LED EFFECTIVE

200

ARTICLES OF INCORPORATION

(General Business)

(Instructions on back of application)

2004 AUG 18 PM 2:17

SECRETARY OF STATE
STATE OF IDAHO

The undersigned, in order to form a Corporation under the provisions of Title 30, Chapter 1, Idaho Code, submits the following articles of incorporation to the Secretary of State.

Article 1: The name of the corporation shall be:

Highland Water Company

Article 2: The number of shares the corporation is authorized to issue: 100,000

Article 3: The street address of the registered office is: 300 North 6th Street, Boise, ID 83702

and the registered agent at such address is: CT Corporation System

Article 4: The name of the incorporator is: Robert G. Taunton

and address of the incorporator is: 485 E. Riverside Dr. #300, Eagle, ID 83616

Article 5: The mailing address of the corporation shall be:

485 E. Riverside Dr. #300, Eagle, ID 83616

Optional Articles:

Department of Water Resources
APPLICANT'S
Exhibit 20
Date Admitted 10-31-06

Customer Acct #:

(If using pre-paid account)

Secretary of State use only

Signature of at least one incorporator:

Robert G. Taunton

Typed Name: Robert G. Taunton

Typed Name:

g:\corp\forms\corp forms\articsofincsprofit.p65 Revised 07/2002

Web Form

IDAHO SECRETARY OF STATE
08/18/2004 05:00
CK: 1000 CT: 181558 BH: 761573
1 @ 100.00 = 100.00 CORP # 2

SCANNED
360094
OCT 01 2004

FILED EFFECTIVE

200

ARTICLES OF INCORPORATION

(General Business)

(Instructions on back of application)

2004 AUG 18 PM 2:1

SECRETARY OF STATE
STATE OF IDAHO

The undersigned, in order to form a Corporation under the provisions of Title 30, Chapter 1, Idaho Code, submits the following articles of incorporation to the Secretary of State.

Article 1: The name of the corporation shall be:

Foothills Sewer Company

Article 2: The number of shares the corporation is authorized to issue: 100,000

Article 3: The street address of the registered office is: 300 North 6th Street, Boise, ID 83702

and the registered agent at such address is: CT Corporation System

Article 4: The name of the incorporator is: Robert G. Taunton

and address of the incorporator is: 485 E. Riverside Dr. #300, Eagle, ID 83616

Article 5: The mailing address of the corporation shall be:

485 E. Riverside Dr. #300, Eagle, ID 83616

Optional Articles:

Customer Acct #:

(If using pre-paid account)

Secretary of State use only

Signature of at least one incorporator:

Robert G. Taunton

Typed Name: Robert G. Taunton

Typed Name:

g:\corp\forms\corp forms\articsofincprofit.p65
Revised07/2002

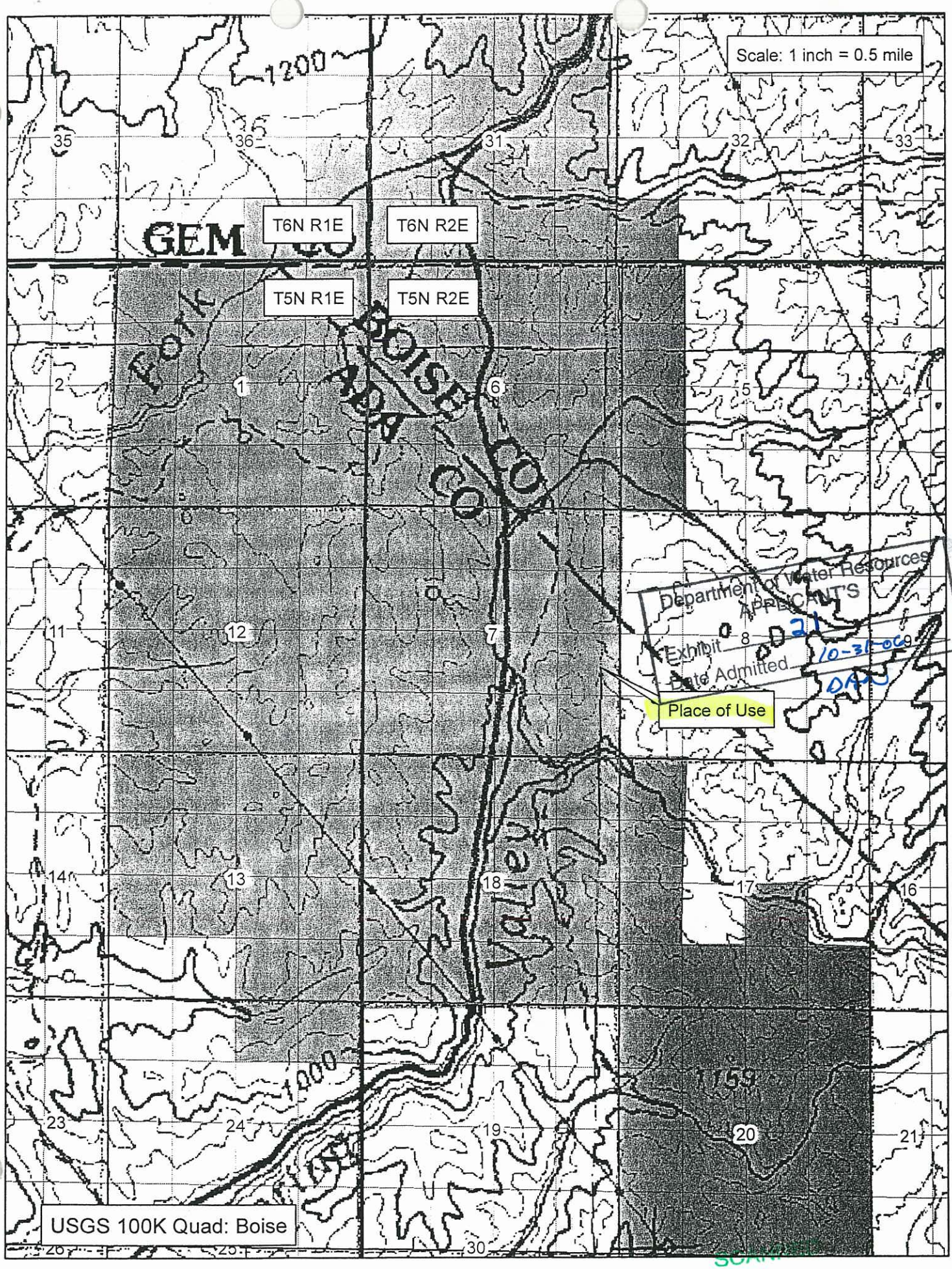
Web Form

IDAHO SECRETARY OF STATE
08/18/2004 05:00
CK: 1000 CT: 181558 BH: 761573
1 @ 100.00 = 100.00 CORP # 3

C 1560095

SCANNED

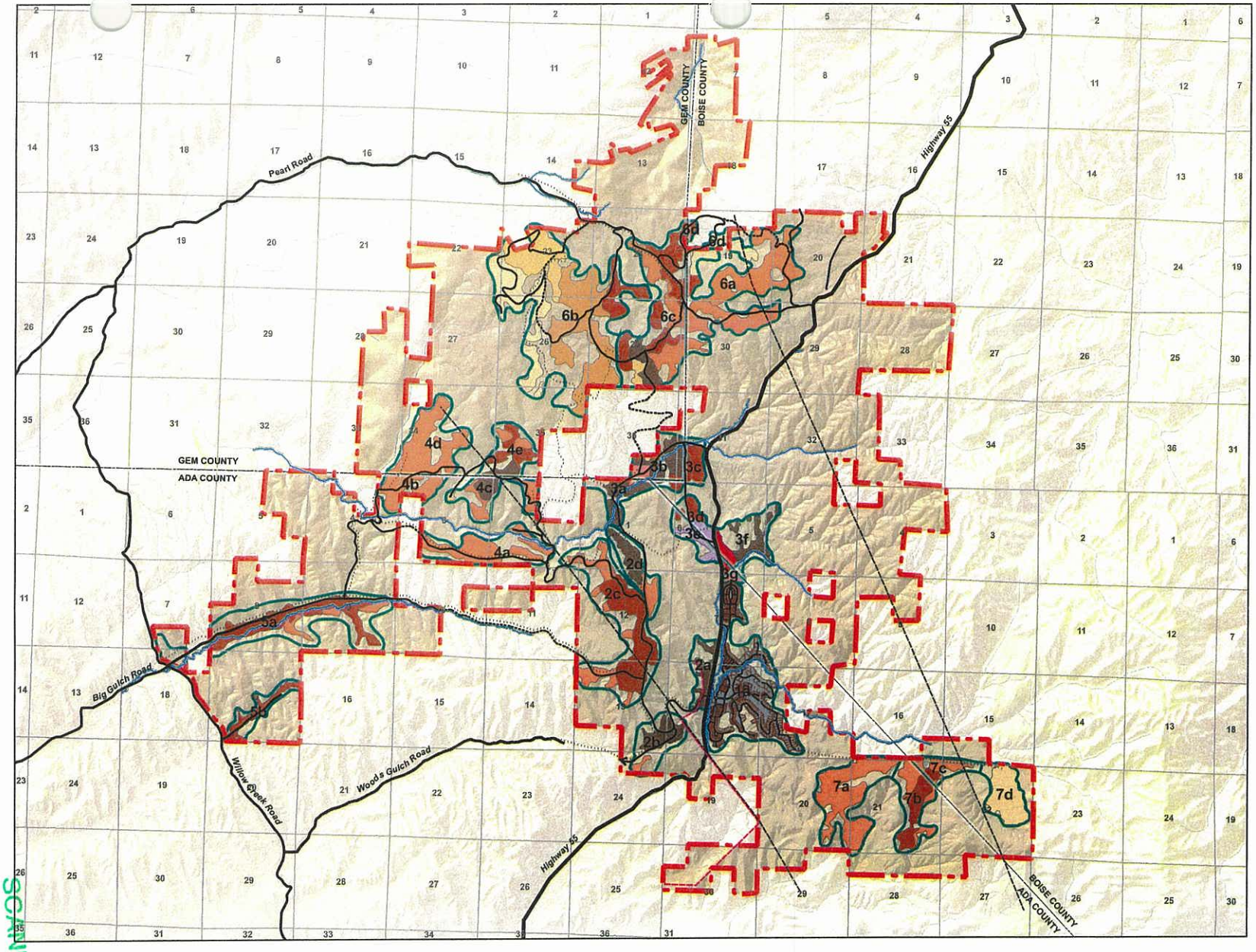
OCT 01 2008


Scale: 1 inch = 0.5 mile
T6N R1E
T6N R2E
T5N R1E
T5N R2E
GEM
BOISE
ADA
Valley
1200
1000
35
36
31
32
33
2
1
6
5
4
11
12
7
14
13
18
17
16
23
24
19
20
21
26
25
30
Place of Use
USGS 100K Quad: Boise
Department of Water Resources
APPLICANT'S
Exhibit 8
Date Admitted 10-30-08
OAW
SCANNED
OCT 0 1 2008

Land Use Summary

HIGH	Unit Total	Population (2.6 pop/hh)
Parcel	Units	People
1a - Ada	684	1,778
2a - Ada	262	680
2b - Ada	331	861
2c - Ada	655	1,703
2d - Ada	309	804
3a - Ada	284	739
3b - Gem	486	1,265
3c - Boise	192	498
3d - Boise	61	160
3e - Ada	11	29
3f - Boise	665	1,730
3g - Ada	119	310
7a - Ada	233	605
Grand Total	4,292	11,162

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OCT 0 1 2008



Concept Master Plan

- Suncor boundary
- Phase I site plan
- Existing transmission line
- Proposed transmission line
- Major existing road or potential road corridor
- Possible potential road corridor
- Hiking Trail
- Perennial stream
- Ephemeral stream
- Neighborhood boundary

Development parcel land use:

- Park
- Phase I
- Town Center
- Village Center
- Employment
- Village Residential - Medium
- Village Residential - Low
- Foothills Residential
- Foothills Low
- Ranch - Medium
- Ranch - Low

0 0.25 0.5 1 Mile

1 inch = 1 mile

Date: September 6, 2006

Sources:

- Development pod and Neighborhood information were constructed by Design Workshop (2006).
- SunCor boundary information was provided by WRG Design (2005) and has been modified by Design Workshop to reflect land trade information provided by SunCor (September, 2006).
- General area hydrography information was compiled by the Idaho Department of Water Resources (1990). Stream information within the property was created by WRG Design (2006).
- Current road and highway locations were determined by Design Workshop from TIGER/Line data (2002) the DeLorme Idaho Atlas & Gazetteer (2002) and topographic information. Proposed road location created by WRG Design (2006).
- Transmission line information was compiled for WRG Design (2005).
- Phase I Site Plan was created by WRG Design (2004).
- County boundary and Section Line information were created by the Idaho Department of Water Resources (1990 and 1993, respectively).

