David, Ariz. 85631
Name
Address

2. Lessee or Operator
Name
Address

3. DRILLER George Pardue Box 216 - Benson Arizona 85602
Name
Address

4. Location of well: Twp. 17 South Rge. 21 East Section 32 N2 ¼ SW ¼ SW ¼
10-acre subdivision

5. Intention to Drill File No. Permit No.

DESCRIPTION OF WELL

6. Total depth of hole 300' ft.
7. Type of casing steel pipe
8. Diameter and length of casing 8 in. from 0 to 120' 6 in. from 0 to 300 in. from to
9. Method of sealing at reduction points red Clay
10. Perforated from 200 to 245, from to, from to, from to
11. Size of cuts 1/8" Number of cuts per foot 4
12. If screen was installed: Length ft. Diam. in. Type
13. Method of construction Drilled
drilled, dug, driven, bored, jetted, etc.
14. Date started 8 (Month) 10 (Day) 72 (Year)
15. Date completed 8 (Month) 26 (Day) 72 (Year)
16. Depth of water Grammed level ft.
If flowing well, so state.
17. Describe point from which depth measurements were made, and give sea-level elevation if available
18. If flowing well, state method of flow regulation

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Received 6-20-74 by FMV
Filed by
File No. D(17-21)32 cca 2241

(Well Log to Appear on Reverse Side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	40	top soil & sand
40	85	yellow Clay sandy little water
85	245	red Clay
245	300	sand Water

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Pardee Well Drilling
Name

Benson Ariz Box 296
Address

Date 6-17-74

RECEIVED
JUN 20 1974
STATE LAND DEPT.

2-73

Log # 141

FORM W-2 10-45 JAHN-TYLER

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REGISTRATION OF WELL

Registration of well existing as of Oct. 3, 1945 is hereby made and filed with the State Land Commissioner as required by Section 5, Chapter 12, Senate Bill No. 3, Seventeenth Legislature, First Special Session 1945.

RECEIVED MAR 11 1947 State Water Division Land Department

1. Owner A.M. Martin (St. Donald)? Name
Address

2. Lessee or Operator
Name
Address

3. Driller E.K. Snyder Name
Address E Kamid Arizona

4. Location of well: Twp. 17S Rge. 21E Section 32 SW ¼ SW ¼ SE ¼
10-acre subdivision

DESCRIPTION OF WELL

5. Total depth of hole 105 ft.
6. Type of casing 8" Pipe
7. Diameter and length of casing 8 in. from 0 to 105 ft in. from to , in. from to
8. Method of sealing at reduction points
9. Perforated from 40 ft to 100 ft from to from to from to
10. Size of cuts ½ X 8" Number cuts per foot 4 cuts [illegible]
11. If screen was installed: Length ft. Diam. in. Type
12. Method of construction Drilled
drilled, dug, driven, bored, jetted, etc.
13. Date completed Feb 1947 Month Year Deepened Month Year
14. Depth to water when drilled 60 ft ft.
If flowing well, so state.
15. Present depth to water 54 ft ft. Date of measurement 2-15-47
If flowing well, so state.
16. Describe point from which depth measurements were made, and give sea-level elevation if available [illegible]
17. If flowing well, state method of flow regulation

DISCHARGE DATA

18. Well discharge
gal. per min. or cu. ft. per sec. or miner's inches.
19. Method of discharge measurement
weir, orifice, current meter, etc.
20. Drawdown ft.
21. Annual discharge in acre-feet, or number of hours pumped: 1944 a.f. or hrs. 1945 a.f. or hrs.
22. Purpose of use Agri
23. Place of use: Twp. Rge. Section Acres
(See 24) Legal subdivision
Twp. Rge. Section Acres
Legal subdivision
24. If well is part of irrigation system of Irrigation District, Association or Company, omit 23 and give name of project.
Name of Project (D-17-21)32 dcc

EQUIPMENT DATA

25. Kind of pump
turbine, centrifugal, etc.
26. Kind of power
electric, natural gas, etc.
27. Horsepower rating of motor

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 3-11-47 by ij
Filed 3-13-47 by ij
File No. (D-17-21)32 dcc
Cross-referenced (Name) by
Cross-referenced (Basin) by
Cross-referenced by

(See Other Side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	60	[illegible]
60	[illegible]	[illegible]
100	105	[illegible]

I hereby certify that I have read the foregoing statements, and that each and all of the items therein contained are true to the best of my knowledge and belief.

[illegible]
Owner, Operator or Driller

[illegible]
Address

Date [illegible]

Log # 142

RECEIVED

STATE OF ARIZONA OCT 17 1983 DEPARTMENT OF WATER RESOURCES

WATER RESOURCES WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Walter Maychar
Name
1111 E Lumberlost #220 Tucson Az 85719
Address

2. Lessee or Operator
Name
Address

3. Driller WEBER DRILLING RT. 1 BOX 276B ST. DAVID, AZ 85630 PHONE 586-4800
Name
Address

4. Location of well: Twp 17S Rge 20E Sec 36

5. Permit No. (if issued) 55-505755

DESCRIPTION OF WELL

6. Total depth of hole 500 ft.

7. Type of Casing 6 7/8" Steel

8. Diameter and length of casing 8 5/8 in. from 0 to 149, 6 5/8 in from 0 to 500.

9. Method of sealing at reduction points welded

10. Perforated from 400 to 500, from ____ to ____, from ____ to ____

11. Size of cuts 3/16 x 8 Number of cuts per foot 4

12. If screen was installed: Length ____ ft. Diam ____ in. Type ____

13. Method of construction drilled
drilled, dug, driven, bored, jetted, etc.

14. Date started 7 (Month) 21 (day) 83 (year)

15. Date completed 8 (Month) 4 (day) 83 (year)

16. Depth to water flowing ft. (If flowing well, so state.)

17. Describe point from which depth measurements were made, and give sea-level elevation if available. ground Level

18. If flowing well, state method of flow regulation Valve

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-505755
Received ____ By ____
Entered 10-20-83 By fe
File No. D(17-20)36dcc

(Well log to appear on Reverse side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	50'	Decomposed granet sand + Clay
50	90	Clay
90	140	Alternating Gravel + Clay, - Surface water
140	400	Clay
400	450	Clay with some small Gravel streaks
450	485	Gravel (Artesion water)
485	500	Clay

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Donald E. Weber
Name

WEBER DRILLING
RT. 1 BOX 276B
ST. DAVID, AZ 85630
PHONE 586-4800
Address

Date 9/18/83

2-73

Log # 143

31542 7110140601

(D-17-21)31DCA1

55-607860

FORM W-9—1M—9-52

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

EXCERPT OF 1945 GROUNDWATER LAW

Report of Well Driller must be prepared by the driller in all detail and filed with the State Land Commissioner as required by Section 7, Chapter 12, Senate Bill No. 3, First Special Session, 1945. This report should be in the mail within 30 days following completion of the well. Section 8 of the law provides: "Any person (includes any individual, firm, public or private corporation, or governmental agency) who shall fail or refuse to make any of the reports, give the notices required, or fail to cooperate with the State Land Commissioner or his representative, under the provisions of this Act, shall be guilty of a misdemeanor and shall be fined a sum not exceeding One Hundred Dollars."

1. OWNER George A. McRae
Name
St. David, Arizona
Address
2. Lessee or Operator
Name
Address
3. DRILLER Dayton Hill
Name
Pomerene, Arizona
Address
4. Location of well: Twp. 17 S Rge. 21 E Section 31 NE ¼ SW ¼ SE ¼
10-acre subdivision
5. Intention to Drill File No. (D-17-21)31 dca

DESCRIPTION OF WELL

6. Total depth of hole 132 ft.
7. Type of casing Welded
8. Diameter and length of casing ___ in. from ___ to 132, ___ in. from ___ to ___, ___ in. from ___ to ___
9. Method of sealing at reduction points ___
10. Perforated from 112 to 132, from ___ to ___, from ___ to ___, from ___ to ___
11. Size of cuts 3/16 Number cuts per foot 8 rows
12. If screen was installed: Length ___ ft. Diam. ___ in. Type ___
13. Method of construction ✓
drilled, dug, driven, bored, jetted, etc.
14. Date completed Oct 20 – 53
Month Year
15. Depth to water ___ ft.
If flowing well, so state.
16. Describe point from which depth measurements were made, and give sea-level elevation if available ___
17. If flowing well, state method of flow regulation ___

18. REMARKS: ___

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Received 1-20-54 by RBC
Filed 1-20-54 by RBC
File No. (D-17-21)31dca

(Well Log to Appear on Reverse Side)

2

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
1	50	soil and silt
50	65	sand - tight
65	80	silt
80	85	sand
85	114	silt
114	132	gravel and Boulders

RECEIVED
JAN 20 1954
STATE LAND
DEPT.

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Dayton Hill
Name

Tonasket Wash
Address

Date 16 Jan 1954

Log # 144

315426110140501

(D-17-21) 31DCA

55-611467

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER George McRae
Name
Address

2. Lessee or Operator
Name
Address

3. DRILLER VERN'S WELL CO. BOX 1888 HUACHUCA CITY, ARIZ. 85616
Name
Address

4. Location of well: Twp. 17S Rge. 21E Section 31 SE ¼ NE ¼ SE ¼
10-acre subdivision

5. Intention to Drill File No. Permit No.

DESCRIPTION OF WELL

6. Total depth of hole 320 ft.

7. Type of casing P.V.C.

8. Diameter and length of casing 6 in. from 0 to 320 in. from to , in. from to

9. Method of sealing at reduction points

10. Perforated from 240 to 320, from to , from to , from to

11. Size of cuts 1/4 Number of cuts per foot 3

12. If screen was installed: Length ft. Diam. in. Type

13. Method of construction drilled
drilled, dug, driven, bored, jetted, etc.

14. Date started 7 (Month) 20 (Day) 77 (Year)

15. Date completed 7 (Month) 22 (Day) 77 (Year)

16. Depth of water 2 gals PM ft.
If flowing well, so state.

17. Describe point from which depth measurements were made, and give sea-level elevation if available
ground level

18. If flowing well, state method of flow regulation 1" valve

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received by

Filed by

File No. D(17-21)31 dad
35-46122

(Well Log to Appear on Reverse Side)

LOG OF WELL

RECEIVED AUG 17 1977 STATE LAND DEPT. 123

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	5	Top soil
5	65	Sand
65	200	red clay
200	320	sand and gravel

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller VERN'S WELL CO. BOX 4858 HUACHUCA CITY, ARIZ. 85616

Address

Date 9-14-77

2-73

Log # 145

315422110141401

(D-17-21)31DCC

FORM W-3 2M 8-48 JAHN-TYLER

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

Report of Well Driller is required to be made and filed with the State Land Commissioner as required by Section 7, Chapter 12, Senate Bill No. 3, Seventeenth Legislature, First Special Session, 1948. A separate report shall be made for each well and filed within 30 days after completion of the well.

1. Owner: ~~Joshua A. Lopez~~ John F. Oliveira
Name
~~St. David Arizona~~ 801 Pine Ave. Long Beach, 13, California
Address

2. Lessee or Operator _____
Name
_____
Address

3. Driller: Cooper & Pardee
Name
Benson Ariz. Box 296
Address

4. Location of well: Twp. 17 S Rge. 21 E Section 31 SW ¼ SE ¼ ¼
10-acre subdivision

DESCRIPTION OF WELL

5. Total depth of hole 112 ft.
6. Type of casing 12"
7. Diameter and length of casing 12" in. from 0 to 112' in. from _____ to _____, _____ in. from _____ to _____
8. Method of sealing at reduction points Clay
9. Perforated from 72' to 112', from _____ to _____, from _____ to _____, from _____ to _____
10. Size of cuts ¼" x 6" Number cuts per foot 6
11. If screen was installed: Length _____ ft. Diam. _____ in. Type _____
12. Method of construction Drilled
drilled, dug, driven, bored, jetted, etc.
13. Date completed Nov. (Month) 1948 (Year)
14. Depth to water 40' ft.
If flowing well, so state.
15. Describe point from which depth measurements were made, and give sea-level elevation if available _____
16. If flowing well, state method of flow regulation _____

DISCHARGE DATA

17. Well discharge Pump 600 g.p.m.
gal. per min. or cu. ft. per sec. or miner's inches.
18. Method of discharge measurement Orifice
weir, orifice, current meter, etc.
19. Drawdown _____ ft.
20. Purpose of use Irrigation
21. Place of use: Twp. _____ Rge. _____ Section _____ _____ Acres 75
(See 22) Legal subdivision
~~22. Purpose of use~~ _____
Twp. _____ Rge. _____ Section _____ _____ Acres _____
Legal subdivision
22. If well is part of irrigation system of Irrigation District, Association or Company, omit 21 and give name of project.
_____
Name of Project

(D-17-21)31 dc

EQUIPMENT DATA

23. Kind of pump Byron Jackson Turbine
turbine, centrifugal, etc.
24. Kind of power Natural Gas
electric, natural gas, etc.
25. Horsepower rating of motor 34

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 11/25/49 by kb
Filed 1/3/50 by kb
File No. (D-17-21)31 dc
Cross-referenced (Name) _____ by _____
Cross-referenced (Basin) _____ by _____
Cross-referenced _____ by _____

(See Other Side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	15	topsoil
15	40	red sandy soil
40	55	fine sand
55	78	red sandy clay
78	108	water sand + gravel
108	112	red clay

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Cooper and Pardee
Name

Benson Ariz Box 296
Address

Date Nov. 1948

RECEIVED
SEP 14 1949
STATE LAND DEPT.
ARIZONA

Log # 146

315422110133601
(D-17-21)32CCD2
55-607858

LOG OF WATER WELL DRILLED BY

Drilled for R. H. Martin, of St. David, Arizona.

Location N½, SW¼, SW¼ Sec. 32, Twp. 17 S, Rge. 21 E.

Date Completed Total Depth 355 ft.

330	Ft. of 3	Inch	Lb. or guage casing used	left in well.
	Ft. of	Inch	Lb. or guage casing used	left in well.
	Ft. of	Inch	Lb. or guage casing used	left in well.
	Ft. of	Inch	Lb. or guage casing used	left in well.
	Ft. of	Inch	Lb. or guage casing used	left in well.

Type of Perforator used: Not perforated.

Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch

Diameter of Perforations. Inches
Length of Perforations. Inches
Depth at which water was first found. Ft.
Standing water level before perforation. Ft. After perforation Ft.
Change in water level while drilling.
Water level when first tested. Ft. Number of gallons per minute. 1.
Draw down from standing level. Ft. " " " " "

Formation From Surface to Bottom of Well, Also Size of Gravel.

0	Ft. to 125	Ft. Soil, sand, rock, silt.	Ft. to	Ft.
125	Ft. to 305	Ft. Clay.	Ft. to	Ft.
305	Ft. to 355	Ft. Sand, gravel.	Ft. to	Ft.
	Ft. to	Ft.	Ft. to	Ft.
	Ft. to	Ft.	Ft. to	Ft.
	Ft. to	Ft.	Ft. to	Ft.
	Ft. to	Ft.	Ft. to	Ft.
	Ft. to	Ft.	Ft. to	Ft.
	Ft. to	Ft.	Ft. to	Ft.
	Ft. to	Ft.	Ft. to	Ft.
	Ft. to	Ft.	Ft. to	Ft.
	Ft. to	Ft.	Ft. to	Ft.
	Ft. to	Ft.	Ft. to	Ft.
	Ft. to	Ft.	Ft. to	Ft.
	Ft. to	Ft.	Ft. to	Ft.

Is well straight from top to bottom? Yes.
At what depth was pump set? No pump. Ft.
Was extra pump suction pipe used? How many feet?
Type of drill rig and number used Hydraulic, rotary.
Total cost of well and pump installed complete. 50 cts. per foot, drilling only.
Name and address of driller who drilled the well: R. H. Martin, Tucson, Ariz.

Date of this report February 1, 1938.

Additional information and comments:
Artesian well.

Log # 147

315423110133701

(D-17-21)32CCC

FORM W-3 2M 8-48 JAHN-TYLER

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

Report of Well Driller is required to be made and filed with the State Land Commissioner as required by Section 7, Chapter 12, Senate Bill No. 3, Seventeenth Legislature, First Special Session, 1945. A separate report shall be made for each well and filed within 30 days after completion of the well.

1. Owner: Chester A. Kelly, Jr. (Name)
St. David Arizona (Address)

2. Lessee or Operator: Chester Kelly (Name)
St. David Arizona (Address)

3. Driller: Cooper & Pardee (Name)
Box 296 - Benson Arizona (Address)

4. Location of well: Twp. 17 S. Rge. 21 E. Section 32 ___ ¼ ___ ¼ ___ ¼ (10-acre subdivision)

DESCRIPTION OF WELL

5. Total depth of hole 103 ft.

6. Type of casing 8"

7. Diameter and length of casing 8" in. from 0 to 103' in. from ___ to ___, ___ in. from ___ to ___

8. Method of sealing at production points ___

9. Perforated from 60' to 103', from ___ to ___, from ___ to ___, from ___ to ___

10. Size of cuts 1/4 x 4" Number cuts per foot 4

11. If screen was installed: Length ___ ft. Diam. ___ in. Type ___

12. Method of construction drilled (drilled, dug, driven, bored, jetted, etc.)

13. Date completed Oct. 9 (Month) 1947 (Year)

14. Depth to water 40' ft. (If flowing well, so state.)

15. Describe point from which depth measurements were made, and give sea-level elevation if available ___

16. If flowing well, state method of flow regulation ___

DISCHARGE DATA

17. Well discharge pump 200 g.p.m. (gal. per min. or cu. ft. per sec. or miner's inches.)

18. Method of discharge measurement barrel (weir, orifice, current meter, etc.)

19. Drawdown ___ ft.

20. Purpose of use Domestic at present

21. Place of use: Twp. 17 S. Rge. 21 E. Section 32 ___ (Legal subdivision) Acres 3 (See 22)

~~23. Purpose of use~~ ___

Twp. ___ Rge. ___ Section ___ ___ (Legal subdivision) Acres ___

22. If well is part of irrigation system of Irrigation District, Association or Company, omit 21 and give name of project.

___ (Name of Project)

(D-17-21)32

EQUIPMENT DATA

23. Kind of pump Pomona Turbine (turbine, centrifugal, etc.)

24. Kind of power Gasoline (electric, natural gas, etc.)

25. Horsepower rating of motor 60

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 9/14/49 by kb
Filed 11/2/49 by kb
File No. (D-17-21)32
Cross-referenced (Name) ___ by ___
Cross-referenced (Basin) ___ by ___
Cross-referenced ___ by ___

(See Other Side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	20	top soil
20	83	red sandy Clay
83	100	Water sand & gravel water
100	103	hard red Clay

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Cooper and Pardee
Name

Benson Ariz. Box 296
Address

Date Oct. 1947

RECEIVED
SEP 14 1949
STATE LAND DEPT.
OF ARIZONA

Log # 148

315423110132701
(D-17-21) 32CDC;

LOG OF WATER WELL DRILLED BY

Drilled for W. A. Riggs, of St.David, Arizona.

Location SE¼,SW¼, Sec. 32, Twp. 17 S.Rge. 21 E.

Date Completed Total Depth 590 ft.

100 Ft. of 3	Inch	Lb.or guage casing used		left in well.
Ft. of	Inch	Lb.or guage casing used		left in well.
Ft. of	Inch	Lb.or guage casing used		left in well.
Ft. of	Inch	Lb.or guage casing used		left in well.
Ft. of	Inch	Lb.or guage casing used		left in well.

Type of Perforator used: Not perforated.

Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch

Diameter of Perforations. Inches
Length of Perforations. Inches
Depth at which water was first found. Ft.
Standing water level before perforation. Ft. After perforation Ft.
Change in water level while drilling.
Water level when first tested. Ft. Number of gallons per minute.
Draw down from standing level. Ft. " " " " "

Formation From Surface to Bottom of Well, Also Size of Gravel.

0 Ft. to 80	Ft. Soil,gravel,small boulders		Ft. to	Ft.
80 Ft. to 380	Ft. Clay,		Ft. to	Ft.
380 Ft. to 420	Ft. Quick sand,		Ft. to	Ft.
420 Ft. to 500	Ft. Clay.		Ft. to	Ft.
500 Ft. to 590	Ft. Gravel and boulders.		Ft. to	Ft.
Ft. to	Ft.		Ft. to	Ft.
Ft. to	Ft.		Ft. to	Ft.
Ft. to	Ft.		Ft. to	Ft.
Ft. to	Ft.		Ft. to	Ft.
Ft. to	Ft.		Ft. to	Ft.
Ft. to	Ft.		Ft. to	Ft.
Ft. to	Ft.		Ft. to	Ft.
Ft. to	Ft.		Ft. to	Ft.
Ft. to	Ft.		Ft. to	Ft.
Ft. to	Ft.		Ft. to	Ft.
Ft. to	Ft.		Ft. to	Ft.

Is well straight from top to bottom? Yes.
At what depth was pump set? No pump. Ft.
Was extra pump suction pipe used? How many feet?
Type of drill rig and number used
Total cost of well and pump installed complete.
Name and address of driller who drilled the well:

Date of this report February 2, 1938.

Additional information and comments:
Artesian well.

Log # 149

Arizona Department of Water Resources
Information Management Unit
P.O. Box 458 • Phoenix, Arizona 85001-0458
(602) 771-8627 • (800) 352-8488
www.water.az.gov

Well Driller Report and Well Log

3-8-07 INPUT M.D.

THIS REPORT MUST BE FILED WITHIN **30 DAYS** OF COMPLETING THE WELL.

PLEASE PRINT CLEARLY USING BLACK OR BLUE INK

RECEIVED FEB 14 2007 INFO MGMT

FILE NUMBER: D(18-20)1 000
WELL REGISTRATION NUMBER: 55 - 906201
PERMIT NUMBER (IF ISSUED):

SECTION 1. DRILLING AUTHORIZATION

Drilling Firm (Mail To:)

NAME: BOART LONGYEAR COMPANY	DWR LICENSE NUMBER: 83
ADDRESS: 7773 WEST SELDON LANE	TELEPHONE NUMBER: 623-486-1881
CITY / STATE / ZIP: PEORIA, AZ, 85345-7980	FAX: 623-486-1885

SECTION 1. REGISTRY INFORMATION

Well Owner

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: Apache Nitrogen Products, Inc.

MAILING ADDRESS: 1436 South Apache Powder Road

CITY / STATE / ZIP: Benson, AZ, 85602

CONTACT PERSON NAME AND TITLE: Pamela Beicke, Corp Director

TELEPHONE NUMBER: 520 720-2114 FAX: 520-720-4158

WELL NAME (e.g., MW-1, RW-3, 1st 25 Well, South Well, etc.): NAB-11

Location of Well

WELL LOCATION ADDRESS (IF ANY): APACHE POWDER ROAD

TOWNSHIP (N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE
18S	20E	1	A 1/4	B 1/4	C 1/4

LATITUDE			LONGITUDE		
°	'	"N	°	'	"W

METHOD OF LATITUDE/LONGITUDE (CHECK ONE): ☐ *GPS: Hand-Held ☒ USGS Quad Map ☐ Conventional Survey ☐ *GPS: Survey-Grade

LAND SURFACE ELEVATION AT WELL: Feet Above Sea Level

METHOD OF ELEVATION (CHECK ONE): ☐ *GPS: Hand-Held ☐ USGS Quad Map ☐ Conventional Survey ☐ *GPS: Survey-Grade

*IF GPS WAS USED, GEOGRAPHIC COORDINATE DATUM (CHECK ONE): ☐ NAD-83 ☐ Other (please specify)

COUNTY: COCHISE

ASSESSOR'S PARCEL ID NUMBER (MOST RECENT): BOOK | MAP | PARCEL

SECTION 3. WELL CONSTRUCTION DETAILS

Drilling Method (CHECK ONE)
- ☐ Air Rotary
- ☐ Bored or Augered
- ☐ Cable Tool
- ☐ Dual Rotary
- ☐ Mud Rotary
- ☐ Reverse Circulation
- ☐ Driven
- ☐ Jetted
- ☐ Air Percussion / Odex Tubing
- ☒ Other (please specify): Sonic

Method of Well Development (CHECK ONE)
- ☐ Airlift
- ☐ Bail
- ☐ Surge Block
- ☐ Surge Pump
- ☐ Other (please specify)

Condition of Well (CHECK ONE)
- ☐ Capped
- ☐ Pump Installed

Method of Sealing at Reduction Points (CHECK ONE)
- ☐ None
- ☐ Packed
- ☐ Swedged
- ☐ Welded
- ☐ Other (please specify)

Construction Dates

DATE WELL CONSTRUCTION STARTED: 1/17/07

DATE WELL CONSTRUCTION COMPLETED: 1/20/07

I state that this notice is filed in compliance with A.R.S. § 45-596 and is complete and correct to the best of my knowledge and belief.

SIGNATURE OF QUALIFYING PARTY: BOART LONGYEAR

DATE: 2-7-07

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 906201

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

Depth

DEPTH OF BORING	DEPTH OF COMPLETED WELL
147 Feet Below Land Surface	Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
Feet Below Land Surface			☐ Valve ☐ Other:

Borehole / **Installed Casing**

Borehole: DEPTH FROM SURFACE FROM (feet)	Borehole: DEPTH FROM SURFACE TO (feet)	Borehole: BOREHOLE DIAMETER (inches)	Casing: DEPTH FROM SURFACE FROM (feet)	Casing: DEPTH FROM SURFACE TO (feet)	Casing: OUTER (inches)	MATERIAL TYPE (T): STEEL	MATERIAL TYPE (T): PVC	MATERIAL TYPE (T): ABS	MATERIAL TYPE (T): IF OTHER TYPE, DESCRIBE	PERFORATION TYPE (T): BLANK OR NONE	PERFORATION TYPE (T): WIRE WRAP	PERFORATION TYPE (T): SHUTTER SCREEN	PERFORATION TYPE (T): MILLS KNIFE	PERFORATION TYPE (T): SLOTTED	PERFORATION TYPE (T): IF OTHER TYPE, DESCRIBE	SLOT SIZE (inches)
0	115	8														
115	147	6														

Installed Annular Material

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	ANNULAR MATERIAL TYPE (T): NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	BENTONITE: GROUT	BENTONITE: CHIPS	BENTONITE: PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	FILTER PACK: SAND	FILTER PACK: GRAVEL	FILTER PACK: SIZE
2	5		X									
5	147				X				BORE HOLE ABANDONED			

LOG OF BORING NO. NAB-11 p1of

PROJ. #: 130.126
FILE CAT: E-01
CC TO:

Project: ANP
Job No. 130.126
Elev. Top of Hole:
Datum:
Prepared By: KMM
Date: 1-17-07
Type/Size of Boring: 8in
Rig Type: Robsonic
Driller: Boart (Dennis)
Reviewed By:
Date:

Depth (ft.)	Blow Count	Recovery	Sample Type	Soil Classification	SOIL TYPE DESCRIPTION (Modifier, Color, Density, Moisture, etc.)	Max Size	Particle Size Distribution %				Grad-ation			Grain Shape				Relative Density				Plasticity				Consistency				
							Boulders/Cobbles	Gravel	Sand	Silt & Clay	Well	Medium	Poor	Angular	Subangular	Subrounded	Rounded	Loose	Med. Dense	Dense	Very Dense	None	Low	Medium	High	Soft	Firm	Stiff	Very Stiff	Hard
1					0-1 Sandy Silt				20	80			X		X			X				X				X				
2					trace gravel; Dry strong rxn to HCl																									
3					light brown 7.5YR 6/6																									
4																														
5					1-4 Silty Clay																									
6					Dry; light brown 7.5YR 6/6					100			X					X					X			X				
7					strong rxn to HCl																									
8																														
9					4-7 Clay																									
0					Dry; light brown 7.5YR 6/6					100			X					X					X			X				
1					strong rxn to HCl																									
2																														
3					7-14 ~~Sandy Clay~~ Sandy Silty Clay																									
4																														
5					coarse gravel (multicolored) (subangular to				40	60			X		X	X		X				X	X			X				
6					subrounded)																									
7					Dry; light brown; strg rxn HCl																									
8																														
9																														
0					14-21 Brown clay																									
1					Dry; mostly loose; some auger					100			X					X	X			X	X			X	X			
2					have's trace amt of silt 7.5YR 5/6																									
3					strong rxn to HCl																									
4					21-36 Red Clay					100			X						X					X			X			
5					Moist; strong rxn to HCl 2.5YR 4/6																									
6					broken up; gypsum clasts																									
7																														
8					36-46 ~~Red Clay~~ Red-brown clay					100			X						X						X	X				
9					very moist malleable; strong rxn to HCl																									
0					5YR 3/6																									

Groundwater Conditions
Date _____ No Groundwater Encountered
Date 1-17-07 Time 1760 Depth 38' bls
Date ____ Time ____ Depth ____

LOG OF BORING NO. NAB-11

PROJ. #: ____
FILE CAT: ____
CC TO: ____

Project: ANP Job No. 130.126
Elev. Top of Hole: ____ Datum: ____ Prepared By: KMM Date: 1-18-07
Type/Size of Boring: 8in Rig Type: Rotosonic Driller: Brart (Dennis) Reviewed By: ____ Date: ____

Depth (ft.)	Blow Count	Recovery	Sample Type	Soil Classification	SOIL TYPE DESCRIPTION (Modifier, Color, Density, Moisture, etc.)	Max. Size	Particle Size Distribution %				Grad-ation			Grain Shape				Relative Density				Plasticity			Consistency				
							Boulders/Cobbles	Gravel	Sand	Silt & Clay	Well	Medium	Poor	Angular	Subangular	Subrounded	Rounded	Loose	Med. Dense	Dense	Very Dense	None	Low	Medium	High	Soft	Firm	Stiff	Very Stiff	Hard
1																													
2					46-51 Brown Red Clay w/ sand				10	90			X		X	X		X					X			X				
3																													
4					saturated; Strong rxn to HCL 5YR 4/6																								
5					has some fine to coarse sand; gravel trace																								
6																													
7																													
8					51-56 Red Clay																								
9					5YR 4/6					100			X						X					X		X	X		
0					moist; Dense/firm																								
1					gypsum clasts; medium rxn to HCL																								
2																													
3					56-70 Red Clay w/ sand 5YR 4/6																								
4																													
5					Moist to saturated; some sand stringers are saturated. Sand is fine to coarse				10	90		X			X	X			X						X	X			
6																													
7					extremely malleable (more than play-doeh)																								
8					Strong rxn to HCL																								
9					(coarse)																								
0																													
1					70-147' Dense Red Clay					100			X							X	X			X			X	X	X
2					Dry to slightly moist; gypsum clasts																								
3					Strong rxn to HCL																								
4																													
5																													
6																													
7																													
8																													
9																													
0																													

018498

Groundwater Conditions
Date ____ No Groundwater Encountered
Date ____ Time ____ Depth ____
Date ____ Time ____ Depth ____

520-307
-3337

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 906201

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	Description Describe material, grain size, color, etc.	Check (T) every interval where water was encountered (if known)
0	1	SANDY SILT LT. BROWN	
1	4	SILTY CLAY LT. BROWN	
4	7	CLAY LIGHT BROWN	
7	14	SANDY SILTY CLAY	
14	21	BROWN CLAY	
21	36	RED CLAY	
36	46	RED BROWN CLAY	
46	51	RED BROWN CLAY W/SAND	
51	56	RED CLAY	
56	70	SILTY RED CLAY W/SAND	
70	147	DENSE RED CLAY	

Log # 153

RECEIVED
JUN 24 1997
RECORDS MGT

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. WEBER DRILLING
   ROUTE 1 BOX 276B
   SAINT DAVID, AZ 85630-9721

2. Owner Name: MERLINDA E. DOMINGUEZ
   Address: APACHE POWDER RD (Street) ST DAVID (City) AZ (State) 85630 (Zip)

3. Location: 18 (Township) N/S 20 (Range) E/W 1 (Section) ¼ NE (10-acre) ¼ NW (40-acre) ¼ NE (160-acre)

4. Well Registration No. 55- 558877 (Required)

5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 540 ft.
7. Type of casing STEEL
8. Diameter and length of casing 8 in. from 0 to 40; 6 in from 0 to 540
9. Method of sealing at reduction points WELDED
10. Perforated from 500 to 540, from _____ to _____ from _____ to _____
11. Size of cuts 48 x 8 Number of cuts per foot 4
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction DRILLED (drilled, dug, driven, bored, jetted, etc)
14. Date started DEC (Month) 2 (Day) 1996 (Year)
15. Date completed DEC (Month) 3 (Day) 1996 (Year)
16. Depth to water 400 ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
    GROUND LEVEL
18. If flowing well, state method of flow regulation: _____
19. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-558877
File No. D(18-20)1 ABA
Received _____ By _____
ENTERED JUN 26 1997

DWR-55-55-7/95 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	400	RED CLAY
400	540	CLAY WITH GRAVEL STREAKS
		FIRST WATER 400'
		STATIC FLOWS 1/2 GPM

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: WEBER DRILLING

Street: RT. 1 BOX 276B

City State Zip: ST. DAVID, AZ. 85630

Phone No.: 520.720.4800

Signature of Driller: Donald E. Weber

Date: 12/30/96

Log # 154

ARIZONA DEPARTMENT OF WATER RESOURCES

DEPARTMENT OF WR

MAY 6 - 1994

OPERATIONS DIV.

15 South 15th Avenue
Phoenix, Arizona 85007

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Name: Vincent Grasso
   Address: 6255 N Camino Premera Tucson Az 85718
   Street City State Zip
2. Driller Name: WEBER DRILLING
   Address: RT. 1 BOX 276B ST. DAVID, AZ. 85630
   Street City State Zip
3. Location: 18.0 N/S Township; 20.0 E/W Range; 1 Section; SW 1/4 10-acre; NW 1/4 40-acre; NE 1/4 160-acre
4. Well Registration No. 55-542381 (Required)
5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 540 ft.
7. Type of casing Steel
8. Diameter and length of casing 8 in. from 0 to 20, 6 in from 0 to 540
9. Method of sealing at reduction points welded
10. Perforated from 498 to 540, from _____ to _____, from _____ to _____.
11. Size of cuts 1/8" x 8" Number of cuts per foot 4
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction drilled
    (drilled, dug, driven, bored, jetted, etc)
14. Date started 2 (Month) 8 (Day) 94 (Year)
15. Date completed 2 (Month) 11 (Day) 94 (Year)
16. Depth to water 485 ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
    Ground level
18. If flowing well, state method of flow regulation: 5 gallon bucket
19. Remarks:

DO NOT WRITE IN THIS SPACE

ENTERED MAY 6 1994

Re 55-542381
Fil D(18-20)1ABC
Re
Ent

DWR-55-55-7/91 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encounterd, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	485	red clay
485	540	decomposed granite
		First water 485
		Flowing well

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: Donald Ebert

WEBER DRILLING

Street ~~RT. 1 BOX 276B~~ ST. DAVID, AZ. 85630

City State Zip

Date 4/19/94

Log # 155

(D-18-20) 1ABC

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 214791

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

DEPTH OF BORING	DEPTH OF COMPLETED WELL
539 Feet Below Land Surface	539 Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
15 Feet Below Land Surface	5/29/07		☐ Valve ☐ Other:

Borehole			Installed Casing													
DEPTH FROM SURFACE		BOREHOLE DIAMETER (inches)	DEPTH FROM SURFACE		OUTER DIAMETER (inches)	MATERIAL TYPE (X)				PERFORATION TYPE (X)						SLOT SIZE IF ANY (inches)
FROM (feet)	TO (feet)		FROM (feet)	TO (feet)		STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	
0	90	12¼	0	90	8⅝	✓				✓						
0	499	8	0	499	6⅝	✓				✓						
499	539	8	499	539	6⅝	✓								✓		1/8x8

Installed Annular Material

DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (X)								FILTER PACK		
						BENTONITE						
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
0	90		✓									

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 214791

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	DESCRIPTION Describe material, grain size, color, etc.	Check (X) every interval where water was encountered
0	45	WEATHERED GRANITE	
45	420	SANDY RED CLAY	FIRST WATER 340
420	470	SANDY RED CLAY W/STREAKS OF GRAVEL	
470	539	VOLCANIC CONGLOMERATE	

Log # 156

ARIZONA DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

DEPARTMENT OF WR
AUG 30 1994
OPERATIONS DIV

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Name: Thomas S. Haymore
   Address: P.O. Box 207 St. David AZ 85630
   Street City State Zip
2. Driller Name: WEBER DRILLING
   Address: RT. 1 BOX 2763
   Street ST. DAVID AZ. 85630 City State Zip
3. Location: 18 N/S 20 E/W 1 NE 1/4 SE 1/4 NE 1/4
   Township Range Section 10-acre 40-acre 160-acre
4. Well Registration No. 55- 542260 (Required)
5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 631' ft.
7. Type of casing Steel
8. Diameter and length of casing 8 in. from 0 to 166, 6 in from 0 to 631.
9. Method of sealing at reduction points welded
10. Perforated from 550 to 631, from _____ to _____, from _____ to _____.
11. Size of cuts 1/8 X 8 Number of cuts per foot 4
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction Drilled
    (drilled, dug, driven, bored, jetted, etc)
14. Date started 1 31 94
    Month Day Year
15. Date completed 2 5 94
    Month Day Year
16. Depth to water Flows 10 gpm ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
    Ground Level
18. If flowing well, state method of flow regulation: Gate Valve
19. Remarks: _____

DO NOT WRITE IN THIS SPACE

Re 55-542260
Fil D(18-20)1ADA
Re
En ENTERED SEP - 2 1994

DWR-55-55-7/91 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encounterd, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	145	Clays, Sands & Gravels
145	520	Clay
520	631	Decomposed Granite
		First water 80'
		Artesian 520'
		Static Flows 10 gpm

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: Randall E. Weber

WEBER DRILLING

Street RT. 1 BOX 276B
ST. DAVID, AZ. 85630

City State Zip

Date 8/27/94

Log # 157

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

500 North Third Street - Phoenix, Arizona 85004-3903
Phone (602) 417-2470

RECEIVED
JUN 24 1997
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the Driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: LOREN P McRAE

   Address: PO BOX 309 (Street) ORACLE (City) AZ (State) 85623 (Zip) (Telephone Number)

2. Drilling Firm: WEBER DRILLING

   Address: RT. 1 BOX 2708 ST. DAVID, AZ. 85630 (Street, City, State, Zip, Telephone Number)

3. Location: NE ¼ (10 Acre) SE ¼ (40 Acre) NE ¼ (160 Acre) of Section 1 Township 18 S Range 20 E

4. Well Registration No. 55-556575 (Required)

5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total Depth of Hole 70 ft.
7. Type of Casing _____
8. Diameter and length of casing _____ inches from _____ to _____, _____ inches from _____ to _____
9. Method of sealing at reduction points _____
10. Perforated from _____ to _____ from _____ to _____ from _____ to _____
11. Size of cuts _____ Number of cuts per foot _____
12. If screen was installed: Length _____ feet. Diameter _____ inches. Type _____
13. Method of construction DRILLED TEST HOLE (drilled, dug, driven, bored, jetted, etc.)
14. Date started JUNE (Month) 11 (Day) 1997 (Year)
15. Date completed JUNE (Month) 11 (Day) 1997 (Year)
16. Depth to water _____ ft. (If flowing well, so state).
17. Describe point from which depth measurements were made, and give sea-level elevation if available _____
18. If flowing well, state method of flow regulation:
19. Remarks: _____

FOR DEPARTMENT USE ONLY

Registration No. 55-556575

File No. D(18-20)1ADA

Received _____ By ____

Entered _____ By ____

DWR-55-55 (Rev 5/98)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	55	SAND - DECOMPOSED GRANITE
55	70	RED CLAY
		TEST HOLE

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller's Name (Qualifying Party): WEBER DRILLING

Street: RT. 1 BOX 2768

City: ST. DAVID, AZ. 85630

State

Zip

520-720-4800 X Donald E. Weber 6-23-97

Phone Number

Date

DWR 55-55 (Rev 5/98)

Log # 158

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER Walter McCrea
Name
Address

2. Lessee or Operator
Name
Address

3. DRILLER VERN'S WELL CO. BOX 4858 HUACHUCA CITY, ARIZ 85616
Name
Address

4. Location of well: Twp. 18S Rge. 20E Section 1 NW ¼ NE ¼ NW ¼
10-acre subdivision

5. Intention to Drill File No. Permit No.

DESCRIPTION OF WELL

6. Total depth of hole 640 ft.

7. Type of casing P.V.C.

8. Diameter and length of casing 6 in. from 0 to 500, in. from to, in. from to

9. Method of sealing at reduction points

10. Perforated from to, from to, from to, from to

11. Size of cuts Number of cuts per foot

12. If screen was installed: Length ft. Diam. in. Type

13. Method of construction drilled
drilled, dug, driven, bored, jetted, etc.

14. Date started 9 (Month) 12 (Day) 77 (Year)

15. Date completed 9 (Month) 15 (Day) 77 (Year)

16. Depth of water flowing ft.
If flowing well, so state.

17. Describe point from which depth measurements were made, and give sea-level elevation if available
ground level

18. If flowing well, state method of flow regulation 1½ in valve

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received by
Filed by
File No. D(18-20)1 bab
35-47676

(Well Log to Appear on Reverse Side) ENTERED MAY - 6 1993

MICROFILMED

LOG OF WELL

RECEIVED
NOV 9 1977
STATE LAND DEPT.
516

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If artesian water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	10	top soil
10	90	sandy clay
90	495	red clay
495	640	sand and gravel

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller VERN'S WELL CO.
Name
BOX 4858
HUACHUCA CITY, ARIZ. 85616
Address

Date 9-17-77

2-73

MICROFILMED

Log # 159

STATE OF ARIZONA

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

DEPARTMENT OF
WATER RESOURCES

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

SEP 1985 DEPARTMENT OF WATER RESOURCES

1. Owner E J SPECKMAN
Name
Address

2. Lessee or Operator
Name
Address

3. Driller TITAN DRILLING
Name
P.O. BOX 1912 BENSON AZ 85602
Address

4. Location of well: 18S 20E 1 SE NE NW

5. Permit No. (if issued)

DESCRIPTION OF WELL

6. Total depth of hole 585 ft.

7. Type of Casing STEEL + P.V.C.

8. Diameter and length of casing 8 in. from 0 to 20, 6 in from 0 to 585.

9. Method of sealing at reduction points CONCRETE

10. Perforated from 520 to 585, from to, from to

11. Size of cuts 3/16 x 6 Number of cuts per foot 2

12. If screen was installed: Length ft. Diam in. Type

13. Method of construction DRILLED
drilled, dug, driven, bored, jetted, etc.

14. Date started 9 (Month) 7 (day) 85 (year)

15. Date completed 9 (Month) 10 (day) 85 (year)

16. Depth to water 30 ft. (If flowing well, so state.)

17. Describe point from which depth measurements were made, and give sea-level elevation if available.:

18. If flowing well, state method of flow regulation

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-512182
Received By
Entered 9-18-85 By
File No. D(18-20)1 bad

(Well log to appear on Reverse side)

DWR-55-6-5/83

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	20	DIRT CLAY
20	90	CLAY, SAND GRAVEL AT 90'
90	130	SAND GRAVEL EST 300-400 G.P.M.
130	520	CLAY
520	585	ARTESIAN SAND SET 585'
		6" P.V.C PACKER AT 200' AIR
		DEVELOPED AT 150 G.P.M @ 145'

I hereby certify that this well was drilled by me (or under my supervison), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller TITAN DRILLING
Name

P.O. BOX 1912
Address

BENSON AZ 85602
City State Zip

Date 9-13-85

Log # 160

(1)-18-20) 1 BBA

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 205876

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

DEPTH OF BORING	DEPTH OF COMPLETED WELL
670 Feet Below Land Surface	650 Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
8 Feet Below Land Surface	5/6/05	10:00 A.M	☒ Valve ☐ Other:

Borehole			Installed Casing													
DEPTH FROM SURFACE		BOREHOLE DIAMETER (inches)	DEPTH FROM SURFACE		OUTER DIAMETER (inches)	MATERIAL TYPE (X)				PERFORATION TYPE (X)						SLOT SIZE IF ANY (inches)
FROM (feet)	TO (feet)		FROM (feet)	TO (feet)		STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	
0	124'	12 1/4	+1'	124'	8"	X				X						
124'	302'	8"	+2'	405'	6"	X				X						
302'	670'	6"	154'	551'	4"	X				X						
			551'	650'	4"	X								X		

Installed Annular Material

DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (X)								FILTER PACK		
						BENTONITE						
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
0	124'			X								

DWR-55-55B-10/01 (Rev.)

