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• W-01583A-05-0326

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page 1 of 2

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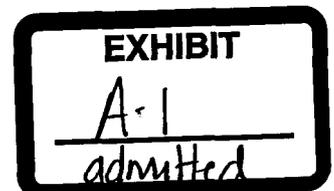
page 2 of 2

Las Quintas Serenas Water Company

Docket Nos. W-01583A-04-0178, W-01583A-05-0326 and

W-01583A-05-0340

**Applicant's
Exhibit A-1**







WestLand Resources, Inc.
Engineering and Environmental Consultants

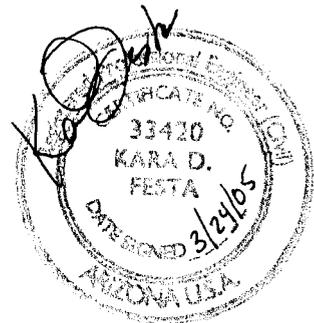
**LAS QUINTAS WATER COMPANY
WATER SYSTEM AND ARSENIC
MASTER PLAN**

Prepared for:

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TABLE OF CONTENTS

CHAPTER 1. INTRODUCTION AND SITE CONSIDERATIONS 1

CHAPTER 2. SCOPE AND APPROACH 2

 2.1. Define Key Issues..... 2

 2.2. Water Resources and Development..... 2

 2.3. Water Source Capacity and Quality Requirements 2

 2.3.1. Arsenic Requirements 2

 2.5. Storage Requirements..... 3

 2.6. Pressure Requirements 3

 2.7. Fire-flow Policy..... 4

 2.8. Water Main Requirements..... 4

 2.9. System Upgrades 4

CHAPTER 3. ENGINEERING CRITERIA 5

 3.1. Demand Criteria 5

 3.2. Supply Criteria..... 5

 3.3. Storage Criteria..... 5

 3.4. Distribution System Criteria 6

CHAPTER 4. EXISTING SYSTEM ANALYSIS 7

 4.1. Existing System Operation 7

 4.2. Demands 7

 4.3. Wells..... 7

 4.4. Storage..... 8

 4.5. Existing System Infrastructure Requirements 9

 4.5.1. Well Nos. 6 and 7 Arsenic Treatment 9

 4.5.2. Well No. 5 Arsenic Treatment 10

 4.5.3. Storage Capacity 10

CHAPTER 5. FUTURE SYSTEM ANALYSIS 11

 5.1. Population Projections..... 11

 5.2. Future System Demands..... 11

 5.3. Wells..... 12

 5.4. Storage..... 12

 5.5. Future System Infrastructure Requirements 12

 5.5.1. Well System Requirements 12

 5.5.2. Storage System Requirements..... 13

LIST OF TABLES

Table 1. Existing System Demands 7

Table 2. Existing Wells..... 8

Table 3. Existing Storage Requirements..... 9

Table 4. Future System Demands 11

Table 5. Future Storage Requirements..... 12

LIST OF EXHIBITS

- Exhibit 1. Existing System Layout and Upgrades
- Exhibit 2. Well No. 6 Proposed Upgrades
- Exhibit 3. Future System Upgrades

LIST OF APPENDICES

- Appendix A. Opinions of Probable Construction Cost

LIST OF ACRONYMS

ADD	average daily demand
ADEQ	Arizona Department of Environmental Quality
ADWR	Arizona Department of Water Resources
CC&N	Certificate of Convenience and Necessity
EPA	Environmental Protection Agency
gpcd	gallons per capita per day
gpm	gallons per minute
lf	lineal feet
MCL	Maximum Contaminant Level
OPCC	opinion of probable construction cost
PDD	peak day demand
PHD	peak hour demand
POE	point of entry
ppb	parts per billion
pphu	persons per housing unit
ppm	parts per million
psi	pounds per square inch
VFD	variable frequency drives

CHAPTER 1. INTRODUCTION AND SITE CONSIDERATIONS

The purpose of this report is to provide a potable water system Master Plan document for the Las Quintas Serenas Water Company, to address water system infrastructure needs of the current and future system including arsenic treatment issues. This document will provide a planning basis for present and future operation of the Las Quintas Serenas system in a manner consistent with the existing facilities, physical constraints, and resources of Las Quintas Serenas Water Company. The infrastructure requirements will be developed based on Arizona Department of Environmental Quality (ADEQ) requirements and standard engineering practices.

This Master Plan is intended to be a flexible, working document allowing Las Quintas Serenas Water staff to adjust planning and water system facilities to meet future conditions. However, this document cannot anticipate every future outcome and, as such, should be reviewed periodically to update the assumptions for water system boundaries, population growth, projected water usage, and infrastructure requirements. It is recommended that these updates be provided at five-year intervals, or as appropriate, to allow timely updates to the capital improvement program and funding issues.

The Las Quintas Serenas Water System Certificate of Convenience and Necessity (CC&N) includes portions of Township 17 South, Range 13 East, Sections 21, 22, 23, 26, and 27, west of Interstate 19 between El Toro Road and Anamax Mine Road (Exhibit 1). The water system currently operates on a single pressure zone. The existing system's water demands are provided by three wells which all pump to two storage tanks floating the pressure zone. The Water Company currently serves approximately 1,000 residential units. The water system also has two standpipes that are used by water-haulers to provide water to approximately 500 homes. There are approximately 50 commercial customers in the water system.

CHAPTER 2. SCOPE AND APPROACH

2.1. DEFINE KEY ISSUES

The development of a Master Plan requires defining a strategic approach, key issues, and policies early in the planning process. These key issues and policies, and their initial assumptions, are required to design the ultimate water system. The policies set within this section will affect the required water system layout, facility sizing, reliability, and costs of the required infrastructure.

2.2. WATER RESOURCES AND DEVELOPMENT

The Las Quintas Serenas water system currently relies solely on groundwater supplies for its water source production. It is anticipated the water company will continue to develop new groundwater wells to serve drinking water needs. The planning of well locations must take into account a number of factors, including the hydrologic availability of water, potential contamination from surrounding industry, location of the demand, and the ability to integrate treatment capacity into the system, as it will likely be required in the future. Water resources will also be impacted by future regulations dealing with limitations on arsenic content in the water, as discussed in Section 2.3.1, below.

2.3. WATER SOURCE CAPACITY AND QUALITY REQUIREMENTS

The ADEQ standards require that the well system be capable of providing peak-day demand (PDD) for the entire system with the largest well out of service. This Master Plan will develop the capacity requirements and locations for wells to meet this requirement. Water quality regulations for arsenic will require the treatment of groundwater prior to distribution. The layout of new wells within the distribution system should be designed to allow the integration of future treatment facilities into the water system.

2.3.1. Arsenic Requirements

In January 2001, the Environmental Protection Agency (EPA) modified 40 CFR Parts 9, 141, and 142, to adopt a new arsenic Maximum Contaminant Level (MCL) for drinking water. The rule modification lowered the MCL for arsenic from 50 parts per billion (ppb) to 10 ppb. This rule applies to all community water systems and non-transient non-community water systems, including the Las Quintas Serenas water system. The date established for compliance with this ruling is January 23, 2006. Compliance must be obtained at all points of entry (POEs) within the system, meaning that all water sources that serve directly into the system must be providing an arsenic level of 10 ppb or less by January 23, 2006.

2.5. STORAGE REQUIREMENTS

Storage capacity is a highly critical element in the design and operation of water systems. Proper storage provides operational flexibility and system reliability. Reservoir storage is used primarily to accommodate hourly fluctuations and demand, PDD fluctuations, fire-flow requirements, and emergency reserve storage. Each of these requirements added together form the required storage capacity. Current ADEQ criteria typically require 1.25 times the average daily demand (ADD) of the peak month plus fire-flow requirements to be the minimum storage capacity per zone. Under certain circumstances, in service areas with excess well capacities, the storage capacity may be lowered. Due to the excess available well capacity, this Master Plan will develop storage criteria using 1.0 times ADD, rather than 1.25 times ADD of the peak month.

The goal of this Master Plan is to develop storage capacity using floating storage wherever possible. The water surface of the storage tank is set at the high water elevation for the zone, which is generally about 100 feet above the highest home in the zone. This allows the homes within the zone boundary to be served directly from the storage tank by gravity and the system pressure regulated by the storage tank elevation. This method provides a highly reliable system with very low-pressure fluctuations. The system will also continue to operate during power outages using the remaining water in the storage tank system. However, because of the location of the storage tank on an easement on a mine tailing embankment, some storage located within the distribution system may also be appropriate, for redundancy.

2.6. PRESSURE REQUIREMENTS

Pressure extremes in water systems result in a potential for contamination to enter the system. Low pressures may allow polluted fluids to be forced into the system. High pressures may cause ruptures or breaks. Normal working pressure in the distribution system should not be less than 40 pounds per square inch (psi). System pressures under peak-day conditions should not drop below 35 psi anywhere within the system. The system shall be designed to maintain a minimum pressure of 20 psi at ground level at all points in the distribution system under all conditions of flow. This is generally understood to mean that the minimum residual pressure must be 20 psi for each customer during a flow condition of peak day plus fire flow. As discussed below, because Las Quintas does not currently provide fire flow, peak hour demand (PHD) would be considered the worst-case condition for analyzing the current system. Maximum pressures of as much as 100 psi can be allowed in small, low-lying areas not subject to high-flow rates and surge pressure. The Uniform Plumbing Code limits water pressure within the individual property owners' plumbing to 15 to 80 psi. Boosting or regulating the pressure from the meter to the customer is the responsibility of the customer.

2.7. FIRE-FLOW POLICY

The Las Quintas Serenas Water Company does not provide fire flow to any customers at this time. Fire-flow requirements for homes typically vary from 1,000 to 1,500 gallons per minute (gpm), depending on the size of the homes. The typical residential subdivision is assumed to have a fire-flow requirement of 1,000 gpm for a two-hour duration. Commercial facility fire-flow requirements also vary depending on the square footage of the commercial building, occupancy type, building material type, exposure distance to other buildings, and whether the structure is sprinklered. Typical commercial facilities have fire-flow requirements of at least 1,500 gpm for a two-hour duration. The local fire district can adjust fire flow requirements, if the nature of the system or the rural nature of the area precludes the full fire flow per the Uniform Fire Code (UFC).

The goal of this Master Plan is to develop adequately sized storage, properly designed pressure zones, and water transmission mains sized to provide as much fire flow as practical to existing areas, and to provide adequate fire flow for new development. This Master Plan will develop criteria and propose infrastructure upgrades to improve overall fire protection of the water system. The fire flow requirement assumed for the review of future system infrastructure in this Master Plan will be 1,500 gpm.

2.8. WATER MAIN REQUIREMENTS

The goal for this Master Plan is to develop a water transmission system that will integrate the existing infrastructure with system upgrades that can take advantage of the floating storage. Transmission and distribution systems should be sized and arranged to minimize friction-generated line losses and provide fire flows. The water transmission and distribution system should be looped wherever possible. In addition, appropriate valving locations and intervals should be provided to isolate small sections of main during breakages and reduce the number of residences out of service.

2.9. SYSTEM UPGRADES

This Master Plan will develop the system design criteria to guide the water company in designing new water facilities. The system design criteria will include methods for demand calculations, peaking factors, water supply requirements, the number and capacity of wells required, storage tank capacity requirements, emergency backup systems, distribution system sizing, and treatment requirements.

The Master Plan will identify upgrade requirements for the existing water system and for the future anticipated system, and specify the required new facilities and/or facility upgrades. These facilities may include additional or upgraded wells, storage tank capacity additions, transmission and distribution main augmentations, and arsenic treatment facilities. Projected cost estimates will be provided for these facilities.

CHAPTER 3. ENGINEERING CRITERIA

Based on the information presented in Chapter 2, the system design criteria for the Master Plan are described below in terms of demand, supply, storage, and distribution system assumptions.

3.1. DEMAND CRITERIA

Demand, residency estimates, and peaking factors are based on the typical criteria for similar systems and from empirical data provided by the water company. This report used a variety of sources to determine the number of persons per residence, annual usage per person, and peaking factors. Numbers of persons per residence for Las Quintas Serenas Water Company are taken from Arizona Department of Water Resources, (ADWR) census information provided to the Water Company. Commercial demands are incorporated into the ADD for the residential customers.

- Average daily per capita water usage for residential customers..... 110 gpcd
- Average number of persons per single-family residence per ADWR2.910
- Average number of persons per multi-family residence per ADWR2.484
- Average number of persons per standpipe residence per ADWR3.040
- Average number of persons per single-family residence for future development..... 3.0
- Ratio of peak-day to average-day use.....2.0
- Ratio of average-day use of peak month to average-day use..... 1.25
- Ratio of peak-hour to average-day use3.5

gpcd -- gallons per capita per day

3.2. SUPPLY CRITERIA

- Well capacity to meet PDD with the largest well out of service.
- Minimum supply to the system to meet PHD or PDD plus fire flow, whichever is larger, for systems without floating storage, or PDD for systems with floating storage.

3.3. STORAGE CRITERIA

- Provide storage volume equal to a minimum of 1.0 times the ADD (for multi-well systems).
- Provide additional storage volume required to provide 1,500 gpm fire flow for a two-hour duration for future system infrastructure sizing.

3.4. DISTRIBUTION SYSTEM CRITERIA

- System design and construction to meet ADEQ requirements.
- Maximum friction head loss for lines up to and including eight inches in size to be 8 feet per 1,000 feet or less. Head loss for lines over eight inches in size to be 5 feet per 1,000 feet or less, according to pipe size.
- Distribution lines to be sized and arranged to provide fire flows to the extent possible.
- Water will be supplied at the customer's meter within a static pressure range of 35 to 85 psi. Due to localized conditions, certain locations may receive water pressure slightly less or greater.

CHAPTER 4. EXISTING SYSTEM ANALYSIS

The purpose of this chapter is to provide information about the existing water system facilities and the sufficiency of those facilities to meet the current system demands. The proposed infrastructure upgrades to address inadequacies in the existing system are discussed in Section 4.5, and shown on Exhibit 1.

4.1. EXISTING SYSTEM OPERATION

The Las Quintas Water system currently operates as a single pressure zone, with an elevation range from approximately 2860 to 2990 feet. The system has two storage tanks with a combined capacity of 90,000 gallons, which provide floating storage for the single zone. The highwater elevation of the storage tanks is approximately 3057 feet. The zone is supplied normal operating pressure by the storage tanks, which are supplied by three wells pumping directly into the system. Most of the mains are 6-inch and 4-inch, with minor amounts of 2-inch. There are some 10-inch and 12-inch water mains near Well No. 6 and the storage tanks. The water company has supplied the system’s hydraulic data and layout. The location of existing system facilities is shown in Exhibit 1.

4.2. DEMANDS

The demand calculations for the existing water system are based upon the demand criteria in Chapter 3. The water company has provided the number of customers for each type of residence. Table 1 provides a summary of the existing system demands.

- Single Family Residence971
- Multi Family Residence42
- Standpipe Residence504
- Total Population = [(971*2.910) + (42*2.484) + (504*3.040)].....4,462

Table 1: Existing System Demands

Population	Average Day Demand (gpd)	Average Day Demand (gpm)	Average Day of Peak Month (gpm)	Peak Day Demand (gpm)	Peak Hour Demand (gpm)
4,462	490,820	341	426	681	1,194

4.3. WELLS

The Las Quintas Serenas Water Company currently operates three wells, Well Nos. 5, 6, and 7. These three wells provide a combined maximum capacity of 1,475 gpm. Well No. 7 is located near the southern end of the CC&N and provides between 600 to 850 gpm. This well has a variable frequency drive that changes the operational speed of the well based on pressure in the water system at the well site. Well

No. 6 is located near the southwest corner of the CC&N. Both an electric motor and a natural gas engine operate Well No. 6. The electric motor provides 350 gpm, while the natural gas engine provides 425 gpm. This type of operation is required for Las Quintas Serenas Water Company because of their interruptible power agreement with Trico Electric. Well No. 5 is located near the middle of the southern portion of the water system. This well has a submersible motor and provides 200 gpm. Well No. 5 has shown signs of decay and may be in the process of collapsing. Although currently producing 200 gpm, Well No. 5 is not considered a reliable asset to the water system's long-term supply requirements, although it will be utilized in the short-term as an emergency backup until such time as additional well capacity upgrades are provided.

As shown in Table 1, the current system PDD is calculated at 681 gpm. The largest well in the system, Well No. 7, appears capable of supporting the current PDD of the water system. The current system is also capable of providing PDD with the largest well out of service, provided that the capacity of Well No. 5 is available.

Water quality analysis for the wells indicates that all three have arsenic levels that will not meet the EPA requirement of less than 10 ppb by January 23, 2006 unless corrective measures are taken. Arsenic treatment will play a significant role in the location of the POE for the wells into the system. The POE is the point at which the water from the well enters the distribution system and may be consumed by the public. All required treatment and testing requirements must be performed before the POE. Well capacity and arsenic levels are provided in Table 2.

Table 2: Existing Wells

Facility	Well Capacity (gpm)	90th percentile Arsenic Levels (ppb)
Well No. 5	200	10.4
Well No. 6	350-425	15
Well No. 7	600-850	12

4.4. STORAGE

The existing system has two storage tanks. Both storage tanks are at the same site, located on the eastern edge of the tailings dam on the nearby mine property. The tanks have a total capacity of 90,000 gallons, split between a 60,000-gallon storage tank and a 30,000-gallon storage tank. The storage requirement for the existing system is 1.0 times ADD, assuming fire flow storage will not be provided for the existing system. For this system the ADD is 341 gpm, or 490,820 gpd. The total existing storage requirement is, therefore, approximately 490,820 gallons, which leaves an existing storage deficit of approximately 400,000 gallons. Table 3 gives a summary of the existing facilities.

Table 3. Existing Storage Requirements

Existing Capacity (Gallons)	Existing Storage Requirement (Gallons)	Existing Storage Deficit (Gallons)
90,000	490,820	400,820

4.5. EXISTING SYSTEM INFRASTRUCTURE REQUIREMENTS

The approach to the construction of new infrastructure to serve the existing water system must take into account the various requirements to provide a comprehensive plan that addresses the issues related to water quality, and storage deficiencies. Long-term well capacity issues will be addressed under the future system requirements section, as it is assumed that the existing well capacity will be sufficient for the short-term needs of the water system. The recommended infrastructure as discussed in this chapter is shown on Exhibit 1.

The first priority for Las Quintas Serenas Water Company is to construct facilities that will allow the water system to provide water meeting the new arsenic standard. The secondary priority is to address the shortage in storage capacity. A variety of options were considered to address these concerns including arsenic treatment at each well site, various combinations of centralized arsenic treatment, and various storage tank locations. The alternative selected to address existing system requirements allows the integration of both arsenic treatment and storage facilities into one water system project. In general, it is most efficient to treat or test well water by concentrating numerous sources into a single centralized system before pumping into the distribution system. The water system facilities proposed for the existing system include a combined treatment system for Well Nos. 6 and 7, with a new storage tank and booster station for delivering treated water, and a small separate treatment system at Well No. 5. An Opinion of Probable Construction Cost (OPCC) for the existing system facilities is provided in Appendix A.

4.5.1. Well Nos. 6 and 7 Arsenic Treatment

The existing system infrastructure to address arsenic concerns at Well No. 6 and 7 will include a new 1,275-gpm iron-media adsorption arsenic treatment system, 400,000-gallon storage tank, and 850-gpm transfer booster station at the existing Well No. 6 site. A new 8-inch water main approximately 2,500 feet in length will be required to connect Well No. 7 to the site. The Well No. 6 site was selected for the treatment system due to visibility concerns at Well No. 7. Site piping will allow either or both of the wells to deliver directly into the arsenic treatment system. The treated water meeting the new arsenic standard will fill a new 400,000-gallon tank located at the Well No. 6 site. A variable frequency drive (VFD) transfer booster station with a capacity of 850 gpm will then pump treated water from the tank into the system. A concept site layout for the new facilities at the Well No. 6 site is shown on Exhibit 2.

The arsenic treatment unit constructed at the Well No. 6 site will be a dual-vessel layout for redundancy purposes. The actual vessels will be sized to accommodate the total capacity of both wells operating

together, approximately 1,275 gpm, so that the system can be operated in this manner as future demands increase. However, it is anticipated that only one of the two wells will need to be running under the current system operation scenario, which will result in longer media life than at full capacity.

The arsenic treatment system will be designed with a flow bypass, to allow treatment of only a percentage of the full flow from either or both wells. The total flow actually going through the arsenic treatment unit will be lower than the well capacity, and the bypass flow will be blended back with the treated water from the arsenic treatment facility. The flow split will be designed to allow treatment to a blended arsenic level of approximately 8 ppb. Because the exact flow split will be determined during final design, and the overall site addresses the total flow from the wells, the total capacity of the treatment system is listed as that of the wells, although not that much flow will actually go through the adsorption vessels.

The transfer booster station will have two 425-gpm VFD pumps, and an extra suction and discharge space for a future pump as demand increases. It is anticipated that this booster station will be a pre-packaged, skid-mounted VFD pump station. Until pipeline deficiencies in the system are addressed as part of the future system upgrades, this booster station cannot actually be upgraded to a higher flow rate. This booster station will typically operate by level control based upon the elevation of the water level in the elevated storage tanks. This booster station could also be designed to be pressure controlled to increase fire protection to the surrounding area. It is anticipated that the booster station will be built with a VFD that will allow the booster pumps to minimize over-pressurization of the water system due to small pipeline sizes in the system. A back-up generator would be included at this facility for emergency power.

Both Wells 6 and 7 will undergo modifications during this process due to the new pressure requirements of pumping to the new storage facility with lower total dynamic pumping head. When these modifications are made the water company will explore options for increasing the flow rate from both wells. Further analysis is needed to determine the maximum safe yield of both wells.

4.5.2. Well No. 5 Arsenic Treatment

Well No. 5 will be equipped with a pre-packaged skid-mounted 200-gpm arsenic treatment facility. Well No. 5 will be equipped only to allow for emergency operation when one of the other wells go offline. This new arsenic treatment facility will be skid mounted to provide the option of moving it to a future location. The facility will include a bypass with blending to minimize the size of the adsorption vessels.

4.5.3. Storage Capacity

The initial storage capacity needs of the existing system will be addressed through the addition of the new 400,000 gallon tank at the Well No. 6 site as a part of the arsenic treatment system. This storage tank will provide additional flexibility in the operation of the water system for meeting peak hour demands. This storage tank will not provide floating storage.

CHAPTER 5. FUTURE SYSTEM ANALYSIS

The water system design criteria, as previously provided, were used to develop the future water system capacity requirements. Future system requirements include the capacity of wells, storage, arsenic treatment, and water mains to serve future demands. The proposed infrastructure upgrades to address inadequacies in the existing system are discussed in the following chapter.

5.1. POPULATION PROJECTIONS

The water system analysis is based on approximate number of units at build-out for the water system. The focus of the infrastructure requirements of this Master Plan will be on development within the existing water system pressure zone boundary. This section of the water system has an approximate buildout of 700 additional single-family residential units based on current land uses and anticipated development, as shown in Exhibit 3.

There is a small section within the CC&N to the west of the existing water system that will require a new pressure zone to be developed to serve the area. Two subdivisions, Twin Buttes and Palo Seco have a combined 100 single-family residential units planned in this area. Two other tracts of land will likely see similar development. All of these areas are located within the CC&N but are outside of the existing water system zone. These sections will be required to develop their own infrastructure independent of the existing system. The sizing, layout, and locations of the infrastructure to serve this area will be developer-driven and will be covered under a separate master plan, as appropriate.

5.2. FUTURE SYSTEM DEMANDS

The demand criteria in Section 3.1 were used in calculating the buildout demands for the anticipated 700 additional units. Table 4 provides a summary of the future system demands.

- Total Population [4,462 (existing) + 700*3.0 (future)]6,562

Table 4: Future System Demands

Population	Average Day Demand (gpd)	Average Day Demand (gpm)	Average Day of Peak Month (gpm)	Peak Day Demand (gpm)	Peak Hour Demand (gpm)
6,562	721,820	501	627	1,002	1,753

5.3. WELLS

Well production requirements are based on meeting PDD with the largest well out of service. PDD for the system at buildout is calculated to be 1,000 gpm.

5.4. STORAGE

The additional 700 units anticipated for buildout will increase this storage requirement by 231,000 gallons. Including fire flow storage capacity requirement would increase the storage requirement by another 180,000 gallons. The total calculated storage requirement for the future system buildout is approximately 900,000 gallons, as shown in Table 5.

Table 5: Future Storage Requirements

Available Capacity (Gallons)	Future Storage Requirement (Gallons)	Future Storage Deficit (Gallons)
400,000*	901,820	501,820

*Based upon 400,000 gallons at Well No. 6 site and assuming the existing 90,000 gallons at the floating storage site is replaced or otherwise not available for use.

5.5. FUTURE SYSTEM INFRASTRUCTURE REQUIREMENTS

Well and reservoir projects, which are recommended as future system upgrades are shown on Exhibit 3. There will also be various pipeline projects to address headloss issues in the water system and improve the looping and operation of the water system, although these are not discussed specifically in this report. An Opinion of Probable Construction Cost for the future system upgrades is included in Appendix A.

5.5.1. Well Requirements

The water company will be exploring options to increase the capacity of Well Nos. 6 and 7 as part of the arsenic treatment project. If it is determined that the new well capacity is sufficient to meet 1,000 gpm PDD with the largest well out of service then no additional wells would be required. In order to meet this requirement each well would need to be increased to at least 1,000 gpm capacity. The need for more source capacity should be continually monitored by Las Quintas Serenas Water Company to ensure that the water company is able to supply PDD with largest well out of service. For purposes of this master plan, we have assumed that a new well would be required, as it is currently unknown whether the well capacities at Well No. 6 and 7 can be increased sufficiently to accommodate all future demands. The actual well capacity required will depend on the required capacity, and pump test results, but this report provides for a new 600 gpm well, based on the existing capacity of the other wells. Several factors will determine the probable location of this new well including, well spacing, proximity to efficient hydrologic aquifer supply, water quality, proximity to the existing distribution system to pump the excess water to

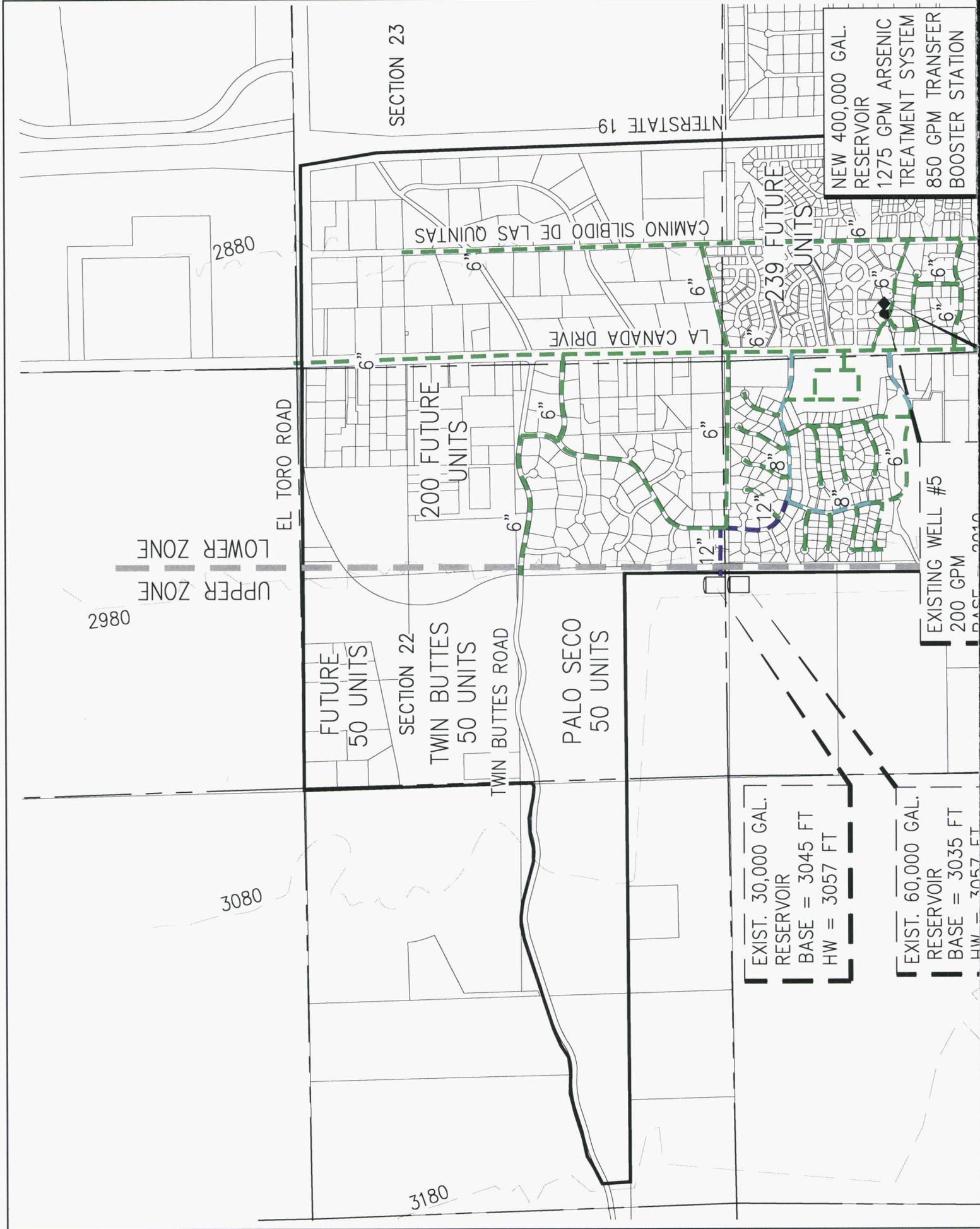
deficient portions of the water system, and land availability. There is a potential well site located near the north end of the CC&N area that could be used for the new well site.

Any new well will likely require an additional onsite arsenic treatment facility, although studies can be performed at the time of well construction to try and reduce arsenic levels through specific well construction methods. The arsenic treatment will be able to pump directly into the system and will not require an additional storage facility or booster station. Appropriately sized mains will also be required from the new well to convey the water to the system, and to the floating reservoir.

5.5.2. Storage Requirements

The recommendation for addressing the storage deficit for the buildout condition is to add storage capacity at the floating reservoir site on the mine tailings. The new storage tank at this site should be constructed as a taller tank or at a higher elevation, to raise the system high water level from 3,057 to at least 3,070 feet and address low-pressure issues at the top of the existing pressure zone. It is assumed that the 30,000-gallon storage tank will be abandoned to make a space for the new tank, and that the 60,000 gallon tank will not be available for normal use, because of the different highwater elevation of the new tank. The existing 60,000-gallon tank could be kept in place for temporary use to allow the future reservoir to be taken out of service for maintenance. Assuming a 400,000-gallon storage tank is constructed at the Well No. 6 site as part of the arsenic treatment upgrades and the capacity of the existing tanks is not available, the total buildout scenario storage requirement will be approximately 500,000 gallons at the mine tailings floating reservoir site.

EXHIBITS



SECTION 23

INTERSTATE 19

NEW 400,000 GAL.
RESERVOIR
1275 GPM ARSENIC
TREATMENT SYSTEM
850 GPM TRANSFER
BOOSTER STATION

CAMINO SILBIDO DE LAS QUINTAS

239 FUTURE UNITS

LA CANADA DRIVE

200 FUTURE UNITS

EL TORO ROAD

UPPER ZONE
LOWER ZONE

2980

FUTURE 50 UNITS

SECTION 22

TWIN BUTTES 50 UNITS

TWIN BUTTES ROAD

PALO SECO 50 UNITS

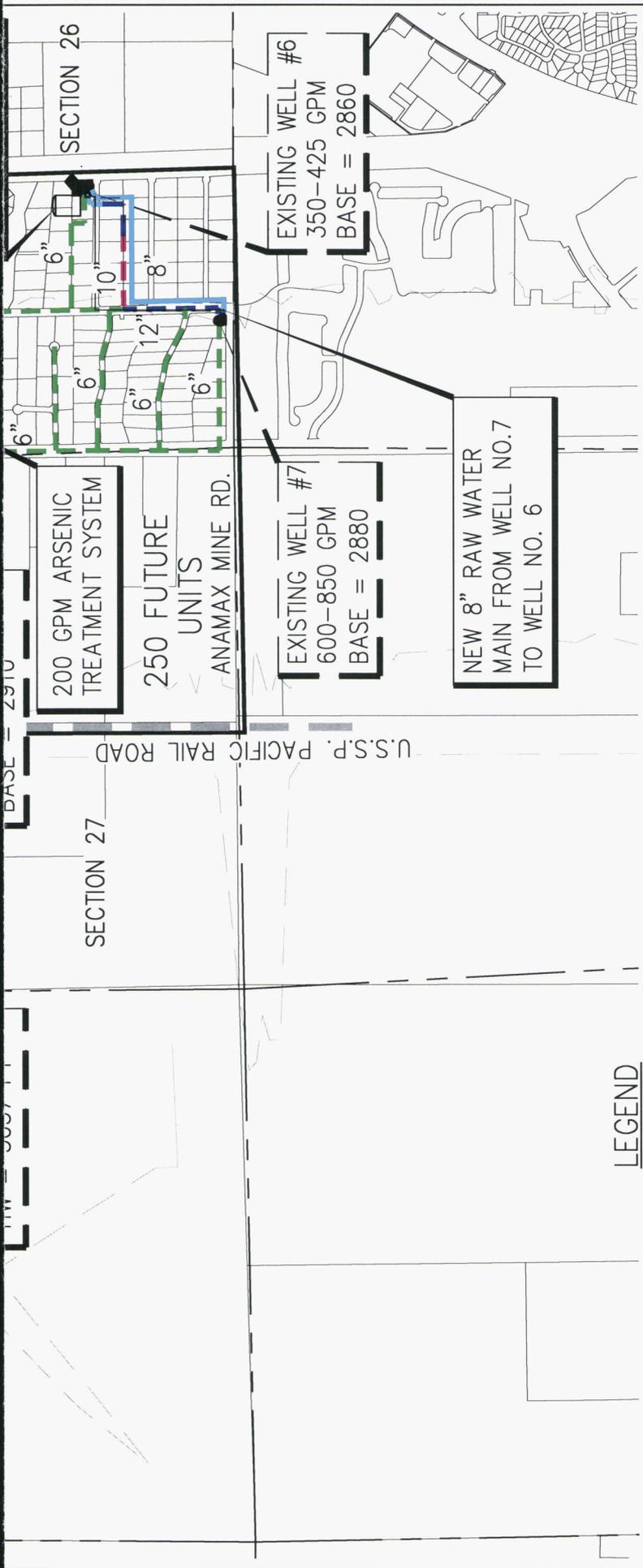
EXISTING WELL #5
200 GPM
BASE = 3010

EXIST. 30,000 GAL.
RESERVOIR
BASE = 3045 FT
HW = 3057 FT

EXIST. 60,000 GAL.
RESERVOIR
BASE = 3035 FT
HW = 3057 FT

3080

3180



LEGEND

-  EXISTING 6 INCH TRANSMISSION MAIN
-  EXISTING 8 INCH TRANSMISSION MAIN
-  EXISTING 10 INCH TRANSMISSION MAIN
-  EXISTING 12 INCH TRANSMISSION MAIN
-  C C & N BOUNDARY
-  ZONE BOUNDARY
-  NEW 8 INCH TRANSMISSION MAIN
-  WELL
-  ARSENIC TREATMENT SYSTEM
-  RESERVOIR



Exhibit 1

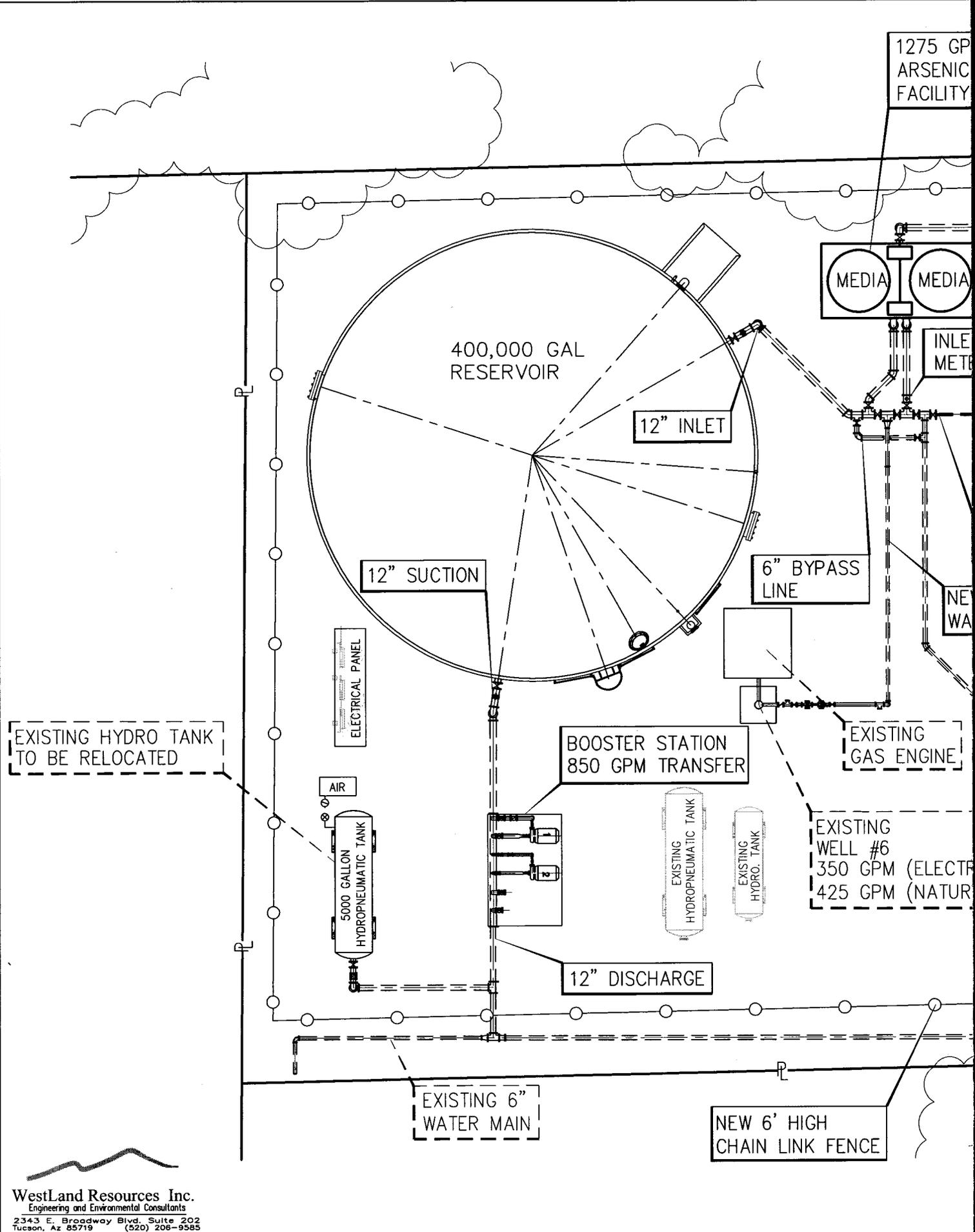
LAS QUINTAS SERENAS WATER COMPANY

Water System Infrastructure

EXISTING SYSTEM LAYOUT AND UPGRADES

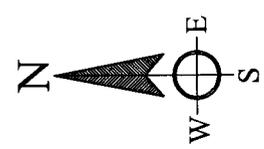
WestLand Resources Inc.
Engineering and Environmental Consultants
2343 E. Broadway Blvd, Suite 202
Tucson, Az 85719 (520) 206-9585

MARCH 24, 2005



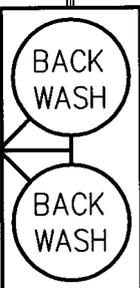
M
TREATMENT

12" BACKWASH
LINE



SCALE: 1" = 20'

T
ER
BACK
WASH



4" RECYCLE
MAIN

W 6"
TER MAIN

NEW 8" WATER
MAIN FROM
WELL #7
(600-800 GPM)

RIC)
AL GAS)

EXISTING 8"
WATER MAIN

Exhibit 2

LAS QUINTAS SERENAS WATER COMPANY

Well No. 6

PROPOSED UPGRADES
MARCH 24, 2005

UPPER ZONE
LOWER ZONE

NEW 8" WATER MAIN

NEW WELL IF REQUIRED

SECTION 23

INTERSTATE 19

CAMINO SILBIDO DE LAS QUINTAS

LA CANADA DRIVE

EL TORO ROAD

200 FUTURE UNITS

239 FUTURE UNITS

400,000 GAL. RESERVOIR
1275 GPM ARSENIC TREATMENT SYSTEM
850 GPM TRANSFER BOOSTER STATION

WELL NO 5. TO BE ABANDONED

FUTURE 50 UNITS

SECTION 22

TWIN BUTTES 50 UNITS

TWIN BUTTES ROAD

PALO SECO 50 UNITS

EXIST. 30,000 GAL. RESERVOIR
BASE = 3045 FT
HW = 3057 FT
(TO BE ABANDONED WHEN NEW 500,000 GAL. RESERVOIR IS INSTALLED)

NEW 500,000 GAL. RESERVOIR (400,000 GALLONS FOR FUTURE GROWTH)
HW = 3070 FT.

EXIST. 60,000 GAL. RESERVOIR

3080

3180

APPENDIX A

**OPINIONS OF
PROBABLE
CONSTRUCTION
COST**

OPINION OF PROBABLE CONSTRUCTION COST

Project Name: Las Quintas Serenas Existing System Upgrades
Project No.: 1148.01 A 8000
Location: Sahuarita, Arizona
Description: Combined Arsenic Treatment at Well Site 6

Prepared by: JL **Date:** 03/24/05
Checked by: KF **Date:** 03/24/05
Client: Las Quintas Serenas Water Company

Item No.	Item Description	Unit	Quantity	Unit Price	Amount	Remarks
1	Site Demolition and Removal of Abandoned Facilities at Well Sites	LS	1	\$10,000	\$10,000	Well No. 6. Assumes that existing hydro tank will be reused.
2	Site Piping Well Site No. 6	EA	1	\$100,000	\$100,000	Includes flow control valves and connections to treatment units
3	Concrete Slabs for Site Equipment	CY	40	\$350	\$14,000	Well Nos. 5 and 6
4	8-inch water main	LF	2,500	\$45	\$112,500	Well No. 7 to Well No. 6
5	400,000 gallon reservoir	LS	1	\$325,000	\$325,000	Well No. 6
6	850-gpm transfer booster station	LS	1	\$120,000	\$120,000	Well No. 6 (pre-packaged VFD pump station)
7	1,250 gpm Adsorption Arsenic Treatment System	LS	1	\$500,000	\$500,000	To treat Well Nos. 6 and 7 (Severn Trent)
8	200 gpm Adsorption Arsenic Treatment System	LS	1	\$100,000	\$100,000	To treat Well No. 5
9	Back-up Generator	LS	1	\$80,000	\$80,000	Well No. 6
10	Fencing and Site Work at Well Sites	EA	1	\$40,000	\$40,000	Well No. 6, includes grading for floodplain
11	Re-equip well	EA	2	\$15,000	\$30,000	Well Nos. 6 and 7, to remove bowls
12	Subtotal				\$1,431,500	
13	25% Engineering and Contingencies				\$357,875	
14	TOTAL				\$1,789,375	

OPINION OF PROBABLE CONSTRUCTION COST

Project Name: Las Quintas Serenas Future System Upgrades

Project No.: 1148.01 A 8000

Location: Sahuarita, Arizona

Description: Future well with individual arsenic treatment and over sizing of reservoir

Prepared by: JL

Date: 03/24/05

Checked by: KF

Date: 03/24/05

Client: Las Quintas Serenas Water Company

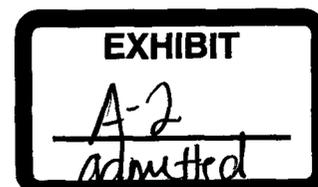
Item No.	Item Description	Unit	Quantity	Unit Price	Amount	Remarks
1	500,000-gallon Reservoir	EA	1	\$440,000	\$440,000	At existing two tank site. Includes grading, site work, fencing and piping
2	New well	EA	1	\$650,000	\$650,000	If required, includes 16-inch casing, chain link fence, geophysical logging, and zonal sampling. Excludes off-site piping, but assumes appropriate sized line in available in La Canada
3	Arsenic Treatment	EA	1	\$350,000	\$350,000	If required.
4	Subtotal				\$1,440,000	
5	25% Engineering and Contingencies				\$360,000	
6	TOTAL				\$1,800,000	

Las Quintas Serenas Water Company

Docket Nos. W-01583A-04-0178, W-01583A-05-0326 and

W-01583A-05-0340

**Applicant's
Exhibit A-2**



DWRF Funding Cycle 2005 Priority List Application

Side 2 of 2 (Use Separate Form for Each Project)

2.5 Consolidation and Regionalization (Check appropriate boxes) N/A

- Consolidate Existing Physical Facilities
- Consolidate Existing Service Areas
- Consolidate Existing Operations
- Consolidate Existing Ownerships

SECTION 3: AMOUNT OF FINANCIAL ASSISTANCE

<u>Total Project Costs</u>	<u>Amount Requested from WIFA</u>	<u>Amount Funded Locally</u>	<u>Amount Funded from Other Sources</u>
\$ 1,789,375.00	= \$1,789,375.00	+ \$0.00	+ \$0.00

List Names of Other Funding Sources:

SECTION 4: READINESS TO PROCEED INDICATORS

4.1 Debt Authorization (Authorization through election or special district creation or process.) (Check appropriate box):

- Authorized – Enclose copy of official election canvas or special district proceedings (governmental)
- Authorized – Enclose Arizona Corporation Commission Order authorizing long term financing (non-governmental)
- Scheduled – Anticipated Authorization Date (insert date): **Pending – Procedural Conference June 23, 2005**
- No Plans to Schedule within Funding Cycle – January 2005 through December 2005.

4.2 Project Plans & Specifications: (Check appropriate box)

- Approved – Enclose Approval Notification.
- Scheduled for Approval – Anticipated Approval Date (insert date):
- Engineer Selected – Anticipated Start Date **WestLand Resources, Inc. – January 2005**
- Engineer Not Selected

4.3 Applicable Local, State, and Federal Project Permits: (Check appropriate box)

- Obtained – Enclose Approval Notification(s).
- Scheduled to Obtain Permit(s) – Anticipated Permit(s) Date (insert date):
- Date of Approval Unknown
- Not Applicable – Explain:

4.4 Project Bids: (Check appropriate box)

- Accepted **Received quotes from Severn Trent for Arsenic Filter(s), as submitted in Master Plan. LQS will need current pricing for final construction plans**
- Scheduled to Solicit Bids – Anticipated Solicitation Date (insert date):
- Date of Bid Solicitation Unknown
- Not Applicable – Explain:

SECTION 5: CERTIFICATION & APPROVAL

As the Authorized Representative, I certify that the information contained in this application is, to the best of my knowledge, true, accurate, and correct.

Signature:

Name: Steve Gay

Title: Operator/Manager

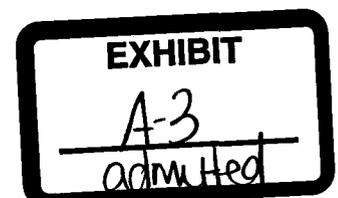
Date: 06/13/05

Las Quintas Serenas Water Company

Docket Nos. W-01583A-04-0178, W-01583A-05-0326 and

W-01583A-05-0340

**Applicant's
Exhibit A-3**



 **Commerce Bank**
of Arizona

Mr. John S. Gay, President
Las Quintas Serenas Water Co.
P.O. Box 68
Sahuarita, AZ 85629
RE: Commercial Line of Credit
Cc: Mr. Lawrence V. Robertson, Jr.

September 2, 2005

Dear Mr. Gay:

On behalf of Commerce Bank Of Arizona (Bank), I am pleased to inform you that the loan request to Las Quintas Serenas Water Co. (Company) has been approved on the following terms and conditions:

Loan Amount: \$1,650,000

Interest Rate: 8% fixed

Terms: 180 day non-revolving line of credit with monthly interest payments. Advances in construction phase are subject to providing acceptable invoices. Then, loan is fully amortized over ten years with monthly principal and interest payments.

Fees: $\frac{3}{4}$ point fee, \$300 documentation fee, due at closing

Pre-payment penalty: None

Collateral: Blanket assignment of the assets of Las Quintas Serenas Water Co.

Insurance: The bank shall be provided with a loss payable endorsement from an insurance company satisfactory to the bank for property damage and loss.

Banking: The Company shall maintain its general and operating accounts at Commerce Bank of Arizona, in the event that the bank establishes a banking office in Green Valley, AZ.

Loan funding is subject to approval of the requested rate increase from Arizona Corporation Commission as per information previously provided to the bank.

The company shall provide all such agreements as the bank shall require including but not limited to promissory notes, security agreements, UCC filings, and any other documents as may be required by the bank and for the bank to perfect the referenced security interests.

Broadway Office
3805 East Broadway Blvd. • Tucson, Arizona 85716
520.325.5200 • Fax 520.327.0513

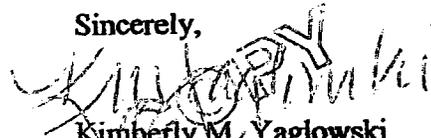
Ina/La Cholla Office
2285 West Ina Rd. • Tucson, Arizona 85741
520.797.4160 • Fax 520.797.4180

www.commercebankaz.com

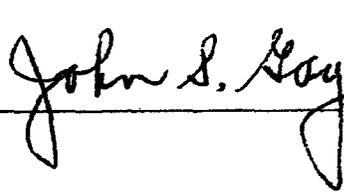
This commitment is conditional upon the preparation, execution, and legal documentation in form and substance satisfactory to Bank incorporating substantially all of the terms and conditions outlined or referred to above. However, it is understood and acknowledged by the company that this commitment does not contain all of the terms and conditions of the loan agreement and/or promissory note.

If you are in agreement with the terms and conditions of this letter, please sign below and return this letter by September 30, 2005, the date that this commitment letter will expire.

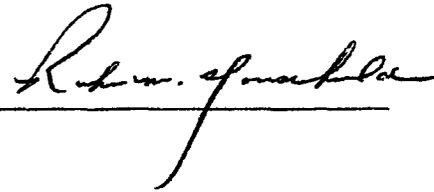
Sincerely,


Kimberly M. Yaglowski
Vice President

ACCEPTED: _____



ACCEPTED: _____

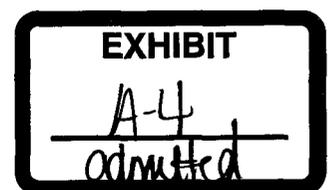


Las Quintas Serenas Water Company

Docket Nos. W-01583A-04-0178, W-01583A-05-0326 and

W-01583A-05-0340

**Applicant's
Exhibit A-4**



CORPORATE RESOLUTION TO BORROW / GRANT COLLATERAL

Principal	Loan Date	Maturity	Loan No	Call / Coll	Account	Officer	Initials
\$1,650,000.00	10-26-2005	04-26-2016	100007-100	04AD / BL		05	
References in the shaded area are for Lender's use only and do not limit the applicability of this document to any particular loan or item. Any item above containing "****" has been omitted due to text length limitations.							

Corporation: Las Quintas Serenas Water CO. 16961 S. Camino De Las Quintas Sahuarita, AZ 85629	Lender: Commerce Bank of Arizona Main Office 3805 E. Broadway Blvd. Tucson, AZ 85716 (520) 325-5200
--	--

I. THE UNDERSIGNED, DO HEREBY CERTIFY THAT:

THE CORPORATION'S EXISTENCE. The complete and correct name of the Corporation is Las Quintas Serenas Water CO. ("Corporation"). The Corporation is a corporation for profit which is, and at all times shall be, duly organized, validly existing, and in good standing under and by virtue of the laws of the State of Arizona. The Corporation is duly authorized to transact business in all other states in which the Corporation is doing business, having obtained all necessary filings, governmental licenses and approvals for each state in which the Corporation is doing business. Specifically, the Corporation is, and at all times shall be, duly qualified as a foreign corporation in all states in which the failure to so qualify would have a material adverse effect on its business or financial condition. The Corporation has the full power and authority to own its properties and to transact the business in which it is presently engaged or presently proposes to engage. The Corporation maintains an office at 16961 S. Camino De Las Quintas, Sahuarita, AZ 85629. Unless the Corporation has designated otherwise in writing, the principal office is the office at which the Corporation keeps its books and records. The Corporation will notify Lender prior to any change in the location of The Corporation's state of organization or any change in The Corporation's name. The Corporation shall do all things necessary to preserve and to keep in full force and effect its existence, rights and privileges, and shall comply with all regulations, rules, ordinances, statutes, orders and decrees of any governmental or quasi-governmental authority or court applicable to the Corporation and The Corporation's business activities.

RESOLUTIONS ADOPTED. At a meeting of the Directors of the Corporation, or if the Corporation is a close corporation having no Board of Directors then at a meeting of the Corporation's shareholders, duly called and held on **October 26, 2005**, at which a quorum was present and voting, or by other duly authorized action in lieu of a meeting, the resolutions set forth in this Resolution were adopted.

OFFICER. The following named person is an officer of Las Quintas Serenas Water CO.:

NAMES	TITLES	AUTHORIZED	ACTUAL SIGNATURES
John S. Gay	President	Y X	

ACTIONS AUTHORIZED. The authorized person listed above may enter into any agreements of any nature with Lender, and those agreements will bind the Corporation. Specifically, but without limitation, the authorized person is authorized, empowered, and directed to do the following for and on behalf of the Corporation:

- Borrow Money.** To borrow, as a cosigner or otherwise, from time to time from Lender, on such terms as may be agreed upon between the Corporation and Lender, such sum or sums of money as in his or her judgment should be borrowed; however, not exceeding at any one time the amount of **One Million Six Hundred Fifty Thousand & 00/100 Dollars (\$1,650,000.00)**, in addition to such sum or sums of money as may be currently borrowed by the Corporation from Lender.
- Execute Notes.** To execute and deliver to Lender the promissory note or notes, or other evidence of the Corporation's credit accommodations, on Lender's forms, at such rates of interest and on such terms as may be agreed upon, evidencing the sums of money so borrowed or any of the Corporation's indebtedness to Lender, and also to execute and deliver to Lender one or more renewals, extensions, modifications, refinancings, consolidations, or substitutions for one or more of the notes, any portion of the notes, or any other evidence of credit accommodations.
- Grant Security.** To mortgage, pledge, transfer, endorse, hypothecate, or otherwise encumber and deliver to Lender any property now or hereafter belonging to the Corporation or in which the Corporation now or hereafter may have an interest, including without limitation all of the Corporation's real property and all of the Corporation's personal property (tangible or intangible), as security for the payment of any loans or credit accommodations so obtained, any promissory notes so executed (including any amendments to or modifications, renewals, and extensions of such promissory notes), or any other or further indebtedness of the Corporation to Lender at any time owing, however the same may be evidenced. Such property may be mortgaged, pledged, transferred, endorsed, hypothecated or encumbered at the time such loans are obtained or such indebtedness is incurred, or at any other time or times, and may be either in addition to or in lieu of any property theretofore mortgaged, pledged, transferred, endorsed, hypothecated or encumbered.
- Execute Security Documents.** To execute and deliver to Lender the forms of mortgage, deed of trust, pledge agreement, hypothecation agreement, and other security agreements and financing statements which Lender may require and which shall evidence the terms and conditions under and pursuant to which such liens and encumbrances, or any of them, are given; and also to execute and deliver to Lender any other written instruments, any chattel paper, or any other collateral, of any kind or nature, which Lender may deem necessary or proper in connection with or pertaining to the giving of the liens and encumbrances.
- Deposit Accounts.** To open one or more depository accounts in the Corporation's name and sign and deliver all documents or items required to fulfill the conditions of all banking business, including without limitation the initiation of wire transfers, until authority is revoked by action of the Corporation on written notice to Lender.
- Negotiate Items.** To draw, endorse, and discount with Lender all drafts, trade acceptances, promissory notes, or other evidences of indebtedness payable to or belonging to the Corporation or in which the Corporation may have an interest, and either to receive cash for the same or to cause such proceeds to be credited to the Corporation's account with Lender, or to cause such other disposition of the proceeds derived therefrom as he or she may deem advisable.
- Further Acts.** In the case of lines of credit, to designate additional or alternate individuals as being authorized to request advances under such lines, and in all cases, to do and perform such other acts and things, to pay any and all fees and costs, and to execute and deliver such other documents and agreements, including agreements waiving the right to a trial by jury, as the officer may in his or her discretion deem reasonably necessary or proper in order to carry into effect the provisions of this Resolution.

ASSUMED BUSINESS NAMES. The Corporation has filed or recorded all documents or filings required by law relating to all assumed business names used by the Corporation. Excluding the name of the Corporation, the following is a complete list of all assumed business names under which the Corporation does business: **None.**

NOTICES TO LENDER. The Corporation will promptly notify Lender in writing at Lender's address shown above (or such other addresses as Lender may designate from time to time) prior to any (A) change in the Corporation's name; (B) change in the Corporation's assumed business name(s); (C) change in the management of the Corporation; (D) change in the authorized signer(s); (E) change in the Corporation's principal office address; (F) change in the Corporation's state of organization; (G) conversion of the Corporation to a new or different type of business entity; or (H) change in any other aspect of the Corporation that directly or indirectly relates to any agreements between the Corporation and Lender. No change in the Corporation's name or state of organization will take effect until after Lender has received notice.

CERTIFICATION CONCERNING OFFICERS AND RESOLUTIONS. The officer named above is duly elected, appointed, or employed by or for the Corporation, as the case may be, and occupies the position set opposite his or her respective name. This Resolution now stands of record on the books of the Corporation, is in full force and effect, and has not been modified or revoked in any manner whatsoever.

NO CORPORATE SEAL. The Corporation has no corporate seal, and therefore, no seal is affixed to this Resolution.

CONTINUING VALIDITY. Any and all acts authorized pursuant to this Resolution and performed prior to the passage of this Resolution are hereby ratified and approved. This Resolution shall be continuing, shall remain in full force and effect and Lender may rely on it until written notice of its revocation shall have been delivered to and received by Lender at Lender's address shown above (or such addresses as Lender may designate from time to time). Any such notice shall not affect any of the Corporation's agreements or commitments in effect at the time notice is given.

IN TESTIMONY WHEREOF, I have hereunto set my hand and attest that the signature set opposite the name listed above is his or her genuine signature.

I have read all the provisions of this Resolution, and I personally and on behalf of the Corporation certify that all statements and representations made in this Resolution are true and correct. This Corporate Resolution to Borrow / Grant Collateral is dated **October 26, 2005**.

**CORPORATE RESOLUTION TO BORROW / GRANT COLLATERAL
(Continued)**

Loan No: 100007-100

Page 2

CERTIFIED TO AND ATTESTED BY:

X
John S. Gay, President of Las Quintas Serenas Water
CO.

NOTE: If the officer signing this Resolution is designated by this foregoing document as one of the officers authorized to act on the Corporation's behalf, it is advisable to have this Resolution signed by at least one non-authorized officer of the Corporation.

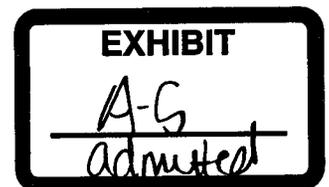
LASTER PRO Lending, Ver. 5.28.00.007 Corp. Hybrid Financial Solutions, Inc. 1997, 2006. All Rights Reserved. - AZ eICR/LA/CIC/FC 78-828 P5-2

Las Quintas Serenas Water Company

Docket Nos. W-01583A-04-0178, W-01583A-05-0326 and

W-01583A-05-0340

**Applicant's
Exhibit A-5**



PROMISSORY NOTE

Principal	Loan Date	Maturity	Loan No	Cell / Coll	Account	Officer	Initials
\$1,650,000.00	10-26-2005	04-26-2016	100007-100	04AD / BL		05	
References in the shaded area are for Lender's use only and do not limit the applicability of this document to any particular loan or item. Any item above containing ***** has been omitted due to text length limitations.							

Borrower: Las Quintas Serenas Water CO.
16961 S. Camino De Las Quintas
Sahuarita, AZ 85629

Lender: Commerce Bank of Arizona
Main Office
3805 E. Broadway Blvd.
Tucson, AZ 85716
(520) 325-5200

Principal Amount: \$1,650,000.00 Interest Rate: 8.000% Date of Note: October 26, 2005

PROMISE TO PAY. Las Quintas Serenas Water CO. ("Borrower") promises to pay to Commerce Bank of Arizona ("Lender"), or order, in lawful money of the United States of America, the principal amount of One Million Six Hundred Fifty Thousand & 00/100 Dollars (\$1,650,000.00) or so much as may be outstanding, together with interest on the unpaid outstanding principal balance of each advance. Interest shall be calculated from the date of each advance until repayment of each advance.

PAYMENT. Borrower will pay this loan in accordance with the following payment schedule: 6 monthly consecutive interest payments, beginning November 26, 2005, with interest calculated on the unpaid principal balances at an interest rate of 8.000% per annum; 119 monthly consecutive principal and interest payments of \$20,025.75 each, beginning May 26, 2006, with interest calculated on the unpaid principal balances at an interest rate of 8.000% per annum; and one principal and interest payment of \$20,026.03 on April 26, 2016, with interest calculated on the unpaid principal balances at an interest rate of 8.000% per annum. This estimated final payment is based on the assumption that all payments will be made exactly as scheduled; the actual final payment will be for all principal and accrued interest not yet paid, together with any other unpaid amounts under this Note. Unless otherwise agreed or required by applicable law, payments will be applied first to any unpaid collection costs; then to any late charges; then to any accrued unpaid interest; and then to principal. Interest on this Note is computed on a 365/365 simple interest basis; that is, by applying the ratio of the annual interest rate over the number of days in a year, multiplied by the outstanding principal balance, multiplied by the actual number of days the principal balance is outstanding. Borrower will pay Lender at Lender's address shown above or at such other place as Lender may designate in writing.

EFFECTIVE RATE. Borrower agrees to an effective rate of interest that is the rate specified in this Note plus any additional rate resulting from any other charges in the nature of interest paid or to be paid in connection with this Note.

PREPAYMENT. Borrower agrees that all loan fees and other prepaid finance charges are earned fully as of the date of the loan and will not be subject to refund upon early payment (whether voluntary or as a result of default), except as otherwise required by law. Except for the foregoing, Borrower may pay without penalty all or a portion of the amount owed earlier than it is due. Early payments will not, unless agreed to by Lender in writing, relieve Borrower of Borrower's obligation to continue to make payments under the payment schedule. Rather, early payments will reduce the principal balance due and may result in Borrower's making fewer payments. Borrower agrees not to send Lender payments marked "paid in full", "without recourse", or similar language. If Borrower sends such a payment, Lender may accept it without losing any of Lender's rights under this Note, and Borrower will remain obligated to pay any further amount owed to Lender. All written communications concerning disputed amounts, including any check or other payment instrument that indicates that the payment constitutes "payment in full" of the amount owed or that is tendered with other conditions or limitations or as full satisfaction of a disputed amount must be mailed or delivered to: Commerce Bank of Arizona, Main Office, 3805 E. Broadway Blvd. Tucson, AZ 85716.

LATE CHARGE. If a payment is 10 days or more late, Borrower will be charged 5.000% of the regularly scheduled payment.

INTEREST AFTER DEFAULT. Upon default, including failure to pay upon final maturity, Lender, at its option, may, if permitted under applicable law, increase the interest rate on this Note 6.000 percentage points. The interest rate will not exceed the maximum rate permitted by applicable law.

DEFAULT. Each of the following shall constitute an event of default ("Event of Default") under this Note:

Payment Default. Borrower fails to make any payment when due under this Note.

Other Defaults. Borrower fails to comply with or to perform any other term, obligation, covenant or condition contained in this Note or in any of the related documents or to comply with or to perform any term, obligation, covenant or condition contained in any other agreement between Lender and Borrower.

False Statements. Any warranty, representation or statement made or furnished to Lender by Borrower or on Borrower's behalf under this Note or the related documents is false or misleading in any material respect, either now or at the time made or furnished or becomes false or misleading at any time thereafter.

Insolvency. The dissolution or termination of Borrower's existence as a going business, the insolvency of Borrower, the appointment of a receiver for any part of Borrower's property, any assignment for the benefit of creditors, any type of creditor workout, or the commencement of any proceeding under any bankruptcy or insolvency laws by or against Borrower.

Creditor or Forfeiture Proceedings. Commencement of foreclosure or forfeiture proceedings, whether by judicial proceeding, self-help, repossession or any other method, by any creditor of Borrower or by any governmental agency against any collateral securing the loan. This includes a garnishment of any of Borrower's accounts, including deposit accounts, with Lender. However, this Event of Default shall not apply if there is a good faith dispute by Borrower as to the validity or reasonableness of the claim which is the basis of the creditor or forfeiture proceeding and if Borrower gives Lender written notice of the creditor or forfeiture proceeding and deposits with Lender monies or a surety bond for the creditor or forfeiture proceeding, in an amount determined by Lender, in its sole discretion, as being an adequate reserve or bond for the dispute.

Events Affecting Guarantor. Any of the preceding events occurs with respect to any guarantor, endorser, surety, or accommodation party of any of the indebtedness or any guarantor, endorser, surety, or accommodation party dies or becomes incompetent, or revokes or disputes the validity of, or liability under, any guaranty of the indebtedness evidenced by this Note.

Change In Ownership. Any change in ownership of twenty-five percent (25%) or more of the common stock of Borrower.

Adverse Change. A material adverse change occurs in Borrower's financial condition, or Lender believes the prospect of payment or performance of this Note is impaired.

Insecurity. Lender in good faith believes itself insecure.

LENDER'S RIGHTS. Upon default, Lender may declare the entire unpaid principal balance on this Note and all accrued unpaid interest immediately due, and then Borrower will pay that amount.

ATTORNEYS' FEES; EXPENSES. Lender may hire or pay someone else to help collect this Note if Borrower does not pay. Borrower will pay Lender that amount. This includes, subject to any limits under applicable law, Lender's attorneys' fees and Lender's legal expenses, whether or not there is a lawsuit, including attorneys' fees, expenses for bankruptcy proceedings (including efforts to modify or vacate any automatic stay or injunction), and appeals. However, Borrower will only pay attorneys' fees of an attorney not Lender's salaried employee, to whom the matter is referred after Borrower's default. If not prohibited by applicable law, Borrower also will pay any court costs, in addition to all other sums provided by law.

JURY WAIVER. Lender and Borrower hereby waive the right to any jury trial in any action, proceeding, or counterclaim brought by either Lender or Borrower against the other.

GOVERNING LAW. This Note will be governed by federal law applicable to Lender and, to the extent not preempted by federal law, the laws of the State of Arizona without regard to its conflicts of law provisions. This Note has been accepted by Lender in the State of Arizona.

DISHONORED ITEM FEE. Borrower will pay a fee to Lender of \$15.00 if Borrower makes a payment on Borrower's loan and the check or preauthorized charge with which Borrower pays is later dishonored.

RIGHT OF SETOFF. To the extent permitted by applicable law, Lender reserves a right of setoff in all Borrower's accounts with Lender (whether checking, savings, or some other account). This includes all accounts Borrower holds jointly with someone else and all accounts Borrower may open in the future. However, this does not include any IRA or Keogh accounts, or any trust accounts for which setoff would be prohibited by law. Borrower authorizes Lender, to the extent permitted by applicable law, to charge or setoff all sums owing on the indebtedness against any and all such accounts, and, at Lender's option, to administratively freeze all such accounts to allow Lender to protect Lender's charge and setoff rights provided in this paragraph.

COLLATERAL. Borrower acknowledges this Note is secured by the following collateral described in the security instrument listed herein: inventory, accounts, equipment and general intangibles described in a Commercial Security Agreement dated October 26, 2005.

LINE OF CREDIT. This Note evidences a straight line of credit. Once the total amount of principal has been advanced, Borrower is not entitled to further loan advances. Advances under this Note may be requested either orally or in writing by Borrower or as provided in this paragraph. Lender may, but need not, require that all oral requests be confirmed in writing. All communications, instructions, or directions by telephone or otherwise to Lender are to be directed to Lender's office shown above. The following person currently is authorized to request advances and authorize payments under the until Lender receives from Borrower, at Lender's address shown above, written notice of revocation of his or her authority: **John S. Gay, President of Las Quintas Serenas Water CO.** Borrower agrees to be liable for all sums either: (A) advanced in accordance with the instructions of an authorized person or (B) credited to any of Borrower's accounts with Lender. The unpaid principal balance owing on this Note at any time may be evidenced by endorsements on this Note or by Lender's internal records, including daily computer print-outs.

SUCCESSOR INTERESTS. The terms of this Note shall be binding upon Borrower, and upon Borrower's heirs, personal representatives, successors and assigns, and shall inure to the benefit of Lender and its successors and assigns.

NOTIFY US OF INACCURATE INFORMATION WE REPORT TO CONSUMER REPORTING AGENCIES. Please notify us if we report any inaccurate information about your account(s) to a consumer reporting agency. Your written notice describing the specific inaccuracy(ies) should be sent to us at the following address: Commerce Bank of Arizona Main Office 3805 E. Broadway Blvd. Tucson, AZ 85716.

GENERAL PROVISIONS. Lender may delay or forgo enforcing any of its rights or remedies under this Note without losing them. Borrower and any other person who signs, guarantees or endorses this Note, to the extent allowed by law, waive presentment, demand for payment, and notice of dishonor. Upon any change in the terms of this Note, and unless otherwise expressly stated in writing, no party who signs this Note, whether as maker, guarantor, accommodation maker or endorser, shall be released from liability. All such parties agree that Lender may renew or extend (repeatedly and for any length of time) this loan or release any party or guarantor or collateral; or impair, fail to realize upon or perfect Lender's security interest in the collateral; and take any other action deemed necessary by Lender without the consent of or notice to anyone. All such parties also agree that Lender may modify this loan without the consent of or notice to anyone other than the party with whom the modification is made. The obligations under this Note are joint and several.

PRIOR TO SIGNING THIS NOTE, BORROWER READ AND UNDERSTOOD ALL THE PROVISIONS OF THIS NOTE. BORROWER AGREES TO THE TERMS OF THE NOTE.

BORROWER ACKNOWLEDGES RECEIPT OF A COMPLETED COPY OF THIS PROMISSORY NOTE.

BORROWER:

LAS QUINTAS SERENAS WATER CO.

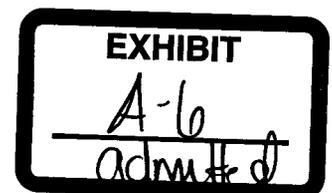
By: _____
**John S. Gay, President of Las Quintas Serenas
Water CO.**

Las Quintas Serenas Water Company

Docket Nos. W-01583A-04-0178, W-01583A-05-0326 and

W-01583A-05-0340

**Applicant's
Exhibit A-6**



COMMERCIAL SECURITY AGREEMENT

Principal	Loan Date	Maturity	Loan No	Call / Coll	Account	Officer	Initials
\$1,650,000.00	10-26-2005	04-26-2016	100007-100	04AD / BL		05	
References in the shaded area are for Lender's use only and do not limit the applicability of this document to any particular loan or item. Any item above containing "****" has been omitted due to text length limitations.							

Grantor: Las Quintas Serenas Water CO.
16961 S. Camino De Las Quintas
Sahuarita, AZ 85629

Lender: Commerce Bank of Arizona
Main Office
3805 E. Broadway Blvd.
Tucson, AZ 85716
(520) 325-5200

THIS COMMERCIAL SECURITY AGREEMENT dated October 26, 2005, is made and executed between Las Quintas Serenas Water CO. ("Grantor") and Commerce Bank of Arizona ("Lender").

GRANT OF SECURITY INTEREST. For valuable consideration, Grantor grants to Lender a security interest in the Collateral to secure the Indebtedness and agrees that Lender shall have the rights stated in this Agreement with respect to the Collateral, in addition to all other rights which Lender may have by law.

COLLATERAL DESCRIPTION. The word "Collateral" as used in this Agreement means the following described property, whether now owned or hereafter acquired, whether now existing or hereafter arising, and wherever located, in which Grantor is giving to Lender a security interest for the payment of the Indebtedness and performance of all other obligations under the Note and this Agreement:

All Inventory, Accounts, Equipment and General Intangibles

In addition, the word "Collateral" also includes all the following, whether now owned or hereafter acquired, whether now existing or hereafter arising, and wherever located:

- (A) All accessions, attachments, accessories, tools, parts, supplies, replacements of and additions to any of the collateral described herein, whether added now or later.
- (B) All products and produce of any of the property described in this Collateral section.
- (C) All accounts, general intangibles, instruments, rents, monies, payments, and all other rights, arising out of a sale, lease, consignment or other disposition of any of the property described in this Collateral section.
- (D) All proceeds (including insurance proceeds) from the sale, destruction, loss, or other disposition of any of the property described in this Collateral section, and sums due from a third party who has damaged or destroyed the Collateral or from that party's insurer, whether due to judgment, settlement or other process.
- (E) All records and data relating to any of the property described in this Collateral section, whether in the form of a writing, photograph, microfilm, microfiche, or electronic media, together with all of Grantor's right, title, and interest in and to all computer software required to utilize, create, maintain, and process any such records or data on electronic media.

RIGHT OF SETOFF. To the extent permitted by applicable law, Lender reserves a right of setoff in all Grantor's accounts with Lender (whether checking, savings, or some other account). This includes all accounts Grantor holds jointly with someone else and all accounts Grantor may open in the future. However, this does not include any IRA or Keogh accounts, or any trust accounts for which setoff would be prohibited by law. Grantor authorizes Lender, to the extent permitted by applicable law, to charge or setoff all sums owing on the Indebtedness against any and all such accounts, and, at Lender's option, to administratively freeze all such accounts to allow Lender to protect Lender's charge and setoff rights provided in this paragraph.

GRANTOR'S REPRESENTATIONS AND WARRANTIES WITH RESPECT TO THE COLLATERAL. With respect to the Collateral, Grantor represents and promises to Lender that:

Perfection of Security Interest. Grantor agrees to take whatever actions are requested by Lender to perfect and continue Lender's security interest in the Collateral. Upon request of Lender, Grantor will deliver to Lender any and all of the documents evidencing or constituting the Collateral, and Grantor will note Lender's interest upon any and all chattel paper and instruments if not delivered to Lender for possession by Lender.

Notices to Lender. Grantor will promptly notify Lender in writing at Lender's address shown above (or such other addresses as Lender may designate from time to time) prior to any (1) change in Grantor's name; (2) change in Grantor's assumed business name(s); (3) change in the management of the Corporation Grantor; (4) change in the authorized signer(s); (5) change in Grantor's principal office address; (6) change in Grantor's state of organization; (7) conversion of Grantor to a new or different type of business entity; or (8) change in any other aspect of Grantor that directly or indirectly relates to any agreements between Grantor and Lender. No change in Grantor's name or state of organization will take effect until after Lender has received notice.

No Violation. The execution and delivery of this Agreement will not violate any law or agreement governing

Grantor or to which Grantor is a party, and its certificate or articles of incorporation and bylaws do not prohibit any term or condition of this Agreement.

Enforceability of Collateral. To the extent the Collateral consists of accounts, chattel paper, or general intangibles, as defined by the Uniform Commercial Code, the Collateral is enforceable in accordance with its terms, is genuine, and fully complies with all applicable laws and regulations concerning form, content and manner of preparation and execution, and all persons appearing to be obligated on the Collateral have authority and capacity to contract and are in fact obligated as they appear to be on the Collateral. At the time any account becomes subject to a security interest in favor of Lender, the account shall be a good and valid account representing an undisputed, bona fide indebtedness incurred by the account debtor, for merchandise held subject to delivery instructions or previously shipped or delivered pursuant to a contract of sale, or for services previously performed by Grantor with or for the account debtor. So long as this Agreement remains in effect, Grantor shall not, without Lender's prior written consent, compromise, settle, adjust, or extend payment under or with regard to any such Accounts. There shall be no setoffs or counterclaims against any of the Collateral, and no agreement shall have been made under which any deductions or discounts may be claimed concerning the Collateral except those disclosed to Lender in writing.

Location of the Collateral. Except in the ordinary course of Grantor's business, Grantor agrees to keep the Collateral (or to the extent the Collateral consists of intangible property such as accounts or general intangibles, the records concerning the Collateral) at Grantor's address shown above or at such other locations as are acceptable to Lender. Upon Lender's request, Grantor will deliver to Lender in form satisfactory to Lender a schedule of real properties and Collateral locations relating to Grantor's operations, including without limitation the following: (1) all real property Grantor owns or is purchasing; (2) all real property Grantor is renting or leasing; (3) all storage facilities Grantor owns, rents, leases, or uses; and (4) all other properties where Collateral is or may be located.

Removal of the Collateral. Except in the ordinary course of Grantor's business, including the sales of inventory, Grantor shall not remove the Collateral from its existing location without Lender's prior written consent. To the extent that the Collateral consists of vehicles, or other titled property, Grantor shall not take or permit any action which would require application for certificates of title for the vehicles outside the State of Arizona, without Lender's prior written consent. Grantor shall, whenever requested, advise Lender of the exact location of the Collateral.

Transactions Involving Collateral. Except for inventory sold or accounts collected in the ordinary course of Grantor's business, or as otherwise provided for in this Agreement, Grantor shall not sell, offer to sell, or otherwise transfer or dispose of the Collateral. While Grantor is not in default under this Agreement, Grantor may sell inventory, but only in the ordinary course of its business and only to buyers who qualify as a buyer in the ordinary course of business. A sale in the ordinary course of Grantor's business does not include a transfer in partial or total satisfaction of a debt or any bulk sale. Grantor shall not pledge, mortgage, encumber or otherwise permit the Collateral to be subject to any lien, security interest, encumbrance, or charge, other than the security interest provided for in this Agreement, without the prior written consent of Lender. This includes security interests even if junior in right to the security interests granted under this Agreement. Unless waived by Lender, all proceeds from any disposition of the Collateral (for whatever reason) shall be held in trust for Lender and shall not be commingled with any other funds; provided however, this requirement shall not constitute consent by Lender to any sale or other disposition. Upon receipt, Grantor shall immediately deliver any such proceeds to Lender.

Title. Grantor represents and warrants to Lender that Grantor holds good and marketable title to the Collateral, free and clear of all liens and encumbrances except for the lien of this Agreement. No financing statement covering any of the Collateral is on file in any public office other than those which reflect the security interest created by this Agreement or to which Lender has specifically consented. Grantor shall defend Lender's rights in the Collateral against the claims and demands of all other persons.

Repairs and Maintenance. Grantor agrees to keep and maintain, and to cause others to keep and maintain, the Collateral in good order, repair and condition at all times while this Agreement remains in effect. Grantor further agrees to pay when due all claims for work done on, or services rendered or material furnished in connection with the Collateral so that no lien or encumbrance may ever attach to or be filed against the Collateral.

Inspection of Collateral. Lender and Lender's designated representatives and agents shall have the right at all reasonable times to examine and inspect the Collateral wherever located.

Taxes, Assessments and Liens. Grantor will pay when due all taxes, assessments and liens upon the Collateral, its use or operation, upon this Agreement, upon any promissory note or notes evidencing the indebtedness, or upon any of the other Related Documents. Grantor may withhold any such payment or may elect to contest any lien if Grantor is in good faith conducting an appropriate proceeding to contest the obligation to pay and so long as Lender's interest in the Collateral is not jeopardized in Lender's sole opinion. If the Collateral is subjected to a lien which is not discharged within fifteen (15) days, Grantor shall deposit with Lender cash, a sufficient corporate surety bond or other security satisfactory to Lender in an amount adequate to provide for the discharge of the lien plus any interest, costs, attorneys' fees or other charges that could accrue as a result of foreclosure or sale of the Collateral. In any contest Grantor shall defend itself and Lender and shall satisfy any final adverse judgment before enforcement against the Collateral. Grantor shall name Lender as an additional obligee under any surety bond furnished in the contest proceedings. Grantor further agrees to furnish Lender with evidence that such taxes, assessments, and governmental and other charges have been paid in full and in a timely manner. Grantor may withhold any such payment or may elect to contest any lien if Grantor is in good faith conducting an appropriate proceeding to contest the obligation to pay and so long as Lender's interest in the Collateral is not jeopardized.

Compliance with Governmental Requirements. Grantor shall comply promptly with all laws, ordinances, rules and regulations of all governmental authorities, now or hereafter in effect, applicable to the ownership, production, disposition, or use of the Collateral, including all laws or regulations relating to the undue erosion of

highly-erodible land or relating to the conversion of wetlands for the production of an agricultural product or commodity. Grantor may contest in good faith any such law, ordinance or regulation and withhold compliance during any proceeding, including appropriate appeals, so long as Lender's interest in the Collateral, in Lender's opinion, is not jeopardized.

Hazardous Substances. Grantor represents and warrants that the Collateral never has been, and never will be so long as this Agreement remains a lien on the Collateral, used in violation of any Environmental Laws or for the generation, manufacture, storage, transportation, treatment, disposal, release or threatened release of any Hazardous Substance. The representations and warranties contained herein are based on Grantor's due diligence in investigating the Collateral for Hazardous Substances. Grantor hereby (1) releases and waives any future claims against Lender for indemnity or contribution in the event Grantor becomes liable for cleanup or other costs under any Environmental Laws, and (2) agrees to indemnify and hold harmless Lender against any and all claims and losses resulting from a breach of this provision of this Agreement. This obligation to indemnify shall survive the payment of the Indebtedness and the satisfaction of this Agreement.

Maintenance of Casualty Insurance. Grantor shall procure and maintain all risks insurance, including without limitation fire, theft and liability coverage together with such other insurance as Lender may require with respect to the Collateral, in form, amounts, coverages and basis reasonably acceptable to Lender and issued by a company or companies reasonably acceptable to Lender. Grantor, upon request of Lender, will deliver to Lender from time to time the policies or certificates of insurance in form satisfactory to Lender, including stipulations that coverages will not be cancelled or diminished without at least fifteen (15) days' prior written notice to Lender and not including any disclaimer of the insurer's liability for failure to give such a notice. Each insurance policy also shall include an endorsement providing that coverage in favor of Lender will not be impaired in any way by any act, omission or default of Grantor or any other person. In connection with all policies covering assets in which Lender holds or is offered a security interest, Grantor will provide Lender with such loss payable or other endorsements as Lender may require. If Grantor at any time fails to obtain or maintain any insurance as required under this Agreement, Lender may (but shall not be obligated to) obtain such insurance as Lender deems appropriate, including if Lender so chooses "single interest insurance," which will cover only Lender's interest in the Collateral.

Application of Insurance Proceeds. Grantor shall promptly notify Lender of any loss or damage to the Collateral, whether or not such casualty or loss is covered by insurance. Lender may make proof of loss if Grantor fails to do so within fifteen (15) days of the casualty. All proceeds of any insurance on the Collateral, including accrued proceeds thereon, shall be held by Lender as part of the Collateral. If Lender consents to repair or replacement of the damaged or destroyed Collateral, Lender shall, upon satisfactory proof of expenditure, pay or reimburse Grantor from the proceeds for the reasonable cost of repair or restoration. If Lender does not consent to repair or replacement of the Collateral, Lender shall retain a sufficient amount of the proceeds to pay all of the indebtedness, and shall pay the balance to Grantor. Any proceeds which have not been disbursed within six (6) months after their receipt and which Grantor has not committed to the repair or restoration of the Collateral shall be used to prepay the indebtedness.

Insurance Reserves. Lender may require Grantor to maintain with Lender reserves for payment of insurance premiums, which reserves shall be created by monthly payments from Grantor of a sum estimated by Lender to be sufficient to produce, at least fifteen (15) days before the premium due date, amounts at least equal to the insurance premiums to be paid. If fifteen (15) days before payment is due, the reserve funds are insufficient, Grantor shall upon demand pay any deficiency to Lender. The reserve funds shall be held by Lender as a general deposit and shall constitute a non-interest-bearing account which Lender may satisfy by payment of the insurance premiums required to be paid by Grantor as they become due. Lender does not hold the reserve funds in trust for Grantor, and Lender is not the agent of Grantor for payment of the insurance premiums required to be paid by Grantor. The responsibility for the payment of premiums shall remain Grantor's sole responsibility.

Insurance Reports. Grantor, upon request of Lender, shall furnish to Lender reports on each existing policy of insurance showing such information as Lender may reasonably request including the following: (1) the name of the insurer; (2) the risks insured; (3) the amount of the policy; (4) the property insured; (5) the then current value on the basis of which insurance has been obtained and the manner of determining that value; and (6) the expiration date of the policy. In addition, Grantor shall upon request by Lender (however not more often than annually) have an independent appraiser satisfactory to Lender determine, as applicable, the cash value or replacement cost of the Collateral.

Financing Statements. Grantor authorizes Lender to file a UCC financing statement, or alternatively, a copy of this Agreement to perfect Lender's security interest. At Lender's request, Grantor additionally agrees to sign all other documents that are necessary to perfect, protect, and continue Lender's security interest in the Property. Grantor will pay all filing fees, title transfer fees, and other fees and costs involved unless prohibited by law or unless Lender is required by law to pay such fees and costs. Grantor irrevocably appoints Lender to execute documents necessary to transfer title if there is a default. Lender may file a copy of this Agreement as a financing statement. If Grantor changes Grantor's name or address, or the name or address of any person granting a security interest under this Agreement changes, Grantor will promptly notify the Lender of such change.

