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**BEFORE THE ARIZONA POWER PLANT AND  
TRANSMISSION LINE SITING COMMITTEE**

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IN THE MATTER OF THE APPLICATION OF  
AGUA CALIENTE SOLAR, LLC, IN  
CONFORMANCE WITH THE REQUIRE-  
MENTS OF ARIZONA REVISED STATUTES  
40-360.03 AND 40-360.06, FOR A  
CERTIFICATE OF ENVIRONMENTAL  
COMPATIBILITY AUTHORIZING  
CONSTRUCTION OF THE AGUA CALIENTE  
SOLAR PROJECT, A 280 MW PARABOLIC  
TROUGH CONCENTRATING SOLAR  
THERMAL, OR A 425 MW PHOTOVOLTAIC  
SOLAR, GENERATING FACILITY AND  
ASSOCIATED TRANSMISSION LINE  
INTERCONNECTING THE GENERATING  
FACILITY TO THE ADJACENT PALO VERDE  
- NORTH GILA #1 500KV TRANSMISSION  
LINE IN YUMA COUNTY APPROXIMATELY  
10 MILES NORTH OF DATELAND,  
ARIZONA.

IN THE MATTER OF THE APPLICATION OF  
ARIZONA PUBLIC SERVICE COMPANY, IN  
CONFORMANCE WITH THE REQUIRE-  
MENTS OF ARIZONA REVISED STATUTES  
40-360.03 AND 40-360.06, FOR A  
CERTIFICATE OF ENVIRONMENTAL  
COMPATIBILITY AUTHORIZING  
CONSTRUCTION OF THE APS Q43 500KV  
TRANSMISSION LINE AND SWITCHYARD  
INTERCONNECTION PROJECT AND  
ASSOCIATED FACILITIES INTER-  
CONNECTING TO THE PALO VERDE -  
NORTH GILA #1 AND FUTURE PALO VERDE  
- NORTH GILA #2 500KV TRANSMISSION  
LINES APPROXIMATELY 10 MILES NORTH  
OF DATELAND, ARIZONA (SECTION 34,  
T5S, R12W, G&SRB&M, YUMA COUNTY,  
ARIZONA)

**Docket No. L-00000JJ-09-0279-00145**

**Case No. 145**

Arizona Corporation Commission  
**DOCKETED**

JUL 15 2009

DOCKETED BY

**Docket No. L-00000D-09-0280-00146**

**Case No. 146**

**NOTICE OF FILING**

**RECEIVED**  
2009 JUL 15 P 1:21  
AZ CORP COMMISSION  
DOCKET CONTROL

1 **NOTICE OF FILING**

2 Applicant, Agua Caliente Solar, LLC, hereby provides Notice of Filing of Summaries of  
3 Expected Direct Testimony of witnesses Stan Barnes, James Woodruff, Dana Diller, Steve Clark,  
4 Greg Bernosky, Randy Schroeder, and Kenda Pollio and prefiled testimony of Mark Etherton and  
5 Marvin Glotfelty for the above-captioned consolidated cases.

6 RESPECTFULLY SUBMITTED this 15<sup>th</sup> day of July, 2009.

7 MOYES SELLERS & SIMS

8  
9   
10 Jay I. Moyes  
11 1850 N. Central Avenue, Suite 1100  
12 Phoenix, Arizona 85004  
13 (602) 604-2141

12 ORIGINAL & 25 copies of the  
13 Foregoing were filed with Docket  
14 Control on the 15<sup>th</sup> day of July, 2009.

15 Copies were hand-delivered the 15<sup>th</sup>  
16 day of July, 2009, to:

17 John Foreman, Chairman  
18 Arizona Power Plant and Transmission  
19 Line Siting Committee  
1275 W. Washington  
Phoenix, AZ 85004

20 And members of the Arizona Power  
21 Plant & Transmission Line Committee  
22 At their individual addresses

23 Tom Campbell, Esq.  
24 Lewis & Roca  
40 N Central Ave.  
Phoenix, AZ 85004

25 Arizona Reporting Service  
26 2200 N Central Avenue #502  
Phoenix, AZ 85004

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**AGUA CALIENTE SOLAR PROJECT  
&  
APS Q43 500KV SWITCHYARD  
AND TRANSMISSION INTERCONNECTION PROJECT**

CASES 145 & 146, Consolidated for Hearing  
Before the  
Arizona Power Plant and Transmission Line Siting Committee

July 21-22, 2009, in Dateland, AZ

**SUMMARIES OF EXPECTED DIRECT TESTIMONY**

**PANEL 1:**

**Stan Barnes**, Copper State Consulting

Mr. Barnes' testimony will set a policy backdrop for the Agua Caliente Solar Project and the need for the Project. He will testify regarding the evolving public policy of encouraging solar energy development in the state of Arizona, both for use by Arizona utilities and customers and for export to the broader southwest renewable energy markets. He will allude to various public statements and information supportive of that policy by key political and regulatory leaders. He will testify generally regarding the current economy and the potential benefits of the Project to the economy of Yuma County and Arizona. He will address how the Project will advance Arizona's policy objective of becoming a solar energy capitol.

**Jim Woodruff**, V.P. Regulatory and Government Affairs, Next Light Renewable Power

Mr. Woodruff's testimony will introduce the corporate structure and ownership of the Applicant in Case 145, Agua Caliente Solar, LLC, and its parent organizations. He will present information regarding the renewable energy experience of the NextLight team, and other renewables projects that NextLight is developing. He will testify about the nature of the market and need for renewable energy in Arizona and the southwest, and how the Project fits into the procurement and power purchase agreement negotiation processes that typify the functions of that marketplace.

