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BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF PAYSON WATER CO., INC., AN ARIZONA CORPORATION, FOR A DETERMINATION OF THE FAIR VALUE OF ITS UTILITY PLANTS AND PROPERTY AND FOR INCREASES IN ITS WATER RATES AND CHARGES FOR UTILITY SERVICE BASED THEREON.	DOCKET NO: W-03514A-13-0111
IN THE MATTER OF THE APPLICATION OF PAYSON WATER CO., INC., AN ARIZONA CORPORATION, FOR AUTHORITY TO: (1) ISSUE EVIDENCE OF INDEBTEDNESS IN AN AMOUNT NOT TO EXCEED $1,238,000 IN CONNECTION WITH INFRASTRUCTURE IMPROVEMENTS TO THE UTILITY SYSTEM; AND (2) ENCUMBER REAL PROPERTY AND PLANT AS SECURITY FOR SUCH INDEBTEDNESS.	DOCKET NO: W-03514A-13-0142 **NOTICE OF FILING**

At the request of the Administrative Law Judge, Payson Water Co., Inc. hereby files the following reports that address the exploration of additional water supplies: (1) 2009 Report by Payson Water Co., Inc. on Water Supply Alternatives for the Mesa del Caballo System, dated November 1, 2009 and revised December 3, 2009 (attached as **Exhibit A**); (2) Geophysical AMT Survey on the Mesa del Caballo Project, dated March 16, 2010 (attached as **Exhibit B**); and (3) Mesa del Caballo Zonge CSAMT Survey, dated March 30, 2010 (attached as **Exhibit C**).

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Arizona Corporation Commission
DOCKETED
OCT 01 2013
DOCKETED BY

RESPECTFULLY SUBMITTED this 1st day of October, 2013.

FENNEMORE CRAIG, P.C.

By ________________________
Jay L. Shapiro
2394 E. Camelback Road
Suite 600
Phoenix, Arizona 85016
Attorneys for Payson Water Co., Inc.

ORIGINAL and thirteen (13) copies
of the foregoing were filed
this 1st day of October, 2013, with:

Docket Control
Arizona Corporation Commission
1200 W. Washington Street
Phoenix, AZ 85007

COPY of the foregoing was hand delivered
this 1st day of October, 2013, to:

Dwight D. Nodes
Assistant Chief Administrative Law Judge
Arizona Corporation Commission
1200 W. Washington Street
Phoenix, AZ 85007

Robin Mitchell, Esq.
Legal Division
Arizona Corporation Commission
1200 W. Washington Street
Phoenix, AZ 85007

By: ________________________
8545276.1/073283.0006

EXHIBIT
A

2009 Report

by

Payson Water Co., Inc.

on

Water Supply Alternatives

for the

Mesa del Caballo

Water System

PWS- 04-030

November 1, 2009

Revision #1 December 3, 2009

Date: November 1, 2009
December 3, 2009 (revision #1)

To: Del Smith
Arizona Corporation Commission
Engineering Division

From: Robert T. Hardcastle
Brooke Utilities, Inc.

Re: ***Water Plan ("Plan") for Mesa del Caballo Water System***

On August 11, 2009 Payson Water Co. (the "Company" or "PYWCo") was contacted by the Commission's Engineering Department (the "Department") requesting a water plan that addresses perceived supply deficiencies of the Mesa del Caballo water system (the "system" or "MdC") located in Payson, Arizona. The System is also known as ADEQ's Public Water System number 04-030. In addition, the Department requested an updated Water Use Data Sheet through July 2009 that included the reported water hauling to the System for the most recent thirteen month period. The Water Use Data Sheet was attached to the previously submitted Report.

The initial deadline for submittal of this Plan was sufficiently short so as to not provide results from any water studies proposed or planned. Accordingly, the Company referred to the Report as "preliminary" in nature and submitted same on August 18, 2009.

Prior to, and since submittal of the preliminary Report, the Company has diligently and carefully worked toward reasonable, prudent and meaningful solutions to better understand and resolve the water supply deficiency at MdC while, at the same time, seeking progress on the long term solution to this problem further discussed herein.

It should be noted that the MdC water system is located on an "island" with U.S. Forest Service lands surrounding the area on all sides. Practically speaking, there are no "off system" water sources available to the Company until the long term solution, discussed herein, is made available.

<u>COMMUNITY INVOLVEMENT:</u> At a community meeting in MdC a group of four community members, Ed Schwebel, Irene Schwartz, Randy & Minnie Norman (the "Water Committee" or

"WC") expressed interest and volunteered to meet with the Company and its representatives on behalf of MdC. The purpose of these meetings was to gain a better understanding of the water challenges facing MdC and provide assistance, where possible, to a solution. Since early August 2009 there have been several meetings and various ideas have been discussed and been pursued in a joint effort between the Company and the WC. Without question the input and participation of the WC has been valuable and productive for the Company. The Company welcomes the participation of the WC.

WATER CONSERVATION: As can be shown by Exhibit 2 the number of mandatory water consumption days in 2009 are not unlike the two previous calendar years. Through August 11, 2009 there have been 69 mandatory water conservations days (31%) and 153 voluntary water consumption days (69%). Such statistics are not unlike the previous years where 76 mandatory water consumption days occurred in 2007 and 47 mandatory water consumption days occurred in 2008. With the balance of 2009 comprised of more seasonally cool and cold days than those experienced during the summer months it is unlikely that 2009 year end mandatory water consumption days will vary greatly from the previous two years.

WATER PRODUCTION: As can be shown clearly in Exhibit 4 MdC customer consumption peaked at the same time well production was at its lowest level at any time in any of the last eight years. It should be further noted that MdC well production was measured twice earlier in 2009 as well. On March 4, 2009 aggregate well production was 59.7 gpm and on May 5, 2009 aggregate well production was measured at 58.8 gpm. In 2008 water production was about 59 gpm when measured in July and consistent with the 2008 ACC Annual Reports showing well production at 60.9 gpm. In 2007 water production was about 60 gpm when measured in July and consistent with the 2007 ACC Annual Reports showing well production at 60.9 gpm. In 2006 water production was about 62 gpm when measured in July and consistent with the 2006 ACC Annual Reports showing well production at 61.6 gpm. However, water production measured on July 30, 2009 dropped by nearly 27% to 44.9 gpm. Since at least 2002 the Company has not seen such a dramatic water production change at MdC as that which occurred in the summer months of 2009.

CUSTOMER CONSUMPTION: While the number of water conservation days are not greatly different from years past, customer consumption continued to increase. The Company's representatives were frequently at MdC during most of the mandatory conservation days in the summer of 2009. During these periods careful monitoring of outdoor watering was noted as well as numerous discussions with customers using over 10,000 gallons monthly. In some cases, Stage 5 water conservation penalties were applied. Based on the Company's observations it appears that MdC has a larger full-time population than in years before. There were more livestock, more families and less homes being used only on weekends. Customers were growing gardens to supplement their dietary needs, multiple families were living in one home, and increased water use was consistent as opposed to short-term periodic increases normally found in a "weekend community" Based on the fact that MdC has comparatively less expensive housing as compared to surrounding areas, it is an assumption that the current economic times are responsible for increased water demand in MdC. In a meeting with ACC Staff on October 22, 2009 the WC expressed belief that the per capita population in MdC has increased over prior years. It becomes clearer that a combination of increased water demand and dramatically lower water production rates, unlike those of prior years, occurred more quickly than the Company anticipated.

As a result, the MdC water system had to be supplemented with very expensive short-term water augmentation in the form of trucked water. As shown by Exhibit 2 nearly a half-million gallons-of-water augmented the MdC water supply through July 2009[1]. The Company expects to seek recovery of these costs as well as any future augmentation costs. The 2009 water augmentation costs were absorbed exclusively by the Company without current impact on its customers. The approximate cost of water augmentation to MdC is $4,000 per day.

<u>**SHORT TERM COMMUNITY SOLUTIONS:**</u> The WC, in conjunction with the Company, strongly supports a change in the curtailment tariff currently in place at MdC. Both the WC and the Company believe a curtailment tariff that is specific and unique to MdC is necessary instead of the existing generalized tariff for all water systems of the Company. After an informational meeting with ACC staff in on Thursday October 22, 2009, the Company and WC are in the process of drafting a new curtailment tariff that accomplishes this objective. The basic curtailment changes encourage conservation through financial measures and attempt to create a curtailment that provides a "water budget", enabling customers to conserve and "spend" their water as they see fit. The initial draft of this curtailment tariff will be circulated to ACC Staff for initial review by the end of November 2009.

The WC is also working in the community to recruit potential water sharing agreements with existing well owners. In previous years, the Company has made a similar effort and is currently contracted with three such water partners. There are approximately thirty wells in MdC and WC members have personally spoken to approximately one-third of these owners with no water sharing interest expressed thus far. When interested parties, if any, are identified the Company will follow up with these prospective water source partners and elicit the WC's assistance as needed. As part of their effort, the WC has encountered five or six wells that are dry or so low

[1] The Company trucked a total of approximately 505,000 gallons of water in 2009.

in production (i.e. economically unfeasible) that the well owner is currently a customer of the Company; two wells are on properties currently for sale and awaiting the new owners[2]; and four well owners have expressed no interest in such an arrangement. The WC members are continuing to identify additional well owners and initiate similar discussions.

A community event, "Make A Difference Day" was held on Saturday October 24, 2009 (see Exhibit 5). The Company partially-sponsored event was intended, in part, to discuss water issues related to MdC and provide customers an opportunity to ask questions about the short term and long term solutions. The event was moderately attended and the WC considered it a success.

SHORT TERM WATER SUPPLY: In an effort to better research the potential of an interim water supply for MdC the Company is considering drilling a new well or deepening existing wells. The MdC project area is less than one mile square and surrounded by the Tonto National Forest (TNF) on all sides. Currently the only water supply is ground water from within the MdC boundaries. It is likely not practical that off-site wells or wells situated on TNF lands are feasible.

In recent years, Town of Payson (TOP) and Bureau of Land Management (BLM) through the Mogollon Rim Water Resource Management Study (MRWRMS) have created hydrological reports and generated hydrological projections on the areas surrounding MdC. These reports indicate that MdC is built on a large block of granite and a highly unlikely place to find productive wells.

The Company has reviewed these reports with TOP's hydrologist which has recommended the Company get a more complete hydrological perspective for MdC. In this regard, the Company has received a two-phase proposal from Zonge Engineering & Research Organization, Inc. (Zonge) to complete a geophysical survey of the MdC area to determine (a) the presence of geological structures capability of transmitting water, and (b) the presence potential of water, if any, within the geological structures as indicated by low resistivity areas in the geology in and around MdC. Low resistivity indicates the potential of water production from either new or existing wells (see Exhibit 6). [3] This proposal preliminarily demonstrates that a geological fault may intersect with MdC. Such faults have sometimes proved to be likely conduits of water. When two faults intersect such areas are considered highly likely areas to find water

[2] The Company has inquired as to the purchase of one of these properties but concluded that the legal ownership of the water source is clouded and may be in question.

[3] Geophysical Survey – Mesa Del Caballo Zonge Engineering & Research Organization: Norman R. Carlson , October 20, 2009

production[4]. The Company regards this additional piece of investigatory analysis as reasonable and prudent in the search for additional water sources for MdC. The Company believes it is possible to conduct the survey in "thinned out" sections of the surrounding TNF. If these survey locations are not possible, the project may require some brushing or clearing of scrub brush along the ground to give the survey the access it requires.

To accomplish the geophysical survey the USFS will require a permit for the actual survey work dependent on the amount of forest "thinning" necessary. The geophysical survey is a relatively low-impact operation, usually requiring only three or four people in two small vehicles; the transceiver equipment is backpack portable, and can be used in areas where off-road access is limited or restricted. In initial discussions with the USFS the Company intends to keep the permit process to a minimum, based on the low impact to the surrounding TNF. USFS may only require a letter of authorization from the Payson District Ranger. It is expected that the permit process would require not more than thirty days. Once USFS permits and/or authorization are secured the survey is expected to be complete within thirty days exclusive of inclement weather conditions[5].

On November 4, 2009 the Company conducted a lengthy telephonic conference with representatives of Zonge to pose additional questions concerning the proposal and what reasonable output expectations are anticipated. Zonge explained that Phase I and Phase II of the proposal related to "cultural noise" distortion from utility power lines crossing the MdC area in a northeast-southwest direction. Phase II of the proposal may be necessary if the distortion experienced in Phase I prevents the collection of sound geological resistivity conclusions. Zonge indicates that their work will ***not*** predict the presence or absence of water within faults that may be identified. Accordingly, any projection for any available sustainable water production should not be expected from Zonge's report as well. Depending upon the conclusions reached by Zonge they may recommend that the Company further contract with an experienced hydrologist familiar with the area that can interpret the geophysical work provided by Zonge[6].