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 205876

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	DESCRIPTION Describe material, grain size, color, etc.	Check (X) every interval where water was encountered
0	3	DIRT	
3	46'	BROWN CLAY	
46	69	SANDY BROWN CLAY	
69	418	RED CLAY	X
418	431	CLAY + GRAVEL STRIPS	X
431	590	SANDY CLAY	X
590	670	FINE BLACK SILT	X

Log # 161

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

RECEIVED APR 5 1988 DEPT. OF WATER RESOURCES

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner A & M Sprecher
Name
Rt. 1 Box 66 St. David AZ. 85630
Mailing Address

2. Driller Titan Drilling
Name
P.O. Box 1912 Benson, AZ. 85602
Mailing Address

3. Location of well: 18s/20e/1 NW/NW/NW

4. Permit No. ____ (if issued)

DESCRIPTION OF WELL

5. Total depth of hole 615 ft.

6. Type of casing steel

7. Diameter and length of casing 8 in. from 0 to 20, 6 in from 0 to 615.

8. Method of sealing at reduction points concrete

9. Perforated from 540 to 600, from ____ to ____, from ____ to ____.

10. Size of cuts .25x4 Number of cuts per foot 4

11. If screen was installed: Length ____ ft. Diam ____ in. Type ____

12. Method of construction drilled
drilled, dug, driven, bored, jetted, etc.

13. Date started 3 (Month) 12 (Day) 88 (Year)

14. Date completed 3 (Month) 17 (Day) 88 (Year)

15. Depth to water 22 ft. (If flowing well, so state.)

16. Describe point from which depth measurements were made, and give sea-level elevation if available ____

17. If flowing well, state method of flow regulation: ____

18. Remarks: ____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

REG. NO. 55-520286

File No. D(18-20)1bbb

Entered ENTERED APR 06 1988

DWR-55-6-Rev. 8/85

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	20	dirt & clay
20	530	clay
530	615	sand & clay conglomerate first water at 530 ft

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Titan drilling
Name

P.O. Box 1912
Address

Benson, AZ. 85602
City State Zip

Date 4-3-88

Log # 162

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

WELL DRILLER REPORT

SEP 1988 DEPARTMENT OF WATER RESOURCES

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner D M & J M Hunsaker
Name
620 Windward circle Tucson, AZ. 85704
Mailing Address

2. Driller Titan Drilling
Name
P.O. Box 1912 Benson, AZ. 85602
Mailing Address

3. Location of well: 18s/20e/1 SW/NW/NW

4. Permit No. _____
(if issued)

DESCRIPTION OF WELL

5. Total depth of hole 535 ft.

6. Type of casing steel & pvc

7. Diameter and length of casing 8 in. from 0 to 120, 6 in from 0 to 535.

8. Method of sealing at reduction points concrete

9. Perforated from 460 to 525, from _____ to _____, from _____ to _____.

10. Size of cuts .20 x 5" Number of cuts per foot 2

11. If screen was installed: Length _____ ft. Diam _____ in. Type _____

12. Method of construction drilled
drilled, dug, driven, bored, jetted, etc.

13. Date started 3 (Month) 2 (Day) 88 (Year)

14. Date completed 3 (Month) 3 (Day) 88 (Year)

15. Depth to water 8' ft. (If flowing well, so state.)

16. Describe point from which depth measurements were made, and give sea-level elevation if available _____

17. If flowing well, state method of flow regulation: _____

18. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

REG. NO. 55-520285

File No. D(18-20)1bbc

ENTERED SEP 16 1988

Entered _____ By _____

DWR-55-6-Rev. 8/85

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	110	dirt, & clay
110	115	100ft water sand & gravel cased off 8"steel casing
120	460	clay
460	535	Artesian sand cased 6" pvc first water at 460 ft.

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Titan Drilling
Name

P.O. Box 1912
Address

Benson AZ 85602
City State Zip

Date 3-8-88

Log # 163

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

RECEIVED APR 5 1988 DEPT. OF WATER RESOURCES

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Milton & Wanda MCEwen
Name
3005 Country Club Dr. Colorado Springs, Co. 80909
Mailing Address

2. Driller Titan Drilling
Name
P.O. Box 1912, Benson, AZ. 85602
Mailing Address

3. Location of well: 18s/20e/1 SW/NW/NW

4. Permit No. _____
(if issued)

DESCRIPTION OF WELL

5. Total depth of hole 530 ft.

6. Type of casing steel & pvc

7. Diameter and length of casing 8 in. from 0 to 20, 6 in from 0 to 530.

8. Method of sealing at reduction points concrete

9. Perforated from 460 to 530, from _____ to _____, from _____ to _____.

10. Size of cuts .20x5" Number of cuts per foot 2

11. If screen was installed: Length _____ ft. Diam _____ in. Type _____

12. Method of construction drilled
drilled, dug, driven, bored, jetted, etc.

13. Date started 2 (Month) 26 (Day) 88 (Year)

14. Date completed 2 (Month) 28 (Day) 88 (Year)

15. Depth to water 8' ft. (If flowing well, so state.)

16. Describe point from which depth measurements were made, and give sea-level elevation if available _____

17. If flowing well, state method of flow regulation: _____

18. Remarks: _____

55-520248

D(18-20)1 bbc

Entered ENTERED APR 06 1988

DWR-55-6-Rev. 8/85

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	20	dirt & clay
20	440	clay
440	530	Artesian sand first water at 440 ft.

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Titan Drilling
Name

P.O. Box 1912
Address

Benson AZ 85602
City State Zip

Date 3- 2-88

Log # 164

(D-18-20) 1CBD

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 213248

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

DEPTH OF BORING	DEPTH OF COMPLETED WELL
529' Feet Below Land Surface	529' Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
74 Feet Below Land Surface	9-13-06	9:45 AM	☐ Valve ☐ Other:

Borehole			Installed Casing													
DEPTH FROM SURFACE		BOREHOLE DIAMETER (inches)	DEPTH FROM SURFACE		OUTER DIAMETER (inches)	MATERIAL TYPE (X)				PERFORATION TYPE (X)						SLOT SIZE IF ANY (inches)
FROM (feet)	TO (feet)		FROM (feet)	TO (feet)		STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	
0	126	12 3/4	+1.5	126'	8 5/8	X				X						
126	529	8"	+2'	489'	6 5/8	X				X						
			489'	529'	6 5/8	X								X		

Installed Annular Material

DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (X)								FILTER PACK		
						BENTONITE						
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
0	126		X									

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 213248

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	DESCRIPTION Describe material, grain size, color, etc.	Check (X) every interval where water was encountered
0	28'	CLAY GRAVEL & ROCKS BROWN	
28	71'	CLAY YELLOW SAND STRIPS	
71'	126'	RED CLAY	
126'	489'	RED CLAY	
489'	529'	CEMENTED GRAVEL	X

Log # 165

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004
WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED NOV 30 1998 RECORDS MGT

1. B-J DRILLING COMPANY, INC.
P.O. BOX 815
BENSON, AZ 85602-0815

2. Owner Name: PAUL BARNHART
Address: P.O. BOX 1136 BENSON, AZ 85602
City State Zip

3. Location: 18 N(S) 20 (E)W 1 ¼ NE ¼ SW ¼ SW
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55- 572047 (Required)
5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 520 ft.
7. Type of casing Steel & PVC
8. Diameter and length of casing 7 in. from +1' to 40 , 5 in from 0 to 520
9. Method of sealing at reduction points Cemented
10. Perforated from 480 to 520 , from _____ to _____ from _____ to _____
11. Size of cuts 1/8 x 3 Number of cuts per foot 8
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction Drilled
(drilled, dug, driven, bored, jetted, etc)
14. Date started 11/04/98
Month Day Year
15. Date completed 11/04/98
Month Day Year
16. Depth to water 27' Static ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
Top of Casing
18. If flowing well, state method of flow regulation: _____

19. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-572047
File No. D(18-20) 1 CCA
Received _____ By _____
Entered _____ By _____

DWR-55-55-7/95 (Rev.)

ANSWERED JAN 20 1999

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	26	Sandy clay
26	420	Dense red clay - very sticky
420	440	Sandy clay
440	485	Clayey sand - 1st Water encountered @ 470'
485	520	Poorly cemented conglomerate - Q increasing w/depth
		Welded Cap

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: B-J DRILLING COMPANY, INC.

P.O. BOX 815
Street

BENSON, AZ 85602-0815 520-586-3282
City State Zip Phone No.

Robert R. Jackson 11/20/98
Signature of Driller Date

Log # 168

ARIZONA DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Name: Jame Goodman
   Address: Box 130 ST. David AZ 85630
   Street City State Zip
2. Driller Name: WEBER DRILLING
   Address: RT. 1 BOX 276B ST. DAVID, AZ. 85630
   Street City State Zip
3. Location: 18 N/S 20 E/W 2 SW 1/4 NE 1/4 NE 1/4
   Township Range Section 10-acre 40-acre 160-acre
4. Well Registration No. 55- 537790 (Required)
5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 665 ft.
7. Type of casing Steel
8. Diameter and length of casing 6 in. from 0 to 665, _____ in from _____ to _____.
9. Method of sealing at reduction points _____
10. Perforated from 605 to 665, from _____ to _____, from _____ to _____.
11. Size of cuts 1/8 X 8 Number of cuts per foot 4
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction Drilled
    (drilled, dug, driven, bored, jetted, etc)
14. Date started 1 27 93
    Month Day Year
15. Date completed 2 4 93
    Month Day Year
16. Depth to water _____ ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available: Ground Level
18. If flowing well, state method of flow regulation: _____
19. Remarks: _____

RECEIVED

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-537790
File No. D(18-20)2AAC
Received _____ By _____
Entered ENTERED APR 29 1993 By _____

DWR-55-55-7/91 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encounterd, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	25	Sand & Clay
25	575	Red Clay
575	665	Sand & Gravel
		First Water 575'
		STATIC 18'

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: Donald L. Weber

WEBER DRILLING
Street RT. 1 BOX 276B
ST. DAVID, AZ. 85630

City State Zip

Date 4/14/93

Log # 169

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004
WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED AUG 21 1998 RECORDS MGT

1. WEBER DRILLING
453 MECHAM DRIVE
SAINT DAVID, AZ 85630

2. Owner Name: CAMILLA BROWNE
Address: TUCSON (City) AZ (State) 85715 (Zip)

3. Location: 18 (Township) N/S 20 (Range) E/W SE (Section) ¼ NW (10-acre) ¼ NE (40-acre) ¼ ____ (160-acre)

4. Well Registration No. 55- 569101 (Required)
5. Permit No. ____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 543 ft.
7. Type of casing STEEL
8. Diameter and length of casing 8 in. from 0 to 40, 6 in from 0 to 543
9. Method of sealing at reduction points WELDED
10. Perforated from 503 to 543, from ____ to ____ from ____ to ____
11. Size of cuts 1/8 X 8 Number of cuts per foot 4
12. If screen was installed: Length ____ ft. Diam ____ in. Type ____
13. Method of construction DRILLED (drilled, dug, driven, bored, jetted, etc)
14. Date started AUG (Month) 1 (Day) 1998 (Year)
15. Date completed AUG (Month) 3 (Day) 1998 (Year)
16. Depth to water 460 ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available GROUND LEVEL
18. If flowing well, state method of flow regulation: ____
19. Remarks: ____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-569101
File No. D(18-20) 2 ABD
Received ____ By ____
Entered ____ By ____
ANSWERED AUG 25 1998

DWR-55-55-7/95 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	30	SAND & CLAY
30	460	CLAY
460	543	CLAY WITH GRAVEL STREAKS
		FIRST WATER 460'
		SECOND WATER 480'
		STATIC 70'

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: WEBER DRILLING

453 MECHAM DRIVE
Street

SAINT DAVID, AZ 85630 520-720-4800
City State Zip Phone No.

X [signature] 8-17-98
Signature of Driller Date

Log # 170

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004

*

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED SEP 23 1998 RECORDS MGT

1. B-J DRILLING COMPANY, INC.
P.O. BOX 815
BENSON, AZ 85602-0815

2. Owner Name: Tina Fogg
Address: 4110 S. Tucson Estates Parkway, Tucson, AZ 85735
City State Zip

3. Location: 18 N/S 20 E/W 2 ¼ SE ¼ NW ¼ NE
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55- 568461 (Required)
5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 600 ft.
7. Type of casing Steel
8. Diameter and length of casing 6 in. from +1' to 57', 4½ in from +1' to 600
9. Method of sealing at reduction points Cemented
10. Perforated from 560 to 600, from _____ to _____ from _____ to _____
11. Size of cuts 1/8 x 4" Number of cuts per foot 12
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction Drilled
(drilled, dug, driven, bored, jetted, etc)
14. Date started 07/16/98
Month Day Year
15. Date completed 07/17/98
Month Day Year
16. Depth to water 540 ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
Top Of Casing
18. If flowing well, state method of flow regulation: _____

19. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-568461
File No. D(18-20) 2 ABD
Received _____ By _____
Entered _____ By _____
ANSWERED SEP 23 1998

DWR-55-55-7/95 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	370	Clay
370	390	Gravels at 370', Clayey gravels & sands to 390'
390	400	Clay
400	410	Clay, gravels and sands (layered)
410	540	Clay
540	560	Clayey gravels-encountered water at 540-approx. 15 GPM
560	600	Gravels

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: B-J DRILLING COMPANY, INC.

P.O. BOX 815
Street

BENSON, AZ 85602-0815 520-586-3282
City State Zip Phone No.

Robert R. Jackson 9-22-98
Signature of Driller Date

Log # 171

STATE OF ARIZONA

DEPARTMENT OF WATER RESOURCES

JUL 1982 DEPARTMENT OF WATER RESOURCES

WELL DRILLER REPORT

This report should be prepared by the driller in all cases and filed with the Department within 30 days following completion of the well.

1. Owner Ken McCarty
Name
RT 1 St. David AZ 85630
Address

2. Lessee or Operator
Name
Address

3. Driller TITAN DRILLING
Name
P.O. BOX 1912 BENSON AZ 85602
Address

4. Location of well:

5. Permit No. (if issued)

DESCRIPTION OF WELL

6. Total depth of hole 220 ft.
7. Type of Casing P.V.C. 6"
8. Diameter and length of casing 8 in. from 0 to 20, 6 in from 0 to 220.
9. Method of sealing at reduction points CONCRETE
10. Perforated from 180 to 220, from to , from to
11. Size of cuts 5/16 x 5 Number of cuts per foot 3
12. If screen was installed: Length ft. Diam in. Type
13. Method of construction DRILLED
drilled, dug, driven, bored, jetted, etc.
14. Date started 6 (Month) 10 (day) 82 (year)
15. Date completed 6 (Month) 10 (day) 82 (year)
16. Depth to water Flowing ft. (If flowing well, so state.)
17. Describe point from which depth measurements were made, and give sea-level elevation if available.
18. If flowing well, state method of flow regulation 1-1" gate valve welded in
19. REMARKS: SUBMERGED

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-502962
Received By
Entered 7-16-82 By
File No. D(18-21)4ccc

(Well log to appear on Reverse side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	20	RED CLAY
20	140	RED CLAY
140 -	150	CLAY COUGL EST 15 GPM
150	220	SET 220' 6" P.V.C. AIR
		DEVELOPED AT 100 GPM @
		180'

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller TITAN DRILLING
Name

P.O. ~~BOX~~ BOX 1912 BENSON 85602
Address

Date 2-1-82

2-73

Log # 172

ARIZONA DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Name: Linda Estrada
   Address: P.O. Box 398 St. David AZ 85630
   Street City State Zip
2. Driller Name: WEBER DRILLING
   Address: RT. 1 BOX 276B ST. DAVID, AZ. 85630
   Street City State Zip
3. Location: 18 N/S 21 E/W 4 SW 1/4 SW 1/4 SW 1/4
   Township Range Section 10-acre 40-acre 160-acre
4. Well Registration No. 55-539559 (Required)
5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 285 ft.
7. Type of casing Steel
8. Diameter and length of casing 8 in. from 0 to 42.6 in from 0 to 285
9. Method of sealing at reduction points welded
10. Perforated from 245 to 285, from _____ to _____, from _____ to _____.
11. Size of cuts 1/8 X 8" Number of cuts per foot 4
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction Drilled
    (drilled, dug, driven, bored, jetted, etc)
14. Date started 6 14 93
    Month Day Year
15. Date completed 6 16 93
    Month Day Year
16. Depth to water Flowing 20 gpm ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
    Ground Level
18. If flowing well, state method of flow regulation: Gate Valve
19. Remarks:

DO NOT WRITE IN THIS SPACE

55-539559
D(18-21)4CCC

Re
Fi
Re
En. ENTERED JUL 09 1993

DWR-55-55-7/91 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encounterd, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	30	Sandy Clay
30	236	Red Clay
236	285	Quarte Sand + Gravel
		First water 236
		Flows 20gpm

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: Donald E. Weber

Street: WEBER DRILLING
RT. 1 BOX 276B
ST. DAVID, AZ. 85630

City State Zip

Date 6/22/93

Log # 173

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER S. M. Blank
Name
Address

2. Lessee or Operator
Name
Address

3. DRILLER Huachuca Pump Co Inc
Name
Hamel Rd Huachuca City 85616
Address

4. Location of well: Twp. 18 S Rge. 21 E Section 4 SW ¼ SW ¼ SW ¼
10-acre subdivision

5. Intention to Drill File No. D(18-21)4 ccc Permit No. 35-72648

DESCRIPTION OF WELL

6. Total depth of hole 275 ft.

7. Type of casing Steel

8. Diameter and length of casing 6 in. from 0 to 240, in. from to, in. from to

9. Method of sealing at reduction points

10. Perforated from to, from to, from to, from to

11. Size of cuts Number of cuts per foot

12. If screen was installed: Length ft. Diam in. Type

13. Method of construction DRILLED
drilled, dug, driven, bored, jetted, etc.

14. Date started 3 (Month) 2 (Day) 79 (Year)

15. Date completed 3 (Month) 2 (Day) 79 (Year)

16. Depth to water 275 ft.
If flowing well, so state.

17. Describe point from which depth measurements were made, and give sea-level elevation if available

18. If flowing well, state method of flow regulation GATE VALVE

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 7/10/79 by RAC

Filed / / by

File No. D(18-21)4 ccc
35-72648

(Well Log to Appear on Reverse Side)

WD FORM G-201
REV. 4-27-63

RECEIVED MAR 25 1979 STATE LAND DEPT.

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	3	Top Soil
3	250	Clay
250	275	Sand + Gravel Water Artesian Flowing

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Ray Sykes HPC Inc.
Name

Hamel Rd Hedgecoxville 85616
Address

Date 3-3-79

2-73

Log # 174

55-602193

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER Eric Carnes
Name
Address

2. Lessee or Operator
Name
Address

3. DRILLER Thorn Well Co
Name
Address

4. Location of well: Twp. 18S Rge. 21E Section 5 NW ¼ NE ¼ NE ¼
10-acre subdivision

5. Intention to Drill File No. Permit No.

DESCRIPTION OF WELL

6. Total depth of hole 320 ft.

7. Type of casing P.V.C.

8. Diameter and length of casing 6 in. from 0 to 320, in. from to, in. from to

9. Method of sealing at reduction points

10. Perforated from 240 to 320, from to, from to, from to

11. Size of cuts ⅛ Number of cuts per foot 3

12. If screen was installed: Length ft. Diam. in. Type

13. Method of construction drilled
drilled, dug, driven, bored, jetted, etc.

14. Date started 5 (Month) 17 (Day) 77 (Year)

15. Date completed 5 (Month) 18 (Day) 77 (Year)

16. Depth of water ft.
If flowing well, so state.

17. Describe point from which depth measurements were made, and give sea-level elevation if available
ground level

18. If flowing well, state method of flow regulation

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received by
Filed by
File No. D(18-21)5 aab
35-44960

(Well Log to Appear on Reverse Side)

RECEIVED
JUN 1 1977
STATE LAND DEPT.
49

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing [illegible] is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	6	top soil
6	95	sand and gravel
95	280	red clay
280	320	gravel red sand

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller VERN'S WELL CO.
BOX 4850
HUACHUCA CITY, ARIZ. 85616

Address

Date 5-18-77

2-73

Log # 175

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

(1)-18-21)5 ABA

wells 35

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER Kenneth D. Curtis
Name
Address
2. Lessee or Operator
Name
Address
3. DRILLER Verno Well co
Name
Address
4. Location of well: Twp. 18S Rge. 21E Section 5 NE ¼ NW ¼ NE ¼
10-acre subdivision
5. Intention to Drill File No. Permit No.

DESCRIPTION OF WELL

6. Total depth of hole 300 ft.
7. Type of casing plastic
8. Diameter and length of casing 6 in. from 0 to 300, in. from to, in. from to
9. Method of sealing at reduction points
10. Perforated from 240 to 300, from to, from to, from to
11. Size of cuts 60 Number of cuts per foot 3
12. If screen was installed: Length ft. Diam. in. Type
13. Method of construction drilled
drilled, dug, driven, bored, jetted, etc.
14. Date started 4 (Month) 19 (Day) 76 (Year)
15. Date completed 4 (Month) 20 (Day) 76 (Year)
16. Depth of water 280 ft.
If flowing well, so state.
17. Describe point from which depth measurements were made, and give sea-level elevation if available
ground level
18. If flowing well, state method of flow regulation

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received by
Filed by
File No. D(18-21)5 aba
35-36636

(Well Log to Appear on Reverse Side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	15	Top soil
15	225	red clay
225	300	sandy clay and gravel

RECEIVED AUG 31 1976 STATE LAND DEPT. 6213

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Verno Well Co
Name

Humphrey City
Address

Date 4-22-76

2-73

Log # 176

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

AUG 21 1991

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner SOUTHWEST GAS CORP
Name
3401 E. GAS RD TUCSON, AZ 85714
Mailing Address

2. Driller ASSOCIATED DRILLERS
Name
BOX 4858
HUACHUCA CITY, AZ 85616
602-456-9781
Address

3. Location of well: 18S 21E 5 NW NW NE

4. Permit No. _____
(If issued)

DESCRIPTION OF WELL

5. Total depth of hole 175 ft.
6. Type of casing —
7. Diameter and length of casing — in. from ____ to ____, ____ in from ____ to ____.
8. Method of sealing at reduction points —
9. Perforated from — to ____, from ____ to ____, from ____ to ____.
10. Size of cuts — Number of cuts per foot ____
11. If screen was installed: Length — ft. Diam ____ in. Type ____
12. Method of construction DRILLED
drilled, dug, driven, bored, jetted, etc
13. Date started 8 (Month) 6 (Day) 91 (Year)
14. Date completed 8 (Month) 7 (Day) 91 (Year)
15. Depth to water — ft. (If flowing well, so state)
16. Describe point from which depth measurements were made, and give sea-level elevation if available —
17. If flowing well, state method of flow regulation: —
18. Remarks: —

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

REG. No. 55-532134
File No. D(18-21)5 ABB
Entered

ENTERED SEP 12 1991

DWR-55-55-2/89

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	45	SAND
45	170	CLAY
170	175	WATER SAND

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller ASSOCIATED DRILLERS
Name
BOX 4858
HUACHUCA CITY, AZ 85616
Address
602-456-9781

City State Zip

Date 8/15/91

Log # 177

(D-18-21) 5 BA

wells 35

LOG OF WATER WELL DRILLED BY

Drilled for **L.D.S.Church.** of **St.David,** Arizona.

Location **N½,NE¼,NW¼** Sec. **5** Twp. **18 S.** Rge. **21 .**

Date Completed Total Depth **350 ft.**

250	Ft. of **2**	Inch	Lb.or guage casing used	left in well.
	Ft. of	Inch	Lb.or guage casing used	left in well.
	Ft. of	Inch	Lb.or guage casing used	left in well.
	Ft. of	Inch	Lb.or guage casing used	left in well.
	Ft. of	Inch	Lb.or guage casing used	left in well.

Type of Perforator used: **Not perforated.**

Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch

Diameter of Perforations. Inches
Length of Perforations. Inches
Depth at which water was first found. Ft.
Standing water level before perforation. Ft. After perforation Ft.
Change in water level while drilling.
Water level when first tested. Ft. Number of gallons per minute.
Draw down from standing level. Ft. " " " " " **2½.**

Formation From Surface to Bottom of Well, Also Size of Gravel.

0	Ft. to	**75**	Ft.	**Dirt, sand and gravel.**	Ft. to	Ft.
75	Ft. to	**295**	Ft.	**Clay,**	Ft. to	Ft.
295	Ft. to	**350**	Ft.	**Sand,fine and coarse gravel.**	Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.

Is well straight from top to bottom? **Yes.**
At what depth was pump set? **No pump.** Ft.
Was extra pump suction pipe used? How many feet?
Type of drill rig and number used **Hydraulic,rotary.**
Total cost of well and pump installed complete. **50 cts.per foot,drilling only.**
Name and address of driller who drilled the well:

Date of this report **February 1, 1938.**

Additional information and comments:
Artesian well.

(D-18-21)5 ba

Log # 178

(D-18-21) 5 BA
wells 35

LOG OF WATER WELL DRILLED BY

Drilled for Miles Merrill, of St.David, Arizona.

Location N½,NE¼,NW¼Sec. 5, Twp. 18 S.Rge. 21 E.

Date Completed Total Depth 430 ft.

300 Ft. of	2 Inch	Lb.or guage casing used		left in well.
Ft. of	Inch	Lb.or guage casing used		left in well.
Ft. of	Inch	Lb.or guage casing used		left in well.
Ft. of	Inch	Lb.or guage casing used		left in well.
Ft. of	Inch	Lb.or guage casing used		left in well.

Type of Perforator used: Not perforated.

Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch

Diameter of Perforations. Inches
Length of Perforations. Inches
Depth at which water was first found. Ft.
Standing water level before perforation. Ft. After perforation Ft.
Change in water level while drilling.
Water level when first tested. Ft. Number of gallons per minute. 4.
Draw down from standing level. Ft. " " " " "

Formation From Surface to Bottom of Well, Also Size of Gravel.

0	Ft. to	35	Ft.	Dirt,some gravel.	Ft. to	Ft.
35	Ft. to	215	Ft.	Clay,streaks of sand &gravel.	Ft. to	Ft.
215	Ft. to	405	Ft.	Hard clay.	Ft. to	Ft.
405	Ft. to	430	Ft.	Sand,gravel,small boulders.	Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to	290	Ft.	First water.	Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.

Is well straight from top to bottom? Yes.
At what depth was pump set? No pump. Ft.
Was extra pump suction pipe used? How many feet?
Type of drill rig and number used Hydraulic,rotary.
Total cost of well and pump installed complete. 50 cts.per foot,drilling only.
Name and address of driller who drilled the well:

Date of this report February 2, 1938.

Additional information and comments:
Artesian well.

(D-18-21)5 ba

Log # 179

DEPARTMENT OF WR

APR 27 1995

OPERATIONS DIV.

ARIZONA DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

(D-18-21) 5 BAA

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Name: CHURCH OF J.C. OF LATTER DAY SAINTS
   Address: 50 E. NORTH TEMPLE ST. SALT LAKE CITY UTAH 84150
   Street City State Zip
2. Driller Name: GEOMECHANICS SOUTHWEST, INC.
   Address: 7400 S. NOGALES HWY, TUCSON, ARIZONA 85706
   Street City State Zip
3. Location: 18 N/S (Township) 21 E/W (Range) 5 (Section) NE 1/4 (10-acre) NE 1/4 (40-acre) NW 1/4 (160-acre)
4. Well Registration No. 55- 547720 (Required)
5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 20 ft.
7. Type of casing NONE
8. Diameter and length of casing _____ in. from _____ to _____, _____ in from _____ to _____.
9. Method of sealing at reduction points _____
10. Perforated from _____ to _____, from _____ to _____, from _____ to _____.
11. Size of cuts _____ Number of cuts per foot _____
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction DRILLED W/HOLLOW STEM AUGER
    (drilled, dug, driven, bored, jetted, etc)
14. Date started 2-15-95
    Month Day Year
15. Date completed 2-15-95
    Month Day Year
16. Depth to water NONE ENCOUNTERED ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
    GROUND SURFACE, ELEVATION
18. If flowing well, state method of flow regulation: _____
19. Remarks: NO WELLS INSTALLED

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. _____
File No. _____
Received _____ By _____
Entered ENTERED By MAY 1 1995

DWR-55-55-7/91 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encounterd, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
		SILTY SAND

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: GEOMECHANICS SOUTHWEST

7400 S. NOGALES HWY.
Street

TUCSON, ARIZONA 85706
City State Zip

Date 2-16-95

Log # 180

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER George McRae
Name
Address

2. Lessee or Operator
Name
Address

3. DRILLER VERN'S WELL CO. BOX 4858 HUACHUCA CITY, ARIZ. 85616
Name
Address

4. Location of well: Twp. 18S Rge. 21E Section 5 NE ¼ NE ¼ SW ¼
10-acre subdivision

5. Intention to Drill File No. Permit No.

DESCRIPTION OF WELL

6. Total depth of hole 380 ft.

7. Type of casing P.V.C.

8. Diameter and length of casing 6 in. from 0 to 320, in. from to, in. from to

9. Method of sealing at reduction points

). Perforated from to, from to, from to, from to

.. Size of cuts Number of cuts per foot

.. If screen was installed: Length ft. Diam. in. Type

. Method of construction drilled
drilled, dug, driven, bored, jetted, etc.

Date started 7 (Month) 24 (Day) 77 (Year)

Date completed 7 (Month) 27 (Day) 77 (Year)

Depth of water 360 ft.
If flowing well, so state.

Describe point from which depth measurements were made, and give sea-level elevation if available
ground level

.f flowing well, state method of flow regulation

EMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received by

Filed by

File No. D(18-21)5 caa
35-46322

(Well Log to Appear on Reverse Side)

LOG OF WELL

:e depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is arte-
ndicate depth at which encountered, and depth to which it rose in well.

STATE LAND DEPT.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
[illegible]	5	top soil
[illegible]	161	sand and gravel
[illegible]	[illegible]	sand clay
[illegible]	[illegible]	rock

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller VERN'S WELL CO.
BOX 485
Name
HUACHUCA CITY, ARIZ. 85616

Address

Date 2-14-77

2-73

Log # 181

ARIZONA DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Name: Gerald W. Tenney
   Address: RT 1 Box 307 (Street) St. David (City) AZ (State) 85630 (Zip)
2. Driller Name: WEBER DRILLING
   Address: RT. 1 BOX 276B (Street) ST. DAVID, AZ. 85630 (City, State, Zip)
3. Location: 18 N/S (Township) 21 E/W (Range) 5 (Section) SE 1/4 (10-acre) NE 1/4 (40-acre) SW 1/4 (160-acre)
4. Well Registration No. 55- 538522 (Required)
5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 409 ft.
7. Type of casing Steel
8. Diameter and length of casing 6 in. from 0 to 409, _____ in from _____ to _____.
9. Method of sealing at reduction points _____
10. Perforated from 369 to 409, from _____ to _____, from _____ to _____.
11. Size of cuts 1/8 X 8 Number of cuts per foot 4
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction Drilled (drilled, dug, driven, bored, jetted, etc)
14. Date started 6 (Month) 2 (Day) 93 (Year)
15. Date completed 6 (Month) 9 (Day) 93 (Year)
16. Depth to water Flowing 15 gpm ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
    Ground Level
18. If flowing well, state method of flow regulation: Gate Valve
19. Remarks: Gravel Pack 409 to 300 Then Benseal + EZ mud to 20' then Cement 6" Casing in a 12" Borehole

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Reg 55-538522
File D(18-21)5CAD
Rec
Ent
ENTERED JUN 21 1993

DWR-55-55-7/91 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encounterd, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	20	Red Clay
20	33	Fine Sand + Clay
33	85	Sand + Gravel
85	295	Red Clay
295	305	Sand Gravel + Clay
305	335	Sand + Clay (Tan)
335	409	Sand + Gravel
		First water 33'
		Artesian 335'
		Flows 15gpm

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: Donald E. Weber

Street: ~~WEBER DRILLING~~ RT. 1 BOX 276B

City: ST. DAVID, AZ. 85630 State: Zip:

Date: 6/14/93

Log # 182

STATE OF ARIZONA

DEPARTMENT OF WATER RESOURCES

JUL 1982 DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Paul B Kartchner
Name
RT 1 Box 309 St. David AZ 85630
Address

2. Lessee or Operator
Name
Address

3. Driller Weber Drilling
Name
RT 1 Box 276 B ST David AZ 85630
Address

4. Location of well: Twp 18S Rge 21E Sec 5 SE, NE, SW

5. Permit No. 55-503019
(if issued)

DESCRIPTION OF WELL

6. Total depth of hole 130 ft.
7. Type of Casing Steel
8. Diameter and length of casing 12 3/4 in. from 0 to 118, _____ in from _____ to _____.
9. Method of sealing at reduction points N/A
10. Perforated from 62 to 118, from _____ to _____, from _____ to _____
11. Size of cuts 8 x 3/16 Number of cuts per foot 16
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction Drilled & driven
drilled, dug, driven, bored, jetted, etc.
14. Date started 6 (Month) 26 (day) 82 (year)
15. Date completed 6 (Month) 30 (day) 82 (year)
16. Depth to water 25 ft. (If flowing well, so state.)
17. Describe point from which depth measurements were made, and give sea-level elevation if available. Ground Level
18. If flowing well, state method of flow regulation _____
19. REMARKS: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-503019
Received _____ By _____
Entered 7-20-82 By _____
File No. D(18-21)5cad

(Well log to appear on Reverse side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	26	Clay
26	27	SAND - water @ 5 gpm
27	60	clay
60	65	silty clay
65	75	clay
75	85	gray silty clay, some gravel
85	90	gravel
90	95	clay
95	100	gravel
100	130	clay.

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Donald E. Weber
Name

RT 1 Box 276B St David AZ 85630
Address

Date 7/13/82

2-73

Log # 183

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER Harold D. Howard (Name)
RR1, Box 139A, St David, Ariz 85630 (Address)

2. Lessee or Operator none (Name)
(Address)

3. DRILLER Pardee Well Drilling Co. (Name) Box 296 (Address)
Benson, Ariz

4. Location of well: Twp. 18S Rge. 21E Section 5 SE ¼ SE ¼ SE ¼ (10-acre subdivision)

5. Intention to Drill File No. D(18-21)5 ddd Permit No.

DESCRIPTION OF WELL

6. Total depth of hole 300' ft.

7. Type of casing Steel

8. Diameter and length of casing 8 in. from 0 to 8, 6 in. from 0 to 300' in. from to

9. Method of sealing at reduction points in red Clay

10. Perforated from 240' to 300', from to, from to, from to

11. Size of cuts ⅛" X 8" Number of cuts per foot

12. If screen was installed: Length ft. Diam. in. Type

13. Method of construction Drilled (drilled, dug, driven, bored, jetted, etc.)

14. Date started Aug 10 1971 (Month Day Year)

15. Date completed Sept 25 1971 (Month Day Year)

16. Depth of water Flowing ft. (If flowing well, so state.)

17. Describe point from which depth measurements were made, and give sea-level elevation if available

18. If flowing well, state method of flow regulation

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received by
Filed by
File No.

(Well Log to Appear on Reverse Side)

WD FORM G-301
REV. 4-27-53

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	60'	Sandy soil
60'	100'	red Clay
100	240	red Clay 240 Water
240	300	Water sand and Gravel

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller L. E. Pardee
Name

Box 296 Benson Ariz
Address

Date March 21, 1973

RECEIVED MAR 23 1973 STATE LAND DEPT.

