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October 18, 2006
Project No. 3133.007

California State University Channel Islands
One University Drive
Camarillo, California 93012

Attention: Ms. Caroline Doll

Subject: Agricultural Water Well Testing, California State University Property, Central Avenue
and Beardsley Road, Camarillo, California

Dear Ms. Doll:

We present our assessment of the two agricultural supply wells located on your property located at the corner of Central Avenue and Beardsley Road in Camarillo, California. The property contains two active agricultural water supply wells on the site. The two wells consist of an older, shallower Oxnard aquifer well (State Well No. 2N/21W-20M3) and a new, deeper Fox Canyon aquifer (FCA) well (State Well No. 2N/21W-19J1) drilled and equipped in 2004.

A Southern California Edison (SCE) well efficiency test was performed on the Oxnard well at some time, not indicated on the Department of Water Resources data sheet. The results of that test, summarized on the well data sheet, indicate that the static water level within the well was 44 feet below ground surface (bgs) and pumped at 1,126 gallons per minute (gpm). At the end of the test, the pumping water level was 94 feet bgs, resulting in a specific capacity of 22.5 gpm/ft.

In order to determine the current pumping capacity of the two wells, we performed short-term pumping tests on both the existing Oxnard aquifer well and the FCA well. The tests were conducted on Thursday, September 21, 2006. Prior to turning either well pump on, static water levels were measured in the wells at depths of 18 feet and 103 feet bgs in the Oxnard well and FCA well, respectively. Both wells are equipped with vertical line shaft turbine pumps which were used to pump the discharge water either to waste or through a large desanding system into the irrigation system. At 8:30a.m., Peter Hanson switched on the pump for the FCA well. The well initially pumped at about 1,510 gpm without sand. Between 5 and 9 minutes after the well pump was turned on, the produced water was very turbid with considerable very fine gray to bluish gray sand. Field measurements of water quality during the first 20 minutes of pumping indicated that the electrical conductivity was between 950 and 1,025 μ S (microsiemens), pH was between 7.44 and 7.53 (unitless) and temperature was between 22.1 and 23.7°C. After 21 minutes of pumping the well at approximately 1,511 gpm, the pumping water level in the well had stabilized to about 299 feet bgs. This resulted in a short-term specific capacity of 7.7 gpm/ft. The produced water was clear following the initial surge of sand.

At 8:51 a.m., after 21 minutes of pumping the FCA well alone to waste, the operator also switched on the pump for the Oxnard well. Upon startup, the well pumped at about 878 gpm to



waste. After four minutes, the water level had declined to 76.9 feet bgs and was still declining. After four minutes of pumping to waste, the combined pumped water was reconfigured to pump to the irrigation system. The pumping rate of the Oxnard well decreased to about 342 gpm due to the relatively higher system pressure, against which the well pump had to work. The pumping rate of the Oxnard well remained relatively steady at approximately 300 gpm for several more hours, until 12:48 pm. At that time, the pumping water level had stabilized at approximately 36.4 feet bgs, or 18.4 feet below the static water level. This drop resulted in a specific capacity of 16.3 gpm/ft. Field measurements of water quality during the first 45 minutes of pumping indicated that the electrical conductivity was between 3,406 μ S, pH was between 7.05 and 7.11, (unitless) and temperature was between 19.6 and 19.7°C. Sand was not noted in the water produced from the Oxnard well. The operator is aware of the sand production from the FCA well and typically pumps the first 10 to 15 minutes of water from both wells to waste in an adjacent unlined ditch.

After approximately one hour of pumping, the FCA well production rate had declined to 1,195 gpm. At that time, the pumping water level was 254 feet bgs, or 151 feet below static water level. The resultant specific capacity was 7.9 gpm/ft. The discharge water was observed as clear with trace quantities of very fine sand. A hydrograph of the Oxnard well water levels during the pumping test and a summary table of the production rates is attached.