GRANTOR'S RIGHT TO POSSESSION AND TO COLLECT ACCOUNTS. Until default and except as otherwise provided below with respect to accounts, Grantor may have possession of the tangible personal property and beneficial use of all the Collateral and may use it in any lawful manner not inconsistent with this Agreement or the Related Documents, provided that Grantor's right to possession and beneficial use shall not apply to any Collateral where possession of the Collateral by Lender is required by law to perfect Lender's security interest in such Collateral. Until otherwise notified by Lender, Grantor may collect any of the Collateral consisting of accounts. At any time and even though no Event of Default exists, Lender may exercise its rights to collect the accounts and to notify account debtors to make payments directly to Lender for application to the Indebtedness. If Lender at any time has possession of any Collateral, whether before or after an Event of Default, Lender shall be deemed to have exercised reasonable care in the custody and preservation of the Collateral if Lender takes such action for that

purpose as Grantor shall request or as Lender, in Lender's sole discretion, shall deem appropriate under the circumstances, but failure to honor any request by Grantor shall not of itself be deemed to be a failure to exercise reasonable care. Lender shall not be required to take any steps necessary to preserve any rights in the Collateral against prior parties, nor to protect, preserve or maintain any security interest given to secure the Indebtedness.

LENDER'S EXPENDITURES. If any action or proceeding is commenced that would materially affect Lender's interest in the Collateral or if Grantor fails to comply with any provision of this Agreement or any Related Documents, including but not limited to Grantor's failure to discharge or pay when due any amounts Grantor is required to discharge or pay under this Agreement or any Related Documents, Lender on Grantor's behalf may (but shall not be obligated to) take any action that Lender deems appropriate, to the extent permitted by applicable law, including but not limited to discharging or paying all taxes, liens, security interests, encumbrances and other claims, at any time levied or placed on the Collateral and paying all costs for insuring, maintaining and preserving the Collateral. All such expenditures incurred or paid by Lender for such purposes will then bear interest at the rate charged under the Note from the date incurred or paid by Lender to the date of repayment by Grantor. All such expenses will become a part of the Indebtedness and, at Lender's option, will (A) be payable on demand; (B) be added to the balance of the Note and be apportioned among and be payable with any installment payments to become due during either (1) the term of any applicable insurance policy; or (2) the remaining term of the Note; or (C) be treated as a balloon payment which will be due and payable at the Note's maturity. The Agreement also will secure payment of these amounts. Such right shall be in addition to all other rights and remedies to which Lender may be entitled upon Default and shall be exercisable by Lender to the extent permitted by applicable law.

DEFAULT. Each of the following shall constitute an Event of Default under this Agreement:

Payment Default. Grantor fails to make any payment when due under the Indebtedness.

Other Defaults. Grantor fails to comply with or to perform any other term, obligation, covenant or condition contained in this Agreement or in any of the Related Documents or to comply with or to perform any term, obligation, covenant or condition contained in any other agreement between Lender and Grantor.

False Statements. Any warranty, representation or statement made or furnished to Lender by Grantor or on Grantor's behalf under this Agreement or the Related Documents is false or misleading in any material respect, either now or at the time made or furnished or becomes false or misleading at any time thereafter.

Defective Collateralization. This Agreement or any of the Related Documents ceases to be in full force and effect (including failure of any collateral document to create a valid and perfected security interest or lien) at any time and for any reason.

Insolvency. The dissolution or termination of Grantor's existence as a going business, the insolvency of Grantor, the appointment of a receiver for any part of Grantor's property, any assignment for the benefit of creditors, any type of creditor workout, or the commencement of any proceeding under any bankruptcy or insolvency laws by or against Grantor.

Creditor or Forfeiture Proceedings. Commencement of foreclosure or forfeiture proceedings, whether by judicial proceeding, self-help, repossession or any other method, by any creditor of Grantor or by any governmental agency against any collateral securing the Indebtedness. This includes a garnishment of any of Grantor's accounts, including deposit accounts, with Lender. However, this Event of Default shall not apply if there is a good faith dispute by Grantor as to the validity or reasonableness of the claim which is the basis of the creditor or forfeiture proceeding and if Grantor gives Lender written notice of the creditor or forfeiture proceeding and deposits with Lender monies or a surety bond for the creditor or forfeiture proceeding, in an amount determined by Lender, in its sole discretion, as being an adequate reserve or bond for the dispute.

Events Affecting Guarantor. Any of the preceding events occurs with respect to any guarantor, endorser, surety, or accommodation party of any of the Indebtedness or guarantor, endorser, surety, or accommodation party dies or becomes incompetent or revokes or disputes the validity of, or liability under, any Guaranty of the Indebtedness.

Adverse Change. A material adverse change occurs in Grantor's financial condition, or Lender believes the prospect of payment or performance of the Indebtedness is impaired.

Insecurity. Lender in good faith believes itself insecure.

RIGHTS AND REMEDIES ON DEFAULT. If an Event of Default occurs under this Agreement, at any time thereafter, Lender shall have all the rights of a secured party under the Arizona Uniform Commercial Code. In addition and without limitation, Lender may exercise any one or more of the following rights and remedies:

Accelerate Indebtedness. Lender may declare the entire Indebtedness, including any prepayment penalty which Grantor would be required to pay, immediately due and payable, without notice of any kind to Grantor.

Assemble Collateral. Lender may require Grantor to deliver to Lender all or any portion of the Collateral and any and all certificates of title and other documents relating to the Collateral. Lender may require Grantor to assemble the Collateral and make it available to Lender at a place to be designated by Lender. Lender also shall have full power to enter upon the property of Grantor to take possession of and remove the Collateral. If the Collateral contains other goods not covered by this Agreement at the time of repossession, Grantor agrees Lender may take such other goods, provided that Lender makes reasonable efforts to return them to Grantor after repossession.

Sell the Collateral. Lender shall have full power to sell, lease, transfer, or otherwise deal with the Collateral or proceeds thereof in Lender's own name or that of Grantor. Lender may sell the Collateral at public auction or private sale. Unless the Collateral threatens to decline speedily in value or is of a type customarily sold on a recognized market, Lender will give Grantor, and other persons as required by law, reasonable notice of the time and place of any public sale, or the time after which any private sale or any other disposition of the Collateral is to be made. However, no notice need be provided to any person who, after Event of Default occurs, enters into and authenticates an agreement waiving that person's right to notification of sale. The requirements of reasonable notice shall be met if such notice is given at least ten (10) days before the time of

the sale or disposition. All expenses relating to the disposition of the Collateral, including without limitation the expenses of retaking, holding, insuring, preparing for sale and selling the Collateral, shall become a part of the Indebtedness secured by this Agreement and shall be payable on demand, with interest at the Note rate from date of expenditure until repaid.

Appoint Receiver. Lender shall have the right to have a receiver appointed to take possession of all or any part of the Collateral, with the power to protect and preserve the Collateral, to operate the Collateral preceding foreclosure or sale, and to collect the Rents from the Collateral and apply the proceeds, over and above the cost of the receivership, against the Indebtedness. The receiver may serve without bond if permitted by law. Lender's right to the appointment of a receiver shall exist whether or not the apparent value of the Collateral exceeds the Indebtedness by a substantial amount. Employment by Lender shall not disqualify a person from serving as a receiver.

Collect Revenues, Apply Accounts. Lender, either itself or through a receiver, may collect the payments, rents, income, and revenues from the Collateral. Lender may at any time in Lender's discretion transfer any Collateral into Lender's own name or that of Lender's nominee and receive the payments, rents, income, and revenues therefrom and hold the same as security for the Indebtedness or apply it to payment of the Indebtedness in such order of preference as Lender may determine. Insofar as the Collateral consists of accounts, general intangibles, insurance policies, instruments, chattel paper, choses in action, or similar property, Lender may demand, collect, receipt for, settle, compromise, adjust, sue for, foreclose, or realize on the Collateral as Lender may determine, whether or not Indebtedness or Collateral is then due. For these purposes, Lender may, on behalf of and in the name of Grantor, receive, open and dispose of mail addressed to Grantor; change any address to which mail and payments are to be sent; and endorse notes, checks, drafts, money orders, documents of title, instruments and items pertaining to payment, shipment, or storage of any Collateral. To facilitate collection, Lender may notify account debtors and obligors on any Collateral to make payments directly to Lender.

Obtain Deficiency. If Lender chooses to sell any or all of the Collateral, Lender may obtain a judgment against Grantor for any deficiency remaining on the Indebtedness due to Lender after application of all amounts received from the exercise of the rights provided in this Agreement. Grantor shall be liable for a deficiency even if the transaction described in this subsection is a sale of accounts or chattel paper.

Other Rights and Remedies. Lender shall have all the rights and remedies of a secured creditor under the provisions of the Uniform Commercial Code, as may be amended from time to time. In addition, Lender shall have and may exercise any or all other rights and remedies it may have available at law, in equity, or otherwise.

Election of Remedies. Except as may be prohibited by applicable law, all of Lender's rights and remedies, whether evidenced by this Agreement, the Related Documents, or by any other writing, shall be cumulative and may be exercised singularly or concurrently. Election by Lender to pursue any remedy shall not exclude pursuit of any other remedy, and an election to make expenditures or to take action to perform an obligation of Grantor under this Agreement, after Grantor's failure to perform, shall not affect Lender's right to declare a default and exercise its remedies.

MISCELLANEOUS PROVISIONS. The following miscellaneous provisions are a part of this Agreement:

Amendments. This Agreement, together with any Related Documents, constitutes the entire understanding and agreement of the parties as to the matters set forth in this Agreement. No alteration of or amendment to this Agreement shall be effective unless given in writing and signed by the party or parties sought to be charged or bound by the alteration or amendment.

Attorneys' Fees; Expenses. Grantor agrees to pay upon demand all of Lender's costs and expenses, including Lender's attorneys' fees and Lender's legal expenses, incurred in connection with the enforcement of this Agreement. Lender may hire or pay someone else to help enforce this Agreement, and Grantor shall pay the costs and expenses of such enforcement. Costs and expenses include Lender's attorneys' fees and legal expenses whether or not there is a lawsuit, including attorneys' fees and legal expenses for bankruptcy proceedings (including efforts to modify or vacate any automatic stay or injunction), appeals, and any anticipated post-judgment collection services. However, Grantor will only pay attorneys' fees of an attorney not Lender's salaried employee, to whom the matter is referred after Grantor's default. Grantor also shall pay all court costs and such additional fees as may be directed by the court.

Caption Headings. Caption headings in this Agreement are for convenience purposes only and are not to be used to interpret or define the provisions of this Agreement.

Governing Law. This Agreement will be governed by federal law applicable to Lender and, to the extent not preempted by federal law, the laws of the State of Arizona without regard to its conflicts of law provisions. This Agreement has been accepted by Lender in the State of Arizona.

No Waiver by Lender. Lender shall not be deemed to have waived any rights under this Agreement unless such waiver is given in writing and signed by Lender. No delay or omission on the part of Lender in exercising any right shall operate as a waiver of such right or any other right. A waiver by Lender of a provision of this Agreement shall not prejudice or constitute a waiver of Lender's right otherwise to demand strict compliance with that provision or any other provision of this Agreement. No prior waiver by Lender, nor any course of dealing between Lender and Grantor, shall constitute a waiver of any of Lender's rights or of any of Grantor's obligations as to any future transactions. Whenever the consent of Lender is required under this Agreement, the granting of such consent by Lender in any instance shall not constitute continuing consent to subsequent instances where such consent is required and in all cases such consent may be granted or withheld in the sole discretion of Lender.

Notices. Any notice required to be given under this Agreement shall be given in writing, and shall be effective when actually delivered, when actually received by telefacsimile (unless otherwise required by law), when deposited with a nationally recognized overnight courier, or, if mailed, when deposited in the United States mail, as first class, certified or registered mail postage prepaid, directed to the addresses shown near the

beginning of this Agreement. Any party may change its address for notices under this Agreement by giving formal written notice to the other parties, specifying that the purpose of the notice is to change the party's address. For notice purposes, Grantor agrees to keep Lender informed at all times of Grantor's current address. Unless otherwise provided or required by law, if there is more than one Grantor, any notice given by Lender to any Grantor is deemed to be notice given to all Grantors.

Power of Attorney. Grantor hereby appoints Lender as Grantor's irrevocable attorney-in-fact for the purpose of executing any documents necessary to perfect, amend, or to continue the security interest granted in this Agreement or to demand termination of filings of other secured parties. Lender may at any time, and without further authorization from Grantor, file a carbon, photographic or other reproduction of any financing statement or of this Agreement for use as a financing statement. Grantor will reimburse Lender for all expenses for the perfection and the continuation of the perfection of Lender's security interest in the Collateral.

Severability. If a court of competent jurisdiction finds any provision of this Agreement to be illegal, invalid, or unenforceable as to any circumstance, that finding shall not make the offending provision illegal, invalid, or unenforceable as to any other circumstance. If feasible, the offending provision shall be considered modified so that it becomes legal, valid and enforceable. If the offending provision cannot be so modified, it shall be considered deleted from this Agreement. Unless otherwise required by law, the illegality, invalidity, or unenforceability of any provision of this Agreement shall not affect the legality, validity or enforceability of any other provision of this Agreement.

Successors and Assigns. Subject to any limitations stated in this Agreement on transfer of Grantor's interest, this Agreement shall be binding upon and inure to the benefit of the parties, their successors and assigns. If ownership of the Collateral becomes vested in a person other than Grantor, Lender, without notice to Grantor, may deal with Grantor's successors with reference to this Agreement and the Indebtedness by way of forbearance or extension without releasing Grantor from the obligations of this Agreement or liability under the Indebtedness.

Survival of Representations and Warranties. All representations, warranties, and agreements made by Grantor in this Agreement shall survive the execution and delivery of this Agreement, shall be continuing in nature, and shall remain in full force and effect until such time as Grantor's Indebtedness shall be paid in full.

Time is of the Essence. Time is of the essence in the performance of this Agreement.

Waive Jury. All parties to this Agreement hereby waive the right to any jury trial in any action, proceeding, or counterclaim brought by any party against any other party.

DEFINITIONS. The following capitalized words and terms shall have the following meanings when used in this Agreement. Unless specifically stated to the contrary, all references to dollar amounts shall mean amounts in lawful money of the United States of America. Words and terms used in the singular shall include the plural, and the plural shall include the singular, as the context may require. Words and terms not otherwise defined in this Agreement shall have the meanings attributed to such terms in the Uniform Commercial Code:

Agreement. The word "Agreement" means this Commercial Security Agreement, as this Commercial Security Agreement may be amended or modified from time to time, together with all exhibits and schedules attached to this Commercial Security Agreement from time to time.

Borrower. The word "Borrower" means Las Quintas Serenas Water CO. and includes all co-signers and co-makers signing the Note and all their successors and assigns.

Collateral. The word "Collateral" means all of Grantor's right, title and interest in and to all the Collateral as described in the Collateral Description section of this Agreement.

Default. The word "Default" means the Default set forth in this Agreement in the section titled "Default".

Environmental Laws. The words "Environmental Laws" mean any and all state, federal and local statutes, regulations and ordinances relating to the protection of human health or the environment, including without limitation the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. Section 9601, et seq. ("CERCLA"), the Superfund Amendments and Reauthorization Act of 1986, Pub. L. No. 99-499 ("SARA"), the Hazardous Materials Transportation Act, 49 U.S.C. Section 1801, et seq., the Resource Conservation and Recovery Act, 42 U.S.C. Section 6901, et seq., or other applicable state or federal laws, rules, or regulations adopted pursuant thereto.

Event of Default. The words "Event of Default" mean any of the events of default set forth in this Agreement in the default section of this Agreement.

Grantor. The word "Grantor" means Las Quintas Serenas Water CO..

Guaranty. The word "Guaranty" means the guaranty from guarantor, endorser, surety, or accommodation party to Lender, including without limitation a guaranty of all or part of the Note.

Hazardous Substances. The words "Hazardous Substances" mean materials that, because of their quantity, concentration or physical, chemical or infectious characteristics, may cause or pose a present or potential hazard to human health or the environment when improperly used, treated, stored, disposed of, generated, manufactured, transported or otherwise handled. The words "Hazardous Substances" are used in their very broadest sense and include without limitation any and all hazardous or toxic substances, materials or waste as defined by or listed under the Environmental Laws. The term "Hazardous Substances" also includes, without limitation, petroleum and petroleum by-products or any fraction thereof and asbestos.

Indebtedness. The word "Indebtedness" means the indebtedness evidenced by the Note or Related Documents, including all principal and interest together with all other indebtedness and costs and expenses for which Grantor is responsible under this Agreement or under any of the Related Documents.

Lender. The word "Lender" means Commerce Bank of Arizona, its successors and assigns.

Note. The word "Note" means the Note executed by Las Quintas Serenas Water CO. in the principal amount of

**COMMERCIAL SECURITY AGREEMENT
(Continued)**

Loan No: 100007-100

Page 7

\$1,650,000.00 dated October 26, 2005, together with all renewals of, extensions of, modifications of, refinancings of, consolidations of, and substitutions for the note or credit agreement.

Property. The word "Property" means all of Grantor's right, title and interest in and to all the Property as described in the "Collateral Description" section of this Agreement.

Related Documents. The words "Related Documents" mean all promissory notes, credit agreements, loan agreements, environmental agreements, guaranties, security agreements, mortgages, deeds of trust, security deeds, collateral mortgages, and all other instruments, agreements and documents, whether now or hereafter existing, executed in connection with the Indebtedness.

GRANTOR HAS READ AND UNDERSTOOD ALL THE PROVISIONS OF THIS COMMERCIAL SECURITY AGREEMENT AND AGREES TO ITS TERMS. THIS AGREEMENT IS DATED OCTOBER 26, 2005.

GRANTOR:

LAS QUINTAS SERENAS WATER CO.

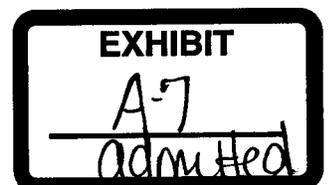
By: _____
John S. Gay, President of Las Quintas
Serenas Water CO.

Las Quintas Serenas Water Company

Docket Nos. W-01583A-04-0178, W-01583A-05-0326 and

W-01583A-05-0340

**Applicant's
Exhibit A-7**



BUSINESS LOAN AGREEMENT

Principal	Loan Date	Maturity	Loan No	Call / Coll	Account	Officer	Initials
\$1,650,000.00	10-26-2005	04-26-2016	100007-100	04AD / BL		05	
References in the shaded area are for Lender's use only and do not limit the applicability of this document to any particular loan or item. Any item above containing "****" has been omitted due to text length limitations.							

Borrower: Las Quintas Serenas Water CO.
16961 S. Camino De Las Quintas
Sahuarita, AZ 85629

Lender: Commerce Bank of Arizona
Main Office
3805 E. Broadway Blvd.
Tucson, AZ 85716
(520) 325-5200

THIS BUSINESS LOAN AGREEMENT dated October 26, 2005, is made and executed between Las Quintas Serenas Water CO. ("Borrower") and Commerce Bank of Arizona ("Lender") on the following terms and conditions. Borrower has received prior commercial loans from Lender or has applied to Lender for a commercial loan or loans or other financial accommodations, including those which may be described on any exhibit or schedule attached to this Agreement ("Loan"). Borrower understands and agrees that: (A) in granting, renewing, or extending any Loan, Lender is relying upon Borrower's representations, warranties, and agreements as set forth in this Agreement; (B) the granting, renewing, or extending of any Loan by Lender at all times shall be subject to Lender's sole judgment and discretion; and (C) all such Loans shall be and remain subject to the terms and conditions of this Agreement.

TERM. This Agreement shall be effective as of October 26, 2005, and shall continue in full force and effect until such time as all of Borrower's Loans in favor of Lender have been paid in full, including principal, interest, costs, expenses, attorneys' fees, and other fees and charges, or until April 26, 2016.

CONDITIONS PRECEDENT TO EACH ADVANCE. Lender's obligation to make the initial Advance and each subsequent Advance under this Agreement shall be subject to the fulfillment to Lender's satisfaction of all of the conditions set forth in this Agreement and in the Related Documents.

Loan Documents. Borrower shall provide to Lender the following documents for the Loan: (1) the Note; (2) Security Agreements granting to Lender security interests in the Collateral; (3) financing statements and all other documents perfecting Lender's Security Interests; (4) evidence of insurance as required below; (5) together with all such Related Documents as Lender may require for the Loan; all in form and substance satisfactory to Lender and Lender's counsel.

Borrower's Authorization. Borrower shall have provided in form and substance satisfactory to Lender properly certified resolutions, duly authorizing the execution and delivery of this Agreement, the Note and the Related Documents. In addition, Borrower shall have provided such other resolutions, authorizations, documents and instruments as Lender or its counsel, may require.

Payment of Fees and Expenses. Borrower shall have paid to Lender all fees, charges, and other expenses which are then due and payable as specified in this Agreement or any Related Document.

Representations and Warranties. The representations and warranties set forth in this Agreement, in the Related Documents, and in any document or certificate delivered to Lender under this Agreement are true and correct.

No Event of Default. There shall not exist at the time of any Advance a condition which would constitute an Event of Default under this Agreement or under any Related Document.

REPRESENTATIONS AND WARRANTIES. Borrower represents and warrants to Lender, as of the date of this Agreement, as of the date of each disbursement of loan proceeds, as of the date of any renewal, extension or modification of any Loan, and at all times any indebtedness exists:

Organization. Borrower is a corporation for profit which is, and at all times shall be, duly organized, validly existing, and in good standing under and by virtue of the laws of the State of Arizona. Borrower is duly authorized to transact business in all other states in which Borrower is doing business, having obtained all necessary filings, governmental licenses and approvals for each state in which Borrower is doing business. Specifically, Borrower is, and at all times shall be, duly qualified as a foreign corporation in all states in which the failure to so qualify would have a material adverse effect on its business or financial condition. Borrower has the full power and authority to own its properties and to transact the business in which it is presently engaged or presently proposes to engage. Borrower maintains an office at 16961 S. Camino De Las Quintas, Sahuarita, AZ 85629. Unless Borrower has designated otherwise in writing, the principal office is the office at which Borrower keeps its books and records including its records concerning the Collateral. Borrower will notify Lender prior to any change in the location of Borrower's state of organization or any change in Borrower's name. Borrower shall do all things necessary to preserve and to keep in full force and effect its existence, rights and privileges, and shall comply with all regulations, rules, ordinances, statutes, orders and decrees of any governmental or quasi-governmental authority or court applicable to Borrower and Borrower's business activities.

Assumed Business Names. Borrower has filed or recorded all documents or filings required by law relating to all assumed business names used by Borrower. Excluding the name of Borrower, the following is a complete list of all assumed business names under which Borrower does business: **None.**

Authorization. Borrower's execution, delivery, and performance of this Agreement and all the Related Documents have been duly authorized by all necessary action by Borrower and do not conflict with, result in a violation of, or constitute a default under (1) any provision of (a) Borrower's articles of incorporation or organization, or bylaws, or (b) any agreement or other instrument binding upon Borrower or (2) any law, governmental regulation, court decree, or order applicable to Borrower or to Borrower's properties.

Financial Information. Each of Borrower's financial statements supplied to Lender truly and completely disclosed Borrower's financial condition as of the date of the statement, and there has been no material adverse change in Borrower's financial condition subsequent to the date of the most recent financial statement supplied to Lender. Borrower has no material contingent obligations except as disclosed in such financial statements.

Legal Effect. This Agreement constitutes, and any instrument or agreement Borrower is required to give under this Agreement when delivered will constitute legal, valid, and binding obligations of Borrower enforceable against Borrower in accordance with their respective terms.

Properties. Except as contemplated by this Agreement or as previously disclosed in Borrower's financial statements or in writing to Lender and as accepted by Lender, and except for property tax liens for taxes not presently due and payable, Borrower owns and has good title to all of Borrower's properties free and clear of all Security Interests, and has not executed any security documents or financing statements relating to such properties. All of Borrower's properties are titled in Borrower's legal name, and Borrower has not used or filed a financing statement under any other name for at least the last five (5) years.

Hazardous Substances. Except as disclosed to and acknowledged by Lender in writing, Borrower represents and warrants that: (1) During the period of Borrower's ownership of the Collateral, there has been no use, generation, manufacture, storage, treatment, disposal, release or threatened release of any Hazardous Substance by any person on, under, about or from any of the Collateral. (2) Borrower has no knowledge of, or reason to believe that there has been (a) any breach or violation of any Environmental Laws; (b) any use, generation, manufacture, storage, treatment, disposal, release or threatened release of any Hazardous Substance on, under, about or from the Collateral by any prior owners or occupants of any of the Collateral; or (c) any actual or threatened litigation or claims of any kind by any person relating to such matters. (3) Neither Borrower nor any tenant, contractor, agent or other authorized user of any of the Collateral shall use, generate, manufacture, store, treat, dispose of or release any Hazardous Substance on, under, about or from any of the Collateral; and any such activity shall be conducted in compliance with all applicable federal, state, and local laws, regulations, and ordinances, including without limitation all Environmental Laws. Borrower authorizes Lender and its agents to enter upon the Collateral to make such inspections and tests as Lender may deem appropriate to determine compliance of the Collateral with this section of the Agreement. Any inspections or tests made by Lender shall be at Borrower's expense and for Lender's purposes only and shall not be construed to create any responsibility or liability on the part of Lender to Borrower or to any other person. The representations and warranties contained herein are based on Borrower's due diligence in investigating the Collateral for hazardous waste and Hazardous Substances. Borrower hereby (1) releases and waives any future claims against Lender for indemnity or contribution in the event Borrower becomes liable for cleanup or other costs under any such laws, and (2) agrees to indemnify and hold harmless Lender against any and all claims, losses, liabilities, damages, penalties, and expenses which Lender may directly or indirectly sustain or suffer resulting from a breach of this section of the Agreement or as a consequence of any use, generation, manufacture, storage, disposal, release or threatened release of a hazardous waste or substance on the Collateral. The provisions of this section of the Agreement, including the obligation to indemnify, shall survive the payment of the Indebtedness and the termination, expiration or satisfaction of this Agreement and shall not be affected by Lender's acquisition of any interest in any of the Collateral, whether by foreclosure or otherwise.

Litigation and Claims. No litigation, claim, investigation, administrative proceeding or similar action (including those for unpaid taxes) against Borrower is pending or threatened, and no other event has occurred which may materially adversely affect Borrower's financial

condition or properties, other than litigation, claims, or other events, if any, that have been disclosed to and acknowledged by Lender in writing.

Taxes. To the best of Borrower's knowledge, all of Borrower's tax returns and reports that are or were required to be filed, have been filed, and all taxes, assessments and other governmental charges have been paid in full, except those presently being or to be contested by Borrower in good faith in the ordinary course of business and for which adequate reserves have been provided.

Lien Priority. Unless otherwise previously disclosed to Lender in writing, Borrower has not entered into or granted any Security Agreements, or permitted the filing or attachment of any Security Interests on or affecting any of the Collateral directly or indirectly securing repayment of Borrower's Loan and Note, that would be prior or that may in any way be superior to Lender's Security Interests and rights in and to such Collateral.

Binding Effect. This Agreement, the Note, all Security Agreements (if any), and all Related Documents are binding upon the signers thereof, as well as upon their successors, representatives and assigns, and are legally enforceable in accordance with their respective terms.

AFFIRMATIVE COVENANTS. Borrower covenants and agrees with Lender that, so long as this Agreement remains in effect, Borrower will:

Notices of Claims and Litigation. Promptly inform Lender in writing of (1) all material adverse changes in Borrower's financial condition, and (2) all existing and all threatened litigation, claims, investigations, administrative proceedings or similar actions affecting Borrower or any Guarantor which could materially affect the financial condition of Borrower or the financial condition of any Guarantor.

Financial Records. Maintain its books and records in accordance with GAAP, applied on a consistent basis, and permit Lender to examine and audit Borrower's books and records at all reasonable times.

Financial Statements. Furnish Lender with the following:

Annual Statements. As soon as available, but in no event later than sixty (60) days after the end of each fiscal year, Borrower's balance sheet and income statement for the year ended, prepared by Borrower.

Tax Returns. As soon as available, but in no event later than thirty (30) days after the applicable filing date for the tax reporting period ended, Federal and other governmental tax returns, prepared by Borrower.

All financial reports required to be provided under this Agreement shall be prepared in accordance with GAAP, applied on a consistent basis, and certified by Borrower as being true and correct.

Additional Information. Furnish such additional information and statements, as Lender may request from time to time.

Insurance. Maintain fire and other risk insurance, public liability insurance, and such other insurance as Lender may require with respect to Borrower's properties and operations, in form, amounts, coverages and with insurance companies acceptable to Lender. Borrower, upon request of Lender, will deliver to Lender from time to time the policies or certificates of insurance in form satisfactory to Lender, including stipulations that coverages will not be cancelled or diminished without at least fifteen (15) days prior written notice to Lender. Each insurance policy also shall include an endorsement providing that coverage in favor of Lender will not be impaired in any way by any act, omission or default of Borrower or any other person. In connection with all policies covering assets in which Lender holds or is offered a security interest for the Loans, Borrower will provide Lender with such lender's loss payable or other endorsements as Lender may require.

Insurance Reports. Furnish to Lender, upon request of Lender, reports on each existing insurance policy showing such information as Lender may reasonably request, including without limitation the following: (1) the name of the insurer; (2) the risks insured; (3) the amount of the policy; (4) the properties insured; (5) the then current property values on the basis of which insurance has been obtained, and the manner of determining those values; and (6) the expiration date of the policy. In addition, upon request of Lender (however not more often than annually), Borrower will have an independent appraiser satisfactory to Lender determine, as applicable, the actual cash value or replacement cost of any Collateral. The cost of such appraisal shall be paid by Borrower.

Other Agreements. Comply with all terms and conditions of all other agreements, whether now or hereafter existing, between Borrower and any other party and notify Lender immediately in writing of any default in connection with any other such agreements.

Loan Proceeds. Use all Loan proceeds solely for Borrower's business operations, unless specifically consented to the contrary by Lender in writing.

Taxes, Charges and Liens. Pay and discharge when due all of its indebtedness and obligations, including without limitation all assessments, taxes, governmental charges, levies and liens, of every kind and nature, imposed upon Borrower or its properties, income, or profits, prior to the date on which penalties would attach, and all lawful claims that, if unpaid, might become a lien or charge upon any of Borrower's properties, income, or profits.

Performance. Perform and comply, in a timely manner, with all terms, conditions, and provisions set forth in this Agreement, in the Related Documents, and in all other instruments and agreements between Borrower and Lender. Borrower shall notify Lender immediately in writing of any default in connection with any agreement.

Operations. Maintain executive and management personnel with substantially the same qualifications and experience as the present executive and management personnel; provide written notice to Lender of any change in executive and management personnel; conduct its business affairs in a reasonable and prudent manner.

Environmental Studies. Promptly conduct and complete, at Borrower's expense, all such investigations, studies, samplings and testings as may be requested by Lender or any governmental authority relative to any substance, or any waste or by-product of any substance defined as toxic or a hazardous substance under applicable federal, state, or local law, rule, regulation, order or directive, at or affecting any property or any facility owned, leased or used by Borrower.

Compliance with Governmental Requirements. Comply with all laws, ordinances, and regulations, now or hereafter in effect, of all governmental authorities applicable to the conduct of Borrower's properties, businesses and operations, and to the use or occupancy of the Collateral, including without limitation, the Americans With Disabilities Act. Borrower may contest in good faith any such law, ordinance, or regulation and withhold compliance during any proceeding, including appropriate appeals, so long as Borrower has notified Lender in writing prior to doing so and so long as, in Lender's sole opinion, Lender's interests in the Collateral are not jeopardized. Lender may require Borrower to post adequate security or a surety bond, reasonably satisfactory to Lender, to protect Lender's interest.

Inspection. Permit employees or agents of Lender at any reasonable time to inspect any and all Collateral for the Loan or Loans and Borrower's other properties and to examine or audit Borrower's books, accounts, and records and to make copies and memoranda of Borrower's books, accounts, and records. If Borrower now or at any time hereafter maintains any records (including without limitation computer generated records and computer software programs for the generation of such records) in the possession of a third party, Borrower, upon request of Lender, shall notify such party to permit Lender free access to such records at all reasonable times and to provide Lender with copies of any records it may request, all at Borrower's expense.

Compliance Certificates. Unless waived in writing by Lender, provide Lender at least annually, with a certificate executed by Borrower's chief financial officer, or other officer or person acceptable to Lender, certifying that the representations and warranties set forth in this Agreement are true and correct as of the date of the certificate and further certifying that, as of the date of the certificate, no Event of Default exists under this Agreement.

Environmental Compliance and Reports. Borrower shall comply in all respects with any and all Environmental Laws; not cause or permit to exist, as a result of an intentional or unintentional action or omission on Borrower's part or on the part of any third party, on property owned and/or occupied by Borrower, any environmental activity where damage may result to the environment, unless such environmental activity is pursuant to and in compliance with the conditions of a permit issued by the appropriate federal, state or local governmental authorities; shall furnish to Lender promptly and in any event within thirty (30) days after receipt thereof a copy of any notice, summons, lien, citation, directive, letter or other communication from any governmental agency or instrumentality concerning any intentional or unintentional action or omission on Borrower's part in connection with any environmental activity whether or not there is damage to the environment and/or other natural resources.

Additional Assurances. Make, execute and deliver to Lender such promissory notes, mortgages, deeds of trust, security agreements, assignments, financing statements, instruments, documents and other agreements as Lender or its attorneys may reasonably request to evidence and secure the Loans and to perfect all Security Interests.

LENDER'S EXPENDITURES. If any action or proceeding is commenced that would materially affect Lender's interest in the Collateral or if Borrower fails to comply with any provision of this Agreement or any Related Documents, including but not limited to Borrower's failure to discharge or pay when due any amounts Borrower is required to discharge or pay under this Agreement or any Related Documents, Lender on Borrower's behalf may (but shall not be obligated to) take any action that Lender deems appropriate, to the extent permitted by applicable law, including but not limited to discharging or paying all taxes, liens, security interests, encumbrances and other claims, at any time levied or placed on any Collateral and paying all costs for insuring, maintaining and preserving any Collateral. All such expenditures incurred or paid by Lender

for such purposes will then bear interest at the rate charged under the Note from the date incurred or paid by Lender to the date of repayment by Borrower. All such expenses will become a part of the Indebtedness and, at Lender's option, will (A) be payable on demand; (B) be added to the balance of the Note and be apportioned among and be payable with any installment payments to become due during either (1) the term of any applicable insurance policy; or (2) the remaining term of the Note; or (C) be treated as a balloon payment which will be due and payable at the Note's maturity.

NEGATIVE COVENANTS. Borrower covenants and agrees with Lender that while this Agreement is in effect, Borrower shall not, without the prior written consent of Lender:

Indebtedness and Liens. (1) Except for trade debt incurred in the normal course of business and indebtedness to Lender contemplated by this Agreement, create, incur or assume indebtedness for borrowed money, including capital leases, (2) sell, transfer, mortgage, assign, pledge, lease, grant a security interest in, or encumber any of Borrower's assets (except as allowed as Permitted Liens), or (3) sell with recourse any of Borrower's accounts, except to Lender.

Continuity of Operations. (1) Engage in any business activities substantially different than those in which Borrower is presently engaged, (2) cease operations, liquidate, merge, transfer, acquire or consolidate with any other entity, change its name, dissolve or transfer or sell Collateral out of the ordinary course of business, or (3) pay any dividends on Borrower's stock (other than dividends payable in its stock), provided, however that notwithstanding the foregoing, but only so long as no Event of Default has occurred and is continuing or would result from the payment of dividends, if Borrower is a "Subchapter S Corporation" (as defined in the Internal Revenue Code of 1986, as amended), Borrower may pay cash dividends on its stock to its shareholders from time to time in amounts necessary to enable the shareholders to pay income taxes and make estimated income tax payments to satisfy their liabilities under federal and state law which arise solely from their status as Shareholders of a Subchapter S Corporation because of their ownership of shares of Borrower's stock, or purchase or retire any of Borrower's outstanding shares or alter or amend Borrower's capital structure.

Loans, Acquisitions and Guaranties. (1) Loan, invest in or advance money or assets to any other person, enterprise or entity, (2) purchase, create or acquire any interest in any other enterprise or entity, or (3) incur any obligation as surety or guarantor other than in the ordinary course of business.

Agreements. Borrower will not enter into any agreement containing any provisions which would be violated or breached by the performance of Borrower's obligations under this Agreement or in connection herewith.

CESSATION OF ADVANCES. If Lender has made any commitment to make any Loan to Borrower, whether under this Agreement or under any other agreement, Lender shall have no obligation to make Loan Advances or to disburse Loan proceeds if: (A) Borrower or any Guarantor is in default under the terms of this Agreement or any of the Related Documents or any other agreement that Borrower or any Guarantor has with Lender; (B) Borrower or any Guarantor dies, becomes incompetent or becomes insolvent, files a petition in bankruptcy or similar proceedings, or is adjudged a bankrupt; (C) there occurs a material adverse change in Borrower's financial condition, in the financial condition of any Guarantor, or in the value of any Collateral securing any Loan; or (D) any Guarantor seeks, claims or otherwise attempts to limit, modify or revoke such Guarantor's guaranty of the Loan or any other loan with Lender; or (E) Lender in good faith deems itself insecure, even though no Event of Default shall have occurred.

RIGHT OF SETOFF. To the extent permitted by applicable law, Lender reserves a right of setoff in all Borrower's accounts with Lender (whether checking, savings, or some other account). This includes all accounts Borrower holds jointly with someone else and all accounts Borrower may open in the future. However, this does not include any IRA or Keogh accounts, or any trust accounts for which setoff would be prohibited by law. Borrower authorizes Lender, to the extent permitted by applicable law, to charge or setoff all sums owing on the Indebtedness against any and all such accounts, and, at Lender's option, to administratively freeze all such accounts to allow Lender to protect Lender's charge and setoff rights provided in this paragraph.

DEFAULT. Each of the following shall constitute an Event of Default under this Agreement:

Payment Default. Borrower fails to make any payment when due under the Loan.

Other Defaults. Borrower fails to comply with or to perform any other term, obligation, covenant or condition contained in this Agreement or in any of the Related Documents or to comply with or to perform any term, obligation, covenant or condition contained in any other agreement between Lender and Borrower.

False Statements. Any warranty, representation or statement made or furnished to Lender by Borrower or on Borrower's behalf under this Agreement or the Related Documents is false or misleading in any material respect, either now or at the time made or furnished or becomes false or misleading at any time thereafter.

Insolvency. The dissolution or termination of Borrower's existence as a going business, the insolvency of Borrower, the appointment of a receiver for any part of Borrower's property, any assignment for the benefit of creditors, any type of creditor workout, or the commencement of any proceeding under any bankruptcy or insolvency laws by or against Borrower.

Defective Collateralization. This Agreement or any of the Related Documents ceases to be in full force and effect (including failure of any collateral document to create a valid and perfected security interest or lien) at any time and for any reason.

Creditor or Forfeiture Proceedings. Commencement of foreclosure or forfeiture proceedings, whether by judicial proceeding, self-help, repossession or any other method, by any creditor of Borrower or by any governmental agency against any collateral securing the Loan. This includes a garnishment of any of Borrower's accounts, including deposit accounts, with Lender. However, this Event of Default shall not apply if there is a good faith dispute by Borrower as to the validity or reasonableness of the claim which is the basis of the creditor or forfeiture proceeding and if Borrower gives Lender written notice of the creditor or forfeiture proceeding and deposits with Lender monies or a surety bond for the creditor or forfeiture proceeding, in an amount determined by Lender, in its sole discretion, as being an adequate reserve or bond for the dispute.

Events Affecting Guarantor. Any of the preceding events occurs with respect to any Guarantor of any of the Indebtedness or any Guarantor dies or becomes incompetent, or revokes or disputes the validity of, or liability under, any Guaranty of the Indebtedness.

Change in Ownership. Any change in ownership of twenty-five percent (25%) or more of the common stock of Borrower.

Adverse Change. A material adverse change occurs in Borrower's financial condition, or Lender believes the prospect of payment or performance of the Loan is impaired.

Insecurity. Lender in good faith believes itself insecure.

EFFECT OF AN EVENT OF DEFAULT. If any Event of Default shall occur, except where otherwise provided in this Agreement or the Related Documents, all commitments and obligations of Lender under this Agreement or the Related Documents or any other agreement immediately will terminate (including any obligation to make further Loan Advances or disbursements), and, at Lender's option, all Indebtedness immediately will become due and payable, all without notice of any kind to Borrower, except that in the case of an Event of Default of the type described in the "Insolvency" subsection above, such acceleration shall be automatic and not optional. In addition, Lender shall have all the rights and remedies provided in the Related Documents or available at law, in equity, or otherwise. Except as may be prohibited by applicable law, all of Lender's rights and remedies shall be cumulative and may be exercised singularly or concurrently. Election by Lender to pursue any remedy shall not exclude pursuit of any other remedy, and an election to make expenditures or to take action to perform an obligation of Borrower or of any Grantor shall not affect Lender's right to declare a default and to exercise its rights and remedies.

MISCELLANEOUS PROVISIONS. The following miscellaneous provisions are a part of this Agreement:

Amendments. This Agreement, together with any Related Documents, constitutes the entire understanding and agreement of the parties as to the matters set forth in this Agreement. No alteration of or amendment to this Agreement shall be effective unless given in writing and signed by the party or parties sought to be charged or bound by the alteration or amendment.

Attorneys' Fees; Expenses. Borrower agrees to pay upon demand all of Lender's costs and expenses, including Lender's attorneys' fees and Lender's legal expenses, incurred in connection with the enforcement of this Agreement. Lender may hire or pay someone else to help enforce this Agreement, and Borrower shall pay the costs and expenses of such enforcement. Costs and expenses include Lender's attorneys' fees and legal expenses whether or not there is a lawsuit, including attorneys' fees and legal expenses for bankruptcy proceedings (including efforts to modify or vacate any automatic stay or injunction), appeals, and any anticipated post-judgment collection services. However, Borrower will only pay attorneys' fees of an attorney not Lender's salaried employee, to whom the matter is referred after Borrower's default. Borrower also shall pay all court costs and such additional fees as may be directed by the court.

Caption Headings. Caption headings in this Agreement are for convenience purposes only and are not to be used to interpret or define the provisions of this Agreement.

Consent to Loan Participation. Borrower agrees and consents to Lender's sale or transfer, whether now or later, of one or more participation interests in the Loan to one or more purchasers, whether related or unrelated to Lender. Lender may provide, without any limitation whatsoever, to any one or more purchasers, or potential purchasers, any information or knowledge Lender may have about

Borrower or about any other matter relating to the Loan, and Borrower hereby waives any rights to privacy Borrower may have with respect to such matters. Borrower additionally waives any and all notices of sale of participation interests, as well as all notices of any repurchase of such participation interests. Borrower also agrees that the purchasers of any such participation interests will be considered as the absolute owners of such interests in the Loan and will have all the rights granted under the participation agreement or agreements governing the sale of such participation interests. Borrower further waives all rights of offset or counterclaim that it may have now or later against Lender or against any purchaser of such a participation interest and unconditionally agrees that either Lender or such purchaser may enforce Borrower's obligation under the Loan irrespective of the failure or insolvency of any holder of any interest in the Loan. Borrower further agrees that the purchaser of any such participation interests may enforce its interests irrespective of any personal claims or defenses that Borrower may have against Lender.

Governing Law. This Agreement will be governed by federal law applicable to Lender and, to the extent not preempted by federal law, the laws of the State of Arizona without regard to its conflicts of law provisions. This Agreement has been accepted by Lender in the State of Arizona.

No Waiver by Lender. Lender shall not be deemed to have waived any rights under this Agreement unless such waiver is given in writing and signed by Lender. No delay or omission on the part of Lender in exercising any right shall operate as a waiver of such right or any other right. A waiver by Lender of a provision of this Agreement shall not prejudice or constitute a waiver of Lender's right otherwise to demand strict compliance with that provision or any other provision of this Agreement. No prior waiver by Lender, nor any course of dealing between Lender and Borrower, or between Lender and any Grantor, shall constitute a waiver of any of Lender's rights or of any of Borrower's or any Grantor's obligations as to any future transactions. Whenever the consent of Lender is required under this Agreement, the granting of such consent by Lender in any instance shall not constitute continuing consent to subsequent instances where such consent is required and in all cases such consent may be granted or withheld in the sole discretion of Lender.

Notices. Any notice required to be given under this Agreement shall be given in writing, and shall be effective when actually delivered, when actually received by telefacsimile (unless otherwise required by law), when deposited with a nationally recognized overnight courier, or, if mailed, when deposited in the United States mail, as first class, certified or registered mail postage prepaid, directed to the addresses shown near the beginning of this Agreement. Any party may change its address for notices under this Agreement by giving formal written notice to the other parties, specifying that the purpose of the notice is to change the party's address. For notice purposes, Borrower agrees to keep Lender informed at all times of Borrower's current address. Unless otherwise provided or required by law, if there is more than one Borrower, any notice given by Lender to any Borrower is deemed to be notice given to all Borrowers.

Severability. If a court of competent jurisdiction finds any provision of this Agreement to be illegal, invalid, or unenforceable as to any circumstance, that finding shall not make the offending provision illegal, invalid, or unenforceable as to any other circumstance. If feasible, the offending provision shall be considered modified so that it becomes legal, valid and enforceable. If the offending provision cannot be so modified, it shall be considered deleted from this Agreement. Unless otherwise required by law, the illegality, invalidity, or unenforceability of any provision of this Agreement shall not affect the legality, validity or enforceability of any other provision of this Agreement.

Subsidiaries and Affiliates of Borrower. To the extent the context of any provisions of this Agreement makes it appropriate, including without limitation any representation, warranty or covenant, the word "Borrower" as used in this Agreement shall include all of Borrower's subsidiaries and affiliates. Notwithstanding the foregoing however, under no circumstances shall this Agreement be construed to require Lender to make any Loan or other financial accommodation to any of Borrower's subsidiaries or affiliates.

Successors and Assigns. All covenants and agreements by or on behalf of Borrower contained in this Agreement or any Related Documents shall bind Borrower's successors and assigns and shall inure to the benefit of Lender and its successors and assigns. Borrower shall not, however, have the right to assign Borrower's rights under this Agreement or any interest therein, without the prior written consent of Lender.

Survival of Representations and Warranties. Borrower understands and agrees that in making the Loan, Lender is relying on all representations, warranties, and covenants made by Borrower in this Agreement or in any certificate or other instrument delivered by Borrower to Lender under this Agreement or the Related Documents. Borrower further agrees that regardless of any investigation made by Lender, all such representations, warranties and covenants will survive the making of the Loan and delivery to Lender of the Related Documents, shall be continuing in nature, and shall remain in full force and effect until such time as Borrower's indebtedness shall be paid in full, or until this Agreement shall be terminated in the manner provided above, whichever is the last to occur.

Time is of the Essence. Time is of the essence in the performance of this Agreement.

Waive Jury. All parties to this Agreement hereby waive the right to any jury trial in any action, proceeding, or counterclaim brought by any party against any other party.

DEFINITIONS. The following capitalized words and terms shall have the following meanings when used in this Agreement. Unless specifically stated to the contrary, all references to dollar amounts shall mean amounts in lawful money of the United States of America. Words and terms used in the singular shall include the plural, and the plural shall include the singular, as the context may require. Words and terms not otherwise defined in this Agreement shall have the meanings attributed to such terms in the Uniform Commercial Code. Accounting words and terms not otherwise defined in this Agreement shall have the meanings assigned to them in accordance with generally accepted accounting principles as in effect on the date of this Agreement:

Advance. The word "Advance" means a disbursement of Loan funds made, or to be made, to Borrower or on Borrower's behalf on a line of credit or multiple advance basis under the terms and conditions of this Agreement.

Agreement. The word "Agreement" means this Business Loan Agreement, as this Business Loan Agreement may be amended or modified from time to time, together with all exhibits and schedules attached to this Business Loan Agreement from time to time.

Borrower. The word "Borrower" means Las Quintas Serenas Water CO. and includes all co-signers and co-makers signing the Note and all their successors and assigns.

Collateral. The word "Collateral" means all property and assets granted as collateral security for a Loan, whether real or personal property, whether granted directly or indirectly, whether granted now or in the future, and whether granted in the form of a security interest, mortgage, collateral mortgage, deed of trust, assignment, pledge, crop pledge, chattel mortgage, collateral chattel mortgage, chattel trust, factor's lien, equipment trust, conditional sale, trust receipt, lien, charge, lien or title retention contract, lease or consignment intended as a security device, or any other security or lien interest whatsoever, whether created by law, contract, or otherwise.

Environmental Laws. The words "Environmental Laws" mean any and all state, federal and local statutes, regulations and ordinances relating to the protection of human health or the environment, including without limitation the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. Section 9601, et seq. ("CERCLA"), the Superfund Amendments and Reauthorization Act of 1986, Pub. L. No. 99-499 ("SARA"), the Hazardous Materials Transportation Act, 49 U.S.C. Section 1801, et seq., the Resource Conservation and Recovery Act, 42 U.S.C. Section 6901, et seq., or other applicable state or federal laws, rules, or regulations adopted pursuant thereto.

Event of Default. The words "Event of Default" mean any of the events of default set forth in this Agreement in the default section of this Agreement.

GAAP. The word "GAAP" means generally accepted accounting principles.

Grantor. The word "Grantor" means each and all of the persons or entities granting a Security Interest in any Collateral for the Loan, including without limitation all Borrowers granting such a Security Interest.

Guarantor. The word "Guarantor" means any guarantor, surety, or accommodation party of any or all of the Loan.

Guaranty. The word "Guaranty" means the guaranty from Guarantor to Lender, including without limitation a guaranty of all or part of the Note.

Hazardous Substances. The words "Hazardous Substances" mean materials that, because of their quantity, concentration or physical, chemical or infectious characteristics, may cause or pose a present or potential hazard to human health or the environment when improperly used, treated, stored, disposed of, generated, manufactured, transported or otherwise handled. The words "Hazardous Substances" are used in their very broadest sense and include without limitation any and all hazardous or toxic substances, materials or waste as defined by or listed under the Environmental Laws. The term "Hazardous Substances" also includes, without limitation, petroleum and petroleum by-products or any fraction thereof and asbestos.

Indebtedness. The word "Indebtedness" means the indebtedness evidenced by the Note or Related Documents, including all principal and interest together with all other indebtedness and costs and expenses for which Borrower is responsible under this Agreement or under any of the Related Documents.

Lender. The word "Lender" means Commerce Bank of Arizona, its successors and assigns.

**BUSINESS LOAN AGREEMENT
(Continued)**

Loan No: 100007-100

Page 5

Loan. The word "Loan" means any and all loans and financial accommodations from Lender to Borrower whether now or hereafter existing, and however evidenced, including without limitation those loans and financial accommodations described herein or described on any exhibit or schedule attached to this Agreement from time to time.

Note. The word "Note" means the Note executed by Las Quintas Serenas Water CO. in the principal amount of \$1,650,000.00 dated October 26, 2005, together with all renewals of, extensions of, modifications of, refinancings of, consolidations of, and substitutions for the note or credit agreement.

Permitted Liens. The words "Permitted Liens" mean (1) liens and security interests securing indebtedness owed by Borrower to Lender; (2) liens for taxes, assessments, or similar charges either not yet due or being contested in good faith; (3) liens of materialmen, mechanics, warehousemen, or carriers, or other like liens arising in the ordinary course of business and securing obligations which are not yet delinquent; (4) purchase money liens or purchase money security interests upon or in any property acquired or held by Borrower in the ordinary course of business to secure indebtedness outstanding on the date of this Agreement or permitted to be incurred under the paragraph of this Agreement titled "Indebtedness and Liens"; (5) liens and security interests which, as of the date of this Agreement, have been disclosed to and approved by the Lender in writing; and (6) those liens and security interests which in the aggregate constitute an immaterial and insignificant monetary amount with respect to the net value of Borrower's assets.

Related Documents. The words "Related Documents" mean all promissory notes, credit agreements, loan agreements, environmental agreements, guaranties, security agreements, mortgages, deeds of trust, security deeds, collateral mortgages, and all other instruments, agreements and documents, whether now or hereafter existing, executed in connection with the Loan.

Security Agreement. The words "Security Agreement" mean and include without limitation any agreements, promises, covenants, arrangements, understandings or other agreements, whether created by law, contract, or otherwise, evidencing, governing, representing, or creating a Security Interest.

Security Interest. The words "Security Interest" mean, without limitation, any and all types of collateral security, present and future, whether in the form of a lien, charge, encumbrance, mortgage, deed of trust, security deed, assignment, pledge, crop pledge, chattel mortgage, collateral chattel mortgage, chattel trust, factor's lien, equipment trust, conditional sale, trust receipt, lien or title retention contract, lease or consignment intended as a security device, or any other security or lien interest whatsoever whether created by law, contract, or otherwise.

BORROWER ACKNOWLEDGES HAVING READ ALL THE PROVISIONS OF THIS BUSINESS LOAN AGREEMENT AND BORROWER AGREES TO ITS TERMS. THIS BUSINESS LOAN AGREEMENT IS DATED OCTOBER 26, 2005.

BORROWER:

LAS QUINTAS SERENAS WATER CO.

By: _____
John S. Gay, President of Las Quintas Serenas
Water CO.

LENDER:

COMMERCE BANK OF ARIZONA

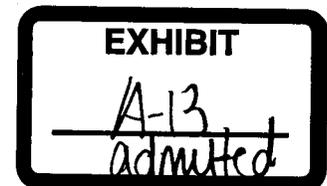
By: _____
Authorized Signer

Las Quintas Serenas Water Company

Docket Nos. W-01583A-04-0178, W-01583A-05-0326 and

W-01583A-05-0340

**Applicant's
Exhibit A-13**



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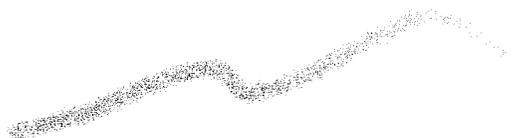
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WestLand Resources, Inc.
Engineering and Environmental Consultants

DESIGN REPORT

**LAS QUINTAS SERENAS
WATER COMPANY
ARSENIC TREATMENT**

Prepared for:

LAS QUINTAS SERENAS WATER COMPANY
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SEPTEMBER 2005
Job No. 1148.02 A 8000



TABLE OF CONTENTS

INTRODUCTION..... 1

ARSENIC TREATMENT CRITERIA 1

SOURCE CAPACITY 1

 Water Quality 2

 Arsenic Levels..... 2

 Arsenic Level Development and Treatment Goals 3

 Arsenic Treatment Facility Siting Analysis 3

TREATMENT ALTERNATIVES CONSIDERED..... 3

 Available Treatment Technologies 3

EVALUATION OF ALTERNATIVES CONSIDERED..... 5

RESERVOIR DESIGN 7

BOOSTER STATION CAPACITY AND PUMP SIZING 8

Electrical and CONTROLS..... 10

OTHER DESIGN CRITERIA..... 11

WELL PUMP MODIFICATIONS 11

 Well No. 7 12

 Well No. 6 12

 Well No. 5 13

ARSENIC TREATMENT FACILITIES 14

 Well No. 6 Site Arsenic Treatment Facilities..... 14

 Well No. 5 Site Arsenic Treatment Facilities..... 14

 Bypass Flow Control Treatment Method 15

LIST OF TABLES

- Table 1. Well Summary
- Table 2. Elevation Pump Controls
- Table 3. Pressure Pump Controls
- Table 4. Well 7 (790gpm) Design Criteria
- Table 5. Well 6 (400 gpm) Design Criteria
- Table 6. Well 5 Design Criteria

LIST OF APPENDICES

- Appendix A. Las Quintas Water System Layout
- Appendix B. System Curve and Hydraulic Modeling Results
- Appendix C. Well No. 6 Site Layout
- Appendix D. Well and Well Pump Information
- Appendix E. Sand Separator Manufacturer Specifications
- Appendix F. Severn Trent Facilities Specifications
- Appendix G. Initial Flow Control Bypass Settings

INTRODUCTION

This report describes the design criteria for arsenic treatment for the Las Quintas Serenas Water Company Well Nos. 5, 6, and 7. Arsenic treatment will consist of a 1,220-gallon-per-minute (gpm) iron-media (Bayoxide® E33) adsorption arsenic treatment system, a 400,000-gallon storage tank, and a 1,000-gpm transfer booster station at the existing Well No. 6 site. A new 12-inch dedicated transmission watermain approximately 2,500 feet long will connect Well No. 7 to the Well No. 6 site. Raw water from either or both wells will be treated through the arsenic system at the Well No. 6 site. The treated water meeting the new arsenic standard will fill the new 400,000-gallon tank. A transfer booster station with a combined capacity of 1,000 gpm will then pump treated water from the new 400,000-gallon storage tank into the distribution system. Well No. 5 will be equipped with a pre-packaged, skid-mounted 210-gpm arsenic treatment facility designed to treat Well No. 5, and deliver directly into the water system and controlled by the existing reservoir system. There will be two Points of Entry (POEs) following implementation of the new arsenic systems, Well No 5 and the reservoir/booster station at the Well No. 6 site.

ARSENIC TREATMENT CRITERIA

In January 2001, the Environmental Protection Agency (EPA) modified 40 Code of Federal Regulations (CFR) Parts 9, 141, and 142, to adopt a new arsenic Maximum Contaminant Level (MCL) for drinking water. The rule modification lowered the MCL for arsenic from 50 parts per billion (ppb) to 10 ppb. This rule applies to all community water systems and non-transient, non-community water systems, including the Las Quintas Serenas Water system. January 23, 2006 is the date established for compliance with this ruling. Compliance must be obtained at all POEs within the system, meaning that all water sources that serve directly into the system must be providing an arsenic level of 10 ppb or less by January 23, 2006. The proposed arsenic treatment facilities will be designed to treat arsenic to 7 ppb, which will meet the new EPA requirements.

SOURCE CAPACITY

The Las Quintas Serenas Water Company currently operates three wells, Well Nos. 5, 6, and 7. All three wells pump directly into the water system to fill the existing 30,000- and 60,000-gallon storage tanks on the Animax mine tailings. The high water level of the tanks is approximately 3,057 feet. Well No. 7 is located near the southern end of the water company's Certificate of Convenience and Necessity (CC&N) and provides between 600 to 850 gpm. This well has a variable frequency drive (VFD) that changes the operational speed of the well based on pressure in the water system at the well site. Well No. 6 is located near the southwest corner of the CC&N. Both an electric motor and a natural gas engine operate Well No. 6. The electric motor provides 350 gpm, while the natural gas engine provides 425 gpm. Las

Quintas Serenas Water Company utilizes this type of operation because of their interruptible power agreement with Trico Electric Cooperative. During interruptible power outages, Well No. 6 and the existing storage are the only available water sources. Well Nos. 6 and 7 cannot operate together due to excessive pressures caused by both wells pumping at the same time. The layout of the Las Quintas Serenas Water system is provided in Appendix A.

WATER QUALITY

Water quality results provided by the owner for all three wells were compared to the National Primary Drinking Water Regulations (NPDWR). NPDWRs are legally enforceable standards to protect public health. All three wells were found to be compliant with the current primary standards, with the exception of the new arsenic standard.

ARSENIC LEVELS

All wells will require arsenic treatment. A typical design criterion for arsenic treatment systems is to treat the 90th percentile arsenic level. A percentile is a value on a scale of 100 that indicates the percent of a distribution that is equal to or below it. For example, an individual water quality sample for a POE with an arsenic level at the 90th percentile is equal to or greater than 90 percent of all the water quality samples containing arsenic for that POE. This statistical method eliminates outlying data points which may result in over-design of the treatment system. The well capacities and design arsenic levels are shown in Table 1. The future anticipated well capacities differ from existing well capacities as the pumping heads will be altered due to the pressure changes related to the arsenic system implementation. The required re-equipping of the wells is included later in this report. Most arsenic treatment systems, including the facilities selected for Las Quintas Serenas, are flexible enough to adjust the amount of treated water should arsenic levels suddenly increase or decrease after initial set up and installation. This is important because a flow bypass will be used at each facility to blend raw and treated well water in order to provide flexibility and extend the bed life of the media. The flow bypass regime will be explained later in this report.

Table 1. Well Summary

Facility	Existing Well Capacity (gpm)	Anticipated Well Capacity (gpm)	90th percentile Arsenic Levels (ppb)
Well No. 5	230	200	11
Well No. 6	350-425	400	15
Well No. 7	600-850	790	13

ARSENIC LEVEL DEVELOPMENT AND TREATMENT GOALS

The owner provided results of arsenic levels for all three wells from March 1990 to February 2005. The 90th percentile arsenic level for each well has been calculated as the basis for design of the treatment system. This arsenic level affects the initial bypass flow control settings, as the bed life of the media and operation & maintenance (O&M) costs. Should arsenic levels in the raw water ever increase or decrease, field adjustments to the flow control bypass may be made to treat various combinations of flow. If the arsenic standard is ever changed, the system can be adjusted, and with minor amendments, can be altered to meet the new standard. The actual size of the treatment vessels is primarily based on gpm flow, rather than raw water arsenic levels.

ARSENIC TREATMENT FACILITY SITING ANALYSIS

Combined arsenic treatment at one facility is often more cost effective and less maintenance than individual treatment systems, as was shown to be the case for Well Nos. 6 and 7 in the Las Quintas Serenas Water System and Arsenic Master Plan, 2005. It was not deemed cost effective to build a dedicated watermain from Well No. 5 to the combined treatment plant at Well No. 6 due to the small size of Well No. 5, the long distance between well sites, and the age and condition of this well. The individual arsenic treatment unit at Well No. 5 will be skid-mounted and transportable to a future well site if Well No. 5 is ever abandoned or a new source well requiring arsenic treatment is developed. It is also recommended that all arsenic treatment sites contain facilities from the same manufacturer and, if possible, the same arsenic treatment process. This will assist water company personnel with operation and familiarity with equipment, and minimize service agreement and O&M contracts with different suppliers.

TREATMENT ALTERNATIVES CONSIDERED

AVAILABLE TREATMENT TECHNOLOGIES

A number of treatment processes can be used to remove arsenic from water. These processes include ion exchange, adsorption, membrane processes, and precipitation processes. Each of these processes is briefly discussed below.

Ion Exchange

Ion exchange is a remediation process that removes dissolved ions from liquids. The ion-exchange process involves passing the contaminated water through a packed media. This media is designed to exchange a solid ion with the liquid phase ion of choice, in this case arsenic. This process occurs until all exchange sites on the media have been exhausted. The media can be regenerated by using a concentrated solution of the ions originally used on the media. Regeneration creates an arsenic-rich waste stream that must then be dealt with by one of the other treatment techniques. Generally, the waste stream is treated using a coagulation-flocculation process, which leaves a liquid waste stream low in arsenic and a solid waste stream high in arsenic. The benefits to this treatment technique are lower capital costs and relatively low volumes of waste when compared with precipitation and membrane processes. Lower capital costs are attained because the water system can lease this type of treatment technology from a vendor, rather than purchasing the equipment outright. This system, however, can suffer greatly if other competing ions are in the liquid stream, as this causes higher waste volumes due to the need to regenerate the media more often. This also results in high maintenance costs. Monitoring of the effluent stream during startup may be needed to properly determine the volumetric setpoint and avoid possible breakthrough conditions. Operator skill for this treatment is categorized as high. One drawback of this treatment technology is that the high arsenic waste streams can be considered a hazardous waste that must be disposed of in an appropriate manner.

Adsorption

The adsorption process involves passing the contaminated water over a packed media in which the arsenic physically and chemically bonds to the media. The packed media is contained within pressurized vessels operating either in parallel or in series. This removal process occurs until all of the available sites within the media are exhausted. It is typically not cost effective to regenerate adsorption media and it must be replaced when it becomes saturated. Generally, the packed media will last anywhere from one to five years before replacement is required. In most cases, the exhausted media can be discarded in landfills and classified as non-hazardous waste. The adsorption life of the media relies on raw water pH, arsenic concentration levels, and operating cycles per day.

Periodic backwashing or “fluffing” is typically performed because adsorption media in pressurized systems can compact and develop preferential channels that can cause short-circuiting and incomplete adsorption over time. Additionally, sand and other sediment from wells, oxidized iron precipitate (depending on media type), or other suspended material may be captured in the adsorption media bed. To prevent excessive pressure drop and channeling, backwashing to “fluff” the adsorption bed is typically performed. The backwashing does not regenerate the media, it merely removes solid particulates from the system and “fluffs” the media. Backwash vessels with recycle pumps may be required depending on owners’ preferences and available options for discharging of waste stream.

The backwash stream is generally much smaller for the adsorption process than the ion exchange stream and only requires separation of the particulates in backwash vessels via sedimentation or through bag filters before the water can either be sent back to the head of the treatment plant, discharged to a sewer or septic system, or hauled from the site and disposed in a sewer or treatment plant. It is possible that the backwash water could be discharged to local waters via a National Pollutant Discharge Elimination System (NPDES) De Minimus permit. The benefits to this system are relatively simple operations and no hazardous materials disposal. Operator skill for this treatment is categorized as low and Operator Level I is typically required to run this type of facility.

Membrane Processes

Membrane processes involve passing the contaminated feed water through a semi-permeable membrane. These membranes are designed to allow certain constituents through while blocking the contaminants of choice. These processes proceed due to a driving force, which can include pressure, chemical potential, or electrical potential. Pressure is most typically used to drive the membrane process. The membrane process can also remove several other constituents from water such as organic carbon, salts, dissolved minerals, and color. Membrane cleaning is important to removal efficiency, and is costly and difficult. This system has several disadvantages including membrane clogging and chemical cleaning requirements, power consumption costs, membrane replacement, and high waste stream volumes. Operator skill for this treatment is categorized as medium.

Precipitation Processes

Precipitation processes involve the addition of a coagulate feed stream to bind with the arsenic and create a solid. For arsenic, an iron or alumina coagulant is generally used. This coagulant binds with the arsenic and is removed from the stream either by natural settling or direct filtration. The benefits of this system are that the coagulants are inexpensive and readily available. However, the system generates a large volume of waste, requires significant feed chemicals, and requires almost continuous monitoring to control feed chemical influent rates. Some feed chemicals must be stored in double-walled containers. The arsenic concentration in the waste is generally lower due to the larger volume of waste that may allow for easier disposal. Operator skill for this treatment is categorized as low.

EVALUATION OF ALTERNATIVES CONSIDERED

The adsorption arsenic treatment process is the preferred alternative for arsenic treatment. The primary reasons for selecting adsorption are: adsorption is the one of the simplest forms of arsenic treatment, adsorption media is specifically designed to select for and remove arsenic, facilities produce low backwash volumes and no hazardous waste generation, facilities require low maintenance, O&M

contracts are readily available with numerous established media suppliers, and this process has been successfully employed in both the United State (including Arizona) and Great Britain. Three adsorption arsenic treatment providers were evaluated. All three treatment providers supply both the treatment facility and media.

McPhee Environmental Supply specializes in nano-particle selective resin known as As:X^{np}. As X^{np} contains iron oxide bound to spherical resin beads that are uniform in size. This uniform spherical shape allows a homogeneous flow that prevents the media from channeling. The spherical beads are termed "macro porous" and have large surface areas containing iron oxide. As:X^{np} is typically regenerated unlike most other iron-based medias. All As:X^{np} is currently regenerated in Tennessee, although McPhee is in the process of permitting a new regeneration facility in Tempe, Arizona. The disadvantage of regeneration of the media is that the media loses adsorption capacity with each regeneration. Free arsenic is also created during the regeneration process that must be properly disposed of. The major advantage of this media is that backwash is infrequent and backwash vessels are not required to settle out the fines associated with other granular iron oxide medias. The backwash water is typically clear and may be pumped directly into the system during the backwash cycle. These units are also typically the least capital cost, although the As:X^{np} is significantly more expensive than other medias considered. It is our understanding that McPhee facilities are designed specifically for As:X^{np} and cannot accept other types of media. McPhee provides media removal and regeneration services, and requires a three-year O&M contract for these services. McPhee is a relatively new arsenic treatment manufacturer and, at the time of this report, did not have any existing facilities operating in Arizona.

US Filter was evaluated as a candidate for providing arsenic treatment to Las Quintas Serenas. US Filter uses Granular Ferric Hydroxide (GFH) ferric-based media. Once the media has exhausted its adsorption capacity, it is removed from the vessel and replaced with new media. US Filter service crews are available to remove the exhausted media and safely dispose of it, and fill the vessel with new media. The simplicity of this process with single-use media is very attractive for small installations and wellhead applications where no treatment currently exists. A backwash process flow rate of 10 to 12 gpm/square foot is typically required to prevent compaction of the bed and remove captured particulates. The backwash process typically requires backwash vessels sized to contain the full backwash volume. The backwash is then decanted in the backwash vessels to allow the captured particulates to settle out. One drawback to the GFH media is that it is shipped wet and requires special storage to prevent biologic growth on the wet media. Water content also increases the media's weight and associated shipping cost. US Filter's facilities are not restricted to the use of a single media and are adaptable should a future media become the preferred alternative.

Severn Trent was the third arsenic treatment supplier evaluated for arsenic treatment. Severn Trent's arsenic removal facilities are similar to those of US Filter. Severn Trent uses a "second-generation" ferric-based media called Bayoxide® E33. Bayoxide® E33 has a larger particle size than GFH, which may reduce backwash frequency, media compaction, and the amount of media particulate contained in the backwash stream. Severn Trent also claims Bayoxide® E33 is also more robust to common water constituents such as silica, vanadium, and variances in pH. Bayoxide® E33 is shipped dry, which makes onsite storage a viable option and makes changing the media simpler. Backwashing is typically performed at a rate of 7 to 9 gpm/square foot. Severn Trent also provides media removal and refill services. Severn Trent's facilities are adaptable to other types of media as more efficient and lower cost media are developed in the future.

Severn Trent was selected to provide both the arsenic treatment facilities and Bayoxide® E33 adsorption media. Major reasons for the selection of Severn Trent were based on initial bids received by Las Quintas Serenas Water Company, anticipated O&M cost provided by Severn Trent, removal efficiency and ease of storage and handling of Bayoxide® E33 media, the ability to use other media types in Severn Trent facilities in the future, and the positive reputation and history of Severn Trent in the environmental services industry.

RESERVOIR DESIGN

A new storage reservoir will be required at the Well No. 6 site to provide equalization between well and booster station pumping cycles for the new arsenic treatment system.

The following equation was used to size the new forbay reservoir capacity based on limiting the largest well, Well No. 7, to five-hour pumping cycles, which is the minimum desired pumping cycle for wells of this size. Ideally, the well would cycle only once or twice a day. Well "pump on" set points are typically set to turn the well on when the reservoir level drops to approximately half full. The main reason to keep the reservoir approximately half full is to maintain net positive suction head (NPSH) on the booster pumps to inhibit cavitation and vortex formation and keep the pumps primed. In addition to maintaining NPSH, the bottom two feet and top one foot of storage are typically considered unusable or "dead" storage. It is assumed that one of the booster pumps (310 gpm with one pump on) is in operation during the time Well No. 7 (790 gpm) is in operation, which results in a net inflow into the reservoir of 480 gpm (790 gpm - 310 gpm):

$$480 \text{ gallons/minute} \times 5 \text{ hours} \times 60 \text{ minutes/hour} = 144,000 \text{ gallons}$$

Assuming 144,000 gallons is about half the capacity of the new reservoir, the minimum storage tank size required by the arsenic treatment system will be approximately 250,000 gallons. 144,000 gallons is about 60 percent of 250,000 gallons. The remaining storage maintains adequate NPSH on the pumps and also accounts for unusable or "dead" storage.

Las Quintas Serenas Water Company has chosen to oversize the reservoir by 150,000 gallons, which will increase the reservoir size to 400,000 gallons. This oversizing of the reservoir is not required for arsenic treatment and will be paid for by the Las Quintas Serenas Water Company.

The new reservoir will be a 400,000-gallon welded steel tank, constructed according to AWWA D-100. The reservoir will be approximately 57 feet in diameter and 24 feet high, with the bottom two feet and top one foot considered "dead" storage. The blended treated water will fill the reservoir through a 12-inch top-feed inlet on the new reservoir. A 12-inch outlet connects to the suction manifold of the new pump station. The reservoir will be provided with a concrete ring wall, a 16-inch overflow line, a 6-inch drain, and a 24-inch screened roof vent.

BOOSTER STATION CAPACITY AND PUMP SIZING

The proposed booster station capacity of 1,000 gpm is based on delivering the maximum capacity that will not over pressurize the water system. A system curve was developed using a hydraulic model to determine the specifications and operating points of the new booster station. The system curve was developed assuming that a new 8-inch water main will connect from Well No. 6 site into the new water distribution network in Santa Cruz Meadows Lots 1-239, north of the site. This 8-inch watermain connection will be required prior to the installation of the proposed booster station. If this 8-inch connection is not available, the booster station design point will change slightly. The system curve is included in Appendix B. A reservoir was used in the model to simulate the effects of a new booster station supplying capacity and pressure at this location. The hydraulic grade (elevation) of the reservoir was set to the desired discharge hydraulic grade of the pump. The hydraulic grade of the reservoir in the hydraulic model was gradually increased from static pressure of approximately 85 pounds per square inch (psi)/196 feet to 100 psi/230 feet. The upper extent 100 psi/230 feet of the analysis is the maximum discharge pressure of existing Well No. 6. It is not desirable to increase the pressure beyond the existing system pressure as increasing the pressure above 100 psi may damage the existing water system or the customers' existing plumbing. The system curve was generated by subtracting 20 feet from the reservoir hydraulic grade to take into account suction pressure that would affect a booster station drawing suction from a 24-foot-tall reservoir, assuming it was four feet low. A hydraulic grade vs. flow curve (system curve) was developed for a pump operating during the average day demand (ADD) and peak day demand (PDD) scenarios. The system curve was used to size booster pumps capable of operating at the desired points along the system curve.

A packaged booster pumping system consisting of four, 20-horsepower constant speed vertical multi-stage pumps will be added at the existing Well No. 6 site. These pumps will feed the existing remote reservoir that provides storage and regulates pressure in the water distribution system. The pump curve for the four pumps operating in parallel for both level and pressure control are included in Appendix B. Reservoir level pump settings are proved in the following table:

Table 2. Elevation Pump Controls

Pump Number	Design Flow (gpm)	Combined Design Flow (gpm)	Horsepower	Upper Reservoir Elevation On (feet)	Upper Reservoir Elevation Off (feet)	Average Pump Head (feet)	Emergency Shut-off Head (feet)
Pump 1	310	310	20	3,053 (4' low)	3,057 (0' low)	180	220
Pump 2	300	600	20	3,051 (6' low)	3,056.5 (.5' low)	185	220
Pump 3	285	850	20	3,050 (8' low)	3,056 (1' low)	195	220
Pump 4	250	1,000	20	3,047 (10' low)	3,055.5 (1.5' low)	205	220

The pump station will also be equipped to provide some pressure control. Pressure control will allow the booster station to provide capacity during sudden pressure drops typically associated with high demand scenarios. The booster station will include a pressure sensing instrument on the discharge side of the unit set and will be programmed turn booster pumps on as pressure decreases below predetermined set points. The booster pumps will turn off as the pressure in the water system rises above a predetermined set point. The following table describes the pressure control of the booster station:

Table 3. Pressure Pump Controls

Pump Number	Design Flow (gpm)	Combined Design Flow (gpm)	Horsepower	Pump On Site Pressure Setting (feet/psi)	Pump Off Site Pressure Setting (feet/psi)	Average Pump Head ^{*1} (feet)	Emergency Shut-off Pump Head (feet)
Pump 1	320	320	20	173/75	215/93	174	220
Pump 2	350	700	20	168/73	212/92	170	220
Pump 3	345	1,035	20	164/71	210/91	167	220
Pump 4	360	1,440	20	159/69	207/90	163	220

*1 Avg. Pump Head is the Avg. Pump On/Off Pressure Settings – Suction Highwater (Assume Tank 4 feet low.).

ELECTRICAL AND CONTROLS

The existing well pump for Well No. 6 is presently served by a 75-horsepower electric motor and a natural gas-powered engine via a combination gear drive that allows either drive to operate the pump. This configuration allows the well pump to be operated during a utility power failure.

Electric power to the site is 200 amperes, 480 volt, three-phase service by Trico Electric Cooperative from pole-mounted transformers. The capacity of the existing electrical service will have to be increased from 200 amperes to 400 amperes to serve the added booster pumps.

An electric generator is required at Well No. 6 as this site will have the proposed 400,000-gallon reservoir, which will contain the majority of available treated water. In the event of a power outage, Well No. 6 will be able to supply treated water to the reservoir because it is also equipped with an emergency power supply via the existing natural gas engine. In order to pump treated water from the onsite reservoir into the water distribution system, an electric generator will be required to supply the booster station with emergency power.

A dedicated 130kW (162 KVA) diesel-powered engine generator is proposed to serve only the new booster pumps. The new pumps will be fed electric power via an automatic transfer switch that will automatically control the generator to provide power to the booster pumps upon loss of the normal utility power source. The transfer switch will also provide an automatic exercise program that can be set to run the engine at regular intervals, such as 20 minutes once a week, to minimize problems arising from extended idle periods. The generator will have a sound-attenuated, weatherproof enclosure and a double-walled, base-mounted fuel tank with capacity for at least 24 hours of full load operation.

The new booster pumps will be provided with weatherproof full-voltage combination starters mounted on an electrical equipment rack. The rack will be designed to provide shade for the equipment and also support the required new service equipment and automatic transfer switch.

The new booster pumps will typically be controlled by level in the remote upper reservoir via the existing radio-telemetry equipment serving the sites. The pumps can be set to start sequentially on falling level in the reservoir, and stop sequentially on rising level using the existing reservoir level signal. Provisions to remove one or more pumps from the pumping regime for maintenance can also be programmed into the telemetry system. Minimal additional telemetry hardware will be required to incorporate the new pumps into this control scheme. Most of the telemetry system work required will be in the form of programming the existing processors at the reservoir and Well No. 6 sites, and at the central telemetry system computer at the water company's office to allow the operator to monitor the new functions.

OTHER DESIGN CRITERIA

The pump station will include 12-inch suction and discharge manifolds as part of the pre packaged booster station and flow meter. A new onsite 12-inch watermain will connect the booster station to the existing 12-inch watermain in Calle Santiago. A portion of the onsite 6-inch watermain will be replaced by a new 8-inch water main as part of the proposed connection to Santa Cruz Meadows north of the well site. It is anticipated that the existing 5,000 gallon 150 psi hydropneumatic tank at Well Site 6 will be relocated to the discharge side of the new booster station. Chlorination facilities will also be provided for each well feed to properly oxidize and disinfect prior to the arsenic treatment system. The Well No. 6 site layout is included in Appendix C.

WELL PUMP MODIFICATIONS

The iron adsorption arsenic treatment facilities typically require 5 to 10 psi for normal operation and 15 psi for backwashing procedures. Two pressure instruments located on the intake and discharge side of the facility measure pressure differential across the arsenic facilities. As the pressure differential across the treatment facility increases above the desired amount, the facility is backwashed or "fluffed" which decreases the pressure differential across the facility. A typical design criterion is to backwash or fluff the media beds when the pressure differential buildup across the facility goes over 10 psi of the initial pressure reading at start up. In order to fill the new onsite 24-foot-tall reservoir, an additional 24-foot/11 psi will be required for these facilities. The wells will be required to deliver a minimum normal operation pressure of 10 psi plus 11 psi to fill the onsite reservoir for a total of 21 psi.

The new pumping water level for Well Nos. 6 and 7 will be the elevation of the Well No. 6 site plus the 21 psi/48 feet. The existing Well No. 6 site elevation of 2,855 feet + 48 feet = 2,903 feet. The well modifications also provide for extra headloss associated with backwash procedures and fluctuation in the pressure differential across the facilities between backwash cycles.

Wells Nos. 6 and 7 currently pump to the existing storage tanks with a highwater elevation of 3,057 feet. Because the wells will now be pumping to a reservoir much lower than the existing storage tank highwater levels, the pumps will be modified to pump to this lower elevation.

The following sections describe the criteria and specifications for well modifications. A summary of the design calculations for Well Nos. 6 and 7, including pump curves and a summary for all three wells, are included in Appendix D.

WELL NO. 7

The existing well will be equipped to pump into a new 2,500 lineal foot (lf) 12-inch dedicated watermain for delivery to the new arsenic treatment facility. An 8-inch watermain would have a headloss of approximately 30 feet and a velocity of 5 feet/second, which is less economical in long-term power consumption than a new 12-inch water main at 4 feet of headloss and a velocity of 2 feet/second. The existing well is currently equipped to pump to the existing storage tanks that are at a higher elevation than the new arsenic treatment facility. Three stages will be removed from the existing 10-stage assembly. System design criteria are shown in the following table.

Table 4. Well 7 (790 gpm) Design Criteria

Pump Head at Treatment Plant Site (feet elevation)	2,903
Well Pad Elevation (feet elevation)	2,880
Static Water Level (feet bls)	363
Estimated Drawdown @ 820 gpm (feet) ^{*1}	8
8-inch Column Head Loss (feet)	13
2,500 lf 12-inch transmission main losses: Hazen Williams C =130 (feet)	4
Manifold Losses (feet)	5
Sand Separator Losses	16
Total Dynamic Head (TDH, feet)	431

^{*1} Las Quintas Serenas Water Co. provided the drawdown for Well 7 and a step test was not available.

The manufacturer's pump curve showing the new design point for seven stages is included in Appendix D.

Well No. 7 will be fitted with a new sand separator at Well No. 7 site. The sand separator will add approximately 7 psi /16 feet of headloss at 790 gpm. Manufacturer's cut sheets for the sand separator can be seen in Appendix E.

Well No. 7 site piping will be disconnected from the existing hydrotank and routed to the new transmission main. The existing Variable Frequency Drive on Well 7 will be used to gradually ramp up Well 7 to maximum capacity and provide some surge protection. The existing hydrotank will remain at the Well No. 7 site to provide surge protection.

WELL NO. 6

Well No. 6 will have four bowl stages removed from its existing 13-stage pump assembly. Additionally, Well No. 6 has shown signs of sanding and will require an external sand separator which will account for a 6 psi/14 feet of headloss at 400 gpm per the manufacturers specifications. Manufacturer's cut sheets for the sand separator can be seen in Appendix E.

A new 3,000 gallon hydropneumatic tank will be required for Well No. 6 to provide surge protection for the arsenic treatment facilities as this well is not equipped with variable frequency drive.

Table 5. Well 6 (400 gpm) Design Criteria

Pump Head at Treatment Plant Site (feet elevation)	2,903
Well Pad Elevation (feet elevation)	2,855
Static Water Level (feet bls)	337
Estimated Drawdown at 400 gpm (feet)	9
6-inch Column Friction Head Loss (460 feet bowl setting) (feet)	11
Manifold Losses (feet)	5
Sand Separator Losses (feet)	14
Total Dynamic Head (TDH, feet)	424

WELL NO. 5

Well No. 5 will not require any modifications, as it will continue to pump directly into the distribution system. The capacity of Well No. 5 will likely decrease to 200 gpm due to the headloss associated with the new treatment facility (approximately 5 psi during normal operation and an additional 10 psi during backwash). The pump curve for Well No. 5 is included in Appendix D. Additionally, Well No. 5 has shown signs of sanding and will require an external sand separator, which will create an 8 psi/18 feet headloss at 200 gpm per the manufacturer's specifications. Manufacturers cut sheets for the sand separator can be seen in Appendix E.

Table 6. Well 5 Design Criteria

	Existing (230 gpm)	Future (200 gpm)
Highwater Elevation (feet elevation)	3057	3057
Well Pad Elevation (feet elevation)	2910	2910
Static Water Level (feet bls)	401	401
Estimated Drawdown at 200 gpm (feet)	7	4
4-inch Column Friction Head Loss (460 feet bowl setting) (feet)	16	12
Manifold Losses (feet)	5	5
Sand Separator Losses (feet)	0	18
Arsenic Facility Losses (feet)	0	23
Total Dynamic Head (TDH, feet)	576	610

ARSENIC TREATMENT FACILITIES

Wells No. 6 and 7 will both be treated for arsenic at the Well No. 6 site via iron media adsorption with a flow bypass. Water from both wells will be blended and treated through the single adsorption media arsenic treatment facility at the Well No. 6 site. Well No. 5 will include an individual arsenic treatment facility. Arsenic facilities at the Well No. 6 site and Well No. 5 will be provided by Severn Trent Water Purification, Inc. (STWP). Both facilities will be delivered with support gravel to support the media and cover the effluent collectors to prevent media plugging, and Bayoxide® E33™ Media.

WELL NO. 6 SITE ARSENIC TREATMENT FACILITIES

The Well No. 6 site will include two, 10-foot-diameter, 75 psi ASME-rated, carbon steel vessels. Vessels will include NFP 61 interior coatings and two access ports, one 24-inch-diameter on the side wall with hinge and one 14-inch x 18-inch on the top head. Each adsorber will include a ladder and platform for access. Additional equipment provided by Severn Trent will include flow meters, control valves, and differential pressure switches.

A 13,400-gallon nominal capacity bolted steel tank with nozzles for fill, withdraws, drain, vent, level switches, and overflow will be provided for backwashing procedures. A side access hatch will be provided on the bolted steel tank. Erection of the bolted steel tank will be provided by Severn Trent on a slab foundation designed and supplied by the site contractor. An access ladder and perimeter handrail is included. Additional items provided by Severn Trent will include a multi-stage backwash transfer pump, a backwash transfer pump pressure gauge, and backwash tank level switches.