619

Log # 184

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

AUG 21 1991

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner SOUTHWEST GAS CORP
Name
3401 E. GAS RD TUCSON, AZ 85714
Mailing Address

2. Driller ASSOCIATED DRILLERS
Name
BOX 4858
HUACHUCA CITY, AZ 85616
602-456-9781
Mailing Address

3. Location of well: 18S 21E 5 SE SE SE

4. Permit No. _____
(If issued)

DESCRIPTION OF WELL

5. Total depth of hole 150 ft.
6. Type of casing —
7. Diameter and length of casing — in. from ____ to ____, ____ in from ____ to ____.
8. Method of sealing at reduction points —
9. Perforated from — to ____, from ____ to ____, from ____ to ____.
10. Size of cuts — Number of cuts per foot ____
11. If screen was installed: Length — ft. Diam ____ in. Type ____
12. Method of construction DRILLED
drilled, dug, driven, bored, jetted, etc
13. Date started 8 (Month) 7 (Day) 91 (Year)
14. Date completed 8 (Month) 9 (Day) 91 (Year)
15. Depth to water — ft. (If flowing well, so state)
16. Describe point from which depth measurements were made, and give sea-level elevation if available —
17. If flowing well, state method of flow regulation: —
18. Remarks: —

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

REG. No. 55-532133
File No. D(18-21)5 DDD
Entered _____

ENTERED SEP 12 1991

DWR-55-55-2/89

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	7	SAND & GRAVEL
7	45	SANDY CLAY
45	150	CLAY

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller ASSOCIATED DRILLERS
Name
BOX 4858
HUACHUCA CITY, AZ 85616
602-456-9781
Address

City State Zip

Date 8/15/91

Log # 185

ARIZONA DEPARTMENT OF WATER RESOURCES
Records Management Section
500 N. 3rd Street * Phoenix, Arizona 85004
(602) 417-2405 * (800) 352-8488
www.water.az.gov

RECEIVED
JAN 14 2003
RECORDS MGT

Well Driller Report and Well Log

FILE NUMBER: D(18-21) 6 AAB
WELL REGISTRATION NUMBER: 55- 594360
PERMIT NUMBER (IF ISSUED):

- Review instructions prior to completing form
- This report should be prepared by the driller in detail and filed with the Department within 30 days following completion of the well.

** PLEASE PRINT CLEARLY **

SECTION 1. REGISTRY INFORMATION

Well Owner

FULL NAME OF COMPANY, ORGANIZATION OR INDIVIDUAL: DAN SCHLEIF
MAILING ADDRESS: 447 APACHE POWDER RD
CITY / STATE / ZIP: ST DAVID, AZ 85630
CONTACT PERSON NAME AND TITLE:
TELEPHONE NUMBER: 805-748-8126
FAX:

Location of Well

WELL LOCATION ADDRESS (IF KNOWN):

TOWNSHIP (N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE
18S	21E	6	NW 1/4	NE 1/4	NE 1/4

LATITUDE: ° ' "N
LONGITUDE: ° ' "W
LAND SURFACE ELEVATION AT WELL: Feet Above Sea Level
METHOD OF LATITUDE / LONGITUDE (CHECK ONE): ☐ Hand-Held ☐ USGS Quad Map ☐ Conventional Survey ☐ GPS : ☐ Survey-Grade
COUNTY ASSESSOR'S PARCEL ID NUMBER: BOOK 121 | MAP 15 | PARCEL 015M
COUNTY WHERE WELL IS LOCATED:

SECTION 2. DRILLING AUTHORIZATION

Drilling Firm

NAME: WEBER DRILLING
DWR LICENSE NUMBER: 272
TELEPHONE NUMBER: 520-720-4800
FAX:

SECTION 3. WELL CONSTRUCTION DETAILS

DATE WELL CONSTRUCTION STARTED: 11-3-02
DATE WELL CONSTRUCTION COMPLETED: 11-6-02
IF FLOWING WELL, METHOD OF FLOW REGULATION: ☐ Valve ☐ Other

Drill Method

CHECK ONE
- ☒ Air Rotary
- ☐ Bored or Augered
- ☐ Cable Tool
- ☐ Dual Rotary
- ☐ Mud Rotary
- ☐ Reverse Circulation
- ☐ Driven
- ☐ Jetted
- ☐ Air Percussion / Odex Tubing
- ☐ Other (please specify)

Method of Well Development

CHECK ONE
- ☒ Airlift
- ☐ Bail
- ☐ Surge Back
- ☐ Surge Pump
- ☐ Other (please specify)

Water Level Information

STATIC WATER LEVEL: 5' Feet Below Land Surface
DATE MEASURED: 11/6/02

Method of Sealing at Reduction Points

CHECK ONE
- ☐ None
- ☐ Packed
- ☐ Swedged
- ☒ Welded
- ☐ Other (please specify)

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 594360

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

Borehole			Installed Casing														
DEPTH FROM SURFACE		BOREHOLE DIAMETER (inches)	DEPTH FROM SURFACE		OUTER DIAMETER (inches)	MATERIAL TYPE (X)				PERFORATION TYPE (X)						SLOT SIZE IF ANY (inches)
FROM (feet)	TO (feet)		FROM (feet)	TO (feet)		STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	
0	98	12 1/4	0	98	8 5/8	✓				✓						
98	428	8	98	428	6 5/8	✓				✓						
428	468	8	428	468	6 5/8	✓								✓		1/8 x 8

Installed Annular Material											
DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (X)								FILTER PACK		
					BENTONITE							
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
0	98		✓									

DEPTH OF BORING		DEPTH OF COMPLETED WELL	
468	Feet Below Land Surface	468	Feet Below Land Surface

DWR-55-55B-10/01 (Rev.)

.Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 594360

SECTION 6. WELL SITE PLAN

NAME OF WELL OWNER	COUNTY ASSESSOR'S PARCEL ID NUMBER BOOK	MAP	PARCEL
DAN SCHLEIF	121	15	015M

- Please draw the following: (1) the boundaries of property on which the well was located; (2) the proposed well location; (3) the locations of all septic tank systems and sewer systems on the property or within 100 feet of the well location, even if on neighboring properties; and (4) any permanent structures on the property that may aid in locating the well.
- Please indicate the distance between the well location and any septic tank system or sewer system.

N
W E
S

SAME AS PERMIT

1" = _____ ft

I state that this notice is filed in compliance with A.R.S. §45-596 and is complete and correct to the best of my knowledge and belief.

DRILLING FIRM	SIGNATURE OF QUALIFYING PARTY	DATE
WEBER DRILLING	David E. Weber	1-10-03

DWR-55-55 (Rev. 10/11/01)

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 594360

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	DESCRIPTION Describe material, grain size, color, etc.	Check (X) every interval where water was encountered
0	15	WEATHERED GRANITE	
15	45	RED CLAY W/ STREAKS OF GRAVELS	
45	355	RED CLAY	
355	400	RED CLAY W/ STREAKS OF GRAVELS	
400	468	VOLCANIC CONGLOMERATE	

Log # 186

(D-18-21) 6 AAB

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 206932

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

DEPTH OF BORING	DEPTH OF COMPLETED WELL
121 Feet Below Land Surface	121 Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
50 Feet Below Land Surface	7/8/05		☐ Valve ☐ Other:

Borehole			Installed Casing													
DEPTH FROM SURFACE		BOREHOLE DIAMETER (inches)	DEPTH FROM SURFACE		OUTER DIAMETER (inches)	MATERIAL TYPE (X)				PERFORATION TYPE (X)						SLOT SIZE IF ANY (inches)
FROM (feet)	TO (feet)		FROM (feet)	TO (feet)		STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	
0	20	12 1/4	0	20	8 5/8	✓				✓						
0	79	8	0	79	6 5/8	✓										
79	121	8	79	121	6 5/8	✓								✓		1/8x8

Installed Annular Material

DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (X)								FILTER PACK		
						BENTONITE						
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
0	20		✓									

WELL REGISTRATION NUMBER
55- 206932

Well Driller Report and Well Log

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	DESCRIPTION Describe material, grain size, color, etc.	Check (X) every interval where water was encountered
0	24	BROWN CLAY	
24	121	SANDY BROWN CLAY W/STREAKS OF GRAVEL	55' FIRST WATER

Log # 187

(D-18-21) 6 AAD

wells 35

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER Alfred Trejo
Name
Address

2. Lessee or Operator
Name
Address

3. DRILLER BJ Drilling Co
Name
P.O. Box 815 - Benson, Az 85602
Address

4. Location of well: Twp. 18S Rge. 21E Section 6 SE ¼ NE ¼ NE ¼
10-acre subdivision

5. Intention to Drill File No. D(18-21)6 Permit No. 49449

DESCRIPTION OF WELL

6. Total depth of hole 100 ft.

7. Type of casing 6 5/8 x .188 Steel

8. Diameter and length of casing 6 in. from 0 to 100, ____ in. from ____ to ____, ____ in. from ____ to ____

9. Method of sealing at reduction points Cement

10. Perforated from 80 to 100, from ____ to ____, from ____ to ____, from ____ to ____

11. Size of cuts 3/16 x 6 Number of cuts per foot 4

12. If screen was installed: Length ____ ft. Diam. ____ in. Type ____

13. Method of construction Drilled - Air Rotary
drilled, dug, driven, bored, jetted, etc.

14. Date started 11/23 (Month) 77 (Year)

15. Date completed 11 (Month) 23 (Day) 77 (Year)

16. Depth of water 70' ft.
If flowing well, so state.

17. Describe point from which depth measurements were made, and give sea-level elevation if available
Collar of hole

18. If flowing well, state method of flow regulation

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 12-7-77 by lee
Filed 12-12-77 by lee
File No. D(18-21)6 aad
35-49449

(Well Log to Appear on Reverse Side)

LOG OF WELL

RECEIVED
DEC 7 1977
STATE LAND DEPT.

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	25	Red clay
25	40	" "
40	100	Sand & gravel - water started @ 40' gradually increasing with depth to a max flow of 100+ gpm @ 100'

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Robert R Jackson
Name

P.O. Box 815 - Benson, Ariz.
Address

Date 11/23/77

2-73

Log # 188

(D-18-21) 6ABA

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55-596097

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

Borehole			Installed Casing													
DEPTH FROM SURFACE		BOREHOLE DIAMETER (inches)	DEPTH FROM SURFACE		OUTER DIAMETER (inches)	MATERIAL TYPE (X)				PERFORATION TYPE (X)						SLOT SIZE IF ANY (inches)
FROM (feet)	TO (feet)		FROM (feet)	TO (feet)		STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	
0	20	12 1/4	0	20	8 5/8	✓				✓						
0	50	8	0	50	6 5/8	✓				✓						
50	118	8	50	118	6 5/8	✓								✓		1/8 x 8

Installed Annular Material											
DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (X)								FILTER PACK		
						BENTONITE						
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
0	20		✓									

DEPTH OF BORING		DEPTH OF COMPLETED WELL	
118	Feet Below Land Surface	118	Feet Below Land Surface

DWR-55-55B-10/01 (Rev.)

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 596097

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	DESCRIPTION Describe material, grain size, color, etc.	Check (X) every interval where water was encountered
0	55	BROWN SANDY CLAY	
55	112	BROWN CLAY W/ GRAVEL STREAKS	✓
112	118	RED CLAY	✓

Log # 189

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004
WELL DRILLER REPORT

RECEIVED
DEC 21 1999
RECORDS MGT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. WEBER DRILLING
453 EAST MECHAM DRIVE
SAINT DAVID, AZ 85630-6235

2. Owner Name: CAREY HOLGATE
Address: ST DAVID (City) AZ (State) 85630 (Zip)

3. Location: 18 (Township) N/S 21 (Range) E/W 6 (Section) ¼ NE (10-acre) ¼ NW (40-acre) ¼ NE (160-acre)

4. Well Registration No. 55- 576951 (Required)
5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 120 ft.
7. Type of casing STEEL
8. Diameter and length of casing 8 in. from 0 to 20, 6 in from 0 to 120'
9. Method of sealing at reduction points WELDED
10. Perforated from 80 to 120, from _____ to _____ from _____ to _____
11. Size of cuts 1/8 X 8 Number of cuts per foot 4
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction DRILLED
(drilled, dug, driven, bored, jetted, etc)
14. Date started DEC (Month) 18 (Day) 1999 (Year)
15. Date completed DEC (Month) 18 (Day) 1999 (Year)
16. Depth to water 20' ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
GROUND LEVEL
18. If flowing well, state method of flow regulation: _____

19. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-576951
File No. D(18-21) 6 ABA
Received _____ By _____
Entered _____ By _____

DWR-55-55-7/95 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	55	BROWN SANDY CLAY
55	120	DECOMPOSED GRANITE
		FIRST WATER 20'
		STATIC 25'

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: WEBER DRILLING

453 EAST MECHAM DRIVE

Street

SAINT DAVID, AZ 85630-6235 520-720-4800

City State Zip Phone No.

X David E. Weber 12/20/99

Signature of Driller Date

Log # 191

(D-18-21) 6ADA

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 200763

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

Borehole			Installed Casing														
DEPTH FROM SURFACE		BOREHOLE DIAMETER (inches)	DEPTH FROM SURFACE		OUTER DIAMETER (inches)	MATERIAL TYPE (X)				PERFORATION TYPE (X)						SLOT SIZE IF ANY (inches)
FROM (feet)	TO (feet)		FROM (feet)	TO (feet)		STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	
0	145	12 1/4	0	145	8 5/8	✓				✓						
0	379	8	0	379	6 5/8	✓				✓						
379	419	8	379	419	6 5/8	✓								✓		1/8 x 8

Installed Annular Material											
DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (X)								FILTER PACK		
					BENTONITE							
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
0	145		✓									

ENTERED MAR 3 1 2004

DEPTH OF BORING		DEPTH OF COMPLETED WELL	
419	Feet Below Land Surface	419	Feet Below Land Surface

DWR-55-55B-10/01 (Rev.)

WELL REGISTRATION NUMBER
55- 200763

Well Driller Report and Well Log

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	DESCRIPTION Describe material, grain size, color, etc.	Check (X) every interval where water was encountered
0	45	BROWN SANDY CLAY	FLOWING WELL
45	120	WEATHERED GRANITE	
120	330	SANDY RED CLAY	FIRST WATER 330'
330	380	RED CLAY W/STREAKS OF GRAVEL	
380	415	WEATHERED GRANITE	
415	419	SANDY RED CLAY	

Log # 194

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

RECEIVED JUL 1989 OPERA

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Jim Mayberry
Name
RT 1 BOX 91 ST. David AZ 85630
Mailing Address

2. Driller WEBER DRILLING RT. 1 BOX 276B ST. DAVID, AZ 85631 PHONE 586-4800
Name

Mailing Address

3. Location of well: Twp 18S Rge 21E Sec 6 NE NE, NW

4. Permit No. 55-524041
(if issued)

DESCRIPTION OF WELL

5. Total depth of hole 420 ft.

6. Type of casing Steel

7. Diameter and length of casing 6 in. from 0 to 160, 4 in from 155 to 420.

8. Method of sealing at reduction points ~~[illegible]~~ Cemented

9. Perforated from 294 to 420, from ____ to ____, from ____ to ____.

10. Size of cuts 3/16 X 3 Number of cuts per foot 6

11. If screen was installed: Length ____ ft. Diam ____ in. Type ____

12. Method of construction Drilled
drilled, dug, driven, bored, jetted, etc.

13. Date started 6 26 89
Month Day Year

14. Date completed 6 30 89
Month Day Year

15. Depth to water 15 ft. (If flowing well, so state.)

16. Describe point from which depth measurements were made, and give sea-level elevation if available Ground Level

17. If flowing well, state method of flow regulation: ____

18. Remarks: 6" Casing Cemented in Top to bottom

55-524041

D(18-21)6 baa

Enter ENTERED AUG 03 1989 By

DWR-55-6-Rev. 8/85

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	50	Silty Clay
50	140	Gravel
140	350	Clay
350	395	Gravel
395	400	Clay
400	410	Gravel
410	420	Clay
		FIRST Water 50' Surface water
		ARTESIAN 395'
		STATIC 15'

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Donald E. Weber
Name

WEBER DRILLING
RT. 1 BOX 276B
ST. DAVID, AZ 85630
PHONE 586-4800

City State Zip

Date 7/25/89

Log # 197

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street
Phoenix, Arizona 85004
WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED
JAN 11 2000
RECORDS MGT

1. WEBER DRILLING
453 EAST MECHAM DRIVE
SAINT DAVID, AZ 85630-6235

2. Owner Name: THOMAS S. HAYMORE
Address: ST DAVID (City) AZ (State) 85630 (Zip)

3. Location: 18 (N/S) 21 (E/W) 6 (Section) ¼ NW (10-acre) ¼ SW (40-acre) ¼ NW (160-acre)
Township Range

4. Well Registration No. 55- 577270 (Required)
5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 128 ft.
7. Type of casing STEEL
8. Diameter and length of casing 12 in. from 0 to 128, ____ in from ____ to ____
9. Method of sealing at reduction points ____
10. Perforated from 71 to 128, from ____ to ____ from ____ to ____
11. Size of cuts 1/8 X 2 1/2 Number of cuts per foot 24
12. If screen was installed: Length ____ ft. Diam ____ in. Type ____
13. Method of construction DRILLED
(drilled, dug, driven, bored, jetted, etc)
14. Date started DEC (Month) 27 (Day) 1999 (Year)
15. Date completed DEC (Month) 27 (Day) 1999 (Year)
16. Depth to water 50 ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
GROUND LEVEL
18. If flowing well, state method of flow regulation: ____
19. Remarks: Gravel packed up to 20' then cemented from 20' up to 0'

ANSWERED JAN 14 2000

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-577270
File No. D(18-21) 6 BCB
Received ____ By ____
Entered ____ By ____

DWR-55-55-7/95 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	50	SANDY BROWN CLAY
50	110	DECOMPOSED GRANITE
110	128	RED CLAY
		FIRST WATER 50'
		STATIC 35'

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: WEBER DRILLING

453 EAST MECHAM DRIVE

Street

SAINT DAVID, AZ 85630-6235 520-720-4800

City State Zip Phone No.

1-10-2000

Signature of Driller Date

Log # 207

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Hugh A Mitchell
Name
3212 Via Rosecado Carlsbad Ca 92008
Mailing Address

2. Driller WEBER DRILLING
Name
RT. 1 BOX 276B
ST. DAVID, AZ. 85630
Mailing Address

3. Location of well: Twp 18S Rge 21E. Section 6, NW 1/4 N.W 1/4 SE 1/4

4. Permit No. 55-530042
(If issued)

DESCRIPTION OF WELL

5. Total depth of hole 452 ft.

6. Type of casing Steel

7. Diameter and length of casing 8 in. from 0 to 205.6 in from 0 to 452

8. Method of sealing at reduction points welded

9. Perforated from 410 to 452 from ____ to ____, from ____ to ____.

10. Size of cuts 8 x 1/8 Number of cuts per foot 4

11. If screen was installed: Length ____ ft. Diam ____ in. Type ____

12. Method of construction drilled
drilled, dug, driven, bored, jetted, etc

13. Date started 7 (Month) 10 (Day) 91 (Year)

14. Date completed 7 (Month) 17 (Day) 91 (Year)

15. Depth to water 30 ft. (If flowing well, so state)

16. Describe point from which depth measurements were made, and give sea-level elevation if available ground

17. If flowing well, state method of flow regulation: 2" gate valve

18. Remarks:

DO NOT WRITE IN THIS AREA

REG. No. 55-530042
File No. D(18-21)6 DBB
Entered ____ By ____
ENTERED JUL 23 1991

DWR-55-55-2/89

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
		first Water 30 ft - S. Artesian flowing
		Second Water 380
0	125	Sand - gravel
125	180	Sandy clay
180	380	clay
300	452	Decomposed Conglomerate

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Randall G. Weber
Name

WEBER DRILLING
Addr RR 1 BOX 276B
ST. DAVID, AZ. 85630

City State Zip

Date 7/17/91

Log # 208

ARIZONA DEPARTMENT OF WATER RESOURCES
Records Management Section
500 N. 3rd Street * Phoenix, Arizona 85004
(602) 417-2405 * (800) 352-8488
www.water.az.gov

RECEIVED NOV 22 2004 Information Management

Well Driller Report and Well Log

FILE NUMBER: D(18-21) 6 DBB
WELL REGISTRATION NUMBER: 55-204298
PERMIT NUMBER (IF ISSUED):

- Review instructions prior to completing form
- This report should be prepared by the driller in detail and filed with the Department within 30 days following completion of the well.

** PLEASE PRINT CLEARLY **

SECTION 1. REGISTRY INFORMATION

Well Owner

FULL NAME OF COMPANY, ORGANIZATION OR INDIVIDUAL: APACHE NITROGEN PRODUCTS INC
MAILING ADDRESS: PO BOX 700
CITY / STATE / ZIP: BENSON, AZ 85602
CONTACT PERSON NAME AND TITLE:
TELEPHONE NUMBER: 520-720-2114
FAX:

Location of Well

WELL LOCATION ADDRESS (IF KNOWN): No Address

TOWNSHIP (N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE
18S	21E	6	SE 1/4	NW 1/4	NW 1/4

LATITUDE: ° ' "N
LONGITUDE: ° ' "W
LAND SURFACE ELEVATION AT WELL: Feet Above Sea Level
METHOD OF LATITUDE / LONGITUDE (CHECK ONE): ☐ USGS Quad Map ☐ Conventional Survey ☐ GPS: ☐ Hand-Held ☐ Survey-Grade
COUNTY ASSESSOR'S PARCEL ID NUMBER: BOOK 121 MAP 1 PARCEL 005
COUNTY WHERE WELL IS LOCATED: Cochise

SECTION 2. DRILLING AUTHORIZATION

Drilling Firm

NAME: BOART LONGYEAR COMPANY
DWR LICENSE NUMBER: 83
TELEPHONE NUMBER: 623-486-1881
FAX:

SECTION 3. WELL CONSTRUCTION DETAILS

DATE WELL CONSTRUCTION STARTED: 9-24-04
DATE WELL CONSTRUCTION COMPLETED: 9-25-04
IF FLOWING WELL, METHOD OF FLOW REGULATION: ☐ Valve ☐ Other

Drill Method

CHECK ONE
- ☐ Air Rotary
- ☐ Bored or Augered
- ☐ Cable Tool
- ☐ Dual Rotary
- ☐ Mud Rotary
- ☐ Reverse Circulation
- ☐ Driven
- ☐ Jetted
- ☐ Air Percussion / Odex Tubing
- ☒ Other (please specify) RotoSonic

Method of Well Development

CHECK ONE
- ☐ Airlift
- ☐ Bail
- ☐ Surge Back
- ☐ Surge Pump
- ☐ Other (please specify)

Method of Sealing at Reduction Points

CHECK ONE
- ☐ None
- ☐ Packed
- ☐ Swedged
- ☐ Welded
- ☐ Other (please specify)

Water Level Information

STATIC WATER LEVEL: 23 Feet Below Land Surface
DATE MEASURED: 9-25-04

ENTERED NOV 22 2004

DWR-55-55-10/01 (Rev.)

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 204298

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

Borehole			Installed Casing													
DEPTH FROM SURFACE		BOREHOLE DIAMETER (inches)	DEPTH FROM SURFACE		OUTER DIAMETER (inches)	MATERIAL TYPE (X)				PERFORATION TYPE (X)						SLOT SIZE IF ANY (inches)
FROM (feet)	TO (feet)		FROM (feet)	TO (feet)		STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	
0'	68'	8"	0'	18'	4"	X				X						
68'	80'	6"	18'	48'	4"		X			X						
			48'	63'	4"		X							X		.020
			63'	68'	4"		X			X						

Installed Annular Material											
DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (X)								FILTER PACK		
						BENTONITE						
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
0'	20'			X								
20'	37'					X						
37'	43'									X		#60
43'	68'									X		8x12
68'	80'						X					

DEPTH OF BORING		DEPTH OF COMPLETED WELL	
80'	Feet Below Land Surface	68'	Feet Below Land Surface

DWR-55-55B-10/01 (Rev.)

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 204298

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	DESCRIPTION Describe material, grain size, color, etc.	Check (X) every interval where water was encountered
0'	20'	silty sand with Clay	
20'	39'	fine to cors sand and Gravel	X
39'	50'	Lean Clay	
50'	66'	fine to cors sand and Gravel	X
66'	80'	fat clay	

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 204298

SECTION 6. WELL SITE PLAN

NAME OF WELL OWNER	COUNTY ASSESSOR'S PARCEL ID NUMBER BOOK	MAP	PARCEL
APACHE NITROGEN PRODUCTS INC	121	1	005

- Please draw the following: (1) the boundaries of property on which the well was located; (2) the proposed well location; (3) the locations of all septic tank systems and sewer systems on the property or within 100 feet of the well location, even if on neighboring properties; and (4) any permanent structures on the property that may aid in locating the well.
- Please indicate the distance between the well location and any septic tank system or sewer system.

N
W E
S

1" = _____ ft

I state that this notice is filed in compliance with A.R.S. §45-596 and is complete and correct to the best of my knowledge and belief.

DRILLING FIRM	SIGNATURE OF QUALIFYING PARTY	DATE
BOART LONGYEAR	[signature]	11-17-04

DWR-55-55 (Rev. 10/11/01)

Log # 209

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

JUL 22 1991

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Hugh A Mitchell
Name
3212 Via Pescado Carlsbad Ca 92008
Mailing Address

2. Driller WEBER DRILLING
Name
RT. 1 BOX 276B
ST. DAVID, AZ. 85630
Mailing Address

3. Location of well: Twp 18S. Rge. 21E. Section 6, NW1/4 NW1/4 SE1/4

4. Permit No. SS-530043
(If issued)

DESCRIPTION OF WELL

5. Total depth of hole 120 ft.

6. Type of casing Steel

7. Diameter and length of casing 8 in. from 0 to 120 in from ____ to ____.

8. Method of sealing at reduction points ____

9. Perforated from 57 to 120 from ____ to ____, from ____ to ____.

10. Size of cuts 8" x 1/8" Number of cuts per foot 6

11. If screen was installed: Length ____ ft. Diam ____ in. Type ____

12. Method of construction drilled
drilled, dug, driven, bored, jetted, etc

13. Date started 7 (Month) 15 (Day) 91 (Year)

14. Date completed 7 (Month) 17 (Day) 91 (Year)

15. Depth to water 30 ft. (If flowing well, so state)

16. Describe point from which depth measurements were made, and give sea-level elevation if available ground

17. If flowing well, state method of flow regulation: ____

18. Remarks: Gravel Packed up to 20' & Cemented the Rest

DO NOT WRITE IN THIS SPACE

REG. No. 55-530043
D(18-21)6 DBB

File No.

Entered ____ By ____

ENTERED JUL 23 1991

DWR-55-55-2/89

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
		first Water 30' — Static 20'
0	30	Clay
30	120	Gravels

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Donald R. Weber
Name

WEBER DRILLING
RT 1 BOX 276B
ST. DAVID, AZ. 85630

City State Zip

Date 7/17/91

Log # 210

DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner APACHE NITROGEN PRODUCTS, INC.
Name
P.O. BOX 700 BENSON AZ 85602
Mailing Address

2. Driller RIVAL WATERWELL SPECIALTY
Name
P.O. BOX 81841 BAKERSFIELD CA 93380
Mailing Address

3. Location of well: D(18-21) 6 DBC

4. Permit No. _____
(If issued)

DESCRIPTION OF WELL

5. Total depth of hole 40 ft.

6. Type of casing 8 5/8" STEEL 4" PVC

7. Diameter and length of casing 8 5/8 in. from +1 to 10, 4 in from +1 to 20.5.

8. Method of sealing at reduction points N/A

9. Perforated from 13 to 18, from — to —, from — to —.

10. Size of cuts 0.020 Number of cuts per foot _____

11. If screen was installed: Length 5 ft. Diam 4 in. Type PVC

12. Method of construction FLUID ROTARY
drilled, dug, driven, bored, jetted, etc

13. Date started 5 (Month) 4 (Day) 90 (Year)

14. Date completed 5 (Month) 5 (Day) 90 (Year)

15. Depth to water DRY ft. (If flowing well, so state)

16. Describe point from which depth measurements were made, and give sea-level elevation if available _____

17. If flowing well, state method of flow regulation: _____

18. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

REG. No. 55-528021

File No. D(18-21)6dbc

Entered ENTERED JUN - 4 1990 By _____

DWR-55-55-2/89

RECEIVED
JUN - 1 1990
OPERATIONS DIV.

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	5	GRAVELLY SAND
5	15	GRAVEL AND COBBLES
15	40	CLAY

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

~~Driller~~ HYDROGEOLOGIST Name: Brian C Travers

Address: 2222 S. DOBSON #401

City: MESA State: AZ Zip: 85260

Date: 5/21/90

Log # 211

(D-18-21)6DBD

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55-594007

SECTION 4. WELL CONSTRUCTION DESIGN AS BUILT (attach additional page if needed)

Borehole			Installed Casing														
DEPTH FROM SURFACE		BOREHOLE DIAMETER (inches)	DEPTH FROM SURFACE		OUTER DIAMETER (inches)	MATERIAL TYPE (X)				PERFORATION TYPE (X)						SLOT SIZE IF ANY (inches)
FROM (feet)	TO (feet)		FROM (feet)	TO (feet)		STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	
0	67'	8"	0	20'	4"	X				X						
67'	76'	6"	20'	27'	4"		X			X						
			27'	42'	4"		X							X		.020
			42'	45'	4"		X			X						

Installed Annular Material												
DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (X)								FILTER PACK		
						BENTONITE						
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
0	1'		X									
1'	20'			X								
20'	22'						X					3/8
22'	24'									X		#60
24'	45'									X		8x12
45'	76'						X					3/8

DEPTH OF BORING		DEPTH OF COMPLETED WELL	
76 ft	Feet Below Land Surface	45 ft.	Feet Below Land Surface

DWR-55-55B-10/01 (Rev.)

ANSWERED FEB 18 2003

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 594007

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	DESCRIPTION Describe material, grain size, color, etc.	Check (X) every interval where water was encountered
0'	16'	silty sand w/fine to coarse gravel	
17'	24'	fine to coarse sand, fine gravel	
25'	26'	fine to coarse sand & gravel	
27'	65'	sand w/fine to coarse gravel	X
66'	76'	clay (St. David clay)	

Log # 212

DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner APACHE NITROGEN PRODUCTS, INC.
   Name
   P.O. BOX 700 BENSON AZ 85602
   Mailing Address
2. Driller RIVAC WATERWELL SPECIALTY
   Name
   P.O. BOX 81841 BAKERSFIELD CA 93380
   Mailing Address
3. Location of well: D(18-21) 6 DBD
4. Permit No. _____
   (If issued)

DESCRIPTION OF WELL

5. Total depth of hole 62 ft.
6. Type of casing 8 5/8" STEEL & 4" PVC
7. Diameter and length of casing 8 5/8 in. from 0 to 20, 4 in from +1 to 46.5.
8. Method of sealing at reduction points N/A
9. Perforated from 29 to 44, from — to —, from — to —.
10. Size of cuts 0.020 Number of cuts per foot —
11. If screen was installed: Length 15 ft. Diam 4 in. Type PVC
12. Method of construction FLUID ROTARY
    drilled, dug, driven, bored, jetted, etc
13. Date started 5 (Month) 7 (Day) 90 (Year)
14. Date completed 5 (Month) 8 (Day) 90 (Year)
15. Depth to water 23 ft. (If flowing well, so state)
16. Describe point from which depth measurements were made, and give sea-level elevation if available _____
17. If flowing well, state method of flow regulation: _____
18. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

REG. No. 55-528022
File No. D(18-21)6dbd
Entered ENTERED JUN - 4 1990 By

RECEIVED JUN - 1 1990 OPERATIONS DIV.

DWR-55-55-2/89

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	2.5	GRAVELLY CLAYEY SAND
2.5	11	CLAY
11	15	CLAYEY GRAVELLY SAND
15	18	~~SANDY~~ CLAY
18	22	SANDY CLAY
22	44	GRAVELLY SAND
44	62	CLAY

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

~~Driller~~ ~~14~~ ~~0~~ ~~0~~ ~~0~~ ~~0~~ ~~0~~ ~~0~~ ~~7~~ ~~5~~ ~~1~~ BRUCE C TRAVERS
Name

2222 S. DOBSON #401
Address

MESA AZ 85202
City State Zip

Date 5/21/90

Log # 213

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner APACHE NITROGEN PRODUCTS, INC
Name
P.O. BOX 700 BENSON AZ 85602
Mailing Address

2. Driller RIVAL WATERWELL SPECIALTY
Name
P.O. BOX 81841 BAKERSFIELD CA 93308
Mailing Address

3. Location of well: D(18-21) 7 AAA

4. Permit No. _____
(If issued)

DESCRIPTION OF WELL

5. Total depth of hole 53 ft.
6. Type of casing 8 5/8" STEEL + 4" PVC
7. Diameter and length of casing 8 5/8 in. from +1 to 17, 4" in from +1 to 35.5.
8. Method of sealing at reduction points N/A
9. Perforated from 18 to 33, from — to —, from — to —.
10. Size of cuts 0.020 Number of cuts per foot _____
11. If screen was installed: Length 15 ft. Diam 4 in. Type PVC
12. Method of construction FLUID ROTARY
drilled, dug, driven, bored, jetted, etc
13. Date started 5 (Month) 4 (Day) 90 (Year)
14. Date completed 5 (Month) 5 (Day) 90 (Year)
15. Depth to water DRY ft. (If flowing well, so state)
16. Describe point from which depth measurements were made, and give sea-level elevation if available _____
17. If flowing well, state method of flow regulation: _____
18. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

REG. No. 55-528008
File No. D(18-2)7aaa
Entered ENTERED JUN - 4 1990 By

RECEIVED JUN - 1 1990 OPERATIONS

DWR-55-55-2/89

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	10	CLAYEY GRAVELLY SAND
10	12	CLAYEY SANDY GRAVEL AND COBBLES
12	33	SANDY GRAVEL AND COBBLES
33	53	CLAY

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

~~Driller~~ HYDROGEOLOGIST Bruce C Traven
Name

2222 S. DOBSON #401
Address

MESA AZ 85202
City State Zip

Date 5/21/90

Log # 214

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner APACHE ~~POWDER~~ NITROGEN PRODUCT, INC
   Name
   P.O. BOX 700 BENSON AZ 85602
   Mailing Address
2. Driller RIVAC WATERWELL SPECIALTY
   Name
   P.O. BOX 81841 BAKERSFIELD CA 93380
   Mailing Address
3. Location of well: D(18-21) 7 AAA
4. Permit No. _____
   (If issued)

DESCRIPTION OF WELL

5. Total depth of hole 62 ft.
6. Type of casing 8 5/8" STEEL & 4" PVC
7. Diameter and length of casing 8 5/8 in. from +.2 to 19.8, 4 in from 11.5 to 47.5.
8. Method of sealing at reduction points N/A
9. Perforated from 30 to 45, from — to —, from — to —.
10. Size of cuts 0.020 Number of cuts per foot —
11. If screen was installed: Length 15 ft. Diam 4 in. Type PVC
12. Method of construction FLUID ROTARY
    drilled, dug, driven, bored, jetted, etc
13. Date started 5 (Month) 10 (Day) 1990 (Year)
14. Date completed 5 (Month) 11 (Day) 1990 (Year)
15. Depth to water 25 ft. (If flowing well, so state)
16. Describe point from which depth measurements were made, and give sea-level elevation if available _____
17. If flowing well, state method of flow regulation: _____
18. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
REG. No. 55-528009
File No. D(18-21)7cdc
Entered _____ By _____

RECEIVED JUN - 1 1990 OPERATIONS DIV.

D(18-21) 7 AAA

DWR-55-55-2/89

ENTERED JUN - 8 1990

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	10	CLAYEY GRAVELLY SAND
10	12	CLAY
12	20	CLAYEY GRAVELLY SAND
20	30	SANDY CLAY
30	47	CLAYEY SANDY GRAVEL
47	62	CLAY

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

~~Driller~~ HYDROGEOLOGIST BRUCE C TRAVERS
Name

2222 S. DOBSON #401
Address

MESA AZ 85202
City State Zip

Date 5/22/90

Log # 215

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North 3rd Street
Phoenix, Arizona 85004

RECEIVED
JUN 30 2000
RECORDS MGT

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. WATER DEVELOPMENT CORP. DBA WDC EXPLORATION
1202 EAST KENTUCKY AVENUE
WOODLAND, CA 95776-5906

2. Owner Name: Apache Nitrogen Products
Address: PoB 700 Benson AZ 85602
City State Zip

3. Location: 18 N/S 21 E/W 7 ¼ NE ¼ NE ¼ NE
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55-579875 (Required)

5. Permit No. _____ (If Issued)

DESCRIPTION OF WELL

6. Total depth of hole 27 ft.
7. Type of casing _____
8. Diameter and length of casing _____ in. from _____ to _____, _____ in from _____ to _____
9. Method of sealing at reduction points _____
10. Perforated from _____ to _____, from _____ to _____ from _____ to _____
11. Size of cuts _____ Number of cuts per foot _____
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction _____
(drilled, dug, driven, bored, jetted, etc)
14. Date started 5 00
Month Day Year
15. Date completed 6 00
Month Day Year
16. Depth to water _____ ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea_level elevation if availabl
_____
18. If flowing well, state method of flow regulation: _____
19. Remarks: _____

ANSWERED JUL 07 2000

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55- 579875
File No. D(18-21) 7 AAA
Received _____ By _____
Entered _____ By _____

DWR-55-55-7/95 (Rev.)

LITHOLOGIC LOG FOR EXPLORATORY BORING EXB-7
ADWR Registration Number 55-579875

DEPTH INTERVAL (feet below land surface)	SOIL TYPE	GROUP SYMBOL(a)	DESCRIPTION OF MATERIALS
0-6	CLAYEY SILTY SAND	SM-SC	Pale yellowish brown (10 YR 6/2); fine to coarse, medium graded, subangular to subrounded sand; trace fine, rounded gravel; trace clay; strong HCl reaction; loose; soft; dry to damp.
6-11	SANDY GRAVEL	GW	Pale yellowish brown (10 YR 6/2); fine to ¾", medium graded, subrounded to rounded gravel; fine to coarse, well graded, subangular to subrounded sand; minor silt/clay; strong
11-27	FAT CLAY (St. David Clay)	CH	Moderate brown (5 YR 4/4); fine, poorly graded sand; strong HCl reaction; medium plasticity; very stiff to hard; damp.

TOTAL DEPTH OF BOREHOLE = 27 FEET

ANSWERED JUL 0 7 2000

(a) United Soil Classification System ASTM D2488

EXB-7 litho log.xls

HARGIS + ASSOCIATES, INC.

Log # 221

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

DEC 12 1990

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Apache Powder Company (now Apache Nitrogen Products)
Name
P.O. Box 700, Benson AZ 85602
Mailing Address

2. Driller Desert Earth Engineering
Name
1001 S. Euclid Avenue, Tucson AZ 85719
Mailing Address

3. Location of well: D(18-21)07 (4 boreholes drilled)

4. Permit No. 55-527753
(If issued)

DESCRIPTION OF WELL

5. Total depth of hole 20.5-40.5 ft.

6. Type of casing none

7. Diameter and length of casing____in. from____to____, ____in from ____to ____.

8. Method of sealing at reduction points ____

9. Perforated from____to____, from____to____, from____to____.

10. Size of cuts____ Number of cuts per foot____

11. If screen was installed: Length____ft. Diam____in. Type____

12. Method of construction auger
drilled, dug, driven, bored, jetted, etc

13. Date started 04 (Month) 29 (Day) 90 (Year)

14. Date completed 05 (Month) 02 (Day) 90 (Year)

15. Depth to water 8ft in one hole only, rest were dry ft. (If flowing well, so state)

16. Describe point from which depth measurements were made, and give sea-level elevation if available land surface

17. If flowing well, state method of flow regulation:

18. Remarks: abandoned in accordance with R-12-15-816 these 4 wells were exploration wells for geotechnical information

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
REG. No. 55-527753
File No. D(18-21)7
Entered ENTERED DEC 13 1990 By

DWR-55-55-2/89

I

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
SB-3	(7 bdd)	
0	1	Fill
1	2.8	silty sandy gravel / sandy silty gravel
2.8	9.7	clay
9.7	24.2	silty clay
24.2	25	silty, gravelly, sand
25	27	silty clay
27	29	silty sandy clay
29	32	silty, gravelly clay
32	37	silty clay
37	40.5	St. David Clay
SB-4	(7Cab)	
0	1	Fill
1	4	Gravelly silty sand
4	16	silty clay
16	25	silty sandy gravel
25	40.5	silty clay
SB-5	(7 cdc)	
0	2.5	Fill
2.5	7.5	clayey sandy silt / silty gravelly sand
7.5	17	sandy silty clay / gravelly clay, sand
17	20.5	clay
SB-6	(7 bbd)	
0	1	Fill
1	10.3	silty sandy gravel
10.3	30.5	Clay

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller [illegible] Jr.
Name

1001 S. Euclid Ave.
Address

Tucson, Ariz. 85719
City State Zip

Date 12-8-90

Log # 222

STATE OF ARIZONA

DEPARTMENT OF
WATER RESOURCES

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner James Howe Jr
Name
RT 1 Box 167 ST David AZ 85630
Address

2. Lessee or Operator
Name
Address

3. Driller Weber Drilling
Name
RT 1 Box 276 B ST David AZ 85630
Address

4. Location of well: Twp 18S Rge 21E Sec 8

5. Permit No. 55-503725
(if issued)

DESCRIPTION OF WELL

6. Total depth of hole 115 ft.
7. Type of Casing Steel
8. Diameter and length of casing 8 in. from 0 to 80, 12" in from 0 to 10.
9. Method of sealing at reduction points
10. Perforated from 41.5' to 80', from to , from to
11. Size of cuts 1/4 X 8 Number of cuts per foot 4
12. If screen was installed: Length ft. Diam in. Type
13. Method of construction drilled & driven
drilled, dug, driven, bored, jetted, etc.
14. Date started 8 (Month) 17 (day) 82 (year)
15. Date completed 8 (Month) 20 (day) 82 (year)
16. Depth to water 60' ft. (If flowing well, so state.)
17. Describe point from which depth measurements were made, and give sea-level elevation if available.
18. If flowing well, state method of flow regulation
19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-503725
Received By
Entered 9.1.82 By
File No. D(18-21)8aa

(Well log to appear on Reverse side)

RECEIVED
AUG 31 1982
DEPT. OF
WATER RESOURCES

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	27	SAnd + gRAvel
27	60	Clay
60	61	SAnd + gRAvel water at 60'
61	115	clay STATIC 45'

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Donald E Weber
Name

RT 1 Box 276B ST David AZ
Address

Date 8/26/82

2-73

Log # 223

LOG OF WATER WELL DRILLED BY

Ed Elsmon, St.David,

Drilled for of Arizona.