We collected water samples from both wells during the short-term production testing. Results of the water quality analyses are attached. Generally, the FCA well water is notably calcium sulfate in chemical character with a total dissolved solids concentration of 950 mg/l. This water is suitable for agricultural use. The water from the Oxnard well has a relatively high electrical conductivity of 3,210 mg/l and, with blending with the FCA well water, is suitable for agricultural use. Based on our observation, it would appear that the existing distribution system is configured such that approximately 80 percent of the groundwater is from the FCA well and approximately 20 percent from the Oxnard aquifer well.

We suggest that each well be tested by SCE for overall pumping system efficiency. The performance of such tests is straightforward, free of charge, and provides information on pump plant energy use as well as pumping plant (motor, bowls, and impellers) conditions.

Should you have any questions regarding this report, please do not hesitate to call.

Sincerely,

FUGRO WEST, INC.

A handwritten signature in black ink, appearing to read "Timothy Nicely".

Timothy Nicely
Project Hydrogeologist

Attachments: Oxnard Well Hydrograph
Production Testing Overview Table
Water Quality Data

Copies Submitted: (4) Addressee



**California State University Property at Central Avenue and Beardsley Road
 Short Term Production Testing Overview**

Time	FCA AF	Oxnard AF	FCA gpm	Oxnard gpm	Note	Total
9/21/2006 8:30	478.874	182.644			FCA switched on, pumped to waste	
9/21/2006 8:41	478.925		1511			1511
9/21/2006 8:51		182.644			Oxnard switched on, pumped to waste	
9/21/2006 8:54					Reconfigured to irrigation system	
9/21/2006 9:00	479.003		1338			2216
9/21/2006 9:03		182.675		878		
9/21/2006 9:10	479.05		1531			1531
9/21/2006 9:20	479.085		1140			
9/21/2006 9:23		182.696		342		
9/21/2006 9:28	479.113		1140			1483
9/21/2006 9:34	479.135		1195			
9/21/2006 9:36		182.708		301		1496

Capco Analytical Services, INC (CAS)
1536 Eastman Avenue, Suite B
Ventura, CA 93003
(805) 644-1095

Prepared For: Fugro West, Inc.
4820 McGrath St., Suite 100
Ventura, CA 93003

September 28, 2006

ATTENTION: Tim Nicely

Laboratory No: 062054
Date Received: 21-SEP-06
Project: CSUCI Water Well Feasibility Study
Project No: 3133.007

Sampled By: Client
ID: See Below

RESULTS

On September 21, 2006, two (2) samples were received for analysis by Capco Analytical Services, Inc. The samples were identified and assigned the lab numbers listed below. This report consists of 3 pages excluding the cover letter and the Chain of Custody.

<u>SAMPLE DESCRIPTION</u>	<u>CAS LAB NUMBER</u>
FOX CANYON WELL	06205401
OXNARD WELL	06205402


Dan A. Farah, Ph.D.
Director - Analytical Operations

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The test results reported represent only the items being tested and may not represent the entire material from which the sample was taken.

Capco Analytical Services, INC. (CAS)
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Fugro West, Inc
CAS LAB NO: 06205401
Sample ID: Fox Canyon Well

Sample Matrix: Water
Date Received: 09/21/06
Date Sampled: 09/21/06

GENERAL MINERAL ANALYSIS

COMPOUND	RESULT	UNITS	DIL	PQL	METHOD	DATE ANALYZED
Alkalinity (CaCO3)	190	mg/L	1	10	310.1	09/26/06
Bicarbonate (CaCO3)	190	mg/L	1	10	310.1	09/26/06
Carbonate (CaCO3)	BQL	mg/L	1	10	310.1	09/26/06
Hydroxide	BQL	mg/L	1	10	310.1	09/26/06
pH	7.1	S.U.	1	---	150.1	09/21/06
Total Hardness	450	mg/L	1	10	130.2	09/26/06
Chloride	48	mg/L	1	1	300.0	09/22/06
Fluoride	0.21	mg/L	1	0.1	300.0	09/26/06
Nitrate as N	1.8	mg/L	1	0.4	300.0	09/22/06
Sulfate	420	mg/L	1	1	300.0	09/22/06
Conductivity	1270	umhos/cm	1	1	120.1	09/21/06
T.D.S.	950	mg/L	1	50	160.1	09/21/06
MBAS Surfactants	BQL	mg/L	1	0.1	425.1	09/22/06
Calcium	130	mg/L	1	0.1	200.7	09/27/06
Copper	BQL	mg/L	1	0.02	200.7	09/27/06
Iron	0.52	mg/L	1	0.1	200.7	09/27/06
Magnesium	35	mg/L	1	0.1	200.7	09/27/06
Manganese	0.11	mg/L	1	0.005	200.7	09/27/06
Potassium	5.0	mg/L	1	0.2	200.7	09/27/06
Sodium	110	mg/L	1	0.5	200.7	09/27/06
Zinc	BQL	mg/L	1	0.05	200.7	09/27/06