Severn Trent will provide a NEMA 4X control panel. The panel will control the start/stop of the backwash return pump. The PLC will be an Allen-Bradley Micrologix 1200 and the HMI will be an Allen-Bradley 600 with sunshield. Power to the panel is to be 120V, 1 ph, 60 hz.

WELL NO. 5 SITE ARSENIC TREATMENT FACILITIES

Well No. 5 will consist of two, 48-inch diameter, 150-psi ASME-rated Fiberglass Reinforced Plastic (FRP) adsorber vessels, and one skid that includes piping, wiring, valves, instruments and controls. The FRP vessels include external paint for protection from UV radiation.

The backwash tank will have a capacity of 3,000 gallons and include nozzles for fill, withdraws, drain, vent, level switches and overflow. A side access hatch will be provided on the backwash tank. Additional items provided by Severn Trent will include a multi-stage backwash transfer pump, a backwash transfer pump pressure gauge, and backwash tank level switches.

Severn Trent will include a NEMA 4X control panel for the Well No. 5 arsenic treatment facilities. Flow and pressure differential indicators are on the front face. A PLC will control the backwash sequence on an operator-settable time schedule. Power to the panel is to be 120V, 1 ph, 60 hz. The PLC will be an Allen-Bradley Micrologix 1200 and the HMI will be an Allen-Bradley 600 with sunshield.

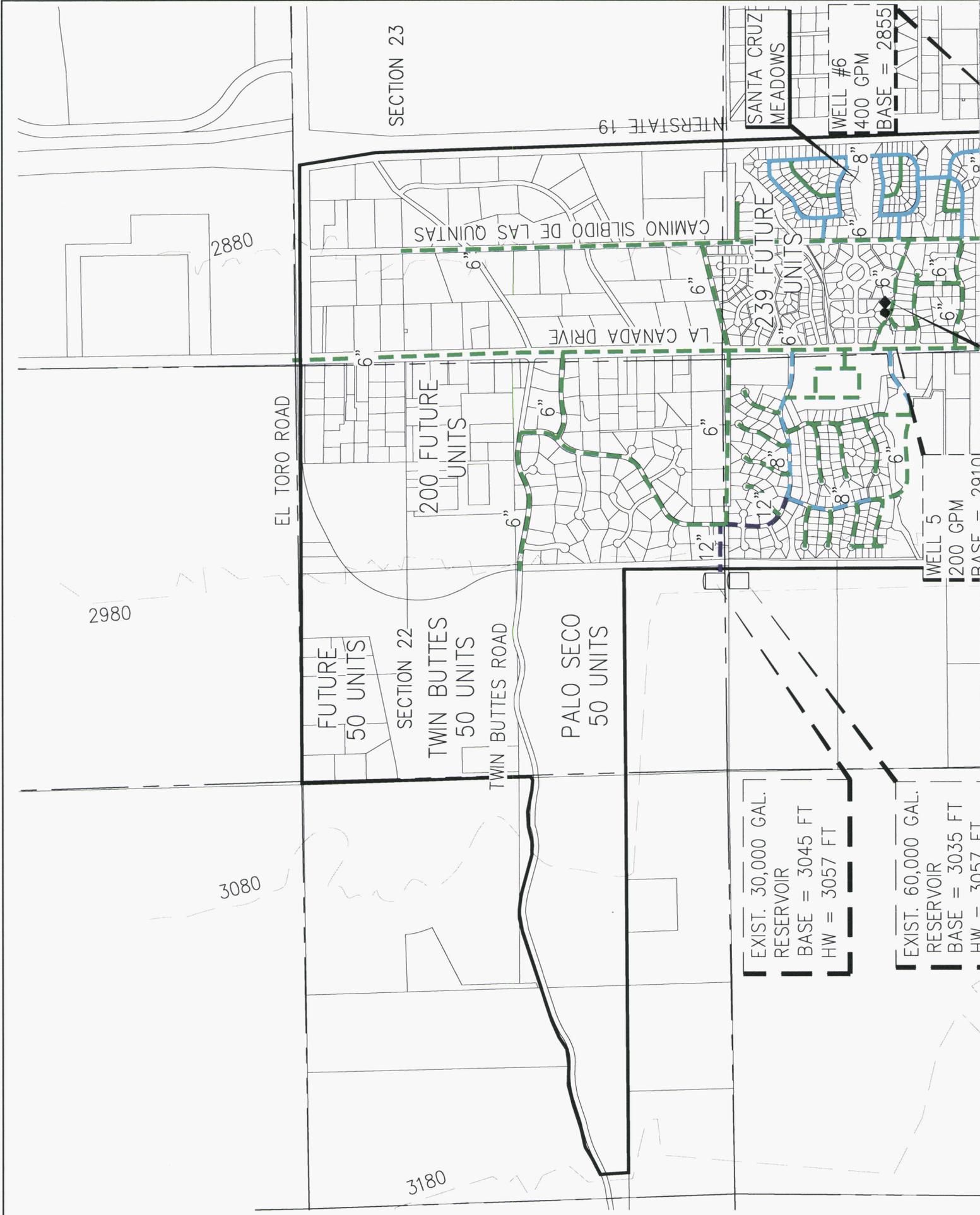
The submittal for the Severn Trent treatment systems is included in Appendix F.

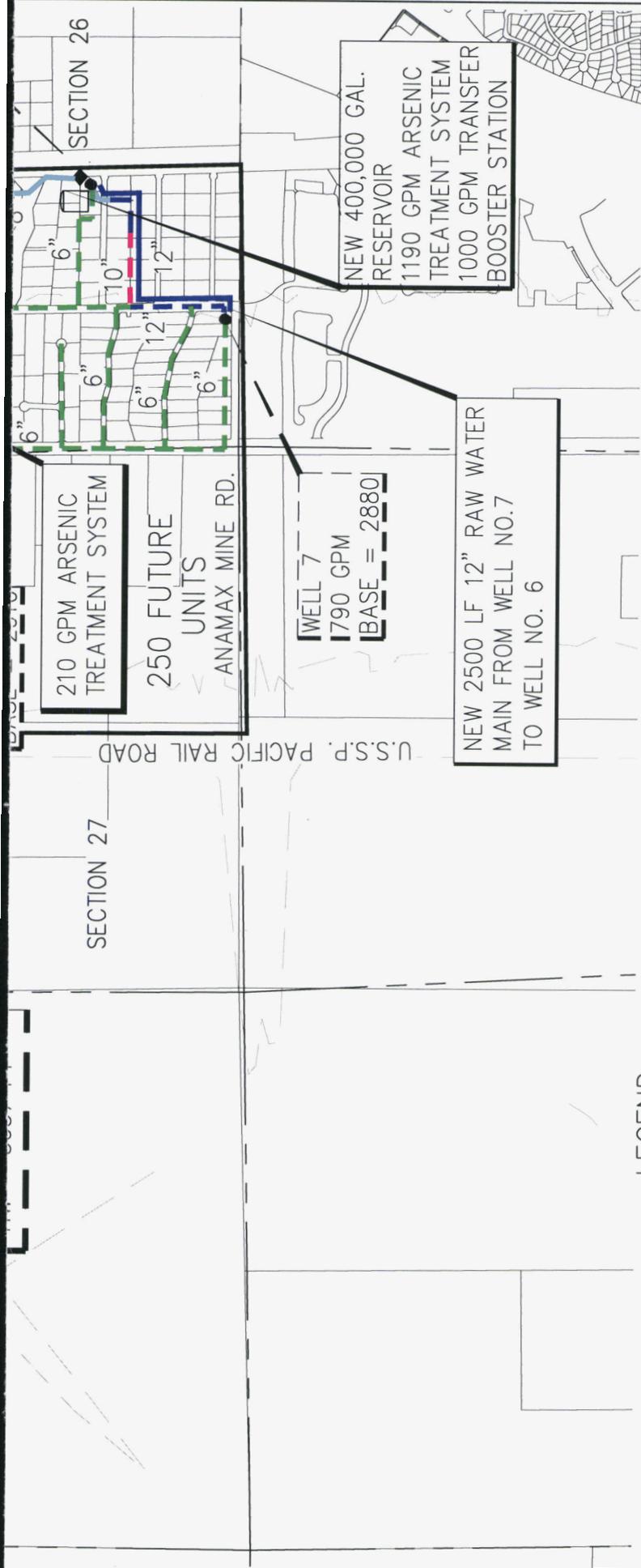
BYPASS FLOW CONTROL TREATMENT METHOD

The Severn Trent adsorption facilities are anticipated to treat processed water to undetectable arsenic levels. In order to meet the treatment design goal of 7 ppb, only a portion of the raw water must be treated to non-detect (0 ppb). Raw water will be blended with treated water to the desired treatment level of 7 ppb. The flow control valves will be set to allow a certain percentage of raw water to either be treated or bypassed as required. Flow control and bypass settings are included in Appendix G.

APPENDIX A

**LAS
QUINTAS
WATER
SYSTEM
LAYOUT**





210 GPM ARSENIC TREATMENT SYSTEM

250 FUTURE UNITS
ANAMAX MINE RD.

WELL 7
1790 GPM
BASE = 2880

NEW 2500 LF 12" RAW WATER MAIN FROM WELL NO.7 TO WELL NO. 6

NEW 400,000 GAL. RESERVOIR
1190 GPM ARSENIC TREATMENT SYSTEM
1000 GPM TRANSFER BOOSTER STATION

LEGEND

- EXISTING 6 INCH TRANSMISSION MAIN
- EXISTING 8 INCH TRANSMISSION MAIN
- EXISTING 10 INCH TRANSMISSION MAIN
- EXISTING 12 INCH TRANSMISSION MAIN
- C C & N BOUNDARY
- NEW 2500 LF 12 INCH TRANSMISSION MAIN
- NEW 8 INCH TRANSMISSION MAIN
- NEW 6 INCH TRANSMISSION MAIN
- WELL
- ARSENIC TREATMENT SYSTEM
- RESERVOIR



0' 1500'
SCALE: 1" = 1500'

Exhibit 1

LAS QUINTAS SERENAS WATER COMPANY

Water System Infrastructure

SYSTEM LAYOUT AND PROPOSED UPGRADES

WestLand Resources Inc.
Engineering and Environmental Consultants
2343 S. E. Broadway Blvd, Suite 202
Tucson, Az 85718 (520) 206-9565

DECEMBER 05, 2005

APPENDIX B

**SYSTEM
CURVE AND
HYDRAULIC
MODELING
RESULTS**

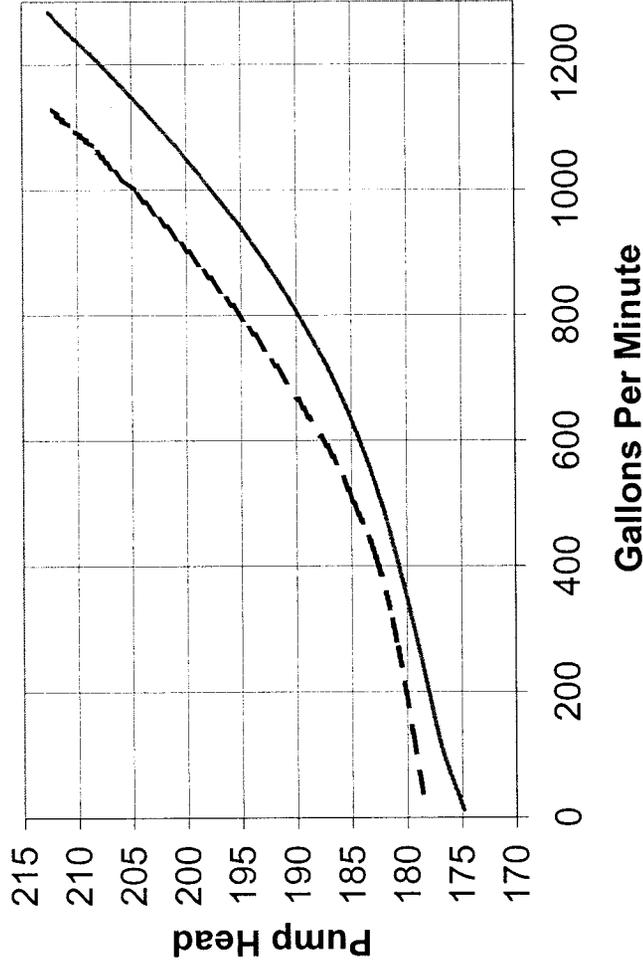
Average Day Demand (ADD)

Hydraulic Grade of Pump	Pressure psi	Pressure ft	Subtract Suction HW (20ft)	Discharge gpm
3054	86.0	199	179	40
3056	87.0	201	181	282
3058	87.8	203	183	414
3060	88.7	205	185	503
3062	89.5	207	187	575
3064	90.4	209	189	638
3066	91.3	211	191	694
3068	92.2	213	193	746
3070	93.0	215	195	794
3072	93.9	217	197	839
3074	94.7	219	199	882
3076	95.6	221	201	923
3078	96.5	223	203	962
3080	97.3	225	205	1000
3082	98.2	227	207	1035
3084	99.0	229	209	1070
3086	99.9	231	211	1103
3088	100.8	233	213	1136

Peak Daily Demand (PDD)

Hydraulic Grade of Pump	Pressure psi	Pressure ft	Subtract Suction HW (20ft)	Discharge gpm
3050	84	195	175	12
3052	85	197	177	112
3054	86	199	179	248
3056	87	201	181	411
3058	87.83	203	183	532
3060	88.69	205	185	627
3062	89.55	207	187	706
3064	90.42	209	189	773
3066	91.28	211	191	832
3068	92.15	213	193	886
3070	93	215	195	936
3072	93.88	217	197	982
3074	94.74	219	199	1026
3076	95.6	221	201	1068
3078	96.47	223	203	1107
3080	97.33	225	205	1145
3082	98.2	227	207	1182
3084	99.06	229	209	1217
3086	99.93	231	211	1251
3088	100.7	233	213	1284

LQS Well Site 6 System Curve



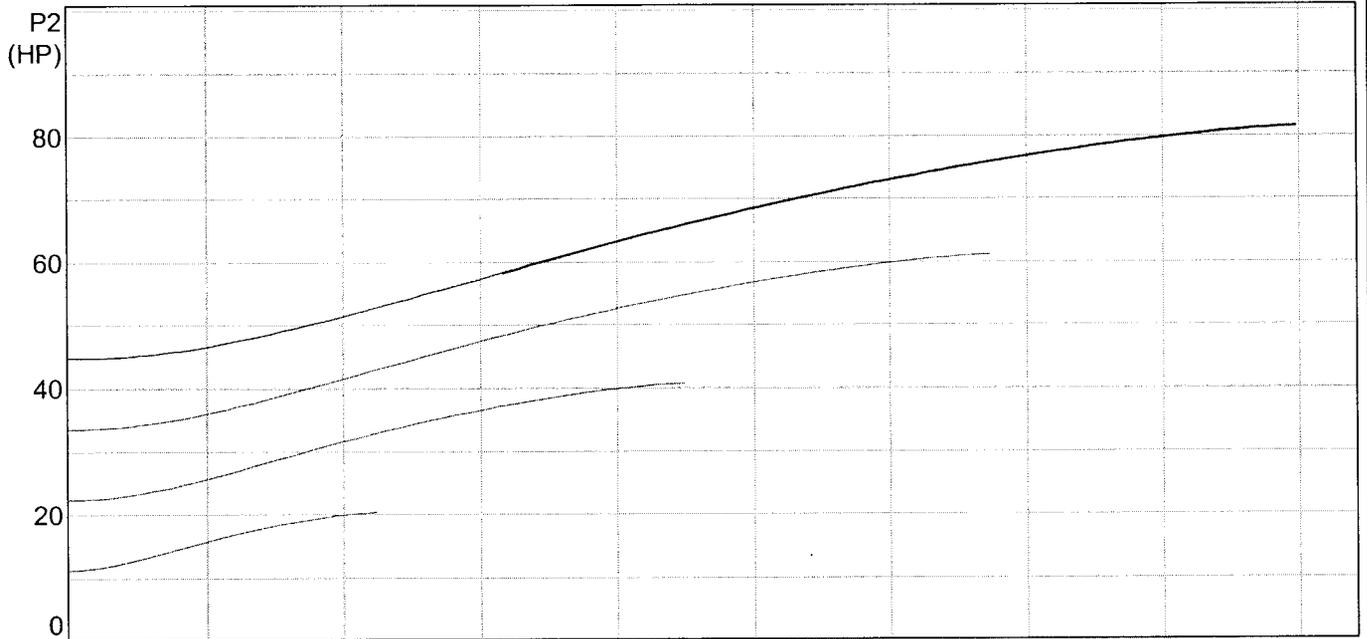
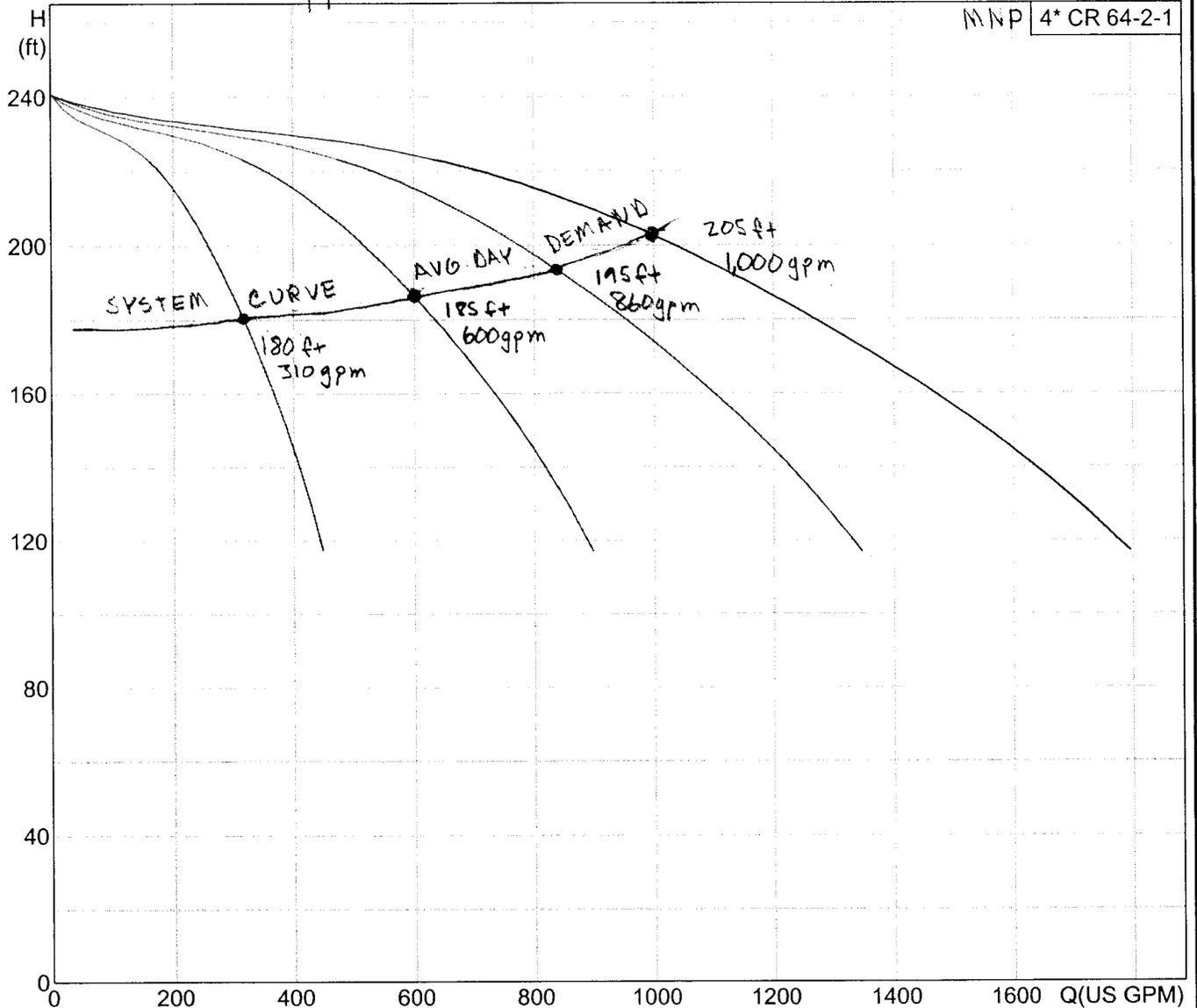
Existing Tanks set to 3055 ft (2ft Low)
Assume 24 ft tall Tank at Well Site No. 6 is four feet low (20 ft suction pressure)

Four Pumps 80 hp (Combined)

MNP CR 64-2-1

Upper Reservoir Level Control

MNP 4* CR 64-2-1

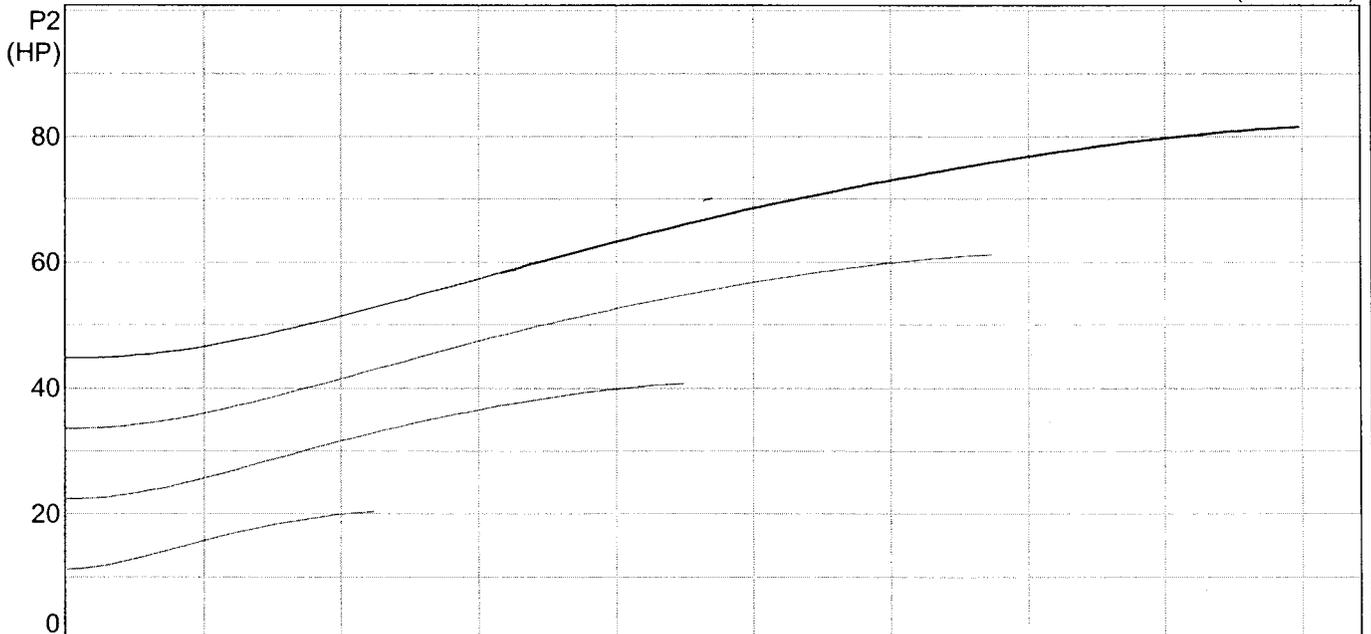
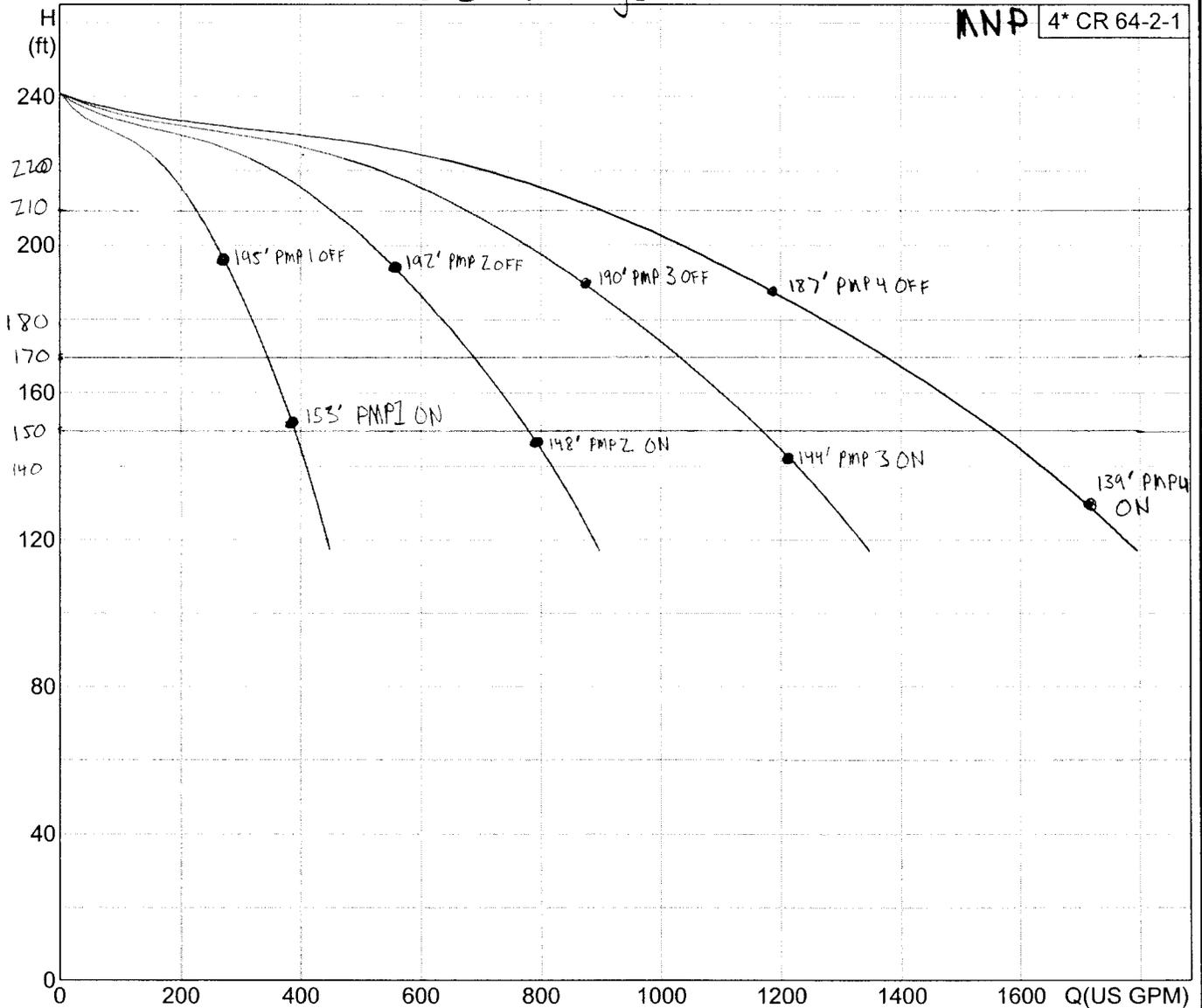


Four Pumps 80 hp (Combined)

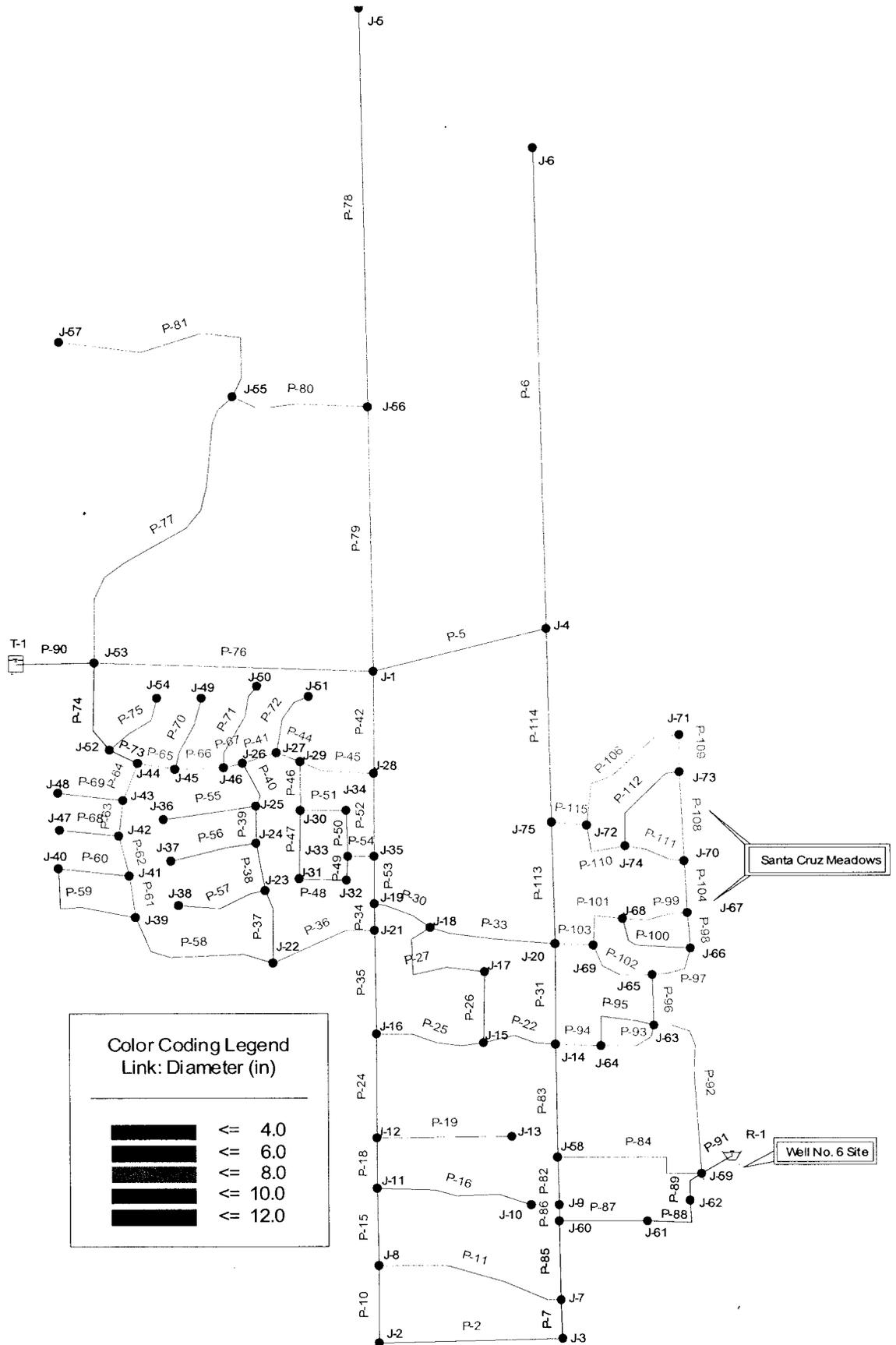
MNPCR 64-2-1

Pressure Settings

MNP 4* CR 64-2-1



Scenario: ADD



Color Coding Legend
Link: Diameter (in)

	≤ 4.0
	≤ 6.0
	≤ 8.0
	≤ 10.0
	≤ 12.0

Table 1. Average Day Demand Junction Report

	Elevation (ft)	Zone	Base Flow (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)
J-48	2,975.00	Zone	4.54	3,056.48	35.25
J-47	2,975.00	Zone	4.54	3,056.65	35.33
J-40	2,975.00	Zone	4.54	3,056.93	35.45
J-57	2,975.00	Zone	4.54	3,056.93	35.45
J-53	2,970.00	Zone	4.54	3,055.70	37.08
J-52	2,970.00	Zone	4.54	3,056.15	37.27
J-43	2,970.00	Zone	4.54	3,056.48	37.42
J-42	2,970.00	Zone	4.54	3,056.65	37.49
J-41	2,965.00	Zone	4.54	3,056.87	39.75
J-39	2,965.00	Zone	4.54	3,057.04	39.82
J-44	2,960.00	Zone	4.54	3,056.31	41.67
J-36	2,960.00	Zone	4.54	3,058.82	42.75
J-54	2,955.00	Zone	4.54	3,056.15	43.76
J-37	2,958.00	Zone	4.54	3,059.27	43.81
J-45	2,955.00	Zone	4.54	3,056.99	44.13
J-38	2,955.00	Zone	4.54	3,059.94	45.4
J-49	2,950.00	Zone	4.54	3,056.99	46.29
J-46	2,945.00	Zone	4.54	3,057.93	48.86
J-50	2,940.00	Zone	4.54	3,057.93	51.02
J-26	2,940.00	Zone	4.54	3,058.33	51.19
J-25	2,940.00	Zone	4.54	3,058.82	51.41
J-55	2,938.00	Zone	4.54	3,056.94	51.46
J-24	2,940.00	Zone	4.54	3,059.27	51.6
J-23	2,940.00	Zone	4.54	3,059.94	51.89
J-22	2,940.00	Zone	4.54	3,061.07	52.38
J-27	2,935.00	Zone	4.54	3,058.66	53.5
J-29	2,930.00	Zone	4.54	3,058.93	55.78
J-30	2,930.00	Zone	4.54	3,059.51	56.03
J-31	2,930.00	Zone	4.54	3,059.70	56.12
J-51	2,925.00	Zone	4.54	3,058.66	57.83
J-34	2,925.00	Zone	4.54	3,059.72	58.29
J-32	2,925.00	Zone	4.54	3,059.86	58.35
J-33	2,925.00	Zone	4.54	3,059.94	58.38
J-5	2,920.00	Zone	4.54	3,057.59	59.53
J-28	2,920.00	Zone	4.54	3,059.16	60.21
J-35	2,920.00	Zone	4.54	3,060.39	60.74

Table 1. Average Day Demand Junction Report

	Elevation (ft)	Zone	Base Flow (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)
J-21	2,920.00	Zone	4.54	3,063.06	61.9
J-19	2,920.00	Zone	4.54	3,063.10	61.91
J-1	2,915.00	Zone	4.54	3,059.16	62.37
J-56	2,910.00	Zone	4.54	3,057.60	63.86
J-16	2,920.00	Zone	4.54	3,069.34	64.61
J-12	2,920.00	Zone	4.54	3,072.36	65.92
J-11	2,920.00	Zone	4.54	3,073.97	66.62
J-8	2,920.00	Zone	4.54	3,076.58	67.74
J-2	2,920.00	Zone	4.54	3,077.20	68.01
J-18	2,910.00	Zone	4.54	3,067.71	68.23
J-17	2,900.00	Zone	4.54	3,069.33	73.26
J-15	2,900.00	Zone	4.54	3,070.26	73.66
J-13	2,890.00	Zone	4.54	3,072.35	78.9
J-75	2,888.00	Zone	4.54	3,071.30	79.3
J-4	2,880.00	Zone	4.54	3,064.79	79.95
J-72	2,885.00	Zone	4.54	3,071.45	80.67
J-20	2,885.00	Zone	4.54	3,071.82	80.83
J-14	2,885.00	Zone	4.54	3,073.17	81.41
J-10	2,885.00	Zone	4.54	3,073.97	81.76
J-6	2,875.00	Zone	4.54	3,064.77	82.11
J-69	2,880.00	Zone	4.54	3,071.99	83.07
J-64	2,878.00	Zone	4.54	3,073.30	84.5
J-74	2,875.00	Zone	4.54	3,071.57	85.05
J-68	2,875.00	Zone	4.54	3,071.99	85.23
J-58	2,880.00	Zone	4.54	3,078.06	85.69
J-9	2,880.00	Zone	4.54	3,078.69	85.96
J-3	2,880.00	Zone	4.54	3,078.81	86.02
J-7	2,880.00	Zone	4.54	3,078.82	86.02
J-60	2,880.00	Zone	4.54	3,078.93	86.07
J-65	2,868.00	Zone	4.54	3,072.40	88.43
J-63	2,868.00	Zone	4.54	3,073.41	88.87
J-71	2,865.00	Zone	4.54	3,071.55	89.36
J-73	2,865.00	Zone	4.54	3,071.58	89.38
J-70	2,865.00	Zone	4.54	3,071.68	89.42
J-67	2,865.00	Zone	4.54	3,071.97	89.54
J-66	2,862.00	Zone	4.54	3,072.09	90.89
J-61	2,865.00	Zone	4.54	3,079.62	92.86
J-62	2,855.00	Zone	4.54	3,079.84	97.28
J-59	2,855.00	Zone	4.54	3,079.95	97.32

Table 2. Average Day Demand Pipe Report

	Length (ft)	Diameter (in)	Hazen-Williams C	Discharge (gpm)	Velocity (ft/s)
P-30	474	6	130	333.92	3.79
P-35	795	6	130	-298.37	3.39
P-53	361	6	130	-290.61	3.3
P-92	1,369.00	8	130	484.59	3.09
P-83	858	6	130	250.13	2.84
P-91	20	12	130	999.53	2.84
P-22	566	6	130	236.91	2.69
P-15	583	6	130	-219.42	2.49
P-114	1,482.00	6	130	217.43	2.47
P-33	977	6	130	-212.28	2.41
P-18	391	6	130	-210.34	2.39
P-5	1,386.00	6	130	-208.35	2.36
P-24	792	6	130	-201.26	2.28
P-96	385	8	130	352.08	2.25
P-67	151	8	130	-349.2	2.23
P-66	382	8	130	-340.12	2.17
P-36	836	8	130	332.59	2.12
P-65	289	8	130	-331.04	2.11
P-58	1,236.00	6	130	185.07	2.1
P-90	601	12	130	659.03	1.87
P-54	205	6	130	-147.68	1.68
P-37	562	6	130	142.98	1.62
P-44	196	8	130	-247.07	1.58
P-52	642	6	130	-138.39	1.57
P-87	681	10	130	-378.11	1.54
P-86	129	6	130	135.99	1.54
P-38	372	6	130	133.9	1.52
P-41	263	8	130	-237.99	1.52
P-31	775	6	130	132.11	1.5
P-82	365	6	130	131.45	1.49
P-26	542	6	130	130.72	1.48
P-76	2,143.00	6	130	-126.48	1.44
P-27	1,008.00	6	130	126.18	1.43
P-46	366	6	130	-124.98	1.42
P-39	288	6	130	124.82	1.42
P-11	1,456.00	6	130	123.46	1.4
P-84	1,231.00	6	130	-123.22	1.4
P-73	237	12	130	479.79	1.36
P-74	714	12	130	470.71	1.34
P-40	360	6	130	115.74	1.31
P-2	1,412.00	6	130	-105.04	1.19
P-25	851	6	130	101.65	1.15
P-10	587	6	130	-100.5	1.14
P-97	425	8	130	175.16	1.12
P-104	403	8	130	173.33	1.11
P-102	571	8	130	-172.38	1.1
P-89	249	12	130	-387.19	1.1

Table 2. Average Day Demand Pipe Report

	Length (ft)	Diameter (in)	Hazen-Williams C	Discharge (gpm)	Velocity (ft/s)
P-62	318	8	130	171.45	1.09
P-88	512	12	130	-382.65	1.09
P-63	273	8	130	162.37	1.04
P-103	299	8	130	-156.05	1
P-64	306	8	130	153.29	0.98
P-115	277	8	130	150.63	0.96
P-79	2,032.00	6	130	-84.55	0.96
P-61	324	8	130	-147.76	0.94
P-50	351	6	130	77.22	0.88
P-98	268	8	130	136.06	0.87
P-80	1,071.00	6	130	75.47	0.86
P-51	361	6	130	72.68	0.82
P-113	932	6	130	71.34	0.81
P-45	579	8	130	-126.63	0.81
P-94	350	8	130	123.43	0.79
P-77	2,533.00	6	130	-66.39	0.75
P-49	182	6	130	-65.92	0.75
P-48	366	6	130	-61.38	0.7
P-85	600	12	130	-237.58	0.67
P-47	527	6	130	-56.84	0.64
P-110	473	8	130	-98.83	0.63
P-111	473	8	130	-94.66	0.6
P-93	505	8	130	90.66	0.58
P-108	682	8	130	74.13	0.47
P-34	205	6	130	38.76	0.44
P-95	644	6	130	37.31	0.42
P-100	659	6	130	-34.55	0.39
P-109	279	8	130	60.88	0.39
P-59	884	6	130	32.77	0.37
P-106	1,120.00	8	130	56.34	0.36
P-60	546	6	130	28.23	0.32
P-7	295	12	130	-109.58	0.31
P-99	504	8	130	-41.81	0.27
P-112	802	6	130	8.71	0.1
P-42	781	6	130	-7.22	0.08
P-101	445	8	130	-11.79	0.08
P-56	674	6	130	4.54	0.05
P-57	700	6	130	4.54	0.05
P-68	459	6	130	4.54	0.05
P-55	724	6	130	4.54	0.05
P-6	3,692.00	6	130	4.54	0.05
P-16	1,213.00	6	130	-4.54	0.05
P-19	1,040.00	6	130	4.54	0.05
P-75	576	6	130	4.54	0.05
P-78	3,173.00	6	130	-4.54	0.05
P-81	1,893.00	6	130	4.54	0.05
P-72	548	6	130	4.54	0.05
P-69	502	6	130	4.54	0.05
P-70	592	6	130	4.54	0.05

Table 3. Average Day Demand Reservoir Report

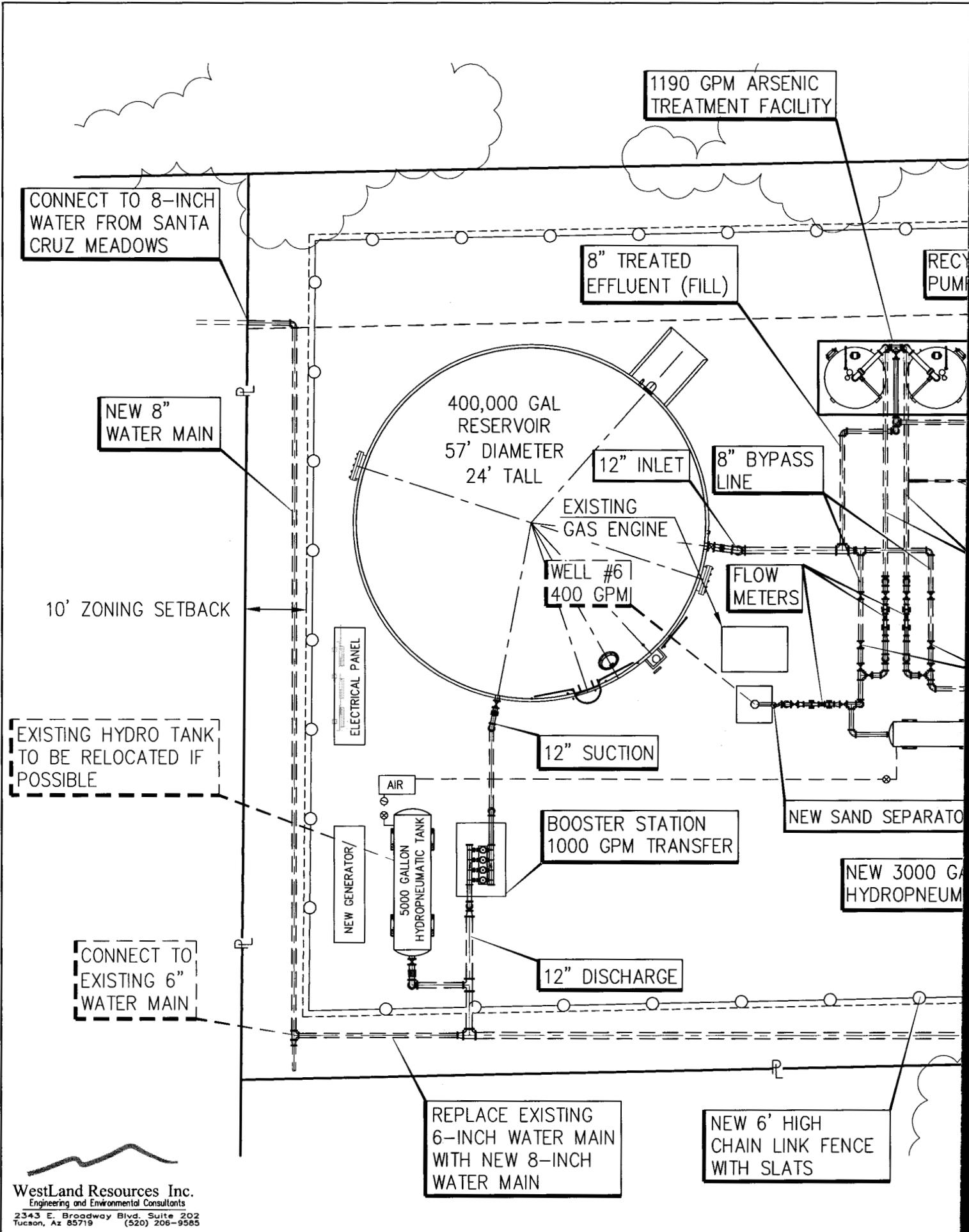
	Elevation (ft)	Zone	Outflow (gpm)	Calculated Hydraulic Grade (ft)
R-1	3,080.00	Zone	999.53	3,080.00

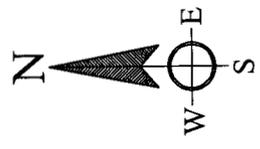
Table 4. Average Day Demand Tank Report

	Zone	Base Elevation (ft)	Minimum Elevation (ft)	Maximum Elevation (ft)	Initial HGL (ft)	Inflow (gpm)	Calculated Hydraulic Grade (ft)
T-1	Zone	3,030.00	3,031.00	3,057.00	3,055.00	659.03	3,055.00

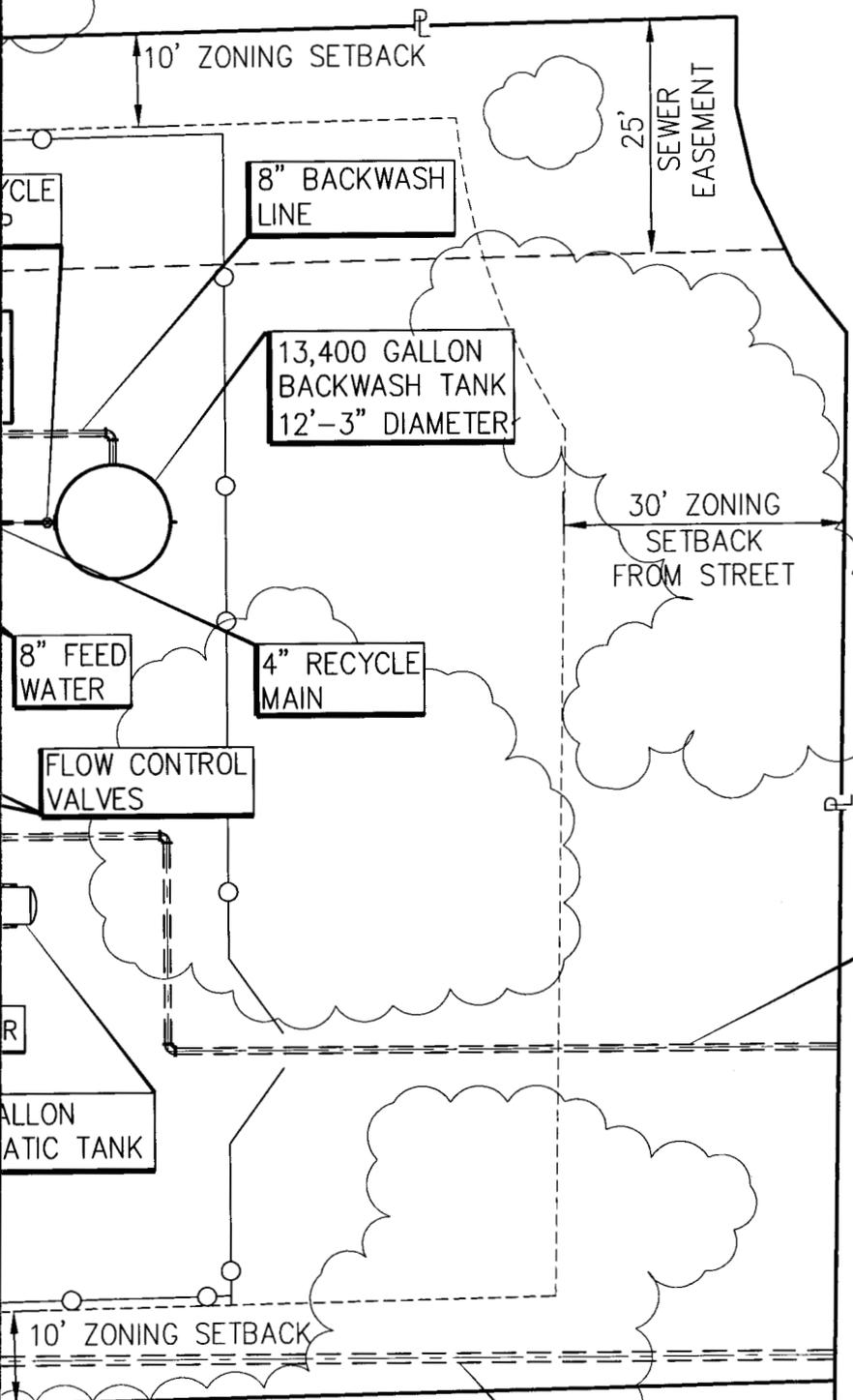
APPENDIX C

**WELL NO. 6
SITE
LAYOUT**





SCALE: 1" = 20'



W. CALLE SANTIAGO

NEW 12" WATER MAIN FROM WELL #7 (790 GPM)

NEW 12" WATER MAIN TO CONNECT TO EXISTING 12" WATER MAIN IN W. CALLE SANTIAGO

LAS QUINTAS SERENAS WATER COMPANY

Well No. 6 Site Layout

PROPOSED UPGRADES
DECEMBER 05, 2005

APPENDIX D

**WELL AND
WELL PUMP
INFORMATION**

Existing Well Summary

	Well No. 5	Well No. 6	Well No. 7
ADWR Registration No.	55-608531	55-608530	55-566940
Date Drilled	1968	1971	1998
Well Depth (ft)	805'	837'	922'
Pump Setting Depth (ft)	460'	420'	460'
Casing Diameter (in)	10.75" to 535' and 8.5" to 805'	12.75"	12.25"
Pump Manufacture	Grundfos (Model 230S)	American Turbine (1760 rpm)	Goulds Pump (Model 11CMC 1770 RPM)
Pump Impeller Trim	230S400-14 (40HP)	10-L-30 (Trim A 7.70")	Curve No. E3143-1 (8.13")
Number of Stages	Summersable Pump	13	10
Pump Column Diameter (in)	4"	6"	8"
Pump Tube Diameter (in)	Summersable Pump	2"	2.5"
Pump Shaft Diameter (in)	Summersable Pump	1.25"	1.5"
Perforations (ft)	357' - 805'	440' - 820'	541' - 902'
Static Water Level (ft) / Date	401' / Oct. 2004	337' / May 2005	363
Discharge Pressure (psi / ft)	75 psi / 173'	95 psi / 219'	85 psi / 196'
Drawdown (ft)	200 gpm / 7 ft	56gpm/ft @ 394 gpm = 7'	850 gpm / 6.5'
		54gpm/ft @ 483 gpm = 9'	
		52gpm/ft @ 586 gpm = 11'	

LQS Well No. 6

Manifold and Pipeline Losses

Design Flow (gpm)	400
-------------------	-----

Pumping Water Level ft bis	346	337static + 9 ft drawdown @ 400 gpm
Pump Head at Treatment Plant Site (ft)	2903	2855 ft (Well No. 6 Site Elevation) + 21 psi / 48 ft (Facility Head)
Site Elevation, Ft	2855	
Sand Separator Losses	14	6psi / 14 ft
Hydraulic Grade Difference ft	62	

Pipeline and Manifold	Colum Tube and Shaft		Including Oil Tube Adjustments
DIA, in	8	Column Diameter (in)	6
"C"	130		
Calculated equiv. Length, ft	50	Pump Setting depth (ft)	420

1.5 inch oil tube

Pipeline and Manifold		Pipe Column	
Velocity	Hf	Calculated Velocity	Hf
fps	ft/1000 ft	fps	ft/100 ft
2.6	3.4	4.8	2.7
Add Manifold Losses			
	5.0		
	5.2		11.3

From Simflow 502-1 for 6" x 1.5" x 1" per 100ft @ 400 gpm

Try to keep velocity above 4ft/s to pick up sediment
Try to keep head loss less than 5ft/100ft

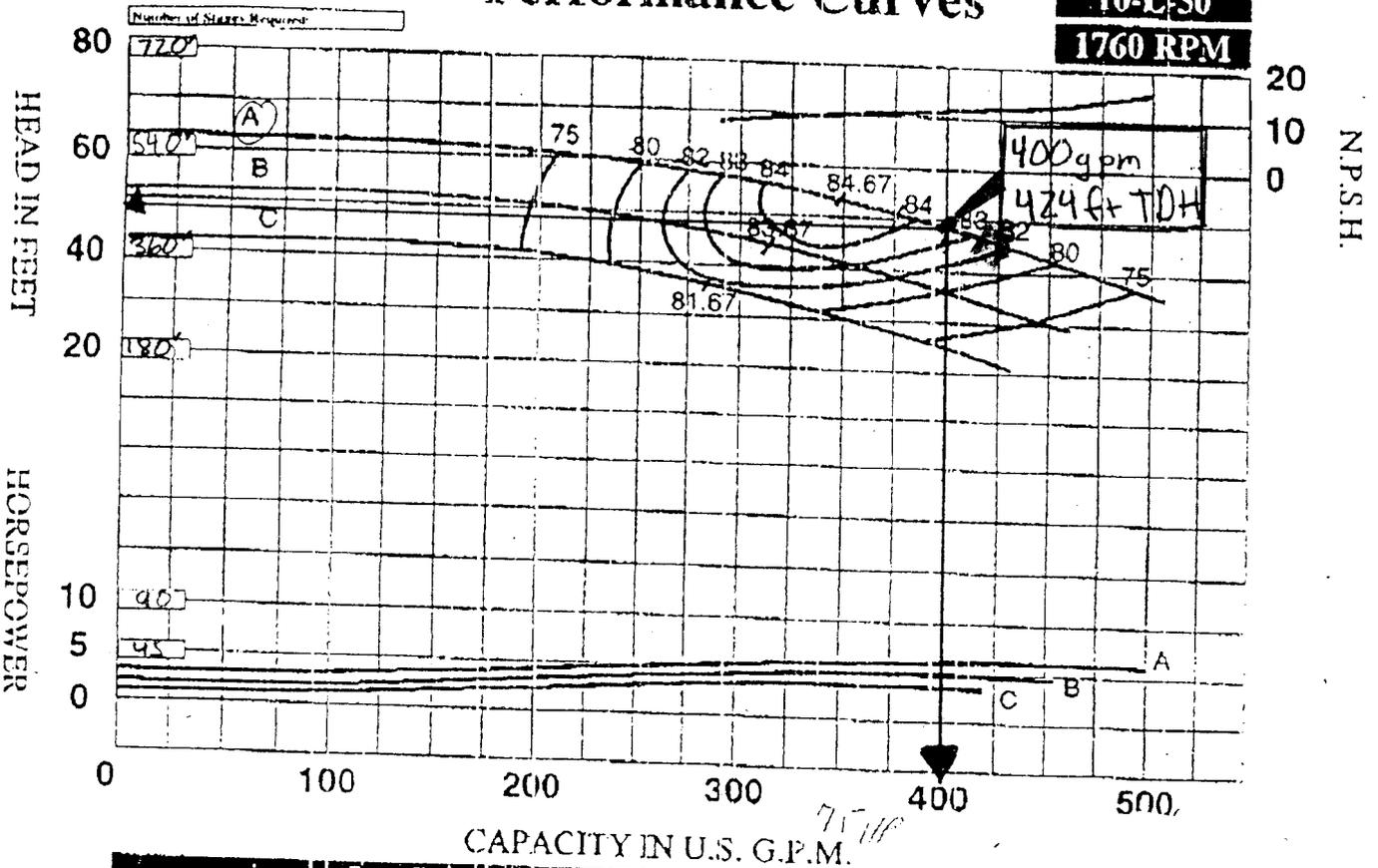
SYSTEM TDH	ft	424.5
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Static Head	ft	408
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Performance Curves

10-L-30
1760 RPM



Impeller Data	
Impeller Number	10-L-30
Type	Enclosed
Diameter: A=	7.700"
B=	7.200"
C=	6.700"
Thrust Constant (K)	4.0 pounds/foot of head
Impeller Weight	9.8 #
Number of Vanes	8
Specific Speed (Ns)	1629
Effective Eye Area	7.24 square inches
(Wt sq.)	.325 lbs. -ft. sq.
Eye Fluid Velocity	0.04 ft/sec./g.p.m.
Peripheral Velocity	7.68 ft./sec./inch of impeller diameter

Bowl Data	
Bowl Number	10-L
Connection Type	Bolted
Outside Diameter: nominal	9.750"
minimum	9.500"
Column Pipe Size: standard	4"
maximum	8"
Suction Pipe Size: standard	6"
maximum	6"
Shaft Size: standard	1.500"
maximum	1.750"
Lateral: standard	.375"
maximum	.500"
Shaft Bearing Clearance	.010"
Impeller Skirt Clearance	.015"
Maximum Sphere Size	.550"
Maximum No. Stages (std. const.)	39
Maximum Head (with full nominal bowl diameter) (1.0 S.G.)	613 ft.

Efficiency Correction for Impeller Data					
Number of Stages	1	2	3	4	5
Deduct No. Points	4	3	2	1	0

Lengths	
Column Adapter	1.500"
Discharge Case	4.000"
Bowl	7.250"
Suction Case	8.750"
Suction Bell	6.500"
Submersible Motor Adapter	12.875"

Approximate Shipping Weights	
First Stage	156 #
Additional Stage	58 #

Miscellaneous	
Hub Projection on Bell Suction	2.250"
Cable Guard Height	.500"
Distance From Impeller Eye to Bottom of Bell Suction	6.688"

General Data

Operational	CONSULT FACTORY
Minimum Required Submergence	
Standard Construction Materials	
Bowl	A48-30 c. i. (porcelain)
Impeller	C83800 br.
Bowl Shaft	416 stainless steel
Shaft Coupling	C1215 steel
Lock Collar	C1215 steel
Cap Screw	grade 5
Bowl Bearing	C84400 br./Auna-N A40
Suction/Submersible Motor Adapter Bearing	C84400 br.
Throttle Collar	C84400 br.
Sand Collar	polyethylene
Column Adapter/Discharge Case/Suction Case	A48-30 c. i.
Submersible Motor Adapter	A48-30 c. i.
Tube Adapter	cl. 65-45-12 ductile iron

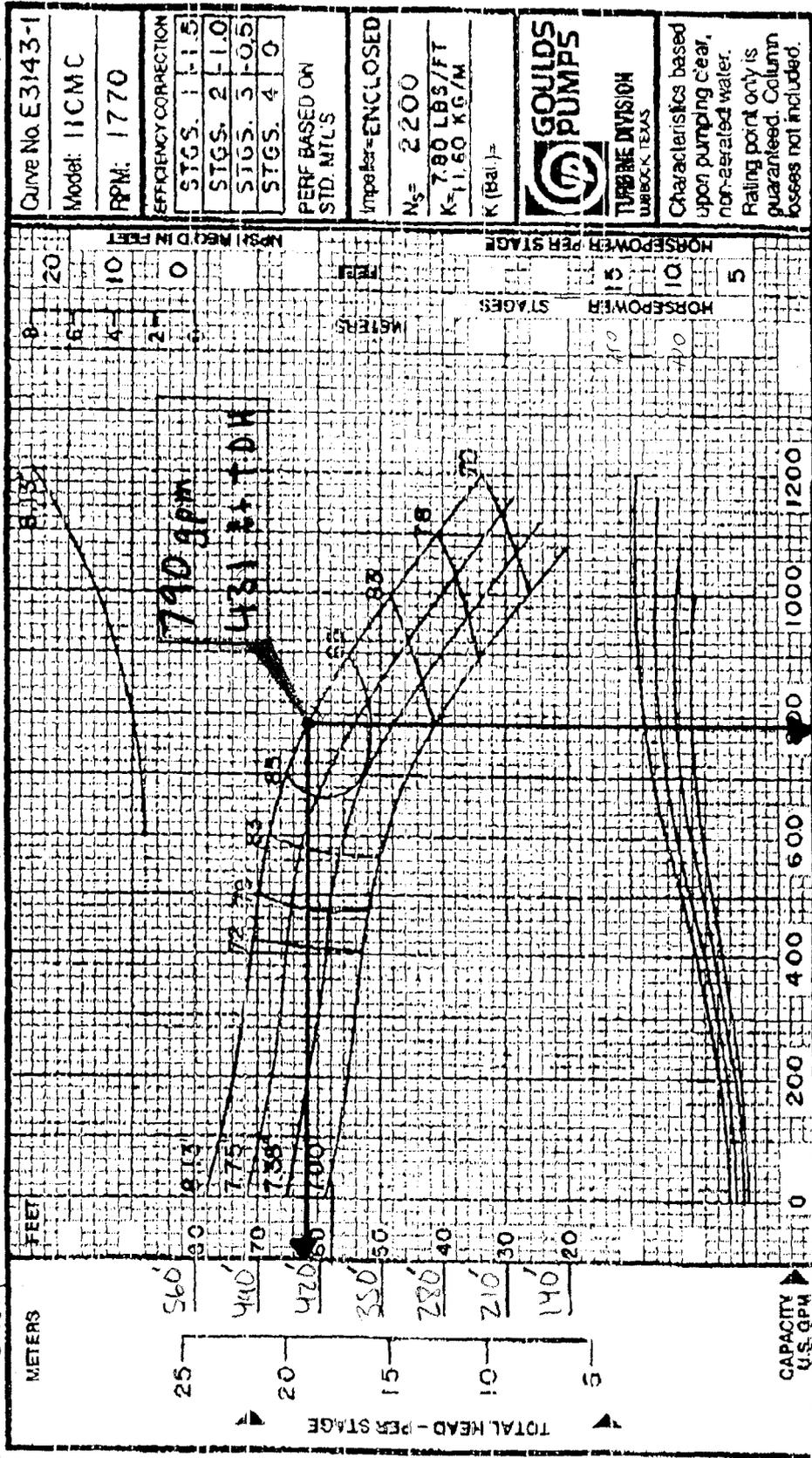
1996
#6 well
Existing 13 bowls

8' Column
2 1/2" Tube

Well No 7 (Variable Frequency Drive Motor)

SOULD'S PROPOSAL NO.	SOULD'S B.O. NO.	INQUIRY NO.	CUSTOMER/O. NO.	P.O. DATE	ITEM NO.	CUSTOMER
PROJECT			SERVICE		GPM CAPACITY	FT. TDH
					% EFFICIENCY	RPM

2002 7 stages



Curve No. E3143-1
Model: 11CMC
RPM: 1770
EFFICIENCY CORRECTION
STGS. 1 - 1.5
STGS. 2 - 1.0
STGS. 3 - 0.5
STGS. 4 - 0
PERF BASED ON STD. MTL'S
Impeller=ENCLOSED
N _s = 2200
K = 7.80 LBS/FT
K = 11.60 KG/M
K (Bal.) =



TURBINE DIVISION
WARREN, TEXAS

Characteristics based upon pumping clear, non-aerated water.
Rating point only is guaranteed. Column losses not included.

MODEL 11CMC
DATE October 1997
SUPERCEDES New

Well #7 10 Stages Existing

MODEL 230S

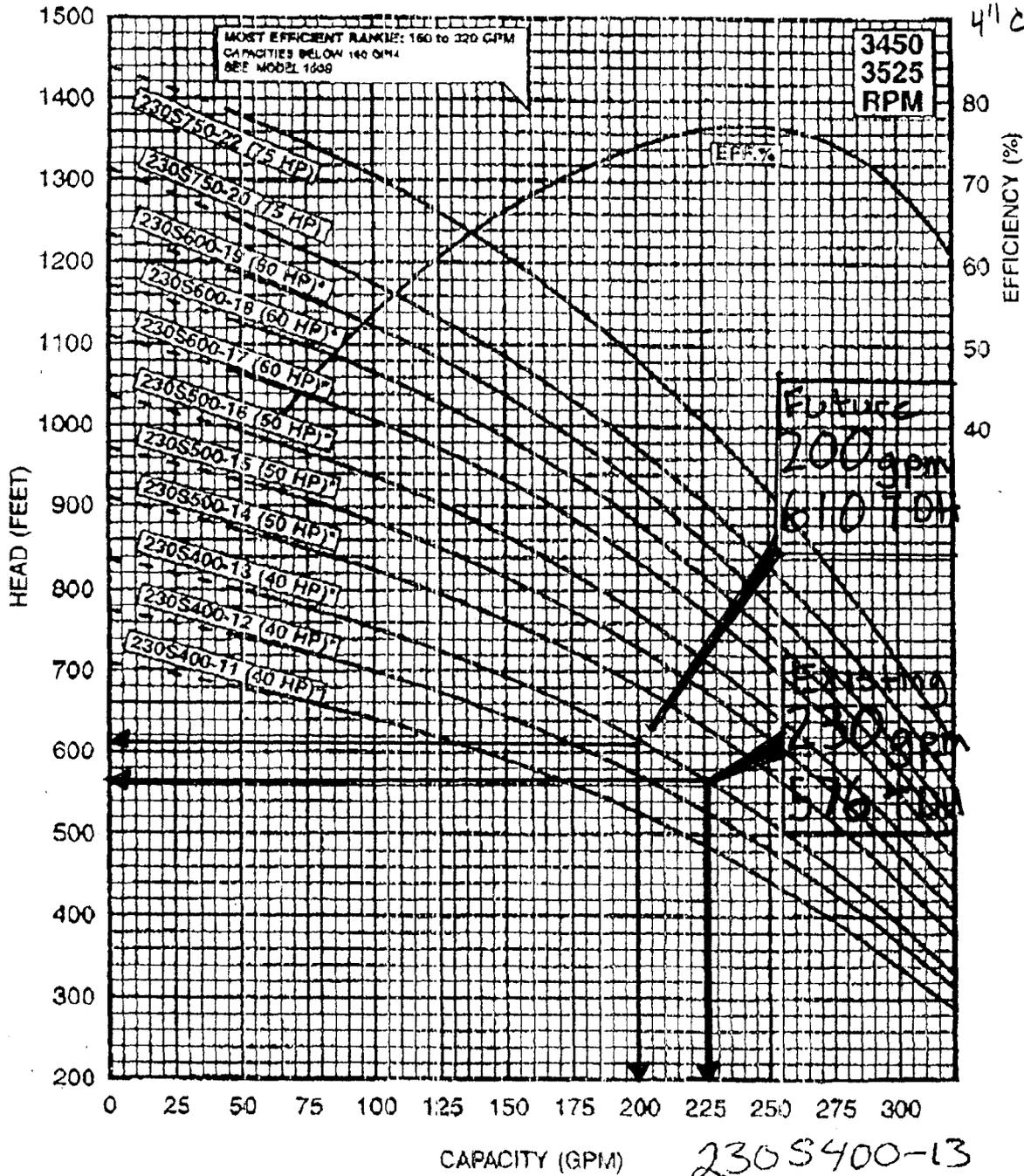
230 GPM

PERFORMANCE CURVES

FLOW RANGE: 160 -320 GPM

OUTLET SIZE: 3" NPT

NOMINAL DIA. 6"



CAPACITY (GPM)

230S400-13

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

- 4" MOTOR STANDARD, 7.5 HP/3450 RPM
- 6" MOTOR STANDARD, 10-00 HP/3450 RPM.
- 8" MOTOR STANDARD, 75 HP/3525 RPM.

* Alternate motor sizes available.

Well #5
2004

Performance conforms to ISO 9908 Annex A @ 8 ft. min. submergence

APPENDIX E

**SAND
SEPARATOR
SPECS.**

Well # 5

Centrifugal-Action Separators for Low-Flow Applications

ILB

Centrifugal-Action Separators for Low-Flow Applications are designed to separate solids from liquids in a wide range of applications. They are available in two standard materials of construction: carbon steel and stainless steel. Each has distinct qualities with regard to corrosion, pressure and cost.

No. 100 (100) separator

Centrifugal-Action Separators for Low-Flow Applications are designed to separate solids from liquids in a wide range of applications.

Centrifugal-Action Separators for Low-Flow Applications are designed to separate solids from liquids in a wide range of applications.

Simple, easy-to-use solution for a wide variety of solids-from-liquids problems.

No. 100 (100) separator

Minimizes water/liquid loss. Zero liquid loss options available.

No. 100 (100) separator

All maintenance operations can be performed during normal operation with no loss of performance (see page 2).

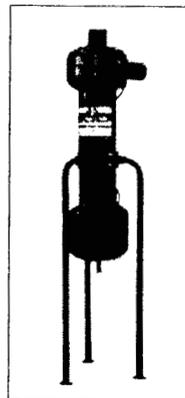
Low pressure loss

Consistent with the systems flow rate, LAKOS Separators typically require no more than 5-12 psi (0.3 - 0.8 bar) for effective solids removal without troublesome pressure fluctuations.

Available in two standard materials of construction

LAKOS ILB Separators are available in either carbon steel or stainless steel. Each has distinct qualities with regard to corrosion, pressure and cost.

LAKOS ILB Separators. The simple, easy-to-use solution for a wide variety of solids-from-liquids problems.



Clamp-on support legs available as an option.



How-it-Works Illustration

Installation & Operating Instructions

Maintenance & Purging

Model Specifications

Engineering Specifications

Flow range:
3-290 U.S. gpm
(.7 - 66 m³/hr) per unit

Maximum standard
pressure rating:
150 psi (10.3 bar)

LAKOS

Liquid-Solids Separation Systems®

Maintenance/Purging

LAKOS automatic purging systems are designed to provide a safe, reliable, and efficient means of purging and maintaining your piping and equipment.

These systems are available in a wide range of sizes and configurations to meet your specific needs.

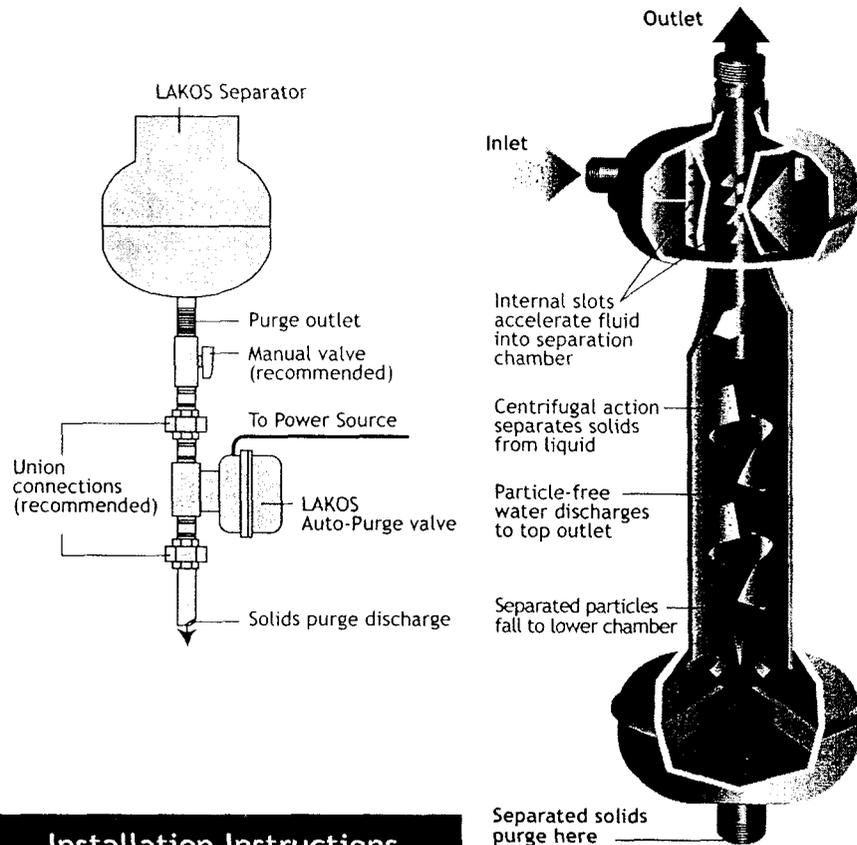
LAKOS automatic purging systems are designed to provide a safe, reliable, and efficient means of purging and maintaining your piping and equipment.

LAKOS offers a complete, reliable automatic purging system to allow you to reduce maintenance, increase the safety of purging and eliminate the need for manual purging. The specific needs of your application are our primary concern.

Refer to the instructions on the separator, valve, and manual valve for more information. LAKOS offers a complete, reliable automatic purging system to allow you to reduce maintenance, increase the safety of purging and eliminate the need for manual purging.

LAKOS products are manufactured and sold under one or more of the following U.S. Patents: 3,289,608; 3,512,651; 3,568,837; 3,701,425; 3,947,364; 3,963,073; 4,027,481; 4,120,795; 4,123,800; 4,140,638; 4,147,630; 4,148,735; 4,305,825; 4,555,333; 5,320,747; 5,338,341; 5,368,735; 5,425,876; 5,571,416; 5,578,203; 5,622,545; 5,653,874; 5,894,995; 6,090,276; 6,143,175; 6,167,960; 6,202,543; Des. 327,693; and corresponding foreign patents. Other U.S. and foreign patents pending.

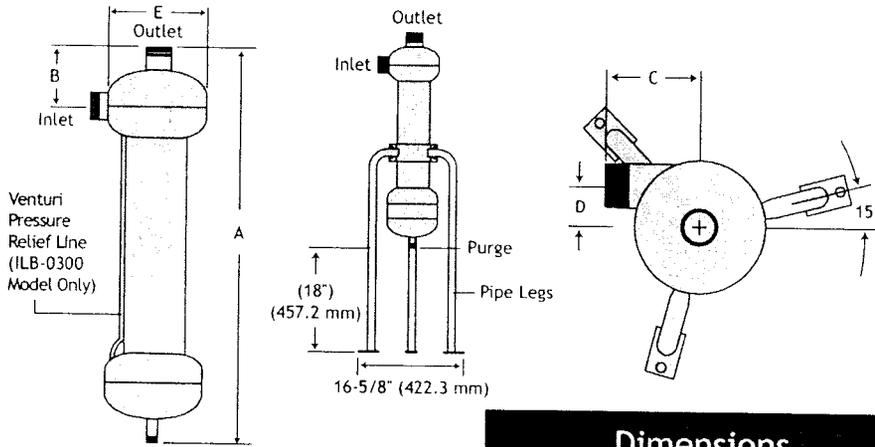
How It Works



Installation Instructions

- 1 LAKOS ILB Separators are shipped in heavy-duty cartons with plastic caps over the inlet and outlet to protect their male pipe threads. Option: Flush unit before operation.
- 2 Prior to installation, the inlet, outlet and purge of each unit should be inspected for the presence of any foreign objects which may have entered the unit during shipping or storage.
- 3 Install piping to inlet and outlet as shown by diagram on page 3. Note data, page 3, for pipe sizes per model.
- 4 For effective solids removal, LAKOS Separators must be operated within the recommended flow range for each model as specified on page 3. *Pipe size is not a factor in model selection.* Minimum inlet pressure should be at least 15 psi (1.0 bar) or equal to the pressure loss anticipated through the separator (see graph, page 3) plus the system's downstream pressure requirement.
- 5 LAKOS ILB Separators should be installed in the near upright vertical position on the discharge side of the pumping system. (Refer to factory for suction side installation.) Suitable means for supporting the separator's weight independently from the inlet/outlet piping is necessary. A LAKOS Mounting Kit is recommended, but may be substituted with similar hardware, such as U-bolts fastened snugly around the separator's inner barrel.
- 6 If subject to idle periods, LAKOS ILB Separators installed in sub-freezing locations must be drained of liquid or protected from freezing to avoid damage from ice expansion. NOTE: All LAKOS automatic purging hardware provide a manual override to allow for easy draining via the purge opening.
- 7 In a pressurized system (vs. open discharge), pressure gauges are recommended at both inlet and outlet to monitor pressure loss and proper system flow (see graph, page 3). If the separator is operated at open discharge, a valve is recommended at the outlet, set to create a back pressure of 5 psi (0.3 bar).

ILB



Dimensions

Model	A		B		C		D		E	
	in	mm	in	mm	in	mm	in	mm	in	mm
ILB-0037	16-1/2	419	3	76	3-5/8	86	1-5/8	41	4	102
ILB-0050	20	508	4	102	4	102	2-1/4	57	6	152
ILB-0075	20	508	4	102	4	102	2-1/8	54	6	152
ILB-0100	30	762	4-3/8	111	4	102	2	51	6	152
ILB-0125	30	762	4-3/8	111	4	102	1-7/8	48	6	152
ILB-0150	30	762	4-3/8	111	4-3/4	121	1-3/4	44	6	152
ILB-0200	33-5/8	854	5	127	5-1/2	140	2-5/8	67	8-5/8	219
ILB-0250	37	940	5-1/2	140	6-1/4	159	2-5/8	67	8-5/8	219
ILB-0300	42	1067	7	178	8-1/4	209	3-1/4	83	10-3/4	273

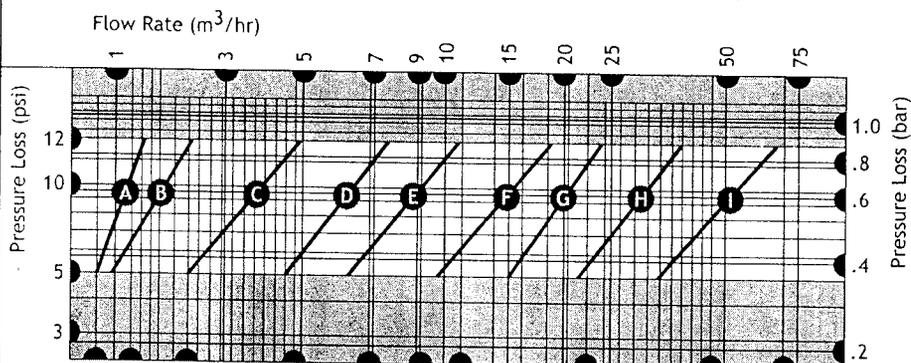
Dimensions for reference only. Consult factory when pre-plumbing.

Specifications

Model	Flow Range		Inlet/Outlet Size male N.P.T.*	Weight		Weight with Water	
	U.S. gpm	m ³ /hr		lbs.	kg	lbs.	kg
ILB-0037	3-6	7-1.5	3/8"	9	4.1	19	8.6
ILB-0050	4-10	1.0-2.5	1/2"	14	6.3	20	9.1
ILB-0075	10-20	2.5-4.5	3/4"	15	6.8	25	11.3
ILB-0100	19-32	4.5-7.5	1"	27	12.2	38	17.2
ILB-0125	28-48	6.5-11.0	1-1/4"	27	12.2	38	17.2
ILB-0150	45-70	10.0-16.0	1-1/2"	27	12.2	40	18.1
ILB-0200	65-108	14.5-24.5	2"	52	23.6	98	44.4
ILB-0250	95-155	21.5-35.0	2-1/2"	60	27.2	109	49.4
ILB-0300	148-290	33.5-66.0	3"	101	45.8	177	80.0

*Also available in BSP or JIS threads. Consult factory for details.

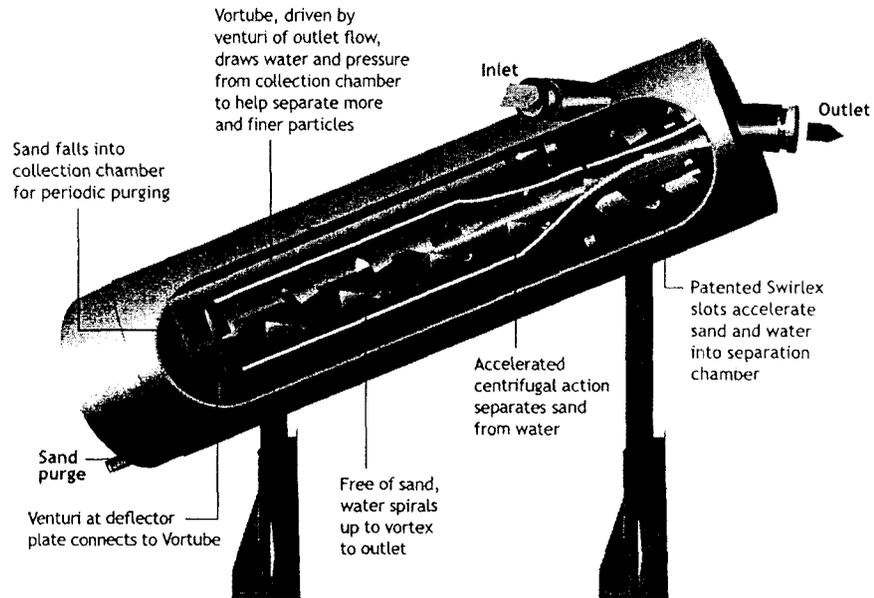
Flow vs. Pressure Loss



- A ILB-0037
- B ILB-0050
- C ILB-0075
- D ILB-0100
- E ILB-0125
- F ILB-0150
- G ILB-0200
- H ILB-0250
- I ILB-0300

Maintenance/Purging

How It Works

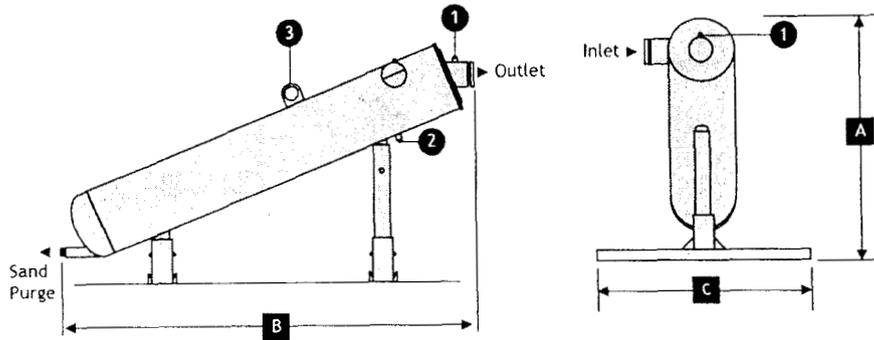


Installation Instructions

- 1 LAKOS IHB Separators are shipped on a wooden skid with the two support legs detached. A large ring, located on the unit's side, is provided for hoisting as necessary.
- 2 A suitable foundation is necessary to accommodate the separator's weight including water (see chart, page 3). Tie-down bolts are recommended in the base of the legs. Prior to installation, inspect the inlet, outlet and purge of each unit for foreign objects that may have entered the unit during shipping or storage.
- 3 Proper purge hardware is required to flush separated sand from the separator. This equipment should be installed before start-up.
- 4 Pipe connections to the inlet and outlet of LAKOS IHB Separator should be a straight run of at least five pipe diameters to minimize turbulence and optimize performance. *Pipe size is not a factor in selecting the proper model of a LAKOS Separator.* Rather, all LAKOS Separators operate within a prescribed flow range.
- 5 Use appropriate hardware to match inlet and outlet size. Grooved couplings are not included with the separator. Inlet pressure to the LAKOS Separator must be at least equal to or greater than the anticipated pressure loss through the separator, plus 15 psi (1.0 bar), plus the required downstream pressure.
- 6 LAKOS IHB Separators are typically installed on the discharge of a pumping system. Consult your LAKOS representative for suction side installation. No other pressure or power is required to operate a LAKOS Separator.
- 7 In a pressurized system (vs. open discharge), pressure gauges are recommended at both inlet and outlet to monitor pressure loss and proper system flow. If the separator is operated at open discharge, a valve is recommended at the outlet, set to create a backpressure of 5 psi (0.3 bar).
- 8 Winterizing is important if the separator is to remain idle in freezing temperatures. Drain water as necessary to avoid bursting due to water-ice expansion.

LAKOS products are manufactured and sold under one or more of the following U.S. Patents: 3,289,608; 3,512,651; 3,568,837; 3,701,425; 3,947,364; 3,963,073; 4,027,481; 4,120,795; 4,123,800; 4,140,638; 4,147,630; 4,148,735; 4,305,825; 4,555,333; 5,320,747; 5,338,341; 5,368,735; 5,425,876; 5,571,416; 5,578,203; 5,622,545; 5,653,874; 5,894,995; 6,090,276; 6,143,175; 6,167,960; 6,202,543; Des. 327,693 and corresponding foreign patents. Other U.S. and foreign patents pending.