Location S½,NE¼,NE¼, Sec. 8, Twp. 18 S. Rge. 21 E.

Date Completed Total Depth 350 ft.

40 4
310 Ft. of 2 Inch Lb. or guage casing used left in well.
Ft. of Inch Lb. or guage casing used left in well.
Ft. of Inch Lb. or guage casing used left in well.
Ft. of Inch Lb. or guage casing used left in well.
Ft. of Inch Lb. or guage casing used left in well.

Not perforated.

Type of Perforator used:

Perforated Ft. to Ft. Holes per Inch
Perforated Ft. to Ft. Holes per Inch
Perforated Ft. to Ft. Holes per Inch
Perforated Ft. to Ft. Holes per Inch
Perforated Ft. to Ft. Holes per Inch

Diameter of Perforations. Inches
Length of Perforations. Inches
Depth at which water was first found, Ft.
Standing water level before perforation. Ft. After perforation. Ft.
Change in water level while drilling. 20.
Water level when first tested. Ft. Number of gallons per minute.
Draw down from standing level. Ft.

Formation From Surface to Bottom of Well, Also Size of Gravel.

Not available.

Ft. to	Ft.	Ft. to	Ft.
Ft. to	Ft.	Ft. to	Ft.
Ft. to	Ft.	Ft. to	Ft.
Ft. to	Ft.	Ft. to	Ft.
Ft. to	Ft.	Ft. to	Ft.
Ft. to	Ft.	Ft. to	Ft.
Ft. to	Ft.	Ft. to	Ft.
Ft. to	Ft.	Ft. to	Ft.
Ft. to	Ft.	Ft. to	Ft.
Ft. to	Ft.	Ft. to	Ft.
Ft. to	Ft.	Ft. to	Ft.
Ft. to	Ft.	Ft. to	Ft.
Ft. to	Ft.	Ft. to	Ft.
Ft. to	Ft.	Ft. to	Ft.
Ft. to	Ft.	Ft. to	Ft.

Is well straight from top to bottom? Yes.
At what depth was pump set? No pump. Ft.
Was extra pump suction pipe used? Hydraulic,rotary. may feet?
Type of drill rig and number used 50 cts.per foot,drilling only.
Total cost of well and pump installed complete. $
Name and address of driller who drilled the well:

January 31, 1938.
Date of this report

Additional information Artesian well.

Log # 224

LOG OF WATER WELL DRILLED BY

Drilled for **Ed Eismon,** of **St.David,** Arizona.

Location **S½,NE¼,NE¼,Sec. 8,** Twp. **18 S.Rge.21 E.**

Date Completed Total Depth **350 ft.**

Ft. of **3**	Inch	Lb.or guage casing used	left in well.
Ft. of	Inch	Lb.or guage casing used	left in well.
Ft. of	Inch	Lb.or guage casing used	left in well.
Ft. of	Inch	Lb.or guage casing used	left in well.
Ft. of	Inch	Lb.or guage casing used	left in well.

Type of Perforator used:

Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch

Diameter of Perforations. Inches
Length of Perforations. Inches
Depth at which water was first found. Ft.
Standing water level before perforation. Ft. After perforation Ft.
Change in water level while drilling.
Water level when first tested. Ft. Number of gallons per minute. **12.**
Draw down from standing level. Ft. " " " " "

Formation From Surface to Bottom of Well, Also Size of Gravel.

0	Ft. to **8**	Ft. **Sand.**	Ft. to	Ft.
8	Ft. to **38**	Ft. **Dirt,sand,gravel.**	Ft. to	Ft.
38	Ft. to **258**	Ft. **Sand,gravel small boulders.**	Ft. to	Ft.
258	Ft. to **349**	Ft. **Clay, caliche.**	Ft. to	Ft.
349	Ft. to **350**	Ft. **Hardpan.**	Ft. to	Ft.
	Ft. to	Ft.	Ft. to	Ft.
	Ft. to	Ft.	Ft. to	Ft.
	Ft. to	Ft.	Ft. to	Ft.
	Ft. to	Ft.	Ft. to	Ft.
	Ft. to	Ft.	Ft. to	Ft.
	Ft. to	Ft.	Ft. to	Ft.
	Ft. to	Ft.	Ft. to	Ft.
	Ft. to	Ft.	Ft. to	Ft.
	Ft. to	Ft.	Ft. to	Ft.
	Ft. to	Ft.	Ft. to	Ft.

Is well straight from top to bottom? **Yes.**
At what depth was pump set? **No pump.** Ft.
Was extra pump suction pipe used? How many feet?
Type of drill rig and number used **Hydraulic,rotary.**
Total cost of well and pump installed complete.**50 cts.per foot,drilling only.**
Name and address of driller who drilled the well:

Date of this report **February 8, 1938.**

Additional information and comments:
Artesian well.

(D-18-21) 8 aa

Log # 225

LOG OF WATER WELL DRILLED BY

Drilled for Ed Eismon, of St.David, Arizona.

Location S½,NE¼,NE¼, Sec. 8, Twp. 18 S. Rge. 21 E.

Date Completed Total Depth 350 ft.

Ft. of	3	Inch	Lb.or guage casing used	left in well.
Ft. of		Inch	Lb.or guage casing used	left in well.
Ft. of		Inch	Lb.or guage casing used	left in well.
Ft. of		Inch	Lb.or guage casing used	left in well.
Ft. of		Inch	Lb.or guage casing used	left in well.

Type of Perforator used: Not perforated.

Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch

Diameter of Perforations. Inches
Length of Perforations. Inches
Depth at which water was first found. Ft.
Standing water level before perforation. Ft. After perforation Ft.
Change in water level while drilling.
Water level when first tested. Ft. Number of gallons per minute. 12.
Draw down from standing level. Ft. " " " " "

Formation From Surface to Bottom of Well, Also Size of Gravel.

0	Ft. to	40	Ft.	Soil,dirt,	Ft. to	Ft.
40	Ft. to	320	Ft.	Yellow clay,sand streaks,	Ft. to	Ft.
320	Ft. to	350	Ft.	Sand,fine and coarse gravel.	Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.

Is well straight from top to bottom? Yes.
At what depth was pump set? No pump. Ft.
Was extra pump suction pipe used? How many feet?
Type of drill rig and number used Hydraulic,rotary.
Total cost of well and pump installed complete. 50 cts.per foot,drilling only.
Name and address of driller who drilled the well:

Date of this report February 1, 1938.

Additional information and comments:

Artesion well.

3(D-18-21)8 aa

Log # 226

STATE OF ARIZONA

DEPARTMENT OF
WATER RESOURCES

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner JAMES HOWE JR
Name
RT 1 Box 167 St David AZ 85630
Address

2. Lessee or Operator
Name
Address

3. Driller Weber Drilling
Name
RT 1 Box 276 B ST. David AZ 85630
Address

4. Location of well: Twp 18 S Rge 21E Sec 8 SE NE NE

5. Permit No. 55-503968
(if issued)

DESCRIPTION OF WELL

6. Total depth of hole 200 ft.

7. Type of Casing 8 5/8 x .188 Steel

8. Diameter and length of casing 8 5/8 in. from 0 to 71.5' in from to .

9. Method of sealing at reduction points N/A

10. Perforated from 36' to 71.5', from to , from to

11. Size of cuts 1/4 x 8 Number of cuts per foot 4

12. If screen was installed: Length ft. Diam in. Type

13. Method of construction drill + drive
drilled, dug, driven, bored, jetted, etc.

14. Date started 10 3 82
Month day year

15. Date completed 10 10 82
Month day year

16. Depth to water 55 ft. (If flowing well, so state.)

17. Describe point from which depth measurements were made, and give sea-level elevation if available. Ground Level

18. If flowing well, state method of flow regulation

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-503968
Received By
Entered 11.5.82 By
File No. D(18-21)8aad

(Well log to appear on Reverse side)

RECEIVED
OCT 25 1982
DEPT. OF
WATER RESOURCES

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	55'	Sand & Gravel first water 54'
55'	63'	Clay @ 5gpm
63'	65'	Sand & Gravel
65'	200'	Clay STATIC 54'

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Donald L. Webb
Name

RT 1 Box 276 B St. David
Address AZ. 85630

Date 10/10/82

2-73

Log # 227

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner S MILLER
   Name
   P.O. Box 2029 Benson AZ 85602
   Mailing Address
2. Driller WEBER DRILLING
   RT. 1 BOX 276B
   ST. DAVID, AZ 85630
   PHONE 586-4800
   Name
   Mailing Address
3. Location of well: Twp 18S Rge 21E Sec 8
4. Permit No. 55-514443
   (if issued)

RECEIVED FEB 4 1987 DEPT. OF WATER RESOURCES

DESCRIPTION OF WELL

5. Total depth of hole 78 ft.
6. Type of casing Steel
7. Diameter and length of casing 12 in. from 0 to 78, ____ in from ____ to ____.
8. Method of sealing at reduction points ____
9. Perforated from 28 to 78, from ____ to ____, from ____ to ____.
10. Size of cuts 3/16 X 4 Number of cuts per foot 24
11. If screen was installed: Length ____ ft. Diam ____ in. Type ____
12. Method of construction drilled
    drilled, dug, driven, bored, jetted, etc.
13. Date started 9 / 10 / 86
    Month Day Year
14. Date completed 9 / 15 / 86
    Month Day Year
15. Depth to water 20 ft. (If flowing well, so state.)
16. Describe point from which depth measurements were made, and give sea-level elevation if available Ground Level
17. If flowing well, state method of flow regulation: ____
18. Remarks: ____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-514443
Received ____ By ____
Entered ____ By ____
ENTERED FEB 06 1987
File No. D(18-21)8 acd

DWR-55-6-Rev. 8/85

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	30	Gray Clay
30	65	Sand & Gravel
65	72	Gray Silt
72	78	Red Clay

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Donald L. Weber
Name

WEBER DRILLING
RT. 1 BOX 276B
ST. DAVID, AZ 85630
PHONE 586-4800
Address

City State Zip

Date 2/2/87

Log # 228

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North 3rd Street
Phoenix, Arizona 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

RECEIVED APR 10 2001 RECORDS MGT

1. WEBER DRILLING
453 EAST MECHAM DRIVE
SAINT DAVID, AZ 85630-6235

2. Owner Name: DONALD & VICTORIA MILLER
Address: NOVATO (City) CA (State) 94945 (Zip)

3. Location: 18 (Township) N/S 21 (Range) E/W 8 (Section) ¼ SE (10-acre) ¼ SW (40-acre) ¼ NE (160-acre)

4. Well Registration No. 55-580914 (Required)

5. Permit No. _____ (If Issued)

DESCRIPTION OF WELL

6. Total depth of hole 387 ft.
7. Type of casing STEEL
8. Diameter and length of casing 8 in. from 0 to 160, 6 in from 0 to 387
9. Method of sealing at reduction points WELDED
10. Perforated from 347 to 387, from _____ to _____ from _____ to _____
11. Size of cuts 1/8 x 8 Number of cuts per foot 4
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction DRILLED (drilled, dug, driven, bored, jetted, etc)
14. Date started MAR (Month) 29 (Day) 2001 (Year)
15. Date completed APR (Month) 4 (Day) 2001 (Year)
16. Depth to water 315 ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea_level elevation if availabl
GROUND LEVEL
18. If flowing well, state method of flow regulation: 1 1/4 QTR BALL VALVE
19. Remarks: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55- 580914
File No. D(18-21) 8 ACD
Received _____ By _____
Entered _____ By _____

DWR-55-55-7/95 (Rev.)

ENTERED APR 12 2001

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	105	RED CLAY W/SAND STREAKS
105	315	RED CLAY
315	387	DECOMPOSED GRANITE
		FIRST WATER 315'
		STATIC FLOWS 12 GPM

I hereby certify that this well was drilled by me (or under by supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: WEBER DRILLING

453 EAST MECHAM DRIVE
Street

SAINT DAVID, AZ 85630-6235 — 520-720-4800
City State Zip — Phone No.

Donald Weber — 4-7-01
Signature of Driller — Date

Log # 229

315302110124901

(D-18-21) 8ADD3

55-612032

FORM W-3 2M 8-48 JAHN-TYLER

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

Report of Well Driller is required to be made and filed with the State Land Commissioner as required by Section 7, Chapter 12, Senate Bill No. 3, Seventeenth Legislature, First Special Session, 1948. A separate report shall be made for each well and filed within 30 days after completion of the well.

1. Owner: Charles B. White (Name)
St David Ariz. (Address)

2. Lessee or Operator: (Name)
(Address)

3. Driller: Cooper and Pardee (Name)
Benson Ariz Box 296 (Address)

4. Location of well: Twp. 18 South Rge. 21 East Section 8 ¼ SE ¼ NE ¼ (10-acre subdivision)

DESCRIPTION OF WELL

5. Total depth of hole 108 ft.

6. Type of casing 12" ¼" Wall

7. Diameter and length of casing 12 in. from 0 to 108' in. from to , in. from to

8. Method of sealing at reduction points Red Clay

9. Perforated from 60' to 108', from to , from to , from to

10. Size of cuts ¼ in. X 4 in. Number cuts per foot single rows of cuts 8 apart

11. If screen was installed: Length ft. Diam. in. Type

12. Method of construction Drilled (drilled, dug, driven, bored, jetted, etc.)

13. Date completed NOV. (Month) 1949 (Year)

14. Depth to water 52' ft. (If flowing well, so state.)

15. Describe point from which depth measurements were made, and give sea-level elevation if available

16. If flowing well, state method of flow regulation

DISCHARGE DATA

17. Well discharge 800 gal per min. 770 g.p.m. (gal. per min. or cu. ft. per sec. or miner's inches.)

18. Method of discharge measurement orifice (weir, orifice, current meter, etc.)

19. Drawdown unknown ft.

20. Purpose of use Irrigation

21. Place of use: Twp. 18 S. Rge. 21 E. Section 8 SE¼NE¼ (Legal subdivision) Acres 40
(See 22)

~~22. Purpose of use~~

Twp. Rge. Section (Legal subdivision) Acres

22. If well is part of irrigation system of Irrigation District, Association or Company, omit 21 and give name of project.

Name of Project

(D-18-21) 8 . d

EQUIPMENT DATA

23. Kind of pump Turbine (turbine, centrifugal, etc.)

24. Kind of power Natural Gas (electric, natural gas, etc.)

25. Horsepower rating of motor 40.5

DO NOT WRITE IN THIS SPACE

OFFICE RECORD

Received 2/23/50 by kb
Filed 2/24/50 by kb
File No. (D-18-21)8 ad
Cross-referenced (Name) by
Cross-referenced (Basin) by
Cross-referenced by

(See Other Side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	42	sandy loam
42	60	fine sand
60	105	sand water gravel
105	108	red clay

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Cooper and Pardee
Name

Benson Ariz Box 296
Address

Date Dec 14, 1949

Log # 234

ARIZONA DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

RECEIVED
FEB 4 1994
OPERATIONS DIV.

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner Name: L. PAUL MORACLE
   Address: Rt. 1 Box 178 St. DAVID ARIZONA 85630
   Street City State Zip
2. Driller Name: WATER DRILLING
   Address: RT. 1 BOX 276B ~~ST. DAVID, AZ. 85630~~
   Street City State Zip
3. Location: 18 S N/S Township; 21E E/W Range; 9 Section; SW 1/4 10-acre; SW 1/4 40-acre; NW 1/4 160-acre
4. Well Registration No. 55- 542261 (Required)
5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 355 ft.
7. Type of casing STEEL
8. Diameter and length of casing 8 in. from 0 to 128, 6 in from 0 to 355
9. Method of sealing at reduction points WELDED
10. Perforated from 313 to 355, from _____ to _____, from _____ to _____.
11. Size of cuts 8" X 1/8" Number of cuts per foot 4
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction DRILLED
    (drilled, dug, driven, bored, jetted, etc)
14. Date started 1 (Month) 28 (Day) 94 (Year)
15. Date completed 1 (Month) 30 (Day) 94 (Year)
16. Depth to water 275' FIRST WATER / 310 2nd WATER ft. (If flowing well, so state)
17. Describe point from which depth measurements were made, and give sea-level elevation if available
    GROUND LEVEL
18. If flowing well, state method of flow regulation: _____
19. Remarks: SEALED OFF SURFACE WATER WITH 8" STEEL CASING AND BEN-SEAL

DO NOT WRITE IN THIS SPACE
Regist 55-542261
File N D(18-21)9BCC
Recei ENTERED FEB - 7 1994
Entered _____ By _____

DWR-55-55-7/91 (Rev.)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encounterd, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
		FIRST WATER 275
		SECOND WATER 310' STATIC 7'
0	113	SANDS + GRAVEL
113	275	CLAY
275	310	SANDSTONE
310	355	DECOMPOSED GRANITE CONGLOMERATE

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: _____

Street WEBER DRILLING
RT. 1 BOX 276B
ST. DAVID, AZ. 85630

City State Zip

Date 2-2-94

Log # 235

315414110153802

(D-18-20) 1 BBA

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER Robert A. Hamp
Name
Rt. 1, Box 59, St. David, Az 85630
Address

2. Lessee or Operator
Name
Address

3. DRILLER DEAN PARKER
Name
4229 North 12th Place
Address

4. Location of well: Twp. 18 South Rge. 20 East Section 1 NE ¼ N W ¼ NW ¼
10-acre subdivision

5. Intention to Drill File No. D(18-20)1 bba Permit No.

DESCRIPTION OF WELL

6. Total depth of hole 565 ft. ft.

7. Type of casing 6 5/8 O.D.

8. Diameter and length of casing 6 5/8 in. from 0 to 565, in. from to, in. from to

9. Method of sealing at reduction points 12 3/4 O.D to 116 ft, into the clay

10. Perforated from 520 to 564, from to, from to, from to

11. Size of cuts 3/16 Number of cuts per foot 4

12. If screen was installed: Length ft. Diam. in. Type

13. Method of construction Drilled cable tools.
drilled, dug, driven, bored, jetted, etc.

14. Date started 4 (Month) 20 (Day) 70 (Year)

15. Date completed 6 (Month) 13 (Day) 70 (Year)

16. Depth of water Flowing ft.
If flowing well, so state.

17. Describe point from which depth measurements were made, and give sea-level elevation if available

18. If flowing well, state method of flow regulation None

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 6-29-70 by Fmr
Filed 6-30-70 by Fmr
File No. D(18-20)1 bba

(Well Log to Appear on Reverse Side)

WD FORM G-301
REV. 4-27-58

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL	
Old Well first 100 ft			
100	114	Sand & gravel	
114	280	Clay	
280	310	Sandy Clay	
310	350	Clay	
350	360	Sandy Clay	
360	445	Clay	
445	455	Sandy Clay	first flowing water
455	540	Clay	
540	563	Sand	flowing water
563	565	Clay	

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Freeland C. Davis
Name

FREELAND C. DAVIS
WELL DRILLING

Address POMERENE ROAD
BENSON, ARIZ. 85602

Date 6-15-70

RECEIVED
JUN 25 1970
STATE LAND DEPT.

Log # 236

315347110125001
(D-18-21)5 DAA 1
55-625589

LOG OF WATER WELL DRILLED BY

Drilled for S. G. Barrow, of St.David, Arizona.

Location N½,SE¼,Sec. 5 Twp. 18,S. Rge. 21.E.

Date Completed Total Depth 400 ft.

60 Ft. of 6	Inch	Lb. or guage casing used	left in well.
Ft. of	Inch	Lb. or guage casing used	left in well.
Ft. of	Inch	Lb. or guage casing used	left in well.
Ft. of	Inch	Lb. or guage casing used	left in well.
Ft. of	Inch	Lb. or guage casing used	left in well.

Type of Perforator used: Not perforated.

Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch

Diameter of Perforations. Inches
Length of Perforations. Inches
Depth at which water was first found. Ft.
Standing water level before perforation. Ft. After perforation. Ft.
Change in water level while drilling.
Water level when first tested. Ft. Number of gallons per minute. 35.
Draw down from standing level. Ft.

Formation From Surface to Bottom of Well, Also Size of Gravel.

	Ft. to	Ft.	Not available.	Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
0	Ft. to 50	Ft.	Surface dirt,some sand.	Ft. to	Ft.
50	Ft. to 300	Ft.	Clay,	Ft. to	Ft.
300	Ft. to 400	Ft.	Water strata,sand and gravel.	Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.
	Ft. to	Ft.		Ft. to	Ft.

Is well straight from top to bottom? Yes.
At what depth was pump set? Ft.
Was extra pump suction pipe used? How may feet?
Type of drill rig and number used Hydraulic,rotary.
Total cost of well and pump installed complete. $50 cts.per foot,drilling only
Name and address of driller who drilled the well: R. H. Martin, 311 N. 3rd. Ave. Tucson.

Date of this report February 1, 1938.

Additional information and comments:

Artesian.well.

Log # 237

315352110311701

(D-18-21) 5 DBB

55-632942

STATE OF ARIZONA

ARIZONA WATER COMMISSION
WATER RIGHTS ADMINISTRATION

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the Az. Water Commission following completion of the well.

1. OWNER Glen R. Kartchner
Name
Address

2. Lessee or Operator
Name
Address

3. DRILLER TITAN DRILLING
Name
S.R. Box 201 A Benson Arizona 85602
Address

4. Location of well: Twp. 18S Rge. 21E Section 5 NW ¼ NW ¼ SE ¼
10-acre subdivision

5. Intention to Drill File No. Permit No.

DESCRIPTION OF WELL

6. Total depth of hole 111 ft.

7. Type of casing 6" steel

8. Diameter and length of casing 6 in. from 0 to 111, in. from to, in. from to

9. Method of sealing at reduction points

10. Perforated from 80 to 111, from to, from to, from to

11. Size of cuts 4 x 4 x 5 Number of cuts per foot 3

12. If screen was installed: Length ft. Diam. in. Type

13. Method of construction DRILLED
drilled, dug, driven, bored, jetted, etc.

14. Date started 2 (Month) 10 (Day) 80 (Year)

15. Date completed 2 (Month) 10 (Day) 80 (Year)

16. Depth to water 70' ft.
If flowing well, so state.

17. Describe point from which depth measurements were made, and give sea-level elevation if available

18. If flowing well, state method of flow regulation

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received by

Filed 11-17-80 by PJT

File No. D(18-21)5 dbb
35-82877

(Well Log to Appear on Reverse Side)

WD FORM G-201
REV. 4-27-53

NOV 1980
DEPARTMENT OF
WATER RESOURCES

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	90'	Clay.
90 - 111		Gravel 10 - 15 G.P.M. at
		110'

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller TITAN DRILLING
Name

S.R. BOX 201 A Benson Arizona 85602
Address

Log # 238

315335110131501

(D-18-21) 5 DCB

55-633154

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER Howard Montgomery
Name
Address

2. Lessee or Operator
Name
Address

3. DRILLER Verde Well Co
Name
Address

4. Location of well: Twp. 18S Rge. 21E Section 5 SW ¼ SE ¼ SW ¼
10-acre subdivision

5. Intention to Drill File No. Permit No.

DESCRIPTION OF WELL

6. Total depth of hole 300 ft.

7. Type of casing P.V.C.

8. Diameter and length of casing 6 in. from 0 to 280, in. from to, in. from to

9. Method of sealing at reduction points

10. Perforated from 260 to 280, from to, from to, from to

11. Size of cuts 1/8 Number of cuts per foot 3

12. If screen was installed: Length ft. Diam. in. Type

13. Method of construction drilled
drilled, dug, driven, bored, jetted, etc.

14. Date started 3 (Month) 14 (Day) 77 (Year)

15. Date completed 3 (Month) 15 (Day) 77 (Year)

16. Depth of water Flowing ft.
If flowing well, so state.

17. Describe point from which depth measurements were made, and give sea-level elevation if available

18. If flowing well, state method of flow regulation 8 gal P.M. 1" valve

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received by

Filed by

File No. D(18-21)5 cdc
35-43365

(Well Log to Appear on Reverse Side)

RECEIVED
MAR 24 1977
STATE LAND DEPT.
2340

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	8	Top soil
8	85	sandy clay
85	260	Red red clay
260	300	hard gravel

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller VERN'S WELL CO. Name
BOX 4958
HUACHUCA CITY ARIZ. 85616
Address

Date 3-22-77

2-73

Log # 239

315415110140701
(D-18-21) 6 ABA3

FORM W-3 2M 8-49 JAHN-TYLER

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

Report of Well Driller is required to be made and filed with the State Land Commissioner as required by Section 7, Chapter 12, Senate Bill No. 3, Seventeenth Legislature, First Special Session, 1945. A separate report shall be made for each well and filed within 30 days after completion of the well.

1. Owner: R. G. Patterson
Name
St. David, Arizona
Address

2. Lessee or Operator _____
Name
Address

3. Driller: G. L. Pardee
Name
Benson, Arizona
Address

4. Location of well: Twp. 18 S Rge. 21 E Section 6 NE ¼ NE ¼ NW ¼ 10½ acre
10-acre subdivision

DESCRIPTION OF WELL

5. Total depth of hole 104 ft.
6. Type of casing 12" steel pipe 3/16" wall
7. Diameter and length of casing 12 in. from 0 to 104' in. from _____ to _____, _____ in. from _____ to _____
8. Method of sealing at reduction points pipe drove into Red Clay
9. Perforated from 50' to 104', from _____ to _____, from _____ to _____, from _____ to _____
10. Size of cuts 1/4" x 8" Number cuts per foot _____
11. If screen was installed: Length _____ ft. Diam. _____ in. Type _____
12. Method of construction Drilled
drilled, dug, driven, bored, jetted, etc.
13. Date completed June 1951
Month Year
14. Depth to water 36 ft.
If flowing well, so state.
15. Describe point from which depth measurements were made, and give sea-level elevation if available _____
16. If flowing well, state method of flow regulation _____

DISCHARGE DATA

17. Well discharge 700 gal. per. min.
gal. per min. or cu. ft. per sec. or miner's inches.
18. Method of discharge measurement _____
weir, orifice, current meter, etc.
19. Drawdown _____ ft.
20. Purpose of use _____
21. Place of use: Twp. 18 S Rge. 21 E Section 6 Lots 1 & 2 Acres 10½
(See 22)
Legal subdivision
~~22. Purpose of use~~ _____
Twp. _____ Rge. _____ Section _____ _____ Acres _____
Legal subdivision
22. If well is part of irrigation system of Irrigation District, Association or Company, omit 21 and give name of project.
_____
Name of Project

EQUIPMENT DATA

23. Kind of pump turbine
turbine, centrifugal, etc.
24. Kind of power Natural gas
electric, natural gas, etc.
25. Horsepower rating of motor _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 6-20-52 by lec
Filed 6-20-52 by lec
File No. (D-18-21) 6 baa
Cross-referenced (Name) _____ by _____
Cross-referenced (Basin) _____ by _____
Cross-referenced _____ by _____

(See Other Side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	20	Black dirt & rock
20	36	sandy clay, muddy rock
36	50	soft water sand
50	68	yellow sandy mud
68	100	sand & gravel water
100	104	Clay

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller G. L. Pendell
Name

Banks, Oregon
Address

Date January 17, 1952

Log # 240

315402110135101
(D-18-21) 6 ADA 3

RECEIVED
JUN 17 1946
WATER DIVISION
State Land Department

FORM W-2 10-45 JAHN-TYLER

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REGISTRATION OF WELL

Registration of well existing as of Oct. 3, 1945 is hereby made and filed with the State Land Commissioner as required by Section 5, Chapter 12, Senate Bill No. 3, Seventeenth Legislature, First Special Session 1945.

1. Owner: Ira L Judd Jr. (Name)
St. David, Arizona (Address)

2. Lessee or Operator: _____ (Name)
_____ (Address)

3. Driller: Ernest Engledue (Name)
St. David, Arizona (Address)

4. Location of well: Twp. 18 S Rge. 21 E Section 6 ___ ¼ ___ ¼ ___ ¼ (10-acre subdivision)

DESCRIPTION OF WELL

5. Total depth of hole 99 ft.
6. Type of casing Standard 12 inch
7. Diameter and length of casing 12 in. from ___ to ___, ___ in. from ___ to ___, ___ in. from ___ to ___
8. Method of sealing at reduction points _____
9. Perforated from starting 54 ft down to 94 ft to 5 ft not perforated on bottom, from ___ to ___, from ___ to ___
10. Size of cuts 3/8 in Number cuts per foot 4 staggered
11. If screen was installed: Length ✓ ft. Diam ___ in. Type _____
12. Method of construction Drilled (drilled, dug, driven, bored, jetted, etc.)
13. Date completed april (Month) 1945 (Year) Deepened _____ (Month) _____ (Year)
14. Depth to water when drilled 35 ft. (If flowing well, so state.)
15. Present depth to water 35 ft. (If flowing well, so state.) Date of measurement _____
16. Describe point from which depth measurements were made, and give sea-level elevation if available _____
17. If flowing well, state method of flow regulation _____

DISCHARGE DATA

18. Well discharge 500 gal. per min. (gal. per min. or cu. ft. per sec. or miner's inches.)
19. Method of discharge measurement Government method used square (weir, orifice, current meter, etc.)
20. Drawdown 30 ft.
21. Annual discharge in acre-feet, or number of hours pumped: 1944 ___ a.f. or ___ hrs. 1945 ~~300~~ a.f. or 300 hrs.
22. Purpose of use For truck gardening & raising hay & grain
23. Place of use: (See 24) Twp. ___ Rge. ___ Section ___ (Legal subdivision) ___ Acres ___
Twp. ___ Rge. ___ Section ___ (Legal subdivision) ___ Acres ___
24. If well is part of irrigation system of Irrigation District, Association or Company, omit 23 and give name of project.
_____ (Name of Project)

(D-18-21)6

EQUIPMENT DATA

25. Kind of pump Turbine (turbine, centrifugal, etc.)
26. Kind of power gas (electric, natural gas, etc.)
27. Horsepower rating of motor approx 22 H.P.

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 6-17-46 by lj
Filed 6-25-46 by lj
File No. (D-18-21)6 ada
Cross-referenced (Name) ___ by ___
Cross-referenced (Basin) ___ by ___
Cross-referenced ___ by ___

(See Other Side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
		35 ft of clay or adobe formation then about 2 ft sand. Sand a trickle of water then more clay to 50 ft. then sand and gravel from 50 ft to 94 ft. and 5 ft driven into hard formation

I hereby certify that I have read the foregoing statements, and that each and all of the items therein contained are true to the best of my knowledge and belief.

Ira L Judd Jr.
Owner, Operator or Driller

St. David, Ariz
Address

Date 6-13-46

Log # 241

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner E E WHITE
Name
P.O. Box 1271 Benson AZ 85602
Mailing Address

2. Driller Weber Drilling
Name

Mailing Address

3. Location of well: Twp 18S Rge 21E Sec 6 NE SE NE

4. Permit No. 55-513537
(if issued)

DESCRIPTION OF WELL

5. Total depth of hole 240 ft.

6. Type of casing Steel

7. Diameter and length of casing 8 in. from 0 to 133.6 in from 0 to 240.

8. Method of sealing at reduction points welded

9. Perforated from 180 to 240, from ____ to ____, from ____ to ____.

10. Size of cuts 1/8 X 2 8 Number of cuts per foot 4

11. If screen was installed: Length ____ ft. Diam ____ in. Type ____

12. Method of construction drilled
drilled, dug, driven, bored, jetted, etc.

13. Date started 3 (Month) 21 (Day) 86 (Year)

14. Date completed 3 (Month) 26 (Day) 86 (Year)

15. Depth to water 29' ft. (If flowing well, so state.)

16. Describe point from which depth measurements were made, and give sea-level elevation if available ground Level

17. If flowing well, state method of flow regulation: ____

18. Remarks: ____

RECEIVED APR 25 1986 DEPT OF WATER RESOURCES

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-513537
Received ____ By ____
Entered ____ By ____
File No. D(18-21)6 ada

ENTERED MAY 05 1986

DWR-55-6-Rev. 8/85

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	55	Clay
55	100	Sugar Sand water
100	120	Gravel
120	195	Clay
195	200	Sand water
200	215	Clay
215	230	Sand
230	240	Clay
		STATIC 29'

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Donald E. Weber
Name

WEBER [illegible]
Address
PHONE 536-4000

City State Zip

Date 4/24/86

Log # 249

MAY 1986
DEPARTMENT OF
WATER RESOURCES

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner D L DAVIDSON
   Name
   RT 1 Box 245
   Mailing Address
2. Driller WEBER DRILLING
   RT. 1 BOX 276B
   ST. DAVID, AZ 85630
   PHONE 586-4800
   Name
   Mailing Address
3. Location of well: Twp 18S Rge 21E Sec 9 NW NW NW
4. Permit No. 55-513988
   (if issued)

DESCRIPTION OF WELL

5. Total depth of hole 300 ft.
6. Type of casing Steel
7. Diameter and length of casing 8 in. from 0 to 20, 6 in from 0 to 300.
8. Method of sealing at reduction points welded
9. Perforated from 260 to 300, from ____ to ____, from ____ to ____.
10. Size of cuts 1/8 x 8 Number of cuts per foot 4
11. If screen was installed: Length ____ ft. Diam ____ in. Type ____
12. Method of construction drilled
    drilled, dug, driven, bored, jetted, etc.
13. Date started 4 (Month) 11 (Day) 86 (Year)
14. Date completed 4 (Month) 11 (Day) 86 (Year)
15. Depth to water 250' ft. (If flowing well, so state.)
16. Describe point from which depth measurements were made, and give sea-level elevation if available Ground Level
17. If flowing well, state method of flow regulation: ____
18. Remarks: ____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-513988
Received ____ By ____
Entered 5-7-86 By DC
File No. D(18-21)9 bbb

DWR-55-6-Rev. 8/85

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	8	Sand
8	250	Clay
250	300	Sand
		First Water 250'
		Static 5'

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Donald G. Weber
Name

WEBER DRILLING
RT. 1 BOX 276B
ST. DAVID, AZ 85630
PHONE 586-4800
Address

City State Zip

Date 5/1/86

Log # 250

LOG OF WATER WELL DRILLED BY

Drilled for **M. H. Merrill,** of **Tucson,** Arizona.

Location **NW¼,NW¼,Sec. 9,** Twp. **18 S.** Rge. **21 E.**

Date Completed **1906.** Total Depth **635 Ft.**

300	Ft. of **12**	Inch	Lb. or guage casing used		left in well.
	Ft. of	Inch	Lb. or guage casing used		left in well.
	Ft. of	Inch	Lb. or guage casing used		left in well.
	Ft. of	Inch	Lb. or guage casing used		left in well.
	Ft. of	Inch	Lb. or guage casing used		left in well.

Type of Perforator used: **Not perforated.**

Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch

Diameter of Perforations. Inches
Length of Perforations. Inches
Depth at which water was first found. Ft.
Standing water level before perforation. Ft. After perforation. Ft.
Change in water level while drilling.
Water level when first tested. Ft. Number of gallons per minute. **50.**
Draw down from standing level. Ft.

Formation From Surface to Bottom of Well, Also Size of Gravel.

0	Ft. to	**315**	Ft.	**Caliche.**	Ft. to	Ft.
315	Ft. to	**615**	Ft.	**Blue gray clay.**	Ft. to	Ft.
615	Ft. to	**635**	Ft.	**Sand,gravel,boulders.**	Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.

Is well straight from top to bottom? **Yes.**
At what depth was pump set? Ft.
Was extra pump suction pipe used? How may feet?
Type of drill rig and number used
Total cost of well and pump installed complete. $
Name and address of driller who drilled the well:

Date of this report **February 1, 1938.**
~~Artesian well~~

Additional information and comments:

Artesian well, site of CCC Camp.

LOG OF WATER WELL DRILLED BY

Drilled for S. G. Barrows of St.David Arizona.

Location SW¼,SE¼, Sec. 21, Twp. 18 S, Rge. 21 E.

Date Completed Total Depth 576 ft.

Ft. of	4	Inch	Lb.or guage casing used	left in well.
Ft. of		Inch	Lb.or guage casing used	left in well.
Ft. of		Inch	Lb.or guage casing used	left in well.
Ft. of		Inch	Lb.or guage casing used	left in well.
Ft. of		Inch	Lb.or guage casing used	left in well.

Type of Perforator used:

Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch
Perforated	Ft. to	Ft.	Holes per	Inch

Diameter of Perforations. Inches
Length of Perforations. Inches
Depth at which water was first found. Ft.
Standing water level before perforation. Ft. After perforation Ft.
Change in water level while drilling.
Water level when first tested. Ft. Number of gallons per minute. 6.
Draw down from standing level. Ft. " " " " "

Formation From Surface to Bottom of Well, Also Size of Gravel.

0	Ft. to	40	Ft.	Dirt,sand,gravel.	Ft. to	Ft.
40	Ft. to	150	Ft.	Sandy clay,	Ft. to	Ft.
159	Ft. to	450	Ft.	Clay.	Ft. to	Ft.
450	Ft. to	565	Ft.	Sand and gravel,some thin layers of hardpan.	Ft. to	Ft.
565	Ft. to	576	Ft.	Rock.	Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.
	Ft. to		Ft.		Ft. to	Ft.

Is well straight from top to bottom? Yes.
At what depth was pump set? Now pump.Ft.
Was extra pump suction pipe used? How many feet?
Type of drill rig and number used Hydraulic,rotary.
Total cost of well and pump installed complete. 50 cts.per foot,drilling only.
Name and address of driller who drilled the well:

Date of this report February 9, 1938.