T.D.S.: Total Dissolved Solids
PQL : Practical Quantitation Limit
BQL : Below Practical Quantitation Limit


Principal Analyst

Capco Analytical Services, INC. (CAS)
1536 Eastman Avenue, Suite B
Ventura CA 93003
(805) 644-1095

Client: Fugro West, Inc.
 CAS LAB NO: 062054-MB

Sample Matrix: MB for Liquid
 Sample ID: Method Blank

GENERAL MINERAL ANALYSIS

COMPOUND	RESULT	UNITS	DIL	PQL	METHOD	DATE ANALYZED
Alkalinity (CaCO3)	BQL	mg/L	1	10	310.1	09/26/06
Bicarbonate (CaCO3)	BQL	mg/L	1	10	310.1	09/26/06
Carbonate (CaCO3)	BQL	mg/L	1	10	310.1	09/26/06
Hydroxide	BQL	mg/L	1	10	310.1	09/26/06
Total Hardness	BQL	mg/L	1	10	130.2	09/26/06
Chloride	BQL	mg/L	1	1	300.0	09/22/06
Fluoride	BQL	mg/L	1	0.1	300.0	09/26/06
Nitrate as N	BQL	mg/L	1	0.4	300.0	09/22/06
Sulfate	BQL	mg/L	1	1	300.0	09/22/06
Conductivity	BQL	umhos/cm	1	1	120.1	09/21/06
T.D.S.	BQL	mg/L	1	50	160.1	09/21/06
MBAS Surfactants	BQL	mg/L	1	0.1	425.1	09/22/06
Calcium	BQL	mg/L	1	0.1	200.7	09/27/06
Copper	BQL	mg/L	1	0.02	200.7	09/27/06
Iron	BQL	mg/L	1	0.1	200.7	09/27/06
Magnesium	BQL	mg/L	1	0.1	200.7	09/27/06
Manganese	BQL	mg/L	1	0.005	200.7	09/27/06
Potassium	BQL	mg/L	1	0.2	200.7	09/27/06
Sodium	BQL	mg/L	1	0.5	200.7	09/27/06
Zinc	BQL	mg/L	1	0.05	200.7	09/27/06

T.D.S.: Total Dissolved Solids
 PQL : Practical Quantitation Limit
 BQL : Below Practical Quantitation Limit



 Principal Analyst

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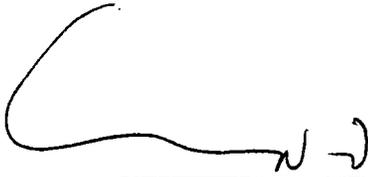
Client: Fugro West, Inc.
CAS LAB NO: 062054
Analyst: AN

Sample Matrix: Water
Date Received: 09/21/06
Date Sampled: 09/21/06

CONDUCTIVITY RESULTS
EPA METHOD 120.1

CAS Lab #	Sample ID	RESULTS (umhos/cm)	PQL (umhos/cm)	Date Analyzed
06205402	Oxnard Well	3210	1	09/21/06
062054-MB	Method Blank	BQL	1	09/21/06

PQL: Practical Quantitation Limit
BQL: Below Practical Quantitation Limit


Principal Analyst