Accordingly, the following proposed well development schedule was discussed with Zonge and is believed to be conservatively realistic:

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[4] See page 2 of Exhibit 6 where prospective survey lines have been identified by Zong and TOP.

[5] The Company has learned from USFS that the geophysical lines from which Zonge will collect data, for the purposes of their report, will require location by survey. The Company has approved the cost of Phase I geophysical survey lines in the amount of $1,800. The project schedule impact has been considered in Table 1 as part of USFS granting permission for this work.

[6] The Company would expect a hydrologist to interpret the data provided by Zonge and make specific recommendations for well development that would represent the Company's best opportunity for sustainable water production.

Table 1

Project Event	Date
Notice to Proceed	4-Nov-09
Permission Request USFS	3-Dec-09
Permission Granted USFS	10-Dec-09
Site Mobilization	14-Dec-09
Zonge site work Phase 1	18-Dec-09
Zonge site work Phase 2 (as necessary)	28-Dec-09
Zonge Report	5-Feb-09
Hydrological interpretation	15-Feb-10
Well development begins	1-Mar-10
Well development completes	1-Apr-10
Water testing	1-Apr-10
Water testing results	30-Apr-10
Well placed in service	10-May-10

It should be noted that these proposed well development project dates are conservative in nature and represent several opportunities for improvement.

On November 4, 2009 the Company issued a Notice to Proceed to Zonge for Phase I of the proposed work (see Exhibit 7)[7] believing this course of action represents a reasonable and prudent expenditure of funds.

LONG TERM WATER SUPPLY: It seems appropriate that the Company needs to supplement the current exclusive ground water supply during annual nine month periods with proposed water supplied through the TOP pipeline from the C.C. Cragin Reservoir.

According to TOP the anticipated time of construction for the CC Cragin Pipeline (CCC) is to begin in early 2014 and expected to be complete before the fall of 2015. This timeline is subject to delay based on the current reduction in TOP customer demand also credited to the recent economic downturn[8]. If customer demand continues in its current direction there is the potential that the CCC pipeline project would be further delayed. However, TOP's contract with Salt River Project (SRP) includes a condition requiring an established water right be used

[7] Zonge indicated they would immediately place this project on their work schedule and attempt to expedite the work as much as possible.

[8] According to TOP.

within five years on the contract date. TOP believes this condition could cause the project to proceed despite the decreased customer demand.

TOP is developing a water delivery agreement at this time for the purpose of pricing turn-out improvements in the CCC project at location consistent with the Company's supplemental water requirements. TOP expects to submit an initial agreement for its review before the end of November 2009.

The Company has submitted to SRP a March 2009 Water Demand and Analysis Report that indicates potential water rights claim based on water deliveries.. This report includes communities within the Companies existing certificated areas and communities not currently served by a water company or a water district. This report is the first step in developing a water right to the CCC project. Once new water rights are established by the Company, TOP can specifically reference and include them in the water delivery agreement between the Company and TOP.

The current plan places TOP's necessary water treatment plant near the Houston Mesa Road immediately southeast of MdC enabling the Company to receive treated water directly from the plant and avoid operating individual treatment plants for the Houston Mesa Road communities.

The Company has identified the following steps necessary to establish water rights with SRP:

1. agree to a quantity of CCC project water for each service area based on necessary supplemental supply and existing water rights. The Company expects to complete this phase of the project by December 2009.
2. execute a Water Delivery Agreement, the basic principles of which are attached. The Company expects to complete this phase of the project by February 2010.
3. reach agreement on use of pipeline. The Company expects to complete this phase of the project by April 2010.
4. ADWR processes the Severance & Transfer. The Company expects to complete this phase of the project by August 2010.
5. The Company obtains necessary permits and builds the necessary infrastructure for the CCC project.. The Company expects to complete this phase of the project in conjunction with TOP.

<u>**FINANCIAL IMPACT**</u>: The financial rate impact on customers for additional water development at MdC should be expected to be substantial but cannot be specifically determined at this time. Such investment in reasonable, prudent and necessary water resources will greatly impact the

small number of customers at MdC. The Company intends to seek recovery through rates for any required investment.

EXHIBIT 1

Brooke Utilities, Inc.

2008-2009 Consumption Mesa del Caballo

15-Aug-09

	2008 Consumption	2009 Consumption	% Change
January	1,254,509	1,316,542	4.9%
February	1,314,276	1,050,630	-20.1%
March	1,271,005	1,388,422	9.2%
April	1,708,755	1,476,899	-13.6%
May	1,465,558	1,598,318	9.1%
June	1,742,396	1,594,111	-8.5%
July	1,521,037	1,962,007	29.0%
Total	10,277,536	10,386,929	1.1%

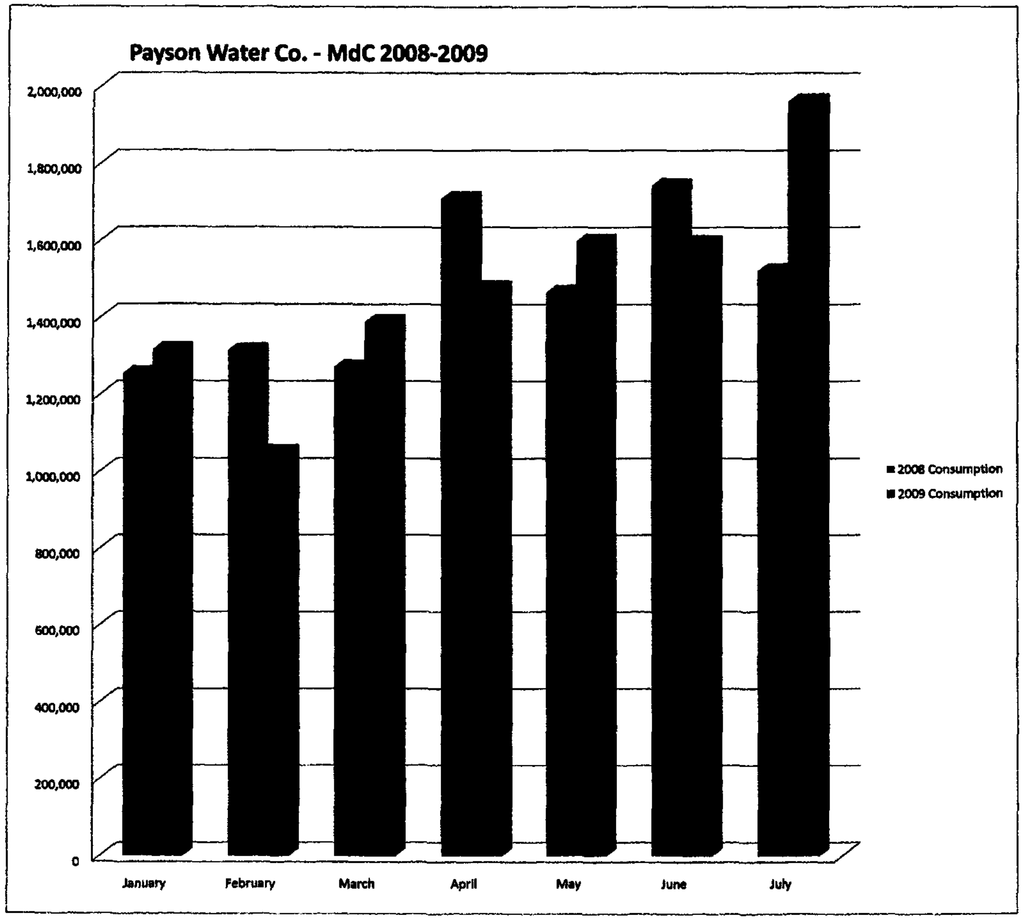


EXHIBIT 2

Payson Water Co.

Water Use Data Sheet

15-Aug-09

NAME OF COMPANY: PAYSON WATER CO. (Mesa del Caballo)

ADEQ PUBLIC WATER SYSTEM: PWS # 04-030

Month/Year	No. Active Customers	Gallons Sold (thousands)	Gallons Pumped (thousands)	Gallons Purchased	Gallons Hauled
Jul-08	376	1,386	840	772	0
Aug-08	378	1,416	794	741	0
Sep-08	376	1,418	897	740	0
Oct-08	374	1,813	718	912	0
Nov-08	373	1,335	775	699	0
Dec-08	371	1,202	508	759	0
Jan-09	373	1,316	731	808	0
Feb-09	371	1,050	714	680	0
Mar-09	372	1,388	739	688	0
Apr-09	371	1,477	878	647	0
May-09	371	1,598	1,017	533	65,000
Jun-09	383	1,594	1,022	508	71,500
Jul-09	385	1,962	1,181	622	292,500

Storage Tank Capacity (Gallons)	Number Each	ADWR Well ID Number	Actual Well Production (gpm)
15,000	3	55-631113	9.0
20,000	1	55-500270	3.6
40,000	1	55-801698	0.0
		55-801699	6.0
		55-631112	3.7
		55-513409	7.2
		55-556158	2.8
		55-588967	1.2
		55-560398	6.6
		55-58229	4.8

Other Water Sources in GPM:	None
Fire Hydrants on System:	No
Total Water Pumped Last 13 Months (000's Gallons):	10,814
Estimated	

EXHIBIT 3

Brooke Utilities, Inc.

2007-2009 Mesa del Caballo Water Conservation

15-Aug-09

	Water Conservation Days			Mandatory Water Conservation Days			Percent Water Conservation Days		
Stage	2007	2008	2009	2007	2008	2009	2007	2008	2009
1	252	259	99						
2	38	59	54	290	318	153	79.5%	87.1%	68.9%
3	65	47	58						
4	10	0	6						
5	0	0	5	75	47	69	20.5%	12.9%	31.1%
Total Days	365	365	222	365	365	222	100.0%	100.0%	100.0%

Note: 2009 data presented through August 11

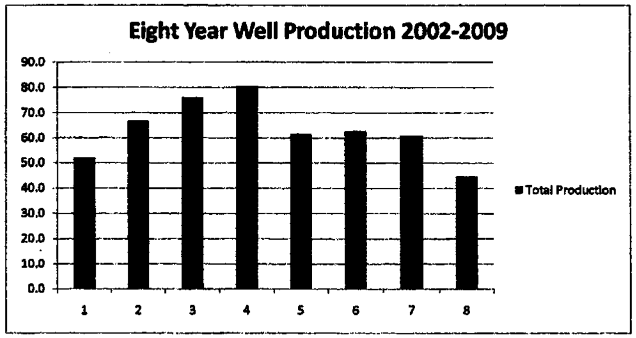
EXHIBIT 4

Brooke Utilities, Inc.

2007-2009 Mesa del Caballo Water Conservation

15-Aug-09

	Well Production (GPM)							
	2002	2003	2004	2005	2006	2007	2008	2009
55-631113	12.0	12.0	8.4	8.0	8.0	8.0	9.0	9.0
55-500270	5.0	5.0	4.0	5.2	5.2	5.2	4.0	3.6
55-801698	5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0
55-801699	5.0	5.0	4.0	6.4	6.4	6.4	6.4	6.0
55-631112	5.0	5.0	4.0	5.1	5.1	5.1	5.1	3.7
55-513409	10.0	10.0	5.7	7.0	7.0	7.0	3.7	7.2
55-556158	10.0	10.0	9.5	11.0	11.0	11.0	11.2	2.8
55-588967	0.0	12.0	14.6	13.0	11.0	11.0	12.0	1.2
55-560398	0.0	3.0	1.0	1.0	1.0	1.0	1.0	6.6
55-580229	0.0	0.0	25.0	24.0	6.9	8.0	8.5	4.8
Total Production	52.0	67.0	76.2	80.7	61.6	62.7	60.9	44.9



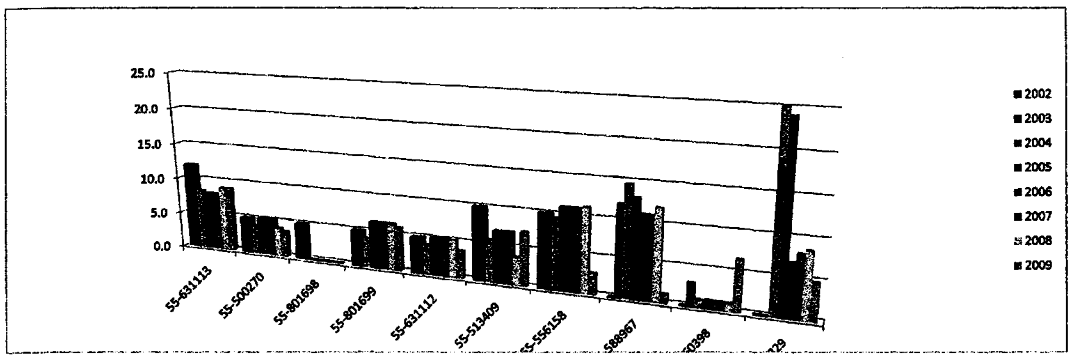


EXHIBIT 5

Saturday Oct. 24

Let's visit with our neighbors and do a little clean up of our streets.