Additional information and comments:

Artesian well

(D-18-21)21 d2

Log # 253

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
15 South 15th Avenue
Phoenix, Arizona 85007

RECEIVED MAY 31 1989

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner P. B. & S. D. Kartehner
Name
Rt-1 Box 309, St. David, Az 85630
Mailing Address

2. Driller WEBER DRILLING
~~RT. 1 BOX 276B~~
ST. DAVID, AZ 85630
PHONE 586-4800
Name
Mailing Address

3. Location of well: Twp. 18S, Rge. 21E, Sec. 22, SW¼, SW¼, SW¼

4. Permit No. (if issued) 55-523768

DESCRIPTION OF WELL

5. Total depth of hole 412 ft.

6. Type of casing Steel

7. Diameter and length of casing 8 in. from 0 to 20, 6 in from 0 to 412.

8. Method of sealing at reduction points welded

9. Perforated from 349 to 412, from ____ to ____, from ____ to ____.

10. Size of cuts 8" x 1/8" Number of cuts per foot 4

11. If screen was installed: Length ____ ft. Diam ____ in. Type ____

12. Method of construction Drilled
drilled, dug, driven, bored, jetted, etc.

13. Date started 3 (Month) 10 (Day) 89 (Year)

14. Date completed 3 (Month) 12 (Day) 89 (Year)

15. Depth to water 290' ft. (If flowing well, so state.)

16. Describe point from which depth measurements were made, and give sea-level elevation if available Ground level

17. If flowing well, state method of flow regulation:

18. Remarks:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
REG. NO. 55-523768
File No. D(18-21)22ccc
Entered ____ By ____
ENTERED JUN 05 1989

DWR-55-6-Rev. 8/85

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
		First water - 290' static - 10'
0	290	Clay
290	295	Sand
295	340	Clay
340	365	Sand
365	380	Clay
380	395	Sand
395	412	Clay

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Donald R. Weber
Name

WEBER DRILLING
RT. 1, BOX 276B
ST. DAVID, AZ 8563(
PHONE 586-4800

City State Zip

Date 4/28/89

Log # 254

STATE OF ARIZONA

DEPARTMENT OF
WATER RESOURCES

APR 1982
DEPARTMENT OF WATER RESOURCES

WELL DRILL

This report should be prepared by the driller all detail filed with the Department within 30 days following completion of the well

1. Owner Tom. E. Gustafson
Name
P O Box 329 St. David, AZ 85630
Address

2. Lessee or Operator
Name
Address

3. Driller Weber Drilling
Name
RT1 Box 276B ST. David AZ 85630
Address

4. Location of well: T18S R21E Sec 28

5. Permit No. 55-501888
(if issued)

DESCRIPTION OF WELL

6. Total depth of hole 112.5 ft.

7. Type of Casing .188 x 12" Steel

8. Diameter and length of casing 12 in. from 0 to 112.5, in from to .

9. Method of sealing at reduction points

10. Perforated from 72.5 to 112.5, from to , from to

11. Size of cuts 3/16 x 2 1/2" Number of cuts per foot 20

12. If screen was installed: Length ft. Diam in. Type

13. Method of construction drilled & driven
drilled, dug, driven, bored, jetted, etc.

14. Date started 3 (Month) 22 (day) 82 (year)

15. Date completed 3 (Month) 25 (day) 82 (year)

16. Depth to water 25 ft. (If flowing well, so state.)

17. Describe point from which depth measurements were made, and give sea-level elevation if available. Ground Level

18. If flowing well, state method of flow regulation

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-501888
Received By
Entered 4-7-82 By
File No. D(18-21)28aab

(Well log to appear on Reverse side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	27	Clay
27	58	Sand
58	84	Clay
84	95	Sand
95	105	Clay
105	107	Fine Sand
107	112.5	Red Clay

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Donald E Weber
Name

RT 1 Box 276 B St David AZ 85630
Address

Date 4/5/82

2-73

Log # 255

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER Ciro Minella
Name
Address

2. Lessee or Operator
Name
Address

3. DRILLER VERN'S WELL CO.
BOX 4858
WOODCHUCK CITY, ARIZ. 85610
Name
Address

4. Location of well: Twp. 18S Rge. 21E Section 28 SW ¼ NE ¼ NE ¼
10-acre subdivision

5. Intention to Drill File No. Permit No.

DESCRIPTION OF WELL

6. Total depth of hole 440 ft.

7. Type of casing P.V.C.

8. Diameter and length of casing 6 in. from 0 to 340, in. from to, in. from to

9. Method of sealing at reduction points

10. Perforated from to, from to, from to, from to

11. Size of cuts Number of cuts per foot

12. If screen was installed: Length ft. Diam. in. Type

13. Method of construction drilled
drilled, dug, driven, bored, jetted, etc.

14. Date started 7 (Month) 18 (Day) 77 (Year)

15. Date completed 7 (Month) 20 (Day) 77 (Year)

16. Depth of water flowing well ft.
If flowing well, so state.

17. Describe point from which depth measurements were made, and give sea-level elevation if available
ground level

18. If flowing well, state method of flow regulation 1 in. valve

19. REMARKS: 200 feet of grout

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received by
Filed by
File No. D(18-21)28 aac
35-46123

(Well Log to Appear on Reverse Side)

c

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	30	clays
30	160	sand and clay
160	340	fine sand and clays
340	440	gravel

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller VERN'S WELL CO. Name
BOX 4858
HUACHUCA CITY, ARIZ. 85616 Address

Date 7-24-77

2-73

Log # 256

STATE OF ARIZONA

RECEIVED
OCT 17 1983
WATER RESOURCES

DEPARTMENT OF
WATER RESOURCES

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner McClewe Partnership
Name
RT 1 Box 203 ST David AZ 85630
Address

2. Lessee or Operator
Name
Address

3. Driller WEBER DRILLING
RT. 1 BOX 276B
ST. DAVID, AZ 85630
PHONE 586-4800
Name
Address

4. Location of well: Twp 18S Rge 21E Sec 28

5. Permit No. 55-505837
(if issued)

DESCRIPTION OF WELL

6. Total depth of hole 100 ft.
7. Type of Casing 6" Steel
8. Diameter and length of casing 6 5/8 in. from 0 to 100, 4 in from 0 to 90.
9. Method of sealing at reduction points
10. Perforated from 50 to 100, from to , from to
11. Size of cuts 1/4 x 8 Number of cuts per foot 4
12. If screen was installed: Length ft. Diam in. Type
13. Method of construction dull + drive
drilled, dug, driven, bored, jetted, etc.
14. Date started 8 5 83
Month day year
15. Date completed 8 12 83
Month day year
16. Depth to water 40 ft. (If flowing well, so state.)
17. Describe point from which depth measurements were made, and give sea-level elevation if available. Ground Level
18. If flowing well, state method of flow regulation
19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-505837
Received By
Entered 10-20-83 By fc
File No. D(18-21)28aba

(Well log to appear on Reverse side)

DWR-6 5-83

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	100'	SAND + GRAVEL water 40'

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Donald E. Weber
Name

WEBER DRILLING
RT. 1 BOX 276B
ST. DAVID, AZ 85630
PHONE 586-4800
Address

9/18/83

Log # 257

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER James E. McCommas (Name)
RT. 1, BOX 203, ST. DAVID, ARIZ. 85630 (Address)

2. Lessee or Operator SAME (Name)
(Address)

3. DRILLER VERN'S WELL CO. (Name)
BOX 4858, HUACHUCA CITY, ARIZ. 85616 (Address)

4. Location of well: Twp. 18S Rge. 21E Section 28 NE ¼ NW ¼ NE ¼ (10-acre subdivision)

5. Intention to Drill File No. D(18-21)28 aba 35-39326 Permit No. D(18-21)28 aba

DESCRIPTION OF WELL

6. Total depth of hole 400 ft.

7. Type of casing Steel

8. Diameter and length of casing 6 in. from 0 to 240, ... in. from ..... to ....., ... in. from ..... to .....

9. Method of sealing at reduction points .....

10. Perforated from ..... to ....., from ..... to ....., from ..... to ....., from ..... to .....

11. Size of cuts ..... Number of cuts per foot .....

12. If screen was installed: Length ..... ft. Diam. ..... in. Type .....

13. Method of construction Drilling (drilled, dug, driven, bored, jetted, etc.)

14. Date started 8 (Month) 9 (Day) 76 (Year)

15. Date completed 8 (Month) 11 (Day) 76 (Year)

16. Depth of water Flowing (If flowing well, so state.) ft.

17. Describe point from which depth measurements were made, and give sea-level elevation if available .....

18. If flowing well, state method of flow regulation 2" valve

19. REMARKS: .....

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received ..... by .....
Filed ..... by .....
File No. D(18-21)28 aba
35-39326

(Well Log to Appear on Reverse Side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	30	clay
30	140	sand and clay
140	340	clay
340	400	water sand and gravel

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Neris Well Co
Name

Huachuca City Az
Address

Date 8-11-76

RECEIVED
DEC 28 1976
STATE LAND DEPT.

2-73

Log # 258

Run Date: 05/20/2002

AZ DEPARTMENT OF WATER RESOURCES

WELL REGISTRY REPORT - WELLS55

Location D 18.0 21.0 28 A B C

Well Reg.No 55 - 610357

AMA NOT WITHIN ANY AMA OR INA

Name MCCOMMAS,J
RT 1 BOX 203

ST DAVID AZ 85630

File Type REGISTERED WELL
Application/Issue Date 05/18/1982

Owner OWNER
Driller Nbr 0
Driller Name NO DRILLER SPECIFIED
Driller Phone
County COCHISE
Intended Capacity GPM 0.00

Well Type NON-EXEMPT
SubBasin NO SUBBASIN
Watershed SAN PEDRO RIVER
Water Uses IRRIGATION
Well Uses WATER PRODUCTION
Discharge Method NONE
Power NO POWER CODE LISTED

Well Depth	520.00	Case Diam	5.00	Tested Cap	50.00
Pump Cap.	50.00	Case Depth	350.00	CRT	
Draw Down	0.00	Water Level	0.00	Log	
		Acres Irrig	0.00	Finish	STEEL - PERFORATED OR SLOTTED CASING

Comments |ICO:|IPQ:|PO#:

Places Of Use
1 D 18 0 21 0 28 A B C

Current Action

Action History
12/27/1977 755 WELL CONSTRUCTION COMPLETED

Log # 259

STATE OF ARIZONA

DEPARTMENT OF
WATER RESOURCES

WELL DRILLER'S REPORT

JAN 1982
DEPARTMENT OF WATER RESOURCES

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner McCleve, LTD.
Name
RT. 1, Box 203 ST. David AZ 85630
Address

2. Lessee or Operator _____
Name
_____
Address

3. Driller Weber Drilling
Name
RT 1 Box 276 B ST David AZ 85630
Address

4. Location of well: Township 18S Range 21E Sec. 28 SE¼ NW¼ NE¼

5. Permit No. (if issued) 55-501646

DESCRIPTION OF WELL

6. Total depth of hole 125 ft.

7. Type of Casing Steel

8. Diameter and length of casing 8 5/8 in. from 0 to 125', _____ in from _____ to _____.

9. Method of sealing at reduction points _____

10. Perforated from 43' to 125', from _____ to _____, from _____ to _____

11. Size of cuts ½" x 2½" Number of cuts per foot 12

12. If screen was installed: Length _____ ft. Diam _____ in. Type _____

13. Method of construction Drilled + Driven
drilled, dug, driven, bored, jetted, etc.

14. Date started 12 (Month) 21 (day) 81 (year)

15. Date completed 12 (Month) 24 (day) 81 (year)

16. Depth to water 55' ft. (If flowing well, so state.)

17. Describe point from which depth measurements were made, and give sea-level elevation if available.
Made from ground level

18. If flowing well, state method of flow regulation _____

19. REMARKS: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-501646
Received _____ By _____
Entered 1-27-82 By mz
File No. D(18-21)28abd

(Well log to appear on Reverse side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0'	57'	Red Clay
57'	68'	Gray Clay
68'	70'	Sand First water 68'
70'	87'	Gravel STATIC water
87'	125'	Gray Clay Level 55'

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller's Name: Donald E. Webb

Address: RT. 1 Box 276 B ST. David AZ.

Date: 1/24/82

2-73

Log # 260

STATE OF ARIZONA

DEPARTMENT OF
WATER RESOURCES

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner James E McCommas
Name
RT 1 Box 203 St. David AZ 85630
Address

2. Lessee or Operator
Name
Address

3. Driller WEBER DRILLING RT. 1 BOX [illegible] ST. DAVID A[illegible] PHONE 586-4800
Name
Address

4. Location of well: Twp 18S Rge 21E Sec 28

5. Permit No. 55-503187
(if issued)

DESCRIPTION OF WELL

6. Total depth of hole 146 ft.

7. Type of Casing Steel

8. Diameter and length of casing 8 in. from 0 to 146, _____ in from _____ to _____.

9. Method of sealing at reduction points

Perforated from 90 to 146, from _____ to _____, from _____ to _____

11. Size of cuts 1/8 x 6 Number of cuts per foot 6

12. If screen was installed: Length _____ ft. Diam _____ in. Type _____

13. Method of construction ~~Dill~~ Drill & drive
drilled, dug, driven, bored, jetted, etc.

14. Date started 4 (Month) 16 (day) 83 (year)

15. Date completed 4 (Month) 23 (day) 83 (year)

16. Depth to water 25 ft. (If flowing well, so state.)

17. Describe point from which depth measurements were made, and give sea-level elevation if available.
ground Level

18. If flowing well, state method of flow regulation

19. REMARKS:

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-503187
Received _____ By _____
Entered 5-31-83 By _____
File No. D(18-21)28abd

(Well log to appear on Reverse side)

RECEIVED
MAY 26 1983
DEPT. OF
WATER RESOURCES

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	45	Clay
45	48	Sand first water
48	105	Clay
105	143	gravel
143	146	Clay

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Donald E. Weber
Name

WEBER DRILLING
RT. 1 BOX 2768
ST. DAVID, AZ 85630
PHONE 586-4800
Address

Date 5/24/83

2-73

Log # 262

MAY 28 1996
RECORDS MGT

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGMENT SUPPORT SECTION

500 North Third Street - Phoenix, Arizona 85004-3903
Phone (602) 417-2470 Fax (602) 417-2422

WELL DRILLER REPORT

This report should be prepared by the Driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner's Name: LINDA A. KETCHAN

   Address: 3052 N. ALVERNON #106 TUCSON AZ 85712
   Street / City / State / Zip / Telephone Number

2. Drilling Firm: J S & K DRILLING, INC.

   Address: 501 PATTON ST. HUACHUCA CITY AZ 85616 456-2355
   Street / City / State / Zip / Telephone Number

3. Location: SE ¼ NW ¼ SE ¼ of Section 28 Township 18 S Range 21 E
   10 Acre / 40 Acre / 160 Acre

4. Well Registration No. 55- 557667 (Required)

5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total Depth of Hole 360 ft.
7. Type of Casing PVC
8. Diameter and length of casing 6 inches from 0 to 140, 4½ inches from 80 to 320
9. Method of sealing at reduction points LAP
10. Perforated from 100 to 320 from — to _____ from _____ to _____
11. Size of cuts 1/16 Number of cuts per foot 2
12. If screen was installed: Length — feet. Diameter _____ inches. Type _____
13. Method of construction DRILLED
    (drilled, dug, driven, bored, jetted, etc.)
14. Date started 5 (Month) 7 (Day) 96 (Year)
15. Date completed 5 (Month) 10 (Day) 96 (Year)
16. Depth to water 90 ft. (If flowing well, so state).
17. Describe point from which depth measurements were made, and give sea-level elevation if available
    STATIC
18. If flowing well, state method of flow regulation: —
19. Remarks: —

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55 - 557667
File No. D(18-21)28 dbd
Received _____ By _____
Entered ENTERED MAY 29 1996

DWR-55-55 (Rev 2/96)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	
0	2	SANDY TOP SOIL
2	90	SANDY CLAY
90	145	SAND
145	175	CONGLOMERATE
175	260	CLAY
260	275	SANDY CLAY
275	310	CLAIE SAND
310	345	CONSOLIATED LAYERS
345	360	CEMENTED CONGLOMERATE

I hereby certify that this well was drilled by me (or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller's Name (Qualifying Party): Joyal Lorse

501 PATTON ST.
Street

H.C. — AZ — 85616
City — State — Zip

456-2355 — 5-13-96
Phone Number — Date

DWR 55-55 (Rev 2/96)

Log # 263

(D-18-21) 28 DCB

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 208281

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

DEPTH OF BORING	DEPTH OF COMPLETED WELL
320 Feet Below Land Surface	320 Feet Below Land Surface

Water Level Information

STATIC WATER LEVEL	DATE MEASURED	TIME MEASURED	IF FLOWING WELL, METHOD OF FLOW REGULATION
48' Feet Below Land Surface	12-10-05	1:00 PM	☐ Valve ☐ Other:

RECEIVED
APR 28
WATER MGMT

Borehole: DEPTH FROM SURFACE FROM (feet)	Borehole: DEPTH FROM SURFACE TO (feet)	Borehole: BOREHOLE DIAMETER (inches)	Installed Casing: DEPTH FROM SURFACE FROM (feet)	Installed Casing: DEPTH FROM SURFACE TO (feet)	Installed Casing: OUTER DIAMETER (inches)	MATERIAL TYPE (X): STEEL	MATERIAL TYPE (X): PVC	MATERIAL TYPE (X): ABS	MATERIAL TYPE (X): IF OTHER TYPE, DESCRIBE	PERFORATION TYPE (X): BLANK OR NONE	PERFORATION TYPE (X): WIRE WRAP	PERFORATION TYPE (X): SHUTTER SCREEN	PERFORATION TYPE (X): MILLS KNIFE	PERFORATION TYPE (X): SLOTTED	PERFORATION TYPE (X): IF OTHER TYPE, DESCRIBE	SLOT SIZE (IF ANY) (inches)
0	20'	12 1/4	+1	20	8 5/8	X										
20	240	7"	+2	240	6 5/8	X										
240	320	5 1/2	-2	320	4 1/2		X									
				260	320									X		1/8

Installed Annular Material

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	ANNULAR MATERIAL TYPE (X): NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	BENTONITE: GROUT	BENTONITE: CHIPS	BENTONITE: PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	FILTER PACK: SAND	FILTER PACK: GRAVEL	FILTER PACK: SIZE
0	20			X								
235	240			X					Cement seal			

DWR-55-55B-10/01 (Rev.)

WELL REGISTRATION NUMBER
55- 208281

Well Driller Report and Well Log

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	DESCRIPTION Describe material, grain size, color, etc.	Check (X) every interval where water was encountered
0	50	Clay	
50	90	Sand - Gravel	
90	280	Clay + Sand	
280	320	Coarse Sand + Gravel with some Layer of Red Clay	

RECEIVED
WATER MGMT

Log # 267

RECEIVED

AUG 15 1946

WATER DIVISION

FORM W-3 10-45 JAHN-TYLER

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

State Land Department REPORT OF WELL DRILLER

Report of Well Driller is required to be made and filed with the State Land Commissioner as required by Section 7, Chapter 12, Senate Bill No. 3, Seventeenth Legislature, First Special Session, 1945. A separate report shall be made for each well and filed within 30 days after completion of the well.

1. Owner Milton Curtis
Name
St. David, Arizona
Address

2. Lessee or Operator _____
Name
_____
Address

3. Driller A. M. Cooper
Name
Benson, Arizona
Address

4. Location of well: Twp. 18 S Rge. 21 E Section 33 ___ ¼ ___ ¼ ___ ¼
10-acre subdivision

DESCRIPTION OF WELL

5. Total depth of hole 100 ft.

6. Type of casing None

7. Diameter and length of casing ___ in. from ___ to ___, ___ in. from ___ to ___, ___ in. from ___ to ___

8. Method of sealing at reduction points ___

9. Perforated from ___ to ___, from ___ to ___, from ___ to ___, from ___ to ___

10. Size of cuts ___ Number cuts per foot ___

11. If screen was installed: Length ___ ft. Diam ___ in. Type ___

12. Method of construction drilled with Cable tools
drilled, dug, driven, bored, jetted, etc.

13. Date completed Aug. 10, 1946
Month Year

14. Depth to water None ft.
If flowing well, so state.

15. Describe point from which depth measurements were made, and give sea-level elevation if available grassroots to 100 ft
Sea-level 3790

16. If flowing well, state method of flow regulation None

DISCHARGE DATA

17. Well discharge None
gal. per min. or cu. ft. per sec. or minor's inches.

18. Method of discharge measurement None
weir, orifice, current meter, etc.

19. Drawdown None ft.

20. Purpose of use ___

21. Place of use: (See 22) Twp. ___ Rge. ___ Section ___ ___ Acres ___
Legal subdivision

Twp. ___ Rge. ___ Section ___ ___ Acres ___
Legal subdivision

22. If well is part of irrigation system of Irrigation District, Association or Company, omit 21 and give name of project.

___
Name of Project

EQUIPMENT DATA

23. Kind of pump ___
turbine, centrifugal, etc.

24. Kind of power ___
electric, natural gas, etc.

25. Horsepower rating of motor ___

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 8-15-46 by LJ
Filed 8-23-46 by LJ
File No. (D-18-21)33
Cross-referenced (Name) ___ by ___
Cross-referenced (Basin) ___ by ___
Cross-referenced ___ by ___

(See Other Side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	100 ft.	no water, sand & gravel formation

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller A M Cooper
Name

Benson, Ariz.
Address

Date Aug. 10, 1946

Log # 268

FORM W-2 2M 8-46 JAHN-TYLER

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REGISTRATION OF WELL

Registration of well existing as of Oct. 3, 1945 is hereby made and filed with the State Land Commissioner as required by Section 5, Chapter 12, Senate Bill No. 3, Seventeenth Legislature, First Special Session 1945.

1. Owner Boquilles Cattle Co.
Name
Fairbanks, Ariz.
Address

2. Lessee or Operator _____
Name
_____
Address

3. Driller R. H. Martin
Name
311 N. 3d Av., Tucson, Ariz.
Address

4. Location of well: Twp. 18 S Rge. 21 E Section 33 NW ¼ SW ¼ ¼
10-acre subdivision

Artesian well.

DESCRIPTION OF WELL

5. Total depth of hole 625 ft.

6. Type of casing _____

7. Diameter and length of casing 3 in. from 0 to 500' _____ in. from _____ to _____, _____ in. from _____ to _____

8. Method of sealing at reduction points _____

9. Perforated from _____ to _____, from _____ to _____, from _____ to _____, from _____ to _____

10. Size of cuts _____ Number cuts per foot _____

11. If screen was installed: Length _____ ft. Diam. _____ in. Type _____

12. Method of construction _____
drilled, dug, driven, bored, jetted, etc.

13. Date completed _____ Deepened _____
Month Year Month Year

14. Depth to water when drilled 500 ft.
If flowing well, so state.

15. Present depth to water _____ ft. Date of measurement _____
If flowing well, so state.

16. Describe point from which depth measurements were made, and give sea-level elevation if available _____

17. If flowing well, state method of flow regulation _____

DISCHARGE DATA

18. Well discharge _____
gal. per min. or cu. ft. per sec. or miner's inches.

19. Method of discharge measurement _____
weir, orifice, current meter, etc.

20. Drawdown _____ ft.

21. Annual discharge in acre-feet, or number of hours pumped: 1944 _____ a.f. or _____ hrs. 1945 _____ a.f. or _____ hrs.

22. Purpose of use _____

23. Place of use: Twp. _____ Rge. _____ Section _____ _____ Acres _____
(See 24) Legal subdivision
Twp. _____ Rge. _____ Section _____ _____ Acres _____
Legal subdivision

24. If well is part of irrigation system of Irrigation District, Association or Company, omit 23 and give name of project.
_____
Name of Project

EQUIPMENT DATA

25. Kind of pump _____
turbine, centrifugal, etc.

26. Kind of power _____
electric, natural gas, etc.

27. Horsepower rating of motor _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 5-22-47 by LJ
Filed 5-23-47 by LJ
File No. (D-18-21)33 cb
Cross-referenced (Name) _____ by _____
Cross-referenced (Basin) _____ by _____
Cross-referenced _____ by _____

(See Other Side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	100	Soil, some sandy streaks
100	500	Clay
500	625	Water strata, some streaks of hard pan.
		submitted by:
		F. B. Jacobs, Engineer
		State Land Classification
		W. P. A. Project #890
		Jan. 25, 1938

I hereby certify that I have read the foregoing statements, and that each and all of the items therein contained are true to the best of my knowledge and belief.

Owner, Operator or Driller

Address

Date

Log # 270

FORM W-2 10-45 JAHN-TYLER

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REGISTRATION OF WELL

Registration of well existing as of Oct. 3, 1945 is hereby made and filed with the State Land Commissioner as required by Section 5, Chapter 12, Senate Bill No. 3, Seventeenth Legislature, First Special Session 1945.

1. Owner E. W. McCommas
   Name
   Rt. 1, St. David, Arizona
   Address

2. Lessee or Operator _____
   Name
   _____
   Address

3. Driller A. M. Cooper
   Name
   Benson, Arizona
   Address

4. Location of well: Twp. 18 S Rge. 21 E Section 28 NW ¼ ~~SE ¼~~ ¼ (12½ acres)
   10-acre subdivision

DESCRIPTION OF WELL

5. Total depth of hole 105 ft.
6. Type of casing Steel
7. Diameter and length of casing 8 in. from 0 to 105' in. from _____ to _____ in. from _____
8. Method of sealing at reduction points None (No reductions)
9. Perforated from 65' to 105' from _____ to _____ from _____ to _____
10. Size of cuts ¼" X 6" Number cuts per foot 4
11. If screen was installed: Length _____ ft. Diam. _____ in. Type _____
12. Method of construction Drilled
    drilled, dug, driven, bored, jetted, etc.
13. Date completed July 27 1946 (Month, Year) Deepened _____ (Month, Year)
14. Depth to water when drilled 70' ft.
    If flowing well, so state.
15. Present depth to water _____ ft. Date of measurement _____
    If flowing well, so state.
16. Describe point from which depth measurements were made, and give sea-level elevation if available _____
17. If flowing well, state method of flow regulation _____

RECEIVED SEP 10 1946 STATE LAND DEPT. OF ARIZONA

DISCHARGE DATA

18. Well discharge No pump installed
    gal. per min. or cu. ft. per sec. or miner's inches.
19. Method of discharge measurement _____
    weir, orifice, current meter, etc.
20. Drawdown _____ ft.
21. Annual discharge in acre-feet, or number of hours pumped: 1944 _____ a.f. or _____ hrs. 1945 _____ a.f. or _____ hrs.
22. Purpose of use Irrigation
23. Place of use: (See 24) Twp. 18 S Rge. 21 E Section 28 _____ Legal subdivision Acres 12½ ~~40~~ acres
    Twp. _____ Rge. _____ Section _____ _____ Legal subdivision Acres _____
24. If well is part of irrigation system of Irrigation District, Association or Company, omit 23 and give name of project.
    _____
    Name of Project

EQUIPMENT DATA

25. Kind of pump Have ordered pump
    turbine, centrifugal, etc.
    with 200 gal. capacity
26. Kind of power Gas Gasoline,
    electric, natural gas, etc.
27. Horsepower rating of motor 5

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 9-10-46 by lj
Filed 9-11-46 by lj
File No. (D-18-21) 28 db
Cross-referenced (Name) _____ by _____
Cross-referenced (Basin) _____ by _____
Cross-referenced _____ by _____

(See Other Side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	70	Red Sand and Gravel
70	102	Water, sand " Gravel
102	105	Red Clay

I hereby certify that I have read the foregoing statements, and that each and all of the items therein contained are true to the best of my knowledge and belief.

E. W. McCommas
Owner, ~~Operator or Driller~~

Rt. 1 – St. David, Ariz.
Address

Date Aug. 27-46

Log # 271

3149591101213 01
(D-18-21) 28DC
55-609171
271

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

IMPORTANT.
Please complete & return

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER MILTON CURTINS
Name
St. David, Arizona
Address

2. Lessee or Operator
Name
Address

3. DRILLER George Pardee
Name
Benson Ariz. Box 296
Address

4. Location of well: Twp. 18S Rge. 21E Section 28 ~~[illegible]~~ ~~[illegible]~~

5. Intention to Drill File No. (D-18-21)28 dcd Permit No. SE ¼ SW ¼ SE ¼

DESCRIPTION OF WELL

6. Total depth of hole 100 ft.

7. Type of casing 16"

8. Diameter and length of casing 16" in. from 0 to 100, in. from to, in. from to

9. Method of sealing at reduction points Red Clay.

10. Perforated from 40' to 100', from to, from to, from to

11. Size of cuts ¼" X 8" Number of cuts per foot 9 Rows in 16" Pipe

12. If screen was installed: Length ft. Diam. in. Type

13. Method of construction Drilled
drilled, dug, driven, bored, jetted, etc.

14. Date started July (Month) 1 (Day) 1962 (Year)

15. Date completed July (Month) 8 (Day) 1962 (Year)

16. Depth of water 40' ft.
If flowing well, so state.

17. Describe point from which depth measurements were made, and give sea-level elevation if available

18. If flowing well, state method of flow regulation

19. REMARKS: Will be capped soon and report on same will follow

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 12-3-62 by
Filed by
File No. (D-18-21)28 dcd

(Well Log to Appear on Reverse Side)

WD FORM G-301
REV. 4-27-53

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	30	top soil + yellow mud.
30	70	dark mud
70	96	Water sand and gravel
96	100	Clay.

RECEIVED DEC 3 1962 STATE LAND DEPT.

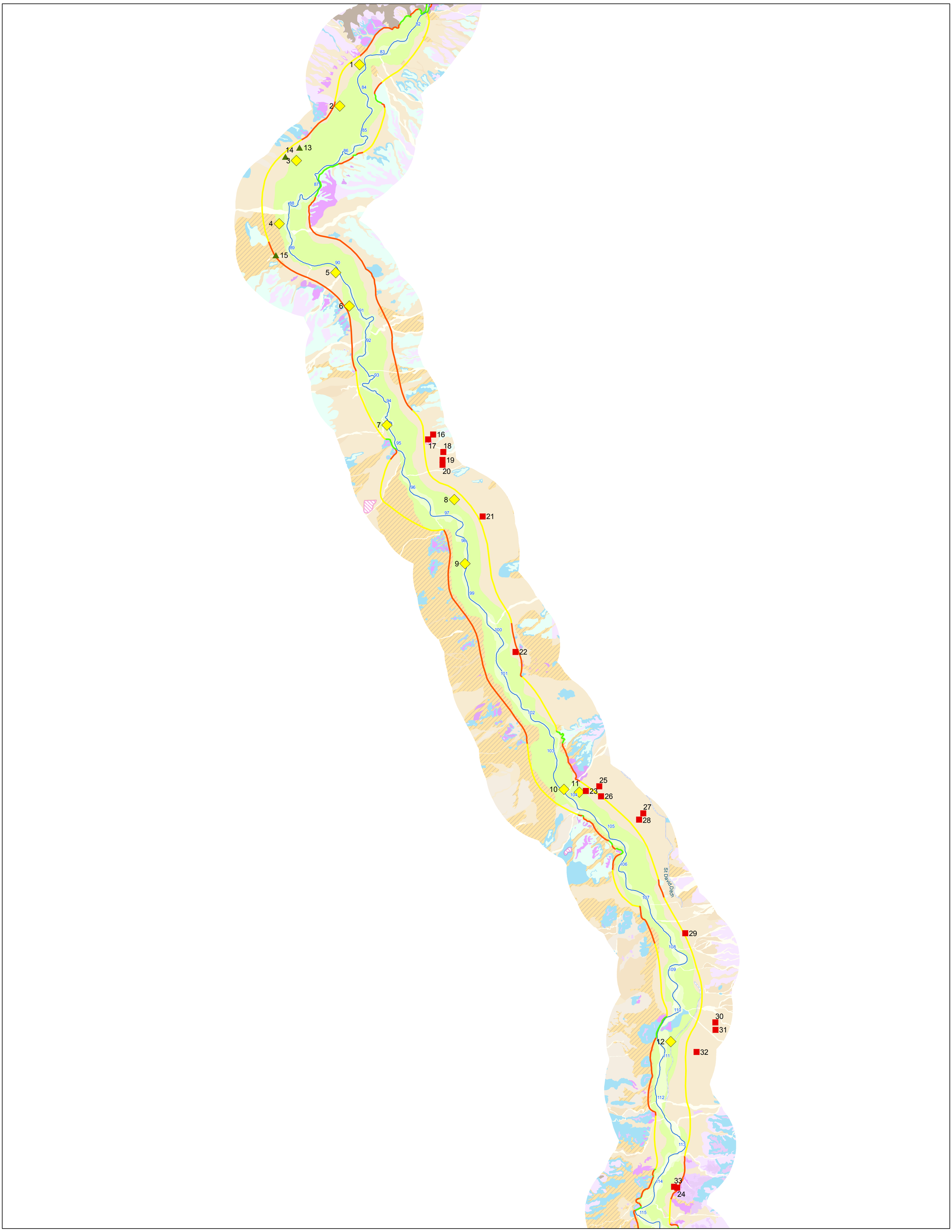
I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller George Pardue
Name

Benson Ariz. Box 296
Address

Date July 15 1962

APPENDIX E:
WATER LEVEL MAPS



Legend

- THA Well Left Side
- THA Well Right Side
- FHA Well
- FHA Delineation Step 1
- FHA Delineation Step 2
- FHA Delineation Step 3
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

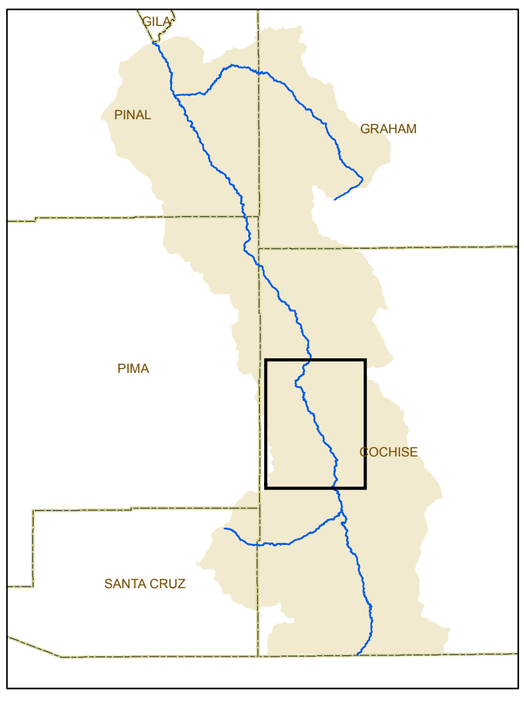
Tertiary Basin Fill Alluvium

Bedrock Units

Scale: 1:55,000

N

0 11,000 22,000 33,000
Feet



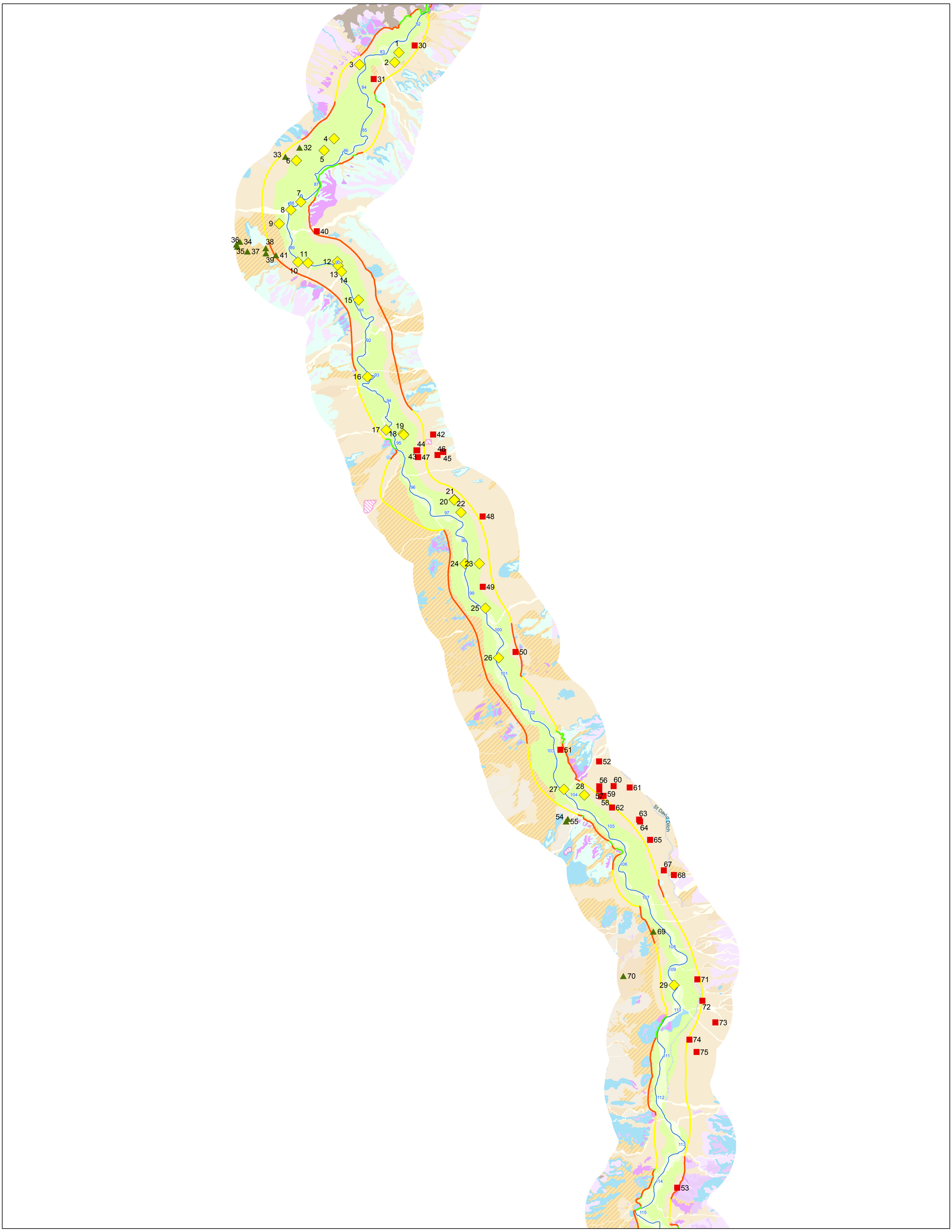
Appendix E
Water Level Measurements

San Pedro River: RM 114-82

1968

2015 Supplemental
Subflow Report

Reissued May 2015



Legend

- THA Well Left Side
- THA Well Right Side
- FHA Well
- FHA Delineation Step 1
- FHA Delineation Step 2
- FHA Delineation Step 3
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

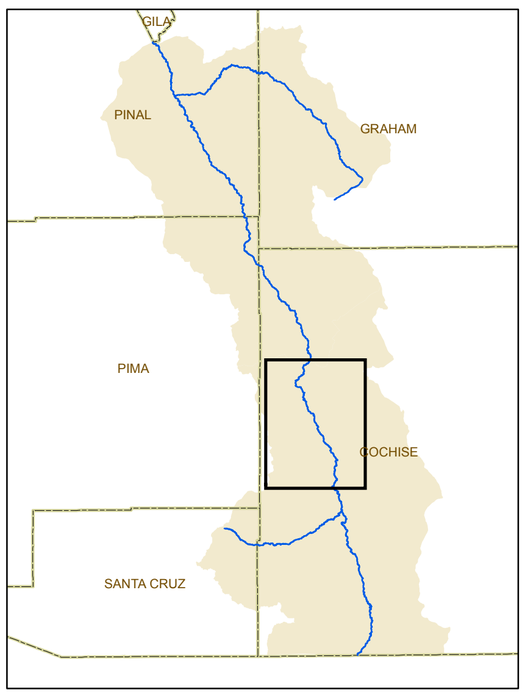
Tertiary Basin Fill Alluvium

Bedrock Units

Scale: 1:55,000

N

0 11,000 22,000 33,000
Feet



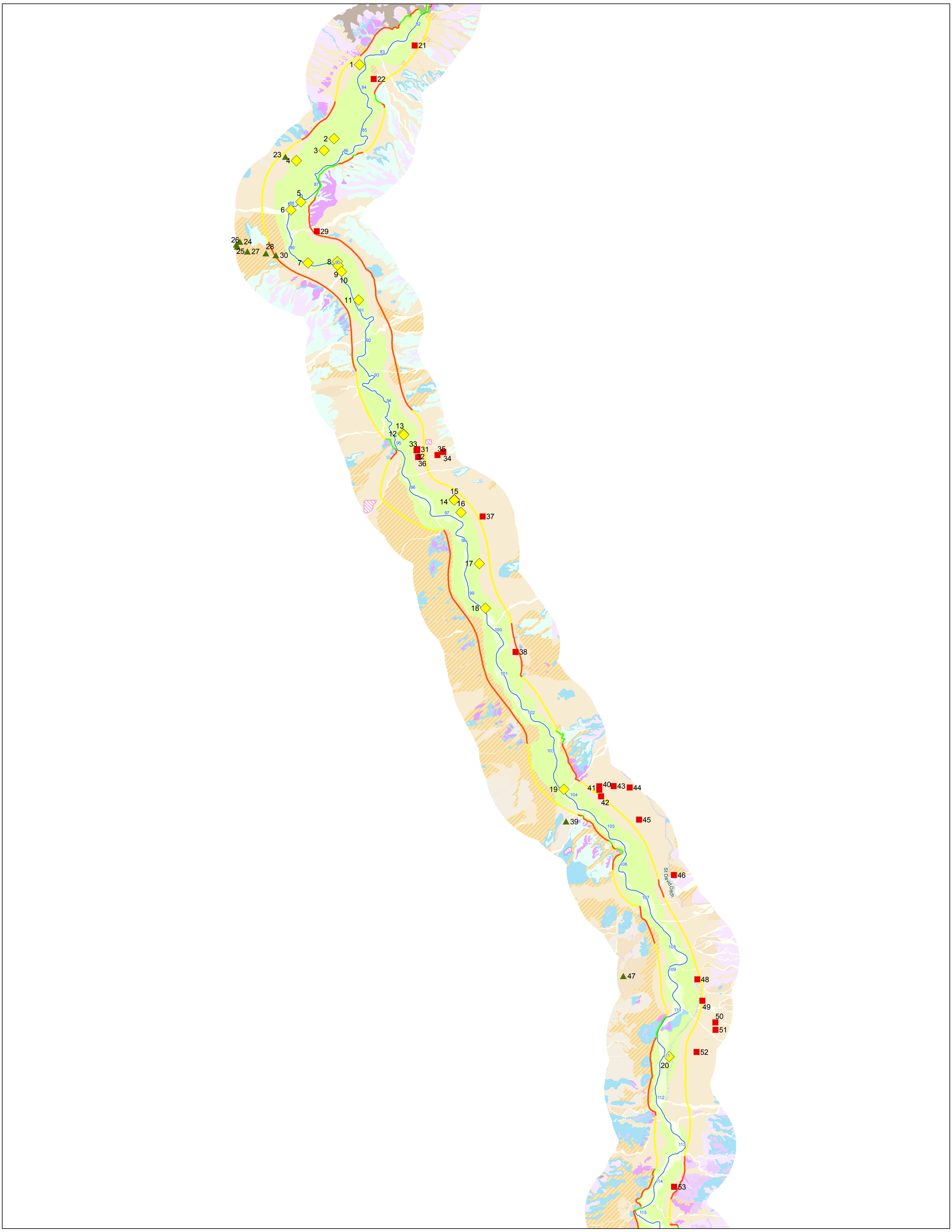
Appendix E
Water Level Measurements

San Pedro River: RM 114-82

1990

2015 Supplemental
Subflow Report

Reissued May 2015



Legend

- THA Well Left Side
- THA Well Right Side
- FHA Well
- FHA Delineation Step 1
- FHA Delineation Step 2
- FHA Delineation Step 2
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