DESIGNWORKSHOP
120 East Main Street
Aspen, CO 81611
970.309.6172 main | 970.920.1387 fax
www.designworkshop.com

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OCT 01 2008

FORM 202

Ident. No. _____ 12/99

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

APPLICATION FOR PERMIT

To appropriate the public waters of the State of Idaho

1. Name of Applicant SunCor Idaho, LLC Phone (208) 939-0343

   Mailing address 485 East Riverside Drive, Suite 300, Eagle, ID 83616

2. Source of water supply ground water which is a tributary of _____

3. Location of point of diversion is Township 5N Range 1E Sec. 9, in the _____ ¼, SW ¼, NW ¼, Govt. Lot _____, B.M., Ada County;

additional points of diversion if any: SWSW of Section 8, T5N R1E; SENW of Section 18, T5N R1E; SENW of Section 13, T5N R1W; SENE of Section 23, T5N R1W; NESW of Section 23, T5N R1W.

4. Water will be used for the following purposes:

   Amount 5.0 cfs (cfs or acre-feet per annum) for municipal purposes from 1/1 to 12/31 (both dates inclusive)

   Amount _____ (cfs or acre-feet per annum) for _____ purposes from _____ to _____ (both dates inclusive)

   Amount _____ (cfs or acre-feet per annum) for _____ purposes from _____ to _____ (both dates inclusive)

   Amount _____ (cfs or acre-feet per annum) for _____ purposes from _____ to _____ (both dates inclusive)

   Amount _____ (cfs or acre-feet per annum) for _____ purposes from _____ to _____ (both dates inclusive)

5. Total quantity to be appropriated is (a) 5.0 (cubic feet per second) and/or (b) _____ (acre feet per annum)

6. Proposed diverting works:

   a. Describe type and size of devices used to divert water from the source Six wells with electric pumps and buried pipeline to place of use.

   b. Height of storage dam _____ feet; active reservoir capacity _____ acre-feet; total reservoir capacity _____ acre-feet

   c. Proposed well diameter is 12 to 18 inches; proposed depth of well is 1000 feet

   d. Is ground water with a temperature of greater than 85°F being sought? No

   e. If well is already drilled, when? _____ Drilling firm _____

   Well was drilled for (well owner) _____ Drilling Permit No. _____

7. Time required for completion of works and application of water to proposed beneficial use is 5 years (*minimum 1 year*)

8. Description of proposed uses (*if irrigation only, go to item 9*):

   a. Hydropower; show total feet of head and proposed capacity in kW. _____

   b. Stockwatering; list number and kind of livestock. _____

   c. Municipal; show name of municipality. Spring Valley Ranch (an unincorporated planned community)

   d. Domestic; show number of households. _____

   e. Other; describe fully. _____

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OCT 0 1 2008

Department of Water Resources
APPLICANT'S
Exhibit 22
Date Admitted 10-31-06
DAC

9. Description of place of use:

a. If water is for irrigation, indicate acreage in each subdivision in the tabulation below.

b. If water is used for other purposes, place a symbol of the use (*example: D for Domestic*) in the corresponding place of use below. See instructions for standard symbols.

TWP	RGE	SEC	NE				NW				SW				SE				TOTALS
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
6N	1E	36													M		M	M	
6N	2E	31	M	M	M	M	M		M	M	M	M	M	M	M	M	M	M	
		32											M						
5N	1E	1	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
		12	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
		13	M	M	M	M	M	M	M	M	M	M			M	M	M	M	
		24	M	M															
5N	2E	5						M	M			M	M						
		6	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
		7	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
		17						M	M			M	M	M		M	M	M	
		18	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
		20	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	

Total number of acres to be irrigated _____

10. Describe any other water rights used for the same purposes as described above. application for permit 63-31966

11. a. Who owns the property at the point of diversion? Applicant (see attached letter dated 5/18/04)

b. Who owns the land to be irrigated or place of use? Applicant (see attached letter dated 5/18/04)

c. If the property is owned by a person other than the applicant, describe the arrangement enabling the applicant to make this filing: (see attached letter dated 5/18/04)

12. Remarks: See attached remarks

13. **MAP OF PROPOSED PROJECT REQUIRED** - Attach an 8½"x11" map clearly identifying the proposed point of diversion, place of use, section #, township & range. (A photocopy of a USGS 7.5 minute topographic quadrangle map is preferred.)

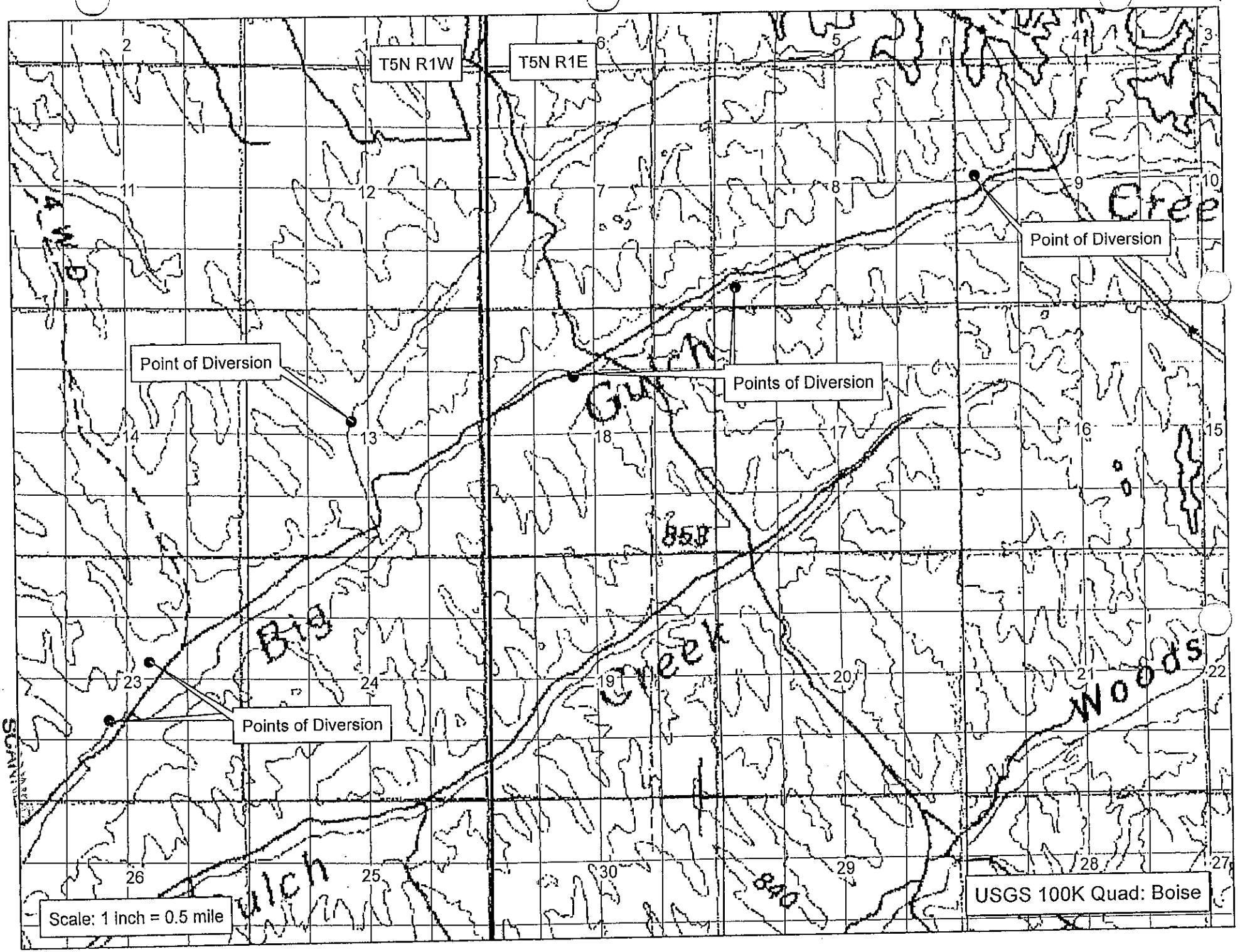
BE IT KNOWN that the undersigned hereby makes this application for permit to appropriate the public waters of the State of Idaho as herein set forth.

Robert G. Tallman, General Manager
Signature of Applicant (and title, if applicable)

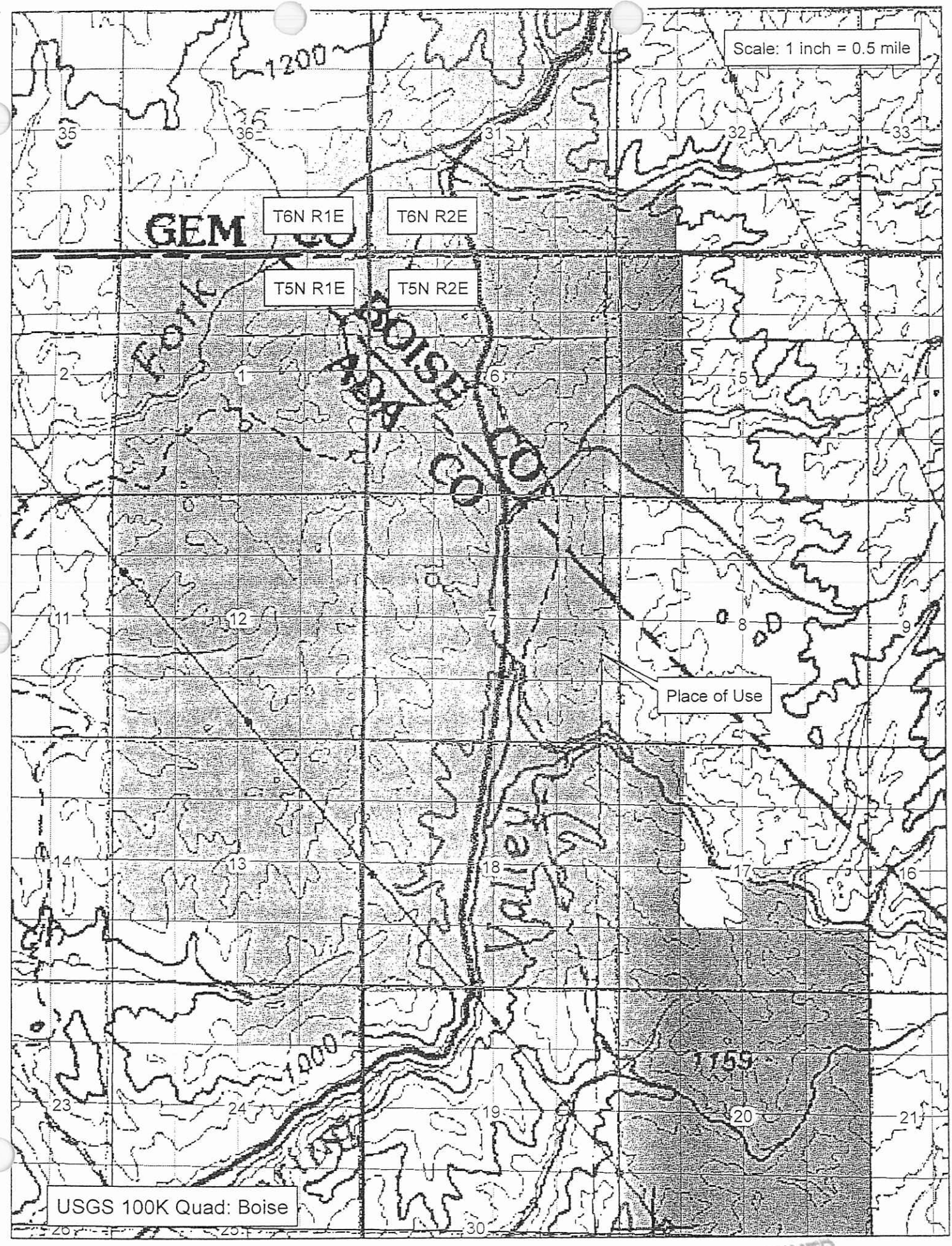
Received by _____ Date _____ Time _____ Preliminary check by
Fee $ _____ Receipted by _____ # _____ Date
Publication prepared by _____ Date _____ Published in
Publication approved _____ Date

SCANNED

OCT 0 1 2008


T5N R1W
T5N R1E
Point of Diversion
Point of Diversion
Points of Diversion
Points of Diversion
Scale: 1 inch = 0.5 mile
USGS 100K Quad: Boise

OCT 0 1 2008



SCANNED
OCT 0 1 2008

SUNCOR

May 18, 2004

State of Idaho
Department of Water Resources
Western Regional Office
2735 Airport Way
Boise, Idaho 83705-5082

Re: Spring Valley Ranch

To Whom It May Concern:

On July 24, 2003 title to the Spring Valley Ranch property was transferred to First American Title Insurance Company, as Trustee, under a dual beneficiary Subdivision Trust Agreement. Under this Trust Agreement the owners of the ranch property, Spring Valley Livestock Company, and the purchaser, SunCor Idaho, LLC, are referred to as the First Beneficiary and Second Beneficiary respectively. The Trust Agreement permits SunCor Idaho, LLC to develop water resources and prepare and submit the water permit application.