**PANEL 2:**

**Dana Diller**, High Energy Resource Services, Project Development Director

Ms. Diller will present an overview of the Agua Caliente Solar Project Site selection and development process. She will explain why the Applicant is seeking approval for two technology options -- concentrating solar thermal ("CSP"), and photovoltaic (PV) -- and the importance of Applicant retaining the flexibility to develop either one or the other on the Project Site. She will overview the factors that will govern the eventual selection of either CSP or PV technology for the Project. Her testimony will examine the Project Site characteristics and attributes, and factors that lead to its selection as the ideal site for development of either the CSP or PV Project, including the solar resource, site disturbance by agriculture, adjacent existing transmission, proven water supply and conservation opportunity, remoteness from other development or impacted uses or habitats, and access by existing roads. Ms. Diller will then present and narrate a detailed "virtual tour" video presentation. The "tour" will examine the Project Site general area in its natural appearance, and then over-laid computer renditions of the proposed facilities on the Project Site from aerial views and from various eye-level key observation points corresponding to those contained in the Application for Case 145. Because both Case 145 and Case 146, consolidated for hearing, deal with the same site, Ms. Diller's testimony regarding the site will be relevant to both cases, and the virtual tour will include the APS Q43 500kV Switchyard and Transmission Interconnection Project facilities that are the subject of Case 146.

**Steve Clark**, V.P. Engineering, NextLight Renewable Power, LLC

Mr. Clark will be the primary witness addressing the technology, engineering, and physical components of the Agua Caliente Solar Project, for both the CSP and the PV technologies.

He will describe the basic 4 "blocks" of the concentrating solar -- CSP -- technology: the parabolic trough solar collection field; the heat transfer fluid system; the thermal energy storage system using molten salt technology; and the power block components with traditional heat exchangers, steam generator, condenser, cooling tower and water treatment facilities. He will address the ancillary facilities associated with a CSP plant, such as the brine disposal evaporation pond, water treatment and administrative building, etc. He will discuss the proven nature of the CSP technology engineering and equipment.

Mr. Clark will then testify about the photovoltaic -- PV -- technology. He will describe the basic components, including different designs of PV panels, support structures and tracking options; the D/C to A/C electrical inverters and transformers; the electrical interconnections; and the ancillary O&M facility. He will explain the basic physics of the photovoltaic principle and the distinctions between PV cell and thin film PV technologies, and will testify about the proven nature of PV technology.

Finally, Mr. Clark will explain the issues and nuances of quantifying the “nameplate” rating and output capabilities of the CSP and PV Projects.

**Marvin Glotfelty:** Clear Creek Associates

Mr. Glotfelty’s testimony addresses water, and is being pre-filed in its entirety along with this witness summary.

**Mark Etherton:** PDS Consulting

Mr. Etherton’s testimony addresses the Gen-Tie transmission line and the transmission system impact study, and is being pre-filed in its entirety along with this witness summary.

**Panel 3: (CASE 146-Specific Testimony)**

**Greg Bernosky:** Arizona Public Service Company

Mr. Bernosky is the Project Director for the APS Q43 500kV Transmission Line and Switchyard Interconnection Project (Case 146). Mr. Bernosky will describe the Project, including its location, size, cost and component facilities. He will identify the requested planning corridor and discuss the potential rights-of-way. Finally, he will explain that this project is needed to interconnect the Agua Caliente Solar Project generation facility, and that additional benefits may result from this project including potential interconnection with other renewable projects.

**PANEL 4: (Testimony applicable to both Cases 145 & 146, sponsored by both Applicants)**

**Randy Schroeder:** EnValue

Mr. Schroeder will testify regarding the statutory factors required to be considered in issuing a Certificate of Environmental Compatibility, pursuant to A.R.S. § 40-360.06, including existing plans for other developments in the vicinity; fish, wildlife and plant life; noise; recreational issues; scenic, historic and archaeological sites in the vicinity; the total environment of the area; technical practicality and experience with the equipment and methods; estimated cost; and any additional factors under applicable federal or state

laws. He will testify about any areas of unique biological wealth or endangered species habitat. Finally, he will address compliance with applicable air and water pollution standards, and applicable ordinances, master plans and regulations of the state and county.

**Kenda Pollio:** kp environmental

Ms. Pollio will conclude the discussion regarding environmental factors, addressing Exhibits A, F and H of the Application, which deal, respectively, with land use, recreation, and existing plans. She will address the governmental jurisdiction (Yuma County); the existing land uses in the area, primarily vacant desert and agricultural; the zoning compatibility of the Project. She will testify about recreational uses and impacts. And she will address existing plans in the surrounding area, including one inactive subdivision re-platting, and the ACC-approved future Palo Verde – North Gila #2 500kV transmission line.

Finally, Ms. Pollio will testify about the public outreach program that has been undertaken to insure public knowledge and opportunity for input, including stakeholder briefings, stakeholder meetings, public open house, media advertising, targeted mailings and distributions of information to surrounding residents, and the Project website.

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**BEFORE THE ARIZONA POWER PLANT AND  
TRANSMISSION LINE SITING COMMITTEE**

**Docket No. L-00000JJ-09-0279-00145**

**CASE NO. 145**

**Agua Caliente Solar Project**

**DIRECT TESTIMONY**

**of**

**Mark L. Etherton, P.E.**

**On Behalf of Applicant, Agua Caliente Solar, LLC**

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**DIRECT TESTIMONY OF MARK L. ETHERTON, P.E.**  
**On Behalf of Applicant Agua Caliente Solar, LLC**  
**Case No. 145**

I. **INTRODUCTION**

Q. **Please state your name and business address.**

A. My name is Mark L. Etherton, and my business address is 5420 S. Lakeshore, Suite 104, Tempe, AZ 85283.

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

A. I am the owner of PDS Consulting, and the Principal of the firm.

Q. **Please briefly describe your educational background and work experience.**

A. I have a BSEE degree from New Mexico State University and have been working in the electric utility field now for 25 years, including 17 years working for Salt River Project. I am a registered Professional Engineer in the State of Arizona. My experience includes transmission planning, communications and protective relaying, substation design, project management, and professional consulting services related to generation project transmission interconnections under the FERC Large Generator Interconnection Procedures.