9 am Meet at the El Caballo Club House

9:30-10:30 Pickup trash off our streets

10:30-11:30 Visit with your neighbors, community business people, Payson Water Company spokesperson Myndi Brogdon and the Water Committee. Houston Mesa Fire Department's equipment & facility will be open for viewing. Conservation information will be available and more!

11:30-12:30 Hot dogs and drinks

Make a Difference (in Mesa Del Caballo) Day

RSVP by Tuesday October 20
(so we know how many hot dogs to buy!!)
Ed Schwebel 478-3712
eschwebel1@gmail.com

Music provided by "Sounds Unlimited"

Sponsored by
El Caballo Club & Payson Water Co.

EXHIBIT 6

Zonge Engineering & Research Organization, Inc.
3322 E Fort Lowell
Tucson, AZ 85716
520-327-5501

Geophysical Survey- Mesa Del Caballo

for
Mesa Del Caballo

by
Zonge Engineering & Research Organization, Inc.
Tucson, Arizona
October 20, 2009

Introduction: Zonge Engineering has prepared a brief proposal and preliminary cost estimate for a geophysical survey near Mesa Del Caballo, near Payson, Arizona. The geophysical survey is intended to provide a better understanding of the subsurface structure as it relates to groundwater production. This proposal is based on a topographic and geologic map provided by Mike Plough, as well as on Zonge's prior experience in geophysical surveys as applied to groundwater exploration in the Payson area specifically, and in northern Arizona and Nevada in general. Zonge has not scouted this specific site to date, however.

The geophysical survey will map subsurface changes in resistivity, which can often be related to changes in pore space and pore fluids. Bedrock is often high resistivity relative to overlying material, and fractured, saturated bedrock is often lower resistivity than unfractured bedrock. Areas of high TDS in the groundwater should appear more conductive than equivalent areas of low TDS. Variations in depth to bedrock, faulting, and other structural changes are often also evident as changes in resistivity. Based on prior experience in this area, we propose to use natural source audio-frequency magnetotellurics (AMT), which is a resistivity sounding method used commonly in the minerals, geothermal, and groundwater exploration industries. This method typically has higher lateral resolution than other resistivity methods, and is usually logistically more efficient.

In the area of interest, a portable microprocessor controlled receiver amplifies, filters, processes, and records the naturally occurring magnetic field and electric field signals along lines or at individual stations. Typically, the field crew includes 3 or 4 people total, in one or two pick-up truck-size vehicles. The receiver equipment can be carried by backpack, and no off-road driving is necessary, although the ability to drive off-road often increases the survey speed thereby reducing survey costs.

The geophysical survey data will be sent to Zonge's Tucson office each night for processing and modeling the following day. Preliminary results will then be sent to the client to allow adjustments to the scope of work while the survey is in progress.

Scope of Work: The approximate locations of the suggested survey lines are shown in Figure 1 below.

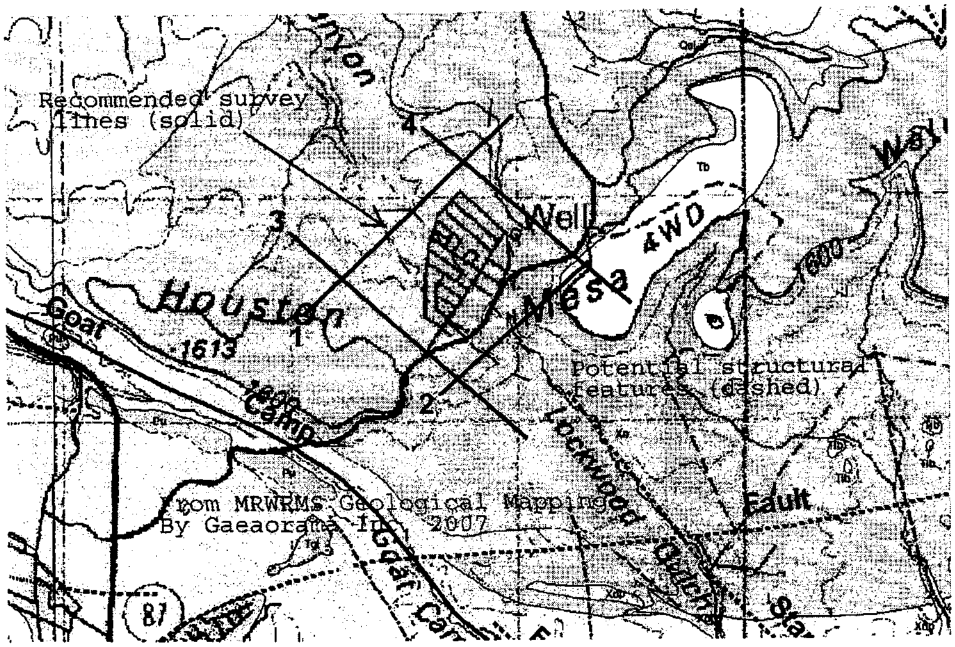


Figure 1: Proposed locations of four survey lines surrounding Mesa Del Caballo.

The exact location of the lines will depend on access, ground cover and cultural features (man-made features such as fences, power lines, pipelines, etc.) that may influence the data. The four lines shown above total approximately 20,000 line feet, and stations will be spaced 200 feet apart along the lines.

A large power line crosses the survey area from southwest to northeast, through the Mesa Del Caballo community, intersecting Lines 3 and 4. It is not known at this time how much influence this power line will have on the data acquisition. As a result, Zonge suggests running this survey as a two phase project in order to evaluate cultural noise from the power line as well as the community itself. In the cost breakdown below, Phase I includes Lines 1 and 2; these lines cross the potential structures of interest approximately perpendicular, and should provide the best resolution of the structures. The data from these lines will be evaluated, and a decision will then be made regarding the value of acquiring data on Lines 3 and 4. During Phase I, if the cultural noise is too strong to acquire valid, useful data, the survey will be discontinued and the possibility of installing a fixed transmitter for a CSAMT survey (controlled source audio-frequency magnetotelluric) will be evaluated and discussed with Mesa Del Caballo.

It is assumed that Mesa Del Caballo representatives will acquire property access rights for the survey, but Zonge will assist in obtaining access permits on USFS property if requested. If line-brushing is necessary due to dense vegetation, the line-brushing costs will be passed on to Mesa Del Caballo at cost, with no handling charges.

Deliverables: The deliverables for this project will be five copies of a report, including the following:

1. Logistical summary of the field activity.
2. Brief review of the CSAMT method, with equipment specifications.
3. Location maps showing station locations with pertinent landmarks and cultural features.
4. Color cross section plots of resistivity results for each survey line.
5. Plan view plots of resistivity at selected depths if applicable.
6. Interpretive maps showing our interpretation of the data with respect to the survey goals.
7. Discussion of our interpretation of the data with respect to any background information that can be provided by Mesa Del Caballo such as geologic maps, prior drilling results, and well logs.
8. The final report, including raw geophysical data, and figures in digital form on diskette or CD.

Proposed Survey Costs: The estimated cost of the AMT survey is shown below. In this estimate, the "Production Survey Costs" include a three-to-four person field crew, vehicles, and all geophysical equipment necessary for the survey operations. Expenses for expendable field supplies (gasoline, survey stakes, motel, per diem, etc.) are estimated, and would be billed at actual cost with no handling charges. Mobilization/demobilization charges may be reduced by 50% if this project is scheduled with another project in the northern Arizona area.

Phase I Estimated Survey Costs (Lines 1 and 2)	
Mobilization/demobilization if necessary (Tucson-Payson-Tucson)	
190 miles X 2 @ $2.60/mile	$ 988.00
Production Survey Costs:	
20 hours @ $225.00/ field hour	$ 4,500.00
Estimated Expenses: (to be billed at actual cost)	
3 days @$500/ day	$ 1,500.00
Data processing:	
2 field days @ $600/field day	$ 1,200.00
Final Report if requested (estimated)	$ 1,500.00
Total Estimated Phase I Survey Cost	**$ 9,688.00**

Phase II Estimated Survey Costs (Lines 3 and 4)	
Production Survey Costs:	
20 hours @ $225.00/ field hour	$ 4,500.00
Estimated Expenses: (to be billed at actual cost)	
2 days @$500/ day	$ 1,000.00
Data processing:	
2 field days @ $600/field day	$ 1,200.00
Final Report if requested (estimated)	(included in Phase I)
Total Estimated Phase II Survey Cost	**$ 6,700.00**

The total estimated survey cost is an estimate only, and not a fixed-price quote. In the event that the survey progresses faster than expected, the total cost would be reduced. The survey scope may be adjusted during the course of the survey if it appears that lines should be extended, deleted, or added. Professional time for meetings and special requests will be billed at $110.00/hour.

Respectfully Submitted,

Zonge Engineering & Research Organization, Inc.
3322 E. Fort Lowell Road
Tucson, AZ 85716
Phone: 520-327-5501
FAX: 520-325-1588
For further information regarding this proposal, contact Norman Carlson.

EXHIBIT
B

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MAR 25 2010

BROOKE UTILITIES

Zonge Engineering and Research Organization, Inc
3322 E. Fort Lowell Rd
Tucson, AZ 85716
Office: (520)327-5501
Fax: (520) 325-1588
www.zonge.com

March 16, 2010

Attention: Myndi Brogdon
Brooke Utilities, Inc.
P.O. Box 82218
Bakersfield, CA 93380

Re: Geophysical AMT survey on the Mesa del Caballo Project

Survey Summary: On February 18th and 19th, 2010, Zonge Engineering and Research Organization, Inc. acquired geophysical natural source audio-frequency magnetotelluric (AMT) survey data on the Mesa del Caballo project, near Payson, Arizona. The survey was intended to assist in understanding the subsurface structure as it relates to groundwater production. Zonge's crew chief on this survey was Tim Nordstrom, and Brooke Utilities' Myndi Brogdon was the primary client contact for this survey. The survey consisted of two short lines, as shown on Figure 1. Due to the dense vegetation, the lines were brushed in advance of the field crew. Stations were spaced 200 feet apart, and the frequency range acquired was from 3 Hz to 1024 Hz. Lines 1 and 2 were oriented southwest to northeast, in order to intersect suspected faulting that is oriented northwest-southeast.

This type of geophysical survey maps subsurface changes in resistivity, which can be related to changes in pore spaces and pore fluids. Bedrock is often high resistivity relative to overlying material, and fractured, saturated bedrock is often lower resistivity than un-fractured bedrock. In addition, areas of high TDS in the groundwater are often more conductive than equivalent areas of low TDS. Variations in depth to bedrock, faulting, and other structural changes are often also evident as changes in resistivity. At the Mesa del Caballo site, the AMT survey was intended to delineate the location of suspected faults (see Figure 2), and to determine whether or not these faults appear low resistivity relative to background.