IHB



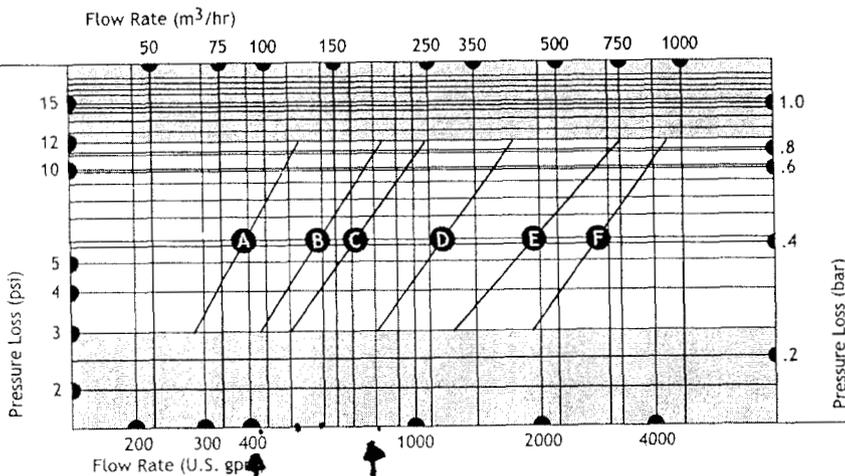
Dimensions

Model	A		B		C	
	in	mm	in	mm	in	mm
IHB-0285	45	1143	78-1/4	1994	40	1016
IHB-0450	52-1/2	1333	96-1/4	2445	40	1016
IHB-0500	52-1/2	1333	96-1/4	2445	40	1016
IHB-0810	61	1549	108	2743	40	1016
IHB-1275	72-1/2	1841	130	3302	40	1016
IHB-1950	79-1/4	2013	142	3607	40	1016

Specifications

Model	Flow Range		Inlet/Outlet Grooved Coupling	Purge Size male N.P.T.	Collection Chamber Capacity		Weight		Weight with Water	
	U.S. gpm	m ³ /hr			gal	liters	lbs.	kg	lbs.	kg
IHB-0285	285-525	65-120	4"	1-1/2"	2.1	7.9	476	216	786	357
IHB-0450	450-825	102-187	6"	1-1/2"	2.8	10.6	699	318	1163	529
IHB-0500	500-1100	114-250	6"	1-1/2"	2.8	10.6	701	320	1167	531
IHB-0810	810-1670	184-379	8"	1-1/2"	6.2	23.5	966	439	1856	844
IHB-1275	1275-3100	290-704	10"	2"	11.5	43.5	1344	611	2960	1346
IHB-1950	1950-4350	443-988	12"	2"	15	56.8	1795	816	3933	1788

Flow vs. Pressure Loss



APPENDIX F

**SEVERN
TRENT
FACILITY
SPECS.**

SEVERN

TRENT

SERVICES

*Filtration
Products*

LAS QUINTAS SERENAS WATER COMPANY

GREEN VALLEY, ARIZONA

PROPOSAL FOR

**SORB 33™ Adsorber Arsenic Removal Systems
For Wells #5, #6 and #7**

This proposal contains proprietary or confidential information of Severn Trent Water Purification, Inc. (STWP) regarding patent protected proprietary technologies and their implementation in the field, recommended uses and costs. Any such proprietary or confidential information disclosed herein is provided at buyer's request and solely for the purpose of enabling buyer to evaluate this proposal.

In receiving and reading this proposal, buyer agrees that it will not reveal or otherwise distribute its contents to any third party without STWP's prior written consent. The foregoing limitation shall not preclude buyer from disclosing the contents of this proposal to its employees, on a need to know basis, who have the responsibility to evaluate and/or implement the program set forth in this proposal. This proposal shall at all times remain the exclusive property of STWP until accepted by the party to which it was tendered.

**STWP Proposal 33841, Rev 2
September 7, 2005**

TABLE OF CONTENTS

- 1.0 Introduction
- 2.0 EAS Equipment Description
- 3.0 APU Equipment Description
- 4.0 Assembly Requirements
- 5.0 Field Services
- 6.0 Qualifications
- 7.0 Price and Payment Schedule
- 8.0 Production Schedule
- 9.0 Acceptance of Proposal

Attachments

Standard Terms and Conditions of Sale

Drawings:

D01	P&I Diagram – APU-160
G01	General Arrangement – APU-160
D1054	P&I Diagram – 10'-0" Adsorbers
G1054	General Arrangement – 10'-0" Adsorbers

1.0 INTRODUCTION

Severn Trent Water Purification, Inc. (STWP) is pleased to offer this proposal for the supply of equipment, materials, and services for SORB 33™ Adsorber Systems at the sites listed below located near Green Valley, AZ. This proposal is in accordance with the specifications of STWP.

The table below lists the specific site and the quantity, size or model of adsorber system.

Well Site	# & Size of Vessels or Model No.	Piping Type	Process Piping Size
Wells #6 & #7	(2) 10' Dia EAS Units	DI	8"
Well #5	(1) APU-160	PVC	3"

The following sections provide descriptions of the EAS Units and the APU Unit.

2.0 EAS EQUIPMENT DESCRIPTION

2.1 Adsorber Internals

2 lots Support Gravel

To support the media and cover the effluent collectors to prevent media plugging, shipped in 50# bags.

2 lots Bayoxide® E33™ Media

Shipped in 38 ft³ super sacks.

2.2 Process Vessels

2 Adsorber Vessels

75 psig vertical pressure vessel, 10'-0" diameter with 5'-3" straight side wall. Design features as follows:

- SA516-70 carbon steel plate.
- Designed and stamped to ASME Section VIII, Division 1 Code in effect at time of contract award.
- Legs for support of the vessels from the floor.
- Interior blast cleaned, SP-10, and coated with NSF 61 certified epoxy.
- Exterior blast cleaned, SP-6, and coated with two coats of self priming epoxy.
- Nozzles to have flanged ends.
- Two access ports, one 24" diameter on the side wall with hinge and one 14" x 18" on the top head.
- 304 stainless steel inlet distributor/backwash collection pipe.
- 304 stainless steel effluent header with 304 stainless steel screened laterals.

1 lots Adsorber Piping

The attached drawings indicate how the vessels will be piped together.

- Cement lined ductile iron process piping
- PP lined carbon steel media removal piping
- Carbon steel rupture disc and vent piping
- Copper instrument tubing for DP cells

2 lots Platforms and Ladders

Each platform and ladder will service one adsorber.

2.3 Valves & Accessories

The enclosed PIDs indicate the type, quantity and size of valves and accessories for the vessels. Accessories will include expansion joints, rupture discs, quick connect adaptors and air release valves. Butterfly valves will have lugged cast iron bodies and stainless steel discs. Control valve operators will be electric actuation type (Triac, or equal) powered by 120V, 60 Hz, 1 phase and with manual handwheel override. Manual butterfly valves have handwheel operators.

2.4 Instrumentation

2 Influent Flow Meters

Magmeters, sizes are indicated on the PIDs.

2 Differential Pressure Switches

2.5 Auxiliary Equipment – Bypass Control

1 Bypass Flow Meter

Magmeter, size per the PID, with the same features as those for the Adsorber Influent Flow Meters.

1 Bypass Flow Control Valve

Electric actuated, modulating butterfly valve, same specification as the automatic valves on the Adsorbers.

2.6 Auxiliary Equipment – Backwash Recovery System

1 Backwash/Rinse Wastewater Holding Tank

Bolted steel tank, 13,400 gallon nominal capacity, with nozzles for fill, withdraw, drain, vent, level switches and overflow. A side access hatch will be provided. Erection of the bolted steel tank will be provided by STWP on a slab foundation designed and supplied by others. An access ladder and perimeter handrail is included.

- 1 Backwash Transfer Pump
Multi-stage centrifugal pump with a capacity of 50 gpm at 50 psi. Final pressure rating will be based on the actual line pressure of the system, which must still be confirmed.
- 1 Backwash Transfer Pump Pressure Gage
- 2 Backwash/Rinse Tank Level Switches

2.8 Controls

- 1 Local Control Panel
NEMA 4X control panel. Panel will control the start/stop of the backwash return pump. The PLC will be an Allen-Bradley Micrologix 1200 and the HMI will be an Allen-Bradley 600 with sunshield. Power to the panel is to be 120V, 1 ph, 60 hz.

3.0 APU EQUIPMENT DESCRIPTION

3.1 Adsorber Internals

- 1 lot Support Gravel
Three grades to support the media and cover the effluent collectors to prevent media plugging, shipped in 50# bags.
- 1 lot Bayoxide® E33 Media
Shipped in 38 ft³ bags.

3.2 APU-160

The APU is an assembly shipped in three segments consisting of two adsorber vessels, and one skid that includes piping, wiring, valves, instruments and controls. Once the three segments are assembled it is completely ready for operation once the support gravel and media are installed. Backwashing of the unit is automatically controlled. The components of the assembly are described below.

- 2 Adsorber Vessels
Vessels will be 48" diameter with the following features:
 - Maximum 150 psig rating
 - FRP construction.
 - Tripod base for support of the vessels from the frame.
 - PVC or stainless steel Inlet distributor/backwash collector.
 - PVC screened effluent laterals.
 - Externally painted for protection from UV radiation (not required if located indoors)

1 Adsorber Mounting Frame
Painted carbon steel and 304 stainless steel construction.

1 lot Adsorber Piping
Process piping will be schedule 80 PVC. Instrument air pipe, tubing and fittings will be copper or PVC. There will be three piping connections for the contractor to make on each skid: a) process influent, b) process effluent, c) backwash effluent.

Bypass piping is included on the skid.

Piping will be painted for protection from UV radiation.

1 lot Valves
Process valves will be Butterfly type valves constructed of PVC. The manual valves will have lever handles. The control valves will have electric actuators rated for 120V, 1ph, 60 hz power. Ball valves for sample, vent and drain are included.

1 lot Instruments

- Each vessel will have a flow meter on the influent.
- Each vessel will have a differential pressure indicating switch.
- Pressure gages are included on the skid influent and effluent.

1 Control Panel
NEMA 4X control panel. Flow and pressure differential indicators are on the front face. A PLC will control the backwash sequence on operator settable time schedule. Power to the panel is to be 120V, 1 ph, 60 hz. The PLC will be an Allen-Bradley Micrologix 1200 and the HMI will be an Allen-Bradley 600 with sunshield.

3.3 Auxiliary Equipment – Backwash Recovery System

1 Backwash/Rinse Wastewater Holding Tank
PE tank for capacity of 3,000 gallons (minimum). Has nozzles for fill, withdraw, drain, vent, level switches and overflow. An access ladder will be provided.

1 Backwash Transfer Pump
Multi-stage centrifugal pump with a capacity of 10 gpm at 50 psi. Final pressure rating will be based on the actual line pressure of the system, which must still be confirmed.

1 Backwash Transfer Pump Pressure Gage

2 Backwash/Rinse Tank Level Switches

4.0 **ASSEMBLY REQUIREMENTS**

The following are the items that will be shipped individually that must be assembled in the field.

EAS Systems

- Gravel
- Bayoxide® E33 media
- Adsorbers: All the internal collectors and distributors will be installed at the shop. The carbon steel piping and media withdraw piping will be attached at the shop.
- Platforms
- Ladders
- Process Piping: Each pair of adsorbers will have a central piping "tree" with valves attached. This "tree" will be shipped as a unit. Individual piping spools that connect the "tree" with the adsorbers will be shipped loose for connection in the field. These loose pipe spools will include the expansion joints.
- Influent flow meters for adsorbers.
- All auxiliary equipment
- Control panel

APU-160

- Gravel
- Bayoxide® E33 media
- Adsorber Vessels.
- Piping Skid
- Interconnecting pipe between piping skid and Adsorber Vessels.
- All auxiliary equipment

5.0 **FIELD SERVICES**

STWP will furnish the services of a qualified field representative to instruct operation personnel and advise on equipment and media installation. The time for each site will be as follows:

Well Site	Equip Installation	Start-up
Wells #6 & #7	3 days in 1 trip	3 days in 1 trip
Well #5	2 days in 1 trip	1 day

Additional services can be purchased, if desired, at the rate of \$1,000 per day (8 hr/day max.) plus travel and living expenses at cost.

When the STWP field representative arrives on-site at the time requested by the contractor/purchaser all equipment must be ready for work to begin. If equipment is not ready then our standard per diem rate, plus travel and living

expenses, will apply.

6.0 **QUALIFICATIONS**

The following items are not included in the STWP package:

- Receiving, unloading, storing and installation of STWP supplied equipment.
- Concrete foundations for vessels, building/architectural work and engineering thereof.
- Anchor bolts for adsorber vessel or mechanical equipment.
- Access ladders & platforms for APU Adsorbers. These FRP tanks cannot have ladders attached.
- Interconnecting piping or piping supports including flanges, bolts, nuts and gaskets, and engineering thereof, outside the boundary of the piping on the adsorber vessels.
- Electrical starters, circuit breakers, motor control center, and engineering thereof, and power supply.
- Conduit and power wire and all signal wiring for instruments.
- Heat trace and insulation of pipe or instruments for freeze protection
- Water supply/disposal for flushing of adsorber internals
- Performance testing; collection of samples and lab analysis.
- Spare parts.

STWP will provide 3 operation and maintenance manuals in final form.

7.0 **PRICE AND PAYMENT SCHEDULE**

STWP will deliver the equipment, materials and service described herein for a lump sum of \$_____ including freight, but no taxes.

Pricing is valid for thirty (30) days.

Payment is net 30 days after invoice. All invoices to be submitted by the 25th day of the month or sooner. Interest to be billed at 1-1/2% per month on invoices unpaid after 30 days or the maximum allowable by law, whichever is less.

Payment shall be made as follows:

- 10% upon initial submittal of drawings for approval;
- 30% upon delivery of raw materials to fabricator and media to distribution site;
- 50% upon delivery of equipment to the site;
- 10% upon completion of start-up.

8.0 **PRODUCTION SCHEDULE**

- Submittal of drawings 4 to 6 weeks after purchase order.
- Delivery of equipment and media 12 to 14 weeks after drawing approval.

9.0 ACCEPTANCE OF PROPOSAL

The referenced documents and attached Standard Terms and Conditions of Sale are incorporated herein and are agreed to be a material part of this Agreement.

AGREED BY:
Severn Trent Water Purification, Inc.

AGREED BY:

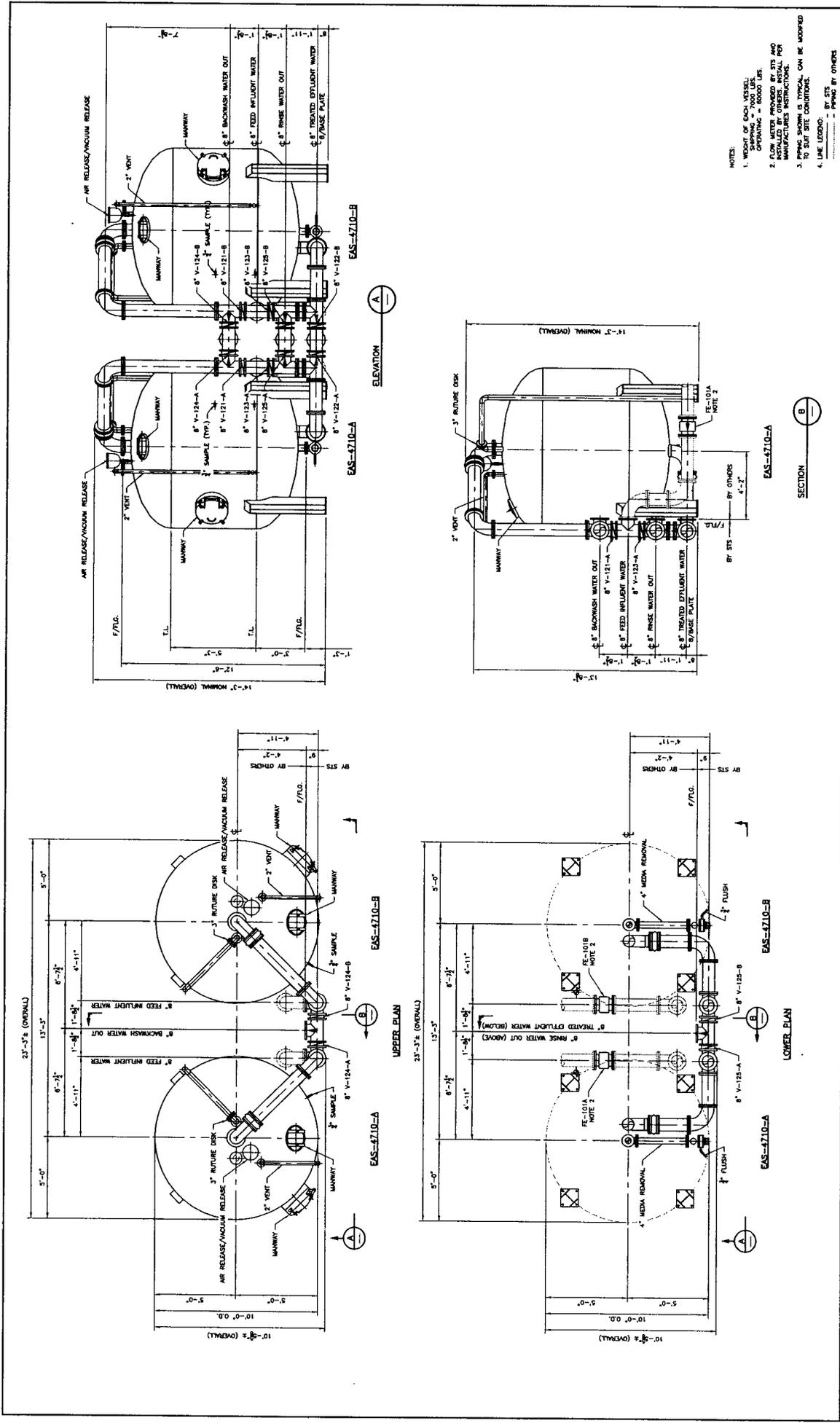
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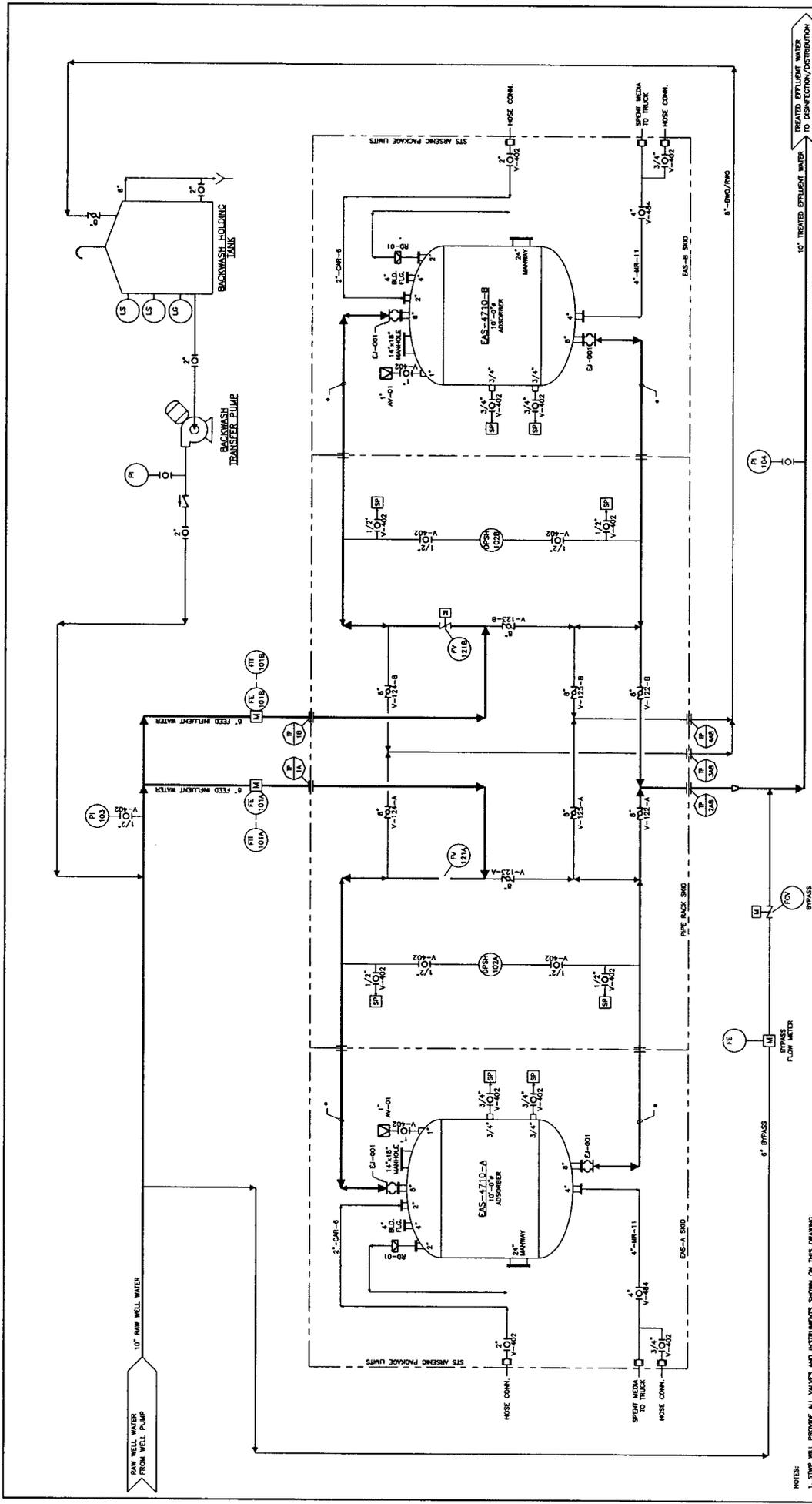
(Client's Purchase Order Number)



- NOTES:
- WEIGHT OF EACH VESSEL, SHIPPING = 7000 LBS. OPERATING = 6000 LBS.
 - FLOW METERS PROVIDED BY SITE AND MANUFACTURER'S INSTRUCTIONS. FOR PIPING SHOWN IS TYPICAL, ON BE MOODIFIED TO SUIT SITE CONDITIONS.
 - LINE LEGEND: BY SITS BY OTHERS

NO. REVISIONS		BY	DATE	APPD	NO.	REVISIONS	BY	DATE	APPD	NO.	SCALE	FOR PROPOSAL ONLY		LAS QUINTAS SERENAS WATER CO. GREEN VALLEY, AZ (2) 10" DIA. EAS ADSORBER SYSTEM GENERAL ARRANGEMENT PLAN AND SECTIONS		SEVERN TRENT SERVICES		FILTRATION PRODUCTS	
A	ISSUE FOR PROPOSAL	KXB	9/2/05	NPK							3/8" x 1-1/2"	CONTRACT NO. E33841-G1055		DRAWING NO. E33841-G1055		REV. A		33841G1055	
						DESIGNED						DATE		REV.		DATE		REV.	
						DRAFTED													
						CHECKED													

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- NOTES:
1. STWP WILL PROVIDE ALL VALVES AND INSTRUMENTS SHOWN ON THIS DRAWING.
 2. STWP WILL PROVIDE ALL PIPING ASSEMBLED AS SHOWN ON THIS DRAWING. ALL PIPING SHALL BE ASSEMBLED TO THE RESPECTIVE SHED EXCEPT THOSE PARTS INDICATED BY AN ASTERISK (*), WHICH WILL SHIP LOOSE.
 3. PIPE NOT DEFINED BY A SHED WILL BE SUPPLIED BY OTHERS. STWP VALVES AND INSTRUMENTS NOT DEFINED BY A SHED WILL BE SUPPLIED BY OTHERS. STWP VALVES AND INSTRUMENTS NOT DEFINED BY A SHED WILL BE SUPPLIED INDIVIDUALLY.

NO.		REVISIONS		BY		DATE		APPROVED		SCALE		NODE	
A		ISSUED FOR PROPOSAL		KJS		9/20/05		NPK		APPD		DATE	
		REVISIONS		BY		DATE		APPROVED		SCALE		NODE	
		DESIGNED		DRAFTED		CHECKED							

FOR PROPOSAL ONLY

LAS QUINTAS SERENAS WATER CO.
 GREEN VALLEY, AZ
 (2) 10"-Ø" DIA. EAS ADSORBERS
 P & I DIAGRAM

SEVERN TRENT SERVICES

CONTRACT NO. **E33841-D1055**

DWG. NO. **A**

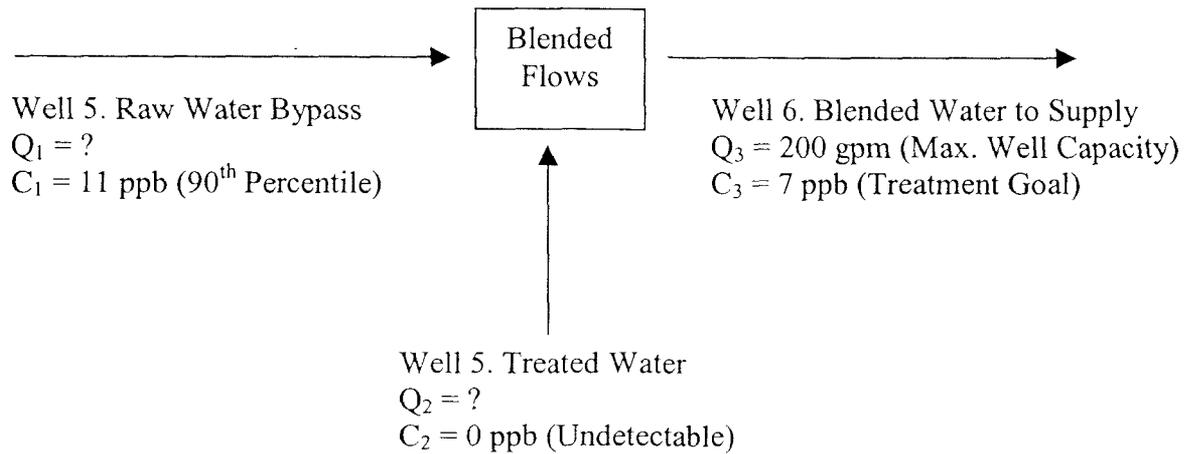
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FILTRATION PRODUCTS

APPENDIX G

**INITIAL
FLOW
CONTROL
BYPASS
SETTINGS**

Initial Flow Control Bypass Settings for Well No. 5



General Equation for Steady State Mass Balance :

$$\Sigma \text{Mass in by flow} = \Sigma \text{Mass out by flow}$$

$$(Q_1)(C_1) + (Q_2)(C_2) = (Q_3)(C_3)$$

or

$$(Q_1)(C_1) + (Q_2)(C_2) - (Q_3)(C_3) = 0$$

Step 1. $(Q_1)(11 \text{ ppb}) + (Q_2)(0 \text{ ppb}) - (200 \text{ gpm})(7 \text{ ppb}) = 0$

Step 2. $(Q_1)(11 \text{ ppb}) = (200 \text{ gpm})(7 \text{ ppb})$

Step 3. $Q_1 = [(200 \text{ gpm})(7 \text{ ppb})] / (11 \text{ ppb})$

Step 4. $Q_1 = 127.27 \text{ gpm}$, use 128 gpm (Raw Water bypassed around (As) Treatment Facility)

Step 5. $Q_2 = Q_3 - Q_1$

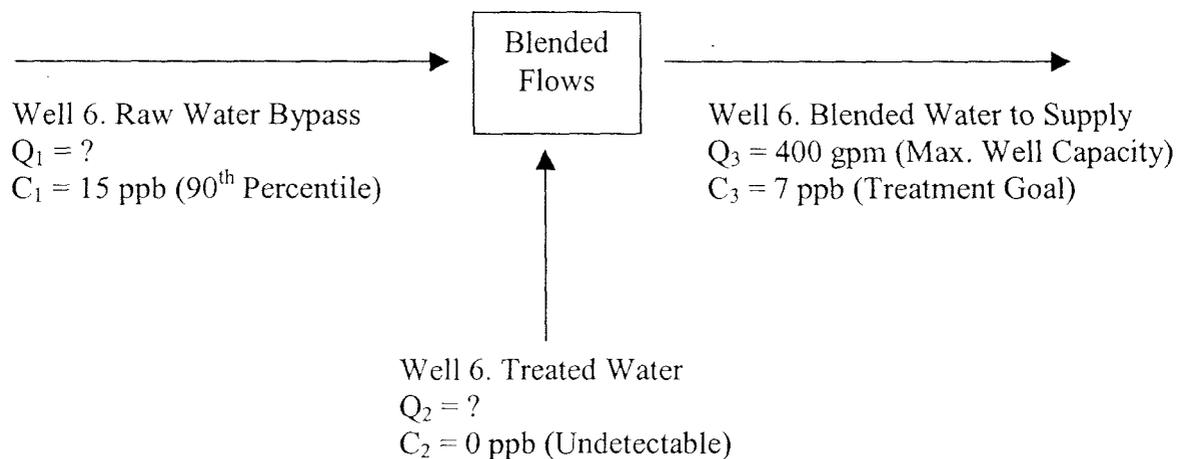
Step 6. $Q_2 = 200 \text{ gpm} - 128 \text{ gpm}$

Step 7. $Q_2 = 72 \text{ gpm}$ (Raw Water Treated to Undetectable As Levels through (As) Treatment Facility)

Note: $(\text{Treated Water in gpm}) / (\text{Well Capacity in gpm}) = (72 \text{ gpm}) / (200 \text{ gpm}) = 36\%$

In order to obtain 7 ppb from 11 ppb, facility must treat 36% of total flow for any well capacity

Initial Flow Control Bypass Settings for Well No. 6



General Equation for Steady State Mass Balance :

$$\Sigma \text{Mass in by flow} = \Sigma \text{Mass out by flow}$$

$$(Q_1)(C_1) + (Q_2)(C_2) = (Q_3)(C_3)$$

or

$$(Q_1)(C_1) + (Q_2)(C_2) - (Q_3)(C_3) = 0$$

Step 1. $(Q_1)(15 \text{ ppb}) + (Q_2)(0 \text{ ppb}) - (400 \text{ gpm})(7 \text{ ppb}) = 0$

Step 2. $(Q_1)(15 \text{ ppb}) = (400 \text{ gpm})(7 \text{ ppb})$

Step 3. $Q_1 = [(400 \text{ gpm})(7 \text{ ppb})] / (15 \text{ ppb})$

Step 4. $Q_1 = 186 \text{ gpm}$ (Raw Water bypassed around (As) Treatment Facility)

Step 5. $Q_2 = Q_3 - Q_1$

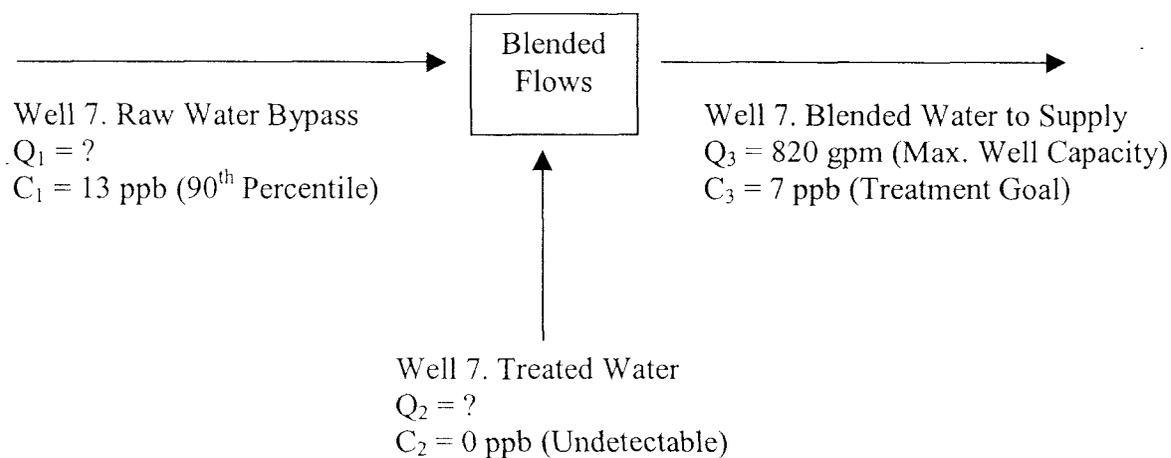
Step 6. $Q_2 = 400 \text{ gpm} - 186 \text{ gpm}$

Step 7. $Q_2 = 214 \text{ gpm}$ (Raw Water Treated to Undetectable As Levels through (As) Treatment Facility)

Note: $(\text{Treated Water in gpm}) / (\text{Well Capacity in gpm}) = (214 \text{ gpm}) / (400 \text{ gpm}) = 53\%$

In order to obtain 7 ppb from 15 ppb, facility must treat 53% of total flow for any well capacity

Initial Flow Control Bypass Settings for Well No. 7



General Equation for Steady State Mass Balance :

$$\Sigma \text{Mass in by flow} = \Sigma \text{Mass out by flow}$$

$$(Q_1)(C_1) + (Q_2)(C_2) = (Q_3)(C_3)$$

or

$$(Q_1)(C_1) + (Q_2)(C_2) - (Q_3)(C_3) = 0$$

Step 1. $(Q_1)(13 \text{ ppb}) + (Q_2)(0 \text{ ppb}) - (820 \text{ gpm})(7 \text{ ppb}) = 0$

Step 2. $(Q_1)(13 \text{ ppb}) = (820 \text{ gpm})(7 \text{ ppb})$

Step 3. $Q_1 = [(820 \text{ gpm})(7 \text{ ppb})] / (13 \text{ ppb})$

Step 4. $Q_1 = 441 \text{ gpm}$ (Raw Water bypassed around (As) Treatment Facility)

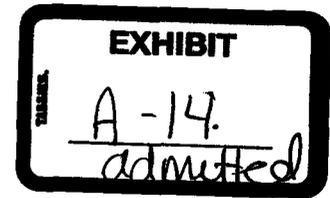
Step 5. $Q_2 = Q_3 - Q_1$

Step 6. $Q_2 = 820 \text{ gpm} - 441 \text{ gpm}$

Step 7. $Q_2 = 379 \text{ gpm}$ (Raw Water Treated to Undetectable As Levels through (As) Treatment Facility)

Note: $(\text{Treated Water in gpm}) / (\text{Well Capacity in gpm}) = (379 \text{ gpm}) / (820 \text{ gpm}) = 46\%$

In order to obtain 7 ppb from 13 ppb, facility must treat 46% of total flow for any well capacity



PREPARED DIRECT TESTIMONY OF
MIKE WOOD
ON BEHALF OF
LAS QUINTAS SERENAS WATER COMPANY
IN
DOCKET NOS. W-01583A-04-0178, W-01583A-05-0326
AND W-01583A-05-0340

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Table of Contents
(Mike Wood)

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

Matter/ Issue Discussion

Page(s)

Purpose of Testimony

1-2

Description of Applicant's
Requests of ACC

2-3

Board of Director's Decision-
Making Process

3-5

Description of Proposed Finance
Of Arsenic-Related Capital Improvements,
And Recovery of Arsenic Treatment
Operating Expenses

7

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3
4
5
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11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
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PREPARED DIRECT TESTIMONY OF
MIKE WOOD
ON BEHALF OF
LAS QUINTAS SERENAS WATER COMPANY
IN
DOCKET NOS. W-01583A-04-0178, W-01583A-05-0326 AND W-01583A-05-0340

Q.1 Please state your name and your business relationship with the Applicant in these proceedings.

A.1 My name is Mike Wood, and I am a member of the Board of Directors and Vice President of Las Quintas Serenas Water Company ("LQS"). I have served in each of those capacities since June, 2003.

Q. 2 Are you testifying as LQS's policy witness in these proceedings?

A. 2 Yes.

Q. 3 What is the purpose of your direct case testimony?

A. 3 There are several purposes of my testimony. First, I will generally describe each of the applications or motions which are the subject of these consolidated proceedings, and explain how they are interrelated. Second, I will generally describe the process used by the Board of Directors and LQS's management to determine the manner in which LQS proposes to put itself in a position to comply with the United States Environmental Protection Agency's ("EPA") arsenic concentration regulations. Third, I will describe how LQS proposes to finance the construction of the capital improvements needed to achieve compliance with EPA's arsenic concentration regulations. Finally, I will generally describe how LQS proposes to service the long-term debt that LQS is seeking

1 authorization from the Commission to incur, in order to fund the construction of the
2 arsenic-related capital improvements.

3
4 In addition to my testimony, LQS is presenting the direct case testimony of three other
5 direct case witnesses. Mark Taylor, an owner and Principal of WestLand Resources, Inc.
6 (“WestLand”) will describe the professional engineering services that his firm provided
7 in connection with the development of a Water System and Arsenic Master Plan (“Plan”)
8 for LQS, which was adopted by the Board of Directors in March, 2005. That Plan, in
9 large measure, provides the basis for the proposed arsenic-related capital improvements
10 to LQS’s water system, which are the subject of these consolidated proceedings. In that
11 regard, Mr. Taylor will discuss the considerations which led WestLand to select the
12 arsenic removal technology which it has recommended. Kimberley Yaglowski, a Vice
13 President and Branch Manager with Commerce Bank of Arizona, will describe the nature
14 of the proposed loan arrangement between the bank and LQS under which LQS would
15 obtain the funds to finance construction of the arsenic-related capital improvements.
16 That loan arrangement is a part of the financing authorization from the Commission that
17 LQS is seeking in Docket No. W-01583A-05-0326. Finally, Ron Kozoman, an
18 experienced utility rate design consultant who has testified before the Commission on
19 numerous occasions, will describe how the Arsenic Cost Recovery Mechanism
20 (“ACRM”) that LQS has proposed would operate, and how revenues received by LQS
21 through the ACRM would be used to service the long-term debt incurred to finance the
22 arsenic-related capital improvements. He will also describe LQS’s proposed recovery of
23 an annualized amount for arsenic treatment operating expense.
24
25
26

27 Q. 4 Please describe the applications or motions which are the subject of these consolidated
28 proceedings.

1 A. 4 My description will be in layman's language, and of a general nature. By means of a
2 motion filed in Docket No. W-01583A-04-0178, LQS has asked the Commission to
3 revisit and amend Decision No. 67455, which the Commission issued on January 4, 2005
4 in LQS's 2004 rate case. The purpose of the amendment or amendments to that decision
5 would be to authorize LQS to recover, as part of its monthly rates and charges for water
6 service, an amount of money sufficient to enable LQS to service the long-term debt it is
7 proposing to incur in connection with construction of the proposed arsenic-related capital
8 improvements, together with the annualized arsenic treatment related operating expense.
9 The additions to LQS's previously authorized rates and charges that LQS is proposing are
10 the ACRM and the annualized operating expense, and it is that proposal which is the
11 subject of LQS's application in Docket No. W-01583A-05-0340. In this regard, it is
12 important to note that LQS is not seeking to recover any rate of return on the arsenic-
13 related capital improvements that would be financed with the proposed long-term debt;
14 and we are pleased that the Commission's Staff recognized that fact in the Staff Response
15 filed on May 23, 2005 in Docket No. W-01583A-04-0178. The proposed long-term debt
16 to which I refer is the subject of LQS's application in Docket No. W-01583A-05-0326.
17 Thus, as you can see, the motion and the two applications are interrelated.
18
19

20
21 Q.5 Please describe the process that the Board of Directors and LQS's management used to
22 determine what LQS should do in order to place itself in a position whereby it could
23 comply with the EPA's arsenic concentration regulations.
24

25 A. 5 By way of background, both in terms of professional training and experience, I would
26 note that I have been involved in the field of environmental regulation and compliance
27 for many years; and that a significant portion of my responsibilities have pertained to
28

1 water quality issues. Thus, assuring that LQS would select and construct an arsenic
2 removal methodology and facilities that would enable it to fully comply with the EPA
3 regulations, and, simultaneously, discharge its public service corporation obligation to
4 provide adequate and reliable water service to its customers at reasonable rates, was a
5 priority for me. That was also the view of the other two members of the Board of
6 Directors and LQS's management.

7
8 At the time that LQS was in hearings in its 2004 rate case last fall, LQS was exploring
9 several arsenic removal methodologies and media. Malcolm Pirnie Engineering had
10 recently concluded a study for the company, which included four (4) options, with the
11 capital costs associated with these options ranging from \$1,080,00 to \$1,280,000, and
12 yearly operation and maintenance expenses ranging from \$166,000 to \$318,000. In
13 addition, LQS had requested proposals from several other consulting firms, which
14 involved similar or alternative remediation approaches, and was beginning to review
15 them. Finally, it had requested and received information from several Arizona water
16 utility associations, which it had also begun to review.

17
18
19 That continued to be the situation in early January, 2005, when the Commission issued
20 Decision No. 67455, which did not include any recovery of arsenic removal costs in the
21 rates and charges for water service which were authorized. In fact, the Commission
22 expressly declined to make any findings or reach any conclusions as to such matters at
23 that time. However, in Decision No. 67455, the Commission did direct LQS to prepare
24 and submit a plan indicating how it intended to comply with the EPA's arsenic
25 regulations. In the interim, the Board of Directors had concluded that LQS needed to
26 update the master water plan for its system which had been prepared by Buck Lewis
27 Engineering in September, 1991. After considering several alternative proposals, LQS
28

1 retained WestLand to prepare a plan which would address system upgrades or additions
2 necessary to enable the company to continue to discharge its public service corporation
3 responsibilities, and those capital improvements that would allow it to fully comply with
4 the EPA's arsenic concentration regulations. The result was the Plan prepared by
5 WestLand in March, 2005, which, as I have previously indicated, LQS's Board of
6 Directors adopted. A copy of the Plan has been marked as Exhibit A-1 for identification.

7
8 Mark Taylor of WestLand will describe in his direct case testimony the factual
9 circumstances on the LQS system and the design, operating and economic considerations
10 which led his firm to recommend the arsenic treatment methodology and related capital
11 facilities which are reflected and discussed in the Plan. As I have previously indicated,
12 from the perspective of the Board of Directors and LQS's management, I believe that the
13 arsenic treatment program and related facilities set forth in the Plan will enable LQS to
14 fully comply with the EPA's arsenic concentration regulations, and allow LQS to
15 continue to discharge its public service obligation to provide adequate and reliable water
16 service to its customers at reasonable rates.

17
18
19 Q.6 How does LQS propose to finance construction of the arsenic-related capital
20 improvements reflected in the Plan?

21
22 A.6 In the financing authorization application which LQS has filed in Docket No. W-
23 01583A-05-0326, LQS has requested that the Commission authorize it to incur long-term
24 indebtedness in the amount of \$1,648,750. In Section III of the Application, the company
25 indicated that it intended to submit an application to the Water Infrastructure Authority of
26 Arizona ("WIFA") for a loan in that amount; and, in fact, LQS submitted such an
27 application to WIFA on or about June 13, 2005. A copy of that application has been
28

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marked as Exhibit A-2 for identification. In that regard, I would like to point out that, as a result of a discussion with the Commission's Staff in late June, the amount of loan authorization now being requested in Docket No. W-01583A-05-0326 is less than the amount of the loan requested in the initial application filed with WIFA. That is because approximately \$140,625 of the capital improvements contained in the original \$1,789,375 amount set forth in the Plan was determined by LQS and the Commission's Staff not to be related to the proposed arsenic treatment program. Accordingly, on July 7, 2005 LQS amended its application in Docket No. W-01583A-05-0326 to reduce the amount of the requested loan authorization from \$1,789,375 to \$1,648,750. In the event the Commission approves LQS's loan authorization request, as so amended, then LQS will amend its loan request of WIFA as it proceeds to the next step in the WIFA loan application process.

However, and as discussed in Section III of its financing application, because LQS did not want to presume that WIFA would automatically grant its loan request, LQS has also pursued an alternative course of action and sought to obtain a loan arrangement with a commercial bank as a "back-up", so to speak. I am pleased to report in that regard that the company's efforts have been successful. By means of a September 2, 2005 letter, Commerce Bank of Arizona extended a loan commitment to LQS. That loan commitment was accepted by LQS in late September, and a copy of the loan commitment letter has been marked as Exhibit A-3 for identification. Subsequently, in late October, the bank sent LQS a package of loan documents to be used for purposes of finalizing the loan arrangement, in the event that the Commission approves LQS's loan authorization request and the proposed ACRM. Kimberley Yaglowksi, a Vice President and Branch

1 Manager of Commerce Bank of Arizona, will identify and describe each of these
2 documents in her direct case testimony.

3
4 In the event that the Commission approves the loan authorization request, LQS enters
5 into the indicated loan arrangement with Commerce Bank of Arizona, and WIFA
6 thereafter approves LQS's loan request, the terms of the arrangement with the bank
7 would allow LQS to pay off that loan in full without a prepayment penalty. Thus, and
8 thanks to the bank's willingness to work with us, LQS would be in a position to finance
9 construction of the arsenic-related capital improvements at the lowest lender rate
10 available to it.

11
12 Q.7 Did LQS give any consideration to internally financing the capital improvements that
13 would be necessary in order for it to comply with EPA's arsenic concentration
14 regulations?

15
16 A.7 Yes, but only for a brief period of time. As early as the beginning of 2004, the Company
17 was contemplating the need to explore external financing. That feeling was confirmed as
18 we began to examine the arsenic treatment options from a system-wide perspective,
19 beginning with the Malcolm Pirnie Engineering study in June, 2004. At that point in
20 time, it became readily apparent that the cost of the capital improvements we were likely
21 going to be required to construct were well beyond the ability of the company to
22 internally finance, even with a rate increase. As I have previously noted, the rates and
23 charges authorized in Decision No. 67455 do not include any increase for that purpose.

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26 Q.8 How does the company propose to acquire the funds necessary to service the long-term
27 debt it is requesting authorization to incur?
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A.8 That is the purpose of the ACRM, which is the subject of LQS's application in Docket No. W-01583A-05-0340. Ron Kozoman will be presenting direct case testimony and exhibits describing and illustrating the nature of the proposed ACRM and how it would operate as a part of LQS's authorized rates and charges for water service. In layman's language, I would describe it as a mechanism by means of which the company recovers from its customers each month the direct costs of its borrowing from the bank or WIFA, as the case may be. In other words, the company would not be earning any return on the capital improvements financed with the borrowed funds by means of the ACRM, and the revenues received from its customers through the ACRM would be a direct function of its debt service obligation.

The funds for the arsenic treatment related operating expense would be acquired through a slight increase in the Company's current rate schedule, the details of which also will be explained in Ron Kozoman's direct case testimony.

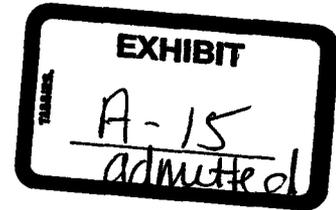
Q.9 Do you have anything you wish to add to your direct case testimony?

A.9 Yes. On behalf of LQS, and myself, I would like to express our appreciation to the Commission and the Commission's Staff for their willingness to reopen the 2004 rate case for the purpose of considering our ACRM proposal. We recognize that what LQS is proposing may require Commission approval of a type that has not been previously forthcoming, and that we may be asking the Commission to move into uncharted waters. In that regard, LQS and its witnesses will do their best to answer any questions and provide any information the Commission, the Commission's Staff or any other party may have or desire.

Q.10 Does that complete your direct case testimony?

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A.10 Yes, it does.



PREPARED DIRECT TESTIMONY OF
MARK TAYLOR
ON BEHALF OF
LAS QUINTAS SERENAS WATER COMPANY
IN
DOCKET NOS. W-01583A-04-0178, W-01583A-05-0326
AND W-01583A-05-0340

Table of Contents
(Mark Taylor)

<u>Matter/ Issue Discussion</u>	<u>Page(s)</u>
Witness/Engineering Firm Background	1 – 5
Description of Engineering Assignment Performed for Las Quintas Serenas Water Company	6
Description of Performance of Engineering Assignment (Including Water and Arsenic Master Plan)	6 – 8
Description of Arsenic-Related Recommended Capital Improvements	8 – 9
Description of Criteria or Considerations Influencing Recommendations	9 – 11
Explanation of Design Report	11

1 PREPARED DIRECT TESTIMONY OF

2 MARK TAYLOR

3 ON BEHALF OF

4 LAS QUINTAS SERENAS WATER COMPANY

5 IN

6 DOCKET NOS. W-01583A-04-0178, W-01583A-05-0326,

7 AND W-01583A-05-0340

8
9
10 Q.1 Please state your name and business relationship with the Applicant as that
11 relationship pertains to these proceedings.

12
13 A.1 My name is Mark Taylor. I am an Owner and Principal of WestLand Resources,
14 Inc. ("WestLand"). WestLand has performed various professional engineering
15 services for Las Quintas Serenas Water Company ("LQS") relating to matters that
16 are the subject of these proceedings. Central to those matters is the Las Quintas
17 Serenas Water Company Water System and Arsenic Master Plan ("Plan"), dated
18 March 24, 2005, that WestLand prepared and submitted to LQS. The Plan, and
19 the recommended capital improvements discussed in the Plan, were adopted by
20 the Board of Directors of LQS that same month and occasioned the filing of the
21 applications that are now before the Commission in Docket Nos. W-01583A-04-
22 0178, W-01583A-05-0326 and W-01583A-05-0340.

1 Q. 2 Please describe WestLand and the nature of the professional engineering services
2 it offers to water utilities such as LQS.

3
4 A. 2 WestLand is an engineering and environmental consulting firm located in Tucson,
5 Arizona, and we provide services throughout the southwestern United States.
6 WestLand specializes in civil engineering (water and wastewater), environmental
7 planning, permitting, resource management, landscape architecture, and cultural
8 resources.

9
10 WestLand was founded in 1997 and has grown steadily to its current staff level of
11 over 98 engineers, scientists, environmental planners, landscape architects,
12 archaeologists, GIS and cartographic specialists, and administrative support staff.
13 Our growth is attributed to an impressive track record for repeat clients, the
14 expertise and experience of our staff, and stringent internal quality assurance and
15 quality control programs.

16
17 Engineering services offered by our firm include water resources planning; water
18 and wastewater system planning and design; wastewater treatment design; arsenic
19 treatment system design; biological systems engineering, irrigation and water
20 harvesting system design; constructed wetland design; groundwater recharge
21 system design; and construction management.

22
23 WestLand performs engineering and consulting services for the private and public
24 sectors. Our engineering staff specializes in water planning, permitting, and

1 infrastructure design for private and municipal water providers. WestLand has
2 continuously provided master planning and design services for 35 public and
3 private water systems, and we are the Engineer-of-Record for ten Arizona
4 Corporation Commission-regulated water companies. WestLand also provides
5 construction management and inspection services for water and wastewater
6 treatment systems, booster stations, wells, reservoirs, and water distribution
7 systems designed by our firm. These services include contract administration,
8 field inspections, submittal review, and pay request evaluation.

9
10 Q. 3 Were you the Principal at WestLand who supervised the provision of those
11 professional engineering services that resulted in the development of the Plan and
12 the capital improvements recommendations submitted to LQS?

13
14 A. 3 Yes.

15
16 Q. 4 Please describe your professional background that qualified you to perform this
17 service.

18
19 A. 4 I am a professional civil engineer specializing in water and wastewater system
20 design analysis and treatment technologies. I have practiced in the civil
21 engineering field for more than 22 years, and during the majority of my
22 engineering career, I have specialized in the field of water and wastewater
23 engineering.

24

1 My background includes 20 years of water and wastewater system master
2 planning for large master-planned communities, multiple large municipal and
3 private water companies in Arizona and Nevada, design and construction
4 administration of numerous large- and small-diameter water system mains,
5 booster stations, wells, reservoirs, lift stations for water and wastewater treatment
6 facilities. I have overseen these programs from the initial master-planning of the
7 project through design, permitting, bidding, construction, certification, and project
8 startup.

9
10 Approximately nine years ago, along with my partner, I founded WestLand to
11 create a firm whose engineering department specializes in the field of water and
12 wastewater design and construction.

13
14 I am a registered civil engineer in the states of Arizona, California, Nevada, and
15 New Mexico.

16
17 In addition, I obtained a Grade 2 Operator's License for water treatment, water
18 distribution, wastewater treatment, and wastewater collection systems in the State
19 of Arizona.

20
21 My education includes a Bachelor of Science in Civil Engineering (1981) and a
22 Master of Business Administration (1983). Both of these degrees were conferred
23 upon me by the University of Arizona.

24

1 Q.5 Have you previously testified before the Commission, and, if so, in what type(s)
2 of proceedings and on how many occasions?

3
4 A. 5 Yes, I have testified before the Commission on two or three occasions. These
5 proceedings were related to rate cases and the establishment of off-site
6 infrastructure tariffs.

7
8 Q.6 Please describe the nature of the assignment that WestLand received from LQS
9 that resulted in the development of the Plan.

10
11 A. 6 LQS contracted with WestLand in January 2005 to provide water master
12 planning. The focus of the request was two-fold: first, LQS requested an analysis
13 of the water system with respect to the engineering considerations of providing
14 adequate and reliable service to customers in order to update a plan prepared for
15 the water system in 1991. Second, because the three existing wells that serve this
16 water system exceed the EPA arsenic standard that will become effective in 2006,
17 LQS requested that the Plan address the methodology for arsenic treatment and
18 determine the most appropriate arsenic treatment technology. WestLand worked
19 with the LQS Board of Directors to develop a Plan that would enable LQS to
20 comply with the upcoming EPA arsenic regulations and simultaneously continue
21 to discharge its ongoing public service corporation obligation to provide adequate
22 and reliable water service at reasonable rates.

23

1 Q.7 Please describe how WestLand performed the assignment that resulted in the Plan
2 and include in your description a discussion of the types of personnel that were
3 used and the types of data and information that the firm took into account.
4

5 A.7 The scope and approach to develop the Plan included defining key issues,
6 identifying water resources, source capacity, and water quality including arsenic
7 requirements, and outlining source, treatment, storage, pressure and distribution
8 system requirements. The engineering criteria used to size and locate system
9 upgrades in the Plan are based on typical design criteria for potable water systems
10 in accordance with Arizona Department of Environmental Quality (ADEQ)
11 standards. WestLand began the development of the Plan by compiling
12 information about the existing water system, including water quality; system
13 operation; and the capacity, condition, and location of existing water system
14 infrastructure. WestLand worked with the water system operator and LQS Board
15 members to review water system operational and pressure considerations and
16 conducted field visits to review items pertinent to the development of the Plan.
17 We utilized LQS water usage records and customer data, along with typical
18 engineering criteria for water systems, to determine the current and projected
19 water system demands for average and peaking conditions.
20

21 This information was used to analyze several options for integrating arsenic
22 treatment into the water system and determine what other water system
23 infrastructure was required to address the issues of system reliability and
24 compliance with ADEQ standards. The water system infrastructure considered

1 included well, reservoir, booster station, and pipeline capacity requirements to
2 provide arsenic treatment and adequate source, storage, and distribution capacity.
3 Several options for arsenic treatment were developed, and Opinions of Probable
4 Construction Cost were prepared. WestLand and the LQS Board of Directors met
5 several times throughout the development of the Plan to discuss the various
6 options and the costs associated with construction and operation and maintenance
7 of the facilities, until the final option was selected. The result of this process was
8 the development of the Plan, which was filed with the Commission.

9
10 The work to develop the Plan was performed by me; Kara Festa, another
11 registered Professional Engineer with our firm; and Jeff Lowy, an Engineer-in-
12 Training under our direct supervision.

13
14 Q.8 With reference to the Plan, which has been marked as Exhibit A-1 for
15 identification, please describe the arsenic removal program that WestLand
16 ultimately recommended to LQS, including the methodology and technology
17 selected and the major capital improvements related to the methodology.

18
19 A. 8 Combined arsenic treatment was recommended for Well Nos. 6 and 7, at the Well
20 Site No. 6, while a smaller individual treatment system was recommended for
21 Well No. 5, as seen in Exhibit 1 of the Plan. A new dedicated raw water main
22 from Well No. 7 will bring raw water to the arsenic treatment plant at Well Site
23 No. 6 site for treatment. Both Well Nos. 6 and 7 will pump raw water through the
24 treatment facility at Well Site No. 6, and a combination of blended and treated

1 water will fill the new onsite storage reservoir as seen in Exhibit 2 of the Plan. A
2 new booster station will pump the treated water from the reservoir into the water
3 system at system pressures in accordance with water system demands. Control of
4 the booster station will be based on the level of water in the existing highwater
5 storage tanks located on the tailings dam. A backup generator will be provided to
6 supply the system with treated water during emergencies.

7
8 After considering several arsenic treatment technologies, an adsorption media
9 arsenic removal process was selected, with Severn Trent as the selected vendor.
10 Ferric Oxide arsenic adsorption media removes arsenic from water by adsorbing
11 arsenic onto the surface of the media. The non-treated well water is pumped
12 through a pressure vessel containing the media where arsenic is adsorbed into the
13 media within the pressure vessel. This removal process occurs until all of the
14 available sites within the media are exhausted. The exhausted media can be
15 discarded in landfills and is classified as non-hazardous waste. The major capital
16 improvements for this adsorption media system are steel pressure vessels and a
17 backwash tank.

18
19 Q.9 Directing your attention to the line item descriptions set forth on Page 1 of
20 Appendix "A" to the Plan, please identify those recommended capital
21 improvements that are related to the arsenic removal program WestLand
22 recommended to LQS.
23

1 A.9 All capital improvements listed in the referenced table are directly related to the
2 recommended arsenic treatment facilities, with the exception of approximately
3 150,000 gallons of storage volume that was added to the proposed reservoir at
4 Well No. 6 for purposes of overall water system improvement. Of the
5 \$1,789,375. total capital improvements shown on Line 14 of Page 1, all but
6 \$140,625., is arsenic removal related, for a total arsenic-related amount of
7 \$1,648,750. If LQS did not have to address the arsenic treatment issues, the
8 recommended master plan facilities to address issues such as existing system
9 requirements for reliability and upgrades for future growth would incorporate
10 different locations and sizes of facilities than those contemplated in the Plan.

11
12 Q.10 Please describe those criteria or considerations that influenced WestLand in its
13 selection of the arsenic removal methodology, technology, and facilities it
14 recommended in the Plan.

15
16 A. 10 WestLand analyzed a number of options related to water system infrastructure
17 and arsenic removal technologies as a part of the development of the Plan.
18 Examples of the options considered included separate wellhead treatment for each
19 well site, consolidated treatment of all well sites, and several combinations
20 thereof. Cost analyses of the various options, along with an engineering review of
21 how the options related to the system as a whole, were used to select the most
22 appropriate option. The analysis of required facilities included an engineering
23 review of the existing water system and various methods for addressing the
24 infrastructure requirements and pressure losses through the arsenic treatment.

1 Hydraulic modeling of the water system was used to review the existing water
2 system and the impact of the proposed modifications to the water system on
3 system pressures and anticipated pressure fluctuations.

4
5 Due to concerns about system operational pressures and pressure fluctuations due
6 to receiving pipeline sizes, the best operational solution for the two larger wells
7 was determined to be the use of low pressure well pumps to deliver raw water to
8 the arsenic treatment plant, with bypass flow and treated flow blended for
9 delivery to a finished water storage tank. A booster station will pump from the
10 finished water storage tank into the system using booster pumps that will deliver
11 at system pressure and at appropriate capacity in response to water system
12 demands. This methodology allows for consistent pressure delivery to and
13 through the arsenic treatment system with different combinations of wells in
14 operation and under varying water system demands and energy efficient delivery
15 to the water system with minimal pressure fluctuations and without
16 overpressurizing the system.

17
18 A number of arsenic treatment technologies were considered, including ion
19 exchange, adsorption, membrane processes, and precipitation processes. The
20 adsorption treatment process was selected as the preferred alternative for arsenic
21 treatment because of the simplicity of this method in terms of treatment and
22 operation and maintenance; low backwash volume and no hazardous waste
23 generation; options for the use of various media suppliers; and the successful
24 history of this process for arsenic treatment in the United States and abroad.

1 Severn Trent was selected to provide both the arsenic treatment facilities and
2 Bayoxide E33 media based on anticipated capital and operation and maintenance
3 costs, storage and handling characteristics of the Bayoxide media, the positive
4 reputation and history of Severn Trent in the environmental services industry, and
5 the ability to utilize other medias in the equipment provided.
6

7 Q.11 What is a design report, and how would it differ from a report in the nature of the
8 Plan?

9
10 A.11 The purpose of a master plan is to analyze the demands, water supply, and
11 infrastructure of a water system and to develop a water service concept that
12 addresses the various issues facing a water company. The master plan describes
13 the infrastructure required to accomplish LQS's goals and provides costs and
14 general information regarding the required infrastructure, such as capacity and
15 location.
16

17 A design report supports the construction plans and provides detailed information
18 for review agencies. This report is specific to those facilities that are planned for
19 a certain phase of the recommended master plan improvements and provides
20 much more detailed engineering design, including sufficient computations,
21 figures, and specifications to describe the exact facilities to be constructed and the
22 sizing and details of said facilities.
23

1 Q.12 Has WestLand prepared a design report for LQS as a follow-up to the arsenic
2 treatment program recommended in the Plan?

3

4 A.12 Yes. An Arsenic Treatment Design Report was prepared by WestLand for LQS
5 in September 2005. This report has been marked as Exhibit A-13 for
6 identification. It was prepared under my supervision.

7

8 Q.13 Was a copy of that Arsenic Treatment Design Report provided to the Commission
9 Staff at that time?

10

11 A.13 Yes. LQS and WestLand agreed to do so at the technical meeting held with the
12 Commission's Staff in late June 2005, which is the meeting referenced in Answer
13 No. 6 of Mike Wood's prepared direct case testimony.

14

15 Q.14 Did the Arsenic Treatment Design Report alter in any meaningful way the
16 conclusions WestLand had reached and the recommendations it had made in the
17 Plan as to an appropriate arsenic removal methodology and the related capital
18 improvements for the LQS water system?

19

20 A.14 No. It confirmed those conclusions and recommendations.

21

22 Q.15 Is there anything else you wish to add to your direct case testimony at this time?

23

1 A. 15 Yes. The Commission's Staff has submitted a number of technical data requests
2 relating to the arsenic removal methodology that WestLand recommended and
3 LQS adopted. WestLand assisted LQS in responding to these data requests, and
4 we hope that the responses have been helpful to the Commission's Staff.
5

6 Q.16 Does that complete your direct case testimony?
7

8 A. 16 Yes.

Table of Contents
(Ron Kozoman)

1
2
3
4
5
6
7
8
9
10
11
12
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15
16
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Matter/ Issue Discussed
Page(s)

Purpose of Testimony
2-3

Identification and Description
Of Exhibits

3

Explanation of Exhibit A-9

3-4

Explanation of Proposed Arsenic Cost
Recovery Mechanism and Annualized Arsenic
Treatment Operating Expense (Includes Explanation
Of Exhibits A-10, A-11, and A-12)
4-9

Explanation of Exhibit A-13
8-9

Discussion of Possible Loan from Water Infrastructure
Financing Authority of Arizona

EXHIBIT
A-16
admitted

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PREPARED DIRECT TESTIMONY OF
RON KOZOMAN
ON BEHALF OF
LAS QUINTAS SERENAS WATER COMPANY
IN
DOCKET NOS. W-01583A-04-0178, W-01583A-05-0326
AND W-01583A-05-0340

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**DIRECT TESTIMONY
RONALD L. KOZOMAN
DOCKET NOS. W-01583A-04-0178, W-01583A-05-0326 AND W-01583A-05-0340**

Q.1 PLEASE STATE YOUR NAME AND BUSINESS ADDRESS?

A.1 My name is Ronald L. Kozoman. My address is 1605 W. Mulberry Drive, Phoenix, Arizona 85015.

Q.2 BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A.2 I am self employed and provide consulting services to utility companies.

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Q.3 HAVE YOU PREPARED A RESUME OF YOUR PROFESSIONAL EDUCATIONAL AND WORK EXPERIENCE?

A.3 Yes. A copy is attached as Appendix A to this testimony.

Q.4 WOULD YOU BRIEFLY SUMMARIZE YOUR UTILITY REGULATORY EXPERIENCE?

A.4 Yes. I was employed by the Illinois Commerce Commission ("ICC") from 1977 to 1981 in various accounting and management positions. While with the ICC, I testified as the ICC Staff's expert witness on cost of capital, rate base and operating income in rate cases involving Commonwealth Edison Company, Illinois Bell Telephone, and other major Illinois utility companies.

I was first retained by the Arizona Corporation Commission ("Commission" or "ACC") in 1981 as a consultant to prepare Commission Staff's cost of capital testimony for the Southwest Gas Corporation and Southern Union Gas Company rate cases. I later became Chief Rate Analyst for the Commission. As Chief Rate Analyst, I was responsible for supervising all of the Commission's rate analysts and utility auditors. While with the Commission, I testified on cost of capital concerning Sun City West Utilities, Continental Telephone Company of California, and Mountain Bell Telephone (now Qwest), among others.

I have also testified as an independent consultant, on behalf of utility companies, utility consumers, and regulatory agencies. I was an instructor in the areas of public utility accounting and general regulatory practices for the National Association of Regulatory Utility Commissioners at its Annual Regulatory Studies Program, held at Michigan State University in East Lansing, Michigan. In years past, I taught Revenue

1 Requirements accounting, and Regulatory Accounting Methods, and Cost of Service, and
2 rate design.

3
4 **Q.5 ON WHOSE BEHALF ARE YOU TESTIFYING?**

5 A.5 I am testifying on behalf of Las Quintas Serenas Water Company ("the Company" or
6 "LQS").

7
8 **Q.6 WHAT IS THE PURPOSE OF YOUR DIRECT CASE TESTIMONY?**

9 A.6 I am providing testimony and exhibits in support of the Arsenic Cost Recovery
10 Mechanism ("ACRM") for which LQS has requested authorization by the Commission in
11 Docket No. W-01583A-05-0340. If approved, the ACRM would be added to those rates
12 and charges for water service provide by the company, which were previously approved
13 by the Commission in Decision No. 67455, which was issued on January 4, 2005 in
14 Docket No W-01583A-04-0178. As indicated by LQS's policy witness, Mike Wood, the
15 purpose of the proposed ACRM is to provide LQS with the means for recovering
16 revenues which would enable it to service the long-term debt it is proposing to incur to
17 finance certain arsenic-related capital improvements which have been recommended by
18 its engineering consultant, WestLand Resources, Inc. That long-term debt is the subject
19 of Docket No W-01583A-05-0326.

20
21 **Q.7 HAVE YOU PREPARED EXHIBITS THAT SUPPORT THE ACRM?**

22 A.7 Yes. I have prepared Exhibit A-8, as marked for identification, which contains the results
23 of Decision No.67455 and the ACRM revenues. Additionally I have prepared Exhibit A-
24 9, which contains the proposed debt as to interest payments, principal payments and
25 related income taxes on the principal payments. I have also prepared, as Exhibit A-10,
26 certain schedules which annualize the customer base and the gallons sold during the 2003

1 test year, and show the impact based on average usage by customers. Finally, I have
2 prepared, as Exhibit A-11, various schedules showing the monthly ACRM charges, the
3 arsenic treatment charges on a per 1,000 gallon basis, and, as Exhibit A-12, schedules
4 showing the impact on customers' bills.

5
6 **Q.8 PLEASE EXPLAIN THE DATA CONTAINED IN EXHIBIT A-8.**

7 A.8 This exhibit starts with revenues and expenses as found in Decision No. 67455. To these
8 results, I have added the debt payments and income taxes on the loan principal payments
9 for the arsenic-related capital improvements, along with the anticipated annualized
10 expense of operating the arsenic treatment facilities, and the amortization of the loan
11 origination fees.

12
13 **Q.9 WHAT INCOME TAX RATE DID YOU USE TO COMPUTE THE INCOME
14 TAXES BASED ON PRINCIPAL PAYMENTS?**

15 A.9 I used the income tax rate from the rate case, which included an effective income tax rate
16 for State of Arizona tax of 6.9680% and a Federal Income tax rate of 13.954% after
17 deducting the State of Arizona tax rate (15.00% prior to State of Arizona tax rate of
18 6.9680%) or $(15.00\% \times (1 - 6.968\%))$.

19
20 **Q.10 WHAT ARE THE TERMS OF THE LOAN YOU USED, AND WHAT DEBT DID
21 YOU ASSUME?**

22 A.10 I used a ten year amortized loan with an assumed interest rate of 8.00%. I assumed a debt
23 of \$1,648,750. The origination fees are 3/4 of 1.00% plus \$300. The total origination
24 fees are \$12,667. $(0.75\% \times \$1,648,750 = \$12,366 + \$300 = \$12,667)$. These
25 assumptions are all based on the September 2, 2005 Loan Commitment Letter from
26 Commerce Bank of Arizona to the Company.

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Q.11 HOW IS THE COMPANY PROPOSING TO SPREAD THE PROPOSED RATE INCREASES DUE TO THE LOAN?

A.11 The proposed rate increases will be applied to the monthly minimums for water service. The origination fees will be amortized over a ten year period, and will also be recovered through the monthly minimum charged customers.

Q.12 HOW WILL THIS ADDITIONAL CHARGE BE SHOWN ON CUSTOMERS' BILLS?

A.12 The additional charge will be listed on the customer's monthly statement as an arsenic treatment surcharge.

Q.13 HOW DID YOU COMPUTE THE MONTHLY ACRM CHARGE?

A.13 I used the customers from the end of the test year. I converted all meters to equivalent 5/8 inch meters. This is shown on Exhibit A-11, Page 2.

Q.14 WHAT ARE THE CURRENT MONTHLY MINIMUMS FOR THE COMPANY?

A.14 The monthly charges at present rates are listed below:

<u>Meter Size</u>	<u>Monthly Minimum</u>
5/8 x 3/4	\$ 10.00
3/4	22.50
1	25.00
1 1/2	55.00
2	70.00

1	3	125.00
2	4	225.00
3	6	350.00
4	Standpipe	10.10

5

6 **Q.15 WHAT ARE THE PROPOSED ACRM CHARGES TO SERVICE THE DEBT,**
7 **AND OVER WHAT CUSTOMER BASE ARE THE CHARGES SPREAD?**

8 A.15 I used the customers at the end of the test year, namely September 30, 2003. Thus, the
9 customer base has been annualized to the year end number of customers. The monthly
10 charges for the ACRM charges by meter size are:

11	Meter	ACRM
12	<u>Size</u>	<u>Charges</u>
13	5/8 x 3/4	\$ 21.99
14	3 / 4	32.98
15	1	54.97
16	1 1/2	109.95
17	2	175.92
18	3	351.83
19	4	549.74
20	6	1,099.48
21	Standpipe	21.99

22

23 Combining the current monthly minimum and the ACRM charges results in the
24 following total monthly charges:

25	Meter	Monthly	ACRM	Total Monthly
26	<u>Size</u>	<u>Minimum</u>	<u>Charge</u>	<u>Charge</u>

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5/8 x 3/4	\$ 10.00	\$ 21.99	\$ 31.99
3/4	22.50	32.98	55.48
1	25.00	54.97	79.97
1 1/2	55.00	109.95	164.95
2	70.00	175.92	245.92
3	125.00	351.83	476.83
4	225.00	549.74	774.74
6	350.00	1,099.48	1,449.48
Standpipe	10.10	21.99	32.09

Q.16 WHY DID YOU USE THE NUMBER OF CUSTOMERS AT SEPTEMBER 30, 2003, AND NOT THE MOST RECENT NUMBER OF CUSTOMERS?

A.16 There are a greater number of customers in 2005 than there were at September 30, 2003. However, if I were to use the most recent number of customers, I would also propose a number of adjustments to other accounts.

It is my understanding that the Commission has allowed the Company's prior rate case to be re-opened only for the limited purpose of considering the proposed recovery of debt service and certain operating expenses associated with arsenic treatment.

If I were to use the most recent number of customers, I would also request the property taxes on the higher revenue, as the revenue requested in the instant case will cause property taxes to increase substantially, even with the decrease in the assessment

1 ratio. I would also request the increased costs associated with serving the increased
2 number of customers, the power costs to serve the increased number of customers, and
3 the cost of this proceeding,

4 Thus, to avoid going beyond the scope of the re-opening, I used only test year
5 customers.
6

7 **Q.17 WHAT IS THE ESTIMATED ANNUAL OPERATING EXPENSE ASSOCIATED**
8 **WITH ARSENIC TREATMENT?**

9 A.17 The estimated annual operating expense associated with arsenic treatment is \$21,000 for
10 the initial year.
11

12 **Q.18 HOW ARE THE ESTIMATED OPERATING EXPENSES ASSOCIATED WITH**
13 **ARSENIC TREATMENT PROPOSED TO BE RECOVERED?**

14 A.18 The operating expenses would be recovered on a per 1,000 gallons basis. The \$21,000,
15 when spread over the annualized gallons from the test year of approximately 145,477,000
16 gallons, results in a charge per 1,000 gallons of \$0.14435229, which would be added to
17 each tier from Decision No. 67455. Exhibit A-10, Page 3 shows the computation of the
18 annualized gallons.
19

20 **Q.19 DID YOU ADJUST INCOME TAXES FOR THE RECOVERY OF THE \$21,000?**

21 A.19 No, as the revenue requirement and income tax taxes are done on an incremental basis.
22 Any additional expense does not affect the income tax from the prior case as long as the
23 Commission allows the full expense to be recovered in revenues.
24

25 If the Commission allows the expense as part of the revenue component, the
26 Commission would allow \$21,000, which does not change income taxes from the prior

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rate case. \$21,000 of revenues offset by \$21,000 of expense results in no change in income taxes.

The same holds true for the amortization of the loan origination fees.

Q.20 WHAT IS CONTAINED ON EXHIBIT A-12?

A.20 Exhibit A-12 shows the billing at both present and proposed rates based on various usage levels. The exhibit also shows the dollar increase and percentage increase at various usage levels by meter size.

Q.21 WHAT WOULD BE THE MONTHLY CHARGES IF THE COMPANY COULD SECURE A LOAN FROM THE WATER INFRASTRUCTURE FINANCING AUTHORITY OF ARIZONA (“WIFA”)?

A.21 Assuming that the Company could secure a loan at 5.00% for a term of twenty years, the monthly treatment arsenic charge for a 5/8 x 3/4-inch meter would be \$11.77. The \$11.77 does not include any reserve that may be required by WIFA. This compares to the bank loan charge of \$21.99 per month, or about 1/2 the charge.

The monthly ACRM under this assumed scenario is substantially lower due to the interest rate, and the longer repayment period for the loan with WIFA.

The charges indicated below do not include any loan origination fees or debt reserves that WIFA may require.

There would be no change in the commodity charges.

The monthly ACRM charges would be:

Meter Size	Monthly Minimum	ACRM Charge	Total Monthly Charge
5/8 x 3/4	\$ 10.00	\$ 11.65	\$ 21.65

1	3/4	22.50	17.48	39.98
2	1	25.00	29.13	54.13
3	1 1/2	55.00	58.26	113.26
4	2	70.00	93.22	163.22
5	3	125.00	186.44	331.44
6	4	225.00	291.31	526.31
7	6	350.00	582.62	922.62
8	Standpipe	10.10	11.65	21.75.

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Q.22 IF THE COMPANY CAN QUALIFY FOR A WIFA LOAN, WILL IT USE THE LOAN FROM THE BANK AS A BRIDGE LOAN; AND, WILL THE COMPANY FILE WITH THE COMMISSION TO LOWER THE ACRM CHARGE?

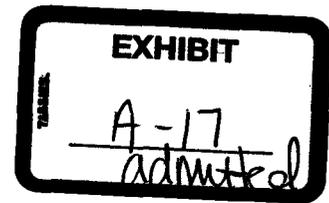
A.22 The answer is "Yes" to both of your questions. The Company would make an appropriate filing with the Commission to lower the ACRM charge to match the terms offered by WIFA.

Q.23 DOES THAT CONCLUDE YOUR DIRECT CASE TESTIMONY?

A.23 Yes, it does.

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PREPARED DIRECT TESTIMONY OF
KIMBERLY YAGLOWSKI
ON BEHALF OF
LAS QUINTAS SERENAS WATER COMPANY
IN
DOCKET NOS. W-01583A-04-0178, W-01583A-05-0326
AND W-01583A-05-0340

Table of Contents
(Kimberly Yaglowksi)

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
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25
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27
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<u>Matter/ Issue Discussion</u>	<u>Page(s)</u>
Background to Loan Commitment	1-2
Description of Proposed Loan Arrangement	3
Description of Loan Documents	3-5
Statement Proposed Loan Arrangement Contingent upon ACC Approval	4

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PREPARED DIRECT TESTIMONY OF
KIMBERLY YAGLOWSKI
ON BEHALF OF
LAS QUINTAS SERENAS WATER COMPANY
IN
DOCKET NOS. W-01583A-04-0178, W-01583A-05-0326 AND W-01583A-05-0340

Q.1 Please state your name and business address.

A.1 My name is Kimberly Yaglowski, and my business address is 2285 West Ina Road, Tucson, Arizona, 85641.

Q. 2 By whom are you employed, and in what capacity?

A. 2 I am employed by Commerce Bank of Arizona. I am a Vice President and Branch Manager.

Q. 3 Please generally describe the responsibilities associated with your position(s).

A. 3 In addition to my duties as manager of the branch office, I am a commercial loan officer for the bank and have full lending responsibilities consistent with Commerce Bank of Arizona Loan Policy.

Q. 4 In connection with your responsibilities relating to commercial loans, did you have occasion to meet earlier this year with representatives of Las Quintas Serenas Water Company ("LQS") in connection with a possible loan arrangement by means of which LQS would obtain funds in order to finance the construction of certain capital improvements to its water system which would enable the company to comply with arsenic concentration regulations promulgated by the United States Environmental Protection Agency ("EPA")?

1 A. 4 Yes. On August 11, 2005, Fred Dawson, Executive Vice President of the bank, and I
2 met for approximately an hour with representatives of LQS to discuss a possible loan
3 arrangement for that purpose. The following people were in attendance on behalf of
4 LQS: Mike Wood, a member of its Board of Directors; Steve Gay, General Manager of
5 LQS; Kaycee Conger, Office Manager of LQS; Ron Kozoman, a utility rate design
6 consultant for LQS; and you, as its attorney.
7

8
9 Q.5 Subsequent to that meeting, did the bank give further consideration to LQS's request for
10 a loan for that purpose; and, if so, what was the result?
11

12 A. 5 Yes. Mr. Dawson and I discussed the matter further and continued our review of LQS's
13 request. In connection with our review, we obtained additional financial information
14 from Ms. Conger at LQS and Mr. Kozoman. We ultimately submitted the results of our
15 review to the bank's Loan Committee, together with a recommendation that the request
16 be approved and a letter of commitment sent to LQS. The Loan Committee accepted that
17 recommendation, and on September 2, 2005 I wrote a letter of commitment to LQS
18 outlining the terms of the loan arrangement the bank was prepared to extend. That letter
19 of commitment was accepted by LQS in late September, 2005. Subsequently, during the
20 latter part of October, 2005, the bank transmitted to LQS several loan documents that
21 would be used to formalize the loan arrangement in the event the necessary approvals
22 were obtained from the Commission.
23

24
25 Q.6 Is the September 2, 2005 letter from you to LQS, which has been marked for
26 identification as Exhibit A-3, the loan commitment letter which you have just described?
27

28 A. 6 Yes.

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Q.7 Please describe the central features of the proposed loan arrangement between Commerce Bank of Arizona and LQS.

A.7 The principal amount of the loan would be \$1,650,000 and the interest rate would be fixed at 8%. The loan would be structured so as to provide a 180-day non-revolving line of credit, with monthly interest payments, during the period that the arsenic-related capital improvements were being constructed. Once construction had been completed, the loan would be fully amortized over a 10-year period with monthly principal and interest payments. Funding of the line of credit and the loan would be subject to, and conditioned upon, the Commission having approved the loan authorization request and the Arsenic Cost Recovery Mechanism ("ACRM") proposal which are the subject of these proceedings. The commitment letter also provides for a ¾ point loan fee and a \$300 documentation fee at closing.

As collateral, the bank would require a "blanket assignment" or senior security interest in LQS's water system assets. In addition, the bank would be provided with a loss payable endorsement from an insurance company acceptable to the bank for property damage to or loss of the assets in which the bank had a security interest.

As noted by Mr. Wood, in his direct case testimony, there would be no prepayment penalty in the event that LQS subsequently obtained a more favorable loan arrangement with the Water Infrastructure Financing Authority of Arizona ("WIFA") or any other lender. In the event of a payoff, the bank's security interest in the assets of LQS would be extinguished.

1 Q.8 I would ask you now to examine the following documents, which have been marked as
2 follows for identification: Exhibit A-4 [Corporate Resolution To Borrow/Grant
3 Collateral]; Exhibit A-5 [Promissory Note]; Exhibit A-6 [Commercial Security
4 Agreement]; and Exhibit A-7 [Business Loan Agreement]. Are these the loan documents
5 that the bank sent to LQS in late October, 2005 that would be used to formalize the loan
6 arrangement with LQS in the event that the Commission should approve the same?
7

8 A.8 Yes. However, the "Loan Date" and the "Maturity Date" shown on each would be
9 revised, as necessary, to reflect the passage of time between when these documents were
10 prepared and when the Commission issued a final decision in these proceedings
11 approving LQS's financing authorization request and the proposed ACRM.
12

13 Q.9 Is the bank's willingness to enter the loan arrangement with LQS expressly contingent
14 upon the Commission's approval of both that request and that proposal?
15

16 A.9 Yes, it is.
17

18 Q.10 Please generally describe the nature and purpose of the documents which have been
19 marked for identification as Exhibit Nos. A-4, A-5, A-6, and A-7.
20

21 A.10 Exhibit A-4 Corporate Resolution: The individual officers/signers named on this
22 document are authorized to represent company in matters pertaining to this loan.
23 Specifically, they have company approval to sign loan documents, borrow funds, and
24 encumber collateral.

25 Exhibit A-5 Promissory Note: This is the borrowing instrument itself. It details the
26 terms and conditions of the loan agreement including payment terms, interest rate,
27 maturity date, etc.
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Exhibit A-6 Security Agreement: This is the pledge agreement and it specifies the collateral for the loan and authorizes the lender to secure a proper security interest in the collateral.

Exhibit A-7 Business Loan Agreement: This document lays out the borrower's responsibilities over the life of the loan with regard to business operations, financial reporting obligations, and future indebtedness, among other issues. Also, it provides certain warranties from the borrower as to the validity and veracity of information and documentation provided in the loan process.

Q.11 Is there anything else you wish to add to your direct case testimony at this time?

A.11 Only to say that I will try to answer any questions that the Commission, the Commission's Staff or any other parties may desire to ask me.

Q.12 Does that complete your direct case testimony?

A.12 Yes, it does.

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PREPARED REBUTTAL CASE TESTIMONY
OF
MIKE WOOD
ON BEHALF OF
LAS QUINTAS SERENAS WATER CO.
IN
DOCKET NOS. W-01583A-04-0178, W-01583A-05-0326 AND W-01583A-05-0340

Q. 1 Please state your name and business relationship with the Applicant in these consolidated proceedings.

A. 1 My name is Mike Wood, and I am a member of the Board of Directors and Vice President of Las Quintas Serenas Water Co. ("LQS"). I have served in each of those capacities since June 2003.

Q. 2 Are you the same Mike Wood who previously filed direct case testimony in these consolidated proceedings as LQS's policy witness, and are you appearing in that same capacity in connection with this rebuttal testimony?

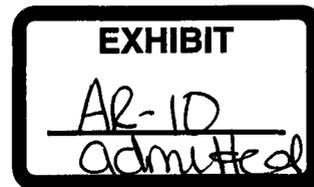
A. 2 Yes, as to each part of your question.

Q. 3 What are the purposes of your rebuttal testimony?

A. 3 First, I want to acknowledge and address a difference of opinion which appears to have developed among the members of LQS's Board of Directors as to the arsenic treatment program that LQS should implement in order to (i) comply with the United States Environmental Protection Agency's ("EPA") arsenic concentration regulations and (ii) continue to provide adequate and reliable water service to the company's customers. Second, I want to note and discuss why the amount of the financing authorization requested by LQS in its amended application in Docket No. W-01583A-05-0326 will need to be increased if the Commission concludes that the arsenic treatment program proposed by LQS is appropriate for its water system.

Q. 4 Please discuss the difference of opinion which appears to have developed among the members of the Board of Directors of LQS as it relates to these consolidated proceedings.

A. 4 As I stated in my prepared direct testimony at pages 4-5, it was a priority for me to assure



1
2
3 "...that LQS would select and construct an arsenic removal
4 methodology and facilities that would enable it to fully comply
5 with the EPA regulations, and, simultaneously, discharge its public
6 service corporation obligation to provide adequate and reliable
7 water service to its customers at reasonable rates..."

8
9 while I considered various proposals for an arsenic treatment program for the company. I
10 know that that also was (and is) the view of a second member of the company's Board of
11 Directors, namely, Rohn Householder. I had also understood that to be the view of John
12 Gay, the third and remaining member, at the time the Board of Directors approved the
13 Water System and Arsenic Master Plan ("Plan") recommended by WestLand Resources,
14 Inc. ("WestLand") in March 2005, as well as at the time it authorized the filing of the
15 financing authorization application with the Commission which led to the establishment
16 of Docket No. W-01583A-05-0326.

17
18 Subsequently, Mr. Gay parted ways with Mr. Householder and me as to how the
19 company should proceed. In so doing, he appears to have been primarily motivated by
20 three factors. The first factor is an understandable desire to not overspend in making
21 those facilities additions necessary to enable the company to comply with the EPA's
22 arsenic concentration regulations. Mr. Householder and I share that view, provided that,
23 in endeavoring to control costs, you do not jeopardize the ability of the company to
24 discharge its ongoing public service obligation to provide adequate and reliable water
25 service to its customers. The second factor appears to be a belief on the part of Mr. Gay
26 that the company has adequate storage capacity at present to enable it to provide adequate
27 and reliable service to its customers. In that regard, that assumption on his part serves as
28 a major premise to the report that he asked Miller Brooks Environmental ("Miller
Brooks") to prepare. The third factor is an apparent assumption by Mr. Gay that LQS can
implement an arsenic treatment program in-house, with little use of outside contractors.

In his prepared rebuttal testimony, Mark Taylor of WestLand has discussed at length why
the arsenic treatment approach reflected in the Miller Brooks report will not enable the
company to attain the two corporate policy goals I have mentioned, whereas the arsenic
treatment program that the LQS Board of Directors has adopted will allow those goals to
be realized. In addition, Mr. Taylor has demonstrated why Mr. Gay's premise as to
adequate storage is not appropriate for a water system the size of LQS; and, he has
included a copy of a letter from the Pima County Department of Environmental Quality
which supports the position of the LQS Board of Directors and WestLand on this issue.

Finally, it is the opinion of Mr. Householder and myself that LQS does not have the staff
to undertake a major construction project in-house, which both the WestLand and Miller
Brooks programs would be; nor does LQS have the staff needed or licensed to allow it to
act as its own general contractor, overseeing the work of subcontractors.