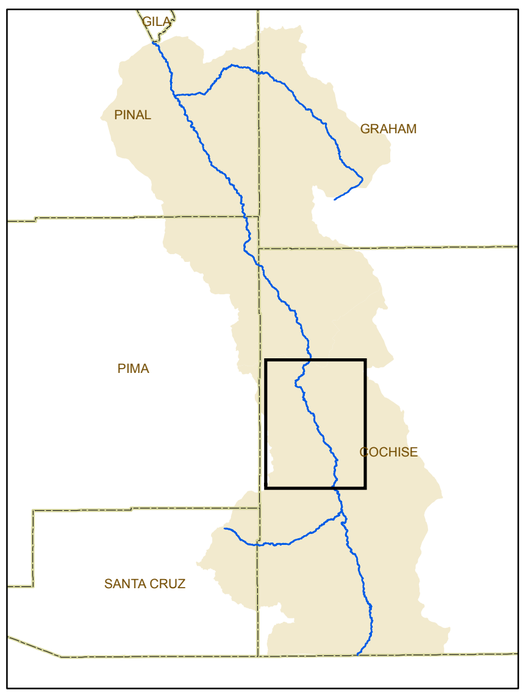
Tertiary Basin Fill Alluvium

Bedrock Units

N

Scale: 1:55,000

0 11,000 22,000 33,000
Feet



Appendix E
Water Level Measurements

San Pedro River: RM 114-82

2006

2015 Supplemental
Subflow Report

Reissued May 2015

APPENDIX F:
WATER LEVEL LINEAR REGRESSIONS

APPENDIX F: 2014 WATER LEVEL REGRESSION ANALYSIS SAN PEDRO RIVER (RM 82-114)

RiverMi	GWSI SITE ID	1968			1990			2006		
		DATE	DEPTH TO WATER	WATER LEVEL ELEVATION	DATE	DEPTH TO WATER	WATER LEVEL ELEVATION	DATE	DEPTH TO WATER	WATER LEVEL ELEVATION
82	320701110173901				11/27/1990	47.35	3,310.65	12/14/2006	48.5	3,309.50
82	320654110175801				11/27/1990	37.45	3,312.55			
82	320644110180301				11/27/1990	47.45	3,315.55			
83	320639110184601	4/10/1968	36.1	3,327.90	11/26/1990	38.4	3,325.60	12/12/2006	40.83	3,323.17
83	320627110182801				11/27/1990	60.4	3,319.60	12/14/2006	66.84	3,313.16
84	320600110190901	4/10/1968	39.5	3,335.50						
84	320527110191601				11/26/1990	38.9	3,343.10	12/12/2006	33.8	3,348.20
86	320515110192801				11/26/1990	37.2	3,350.80	12/12/2006	38.07	3,349.93
86	320524110200701	4/10/1968	39.1	3,367.90	11/26/1990	42.4	3,364.60			
86	320502110200401	4/10/1968	43.9	3,363.10	11/26/1990	48.3	3,358.70	12/12/2006	43.5	3,363.50
86	320509110201201	4/10/1968	57.2	3,366.80	11/26/1990	60.9	3,363.10	12/12/2006	54.8	3,369.20
86	320429110195201				11/26/1990	38.5	3,367.50	12/12/2006	39.8	3,366.20
87	320411110200801				11/27/1990	40.15	3,360.85	12/13/2006	42.78	3,358.22
88	320357110201601	3/13/1968	43.4	3,375.60	11/26/1990	42.4	3,376.60			
88	320341110210901				11/28/1990	57.61	3,402.39	12/12/2006	65.3	3,394.70
88	320337110211301				11/28/1990	55.5	3,401.50	12/12/2006	63.2	3,393.80
88	320338110211201				11/28/1990	56.41	3,400.59	12/12/2006	63.8	3,393.20
88	320332110210101				11/28/1990	49.5	3,395.50	12/12/2006	55.88	3,389.12
88	320336110204001				11/26/1990	50.7	3,388.30			
88	320331110203801				11/26/1990	55.5	3,387.50	12/12/2006	55.8	3,387.20
88	320348110194001				11/27/1990	61.65	3,386.35	12/13/2006	61.2	3,386.80
89	320329110202901	3/13/1968	42.05	3,393.95	11/26/1990	51.6	3,384.40	12/12/2006	52.7	3,383.30
89	320316110200001				11/28/1990	40.6	3,381.40			
89	320321110194801				11/27/1990	40.85	3,379.15	12/13/2006	38.53	3,381.47
90	320320110191201				11/27/1990	44.45	3,390.55	12/13/2006	43.46	3,391.54
90	320318110190701				11/27/1990	46	3,390.00	12/13/2006	38	3,398.00
90	320311110191501	3/13/1968	32.5	3,387.50						
90	320312110190801				11/27/1990	45.75	3,391.25	12/13/2006	37.5	3,399.50
90	320243110184801				11/27/1990	43.35	3,401.65	12/13/2006	36.4	3,408.60
91	320237110185901	3/13/1968	31.2	3,408.80						
91	320125110183801				11/28/1990	34.97	3,405.03			
94	320036110181501	3/14/1968	30.4	3,449.60						
94	320025110182001				11/28/1990	32.2	3,448.80			
94	320027110175601				11/29/1990	30.2	3,455.80	12/14/2006	31.33	3,454.67
94	320026110175501				11/29/1990	29.6	3,456.40	12/14/2006	29.68	3,456.32
95	320030110172001	3/18/1968	46.3	3,463.70	11/30/1990	45.75	3,464.25			
95	320021110172601	3/1/1968	46.8	3,463.20						
95	320008110174101							12/14/2006	39.61	3,459.39
90	320010110173901				11/29/1990	40.35	3,458.65	12/14/2006	41.53	3,457.47
90	320011110173901				11/29/1990	41.25	3,457.75	12/14/2006	42.97	3,456.03
95	320007110171101	3/20/1968	86.35	3,454.65	11/30/1990	90.59	3,450.00	12/14/2006	90.42	3,450.58
95	320005110170901				11/29/1990	72.4	3,460.60	12/14/2006	83.7	3,449.30
95	320003110174001				11/29/1990	44.75	3,463.25	12/14/2006	48.43	3,459.57
95	320000110170901	3/18/1968	75.85	3,461.15						
95	315955110170901	3/20/1968	78.7	3,441.30						
95	315922110165601	3/21/1968	45.85	3,466.15	11/29/1990	35.82	3,476.18	12/7/2006	35.7	3,476.30
96	315918110165501				11/29/1990	35.9	3,479.10	12/7/2006	32.9	3,482.10

APPENDIX F: 2014 WATER LEVEL REGRESSION ANALYSIS SAN PEDRO RIVER (RM 82-114)

RiverMi	GWSI SITE ID	1968			1990			2006		
		DATE	DEPTH TO WATER	WATER LEVEL ELEVATION	DATE	DEPTH TO WATER	WATER LEVEL ELEVATION	DATE	DEPTH TO WATER	WATER LEVEL ELEVATION
97	315905110164701				11/29/1990	28.13	3,481.87	12/5/2006	29.33	3,480.67
97	315902110162301	3/20/1968	40	3,490.00	11/29/1990	50.2	3,479.80	12/5/2006	38.42	3,491.58
98	315817110163901	3/22/1968	6.4	3,492.60	11/28/1990	7.5	3,491.50			
98	315816110162501				11/29/1990	28.4	3,496.60	12/5/2006	27	3,498.00
98	315752110162401				11/28/1990	35.1	3,501.90			
99	315733110161801				11/28/1990	30.7	3,509.30	12/7/2006	29	3,511.00
100	315646110153801	4/4/1968	27.6	3,522.40	11/27/1990	28.18	3,521.82	12/8/2006	29.89	3,520.11
100	315639110160201				11/27/1990	27.02	3,512.98			
100	315505110145101				11/28/1990	18.1	3,566.90			
103	315423110144401	4/1/1968	19.65	3,570.35	11/28/1990	20.1	3,569.90	12/5/2006	20.7	3,569.30
103	315453110140501				11/27/1990	37.6	3,607.40			
104	315422110142901	4/1/1968	14.5	3,575.50						
104	315423110142101	4/1/1968	14.5	3,585.50						
104	315419110142301				11/28/1990	19.9	3,588.10			
104	315416110142101	4/1/1968	21.85	3,585.15	11/28/1990	19.8	3,587.20			
104	315355110144501				11/27/1990	49.6	3,575.40			
104	315354110144601				11/27/1990	54.2	3,583.80	12/7/2006	58.9	3,579.10
104	315427110140601	4/1/1968	44.6	3,580.40	11/28/1990	41.1	3,583.90	12/5/2006	44.5	3,580.50
104	315423110140601				11/28/1990	37.7	3,587.30	12/5/2006	41.2	3,583.80
104	315417110140001	4/1/1968	28.75	3,593.25	11/28/1990	25.8	3,596.20	12/11/2006	32.7	3,589.30
104	315418110150001				11/28/1990	35.1	3,589.90			
104	315428110134801				11/28/1990	26.7	3,617.30	12/5/2006	42.6	3,601.40
104	315425110132901				11/27/1990	38.1	3,619.90	11/27/2006	54.8	3,603.20
104	315406110135001				11/27/1990	30.4	3,594.60			
105	315400110131301	4/2/1968	52.05	3,607.95						
105	315355110132101	4/2/1968	43.95	3,605.05	11/27/1990	42.8	3,606.20	11/27/2006	49.5	3,599.50
105	315352110311701				11/28/1990	44.5	3,605.50			
105	315333110130501				11/26/1990	16	3,624.00			
106	315243110132101				11/26/1990	14.9	3,615.10			
106	315305110124901				11/26/1990	54.3	3,620.70			
106	315257110123701				11/26/1990	74.9	3,618.10	12/6/2006	78.8	3,614.20
107	315200110130201	11/26/1990	33.9	3,607.10						
107	315156110122601	4/3/1968	36.1	3,648.90						
107	315110110134301				11/28/1990	0	3,685.00	12/12/2006	0	3,685.00
109	315111110121001				11/27/1990	38.1	3,665.90	12/15/2006	36.2	3,667.80
109	315155110124101				11/26/1990	36.2	3,627.80			
109	315050110120201				11/27/1990	41.2	3,660.80	12/13/2006	41.4	3,660.60
110	315032110114901	4/3/1968	66.95	3,668.05	11/27/1990	73.8	3,661.20	12/14/2006	71.4	3,663.60
110	315019110115001	4/3/1968	67.7	3,677.30				12/14/2006	79	3,666.00
110	315005110122001				11/27/1990	43.2	3,664.80			
110	315005110124301	4/1/1968	16.7	3,673.30						
110	314959110121301	4/3/1968	45.5	3,678.50	11/27/1990	61.5	3,662.50	12/14/2006	56.5	3,667.50
110	314952110124401							12/14/2006	27.1	3,657.90
114	314740110123801	3/27/1968	20.8	3,725.20				12/11/2006	27.2	3,718.80
	site count: 91									

1990

All Wells		FHA		Well Constructed in THA West of FHA		Well Constructed in THA East of FHA	
3524.32	3310.65	5021.138	3312.55	20656.09	3364.6	3524.32	3310.65
5021.138	3312.55	5694.293	3315.55	22361.7	3363.1	9156.605	3319.6
5694.293	3315.55	8490.872	3325.6	28152.78	3402.39	55451.48	3458.65
8490.872	3325.6	17503.22	3343.1	28156.03	3401.5	55471.12	3457.75
9156.605	3319.6	19007.14	3350.8	28159.28	3400.59	56039	3463.25
17503.22	3343.1	21590.07	3358.7	28815.79	3395.5	72165.71	3501.9
19007.14	3350.8	24943.94	3367.5	29054.61	3388.3	78826.29	3521.82
20656.09	3364.6	25954.3	3360.85	29253.12	3387.5	91300.17	3566.9
21590.07	3358.7	27400.62	3376.6	29978.6	3384.4	97706.04	3587.2
22361.7	3363.1	31047.22	3381.4	97997.63	3575.4	99726.13	3596.2
24943.94	3367.5	31824.48	3379.15	98136.67	3583.8	99757.11	3589.9
25954.3	3360.85	34577.46	3390.55	113899.1	3607.1	100784.5	3594.6
27400.62	3376.6	34755.26	3390	119680.4	3685	119741.5	3665.9
28152.78	3402.39	35325.55	3391.25			122416.3	3660.8
28156.03	3401.5	38710.39	3401.65			125632.9	3664.8
28159.28	3400.59	46701.52	3405.03			29393.16	3386.35
28815.79	3395.5	52344.26	3448.8			54122.41	3464.25
29054.61	3388.3	53435.7	3455.8			55782.83	3450
29253.12	3387.5	53547.79	3456.4			56002	3460.6
29393.16	3386.35	63062.34	3476.18			65126.97	3479.8
29978.6	3384.4	63085.3	3479.1			96840.62	3607.4
31047.22	3381.4	64244.24	3481.87			98855.65	3583.9
31824.48	3379.15	69484.65	3491.5			99023.51	3587.3
34577.46	3390.55	69589.7	3496.6			100011.4	3617.3
34755.26	3390	74562.74	3509.3			100014.6	3619.9
35325.55	3391.25	79932.12	3512.98			103291.5	3606.2
38710.39	3401.65	95701.78	3569.9			103457.9	3605.5
46701.52	3405.03	97642.17	3588.1			104702.7	3624
52344.26	3448.8	120426.6	3627.8			109183.5	3615.1
53435.7	3455.8					109826.1	3620.7
53547.79	3456.4					110166.3	3618.1
54122.41	3464.25	24573.41				123474.3	3661.2
55451.48	3458.65					126910.6	3662.5
55471.12	3457.75						
55782.83	3450						
56002	3460.6						
56039	3463.25						
63062.34	3476.18						
63085.3	3479.1						
64244.24	3481.87						
65126.97	3479.8						
69484.65	3491.5						
69589.7	3496.6						
72165.71	3501.9						
74562.74	3509.3						
78826.29	3521.82						
79932.12	3512.98						

1990	All Wells		FHA	Well Constructed in THA West of FHA	Well Constructed in THA East of FHA
	91300.17	3566.9			
	95701.78	3569.9			
	96840.62	3607.4			
	97642.17	3588.1			
	97706.04	3587.2			
	97997.63	3575.4			
	98136.67	3583.8			
	98855.65	3583.9			
	99023.51	3587.3			
	99726.13	3596.2			
	99757.11	3589.9			
	100011.4	3617.3			
	100014.6	3619.9			
	100784.5	3594.6			
	103291.5	3606.2			
	103457.9	3605.5			
	104702.7	3624			
	109183.5	3615.1			
	109826.1	3620.7			
	110166.3	3618.1			
	119680.4	3685			
	119741.5	3665.9			
	120426.6	3627.8			
	122416.3	3660.8			
	123474.3	3661.2			
	125632.9	3664.8			
	126910.6	3662.5			

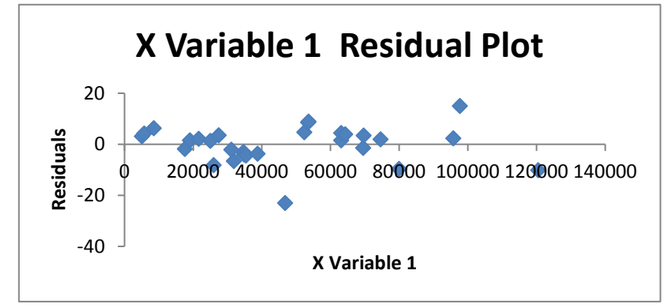
2006	All Wells		FHA		Well Constructed in THA West of FHA		Well Constructed in THA East of FHA	
	3524.32	3309.5	8490.872	3323.17	22361.7	3369.2	3524.32	3309.5
	8490.872	3323.17	17503.22	3348.2	28152.78	3394.7	9156.605	3313.16
	9156.605	3313.16	19007.14	3349.93	28156.03	3393.8	55372.65	3459.39
	17503.22	3348.2	21590.07	3363.5	28159.28	3393.2	55451.48	3457.47
	19007.14	3349.93	24943.94	3366.2	28815.79	3389.12	55471.12	3456.03
	21590.07	3363.5	25954.3	3358.22	29253.12	3387.2	56039	3459.57
	22361.7	3369.2	31824.48	3381.47	29978.6	3383.3	78826.29	3520.11
	24943.94	3366.2	34577.46	3391.54	98136.67	3579.1	99726.13	3589.3
	25954.3	3358.22	34755.26	3398	119680.4	3685	119741.5	3667.8
	28152.78	3394.7	35325.55	3399.5			122416.3	3660.6
	28156.03	3393.8	38710.39	3408.6			141547.5	3718.8
	28159.28	3393.2	53435.7	3454.67			29393.16	3386.8
	28815.79	3389.12	53547.79	3456.32			55782.83	3450.58
	29253.12	3387.2	63062.34	3476.3			56002	3449.3
	29393.16	3386.8	63085.3	3482.1			65126.97	3491.58
	29978.6	3383.3	64244.24	3480.67			98855.65	3580.5
	31824.48	3381.47	69589.7	3498			99023.51	3583.8
	34577.46	3391.54	74562.74	3511			100011.4	3601.4
	34755.26	3398	95701.78	3569.3			100014.6	3603.2
	35325.55	3399.5	128040.1	3657.9			103291.5	3599.5
	38710.39	3408.6					110166.3	3614.2
	53435.7	3454.67					123474.3	3663.6
	53547.79	3456.32					123858.2	3666
	55372.65	3459.39	16959.86				126910.6	3667.5
	55451.48	3457.47						
	55471.12	3456.03						
	55782.83	3450.58						
	56002	3449.3						
	56039	3459.57						
	63062.34	3476.3						
	63085.3	3482.1						
	64244.24	3480.67						
	65126.97	3491.58						
	69589.7	3498						
	74562.74	3511						
	78826.29	3520.11						
	95701.78	3569.3						
	98136.67	3579.1						
	98855.65	3580.5						
	99023.51	3583.8						
	99726.13	3589.3						
	100011.4	3601.4						
	100014.6	3603.2						
	103291.5	3599.5						
	110166.3	3614.2						
	119680.4	3685						

2006	All Wells		FHA	Well Constructed in THA West of FHA	Well Constructed in THA East of FHA
	119741.5	3667.8			
	122416.3	3660.6			
	123474.3	3663.6			
	123858.2	3666			
	126910.6	3667.5			
	128040.1	3657.9			
	141547.5	3718.8			

1968	All Wells		FHA		Well Constructed in THA West of FHA		Well Constructed in THA East of FHA	
	8490.872	3327.9	8490.872	3327.9	20656.09	3367.9	78826.29	3522.4
	12477.43	3335.5	12477.43	3335.5	22361.7	3366.8	97469.31	3585.5
	20656.09	3367.9	21590.07	3363.1	29978.6	3393.95	97706.04	3585.15
	21590.07	3363.1	27400.62	3375.6			99726.13	3593.25
	22361.7	3366.8	35064	3387.5			115341.4	3648.9
	27400.62	3375.6	38729.35	3408.8			141547.5	3725.2
	29978.6	3393.95	52062.36	3449.6			54122.41	3463.7
	35064	3387.5	63062.34	3466.15			55113	3463.2
	38729.35	3408.8	69484.65	3492.6			55782.83	3454.65
	52062.36	3449.6	95701.78	3570.35			57138.27	3461.15
	54122.41	3463.7	97180.1	3575.5			57917.16	3441.3
	55113	3463.2	126513.5	3673.3			65126.97	3490
	55782.83	3454.65					98855.65	3580.4
	57138.27	3461.15					103211.1	3607.95
	57917.16	3441.3					103291.5	3605.05
	63062.34	3466.15					123474.3	3668.05
	65126.97	3490	18486.49				123858.2	3677.3
	69484.65	3492.6					126910.6	3678.5
	78826.29	3522.4						
	95701.78	3570.35						
	97180.1	3575.5						
	97469.31	3585.5						
	97706.04	3585.15						
	98855.65	3580.4						
	99726.13	3593.25						
	103211.1	3607.95						
	103291.5	3605.05						
	113899.1	3607.1						
	115341.4	3648.9						
	123474.3	3668.05						
	123858.2	3677.3						
	126513.5	3673.3						
	126910.6	3678.5						
	141547.5	3725.2						

SUMMARY OUTPUT 1990

Regression Statistics	
Multiple R	0.996242461
R Square	0.992499042
Adjusted R Square	0.992221228
Standard Error	7.327834189
Observations	29



ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	191835.2356	191835.2356	3572.5401	3.14656E-30
Residual	27	1449.823155	53.6971539		
Total	28	193285.0587			

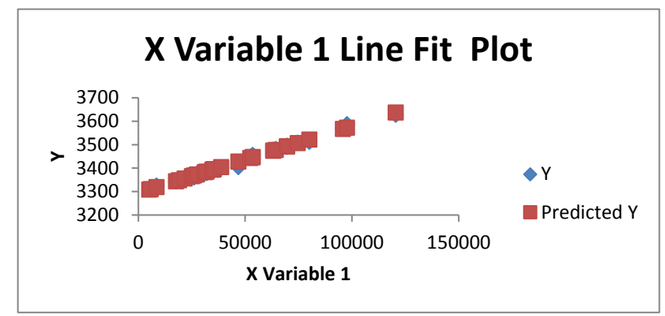
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 75.0%*	*Upper 75.0%*	*Lower 50.0%*	*Upper 50.0%*
Intercept	3295.075228	2.623249382	1256.104452	6.78979E-66	3289.692765	3300.457691	3291.99122	3298.159236	3293.281752	3296.868704
X Variable 1	0.002846667	4.76264E-05	59.77072946	3.14656E-30	0.002748946	0.002944389	0.002790676	0.002902659	0.002814106	0.002879229

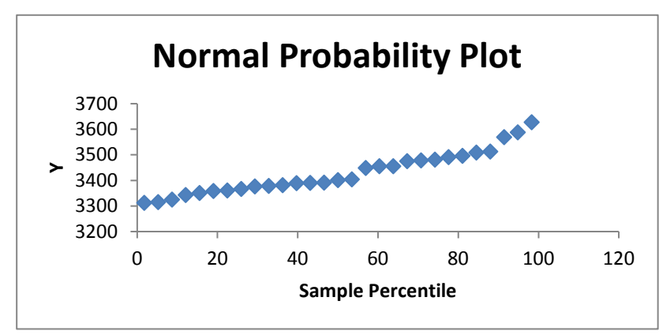
RESIDUAL OUTPUT

Observation	*Predicted Y*	*Residuals*	*Standard Residuals*
1	3309.368737	3.181263283	0.442100609
2	3311.284987	4.265013241	0.592709494
3	3319.245916	6.354084255	0.883027988
4	3344.901072	-1.801071526	-0.250295165
5	3349.182225	1.617774576	0.224822362
6	3356.534978	2.165021896	0.300873399
7	3366.08232	1.417679759	0.197015157
8	3368.958481	-8.108481134	-1.126836771
9	3373.075664	3.524336279	0.489777512
10	3383.456348	-2.056347594	-0.285770916
11	3385.668946	-6.518946154	-0.90593887
12	3393.50576	-2.955760215	-0.410762415
13	3394.011885	-4.011885417	-0.557532284
14	3395.635309	-4.385308708	-0.609426972
15	3405.270841	-3.620840963	-0.503188781
16	3428.018915	-22.98891543	-3.194772831
17	3444.081909	4.718091248	0.655673809
18	3447.188878	8.611121883	1.196688827
19	3447.507983	8.892016747	1.235724826
20	3474.592727	1.587272957	0.220583547
21	3474.658087	4.441912646	0.617293229
22	3477.957218	3.912781572	0.543759809
23	3492.874902	-1.374901866	-0.191070307

PROBABILITY OUTPUT

Percentile	*Y*
1.724137931	3312.55
5.172413793	3315.55
8.620689655	3325.6
12.06896552	3343.1
15.51724138	3350.8
18.96551724	3358.7
22.4137931	3360.85
25.86206897	3367.5
29.31034483	3376.6
32.75862069	3379.15
36.20689655	3381.4
39.65517241	3390
43.10344828	3390.55
46.55172414	3391.25
50	3401.65
53.44827586	3405.03
56.89655172	3448.8
60.34482759	3455.8
63.79310345	3456.4
67.24137931	3476.18
70.68965517	3479.1
74.13793103	3481.87
77.5862069	3491.5





SUMMARY OUTPUT		1990				
24	3493.173955	3.426044738	0.476117922	81.03448276	3496.6	
25	3507.330543	1.969456901	0.273695704	84.48275862	3509.3	
26	3522.615372	-9.635371656	-1.339028963	87.93103448	3512.98	
27	3567.506354	2.393645522	0.332645257	91.37931034	3569.9	
28	3573.030008	15.06999238	2.094278975	94.82758621	3588.1	
29	3637.889679	-10.08967922	-1.40216415	98.27586207	3627.8	

	FHA Lower 75%	*FHA Best Fit*	*FHA Upper 75%*	*FHA Lower 95%*	*FHA Upper 95%*	*FHA Lower 50%*	*FHA Upper 50%*
5021.137683	3306.003586	3309.368737	3312.733887	3303.495601	3315.241872	3307.411765	3311.325709
5694.293281	3307.882145	3311.284987	3314.687829	3305.346069	3317.223904	3309.306096	3313.263878
8490.871911	3315.686489	3319.245916	3322.805343	3313.033713	3325.458119	3317.175964	3321.315867
17503.21965	3340.837027	3344.901072	3348.965116	3337.808169	3351.993974	3342.537665	3347.264479
19007.13754	3345.033974	3349.182225	3353.330477	3341.942358	3356.422092	3346.769849	3351.594602
21590.07115	3352.242104	3356.534978	3360.827852	3349.042703	3364.027253	3354.038497	3359.031459
24943.93764	3361.601657	3366.08232	3370.562983	3358.262301	3373.90234	3363.476632	3368.688008
25954.29838	3364.421246	3368.958481	3373.495716	3361.039728	3376.877234	3366.319894	3371.597068
27400.61512	3368.457447	3373.075664	3377.693881	3365.015574	3381.135753	3370.389983	3375.761345
31047.22454	3378.633951	3383.456348	3388.278745	3375.039906	3391.872789	3380.651928	3386.260768
31824.48381	3380.803029	3385.668946	3390.534863	3377.17655	3394.161342	3382.839218	3388.498675
34577.46236	3388.485699	3393.50576	3398.525821	3384.744339	3402.267181	3390.586391	3396.42513
34755.25806	3388.981869	3394.011885	3399.041902	3385.23309	3402.790681	3391.086726	3396.937044
35325.54714	3390.573361	3395.635309	3400.697256	3386.800784	3404.469833	3392.69158	3398.579037
38710.39376	3400.01937	3405.270841	3410.522312	3396.105544	3414.436138	3402.216897	3408.324785
46701.5188	3422.320007	3428.018915	3433.717824	3418.072715	3437.965116	3424.704768	3431.333062
52344.25521	3438.067054	3444.081909	3450.096764	3433.584292	3454.579525	3440.584026	3447.579792
53435.69619	3441.112911	3447.188878	3453.264845	3436.584604	3457.793152	3443.655456	3450.7223
53547.79398	3441.42574	3447.507983	3453.590227	3436.892755	3458.123211	3443.970911	3451.045055
63062.33881	3467.977747	3474.592727	3481.207707	3463.047724	3486.13773	3470.745847	3478.439607
63085.2991	3468.041822	3474.658087	3481.274352	3463.110841	3486.205334	3470.81046	3478.505715
64244.24417	3471.276062	3477.957218	3484.638375	3466.296718	3489.617719	3474.071854	3481.842583
69484.64699	3485.900326	3492.874902	3499.849478	3480.702302	3505.047501	3488.818902	3496.930901
69589.70086	3486.193497	3493.173955	3500.154413	3480.99109	3505.356821	3489.114535	3497.233375
74562.73994	3500.071636	3507.330543	3514.58945	3494.661705	3519.999381	3503.109193	3511.551893
79932.11643	3515.055824	3522.615372	3530.17492	3509.421831	3535.808912	3518.219187	3527.011556
95701.77892	3559.063835	3567.506354	3575.948874	3552.77178	3582.240929	3562.596686	3572.416023
97642.17185	3564.478842	3573.030008	3581.581173	3558.105816	3587.9542	3568.057157	3578.002858
145000	3696.639176	3707.841989	3719.044803	3688.289924	3727.394054	3701.327098	3714.356881

SUMMARY OUTPUT 2006

Regression Statistics	
Multiple R	0.998565453
R Square	0.997132964
Adjusted R Square	0.996973685
Standard Error	4.643686215
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	134995.1627	134995.1627	6260.261508	2.43071E-24
Residual	18	388.1487899	21.56382166		
Total	19	135383.3115			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 75.0%*	*Upper 75.0%*	*Lower 50.0%*	*Upper 50.0%*
Intercept	3296.903829	2.017097777	1634.478937	5.30731E-48	3292.666064	3301.141594	3294.506082	3299.301576	3295.515332	3298.292326
X Variable 1	0.002856628	3.61042E-05	79.12181436	2.43071E-24	0.002780776	0.00293248	0.00281371	0.002899545	0.002831775	0.002881481

RESIDUAL OUTPUT

Observation	*Predicted Y*	*Residuals*	*Standard Residuals*
1	3321.159089	2.010910671	0.444908252
2	3346.904012	1.295988177	0.286733689
3	3351.200145	-1.270145365	-0.28101604
4	3358.578625	4.921374867	1.088840156
5	3368.159373	-1.959373168	-0.433505726
6	3371.045598	-12.82559767	-2.837626914
7	3387.814532	-6.344532168	-1.403709651
8	3395.678767	-4.138767035	-0.915690405
9	3396.186663	1.813336845	0.401195606
10	3397.815767	1.684233238	0.372631801
11	3407.485013	1.11498651	0.246687586
12	3449.549721	5.12027925	1.132847184
13	3449.869942	6.450057574	1.427056846
14	3477.049455	-0.74945502	-0.165814786
15	3477.115044	4.984955975	1.102907295
16	3480.425719	0.244281329	0.054046547
17	3495.695698	2.304301534	0.509820144
18	3509.90182	1.09818017	0.242969231
19	3570.288185	-0.988184784	-0.218633066
20	3662.666831	-4.766830927	-1.05464775

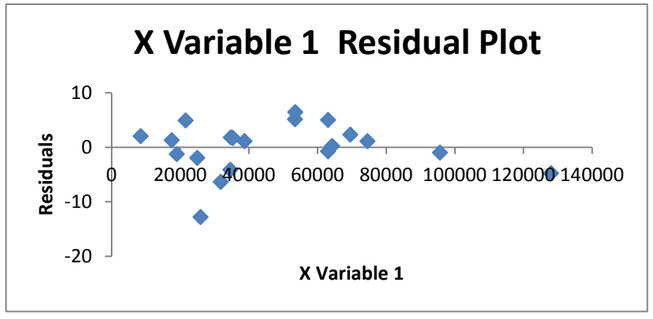
PROBABILITY OUTPUT

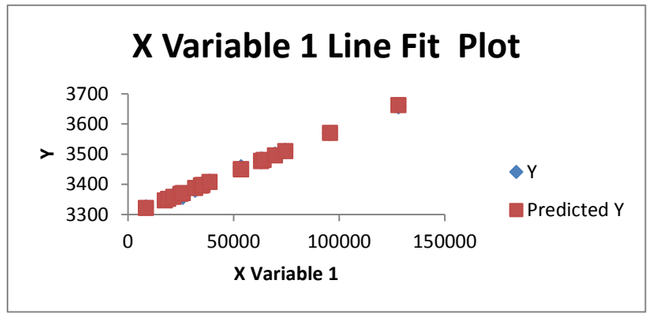
Percentile	*Y*
2.5	3323.17
7.5	3348.2
12.5	3349.93
17.5	3358.22
22.5	3363.5
27.5	3366.2
32.5	3381.47
37.5	3391.54
42.5	3398
47.5	3399.5
52.5	3408.6
57.5	3454.67
62.5	3456.32
67.5	3476.3
72.5	3480.67
77.5	3482.1
82.5	3498
87.5	3511
92.5	3569.3
97.5	3657.9

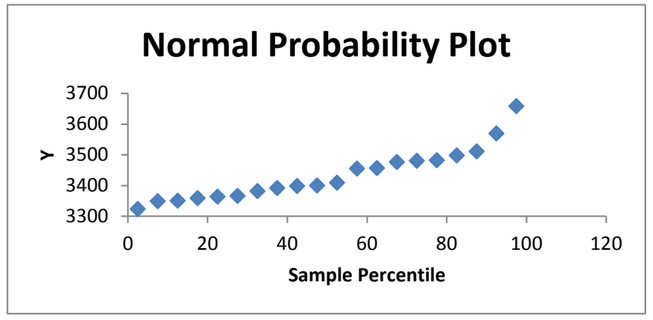
	FHA Best Fit	*FHA Lower 75%*	*FHA Upper 75%*	*FHA Lower 95%*	*FHA Upper 95%*	*FHA Lower 50%*	*FHA Upper 50%*
8490.871911	3321.159089	3318.396936	3323.921243	3316.277274	3326.040905	3319.55957	3322.758608

SUMMARY OUTPUT

	2006						
17503.21965	3346.904012	3343.755071	3350.052953	3341.338591	3352.469432	3345.080511	3348.727513
19007.13754	3351.200145	3347.98666	3354.41363	3345.52065	3356.879641	3349.339268	3353.061023
21590.07115	3358.578625	3355.254287	3361.902963	3352.703209	3364.454042	3356.653554	3360.503696
24943.93764	3368.159373	3364.691096	3371.627651	3362.029559	3374.289187	3366.150949	3370.167797
25954.29838	3371.045598	3367.533958	3374.557237	3364.839146	3377.25205	3369.012063	3373.079132
31824.48381	3387.814532	3384.050959	3391.578105	3381.162815	3394.46625	3385.635107	3389.993957
34577.46236	3395.678767	3391.797043	3399.560491	3388.81823	3402.539304	3393.430923	3397.926611
34755.25806	3396.186663	3392.297309	3400.076017	3389.31264	3403.060686	3393.9344	3398.438926
35325.54714	3397.815767	3393.901937	3401.729596	3390.898486	3404.733047	3395.549331	3400.082203
38710.39376	3407.485013	3403.425915	3411.544112	3400.310985	3414.659042	3405.134454	3409.835573
53435.69619	3449.549721	3444.85865	3454.240792	3441.258748	3457.840693	3446.833197	3452.266245
53547.79398	3449.869942	3445.174061	3454.565824	3441.570467	3458.169418	3447.150632	3452.589252
63062.33881	3477.049455	3471.945233	3482.153677	3468.028282	3486.070628	3474.093682	3480.005228
63085.2991	3477.115044	3472.009837	3482.220251	3468.092129	3486.137959	3474.1587	3480.071388
64244.24417	3480.425719	3475.270773	3485.580665	3471.314896	3489.536542	3477.440572	3483.410866
69589.70086	3495.695698	3490.311339	3501.080058	3486.179412	3505.211985	3492.577702	3498.813695
74562.73994	3509.90182	3504.30403	3515.499609	3500.008318	3519.795322	3506.660229	3513.14341
95701.77892	3570.288185	3563.783162	3576.793208	3558.791243	3581.785126	3566.52123	3574.05514
145000	3711.11485	3702.494073	3719.735627	3695.878537	3726.351163	3706.122696	3716.107004







SUMMARY OUTPUT 1968

Regression Statistics	
Multiple R	0.998047796
R Square	0.996099404
Adjusted R Square	0.995709344
Standard Error	7.08872262
Observations	12

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	128323.9243	128323.9243	2553.710527	2.22568E-13
Residual	10	502.4998838	50.24998838		
Total	11	128826.4242			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 75.0%*	*Upper 75.0%*	*Lower 50.0%*	*Upper 50.0%*
Intercept	3295.994369	3.70637352	889.2774436	7.95614E-26	3287.736054	3304.252684	3291.46794	3300.520797	3293.400604	3298.588134
X Variable 1	0.00289301	5.72485E-05	50.53425102	2.22568E-13	0.002765452	0.003020567	0.002823095	0.002962925	0.002852947	0.002933073

RESIDUAL OUTPUT

Observation	*Predicted Y*	*Residuals*	*Standard Residuals*
1	3320.558544	7.34145603	1.086201909
2	3332.091698	3.40830193	0.504273818
3	3358.454655	4.645345023	0.687299987
4	3375.264615	0.335384713	0.049621698
5	3397.434874	-9.934874428	-1.469909991
6	3408.03877	0.76123048	0.112627522
7	3446.611294	2.988705599	0.442192627
8	3478.434329	-12.28432934	-1.817522563
9	3497.014129	-4.41412949	-0.653090594
10	3572.860548	-2.510547552	-0.371446963
11	3577.137343	-1.637343001	-0.242252366
12	3661.9992	11.30080003	1.672004916

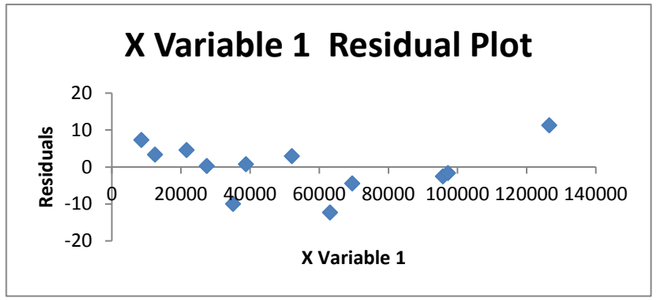
PROBABILITY OUTPUT

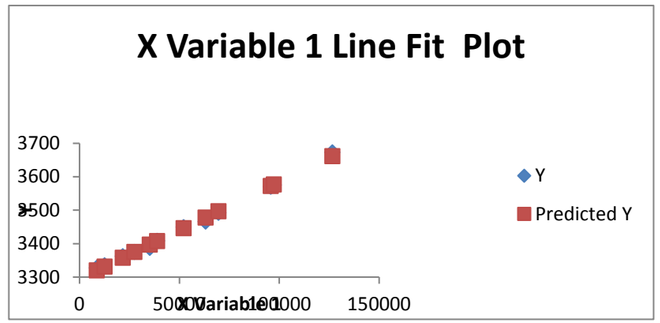
Percentile	*Y*
4.166666667	3327.9
12.5	3335.5
20.83333333	3363.1
29.16666667	3375.6
37.5	3387.5
45.83333333	3408.8
54.16666667	3449.6
62.5	3466.15
70.83333333	3492.6
79.16666667	3570.35
87.5	3575.5
95.83333333	3673.3