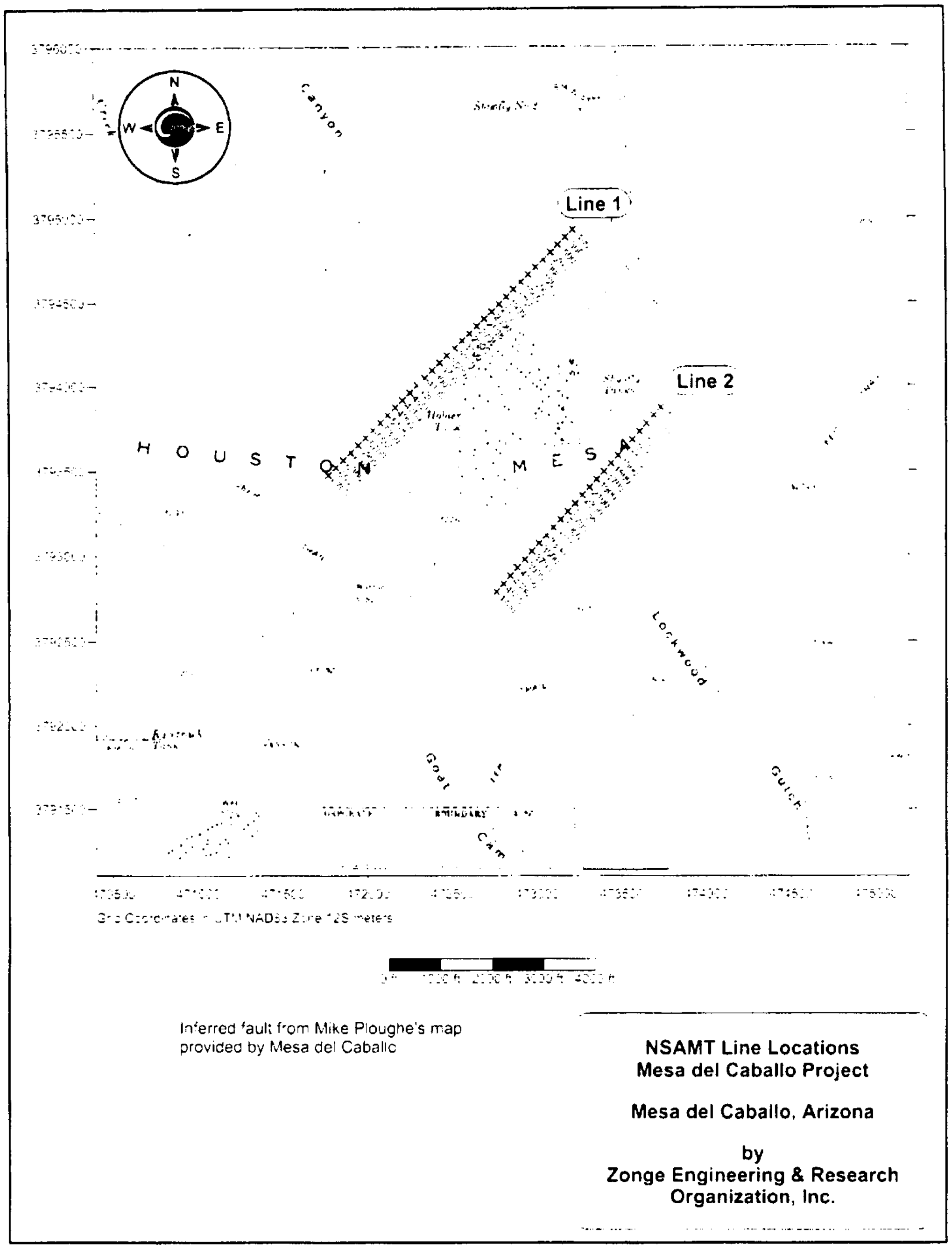


Figure 1- Line and station locations. with faults redrawn from Mike Ploughe's map.

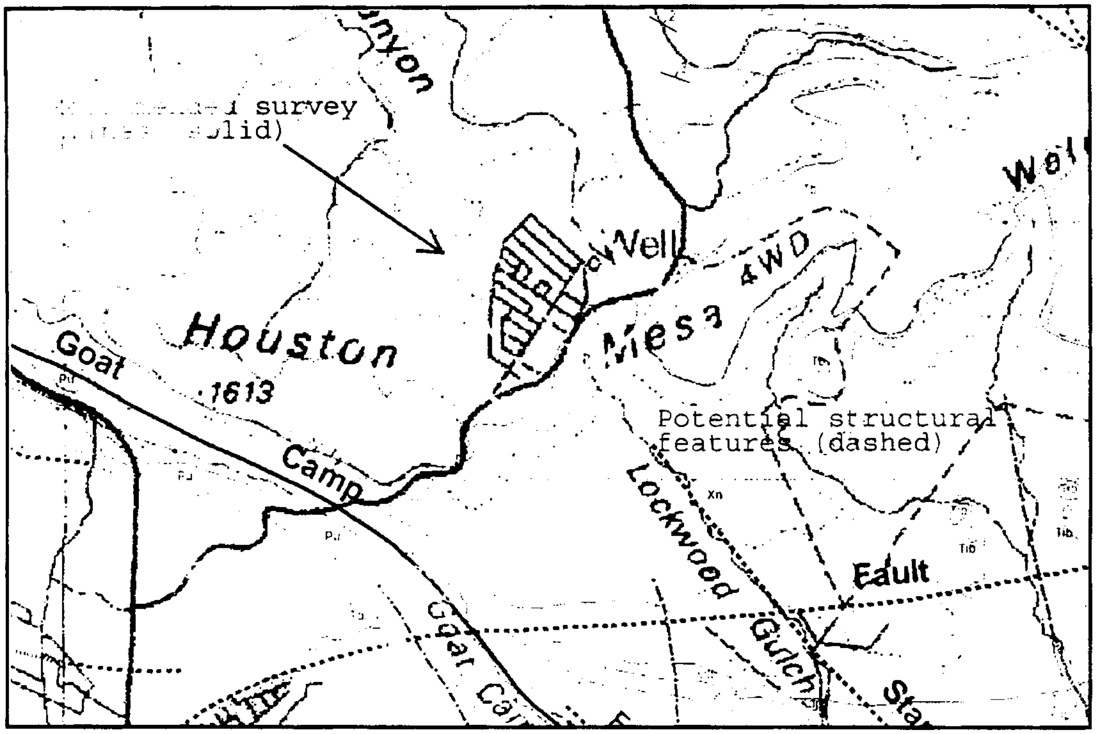


Figure 2- Fault location map provided by Brooke Utilities, showing lines recommended by Mike Ploughe.

Data at the Mesa del Caballo site were moderately noisy, primarily due to culture associated with the housing development itself. Culture includes man-made metallic conductors such as fences, pipelines, and power lines, as well as objects that actually radiate electrical noise such as active power lines, cathodically-protected pipelines, and radio transmitters. It is possible that the cultural effects have masked valid changes in resistivity, or that some of the changes in resistivity that are seen in the data are actually the result of culture.

<u>Summary of Results:</u> Lines 1 and 2 were parallel and intended to map suspected faults oriented approximately northwest-southeast. For discussion purposes, the suspected faults are called Faults A, B, and C, as shown on Figure 1. Figure 3 shows the smooth-model inversion results in the form of the resistivity cross sections for each line. On these cross sections, low resistivities

are shaded toward the red end of the spectrum (yellow-orange-red). and high resistivities are shaded toward the blue end of the spectrum (green-blue). Station numbers. in feet. are shown along the top of each cross section. elevations in meters are down the right side of the plot. with approximate depth in feet down the left side of the plot.

Line 1 was located northwest of Mesa del Caballo. and crossed all three faults. According to geologic maps of the area. this entire line was probably on a thin layer of Tapeats Sandstone. which overlies gneissic granitoid. Resistivities along this line are very high. as would be expected from the geology and from Zonge's prior work in the general area. North of station 1900. surface resistivities are noticeably lower than south of that location. suggesting a possible contact or change in surface material. At depths greater than 400 feet. resistivities between stations 4200 and 3600 are lower than background: this area correlates to the region between Faults A (which intersects the line at station 4200) and B (which intersects the line at station 3400). Fault C. which intersects this line at station 900. is not associated with any change in resistivity.

Line 2 was located southeast of Mesa del Caballo. and according to geologic maps is probably located on the gneissic granitoid. In good agreement with Line 1. the northern part of Line 2 is low resistivity at the surface. from approximately station 1500 to the north end of the line. According to the geologic map. this part of the line (approximately station 1500 to the north end of the line) is on tertiary basalt. which may explain the low resistivities. (Note that Line 1. which also shows surface low resistivities on the north end of the line. does not appear to cross the tertiary basalt. according to the geologic map.) Line 2 crosses Fault A at approximately station 3400. and a narrow zone of low resistivities is evident centered at station 3500. Faults B and C merge. and cross Line 2 at station 2600. but there is no significant change in the resistivity in that vicinity. In the deeper data (greater than 400 feet). low resistivities are evident. however. from station 1300 to station 600.

In this environment. where fractured zones in the bedrock may be more likely to produce more groundwater than un-fractured areas. it is encouraging that an independently inferred fault from the geologic map (Fault A) shows lower resistivities than background on both lines that it crosses. This zone of decreased resistivity is centered at station 3900 on Line 1 and station 3500 on Line 2. and may represent a fractured bedrock zone.

Resistivities do not change in the vicinity of Fault C on either line. and Fault B shows no change on Line 2. but may be the boundary of a low resistivity zone on Line 1. The data from prior work in this area showed that some mapped faults exhibited a decrease in resistivity. but others showed no change or appeared to be a resistive boundary.

A second low resistivity zone (in addition to Fault A) is seen on Line 2. and extends from station 1300 to 600: the geologic map indicates no faults in this area. This zone may correlate with a weaker low resistivity zone on Line 1 that extends from station 2900 to 1900. although there are resistive stations within this stretch online 1.

The geophysical data should now be correlated with other available background geologic. hydrologic. and borehole information for this area. This background information may assist in interpreting which of the above described zones of decreased resistivity might represent the best groundwater target. for example. or whether or not the low resistivities associated with the basalts might represent a good shallow groundwater target. Although the changes in resistivity indicating possible faults or fracture zones discussed above appear valid based on our experience in this environment. other interpretations are possible.

PROJECT LOGISTICS

Survey Summary: The AMT lines were acquired using an electric-field receiver dipole size of 200 feet. Electric-field measurements were made in groups, or "set-ups", of five dipoles concurrently. For each set-up of electric-field measurements, a magnetic field measurement was made simultaneously at the center of the set-up. A total of 58 stations were acquired on the two lines.

The line locations were suggested by Mike Ploughe and Brooke Utilities in conjunction with Zonge, based primarily on the location of inferred faults and on cultural features in the area. Endpoints of the lines were provided to Brooke's survey crew, who flagged the line location for the brush cutting crew. Lines 3 and 4 were considered optional, and have not been surveyed or brushed to date. The Zonge crew used a GPS to verify the locations of the lines. Station location coordinates are appended below to this report.

Field Instrumentation: The receiver used for the AMT survey was a Zonge GDP-32II multi-purpose receiver. This receiver is a backpack-portable, 16-bit, microprocessor-controlled receiver capable of gathering data on as many as 16 channels simultaneously. The electric-field signals were sensed using non-polarizable porous pot electrodes, connected to the receiver with 16-gauge insulated wire. The AMT magnetic-field signal was sensed with a Zonge Ant/4 magnetic field antenna.

Data Quality: Data quality was relatively good throughout this project, and good repeatability between stacks of data was achieved. Standard Zonge field procedure requires that the receiver operator make multiple measurements of each data point while monitoring real-time standard-error values displayed on the screen of the receiver and correlation coefficients. For AMT, multiple blocks of the data are also displayed graphically as resistivity-versus-frequency curves (plotted on a log-log scale), with error bars denoting data scatter for the operator in the field.

Cultural Contamination: A grounded fence crossed Line 1 as shown on Figure 3, but no other known culture intersected the lines. The Mesa del Caballo subdivision is very close to both lines, however, and noise is apparent in the data, particularly around 60 Hz, as would be expected.

Smooth-Model Inversion: Briefly. smooth-model inversion mathematically "back-calculates" (or "inverts") from the measured data to determine a likely location. size and depth of the source or sources of resistivity changes. The results of the smooth-model inversion are intentionally gradational. rather than showing abrupt. "blocky" changes in the subsurface.

The AMT lines were modeled using both 1D and 2D smooth-model inversion programs. called SCSINV and SCS2D respectively. Both sets of model results are used in the interpretation. although Figure 1 shows 1D results. since these results preserve narrow features. The 2D model differs from the 1D model in that the iterative adjustment utilizes information from adjacent stations. and when modeling a given station. it does not assume that the subsurface changes in resistivity only occur vertically. As a result. 2D results are usually smoother horizontally than the 1D results. However. 2D results also often smooth out real. but weak. lateral changes. and when lines are very short. the 2D models often overemphasize and exaggerate small. local features and noise.

The inversion results should not be considered a unique solution. and some ambiguity remains in any mathematical representation of the data.

Respectfully submitted.