Sincerely,

R. Taunton

Robert G. Taunton
General Manager

SunCor Idaho, LLC
485 East Riverside Drive • Suite 300 • Eagle, ID 83616 • Tel 208.939.0343 • Fax 208.939.9972

SCANNED
OCT 01 2008

Remarks. SunCor Idaho, LLC proposes appropriation of 5.0 cfs for municipal purposes to serve the Spring Valley Ranch planned unit development. Municipal uses will include domestic and irrigation for approximately 700 homes, commercial uses at retail and office facilities, fire protection, and other uses. Municipal use may also include seasonal aquifer recharge in the E ½ of Section 1, T5N, R1E. Recharged water would be rediverted from the aquifer for municipal purposes under pending water right permit 63-31966.

A maximum of six points of diversion are anticipated, although ultimately as few as three wells may be constructed. Well size will be 12-inch to 18-inch diameter. Water-bearing zone to be appropriated is 200 feet to 1000 feet.

SunCor Idaho is forming a water utility (Highland Water Company) that will be regulated by the Idaho Public Utilities Commission. The initial service area proposed for the utility will be the place of use described by this permit. SunCor Idaho anticipates filing with the Idaho Public Utilities Commission an application for Certificate of Convenience and Necessity to serve this area.

The lands within the place of use and at the points of diversion are currently owned or controlled by SunCor Development Company. The place of use is being developed for residential use by SunCor Idaho, LLC. SunCor Development Company is the parent company for SunCor Idaho LLC.

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OCT 0 1 2008

SPF Water Engineering, LLC
208-383-4140
600 E. River Park Lane, Ste. 105
Boise, ID 83706

KEYBANK NATIONAL ASSOCIATION
BOISE, ID 83706
92-155/1241

1324

Jan 23, 2005

PAY TO THE ORDER OF Idaho Dept. of Water Resources $ 410.00

Four hundred ten & no/100 DOLLARS

Details on Back. Security Features Included

MEMO Sun Cor Idaho App. for Permit

AUTHORIZED SIGNATURE

⑈001324⑈ ⑆124101555⑆ 1244100298⑈

SCANNED
OCT 01 2008

SPF Water Engineering, LLC
water resource consultants

March 3, 2005

Department of Water Resources
APPLICANT'S
Exhibit 23
Date Admitted 10-31-06
D Rn

Steve Lester
Idaho Department of Water Resources
2735 Airport Way
Boise, ID 83705

Subject: Application for Permit No. 63-32061– SunCor Idaho, LLC

Dear Steve:

This letter is a response to the five bullet points listed in your letter of February 18, 2005.

1. Thanks for catching our error on the point of diversion description. You are correct. The point of diversion should be described as the SWNE of Section 23 rather than the SENE of Section 23. I'll come in to the office and make the change.

2. I have enclosed a signed "Request to Process" form.

3. With regard to groundwater flow direction, I have enclosed a contour map of groundwater levels that we prepared based on water levels in wells in the area between Eagle and Pearl (Figure 1). Of our six proposed diversion points shown on the contour map, the four northernmost points are clearly tributary to the Payette River. The two southernmost points of diversion (in Section 23) are more likely tributary to the Payette River than the Boise River, but the data are not adequate to say with absolute certainty.

4. We anticipate that the water proposed for appropriation will be available from the aquifer on a sustainable basis. Under a highest use scenario (continuous pumping of 5 cfs, 24 hours per day, 365 days per year), the total volume pumped under the permit could be 3,620 acre feet per year. The basin area tributary to the aquifers proposed for appropriation appears to be the Willow Creek drainage above Highway 16, and the Big Gulch and Little Gulch drainages north of the boundary between townships 4 North and 5 North. Total annual precipitation in this area is approximately 70,000 acre feet (Figure 2). If we assume that 5 percent of the annual precipitation within this area is available for groundwater recharge, the precipitation will supply 3,500 acre feet to the aquifer annually. Recharge will occur as direct infiltration of precipitation on lands above the aquifer, leakage from the stream beds of Willow Creek, Big Gulch, and Little Gulch, leakage from the reservoir on Willow Creek, and ground water inflow from the tributary basin to the north.

RECEIVED MAR 0 7 2005

600 East River Park Lane, Suite 105 · Boise, ID 83706 · 208.383.4140 · fax 208.383.4156 · www.spfwater.com

SCANNED
OCT 0 1 2008

Other potential sources of recharge to the aquifer are leakage from the Farmers Union Canal to the south and the Black Canyon Canal to the northeast. Both canals are perched above the water table, so we assume that they leak and provide significant recharge to this area. The bottoms of both canals are 50 to 100 feet above the water table, so additional groundwater pumping will not induce additional losses.

The groundwater contours demonstrate that recharge that reaches the aquifer cannot flow south toward the Boise Valley. As a result, recharge from the upland areas in the Willow Creek drainage is captured by the aquifer beneath Willow Creek and Big Gulch, with discharge northwesterly toward the Payette River Valley.

Addition information that indicates that groundwater is available for appropriation in this area is water-level monitoring at the Lynn Ranch along Willow Creek between Highway 16 and the confluence of the North Fork and South Fork Willow Creek. Water levels have been monitored at the Lynn Ranch (T5N, R1W, Section 3) since 1993 with no evidence of water level decline (Table 1).

5. With regard to methods to avoid injury to other water rights, we believe that water-level monitoring is the most appropriate action. SunCor has existing test wells in the area that can be utilized for monitoring purposes. Note that there are essentially no existing wells or groundwater rights in the near vicinity of the proposed points of diversion, except for stockwater wells associated with Spring Valley Ranch. As a result, direct well interference should not be an issue. However, water-level monitoring is appropriate to ensure that long-term water-level decline is not occurring under the proposed permit or future permits.

Sincerely,

Terry M. Scanlan

Terry M. Scanlan, P.E.

Cc: Bob Taunton – SunCor Idaho, LLC
Al Barker – Barker Rosholt Simpson

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OCT 0 1 2008

REQUEST TO PROCESS

COMPLETE REQUEST IF YOU WANT YOUR APPLICATION TO BE PROCESSED USING ONE OF THE THREE ALTERNATIVES BELOW

Name of Applicant: SunCor Idaho LLC

Mailing Address: 485 East Riverside Drive, Suite 300
Eagle, ID 83616

Application No. (if known): 63-32061

____ IN LOCAL PUBLIC INTEREST

Yes, I want my application processed and before it is advertised, I will amend my application to demonstrate that the proposed appropriation is in the local public interest including the need to preserve flows in the Snake River during the migration periods of anadromous fish.

____ PROPOSE MITIGATION NOW

Yes, I want my application processed and before it is advertised, I will amend my application to include proposed mitigation to offset anticipated depletions in the Snake River during periods of anadromous fish migration.

__X__ WILL AGREE TO MITIGATION IN THE FUTURE IF NECESSARY

Yes, I want my application processed at this time, and I will accept a condition of approval that will require mitigation should the Director of the Idaho Department of Water Resources determine that mitigation is necessary to offset depletions from this appropriation to flows in the Snake River during periods of anadromous fish migration. I understand that mitigation is not required now but may be needed in the future. I also understand that the Director will not require mitigation until I have an opportunity to review the process by which the need for mitigation is established and the amount of water required is quantified.