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2 Q. 5 In describing the purposes of your rebuttal testimony, you indicated that the amount of
3 financing authorization requested in Docket No. W-01583A-05-0326 will need to be
4 increased in the event that the Commission approves the arsenic treatment program
5 proposed by LQS. Why would that increase be necessary?

6 A. 5 There are two reasons. First, the costs of the equipment and construction necessary to
7 implement our proposed program have increased since the original cost estimate prepared
8 by WestLand in March 2005, or approximately one year ago. In his rebuttal testimony
9 and Exhibit AR-3, Mark Taylor describes in some detail, and on a line item basis, where
10 changes in the estimated costs have occurred. However, I would note, the allowance for
11 Engineering and Contingencies has been reduced from 25% to 15% now that we are
12 working with cost estimates provided by a general contractor who is qualified to
13 implement the program.

14 Second, LQS does not have the financial resources that would allow it to internally
15 finance the difference between the original cost estimate of \$1,648,750 and the current
16 cost estimate of \$1,889,168. As a consequence, those additional funds will have to be
17 borrowed from an outside lender, whether that lender is Commerce Bank of Arizona
18 and/or the Arizona Water Infrastructure Financing Authority ("WIFA"). In that regard,
19 we believe that it is imperative that the Commission decision in Docket No. W-01583A-
20 05-0326 authorize the company to borrow the approved amount from both Commerce
21 Bank of Arizona and WIFA. It is essential that we have a "back up" alternative, which
22 the Commerce Bank of Arizona's loan commitment represents. The ACC Staff's
23 financial witness, Daniel Zivan, appears to assume that a WIFA loan is a "given" if the
24 Commission approves our financing request. We do not think it is appropriate to proceed
25 on the basis of such an assumption, absent a prior commitment from WIFA.

26 As a final comment, I wish to note that a timely decision by the Commission is crucial.
27 WIFA has advised us that if the Commission issues a decision on our financing
28 authorization request by June 1, 2006, WIFA can have our loan application acted upon by
its Board of Directors that same month. Otherwise, no action would occur until the
WIFA Board of Directors next meeting in September 2006. Given that it will take many
months to order and install the necessary equipment, and to complete the related
construction work, every month is important.

Q. 6 Is there anything else you wish to say as a part of your rebuttal testimony?

A. 6 Yes. First, I am pleased that the ACC Staff's engineering witness, Dorothy Hains,
appears to be in general agreement with the basic design concept which WestLand
developed for LQS's arsenic treatment program. While she has recommended certain
equipment disallowances and estimated cost reductions, which Mark Taylor addresses in
his rebuttal testimony, she appears to be in general conceptual agreement with the
approach LQS has adopted.

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Second, it is the hope of Mr. Householder and myself that, after reviewing the critique of the Miller Brooks report set forth in Mark Taylor's rebuttal testimony and exhibits, John Gay will come to a full realization of why Mr. Householder and I have continued to support the arsenic treatment program developed by WestLand; and that, with such an understanding upon his part, we can put our differences on this matter behind us.

Q. 7 Does that complete your rebuttal testimony?

A. 7 Yes, it does.

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PREPARED REBUTTAL CASE TESTIMONY
OF
MARK TAYLOR
ON BEHALF OF
LAS QUINTAS SERENAS WATER CO.
IN
DOCKET NOS. W-01583A-04-0178, W-01583A-05-0326 AND W-01583A-05-0340

Q. 1 Please state your name and business affiliations.

A. 1 My name is Mark Taylor. I am a registered Professional Engineer in the State of Arizona, and I am a Principal of WestLand Resources, Inc (WestLand).

Q. 2 Are you the same Mark Taylor who has previously submitted direct case testimony upon the behalf of Las Quintas Serenas Water Co. ("LQS") in the above-referenced consolidated proceedings?

A. 2 Yes. My previously filed prepared direct testimony includes a description of my professional qualifications and experience.

Q. 3 What are the purposes of your rebuttal testimony?

A. 3 There are several purposes to my rebuttal testimony. First, I will discuss the nature of the review and analysis of the documentation filed by Intervenor John Gay that my firm and representatives of LQS have undertaken, and I will discuss the results of that review and analysis. Second, I will provide a summary description of those capital improvements WestLand believes are necessary in order to enable LQS (i) to fully comply with the arsenic concentration regulations promulgated by the United States Environmental Protection Agency ("EPA"), and (ii) to continue to provide adequate and reliable water service to its customers. As LQS's policy witness, Mike Wood, stated in his prepared direct case testimony, these two goals provide the policy framework for the company's applications and requests in these consolidated proceedings. Third, I will discuss certain adjustments that should be made to the October 12, 2005 Opinion of Probable Construction Cost ("OPCC") prepared by WestLand, which appears to be the "starting point" for the analysis and direct case presentation filed by the Arizona Corporation Commission ("ACC") staff. Fourth, I will discuss and critique the capital improvements cost disallowances and adjustments proposed by the ACC Staff.

Q. 4 Please describe the review and analysis of the direct case documentation submitted by Intervenor John Gay that WestLand and the company conducted.

EXHIBIT
AR-11
admitted

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3 A. 4 Both myself and another professional engineer with our firm, Kara Festa, began by
4 thoroughly reviewing the direct case documentation prepared by Intervenor John Gay.
5 We are both thoroughly familiar with the history of this project, having been involved for
6 the entire time (more than one year) that WestLand has been working with LQS on the
7 master plan and arsenic design. Our history with this project is based on a number of
8 meetings with the LQS Board of Directors, management and staff; multiple field visits to
9 review the operation of the water system; knowledge of the LQS system from review of
10 existing water company records and previous engineering studies; and an understanding
11 of how arsenic and other water system regulations relate to the LQS system.

12
13 WestLand used this historical knowledge of the water system, personnel, and
14 requirements to evaluate the Miller Brooks Environmental (Miller Brooks) report and
15 other documents submitted by Intervenor John Gay for completeness, technical
16 correctness, accuracy of events, and relevance to the needs of the existing LQS water
17 system. We identified the major and minor issues and inconsistencies in the documents
18 and then developed an approach to address the major items that are relevant to these
19 proceedings in this rebuttal testimony. The main focus of our review was the Miller
20 Brooks report and certain information about the adequacy of the existing water system
21 that appeared to form the basis for John Gay's position. As a part of our approach, we
22 used the additional expertise of an Arizona-licensed contractor with experience in water
23 system construction and arsenic plant projects, as well as familiarity with the bidding
24 conditions in southern Arizona, to analyze the construction cost estimates in both
25 WestLand's and Miller Brooks' reports. That contractor was Smyth Steel
26 Manufacturing, Inc. ("Smyth Steel"), which is based in Tucson, Arizona.

27
28 Q. 5 Did your review and analysis disclose any incompleteness or deficiencies in the report
prepared by Miller Brooks, which appears to be a major predicate for the position being
taken by Mr. Gay as to the amount of financing which should be authorized for capital
improvements for arsenic treatment?

A. 5 Yes. In that regard, I would like to provide some context. The Miller Brooks report does
present a feasible concept for an arsenic treatment approach that addresses only the issue
of arsenic concentration in the wells. Although there are a few equipment items that we
feel would be required to complete the arsenic system proposed in that report, such as
flow control for the proposed bypass, chlorination, sand separation, and backup power
supply, there are no major engineering deficiencies in the concept, given its limited
scope.

However, there are two fundamental issues with the approach that was requested by Mr.
Gay, as reflected in the Miller Brooks report. Information in the report indicates that its
development was based upon an instruction from Mr. Gay to look solely at the design of
individual arsenic treatment for the three wells, without consideration of the water system
as a whole, and also to assume that all of the work would be either self-performed by
LQS or subcontracted to local contractors.

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3 With respect to the first point, Miller Brooks was not asked to (i) perform site visits to
4 confirm the information provided or identify site-specific construction factors that may
5 not be evident in the photographs provided, (ii) determine if other solutions would better
6 fit the overall LQS system, (iii) analyze the existing water system for deficiencies, (iv)
7 identify water system issues that would be intensified by the implementation of the plan,
8 or (v) determine the effect of the proposed improvements on the existing system
9 operation. The Miller Brooks report, by the limited nature of what was requested of that
company, did not address system factors such as (a) storage requirements, (b) additional
pressure on the wellheads due to losses through the arsenic treatment, (c) subsequent
reduction of well capacity due to the additional pressure, or (d) undersized pipelines and
excessive pressures in the water system.

10 Second, as set forth in the respective direct case filings of LQS and John Gay, the cost
11 estimates do not allow a direct "apples-to-apples" comparison of the cost estimates for
12 the two arsenic systems, due to different assumptions. The assumptions made in
13 WestLand's cost estimate, and discussed with the LQS Board of Directors, were that
14 LQS will publicly bid the plans for the Well Nos. 6 and 7 combined arsenic treatment
15 system and will award the construction to the lowest qualified bidder to construct the
16 project in its entirety. This was due to the complexity of the Severn Trent arsenic
17 treatment system, which will require a significant construction effort to assemble.
18 WestLand assumed that the small packaged system for the Well No. 5 site would be
19 installed by LQS. The construction at this site will be less difficult due to the pre-
20 packaged skid-mounted treatment plant that is planned. Per the direction of John Gay,
21 Miller Brooks provided cost estimates assuming that LQS would act as a general
22 contractor and perform most of the installation at all three sites, although the treatment
23 systems at Well Nos. 6 and 7 would be the same type of site-assembled Severn Trent
24 treatment systems as planned for the combined site in WestLand's report.

25 WestLand's review of the cost estimates indicates that the Miller Brooks cost estimates
26 do not reflect current costs for the construction of the arsenic treatment systems by a
27 general contractor with the appropriate State of Arizona Class A-General Engineering
28 contractor license, as well as several other cost items. The issues identified with respect
to the cost estimates in the Miller Brooks report are as follows: (i) appropriate markup
and labor costs for a general contractor to install the facilities; (ii) costs for equipment
and operation of equipment required for installation of the facilities, such as cranes; (iii)
shipping costs for delivery of the arsenic treatment plant equipment from Pittsburgh,
Pennsylvania; (iv) appropriate unit costs for short lengths of piping and installation in a
retrofit situation where hand-digging may be required; (v) chlorination equipment; and
(vi) sand separation equipment.

Q. 6 Did you develop the full cost for the design concept presented in the Miller Brook report,
if adjusted to take the deficiencies and omissions you have described into account?

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A. 6 Yes.

Q. 7 Please describe how that was accomplished.

A. 7 The approach we used to arrive at a basis for comparison of the cost estimates was to adjust the costs provided by Miller Brooks, as necessary, to obtain a cost estimate that would reflect construction of the Severn Trent arsenic treatment systems for Well Nos. 6 and 7 by a licensed general contractor and to address the other items not currently provided for in the Miller Brooks report. The primary goal of the cost analysis was to utilize (i) the expertise of a local contractor with knowledge of current, local bidding conditions; (ii) experience with construction of water plant sites; and (iii) the same set of construction criteria, in order to develop an "apples-to-apples" construction cost comparison between the two design concepts.

To this end, WestLand contacted Smyth Steel to provide a full cost estimate for the Miller Brooks concept using the detailed cost estimates provided in that report as a starting point. At the same time, Smyth Steel also provided a cost estimate based on the WestLand design concept, plans, and specifications for the arsenic treatment system. Smyth Steel holds a Class A-General Engineering license issued by the State of Arizona Registrar of Contractors. They are involved in the construction of numerous water plant sites each year, including wells, reservoirs, booster stations, and pipelines, and Smyth is currently involved in the construction of several arsenic treatment systems. Smyth Steel is familiar with local bidding conditions, equipment availability and lead-times, and the issues associated with the type of construction contemplated on this project. As such, WestLand and LQS felt that Smyth Steel's input would be valuable in providing accurate, complete, and comparable cost estimates.

Q. 8 Please describe the completed cost picture you developed for the arsenic treatment approach reflected in the Miller Brooks report.

A. 8 In order to obtain comparative cost figures for the two arsenic treatment options, Smyth Steel was asked to provide a construction cost estimate for the Miller Brooks concept design based upon the assumption that the Severn Trent arsenic treatment systems for Well Nos. 6 and 7 would be constructed by a general contractor, while the packaged plant for the Well No. 5 site would be installed by LQS. Smyth Steel was asked to provide a construction cost estimate for Well Nos. 6 and 7 representative of a typical contractor's bid under current conditions to complete the facilities as intended by the conceptual design. The cost for Well No. 5 was based on Miller Brooks' cost estimate, updated to reflect the omitted items.

We asked Smyth Steel to provide the cost estimates in the same format as was previously provided in the Miller Brooks report. Even though the format for the cost estimates in the Miller Brooks report included different line items than the WestLand cost estimates, we believed it was important for the integrity of the comparison to the original report to

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maintain a similar format. The cost estimate provided by Miller Brooks was divided separately for each well and had four separate item descriptions for each well. Smyth Steel used these four categories and added two additional categories not originally proposed by Miller Books. These two categories were a sand separator and a chlorination unit, which were equally added to both Miller Brooks and WestLand's design concepts. In addition, freight, contractor's mark-up, and installation costs were also added to the Miller Brooks costs for Well Nos. 6 and 7.

The resulting total construction cost, excluding engineering and contingencies, for the Miller Brooks proposal was \$1,055,913. We added a 15 percent engineering and contingencies cost of \$158,387, for a total cost of \$1,214,300. Exhibit AR-1 provides a breakdown of the Smyth Steel cost construction estimate for the Miller Brooks proposal.

Miller Brooks Design

Smyth Steel Cost Estimate	\$1,055,913
15% Engineering and Contingencies	<u>158,387</u>
	\$1,214,300

Q. 9 Would the arsenic treatment system reflected in the Miller Brooks report, if fully and properly implemented, enable the company to achieve its two policy goals of (i) complying with the EPA's arsenic concentration regulations and (ii) continuing to provide adequate and reliable water service to its customers?

A. 9 No.

Q. 10 Why not?

A. 10 The treatment system reflected in the Miller Brooks report does not achieve both goals. While the Miller Brooks approach would result in water that complies with EPA arsenic requirements, it does not address other water system factors that are critical to the incorporation of arsenic treatment on the LQS water system. When WestLand was originally retained by the LQS Board of Directors to provide a plan to address arsenic, the Board's direction was that we review this issue within the broader context of the overall needs of the water system.

Using this approach, WestLand developed the LQS Water System and Arsenic Master Plan ("Plan") in March 2005. This Plan addresses not only arsenic, but a number of other issues that must be addressed in the implementation of an arsenic treatment program. Addressing these other issues will avoid weakening the water system due to the addition of the arsenic treatment system and will assist LQS in to achieving the two policy goals previously mentioned.

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Q. 11 Please explain the approach to the Plan, the issues that WestLand identified through the development of the Plan, and how those issues relate to the addition of the arsenic treatment system to the LQS water system.

A. 11 When WestLand developed the Plan, in addition to developing alternatives for arsenic reduction in each of the three wells, we also identified additional factors that are integral to system reliability and operation and could be affected by the methodology selected for arsenic treatment. These factors are (a) adequate storage volume, (b) excessive operating pressures in the water system due to small pipeline sizes, and (c) the effect of increased pressure losses through the arsenic treatment system on wellhead pressure and well capacity.

It is important to discuss in detail the subject of providing reliable and adequate storage for system operation during both peaking demands and emergency situations. The typical engineering requirement for providing storage to a water system is to provide above-ground storage in the amount of average daily demand for the peak month, plus fire flow requirements, accounting for any additional operational band or unusable storage. This is a standard requirement used by both large and small water systems throughout southern Arizona. Many water systems increase their goal for storage capacity to as much as two times average daily demand, and some use approximately one time average daily demand plus fire flow volume. The recommended volume of above-ground storage has multiple uses. The primary use is to provide an adequate volume of water that is available during periods of peak demand, especially during summer months. This water needs to be available during the instantaneous and peak hour demands throughout the year or when operational issues or maintenance occurs on existing wells.

In the existing Arizona Administrative Code (R-18-5-503), as referenced in Mr. Gay's presentation, there is a calculation that can be used to reduce calculated storage capacity requirements by accounting for available well capacity. This "exception" allows the typical storage requirement of a water system to be reduced by treating well production capacity as "storage," minus the capacity of the largest well. In the case of LQS, this results in a calculated storage requirement of negative (-) 512,000 gallons. Because of the exception, technically LQS can state that it is in compliance with State law, although the reality is that the available storage is considerably less than what would be considered operationally adequate or consistent with industry standards. The LQS system includes a total of only 90,000 gallons of storage, and the water system has a calculated average daily demand of approximately 450,000 gallons, and average day of peak month demand of approximately 712,000 gallons. Thus, in reality, its current storage is clearly deficient.

WestLand has discussed the issue of this reservoir capacity calculation with staff at our local regulatory agency, Pima County Department of Environmental Quality (PDEQ), numerous times in the past when preparing master plans for various water companies. Staff at PDEQ has always maintained that a minimum of average daily demand of the water system, plus fire flow, should be maintained to provide safe and reliable storage,

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3 and they do not recommend use of the aforementioned exception calculation. Based
4 upon these conversations with PDEQ, WestLand continues to recommend storage equal
5 to a minimum of average daily demand for all water systems. This is a position that
6 consistently has been both supported and encouraged by PDEQ and reiterated in recent
7 telephone conversations and meetings with PDEQ. It is also detailed in the February 16,
8 2006 letter from Mr. Mike Redmond, Senior Civil Engineering Assistant at PDEQ, to Mr.
9 Steve Gay, General Manager of LQS. A copy of this letter is attached as Exhibit AR-2.

10 The other issues identified in the development of the Plan, while less conspicuous than
11 the lack of storage capacity, are no less significant to the proper operation of the water
12 system. The existing system consists of a number of small water mains that are not
13 adequate to convey large volumes of water. When water in excess of immediate demand
14 is pumped into the water system, as would likely occur with any arsenic treatment
15 system, this can result in high operating pressures and therefore increased operating and
16 maintenance costs. Depending upon the demand within the water system, the LQS
17 system experiences pressure fluctuations around 25 psi, and sometimes greater than 30
18 psi when the wells are operating, due to the pipeline sizes and the output volume of the
19 wells delivering directly into the system. System pressures reach as high as 110 psi in the
20 lowest elevations in the water system. This is not an ideal operating situation for the
21 water system pipelines or the wells that are currently delivering directly into the water
22 system.

23 Other issues identified during the development of the Plan were the increased pressure
24 that would be developed on the wellhead, especially at Well Nos. 6 and 7, due to the head
25 losses anticipated through the operation of the arsenic treatment units and appurtenances,
26 and the subsequent reduced capacity of wells. In addition, the higher the pressure on the
27 wellheads, the more wear and less operating life that can be expected for the pumps and
28 other equipment.

19 Q. 12 Does the arsenic treatment system designed by WestLand Resources, and approved by
20 the company's Board of Directors attain both of the company's policy goals, namely, (i)
21 compliance with the EPA's arsenic concentration regulations and (ii) continuous
22 provision of adequate and reliable water service to customers?

23 A. 12 Yes.

24 Q. 13 Please briefly explain how the plan proposed will achieve each of those goals.

25 Q. 13 As previously mentioned, WestLand's direction from the LQS Board of Directors was to
26 provide the best solution for arsenic treatment in coordination with the needs of the
27 overall water system. Within this framework, WestLand developed a concept for a
28 combined arsenic treatment system for Well Nos. 6 and 7 that includes storage, a booster
station, and a backup generator. Well No. 5 was proposed to be kept separate and to

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2 deliver directly into the water system, as this well site does not have pressures as high as
3 the other two sites.

4 As designed, the Plan calls for a 400,000-gallon reservoir and 1,000 gpm booster station
5 with a backup generator at the Well No. 6 site. We believe that this is the best
6 engineering solution for LQS because it addresses many of the issues identified during
7 the master planning within the context of providing arsenic treatment. The reservoir
8 serves the dual purpose of providing reliable and adequate storage for system operation,
9 as well as serving as a finished water holding tank for the combined arsenic treatment
10 product from Well Nos. 6 and 7.

11 The proposed system will allow the pump station to deliver potable water into the system
12 at a rate commensurate with what is being used by the system. This will allow water
13 deliveries to correspond better with water system demands and will reduce system
14 operating pressures, thereby resulting in less electricity required to provide water to the
15 system.

16 Because the Plan includes re-equipping the wells and delivering at low pressure through
17 the arsenic treatment plant and into the finished water storage, it also addresses the issue
18 of excessive pressures on the existing Well Nos. 6 and 7. This methodology will reduce
19 the pressures on the existing well system from current pressures that range from 80 to
20 110 psi down to a range of 20 to 30 psi, resulting in improved operation and maintenance
21 of the wells due to lower pressure on the wellheads. As a result, the wells would
22 maintain current production capacity and could even be increased in capacity without
23 increasing motor horsepower or electrical service and controls for the sites.

24 The backup generator will provide a method of accessing the treated water during a
25 power outage. This backup supply is important to the provision of adequate service by
26 LQS, since the usable capacity in the 90,000 gallons of existing storage would provide
27 less than two hours of water supply to the system if there were an outage during peak
28 hour demand and the tanks were full. A more likely scenario, with the tanks only
partially full, would likely result in one hour or less before the system was out of water.

In summary, for all of the reasons discussed above, WestLand and LQS believe that the
Plan developed by WestLand will enable the company to attain the previously stated two
policy goals, whereas the design approach reflected in the Miller Brooks report would
not.

Q. 14 The company's applications were based upon the OPCC that was prepared by WestLand
in the Spring of 2005. Was that OPCC subsequently revised by WestLand in order to
reflect more recent costs, and was a copy of that OPCC provided to the ACC Staff?

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A. 14 Yes. The OPCC was updated in October 2005 for the reasons you suggest; and a copy of the same was provided to ACC staff as a part of LQS's response to ACC staff's Fourth Set of Data Requests.

Q. 15 Does it appear that the ACC Staff used the October 2005 OPCC as the "starting point" for its critique of the company's proposed capital improvements program, and its testimony on the proposed financing authorizations?

A. 15 Yes.

Q. 16 Assuming that to be what has occurred, are there certain adjustments that should be made to the October 2005 OPCC in order to conform it to what the company is actually proposing through its applications and testimony and exhibits as of this point in time?

A. 16 Yes.

Q. 17 Please describe the nature of those adjustments, and quantify the cost effect of the same on the October 2005 OPCC.

A. 17 As previously mentioned, we requested that Smyth Steel provide a contractor's cost estimate for the WestLand arsenic treatment program. Our primary goal in having a licensed general contractor review our plans and provide a construction cost estimate based upon local conditions, current equipment and labor prices, and experience with the local construction industry, was to provide the most accurate construction cost estimate for the proposed project for use in connection with the financing authorization request. We believe that the resulting construction cost estimate is the most accurate we are able to obtain without proceeding with an actual bidding process with multiple contractors.

WestLand's October 12, 2005 OPCC included 16 separate item descriptions. Smyth Steel evaluated our design concept, prepared a detailed cost estimate, and broke out three additional line items which were previously incorporated into other line items. These items are electrical equipment, a new air compressor, and disinfection and testing. Smyth Steel's construction cost estimate for the Plan shown in WestLand's September 2005 Arsenic Treatment Design Report is \$1,722,755, and this information is detailed in Exhibit AR-3. A copy of the September 2005 design report was attached to my previously filed direct testimony as Exhibit A-13.

The \$1,722,755 cost estimate includes the 400,000-gallon reservoir recommended in the master plan. However, only 250,000 gallons of storage is included as a part of the company's proposed arsenic capital improvements program and the financing authorization request. Therefore, we must adjust the cost estimate to include only 250,000 gallons of storage. Smyth Steel provided information that a cost reduction of \$80,000 could be anticipated to reduce the reservoir cost from 400,000-gallons to 250,000-gallons, as shown in Exhibit AR-4. This will result in a subtotal of \$1,642,755.

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2 Following the adjustment for reservoir size, we then added 15 percent engineering and
3 contingencies of \$246,413 for a total cost of \$1,889,168. The engineering and
4 contingency percentage was reduced from the original 25 percent estimate to 15 percent
5 based upon what we believe is the more accurate construction cost estimate by a licensed
6 contractor.

7 **WestLand Design**

Smyth Steel Cost Estimate	\$1,722,755
Subtract (150,00 gallon oversize)	-80,000
	\$1,642,755
15% Engineering and Contingencies	246,413
	\$1,889,168

10 The final cost estimate is approximately \$59,000 less than the October 12, 2005 cost
11 estimate, after adjusting for the 250,000-gallon reservoir and reducing the Engineering
12 and Contingencies allowance from 25% to 15%. The differential cost between the Miller
13 Brooks arsenic project cost estimate and the WestLand arsenic project cost estimate is
14 approximately \$675,000; however, as I have previously discussed, the Miller Brooks
15 approach does not achieve LQS's policy goals.

16 Q. 18 Have you reviewed and analyzed the prepared testimony and exhibits filed by Dorothy
17 Hains as a part of the ACC Staff's direct case?

18 A. 18 Yes.

19 Q. 19 Do you agree with the cost disallowances and estimated cost reductions with regard to the
20 company's capital improvements program that she has proposed?

21 A. 19 No.

22 Q. 20 Please describe each of the cost disallowances and estimated cost reductions she has
23 recommended, and discuss why the company and WestLand disagree as to each.

24 A. 20 The January 25, 2006 direct testimony of Ms. Dorothy Hains included adjustments via
25 exclusion or cost adjustment of several items in WestLand's October 12, 2005 OPCC.
26 First, three items were excluded from the arsenic treatment project, namely, Item No. 5)
27 400,000-gallon reservoir; Item No. 11) emergency backup generator; and Item No. 14)
28 hypochlorite chlorination units.

As I explained in detail previously, the 400,000-gallon reservoir is crucial to maintaining
a water system that has adequate storage for operational uses and providing a forebay to
balance the differential flows between the wells and the booster station. We have
previously agreed with ACC Staff that not all of the 400,000 gallons of storage

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2 recommended in the Plan is solely for arsenic treatment. The minimum storage capacity
3 that we feel is required for the proper operation of this arsenic treatment system, without
4 excessive cycling and stress on the wells, is 250,000 gallons. This minimum 250,000
5 gallons of storage is integral to the project as designed and is necessary for the operation
6 of this arsenic treatment system. Also, this reservoir cannot be eliminated and still
maintain the overall benefits to this system previously described in terms of providing
adequate and reliable water service.

7 The second item eliminated in Ms. Hain's direct testimony is the emergency backup
8 generator. As mentioned previously, the emergency backup generator is an important
9 part of the overall system and is essential to the LQS goal of providing adequate and
10 reliable water service in order to maintain the health, safety, and reliability of the public
11 water system. It is imperative that water service be maintained to the public when
commercial power service from Trico Electric Cooperative is interrupted. The system as
a whole, in order to operate as intended even during relatively brief periods of
commercial power interruptions, requires an emergency backup generator.

12 The last item recommended for exclusion was the hypochlorite chlorination units. These
13 units have several benefits, including maintaining the health and safety of the community.
14 However, the disinfection of the water also performs an important function for the arsenic
15 treatment plant as discussed in the February 8, 2006 letter from Severn Trent to
16 WestLand, a copy of which is attached as Exhibit AR-5. This letter discusses the role of
17 chlorination prior to arsenic treatment as a means of oxidizing the arsenic compounds
from As (III) to As (V), which is the form of arsenic most readily adsorbed in the
adsorption process. For this reason, we believe the chlorination units are a necessary part
of the arsenic treatment system.

18 In terms of the cost reductions recommended by Ms. Hains, her direct testimony included
19 costs reductions on four items: Item No. 4) 12-inch water main; Item No. 8) Well No. 6
20 backwash tank; Item No. 10) Well No. 5 backwash tank; and Item No. 16) 3,000-gallon
hydropneumatic tank.

21 ACC staff suggested that an appropriate cost for 12-inch water main was \$36.70 per foot
22 rather than \$65.00 per lineal foot. We believe this cost is inadequate for this project due
23 to the large increases in construction cost and pipe materials over the last year, the design
24 requirement to include approximately 110 lineal feet of pipeline boring under
jurisdictional washes, and a newly paved road, and approximately 1,600 square yards of
chip seal pavement replacement. The Smyth Steel construction cost estimate for these
items is approximately \$79.65 per lineal foot.

25 ACC staff recommended a reduction in backwash tank prices from WestLand's \$25,000
26 to \$13,400 for Well No. 6 and \$4,000 to \$3,600 for Well No. 5. These two items were
27 priced by Smyth Steel, and both items include the equipment cost, the cost of delivery,
28

1
2 fittings, and installation. The Smyth Steel cost estimate supported WestLand's cost
3 estimate of October 12, 2005.

4 The last recommended reduction was reducing the cost of the 3,000-gallon
5 hydropneumatic tank from \$18,000, to \$12,000. Based upon the current cost of steel and
6 an ASME-rated tank, including all connections, controls, and installation, Smyth Steel's
7 cost estimate for the 3,000-gallon hydropneumatic tank is \$20,000.

8 Based upon the project-specific factors described, current construction costs, local
9 construction conditions, and the experience of Smyth Steel, we believe the construction
10 cost estimate provided in Exhibit AR-3 is the most accurate current cost for the project.

11 Q. 21 Please summarize again why you believe that the arsenic treatment program developed
12 by WestLand Resources and adopted by the company's Board of Directors will enable
13 Las Quintas Serenas Water Co. to (i) comply with the EPA's arsenic concentration
14 regulations, and (ii) continue to provide adequate and reliable water service to customers.

15 A. 21 Over a year ago, the LQS Board of Directors retained WestLand to evaluate the LQS
16 water system for its ability to provide water to its customers with the two corporate
17 policy goals of (i) complying with the EPA's arsenic concentration regulations, and (ii)
18 continuing to provide adequate and reliable water service to its customers. We prepared
19 the analysis and our recommendations based on accepted engineering practices and
20 current industry standards. Our analysis included water quality concern, (in this case,
21 arsenic) and a review of the system's ability to provide adequate service while
22 maintaining appropriate operational pressures and well capacities.

23 The ultimate objective of the LQS Board of Directors was to provide the best overall
24 service to its customers in the most economical fashion. As a professional engineer, my
25 personal goal, and the goal of our firm, is to provide a recommendation to the water
26 company that will address all the issues facing that company and offer the best and most
27 economical improvements addressing long-term health and safety, operational cost, and
28 system reliability for LQS customers. In this instance, achieving this goal requires that
our recommendation include (a) storage for peaking demands, (b) a booster station, and
(c) an emergency generator. This program will deliver water at rates to match customer
demand and (i) reduce long-term operation energy cost, (ii) reduce pressures upon old
pipelines, (iii) reduce pressures on well heads to maintain or increase well capacity and
(iv) reduce long-term operation maintenance, as well as provide an adequate and efficient
arsenic treatment system.

We firmly believe that the system detailed in our Plan and in this and previous testimony
provides all of these features and provides the greatest benefits to the customers of LQS.
We do not believe that building a system that performs only one of these functions and
later has to be retrofitted to address other issues, or creates other water system issues that
cannot easily be addressed, is in the best interest of the water system customers.

MUNGER CHADWICK, P.L.C.
ATTORNEYS AT LAW
NATIONAL BANK PLAZA
333 NORTH WILMOT, SUITE 300
TUCSON, ARIZONA 85711
(520) 721-1900

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Q. 22 Does that complete your rebuttal testimony?

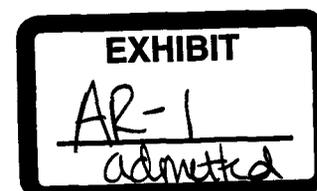
A. 22 Yes

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Las Quintas Serenas Water Company

Docket Nos. W-01583A-04-0178, W-01583A-05-0326 and

W-01583A-05-0340



**Applicant's
Exhibit AR-1**

Miller Brooks Arsenic Program
2/20/2006

SMYTH STEEL

ITEM	Per Miller Brooks		
	WELL 5	WELL 6	WELL 7
EQUIPMENT	\$ 121,544.00	\$ 218,985.00	\$ 284,523.00
SITE WORK / CONCRETE	\$ 5,984.00	\$ 25,500.00	\$ 20,286.00
PIPING	\$ 12,888.00	\$ 41,600.00	\$ 53,281.00
ELECTRICAL	\$ 8,680.00	\$ 16,720.00	\$ 17,538.00
SAND SEPERATOR	\$ 1,445.00	\$ 4,205.00	\$ 5,255.00
CLORINATOR	\$ 1,050.00	\$ 2,000.00	\$ 2,000.00
SUB TOTALS	\$ 151,571.00	\$ 308,010.00	\$ 382,883.00
MARK UP 10%	\$ -	\$ 30,901	\$ 38,288
FREIGHT	\$ 2,500.00	\$ 2,500.00	\$ 2,500.00
INSTALLATION	\$ -	\$ 35,000.00	\$ 35,000.00
TOTALS	\$ 154,071	\$ 377,411	\$ 458,671

Taxes TOTAL \$ 990,153

TAXES Sahuarita 5.59% \$ 55,350.00
 BONDS \$ 10,410.00
 TOTAL \$ 1,055,913

EXCLUDES: PERMITS

Well # 5 per Miller Brooks Estimate.

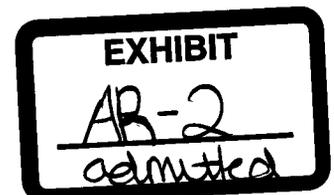
This is based on information provided to us.

Electrical assumes all controls and disconnects included with package plant price.

Las Quintas Serenas Water Company

Docket Nos. W-01583A-04-0178, W-01583A-05-0326 and

W-01583A-05-0340



**Applicant's
Exhibit AR-2**

February 16, 2006

Mr. Steve Gay, Operation/Manager
LAS QUINTAS WATER COMPANY
P.O. Box 68
Sahuarita, Arizona 85629

Re: WATER SYSTEM STORAGE REQUIREMENTS

Dear Steve:

This is in response to your request to clarify the rules and regulations pertaining to water system storage requirements for public water systems.

Pima County Department of Environmental Quality's policy is to approve plans and designs, which adhere to the minimum standards and guidelines found in Arizona Administrative Code, Title 18, Chapter 5 and ADEQ's Engineering Bulletin #10. Neither of these codes and bulletins have been significantly revised in the past 14 years, while historical documentation and examples on what works and what doesn't continues to grow showing a need for these codes and bulletins to be significantly revised.

The rest of this letter is a personal recommendation, which is based on 13 years of experience working for Pima County Department of Environmental Quality, and with over 200 Public Water Systems within Pima County.

Per the Arizona Revised Statutes R18-5-503 Storage Requirements, ..."the minimum storage capacity shall be equal to the average daily demand during the peak month of the year." This is the minimum storage capacity typically required for public water systems in order to provide adequate above ground storage. This storage is required to provide peak capacity during the peak hour demands through the summer months, and also emergency storage when a large well is out of service. In addition to this minimum storage capacity requirement, all fire flow requirements needs to be in addition to this volume. The Arizona Administrative Code also includes a caveat that states the following; "The minimum storage capacity for a multiple well system may be reduced by the amount of the total daily demand minus the production from the largest producing well." While this option may allow the water company to reduce the minimum storage capacity required for water systems, typically using this equation produces a negative net requirement of storage capacity and from my personal experience this only works with very small water system with populations under a few hundred. While it is the option of the water company to choose this methodology for determining storage, it is my strong recommendation that the minimum storage capacity for a water system be equal to or greater than the average daily demands during the peak month of the year for all water systems. This volume of above-ground storage provides adequate capacity to serve a water system during peak hour demands, throughout the peak demands of the summer months, and also provides emergency storage for well outages. I believe this will better provide a water system with greater reliability, public safety, and provide the greatest level of service to the customers.

Sincerely,



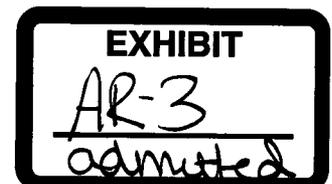
Mike Redmond, R.S.
Sr. Civil Engineering Assistant

cc: Mike Wood, Director, LQS Board Director
Rohn Hourseholder, LQS Board Director
John S. Gay, Director, LQS Board Director

Las Quintas Serenas Water Company

Docket Nos. W-01583A-04-0178, W-01583A-05-0326 and

W-01583A-05-0340



**Applicant's
Exhibit AR-3**

OPINION OF PROBABLE CONSTRUCTION COST

Project Name: Las Quintas Serenas Water System and Arsenic Program
2/20/2006

Item No.	Item Description	Unit	Quantity	Unit Price	Amount	Remarks
1	Site Demolition and Removal of Abandoned Facilities at Well Sites	LS	1	\$12,500	\$12,500	Well No. 6.
2	Site Piping Well Site No. 6	EA	1	\$92,000	\$92,000	Includes flow control valves and connections to treatment units
3	Concrete Slabs for Site Equipment	CY	30	\$600	\$18,000	Well Nos. 5 and 6
4	12-inch water main SDR-11 HDPE	LF	2,500	\$79.65	\$199,125	Well No. 7 to Well No. 6 site, includes 1600 sy chip seal, and 110 lf jack & bore.
5	400,000 gallon reservoir	LS	1	\$270,000	\$270,000	Well No. 6 site
6	1000-gpm transfer booster station	LS	1	\$220,000	\$220,000	Well No. 6 site
7	1,190 gpm Adsorption Arsenic Treatment System	LS	1	\$400,000	\$400,000	To treat Well Nos. 6 and 7 (Severn Trent)
8	Well No. 6 site backwash tank	LS	1	\$25,000	\$25,000	For Well No. 6 facility includes recycle pump.
9	200 gpm Adsorption Arsenic Treatment System	LS	1	\$150,071	\$150,071	To treat Well No. 5, per Miller Brooks estimate
10	Well No. 5 Backwash tank	LS	1	\$4,000	\$4,000	For Well No. 5 facility
11	Back-up Generator	LS	1	\$60,000	\$60,000	Well No. 6
12	Fencing and Site Work at Well Sites	EA	1	\$43,000	\$43,000	Well No. 6, includes grading for floodplain
13	Re-equip well	EA	2	\$15,000	\$30,000	Well Nos. 6 and 7, to remove bowls
14	Hypochlorite chlorination units	EA	3	\$2,000	\$6,000	All three well sites
15	Sand Separators	LS	1	\$13,827	\$13,827	All three well sites
16	3,000 gallon hydro pneumatic tank	EA	1	\$20,000	\$20,000	Well No. 6 Site
17	Electrical	EA	1	\$47,800	\$47,800	
18	Furnish, install new air compressor	EA	1	\$5,000	\$5,000	
19	Disinfection, and Testing	LS	1	\$5,000	\$5,000	
	Subtotal				\$1,621,323	
	TOTAL				\$1,621,323	

TAX SAHUARITA @ 5.59%

\$90,632
\$10,800
\$1,722,755

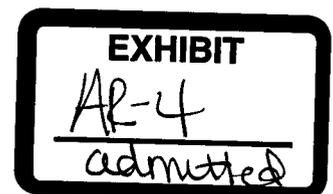
Excludes: Permits,
This is based on information provided.
Electrical assumes all controls and disconnects included in package plant price.

TOTAL

Las Quintas Serenas Water Company

Docket Nos. W-01583A-04-0178, W-01583A-05-0326 and

W-01583A-05-0340



**Applicant's
Exhibit AR-4**

SMYTH STEEL
 4010 E. ILLINOIS ST.
 TUCSON, AZ 85714
 PHONE (520) 750-8719
 FAX (520) 750-9544

FACSIMILE TRANSMITTAL SHEET

TO: Mark Taylor	FROM: Al Heimpel
COMPANY: Westland Resources	DATE: FEBRUARY 17, 2006
FAX- 206-9518	TOTAL NO. OF PAGES INCLUDING COVER: 2
PHONE NUMBER-	
RE: Las Quintas	YOUR REFERENCE NUMBER:

URGENT FOR REVIEW PLEASE COMMENT PLEASE REPLY

NOTES/COMMENTS

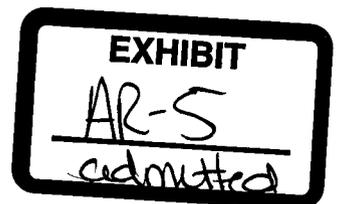
As requested
 The estimated cost deduction to replace the proposed 400,000 gallon reservoir with a 250,000 gallon reservoir would be \$ 80,000.00

Al

Las Quintas Serenas Water Company

Docket Nos. W-01583A-04-0178, W-01583A-05-0326 and

W-01583A-05-0340



**Applicant's
Exhibit AR-5**

SEVERN

TRENT

SERVICES

Filtration
Products

8 February 2006

Mr. Jeff A. Lowy
Westland Resources
2343 E. Broadway Boulevard, Suite 202
Tucson, AZ 85719

Subject: Prechlorination for Las Quintas Water Co SORB 33® As Removal System

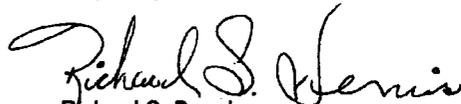
Dear Mr. Lowy:

We understand that Westland Resources has proposed chlorination treatment upstream of both of Severn Trent Services' SORB 33® As Removal Systems for the purpose of ensuring that all of the water's arsenic is oxidized to the As(V) state. The water analysis provided to Hennesy Mechanical Sales and to STS date March 31, 2004 did not report speciation of As(III) but only the total As assay. Therefore, the presence of As(III) and its concentration relative to total As is unknown for each of the 3 wells.

Prechlorination of water for SORB 33® As treatment can only be beneficial to the process. Although the Bayoxide® E33 GFO media can remove As in its reduced +3 state, the adsorption process is most efficient when treating water with oxidized As(V).

Please feel free to contact me at the numbers below on my cell phone at (813) 601-7966 or e-mail at rdennis@severntrentservices.com if you have any questions on this subject.

Very Truly Yours,



Richard S. Dennis
Separation Products Manager

Enclosures

cc: Mr. Steven C. Wood - STS
Mr. Jeff Pals - Hennesy

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PREPARED REBUTTAL CASE TESTIMONY
OF
RONALD L. KOZOMAN, CPA
ON BEHALF OF
LAS QUINTAS SERENAS WATER CO.
IN
DOCKET NOS. W-01583A-04-0178, W-01583A-05-0326 AND W-01583A-05-0340

- Q. 1 Please state your name and professional status.
- A. 1 My name is Ronald L. Kozoman. I am a Certified Public Accountant, with a concentration in public utility accounting and regulation.
- Q. 2 Are you the same Ronald L. Kozoman who previously submitted direct case testimony on behalf of Las Quintas Serenas Water Co. ("LQS") in these consolidated proceedings?
- A. 2 Yes.
- Q. 3 Before beginning with your rebuttal testimony, is there a matter you would like to clarify with regard to your previously filed prepared direct testimony?
- A. 3 Yes, I used a gross-up factor based on the test year income tax rate that was used. However, Staff is using an income tax gross up tax factor using the actual income tax rates which would be incurred depending on how much principal on the proposed loan is repaid. I was under the impression that the income tax conversion could not be changed for purposes of these consolidated proceedings. Therefore, I used 26.459% on the loan.
- This was the tax rate used in the last rate case. Thus, the income tax factor needs to be changed. Instead of a uniform tax rate of 26.459%, the income tax gross-up varies based on whether the principal repaid (which would be taxable income to the utility) causes the Company to end up in the higher federal tax brackets. The tax factors are shown on Exhibit AR-6
- Q. 4 Have you reviewed the prefiled testimony and exhibits of the Arizona Corporation Commission Staff ("Staff") in these consolidated proceedings?
- A. 4 Yes.

EXHIBIT
AR-12
admitted

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Q. 5 Are there matters contained in the Staff testimony and exhibits that you wish to address in this rebuttal testimony?

A. 5 Yes. I would like to discuss several inaccuracies or shortcomings I observed in the testimony and exhibits of Staff financial witness Daniel Zivan. Mark Taylor of WestLand Resources, Inc. will discuss the testimony and exhibits of Staff engineering witness Dorothy Hains in his rebuttal case testimony.

My concern with Mr. Zivan is that he isn't telling the whole story on Staff's proposed Water Infrastructure Financing Authority ("WIFA") loan "solution". Many important elements are left out of his testimony description of the requirements for a WIFA loan, although some of these facts are spelled out in the Staff Report Summary which goes to the Director of the Utility's Division.

Q. 6 Please describe the manner in which Mr. Zivan has failed to provide an accurate and complete description of the requirements and process which must be followed in order to obtain a loan from WIFA.

A. 6 Mr. Zivan does not list all the criteria involved with the WIFA loan process. As an example, he does not set forth the fact that the WIFA loan will be approximately 2.00% over prime rate (which is now 7.50%) multiplied by 80% (a subsidy from WIFA). So, for example, that 2.00% would be added to the current prime rate of 7.50% which equals 9.50%. When that amount is multiplied by 80%, the resulting effective loan interest rate is 7.60%, as opposed to Mr. Zivan's understated rate of 7.50%. In addition, and significantly, the Staff does not disclose that WIFA requires borrowers to accumulate (or fund) 20% of the loan principal amount (over a sixty (60) month period) as a debt reserve against the prospect of a borrower not having the funds to make payments on the loan and/or for money being available to be used for needed repairs. That amount is significant. For example, 20% times Staff's recommended loan amount of \$1,324,688 would be \$264,938, which funded over sixty (60) months equals \$4,418 per month. Thus, when Mr. Zivan talks about keeping the Company whole "cash wise," he is omitting a very important and relevant cost factor.

I agree with Mr. Zivan that theoretically it would be less expensive for the Company's customers if the Commission approves funding with WIFA, due to the twenty (20) year repayment term (using traditional rate base regulation), because the cost of debt would be set at approximately 7.60% in the cost of capital model vs. 8.00% for the bank loan.

However, I strongly disagree with his suggestion that this is the cheapest cost for the Company or its customers. To the contrary, in reality, the Company and its customers would repay more cash to WIFA than if the Company used the Bank loan with Commerce Bank of Arizona. To illustrate this point, we can use the analogy of a house loan or mortgage that could be financed over fifteen (15) years or thirty (30) years. The

1
2 thirty (30) year loan would result in a lower monthly payment, but the borrower would
3 pay back less total dollars with fifteen (15) year loan.

4 Q. 7 Have you prepared exhibits that illustrate this point?

5 A. 6 Yes. I have prepared Exhibit AR-7 (loan with Commerce Bank of Arizona for ten years)
6 and AR-8 (loan with WIFA over twenty years). To make the loans comparable, I
7 assumed a ten (10) year loan at Staff's recommended loan amount vs. a twenty (20) year
8 WIFA loan in the same amount. That loan amount is \$1,324,688. For the bank loan I
9 assumed an 8.00% fixed interest rate. For the WIFA loan I assumed the Staff's interest
rate of 7.50% (and not the correct 7.60% that WIFA would charge if the loan were made
today.)

10 With the ten (10) year loan the total payments to Commerce Bank of Arizona would total
11 approximately **\$1,938,890** (assuming uniform monthly payments) including closing fees
of **\$10,235**. This is shown on Exhibit AR-7. These total payments consist of interest of
12 \$603,966, closing fees of \$10,235, and the principal payment of \$1,324,688.

13 With the twenty (20) year loan with WIFA, the sum of the payments would total
14 **\$2,561,183** and consist of interest of \$1,236,495 and the principal payment of
\$1,324,688. This is shown on Exhibit AR-8.

15 So the customers will actually pay \$622,293 more for the twenty (20) year WIFA loan
16 than for the ten (10) year Commerce Bank of Arizona loan, even when the loan
origination fees are included.

17 The monthly payments with a ten (10) year loan at 8.00% interest rate are noticeably
18 higher than the same loan amortized over a twenty (20) year period with WIFA at the
19 Staff's assumed interest rate 7.50%. However, when you add in the previously
20 mentioned WIFA debt reserve requirement, the difference between the bank and WIFA
21 monthly payments is substantially smaller, for the first five (5) years. Additionally, the
aggregate amount actually paid for the WIFA loan is substantially more than for the bank
loan.

22 Q. 8 Do you agree with the prime rate that Mr. Zivan used?

23 A. 8 No. Mr. Zivan used a prime rate of 7.37% in his computations, which does not exist and
24 never has. Apparently he used the known prime rate (At the date he prepared his
25 testimony of 7.25% and added 0.125% as an assumed prime rate increase. He apparently
26 went half way between a .25% interest hike and no rate hike. However, I am not faulting
Mr. Zivan on this item, as trying to out guess the Federal Reserve is next to impossible.

27 I commend Mr. Zivan's use of the actual tax rate rather than the test year tax rate. At
28 least that helps with the first year income tax payments. However, the second year

1
2 income taxes will be understated as the principal payments increase. My computations
3 have the same problem.

4 Q. 9 Will the company have increased property taxes and income taxes (in future years) due to
5 the amounts that are recommended by either you or the Staff?

6 A. 9 Yes. As additional revenues are recorded, the property taxes, which are revenue based,
7 will increase. And, as the principal on either loan is reduced, the income taxes will
8 increase, as the Company will have less interest expense to deduct. Thus, the company is
9 not kept whole as to cash flow unless it files another rate case and its rates are adjusted to
10 reflect this situation. A rate case can be an expensive and time consuming undertaking.

11 Q. 10 Assuming that the Commission does not allow the operating expenses of \$21,000
12 associated with the operation of the arsenic treatment equipment, or the amortization of
13 the loan origination fees of \$1,267, will the income taxes be higher or lower than what
14 the Staff has computed?

15 A. 10 The income taxes would be lower, as there is no provision for not deducting these
16 expenses for income taxes, unless the Company gets an accounting order from this
17 Commission to defer them and collect them at a later date.

18 Alternatively, the Commission could grant an adjuster mechanism for the operating and
19 maintenance costs.

20 Q. 11 Have you reviewed Mark Taylor's rebuttal case testimony?

21 A. 11 Yes, I have.

22 Q. 12 Have you computed the latest monthly customer charge under the proposed Arsenic Cost
23 Recovery Mechanism, based on the latest cost estimate for the arsenic treatment plant
24 recommended by WestLand Resources, and adopted by LQS's Board of Directors?

25 A.12 Yes. I have prepared Exhibit AR-9 which reflects that the monthly customer charge for
26 an equivalent 5/8 inch meter would be \$27.62 as a result of the updated estimated cost of
27 the proposed arsenic treatment program and related income tax consequences, including
28 "gross up" on loan principal payments.

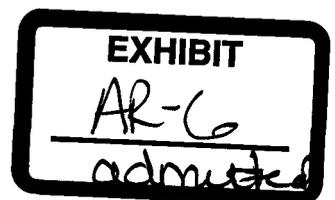
Q. 13 Does that conclude your rebuttal case testimony?

A. 13 Yes it does.

Las Quintas Serenas Water Company

Docket Nos. W-01583A-04-0178, W-01583A-05-0326 and

W-01583A-05-0340



**Applicant's
Exhibit AR-6**

Las Quinta Sernas Water Company
Incremental Income Rates

Exhibit AR-6
Witness: Kozoman

Staffs Prior
Taxable
Income +
(Commerce
Banks
Plus
Principal
Repayments)
1st Year

(a)
Staffs
Taxable
Income
Plus Incremental Principal Payments
of \$20,000

Income Tax Brackets for 2006	Staffs Taxable Income	Staffs Taxable Income + Principal Repayments)
2006 2006 2006	2006	1st Year
50,000 75,000 100,000 500,000	18,260 38,260 58,260 78,260 98,260	146,823
3,484 5,226 6,968 34,840	1,272 2,666 4,060 5,453 6,847	10,231
Less Arizona Income Tax	6,968%	
Arizona Income Tax Rate =		
Federal Income Before Taxes	50,000 75,000 100,000 500,000	18,260 38,260 58,260 78,260 98,260
Less Arizona Income Taxes	3,484 5,226 6,968 34,840	1,272 2,666 4,060 5,453 6,847
Federal Taxable Income	46,516 69,774 93,032 465,160	16,988 35,594 54,200 72,807 91,413

FEDERAL INCOME TAXES:	6,977	7,500	7,500	7,500	2,548	5,339	7,500	7,500	7,500	7,500	7,500
15% BRACKET UP TO \$50,000	6,977	7,500	7,500	7,500	2,548	5,339	7,500	7,500	7,500	7,500	7,500
25% BRACKET ON NEXT \$25,000	-	4,944	6,250	6,250	-	-	1,050	5,702	6,250	6,250	6,250
34% BRACKET ON NEXT \$25,000	-	-	6,131	8,500	-	-	-	-	5,581	8,500	8,500
39% BRACKET ON NEXT \$235,000	-	-	-	91,650	-	-	-	-	-	14,271	14,271
34% BRACKET OVER \$335,000	-	-	-	44,254	-	-	-	-	-	-	-
Federal Income Taxes	6,977	12,444	19,881	158,154	2,548	5,339	8,550	13,202	19,331	36,521	36,521
Total Income Tax	10,461	17,670	26,849	192,994	3,821	8,005	12,610	18,655	26,177	46,751	46,751
Tax Rate	20.92%	23.56%	26.85%	38.60%	20.92%	20.92%	21.64%	23.84%	26.64%	31.84%	31.84%

Effective Income Tax Rates	6.968%	6.968%	6.968%	6.968%	6.968%	6.968%	6.968%	6.968%	6.968%	6.968%
State	6.968%	6.968%	6.968%	6.968%	6.968%	6.968%	6.968%	6.968%	6.968%	6.968%
Federal	15.00%	17.83%	21.37%	34.00%	15.00%	15.00%	15.77%	18.13%	21.15%	26.74%
Total Tax Rate	21.97%	24.80%	28.34%	40.97%	21.97%	21.97%	22.74%	25.10%	28.11%	33.71%

Revenue Conversion Factor	128.15%	132.98%	139.54%	169.40%	128.15%	128.15%	129.44%	133.51%	139.11%	150.84%
(1 / (1 plus tax rate))	128.15%	132.98%	139.54%	169.40%	128.15%	128.15%	129.44%	133.51%	139.11%	150.84%
Increment Tax (Staff Method)	28.15%	32.98%	39.54%	69.40%	28.15%	28.15%	29.44%	33.51%	39.11%	50.84%

(a) From Staff Exhibit DTZ-1 Income Taxes of \$3,458 and Operating Income of \$14,802.

Las Quintas Serenas Water Company

Docket Nos. W-01583A-04-0178, W-01583A-05-0326 and

W-01583A-05-0340



**Applicant's
Exhibit AR-7**

Las Quinta Serenas Water Company
Test Year Ended 9/30/03
Company Requested Loan at 8.00%

Exhibit No. AR-7
 Witness: Kozoman

Assumes Uniform Monthly Payments

ACC Staff Recommended Loan

Bank Interest (fixed) Interest Rate / Annual
 Bank Interest Rate (fixed) / Monthly
 Term In Years
 Term In months
 Monthly Annuity Factor
 Monthly Payment
 Staff Payments without Income Tax
Loan Fees = (.75% x Loan Amount = \$9,935.16) + \$300

Commerce
Bank

\$ 1,324,688
8.00%
 0.666667%
 10
 120
 82.4215
 \$ 16,072.12
 \$ 16,072.00
 \$ 10,235.16

Payment Number	Payment	Interest Expense	Principal Payment	Balance	Principal Payment	Year
				\$ 1,324,688.00		
1	\$ 16,072.12	\$ 8,831.25	\$ 7,240.87	1,317,447.13		
2	16,072.12	8,782.98	\$ 7,289.14	1,310,157.99		
3	16,072.12	8,734.39	\$ 7,337.73	1,302,820.26		
4	16,072.12	8,685.47	\$ 7,386.65	1,295,433.61		
5	16,072.12	8,636.22	\$ 7,435.90	1,287,997.71		
6	16,072.12	8,586.65	\$ 7,485.47	1,280,512.24		
7	16,072.12	8,536.75	\$ 7,535.37	1,272,976.87		
8	16,072.12	8,486.51	\$ 7,585.61	1,265,391.26		
9	16,072.12	8,435.94	\$ 7,636.18	1,257,755.08		
10	16,072.12	8,385.03	\$ 7,687.09	1,250,067.99		
11	16,072.12	8,333.79	\$ 7,738.33	1,242,329.66		
12	16,072.12	8,282.20	\$ 7,789.92	1,234,539.74	\$ 90,148.26	Year 1
13	16,072.12	8,230.26	\$ 7,841.86	1,226,697.88		
14	16,072.12	8,177.99	\$ 7,894.13	1,218,803.74		
15	16,072.12	8,125.36	\$ 7,946.76	1,210,856.98		
16	16,072.12	8,072.38	\$ 7,999.74	1,202,857.24		
17	16,072.12	8,019.05	\$ 8,053.07	1,194,804.17		
18	16,072.12	7,965.36	\$ 8,106.76	1,186,697.41		
19	16,072.12	7,911.32	\$ 8,160.80	1,178,536.60		
20	16,072.12	7,856.91	\$ 8,215.21	1,170,321.39		
21	16,072.12	7,802.14	\$ 8,269.98	1,162,051.42		
22	16,072.12	7,747.01	\$ 8,325.11	1,153,726.30		
23	16,072.12	7,691.51	\$ 8,380.61	1,145,345.69		
24	16,072.12	7,635.64	\$ 8,436.48	1,136,909.21	\$ 97,630.53	Year 2
25	16,072.12	7,579.39	\$ 8,492.73	1,128,416.48		
26	16,072.12	7,522.78	\$ 8,549.34	1,119,867.14		
27	16,072.12	7,465.78	\$ 8,606.34	1,111,260.80		
28	16,072.12	7,408.41	\$ 8,663.72	1,102,597.08		

29 16,072.12 7,350.65 \$ 8,721.47 1,093,875.61

**Las Quinta Serenas Water Company
Test Year Ended 9/30/03
Company Requested Loan at 8.00%**

Exhibit No. AR-7
Witness: Kozoman

<u>Payment Number</u>	<u>Payment</u>	<u>Interest Expense</u>	<u>Principal Payment</u>	<u>Balance</u>	<u>Principal Payment</u>	<u>Year</u>
30	16,072.12	7,292.50	\$ 8,779.62	1,085,095.99		
31	16,072.12	7,233.97	\$ 8,838.15	1,076,257.85		
32	16,072.12	7,175.05	\$ 8,897.07	1,067,360.78		
33	16,072.12	7,115.74	\$ 8,956.38	1,058,404.39		
34	16,072.12	7,056.03	\$ 9,016.09	1,049,388.30		
35	16,072.12	6,995.92	\$ 9,076.20	1,040,312.10		
36	16,072.12	6,935.41	\$ 9,136.71	1,031,175.40	\$ 105,733.81	Year 3
37	16,072.12	6,874.50	\$ 9,197.62	1,021,977.78		
38	16,072.12	6,813.19	\$ 9,258.94	1,012,718.84		
39	16,072.12	6,751.46	\$ 9,320.66	1,003,398.18		
40	16,072.12	6,689.32	\$ 9,382.80	994,015.38		
41	16,072.12	6,626.77	\$ 9,445.35	984,570.03		
42	16,072.12	6,563.80	\$ 9,508.32	975,061.71		
43	16,072.12	6,500.41	\$ 9,571.71	965,490.00		
44	16,072.12	6,436.60	\$ 9,635.52	955,854.48		
45	16,072.12	6,372.36	\$ 9,699.76	946,154.72		
46	16,072.12	6,307.70	\$ 9,764.42	936,390.30		
47	16,072.12	6,242.60	\$ 9,829.52	926,560.78		
48	16,072.12	6,177.07	\$ 9,895.05	916,665.73	\$ 114,509.67	Year 4
49	16,072.12	6,111.10	\$ 9,961.02	906,704.72		
50	16,072.12	6,044.70	\$ 10,027.42	896,677.29		
51	16,072.12	5,977.85	\$ 10,094.27	886,583.02		
52	16,072.12	5,910.55	\$ 10,161.57	876,421.45		
53	16,072.12	5,842.81	\$ 10,229.31	866,192.14		
54	16,072.12	5,774.61	\$ 10,297.51	855,894.64		
55	16,072.12	5,705.96	\$ 10,366.16	845,528.48		
56	16,072.12	5,636.86	\$ 10,435.26	835,093.21		
57	16,072.12	5,567.29	\$ 10,504.83	824,588.38		
58	16,072.12	5,497.26	\$ 10,574.86	814,013.52		
59	16,072.12	5,426.76	\$ 10,645.36	803,368.15		
60	16,072.12	5,355.79	\$ 10,716.33	792,651.82	\$ 124,013.91	Year 5
61	16,072.12	5,284.35	\$ 10,787.78	781,864.04		
62	16,072.12	5,212.43	\$ 10,859.69	771,004.35		
63	16,072.12	5,140.03	\$ 10,932.09	760,072.26		
64	16,072.12	5,067.15	\$ 11,004.97	749,067.29		
65	16,072.12	4,993.78	\$ 11,078.34	737,988.95		
66	16,072.12	4,919.93	\$ 11,152.19	726,836.75		
67	16,072.12	4,845.58	\$ 11,226.54	715,610.21		
68	16,072.12	4,770.73	\$ 11,301.39	704,308.82		
69	16,072.12	4,695.39	\$ 11,376.73	692,932.10		
70	16,072.12	4,619.55	\$ 11,452.57	681,479.52		

71	16,072.12	4,543.20	\$ 11,528.92	669,950.60		
72	16,072.12	4,466.34	\$ 11,605.78	658,344.81	\$ 134,307.01	Year 6

Las Quinta Serenas Water Company
Test Year Ended 9/30/03
Company Requested Loan at 8.00%

Exhibit No. AR-7
Witness: Kozoman

<u>Payment Number</u>	<u>Payment</u>	<u>Interest Expense</u>	<u>Principal Payment</u>	<u>Balance</u>	<u>Principal Payment</u>	<u>Year</u>
73	16,072.12	4,388.97	\$ 11,683.16	646,661.66		
74	16,072.12	4,311.08	\$ 11,761.04	634,900.62		
75	16,072.12	4,232.67	\$ 11,839.45	623,061.17		
76	16,072.12	4,153.74	\$ 11,918.38	611,142.79		
77	16,072.12	4,074.29	\$ 11,997.84	599,144.95		
78	16,072.12	3,994.30	\$ 12,077.82	587,067.13		
79	16,072.12	3,913.78	\$ 12,158.34	574,908.79		
80	16,072.12	3,832.73	\$ 12,239.40	562,669.39		
81	16,072.12	3,751.13	\$ 12,320.99	550,348.40		
82	16,072.12	3,668.99	\$ 12,403.13	537,945.27		
83	16,072.12	3,586.30	\$ 12,485.82	525,459.45		
84	16,072.12	3,503.06	\$ 12,569.06	512,890.39	\$ 145,454.42	Year 7
85	16,072.12	3,419.27	\$ 12,652.85	500,237.54		
86	16,072.12	3,334.92	\$ 12,737.20	487,500.34		
87	16,072.12	3,250.00	\$ 12,822.12	474,678.22		
88	16,072.12	3,164.52	\$ 12,907.60	461,770.62		
89	16,072.12	3,078.47	\$ 12,993.65	448,776.97		
90	16,072.12	2,991.85	\$ 13,080.27	435,696.70		
91	16,072.12	2,904.64	\$ 13,167.48	422,529.22		
92	16,072.12	2,816.86	\$ 13,255.26	409,273.96		
93	16,072.12	2,728.49	\$ 13,343.63	395,930.33		
94	16,072.12	2,639.54	\$ 13,432.59	382,497.75		
95	16,072.12	2,549.98	\$ 13,522.14	368,975.61		
96	16,072.12	2,459.84	\$ 13,612.28	355,363.33	\$ 157,527.07	Year 8
97	16,072.12	2,369.09	\$ 13,703.03	341,660.30		
98	16,072.12	2,277.74	\$ 13,794.39	327,865.91		
99	16,072.12	2,185.77	\$ 13,886.35	313,979.56		
100	16,072.12	2,093.20	\$ 13,978.92	300,000.64		
101	16,072.12	2,000.00	\$ 14,072.12	285,928.52		
102	16,072.12	1,906.19	\$ 14,165.93	271,762.59		
103	16,072.12	1,811.75	\$ 14,260.37	257,502.22		
104	16,072.12	1,716.68	\$ 14,355.44	243,146.78		
105	16,072.12	1,620.98	\$ 14,451.14	228,695.64		
106	16,072.12	1,524.64	\$ 14,547.48	214,148.16		
107	16,072.12	1,427.65	\$ 14,644.47	199,503.69		
108	16,072.12	1,330.02	\$ 14,742.10	184,761.59	\$ 170,601.73	Year 9
109	16,072.12	1,231.74	\$ 14,840.38	169,921.22		
110	16,072.12	1,132.81	\$ 14,939.31	154,981.90		
111	16,072.12	1,033.21	\$ 15,038.91	139,943.00		
112	16,072.12	932.95	\$ 15,139.17	124,803.83		

113	16,072.12	832.03	\$ 15,240.10	109,563.73
114	16,072.12	730.42	\$ 15,341.70	94,222.04
115	16,072.12	628.15	\$ 15,443.97	78,778.06

Las Quinta Serenas Water Company
Test Year Ended 9/30/03
Company Requested Loan at 8.00%

Exhibit No. AR-7
 Witness: Kozoman

Payment Number	Payment	Interest Expense	Principal Payment	Balance	Principal Payment	Year
116	16,072.12	525.19	\$ 15,546.93	63,231.13		
117	16,072.12	421.54	\$ 15,650.58	47,580.55		
118	16,072.12	317.20	\$ 15,754.92	31,825.63		
119	16,072.12	212.17	\$ 15,859.95	15,965.68		
120	16,072.12	106.44	\$ 15,965.68	(0.00)	\$ 184,761.59	Year 10

Bank Loan

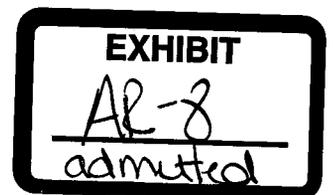
Actual Total Dollars Paid on Loan over 10 Years

<u>Total</u>	<u>Interest</u>	<u>Principal</u>
<u>Payments</u>	<u>Expense</u>	<u>Payment</u>
\$ 1,928,654	\$ 603,966	\$ 1,324,688
10,235	Loan Closing Costs	
<u>\$ 1,938,890</u>	Total Paid Out for Loan	

Las Quintas Serenas Water Company

Docket Nos. W-01583A-04-0178, W-01583A-05-0326 and

W-01583A-05-0340



**Applicant's
Exhibit AR-8**

Las Quinta Serenas Water Company
Test Year Ended 9/30/03
Staff Proposed WIFA Loan At Staff's Assumed Interest Rate

Exhibit No. AR-8
 Witness: Kozoman

Assumes Uniform Monthly Payments	Staff's
ACC Staff Recommended Loan	<u>WIFA LOAN</u>
Staff's Assumed Subsidized Interest Rate / Annual	\$ 1,324,688
Subsidized Interest Rate / Monthly	7.50%
Term In Years	0.625000%
Term In months	20
Monthly Annuity Factor	240
Monthly Payment	124.1321
Staff Payments without Income Tax (rounded)	\$ 10,671.60
	\$ 10,672.00

\$ 1,324,688	
20%	Reserve "Funding" Percentage required in 5 years
<u>\$ 264,938</u>	\$ 4,415.63 Additional Funding to Monthly Payment for 1st Five Years

Payment Number	Payment	Interest Expense	Principal Payment	Balance	Principal Payment	Year
				\$ 1,324,688.00		
1	\$ 10,671.60	\$ 8,279.30	\$ 2,392.30	1,322,295.70		
2	\$ 10,671.60	8,264.35	2,407.25	1,319,888.46		
3	\$ 10,671.60	8,249.30	2,422.29	1,317,466.16		
4	\$ 10,671.60	8,234.16	2,437.43	1,315,028.73		
5	\$ 10,671.60	8,218.93	2,452.67	1,312,576.06		
6	\$ 10,671.60	8,203.60	2,468.00	1,310,108.07		
7	\$ 10,671.60	8,188.18	2,483.42	1,307,624.65		
8	\$ 10,671.60	8,172.65	2,498.94	1,305,125.70		
9	\$ 10,671.60	8,157.04	2,514.56	1,302,611.14		
10	\$ 10,671.60	8,141.32	2,530.28	1,300,080.87		
11	\$ 10,671.60	8,125.51	2,546.09	1,297,534.77		
12	\$ 10,671.60	8,109.59	2,562.00	1,294,972.77	\$ 29,715.23	Year 1
13	\$ 10,671.60	8,093.58	2,578.02	1,292,394.75		
14	\$ 10,671.60	8,077.47	2,594.13	1,289,800.62		
15	\$ 10,671.60	8,061.25	2,610.34	1,287,190.28		
16	\$ 10,671.60	8,044.94	2,626.66	1,284,563.63		
17	\$ 10,671.60	8,028.52	2,643.07	1,281,920.55		
18	\$ 10,671.60	8,012.00	2,659.59	1,279,260.96		
19	\$ 10,671.60	7,995.38	2,676.22	1,276,584.74		
20	\$ 10,671.60	7,978.65	2,692.94	1,273,891.80		
21	\$ 10,671.60	7,961.82	2,709.77	1,271,182.03		
22	\$ 10,671.60	7,944.89	2,726.71	1,268,455.32		
23	\$ 10,671.60	7,927.85	2,743.75	1,265,711.57		
24	\$ 10,671.60	7,910.70	2,760.90	1,262,950.67	\$ 32,022.10	Year 2
25	\$ 10,671.60	7,893.44	2,778.15	1,260,172.52		
26	\$ 10,671.60	7,876.08	2,795.52	1,257,377.00		
27	\$ 10,671.60	7,858.61	2,812.99	1,254,564.01		
28	\$ 10,671.60	7,841.03	2,830.57	1,251,733.44		
29	\$ 10,671.60	7,823.33	2,848.26	1,248,885.17		
30	\$ 10,671.60	7,805.53	2,866.06	1,246,019.11		

Las Quinta Serenas Water Company
Test Year Ended 9/30/03
Staff Proposed WIFA Loan At Staff's Assumed Interest Rate

Exhibit No. AR-8
 Witness: Kozoman

<u>Payment Number</u>	<u>Payment</u>	<u>Interest Expense</u>	<u>Principal Payment</u>	<u>Balance</u>	<u>Principal Payment</u>	<u>Year</u>
31	\$ 10,671.60	7,787.62	2,883.98	1,243,135.13		
32	\$ 10,671.60	7,769.59	2,902.00	1,240,233.13		
33	\$ 10,671.60	7,751.46	2,920.14	1,237,312.99		
34	\$ 10,671.60	7,733.21	2,938.39	1,234,374.60		
35	\$ 10,671.60	7,714.84	2,956.76	1,231,417.85		
36	\$ 10,671.60	7,696.36	2,975.23	1,228,442.61	\$ 34,508.06	Year 3
37	\$ 10,671.60	7,677.77	2,993.83	1,225,448.78		
38	\$ 10,671.60	7,659.05	3,012.54	1,222,436.24		
39	\$ 10,671.60	7,640.23	3,031.37	1,219,404.87		
40	\$ 10,671.60	7,621.28	3,050.32	1,216,354.55		
41	\$ 10,671.60	7,602.22	3,069.38	1,213,285.17		
42	\$ 10,671.60	7,583.03	3,088.56	1,210,196.61		
43	\$ 10,671.60	7,563.73	3,107.87	1,207,088.74		
44	\$ 10,671.60	7,544.30	3,127.29	1,203,961.45		
45	\$ 10,671.60	7,524.76	3,146.84	1,200,814.61		
46	\$ 10,671.60	7,505.09	3,166.51	1,197,648.11		
47	\$ 10,671.60	7,485.30	3,186.30	1,194,461.81		
48	\$ 10,671.60	7,465.39	3,206.21	1,191,255.60	\$ 37,187.01	Year 4
49	\$ 10,671.60	7,445.35	3,226.25	1,188,029.35		
50	\$ 10,671.60	7,425.18	3,246.41	1,184,782.94		
51	\$ 10,671.60	7,404.89	3,266.70	1,181,516.24		
52	\$ 10,671.60	7,384.48	3,287.12	1,178,229.12		
53	\$ 10,671.60	7,363.93	3,307.66	1,174,921.45		
54	\$ 10,671.60	7,343.26	3,328.34	1,171,593.12		
55	\$ 10,671.60	7,322.46	3,349.14	1,168,243.98		
56	\$ 10,671.60	7,301.52	3,370.07	1,164,873.91		
57	\$ 10,671.60	7,280.46	3,391.13	1,161,482.77		
58	\$ 10,671.60	7,259.27	3,412.33	1,158,070.44		
59	\$ 10,671.60	7,237.94	3,433.66	1,154,636.79		
60	\$ 10,671.60	7,216.48	3,455.12	1,151,181.67	\$ 40,073.93	Year 5
61	\$ 10,671.60	7,194.89	3,476.71	1,147,704.96		
62	\$ 10,671.60	7,173.16	3,498.44	1,144,206.52		
63	\$ 10,671.60	7,151.29	3,520.31	1,140,686.21		
64	\$ 10,671.60	7,129.29	3,542.31	1,137,143.91		
65	\$ 10,671.60	7,107.15	3,564.45	1,133,579.46		
66	\$ 10,671.60	7,084.87	3,586.72	1,129,992.73		
67	\$ 10,671.60	7,062.45	3,609.14	1,126,383.59		
68	\$ 10,671.60	7,039.90	3,631.70	1,122,751.89		
69	\$ 10,671.60	7,017.20	3,654.40	1,119,097.50		
70	\$ 10,671.60	6,994.36	3,677.24	1,115,420.26		
71	\$ 10,671.60	6,971.38	3,700.22	1,111,720.04		
72	\$ 10,671.60	6,948.25	3,723.35	1,107,996.69	\$ 43,184.98	Year 6

Las Quinta Serenas Water Company
Test Year Ended 9/30/03
Staff Proposed WIFA Loan At Staff's Assumed Interest Rate

Exhibit No. AR-8
 Witness: Kozoman

<u>Payment Number</u>	<u>Payment</u>	<u>Interest Expense</u>	<u>Principal Payment</u>	<u>Balance</u>	<u>Principal Payment</u>	<u>Year</u>
73	\$ 10,671.60	6,924.98	3,746.62	1,104,250.08		
74	\$ 10,671.60	6,901.56	3,770.03	1,100,480.04		
75	\$ 10,671.60	6,878.00	3,793.60	1,096,686.45		
76	\$ 10,671.60	6,854.29	3,817.31	1,092,869.14		
77	\$ 10,671.60	6,830.43	3,841.16	1,089,027.98		
78	\$ 10,671.60	6,806.42	3,865.17	1,085,162.80		
79	\$ 10,671.60	6,782.27	3,889.33	1,081,273.48		
80	\$ 10,671.60	6,757.96	3,913.64	1,077,359.84		
81	\$ 10,671.60	6,733.50	3,938.10	1,073,421.74		
82	\$ 10,671.60	6,708.89	3,962.71	1,069,459.03		
83	\$ 10,671.60	6,684.12	3,987.48	1,065,471.55		
84	\$ 10,671.60	6,659.20	4,012.40	1,061,459.15	\$ 46,537.54	Year 7
85	\$ 10,671.60	6,634.12	4,037.48	1,057,421.68		
86	\$ 10,671.60	6,608.89	4,062.71	1,053,358.97		
87	\$ 10,671.60	6,583.49	4,088.10	1,049,270.86		
88	\$ 10,671.60	6,557.94	4,113.65	1,045,157.21		
89	\$ 10,671.60	6,532.23	4,139.36	1,041,017.85		
90	\$ 10,671.60	6,506.36	4,165.23	1,036,852.61		
91	\$ 10,671.60	6,480.33	4,191.27	1,032,661.34		
92	\$ 10,671.60	6,454.13	4,217.46	1,028,443.88		
93	\$ 10,671.60	6,427.77	4,243.82	1,024,200.06		
94	\$ 10,671.60	6,401.25	4,270.35	1,019,929.71		
95	\$ 10,671.60	6,374.56	4,297.04	1,015,632.68		
96	\$ 10,671.60	6,347.70	4,323.89	1,011,308.79	\$ 50,150.37	Year 8
97	\$ 10,671.60	6,320.68	4,350.92	1,006,957.87		
98	\$ 10,671.60	6,293.49	4,378.11	1,002,579.76		
99	\$ 10,671.60	6,266.12	4,405.47	998,174.29		
100	\$ 10,671.60	6,238.59	4,433.01	993,741.28		
101	\$ 10,671.60	6,210.88	4,460.71	989,280.57		
102	\$ 10,671.60	6,183.00	4,488.59	984,791.97		
103	\$ 10,671.60	6,154.95	4,516.65	980,275.33		
104	\$ 10,671.60	6,126.72	4,544.88	975,730.45		
105	\$ 10,671.60	6,098.32	4,573.28	971,157.17		
106	\$ 10,671.60	6,069.73	4,601.86	966,555.31		
107	\$ 10,671.60	6,040.97	4,630.63	961,924.68		
108	\$ 10,671.60	6,012.03	4,659.57	957,265.11	\$ 54,043.67	Year 9
109	\$ 10,671.60	5,982.91	4,688.69	952,576.42		
110	\$ 10,671.60	5,953.60	4,717.99	947,858.43		
111	\$ 10,671.60	5,924.12	4,747.48	943,110.95		
112	\$ 10,671.60	5,894.44	4,777.15	938,333.80		
113	\$ 10,671.60	5,864.59	4,807.01	933,526.79		
114	\$ 10,671.60	5,834.54	4,837.05	928,689.73		
115	\$ 10,671.60	5,804.31	4,867.29	923,822.45		
116	\$ 10,671.60	5,773.89	4,897.71	918,924.74		

Las Quinta Serenas Water Company
Test Year Ended 9/30/03
Staff Proposed WIFA Loan At Staff's Assumed Interest Rate

Exhibit No. AR-8
 Witness: Kozoman

<u>Payment Number</u>	<u>Payment</u>	<u>Interest Expense</u>	<u>Principal Payment</u>	<u>Balance</u>	<u>Principal Payment</u>	<u>Year</u>
117	\$ 10,671.60	5,743.28	4,928.32	913,996.42		
118	\$ 10,671.60	5,712.48	4,959.12	909,037.30		
119	\$ 10,671.60	5,681.48	4,990.11	904,047.19		
120	\$ 10,671.60	5,650.29	5,021.30	899,025.89	\$ 58,239.22	Year 10
121	\$ 10,671.60	5,618.91	5,052.68	893,973.21		
122	\$ 10,671.60	5,587.33	5,084.26	888,888.94		
123	\$ 10,671.60	5,555.56	5,116.04	883,772.90		
124	\$ 10,671.60	5,523.58	5,148.02	878,624.89		
125	\$ 10,671.60	5,491.41	5,180.19	873,444.69		
126	\$ 10,671.60	5,459.03	5,212.57	868,232.13		
127	\$ 10,671.60	5,426.45	5,245.15	862,986.98		
128	\$ 10,671.60	5,393.67	5,277.93	857,709.05		
129	\$ 10,671.60	5,360.68	5,310.91	852,398.14		
130	\$ 10,671.60	5,327.49	5,344.11	847,054.03		
131	\$ 10,671.60	5,294.09	5,377.51	841,676.52		
132	\$ 10,671.60	5,260.48	5,411.12	836,265.40	\$ 62,760.49	Year 11
133	\$ 10,671.60	5,226.66	5,444.94	830,820.47		
134	\$ 10,671.60	5,192.63	5,478.97	825,341.50		
135	\$ 10,671.60	5,158.38	5,513.21	819,828.29		
136	\$ 10,671.60	5,123.93	5,547.67	814,280.62		
137	\$ 10,671.60	5,089.25	5,582.34	808,698.27		
138	\$ 10,671.60	5,054.36	5,617.23	803,081.04		
139	\$ 10,671.60	5,019.26	5,652.34	797,428.70		
140	\$ 10,671.60	4,983.93	5,687.67	791,741.04		
141	\$ 10,671.60	4,948.38	5,723.21	786,017.82		
142	\$ 10,671.60	4,912.61	5,758.98	780,258.84		
143	\$ 10,671.60	4,876.62	5,794.98	774,463.86		
144	\$ 10,671.60	4,840.40	5,831.20	768,632.66	\$ 67,632.74	Year 12
145	\$ 10,671.60	4,803.95	5,867.64	762,765.02		
146	\$ 10,671.60	4,767.28	5,904.32	756,860.70		
147	\$ 10,671.60	4,730.38	5,941.22	750,919.49		
148	\$ 10,671.60	4,693.25	5,978.35	744,941.14		
149	\$ 10,671.60	4,655.88	6,015.71	738,925.42		
150	\$ 10,671.60	4,618.28	6,053.31	732,872.11		
151	\$ 10,671.60	4,580.45	6,091.15	726,780.96		
152	\$ 10,671.60	4,542.38	6,129.22	720,651.75		
153	\$ 10,671.60	4,504.07	6,167.52	714,484.23		
154	\$ 10,671.60	4,465.53	6,206.07	708,278.16		
155	\$ 10,671.60	4,426.74	6,244.86	702,033.30		
156	\$ 10,671.60	4,387.71	6,283.89	695,749.41	\$ 72,883.25	Year 13
157	\$ 10,671.60	4,348.43	6,323.16	689,426.25		
158	\$ 10,671.60	4,308.91	6,362.68	683,063.56		
159	\$ 10,671.60	4,269.15	6,402.45	676,661.12		

Las Quinta Serenas Water Company
Test Year Ended 9/30/03
Staff Proposed WIFA Loan At Staff's Assumed Interest Rate

Exhibit No. AR-8
 Witness: Kozoman

<u>Payment Number</u>	<u>Payment</u>	<u>Interest Expense</u>	<u>Principal Payment</u>	<u>Balance</u>	<u>Principal Payment</u>	<u>Year</u>
160	\$ 10,671.60	4,229.13	6,442.46	670,218.65		
161	\$ 10,671.60	4,188.87	6,482.73	663,735.92		
162	\$ 10,671.60	4,148.35	6,523.25	657,212.67		
163	\$ 10,671.60	4,107.58	6,564.02	650,648.66		
164	\$ 10,671.60	4,066.55	6,605.04	644,043.61		
165	\$ 10,671.60	4,025.27	6,646.32	637,397.29		
166	\$ 10,671.60	3,983.73	6,687.86	630,709.43		
167	\$ 10,671.60	3,941.93	6,729.66	623,979.77		
168	\$ 10,671.60	3,899.87	6,771.72	617,208.04	\$ 78,541.37	Year 14
169	\$ 10,671.60	3,857.55	6,814.05	610,394.00		
170	\$ 10,671.60	3,814.96	6,856.63	603,537.36		
171	\$ 10,671.60	3,772.11	6,899.49	596,637.87		
172	\$ 10,671.60	3,728.99	6,942.61	589,695.27		
173	\$ 10,671.60	3,685.60	6,986.00	582,709.26		
174	\$ 10,671.60	3,641.93	7,029.66	575,679.60		
175	\$ 10,671.60	3,598.00	7,073.60	568,606.00		
176	\$ 10,671.60	3,553.79	7,117.81	561,488.19		
177	\$ 10,671.60	3,509.30	7,162.30	554,325.90		
178	\$ 10,671.60	3,464.54	7,207.06	547,118.84		
179	\$ 10,671.60	3,419.49	7,252.10	539,866.73		
180	\$ 10,671.60	3,374.17	7,297.43	532,569.31	\$ 84,638.74	Year 15
181	\$ 10,671.60	3,328.56	7,343.04	525,226.27		
182	\$ 10,671.60	3,282.66	7,388.93	517,837.33		
183	\$ 10,671.60	3,236.48	7,435.11	510,402.22		
184	\$ 10,671.60	3,190.01	7,481.58	502,920.64		
185	\$ 10,671.60	3,143.25	7,528.34	495,392.30		
186	\$ 10,671.60	3,096.20	7,575.39	487,816.90		
187	\$ 10,671.60	3,048.86	7,622.74	480,194.16		
188	\$ 10,671.60	3,001.21	7,670.38	472,523.78		
189	\$ 10,671.60	2,953.27	7,718.32	464,805.46		
190	\$ 10,671.60	2,905.03	7,766.56	457,038.89		
191	\$ 10,671.60	2,856.49	7,815.10	449,223.79		
192	\$ 10,671.60	2,807.65	7,863.95	441,359.84	\$ 91,209.46	Year 16
193	\$ 10,671.60	2,758.50	7,913.10	433,446.75		
194	\$ 10,671.60	2,709.04	7,962.55	425,484.19		
195	\$ 10,671.60	2,659.28	8,012.32	417,471.87		
196	\$ 10,671.60	2,609.20	8,062.40	409,409.47		
197	\$ 10,671.60	2,558.81	8,112.79	401,296.69		
198	\$ 10,671.60	2,508.10	8,163.49	393,133.19		
199	\$ 10,671.60	2,457.08	8,214.51	384,918.68		
200	\$ 10,671.60	2,405.74	8,265.85	376,652.83		
201	\$ 10,671.60	2,354.08	8,317.52	368,335.31		
202	\$ 10,671.60	2,302.10	8,369.50	359,965.81		

203 \$ 10,671.60 2,249.79 8,421.81 351,544.00

**Las Quinta Serenas Water Company
Test Year Ended 9/30/03
Staff Proposed WIFA Loan At Staff's Assumed Interest Rate**

Exhibit No. AR-8
Witness: Kozoman

Payment Number	Payment	Interest Expense	Principal Payment	Balance	Principal Payment	Year
204	\$ 10,671.60	2,197.15	8,474.45	343,069.55	\$ 98,290.29	Year 17
205	\$ 10,671.60	2,144.18	8,527.41	334,542.14		
206	\$ 10,671.60	2,090.89	8,580.71	325,961.43		
207	\$ 10,671.60	2,037.26	8,634.34	317,327.10		
208	\$ 10,671.60	1,983.29	8,688.30	308,638.79		
209	\$ 10,671.60	1,928.99	8,742.60	299,896.19		
210	\$ 10,671.60	1,874.35	8,797.25	291,098.94		
211	\$ 10,671.60	1,819.37	8,852.23	282,246.72		
212	\$ 10,671.60	1,764.04	8,907.55	273,339.16		
213	\$ 10,671.60	1,708.37	8,963.23	264,375.94		
214	\$ 10,671.60	1,652.35	9,019.25	255,356.69		
215	\$ 10,671.60	1,595.98	9,075.62	246,281.07		
216	\$ 10,671.60	1,539.26	9,132.34	237,148.73	\$ 105,920.82	Year 18
217	\$ 10,671.60	1,482.18	9,189.42	227,959.32		
218	\$ 10,671.60	1,424.75	9,246.85	218,712.47		
219	\$ 10,671.60	1,366.95	9,304.64	209,407.82		
220	\$ 10,671.60	1,308.80	9,362.80	200,045.02		
221	\$ 10,671.60	1,250.28	9,421.31	190,623.71		
222	\$ 10,671.60	1,191.40	9,480.20	181,143.51		
223	\$ 10,671.60	1,132.15	9,539.45	171,604.06		
224	\$ 10,671.60	1,072.53	9,599.07	162,004.99		
225	\$ 10,671.60	1,012.53	9,659.07	152,345.93		
226	\$ 10,671.60	952.16	9,719.43	142,626.49		
227	\$ 10,671.60	891.42	9,780.18	132,846.31		
228	\$ 10,671.60	830.29	9,841.31	123,005.00	\$ 114,143.73	Year 19
229	\$ 10,671.60	768.78	9,902.82	113,102.19		
230	\$ 10,671.60	706.89	9,964.71	103,137.48		
231	\$ 10,671.60	644.61	10,026.99	93,110.49		
232	\$ 10,671.60	581.94	10,089.66	83,020.84		
233	\$ 10,671.60	518.88	10,152.72	72,868.12		
234	\$ 10,671.60	455.43	10,216.17	62,651.95		
235	\$ 10,671.60	391.57	10,280.02	52,371.93		
236	\$ 10,671.60	327.32	10,344.27	42,027.66		
237	\$ 10,671.60	262.67	10,408.92	31,618.73		
238	\$ 10,671.60	197.62	10,473.98	21,144.75		
239	\$ 10,671.60	132.15	10,539.44	10,605.31		
240	\$ 10,671.60	66.28	10,605.31	\$ 0	\$ 123,005.00	Year 20

WIFA Loan

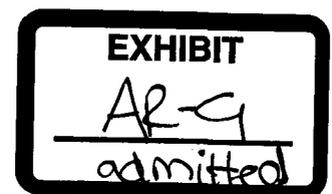
Actual Total Dollars Paid on Loan Over 20 Years

<u>Total</u>	<u>Interest</u>	<u>Principal</u>
--------------	-----------------	------------------

<u>Payments</u>	<u>Expense</u>	<u>Payment</u>
\$ 2,561,183	\$ 1,236,495	\$ 1,324,688
\$ 2,561,183	Total Paid Out for Loan For WIFA Loan	

Las Quintas Serenas Water Company

Docket Nos. W-01583A-04-0178, W-01583A-05-0326 and
W-01583A-05-0340



**Applicant's
Exhibit AR-9**

BEFORE THE ARIZONA CORPORATION COMMISSION

JEFF HATCH-MILLER
Chairman
WILLIAM A. MUNDELL
Commissioner
MARC SPITZER
Commissioner
MIKE GLEASON
Commissioner
KRISTIN K. MAYES
Commissioner

IN THE MATTER OF THE APPLICATION OF)
LAS QUINTAS SERENAS WATER CO. FOR AN)
INCREASE IN ITS WATER RATES)

DOCKET NO. W-01583A-04-0178

IN THE MATTER OF THE APPLICATION OF)
LAS QUINTAS SERENAS WATER CO. FOR)
AUTHORITY TO INCUR LONG-TERM)
INDEBTEDNESS TO FINANCE WATER)
SYSTEM IMPROVEMENTS AND ASSURE)
COMPLIANCE WITH NEW ARSENIC RULES)

DOCKET NO. W-01583A-05-0326

IN THE MATTER OF THE APPLICATION OF)
LAS QUINTAS SERENAS WATER CO. FOR)
AN OPINION AND ORDER TO (I) RE-OPEN)
THE RECORD IN A RECENT RATE CASE SO)
AS TO CONSIDER EVIDENCE IN SUPPORT OF)
AN ARSENIC COST RECOVERY MECHANISM,)
AND (II) MODIFY RATE CASE DECISION IN)
ORDER TO ADD AN ARSENIC COST)
RECOVERY MECHANISM AS AN)
AUTHORIZED RATE AND CHARGE)

DOCKET NO. W-01583A-05-0340

DIRECT TESTIMONY

OF

DOROTHY HAINS

UTILITIES ENGINEER

UTILITIES DIVISION

JANUARY 25, 2006

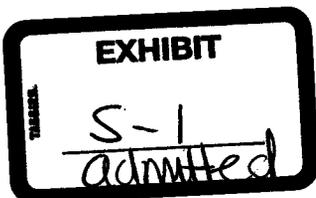


TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
PURPOSE OF TESTIMONY.....	2
ARSENIC TREATMENT PROJECT	3
CONCLUSIONS.....	8

EXECUTIVE SUMMARY
LAS QUINTAS SERENAS WATER COMPANY
DOCKET NOS. W-01583A-04-0178, W-01583A-05-0326
AND W-01583A-05-0340

CONCLUSIONS

1. The Las Quintas Serenas Water Company is delivering water that will not meet the new arsenic standard of 10 micro grams per liter and therefore needs to install treatment equipment to meet the new standard.
2. Staff has reviewed the Company's proposed treatment project and concludes that the 400,000 gallon storage tank, on-site generator and three hypochlorite chlorination units are not required for arsenic treatment and recommends their associated costs be removed from the total project cost.
3. Based upon Staff's Engineering evaluation of the Las Quintas Serenas proposal, Staff concludes that the Arsenic Treatment Project is appropriate and that for purposes of an Arsenic Remedial Surcharge Mechanism ("ARSM") the cost of arsenic treatment should be \$1,324,688. Staff makes no determination of the capital improvements as "used and useful" at this time, but defers this determination until the Company files its next rate application.