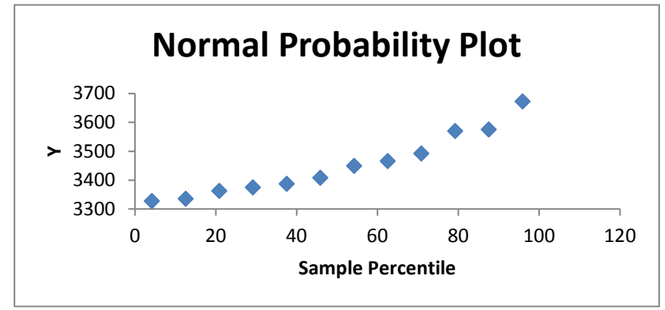
	FHA Lower 75%	*FHA Best Fit*	*FHA Upper 75%*	*FHA Lower 95%*	*FHA Upper 95%*	*FHA Lower 50%*	*FHA Upper 50%*
8490.871911	3315.438476	3320.558544	3325.678612	3311.217154	3329.899934	3317.624608	3323.49248
12477.43094	3326.692909	3332.091698	3337.490487	3322.241792	3341.941604	3328.998048	3335.185349
21590.07115	3352.418756	3358.454655	3364.490554	3347.442363	3369.466947	3354.995923	3361.913387
27400.61512	3368.822472	3375.264615	3381.706759	3363.511144	3387.018087	3371.573094	3378.956136
35064.00415	3390.456945	3397.434874	3404.412804	3384.70388	3410.165869	3393.436334	3401.433415
38729.35479	3400.804577	3408.03877	3415.272962	3394.840231	3421.237308	3403.893383	3412.184156
52062.36377	3438.444924	3446.611294	3454.777665	3431.71203	3461.510559	3441.931745	3451.290843
63062.33881	3469.498895	3478.434329	3487.369763	3462.131934	3494.736724	3473.314086	3483.554572
69484.64699	3487.62968	3497.014129	3506.398579	3479.89252	3514.135739	3491.636588	3502.391671

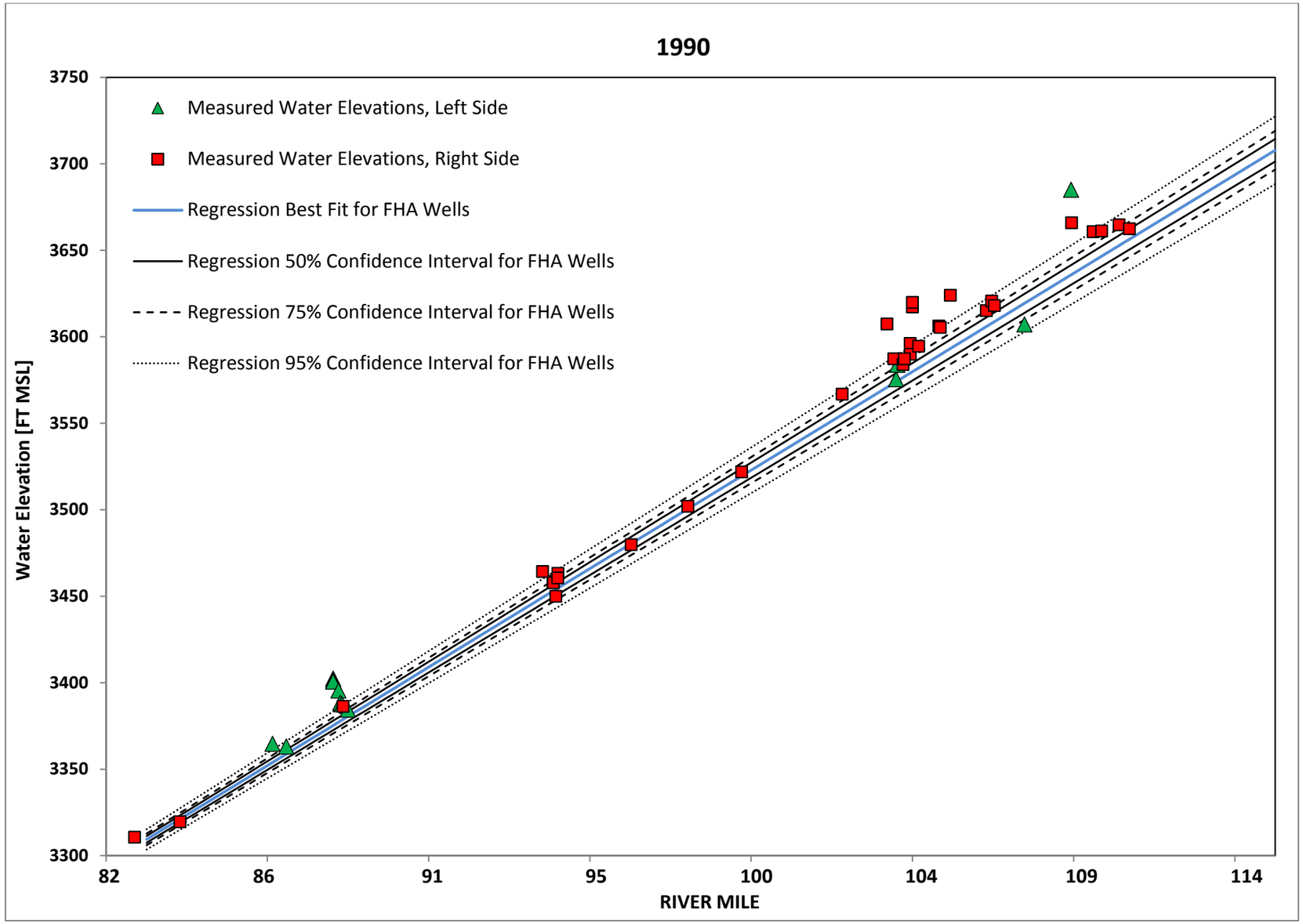
SUMMARY OUTPUT 1968

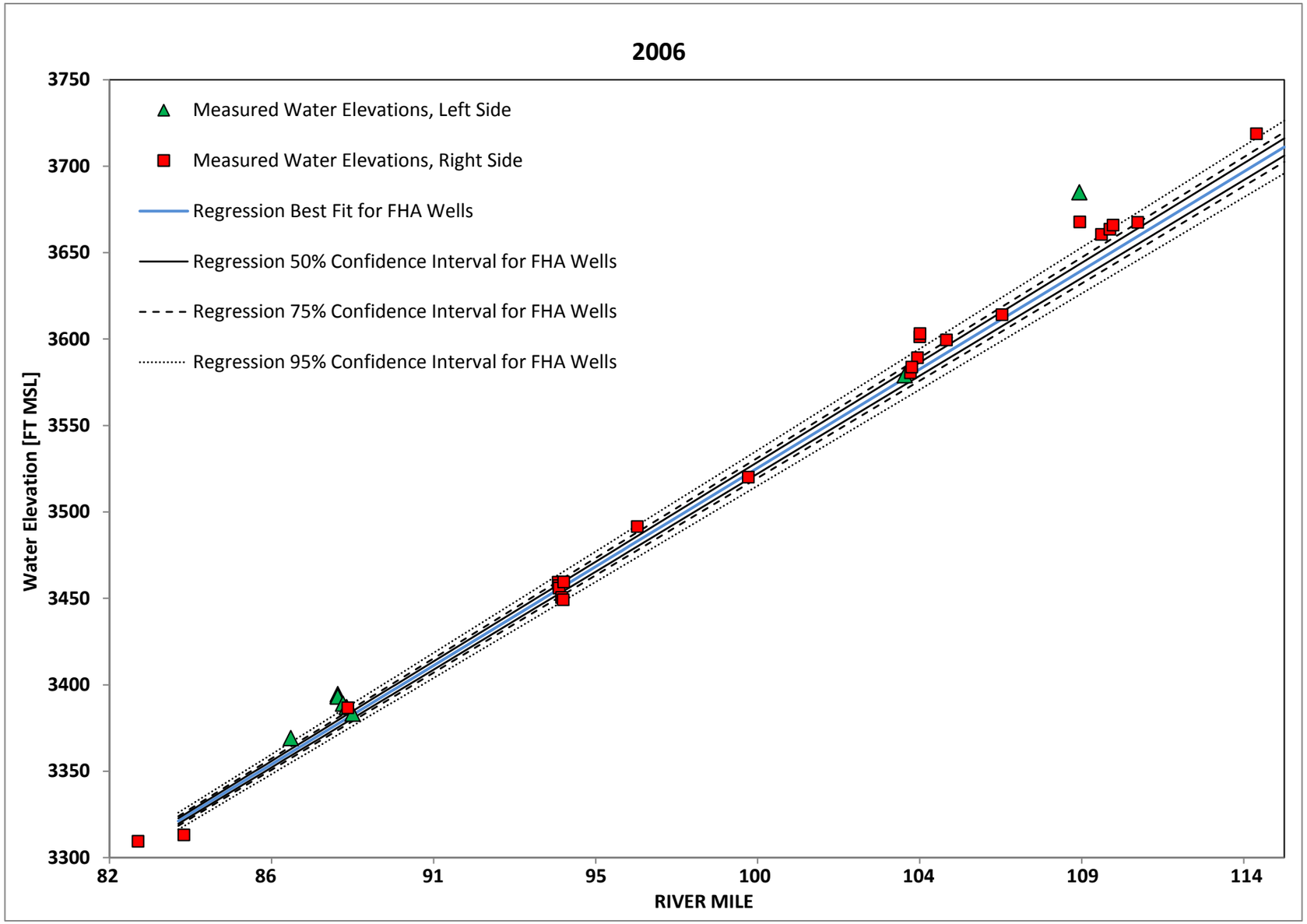
95701.77892	3561.643126	3572.860548	3584.077969	3552.394744	3593.326351	3566.432664	3579.288431
97180.09936	3565.816565	3577.137343	3588.458121	3556.482969	3597.791717	3570.650234	3583.624452
145000	3700.816673	3715.480781	3730.14489	3688.726616	3742.234947	3707.077855	3723.883708

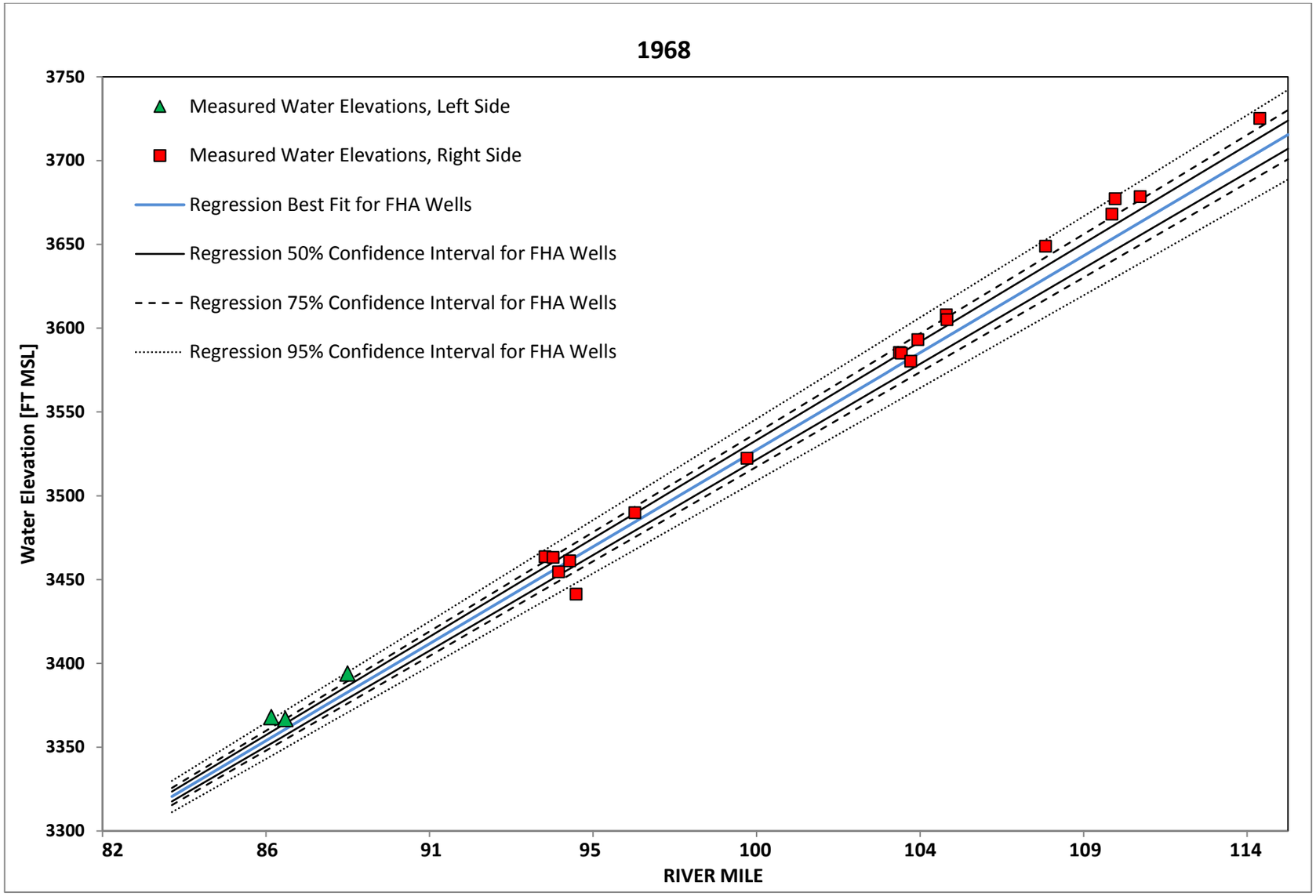







1990
Measured Water Elevations, Left Side
Measured Water Elevations, Right Side
Regression Best Fit for FHA Wells
Regression 50% Confidence Interval for FHA Wells
Regression 75% Confidence Interval for FHA Wells
Regression 95% Confidence Interval for FHA Wells
Water Elevation [FT MSL]
3750
3700
3650
3600
3550
3500
3450
3400
3350
3300
82
86
91
95
100
104
109
114
RIVER MILE


2006
Measured Water Elevations, Left Side
Measured Water Elevations, Right Side
Regression Best Fit for FHA Wells
Regression 50% Confidence Interval for FHA Wells
Regression 75% Confidence Interval for FHA Wells
Regression 95% Confidence Interval for FHA Wells
Water Elevation [FT MSL]
3750
3700
3650
3600
3550
3500
3450
3400
3350
3300
82
86
91
95
100
104
109
114
RIVER MILE


1968
Measured Water Elevations, Left Side
Measured Water Elevations, Right Side
Regression Best Fit for FHA Wells
Regression 50% Confidence Interval for FHA Wells
Regression 75% Confidence Interval for FHA Wells
Regression 95% Confidence Interval for FHA Wells
Water Elevation [FT MSL]
3750
3700
3650
3600
3550
3500
3450
3400
3350
3300
82
86
91
95
100
104
109
114
RIVER MILE

APPENDIX G:
SUBFLOW ZONE
DELINEATION MAP SHEETS

T22S R21E
T22S R22E
T23S R21E
T23S R22E
T24S R21E
T24S R22E
Greenbush Draw
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157

Legend

- FHA Line
- Updated Subflow Zone
- Townships
- Sections
- Holocene Composite Active Floodplain
- Major Tributaries (>50 sqmi)
- Tributary Washes
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

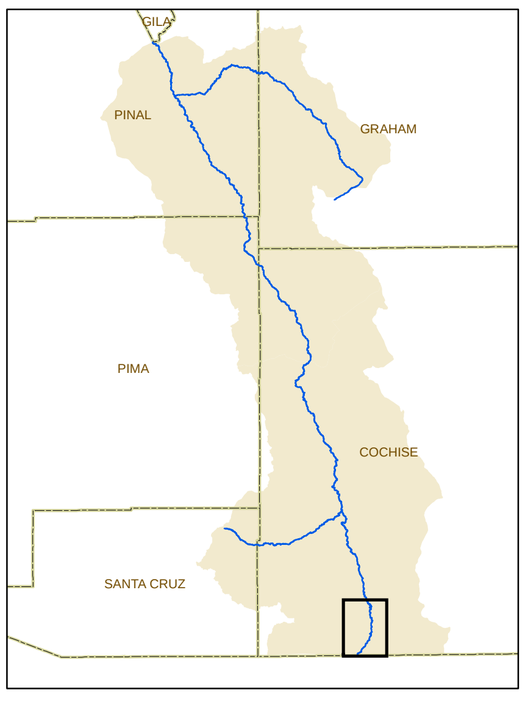
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

0 5,000 10,000 15,000
Feet



Appendix G
Subflow Zone Delineation Map Sheets

San Pedro River: RM 157-143

Map 1 of 17

2015 Supplemental Subflow Report

Reissued May 2015

T21S R21E

T21S R22E

T22S R21E

T22S R22E

Government Draw

131 132 133 134 135 136 137 138 139 140 141 142 143

Legend

- FHA Line
- Updated Subflow Zone
- Townships
- Sections
- Holocene Composite Active Floodplain
- Major Tributaries (>50 sqmi)
- Tributary Washes
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

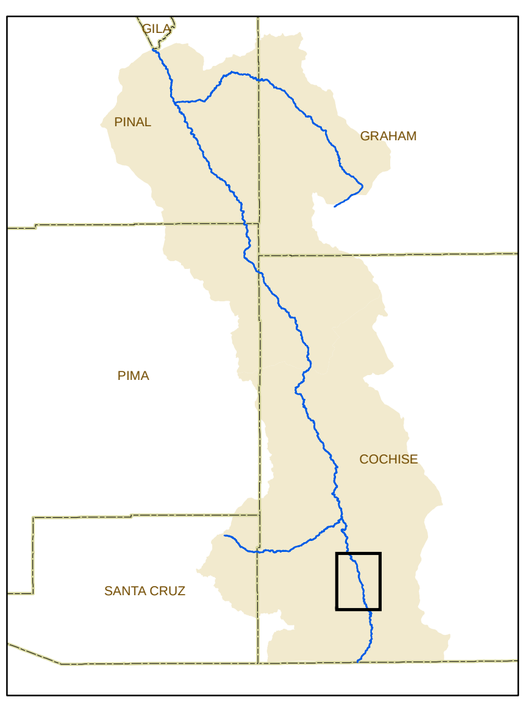
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

0 5,000 10,000 15,000
Feet

N



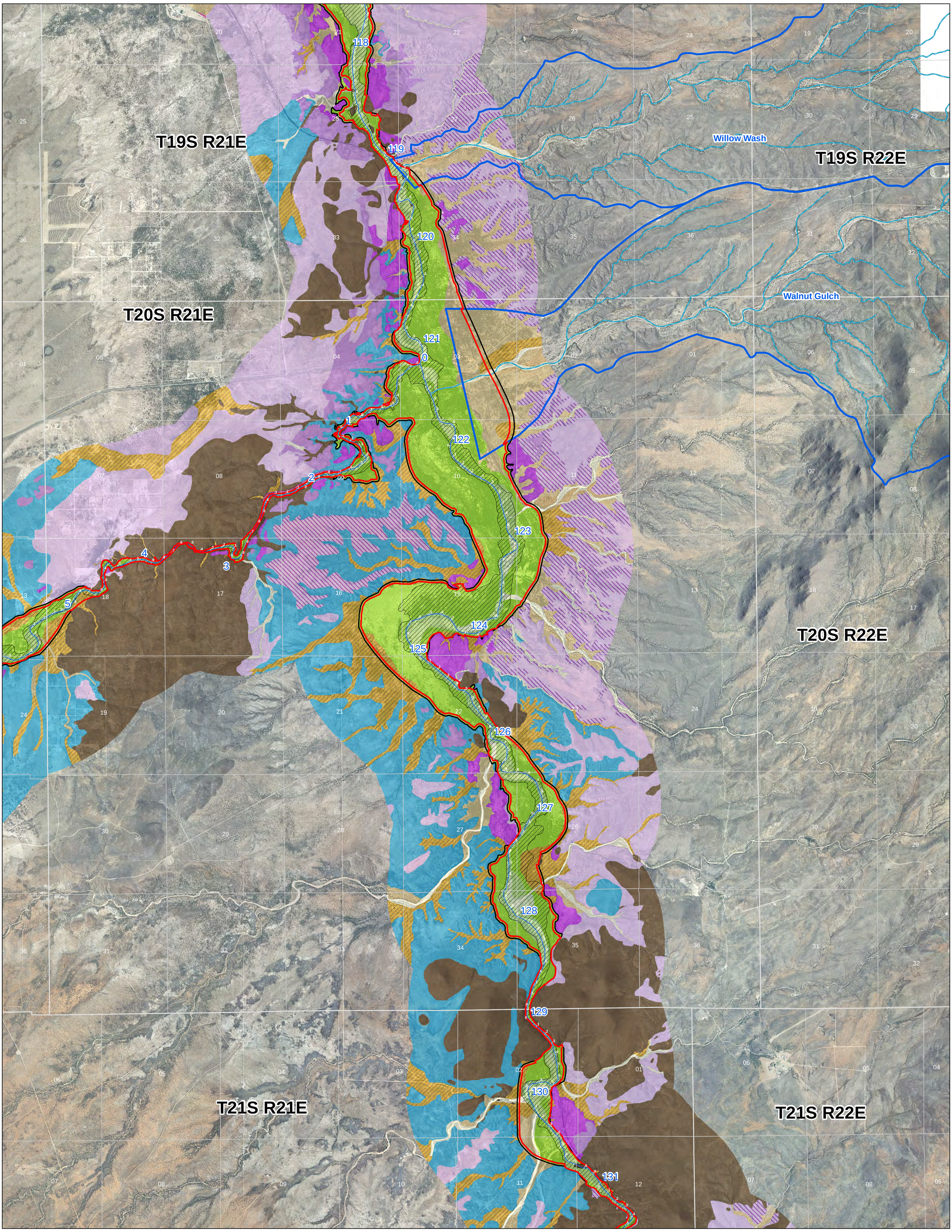
Appendix G
Subflow Zone Delineation Map Sheets

San Pedro River: RM 143-131

Map 2 of 17

2015 Supplemental Subflow Report

Reissued May 2015



Legend

- FHA Line
- Updated Subflow Zone
- Townships
- Sections
- Holocene Composite Active Floodplain
- Major Tributaries (>50 sqmi)
- Tributary Washes
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

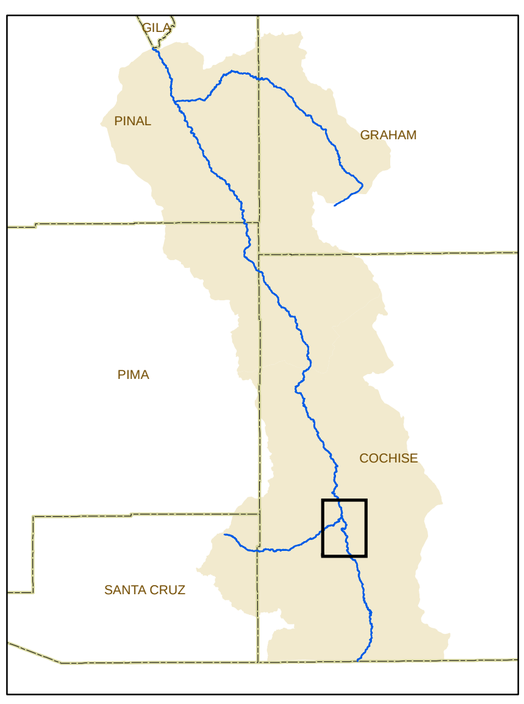
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

0 5,000 10,000 15,000
Feet



Appendix G
Subflow Zone Delineation Map Sheets

San Pedro River: RM 131-118

Map 3 of 17

2015 Supplemental Subflow Report

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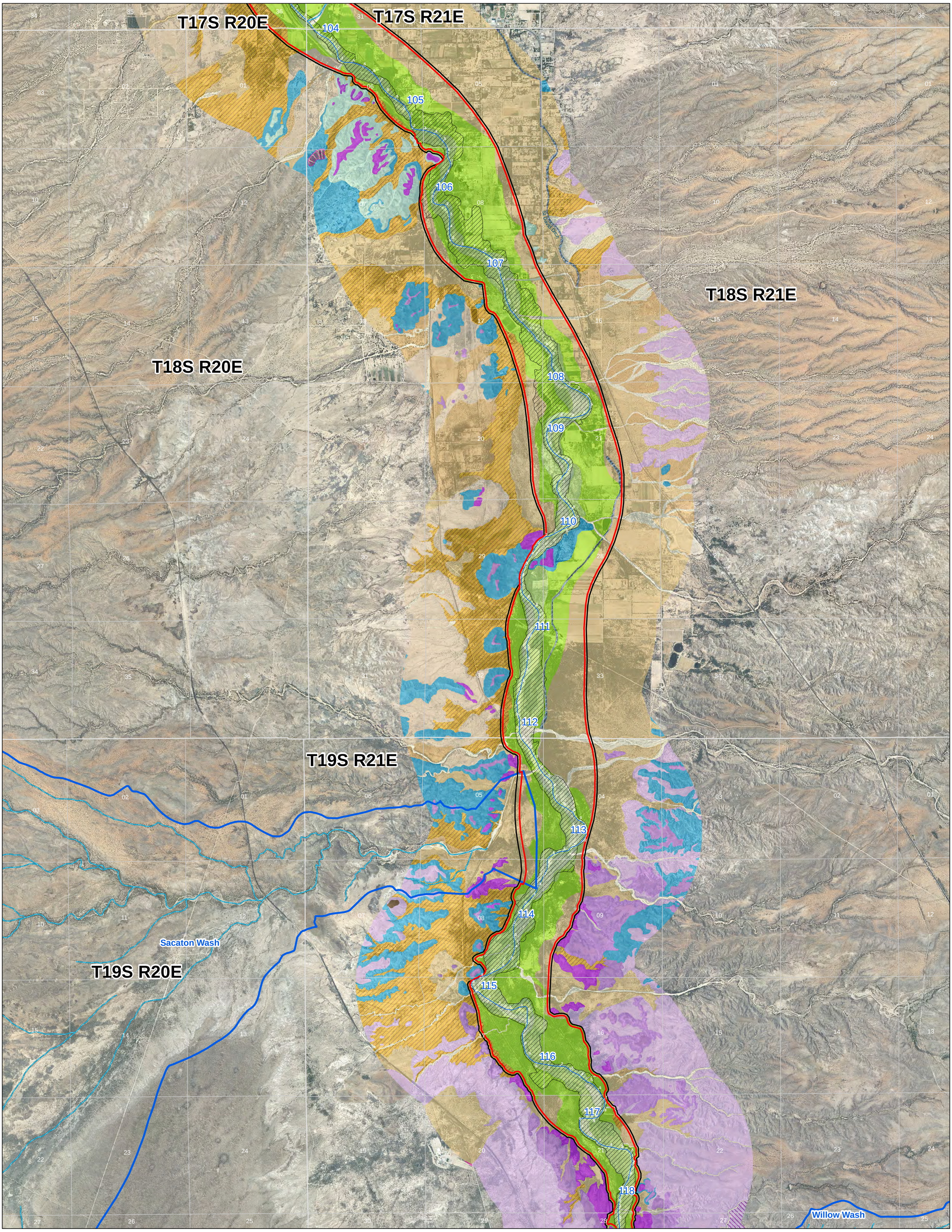


Legend

- FHA Line
- Updated Subflow Zone
- Townships
- Sections
- Holocene Composite Active Floodplain
- Major Tributaries (>50 sqmi)
- Tributary Washes
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

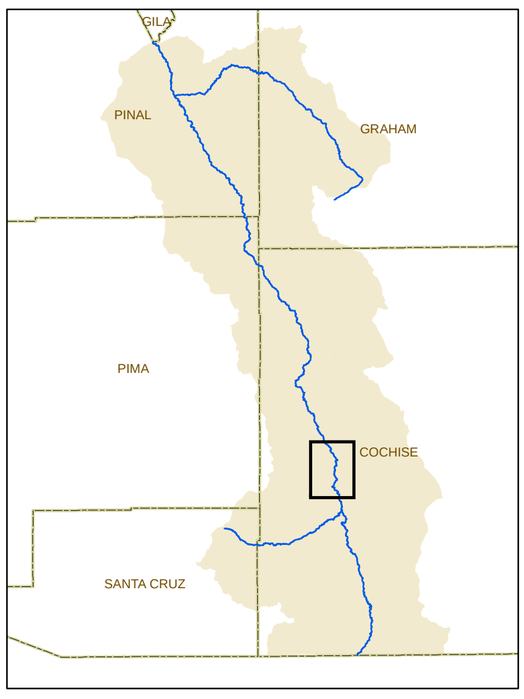
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

0 5,000 10,000 15,000
Feet

N



Appendix G
Subflow Zone Delineation Map Sheets

San Pedro River: RM 118-104

Map 4 of 17

2015 Supplemental Subflow Report

Reissued May 2015

T16S R20E
T16S R21E
T17S R21E
T17S R20E
T18S R20E
T18S R21E
Dragoon Wash
St David Ditch

Legend

- FHA Line
- Updated Subflow Zone
- Townships
- Sections
- Holocene Composite Active Floodplain
- Major Tributaries (>50 sqmi)
- Tributary Washes
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

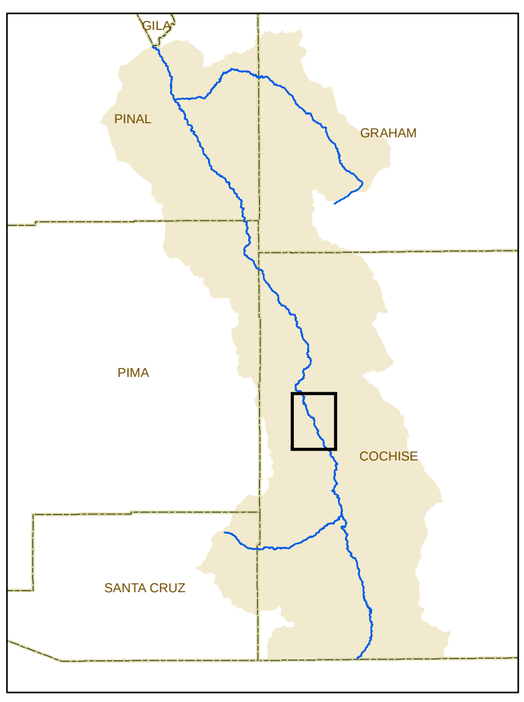
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

0 5,000 10,000 15,000
Feet

N



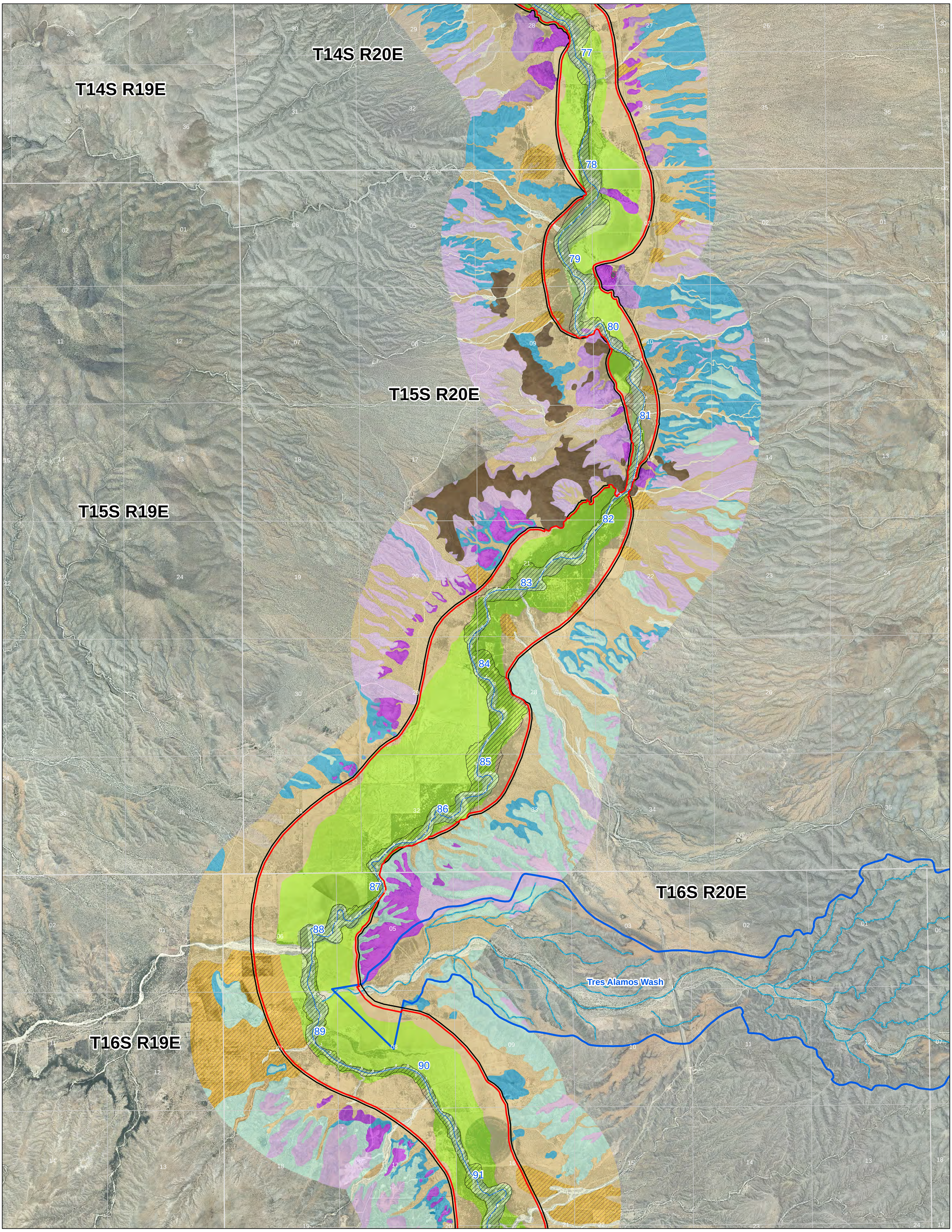
Appendix G
Subflow Zone Delineation Map Sheets

San Pedro River: RM 104-91

Map 5 of 17

2015 Supplemental Subflow Report

Reissued May 2015



Legend

- FHA Line
- Updated Subflow Zone
- Townships
- Sections
- Holocene Composite Active Floodplain
- Major Tributaries (>50 sqmi)
- Tributary Washes
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

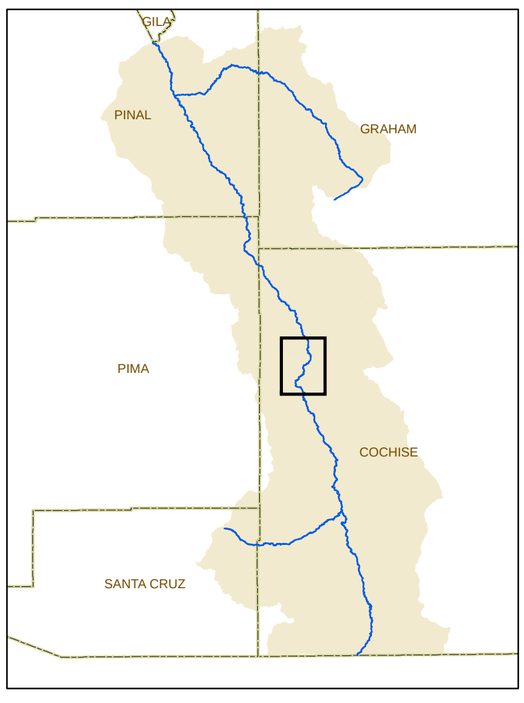
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

0 5,000 10,000 15,000
Feet



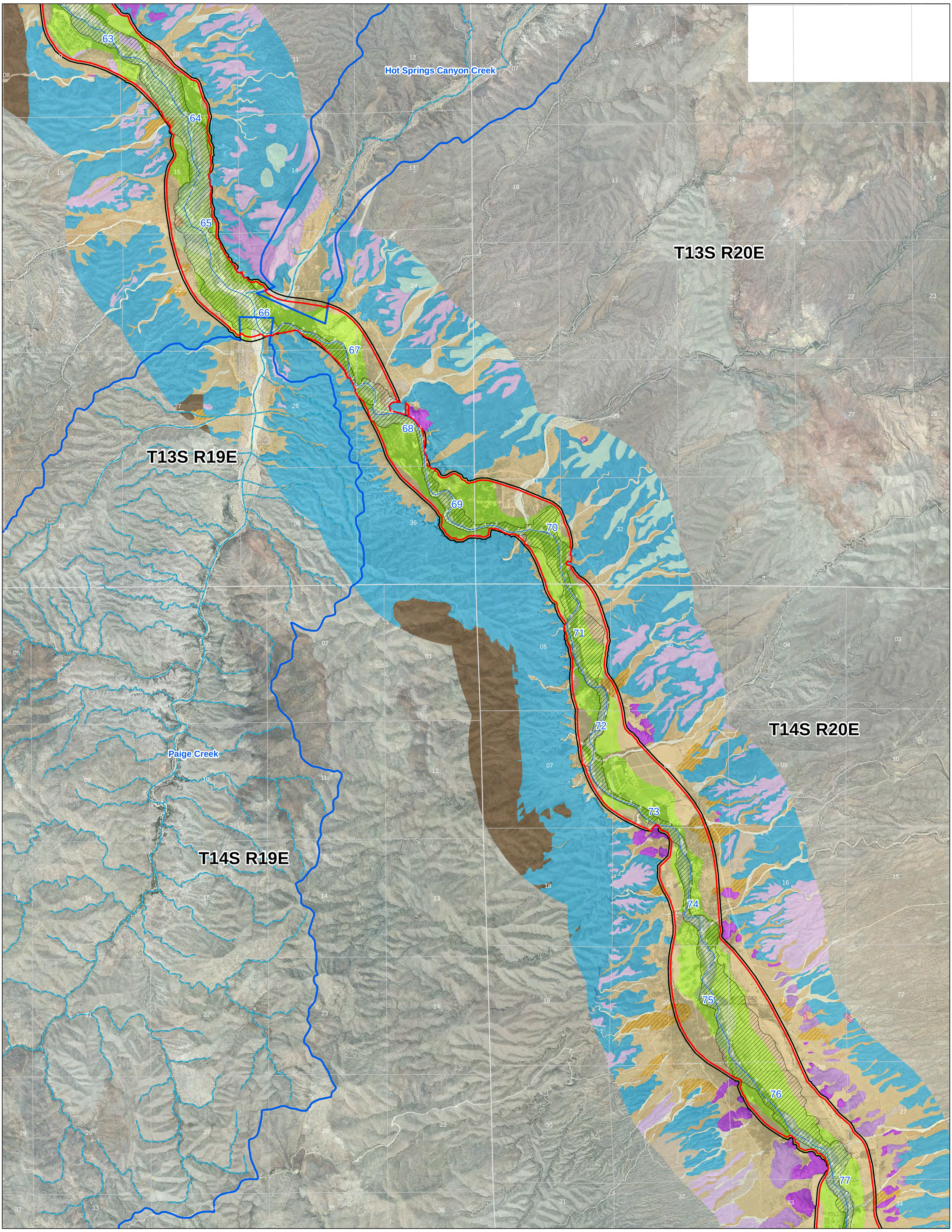
Appendix G
Subflow Zone Delineation Map Sheets

San Pedro River: RM 91-77

Map 6 of 17

2015 Supplemental Subflow Report

Reissued May 2015



Legend

- FHA Line
- Updated Subflow Zone
- Townships
- Sections
- Holocene Composite Active Floodplain
- Major Tributaries (>50 sqmi)
- Tributary Washes
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

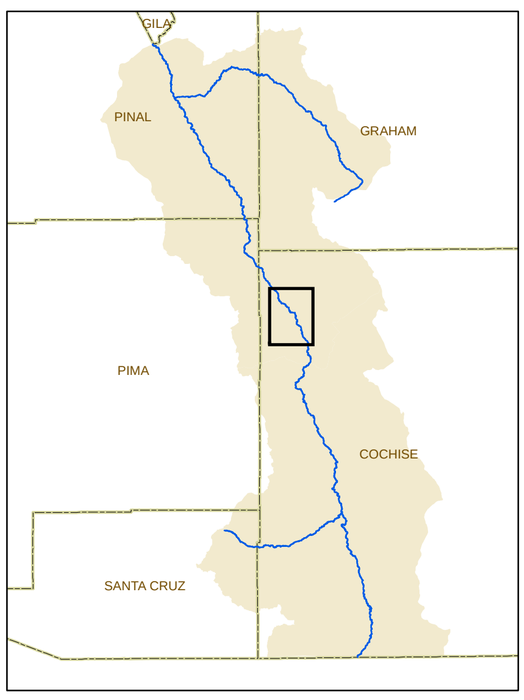
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