Q. **Please describe your role in the Agua Caliente Solar Project.**

A. In my capacity as transmission consultant, I have assisted with the initial feasibility analysis of interconnecting the Project to the grid; prepared the Interconnection Request to Arizona Public Service (APS), the operator of the Palo Verde-North Gila 500kV line; provided modeling input, technical support and coordination during the

1 System Impact Study and Facilities Study; and provided overall support to the Project  
2 development team related to interconnecting the Project to the transmission system.  
3

4 Q. **What is the purpose of your testimony?**

5 A. My testimony explains the proposed electrical interconnection of the Agua Caliente  
6 Solar Project with the regional high voltage transmission grid, and confirms that the  
7 Project can be reliably interconnected to the transmission system.  
8

9 II. SUMMARY

10 Q. **Please summarize your testimony .**

11 A. The Agua Caliente Solar Project will interconnect to the Western Regional high  
12 voltage transmission system by means of a generation interconnection line (Gen-Tie  
13 Line) emanating from the solar generating facility and terminating in a new  
14 switchyard facility identified as the APS Q43 500kV Switchyard. The Gen-Tie Line  
15 and APS Q43 Switchyard are both located on the Project property controlled by the  
16 Applicant. A short 500kV loop in-out transmission line will interconnect the APS  
17 Q43 Switchyard to the adjacent existing Palo Verde – North Gila #1 500kV  
18 transmission line. The System Impact Study confirms that the interconnection will  
19 comply with all applicable adequacy, safety and reliability standards, as well as the  
20 Arizona Corporation Commission’s “Guiding Principles for ACC Staff Determination  
21 of Electric System Adequacy and Reliability.”  
22

23 III. DETAILED TESTIMONY REGARDING TRANSMISSION.  
24  
25  
26

1 Q. **Can you describe in more detail each component of the transmission**  
2 **interconnection facilities associated with the Agua Caliente Solar Project, for**  
3 **both the CSP and PV Projects?**

4 A. The interconnection of the Agua Caliente Solar Project is proposed to be  
5 accomplished by a new 500kV single circuit Gen-Tie transmission line running from  
6 the Project substation to the new proposed APS Q43 500kV Switchyard, where the  
7 existing Palo Verde – North Gila #1 500kV line will be “looped in” to a three-breaker  
8 ring configuration.

- 9 • **For the CSP Project:** Electricity will be generated at the 18kV level and then  
10 stepped up to 500kV via a generator step up (GSU) transformer. The Gen-Tie  
11 transmission line will be routed approximately two miles from the GSU, located in  
12 the Power Block area, along and inside the Project property western boundary, and  
13 into the Q43 APS 500kV Switchyard.
- 14 • **For the PV Project:** Multiple inverters will be configured among the PV panel  
15 modules to convert the panel-generated DC power to AC power at the 34.5 kV  
16 level, which will then be stepped up to 500kV via a step up transformer (SUT) at  
17 the Project substation. The GenTie transmission line will be routed approximately  
18 200 feet from the SUT directly into the APS Q43 500kV Switchyard.

19  
20 The APS Q43 500kV Switchyard will serve as the Point of Interconnection (POI) for  
21 the Project. APS’ witness Mr. Greg Bernosky will provide additional details in his  
22 testimony regarding the proposed APS Q43 interconnection switchyard and facilities.  
23

24 Q. **Can you describe the studies that were performed with respect to interconnection**  
25 **of the Project with the regional transmission grid, who performed those studies,**  
26

1 **and the conclusions that those studies reached regarding the impacts and**  
2 **reliability of the proposed interconnection arrangements and facilities?**

3 A. The System Impact Study (SIS) was performed by APS and their consultant USE  
4 Consulting. The SIS analysis included power flow, transient and post transient  
5 stability, short circuit, and preliminary cost estimates to interconnect to the Palo Verde  
6 – North Gila #1 500kV line. The completed SIS was submitted to the Arizona  
7 Corporation Commission on November 12, 2008, as a component of the 90-Day Plan  
8 Filing. The actual study performed by APS included 900MW of proposed solar  
9 generation resources studied as a “cluster” in a single SIS. The requirement to study  
10 the SIS as a cluster is based on the APS LGIP for multiple SIS Agreements executed  
11 within a single three-month time frame.

12  
13 The SIS concluded that there were (i) no impacts to the system under normal or single  
14 contingency (N-1) conditions; (ii) no transient or post-transient related impacts, (iii)  
15 no impacts related to short circuit duty impacts to the existing system; and that (iv) the  
16 proposed arrangements meet all NERC, WECC and utility specific planning criteria.

17  
18 Q. **In your professional opinion will the interconnection arrangements that you have**  
19 **described, if constructed as proposed for the Agua Caliente Solar Project, comply**  
20 **with all applicable standards for commercial operation in an adequate, safe and**  
21 **reliable manner?**

22 A. Yes, they will.

23  
24 Q. **Does this conclude your direct testimony?**

25 A. Yes, it does.  
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**BEFORE THE ARIZONA POWER PLANT AND  
TRANSMISSION LINE SITING COMMITTEE**

**Docket No. L-00000JJ-09-0279-00145**

**CASE NO. 145**

**Agua Caliente Solar Project**

**DIRECT TESTIMONY  
of  
Marvin Glotfelty, R.G.**

**On Behalf of Applicant, Agua Caliente Solar, LLC**



1 availability and adequacy of the groundwater resources for the Project's needs, and the  
2 impacts of the operation of the Project on the groundwater resources in the vicinity of  
3 the Project Site.