1 **INTRODUCTION**

2 **Q. Please state your name and business address.**

3 A. My name is Dorothy Hains. My business address is 1200 West Washington Street,
4 Phoenix, Arizona 85007.

5
6 **Q. By whom and in what position are you employed?**

7 A. I am employed by the Arizona Corporation Commission ("Commission" or "ACC") as a
8 Utilities Engineer - Water/Wastewater in the Utilities Division.

9
10 **Q. How long have you been employed by the Commission?**

11 A. I have been employed by the Commission since January 1998.

12
13 **Q. What are your responsibilities as a Utilities Engineer - Water/Wastewater?**

14 A. My main responsibilities are to inspect, investigate and evaluate water and wastewater
15 systems. This includes obtaining data, preparing reconstruction cost new and/or original
16 cost studies, cost of service studies and investigative reports, interpreting rules and
17 regulations, and to suggest corrective action and provide technical recommendations on
18 water and wastewater system deficiencies. I also provide written and oral testimony in
19 rate cases and other cases before the Commission.

20
21 **Q. How many companies have you analyzed for the Utilities Division?**

22 A. I have analyzed approximately 90 companies covering these various responsibilities for
23 Utilities Division Staff ("Staff").

24
25 **Q. Have you previously testified before this Commission?**

26 A. Yes, I have testified before this Commission.

1 Q. What is your educational background?

2 A. I graduated from Alabama University in Birmingham in 1987 with a Bachelor of Science
3 degree in Civil Engineering.

4
5 Q. Briefly describe your pertinent work experience.

6 A. Before my employment with the Commission, I was an Environmental Engineer for the
7 Arizona Department of Environmental Quality ("ADEQ"), for ten years. Prior to that
8 time, I was an Engineering Technician with C. F. Hains, Hydrology in Northport,
9 Alabama for approximately five years.

10
11 Q. Please state your professional membership, registrations, and licenses.

12 A. I am a member of the American Society of Civil Engineering ("ASCE") and American
13 Water Works Association ("AWWA"). I am a registered Civil Engineer in Arizona.

14
15 **PURPOSE OF TESTIMONY**

16 Q. What is the purpose of your testimony in this proceeding?

17 A. To present Staff's Engineering opinion of Las Quintas Serenas' arsenic treatment plant
18 proposal. The Staff recommendations regarding plant disallowance and estimated costs
19 contained in the Arsenic Treatment Project Section of my testimony are intended to reflect
20 what Staff believes are plant expenditures and reasonable costs that are directly related to
21 arsenic removal and thus appropriate for inclusion in the proposed Arsenic Remedial
22 Surcharge Mechanism ("ARSM").

23

1 **ARSENIC TREATMENT PROJECT**

2 **Q. Please briefly describe how the Company proposes to reduce the arsenic level in its**
3 **water to the new arsenic standard which becomes effective in January 2006?**

4 A. The Company proposes to install two Severn Trent arsenic treatment plants which are
5 designed to use iron media as the adsorption material to remove the arsenic in order to
6 comply with the new arsenic standard which is 10 micro grams per liter ("µg/l"). A 200
7 gallons per minute ("GPM") Severn Trent plant will be installed at Well Site No. 5 to treat
8 groundwater from Well No. 5. Another 1,190 GPM Severn Trent plant would be installed
9 at Well Site No. 6 to treat groundwater from both Well No. 6 and Well No. 7.

10
11 **Q. Please briefly describe the Severn Trent plant operation.**

12 A. Severn Trent's plant is designed to remove arsenic using the adsorption method. The
13 adsorption media, which has the trademark name "SORB 33", must be backwashed
14 periodically to maintain its efficiency. The water used to backwash the media is
15 considered "wastewater"; this wastewater must be disposed of in accordance with the
16 proper permit issued by ADEQ. The Company plans to store this wastewater on-site and
17 then transport it to a Pima County wastewater treatment plant for treatment and disposal.

18
19 **Q. Please briefly describe the other plant additions included in the Company's proposed**
20 **Arsenic Treatment Project.**

21 A. The Company lists sixteen items in the Arsenic Treatment Project. The sixteen items are:
22 (1) site demolition and removal of abandoned facilities at each well site; (2) installation of
23 piping at Well Site No. 6; (3) installation of concrete slabs at Well Sites 5 and 6 to support
24 treatment equipment; (4) installation of 2,500 feet of 12-inch main between Wells 6 and 7;
25 (5) installation of a new 400,000 gallon storage tank at Well Site No. 6; (6) installation of
26 a new 1,000 gpm transfer booster pump station at Well Site No. 6; (7) installation of the

1 Severn Trent arsenic treatment system at Well Site No. 6; (8) installation of a new 13,400
2 gallon holding tank for backwash water at Well Site No. 6; (9) installation of the Severn
3 Trent arsenic treatment system at Well Site No. 5; (10) installation of a holding tank for
4 backwash water at Well Site No. 5; (11) installation of a backup generator at Well Site
5 No. 6; (12) installation of fencing and flood prevention grading at Well Site No. 6; (13)
6 well pump modifications¹ for Well Nos. 6 and 7; (14) installation of hypochlorite
7 chlorination units at Well Sites 5, 6 and 7; (15) installation of sand separators at Well Sites
8 5, 6 and 7; and, (16) installation of a 3,000 gallon pressure tank at Well Site No. 6.

9
10 **Q. Does Staff agree that all the items listed above and included in the Company's**
11 **proposed Arsenic Treatment Project are needed for arsenic treatment? Please**
12 **explain.**

13 **A.** No. Staff recommends that item 5, installation of a new 400,000 gallon storage tank at
14 Well Site No. 6, be excluded from the Arsenic Treatment Project. Staff's calculations
15 show that the Company has adequate storage and production capacity at this time². In
16 addition, the Severn Trent system does not require storage capacity in its arsenic removal
17 process.

18
19 Staff also recommends that item 11, installation of an emergency backup generator at
20 Well Site No. 6, be excluded from the Arsenic Treatment Project. This emergency
21 generator would supply energy to operate the controls and run the pumps when
22 commercial power is interrupted.³ Severn Trent does not recommend an emergency
23 generator be installed for the proper operation of its treatment system. Staff has no reason

¹ The operation of Well Nos. 6 and 7 must be synchronized to prevent excess water pressure and damage to the new Severn Trent arsenic treatment plant.

² Staff's calculations show that the Company has adequate capacity to serve its existing customer base plus three hundred additional connections.

³ Per the Company's response to Staff Data Request DMH 3-7 Trico Electric Cooperative is the provider of commercial power in the Company's CC&N area.

1 to believe an interruption in the supply of power to the water system would damage the
2 Severn Trent treatment system or result in a health hazard through the pollution of treated
3 groundwater. Severn Trent's treatment plant does not operate through the use of a high
4 pressurized operating system which could cause the media to flow into the distribution
5 system in violation of the Safe Drinking Water Act. The Severn Trent plant does not
6 require the use of a computer operating system which could be damaged or difficult to
7 operate if a total loss of power were to occur.⁴ Finally, Staff recommends that item 14,
8 installation of hypochlorite chlorination units at Well Sites 5, 6 and 7, be excluded from
9 the Arsenic Treatment Project. Severn Trent's system does not require nor recommend
10 that disinfection occur before delivering treated water.

11
12 **Q. Please explain why Staff believes that item 16, the booster pump station and 3,000**
13 **gallons pressure tank, should be included in this Arsenic Treatment Project.**

14 **A.** After the combined groundwater from Wells Nos. 6 and 7 has been treated by the Severn
15 Trent arsenic removal treatment plant there may not be sufficient pressure to deliver the
16 water throughout the distribution system. The proposed booster pump station and pressure
17 tank should eliminate any potential low pressure problems.⁵

18
19 **Q. Does Staff have any adjustments it would like to recommend be made to the**
20 **Company's cost estimates for the purchase and construction of the plant items**
21 **included in the Arsenic Treatment Project? Please explain.**

22 **A.** Yes. Staff recommends that the cost estimate for item 4, installation of 2,500 feet of 12-
23 inch main between Wells Nos. 6 and 7 be adjusted to reflect what Staff believes is a

⁴ Staff would note that the Company does use a computerized system to operate its well pumps which are not part of the proposed arsenic treatment.

⁵ Minimum water pressure requirements are expected to be maintained throughout the Well No. 5 system after Severn Trent's treatment plant has been installed therefore no booster station or additional pressure tank is needed for this system.

1 reasonable cost per foot to install this pipe. The Company estimated a unit cost for 12-
2 inch main of approximately \$65 dollars per foot which is much higher than the \$36.70 per
3 foot which Staff experienced as the statewide average installed cost during 2005.

4
5 Staff also recommends that the cost estimates for the holding tanks in items 8 and 10 be
6 adjusted to what Staff believes is a reasonable cost per gallon to install these tanks. The
7 Company plans to install a 13,400 gallon steel tank for holding backwash water at Well
8 Site 6 and a 3,000 gallon polyethylene ("PE") tank to be used for holding backwash water
9 at Well Site 5. The Company estimated a cost of \$25,000 (\$1.86 per gallon) for the steel
10 tank and \$4,000 (\$1.33 per gallon) for the PE tank. Staff recommends adjusting these cost
11 estimates from \$25,000 to \$13,400 and from \$4,000 to \$3,600. Staff's adjustments are
12 based on \$1.00 per gallon for a steel tank and \$1.20 per gallon for a PE tank which is the
13 typical installed costs Staff has experienced.

14
15 Finally, Staff recommends that the cost of the 3,000 gallon pressure tank in item 16 be
16 reduced from the Company's estimate of \$18,000 to \$12,000 which again is based on a
17 typical installed cost per gallon that Staff has experienced.

18
19 **Q. Please summarize Staff's adjustments and recommendation to the Company's**
20 **proposed Arsenic Treatment Project.**

21 **A.** Staff concludes the Company's Arsenic Treatment Project adjusted to reflect Staff's
22 recommendations is reasonable. Staff's recommended adjustments to the Company's
23 proposal are reflected in the right hand column of the following table:
24

Description	Company's estimated cost (\$)	Staff adjustments (\$)
Site Demolition and Removal of Abandoned facilities at well sites	10,000	10,000
Site Piping Well Site No. 6	100,000	100,000
40 cubic yard concrete slabs for site equipment@ Well Nos. 5 & 6	14,000	14,000
2,500 feet of 12-inch pipelines between Well Nos. 6 & 7	162,500	91,750
One 400,000-gallon storage tank@ Well site No. 6	325,000	0
One 1,000-gpm transfer booster station @ Well site No. 6	120,000	120,000
One 1,190 gpm Severn Trent adsorption arsenic treatment system @ Well site No. 6	500,000	500,000
One 13,400 gallon steel backwash water holding tank @ Well site No. 6	25,000	13,400
One 200 gpm Severn Trent adsorption arsenic treatment system @ Well site No. 5	104,000	104,000
One 3,000 gallon PE backwash water holding tank @ Well site No. 5	4,000	3,600
One 130KW diesel generator @ Well site No. 6	80,000	0
Fencing, site grading work @ Well site No. 6	40,000	40,000
Well Pump modification for Well Nos. 6 and 7	15,000	15,000
Three hypochlorite chlorination units @ Well Nos. 5, 6 & 7	5,400	0
Three sand separators @ Well Nos. 5, 6 & 7	21,000	21,000
One 3,000 gallon pressure tank @ Well site No. 6	18,000	12,000
Subtotal	1,558,900	1,059,750
25% engineering & contingencies	389,725	264,938
Total	1,948,625	1,324,688

1 Staff's adjusted Arsenic Treatment Project amount total is \$1,324,688, which is
2 approximately \$624,000 less than that proposed by the Company.
3

4 **CONCLUSIONS**

5 **Q. What are Staff's conclusions regarding the Las Quintas Serenas' Arsenic Treatment**
6 **Project?**

7 A. Based upon Staff's engineering evaluation of the Las Quintas Serenas proposal, Staff
8 concludes that the Arsenic Treatment Project is appropriate and that for purposes of an
9 ARSM the cost of arsenic treatment should be \$1,324,688. Staff makes no determination
10 of the capital improvements as "used and useful" at this time, but defers this determination
11 until the Company files its next rate application.
12

13 **Q. Does this conclude your pre-filed testimony?**

14 A. Yes, it does.

BEFORE THE ARIZONA CORPORATION COMMISSION

JEFF HATCH-MILLER
Chairman
WILLIAM A. MUNDELL
Commissioner
MARC SPITZER
Commissioner
MIKE GLEASON
Commissioner
KRISTIN K. MAYES
Commissioner

IN THE MATTER OF THE APPLICATION OF)
LAS QUINTAS SERENAS WATER CO. FOR AN)
INCREASE IN ITS WATER RATES)

DOCKET NO. W-01583A-04-0178

IN THE MATTER OF THE APPLICATION OF)
LAS QUINTAS SERENAS WATER CO. FOR)
AUTHORITY TO INCUR LONG-TERM)
INDEBTEDNESS TO FINANCE WATER)
SYSTEM IMPROVEMENTS AND ASSURE)
COMPLIANCE WITH NEW ARSENIC RULES)

DOCKET NO. W-01583A-05-0326

IN THE MATTER OF THE APPLICATION OF)
LAS QUINTAS SERENAS WATER CO. FOR)
AN OPINION AND ORDER TO (I) RE-OPEN)
THE RECORD IN A RECENT RATE CASE SO)
AS TO CONSIDER EVIDENCE IN SUPPORT OF)
AN ARSENIC COST RECOVERY MECHANISM,)
AND (II) MODIFY RATE CASE DECISION IN)
ORDER TO ADD AN ARSENIC COST)
RECOVERY MECHANISM AS AN)
AUTHORIZED RATE AND CHARGE)

DOCKET NO. W-01583A-05-0340

DIRECT TESTIMONY

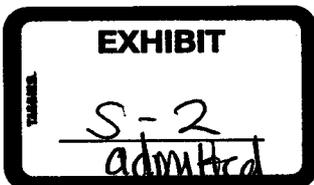
OF

DANIEL T. ZIVAN

PUBLIC UTILITIES ANALYST III

UTILITIES DIVISION

JANUARY 25, 2006



1 **I. INTRODUCTION**

2 **Q. Please state your name, occupation, and business address.**

3 A. My name is Daniel Zivan. I am a Public Utilities Analyst III employed by the Arizona
4 Corporation Commission ("ACC" or "Commission") in the Utilities Division ("Staff").
5 My business address is 1200 West Washington Street, Phoenix, Arizona 85007.
6

7 **Q. Briefly describe your responsibilities as a Public Utilities Analyst.**

8 A. I am responsible for the examination and verification of financial and statistical
9 information included in utility rate applications. In addition, I develop revenue
10 requirements, analyze financial information related to financings, sales of assets and other
11 matters. I am also responsible for preparing written reports, testimonies, and schedules
12 that include Staff recommendations to the Commission and testifying at evidentiary
13 hearings on these matters.
14

15 **Q. Please describe your educational background and professional experience.**

16 A. In 2001, I graduated from Arizona State University, receiving a Bachelor of Science
17 degree in Global Business with a specialization in finance. My course of studies included
18 classes in corporate and international finance, investments, accounting, and economics. In
19 2005, after three years of working in financial analysis, financial operations and
20 accounting, I accepted employment with the Commission as a Public Utilities Analyst in
21 the Financial and Regulatory Analysis Section. I have attended seminars on rate design,
22 rate making and financial modeling during my employment with the Commission.
23

1 **Q. During the course of your responsibilities of the Commission did you analyze the**
2 **applications from Las Quintas Serenas Water Company for financing and for a**
3 **surcharge mechanism to recover costs for arsenic treatment?**

4 **A. Yes I did. I prepared a Staff Report that describes my analysis and Staff's**
5 **recommendations regarding LQS' request for financing approval and for a surcharge**
6 **mechanism related to arsenic.**

7
8 **Q. Do you adopt that Staff Report as your testimony in this case?**

9 **A. Yes. The attached Staff Report is my testimony for this case.**

MEMORANDUM

TO: Docket Control

FROM: Ernest G. Johnson
Director
Utilities Division

DATE: January 25, 2006

RE: STAFF REPORT FOR LAS QUINTAS SERENAS WATER CO.
APPLICATION FOR FINANCING (DOCKET NOS. W-01583A-04-0178, W-
01583A-05-0326 & W-01583A-05-0340)

Attached is the Staff Report for Las Quintas Serenas Water Co. application for financing and request to open a previous rate case to establish an arsenic cost recovery mechanism. Staff recommends authorization of a reduced financing amount and approval of an arsenic removal surcharge mechanism.

EGJ: DTZ:red

Originator: Daniel Zivan

Attachment: Original and sixteen copies

Service List for: Las Quintas Serenas Water Co.

Docket Nos. W-01583A-04-0178, W-01583A-05-0326 & W-01583A-05-0340

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Munger Chadwick PLC
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Ms. Lyn Farmer
Chief Administrative Law Judge, Hearing Division
Arizona Corporation Commission
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**STAFF REPORT
UTILITIES DIVISION
ARIZONA CORPORATION COMMISSION**

LAS QUINTAS SERENAS WATER CO.

**DOCKET NOS. W-01583A-04-0178,
W-01583A-05-0326 & W-01583A-05-0340**

APPLICATION FOR FINANCING

JANUARY 25, 2006

EXECUTIVE SUMMARY
LAS QUINTAS SERENAS WATER CO.
DOCKET NOS. W-01583A-04-0178,
W-01583A-05-0326 AND W-01583A-05-0340

Las Quintas Serenas Water Co. ("LQS" or "Applicant" or "Company"), an Arizona "C" Corporation located in Sahuarita, Arizona, provides potable water services to approximately 826 customers and standpipe water services to approximately 146 additional customers. LQS's current rates were approved in Decision No. 67455, dated January 6, 2005.

LQS originally filed a financing application with the Arizona Corporation Commission ("Commission"), Docket No. W-01583A-05-0326, on March 7, 2005 requesting authorization to incur \$1,789,375 of long-term debt from either Commerce Bank of Arizona ("Commerce") or the Water Infrastructure Financing Authority ("WIFA") to finance the implementation of plant improvements that would reduce arsenic levels to comply with federal arsenic standards requiring that arsenic levels be reduced to 10 particles per billion ("ppb") by January 23, 2006 and plant improvements that are not arsenic-related. Then LQS filed a second application (Docket No. W-01583A-05-0339) requesting to re-open its previous rate case to consider its \$1,789,375 financing and recovery of arsenic related operation and maintenance expenses. Then LQS filed a third application (Docket No. W-01583A-05-0340) that reduced the financing request to only arsenic treatment facilities, which LQS asserted to be \$1,648,750. Docket No. W-01583A-05-0339 was administratively closed and Docket Nos. W-01583A-05-0326 and W-01583A-05-0340 were consolidated.

LQS proposes to borrow \$1,648,750 from Commerce and then refinance with a loan from WIFA. LQS has submitted as part of its application an approval letter from Commerce stating that it has been approved for a 10-year amortizing loan in the amount of \$1,650,000 with a fixed interest rate of 8.00 percent per annum. Closing costs for the Commerce loan are approximately \$12,675. In contrast, the WIFA loan is 20-year amortizing with an estimated interest rate of 7.40 percent per annum and has no closing costs.

Staff has determined that the appropriate cost to construct LQS's proposed plant improvements is \$1,324,688. Staff concludes that authorization of a loan for \$1,324,688 is appropriate to finance the arsenic treatment plant. Issuance of a 20-year \$1,324,688 amortizing loan at 7.40 percent with the operating income authorized in Decision No. 67455 would result in a 0.19 times interest earned ratio ("TIER") and a 0.52 debt service coverage ratio ("DSC"). A DSC of 0.52 demonstrates that LQS would not be able to meet debt obligations on such a loan with its existing rates. LQS would have even less ability to service debt on a 10-year amortizing loan. Accordingly, Staff concludes that approval of the Commerce loan is inappropriate. In order to provide LQS a pathway for servicing a 20-year loan, Staff recommends an arsenic removal surcharge mechanism ("ARSM").

An ARSM does not authorize the collection of surcharge revenue; however, it provides a method for determining the surcharge amount necessary to pay debt service obligations and additional income taxes that would result from the surcharge revenue. An ARSM requires LQS

financing. Staff calculated an estimated monthly surcharge of \$12.85 for a 5/8x3/4-inch meter customer based on debt financing in the amount of \$1,324,688.

LQS's existing capital structure is composed of 100 percent equity. A \$1,324,688 20-year amortizing loan at 7.40 percent would result in a capital structure composed of 1.7 percent short-term debt, 75.9 percent long-term debt and 22.3 percent equity. The resulting highly leveraged capital structure could restrict LQS's ability to obtain additional debt financing, may result in less favorable terms for future financing and places upward pressure on rates.

Staff concludes that authorization for the Company to issue long-term debt to WIFA in an amount not to exceed \$1,324,688 for the purposes stated in the application would be lawful and within LQS's corporate powers, compatible with the public interest, consistent with sound financial practice and would not impair its ability to provide services **if an ARSM is adopted**.

Staff recommends authorization for the Company to issue long-term debt to WIFA in an amount not to exceed \$1,324,688 only if Staff's recommended ARSM is approved.

Staff recommends denial of the Company's request to borrow any funds from Commerce.

Staff further recommends granting no provision for operation and maintenance expense ("O&M") in this proceeding because the amount is not known and measurable, any unrecovery of O&M is offset by anticipated surcharge profits and is consistent with the Commission's normal practice.

TABLE OF CONTENTS

	<u>PAGE</u>
Introduction.....	1
Background.....	1
Purpose of Financing.....	1
Description of Proposed Financing.....	1
Financial Analysis.....	2
Compliance.....	4
Engineering Analysis.....	4
Operating and Maintenance Expenses.....	4
Staff Conclusions and Recommendations.....	4

SCHEDULES

SELECTED FINANCIAL DATA WITH IMMEDIATE EFFECTS OF THE RECOMMENDED DEBT AND ARSM SURCHARGE	Schedule DTZ -1
CALCULATION OF ARSM SURCHARGE REVENUE REQUIRED TO PRESERVE CASH FLOW WITH WIFA LOAN.....	Schedule DTZ -2
CONVERSION FACTOR TABLE.....	Schedule DTZ -3

ATTACHMENTS

EXHIBIT A

INTRODUCTION

Las Quintas Serenas Water Co. ("LQS" or "Applicant" or "Company"), an Arizona "C" Corporation located in Sahuarita, Arizona, filed an application for financing with the Arizona Corporation Commission ("Commission") on March 7, 2005. LQS proposes to borrow \$1,648,750 from Commerce Bank of Arizona ("Commerce") and then refinance the debt with a loan from the Water Infrastructure Financing Authority ("WIFA"). The loan proceeds will be used to fund implementation of water system improvements in order to comply with the Safe Drinking Water Act which requires that arsenic levels be reduced to 10 particles per billion ("ppb") by January 23, 2006. The Company also requests to recover an estimated \$21,000 annually of operations and maintenance expense related to the proposed arsenic removal facilities.

BACKGROUND

LQS is an Arizona "C" Corporation that provides potable water services to approximately 826 customers and standpipe water services to approximately 146 additional customers. LQS' current rates were approved in Decision No. 67455, dated January 6, 2005. On January 23, 2001, the Environmental Protection Agency ("EPA") reduced the drinking water maximum contaminant level of arsenic from 50 ppb to 10 ppb. All community water systems are required to comply with the new federal rule by January 23, 2006.

LQS originally filed a financing application, Docket No. W-01583A-05-0326, on March 7, 2005, requesting authorization to incur \$1,789,375 of long-term debt to finance the implementation of plant improvements that would reduce arsenic levels to comply with the new federal rule and plant improvements that are not related to arsenic. Then LQS filed a second application¹ requesting to re-open its previous rate case to include consideration of its \$1,789,375 financing. Then LQS filed a third application² requesting to re-open its previous rate case only for consideration of financing related to arsenic removal, which LQS asserted to be \$1,648,750. The Docket for the second application was administratively closed and Docket Nos. W-01583A-05-0326 and W-01583A-05-0340 were consolidated.

PURPOSE OF FINANCING

The purpose of the financing is to provide LQS with sufficient funds to construct arsenic treatment equipment necessary to comply with EPA arsenic standards.

DESCRIPTION OF PROPOSED FINANCING

LQS proposes to borrow \$1,648,750 from Commerce and then refinance the debt with a WIFA loan. In essence, the Company proposes to use the Commerce debt as a bridge loan.³ The

¹ Docket No. W-01583A-05-0339

² Docket No. W-01583A-05-0340

³ Direct testimony of Ronald L. Kozoman; Page 11, Line 14

Commerce loan would be amortized over a period of 10 years and have a fixed interest rate of 8.00 percent per annum. Additionally, Commerce would charge a fee of \$300 to process documentation as well as a loan origination fee of .75 percent which would amount to \$12,375. In total, LQS would incur \$12,675 of closing costs should it obtain the proposed financing from Commerce. The WIFA loan would be amortized over a period of 20 years and would have a fixed interest rate of approximately 7.40 percent per annum, equal to the prime rate (7.25 percent as of January 20, 2006) plus 200 basis points multiplied by .80. No closing costs are applicable to the WIFA loan.

FINANCIAL ANALYSIS

Staff has concluded that the construction cost for the proposed plant improvement is \$1,324,688 (see Engineering Analysis). Accordingly, Staff's financial analysis is based on that amount of debt issuance. Table 1 presents a summary of the WIFA and Commerce loan options.

TABLE 1

	WIFA Loan ⁴	Commerce Loan ⁵
Closing Costs	\$0	\$12,675
Interest Rate	7.40%	8.00%
Amortization Period	20 years	10 years
Average Monthly Payment	\$10,672	\$16,072

Schedule DTZ-1, Column A, presents financial information that reflects Decision No. 67455 and shows a capital structure composed of 100 percent equity. Column C is the same as Column A modified to reflect the issuance of Staff's recommended debt in the amount of \$1,324,688. Issuance of the recommended debt would produce a 0.19 times interest earned ratio ("TIER") and a 0.52 debt service coverage ratio ("DSC"). A DSC of 0.52 demonstrates that LQS would not be able to meet all of its obligations with its existing operating income.

The TIER represents the number of times earnings cover interest expense on long-term debt. A TIER greater than 1.0 means that operating income is greater than interest expense. A TIER less than 1.0 is not sustainable in the long term but does not mean that debt obligations cannot be met in the short term.

The DSC represents the number of times internally generated cash will cover required principal and interest payments on long-term debt. A DSC greater than 1.0 indicates that operating cash flow is sufficient to cover debt obligations. A DSC less than 1.0 means that debt service obligations cannot be met by cash generated from operations and that another source of funds is needed to avoid default.

⁴ Payment calculated with a loan amount of \$1,324,688, an interest rate of 7.5 percent and a loan amortization of 20 years.

⁵ Payment calculated with a loan amount of \$1,324,688, an interest rate of 8 percent and a loan amortization of 10 years.

The Commission has previously authorized an ARSM to assist small water utilities to obtain debt financing they could not otherwise service for arsenic treatment plant. An ARSM provides a method for determining the surcharge amount necessary to pay debt service obligations on any authorized financing and the additional income taxes resulting from the surcharge revenue. An ARSM does not authorize the collection of surcharge revenue. An ARSM requires LQS to file a separate surcharge request for the Commission's consideration after it obtains any authorized financing. Staff concludes that an ARSM is necessary for the Applicant to obtain sufficient financing for capital improvements needed to meet the 10 ppb maximum contaminant level for arsenic.

Schedule DTZ-2 presents a calculation of the additional annual revenue needed by LQS to service a \$1,324,688 WIFA loan and to maintain the same level of cash flow resulting from Decision No. 67455⁶. The Applicant would need additional revenue in the amount of \$29,715 for principle repayments, \$98,344 for interest expense and \$12,241 for income taxes for a total of \$140,300.

Schedule DTZ-1 Column E shows that \$140,300 of additional revenue would produce a 1.61 TIER and a 1.61 DSC with a \$1,324,688 WIFA loan. A DSC of 1.61 demonstrates that LQS would be able to meet all of its obligations. Column E also shows that the pro forma capital structure that would result from this loan is highly leveraged consisting of 1.7 percent short-term debt, 75.9 percent long-term debt and 22.3 percent equity.

A highly leveraged capital structure is a concern for Staff because it restricts a utility's ability to obtain additional debt financing, may result in less favorable terms for future financing and places upward pressure on rates. However, there are no other known alternatives available to LQS to finance the implementation of the necessary arsenic removal facilities. LQS needs the arsenic treatment facilities to comply with the Safe Drinking Water Act's new arsenic levels and to deliver safe water.

Table 1 above shows that the monthly payment on the Commerce loan is \$5,400 (\$16,072 - \$10,672) greater than the WIFA loan. Meeting the debt service on the lower cost WIFA loan can only be achieved via a surcharge. The Applicant does not have sufficient cash flow for the WIFA loan and requires a surcharge to meet debt service requirements. The Commerce loan would require a larger surcharge than the WIFA loan. In addition, obtaining the Commerce loan requires incurring closing costs of \$12,675. The closing costs significantly increase the cost for a temporary bridge loan. The principal portion of the debt service, which is anticipated to be covered by a surcharge, represents profit to the Applicant. A surcharge for the Commerce loan includes a higher principal component than would a surcharge for the WIFA loan. This additional surcharge represents a windfall profit that is unnecessary for customers to pay. In addition, refinancing the surcharge would call for resetting the surcharge to a level for the WIFA loan, an undesirable regulatory complication. Accordingly, Staff concludes that the Commerce loan is inappropriate.

⁶ Assuming continuation of the operating revenue and expenses authorized in Decision No. 67544.

Staff calculated an estimated monthly surcharge of \$12.85 for a 5/8x3/4-inch meter customer based on debt financing in the amount of \$1,324,688. Staff's surcharge calculation methodology and the resulting estimated surcharges for other meter sizes is presented in Exhibit A.

COMPLIANCE

There are no compliance issues with Las Quintas Serenas Water Co.

ENGINEERING ANALYSIS

Staff's Engineering analysis is presented in the attached memorandum. Staff reviewed the material cost estimates to construct the proposed plant improvements. Staff concludes that the appropriate cost to construct LQS's proposed plant improvements is \$1,324,688. Staff makes no "used and useful" determination in this proceeding. Treatment of the proposed plant improvements for rate-making purposes is deferred to a future rate proceeding.

OPERATING AND MAINTENANCE EXPENSES

The Commission's normal practice is not to allow operating and maintenance expense ("O&M") related to arsenic treatment when an ARSM is established. The amount of O&M is not known and measurable. Further, any under-recovery of O&M by the Applicant would be offset by the recovery of the principal portion of the loan included as a component of the anticipated surcharge. Accordingly, Staff concludes that no provision for recovery of O&M should be granted in this proceeding.

STAFF CONCLUSIONS AND RECOMMENDATIONS

Staff concludes that the construction of arsenic removal equipment is necessary for LQS to comply with the Safe Drinking Water Act's new arsenic level of 10 ppb effective January 23, 2006 and that \$1,324,688 is a reasonable estimated cost.

Staff concludes that the proposed use of funds is appropriate and that LQS' current rates are insufficient to service the recommended debt.

Staff concludes that an arsenic removal surcharge mechanism should be adopted to provide the Applicant with a method for determining the surcharge amount necessary to pay debt service obligations on any authorized financing and the additional income taxes resulting from the surcharge revenue.

Staff concludes that authorization to issue \$1,324,688 of debt to WIFA would be lawful and within the corporate powers of the Applicant, compatible with the public interest, consistent with sound financial practices, and would not impair LQS's ability to provide service if an arsenic removal surcharge mechanism is adopted.

Staff recommends authorizing an arsenic removal surcharge mechanism in order to provide LQS with a mechanism for applying for a surcharge to meet debt service requirements associated with the proposed financing.

Staff recommends that LQS be required to file the arsenic surcharge filing within 15 days of the loan closing.

Staff further recommends that LQS be required to calculate its proposed surcharge tariff using the actual loan principal and interest components and the same methodology that Staff used to determine the estimated surcharge amount (Exhibit A).

Staff further recommends denial of the request to obtain financing from Commerce.

Staff further recommends authorizing the Company to engage in any transactions and to execute any documents necessary to effectuate the authorizations granted.

Staff further recommends denial of the Company's request to recover \$21,000 in annual operations and maintenance expense.

FINANCIAL ANALYSIS

Selected Financial Data with Immediate
Effects of the Recommended Debt with ARSM Surcharge

	[A] ACC Decision No. 67455	[B] Pro Forma Change	[C] ACC Decision No. 67455 including long-term debt	[D] Pro Forma Change	[E] Pro Forma Result	
INCOME STATEMENT						
Operating Revenue	\$ 295,613		\$ 295,613		\$ 295,613	
Surcharge	-			\$ 140,300	140,300	
Total Revenue	295,613		295,613	140,300	435,913	
Income taxes	3,458		3,458	12,241	15,699	
Other Operating Expenses	277,353		277,353	-	277,353	
Total Operating Expenses	280,811		280,811	12,241	293,052	
Operating income	14,802		14,802	128,059	142,861	
Interest Expense	-	98,344	98,344	-	98,344	
Net Income	14,802		(83,542)	128,059	44,517	
Principal Repayment	-	29,715	29,715	-	29,715	
TIER (Interest Coverage)	N/A		0.19	1.61		
DSC	N/A		0.52	1.61		
Short-term Debt	\$ -	0%	\$ 29,715	1.7%	\$ 29,715	1.7%
Long-term Debt	\$ -	0%	\$ 1,294,972	75.9%	\$ 1,294,972	75.9%
Common Equity	\$ 380,401	100%	\$ 380,401	22.3%	\$ 380,401	22.3%
Total Capital	\$ 380,401	100%	\$ 1,705,089	100.0%	\$ 1,705,089	100.0%

[A] Operating income approved in Decision No. 67455

[B] Interest expense and principal repayment from DTZ-2

[C] Operating income approved in Decision No. 67455 with effect of recommended long-term debt

[D] ARSM surcharge revenue and incremental income taxes from DTZ-2

[E] Operating income approved in Decision No. 67455 with effects of recommended long-term debt and ARSM surcharge revenue

Las Quintas Serenas Water Company
Docket No.'s W-01583A-05-0326 and W-01583A-05-0340
Test Year Ended September 30, 2003

Schedule DTZ-2

Line No.	CALCULATION OF ARSM SURCHARGE REVENUE REQUIRED TO PRESERVE CASH FLOW WITH WIFA LOAN
----------	--

1	Annual Principal Payment on the Loan	\$ 29,715
2	Gross Revenue Conversion Factor	1.4120
3	Increase in Revenue Due to Principal Payment [L1 X L2]	\$ 41,957
4	Annual Principal Payment on the Loan [L1]	\$ 29,715
5	Incremental Income Taxes [L3 - L4]	\$ 12,241
6	Annual Interest Payment on the Loan	\$ 98,344
7	Debt Service Component of Incremental Revenue [L1+L6]	\$ 128,059
8	Total Incremental Revenue Requirement [L5 + L7]	\$ 140,300

Las Quintas Serenas Water Company Schedule DTZ-3
 Docket No.'s W-01583A-05-0326 and W-01583A-05-0340
 Test Year Ended September 30, 2003

TABLE A
 Conversion Factor Table (Based on a 20-year Loan)

Line No.	Column A Annual Interest	Column B Annual Payment Conversion Factor	Column C Annual Interest Payment Conversion Factor	Column D Annual Principal Payment Conversion Factor
1	3.50%	0.0696	0.0344	0.0352
2	3.75%	0.0711	0.0369	0.0342
3	4.00%	0.0727	0.0394	0.0333
4	4.25%	0.0743	0.0419	0.0324
5	4.50%	0.0759	0.0444	0.0316
6	4.75%	0.0775	0.0468	0.0307
7	5.00%	0.0792	0.0493	0.0299
8	5.25%	0.0809	0.0518	0.0291
9	5.50%	0.0825	0.0543	0.0283
10	5.75%	0.0843	0.0568	0.0275
11	6.00%	0.0860	0.0593	0.0267
12	6.25%	0.0877	0.0618	0.0259
13	6.50%	0.0895	0.0643	0.0252
14	6.75%	0.0912	0.0668	0.0245
15	7.00%	0.0930	0.0692	0.0238
16	7.25%	0.0948	0.0717	0.0231
17	7.50%	0.0967	0.0742	0.0224
18	7.75%	0.0985	0.0767	0.0218
19	8.00%	0.1004	0.0792	0.0211

Instructions to Calculate the Annual Surcharge Revenue Requirement on the Loan

Step 1. Find the Annual Payment on the Loan

Refer to Table A, the Conversion Factor Table. Reading the table from top to bottom, find the interest rate in column A that is equal to the stated annual interest rate of the loan. Reading across the table, find the Annual Payment Conversion Factor in Column B that corresponds with the loan interest rate (in the event that the loan interest rate is different from the interest rates in Table A, use the next higher interest rate that can be found in Table A). Multiply that annual payment conversion factor by the total amount of the loan to calculate the annual debt service on the loan.

Annual payment conversion factor
(*) Times total amount of the loan
(=) Equals annual debt service on the loan

Step 2. Find the Annual Interest Payment on the Loan

Refer to Table A and find the annual interest payment conversion factor in Column C that corresponds with the stated annual interest rate of the loan. Multiply the annual interest payment conversion factor by the total amount of the loan to calculate the annual interest expense on the loan.

Annual interest payment conversion factor
(*) Times total amount of the loan
(=) Equals annual interest expense on the loan

Step 3. Find the Annual Principal Payment on the Loan

Refer to Table A and find the annual principal payment conversion factor in Column D that corresponds with the stated annual interest rate of the loan. Multiply the annual principal payment conversion factor by the total amount of the loan to calculate the annual principal payment on the loan.

Annual principal payment conversion factor
(*) Times total amount of the loan
(=) Equals annual principal payment on the loan

Step 4. Find the Gross Revenue Conversion Factor¹ (GRCF)

The GRCF calculated below is used in step 5.

$$\text{GRCF} = \frac{1}{1 - \text{Effective incremental income tax rate}^2}$$

$$\text{GRCF} = \frac{1}{1 - 0.2918} = \frac{1}{0.7082} = 1.4120$$

Step 5. Find the Incremental Income Tax Factor

The incremental income tax factor is calculated below:

$$\begin{aligned} \text{Incremental Income Tax Factor} &= \text{GRCF} - 1 \\ &= 1.4120 - 1 \\ &= 0.4120 \end{aligned}$$

Step 6. Find the Annual Income Tax Component of the Surcharge Revenue

Multiply the incremental income tax factor by the annual principal payment on the loan determined in step 3 to calculate the income tax component of the annual surcharge revenue.

Incremental income tax conversion factor

(*) Times the annual principal payment on the loan

(=) Equals the annual income tax component of the annual surcharge revenue

Step 7. Find the Debt Service Component of the Annual Surcharge Revenue

Add the annual interest expense on the loan determined in step 2 to the annual principal payment determined in step 3. The sum is the debt service component of the annual surcharge revenue.

Annual interest payment on the loan

(+) Plus annual principal payment

(=) Equals the debt service component of the annual surcharge revenue

¹ The gross revenue conversion factor indicates the incremental revenue required to increase operating income by one dollar.

² The effective income tax rate represents the effective tax rate on the incremental income. Use the effective incremental income tax rate of 29.1762%.

Step 8. Find the Total Annual Surcharge Revenue Requirement Needed for the Loan.

Add the annual income tax component determined in step 6 to the annual debt service component determined in step 7. The sum equals the annual surcharge revenue requirement for the loan.

- Annual income tax component of the surcharge revenue
- (+) Plus annual debt service component of the surcharge revenue
- (=) Equals the total annual surcharge revenue requirement for the loan

Instruction for Step 9

Step 9. Find the equivalent bills.

Multiply the NARUC meter capacity multiplier by the number of current customers and by the number of months per year. The sum of the products equals the equivalent bills.

Result

Col A	Col B	Col C	Col D	Col E
Meter Size	NARUC Meter Capacity Multiplier	Number of Customers	Number of Months In Year	Equivalent Bills Col B x C x D
5/8"x 3/4" Meter	1	0	12	0
3/4" Meter	1.5	0	12	0
1" Meter	2.5	0	12	0
1½" Meter	5	0	12	0
2" Meter	8	0	12	0
3" Meter	15	0	12	0
4" Meter	25	0	12	0
6" Meter	50	0	12	0
			Total	0

Instruction for Step 10

Step 10. Find the monthly surcharge for 5/8" x 3/4" customers.

Divide the result obtained in step 8 by the number of equivalent bills calculated in step 9 to obtain the monthly surcharge for 5/8" x 3/4" customers.

Result

\$140,300	Total annual surcharge revenue requirement for the loan (Step 8)
÷ 10,920	Number of equivalent bills
\$ 12.85	Total monthly surcharge for 5/8" x 3/4" customers

Instruction for Step 11

Step 11. Find the monthly surcharge for remaining meter size customers.

Multiply the Result obtained in step 10 by the NARUC meter capacity multipliers to obtain the monthly surcharges for all other meter sizes.

Col A	Col B	Col C	Col D
Meter Size	NARUC Meter Capacity Multiplier	5/8" x 3/4" Customers' Surcharge	Surcharge by Meter Size Col B x C
5/8"x 3/4" Meter	1	\$0.00	\$ 0.00
3/4" Meter	1.5	\$0.00	\$ 0.00
1" Meter	2.5	\$0.00	\$ 0.00
1½" Meter	5	\$0.00	\$ 0.00
2" Meter	8	\$0.00	\$ 0.00
3" Meter	15	\$0.00	\$ 0.00
4" Meter	25	\$0.00	\$ 0.00
6" Meter	50	\$0.00	\$ 0.00

Example

Loan amount: \$1,324,688
Term: 20 years
Stated Annual Interest Rate: 7.50%

Instruction for Step 1

Step 1. Find the Annual Payment on the Loan

Refer to Table A, the Conversion Factor Table. Reading the table from top to bottom, find the interest rate in column A that is equal to the stated annual interest rate of the loan. Reading across the table, find the Annual Payment Conversion Factor in Column B that corresponds with the loan interest rate (in the event that the loan interest rate is different from the interest rates in Table A, use the next higher interest rate that can be found in Table A). Multiply that annual payment conversion factor by the total amount of the loan to calculate the annual debt service on the loan. Rounding errors may occur.

Result

0.0967	Annual Payment Conversion Factor (Table A, Line 17, Column B)
x \$1,324,688	Total loan amount
\$ 128,097	Annual loan payment

Instruction for Step 2

Step 2. Find the Annual Interest Payment on the Loan

Refer to Table A and find the annual interest payment conversion factor in Column C that corresponds with the stated annual interest rate of the loan. Multiply the annual interest payment conversion factor by the total amount of the loan to calculate the annual interest expense on the loan. Rounding errors may occur.

Result

0.0742	Table A, Line 14, Column C
x \$1,324,688	Total loan amount
\$ 98,344	Annual interest expense

Instruction for Step 3

Step 3. Find the Annual Principal Payment on the Loan

Refer to Table A and find the annual principal payment conversion factor in Column D that corresponds with the stated annual interest rate of the loan. Multiply the annual principal payment conversion factor by the total amount of the loan to calculate the annual principal payment on the loan. Rounding errors may occur.

Result

0.0224	Table A, Line 14, Column D
x \$1,324,688	Total loan amount
\$ 29,715	Annual principal payment

Instruction for Step 4

Step 4. Find the Gross Revenue Conversion Factor (GRCF)

The GRCF calculated below is used in step 5.

Result

$$\text{GRCF} = \frac{1}{1 - \text{Effective incremental income tax rate}}$$

$$\text{GRCF} = \frac{1}{1 - 0.2918} = \frac{1}{0.7082} = 1.4120$$

Instruction for Step 5

Step 5. Find the Incremental Income Tax Factor

The incremental income tax factor is calculated below:

Result

$$\begin{aligned} \text{Incremental Income Tax Factor} &= \text{GRCF} - 1 \\ &= 1.4120 - 1 \\ &= 0.4120 \end{aligned}$$

Instruction for Step 6

Step 6. Find the Annual Income Tax Component of the Surcharge Revenue

Multiply the incremental income tax factor by the annual principal payment on the loan determined in step 3 to calculate the income tax component of the annual surcharge revenue. Rounding errors may occur.

Result

0.4120	Incremental income tax factor (Step 5)
x \$29,715	Annual principal payment
\$12,242	Annual income tax component of the annual surcharge revenue

Instruction for Step 7

Step 7. Find the Debt Service Component of the Annual Surcharge Revenue

Add the annual interest expense on the loan determined in step 2 to the annual principal payment determined in step 3. The sum is the debt service component of the annual surcharge revenue.

Result

\$98,344	Annual interest expense (Step 2)
+ \$29,715	Annual principal payment (Step 3)
<u>\$128,059</u>	Debt service component of the annual surcharge revenue

Instruction for Step 8

Step 8. Find the Total Annual Surcharge Revenue Requirement Needed for the Loan.

Add the annual income tax component determined in step 6 to the annual debt service component determined in step 7. The sum equals the annual surcharge revenue requirement for the loan.

Result

\$12,241	Annual income tax component (Step 6)
+ \$128,059	Debt service component (Step 7)
<u>\$140,300</u>	Total annual surcharge revenue requirement for the loan

Instruction for Step 9

Step 9. Find the equivalent bills.

Multiply the NARUC meter capacity multiplier by the number of current customers and by the number of months per year. The sum of the products equals the equivalent bills.

Result

Col A	Col B	Col C	Col D	Col E
Meter Size	NARUC Meter Capacity Multiplier	Number of Customers	Number of Months In Year	Equivalent Bills Col B x C x D
5/8"x 3/4" Meter	1	754	12	9,048
3/4" Meter	1.5	1	12	18
1" Meter	2.5	37	12	1110
1½" Meter	5	6	12	360
2" Meter	8	4	12	384
3" Meter	15	0	12	0
4" Meter	25	0	12	0
6" Meter	50	0	12	0
			Total	10,920

Instruction for Step 10

Step 10. Find the monthly surcharge for 5/8" x 3/4" customers.

Divide the result obtained in step 8 by the number of equivalent bills calculated in step 9 to obtain the monthly surcharge for 5/8" x 3/4" customers.

Result

\$140,300	Total annual surcharge revenue requirement for the loan (Step 8)
÷ 10,920	Number of equivalent bills
\$ 12.85	Total monthly surcharge for 5/8" x 3/4" customers

Instruction for Step 11

Step 11. Find the monthly surcharge for remaining meter size customers.

Multiply the Result obtained in step 10 by the NARUC meter capacity multipliers to obtain the monthly surcharges for all other meter sizes.

Col A	Col B	Col C	Col D
Meter Size	NARUC Meter Capacity Multiplier	5/8" x 3/4" Customers' Surcharge	Surcharge by Meter Size Col B x C
5/8"x 3/4" Meter	1	\$12.85	\$ 12.85
3/4" Meter	1.5	\$12.85	\$ 19.28
1" Meter	2.5	\$12.85	\$ 32.13
1½" Meter	5	\$12.85	\$ 64.25
2" Meter	8	\$12.85	\$ 102.80
3" Meter	15	\$12.85	\$ 192.75
4" Meter	25	\$12.85	\$ 321.25
6" Meter	50	\$12.85	\$ 642.50

RECEIVED

RECEIVED

JAN 7 2006

John S. Gay
1241 W. Calle De La Plaza,
Sahuarita, Az. 85629
January 25, 2006
Phone (520) 625 - 3327

HEARING

ARIZONA CORPORATION COMMISSION
HEARING DIVISION
W-01583A-04-0178
W-01583A-05-0326
W-01583A-05-0340

2006 JAN 26 1P 4: 06

AZ CORP COMMISSION
DOCUMENT CONTROL
INDEX FOR INTERVENOR JOHN GAY'S LAS QUINTAS SERENAS WATER CO.
PAPERS

1. 8 Page letter with comments on the L.Q.S. system & various exhibits.
2. Exhibit G - 1 Before the Az. Corp. Comm. – PROCEDURAL ORDER
3. " G - 2 Steve Gay, Operator/Manager 12/29/05 report.
4. " G - 3 Resolved ... reopen rate case.....Further Resolved.....
5. " G - 4 John Gay 2/20/05 Comparison of costs of Arsenic units at each well with combined of 6 & 7 at Well 6
6. " G - 5 Miller Brooks 7/1/05 Plans, Costs, etc for Arsenic treatment at each well. (*short*)
7. " G - 6 John Gay 1/20/06 letter to other Directors & Interested parties – need \$180,000 savings per year to make combined at #6 as cost effective as arsenic units at each well.
8. " G - 7 John Gay 9/14/05 letter to Judge Rodda asking for Intervention to try to stop out of control spending by L.Q.S. Board of Directors majority.
9. " G - 8 John Gay 1/9/06 letter to other Directors & Operation people –Money problems, When Manager leaves, New well possibility, etc.
10. " G - 9 John Gay 4/18/05 letter to Mike Redmond, PDEQ Minimun storage, \$600,000 Arsenic vs \$1,789,375
11. " G - 10 3 pages Ron Kozoman's exhibits to show 219.90% increase in rates for some customers.
12. " G - 11 John Gay trying to use Westland's figures to compare costs of Arsenic units at each well

EXHIBIT
I-1
admitted

INDEX (CONTINUED)

with combined of 6 & 7 at well 6

13. Exhibit G - 12 Manager showing L.Q.S. savings of \$40,200 per year because we use Elec. Interrupt Service (Watch what do in future so do not loose this.)

1-25-06 Doc

1241 W. Calle De La Plaza
Sahuarita, Az. 85629
January 22, 2006
Phone (520) 625 - 3327

Arizona Corporation Commission
Docket Control ?
400 W. Congress, Tucson, Az.

(I do not know how to address this letter. I phoned 628-6550 on Jan. 12, 2006 and Reg Lopez told me to deliver to Suite 218 in the North Building and he would distribute as required.)

INTERVENOR'S PAPERS & DOCUMENTS FOR DOCKET NO. W-0158A-04-0178, W-0158A-05-0326, and W-01583A-05-0340

1. In my Exhibit G-1 (Before the Az. Corp. Comm. --PROCEDURAL ORDER) it states near the bottom of Page 3 "The exact type of recovery mechanism has not yet been defined." I therefore believe that if I can show the Commission that my idea has merit it may be approved.

2. On the Decision 67455 that the Commission ordered to be effective January 1, 2005 the Commission was very definite on what and when L.Q.S. had to do about arsenic and we were to be in compliance on January 23, 2006. I have never had any information in writing that this date was being extended. In fact, I even heard that there might be fines, etc. if we were not in compliance. My voting as a Director of L.Q.S. was based on this written order.

In Exhibit G-2 (Steve Gay, Operator/Manager 12/29/05 report to the Directors) under 4. Arsenic ADEQ time frame: Steve says he talked to John Calkins (I don't know his title, or whom he is with), and at our Directors meeting of 1-19-06 Steve spoke about our extension time for being in compliance. He states, "For LQS it will mean that in the 1st qtr. of 2007 ADEQ will have our Point of Entry's (POE'S) sampled for arsenic" So I have some hear-say information now, but I still do not have anything written by the Commission saying we have an extension in time for compliance. So again, this lack of written orders from the Commission has influenced my voting as a Director.

3. In my Exhibit G-3 (Resolved ... reopen rate case, Be It Further Resolved long-term indebtednessetc.) on April 27, 2005 I voted as a Director for this resolution. All five resolutions were in general terms to get the ball rolling with the Commission, and nothing tied us down to a particular plan so I was in favor of the 5 resolutions.

ARSENIC TREATMENT PROPOSALS

A. Phelps Dodge paid Malcolm Pirnie and they came up with four alternatives which ranged in capital costs from \$1,080,000 to \$1,280,000 with annual operation and maintenance costs from \$166,000 to \$318,000. On two of the alternatives they assumed turnkey media replacement of twice a year. They did mention in three of the alternatives, "Blending will assist in controlling sulfate, if it becomes an issue." Sulfates are an issue in the water company that adjoins us on the south so I do not know if this is why Phelps Dodge had this report done. In any case, they weren't considered partly because their O & M annual costs were so high. (In Commission's Docket W-0158A-04-0178 and in Decision 67455 of Jan. 1, 2005 "Staff has calculated a preliminary estimate of arsenic removal costs for LQS's system using ADEQ Arsenic Master Plan ("AMP"). Staff's estimate includes \$186,992 in capital costs, \$124,122 for annual operations and maintenance costs and \$28,049 in engineering costs. However, we make no finding in this Decision as to the reasonableness of Staff's estimates or any costs that may be incurred by LQS to meet the new arsenic MCLs.")

B. Steve Gay went to a lot of meetings on the subject, talked to sales people and engineers, and on Sept. 27, 2004 Kaycee, Steve, and I went to Mesa to a big show where the various companies had displays and engineers to explain and answer questions. L.Q.S. even joined an organization which was working on the subject.

c. On January 10, 2005 we signed a contract with Westland Resources to do engineering to assist with the arsenic removal.

D My notes show I received on 2-16-05 Westland's February 2005 report "LAS QUINTAS WATER COMPANY DRAFT WATER SYSTEM MASTER PLAN."

My G-4 Exhibit goes into great detail showing costs of a arsenic system with units at each well for **\$580,000** over all, compared to Westland's central arsenic plan costing **\$1,279,000** or **\$1,598,750**. You will note I sent copies of this on February 20, 2005 to Westland, Mike Wood, and Rohn Householder. I have never received any phone calls back questioning these facts, or anything in writing. As I recall, (and Steve Gay also recalls it, and I do not know about Kaycee) at a Directors meeting after they had copies of G-4 Rohn said, "Oh, that is just the salesman talking." It is not important whether Rohn said anything, but I thought he did, so my wife and I hired the engineering firm Miller Brooks Environmental, Inc. to see what they might come up with.

On June 7, 2005 I sent Miller Brooks an advance of \$1,000 and signed the paper work for them to do the engineering for Exhibit G-5. We paid them over \$7,000 total and I think they did a fine job. (Some years ago I worked for the U.S. Navy doing engineering upgrading mostly on submarines. I would pull the plans of the particular submarine, make my drawings and list of materials and when this was approved the material would be purchased. All this time the submarine could be at sea half the world away. The submarine was scheduled into the San Francisco Naval Shipyard for the modifications after all plans were done and material purchased and in the Shipyard's warehouse. So with that experience I did the same sort of thing with Miller Brooks. I took photos and made drawings so they did not have to come from Phoenix to LQS property.) Miller Brooks Environmantal's design was, I felt, far superior to, and much more practical than Westland's design, and could be put in for about one half of the cost.

One notes when compring Exhibits G-4 and G-5 that on Well #7 both are using Model EAS-3008 but the price quotd on G-4 was only good until 22 June 04, and on G-5 the price was more and good until 13 May 05. The G-4 price was for \$229,000 and the G-5 for \$243,000. That is one of the reasons I had \$580,000 for G-4 and Miller Brooks has \$712,000 for G-5.

COST COMPARISON BETWEEN CENTRAL UNIT AND AT EACH WELL

5. Applicant's Exhibit A-1 which is a March 2005 report shows on Appendix A costs of \$1,789,375. In Applicant's Exhibit A-13 which is a September 2005 report I can not find any costs. Exhibit 2 in Applicant's

Exhibit A-1 is the plans for the central unit at Well #6. Appendix C in Applicant's Exhibit A-13 is again the #6 well site layout. Between the two there are lots of changes and Steve Gay told me the other day that there are major changes in the plans that are now coming out from the ones shown in Exhibit A-13. From what I see, many of these changes are going to make the cost go up so there is a good chance now that the \$1,789,375 figure of 3/24/05 will not cover what Westland has in their plans now.

6. In any case, it doesn't really matter what the final Westland costs, and the Miller Brooks costs are, there is about \$1,000,000 difference between the two. This is the reason I wrote the Exhibit G-6 because if I can get either of the other two Directors to agree with me L.Q.S. will have saved about \$1,000,000 and have a more reliable system.

7. In the second paragraph on the second page in my September 14th letter to Judge Rodda (Exhibit G-7) I partially explain why I want to be an intervenor as soon as possible because the manager and other two Directors are spending money to implement the Westland proposal because they think it is in effect. In my Exhibit G-8 in paragraph #11 I explain to the other two Directors that we have had to sell \$94,917 of our investments this year just to operate.

If I am correct in my paragraph #1 in this letter, backed up by my Exhibit G-1 we are wasting a lot of money if the Corporation Commission decides that Westland's central unit is too costly.

8. My letter of April 18, 2005 to Mike Redmond, Pima County Dept. of Environmental Quality (Exhibit G-9) was given to Mr Redmond when I met him at his office at 8 AM on April 19, 2005. Paragraph #7 and #8 deal with minimum required storage and he figured it out right then and said we were o.k. Later that day I handed copies of this letter to Steve Gay and Larry Robertson and mailed Rohn's and Mike's copies on April 20th. When I checked with Rohn and Mike (a few days later ?) all they wanted to know was, "Did you get it in writing" My understanding is that the ADEQ is the one that actually checks our system for compliance, not the Corporation Commission, so here is a man that a few years earlier I was along with him when he checked a new L.Q.S. subdivision pipe installation to see if it was o.k., and I am supposed to ask him to sign a paper to what he told me.

Mr Redmond and I talked about Westland's \$1,789,375 system and he agreed with me having seen our system that the \$600,000 system would be more reliable, and as far as they were concerned, we could change engineers at any time.

COMPARING CUSTOMERS MONTHLY COSTS FOR WATER

9. I wanted to refer to Ron Kozoman's figures and use his Exhibit A-8 or A-9 but frankly I was not smart enough so I have copied three of his pages and I will call them my Exhibit G-10. The bottom area of page 7 is the heading for the material on page 8. He shows 5/8 x 3/4 meters having a Monthly Minimum of \$10.00 and then adding the ACRM Charge of \$21.99 gives a total of \$31.99. On the next page (Exhibit Schedule H-3 Page 1 Witness: Kozoman) he shows this to be a 219.90% increase for all people having this size meter. He is figuring this on a proposed debt of \$1,648,750 which I believe would be a \$9.34 rate increase if our arsenic removal system only costs \$700,000. I would expect many of our customers to complain loudly when they are charged an additional \$21.99 per month and a more reliable system could have been built where their additional charge would have been \$9.34.

IS A CENTRAL ARSENIC TREATMENT LOCATION MOST EFFICIENT ?

10. Page 1 of Exhibit G - 11 is the written motion I made at the April 27, 2005 meeting of the Board of Directors. The motion was approved 3 to 0. Page 2 is a copy of Page 9 of Applicant's Exhibit A-1. They should be identical.

Page 3 is Westland's "Combined Arsenic Treatment at Well Site 6". The subtotal of this is \$1,431,500.

Page 4 is Westland's "Individual Arsenic Treatment at Each Well." The subtotal of this is \$1,337,000. They forgot to add the 200 gpm Adsorption Treatment System for #5 which they had on my page 3 as \$100,000 so when I add this the subtotal is \$1,437,000. So using their figures it is more expensive to treat at Each Well.

I do not agree with Westland so I have taken my Page 3 and blanked out the Unit, Quantity and Unit price columns so I can show my figures and I will give reasons below. This will be my page 5. Page 6 explains with #5 well exactly what I have been trying to explain we should do at the #6 well and #7 well. When you don't have to put in 100,000 gal. to 400,000 gal tanks and new pumping units and new elec generating units there is enough space at each well without moving fencing and the existing equipment. The \$243,000 and the \$188,000 I took from my Exhibit G-5 and these prices were good until 13 May 2005.

We Directors were told by Steve Gay that Westland would not make a comparison sheet like we asked for. Steve said that they said they had already done this. Steve gave me on May 2nd what I call Page 4. This was so absurd that I would not even consider it. My reasons were

1. They forgot to include #5 well for \$100,000.
2. They had a 150,000 gallon reservoir at #7 well for \$140,000.
3. They had a 100,000 gallon reservoir at #6 well for \$95,000.

On the two reservoirs I could understand that they did not understand what was going on, but my page 6 shows that someone at Westland did understand because they wrote nearly an entire page saying #5 will not require any modifications to pump directly into the distribution system.

This #10 subject on the motion for information I have covered in detail because I have the feeling that Mike Wood and Rohn Householder either do not understand the L.Q.S. water system, or they do not care. (I am happy to hear that Rohn and a couple of other people will tour the system in a few days. I may be wrong, but I do not think Rohn has ever been to #6 well where this central unit is proposed, even though the proposal which he continuously backs will cost over \$1,000,000.)

11. **Interrupt Service (IS)** I am including as Exhibit G-12 a page Steve Gay, our manager, wrote some time ago. He shows that L.Q.S. saves over \$40,200 per year by using interrupt service. If we go with Westland's proposal we need to watch carefully, or L.Q.S.'s expenses in the future will be \$40K per year more. Steve has been manager for about 20 years and it is his dedication and experience that makes this system work. Steve gave us notice several months ago that he is leaving on March 31, 2006. He has tried, and I have tried, to get information from the two Phelps Dodge Directors as to what they plan to do when Steve leaves, and at the Director's meeting last week I asked point blank and they said in a week, or two, we might have some information. The only other L.Q.S. field employee is Gary Hatcher who is leaving at the same time and we need to get someone now to be trained by Gary.

NEW ORLEANS WATER TANK LOCATION

12. I assume that qualified engineers stamped approval to build levees and construct homes that were destroyed by water a few months ago in New Orleans. As I hear it, people in the hard-hit areas had no clean drinking water and could not flush toilets. Applicant's Exhibits A-1 and A-13 both show in their proposals 400,000 Gallon Reservoirs at #6 well

January 22, 2006 Page 7

location. Westland shows the cost for this reservoir to be \$325,000. If the L.Q.S. franchise area had a major disaster we probably could fill gallon jugs of water from the water in this tank, but would be no help in flushing toilets in any homes left.

We have two storage tanks on the old Anamax property at an elevation to give proper water pressure to our franchise area. A few years ago we got a second easement where the tanks are, so there is now enough room to build a large tank where the north small tank is now. Near the bottom of page 1 on Exhibit G-2 is a comment that our lawyer does not like the wording of the easement.

On January 12th I phoned Harold Metz of Twin Buttes Properties, who now own the property and I explained our situation and he said he would check with their lawyer, I think in Cleveland. At the L.Q.S. Director's meeting last week we instructed our Manager, Steve Gay, to get in writing what our lawyer didn't like so we could correct the problem, if there is one. I checked with Steve yesterday and he had nothing from our lawyer as he is on vacation. Today, January 24th, I phoned Harold Metz with that information. He suggested we have our lawyer write up what he likes and present it to the Twin Buttes Properties people.

Twin Buttes Properties owns about 77 acres of undeveloped property in the L.Q.S. franchise area, so I would think they would like L.Q.S. to operate smoothly.

CONCLUSION

At our Director's Board meeting on January 19, 2006 we received the Monthly Financial reports for September 2005. With no October, November, and December financial reports available, and then in my Exhibit G-8 saying on #11 that we had used **\$94,917** of our savings in less than one year one can see how difficult it is for us three Directors to make sensible decisions.

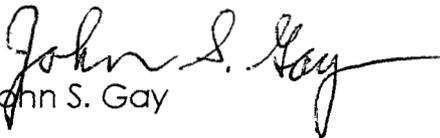
In our Decision No. 67455 we asked for a return of 30.97% and this was all Kent Alme's idea who was a Director then. Seeing how the Commission wrote this up in the Decision I have always wondered if they felt our organization was like Enron, with crooks running it, and gave us a bad time and made it necessary to come right back for another rate increase before we went broke. Therefore, when I have seen our offering a proposal costing about \$1,000,000 more than I feel will be necessary for a more reliable system, I felt I must speak up and be an intervenor. Assuming that our lawyer is used to answer most of my intervenor items (At the 1/19/06 meeting neither Kaycee who types the checks or Steve who signs them could tell us what the lawyer's wages are) and not Kaycee at

January 22, 2006 Page 8

\$16.37 per hour, or Steve at \$27.80 per hour, these proceedings will cost L.Q.S. (and our customers) lots of money .

If I can just get one of the two Phelps Dodge Directors to see the advantages of saving \$1,000,000 and vote with me, everything will be over. If they have strong beliefs and will explain them to me, and they make sense, then I will vote with them and L.Q.S. will not have to spend all of this money on lawyer's fees.

Yours truly


John S. Gay

1-22-06 Doc

Exhibit G-1

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

JEFF HATCH-MILLER, Chairman
WILLIAM A. MUNDELL
MARC SPITZER
MIKE GLEASON
KRISTIN K. MAYES

*Recd
Nov 17, 05
JG*

IN THE MATTER OF THE APPLICATION OF
LAS QUINTAS SERENAS WATER CO. FOR A
RATE INCREASE.

DOCKET NO. W-01583A-04-0178

IN THE MATTER OF THE APPLICATION OF
LAS QUINTAS SERENAS WATER CO. FOR
AUTHORITY TO INCUR LONG-TERM
INDEBTEDNESS TO FINANCE WATER
SYSTEM IMPROVEMENTS AND ASSURE
COMPLIANCE WITH NEW ARSENIC RULES.

DOCKET NO. W-01583A-05-0326

IN THE MATTER OF THE APPLICATION OF
LAS QUINTAS SERENAS WATER CO. FOR AN
OPINION AND ORDER TO (i) RE-OPEN THE
RECORD IN A RECENT RATE CASE SO AS TO
CONSIDER EVIDENCE IN SUPPORT OF AN
ARSENIC COST RECOVERY MECHANISM,
AND (ii) MODIFY RATE CASE DECISION IN
ORDER TO ADD AN ARSENIC COST
RECOVERY MECHANISM AS AN
AUTHORIZED RATE AND CHARGE.

DOCKET NO. W-01583A-05-0340

PROCEDURAL ORDER

BY THE COMMISSION:

By Procedural Order dated August 18, 2005, upon request of the parties, the Arizona Corporation Commission ("Commission") suspended the procedural schedule that had been set in the above captioned matter.

On November 15, 2005, Commission Utilities Division Staff ("Staff") and Las Quintas Serenas Water Company ("Las Quintas" or "Company") jointly proposed the following procedural schedule:

Las Quintas files direct testimony and exhibits	December 7, 2005
Staff/Intervenors file direct testimony and exhibits	January 25, 2006
Las Quintas files rebuttal testimony and exhibits	February 21, 2006

1 Hearing

March 1, 2006

2 IT IS THEREFORE ORDERED that a **hearing** in the consolidated matters shall commence
3 on **March 1, 2006, at 10:00 a.m.**, or as soon thereafter as is practical, at the Commission's offices,
4 **Room 222, 400 West Congress, Tucson, Arizona.**

5 IT IS FURTHER ORDERED that direct testimony and associated exhibits to be presented at
6 hearing by Las Qunitas shall be reduced to writing and filed on or before **December 7, 2005.**

7 IT IS FURTHER ORDERED that testimony and associated exhibits to be presented at hearing
8 by Staff or any Intervenors shall be reduced to writing and filed on or before **January 25, 2006.**

9 IT IS FURTHER ORDERED that any rebuttal testimony and associated exhibits to be
10 presented at hearing by Las Quintas shall be reduced to writing and filed on or before **February 21,**
11 **2006.**

12 IT IS FURTHER ORDERED that any surrebuttal testimony and any rejoinder testimony shall
13 be presented orally at the hearing.

14 IT IS FURTHER ORDERED that any objections to any testimony or exhibits that have been
15 prefiled as of February 21, 2006, shall be made on or before February 27, 2006.

16 IT IS FURTHER ORDERED that all testimony filed shall include a table of contents that lists
17 the issues discussed.

18 IT IS FURTHER ORDERED that any substantive corrections, revisions, or supplements to
19 pre-filed testimony shall be reduced to writing and filed no later than five days before the witness is
20 scheduled to testify.

21 IT IS FURTHER ORDERED that the parties shall prepare a brief, written summary of the
22 pre-filed testimony of each of their witnesses and shall file each summary by 3:00 p.m. on February
23 27, 2006.

24 IT IS FURTHER ORDERED that copies of summaries shall be served upon the Presiding
25 Officer, the Commissioners, and the Commissioners' aides, as well as the parties of record.

26 IT IS FURTHER ORDERED that intervention shall be in accordance with A.A.C. R14-3-105,
27 except that all motions to intervene must be filed on or before **February 14, 2006.**

28 IT IS FURTHER ORDERED that discovery shall be as permitted by law and the rules and

1 regulations of the Commission, except that: until February 1, 2006, any objection to discovery
 2 requests shall be made within 7 days¹ of receipt and responses to discovery requests shall be made
 3 within 10 days of receipt; thereafter, objections to discovery requests shall be made within 5 days and
 4 responses shall be made in 7 days; the response time may be extended by mutual agreement of the
 5 parties involved if the request requires an extensive compilation effort.

6 IT IS FURTHER ORDERED that, in the alternative to filing a written motion to compel
 7 discovery, any party seeking discovery may telephonically contact the Commission's Hearing
 8 Division to request a date for a procedural hearing to resolve the discovery dispute; that upon such a
 9 request, a procedural hearing will be convened as soon as practicable; and that the party making such
 10 a request shall forthwith contact all other parties to advise them of the hearing date and shall at the
 11 hearing provide a statement confirming that the other parties were contacted.²

12 IT IS FURTHER ORDERED that any responses to motions shall be filed within five days of
 13 the filing date of the motion.

14 IT IS FURTHER ORDERED that any replies shall be filed within five days of the filing date
 15 of the response.

16 IT IS FURTHER ORDERED that public notice of the hearing in this matter shall be provided
 17 in the following form and style, with the heading in no less than 12 point type and the body in no less
 18 than 10 point type:

19 **PUBLIC NOTICE OF HEARING ON THE APPLICATION OF**
 20 **LAS QUINTAS SERENAS WATER COMPANY**
 21 **FOR AUTHORITY TO IMPLEMENT AN ARSENIC COST RECOVERY MECHANISM**
Docket No. W-01583A-04-0178 et al.

22 On May 15, 2005, Las Quintas Serenas Water Co. ("Company") filed with the
 23 Arizona Corporation Commission ("Commission") an application for authority to
 24 implement a charge to recover the cost of new water treatment facilities needed to
 25 comply with new federal government drinking water standards. The new federal
 26 standards, which become effective January 23, 2006, reduce the maximum level of
 arsenic allowed in drinking water from 50 to 10 parts per billion. On May 2, 2005, the
 Company filed a Finance Application seeking authority to incur long-term debt in the
 amount of \$1,648,750 associated with the capital improvements needed to treat
 arsenic. The exact type of recovery mechanism has not yet been defined. If approved
 by the Commission, an additional charge to allow for recovery of the costs associated

27 ¹ "Days" means calendar days.

28 ² The parties are encouraged to attempt to settle discovery disputes through informal, good-faith negotiations
 before seeking Commission resolution of the controversy.

1 with arsenic treatment would be effective in the second quarter of 2006, and would
 2 increase the average monthly residential bill by an as yet undetermined amount.
 3 Copies of the Company's application and other filings are available for public
 4 inspection during regular business hours at the Company's office [COMPANY
 INSERT ADDRESS AND CONTACT INFORMATION HERE] and at the
 Commission's Docket Control Center, 1200 West Washington, Phoenix, Arizona
 85007 or its Tucson office 400 W. Congress, Suite 218, Tucson, Arizona 85701.

5 The Commission will hold a public hearing on this matter beginning **March 1, 2006**
 6 **at 10:00 a.m.** at the Commission's offices, Room 222, 400 West Congress Street,
 Tucson, Arizona. Public comments will be taken on the first day of the hearing.

7 The law provides for an open public hearing at which, under appropriate
 8 circumstances, interested parties may intervene. Intervention shall be permitted to any
 9 person entitled by law to intervene and having a direct and substantial interest in the
 matter. Persons desiring to intervene must file a written motion to intervene with the
 Commission no later than **February 14, 2006**. The motion to intervene must be sent
 to all parties of record, and shall contain the following:

- 10 1. The name, address, and telephone number of the proposed intervenor
 11 and of any entity upon whom service of documents is to be made if
 different from the intervenor;
- 12 2. A short statement of the proposed intervenor's interest in the
 13 proceeding; and
- 14 3. A statement certifying that a copy of the motion to intervene has been
 mailed to all parties of record in the proceeding.

15 The granting of intervention, among other things, entitles a party to present sworn
 16 evidence at the hearing and to cross-examine other witnesses. However, failure to
 17 intervene will not preclude any interested person or entity from appearing at the
hearing and providing public comment or from filing written comments in the record
of the case. You will not receive any further notice of this proceeding unless you
 18 request it.

19 If you have any questions about this application, or want further information on
 20 intervention, you may contact the Consumer Services Section of the Commission at
 1200 W. Washington Street, Phoenix, Arizona 85007 or call 1-800-222-7000.

21 The Commission does not discriminate on the basis of disability in admission to its
 22 public meetings. Persons with a disability may request a reasonable accommodation
 23 such as a sign language interpreter, as well as request this document in an alternative
 format, by contacting Linda Hogan, ADA Coordinator, voice phone number 602/542-
 3931, E-mail LHogan@azcc.gov. Requests should be made as early as possible to
 allow time to arrange the accommodation.

24 IT IS FURTHER ORDERED that Las Quintas shall cause a copy of the above-ordered notice
 25 to be published in a newspaper of general circulation in its service area no later than **December 21,**
 26 **2005**, and shall file certification of publication as soon as practicable after publication has been
 27 completed.

1 IT IS FURTHER ORDERED that Las Quintas shall mail a copy of the above-ordered notice
2 to each of its customers by First Class United States mail no later than **December 21, 2005**; and shall
3 file certification of mailing as soon as practicable after mailing has been completed.

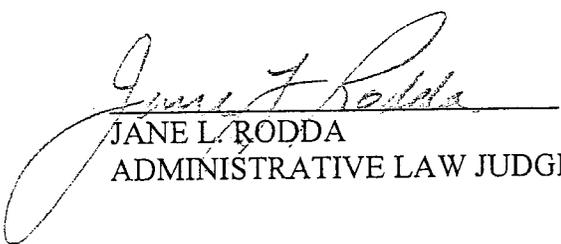
4 IT IS FURTHER ORDERED that notice shall be deemed complete upon publication and
5 mailing of same, notwithstanding the failure of an individual to read the notice.

6 IT IS FURTHER ORDERED that the Ex Parte Rule (A.A.C. R14-3-113 - Unauthorized
7 Communications) applies to this proceeding and shall remain in effect until the Commission's
8 Decision in this matter is final and non-appealable.

9 IT IS FURTHER ORDERED that the time periods specified herein shall not be extended
10 pursuant to Rule 6(a) or (e) of the Rules of Civil Procedure.

11 IT IS FURTHER ORDERED that the Presiding Officer may rescind, alter, amend, or waive
12 any portion of this Procedural Order either by subsequent Procedural Order or by ruling at hearing.

13 DATED this 16th day of November, 2005.

14
15
16 
17 JANE L. RODDA
18 ADMINISTRATIVE LAW JUDGE

19 Copies of the foregoing mailed
20 this 16th day of November, 2005 to:

21 Mr. Steve Gay
22 General Manager/Operator
23 Las Quintas Serenas Water Company
24 16965 Camino De Las Quintas
25 P.O. Box 68
26 Sahuarita, AZ 85629

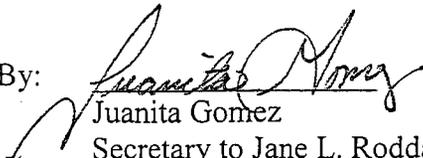
27 Lawrence V. Robertson Jr
28 Munger Chadwick PLC
333 N Wilmot Suite 300
Tucson, AZ 85711-2634

John S. Gay
1241 W. Calle De La Plaz
Sahuarita, Arizona 85629

Christopher Kempley, Chief Counsel
Jason Gellman
Legal Division
ARIZONA CORPORATION COMMISSION
1200 W. Washington Street
Phoenix, Arizona 85007

Ernest Johnson, Director
Utilities Division
ARIZONA CORPORATION COMMISSION
1200 W. Washington Street
Phoenix, Arizona 85007

1 Arizona Reporting Service, Inc.
2 2627 N. Third Street, Suite Three
3 Phoenix, Arizona 85004-1103

4 By: 
5 Juanita Gomez
6 Secretary to Jane L. Rodda
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LAS QUINTAS SERENAS WATER CO.

P. O. BOX 68

SAHUARITA, AZ 85629

(520) 625-8040

648-3520 Fax

Exhibit G-2

1-19-06
Rec'd JH

Does the Board want a meeting in Dec. 2005, or January 2006?

#1.LQS Viability:

I am extremely concerned that LQS will be getting into a financial situation where it will not be able to operate successfully.

ACC coordination (ACRM)	Expended to date	Outstanding
Legal	\$ 19,566.40	\$ 7,882.23
Account	\$ 1,720.00	\$ 00
ACC specialty Accountant	\$ 13,313.19	\$ 00
WestLand Engineering	\$ 4,110.46	\$ 4,794.25
LQS Office costs	\$ 466.44	\$ 298.82
	<hr/>	<hr/>
	\$ 39,176.47	\$ 12,975.30

These costs are all related to acquiring ACC authority to accrue debt and are not considered a part of the Arsenic Recovery Mechanism (ACRM). More money is expected to be spent throughout this procedure. LQS will not have an opportunity to recover these costs until the next rate case at which time the ACC will determine what part of these costs will be allowed (if any) in the company's future rates.

(Legal and accounting have been very generous to LQS on what hours have been billed to the company).

Upsizing 250,000 gallon arsenic storage tank to 400,000 gallons:

WestLand is saying that 1/4 of the cost of a 400,000 gallon tank would be \$ 140,000 which I think LQS cannot afford the luxury of at this time. It is highly probable that the ACC will not allow LQS to recoup the cost of the additional storage, as they may rule it not useful, unless the engineers can prove that it enhances the plant.

Larry Robertson looked at the LQS easement for the storage tanks on # 3 tailings and said that at the discretion of the Grantor, LQS could be moved off at any time at LQS's expense and that the Grantor does not need to give LQS another easement. Larry also suggests that LQS not show this easement to the ACC as they may remove or subtract a portion of the current rate base for this storage facility.

If LQS should have # 7 well go down, # 5 well cave in and only # 6 well operating at the new arsenic plant capacity of 550 GPM natural gas and have only 250,000 gallons storage with boosters + 90,000 gal storage on # 3 tailings, then this

would give LQS just enough water for one normal day during the hottest month average. This is what the minimum storage required by ADEQ and PDEQ is. This also includes the new 239 homes of Santa Cruz Meadows and other homes recently built. LQS could get ANAMAX Park to reduce watering and probably keep the customers all in water for an extended time. (Pages 7& 8 attached of Nov. 2003 Managers report)

I am concerned that LQS will install a \$ 100,000 + dollar arsenic treatment plant at # 5 well, then # 5 well will not be functional for what ever reason and then the ACC will not allow LQS to charge the customers for the remaining costs for the plant and equipment because it is not used or useful. The expected life and payback from the ACC is 20 years according to Larry. If the arsenic treatment plant is not being used then the customers should not be responsible to pay for it. Larry says "roll of the dice."

I do not know if there is a reasonable possibility of using the proposed cost of # 5 well arsenic treatment plant to either increase pumping capacity of # 6 well or more storage to offset # 5 well pumping (200 GPM X 60 minutes X 24 hours = 288,000 gallons per day)

6 well is currently overdue for a major overhaul, of about \$ 35,000 dollars. I am waiting until after the arsenic plant is installed, so the new bowls would be set up for the new pump curve needed to operate at lower pressure and larger volume for the arsenic treatment plant.