0 5,000 10,000 15,000
Feet



Appendix G
Subflow Zone Delineation Map Sheets

San Pedro River: RM 77-63

Map 7 of 17

2015 Supplemental Subflow Report

Reissued May 2015

T11S R18E

T11S R19E

T12S R19E

T12S R18E

T13S R18E

T13S R19E

Redfield Canyon Creek

Buehman Canyon Creek

50 51 52 53 54 55 56 57 58 59 60 61 62 63

Legend

- FHA Line
- Updated Subflow Zone
- Townships
- Sections
- Holocene Composite Active Floodplain
- Major Tributaries (>50 sqmi)
- Tributary Washes
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

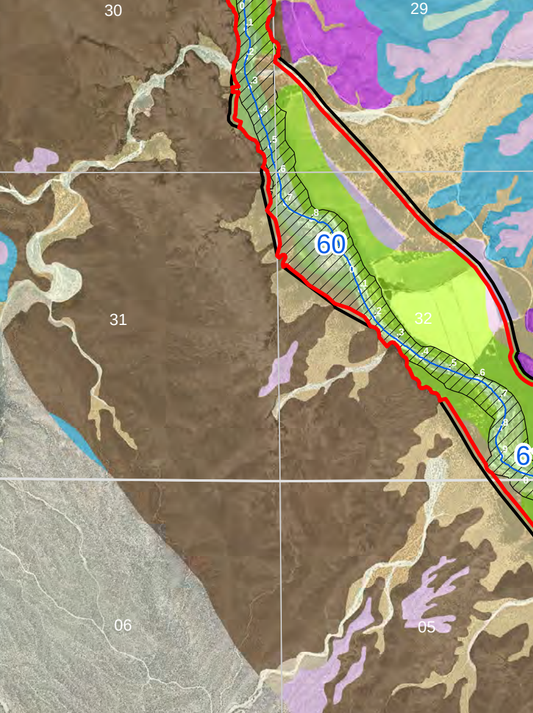
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

0 5,000 10,000 15,000
Feet



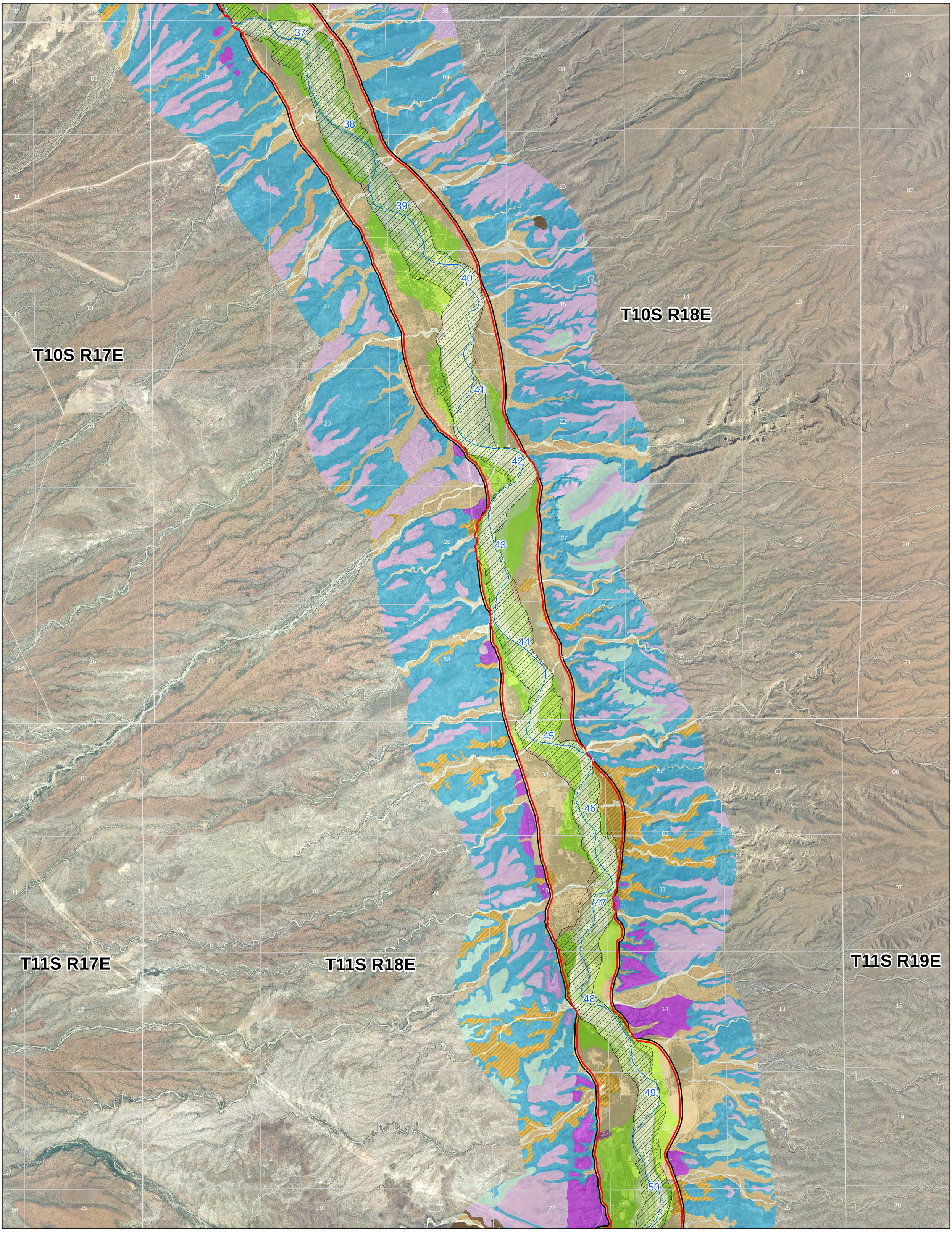
Appendix G
Subflow Zone Delineation Map Sheets

San Pedro River: RM 63-50

Map 8 of 17

2015 Supplemental Subflow Report

Reissued May 2015



Legend

- FHA Line
- Updated Subflow Zone
- Townships
- Sections
- Holocene Composite Active Floodplain
- Major Tributaries (>50 sqmi)
- Tributary Washes
- River

Holocene River Alluvium

- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium

- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands

- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium

- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

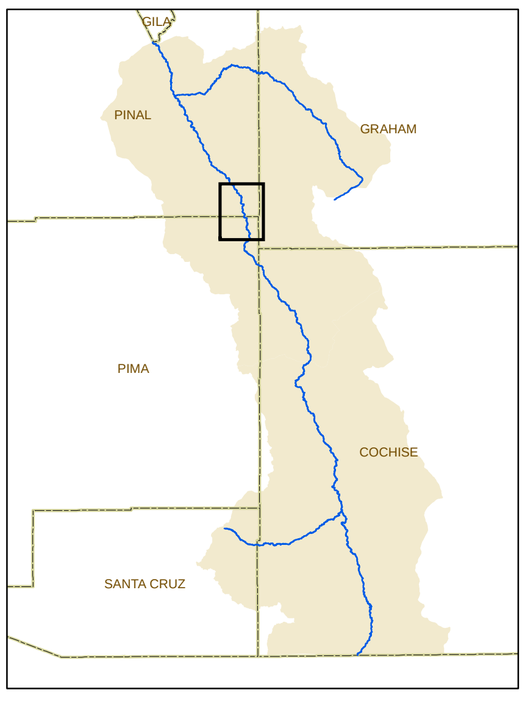
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

0 5,000 10,000 15,000
Feet

N



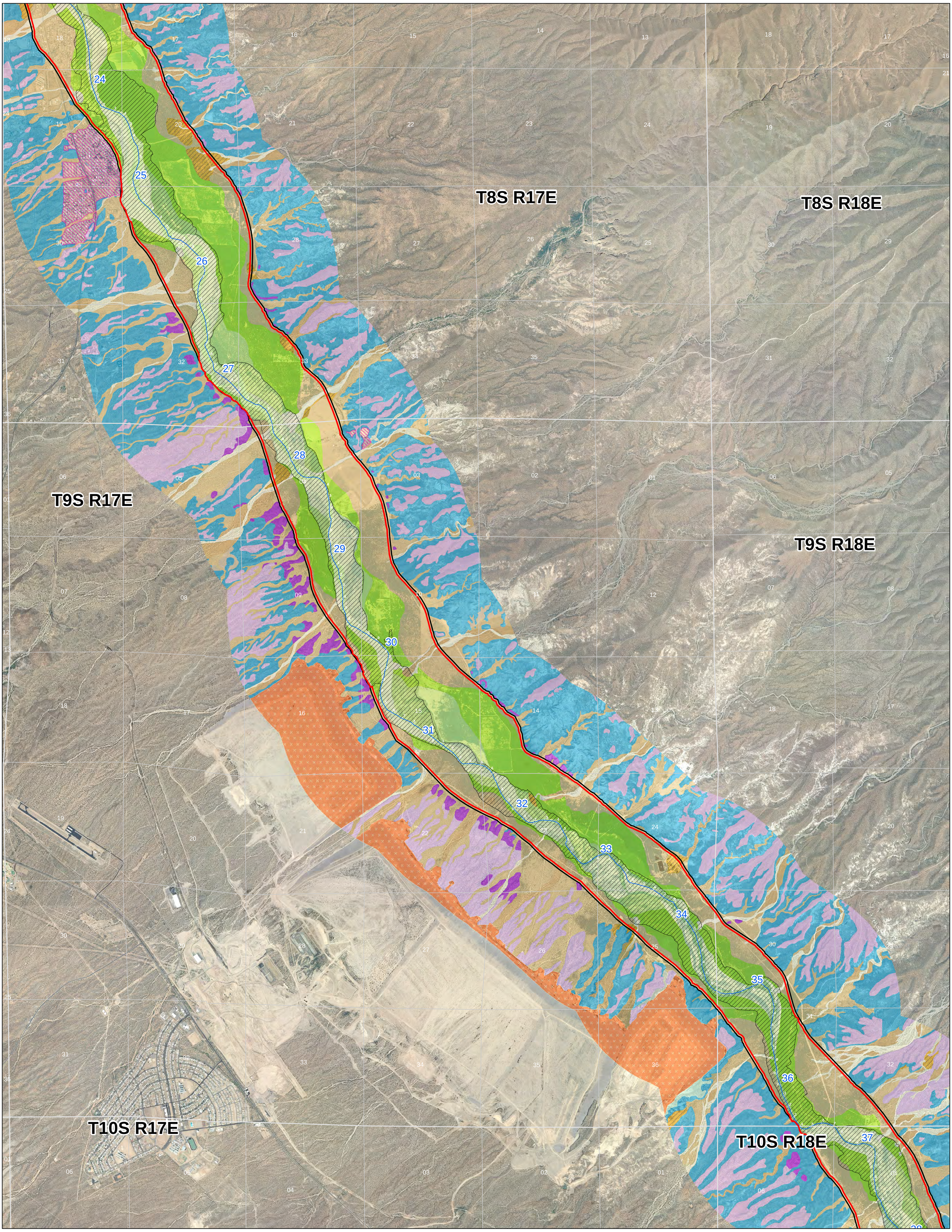
Appendix G
Subflow Zone Delineation Map Sheets

San Pedro River: RM 50-37

Map 9 of 17

2015 Supplemental Subflow Report

Reissued May 2015



Legend

- FHA Line
- Updated Subflow Zone
- Townships
- Sections
- Holocene Composite Active Floodplain
- Major Tributaries (>50 sqmi)
- Tributary Washes
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

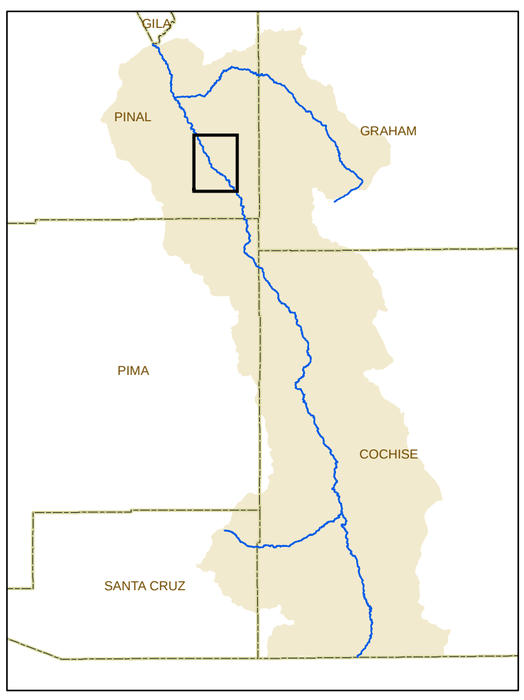
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

0 5,000 10,000 15,000
Feet

N



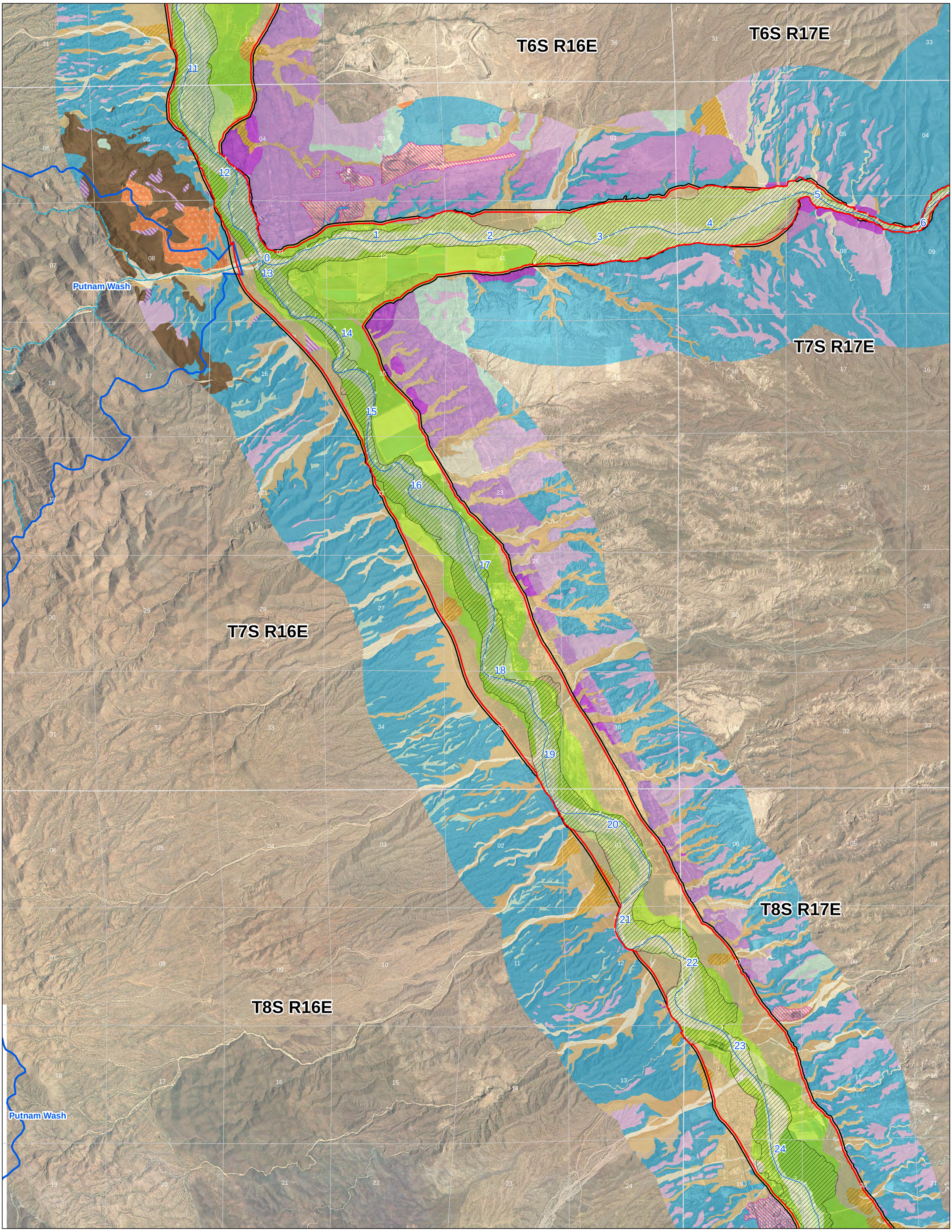
Appendix G
Subflow Zone Delineation Map Sheets

San Pedro River: RM 37-24

Map 10 of 17

2015 Supplemental Subflow Report

Reissued May 2015



Legend

- FHA Line
- Updated Subflow Zone
- Townships
- Sections
- Holocene Composite Active Floodplain
- Major Tributaries (>50 sqmi)
- Tributary Washes
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

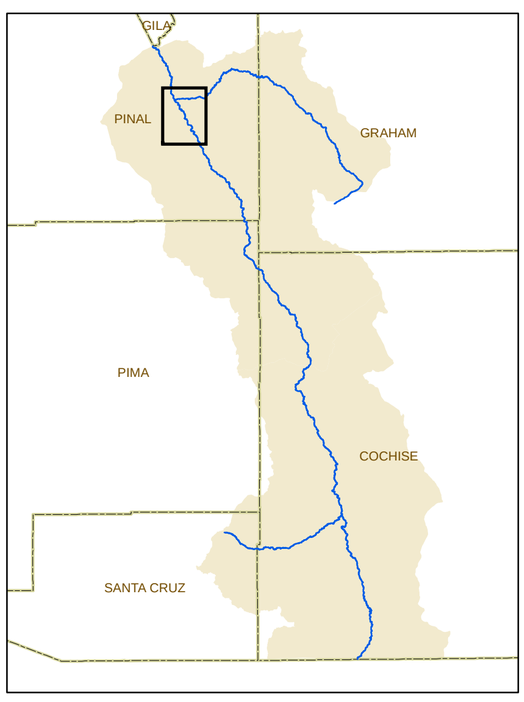
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

0 5,000 10,000 15,000
Feet



Appendix G
Subflow Zone Delineation Map Sheets

San Pedro River: RM 24-11

Map 11 of 17

2015 Supplemental Subflow Report

Reissued May 2015

T5S R15E

T5S R16E

T6S R15E

T6S R16E

T7S R15E

T7S R16E

Putnam Wash

Legend

- FHA Line
- Updated Subflow Zone
- Townships
- Sections
- Holocene Composite Active Floodplain
- Major Tributaries (>50 sqmi)
- Tributary Washes
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

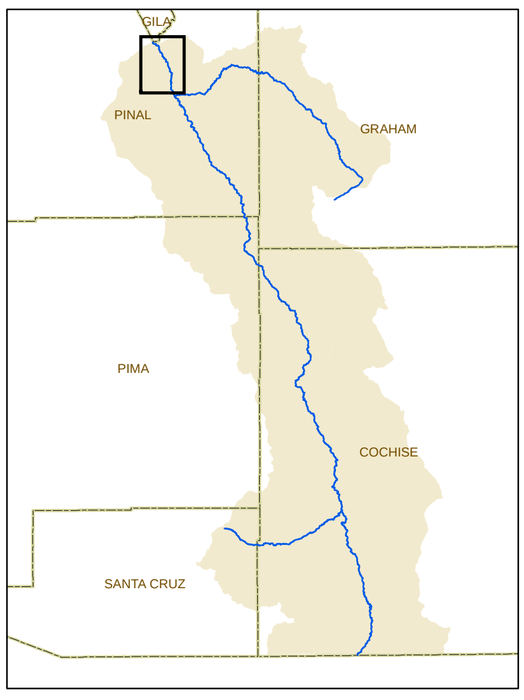
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

0 5,000 10,000 15,000
Feet



Appendix G
Subflow Zone Delineation Map Sheets

San Pedro River: RM 11-0

Map 12 of 17

2015 Supplemental Subflow Report

Reissued May 2015

T6S R19E

T6S R20E

T7S R19E

T7S R20E

T8S R19E

T8S R20E

Legend

- FHA Line
- Updated Subflow Zone
- Townships
- Sections
- Holocene Composite Active Floodplain
- Major Tributaries (>50 sqmi)
- Tributary Washes
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

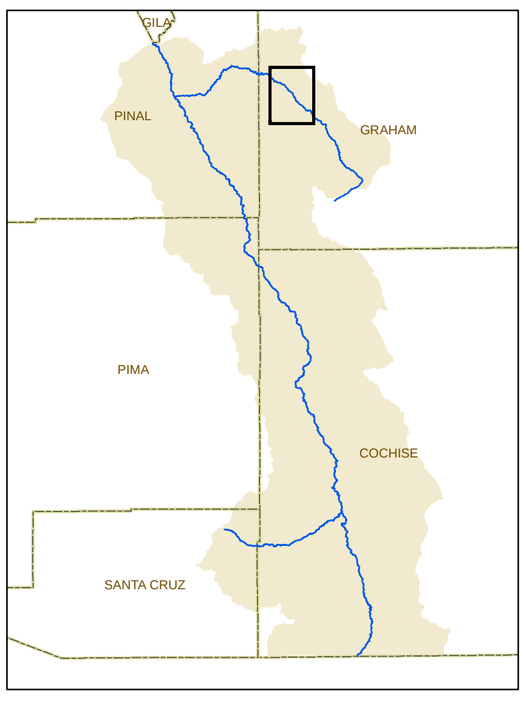
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

0 5,000 10,000 15,000
Feet

N



Appendix G
Subflow Zone Delineation Map Sheets

Aravaipa Creek: RM 37-26

Map 13 of 17

2015 Supplemental Subflow Report

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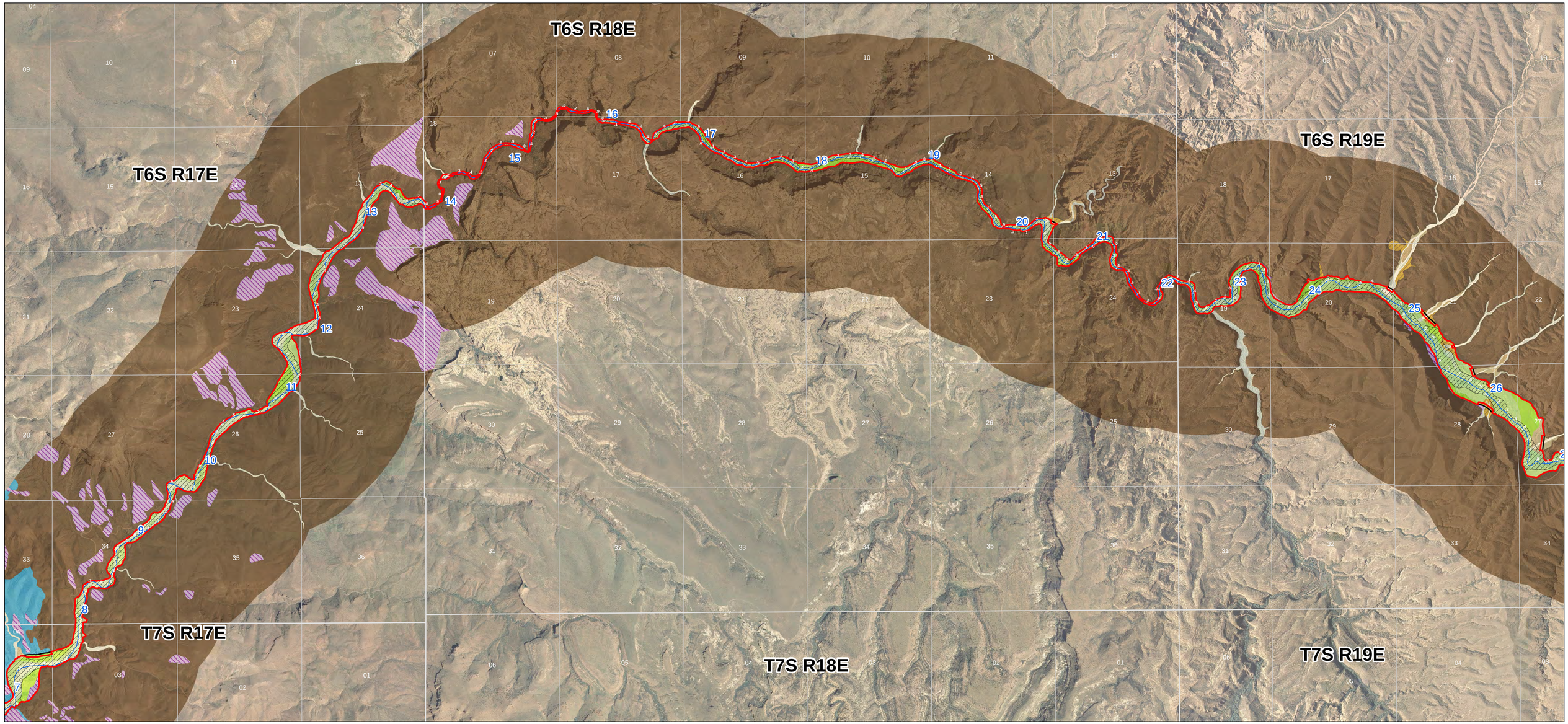


Legend

- FHA Line
- Updated Subflow Zone
- Townships
- Sections
- Holocene Composite Active Floodplain
- Major Tributaries (>50 sqmi)
- Tributary Washes
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

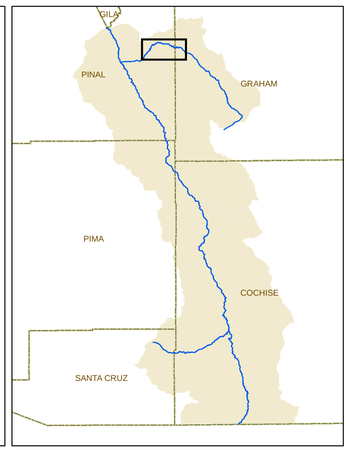
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

0 5,000 10,000 15,000
Feet



Appendix G
Subflow Zone Delineation Map Sheets

Aravaipa Creek: RM 26-8

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2015 Supplemental Subflow Report

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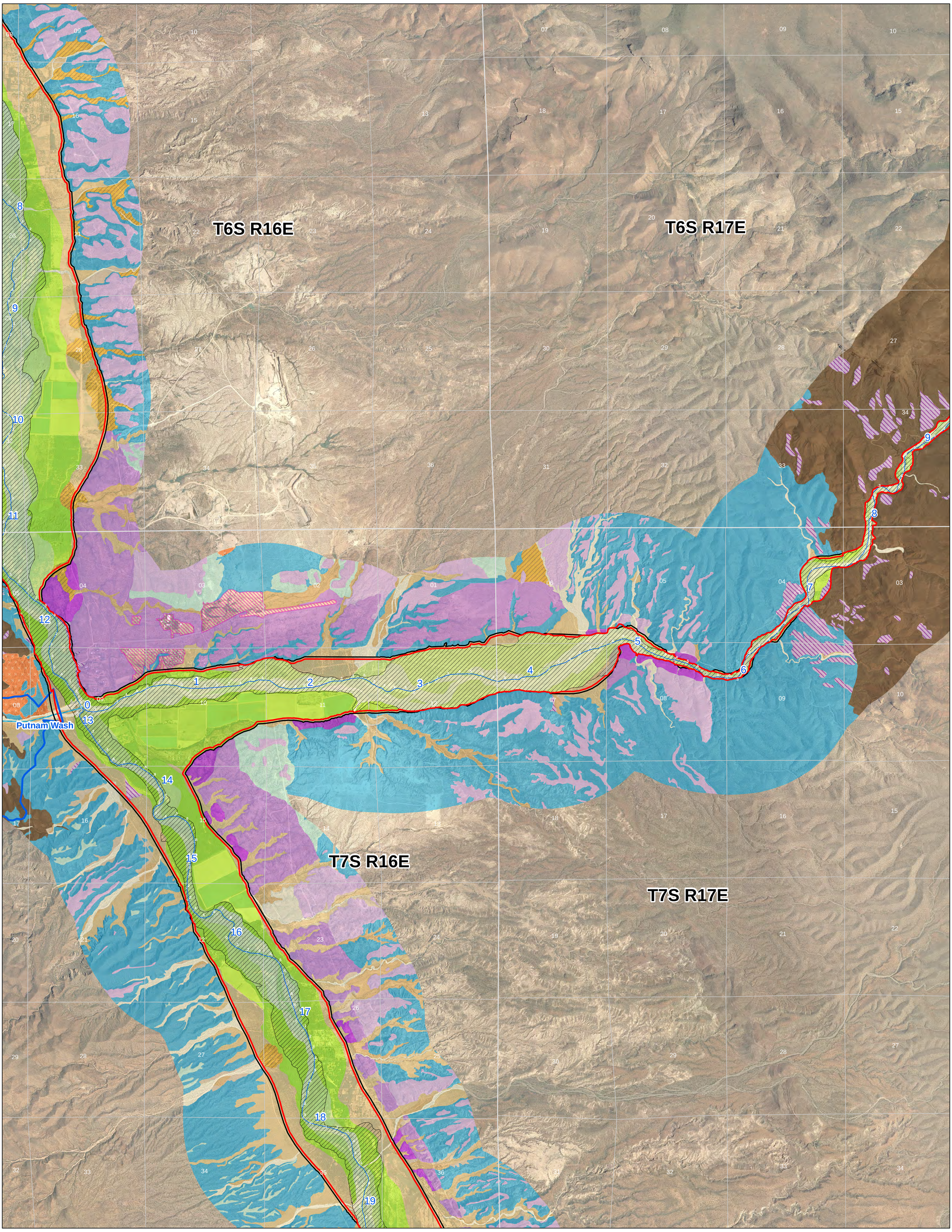


Legend

- FHA Line
- Updated Subflow Zone
- Townships
- Sections
- Holocene Composite Active Floodplain
- Major Tributaries (>50 sqmi)
- Tributary Washes
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

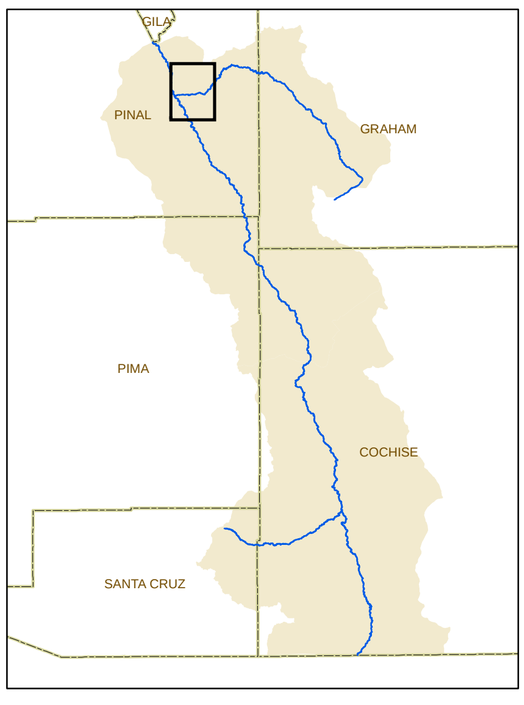
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

0 5,000 10,000 15,000
Feet



Appendix G
Subflow Zone Delineation Map Sheets

Aravaipa Creek: RM 8-0

Map 15 of 17

2015 Supplemental Subflow Report

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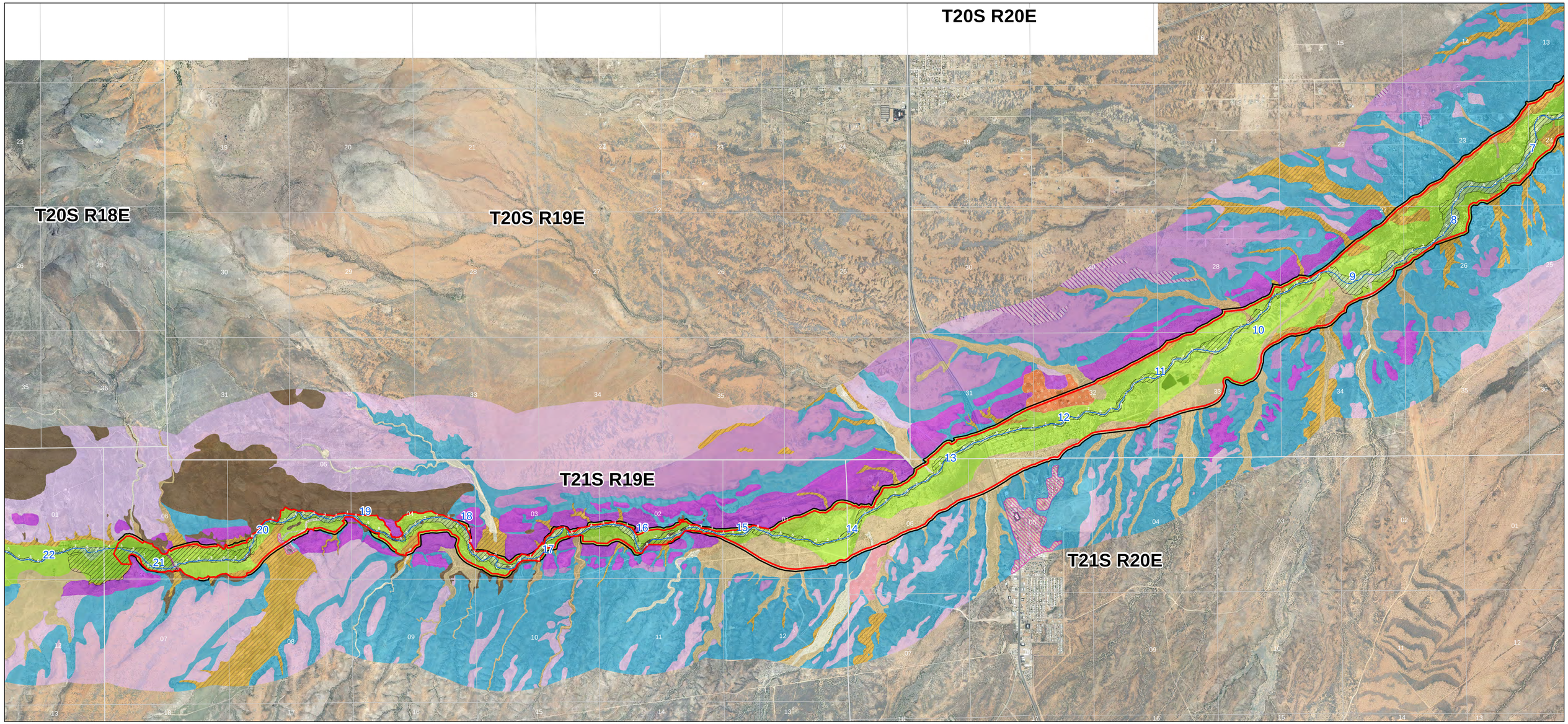


Legend

- FHA Line
- Updated Subflow Zone
- Townships
- Sections
- Holocene Composite Active Floodplain
- Major Tributaries (>50 sqmi)
- Tributary Washes
- River

Holocene River Alluvium
- Active river channel deposits
- Flood channel & low terrace deposits
- Historical river terrace deposits
- Latest Holocene to historical river terrace deposits
- Late to early Holocene river terrace deposits

Holocene Tributary Stream Alluvium
- Modern stream channel deposits
- Latest Holocene alluvium
- Late Holocene alluvium
- Older Holocene alluvium

Holocene Piedmont Alluvium

Disturbed Lands
- Disturbed
- Ditch
- Mining related

Pleistocene River Alluvium
- Late Pleistocene river terrace deposits
- Middle to late Pleistocene river terrace deposits
- Early to middle Pleistocene river terrace deposits
- Pleistocene river deposits
- Early Pleistocene river channel alluvium
- Quaternary hillslope talus & colluvium

Pleistocene Piedmont Alluvium

Pleistocene Alluvium

Tertiary Piedmont Alluvium

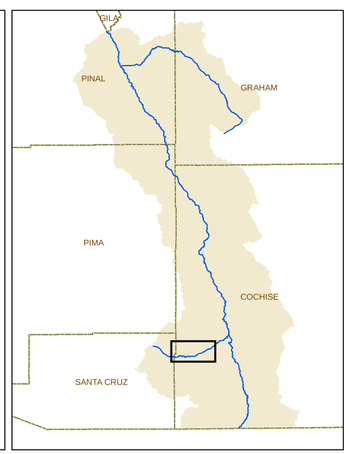
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

0 5,000 10,000 15,000
Feet



Appendix G
Subflow Zone Delineation
Map Sheets

Babocomari River: RM 22-7

Map 16 of 17

2015 Supplemental
Subflow Report

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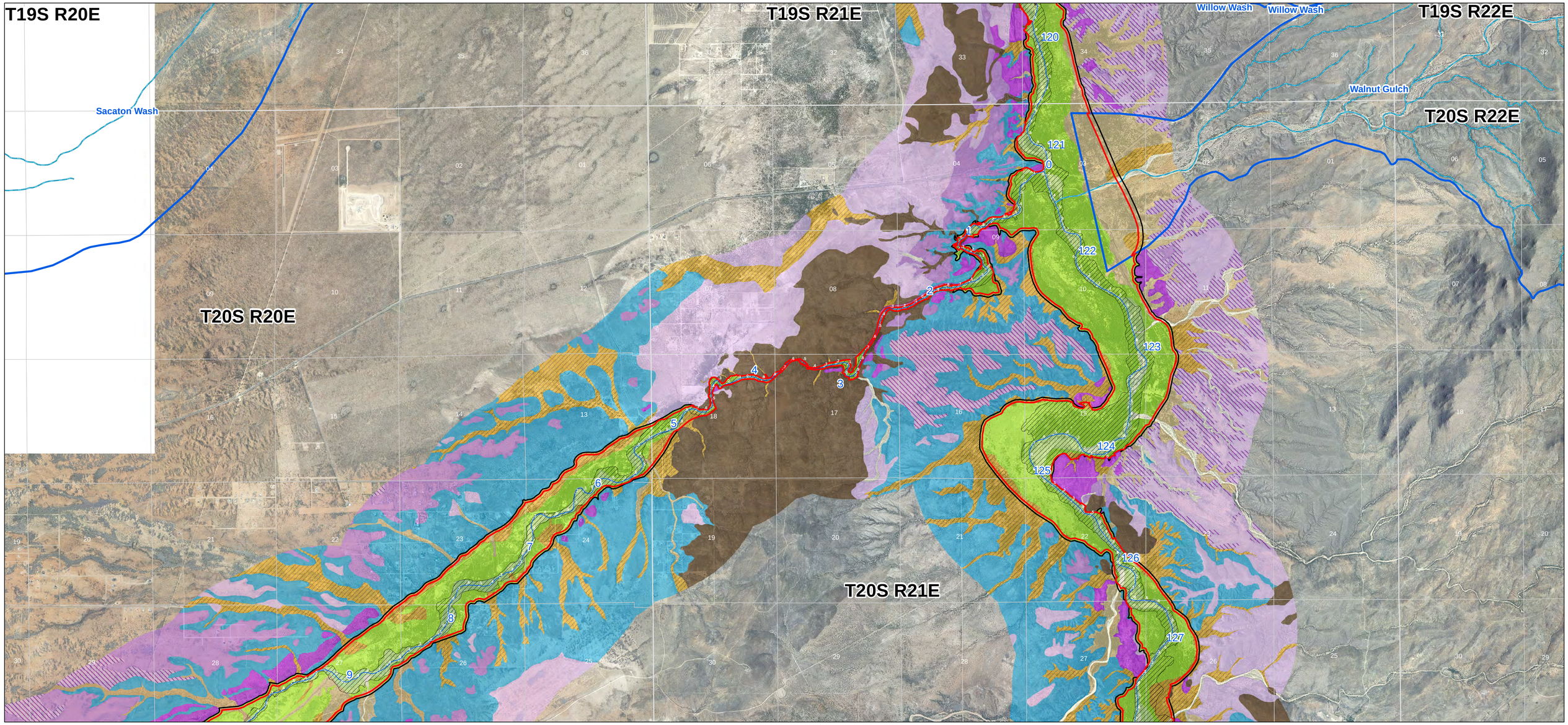

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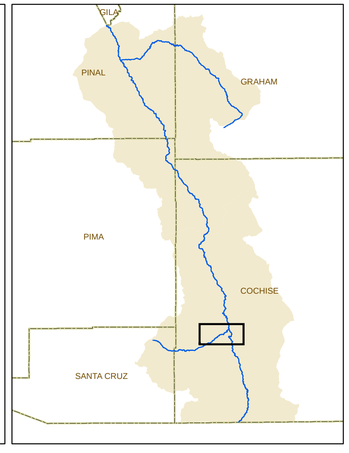
Tertiary Basin Fill Alluvium

Bedrock Units

Basemap: NAIP 2010
Scale: 1:24,000

N

0 5,000 10,000 15,000
Feet



Appendix G
Subflow Zone Delineation Map Sheets

Babocomari River: RM 7-0

Map 17 of 17

2015 Supplemental Subflow Report

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