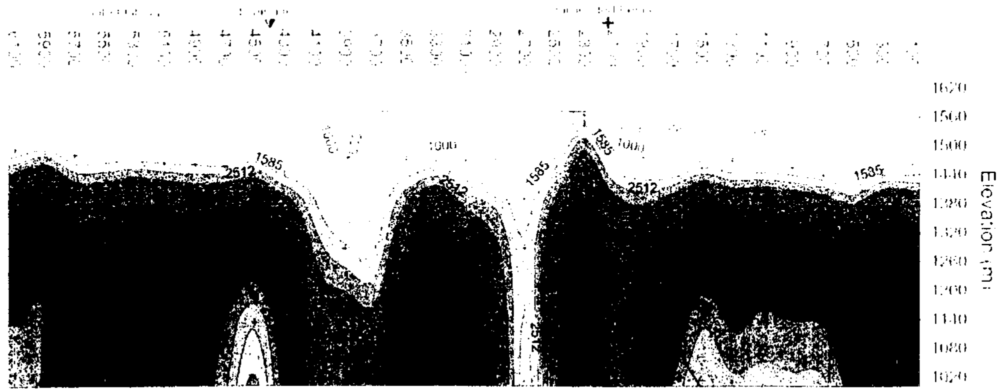
Norman Carlson
Chief Geophysicist
Zonge Engineering & Research Organization. Inc.
3322 E Fort Lowell Road
Tucson. AZ 85716 USA

Station Locations in UTM NAD83 Zone 12S meters

Line	Station Center	Easting	Northing
1	100	473217	3794929
1	300	473173	3794885
1	500	473129	3794841
1	700	473085	3794797
1	900	473041	3794753
1	1100	472997	3794709
1	1300	472953	3794665
1	1500	472909	3794621
1	1700	472865	3794577
1	1900	472822	3794532
1	2100	472778	3794488
1	2300	472734	3794444
1	2500	472690	3794400
1	2700	472646	3794356
1	2900	472602	3794312
1	3100	472558	3794268
1	3300	472514	3794224
1	3500	472470	3794180
1	3700	472426	3794136
1	3900	472382	3794092
1	4100	472338	3794048
1	4300	472294	3794004
1	4500	472250	3793960
1	4700	472206	3793916
1	4900	472162	3793872
1	5100	472119	3793827
1	5300	472075	3793783
1	5500	472031	3793739
1	5700	471987	3793695
1	5900	471943	3793651
1	6100	471899	3793607
1	6300	471855	3793563
1	6500	471811	3793519
1	6700	471767	3793475
2	100	473735	3793870
2	300	473693	3793823
2	500	473650	3793776
2	700	473608	3793729
2	900	473565	3793682
2	1100	473523	3793635
2	1300	473480	3793588
2	1500	473438	3793541
2	1700	473396	3793494
2	1900	473353	3793447
2	2100	473311	3793400
2	2300	473268	3793353

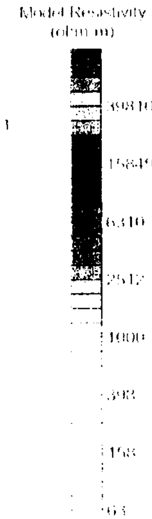
2	2500	473226	3793305
2	2700	473183	3793258
2	2900	473141	3793211
2	3100	473098	3793164
2	3300	473056	3793117
2	3500	473014	3793070
2	3700	472971	3793023
2	3900	472929	3792976
2	4100	472886	3792929
2	4300	472844	3792882
2	4500	472801	3792835
2	4700	472759	3792788

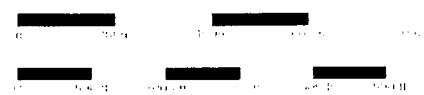
Resistivity Cross Section- Line 1



Resistivity Cross Section- Line 2

Natural Source Data
Receiver Data
Length 200 ft
Orient N45E
Inversion control parameters
ResSmth 1, dpW 0.1, dxW 1, dzW 1
SCS2D v3.20i

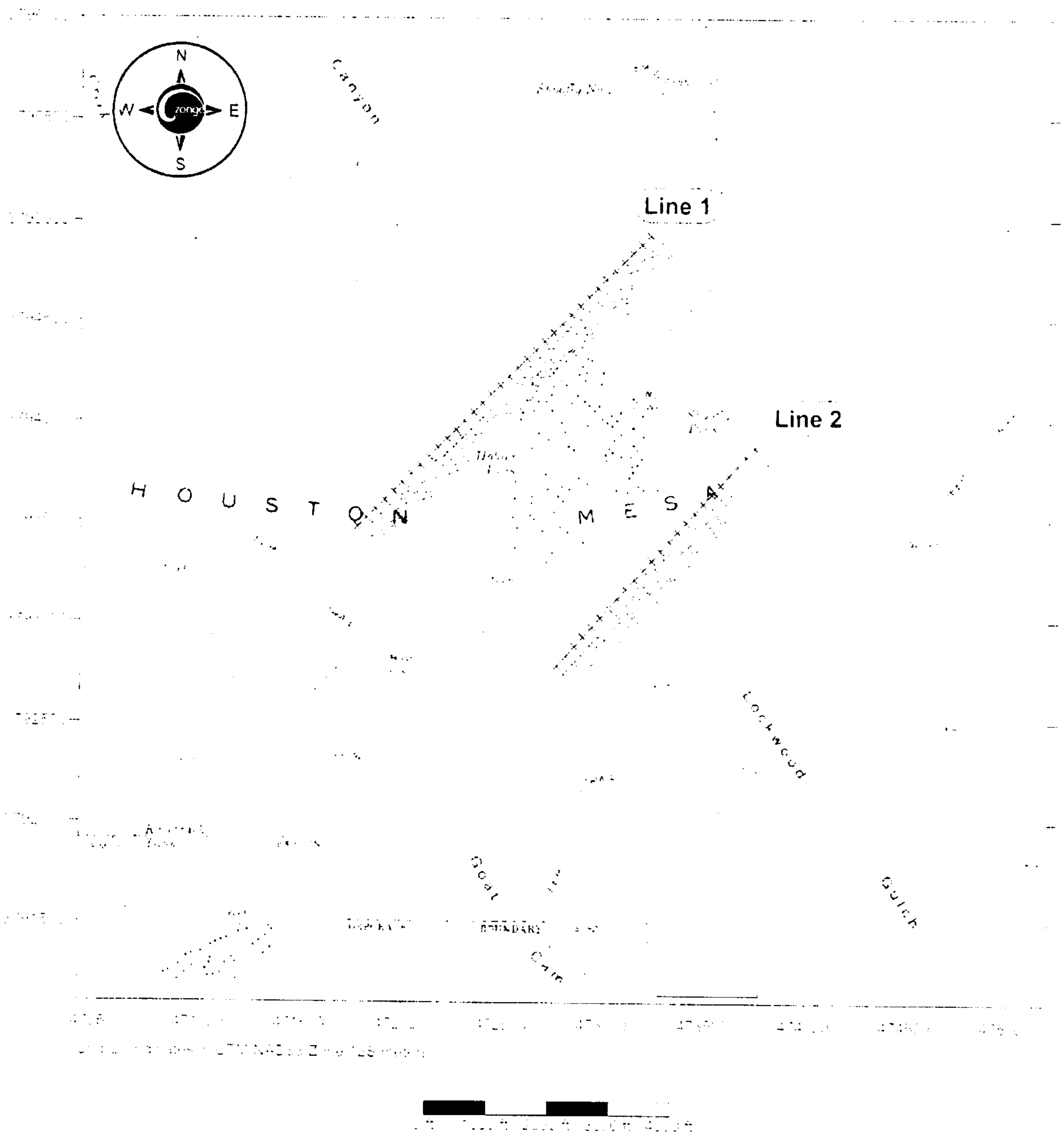




Mesa Del Caballo Project
Lines 1 and 2

1D Smooth-Model Inversion
Scalar NSAMT Data
by Zonge Engineering

AUTHOR	DRAWN	DATE	SCALE	PROJECT

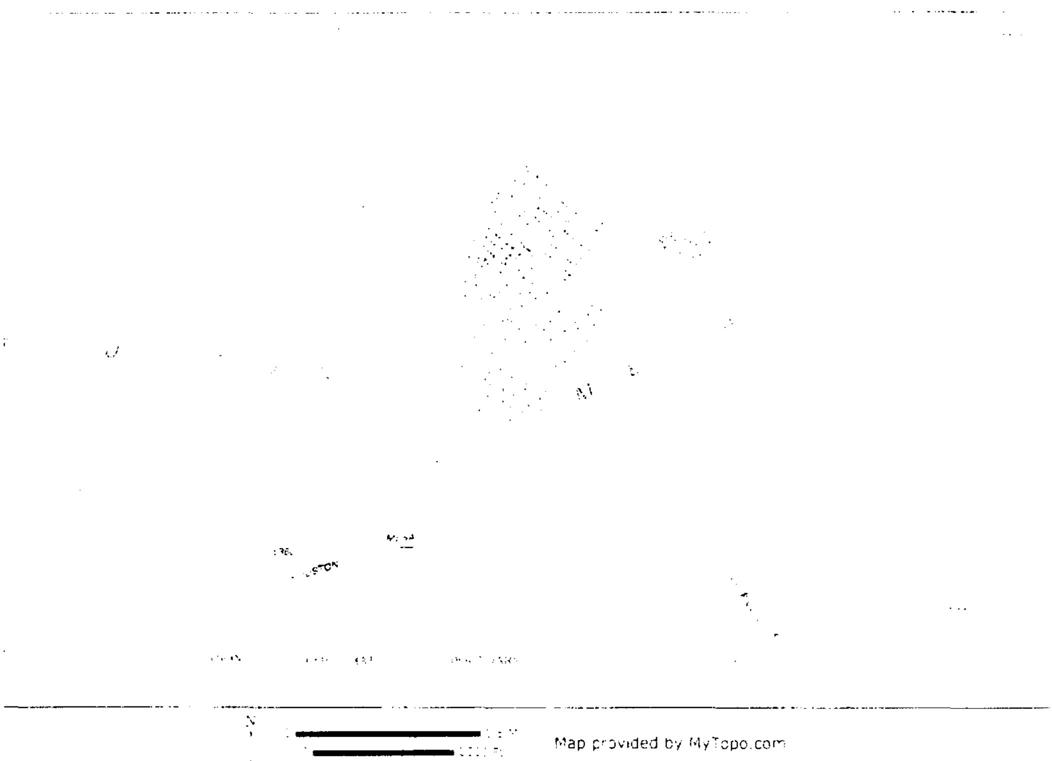


Inferred fault from Mike Ploughe's map provided by Mesa del Caballo

NSAMT Line Locations
Mesa del Caballo Project

Mesa del Caballo, Arizona

by
Zonge Engineering & Research Organization, Inc.


Map provided by MyTopo.com

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C

Southwest Ground-water Consultants, Inc.

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APR 20 2010

BROOKE UTILITIES

LETTER OF TRANSMITTAL

PRIVILEGED AND CONFIDENTIAL

TO:	Mr. Bob Hardcastle President Brooke Utilities P. O. Box 82218 Bakersfield, CA 93380	DATE:	April 16, 2010
		DELIVERY:	Mail
FROM:	Kevin Goldman Southwest Ground-water Consultants, Inc. 3033 N. 44th Street, Suite 120 Phoenix, AZ 85018	PAGES:	One report plus this cover
		PROJECT:	Mesa Del Caballo
Copy:	Stephen D. Noel, SGC Ms. Myndi Brogdon, Brooke Utilities	PROJECT NO.	B.1793

REMARKS

Bob:

Please find enclosed one original letter report entitled, "*Mesa del Caballo Zonge CSAMT Survey,*" dated March 30, 2010.

Please let me know if you have any questions or need additional information.

Thank you,

Kevin Goldman
Staff Geologist

THE INFORMATION CONTAINED IN THIS TRANSMITTAL IS PRIVILEDGED AND CONFIDENTIAL, INTENDED FOR THE USE OF THE ADDRESSEE LISTED ABOVE. IF YOU ARE NOT THE INTENDED RECIPIENT, YOU ARE HEREBY NOTIFIED THAT ANY DISCLOSURE, COPYING, DISTRIBUTION, OR ANY ACTION IN RELIANCE ON THE CONTENTS OF THIS TRANSMITTED INFORMATION IS STRICTLY PROHIBITED. IF YOU HAVE RECEIVED THIS TRANSMITTAL IN ERROR, PLEASE IMMEDIATELY NOTIFY US BY TELEPHONE TO ARRANGE FOR THE RETURN OF THIS DOCUMENT TO US.

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Phoenix, Arizona
Prescott, Arizona
Cottonwood, Arizona

Southwest Ground-water Consultants, Inc.