4  
5 **II. SUMMARY**

6 **Q. Please summarize your conclusions regarding the matters addressed in your**  
7 **testimony.**

8 **A.** The studies we conducted, together with historical data and analyses, indicate that the  
9 Project Site will provide abundant groundwater resources that are more than adequate  
10 for the needs of the Project. The projected operations of the Project will result in  
11 substantial water conservation compared to historical and present uses. This will  
12 result in material positive impacts on the groundwater resources underlying both the  
13 Project Site and other groundwater-dependent lands and uses in the general vicinity.

14  
15 **III. DETAILED TESTIMONY REGARDING THE PROJECT WATER RESOURCES**

16  
17 **Q. Please briefly describe the studies and analyses that you performed regarding the**  
18 **Agua Caliente Solar Project's water resources, including both quantity and**  
19 **quality.**

20 **A.** As part of our studies we collected and analyzed existing data from previous  
21 hydrogeologic work completed on and near the proposed site of the Agua Caliente  
22 Solar Project historically known as the Whitewing Ranch, conducted testing of wells  
23 at the Site, collected groundwater samples from on-Site wells for water quality  
24 analysis, constructed a groundwater flow model to simulate future hydrologic  
25  
26

1 conditions at the Site, and projected hydrologic impacts from the proposed operation  
2 of the Agua Caliente Solar Project.

3  
4 **Q. Can you summarize the projected water needs of the Project, first if CSP  
5 technology is employed, and secondly, if PV technology is employed?**

6 **A.** It is my understanding that if concentrating solar thermal (CSP) technology is  
7 employed, the water demand will be approximately 3,000 acre-feet per year. If  
8 photovoltaic (PV) technology is used, it is my understanding that the water demand  
9 would be approximately 15 acre-feet per year.

10  
11 **Q. Can you explain and graphically depict the historical groundwater use patterns  
12 on the the Project Site?**

13 **A.** Using available information for acreage in production and well construction dates,  
14 groundwater use started in about 1950, and estimates of pumping averaged less than  
15 4,000 acre-feet per year prior to 1955. Groundwater pumpage increased dramatically  
16 as new wells and agricultural fields were put into production, peaking in the 1975 to  
17 1980 timeframe at approximately 25,000 acre-feet per year.

18  
19 The attached **Figure 1** illustrates estimated historical groundwater pumpage for the  
20 Whitewing Ranch. The proposed rate listed on the graph shows the proposed future  
21 pumping rate of 7,510 acre-feet per year, assuming the water demand of 3,000 acre-  
22 feet per year under the CSP technology alternative.

23  
24 **Figure 2** shows the groundwater elevation contours (in feet above mean sea level) and  
25 the direction of groundwater flow in 1955, based on the historic water-level data  
26

1 available. Generally, groundwater flowed to the south toward the Gila River, prior to  
2 significant farming.

3  
4 **Figure 3** shows groundwater elevation contours in 1973, during a period of significant  
5 groundwater pumpage. Water levels show that a cone of depression had formed on  
6 the water table beneath Whitewing Ranch. Groundwater flowed into this cone of  
7 depression as a result of pumping.

8  
9 **Figure 4** shows groundwater elevation contours in 2008, at which time a new cone of  
10 depression has formed on the water table surface beneath the agricultural property  
11 west of the Project Site. Groundwater flows into these two cones of depression due to  
12 pumping. Historical groundwater quality data indicate that the northward movement  
13 of groundwater toward the two cones of depression caused increasing salinity in the  
14 southern portion of the Whitewing Ranch. The source of the saline water is associated  
15 with floodplain deposits along the Gila River; and the historical pumping caused that  
16 higher-salinity water to migrate northward.

17  
18 **Q. Can you explain and graphically depict the projected hydrologic effects of the**  
19 **operation of the Project under its proposed CSP highest water use scenario?**

20 **A.** The proposed pumping rate for the entire Whitewing Ranch property is 7,510 acre-feet  
21 per year. This rate assumes 3,000 acre-feet for the facility, 4,500 acre-feet for ongoing  
22 agriculture and 10 acre-feet for domestic uses. This rate is approximately one-half of  
23 the current estimated pumping rate for the ranch. The groundwater model was used to  
24 simulate this pumping rate from the current time (2008) to the year 2040, and **Figure**  
25  
26

1           **5** shows the change in water levels from 2008 to 2040, after 30 years of Project  
2 operation.

3  
4           The colored contour lines on **Figure 5** indicate the relative rise or decline in  
5 groundwater levels during the 30-year simulation period. The red and orange colored  
6 contour lines indicate a drop in water levels, and the yellow and green colored contour  
7 lines indicate a rise in water levels. In general, water levels underlying the northern  
8 portion of the Whitewing Ranch (in the area of the actively pumped wells) experience  
9 a water-level rise of 20 to 40 feet during the 30-year period, due to the reduced  
10 groundwater pumping. This rise in water levels will reverse the trend of water-level  
11 declines in the Whitewing Ranch area, as well as the area to the west of the ranch.  
12 The rise of groundwater levels will reverse the groundwater gradient such that  
13 groundwater once again flows toward the south and southwest beneath Whitewing  
14 Ranch, which will mitigate the increasing salinity levels in the groundwater both  
15 beneath the Whitewing Ranch, and also beneath the farming area west of the  
16 Whitewing Ranch.

17  
18           **Figure 6** illustrates domestic water wells near the Agua Caliente Solar Project. The  
19 nearest wells with a registered domestic use are approximately 2 miles southwest of  
20 the Project Site. Water levels at those well sites are also projected to increase over  
21 current levels.

22  
23           **Q.    Is the Project Site located in an Active Management Area under the Arizona**  
24           **Groundwater Code?**

25           **A.    No.**  
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**Q. Can you summarize your professional opinion regarding the adequacy of the Project Site's groundwater resources to support the proposed Project, and the effects of the Project's water use upon those groundwater resources in the future?**

A. Based on the information available, the water resources at the Site are clearly adequate, and the proposed change from agricultural use to the Agua Caliente Solar Project use will cause groundwater levels to rise due to decreased pumpage. The impact of operating the Solar Project facility is an increase in groundwater levels of 20 to 40 feet, over the life of the facility (30 years).