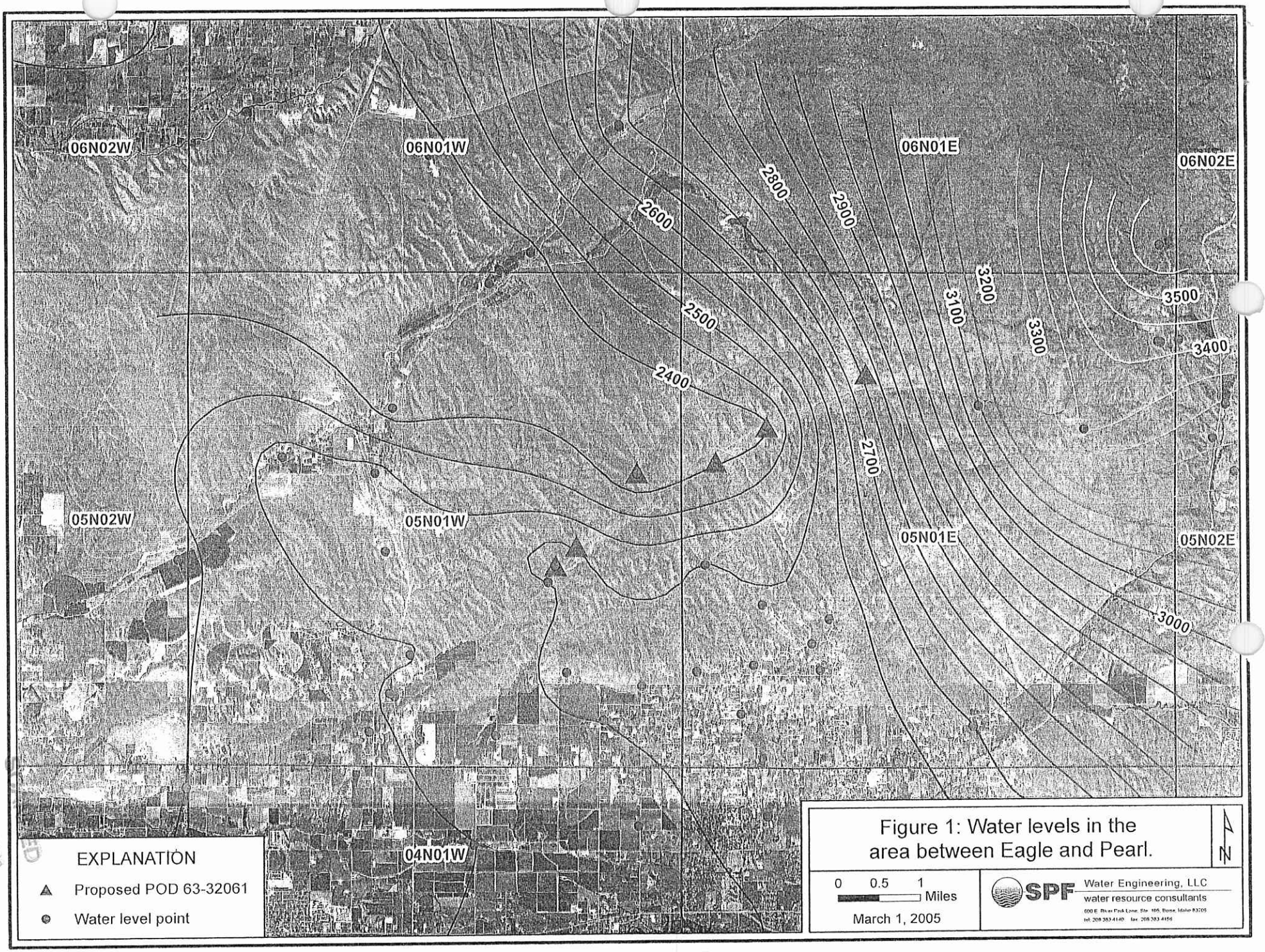
Signature: Robert G Tauntun

Date: 2/24/05

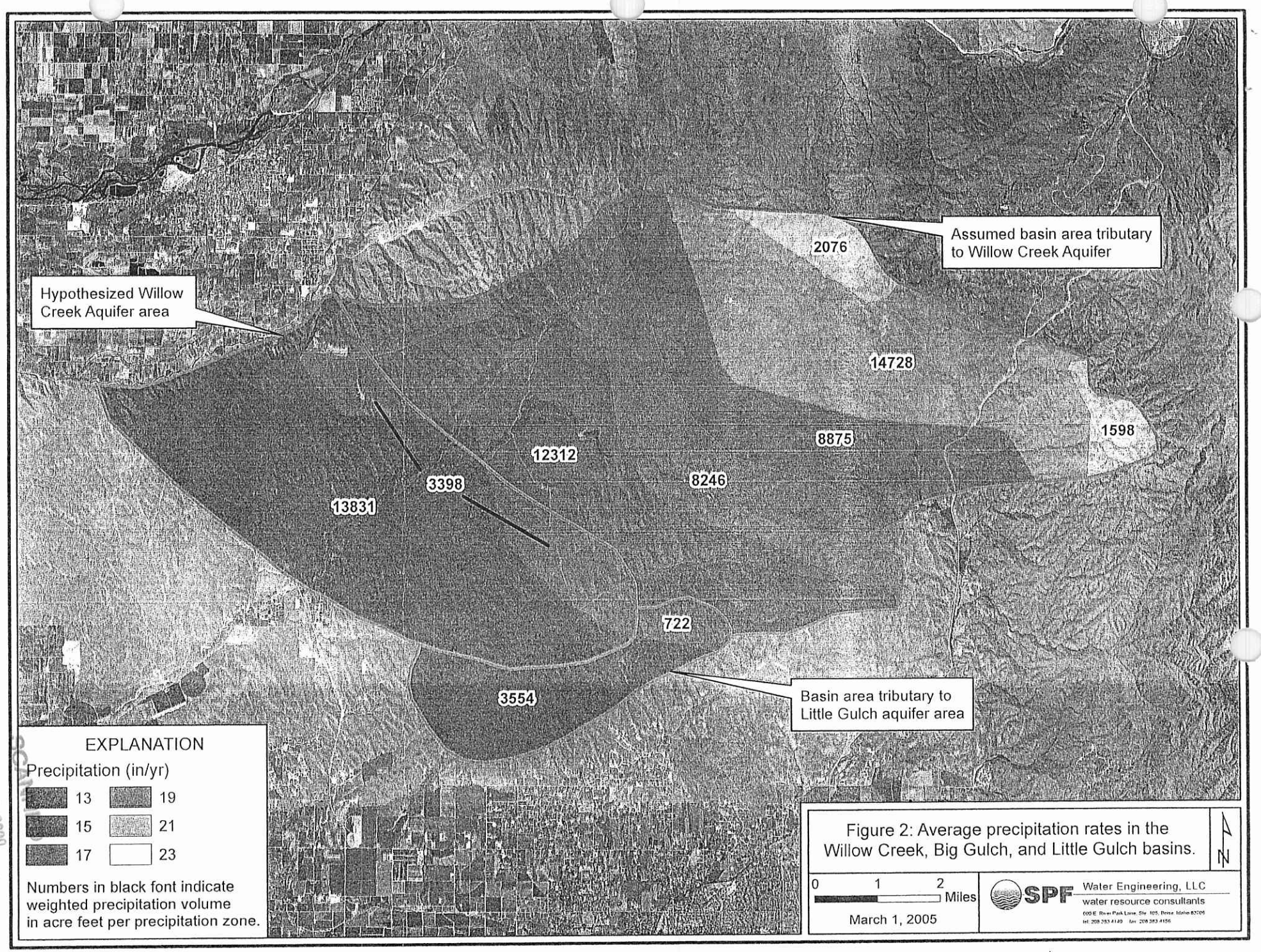
Please return this form to:

Idaho Department of Water Resources
Western Regional Office
2735 Airport Way
Boise, ID 83705-5082

SCANNED
OCT 0 1 2008


06N02W
06N01W
06N01E
06N02E
05N02W
05N01W
05N01E
05N02E
04N01W
2600
2800
2900
3200
3100
3300
3500
3400
2500
2400
2700
3000
EXPLANATION
Proposed POD 63-32061
Water level point
Figure 1: Water levels in the area between Eagle and Pearl.
N
0 0.5 1 Miles
March 1, 2005
SPF Water Engineering, LLC
water resource consultants

OCT 0 1 2008


Assumed basin area tributary to Willow Creek Aquifer
Hypothesized Willow Creek Aquifer area
2076
14728
1598
8875
12312
8246
3398
13831
722
3554
Basin area tributary to Little Gulch aquifer area
EXPLANATION
Precipitation (in/yr)
13
15
17
19
21
23
Numbers in black font indicate weighted precipitation volume in acre feet per precipitation zone.
Figure 2: Average precipitation rates in the Willow Creek, Big Gulch, and Little Gulch basins.
N
0 1 2 Miles
March 1, 2005
SPF Water Engineering, LLC
water resource consultants
600 E. River Park Lane, Ste. 105, Boise, Idaho 83706
tel: 208.383.4140 fax: 208.383.4156

OCT 01 2008

Date	M. Lynn Domestic Well	C. Lynn Domestic Well	Lynn Old Irrigation Well
9/9/1993		394.4	382.5
10/21/1994	394.76	394.02	383.40
1/22/1995	395.32	394.25	382.23
3/24/1995	395.48	394.29	382.78
5/21/1995	397.28*	394.66*	382.53
8/27/1995	394.64	394.09	388.45*
10/22/1995	394.61	394.30	383.45*
3/16/1996	395.44	394.49	382.48
10/29/1996	394.66	394.26	382.44
3/26/1997			381.51
10/18/1997	395.15	394.55	383.15
4/16/1998	396.48	394.45	
10/21/1998	395.44	394.74	382.60
3/20/1999	395.76	394.59	382.30
10/21/1999	395.35	395.20*	383.07
3/31/2000	395.90	395.06	382.41
10/26/2000	394.63	394.40	382.24
3/24/2001	395.33	394.92*	382.10
10/30/2001	394.78	**	381.65
3/21/2002	395.73		382.11
10/31/2002	397.44*		383.66
3/10/2003	396.44		382.67
3/24/2004	396.48		382.99

* recovering slowly from recent pumping

**sounding tube removed during well repair

SCANNED
OCT 0 1 2008

IDAHO DEPARTMENT OF WATER RESOURCES

Water Application Report 63-32061

WATER RIGHT NUMBER: 63-32061

Owner Type	Name and Address
Representative	SPF WATER ENGINEERING LLC C/O TERRY SCANLAN 600 E RIVER PARK LN STE 105 BOISE, ID 83706 (208)383-4140
Current Owner	SUNCOR IDAHO LLC 485 E RIVERSIDE DR STE 300 EAGLE, ID 83616 (208)939-0343

Priority Date: 01/25/2005

Basis:

Status: Active

Source	Tributary
GROUND WATER	

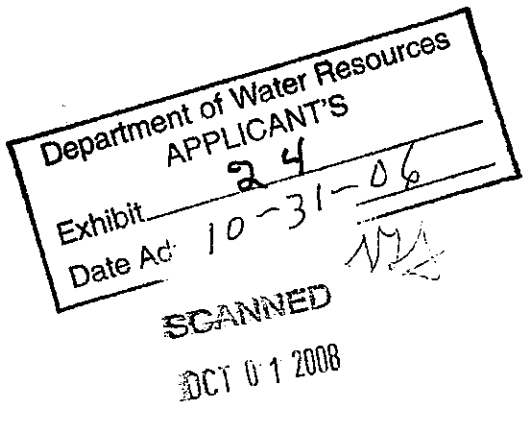
Beneficial Use	From	To	Diversion Rate	Annual Volume
MUNICIPAL	01/01	12/31	5.000 CFS	
		Total Diversion:	5.000 CFS	

Location of Point(s) of Diversion

GROUND WATER ADA County	SW1/4SW1/4	Sec. 8,	Twp 05N,	Rge 01E, B.M.
GROUND WATER ADA County	SW1/4NW1/4	Sec. 9,	Twp 05N,	Rge 01E, B.M.
GROUND WATER ADA County	SE1/4NW1/4	Sec. 18,	Twp 05N,	Rge 01E, B.M.
GROUND WATER ADA County	SE1/4NW1/4	Sec. 13,	Twp 05N,	Rge 01W, B.M.
GROUND WATER ADA County	SW1/4NE1/4	Sec. 23,	Twp 05N,	Rge 01W, B.M.
GROUND WATER ADA County	NE1/4SW1/4	Sec. 23,	Twp 05N,	Rge 01W, B.M.

Place of Use

Conditions of Approval:



IDAHO DEPARTMENT OF WATER RESOURCES

Water Application Report 63-32061

Remarks:

Comments:

1. slester 2/15/2005 Comment/Analysis
Comment: Application proposes additional 5.0 cfs for same municipal service area proposed in 63-31966. P/U aka Spring Valley Ranch, an unincorporated planned community. Proposed wells to be 12-18 inch diameter. Municipal use might include seasonal aquifer recharge in E 1/2 of S1, T5N, R1E in P/U. Proposes that recharge water would be diverted from aquifer under 63-31966. Proposes to seek IPUC approval as a municipal provider. A key reason this second application was filed is that aquifers proposed for development under 63-31966 probably will not provide enough water for Phase 1 of the development (consultant information received 10/5/04 in 63-31966).

2. slester 2/15/2005 Legal Notice Remarks
Comment: Proposed use is for additional water for an unincorporated planned community in portions of Ada, Boise and Gem Counties aka Spring Valley Ranch located between Shadow Valley Golf Course and Horseshoe Bend Hill along both sides of Hwy 55. Municipal use is for this service area of about 9 square miles. Use might include aquifer recharge (aquifer storage and recovery). Six proposed wells will be located in Big Gulch Creek drainage about 3 to 9 miles west of the service area. Water bearing zone to be appropriated is from 200 to 1000 feet. Applicant agrees to mitigate consumptive use in the future as needed.

Water Supply Bank:

SCANNED
OCT 0 1 2008

IDAHO DEPARTMENT OF WATER RESOURCES

Water Permit Report 63-31966

WATER RIGHT NUMBER: 63-31966

Owner Type	Name and Address
Representative	SPF WATER ENGINEERING LLC C/O TERRY SCANLAN 600 E RIVER PARK LN STE 105 BOISE, ID 83706 (208)383-4140
Current Owner	SUNCOR IDAHO LLC 485 E RIVERSIDE DR STE 300 EAGLE, ID 83616 (208)939-0343

Priority Date: 05/21/2004

Basis:

Status: Active

Source	Tributary
GROUND WATER	

Beneficial Use	From To	Diversion Rate	Annual Volume
MUNICIPAL	01/01 to 12/31	5.000 CFS	
	Total Diversion:	5.000 CFS	

Location of Point(s) of Diversion

GROUND WATER ADA County	L6 (NW1/4SW1/4)	Sec. 6,	Twp 05N,	Rge 02E, B.M.
GROUND WATER ADA County	L7 (SW1/4SW1/4)	Sec. 6,	Twp 05N,	Rge 02E, B.M.
GROUND WATER ADA County	NW1/4SE1/4	Sec. 7,	Twp 05N,	Rge 02E, B.M.
GROUND WATER ADA County	SE1/4SE1/4	Sec. 7,	Twp 05N,	Rge 02E, B.M.
GROUND WATER ADA County	SW1/4NE1/4	Sec. 18,	Twp 05N,	Rge 02E, B.M.
GROUND WATER ADA County	SE1/4SE1/4	Sec. 1,	Twp 05N,	Rge 01E, B.M.
GROUND WATER ADA County	SE1/4SE1/4	Sec. 1,	Twp 05N,	Rge 01E, B.M.