LQS has approximately \$ 220,550 remaining value in stocks & mutual funds.

LQS sold \$ 28,257 of stock to cover expenses in Nov. 2005

Johnson & Johnson	\$ 18,504.21
Intel	\$ 4,945.42
SBC Communications	\$ 4,808.36

2. Kaycee's wages to be re-evaluated:

3. Gary Hatcher has resigned with an effective date no later than March 31, 2006. He is very willing to train his replacement on water meter reading and sequencing.

Does the Board want a fulltime person in this position?

A person on call all the time?

A person with mechanical, water or electrical background?

What price range is the Board willing to pay, and is part time work and call out worth more per hour or less per hour than fulltime employees.

What is being paid in the water industry, (\$ 14 for a water meter reader) or like the day labors (\$ 8 per hr.) or skill based pay compensation (start \$12, and possibly achieve \$ 25 per hr. as in Tucson Water)

4. Arsenic ADEQ time frame:

I talked to John Calkins (1-800-2345677 ext 771-4617) on 10/12/05 about the extension time for being in compliance for Arsenic. For LQS it will mean that in the 1st qtr of 2007 ADEQ will have our Point of Entry's (POE's) sampled for arsenic through the MAP program. If the samples are less than 10 PPB the water company is in compliance and the next samples will be taken in 2010. If the samples are 10 PPB or higher in the 1st Qtr in 2007, then quarterly sampling will begin for the rest of the year, and if the average yearly samples are less than 10 PPB, then the water company will be in compliance and MAP will sample LQS again in 2010.

This has been confirmed by the ADEQ web site.

LQS received an EPA Email saying that the EPA has now made an "arsenic Virtual Trade Show" site with training scheduled on how to use the site on January 10, 2006.

5. ACC progress:

John Gay is now signed up as an intervener in the pending applications for the arsenic recovery mechanism and the authority to approve debt.

LQS's Lawyer requests that intervener's requests for information be submitted in writing, so the company will have documentation of what is provided.

After all kinds of data requests and phone conferences, the ACC and LQS are on track for the procedural hearing schedule as per Judge Rodda .

Westland progress:

The surveying and alignment for the water line from # 7 well to # 6 well is completed.

A Hydrologist is working through WestLand Resources on whether the # 6 well site needs to be raised to keep it out of the sand wash and which sand washes need to be bored under in order to keep the time and cost of permitting down.

6. System operation:

The radio SCADA system has been having problems for some time. First communication from # 6 well to the office was sporadically not working. After changing antennas, using the tank SCADA as a repeater and lots of testing, the # 6 well radio was changed out for a new one. # 6 SCADA works great now, but twice now the total SCADA radio system seemed jammed with nothing working. The radio manufacture troubleshooting technicians think it could be one of the radios jamming in send mode and locking the whole band. This would be like using a CB radio and having the mike keyed so only interference could be heard. The factory representatives say that this has happened a few times out of thousands of radios in operation.

We are now waiting for the system to jam again so each radio can be physically checked by looking at its lights and seeing what is happening.

7. LaCanada & Santa Cruz Meadows:

As far as LQS is concerned, La Canada is completed except the raising of the valve boxes and completing the modifications on the maps. (as built)

LQS has installed two new 1 ½" water meters on La Canada for landscape which the Town will eventually be paying the water bill on.

Santa Cruz Meadows is actually being built. Brushing started the first week of December with starting the water line tie-ins on Dec. 12, 2005. This is great and will help LQS by looping in # 6 & 7 wells into the system and allowing much greater flows with less pressure loss.

8. County bi-yearly inspection:

PDEQ inspected the water system on 12/7/05 and found no out of compliance issues.

9. Nancy Freeman:

She is still writing articles in the Green Valley paper about polluted water, but LQS is receiving few comments from our customers about her articles.

Nancy is organizing a meeting at the U of A on January 23, 2006 for the purpose of discussing the possibility of how to save the aquifer by recharging storm water. John & Steve are planning on going.

10. Town study of "whether the town wants to get into the water business."

The Sahuarita Sun Oct. 30, 2005 had an article about the town hiring a consultant to look into the prospects of supplying roads, sewer, water and schools in the area.

Mike Lytle, Manager for Rancho Sahuarita Water asked if LQS was for sale as possibly they would be interested in buying.

11. Grumpy customers:

Our family is still getting people walking into the house looking for the water company or calling our house phone number for the water company. This is happening less and less.

However, Sunday Nov. 20, 2005 I was woken up by someone ringing my door bell, wanting their water turned back on at the standpipe. (They forgot to pay their bill) I charged LQS \$ 42.68 for 1 ½ hour straight time to turn the water back on and also check the office computer for system operations. The ACC has given LQS \$ 20 dollars for a

turn on and \$30 dollars for after hour's (week days before 8 A. M. or after 5 P. M. and weekends) at customers request. At this time LQS is only charging the \$ 20 re-establishment fee to all customers regardless of time frame, trying to keep customers happier. If the Board wants, LQS can charge a \$ 30 dollar fee for after hours and weekend re-establishment (by customer request) as per the current rate tariff. At this time only one board member lives in the LQS franchise and the other Board members are not known and are not neighbors of mad customers who vent themselves on the phone, in the grocery stores, at the bank, or during public events.

Sahuarita Post office is now sending some LQS mail to Phoenix, to be sorted and then sent back to Sahuarita. The delivery time for a piece of mail sent from Sahuarita to get to LQS post office box varies from 1 day to 3 days with the record being received in 5 weeks. When LQS turns customers off for lack of payment and the customer complains that the check is in the mail, LQS accepts their claim as valid, turns the water on and if the check is soon delivered with a post mark date to confirm their claim, the \$ 20 dollar reconnect fee is waived.

LQS is getting lots more grumpy customers in the office and in the field.

12. Fire Sprinklers:

Robert Brown from Unity Church:

Mr. Brown keeps calling and coming in saying that his architect says that the water company requires that they have a 4" water line for their fire sprinklers in the building that they are going to build. He has checked with Community water and says that they allow some special deal that a fire sprinkler line does not need to be paid for and that Community water installs a small meter to check for leaks but no charge is applied for the fire sprinklers.

There was a complaint filed with the ACC by Mr. Brown about what LQS says that LQS has to charge for a 4" meter under ACC rules. (LQS first written complaint) Richard Martinez from the ACC is who is on the case, says that LQS can only do at this time what is being done, but he suggests that LQS consider asking ACC for a fire sprinkler tariff similar to what Community Water has. Richard also says that there is some code that says that all commercial buildings must have a 4" water service line for sprinklers.

Norris West of Community Water (625-8409) says that they charge the applicant what it costs Community Water to install the fire sprinkler system to their main and then there is a double check valve with a meter to register water leaks. The ACC have given Community Water a monthly tariff for each fire sprinkler size.

Mike Lytle of Rancho Sahuarita (399-1105) says that for homes over 3,600 sq. ft. a 3/4" meter is installed and the customer pays the standard tariff for this meter.

The Town requires that fire sprinklers be installed in all new homes of 3,600 sq. ft. or larger.

For new subdivisions the Town is requiring that LQS install 1 ¼ meter service lines for "U" branch services instead of the normal 1" service line. This is to support sprinklers on ¾" meters.

This scenario comes up about once a year for new commercial buildings and about twice a year for large homes with sprinklers installed.

Steve Gay
Operator/Manager
12/29/05

Rec'd 4-27-05 at LOS Board meeting at LOS office

Munger Chadwick

From: "Larry Robertson" <lvrobertson@mungerchadwick.com>
To: "Kaycee Conger" <LQSWater@aol.com>
Sent: Tuesday, April 26, 2005 11:40 AM
Attach: agreement (fml).doc
Subject: Suggested Corporate Resolutions

Exhibit G-3

Attached for review and consideration by the members of the Board of Directors and you is a draft of suggested corporate resolutions, and the prefatory recital provisions, which would authorize the filing of the two draft applications I transmitted to you last week. In addition, these resolutions would also authorize the filing of an application for long-term financing authorization to fund implementation of those recommendations set forth in WestLand Resources Plan which relate to non-arsenic water system capital improvements. I have not drafted that application as yet. The resolutions are set up so that the Board of Directors can choose to adopt all or only some of them, and I will prepare the final set of recital provisions and corporate resolutions once we know the decision(s) of the Board of Directors.

Call me if you have any questions. Otherwise, I will plan to be in attendance at the Board of Director's Meeting in your offices at 10:30 tomorrow morning.

MUNGER CHADWICK

John F. Munger
Munger Chadwick, P.L.C.
333 N. Wilmot, Suite 300
Tucson, Arizona 85711
520-721-1900 (office)
520-747-1550 (fax)

jfmunger@mungerchadwick.com

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4-27-05
at Board meeting
approved vote 3-0
JG

WHEREAS, the United States Environmental Protection Agency ("EPA") has promulgated regulations, effective January 23, 2006 which reduce the allowable concentration of arsenic in potable water systems from 50 parts per billion to 10 parts per billion; and,

WHEREAS, the Company's water system is subject to the EPA's new arsenic concentration regulations; and,

WHEREAS, each of the Company's water system wells produces water with arsenic concentration in excess of the new arsenic concentration level to be allowed under the EPA's regulations; and,

WHEREAS, the Company will have to make certain capital investment and incur certain operation and maintenance expense in order to place itself in a position where it can comply with the EPA's new arsenic concentration regulations; and,

WHEREAS, at the Company's request, WestLand Resources, Inc. ("WestLand") has prepared a "Water System and Arsenic Master Plan" ("Plan") for the Company which, if implemented, would enable the Company to comply with the EPA's new arsenic concentration regulations and to achieve certain other water system improvements recommended by WestLand; and

WHEREAS, the revenues and rates and charges for water service recently authorized by the Arizona Corporation Commission ("ACC") will not produce sufficient revenues to allow the Company to finance the capital investment and operation and maintenance expense necessary to implement those recommendations in the Plan intended to enable the Company to comply with the EPA's new arsenic concentration regulations; and,

WHEREAS, the revenues and rates and charges recently authorized by the ACC also will not produce sufficient revenues to allow the Company to finance the other water system capital improvements recommended by WestLand;

NOW, THEREFORE, the Board of Directors of the Company hereby adopts the following resolutions:

RESOLVED, the Company and its management are hereby authorized to file such application(s) with the ACC as may be necessary in order for the ACC to reopen the Company's recently concluded rate case for the purpose of the ACC considering and adopting an Arsenic Cost Recovery Mechanism ("ACRM") which would allow the Company to recover through its rates and charges for water service capital costs and certain operation and maintenance expense related to the Company's efforts to comply with the EPA's new arsenic concentration regulations;

← spelling ? JLL

BE IT FUTHER RESOLVED, the Company and its management are hereby authorized to file with the ACC an application requesting authorization to incur long-term indebtedness in an amount sufficient to enable the Company to make the capital investment necessary to implement those recommendations in the Plan related to compliance with the EPA's new arsenic concentration regulations;

BE IT FURTHER RESOLVED, the Company and its management are hereby authorized to file with the ACC an application requesting authorization to incur long-term indebtedness in an additional amount sufficient to enable the Company to make the capital investment necessary to implement the remaining water system recommendations set forth in the Plan;

BE IT FURTHER RESOLVED, that the Company and its management are hereby authorized to file an application with the Water Infrastructure Financing Authority of Arizona ("WIFA") requesting grants and/or loans in an amount or amounts sufficient to enable the Company to utilize such long-term financing authorization(s) as the Company may receive from the ACC; and

BE IT FURTHER RESOLVED, the Company and its management are hereby authorized to retain such consulting and professional services as may be necessary to implement the foregoing resolutions.

Exhibit G-4

February 20, 2005 John Gay's comments on Westland Resources' Las Quintas **Serenas** Water Company Draft Water System Master Plan

1. I feel that it is a very inclusive fine report.
2. On page 11 Average Day of Peak month of 627 Gpm is different than Steve's September, October, November 2003 report where he said June to July 2003 used 21,349,000 gallons and he used a 16 hour day to come up with 741 Gpm. I am probably wrong, and it isn't important.
3. For Westland's info I do not think we mentioned we had a large extension cord in the #5 well storage shed and to try it out for times of no electricity we rented a Cat generator and test ran both #5 well (had its 50 H.P. turbine motor then) and #6 well.
4. In the Westland report you suggest we drill a new well sometime. I would like to see that be a top priority and included with the suggestions on how to treat for the arsenic.
5. On Feb. 17th I made a report and gave it to Steve on how to use the existing well and pipes on #5 well and take a portion of the 200 Gpm flow and run it thru a Severn Trent Model EAS - 1205 and into a 3,350 Gal. galvanized tank and use a 2" pump to put the treated water back into the well flow going into our system. Steve gave some suggestions, but saw no great problems with this idea so I will proceed with costs and comments on using this idea at each of our three wells.
6. For all of the following I am using the quote that Jeff Pals of Hennesy sent us on March 31, 2004. I was very interestd in pushing ahead quickly and getting a packaged deal from Hennesy on the ground and operating so we later got some better prices that the March 31st, but I am using that as it covered all three wells.
- 7A. #5 Well Model EAS -1205 Adsorbers & Media \$74,000
Capacity 200 Gpm, Treatment 114 Gpm, Auxiliary Equip. \$10,000
John's tanks, piping, elec. etc. \$10,000 giving a total about \$100,000
- 7B. #6 Well Model EAS -1606 Adsorbers & Media \$161,000
Capacity 400 Gpm, Treat. 300 Gpm, Aux. Equipment \$10,000
John will probably have to go to 3 or 4" pipe Total about \$200,000

7C. #7 Well Model EAS -3008 Adsorbers & Media \$219,000
Capacity 800 Gpm. Treatment 533 Gpm Aux. Equip. \$10,000
John's will probably need 6" pipe. Guess total about \$280,000

7A, 7B, and 7C Totals \$100,000 + \$200,000 + \$280,000 = **\$580,000**

8. This compares with Westland's **\$1,279,000**

9. I am now going to compare Westland's with John's.

9A. Item #1 Site Demolition Westland \$10,000 John Zero
(All wells will remain the same, just add arsenic removal equipment.)

9B. Site Piping Well Site #6 Westland \$100,000 John \$40,000

9C. Concrete Slabs for Site Equip. " \$14,000 John \$10,000?

9D. 8" water main from #7 to #6 " \$112,500 " Zero

9E. 250,000 gallon reservoir. " \$212,500 " John would like to see some of this money (or all) in a tank on the hill where customers will have water when there is no electricity --Also take some of this money and start things going on a new well.

9F. 850 Gpm transfer pumps Westland \$200,000 John Zero as his idea has us using all of our present wells and pumps without any changes.

9G. 1,250 Gpm Adsorption Removal Unit \$500,000 John \$580,000 which is three separate units so if anything goes wrong with one the other two are independant and can produce water to drink.

9H. 200 Gpm Unit for #5 Well Westland \$85,000 John zero as already included in 9G of \$580,000.

9I. Fencing at #6 Well -----Westland \$15,000 John Zero If this idea has any merit when Westland designs the system John's guesses could be way off -- They probably are!

9J. Remove Bowls on #6 and #7 wells. Westland \$30,000 John Zero John is leaving the wells just like they are now.

9K. 25% Engineering and Contingencies Westland \$319,750 John wonders if his should be nearly Zero as he plans to use off the shelf proven units at each well. So should we be comparing John's **\$580,000** to Westland's **\$1,279,000**, or really with their **\$1,598,750 ?**

10. Other than wages, the purchase of power is one of our largest expenses and runs about \$20,000 per year. I do not know if we explained to Westland that by using interruptible power we pay about half price. We have been doing this for 18 or 20 years and Trico changes the name and how they apply it but usually it makes our power be about half price. One time it was called "Time Of Day." Steve now knows by the

temperatore the day before, and the 10 P.M. wether report, and if it is a weekend what he has to plan for the next day.

11. I do not know the details of Westland,s plans at #6 well but it looks like we will not be able to use the #6 well on natural gas when Trico turns off our electricity so the half priced power will be gone.

12. Also it looks like the 250,000 gallon reservoir at #6 well will be of no value when Trico turns off our power.

13. Westland may think John is unhappy with their report. No, John thinks they did a fantastic job to turn out what they did for us to look at and make suggestions. After all Steve has run the system for 20 years and John has been Pres., Vice Pres., Manager, Co-Manager, etc. for 40 years. I may be getting senile, but I still remember a few things. Westland has been involved for maybe 2 or 3 months.

2-20-05 DOC

E mail? or Fax? 9 or 10 A.M. Tues. Feb. 22, 2005 to:
Westland
Mike Wood
Rohn Householder

1 KENT

LAS QUINTAS SERENAS WATER COMPANY WATER ANALYSIS INFORMATION

Date: Wednesday, March 31, 2004

Retailer: HENNESY MECHANICAL SALES, LLC
 Contact: Jeff Pais
 Mailing Address: 201 S. 26th Street
 City, State, Zip Code: Phoenix, Arizona 85034
 Telephone Number: (602) 996-3444 Facsimile Number: (602) 996-9408
 E-Mail Address: jeff@hennesymech.com

Wells
5, 6, & 7

Treatment Capacity: 1 MGD Maximum

Water Analysis:

Test	Well #5 200	Well #6 350 - 425	Well #7 600 - 850	GPM
Temperature	26	26	26	C
pH	6.8-7.7 (7.2 Normal)	7.1-7.5 (7.3)	7.2-7.3	
Total As	9.0-10.0 (9.0)	12.0-14.0 (14.0)	10.0-12.0 (11.0)	PPB
As (III)	—	—	—	PPB
Alkalinity	150	139	143	PPM
Hardness	426	106	99	PPM
Silica		39.2	36.9	PPM SiO ₂
Sulfate	180	37	30	PPM SO ₄
Sulfide		<0.05	<0.05	PPM S
Phosphate		<0.06	<0.06	PPM PO ₄
Turbidity		0.2	0.4	NTU
Suspended Solids		<5	<5	PPM
Antimony	<0.0030	<3.0	<3.0	PPM Sb
Cadmium	<0.0005			PPM Cd
Chromium	<0.010	<10	<10	PPM Cr
Iron	<0.01	50-55	<40	PPM Fe
Lead		10	<2.0	PPM Pb
Manganese		<10	<10	PPM Mn
Molybdenum		<30	<30	PPM Mo
Selenium	.03	<3.0	<3.0	PPM Se
Uranium	5.4 +/- 1.1	6.4 +/- 1.2	6.4 +/- 1.2	PPM U
Vanadium		<20	<20	PPM V

Direct / Send Inquiries to:

Steve Gay; General Manager / Operator

Las Quintas Serenas Water Company P.O. Box 68, Sahuarita Arizona 85629

Telephone: 520.625.8040 Facsimile: 520.648.3520 E-Mail: LQSWater@aol.com

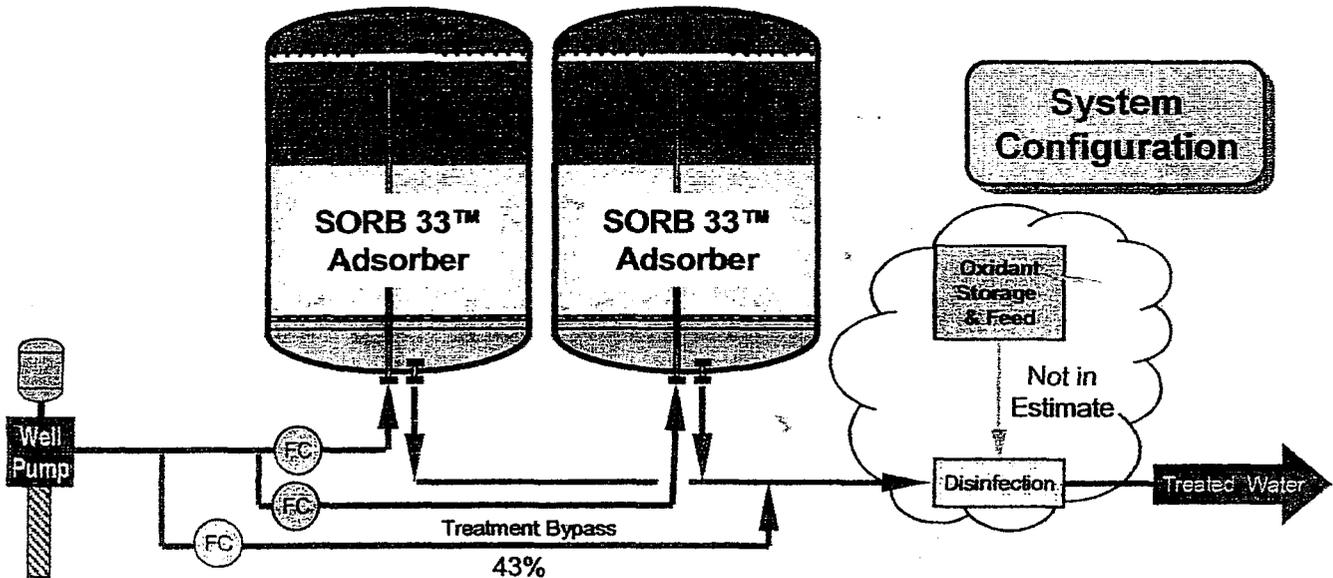
SORB 33™ As Removal System Sizing & Estimate

System Requirements

Client:	Las Quintas Serenas Water Co	Normal Operating Factor:	75%
Name of Site:	Well #5	Ambient pH:	7.20
Capacity:	0.29 MGD	Fe/Mn Removal:	No
		As Analysis:	9.0 µg/L
	200 GPM	pH Adjust Value:	No
Treatment:	114 GPM	Backwash Volume:	3,927 Gals
		Reagent:	No
		Max Capacity:	160 GPM
		Residuals Treat:	No

System Design

No. of Trains:	1	Media per Adsorber:	69 Ft ³
Model No.:	EAS-1205	Total Media Inventory:	69 Ft ³
Diameter:	5.0 Ft	Media Bed Depth:	3.5 Ft
Specific Velocity:	5.8 GPM/Ft ²	Flow Configuration:	Parallel ^w /Bypass
Fe/Mn Removal:	No Units	Working Capacity:	254,200 BV's
Total Footprint:	8 Ft x 6 Ft	Cycle Life:	34.8 Months



Estimated System Costs

Adsorbers & Media:	\$74,000	Media Replace & Disposal:	\$4,811
Auxiliary Equipment:	\$10,000	Other Treatment Costs:	\$0
Installation:	\$0		
Total Capital Costs:	\$84,000	Annual Operating Costs:	\$4,800

Unit Capital Costs: **\$0.292** per Gal/Day of Capacity

Unit Operating Costs: **\$0.061** per 1,000 Gals

Budgetary Estimate in Effect Through: **22-Jun-04**

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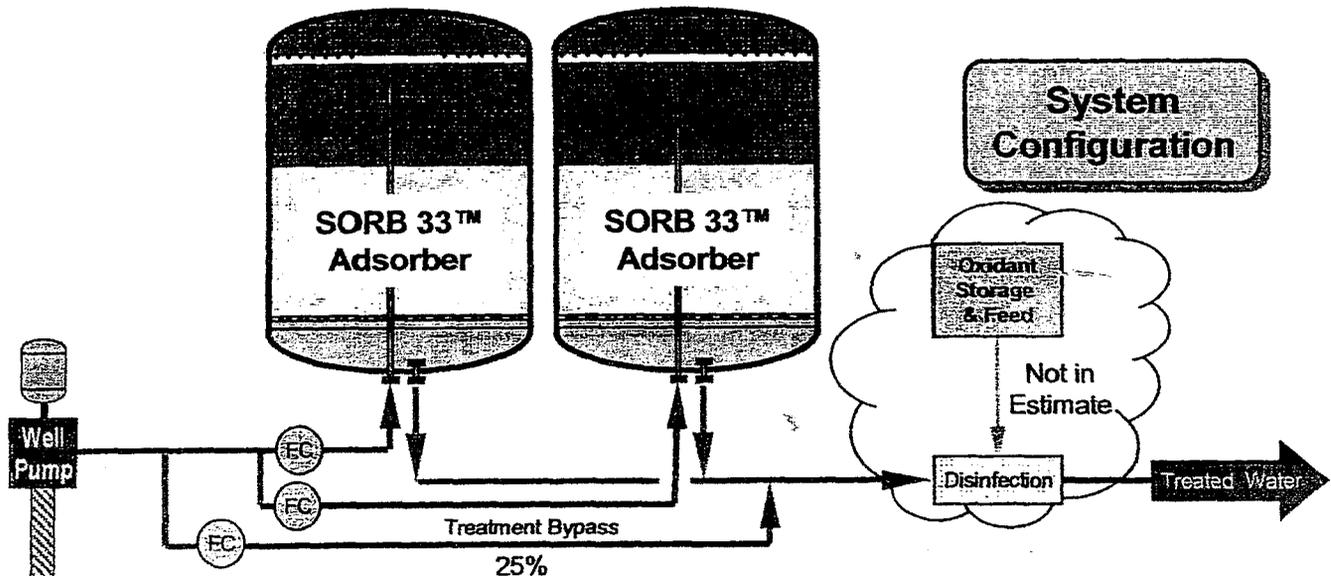
SORB 33™ As Removal System Sizing & Estimate

System Requirements

Client:	Las Quintas Serenas Water Co	Normal Operating Factor:	75%
Name of Site:	Well #6	Ambient pH:	7.30
Capacity:	0.58 MGD	Fe/Mn Removal:	No
	400 GPM	As Analysis:	14.0 µg/L
	300 GPM	pH Adjust/Value:	No
Treatment:	300 GPM	Backwash Volume:	5,655 Gals
		Reagent:	
		Max Capacity:	460 GPM
		Residuals Treat:	No

System Design

No. of Trains:	2	Media per Adsorber:	90 Ft ³
Model No.:	EAS-1606	Total Media Inventory:	180 Ft ³
Diameter:	6.0 Ft	Media Bed Depth:	3.2 Ft
Specific Velocity:	5.3 GPM/Ft ²	Flow Configuration:	Parallel ^w /Bypass
Fe/Mn Removal:	No Units	Working Capacity:	118,300 BV's
Total Footprint:	16 Ft x 8 Ft	Cycle Life:	16.2 Months



Estimated System Costs

Adsorbers & Media:	\$161,000	Media Replace & Disposal:	\$27,139
Auxiliary Equipment:	\$10,000	Other Treatment Costs:	\$0
Installation:	\$0		
Total Capital Costs:	\$171,000	Annual Operating Costs:	\$27,100

Unit Capital Costs: **\$0.297** per Gal/Day of Capacity
 Unit Operating Costs: **\$0.172** per 1,000 Gals

Budgetary Estimate in Effect Through: **22-Jun-04**

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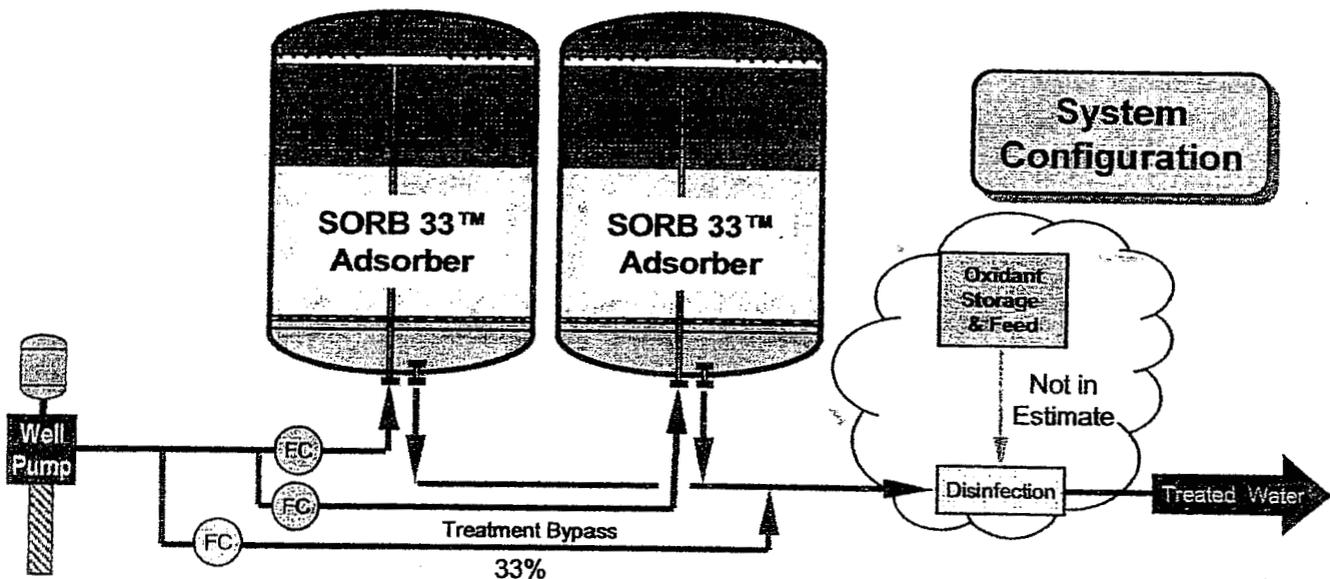
SORB 33™ As Removal System Sizing & Estimate

System Requirements

Client: Las Quintas Serenas Water Co		Normal Operating Factor:	75%
Name of Site:	Well #7	Ambient pH:	7.20
Capacity:	1.15 MGD	Fe/Mn Removal:	No
	800 GPM	As Analysis:	11.0 µg/L
Treatment:	533 GPM	pH Adjust/Value:	No
		Backwash Volume:	10,053 Gals
		Reagent:	
		Max Capacity:	810 GPM
		Residuals Treat:	No

System Design

No. of Trains:	2	Media per Adsorber:	160 Ft ³
Model No.:	EAS-3008	Total Media Inventory:	321 Ft ³
Diameter:	8.0 Ft	Media Bed Depth:	3.2 Ft
Specific Velocity:	5.3 GPM/Ft ²	Flow Configuration:	Parallel ^W /Bypass
Fe/Mn Removal:	No Units	Working Capacity:	171,900 BV's
Total Footprint:	20 Ft x 10 Ft	Cycle Life:	23.5 Months



Estimated System Costs

Adsorbers & Media:	\$219,000	Media Replace & Disposal:	\$33,203
Auxiliary Equipment:	\$10,000	Other Treatment Costs:	\$0
Installation:	\$0		
Total Capital Costs:	\$229,000	Annual Operating Costs:	\$33,200

Unit Capital Costs: **\$0.199** per Gal/Day of Capacity
 Unit Operating Costs: **\$0.105** per 1,000 Gals

Budgetary Estimate in Effect Through: **22-Jun-04**

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SORB 33™ As Removal System Scope of Supply

Adsorber Vessel

- Vertical Pressure Vessel(s), Carbon Steel, 5'0" Straight Side Height
- Code Stamped to ASME Section VIII, Division 1
- Interior Coated with NSF 61 Epoxy
- Bottom Distributor/Collector
 - 10'- Ø & Larger: Cone Bottom with Screen Nozzles
 - 8'- Ø & Smaller: Header/Lateral with Well Screen Pipes
- Media Fill: Gravity Fill & Hydraulic Empty
 - Options for Education Fill & Vacuum Empty
- Carbon Steel Piping, A53 Grade B

Process Valves

- Automatic Influent Flow Inlet Valves
- Manual Valve Tree for Isolation, Backwash & Media Fill/Drain

Instrumentation & Specialties

- Flow Meter & Totalizer for Each Adsorber
- Inlet & Effluent Pressure Gauges
- Differential Pressure Gauges for Each Adsorber

Optional Control System (as indicated in Requirements)

- Painted Steel NEMA 12 Control Panel with Grounding
- Fully Programmed PLC with Software Documentation
- Automated Valves for Isolation and Backwash

Optional Equipment (as indicated in Requirements)

- Acid pH Adjustment – pH PID Loop, Metering Pump, Inline Mixer & Storage
- CO₂ pH Adjustment – pH PID Loop, Mixing Unit & Storage Tank
- Fe/Mn Removal Unit – Pressure Vessel, Automatic Valves & Media
- Residuals Handling – Backwash Water Hold Tank & Drain or Reclaim Pump

Field Services

- System Installation & Media Fill Inspection
- Training, Start-up & O&M Manuals

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July

**PRELIMINARY EVALUATION AND
BUDGETARY OPINION OF PROBABLE COSTS FOR
DISSOLVED ARSENIC REDUCTION SYSTEMS FOR
LAS QUINTAS SERENAS WATER COMPANY'S THREE WELLS**

JULY 1, 2005

**PREPARED FOR:
MR. JOHN S. GAY
1241 W. CALLE DE LA PLAZA
SAHUARITA, ARIZONA 85629**

**PREPARED BY:
MILLER BROOKS ENVIRONMENTAL, INC.
202 EAST EARLL DRIVE, SUITE 470
PHOENIX, ARIZONA 85012**

MILLER BROOKS PROJECT #635-0001-01



TABLE OF CONTENTS

1.0	INTRODUCTION.....	1
1.1	PROJECT BACKGROUND	1
1.2	STRATEGY TO ACHIEVE COMPLIANCE.....	2
2.0	WATER SYSTEM SPECIFICATIONS	2
2.1	WATER WELLS AND ASSOCIATED INFRASTRUCTURE	2
3.0	ARSENIC REDUCTION TECHNOLOGY	4
3.1	ARSENIC REDUCTION TECHNOLOGY AND SYSTEM REQUIREMENTS	4
3.1.1	Technology Description	4
3.1.2	Design Criteria.....	5
3.1.3	Environmental Impacts.....	5
3.1.4	Land Requirements.....	5
3.1.5	Potential Construction Problems	5
3.1.6	Advantages/Disadvantages.....	5
3.1.7	Permitting	6
3.2	SYSTEM EQUIPMENT AND INSTALLATION REQUIREMENTS	6
3.2.1	Treatment Equipment Requirements	6
3.2.2	Site Work.....	7
3.2.3	Piping and Mechanical Work	7
3.2.4	Electrical and Controls	7
4.0	COST ESTIMATES.....	8
4.1	ENGINEER'S OPINION OF PROBABLE BUDGETARY COSTS.....	8
4.2	TREATMENT SYSTEM INSTALLATION COST BREAKDOWN	8
4.3	O&M COSTS	9
5.0	SUMMARY	9
6.0	LIMITATIONS	10
7.0	REFERENCES.....	11

FIGURES

Figure 1	Site Location Map
Figure 2	Water System Infrastructure
Figure 3	Process and Instrumentation Diagram
Figure 4	Piping Schematic for Well No. 5
Figure 5	Piping Schematic for Well No. 6
Figure 6	Piping Schematic for Well No. 7



TABLES

Table 1	Well Capacities and Arsenic Concentrations
Table 2	Piping and Equipment Descriptions
Table 3	Engineer's Opinion of Probable Costs
Table 4	Estimated Capital and O&M Cost Summaries

APPENDICES

Appendix A	Arsenic Removal System Sizing and Estimate Summaries
Appendix B	Equipment Information

1.0 INTRODUCTION

Miller Brooks Environmental, Inc. (Miller Brooks) of Phoenix, Arizona is pleased to submit this Preliminary Evaluation and Opinion of Probable Cost for Dissolved Arsenic Reduction Systems for Las Quintas Serenas Water Company's Three Wells. The wells are located within the Las Quintas Serenas subdivision in parts of Sections 22, 23, 26, and 27, Township 17 South, Range 13 East, Pima County, Arizona (Figure 1). This report was prepared at the request of Mr. John S. Gay, project representative and member of the Las Quintas Serenas Water Company (LQSWC) Board. The report provides an evaluation of the treatment requirements and costs for removal of dissolved arsenic detected in Las Quintas Serenas Water Company's three production wells, Well No. 5, Well No. 6, and Well No. 7 (Figure 2). This effort involves providing an engineering analysis and budgetary estimate for installing separate treatment systems at each well as an alternative to installation of a central treatment system for arsenic reduction. Miller Brooks understands that the LQSWC has contracted with another engineering firm for design of the central treatment system option.

1.1 **PROJECT BACKGROUND**

At the request of the LQSWC project representative, Hennesy Mechanical Sales (Hennesy) provided equipment proposals for individual arsenic treatment systems at each of the LQSWC three wells (Appendix A). The proposals were prepared by Severn Trent Services (STS), one of the major suppliers of arsenic adsorption treatment technology. Hennesy is the Arizona representative for STS. In order to develop a more detailed understanding of the additional requirements and probable costs for installation of the proposed individual arsenic treatment systems, the project representative solicited a referral from Hennesy for an engineering company that could perform the detailed evaluation and prepare cost estimates. Hennesy subsequently recommended Miller Brooks, and at the direction of the project representative, provided the STS proposals to Miller Brooks. Miller Brooks was later retained to prepare this report.

Beginning on January 23, 2006, the Federal criteria for allowable arsenic concentrations in drinking water will be reduced to 10 micrograms per liter ($\mu\text{g/L}$). Based on the water-quality information provided in the STS proposals (Appendix A), water supplied from the three wells contains between 9 $\mu\text{g/L}$ and 14 $\mu\text{g/L}$. Consequently, in order to be in compliance with this new standard, the LQSWC will be required to reduce the total influent Aarsenic concentration in the water system to achieve a concentration that is sufficiently below the 10 $\mu\text{g/L}$ limit. (Note that although the arsenic

concentration for Well No. 5 is less than 10 µg/L, treatment to ensure that arsenic concentration in this well remains below 10 µg/L has also been proposed for this well.)

The capacity of each well, the required treatment flowrate, and arsenic concentration in each of the three wells is as follows:

Table 1 – Well Capacities and Arsenic Concentrations

Source	Capacity		Required Treatment Flowrate (gpm)	Arsenic Concentration (µg/L)
	MGD ¹	GPM ²		
Well No. 5	0.29	200	114	9
Well No. 6	0.58	400	300	14
Well No. 7	1.15	800	533	11

¹ Million Gallons per Day (MGD)

² gallons per minute (GPM)

1.2 STRATEGY TO ACHIEVE COMPLIANCE

Miller Brooks believes that the most effective strategy to achieve compliance is to treat only as much as would be required to safely achieve the 10 µg/L limit. Therefore, it has been assumed that a portion of the water from each well will bypass the treatment equipment and will be blended downstream of the treatment system prior to entry into the distribution system. Blending and split-stream treatment are both accepted methods of achieving compliance (U.S. Environmental Protection Agency [EPA], 2003). In Table 1 above, the required treatment flow rate is given. This rate was calculated based on achieving a combined arsenic discharge concentration of 5 µg/L (one half of the 10 µg/L limit).

2.0 WATER SYSTEM SPECIFICATIONS

The LQSWC system consists of the following engineering specifications:

2.1 WATER WELLS AND ASSOCIATED INFRASTRUCTURE

The LQSWC water system consists of three existing and operating wells. Existing and proposed water system infrastructure is presented in Figure 2. The following provides available information compiled from the project representative, the Arizona Department of Environmental Quality (ADEQ), and the Arizona Department of Water Resources (ADWR) database:

- Well No. 5:
 - Public Water System #: 10064
 - POE #: 005
 - ADWR Registration #: 55-608531
 - Legal Cadastral Coordinates: SW ¼, SW ¼, NW ¼, Section 26, Township 17 South, Range 13 East, Pima County
 - Well Installation: 1972
 - Approximate Well Depth: 807 feet
 - Approximate Depth to Groundwater: 380.0 feet below ground surface (bgs) (2000)
 - Well Diameter: 10-3/4 inches to 535 feet and 8-1/2 inches to 805 feet
 - Casing Type: Welded Steel
 - Approximate Daily Production: 290,000 gallons per day (gpd)
 - Storage Tank: None
 - Maximum Pump Capacity: 250 gallons per minute (gpm)
 - Hydro-pneumatic Tanks: One 1,500-gallon tank
 - Booster Pumps: None

- Well No. 6:
 - Public Water System #: 10064
 - POE #: 006
 - ADWR Registration #: 55-608530
 - Legal Cadastral Coordinates: SE ¼, NE ¼, SW ¼, Section 26, Township 17 South, Range 13 East, Pima County
 - Well Installation: 1971
 - Approximate Well Depth: 837 feet
 - Approximate Depth to Groundwater: 320 feet bgs (2000)
 - Well Diameter: 12-3/4 inches
 - Casing Type: Welded Steel
 - Approximate Daily Production: 580,000 gpd
 - Storage Tank: None
 - Maximum Pump Capacity: 300 gpm
 - Hydro-pneumatic Tanks: One 700-gallon and one 1,500-gallon tank
 - Booster Pumps: None

- Well No. 7:
 - Public Water System #: 10064
 - POE #: 007
 - ADWR Registration #: 55-566940
 - Legal Cadastral Coordinates: SE ¼, SW ¼, SW ¼, Section 26, Township 17 South, Range 13 East, Pima County
 - Well Installation: 1998
 - Approximate Well Depth: 922 feet bgs
 - Approximate Depth to Groundwater: Not reported
 - Well Diameter: 12 inches
 - Casing Type: Steel
 - Approximate Daily Production: 1,150,000 gpd
 - Storage Tank: None
 - Maximum Pump Capacity: 750 gpm

- Hydro-pneumatic Tanks: One 2,000-gallon tank
- Booster Pumps: None

As illustrated in Figure 2, the LQSWC distribution system consists of the following infrastructure:

- Three production wells independently connected to the distribution network
- Reservoirs: Existing 30,000- and 60,000-gallon storage tanks
- Number of Connections: Unknown [Total Population: 4063 (ADEQ, 2005)]
- Total System Yield: 2.02 MGD
- Water Main Diameter: Existing 6-inch, 8-inch, 10-inch, and 12-inch transmission mains
- Fire Hydrants: None
- Pressure System: Varies across the distribution network due to elevation differences (Well No. 5: ~60 pounds per square inch gauge (psig); Well No. 6: ~100 psig; and Well No. 7, ~80 psig).

3.0 ARSENIC REDUCTION TECHNOLOGY

Based on the chemical and physical data provide by LQSWC, adsorption onto iron-based sorbents (IBS) was recommended by STS to address reduction of dissolved arsenic in drinking water generated at each of LQSWC's three wells. The following is a brief description of that technology.

3.1 *ARSENIC REDUCTION TECHNOLOGY AND SYSTEM REQUIREMENTS*

Arsenic reduction by IBS is one of the more practical arsenic treatment technologies. This technology is commonly referred to as adsorption using granular iron oxide or granular ferric hydroxide (GFH). Adsorption of arsenic onto granular iron oxide is an emerging method of removing dissolved arsenic from drinking water. Although new to the United States, the method has been successfully utilized for years in Germany. The technology appears to be simple and reliable and is rapidly becoming the favored technology for removal of dissolved arsenic from drinking water sources.

3.1.1 Technology Description

Untreated water extracted from the well is passed through a bed of iron-oxide pellets, facilitating the adsorption of dissolved arsenic onto the iron oxide. When the iron oxide becomes spent (unable to adsorb sufficient arsenic to meet water-quality goals), it is discarded, and replaced with fresh iron oxide. A typical piping and instrumentation diagram (P&ID) for the proposed arsenic treatment systems is presented as Figure 3. Equipment and piping descriptions for each of the three individual arsenic treatment systems is presented in Table 2.

3.1.2 Design Criteria

The IBS Arsenic adsorption equipment should have the following properties:

- Produce product water with concentrations of less than 10 µg/L Arsenic;
- Operate reliably; and
- Operate with minimum maintenance

3.1.3 Environmental Impacts

An IBS arsenic adsorption system would be installed near each of the three wells. The spent iron-oxide pellets can be disposed of as solid, non-hazardous waste in a landfill. No adverse environmental effects are expected. Backwashing the units will produce a small amount of solids, which can be captured in a bag filter and disposed of as solid waste (i.e., in the trash). Backwash water will be stored in a tank (one tank for each well/treatment system). Recovered backwash will be recycled back to the water supply (upstream of the treatment unit) over a several day period following each backwash event.

3.1.4 Land Requirements

An IBS arsenic adsorption system would require no new land. However, a small building or shade structure is recommended for equipment subject to damage from ultraviolet radiation. For this project, a shade structure is recommended for Well No. 5 only, as the vessels for this system may require protection from the sun. Concrete pads will also be required for each treatment system. System footprints and concrete pad sizes vary from 13 feet by 5 feet for Well No. 5, 16 feet by 6 feet for Well No. 6, to 20 feet by 10 feet for Well No. 7. Locations of the proposed treatment systems for Well No. 5, Well No. 6, and Well No. 7 are presented in Figure 2. The general arrangements for each of the treatment systems and auxiliary equipment are presented in Figures 4, 5, and 6, respectively.

3.1.5 Potential Construction Problems

Arsenic adsorption systems based on IBS use ductile iron, carbon steel, or PVC pipe and valves, and steel or fiberglass pressure vessels common to other types of media filtration, such as granular carbon or ion exchange resin. For this reason, the equipment is available off the shelf, and construction problems are minimal.

3.1.6 Advantages/Disadvantages

The advantages of using IBS arsenic adsorption systems are:

- The technology is simple and well understood
- Equipment is easy to operate
- Operations require no addition of chemicals
- There is no requirement to chlorinate the water
- There is only one point of maintenance
- Additional taps require no additions to treatment equipment
- Operating costs are moderate due to the relatively low arsenic concentration within these wells

The disadvantage of IBS Arsenic adsorption systems is:

- The technology is not recognized by the EPA as a "best available technology" (BAT) for removing arsenic from drinking water (EPA, 2003). The lack of recognition is because IBS' track record was not sufficiently established to be considered as BAT at the time the rule was promulgated. Despite the lack of recognition, the technology is currently being implemented throughout the United States, including Arizona.

3.1.7 Permitting

Each treatment system will require a permit to construct. The permit application process from the Pima County Department of Environmental Quality (PDEQ) requires submittal of an application and a design report, along with a completed set of construction plans. Equipment is typically ordered in advance of the application for the permit to construct. Permits to construct generally require approximately eight weeks for approval. During this period, PDEQ will conduct a review of the drinking water treatment system design. Required changes must be incorporated into the engineering plans prior to obtaining the permits to construct and issuing the construction documents.

3.2 SYSTEM EQUIPMENT AND INSTALLATION REQUIREMENTS

In addition to the treatment technology, there are also related ancillary efforts for site work and installation of on-site plumbing and electrical work.

3.2.1 Treatment Equipment Requirements

Recommended equipment for each system is presented in Figure 3 and Table 2. In addition to the treatment equipment (Appendix A), each system includes a backwash recovery system. The backwash recovery system includes a tank, bag filter, and backwash recycle pump. Each treatment system will periodically require backwashing (approximately every 30 days). Vessels from the treatment system will be backwashed one at a time (there are two vessels per treatment system). Backwash water will pass through the bag filter(s), where solids (a small amount of fine particulates and spent media) will be captured from the backwash. Each tank will be sized to contain the amount of water from one

backwash event. Following backwash of each vessel, filtered backwash will be slowly pumped back into the supply upstream of the treatment system. Information summaries of backwash recovery equipment are provided in Appendix B.

3.2.2 Site Work

Each system will require a concrete pad for the treatment system equipment. An enclosure, or canopy, is recommended for the treatment equipment for Well No. 5 to provide protection from the sun. No enclosures or provisions for shade or protection from the sun have been included for either of the other two treatment systems for Wells No. 6 and 7. The recommended sizes for each concrete pad are presented in Table 3 and shown on Figures 4 through 6.

3.2.3 Piping and Mechanical Work

Piping for each system is shown in Figure 3, the P&ID, and Figures 4 through 6, the piping schematics for each system. The P&ID presents the functional requirements and major equipment, controls, and valves for the proposed treatment system. Piping and equipment descriptions are presented in Table 2. Each system will include inlet, outlet, treatment bypass, backwash drain, and backwash recycle piping. A flow meter is recommended in the treatment bypass to provide a means to monitor flow rate and total amount of flow through the treatment bypass. (Each treatment system also includes a flow meter for measurement of the flow rate and total amount of flow through each treatment system.) Figures 4 through 6 also present the proposed general arrangement and locations of the treatment and backwash recovery equipment for each treatment system. Interconnecting piping is shown in a single-line format to generally show the major piping runs between equipment. Note that the purpose of the piping schematics is to provide a means of estimating piping lengths, but not for a detailed material takeoff or for construction.

3.2.4 Electrical and Controls

Based on information provided to Miller Brooks, it is assumed that adequate single-phase power is available at each well site. Each system will require a 120-volt circuit for the systems control panel. Interconnecting wiring is also required between the control panel and the level indicator and switches in each backwash recovery tank, as well as to each backwash recycle pump and to the bypass flow meter. All of the controls will be interfaced with the control panel. Power supply to the recycle pump will be supplied from the control panel.

4.0 COST ESTIMATES

Based on the equipment descriptions presented in Section 3.0, Miller Brooks has prepared costs estimates for the individual arsenic treatment systems proposed for each well. A summary and breakdown of the costs for each treatment system are presented in Table 3. It should be noted that we have also provided estimated operation and maintenance (O&M) costs associated with each of the arsenic reduction systems, along with the estimated capital and installed costs in Table 4.

4.1 *ENGINEER'S OPINION OF PROBABLE BUDGETARY COSTS*

Total installed system costs for each of the three proposed arsenic treatment systems are presented in Table 3, page 1. Installed system costs include the cost for procurement and installation of the arsenic treatment system equipment (including site work, piping, and electrical). Installed system costs also include design, permitting, construction inspections, and preparation of as-builts (or redlines). A ten percent contingency is also included to cover costs that were not anticipated during project estimates for changes in field conditions, or for changes in pricing for equipment and materials which may occur between the time the quotes are obtained and when the estimates are prepared. Arsenic treatment system costs are based on the equipment estimates provided by Hennesy and STS (Appendix A). Estimated costs for backwashing equipment were provided by other vendors. Note that costs for design, permitting, construction inspections and redlines are typically approximately 12 to 15 percent of the total installation costs. Based on the above, the Engineer's Opinion of Total Probable Cost for the three arsenic treatment systems is estimated to be approximately \$872,400. Note that this cost is most likely less than what it would cost for construction using a general contractor (see discussion in Section 4.2 below). However, Miller Brooks believes that this cost presentation is reasonable given the simplified approach requested by the project representative.

4.2 *TREATMENT SYSTEM INSTALLATION COST BREAKDOWN*

A breakdown of the equipment, site work, piping, and electrical costs is also presented in Table 3, page 1. The total estimated cost for equipment installation for all three systems would be approximately \$712,000. Summaries of these costs are detailed on Table 3, pages 2 through 4. Unit costs are based on R.S. Means (2003a and 2003b). Note that a major assumption in this cost estimate was that all of the work would be either self-performed or subcontracted to local contractors. It was also assumed that all equipment and materials would be purchased directly from the suppliers. As such, the cost for equipment does not include any contractor markups for overhead and profit, local conditions, or escalated costs as would typically be included for projects performed by a general

contractor. A 25 percent markup was used for materials and labor for site work (i.e., concrete), piping, and electrical to allow for subcontractor markups. Note that any work performed by LQSWC may not be subject to the 25 percent markup. Excluding this 25 percent, subcontractor markup would reduce the overall project costs to \$851,600 (a reduction of approximately \$21,400).

4.3 O&M COSTS

The estimated O&M costs for each system are based on the estimates provided by Hennesy and STS (Appendix A). For IBS arsenic adsorption systems, the majority of these costs are for annual replacement of media (i.e., the IBS). Including a nominal allocation for labor, the total O&M cost would be \$47,800, or approximately \$0.024 per 1000 gallons treated. No costs have been included for chemicals which may be required for disinfection (i.e., hypochlorite) or pH control.

5.0 SUMMARY

Benefits of the individual treatment approach include diversity of supply, flexibility for emergency repairs or scheduled maintenance and an economical approach for drinking water treatment. Disadvantages include the requirement to obtain permits, monitor, and maintain three separate treatment systems. However, the major advantage of individual systems versus a central arsenic reduction system would most likely reduce costs associated with minimal infrastructure upgrades.

In the event the LQSWC elects to implement arsenic reduction systems at each well, Miller Brooks recommends IBS arsenic adsorption systems manufactured by STS. This recommendation is based on overall project costs, taking into account the capital costs, as well as long-term O&M costs. Also note that this work was based on a limited amount of information provided by the project representative and Hennesy. Although this information was sufficient for preparing this report, additional site information (site plan, mechanical, and electrical drawings, well pump information, equipment information, operational data) for each well would be necessary for preparing a detailed design for individual treatment systems at each well. Should LQSWC wish to pursue treatment at each well, rather than in a central treatment facility, Miller Brooks would be pleased to meet with LQSWC's Board to provide additional details regarding the findings of this report and to discuss the individual treatment option.

6.0 LIMITATIONS

This Preliminary Evaluation and Budgetary Opinion of Probable Cost for Las Quintas Serenas Water Company's Three Wells has been prepared by Miller Brooks Environmental, Inc. (Miller Brooks) for the sole use of the project representative, Mr. John S. Gay. Our professional services have been performed using that degree of care and skill ordinarily exercised under similar circumstances by other engineers practicing in this field. No other warranty, expressed or implied, is made as to the professional findings or advice in this report. Any use of or reliance on this report by a third party shall be at that party's sole risk.

Miller Brooks can offer no assurances and assumes no responsibility for site conditions or activities outside the scope of the inquiry as outlined in this document. All parties should understand that Miller Brooks has relied on the accuracy of documents, oral information, and other materials, services, and information provided by the project representative and other parties. Miller Brooks must provide any subsequent modification, revision, or verification of this report in writing.

Miller Brooks appreciates the opportunity to provide these consulting services. Should there be any questions regarding information presented in this report or if further documentation is desired, please contact us at 602-728-0577.

PREPARED BY:

Miller Brooks Environmental, Inc.



Raymond S. Craft, P.E.
Arizona Registered Professional Engineer No. 19384



7.0 REFERENCES

Arizona Department of Environmental Quality, 2005, *Safe Drinking Water Monitoring Assistance Program (MAP), MAP Schedule for Pima County*.

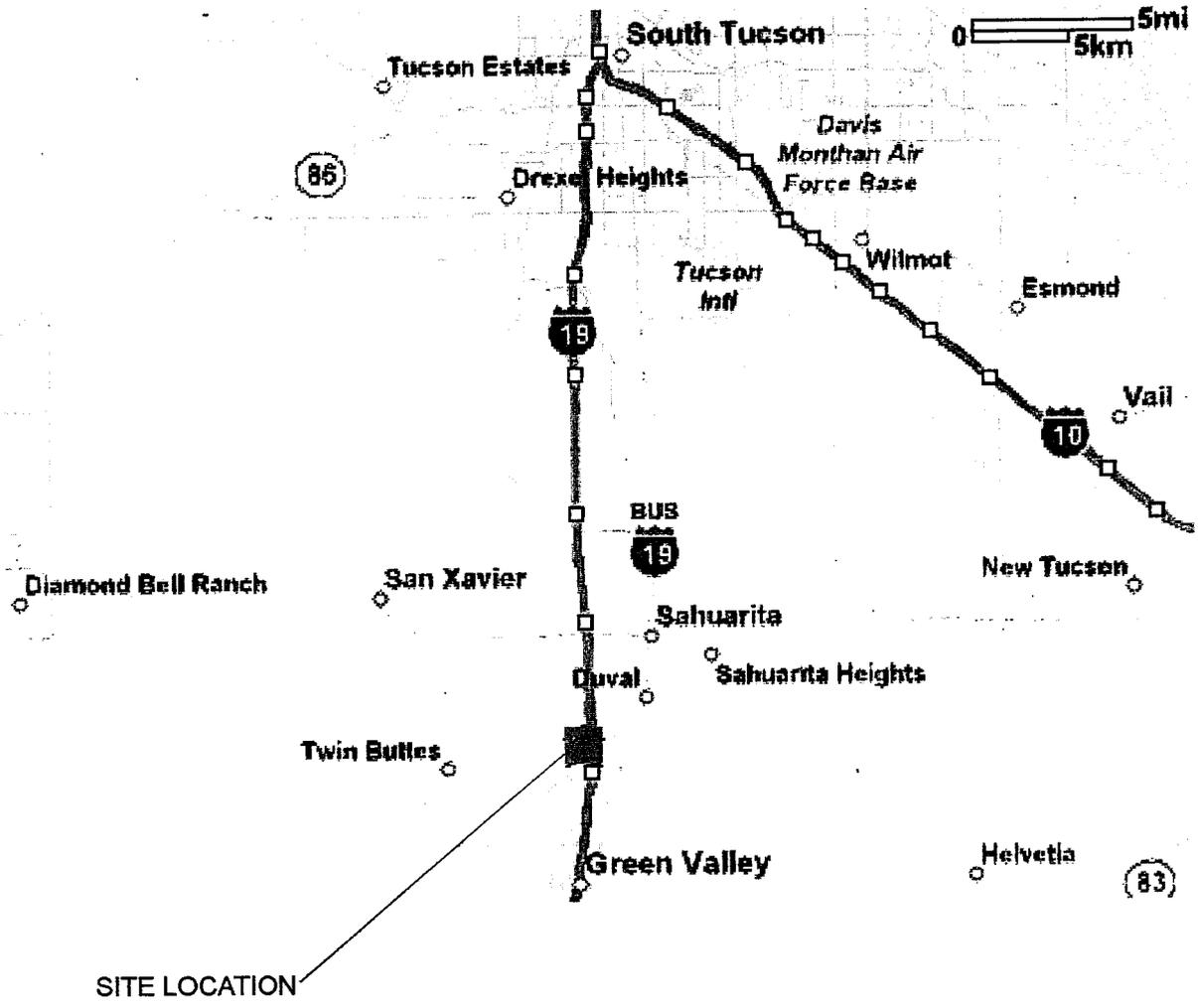
R. S. Means, 2003a, *Environmental Remediation Cost Data – Assemblies*; R. S. Means Company, Kingston, Massachusetts.

_____, 2003b, *Environmental Remediation Cost Data - Unit Price*; R. S. Means Company, Kingston, Massachusetts.

U. S. Environmental Protection Agency, July 2003, *Arsenic Treatment Technology Evaluation Handbook for Small Systems*, Table ES-1, page iv.

_____, July 2003, *Arsenic Treatment Technology Evaluation Handbook for Small Systems*, 13p.

FIGURES



© 2005 MapQuest.com, Inc



Approximate Scale:
1 inch = 10km

Note: All boundaries and locations approximate.



LAS QUINTAS SERENAS
WATER COMPANY'S THREE WELLS
SAHUARITA, ARIZONA 85629

SITE LOCATION MAP

FIGURE

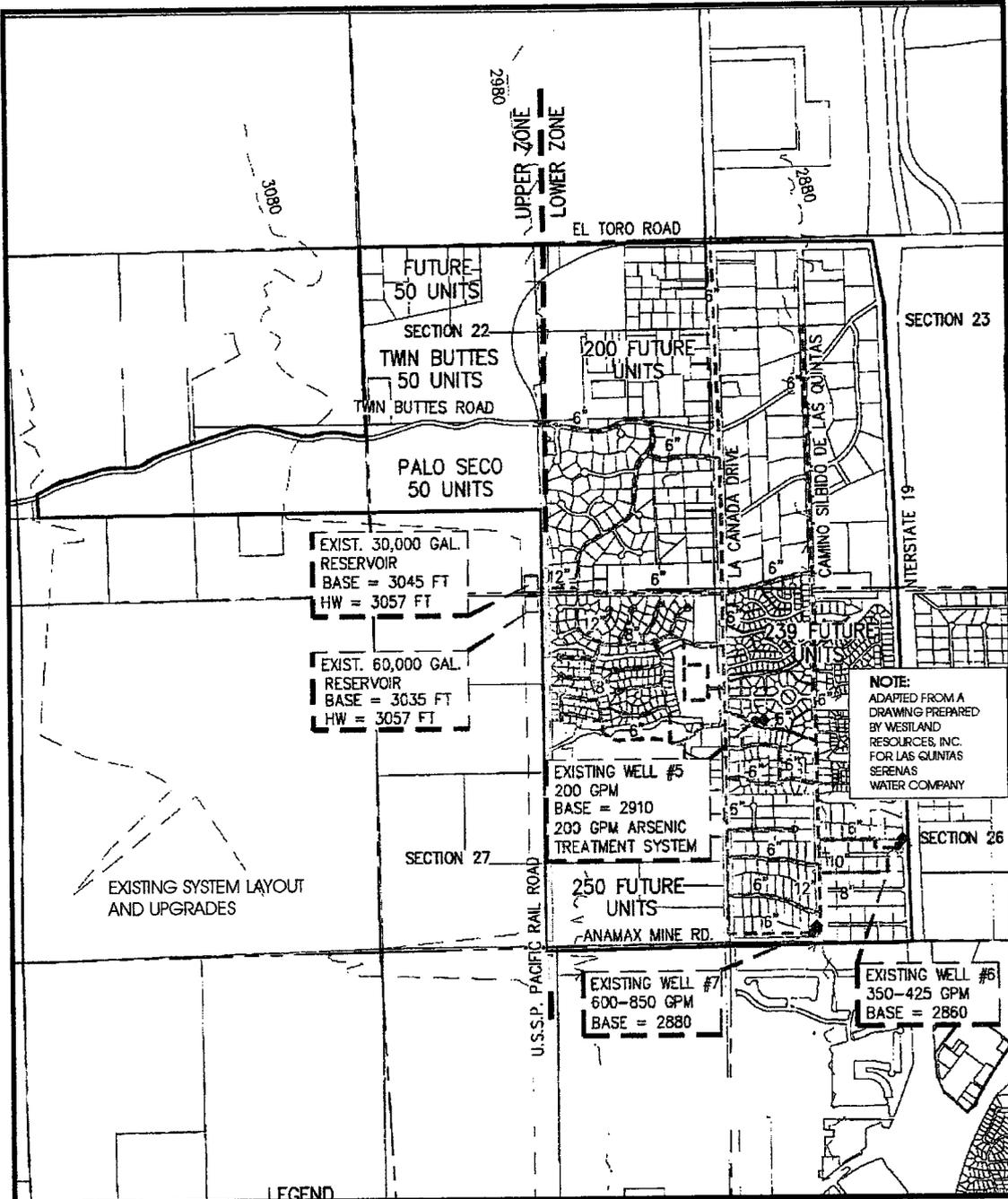
PROJECT:#
635-0001-01

FILE#:
0001map1

DATE DRAWN:
06/27/05

DRAWN BY:
J. HIGH

1

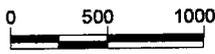


NOTE:
 ADAPTED FROM A
 DRAWING PREPARED
 BY WESTLAND
 RESOURCES, INC.
 FOR LAS QUINTAS
 SERENAS
 WATER COMPANY

EXISTING SYSTEM LAYOUT
 AND UPGRADES

LEGEND

- EXISTING 6 INCH TRANSMISSION MAIN
- EXISTING 8 INCH TRANSMISSION MAIN
- EXISTING 10 INCH TRANSMISSION MAIN
- EXISTING 12 INCH TRANSMISSION MAIN
- C C & N BOUNDARY
- ZONE BOUNDARY
- WELL
- ◆ ARSENIC TREATMENT SYSTEM
- RESERVOIR



Approximate Scale:
 1 inch = 1000 miles

Note: All boundaries and locations approximate.

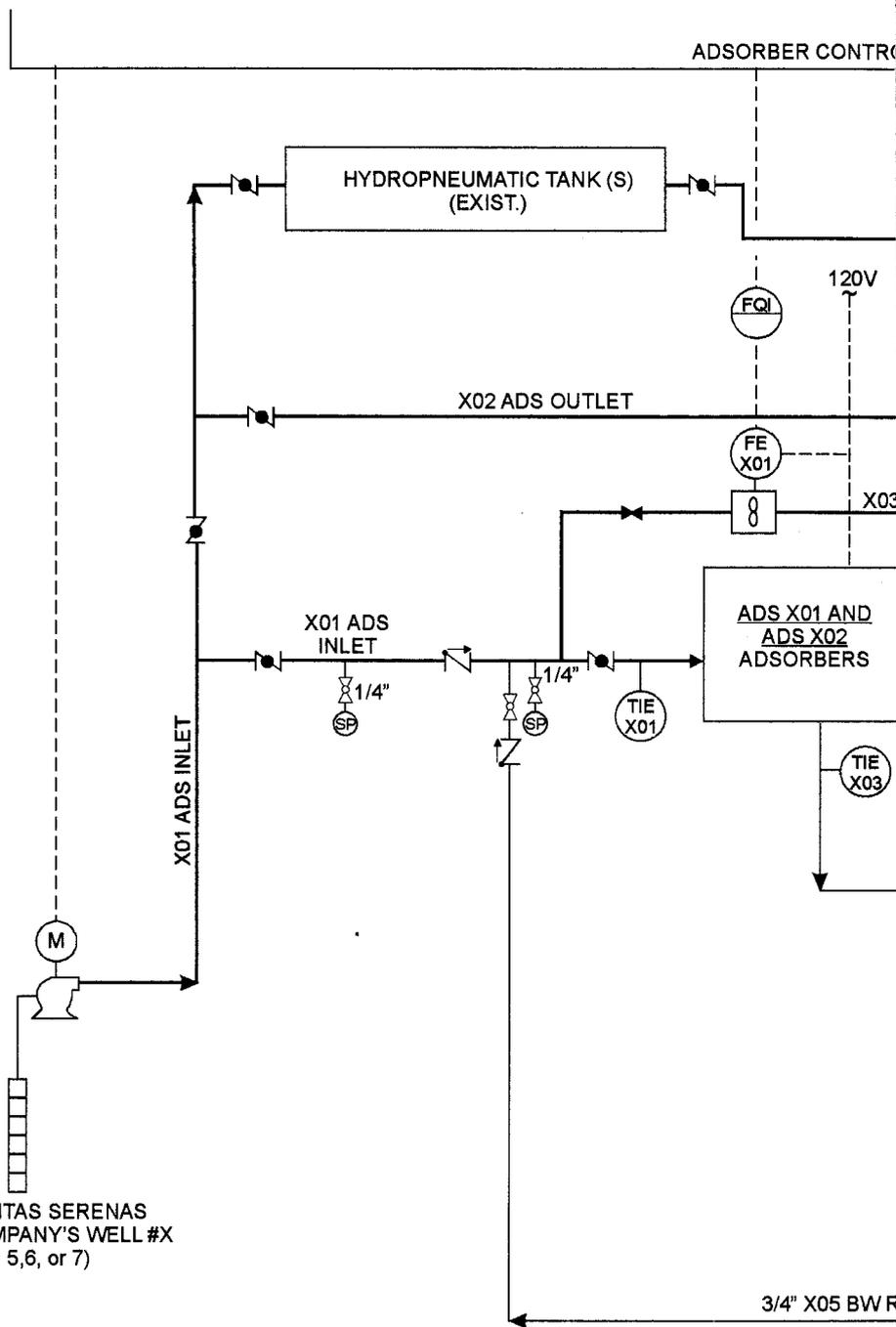


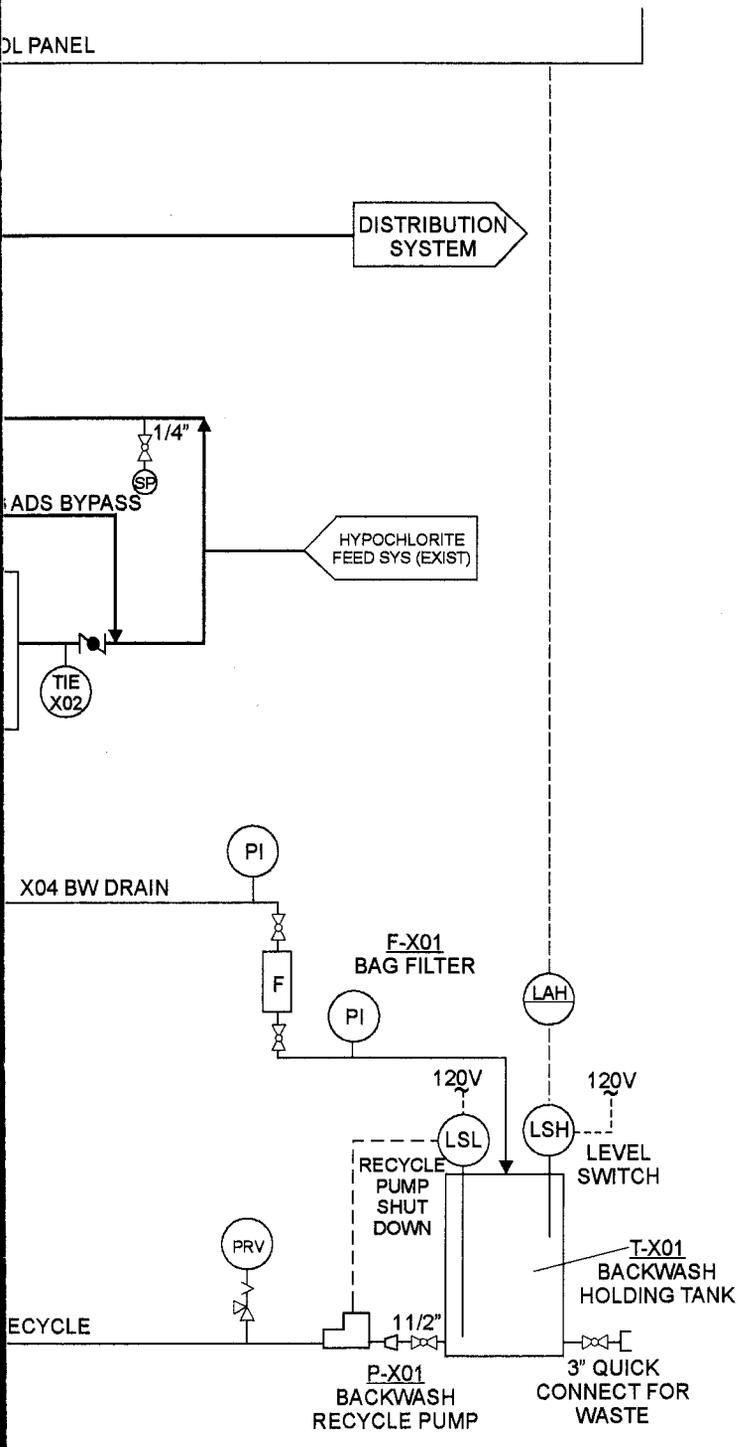
LAS QUINTAS SERENAS
 WATER COMPANY'S THREE WELLS
 SAHUARITA, ARIZONA 85629

WATER SYSTEM INFRASTRUCTURE			FIGURE
PROJECT:# 635-0001-01	FILE#: 0001sp002	DATE DRAWN: 06/27/05	2
			DRAWN BY: J. HIGH

LEGEND	
(TIE)	Service Connection
(PRV)	Pressure Relief Valve
(Z)	Check Valve
(BV)	Butterfly Valve
(BV)	Ball Valve
(GV)	Globe Valve
(FE)	Flow Element
(F)	Filter
(→)	Flow Direction
(P)	Pump
(PR)	Piping Reducer
(MP)	Metering Pump
(SP)	Sample Port
(FTI)	Flow Totalizing Indicator
(SH)	Level SW High
(SL)	Level SW Low
(PI)	Pressure Indicator
(FE)	Flow Element
(PRV)	Pressure Relief Valve
- - -	Electric Power or Control Line

LAS QUINTAS SERENAS
WATER COMPANY'S WELL #X
(X = 5,6, or 7)



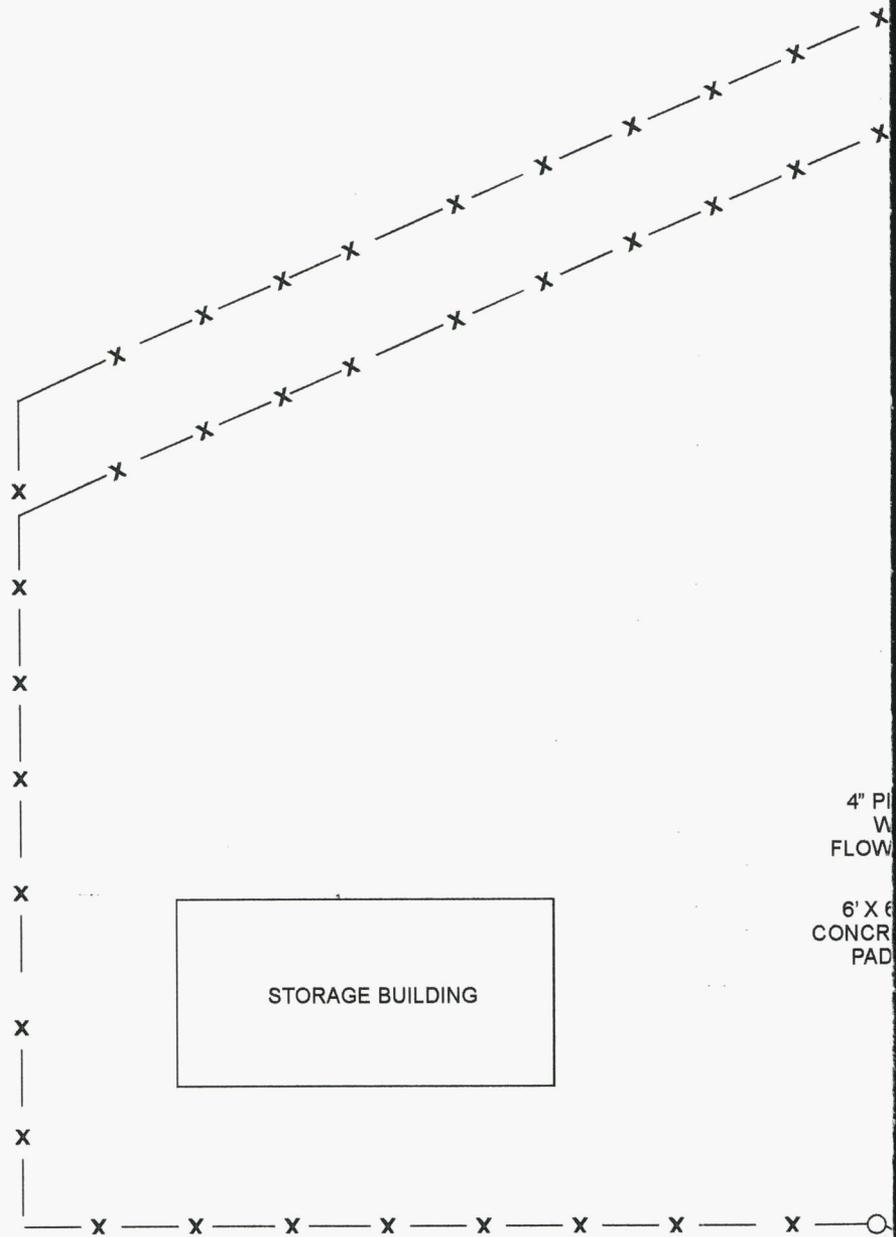


NOTES:

1. THE BASIC CONFIGURATION SHOWN IS TYPICAL FOR THE TREATMENT SYSTEM FOR EACH WELL.
2. SEE TABLE 1 FOR PIPING AND EQUIPMENT DESCRIPTIONS (SIZES, MATERIALS OF CONSTRUCTION, ETC.)



		LAS QUINTAS SERENAS WATER COMPANY'S THREE WELLS SAHUARITA, ARIZONA 85629	
PROPOSED ARSENIC REDUCTION SYSTEM PROCESS AND INSTRUMENT DIAGRAM			FIGURE 3
PROJECT:# 636-0001-01	FILE:# 0001sch001	DATE DRAWN: 06/21/05	DRAWN BY: J. HIGH



4" PI
W
FLOW

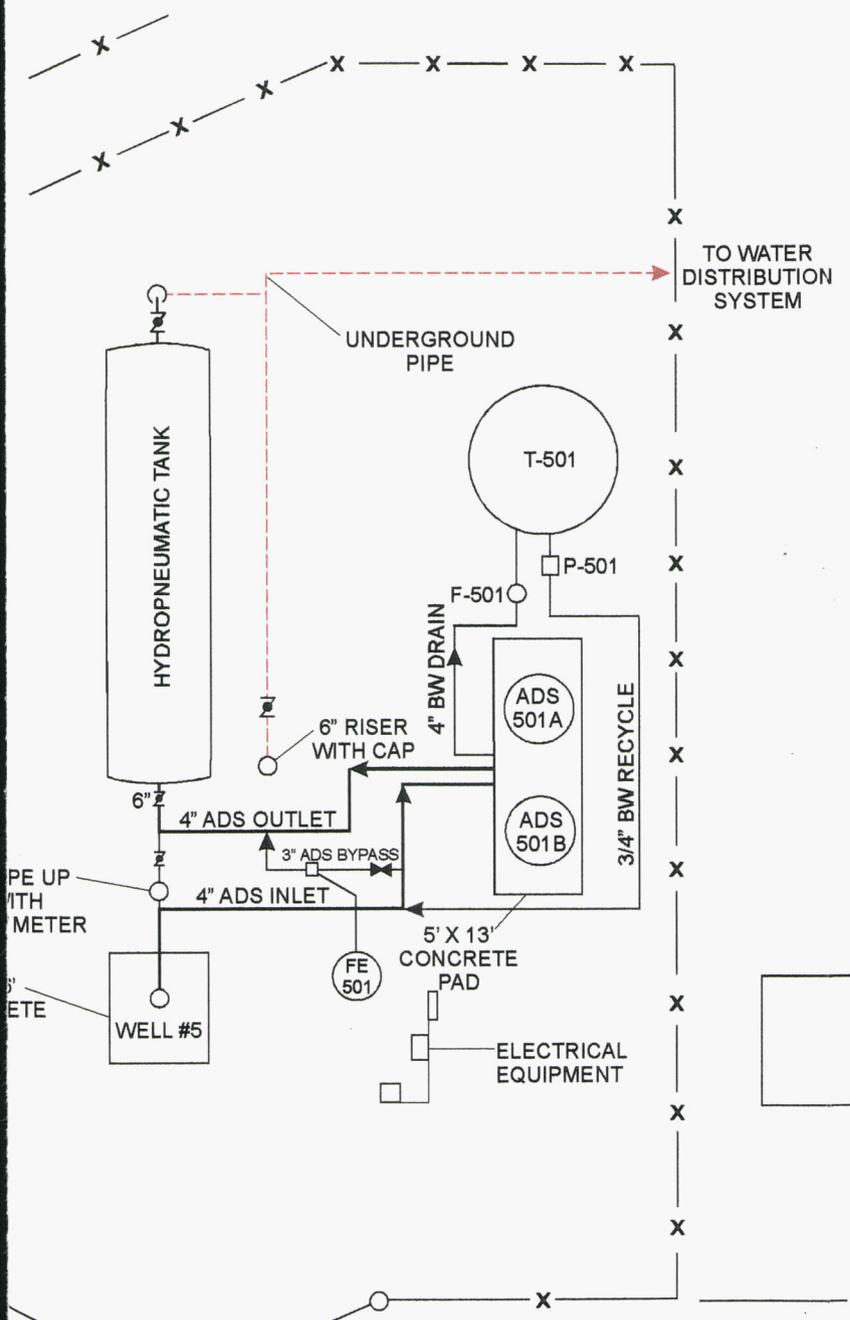
6' X 6'
CONCR
PAD

STORAGE BUILDING

0 5 10

Approximate Scale:
1 inch = 10 feet

Note: All boundaries and locations approx

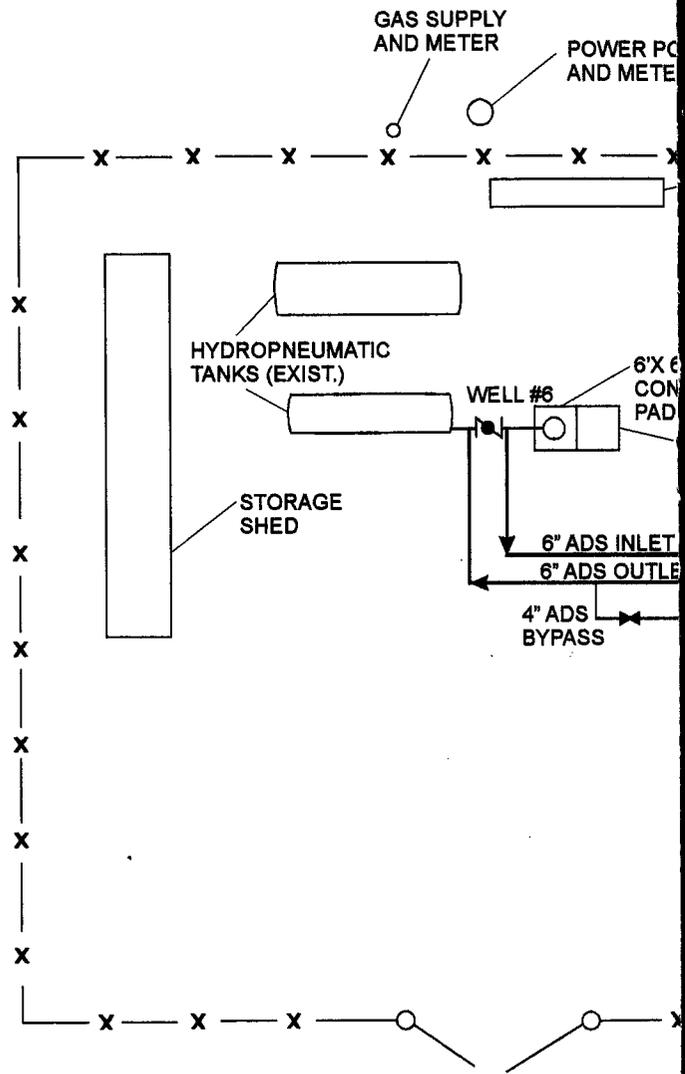


GENERAL NOTES:

1. PIPING ROUTING AND EQUIPMENT LOCATIONS ARE APPROXIMATE.
2. SEE PROCESS AND INSTRUMENTATION DIAGRAM (FIGURE 3) AND PIPING AND EQUIPMENT DESCRIPTIONS (TABLE 1) FOR DETAILS.
3. FOR INFORMATION PURPOSES ONLY - NOT FOR CONSTRUCTION.



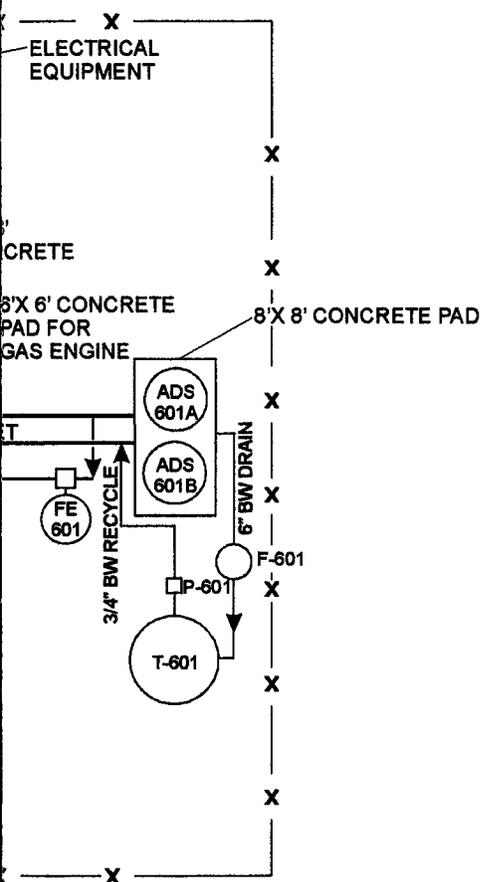
		LAS QUINTAS SERENAS WATER COMPANY'S THREE WELLS SAHUARITA, ARIZONA 85629	
PROPOSED ARSENIC REDUCTION SYSTEM WELL NO. 5 PIPING SCHEMATIC			FIGURE 4
PROJECT:# 635-0001-01	FILE:# 0001well001	DATE DRAWN: 06/21/05	DRAWN BY: J. HIGH



Approximate Scale:
1 inch = 20 feet

Note: All boundaries and locations approx

OLE
R



GENERAL NOTES:

1. PIPING ROUTING AND EQUIPMENT LOCATIONS ARE APPROXIMATE.
2. SEE PROCESS AND INSTRUMENTATION DIAGRAM (FIGURE 3) AND PIPING AND EQUIPMENT DESCRIPTIONS (TABLE 1) FOR DETAILS.
3. VALVES AT WELL #6 AND HYDROPNEUMATIC TANK AND WATER DISTRIBUTION PIPING NOT SHOWN.
4. FOR INFORMATIONAL PURPOSES ONLY - NOT FOR CONSTRUCTION.