**Q. Does this conclude your direct testimony?**

A. Yes, it does.

Estimated Pumping

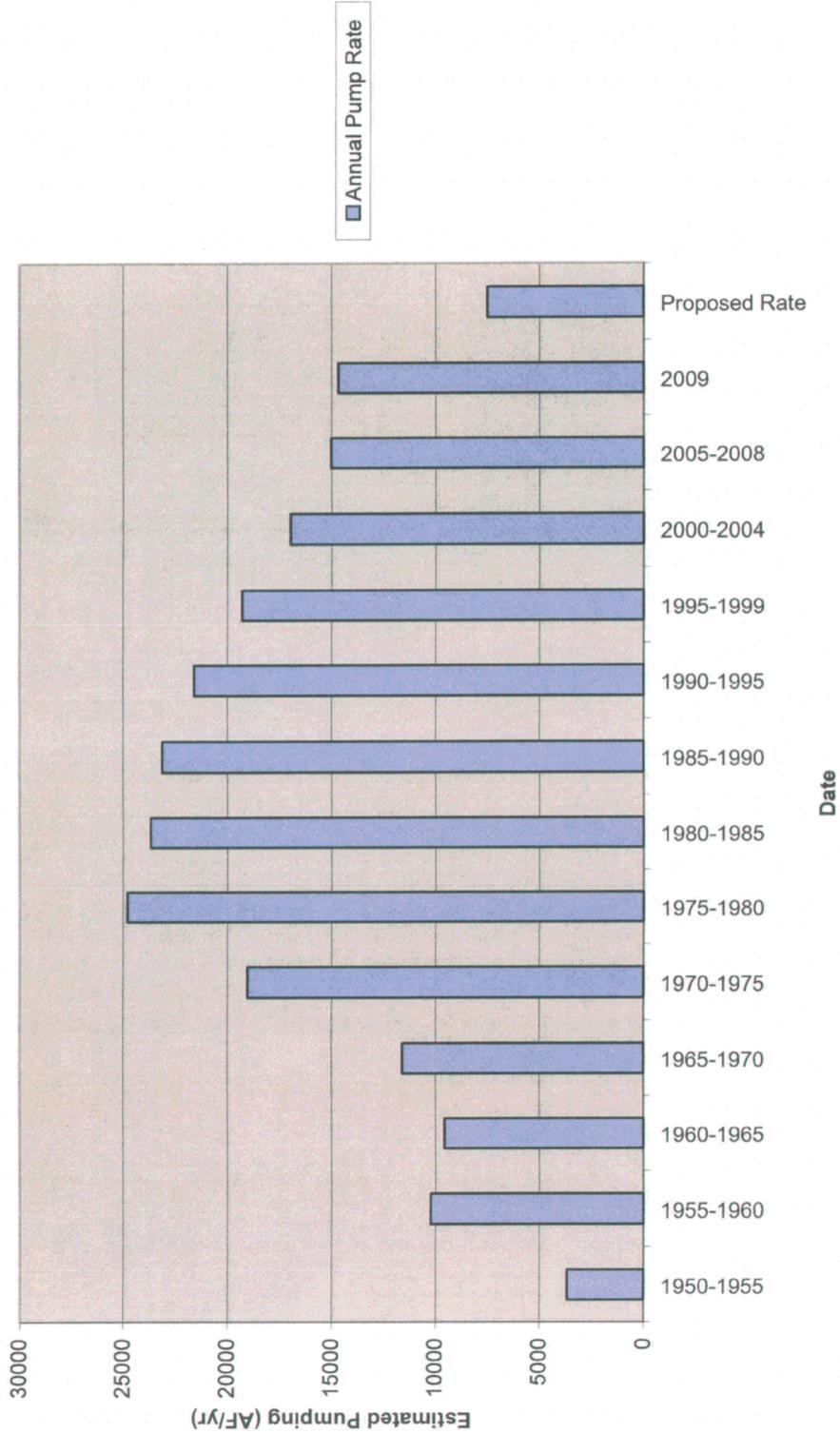


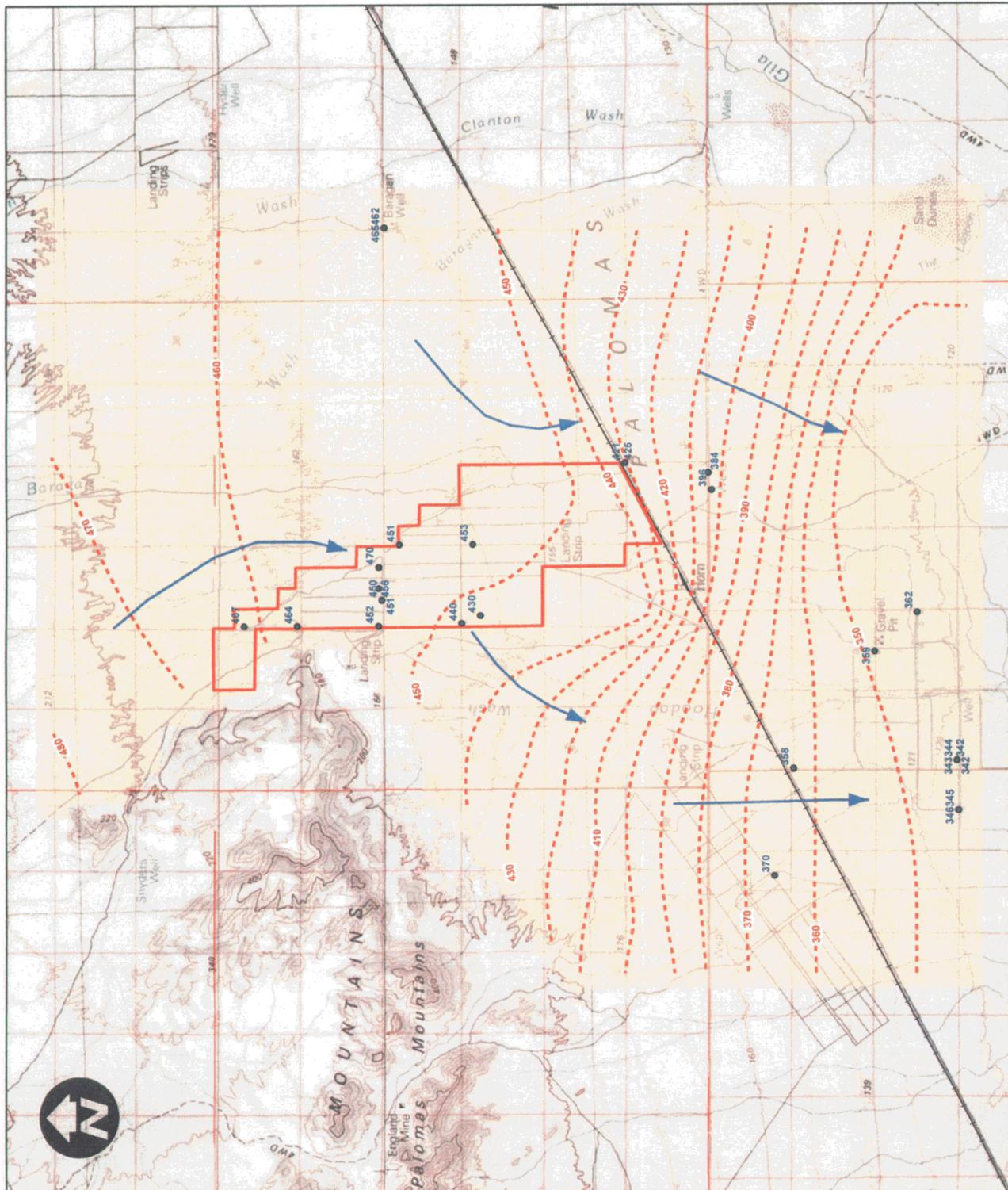
FIGURE 1

Estimated Annual Well Pumping  
Whitewing Ranch  
Agua Caliente Solar Project

6155 East Indian School Road  
Suite 200  
Scottsdale, Arizona 85251  
(480) 659-7131

June 30, 2009





**Legend**

- Model Water Level Data
- ➔ Flow Directions
- - - 1955 Model Simulated Groundwater Elevation
- Railroad
- ▭ Whitewing Ranch
- ▭ Model Domain