Place of Use

MUNICIPAL

Twp Rge Sec	NE				NW				SW				SE				Totals
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	

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		NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	Totals
05N 01E	1	X L1	X L2	X	X	X L3	X L4	X	X	X	X	X	X	X	X	X	X	
05N 01E	12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
05N 01E	13	X	X	X	X	X	X	X	X	X	X			X	X	X	X	
05N 01E	24	X	X															
05N 02E	5						X L4	X			X	X						
05N 02E	6	X L1	X L2	X	X	X L3	X L4	X L5	X	X	X L6	X L7	X	X	X	X	X	
05N 02E	7	X	X	X	X	X	X L1	X L2	X	X	X L3	X L4	X	X	X	X	X	
05N 02E	17						X	X			X	X	X		X	X	X	
05N 02E	18	X	X	X	X	X	X L1	X L2	X	X	X L3	X L4	X	X	X	X	X	
05N 02E	20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
06N 01E	36													X		X	X	
06N 02E	31	X	X	X	X	X		X L2	X	X	X L3	X L4	X	X	X	X	X	
06N 02E	32											X						

Conditions of Approval:

1. 102 The right holder shall not provide water diverted under this right for the irrigation of land having appurtenant surface water rights as a primary source of irrigation water except when the surface water rights are not available for use. This condition applies to all land with appurtenant surface water rights, including land converted from irrigated agricultural use to other land uses but still requiring water to irrigate lawns and landscaping.
2. 128 Place of use is within the area served by the public water supply system of Suncor Idaho, LLC for use within Spring Valley Ranch. The place of use is generally located within Sections 1, 12, 13 and 24, Township 05N, Range 01E; Sections 5, 6, 7, 17, 18 and 20, Township 05N, Range 02E; Section 36, Township 06N, Range 01E; Sections 31 and 32, Township 06N, Range 02E.
3. 121 The Director retains jurisdiction to require the right holder to provide purchased or leased natural flow or stored water to offset depletion of Lower Snake River flows if needed for salmon migration purposes. The amount of water required to be released into the Snake River or a tributary, if needed for this purpose, will be determined by the Director based upon the reduction in flow caused by the use of water pursuant to this permit.

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4. 26A Project construction shall commence within one year from the date of permit issuance and shall proceed diligently to completion unless it can be shown to the satisfaction of the Director of the Department of Water Resources that delays were due to circumstances over which the permit holder had no control.

5. Water bearing zone to be appropriated is from 50 to 500 feet.

6. 134 Prior to or in connection with the proof of beneficial use statement to be submitted for municipal water use under this right, the right holder shall provide the department with documentation showing that the water supply system is being regulated by the Idaho Department of Environmental Quality as a public water supply and that it has been issued a public water supply number.

7. 046 Right holder shall comply with the drilling permit requirements of Section 42-235, Idaho Code and applicable Well Construction Rules of the Department.

8. T17 Prior to diversion of water under this right, the right holder shall provide a means of measurement acceptable to the Department from all authorized points of diversion which will allow determination of the total rate of diversion.

Remarks:

Comments:

Water Supply Bank:

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SPF Water Engineering, LLC
water resource consultants

Department of Water Resources
APPLICANT'S
Exhibit 25
Date Admitted 10-31-06

December 7, 2005

North Ada County Foothills Association
c/o David Head
855 Stillwell Drive
Eagle, ID 83616

Subject: Water-Level Monitoring Plan and Agreement - Avimor (Spring Valley Ranch) Project

Dear David:

On behalf of SunCor Idaho, LLC (SunCor), this letter outlines the water-level monitoring program that will be conducted to resolve the North Ada County Foothills Association (NACFA) protest of SunCor's application for permit 63-32061.

The water-level monitoring program will consist of periodic water-level measurements at approximately 8 NACFA private wells and approximately 7 SunCor wells. These measurements will supplement water levels in approximately 6 other wells in the area that are currently measured on a quarterly or bi-monthly basis by the Idaho Department of Water Resources (IDWR) and by the U.S. Geological Survey (USGS). The NACFA private wells for measurement by SunCor will be selected by the NACFA, and approved by SunCor. SunCor will require that the wells proposed for measurement have well construction that is documented by a well driller's report. Selected wells will be readily accessible for measurement purposes. If a specific well drops out of the program, NACFA and SunCor shall jointly identify a new alternative well as a replacement.

Measurements during the first year of monitoring will occur on a bi-monthly basis to determine the magnitude of seasonal water-level fluctuations. After the first year of monitoring, water levels would be obtained in the spring (April) and fall (October) so that the annual high and low water levels can be documented. Water level monitoring would occur for a 10-year period. The water-level monitoring program would be terminated if the water right permit is denied or withdrawn by SunCor. The responsibility for the program shall be with the permit holder in the event that the permit is assigned to another entity.

Water levels would be measured with electric-line well probes or steel tapes. The tips of these instruments that would contact the well water will be sanitized before each measurement. Measurement tubes (1-inch diameter PVC pipes) may need to be installed in wells where measuring equipment could potentially become tangled in submersible pump cable.

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A summary of the monitoring data would be prepared annually by SunCor. This summary will include water levels from the SunCor, NACFA, and USGS/IDWR wells, and will be provided to NACFA. The costs of installing the monitoring equipment, collecting, summarizing, and distributing the information collected by the monitoring program will be paid for by SunCor.

A release form for well owners interested in participating in the program is attached. The form authorizes SunCor to measure water levels in a land owner's well until such time as the monitoring program ends, or the well owner decides to withdraw from the program.

Please feel free to call me at 383-4140 if you have any questions.

Sincerely,

Terry M. Scanlan P.E., P.G.
Engineer/Hydrogeologist

cc: Bob Taunton

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Water Level Monitoring Agreement

Well Name _____

Well Location _____

The undersigned well owner hereby agrees to allow SunCor Idaho LLC through its designated contractor to enter on to the well owner's property on a regularly scheduled basis to measure well water levels as part of a water-level monitoring program. Monitoring frequency is anticipated to be bi-monthly for the first year and semi-annual (April and October) in subsequent years. The well owner agrees to cooperate with SunCor in these efforts, and will designate a reasonable and safe means of well access for this purpose. The measurements would be conducted using electric-line well probes or steel tapes. The work will involve removing the well cap to access the well. Wells with submersible pumps may require water level measurement tubes to prevent entanglement of well probes in submersible pump wire. The tubes will be installed by SunCor's contractor at SunCor's expense.

The undersigned well owner hereby releases SunCor and SunCor's contractors from any and all liability, other than negligence, associated with the water level monitoring program, including, but not limited to, real or perceived damage to the well, well pump, or well water quality. Water-level monitoring will continue until (1) the monitoring program is terminated or until (2) the well owner notifies SunCor in writing that they desire to withdraw from the monitoring program. If SunCor assigns the permit in the future, the obligations under this agreement shall pass to the new permit holder.

Well Owner Name _____

Mailing Address _____

Daytime Telephone _____

Well Owner Signature _____

Date _____

Witness Signature _____

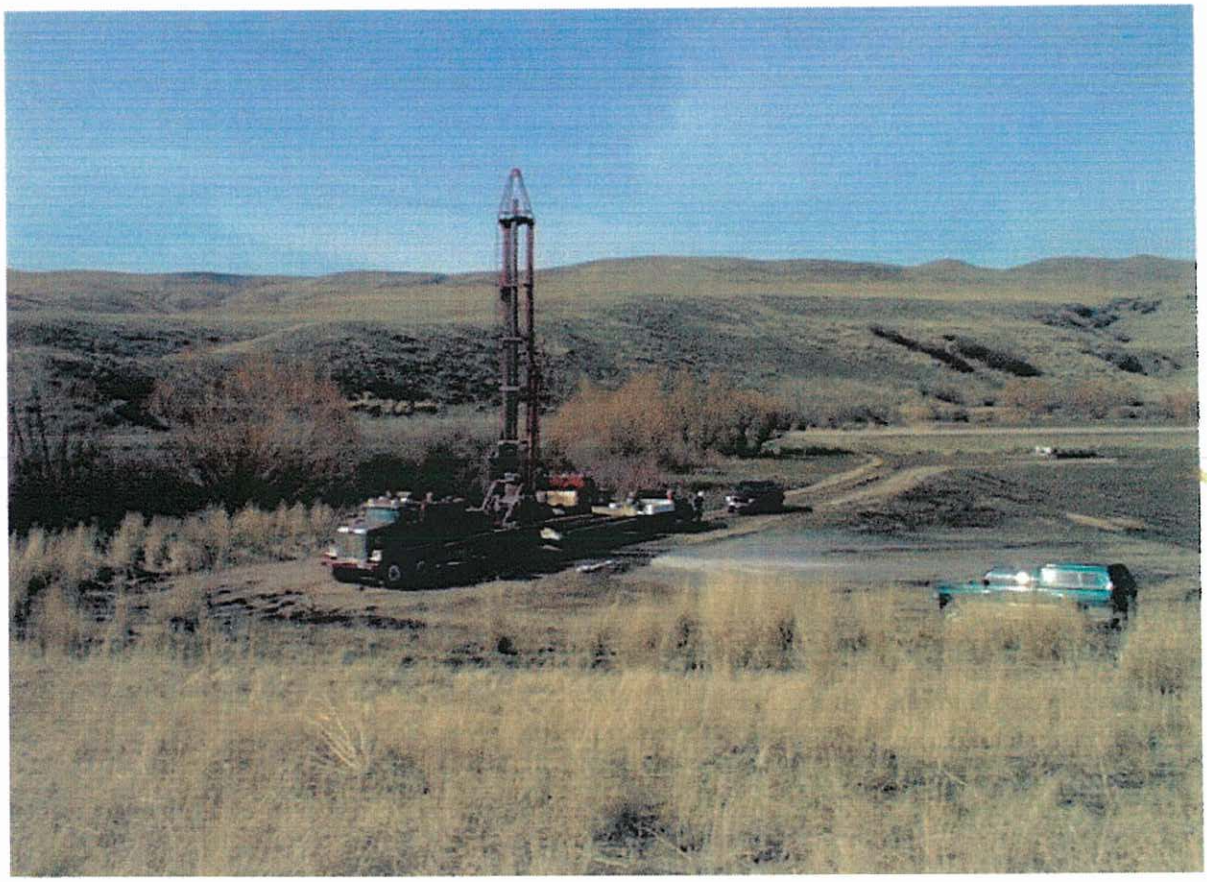
SunCor Signature _____

Date _____

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Department of Water Resources
APPLICANT'S
Exhibit 26
Date Admitted 10-31-06

GROUNDWATER EXPLORATION DRILLING IN THE SPRING VALLEY RANCH VICINITY OF GEM, ADA, AND BOISE COUNTIES, IDAHO



REPORT PREPARED FOR

SUNCOR DEVELOPMENT COMPANY

BY

SCANLAN ENGINEERING

APRIL 2003

LICENSED PROFESSIONAL GEOLOGIST
SCANLAN
10/13/06
646
STATE OF IDAHO

PROFESSIONAL ENGINEER
6266
10/13/06
STATE OF IDAHO

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EXECUTIVE SUMMARY

Four groundwater exploration boreholes were drilled in Spring Valley and in the South Fork Willow Creek Valley in an attempt to locate aquifers to serve Phase 1 of the Spring Valley Ranch Project. Well locations are shown on Figure 1.

- The first two wells produced less than 75 gpm each during short-term pumping tests, suggesting poor potential for aquifers at those sites to provide a significant and sustainable groundwater supply.

- The third well penetrated a geographically limited, but highly productive aquifer (referred to herein as the Sandy Hill Aquifer). The well produced 160 gpm with 3 feet of stabilized drawdown during a short-term pumping test, with full water-level recovery immediately after cessation of pumping. These test results suggest that properly completed wells in the Sandy Hill Aquifer should be capable of yields in excess of 500 gpm. However, the limited extent of the aquifer (estimated at less than one square mile) and limited available recharge suggest that the withdrawals in excess of approximately 100 acre feet annually might not be sustained without significant water level declines.