RECEIVED
APR 20 2010
BROOKE UTILITIES

March 30, 2010

Mr. Bob Hardcastle
President, Brooke Utilities
P.O. Box 82218
Bakersfield, California 93380

SUBJECT: MESA DEL CABALLO ZONGE CSAMT SURVEY

Dear Mr. Hardcastle,

Southwest Ground-water Consultants, Inc. (SGC) has prepared the following letter report summarizing the results and findings of Zonge Engineering and Research Organization (Zonge), Inc. The Zonge report is entitled *Geophysical AMT Survey on the Mesa Del Caballo Project*, dated March 16, 2010. A copy of the Zonge report is presented in Attachment I for reference. The SGC interpretation of the Zonge data with respect to the local hydrogeologic conditions and recommended well locations and depths are also presented

ZONGE REPORT REVIEW

Geophysical Survey

Zonge conducted a natural source Audio-frequency Magnetotelluric (AMT) geophysical survey in the immediate vicinity of the Mesa del Caballo development near Payson, Arizona in February, 2010. The purpose of the survey was to identify sub-surface structures that may be areas of increased hydraulic conductivity and subsequent areas of higher ground-water production. These sub-surface structures were then correlated to mapped or inferred surface geologic features to evaluate if these structures extended beneath the Mesa del Caballo community.

The geophysical survey measured the resistivity of the sub-surface material, which is controlled in part by the density and extent of pores (voids) in the rock material and the amount and conductivity of the fluid in the pore space. Bedrock, in this case granite and granitic type rock, is typically more resistant than unconsolidated, fractured, and/or saturated bedrock. The resistivity difference between the more competent granitic bedrock and decomposed and/or fractured bedrock was the key factor in mapping sub-surface fracture zones.

Two survey lines were run in the immediate vicinity of the property roughly perpendicular to mapped and/or inferred northwest and southeast trending structures passing through the development (Figure 1 in Attachment I). Details of the field operations and survey are presented in the Zonge report.

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Phoenix, Arizona
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Survey Results
Review of the geophysical survey results indicates that the upper 200 to 500 feet of material has the lowest measured resistivity values and that these values generally increase with depth. In two specific areas in Line 2 and in three areas in Line 1, the lower resistivity values extend to 2,000 feet in depth. In these zones, the deeper resistivity values are similar to values observed in the upper shallower zones. For example, in the southern resistivity zone mapped on Figure 1 (Attachment II), a resistivity of 6,310 ohm-m observed at a depth of 1,700 feet is the same value as observed at a depth of 700 feet. These resistivity values strongly imply a fractured rock zone exists versus the surrounding higher resistive competent rock material.

SGC has correlated the trends of these lower resistivity zones between Survey Lines 1 and 2, with the surface geologic map prepared by Gaeorama, Inc. (2007, Figure 2, Attachment II). This correlation is presented as Figure 3 (Attachment II) where the low resistivity zones in each survey line are extended through the project area along the general trends of the surface geologic structures mapped by Gaeorama (2007) and expanded by Mr. Mike Ploughe (Faults A, B, and C) as shown on Figure 1 (Attachment II).

These lower resistivity zones have been interpreted as fractured zones within the granitic bedrock associated with the local and regional structures, for example the Lockwood Gulch Fault trending from the southeast to the northwest through the development.

RECOMMENDED WELL LOCATIONS

Review of existing well information in and around the property from the records of the Arizona Department of Water Resources indicates that the local production wells range in depth from approximately 200 feet to 500 feet below land surface (bls). These wells have been completed in the shallower lower resistive material as noted in Figure 4 (Attachment II), and have reported yields ranging from less than 5 gallons per minute (gpm) to 25 gpm. The specific capacity of these wells range from 0.05 gallons per minute per foot of drawdown (gpm/ft) to 0.55 gpm/ft. Based on the local hydrogeologic conditions supported by the geophysical cross-sections, the yield of wells designed to be production wells completed to depths up to 500 feet will be in the 10 to 25 gpm range.

By completing new wells or extending existing wells (if possible) deeper into the similar less resistive/fractured rock, the yield of the wells would be expected to increase at rates similar to the calculated specific capacity of the shallower wells. For example, a 1,000 foot well drilled in the Southern Low Resistivity Zone could yield up to 380 gpm based on a specific capacity on 0.55 gpm/ft where the estimated saturated thickness is 800 feet. This type of projection based on specific capacity data is an upper end estimate because the fractured material tightens (becomes less fractured/porous) with depth as observed in the geophysical cross-section data (Figure 3, Attachment I) resulting in declining specific capacity values and ultimately lower production rates. However, doubling the potential yield of wells to 50 gpm +/- by completing them to depths of 1,000 feet would be a realistic expectation. Extending wells deeper than 1,000 feet may further increase the well yield, but the specific capacity of the well would be expected to decrease with depth.

The preferred locations for larger capacity wells (1,000 feet +/-) are presented in Figure 3 (Attachment II). These locations are identified as the shaded lower resistivity zones where the low resistivity material, believed to be zones of fractured rock, extends to depths of 2,000 feet bls. Within these areas, two well sites have been identified based on location within the development and within the immediate vicinity of water system facilities that may better support the location of a production well.

Well sites, including Site A, in the Southern Low Resistivity Zone are preferred over the Northern Low Resistivity Zone, including Site B, because the width of the fractured zone in this area appears to be wider at depth. In addition, the Northern Low Resistivity Zone extending from Survey Line 1 is bifurcated and it is unknown where the fracture zone trends into one larger zone as observed in Survey Line 2 (between stations 700 and 1350).

Please call if you have any questions or require additional information.

Sincerely,
Southwest Ground-water Consultants, Inc.

Stephen D. Noel, R.G.
President

REGISTERED GEOLOGIST
CERTIFICATE NO.
17065
STEPHEN D.
NOEL
ARIZONA, U.S.A.
Expires: 9/30/12

C: Myndi Brogdon

Attachments: I – Zonge Report, March 16, 2010
II – Figures
1 – Low Resistivity Zones
2 – Surface Geologic Map
3 – Proposed Production Well Locations
4 – Well Location Map

ATTACHMENT I

Zonge Report, March 16, 2010

Zonge Engineering and Research Organization, Inc
3322 E. Fort Lowell Rd
Tucson, AZ 85716
Office: (520)327-5501
Fax: (520) 325-1588
www.zonge.com

March 16, 2010

Attention: Myndi Brogdon
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Bakersfield, CA 93380

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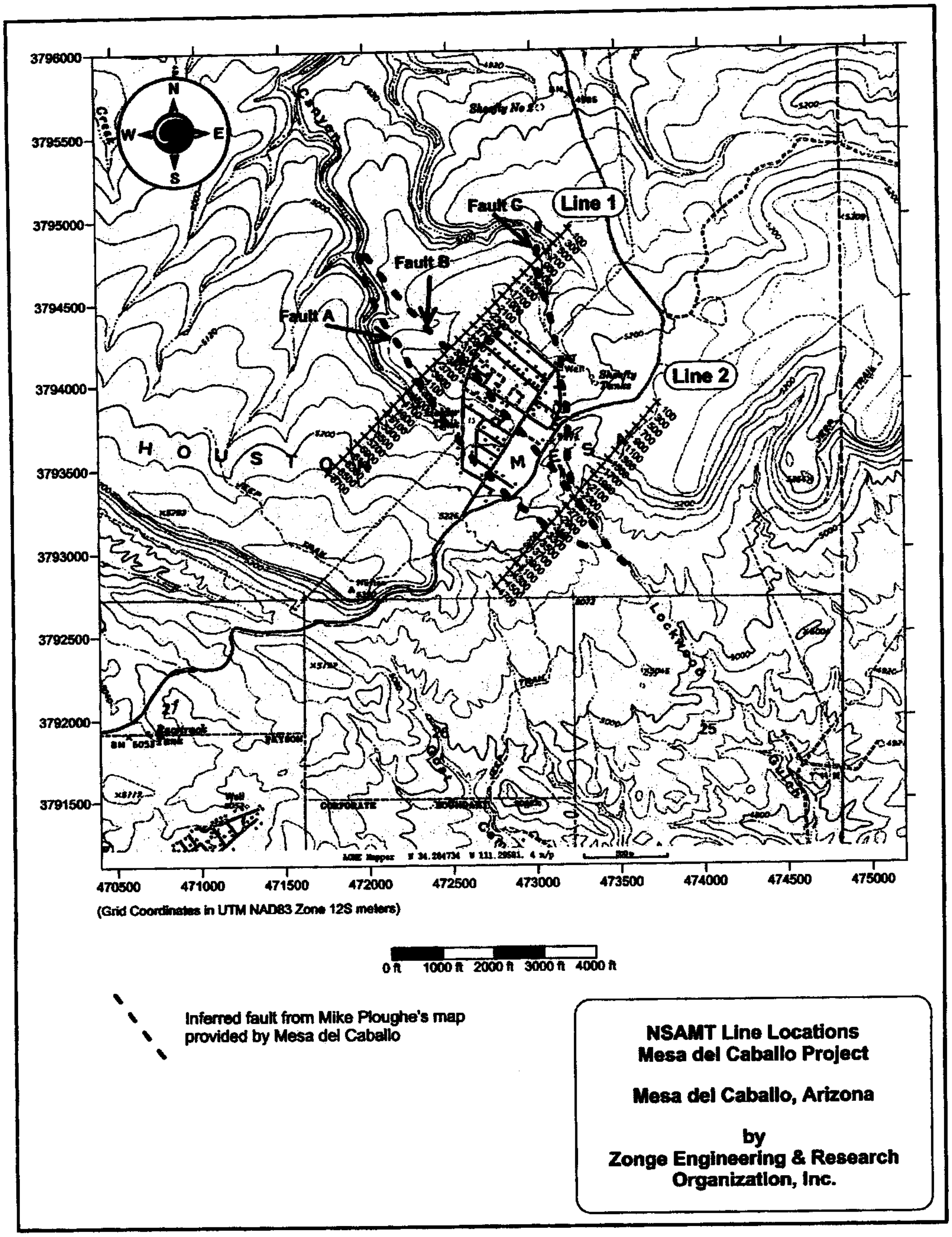

Figure 1 - Line and station locations, with faults redrawn from Mike Ploughe's map.

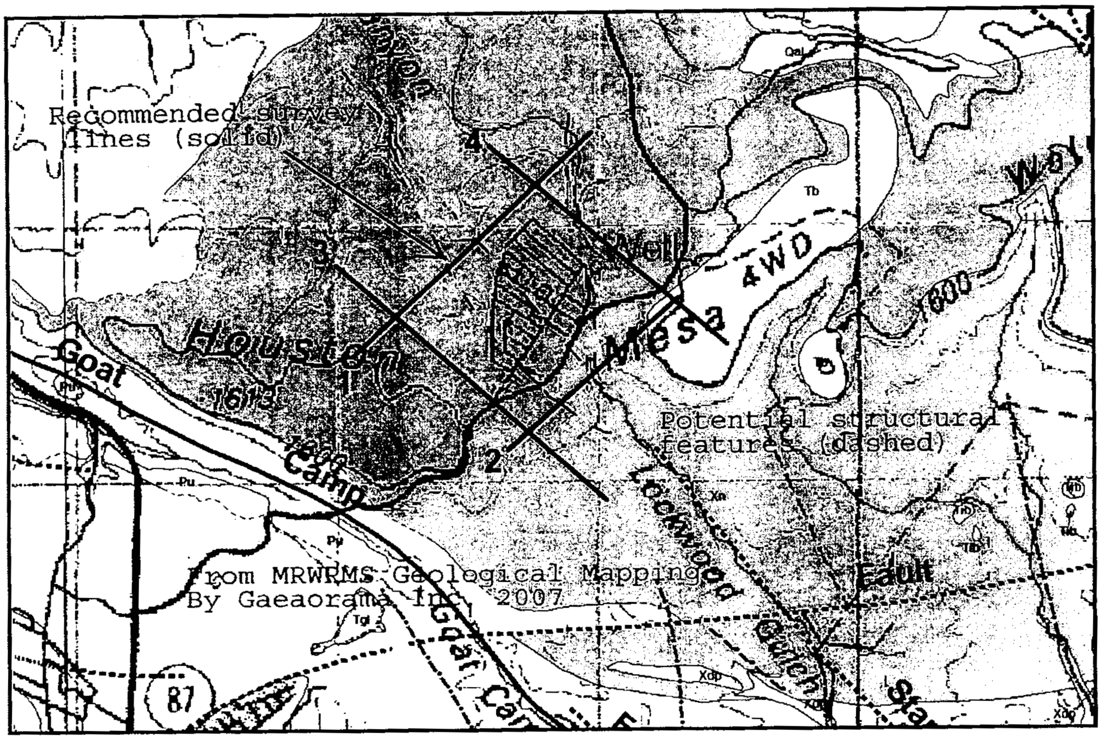

Figure 2- Fault location map provided by Brooke Utilities, showing lines recommended by Mike Ploughe.