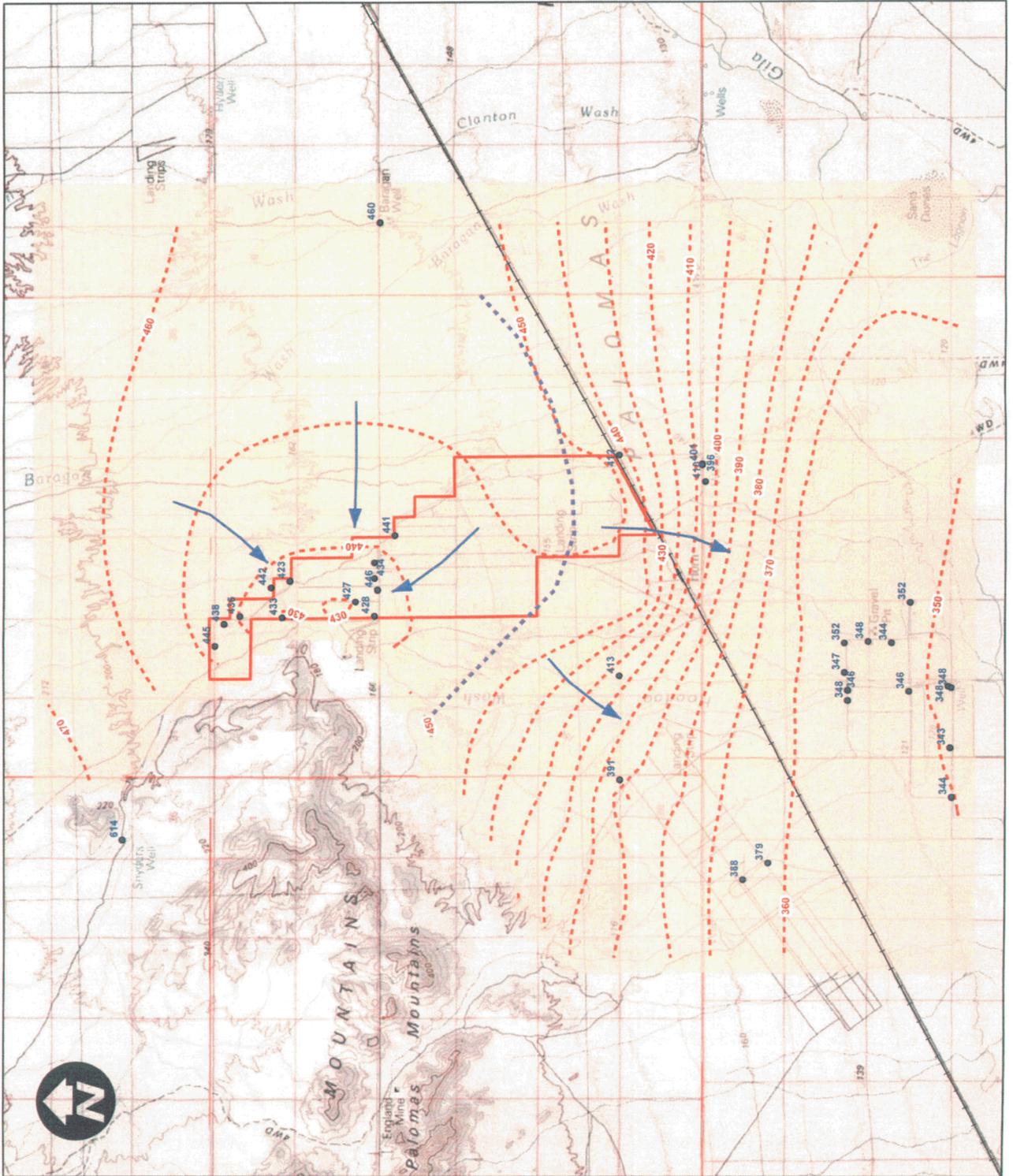


**Figure 2**  
Whitewing Ranch

1955 Groundwater Elevation Contours



March 2009

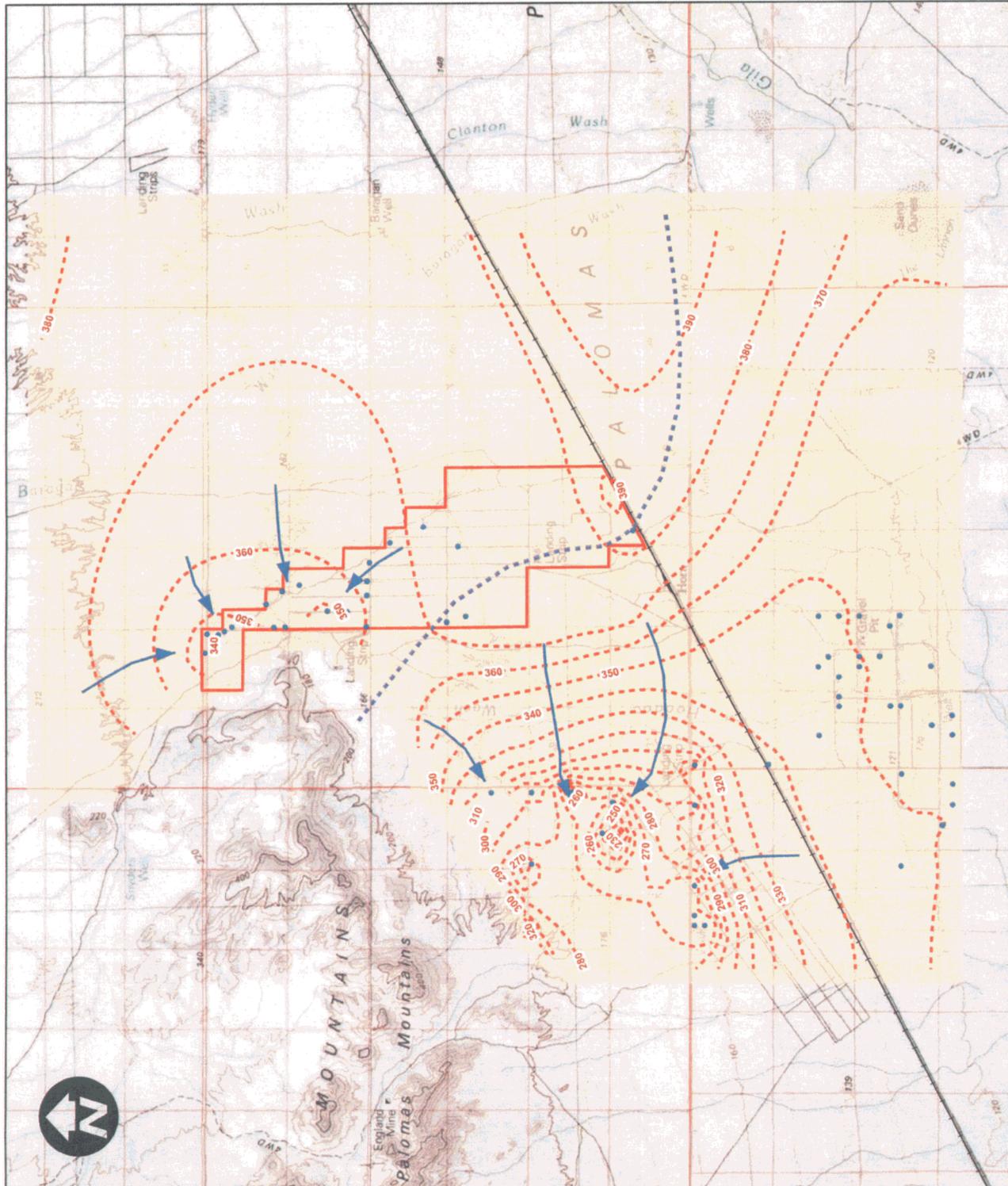


**Legend**

- Model Water Level Data
- ➔ Approximate Groundwater Flow Direction
- Groundwater Divide
- - - 1973 Model Simulated Groundwater Elevations
- Railroad
- ▭ Whitewing Ranch
- ▭ Model Domain



**Figure 3**  
 Whitewing Ranch  
 1973 Groundwater Elevation Contours



**Legend**

- Model Simulated Wells
- ➔ Flow Directions
- - - Groundwater Divide
- - - 2008 Model Simulated Groundwater Elevations
- Railroad
- ▭ Whitewing Ranch
- ▭ Model Domain