- The fourth well was drilled one-half mile south of Spring Valley Ranch headquarters. This 1220-foot well penetrated a sand and gravel aquifer at a depth of 240 to 290 feet. Several discrete fracture zones between 875 and 1220 feet in the underlying granite produced (3 to 25 gpm) during drilling but were not productive enough to warrant further testing. Testing of the shallow sand and gravel aquifer suggests that it will produce short-term yields of 100 gpm or more, but sustainable yields will be considerably less. As a result, the well shows little potential for significant water supply to support the project.

Additional exploration drilling and testing is recommended to further characterize the Sandy Hill Aquifer, since current information suggests that the aquifer might support a few hundred homes on a long term-basis, or several hundred homes on a short-term basis. Water quality from aquifer is excellent in all respects except arsenic. Arsenic was present in the sample from SVR-3 at concentrations that will require treatment to meet future drinking water standards.

Productive aquifers are believed to be present on Spring Valley Ranch lands in the vicinities of Big Gulch and Little Gulch, approximately four to seven miles west of Phase 1. Exploration drilling and testing in that area is recommended to verify water quality and aquifer conditions for a future well field. A well field in Big Gulch could be developed to serve later phases of the Spring Valley Ranch project or the long-term water needs of Phase 1 if the Sandy Hill Aquifer is not sustainable.

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INTRODUCTION

Background

SunCor Development Company is evaluating development potential for the Spring Valley Ranch property located northwest of Boise, Idaho. The property consists of more than 30,000 acres located in Ada, Gem, and Boise Counties. Approximately 12,500 acres were identified as a primary development area in studies conducted in June 2001. The ultimate population within the primary development area could be as high as 30,000 residents, based on 11,300 dwelling units with 2.7 occupants per dwelling unit (Idaho average). The initial phase of the project will likely consist of less than 1000 homes in a core area located along Highway 55 in Spring Valley, and also located west of Highway 55 in the South Fork Willow Creek Valley.

SunCor contacted Scanlan Engineering in June 2002 to provide consulting services related to water supply for the Spring Valley Ranch Project. As a first step, Scanlan Engineering prepared a letter report dated July 11, 2002 that discussed groundwater resources within the Spring Valley Ranch property. A primary goal of the study was to propose an exploration-drilling program to locate and develop groundwater supplies to serve Phase 1 of the project. For purposes of that study, an initial phase water supply target of approximately 2 million gallons per day (1,400 gpm) was determined to be adequate to provide the peak-day domestic and landscape irrigation supply for approximately 1,000 homes.

Scanlan Engineering's July 11, 2002 report concluded that aquifers located in the western portion of the property (near Big Gulch) have the best potential to serve the ultimate needs of the project. Properly constructed wells in Big Gulch are anticipated to yield flow rates in excess of 1,000 gpm. Three exploration wells in Big Gulch were recommended to document water quality and aquifer characteristics.

The report also concluded that limited exploration for aquifers in the Spring Valley area was warranted. Although highly productive aquifers were not anticipated in the Spring Valley area, exploration drilling was recommended to explore for groundwater supplies located in the close proximity of initial development areas. Low capacity wells in this area might be candidates to serve the initial needs of the development. Other areas of Spring Valley Ranch property were determined to have very low probability for significant groundwater development. These other areas were either located in remote upland locations, or are underlain at shallow depth by granitic bedrock.

On October 15, 2002, SunCor authorized Scanlan Engineering to proceed with drilling of three exploration boreholes. A fourth exploration borehole was authorized on January 16, 2003. This report presents the results of those drilling activities. All activities occurred within the vicinity of the potential Phase 1 Development Area (Spring Valley Creek and South Fork Willow Creek areas). Well locations are shown on Figure 1.

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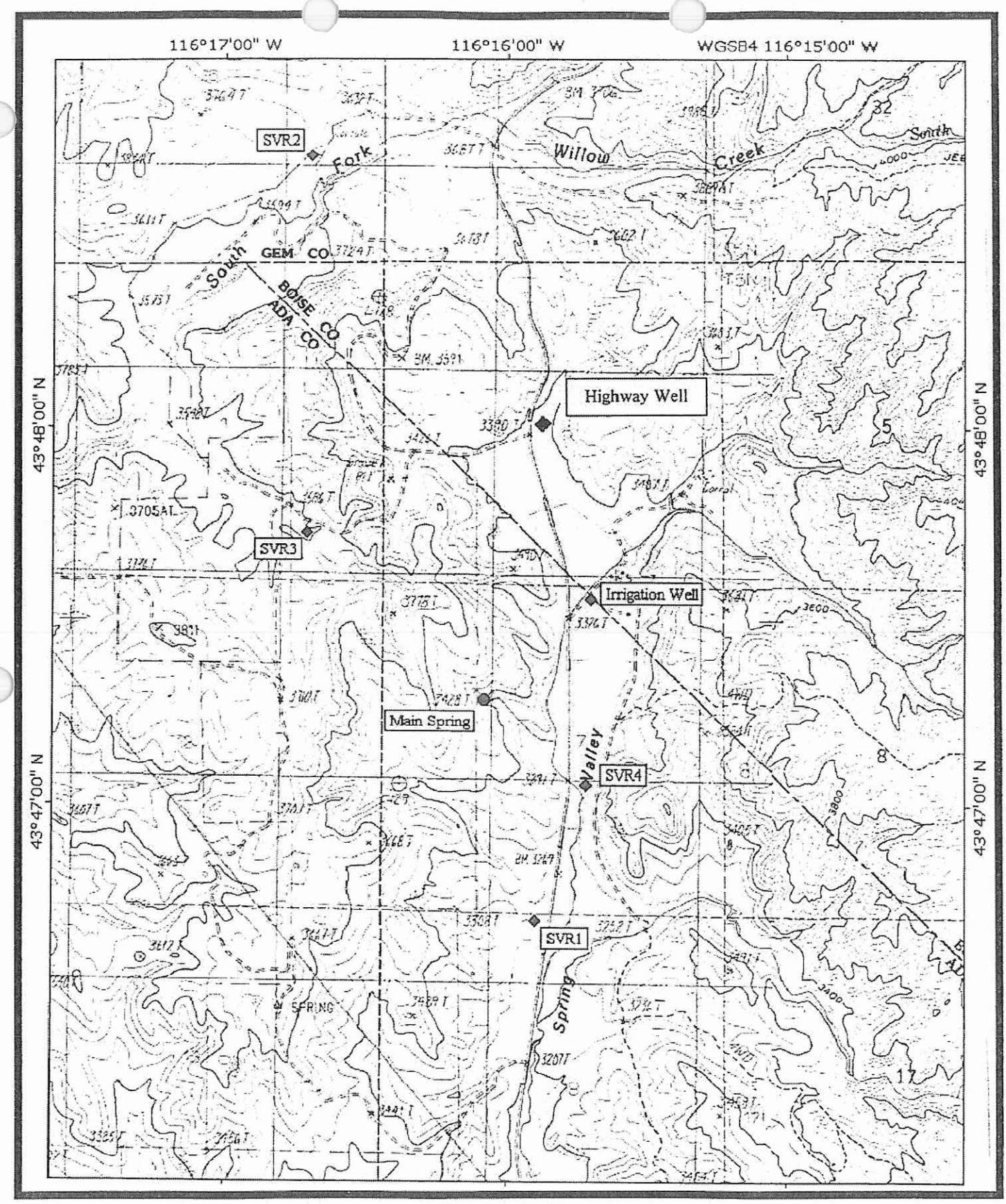


FIGURE 1
WELL LOCATION MAP

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Scope of Work

The following tasks were accomplished.

1. Four exploratory boreholes (Exploration Well Nos. 1, 2, 3, and 4) were drilled, with approximately 3,483 feet of total drilling. The first three boreholes were drilled using the mud-rotary technique, which allows the borehole to be advanced through unconsolidated materials without the use of well casing. The fourth borehole was drilled primarily using air rotary techniques, which requires well casing to support the boring through unconsolidated or unstable materials.

2. Geophysical logs were run on each of the three mud-rotary boreholes. The geophysical logs provide documentation of the borehole characteristics, and assist in identification of formation changes and lithology.

3. Exploration Well No. 1 was completed for stockwater and water-level observation purposes with 100 feet of 6-inch well casing.

4. Exploration Well No. 2 was completed for stockwater and water-level observation purposes with 300 feet of 6-inch well casing.

5. Exploration Well No. 3 was completed for stockwater, water-level observation, and test pumping purposes with 245 feet of 6-inch casing and well screen.

6. Exploration Well No. 4 was completed for water-level observation and test pumping purposes with 60 feet of 10-inch surface casing, 240 feet of 8-inch well casing, and 40 feet of 6-inch well screen. The lower portion of the exploratory boring (300 to 1220 feet) was abandoned by backfilling with bentonite chips and cement grout.

7. Exploration Well Nos. 1 and 2 each were test pumped in an open-hole condition prior installation of casing to determine potential yield and water quality. Exploration Well No. 2 was test pumped again after it was cased to 300 feet.

8. An air-lift pumping test of the lower portion of the Exploration Well No. 4 borehole prior to abandonment.

9. Exploration Well Nos. 3 and 4 were test pumped in a completed (cased and screened) condition to determine potential yield and water quality.

10. A short pumping test was conducted on the Ranch Irrigation Well to determine approximate aquifer parameters.

11. Water samples were collected from the four exploration wells, from the Ranch Irrigation Well, from the hillside spring in Spring Valley, and from stockwater wells in Little Gulch and Big Gulch.

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12. Limited surface geologic exploration was conducted in an effort to better characterize local geology.

Details and results of the above activities are provided in follow sections. A summary of well testing results is provided as Table 1.

EXPLORATION WELL NO. 1

Exploration Well No. 1 (SVR 1) is located in Spring Valley, west of Highway 55, approximately one mile southwest of the Spring Valley Ranch headquarters. Target depth for the well was 600 feet or top of granite. The purpose of the exploration well was to provide definition of local stratigraphy and explore for water-bearing sand zones within an anticipated sedimentary section.

Drilling

Exploration Well No. 1 (IDWR tag No. D25898) was drilled to a total depth of 447 feet using mud-rotary methods. The nominal 8-inch diameter borehole penetrated lakebed sediments and volcaniclastic sediments from surface to approximately 340 feet. Well cuttings through this interval are described as primarily very fine-grained sandstone, clay, tuffaceous sandstone, and tuff. These materials are gravelly at times, but without any significant layers of coarse-grained clean sand. At 340 feet, the borehole appears to have entered decomposed granite. The granite continued to the bottom of the borehole and became progressively less weathered (and more dense) with depth. Note that the cuttings from the 340 to 447-foot section of the borehole are composed primarily of angular quartz grains, which look identical to a coarse-grained sand deposit. However, based on drilling characteristics, geophysical logs, and the presence of mica (biotite) in the cuttings, it was determined that this material is weathered granite.

Following drilling, geophysical logs (single point resistivity and natural gamma) were run to 427 feet. The borehole was then developed by bailing at a rate of approximately 40 gpm. During bailing, the driller reported that the borehole was open to approximately 420 feet. The driller thought that most of the water was being produced from above the top of the granite (i.e., above 340 feet), because mud was bailed from bottom of the borehole and muddy water was bailed from 375 feet, while relatively clean water was bailed from above 200 feet. These observations suggest that significant flow was not moving up the borehole from below 375 feet.

Testing

Static water level in the well prior to test pumping was approximately 17 feet below ground surface. The well was tested in an open-hole condition and produced 51 gpm with 102 feet of drawdown after 7.5 hours of test pumping. Pumping water level did not stabilize during the test period. Estimated transmissivity of the tested aquifer section was 1500 gpd/ft.