Data at the Mesa del Caballo site were moderately noisy, primarily due to culture associated with the housing development itself. Culture includes man-made metallic conductors such as fences, pipelines, and power lines, as well as objects that actually radiate electrical noise such as active power lines, cathodically-protected pipelines, and radio transmitters. It is possible that the cultural effects have masked valid changes in resistivity, or that some of the changes in resistivity that are seen in the data are actually the result of culture.

<u>Summary of Results:</u> Lines 1 and 2 were parallel and intended to map suspected faults oriented approximately northwest-southeast. For discussion purposes, the suspected faults are called Faults A, B, and C, as shown on Figure 1. Figure 3 shows the smooth-model inversion results in the form of the resistivity cross sections for each line. On these cross sections, low resistivities

are shaded toward the red end of the spectrum (yellow-orange-red), and high resistivities are shaded toward the blue end of the spectrum (green-blue). Station numbers, in feet, are shown along the top of each cross section, elevations in meters are down the right side of the plot, with approximate depth in feet down the left side of the plot.

Line 1 was located northwest of Mesa del Caballo, and crossed all three faults. According to geologic maps of the area, this entire line was probably on a thin layer of Tapeats Sandstone, which overlies gneissic granitoid. Resistivities along this line are very high, as would be expected from the geology and from Zonge's prior work in the general area. North of station 1900, surface resistivities are noticeably lower than south of that location, suggesting a possible contact or change in surface material. At depths greater than 400 feet, resistivities between stations 4200 and 3600 are lower than background; this area correlates to the region between Faults A (which intersects the line at station 4200) and B (which intersects the line at station 3400). Fault C, which intersects this line at station 900, is not associated with any change in resistivity.

Line 2 was located southeast of Mesa del Caballo, and according to geologic maps is probably located on the gneissic granitoid. In good agreement with Line 1, the northern part of Line 2 is low resistivity at the surface, from approximately station 1500 to the north end of the line. According to the geologic map, this part of the line (approximately station 1500 to the north end of the line) is on tertiary basalt, which may explain the low resistivities. (Note that Line 1, which also shows surface low resistivities on the north end of the line, does not appear to cross the tertiary basalt, according to the geologic map.) Line 2 crosses Fault A at approximately station 3400, and a narrow zone of low resistivities is evident centered at station 3500. Faults B and C merge, and cross Line 2 at station 2600, but there is no significant change in the resistivity in that vicinity. In the deeper data (greater than 400 feet), low resistivities are evident, however, from station 1300 to station 600.

In this environment, where fractured zones in the bedrock may be more likely to produce more groundwater than un-fractured areas, it is encouraging that an independently inferred fault from the geologic map (Fault A) shows lower resistivities than background on both lines that it crosses. This zone of decreased resistivity is centered at station 3900 on Line 1 and station 3500 on Line 2, and may represent a fractured bedrock zone.

Resistivities do not change in the vicinity of Fault C on either line, and Fault B shows no change on Line 2, but may be the boundary of a low resistivity zone on Line 1. The data from prior work in this area showed that some mapped faults exhibited a decrease in resistivity, but others showed no change or appeared to be a resistive boundary.

A second low resistivity zone (in addition to Fault A) is seen on Line 2, and extends from station 1300 to 600; the geologic map indicates no faults in this area. This zone may correlate with a weaker low resistivity zone on Line 1 that extends from station 2900 to 1900, although there are resistive stations within this stretch online 1.

The geophysical data should now be correlated with other available background geologic, hydrologic, and borehole information for this area. This background information may assist in interpreting which of the above described zones of decreased resistivity might represent the best groundwater target, for example, or whether or not the low resistivities associated with the basalts might represent a good shallow groundwater target. Although the changes in resistivity indicating possible faults or fracture zones discussed above appear valid based on our experience in this environment, other interpretations are possible.

PROJECT LOGISTICS

Survey Summary: The AMT lines were acquired using an electric-field receiver dipole size of 200 feet. Electric-field measurements were made in groups, or "set-ups", of five dipoles concurrently. For each set-up of electric-field measurements, a magnetic field measurement was made simultaneously at the center of the set-up. A total of 58 stations were acquired on the two lines.

The line locations were suggested by Mike Ploughe and Brooke Utilities in conjunction with Zonge, based primarily on the location of inferred faults and on cultural features in the area. Endpoints of the lines were provided to Brooke's survey crew, who flagged the line location for the brush cutting crew. Lines 3 and 4 were considered optional, and have not been surveyed or brushed to date. The Zonge crew used a GPS to verify the locations of the lines. Station location coordinates are appended below to this report.

Field Instrumentation: The receiver used for the AMT survey was a Zonge GDP-32II multi-purpose receiver. This receiver is a backpack-portable, 16-bit, microprocessor-controlled receiver capable of gathering data on as many as 16 channels simultaneously. The electric-field signals were sensed using non-polarizable porous pot electrodes, connected to the receiver with 16-gauge insulated wire. The AMT magnetic-field signal was sensed with a Zonge Ant/4 magnetic field antenna.

Data Quality: Data quality was relatively good throughout this project, and good repeatability between stacks of data was achieved. Standard Zonge field procedure requires that the receiver operator make multiple measurements of each data point while monitoring real-time standard-error values displayed on the screen of the receiver and correlation coefficients. For AMT, multiple blocks of the data are also displayed graphically as resistivity-versus-frequency curves (plotted on a log-log scale), with error bars denoting data scatter for the operator in the field.

Cultural Contamination: A grounded fence crossed Line 1 as shown on Figure 3, but no other known culture intersected the lines. The Mesa del Caballo subdivision is very close to both lines, however, and noise is apparent in the data, particularly around 60 Hz, as would be expected.

Smooth-Model Inversion: Briefly, smooth-model inversion mathematically "back-calculates" (or "inverts") from the measured data to determine a likely location, size and depth of the source or sources of resistivity changes. The results of the smooth-model inversion are intentionally gradational, rather than showing abrupt, "blocky" changes in the subsurface.

The AMT lines were modeled using both 1D and 2D smooth-model inversion programs, called SCSINV and SCS2D respectively. Both sets of model results are used in the interpretation, although Figure 1 shows 1D results, since these results preserve narrow features. The 2D model differs from the 1D model in that the iterative adjustment utilizes information from adjacent stations, and when modeling a given station, it does not assume that the subsurface changes in resistivity only occur vertically. As a result, 2D results are usually smoother horizontally than the 1D results. However, 2D results also often smooth out real, but weak, lateral changes, and when lines are very short, the 2D models often overemphasize and exaggerate small, local features and noise.

The inversion results should not be considered a unique solution, and some ambiguity remains in any mathematical representation of the data.

Respectfully submitted,

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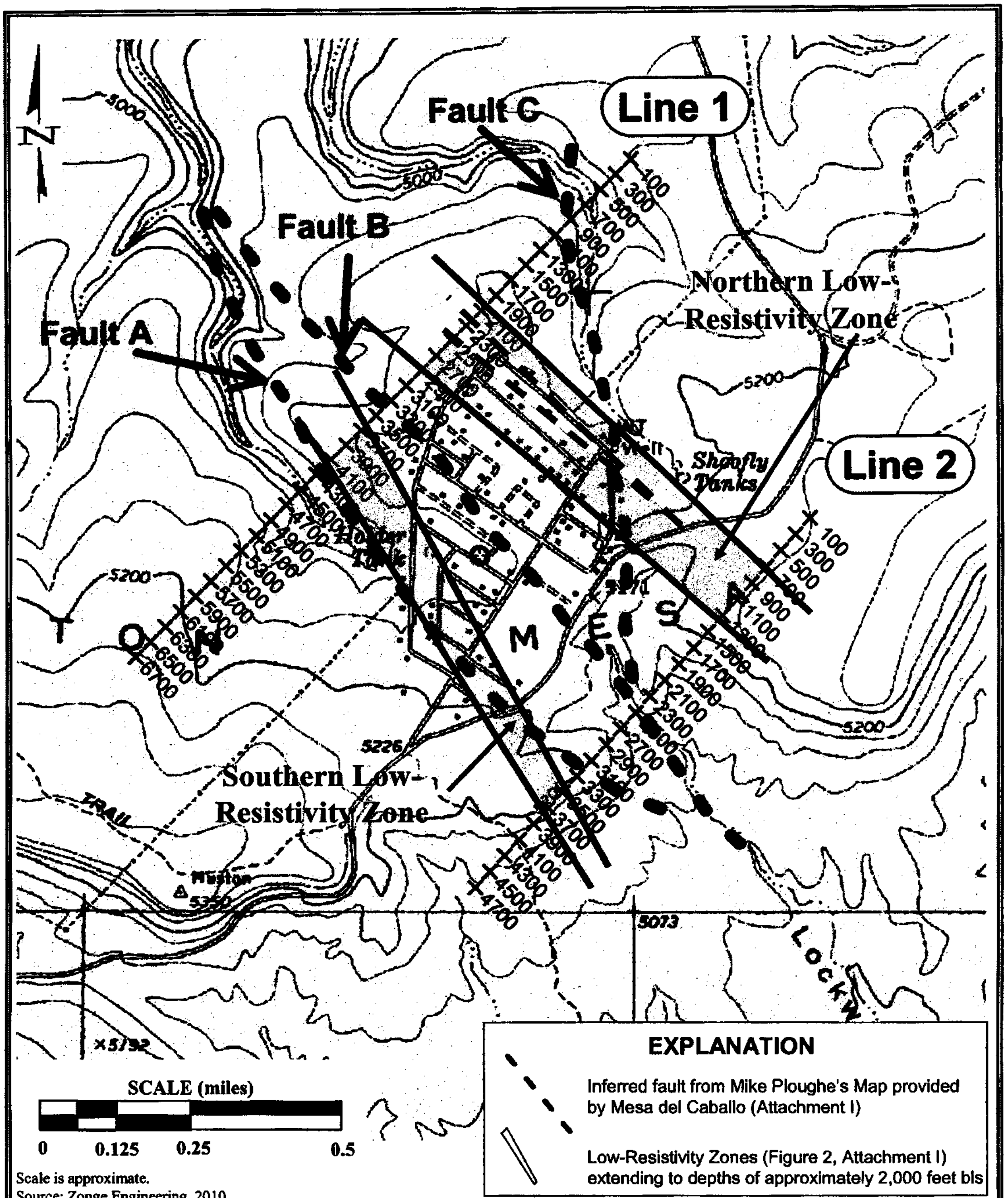
Tucson, AZ 85716 USA