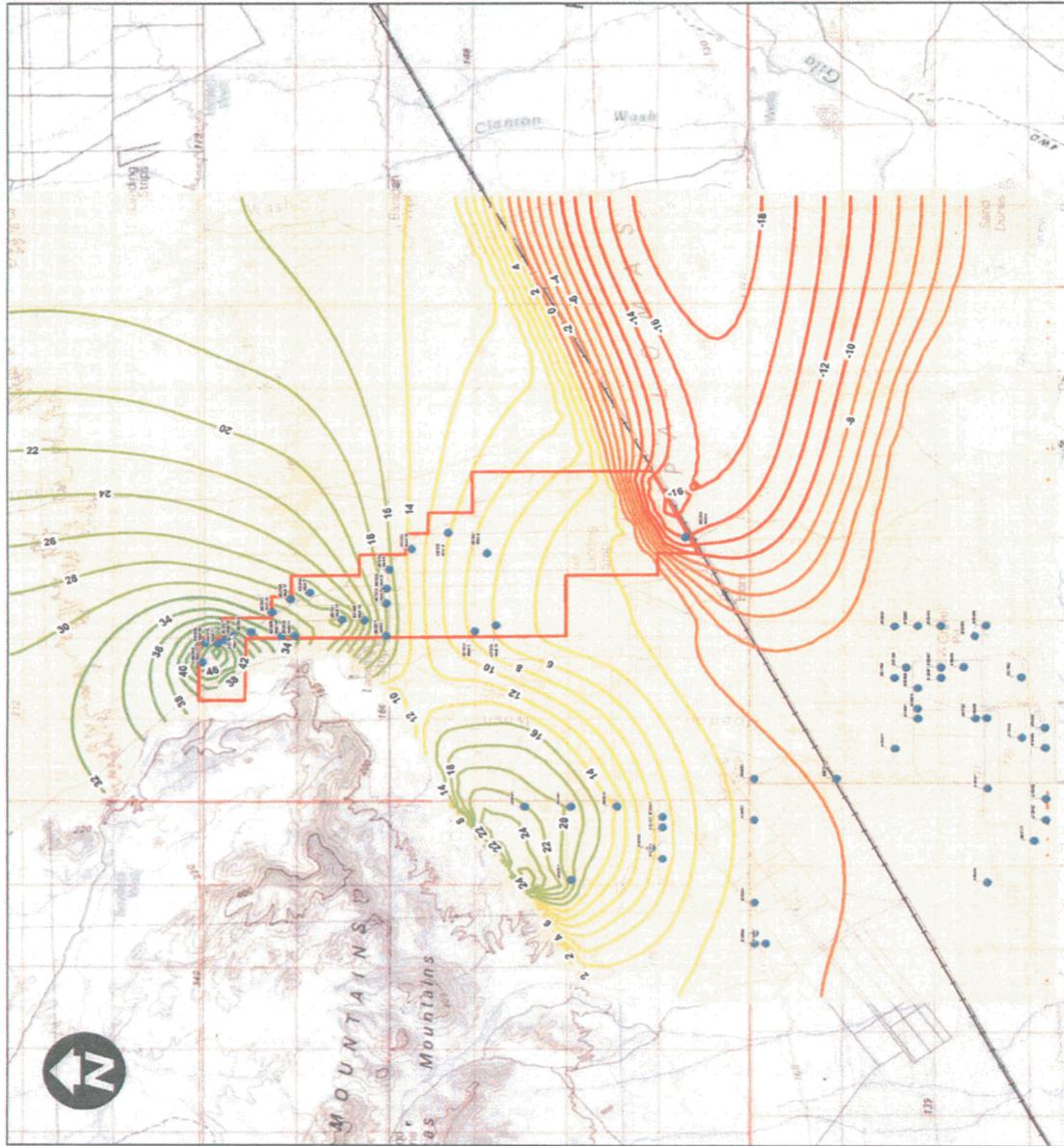


**Figure 4**  
Whitewing Ranch

2008 Groundwater Elevation Contours



March 2009



**Legend**

• Model Simulated Wells

□ Whitewing Ranch

**Difference in Water Levels 2008 to 2040**

Change (feet)

-18 - -10

-9 - -0

1 - 15

16 - 30

31 - 48

— Railroad

Model Domain



**Figure 5**

Whitewing Ranch

Difference in Simulated Water Levels  
from 2008 to 2040



April 2009

Registry No.	Location	Owner
55-207040	C(5-11) 05ADA	RUCKLE, BEN
55-211157	C(5-11) 05ADB	RUCKLE, BEN
55-500295	C(6-12) 06CCC	CONNECTICUT GENERAL
55-509452	C(5-13) 36DDD	CONNECTICUT GENERAL
55-513449	C(6-12) 17DBA	LIPKE, ELWYN H.
55-519858	C(6-11) 12BCC	WESTERN AZ ROCK PROD.
55-566887	C(5-13) 369BB	POTTER, MARILYN C.
55-566887	C(6-12) 069BB	TRUST OF GABRIEL
55-584922	C(5-11) 10DGD	HYDER SOUTHERN BAPTIST MISSION
55-609859	C(5-13) 02DCC	MCCASLIN, ELLI
55-610505	C(6-12) 18DAB	CONNECTICUT GENERAL
55-615065	C(6-13) 38AAB	AZ STATE LAND DEPT.
55-615077	C(6-12) 06CCC	ANDERSON, GERALD
55-633027	C(6-11) 06CDD	WESLEYN CO.
55-646161	C(6-11) 10D	AZ STATE LAND DEPT.
55-650242	C(6-13) 11	KLOSTERMEIER, L.
55-650852	C(6-11) 01C	LOPEZ, A.
55-650852	C(6-13) 25CDD	CUEVAS, P. M.
55-600992	C(6-13) 12AAA	AMAVISCA FAMILY TRUST

### Legend

- Registered Wells
  - <all other values>
- Water Use
  - Domestic Use
- Distance from Property
  - 1-mile
  - 2-miles
  - 3-miles
- Whitewing Ranch
  - Whitewing Ranch
  - Railroad
  - Model Domain



**Figure 6**  
Whitewing Ranch  
Domestic Wells Near Project

**CLEAR CREEK ASSOCIATES**

April 2009