The discharge from the well was very dirty (fine sand and suspended sediment) throughout the pumping test. Water temperature was 60 degrees F. Field specific conductance and pH were 282 uS and 7.4 S.U., respectively. The water has a noticeable hydrogen sulfide odor. A field-filtered (0.45-micron) water sample was collected for laboratory water-quality analysis. The

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Table 1
Summary of Aquifer Tests
Sping Valley Ranch

Well No.	Test type	Test Date	Static Water Level (ft. bmp)	Well Condition	Pumping Rate (gpm)	Test Duration (mins.)		Drawdown (ft.)	Transmissivity (gpd/ft)		Comments
						Pumping	Recovery		Drawdown	Recovery	
SVR1	Step	11/07/02	19.5	Open hole	Variable	150	30	128.8	NA	NA	Pumped at 20, 50 and 60 gpm; Spec Cap .9 gpm/ft, .7 gpm/ft., and .5 gpm/ft respectively.
SVR1	Constant Rate	11/08/02	19.8	Open hole	51	450	150	102.0	1500	1925	Cloudy, T = 60.3 F, SC = 282 uS, EC = 733 uS, pH = 7.39
SVR2	Constant Rate	11/22/02	18.0	Open hole	40	332	25	95.3	528	365	Cloudy, T = 66.7 F, SC = 815 uS, EC = 725 uS.
SVR2	Constant Rate	12/19/02	35.1	Cased to 300 ft	50	150	115	159.9	695	280	Almost clear, T = 66.6 F, SC = 773 uS, EC = 690 uS.
SVR3	Constant Rate	12/16/02	175.0	Cased and screened to 260 ft.	50	85	10	1.6	46875 *	NA	Clear, T = 56.8 F, EC = 111.5 uS, SC = 142 uS
SVR3	Constant Rate	12/18/02	177.8	Cased and screened to 260 ft.	160	65	15	3.0	80000 *	NA	Clear, T = 56.1 F, EC = 108 uS, SC = 138 uS.
SVR4	Constant Rate	03/06/03	43.4	Cased and screened to 290 ft.	100	180	220	114.5	910 (early) 290 (late)	550	Clear, T = 56 F, SC = 590 uS, pH 7.4
SVR4	Constant Rate	03/14-15/03	+2 gl	Cased and screened to 290 ft.	80	1443	180	200.7	1320 (early) 120 (mid) 640 (late)	660	Clear, T =66.2 F, SC = 546 uS
Irrigation Well	Constant Rate	12/05/02	18.0	Cased, const. unk.	100	150	70	105.1	480	455	Clear, T = 56.7 F, SC = 450 umhos/cm, EC= 350 umhos/cm.

Notes:
* = Calculated value; where T (gpd/ft) = Specific Capacity (gpm/ft) x 1500.

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laboratory results suggest relatively good water quality, although manganese (0.18 mg/L) is in excess of the secondary standard (0.05 mg/L). There were no inorganic constituents in excess of primary drinking water standards.

Well Completion

After testing, the bottom of the borehole was measured at approximately 390 feet, suggesting that the lower 57 feet of borehole was filled with materials that had caved from the borehole walls. An attempt was made to bail out the fill material. This attempt was unsuccessful because the borehole was unstable between 250 and 350 feet, and continued to cave in when material was removed. The borehole was eventually completed with 6-inch steel casing set to 100 feet. The bottom of the casing was equipped with a shale trap to seal the casing to the 8-inch borehole. A bentonite grout surface seal was placed above the shale trap with tremie pipe from approximately 90 feet to surface.

Discussion

Results of drilling and test pumping of Exploration Well No. 1 suggest that groundwater potential at the site is low. A properly completed production well at this site will likely produce a sustainable yield of less than 50 gpm. Water quality is acceptable for public water system use. However, due to low yield, additional groundwater development at this location is not currently recommended.

EXPLORATION WELL NO. 2

Exploration Well No. 2 (SVR 2) is located in the South Fork Willow Creek Valley, approximately ½ mile west of Highway 55 and 1.5 miles northwest of the Spring Valley Ranch headquarters. Target depth for the well was 800 feet or top of granite. The purpose of the exploration well was to provide definition of local stratigraphy and explore for possible water-bearing sand layers or fractured basalt.

Drilling

Exploration Well No. 2 (IDWR Tag No. D25899) was drilled to a total depth of 846 feet using mud-rotary methods. The borehole is nominal 8-inch diameter above 700 feet and 6-inch diameter below 700 feet. Materials penetrated consisted primarily of shale, clay, and fine-grained sandstone. A layer of basalt rock and basaltic tuff was present from 560 to 610 feet. The driller reported soft sandstone at 725 feet. At approximately 740 feet, the borehole entered decomposed granite. This material was present to total depth.

Geophysical logs (single point resistivity, natural gamma, and caliper) were run to 843 feet. Following logging, the borehole was developed briefly by bailing. The driller indicated that a potentially unstable sand zone was present from 130 to 140 feet. A test pump was set at approximately 130 feet to avoid being below this zone in event of borehole collapse.

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First Pumping Test

Static water level prior to testing was approximately 15 feet below ground surface. The hole was test pumped in an open-hole condition for 5.5 hours and produced 40 gpm with 95 feet of drawdown. Drawdown did not stabilize, and discharge was dirty (fine sand and suspended sediment) throughout the pumping test. Estimated transmissivity of the tested section of the aquifer was approximately 500 gpd/ft.

The temperature of water produced during test pumping was 66 degrees F. Specific conductance varied throughout the test period between 650 and 800 uS. The reason for the variation is unknown, but may suggest contributions from various zones within the borehole as the pumping test progressed. A field-filtered water sample was collected for laboratory water-quality analysis. Laboratory results suggest poor to moderate quality water. Arsenic (0.016 mg/L) exceeds the future primary standard of 0.010 mg/L. TDS (570 mg/L), iron (0.95 mg/L), and manganese (1.64 mg/L) exceed the secondary standards of 500 mg/L, 0.30 mg/L and 0.05 mg/L, respectively. The water is hard (319 mg/L as CaCO3), and high in sulfate (229 mg/L).

Well Completion

Geophysical logging, drilling characteristics, and well cuttings suggested that water-bearing zones might be present between 100 and 150 feet, and below 450 feet. In order to be able to adequately stress zones below 450 feet during test pumping, the suspected upper water-bearing zones in the well were cased off by installing 6-inch casing to 300 feet. The 6-inch well casing is equipped with shale traps at 160 and 300 feet. A grout surface seal was placed with tremie pipe from approximately 150 feet to surface.

Second Pumping Test

Following installation of casing, the well was test pumped at 60 gallons per minute for 2.5 hours. Static water level before the test was 32 feet below the top of casing. Pumping water level at the end of the test was 192 feet (160 feet of drawdown) and had not stabilized. Water discharge was initially very turbid but was clearing by the end of the test. Temperature was 67 degrees F and specific conductance was 733 uS. The specific capacity of the lower part of this well is slightly less than the specific capacity of the uncased borehole (as measured by the first test at this location). This suggests that the majority of water produced from this well during the first pumping test was coming from zones below 300 feet depth. Estimated transmissivity of the tested section is approximately 500 gpd/ft.

Discussion

Results of drilling and test pumping of Exploration Well No. 2 suggest that groundwater production potential at the site is low and water quality is relatively poor. A properly completed production well at this site will likely produce a sustainable yield of 60 gpm or less with drawdown of more than 200 feet. The water has high concentrations of iron, manganese, sulfate, and TDS. Arsenic concentration (0.016 mg/L) exceeds the future standard of 0.010 mg/L. Due to low yield and poor water quality, significant groundwater development at this location is not anticipated.

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Additional development work could be considered in an attempt to stimulate more production from deep aquifer zones. The additional development would probably consist of air-lift pumping from 300 feet or deeper. However, in all likelihood the additional development work will simply confirm the low production potential shown by test pumping.

EXPLORATION WELL NO. 3

Exploration Well No. 3 (SVR 3) is located west of Highway 55, approximately 3/4-mile west of the Spring Valley Ranch headquarters. Target depth for the well was 1,000 feet, or top of granite. The purpose of the exploration well was to provide better definition of local stratigraphy and explore for possible water-bearing sand zones in a primarily sedimentary formation.

Drilling

Exploration Well No. 3 (IDWR Tag No. D29004) was drilled to a total depth of approximately 970 feet using mud-rotary methods, with 8-inch diameter hole to total depth. The borehole penetrated a coarse-grained sand unit extending from ground surface to a depth of 275 feet. Below 275 feet, the borehole entered a sequence of lakebed sediments and volcaniclastic sediments (shale, clay, tuff and fine-grained sandstone) that continued to the bottom of the borehole.

Geophysical logs (single point resistivity, natural gamma, and caliper) were run to 967 feet following drilling. The well cuttings, drilling characteristics, and geophysical logs did not provide indications of high permeability zones below 275 feet. Therefore, testing was focused on the coarse sand unit above 275 feet.

Completion

In order to test the unconsolidated sands above 275 feet, it was necessary to complete the borehole with well casing and screen. The well was constructed with 6-inch well casing and 40 feet of 6-inch stainless steel well screen extending to a total depth of 245 feet. An open hole was left below the bottom of the 6-inch casing.

The well was developed initially by bailing, and then by surging with a 5-hp test pump. The discharge from the well quickly cleared during pumping. Static water level was determined to be approximately 176 feet below top of casing. Pumping water level at 50 gpm (maximum capacity of the 5-hp development pump) was stable at 178 feet below top of casing.

Testing

A 25-hp test pump was used for testing of the well. This pump produced only 160 gpm due to friction losses in the 2.5-inch pipe used for setting the pump. Larger diameter pipe was not used because of the need to also fit a water-level sounding tube within the 6-inch casing. At the 160-gpm pumping rate, the water-level drawdown was approximately 3 feet. Pumping water level stabilized within one minute of the start of testing. The rapid water-level response during testing

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precludes calculation of aquifer hydraulic parameters using standard graphical methods. However, based on a specific capacity of 53 gpm/ft, a minimum transmissivity of 80,000 gpd/ft is estimated.

The water produced during pumping had a specific conductance of approximately 100 uS, suggesting excellent water quality. This specific conductance is substantially lower than the specific conductance measured at the other exploration wells and at the Ranch Irrigation Well. Laboratory analysis showed good water quality for all parameters except arsenic. The arsenic concentration of 0.038 mg/L is less than the current Maximum Contaminant Level of 0.050 mg/L, but more than the future standard of 0.010 mg/L.

It is likely that essentially all of the water produced during development and testing was derived from the portion of the borehole above 275 feet. The driller reported that the well and borehole was filled with sand below approximately 240 feet following completion of test pumping.

Discussion

Additional test pumping is needed to better estimate potential yield from the aquifer penetrated by Exploration Well No. 3. Based on the limited information obtained during development and test pumping, it is probable that a yield of several hundred gpm could be obtained from a properly completed production well at this site. The water from the aquifer will require treatment for arsenic removal, but otherwise is excellent quality for public water system use. However, the lateral extent of the aquifer is limited. Surface geologic mapping suggests that the sand unit does not extend to the east more than approximately 1500 feet. The aquifer appears to be bounded at a distance of 1000 feet to the southwest by a faulted contact with a ridge of granitic rock. The aquifer does not extend north to the vicinity of Exploration Well No. 2 (6,000 feet north). Therefore, the total yield from the aquifer may not be adequate to sustain high rate pumping for many months or years. Nonetheless, the aquifer appears to be a significant resource that could be exploited for the initial phase of the project. The aquifer could also function in the future as a reservoir to allow winter-time groundwater recharge, and summer-time high rate production.

EXPLORATION WELL NO. 4

Exploration Well No. 4 (SVR 4) is located east of Highway 55, approximately ¼ mile south of Spring Valley Ranch headquarters. SunCor selected the well site, and established a target depth of 1200 feet.

Drilling

Exploration Well No. 4 (IDWR Tag No. D0029075) was drilled to a total depth of approximately 1220 feet, primarily using air-rotary methods, with 14-inch diameter hole to 60 feet, 8-inch diameter hole to 840 feet and 6-inch diameter hole to 1220 feet.

The borehole penetrated a sequence of lakebed sediments and volcaniclastic sediments (shale and clay) from near ground surface to approximately 240 feet, and again from 290 feet to 450 feet. A coarse-grained sand and gravel aquifer was penetrated between 240 to 290 feet. Below

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450 feet, the borehole penetrated decomposed granite. Casing (8-inch diameter) was required to a depth of 640 feet, after which 8-inch open borehole was extended 840 feet. The 200 feet of open borehole became increasing unstable as the open borehole was advanced, and eventually collapsed back to 660 feet. A string of 6-inch casing was then required to advance the borehole beyond 660 feet. The 6-inch casing was advanced to 1035 feet, after which open 6-inch borehole was extended to 1220 feet. The open hole below the 6-inch casing was drilled using the mud-rotary method.