LAS QUINTAS SERENAS
WATER COMPANY'S THREE WELLS
SAHUARITA, ARIZONA 85629

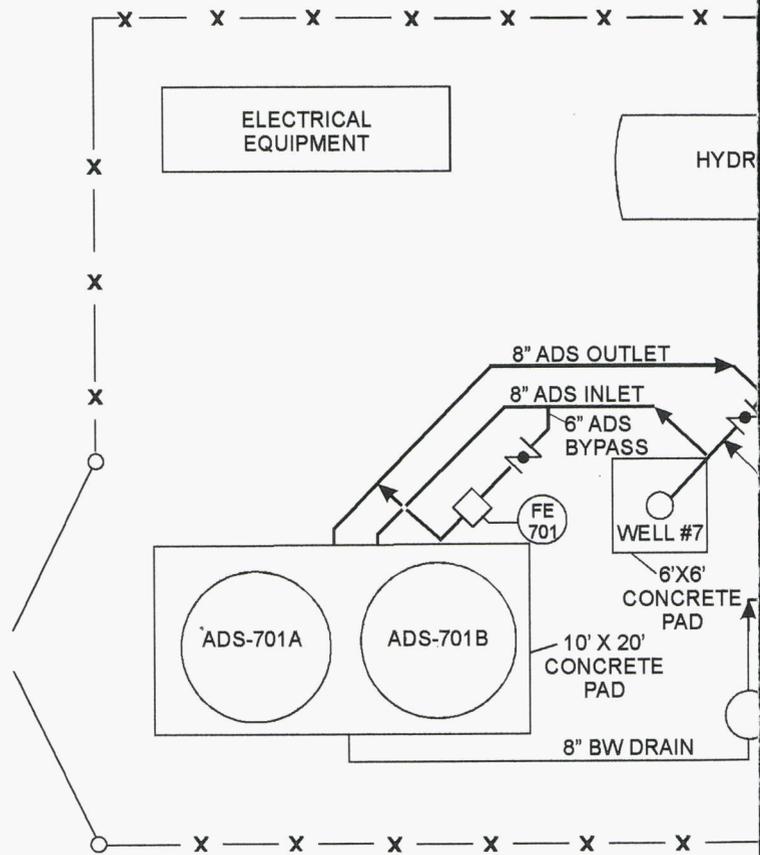
**PROPOSED ARSENIC REDUCTION SYSTEM
WELL NO. 6 PIPING SCHEMATIC**

FIGURE

PROJECT:# 635-0001-01	FILE:# 0001well002	DATE DRAWN: 06/21/05	DRAWN BY: J. HIGH
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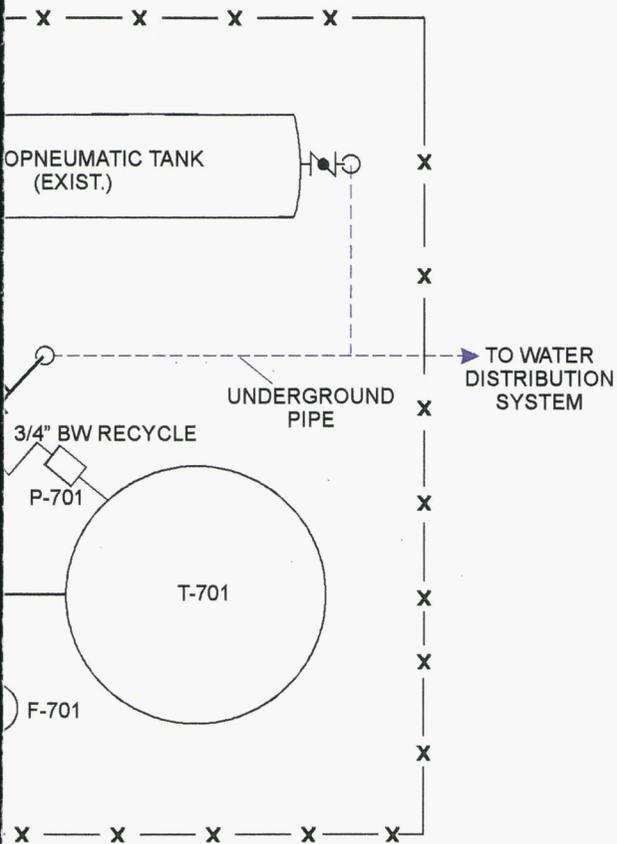
5

imate.



Approximate Scale:
1 inch = 20 feet

Note: All boundaries and locations approx



GENERAL NOTES:

1. PIPING ROUTING AND EQUIPMENT LOCATIONS ARE APPROXIMATE.
2. SEE PROCESS AND INSTRUMENTATION DIAGRAM (FIGURE 3) AND PIPING AND EQUIPMENT DESCRIPTIONS (TABLE 1) FOR DETAILS.
3. FOR INFORMATIONAL PURPOSES ONLY - NOT FOR CONSTRUCTION.



LAS QUINTAS SERENAS
 WATER COMPANY'S THREE WELLS
 SAHUARITA, ARIZONA 85629

**PROPOSED ARSENIC REDUCTION SYSTEM
 WELL NO. 7 PIPING SCHEMATIC**

FIGURE

PROJECT:# 635-0001-01	FILE:# 0001well003	DATE DRAWN: 06/21/05	DRAWN BY: J. HIGH
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6

TABLES

TABLE 2
 Las Quintas Serenas Water Company's Three Wells
 Arsenic Reduction System
 Piping and Equipment Descriptions

PIPING			
WELL NO. 5			
LINE NO.	DESCRIPTION	CONNECTION TYPE (at APU)	SIZE AND MATERIAL
501	ADSORBER INLET	ANSI 150# FLANGE	4" DUCTILE IRON
502	ADSORBER OUTLET	ANSI 150# FLANGE	4" DUCTILE IRON
503	BACKWASH DRAIN	ANSI 150# FLANGE	4" PVC, SCH. 80
504	TREATMENT BYPASS	N/A	3" DUCTILE IRON
505	BACKWASH RECYCLE	1-1/2" NPT (at tank)	3/4" PVC, SCH. 80
WELL NO. 6			
LINE NO.	DESCRIPTION	CONNECTION TYPE (at APU)	SIZE AND MATERIAL
601	ADSORBER INLET	ANSI 150# FLANGE	6" DUCTILE IRON
602	ADSORBER OUTLET	ANSI 150# FLANGE	6" DUCTILE IRON
603	BACKWASH DRAIN	ANSI 150# FLANGE	6" PVC, SCH. 80
604	TREATMENT BYPASS	N/A	4" DUCTILE IRON
605	BACKWASH RECYCLE	1-1/2" NPT (at tank)	3/4" PVC, SCH. 80
WELL NO. 7			
LINE NO.	DESCRIPTION	CONNECTION TYPE (at APU)	SIZE AND MATERIAL
701	ADSORBER INLET	ANSI 150# FLANGE	8" DUCTILE IRON
702	ADSORBER OUTLET	ANSI 150# FLANGE	8" DUCTILE IRON
703	BACKWASH DRAIN	ANSI 150# FLANGE	8" PVC, SCH. 80
704	TREATMENT BYPASS	N/A	6" DUCTILE IRON
705	BACKWASH RECYCLE	1-1/2" NPT (at tank)	3/4" PVC, SCH. 80
EQUIPMENT			
WELL NO. 5			
EQUIPMENT NO.	DESCRIPTION	MANUF. & MODEL NO.	SIZE AND MATERIAL
ADS-501A & ADS-501B	ADSORBERS	AdEdge Technologies, APU-160	2 Vessels, 4 ft diameter, FRP
F-501	BAG FILTERS	FSI, FSPN-85	2" Inlet/Outlet, 316SS
P-501	BACKWASH RECYCLE PUMP	Prominent Pumps, Sigma 1	38 gph @ 58 psig
T-501	BACKWASH TANK	PolyProcessing Co., #1104050	4,050 gal., HDXLPE ¹
WELL NO. 6			
EQUIPMENT NO.	DESCRIPTION	MANUF. & MODEL NO.	SIZE AND MATERIAL
ADS-601A & ADS-601B	ADSORBERS	Severn Trent, EAS-1606	2 Vessels, 6 ft diameter, Steel
F-601	BAG FILTERS	FSI, FSPN-355	4" Inlet/Outlet, 316SS
P-601	BACKWASH RECYCLE PUMP	Prominent Pumps, Sigma/2	111 gph @ 58 psig
T-601	BACKWASH TANK	PolyProcessing Co., #1108050	8,050 gal., HDXLPE ¹
WELL NO. 7			
EQUIPMENT NO.	DESCRIPTION	MANUF. & MODEL NO.	SIZE AND MATERIAL
ADS-701A & ADS-701B	ADSORBERS	Severn Trent, EAS-3008	2 Vessels, 8 ft diameter, Steel
F-701	BAG FILTERS	FSI, FSPN-1100	6" Inlet/Outlet, 316SS
P-701	BACKWASH RECYCLE PUMP	Prominent Pumps, Sigma/3	264 gph @ 58 psig
T-701	BACKWASH TANK	PolyProcessing Co., #11014950	14,950 gal., HDXLPE ¹

Notes: ¹ - High Density Cross Linked Polyethylene

TABLE 3
 Las Quintas Serenas' Three Wells
 Arsenic Removal System
 Engineer's Opinion of Probable Cost

	<u>Well No. 5</u>	<u>Well No. 6</u>	<u>Well No. 7</u>	<u>Totals</u>
Arsenic Treatment System	\$ 149,074.97	\$ 246,692.37	\$ 316,233.09	\$ 712,000.42
Design	\$ 11,926.00	\$ 17,268.47	\$ 18,973.99	\$ 48,168.45
0	\$ 5,963.00	\$ 8,634.23	\$ 9,486.99	\$ 24,084.22
Construction Inspections and Redlines	\$ 4,472.25	\$ 6,167.31	\$ 6,324.66	\$ 16,964.22
Contingencies	\$ 14,907.00	\$ 24,669.00	\$ 31,623.00	\$ 71,199.00
Total	\$ 186,343.21	\$ 303,431.38	\$ 382,641.73	\$ 872,416.31
Equipment	\$ 121,543.73	\$ 218,984.58	\$ 284,522.98	\$ 625,051.29
Concrete/Site Work/Building	\$ 5,963.80	\$ 3,656.56	\$ 4,835.50	\$ 14,455.86
Piping	\$ 12,887.44	\$ 15,371.23	\$ 18,194.61	\$ 46,453.27
Electrical	\$ 8,680.00	\$ 8,680.00	\$ 8,680.00	\$ 26,040.00
Arsenic Treatment System Cost Breakdown:	\$ 149,074.97	\$ 246,692.37	\$ 316,233.09	\$ 712,000.42

TABLE 3
Las Quintas Arenas' Three Wells
Arsenic Removal System
Engineer's Opinion of Probable Cost

Well No. 5
We 11 No 5

Item	Unit Price				Unit Cost (w/o m.u.)	mu (GC, OH & P)	Unit Cost	Labor	Total Costs		Total
	Quantity	Unit	Labor	Equip.					Material	Equipment	
Arsenic Treatment System											
Site Work											
Concrete pad for equipment (8' x 15' by 1' thick)	120	SF	5.54	0.86	16.84	1.25	21.05	831.60	129.15	1,565.55	2,526.30
Equipment Shade Cover	1	EA	750.00		2,250.00	1.25	2,812.50	971.50	-	1,875.00	2,812.50
Painting (piping and structural steel only)	1	Job			500.00	1.25	625.00	-	-	625.00	625.00
Equipment											5,963.80
Arsenic Treatment System (without backwash recycle)											
Arsenic Treatment System Installation	1	EA			97,500.00	1.00	97,500.00	-	-	97,500.00	97,500.00
Auxiliary Equipment	1	EA	2,648.10		2,648.10	1.00	2,648.10	2,648.10	-	-	2,648.10
Startup Assistance & Acceptance (from Equipment Supplier)	1	EA	1,800.00		1,800.00	1.00	1,800.00	1,800.00	-	-	1,800.00
Backwash tank (4,050-gallon Vertical XPLE Tank) with IFMO tank pad and access ladder	1	EA	1,050.00	189.00	8,725.67	1.00	8,725.67	1,050.00	189.00	7,486.67	8,725.67
Backwash Filter (FSI FSPN 85)	1	EA	532.35	100.00	2,332.35	1.00	2,332.35	532.35	100.00	1,700.00	2,332.35
Backwash Recycle Pump (Prominent Sigma 1)	1	EA	532.35		1,932.35	1.00	1,932.35	532.35	-	1,400.00	1,932.35
Bases for Backwash Filter and Pump	10	SF	2.77	0.43	8.42		10.53	34.65	5.38	65.23	105.26
Piping											
Adsorber Inlet Piping (4" DIP)	50	FT	7.16	0.57	15.96	1.25	19.95	447.56	35.44	514.50	997.50
Adsorber Outlet Piping (4" DIP)	30	FT	7.16	0.57	15.96	1.25	19.95	447.56	35.44	514.50	997.50
Adsorber Bypass Piping (4" DIP)	20	FT	7.16	0.57	15.96	1.25	19.95	447.56	35.44	514.50	997.50
Bypass Flowmeter (Allowance)	1	EA	525.00		2,525.00	1.25	3,156.25	179.03	14.18	205.80	399.00
Valves 4" steel butterfly valves	6	EA	145.95		295.95	1.25	369.94	1,094.63	-	2,500.00	3,156.25
Valves 4" iron body check valves	1	EA	77.70		394.80	1.25	493.50	97.13	-	1,125.00	2,219.63
Backwash piping to backwash tank (4" PVC Schedule 80)	50	FT	9.72	0.47	12.71	1.25	15.88	607.69	29.53	156.84	794.06
Valves 3" PVC Ball valves	2	EA	50.00		137.15	1.25	171.44	125.00	-	217.88	342.88
Valves 1/4" PVC Ball valves	5	EA	25.00		45.00	1.25	56.25	156.25	-	125.00	281.25
3/4" PVC Schedule 80 piping from backwash tank (backwash recycle)	100	FT	9.21	0.81	10.65	1.25	13.31	1,151.06	101.06	78.75	1,330.88
Piping Specialties (pressure gauges, relief valve etc.)	1	Lot			500.00	1.25	625.00	-	-	625.00	625.00
Piping Supports	1	Lot			1,000.00	1.25	1,250.00	-	-	1,250.00	1,250.00
Electrical											12,887.44
Electrical power supply (120 VAC, single phase, conduit and wiring to equipment)	1	Lot	1,250.00		2,500.00	1.25	3,125.00	1,562.50	-	1,562.50	3,125.00
Level controls (high/low level switches) for Backwash tank	1	EA	300.00		1,444.00	1.25	1,805.00	375.00	-	1,430.00	1,805.00
Electrical conduit and wiring to backwash tank switches, recycle pump, and flowmeter (from control panel)	200	LF	7.50		15.00	1.25	18.75	1,875.00	-	1,875.00	3,750.00
Subtotal											8,680
Installation Cost											149,074.97
Design	8.0%							17,141.20	639.18	131,294.59	149,074.97
Permitting	4.0%										11,926.00
Construction Inspections and Revisions	3.0%										5,963.00
Contingencies	10%										4,472.25
Total											186,343.21

TABLE 3
Las Quintas Serenas' Three Wells
Arsenic Removal System
Engineer's Opinion of Probable Cost

Item	Quantity	Unit	Unit Price			Unit Cost (w/o m.u.)	m.u. (GC, OH & P)	Unit Cost	Labor	Equipment	Material	Total Costs	
			Labor	Equip.	Material							Equipment	Material
Arsenic Treatment System													
Site Work													
Concrete pad for equipment (8' x 18' by 1' thick)	144	SF	5.54	0.86	10.44	\$	1.25	\$	16.84	\$	997.92	\$	1,878.66
Painting (piping and structural steel only)	1	Job			500.00	\$	1.25	\$	625.00	\$		\$	625.00
Equipment						\$							3,656.56
Arsenic Treatment System (without backwash recycle)													
Arsenic Treatment System Installation	1	EA	5,000.00		181,500.00	\$	1.00	\$	181,500.00	\$		\$	181,500.00
Auxiliary Equipment	1	EA			5,000.00	\$	1.00	\$	5,000.00	\$		\$	5,000.00
Startup Assistance & Acceptance (from Equipment Supplier)	1	EA	1,800.00		6,500.00	\$	1.00	\$	6,500.00	\$		\$	6,500.00
Backwash tank (8,050-gallon Vertical XPLE Tank) with FEMO tank pad and access ladder	1	Lot			1,800.00	\$	1.00	\$	1,800.00	\$		\$	1,800.00
Backwash Filter (FSI ESPN 355)	1	EA	1,250.00	216.30	12,006.67	\$	1.00	\$	13,482.97	\$	216.30	\$	12,006.67
Bases for Backwash Filter and Pump	10	SF	532.35	0.43	2,014.00	\$	1.00	\$	2,546.35	\$	150.00	\$	2,000.00
Piping			2.77		5.22	\$	1.00	\$	10.33	\$	34.65	\$	5.38
Adsorber Inlet Piping (6" DIP)	50	FT	10.47	0.82	9.52	\$	1.25	\$	26.01	\$	654.28	\$	595.22
Adsorber Outlet Piping (6" DIP)	50	FT	10.47	0.82	9.52	\$	1.25	\$	26.01	\$	654.28	\$	595.22
Bypass Flowmeter (Albawance)	1	EA	525.00		2,000.00	\$	1.25	\$	2,601.00	\$	261.71	\$	2,339.29
Valves 6" steel butterfly valves	6	EA	117.60		244.00	\$	1.25	\$	3,156.25	\$	656.25	\$	2,500.00
Valves 6" iron body check valves	1	EA	117.60		538.60	\$	1.25	\$	845.25	\$	147.00	\$	698.25
Backwash piping to backwash tank (6" PVC Schedule 80)	50	FT	15.75	0.71	6.30	\$	1.25	\$	28.45	\$	984.38	\$	393.75
Valves 4" PVC Butterfly valves	2	EA	75.00		155.40	\$	1.25	\$	288.00	\$	187.50	\$	388.50
Valves 1/4" PVC Ball valves	5	EA	25.00		20.00	\$	1.25	\$	56.25	\$	156.25	\$	125.00
3/4" PVC Schedule 80 piping from backwash tank (backwash recycle)	100	FT	9.21	1.21	0.63	\$	1.25	\$	13.81	\$	1,151.06	\$	78.75
Piping Specialties (pressure gauges, relief valve etc.)	1	Lot			500.00	\$	1.25	\$	625.00	\$		\$	625.00
Piping Supports	1	Lot			1,000.00	\$	1.25	\$	1,250.00	\$		\$	1,250.00
Electrical						\$							15,371.23
Electrical power supply (120 VAC, single phase, conduit and wiring) to equipment	1	Lot	1,250.00		1,250.00	\$	1.25	\$	3,125.00	\$	1,562.50	\$	1,562.50
Level controls (high/low level switches) for Backwash tank	1	EA	300.00		1,144.00	\$	1.25	\$	1,805.00	\$	375.00	\$	1,430.00
Electrical conduit and wiring to backwash tank switches, recycle pump, and flowmeter (from control panel)	200	LF	7.50		7.50	\$	1.25	\$	18.75	\$	1,875.00	\$	1,875.00
						\$							8,680
Subtotal						\$		\$	20,072.13	\$	845.40	\$	225,774.83
Design	7.0%					\$		\$					17,268.47
Permitting	3.5%					\$		\$					8,634.23
Construction Inspections and Redlines	2.5%					\$		\$					6,167.31
Contingencies	10%					\$		\$					24,669.00
Total						\$		\$					303,431.38

TABLE 3
Las Quintas Serenas' Three Wells
Arsenic Removal System
Engineer's Opinion of Probable Cost

Well No. 7 Item	Unit Price				Unit Cost (w/o m.u.)	m.u. (GC, OH & P)	Unit Cost	Labor	Equipment	Material	Total Costs		
	Quantity	Unit	Labor	Equip.							Material	Equipment	Material
Arsenic Treatment System													
Site Work													
Concrete pad for equipment (10' x 20' by 1' thick)	200	SF	5.54	0.86	16.84		21.05	1,386.00	215.25	2,609.25			4,210.50
Painting (piping and structural steel only)	1	Job			500.00		625.00			625.00			625.00
Equipment													
Arsenic Treatment System (without backwash recycle)	1	EA			236,500.00		236,500.00			236,500.00			236,500.00
Arsenic Treatment System Installation	1	EA	5,000.00		5,000.00		5,000.00						5,000.00
Auxiliary Equipment	1	EA			6,500.00		6,500.00						6,500.00
Startup Assistance & Acceptance (from Equipment Supplier)	1	Lot	1,800.00		1,800.00		1,800.00						1,800.00
Backwash tank (14,950-gallon Vertical XPLE Tank) with IFMO tank pad and access ladder	1	EA	1,680.00	287.70	18,731.67		20,699.37	1,680.00	287.70	18,731.67			20,699.37
Backwash Filter (ESIFSPN T100)	1	EA	1,200.00	200.00	8,600.00		10,000.00	1,200.00	200.00	8,600.00			10,000.00
Backwash Recycle Pump (Prominent Sigma 3)	1	EA	532.35		3,918.35		3,918.35	532.35		3,918.35			3,918.35
Bases for Backwash Filter and Pump	10	SF	2.77	0.43	5.22		10.53	34.65	5.38	65.23			105.26
Piping	50	FT	10.47	1.04	11.52		28.79	654.28	64.97	720.30			1,439.55
Adsorber Inlet Piping (8" DIP)	50	FT	10.47	1.04	11.52		28.79	654.28	64.97	720.30			1,439.55
Adsorber Outer Piping (8" DIP)	20	FT	10.47	1.04	11.52		28.79	261.71	25.99	288.12			575.82
Bypass Flowmeter (Allowance)	1	EA	525.00		2,000.00		3,156.25	656.25		2,500.00			3,156.25
Valves 8" steel butterfly valves	6	EA	207.90		644.90		806.13	1,559.25		3,277.50			4,836.75
Valves 8" iron body check valves	1	EA	207.90		994.35		1,502.81	259.88		1,242.94			1,502.81
Backwash piping to backwash tank (6" PVC Schedule 80)	50	FT	13.61	0.95	5.02		24.47	850.76	59.06	315.69			1,225.51
Valves 6" PVC butterfly valves	2	EA	100.00		113.30		266.62	250.00		283.24			533.24
Valves 1/4" PVC Ball valves	5	EA	25.00		20.00		56.25	156.25		125.00			281.25
3/4" PVC Schedule 80 piping from backwash tank (backwash recycle)	100	FT	9.21	0.81	0.63		13.31	1,151.06	101.06	78.75			1,330.88
Piping Specialties (pressure gauges, relief valve etc.)	1	Lot			500.00		625.00			625.00			625.00
Piping Supports	1	Lot			1,000.00		1,250.00			1,250.00			1,250.00
Electrical													
Electrical power supply (120 VAC, single phase, conduit and wiring) to equipment	1	Lot	1,250.00		1,250.00		3,125.00	1,562.50		1,562.50			3,125.00
Level controls (high/low level switches) for Backwash tank	1	EA	300.00		1,144.00		1,805.00	375.00		1,430.00			1,805.00
Electrical conduit and wiring to backwash tank switches, recycle pump, and flowmeter (from control panel)	200	LF	7.50		7.50		18.75	1,875.00		1,875.00			3,750.00
													8,680
Subtotal													316,233.09
Installation Cost													293,309.48
Design	6.0%							21,899.23	1,024.38	293,309.48			316,233.09
Permitting	3.0%												18,973.99
Construction Inspections and Redlines	2.0%												9,486.99
Contingencies	10%												6,324.66
Total													382,641.73

TABLE 4

Estimated Capital and O&M Cost Summaries for Arsenic Treatment Systems
Las Quintas Serenas Water Company's Three Wells

Treatment Location	Arsenic Removal Technology	Equipment Supplier	Capital Cost ¹	Installed Cost ²	Annual O&M Costs		
					Media ³	O&M Labor ⁴	Total O&M Cost
Well No. 5	Granular Iron Oxide	Severn Trent	\$121,544	\$149,075	\$4,100	\$1,000	\$5,100
Well No. 6	Granular Iron Oxide	Severn Trent	\$218,985	\$246,692	\$17,800	\$1,000	\$18,800
Well No. 7	Granular Iron Oxide	Severn Trent	\$284,523	\$316,233	\$22,900	\$1,000	\$23,900
Totals:			\$625,051	\$712,000	\$44,800	\$3,000	\$47,800

¹ - Includes backwash recovery equipment

² - Does not design, permitting, construction inspections/redlines, and contingencies

³ - From Arsenic Removal System Sizing and Estimate Summaries (see Appendix A)

⁴ - Based on 2 hours per week and 50 weeks per year. Assumed General Hourly Labor Cost: \$20

Exhibit G-6

1241 W. Calle De La Plaza
Sahuarita, Az. 85629
January 20, 2006
Phone 625 - 3327

To Mike Wood, Rohn Householder, Steve Gay, Kaycee Conger and
Lawrence V. Robertson, Jr.:

That was a good Directors meeting yesterday. I finally asked Rohn directly why he was in favor of spending about \$1,700,000 for a central arsenic treatment system instead of about \$700,000 for arsenic treatment at each well. I can now start answering his concerns and pushing other people to supply what information I am unable to provide.

I am trying to put in print what I think Rohn said. If I am wrong, or have left out important facts, let me know, or when Rohn testifies at the later hearings a court reporter will get it correct what his ideas are. I think, and remember, what he said as:

1. In general central units are better.
2. Central units are cheaper to operate.
3. He did not want to get into the pros and cons of operating a central vs at each well because he did not know the operation, problems, maintenance, etc.

For the past six months to a year my letters and comments to Rohn and the others has been on the operational problems involved with Westland's proposal, and the excessive cost. This is also what many of my exhibits as an intervenor would cover.

Central units are cheaper to operate.

The central unit Westland is proposing will cost roughly \$1,000,000 more than the units at each well. We have a proposal to loan L.Q.S. money at 8% so just to cover the interest the central unit must be \$80,000 per year cheaper to operate. If we are thinking of paying back the loan in ten years we need the central unit to be another \$100,000 cheaper to operate per year.

I will try to come up with costs, but I doubt if there is any chance I will come up with central unit cost \$180,000 cheaper per year. If I do come up with this type of saving, or anyone else can show us that type of savings, I would be glad to change my vote to a vote for a central unit and withdraw my intervention proceedings. (Note that Ron Kozoman

January 20, 2006 Page 2

on his page 9 of testimony states, "The estimated annual operating expense associated with arsenic treatment is \$21,000 for the initial year.")

If we can't come up with savings in the range of \$180,000 per year with a central unit, either Rohn or Mike might consider changing their vote to arsenic units at each well.

Yours truly,

John S. Gay

1-20-06 Doc

1241 W. Calle De La Plaza
Sahuarita, Az. 85629
September 14, 2005
Phone (520) 625 - 3327

Judge Jane L. Rodda
Administrative Law Judge
Arizona Corporation Commission
1200 W. Washington Street
Phoenix, Arizona 85007

Exhibit G-7

RE: Las Quintas Serenas Water Co. ("LQS")
Docket Nos. W-01583A-04-0178, W-01583A-05-0326 and
W-01583A-05-0340

Dear Judge Rodda:

I have problems and I hope you can help me, or direct me to the proper people. My wife and I have lived at the above address since about 1965. We live in the LQS franchise area and have always received our water from LQS. I am a graduate mining engineer and I worked for a while as a design engineer for the U S Navy on mostly submarine piping and hydraulics. So I have some knowledge of handling fluids. I have no legal experience so I have no idea how to write this letter, or to whom.

In Docket No. W-01583A-04-0178 on March 9, 2004 LQS filed an application with the Commission for a permanent rate increase. On or before January 15, 2005 LQS was ordered to use the new rate schedule. According to paragraph number 30 in this rate case the Staff thought LQS was getting a 2.9 % increase in revenue over the test year. Actually LQS spent over \$40,000 on the rate case and we got a rate decrease so we have had to sell tens of thousands of dollars of investments to pay our employees and purchase power to run the wells.

In paragraph number 43 in this rate case the Staff calculated preliminary estimate of arsenic removal of \$186,992 in capital costs. LQS has a Westland Resources report that the cost for arsenic removal will be about \$1,700,000. I have been President, Vice President, Operator, Co - Operator Manager, and Treasurer at various times for LQS for about forty years, and a Director for that entire time, and I felt the \$1,700,000 system was poorly designed and would not be reliable so I got information on a

system which would be reliable costing about \$600,000 and presented this to the two Plelps Dodge Directors. At first one of them said that was just a salesman's idea so my wife and I paid Miller Brooks Environmental over \$7,000 to do the engineering and they came up with what I think is a good system with costs just over \$700,000. This would be a much better system and \$1,000,000 less in cost.

LQS attorney Lawrence V. Robertson in his August 22, 2005 letter to Jason Gellman of the Arizona Corp. Comm. Legal Division had a proposed schedule for Docket W-01583A-05-0340 which looked to me like December 9, 2005 would be the first time I as an Intervenor would be able to present my case. After seeing that LQS had to spend over \$40,000 to answer all of Staff's requests it looks like LQS could end up spending lots of money on the engineering, etc requirements Staff probably will require. And then if Staff goes for the \$700,000 system, or Staff's preliminary \$186,992 system, LQS could have spent a lot of money for nothing. So as soon as possible I would like Staff to know that an intervenor will at some time like to present a system with costs around \$700,000.

This date was DRAFT of letter & actual letter dated Aug 31, 2005 JSG

Is there someone I should notify now that I plan to be an Intervenor on December 9th, or preferably sooner if possible?

Yours truly,



John S. Gay, LQS water customer.

cc: Steve Gay, LQS Manager
Rohn Householder, LQS Director
Mike Wood, LQS Director

1241 W. Calle De La Plaza
Sahuarita, Az. 85629
January 9, 2006
Phone 625 - 3327

Handwritten: Exhibit G-8

To Mike Wood, Rohn Householder, Steve Gay and Kaycee Conger;

NEW WELL SITE

1. I have known about Santa Cruz Meadows subdivision for many years in a vague way, but when I saw the large piece of ground being cleared I was suprised. Recently when talking to Steve about L.Q.S. business he showed me the plans for the subdivision and said he had an extra copy so I took the set of plans home to look over. I had no idea it would be so large: it is for 239 lots. (Witness Kozoman Schedule H-2 lists customers on 9-30-03 as 700 of 5/8 meter, a few of 1", 1.5", etc and 150 standpipe customers for a total of 897 customers.) It is easy to see that the addition of 239 customers should change L.Q.S. water use quite a lot so I think we should consider seeing if we can obtain a well site on this property.

2. When I look over the Santa Cruz Meadows plans I see that most of their water system pipes will be 8". Most of the old L.Q.S. system is 6". This might not mean much to Rohn, but to get the rough idea of water flow capacity in pipes one squares the diameter. Therefore, $6 \times 6 = 36$ and $8 \times 8 = 64$ so in rough terms 8" pipe system will cary almost twice what a 6" system will.

3. The set of drawings that Steve gave me had Steve signing for L.Q.S. on May 30, 2003, and then after revision #1 March 29, 2005, and there was a place for L.Q.S. Re-Acceptance after revision #2 but on my copy Steve had not signed. Therefore, I do not know if it is too late to negotiate a well site, but as far as I am concerned it is worth a try.

4. Charlie Barter, a L.Q.S. Director, until his death, worked for Montgomery and Associates and they were the ones that picked the location and oversaw the drilling of our #7 well. I know I was well pleased with their work and I believe Steve felt the same. The #7 location was picked with hopes that the nitrates from the sewage plant would be to the east and the problems from the mines would be to the west. (I went to a well-attended Nancy Freeman meeting today and she is a pusher who wants some of the treated sewage water to be used on golf courses in the future and not be an item of our concern.) To me, there are several possible well locations in Santa Cruz Meadows and they are

all farther away from the mines than either #6, or #7 wells.

5. I believe a replacement well has to be drilled within 660 feet of the old well and possibly the ADWR would only allow an approved pumping rate the same as the old well registered gallons per minute. If this is the case, if our #5 well fails we might want to drill the replacement well on the site as we have pressure tank, piping, electricity, fencing, SCADA all there and we might also have our arsenic system in place, and this well has the lowest arsenic level of our three wells. See Steve's 12/29/05 letter to us as the second and third paragraph on page 2 cover #5 well.

6. I have Arizona Department of Water Resources Form 55-40 "Notice of Intent to Drill, Deepen, Replace or Modify a Well" and the form to fill out. The fee is \$150 and I have this info as I plan to drill a well soon near St David. I phoned the well driller in October of 2005 and their first available date to drill is this coming March. Therefore, if I can get either Mike or Rohn to agree with me it is my suggestion we have Steve get going to find out what size well we are allowed to replace #5 with, the costs, and when we might get the well drilled. I do not want to drill now, as #5 is working fine, but we directors should have the info in front of us so we can move quickly which ever way we want to go if #5 fails. About a month ago when Steve was gone I checked the system and found that #5 was the well running and I was surprised as Steve has been using #7. When I got to the office I found a note saying he had put #5 in lead because he would be gone and it was the **most reliable**.

(I have a copy of a Nov. 30, 2003 Invoice from Montgomery & Assoc. For Professional hydrogeological services: project management and planning; initial preparation of technical specifications for ST-5 replacement well; and teleconferences with S. Gay concerning alternatives for ST-5 replacement.)

OPERATION OF L.Q.S. WHEN STEVE LEAVES

7. Steve will be gone on April 1st. and Gary Hatcher has given notice, so after April 1st Mike, Rohn, Kaycee, and myself will be operating the system unless we have people trained at that time. Steve's 12/29/05 letter has under #2 Kaycee's wages, and under #3 asking about replacement labor, and under #6 how poorly the system is operating, and #11 on Grumpy customers. One item that needs to be added and emphasized is that Mike and Rohn will be entirely in charge of this. I will be glad to offer ideas and suggestions, but the entire operation will be run by the

Jan. 9, 2006 Page 3

two of them. I have spent much time, written many letters to the two men explaining how we can have a more reliable arsenic system for around \$600,000 and they have never answered any of my letters and they are still going for a \$1,600,000 system.

8. I do not know if Rohn and Mike are even aware of some of the items we now have in place to make sure things run well.

a. Kaycee, Steve, Gary, and myself all have keys to enter the well yards, standpipe locked area, and office and we all have some idea what is going on in each area. My understanding is that neither Mike nor Rohn have keys to enter these points and I doubt if they would know what was going on in most places if they did get in.

b. At Steve's house and at my house we both have pressure gauges attached to the water system so we have some idea from our homes how things are going. There is electrical switch gear so if the water pressure gets below a set point a gong rings at Steve's, and the phone rings at both his and my houses with a recording saying, "Low Water Pressuse", and I believe it keeps repeating this message.

c. Usually when Steve will be out of town he lets me know and I check the system. An example was December 17th, a Saturday, so I went to each well, noted water pressure, run time, etc. and then went to the office to verify. Most of the time I do not turn in my hours as I figure my monthly Director's fee should cover this.

d. Item "c" is usually on weekends. When Steve is on vacation Kaycee usually keeps tabs during the week with possibly Gary and/or me checking the field and reporting to her. Then I usually handle the weekend.

9. Unless Mike and Rohn have people trained and in place when Steve and Gary leave, I will be sure that Mike's and Rohn's home phones and addresses are well displayed and I will make it plain that the two are operating the system.

MONEY PROBLEMS

10. Steve's 12/29/05 letter talks about money under #1 and #6. I see that on 8/15/05 Check #7580 went to Atty. Lawrence Robertson for "Telephone conferences; Bank - Loan Arrangements \$302.50." On 9/8/05 more Loan Discussions w/ Bank \$522.50. Same day another

\$495.00 on the same subject. Again on 9/8/05 Meeting Commerce Bank - Possible loan arrangements \$797.50, and on 10/17/05 Preparation/Participation w/Alliance Bank for \$330.00. This is a lot of money to pay out for a lawyer.

On September 2, 2005 Commerce Bank sent John Gay, President of LQS, a letter telling of a \$1,650,000 Loan at 8%.

Do these various people know that the ARTICLES OF INCORPORATION OF LAS QUINTAS SERENAS WATER CO. were filed with the Arizona Corporation Commission and recorded in Book 1146 from page 479 to 485 and under ARTICLE VI it states:

The highest amount of indebtedness or liability to which the corporation may at any time subject itself is the sum of Six Hundred Sixty-Six Thousand (\$666,000) -----Dollars. (JSG File #89)

#1 should
#6 Wall
11. Steve's 12/29/05 letter doesn't indicate what months this report covers. In #6 he states LQS sold \$28,257 in stocks to cover expenses in Nov. 2005. Kaycee's "Month End Summary December 2005" lists the same Intel \$4,945.42, and SBC Comm. \$4,808.36, and John. & Johnson \$18,504.21, but Kaycee also lists a second sale of Johnson & Johnson of \$18,051.90. In order that Mike and Rohn understand the seriousness of money under their direction they need to know about this second Johnson & Johnson (\$18,051.90), plus we sold Ivy Bond Fund A for \$10,761.06 on 4/18/05, plus Scudder Short Term Bond Fund for \$10,787.50 on 3/31/05, plus T Rowe Price Mid Cap Growth for \$27,059.63 on 3/24/2005. If I have added it correctly **that is \$94,917 we have used from our savings in less than one year, and not added one capital improvement.**

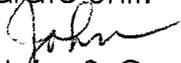
12. If I am correct I show we received Profit & Loss statements for May, June, July, and August all on 9-22-05. As I remember when Rohn first became a Director he wanted monthly statements and I believe Kaycee told him she couldn't do it until the tax person gave her the cost to charge each month. In any case I maintain we must have more up-to-date accounting, even if isn't complete. I never get any feed back from either Mike or Rohn so I do not know if they are aware what is going on and if one of them is authorizing these very frequent and large checks for attorney and accounting fees. (See attached Transaction Detail Report.)

13. If someone feels we must spend money wildly to show the Arsenic people we are working toward a proper goal, then have Westland

Jan. 9, 2006 Page5

Resources work on #5 well because they and I, as an intervenor, plan to have the arsenic unit there as a separate unit.

\hnxcx 1-9-06 Doc


John S. Gay

1241 W. Calle De La Plaza,
Sahuarita, Az. 85629
April 18, 2005
Phone 625 - 3327

Mr. Mike Redmond, R.S., PDEQ
Pima County Dept. of Environmental Quality
150 West Congress Street
Tucson, Az. 85701 - 1317

Exhibit G-9

Dear Mr. Redmond:

1. We have received Eric Shepp's letter of April 7th, and I need help.
2. Las Quintas Serenas Water Co. (LQS) has an arsenic problem that we need to correct. We have used Buck Lewis as our engineer for about 20 years but Buck has retired so we looked for a new engineer and signed a contract with Westland Resources, Inc. on January 10, 2005 to do some engineering for us.
3. On March 9,2004 LQS filed an application with the Arizona Corporation Commission for a permanent rate increase. On Jan. 4, 2005 Decision No. 67455 was Docketed. LQS spent about \$40,000 on this rate case and instead of a rate increase it turned out to be a rate decrease. We spent this \$40,000 and in the end we had not improved our water system any, or helped our customers in any way. "Findings Of Fact" #42 gave the values of arsenic in our three wells and stated that our wells are above the new arsenic maximum contaminant level which will be required on January 23, 2006.
4. In Findings Of Fact #43 the Commission Staff calculated preliminary estimates of cost for LQS's arsenic removal. Staff estimated capital costs and operation and maintenance costs, however made no finding in this Decision as to the reasonableness of Staff's estimates, and no suggestions or help was given to finance the arsenic removal.
5. The Commission ordered that LQS submit its detailed arsenic removal plan to ADEQ or the PCDEQ by February 28, 2005 for review and approval. Westland worked hard and produced LAS QUINTAS WATER COMPANY WATER SYSTEM AND ARSENIC MASTER PLAN dated 3-24-05 by Kara Festa. This was after the date ordered by the Commission so we

distributed it immediately even though we could see errors. (Our name is Las Quintas Serenas Water Co. not Las Quintas Water Co.) The most major problem I see with Westland's report is that in Appendix A they estimate costs as \$1,789,375, and with the quotes we have from Severn Trent Services I think we will have a more reliable system for under \$600,000.

6. If we spend the \$1,789,375 I feel that LQS will have to more than double each water customer's monthly water costs. I would expect this to bring lawsuits from stockholders of LQS or from our customers, especially when it can be shown that the \$600,000 plan gives more reliable water service.

7. I have been President, Vice President, Co-Manager, or Director of LQS since about 1966. Since The Anaconda Co. took over LQS in about 1966 and I became President we have made many improvements and had no serious complaints to our water service. Phelps Dodge is now the major stockholder and two of our three Directors who direct operations are Phelps Dodge employees. (I am the third Director.) I have not been able to convince the other two Directors that my \$600,000 plan has any merit. In fact, we have not even been able to agree whether we are in compliance on our storage. So that is the first thing I want to get ironed out. Here is where I need your help.

8. **System Storage** Az. Revised Statutes R18-4-503 Storage requirements as it pertains to LQS. ".....the minimum storage capacity shall be equal to the average daily demand during the peak month of the year. Storage capacity may be based on existing consumption and phased in as the water system expands....." "The minimum storage capacity for a multiple-well system may be reduced by the amount of the total daily demand minus the production from the largest producing well." Our peak month was June to July 2003 with 21,349,000 gallons / 30 days = 711,633 average gallons per day. We have storage of 60,000 + 30,000gallons = 90,000 total.

This is where I need help. Our largest well is 850 gpm x 60 min. x 24 hours = 1,224,000 gallons. This 711,633 average daily demand - 1,224,000 gal. = minus 512,367 gallons, so is our required storage zero gallons?

9. System Storage -- ADEQ Booklet #9 ?

"The minimum storage capacity for systems not providing fire protection should approximate the annual average daily consumption. This capacity may be reduced when the source and treatment facilities have sufficient capacity, with standby power capability, to supplement peak demands of the system." Here again I need help. Just how much capacity does ADEQ require from LQS?

10. Westland 2.3 Water Source Capacity

"The ADEQ standards require that the well system be capable of providing peak day demand (PDD) for the entire system with the largest well out of service."

#6 well electric 350 gpm x 60 min x 24 hr = 504,000 gallons.

#6 well Nat. gas 425 gpm x 60 min. x 24 hr. = 612,000 gallons.

#5 well electric 200 gpm x 60 min. x 24 hr. = 288,000 gallons

288,000 + 504,000 = 792,000 gal. with #6 on electric.

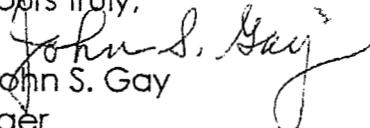
288,000 + 612,000 = 900,000 gal. with #6 on Natural gas.

One day in May we pumped 910,000 gallons which is our PDD.

11. NOW WE GET TO THE BIG QUESTION. With Westland's \$1,789,375 plan #7 well will no longer pump into the system. Also #6 well no longer pumps into the system. Only #5 well will pump into the system. So how much storage is required with their system?

With Severn Trent's \$600,000 system all three wells will still pump water into the system.

Yours truly,


John S. Gay

cc: Steve Gay, LQS Manager
Rohn Householder, LQS Director
Mike Wood, LQS Director
Lawrence V. Robertson, LQS Sttorney
Westland Resources

4-18-05 DOC

Exhibit G-10

1	3	125.00
2	4	225.00
3	6	350.00
4	Standpipe	10.10

5
6 **Q.15 WHAT ARE THE PROPOSED ACRM CHARGES TO SERVICE THE DEBT,**
7 **AND OVER WHAT CUSTOMER BASE ARE THE CHARGES SPREAD?**

8 A.15 I used the customers at the end of the test year, namely September 30, 2003. Thus, the
9 customer base has been annualized to the year end number of customers. The monthly
10 charges for the ACRM charges by meter size are:

11	<u>Meter</u>	<u>ACRM</u>
12	<u>Size</u>	<u>Charges</u>
13	5/8 x 3/4	\$ 21.99
14	3 / 4	32.98
15	1	54.97
16	1 1/2	109.95
17	2	175.92
18	3	351.83
19	4	549.74
20	6	1,099.48
21	Standpipe	21.99

22
23 Combining the current monthly minimum and the ACRM charges results in the
24 following total monthly charges:

25	<u>Meter</u>	<u>Monthly</u>	<u>ACRM</u>	<u>Total Monthly</u>
26	<u>Size</u>	<u>Minimum</u>	<u>Charge</u>	<u>Charge</u>

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5/8 x 3/4	\$ 10.00	\$ 21.99	\$ 31.99
3/4	22.50	32.98	55.48
1	25.00	54.97	79.97
1 1/2	55.00	109.95	164.95
2	70.00	175.92	245.92
3	125.00	351.83	476.83
4	225.00	549.74	774.74
6	350.00	1,099.48	1,449.48
Standpipe	10.10	21.99	32.09

Q.16 WHY DID YOU USE THE NUMBER OF CUSTOMERS AT SEPTEMBER 30, 2003, AND NOT THE MOST RECENT NUMBER OF CUSTOMERS?

A.16 There are a greater number of customers in 2005 than there were at September 30, 2003. However, if I were to use the most recent number of customers, I would also propose a number of adjustments to other accounts.

It is my understanding that the Commission has allowed the Company's prior rate case to be re-opened only for the limited purpose of considering the proposed recovery of debt service and certain operating expenses associated with arsenic treatment.

If I were to use the most recent number of customers, I would also request the property taxes on the higher revenue, as the revenue requested in the instant case will cause property taxes to increase substantially, even with the decrease in the assessment

Las Quintas Serenas Water Company With 8.00% Loan
Present and Proposed Rates Including Estimated Surcharge for ARSM Surcharge
Estimated Operation & Maintenance Expense Associated with Arsenic Treatment Plant
Test Year Ended September 30, 2003

Exhibit
Schedule H-3
Page 1
Witness: Kozoman

Line No.	Customer Classification and Meter Size	Present Rates	Proposed Rates (a)	Percent Change
1	Monthly Usage Charge for:			
2	5/8 x 3/4 Inch	\$ 10.00	\$ 31.99	219.90%
3	3/4 Inch	22.50	55.48	146.58%
4	1 Inch	25.00	79.97	219.88%
5	1 1/2 Inch	55.00	164.95	199.91%
6	2 Inch	70.00	245.92	251.31%
7	3 Inch	125.00	476.83	281.46%
8	4 Inch	225.00	774.74	244.33%
9	6 Inch	350.00	1,449.48	314.14%
10	Standpipe	10.10	32.09	217.72%
11				
12	<u>Gallons included in Minimums all meters but 4"</u>			
13				
14	<u>Tier 1: Gallons upper limit</u>			
15	5/8 x 3/4 Inch All (a)	4,000	4,000	N/A
16	3/4 Inch All (a)	4,000	4,000	N/A
17	1 Inch All (a)	40,000	40,000	N/A
18	1.5 Inch All (a)	100,000	100,000	N/A
19	2 Inch All (a)	150,000	150,000	N/A
20	3 Inch All (a)			N/A
21	4 Inch All (a)	400,000	400,000	N/A
22	6 Inch All (a)	400,000	400,000	N/A
23	Standpipe All (a)	4,000	4,000	N/A
24				
25	<u>Tier 2: (Gallon upper limit, up to, but not exceeding)</u>			
26	5/8 x 3/4 Inch All (b)	23,000	23,000	N/A
27	3/4 Inch All (b)	23,000	23,000	N/A
28	1 Inch All (b)	40,001	99,999,999	N/A
29	1.5 Inch All (b)	100,001	99,999,999	N/A
30	2 Inch All (b)	150,001	99,999,999	N/A
31	3 Inch All (b)		99,999,999	N/A
32	4 Inch All (b)	400,001	99,999,999	N/A
33	6 Inch All (b)	400,001	99,999,999	N/A
34	<u>Tier 3: (Gallon upper limit, up to, but not exceeding)</u>			
35	5/8 x 3/4 Inch	23,001	23,001	N/A
36	3/4 Inch	23,001	23,001	N/A
37	1 Inch	99,999,999	99,999,999	N/A
38	1.5 Inch	99,999,999	99,999,999	N/A
39	2 Inch	99,999,999	99,999,999	N/A
40	3 Inch	99,999,999	99,999,999	N/A
41	4 Inch	99,999,999	99,999,999	N/A
42	6 Inch	99,999,999	99,999,999	N/A
43	<u>Commodity Rates (per 1,000 gallons in excess of gallons in Each Tier)</u>			
44	All Tier 1	\$	0.950 \$	1.094342290 15.19%
45	All Tier 2		1.150 \$	1.294352290 12.55%
46	All Tier 3		1.350 \$	1.494352290 10.69%
47	All Tier 4		1.350 \$	1.494352290 10.69%



April 27, 2005

Exhibit G-11

Page 1

John Gay makes the following motion:

In Westland's Las Quintas Water Company Water System and Arsenic Master Plan it states under 4.5, "A variety of options were considered to address these concerns including arsenic treatment at each well site," "In general, it is most efficient to treat or test well water by concentrating numerous sources into a single centralized system before pumping into the distribution system." Westland gave us no figures or facts to back up this statement so I would like to pay Westland to present these facts and figures to us, so everybody at Las Quintas Serenas Water Co. can see if there are any advantages to their \$1,789,375 system over the Severn Trent units at each well for a total cost of around \$600,000.

Table 3. Existing Storage Requirements

Existing Capacity (Gallons)	Existing Storage Requirement (Gallons)	Existing Storage Deficit (Gallons)
90,000	490,820	400,820

4.5. EXISTING SYSTEM INFRASTRUCTURE REQUIREMENTS

Page 2

The approach to the construction of new infrastructure to serve the existing water system must take into account the various requirements to provide a comprehensive plan that addresses the issues related to water quality, and storage deficiencies. Long-term well capacity issues will be addressed under the future system requirements section, as it is assumed that the existing well capacity will be sufficient for the short-term needs of the water system. The recommended infrastructure as discussed in this chapter is shown on Exhibit 1.

The first priority for Las Quintas Serenas Water Company is to construct facilities that will allow the water system to provide water meeting the new arsenic standard. The secondary priority is to address the shortage in storage capacity. A variety of options were considered to address these concerns including arsenic treatment at each well site, various combinations of centralized arsenic treatment, and various storage tank locations. The alternative selected to address existing system requirements allows the integration of both arsenic treatment and storage facilities into one water system project. In general, it is most efficient to treat or test well water by concentrating numerous sources into a single centralized system before pumping into the distribution system. The water system facilities proposed for the existing system include a combined treatment system for Well Nos. 6 and 7, with a new storage tank and booster station for delivering treated water, and a small separate treatment system at Well No. 5. An Opinion of Probable Construction Cost (OPCC) for the existing system facilities is provided in Appendix A.

4.5.1. Well Nos. 6 and 7 Arsenic Treatment

*March 2005 3/24/05
Signed by Kara Festa*

The existing system infrastructure to address arsenic concerns at Well No. 6 and 7 will include a new 1,275-gpm iron-media adsorption arsenic treatment system, 400,000-gallon storage tank, and 850-gpm transfer booster station at the existing Well No. 6 site. A new 8-inch water main approximately 2,500 feet in length will be required to connect Well No. 7 to the site. The Well No. 6 site was selected for the treatment system due to visibility concerns at Well No. 7. Site piping will allow either or both of the wells to deliver directly into the arsenic treatment system. The treated water meeting the new arsenic standard will fill a new 400,000-gallon tank located at the Well No. 6 site. A variable frequency drive (VFD) transfer booster station with a capacity of 850 gpm will then pump treated water from the tank into the system. A concept site layout for the new facilities at the Well No. 6 site is shown on Exhibit 2.

The arsenic treatment unit constructed at the Well No. 6 site will be a dual-vessel layout for redundancy purposes. The actual vessels will be sized to accommodate the total capacity of both wells operating

Applicant's Exhibit A-1 Pg 9

OPINION OF PROBABLE CONSTRUCTION COST

*Applicant's A-1
 Exhibit
 Appendix A*

Project Name: Las Quintas Serenas Existing System Upgrades
 Project No. 1148.01 A 8000
 Location: Sahuarita, Arizona
 Description: Combined Arsenic Treatment at Well Site 6

Prepared by: JL Date: 03/24/05
 Checked by: KF Date: 03/24/05
 Client: Las Quintas Serenas Water Company

Page 3

Item No.	Item Description	Unit	Quantity	Unit Price	Amount	Remarks
1	Site Demolition and Removal of Abandoned Facilities at Well Sites	LS	1	\$10,000	\$10,000	Well No. 6. Assumes that existing hydro tank will be reused.
2	Site Piping Well Site No. 6	EA	1	\$100,000	\$100,000	Includes flow control valves and connections to treatment units
3	Concrete Slabs for Site Equipment	CY	40	\$350	\$14,000	Well Nos. 5 and 6
4	8-inch water main	LF	2,500	\$45	\$112,500	Well No. 7 to Well No. 6
5	400,000 gallon reservoir	LS	1	\$325,000	\$325,000	Well No. 6
6	850-gpm transfer booster station	LS	1	\$120,000	\$120,000	Well No. 6 (pre-packaged VFD pump station)
7	1,250 gpm Adsorption Arsenic Treatment System	LS	1	\$500,000	\$500,000	To treat Well Nos. 6 and 7 (Severn Trent)
8	200 gpm Adsorption Arsenic Treatment System	LS	1	\$100,000	\$100,000	To treat Well No. 5
9	Back-up Generator	LS	1	\$80,000	\$80,000	Well No. 6
10	Fencing and Site Work at Well Sites	EA	1	\$40,000	\$40,000	Well No. 6, includes grading for floodplain
11	Re-equip well	EA	2	\$15,000	\$30,000	Well Nos. 6 and 7, to remove bowls
12	Subtotal				\$1,431,500	
13	25% Engineering and Contingencies				\$357,875	
14	TOTAL				\$1,789,375	

OPINION OF PROBABLE CONSTRUCTION COST

Red from Slips 3-2-05

Page 4

Project Name: Las Quintas Serenas Existing System Upgrades
Project No.: 1148.01 A 8000
Location: Sahuarita, Arizona
Description: Individual Arsenic Treatment at Each Well

Prepared by: JL
Checked by: KDF
Client: Las Quintas Serenas Water Company
Date: 02/18/05

Item No.	Item Description	Unit	Quantity	Unit Price	Amount	Remarks
1	Site Demolition and Removal of Abandoned Facilities at Well Sites	EA	2	\$7,000	\$14,000	Well Nos. 6 and 7. Assumes that existing hydro tanks will be reused
2	Site Piping Well Site No. 6	EA	1	\$80,000	\$80,000	Includes flow control valves and connections to treatment units
3	Site Piping Well Site No. 7	EA	1	\$50,000	\$50,000	Includes flow control valves and connections to treatment units
4	Concrete Slabs for Site Equipment	CY	80	\$350	\$28,000	Well Nos. 5 and 6
5	150,000 gallon reservoir	LS	1	\$140,000	\$140,000	Well No. 7
6	100,000 gallon reservoir	LS	1	\$95,000	\$95,000	Well No. 6
7	850-gpm transfer booster station	LS	1	\$120,000	\$120,000	Well No. 7 (pre-packaged VFD pump station)
8	850-gpm Adsorption Arsenic Treatment System	LS	1	\$425,000	\$425,000	Well No. 7 (Severn Trent)
9	425-gpm transfer booster station	LS	1	\$80,000	\$80,000	Well No. 6 (pre-packaged VFD pump station)
10	425-gpm Adsorption Arsenic Treatment System	LS	1	\$280,000	\$280,000	Well No. 6 (Severn Trent)
11	Fencing and Site Work	EA	1	\$15,000	\$15,000	Well No. 6
12	Fencing and Site Work	EA	1	\$10,000	\$10,000	Well No. 7
13	Subtotal				\$1,337,000	
14	25% Engineering and Contingencies				\$334,250	
15	TOTAL				\$1,671,250	

OPINION OF PROBABLE CONSTRUCTION COST

Rock from Skins 5-1-05

Page 5

Project Name: Las Quintas Serenas Existing System Upgrades
Project No.: 1148.01 A 8000
Location: Sahuarita, Arizona
Description: Individual Arsenic Treatment at Each Well

Prepared by: JL
Checked by: KDF
Client: Las Quintas Serenas Water Company
Date: 02/18/05

Item No.	Item Description	Amount	Remarks
1	Site Demolition and Removal of Abandoned Facilities at Well Sites	\$14,000	Well Nos. 6 and 7. Assumes that existing hydro tanks will be reused
2	Site Piping Well Site No. 6	\$80,000	Includes flow control valves and connections to treatment units
3	Site Piping Well Site No. 7	\$50,000	Includes flow control valves and connections to treatment units
4	Concrete Slabs for Site Equipment	\$28,000	Well Nos. 5 and 6
5	150,000 gallon reservoir	\$140,000	Well No. 7
6	100,000 gallon reservoir	\$95,000	Well No. 6
7	850-gpm transfer booster station	\$120,000	Well No. 7 (pre-packaged VFD pump station)
8	850-gpm Adsorption Arsenic Treatment System	\$425,000	Well No. 7 (Severn Trent)
9	425-gpm transfer booster station	\$80,000	Well No. 6 (pre-packaged VFD pump station)
10	425-gpm Adsorption Arsenic Treatment System	\$280,000	Well No. 6 (Severn Trent)
11	Fencing and Site Work	\$15,000	Well No. 6
12	Fencing and Site Work	\$10,000	Well No. 7
13	Subtotal	\$1,337,000	
14	25% Engineering and Contingencies	\$334,250	
15	TOTAL	\$1,671,250	

200 gpm Adsorb. Arsenic

6224000

A new 3,000 gallon hydropneumatic tank will be required for Well No. 6 to provide surge protection for the arsenic treatment facilities as this well is not equipped with variable frequency drive.

Page 6

Table 5. Well 6 (400 gpm) Design Criteria

Pump Head at Treatment Plant Site (feet elevation)	2,903
Well Pad Elevation (feet elevation)	2,855
Static Water Level (feet bls)	337
Estimated Drawdown at 400 gpm (feet)	9
6-inch Column Friction Head Loss (460 feet bowl setting) (feet)	11
Manifold Losses (feet)	5
Sand Separator Losses (feet)	14
Total Dynamic Head (TDH, feet)	424

WELL NO. 5

Well No. 5 will not require any modifications, as it will continue to pump directly into the distribution system. The capacity of Well No. 5 will likely decrease to 200 gpm due to the headloss associated with the new treatment facility (approximately 5 psi during normal operation and an additional 10 psi during backwash). The pump curve for Well No. 5 is included in Appendix D. Additionally, Well No. 5 has shown signs of sanding and will require an external sand separator, which will create an 8 psi/18 feet headloss at 200 gpm per the manufacturer's specifications. Manufacturers cut sheets for the sand separator can be seen in Appendix E.

Table 6. Well 5 Design Criteria

	Existing (230 gpm)	Future (200 gpm)
Highwater Elevation (feet elevation)	3057	3057
Well Pad Elevation (feet elevation)	2910	2910
Static Water Level (feet bls)	401	401
Estimated Drawdown at 200 gpm (feet)	7	4
4-inch Column Friction Head Loss (460 feet bowl setting) (feet)	16	12
Manifold Losses (feet)	5	5
Sand Separator Losses (feet)	0	18
Arsenic Facility Losses (feet)	0	23
Total Dynamic Head (TDH, feet)	576	610

Applicant's
Exhibit A-13

Page 8 of Attachment of
Managers Report of 12/29/05

Exhibit G-12

Interrupt Service (IS)

TRICO ELECTRIC COOPERATIVE (TRICO) interrupts usually do not occur during our water peak demand time as most people are indoors, working, or driving and not watering their yards during the extreme heat, and the commercial water haulers from the stand pipe have stopped for the day.

Currently TRICO's maximum interrupt has been 8 hours (which occurred this past summer). If the Natural Gas well is started when the tanks are full, then the tanks act as a shock absorber for the system, allowing the tanks to fill when the well pumps in excess of system demand and feeding into the system when the demand is higher than the well can produce.

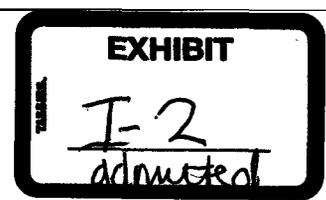
About once a year, during an interrupt, the current storage contributes about 50,000 gallons into the system. Once we add the 345 obligated homes, and based on the current system's maximum pumping capabilities (refer to the pumping detail listed below), we will need about 100,000 gallons more storage to offset the demand*.

Community Water Company also has their wells on the TRICO IS program. They have decided to go with storage to supply their customers with water instead of an alternate energy supply for pumping water during interrupts. This does not give them water in the case of a sustained electrical power outage.

Interrupt Service (IS) Rates: We currently have our wells on Interruptible Service – two (2) of which are 6.17 cents per KW used and no demand charge if the wells are not run through the IS peak demand. (There is a verbal agreement* that we can run through the interrupts as many times a year as necessary so long as we pay the demand charge of \$ 15.25 per KW. The # 5 well has a demand charge of about \$549.00, the #6 well about \$1,000.00, and the #7 well about \$1,900.00 per monthly violation).

The normal pumping rate is General Service - 3 which is a demand charge of \$15.25 per KW per month and 5.85 cents per KW used. The cost of KW is \$115.00 per month more for the IS-2 rate, and over GS-3 rate but does not have the demand charge of \$ 3,500 dollars.

Our monthly average for electricity for the fiscal year ending 2003 was \$2,302.00 dollars. **LQS is saving over \$3,350.00 per month with the IS – 2 rate (over \$40,200.00 per year).**



1241 W. Calle De La Plaza
Sahuarita, Az. 85629
February 20, 2006
Phone (520) 625 - 3327

Judge Jane L. Rodda
Administrative Law Judge
Arizona Corporation Commission
1200 W. Washington Street
Phoenix, Arizona 85007

AND 400 w. Congress,
Tucson, Az. 85701

RE: Las Quintas Serenas Water Co.
Docket No. W-01583A-04-0178 et al.

RECEIVED

FEB 22 2006

ARIZONA CORP. COMMISSION
TUCSON, AZ

Dear Judge Rodda:

I have attached your letter to me of December 9, 2005 because from your letterhead I was confused about where to send letters to you. My February 2nd letter and the February 12th letters I sent to Phoenix. I have at the end of the Feb. 12th letter a PS asking if I should take 11 copies to Reg Lopez to distribute, as I do not know what I should be doing. Sometime after Feb. 12 I heard that your office was in Tucson, so with your carbon copy of the February 18th letter to Steve Gay I sent your copy to Tucson. Today is a holiday and I will be gone all day tomorrow so I will be unable to phone the Corporation Commission offices to know what address to use for you so I will send a copy of this letter to Tucson, and one to Phoenix.

My February 18th letter to Steve Gay was to gather facts which might show how vulnerable the Westland system is if problems occur. My item #10 on page 2 of that letter explains my thoughts. Over the past two days the #5 and #6 wells have carried the system easily. This morning the dirt work started on Santa Cruz Meadows for 239 homes and they had three fire hoses going into the two large elevated tanks that supply water to the two big off highway water trucks which were working hard spraying water for the earth moving equipment. I thought this would give our two wells a real test. But Steve Gay, being a good electrician, had figured out that the #7 pump motor was O.K. and that the main trouble was burned out equipment in the frequency drive switchgear which he bypassed and replaced big burned-out fuses and ran #7 well. The SCADA (system control and data acquisition) system is not working on #7 well, but it is working on showing how full our storage tanks are. So when

Steve is in the office he can check on how full the tanks are, and I assume he will go back to automatic tonight on #5 and #6 wells.

In item #5 of my February 12th letter to you I list some of the advantages of Community Water Company of Green Valey taking over Las Quintas Serenas (L.Q.S.). Since then Community has had a Directors meeting and they would like to pursue the purchase of L.Q.S. Community has a proven track record of occasions when they have taken over water companies whse owners have become greedy at the expense of the customers. The results have been excellent for the customers.

A. Attached sheet "A" shows that in 1987 New Pueblo Water Co. was given rates of basic minimum of \$14.85 per month, to include the first 1,000 gallons, plus \$3.35 per 1,000 beyond the minimum. L.Q.S. which is about a mile to the north of New Pueblo under Decision No. 54760 in Nov. 1985 was give the rate of \$10.00 for the first 2,000 gallons or less per customer per month and a rate of \$1.36 per 1,000 gallons in excess of the minimum. We had that rate for many years and did fine on it. Community, which I believe joins New Pueblo on the south, still has a Minimum of \$12.50 for 2,000 gallons or less and a rate of \$1.07 per 1,000 gallons for all over 2,000 gallons. (See attachment "B")

B. Attachment "C" explains how in 1990 Community took over New Pueblo. I think that the old New Pueblo customers are still paying \$12.50 for 2,000 gallond plus the \$1.07 for gallons over 2,000. About 600 New Pueblo customers were very happy whan Karl Ronstadt sold out to Community.

C. The Westland proposal costing around \$1,600,000 will increase most of L.Q.S. customers minimum from \$10.00 to \$21.65 per month, and Standpipe customers from \$10.10 to 21.75 if you go by Ronald Kozoman's Exhibits A-8 through A-12. Attachment "D" explains how Community already has one of their wells in operation to treat for arsenic, and another being installed. Community says they plan to ask for about a 20% rate hike. With their rate of \$1.07 now, a 20% hike does not begin to compare with going from \$10.00 to \$21.75.

February 20, 2006 Page 3

I believe it is the duty of the Corporation Commission to protect customers from being forced to pay unfair high rates.

Yours truly,


John S. Gay

cc: Las Quintas Serenas Water Co.
P.O. Box 68
Sahuarita, Az. 85629

Community Water Co. of Green Valley
P.O. Box 1078
Green Valley, Az. 85622 - 1078

2-20-06 Doc

COMMISSIONERS
JEFF HATCH-MILLER - Chairman
WILLIAM A. MUNDELL
MARC SPITZER
MIKE GLEASON
KRISTIN K. MAYES

*Rec'd 12-10-05
JLH*



LYN FARMER
Chief Administrative Law
Judge

ARIZONA CORPORATION COMMISSION

December 9, 2005

John Gay
1241 W. Calle de la Plaza
Sahuarita, Arizona 85629

Dear Mr. Gay,

Pursuant to your request this morning, I am enclosing a copy of the portion of the Commission's Rules of Practice that address intervention and directions, including a sample letter, for how to request intervention.

If you have any other questions concerning the Commission's Rules of Practice, do not hesitate to call the Commission's Tucson office, 520 628-6550, and ask to speak to a Consumer Services Representative of myself.

Sincerely,

Jane L. Rodda
Jane L. Rodda
Administrative Law Judge

Encl:
Intervention instructions
R-14-3-105

*9:15 AM Thurs
Jan 12, 2006 phoned
628-6550 & was trans + then long talk
my Reg Lopez (Suite 218 - North Building)
Can bring my 10 copies to him &
they distribute - I explained
some drawings in engineering reports
fed out to 11x17"
JLH 9:40 AM*

A

Commission approves water rate

by Robert Will
Green Valley News

The Arizona Corporation Commission last Wednesday officially affirmed the recommendations of its

hearing officer and staff in ordering increases in the rates charged by the New Pueblo Water Co. which serves the Pueblo Estates and Calle de Las Tiendas areas in the north part of

Green Valley.

The decision had been delayed pending resolution of errors discovered in the computation by ACC staff members of the rate base



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Vol. 23 No. 90

Green Valley, Arizona

"YOUR COMMUNITY"

hike for Pueblo Estates residents

for the water company, according to a spokesman for the commission.

The new residential rates, which are to go into effect June 1, according to the

spokesman, include a basic minimum rate of \$14.85 per month, to include the first 1,000 gallons, plus \$3.55 per 1,000 gallons beyond the minimum.

The new rates reflect an increase from the previous \$12 minimum, which included the first 1,000 gallons, and a use charge of \$3.25 per 1,000 gallons in excess of the minimum.

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Sun

NEWSPAPER

Friday, May 22, 1987

26 Pages

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TARIFF SCHEDULE

B

TARIFF SHEET NO. 001
GENERAL SERVICE

A.C.C. Docket No. U-2304-86-219
Decision No. 55593

June 4, 1987

COMMUNITY WATER CO. OF GREEN VALLEY
Arturo Gabaldón, General Manager

SPECIAL PROVISIONS

1. A non-refundable Establishment Charge in the amount of \$25.00, and the appropriate tax adjustment, will be assessed to each new or different consumer and/or person who applies for water service at the customer's delivery point. Billing for the Establishment Charge will be rendered as part of the Customer's first service bill.
2. If service is to be re-established at the same service location for a Customer who has previously ordered a service disconnection within the preceding twelve month period, or for any member of such Customer's household, a sum equal to the applicable monthly billing minimum times the number of months disconnected, and the appropriate tax adjustment will be required as a precondition to the establishment of such service. Payment for such charge shall be made at the time of application for re-establishment of service. (See A.C.C. Decision No. 55593, A.C.C. R14-2-403D).
3. Turn On/Off Fee (at customer request):

After Hours \$10.00
Sunday/Holidays. \$20.00
(See A.C.C. Decision No. 55593)
4. Customer requested meter test; \$20.00 (A.C.C. R14-2-408F).
5. Customer requested re-read; \$10.00 (A.C.C. R14-2-408C).
6. Check returned for insufficient funds; \$10.00 (A.C.C. 14-2-409F).

TERMS AND CONDITIONS - Subject to the Company's "Water Service Rules and Regulations".

TARIFF SCHEDULE

TARIFF SHEET NO. 001
GENERAL SERVICE

A.C.C. Docket No. U-2304-86-219
Decision No. 55593

June 4, 1987

COMMUNITY WATER CO. OF GREEN VALLEY
Arturo Gabaldón, General Manager

AVAILABILITY - In Green Valley and Environs at all points where facilities of adequate capacity and pressure are adjacent to the premises served.

APPLICATION - To all water service required when such service is supplied at one premise through one point of delivery and measured through one meter. Not applicable to temporary, stand-by, supplementary or resale service.

MONTHLY BILL:

<u>MINIMUM</u>	\$12.50 for 5/8" x 3/4" meter for 2,000 gallons or less
	12.50 for 3/4" meter for 2,000 gallons or less
	15.00 for 1" meter for 2,000 gallons or less
	18.76 for 1 1/2" meter for 2,000 gallons or less
	23.76 for 2" meter for 2,000 gallons or less
	32.51 for 3" meter for 2,000 gallons or less
	48.76 for 4" meter for 2,000 gallons or less
	65.01 for 6" meter for 2,000 gallons or less

<u>RATE</u>	\$ 1.07 per 1,000 gallons for all over 2,000 gallons
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ADJUSTMENT - Plus the applicable proportionate part of any taxes or governmental impositions which are or may be in the future assessed on the basis of the gross revenues of the Company and/or the price or revenue from the water or service sold and/or the volume of water pumped or purchased for sale and/or sold hereunder. In the event of any increase or decrease in taxes or other governmental impositions, rates shall be adjusted to reflect such increase or decrease.

SPECIAL PROVISIONS - The Special Provisions set forth as part of Water Tariff Sheet No. 001 are made a part hereof as if set forth herein.

C

Community Water Co. of Green Valley

10-3-90 G.V. News.

Area water company has new owners

File #140

**By Robert Will
Green Valley News**

Community Water Co. of Green Valley officially took over the New Pueblo Water Co. system on Friday, Sept. 28, James R. Livingston, Community water president, said Monday.

The \$500,000 purchase was approved by the Arizona Corporation Commis-

sion last Sept. 19 following some three years of negotiation with Karl Ronstadt, owner of New Pueblo.

The period between the ACC approval and last Friday's official takeover of the New Pueblo system was required for technical completion of the sale, company officials said.

Community Water Co. is a non-profit cooperative organization which, prior to this purchase, had served about 7,000 customers in the Green Valley area.

Acquisition of the New Pueblo system will add about 600 customers to Community's service area, including the Pueblo Estates residential section and the business community along Calle de las Tiendas and Duval Road as well as north of Duval Road.

Community Water Co. officials said work on connecting the two systems has already begun and will be completed "in the very near future, possibly within the month."

G.V. Paper Front Page
Fri Oct 14, 05

D

Community Water will request hike

By Tim Hull
Green Valley News

GREEN VALLEY—By the end of the year Community Water Co. will ask state regulators to approve an approximately 20 percent rate hike, General Manager Art Gabaldón said this week.

Typically it takes about a year for the Arizona Corporation Commission to review a rate case. Gabaldón said that if the increase is approved it will likely show up on water bills around the end of 2006.

Average increase

"The average bill will increase from about \$15 to about \$18 a month," he said.

The rate increase request, the company's first since 1987, is the result of increased operating costs and costs associated with meeting new federal arsenic standards set to take effect in January 2006, Gabaldón said.

Multi-million-dollar arsenic treatment plants are

currently being installed at Community Water's well No. 6, and one is already in operation at well No. 9.

The utility is constructing two new wells on the east side of Interstate 19 that need arsenic treatment as well; however, last month, Phelps Dodge agreed to shell out several million dollars to pay to treat those wells.

The agreement came after two of Community Water's wells near the Sierrita Mine had to be shut down because of high sulfate levels resulting from seepage from the mine's tailing impoundments.

Had those wells not been contaminated by sulfate, they would not have needed arsenic treatment to comply with the new standards, Gabaldón said.

The two new wells meant to replace the contaminated ones, while not affected by the mine's sulfate plume, do need some treatment to meet the arsenic standards, he said—hence the agreement with Phelps Dodge.

That agreement will have

no effect on the rate case, Gabaldón added.

Land sale

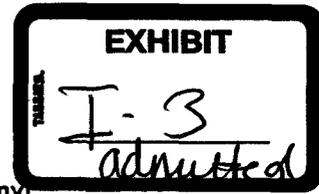
The new wells are expected to be in operation by May 2006, Gabaldón said, though the company is still waiting to hear if Green Valley Recreation will agree to sell the utility a small piece of land behind the Abrego South Center on which an arsenic treatment plant would be built.

GVR Executive Director Jeff Ziegler said Wednesday that negotiations with the utility are moving forward and a vote on the sale is expected at the nonprofit leisure services company's Oct. 25 board meeting.

"Everything looks positive for us and Community Water," Ziegler said. "We view it (the sale) as a positive benefit for all."

Gabaldón said Community Water will hold a public meeting on the proposed rate increase Tuesday, Nov. 29, at West Center.

thull@gvnews.com | 547-9732



Las Quintas Serenas Water Company Responses to John S. Gay Set of Data Requests*

*(In the form of a February 18, 2006 Letter to Steve Gay, Operator / Manager of the Company)

- Q-1 When did you find out that #7 would not operate?
A-1 *Steve Gay; Operator / Manager – Las Quintas Serenas Water Company*
The first time LQS was aware that the #7 Well was not functioning properly was on Thursday, February 9, 2006 when the cooling fan bearing in the frequency drive went out. The second time was on Friday, February 17, 2006 when three (3) main fuses blew in the frequency drive, temporarily stopping all service at #7 Well.
As you are aware, the function of the frequency drive is to automatically control the pressure levels within the system to stay within certain high pressure limits, as set by the operator, by changing the speed of the well pump motor which controls the amount of water flow from the well or point of entry into the system. The volume in which the flow of water enters the system causes pressure within the system which, in the case of LQS, needs to be monitored due to the existence of small mains which cannot adequately handle the maximum capacity of the #7 Well.
The #7 Well can be run without the frequency drive as long as there is enough draw on the system to adequately keep the pressures within the system within the same limits set forth for the frequency drive.

- Q-2 What did you do to try to get it going?
A-2 *Steve Gay; Operator / Manager – Las Quintas Serenas Water Company*
When the cooling fan bearing failed, I replaced the fan. However, in doing so, it appears that I accidentally left a lug loose while re-installing the wiring, causing the fuses to blow and rendering the frequency drive non-operational – causing the second failure mentioned above.
In order to meet the demands of the system, I by-passed the frequency drive at the #7 Well and am currently running the Well manually.

- Q-3 Did you have to call on outside help, and if so who, etc?
A-3 *Steve Gay; Manager / Operator – Las Quintas Serenas Water Company*
Paul Crookston; White Mountain Technical Services was contacted to assess the damage. He found the loose connection and the short in the transformer.
TRICO Electric Cooperative was also contacted. They installed a recording meter at the #7 Well to research the power spikes and/or hot connections that had caused or would continue to cause the frequency drive problems LQS is experiencing.

- Q-4 My guess is that the well is still down, and if that is the case you will not have answers for some time, but the following are some points you might cover so our Lawyer, two other Board members who are the majority and who direct much of what we do and spend money on, and Westland will have some idea of what actually goes on with the LQS system.
A-4 [Comment: Item 4 in John Gay's February 18, 2006 letter actually is a assertion on his part and not a data request]

- Q-5 How long was #7 down, and when was it started?
A-5 *Steve Gay; Operator / Manager – Las Quintas Serenas Water Company*
Although the #7 Well was "down" as of Thursday afternoon, February 9, 2006 until Saturday morning, February 11, 2006, it was by the choice of the operator and not due to total equipment failure. The frequency drive was not operational during this time, however, the drive could have been by-passed had the demand on the system required it.

- Q-6 What were the costs?
A-6 *Steve Gay; Operator / Manager – Las Quintas Serenas Water Company*
The total cost to date is \$496.30 which includes the purchase of the cooling fan, overnight shipping and tax.
The parts to repair the frequency drive are on order.

FEB 28 06 02:03P LQS WATER CONTROL SEC 010 0000 P.0

Las Quintas Serenas Water Company Responses to John S. Gay Set of Data Requests*

*(In the form of a February 18, 2006 Letter to Steve Gay, Operator / Manager of the Company)

- Q-7 How many other times has #7 been down within 12 months or so, and for how long, and did we have to call in outside help, and what were the costs? I believe you said it was down some about one or two weeks ago. I remember Kaycee and I had trouble around one year ago and had to call Paul and I think he put in a 3" x 4" x 1" box costing maybe \$700, plus the costs of the service call by Paul. If you are pressed for time your answer can wait for a week, or two. But I would appreciate an answer before the March 1st hearing.
- A-7 *Steve Gay, Operator / Manager – Las Quintas Serenas Water Company*
LQS records show the #7 Well service was interrupted or "down" a total of fifteen (15) times within the last calendar year (2005). No records were kept by either TRICO or LQS of the amount of time each interruption lasted.
LQS requested the services of Mr. Paul Crookston; White Mountain Technical Services, in August, 2005, to address several issues pertaining to the SCADA system. While he was in the field, the frequency drive needed repair and the HIM needed replacement – both pieces of equipment are a part of the #7 Well. The service at the #7 Well was interrupted at this time.
- Q-8 When #7 well was drilled, designed, and everything in place to operate, did we, in your opinion, do everything first class and to the best of our ability? Did we hire consultation experts?
- A-8 *Steve Gay, Operator / Manager – Las Quintas Serenas Water Company*
In response to the first question LQS utilized its personnel to the best of their abilities. In addition, and in response to the second question, LQS retained Errol L. Montgomery & Associates to locate, design, and supervise construction for an additional water supply well identified as well ST-7.
- Q-9 Even though now we are having a problem, and we have had problems in the past, has LQS at any time had to curtail our customer's water use?
- A-9 *Steve Gay, Operator / Manager – Las Quintas Serenas Water Company*
This is the first occasion in which an operational problem at the #7 Well has necessitated a reduction in water service to a customer; and, in this instance, water service was maintained to that customer but at a reduced level. More specifically, due to the replacement of the cooling fan in the frequency drive at the #7 Well (refer to Question / Answer #5), LQS asked one (1) customer to conserve water being used for construction purposes, as they were using approximately 1,050 GPM for six (6) hours each day.
- Q-10 My point is this: With the present system (and also with the more practical Miller Brooks system which I have proposed), #6 well and #7 well each pump water into the system independently, so if either well goes down then the other well can supply water into the system. With the proposed WestLand system neither well would pump directly into the system. Each well would pump into a holding tank at #6 well, and a separate new WestLand pump station would then do all the pumping to get the water from #6 well and #7 well into the system. If the pumping station breaks down then no water goes into the system except for the #5 well which is only 200 gpm, and most of our customers would be without water.
- A-10 *Mark Taylor, Principal Engineer – WestLand Resources, Inc.*
The basic question is whether two separate vertical turbine well pumps pumping into a system are more or less reliable than a single booster station pumping out of a 250,000-gallon reservoir. I believe that a booster station is more reliable than the wells for several reasons. While the well system consists of two pumps and their associated starter control systems, only one of which has backup power in case of a power outage, the booster station has four pumps with separate starters and control systems. If any one of the booster pumps goes out, three more are available to provide service. All four pumps on the booster station have backup power available.

Las Quintas Serenas Water Company
Responses to John S. Gay Set of Data Requests*

**(In the form of a February 18, 2006 Letter to Steve Gay, Operator / Manager of the Company)*

When there are issues with a well or well pump, repairs generally involve specialized contractors and often repairs can take several days. On the other hand, if booster pumps fail, there are many more contractors who can repair them with off-the-shelf items, and repairs are typically quick. Due to these factors, we believe that a properly designed booster station, with all the proposed backup features, is as, if not more, reliable than the two existing well pumps.

Green Valley News and Sun

Sunday Feb 26, 2006

Front Page

EXHIBIT I-4 admitted

Community Water Co. of Green Valley may seek to acquire Las Quintas

By Philip Franchine
Green Valley News

The Community Water Co. of Green Valley is planning to ask the owners of Las Quintas Serenas Water Co. to discuss selling the company to Community Water.

Such a move could save Las Quintas from having to go into debt to buy arsenic-reduction equipment.

Las Quintas has proposed to the Arizona Corporation Commission, that it borrow \$1.6 million to pay for arsenic-reduction equipment needed to meet tightening federal standards. Meanwhile, Community Water already has installed arsenic-reduction equipment in two of its wells.

The arsenic reduction proposal will be discussed at an Arizona Corporation Commission hearing at 10 a.m. Wednesday, March 1, at Room 222, State of Arizona building, 400 W. Congress St., Tucson.

Arsenic reduction

Community Water board majority has proposed borrowing to pay for arsenic-reduction equipment and would raise rates by at least \$20 a month for 10 years to pay off the debt. Dissident board member John Gay has proposed a less-costly arsenic-reduction system, and a smaller monthly increase.

Meanwhile, Community Water General Manager Art Gabaldón said that, depending on a variety of factors, including the sale price, an acquisition by CWC could take care of Las Quintas' need to meet new arsenic standards without borrowing. That's because Las Quintas' 1,000 customers could be connected to the larger CWC system, Gabaldón said. Community Water serves about 15,000 customers. Las Quintas customers are located in Sahuarita in a two-

Serenas

Las Quintas

not community

square mile area west of Interstate 19 and south of El Toro Road. Gabaldón said, "Community Water is trying to ask for time to negotiate for a controlling interest in Las Quintas. We do not wish to hinder or slow them in their efforts to meet the arsenic standards if

WATER: CW considering Las Quintas acquisition

FROM PAGE A1

negotiations don't work. "We are in process of preparing a letter to the board of Las Quintas, asking them would they enter into negotiations so we can evaluate what it (a takeover) would take," Gabaldón said. Gay said that while he has proposed an arsenic-reduction plan, now that he is aware

of Community Water's interest, he would prefer that option. However, the balance of power is with Phelps-Dodge, which controls a majority of the stock and two of the three seats on the board. Phelps-Dodge spokesman Ken Vaughn said the company owns a majority interest in Las Quintas, has not received an inquiry from Community Water, and will read it when it

arrives. Gabaldón said that CWC could offer some benefits to the Quintas customers, including a 5 million-gallon storage tank that keeps good pressure in the system for fire sprinklers. He acknowledged there are some issues to be worked out, including the source of the water.

SEE WATER, PAGE A2

phfranchine@gvnews.com | 547-9738

ACC hears increased Quintas rate request

By Philip Franchine

Sahuarita Sun

The Arizona Corporation Commission today will consider an increased request by Las Quintas Serenas Water Co. to borrow money to pay for arsenic treatment equipment.

The larger request is for \$1,889,375, up from \$1,648,750 previously, and reflects increased costs of construction and equipment, Las Quintas lawyer Lawrence Robertson said.

Las Quintas serves about 1,000 customers in Sahuarita west of Interstate 19 and south of El Toro Road.

The Las Quintas board majority has proposed two ap-

proaches, one that would mean a monthly increase of something above \$11.65 a month per customer for 20 years, if a state loan is approved, or a monthly increase of \$27.19 a month per customer for 10 years if the state loan is not approved and the improvements are financed privately.

Robertson said the ACC staff has argued in favor of the second option, because it would cost customers less in the long run.

Meanwhile, dissident board member John Gay has proposed borrowing a smaller amount to mitigate arsenic at each of the water company's three wells, which he says would be more efficient than the central system the

board majority has proposed. Others say his approach would leave the system with inadequate storage capacity.

The Las Quintas rate case would not affect the rates charged by the Community Water Co. of Green Valley, which may seek to purchase Las Quintas. Community Water already has installed, and has begun operating, its own arsenic-reduction equipment.

Community Water has not yet formally contacted Las Quintas about a takeover. The hearing on the Las Quintas rate case is at 10 a.m. today in Room 222 of the state building, 400 W. Congress St. in Tucson.

franchine@qnews.com | 547-9738

COUNCIL: Will building heights block mountain views?

FROM PAGE 1

Racy said he would bring

That sentiment was echoed by council member Phil Conklin, who said the

and create visual interest. Regarding the mountain



Sahuarita

Municipal Court

The following cases were heard in Sahuarita Municipal Court on Tuesday, Feb. 21, unless otherwise noted.

Ricardo S. Hernandez, 26, of Sahuarita, pleaded guilty to assault, disorderly conduct and domestic violence and was fined \$660 and sentenced to 12 months unsupervised probation.

He got into an altercation after his girlfriend came home and found him drunk. She called police after he struck her and when police arrived he first tried to jump a fence to escape, then hid in a crawl space in the attic of his home.

Albert Mendoza, 38, of La Mesas, Calif., pleaded conditionally guilty to driving on a suspended license and pleaded guilty to speeding and was fined \$152 and given a suspended fine of \$582.

Roy J. Shantz, 24, of

valid license in court.

Edwin T. Kirpes, 18, of Sahuarita, pleaded conditionally guilty to possession of marijuana paraphernalia, and four counts of contributing to delinquency of a minor. He was given suspended fines totaling \$2,419 and was sentenced to a six month diversion and ordered to attend drug education and pay a court fee of \$35.

Daniel A. DeLeon, 18, of Sahuarita, pleaded conditionally guilty to possession of marijuana and paraphernalia and possession in a school zone and was given suspended fines totaling \$1,814. He was ordered to attend drug education, sentenced to six months diversion and ordered to pay a fee of \$35.

James Buonavolonta,

with

part

fine

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