Station Locations in UTM NAD83 Zone 12S meters

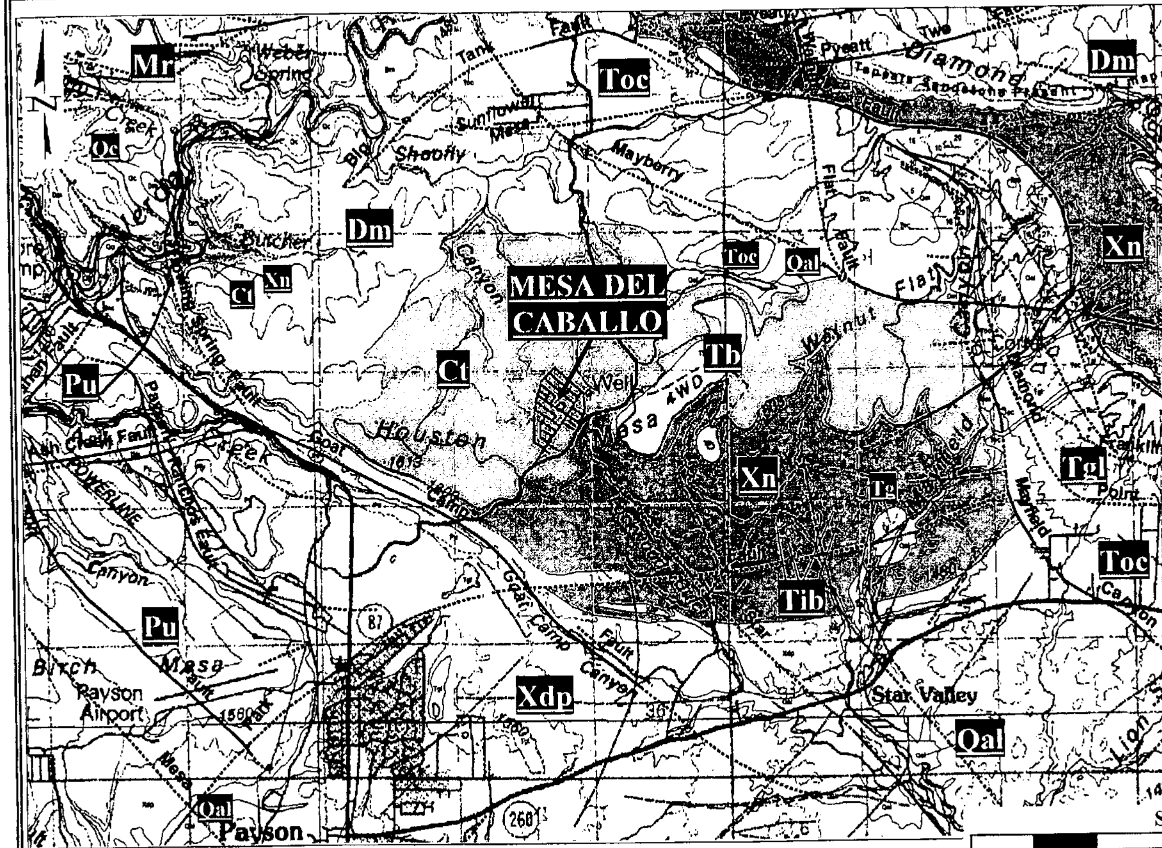
Line	Station Center	Easting	Northing
1	100	473217	3794929
1	300	473173	3794885
1	500	473129	3794841
1	700	473085	3794797
1	900	473041	3794753
1	1100	472997	3794709
1	1300	472953	3794665
1	1500	472909	3794621
1	1700	472865	3794577
1	1900	472822	3794532
1	2100	472778	3794488
1	2300	472734	3794444
1	2500	472690	3794400
1	2700	472646	3794356
1	2900	472602	3794312
1	3100	472558	3794268
1	3300	472514	3794224
1	3500	472470	3794180
1	3700	472426	3794136
1	3900	472382	3794092
1	4100	472338	3794048
1	4300	472294	3794004
1	4500	472250	3793960
1	4700	472206	3793916
1	4900	472162	3793872
1	5100	472119	3793827
1	5300	472075	3793783
1	5500	472031	3793739
1	5700	471987	3793695
1	5900	471943	3793651
1	6100	471899	3793607
1	6300	471855	3793563
1	6500	471811	3793519
1	6700	471767	3793475
2	100	473735	3793870
2	300	473693	3793823
2	500	473650	3793776
2	700	473608	3793729
2	900	473565	3793682
2	1100	473523	3793635
2	1300	473480	3793588
2	1500	473438	3793541
2	1700	473396	3793494
2	1900	473353	3793447
2	2100	473311	3793400
2	2300	473268	3793353

2	2500	473226	3793305
2	2700	473183	3793258
2	2900	473141	3793211
2	3100	473098	3793164
2	3300	473056	3793117
2	3500	473014	3793070
2	3700	472971	3793023
2	3900	472929	3792976
2	4100	472886	3792929
2	4300	472844	3792882
2	4500	472801	3792835
2	4700	472759	3792788

ATTACHMENT II



Southwest Ground-water Consultants, Inc.	LOW-RESISTIVITY ZONES	Figure 1
March 26, 2010 Project B.1793	Mesa del Caballo, Gila County, Arizona	



GEOLOGIC KEY

QUATERNARY

Qal – Alluvium
Qc – Colluvium

TERTIARY

Tg – Gravel
Tgl – Gravel & Limestone
Tb – Basalt
Toc – Older Conglomerate
Tib – Basalt Plugs & Dikes

PALEOZOIC

Dm – Devonian Martin Formation
Mr – Mississippian Redwall Formation: Limestone Member
Ct – Cambrian Tapeats Sandstone
Pu – Undivided Paleozoic Rocks

EARLY PROTEROZOIC

Xdp – Payson Granite
Xn – Gneissic Granitoids

STRUCTURE

—— Mapped Faults
...... Inferred Faults

SCALE (miles)

0 1.0 2.0 4.0

Scale is approximate.

Source: Gaeaorama, Inc., 2007, Geologic Map of the Mogollon Rim Water Resources Management Study Area, Northern Gila County, Arizona. 1:50,000.

Southwest Ground-water Consultants, Inc.

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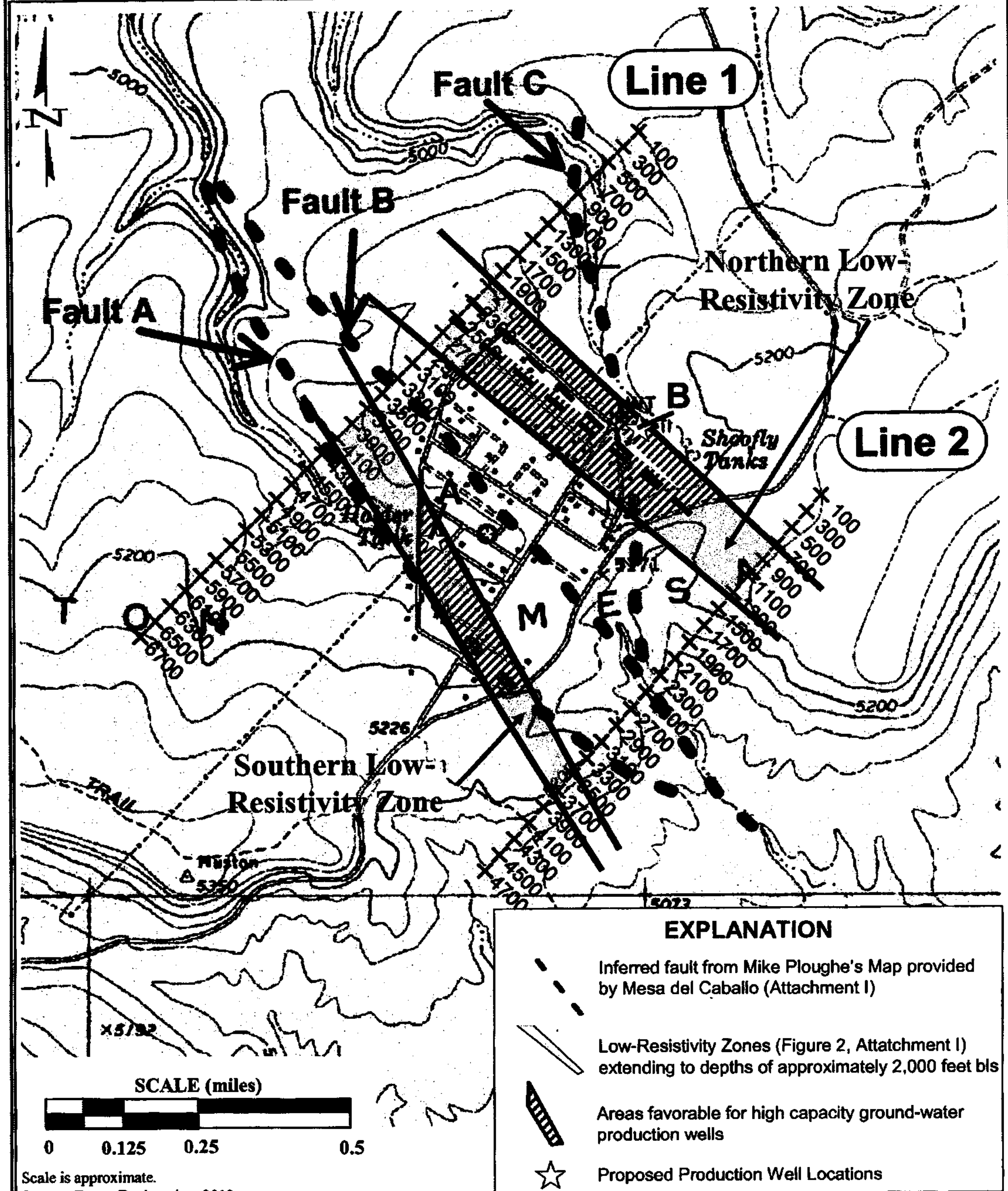
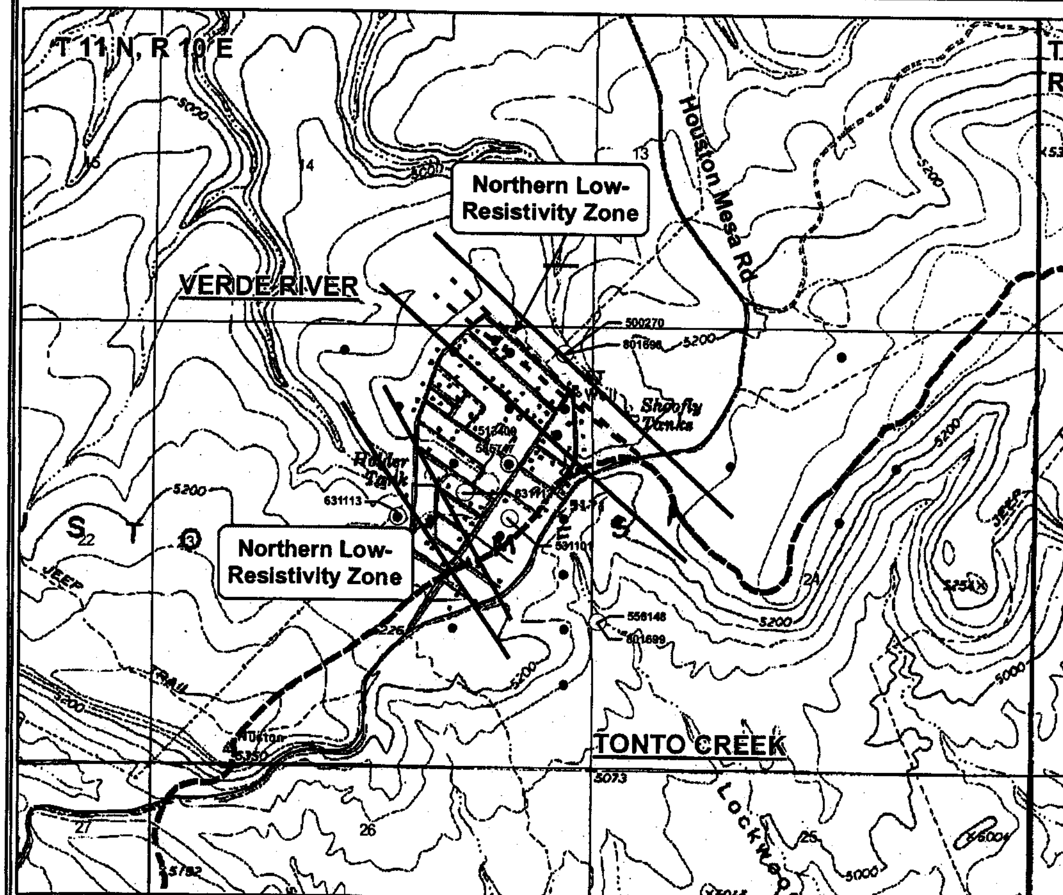
SURFACE GEOLOGIC MAP

Mesa del Caballo, Gila County, Arizona

Figure 2



Southwest Ground-water Consultants, Inc.	PROPOSED PRODUCTION WELL LOCATIONS	Figure 3
March 26, 2010 Project B.1793	Mesa del Caballo, Gila County, Arizona	



Registration Number (55-)	Cadastal Location	Total Casing Depth (ft bls)	Casing Width (in)	Pump Rate (gpm)	Remarks
500270	A(11-10) 23AAA	98	6	0	Location based on cadastral
801698	A(11-10) 23AAA	100	6	7	Location based on cadastral
631112	A(11-10) 23AAC	80	5	7	Location based on ADWR GPS coordinates
631113	A(11-10) 23ACC	104	6	22	Location based on cadastral
513409	A(11-10) 23ADB	395	6	20	Location based on cadastral
531101	A(11-10) 23ADC	400	6	18	Location based on cadastral
556148	A(11-10) 23ADC	400	6	18	Location based on ADWR GPS coordinates
801699	A(11-10) 24	80	6	7	Location based on ADWR GPS coordinates

EXPLANATION

ADWR Registered Production Wells

○ Payson Water Co. (United Utilities)

• Private Owners

Low-Resistivity Zones

Ground-Water Basin

0 1,000 2,000 3,000 4,000 Feet

Base GIS Data and Well Data: ADWR (2009) Topographic Map: Libre Map Project (http://libremap.org - Accessed 3/25/10)

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WELL LOCATION MAP

Mesa del Caballo, Gila County, Arizona

Figure 4