The borehole produced minor air-lift flows (i.e., less than 20 gpm) at various levels between 0 and 240 feet. From 240 to 290 feet, air-lift pumping rate was estimated at more than 200 gpm. No significant water-bearing zones were detected by air-lift pumping between 290 feet and the bottom of the 6-inch casing at 1040 feet, although minor water-bearing fractures were encountered at approximately 875, 990 and 1035 feet. Following mud-rotary drilling of the interval from 1035 to 1220 feet, the borehole was flushed with clear water. The flushed borehole produced an artesian flow of less than ¼ gpm, and an air-lift flow (from 315 feet) of 10 to 15 gpm. A sample of the air-lift flow was obtained for laboratory analysis.

Completion

As a first step of the exploration drilling, a 10-inch surface casing was set to 60 feet, and sealed with cement grout. The 10-inch surface casing was utilized so that (1) the well could be shut in if high pressure or high rate artesian flows were encountered and (2) to provide a surface seal if public water system use was proposed in the future. Below the surface casing, the exploration borehole was cased as necessary during drilling, with 8-inch casing to 640 feet and 6-inch casing to 1040 feet. After reaching total depth and conducting air-lift testing, the borehole below approximately 700 feet was abandoned using neat cement grout installed through tremie pipe. The 6-inch casing was then cut off at a depth of 680 feet. The casing above 680 feet was removed from the borehole and the 8-inch casing was cut off at 340 feet. The well was then filled with bentonite chips to approximately 320 feet. Sand was installed from approximately 320 to 300 feet as the 8-inch casing was pulled back. A string of 6-inch casing and well screen was installed from 230 to 300 feet, and the 8-inch casing pulled back to 240 feet to expose the well screen. The well was then developed by air-lift pumping for 2.5 hours at a rate of approximately 200 gpm. Water level prior to air-lift pumping was +2 feet. After air-lift pumping, the water level was measured at 88 feet.

Testing

Testing began of Exploration Well No. 4 began with a step-rate pumping test on March 6. The test pump was a 25-hp submersible set at a depth of 210 feet. Prior to starting the pump, the static water level was 43 feet below ground surface. Since the water level had been 2 feet above ground the previous day, the pre-test static indicated that the pressure in the aquifer had not recovered from air-lift pumping the previous day.

The pump was started at 100 gpm as the first step of the step-rate test. At the 100-gpm rate, the water level dropped steadily throughout a 3-hour pumping period with no sign of stabilization. At the end of the 3-hour pumping period, pumping water level was 158 feet. Given the large amount

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of drawdown at the 100-gpm rate, no additional steps were attempted, and the step-rate pumping test was terminated. Three hours following the end of pumping, the water level had recovered to only 94 feet. After four days, water level had recovered to approximately 12 feet.

Constant-rate testing was conducted on March 14 and 15. The well was pumped at a rate of 80 gpm for 24 hours. Static water level at the start of the test was +2 feet. Water level at the end of the test was 200 feet. At the end of the test, the drawdown rate appeared to be trending toward stabilization. Water-level responses from test pumping were not detected in either the Ranch Well or Exploration Well No. 1.

Following the constant-rate test, water levels recovered slowly. Nine days after the test, the water level was still 38 feet from full recovery.

The indication from the test pumping response is that the well is completed in a relatively permeable aquifer zone, but the permeable zone is very limited in lateral extent. Thus, while this well can probably be pumped at high rates (more than 200 gpm) for periods of less than an hour, the limited aquifer storage capacity will reduce the sustainable yield to approximately 65 gpm. Estimated transmissivity in the near vicinity of the well is approximately 1320 gpd/ft. If this short-term trend had continued, the well would be capable of producing a sustained yield of 180 gpm from a pumping level of 225 feet. However, after 15 minutes of pumping the effective transmissivity decreased by an order of magnitude (to 120 gpd/ft) as a result of negative hydraulic boundaries. The negative boundaries are the hydraulic expression of drawdown effects reaching the outer edge of the permeable portion of the aquifer. In this case, the limit of the aquifer may be (1) the edge of a buried channel, (2) a fault, or (3) a change in permeability where a lens-shaped deposit of permeable sand and gravel "pinches out" into a surrounding mass of low-permeability sediments. These hydraulic boundaries severely limit the long-term productivity of the well and aquifer. Leakage from overlying and underlying fine-grained sediments, or a positive hydraulic boundary as some distance from the well, is probably responsible for the trend toward stabilization (effective transmissivity of 640 gpd/ft) that was noted near the end of the constant-rate test.

Water quality from the aquifer is moderate, with no parameters exceeding primary drinking water standards, but concentrations of iron (0.73 mg/L) and manganese (0.26 mg/L) exceed secondary standards. Water temperature was 66 degrees F, specific conductance was 590 uS, and pH was 7.4. The water has a very faint hydrogen sulfide odor. Laboratory analysis found less than 0.003 mg/L arsenic, TDS of 404 mg/L, and nitrate of less than 0.20 mg/L.

Discussion

Results of drilling and test pumping of Exploration Well No. 4 suggest that groundwater potential at the site is low. Although the well is capable of short-term pumping at rates of more than 200 gpm, a properly completed production well at this site will likely produce an estimated sustainable yield of only 60 gpm. Water quality is acceptable for public water system use. However, due to low yield, additional groundwater development at this location is not currently recommended.

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HILLSIDE SPRING

A spring located ¼ mile west of Highway 55 in Spring Valley currently serves as the domestic and stockwater source for the Spring Valley Ranch headquarters. The spring was developed many years ago by driving a tunnel into the soft sandstone hillside. The tunnel is not currently visible, as the portal reportedly was sealed and covered. However, piping from the tunnel is functional, and water is supplied under gravity pressure from the spring (at elevation 3400 feet +/) to the ranch headquarters (at elevation 3330 +/-) and nearby stocktanks. Ranch Manager Jerry Thompson reported that the flow from the spring was measured at 50 gpm during summertime several years ago. Discharge rate from the spring during the Exploration Well No. 4 pumping test in March 2003 was 48 gpm, suggesting that the discharge rate is relatively constant.

A water sample was collected from the spring and submitted for laboratory testing. Field specific conductance was 188 uS. Laboratory results show excellent water quality, except for arsenic at 0.021 mg/L.

Conceptually, it appears that the aquifer zone tapped by Exploration Well No. 3 is in hydraulic connection with the hillside spring. Water level elevation at the spring is approximately 3400 feet, compared with a water level elevation of approximately 3420 feet at Well No. 3. The elevation of shallow groundwater at Exploration Well No. 2 is estimated to be approximately 3600 feet. This may suggest a gradient from the South Fork Willow Creek Valley toward Spring Valley. The spring is not anticipated to be in hydraulic connection with the aquifer zones tapped by Exploration Well No. 4 or the Ranch Irrigation Well.

The sedimentary formation that the spring issues from consists of a slightly indurated fine-grained sand. The material has the appearance of a dune sand, although further investigation would be required to ascertain whether it has an eolian or alluvial origin. The sand it is noticeably different in appearance from the coarse-grained sand aquifer in the upper 275 feet of Well No. 3. This suggests that the two sources are separate geologic units, although we suspect that they are hydraulically connected. The coarse-sand appears to be a younger, stratigraphically higher unit, perhaps equivalent to the Pierce Gulch sand of the upper Idaho Group. The dune sand appears to be an older sand, perhaps part of the lower Idaho Group or even the older Payette Formation or Poison Creek Formation. The nature of the contact between the two units is unclear.

Given the probable hydraulic connection between the spring and the Sandy Hill Aquifer, monitoring of spring discharge is recommended during future Sandy Hill Aquifer exploration activities. Significant development of the Sandy Hill Aquifer may eventually deplete or eliminate flow from the spring.

The discharge from the spring also provides a preliminary estimate of the minimum yield from the Sandy Hill Aquifer. For instance, if the spring discharge averages 50 gpm, the annual discharge from the aquifer at that location is approximately 80 acre feet (26 million gallons). This amount of discharge is probably the minimum amount that can produced from the Sandy Hill aquifer (provided that a decline in spring discharge is acceptable) on an annual basis. The actual potential yield from the aquifer is probably more than the measured spring discharge, but the annual spring discharge provides a rough estimate of the minimum potential annual yield.

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RANCH IRRIGATION WELL

A short-pumping test of the Ranch Irrigation Well was conducted to determine approximate yield. The well was pumped at an average rate of 100 gpm for 2.5 hours. Drawdown did not stabilize, and was measured at 105 feet (123 feet below ground level) at the end of the test period. The well appears to be completed with 12-inch perforated casing at the surface, and cascading water was audible after the pumping water level fell below about 37 feet.

Based on the results of test pumping, the well appears to be capable of a sustained pumping rate of less than 100 gpm. This short-term test result matches with anecdotal information from Jerry Thompson who indicated that the well could sustain a pumping rate of about 65 gpm or 75 gpm for irrigation purposes, and that the pump is set at 190 feet. Using the drawdown trend from short-term test, the estimated pumping water level after 3 months of continuous pumping at 65 gpm would be approximately 170 feet.

Water temperature during testing was 57 degrees F, and specific conductance was 450 uS. A water quality sample was not collected for laboratory analysis during the test. The well was later sampled on March 6. At that time, temperature was 56 degrees F, specific capacity was 507 uS, and pH was 7.5.

Depth and construction of the well are not documented. The previous Ranch Manager (Red) recalled that the well was drilled to approximately 400 feet, and that drilling was terminated when they hit granite. However, retired well driller Wayne Stevens recalled deepening the well to approximately 1000 feet many years ago. The well was then "shot" using dynamite in an attempt to stimulate production. The dynamite approach was partially successful, as the well reportedly flowed under artesian pressure for a short time afterward.

BIG GULCH AND LITTLE GULCH STOCKWATER WELLS

Water samples were collected from stockwater wells located in Big Gulch and Little Gulch. Well locations are shown on Figure 2.

Both wells produce excellent quality groundwater, with low total dissolved solids (approximately 200 mg/L), and very low concentrations of iron, manganese and sulfate. Arsenic was present a levels barely detectable (.005 to .006 mg/L). Nitrates were also low indicating the aquifer has not been impacted by nearby cattle grazing operations.

No data are available regarding well construction or well depth. Jerry Thompson thought that the pumps were set at less than 200 feet in both wells.

COMPARSION OF WATER QUALITY

Water quality results for the three wells and the spring are provided in Table 2. Major ion distributions are shown graphically on Figure 3.

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Table 2
Water Quality Results
Spring Valley Ranch

Source			SVR 1	SVR 2	SVR 3	SVR Spring	SVR Spring*	Big Gulch 1	Little Gulch 1	SVR 4 (250')	SVR Irrigation	SVR 4 (deep)
Date	MCL	SMCL	11/08/2002	11/27/2002	12/18/2002	12/18/2002	03/19/2002	02/14/2003	02/14/2003	03/06/2003	03/06/2003	02/25/2003
arsenic	0.01**		0.008	0.016	0.038	0.021	0.021	0.005	0.006	<0.003	0.006	0.004
ammonia			0.18	0.23	<0.04	<0.04	0.07	<0.04	<0.04	0.46	0.75	0.04
antimony	0.006		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
barium	2		<0.05	0.06	<0.05	<0.05	<0.05	0.05	<0.05	<0.05	0.22	<0.05
beryllium	0.004		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
bicarbonate			94.4	189	50.4	66.2		121	104	155	169	136
calcium			27.3	85.6	12.9	22.2	24.4	30.8	23.9	45.6	50	1.58
chloride		250	4	5	2	3	3	5	6	3	12	5
chromium	0.1		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
fluoride	4	2	0.44	0.34	0.27	0.33	0.38	0.6	0.59	0.17	0.79	0.97
hardness			99.5	319	41.8	67.7	69.2	107	89.7	19	125	5
iron		0.3	0.06	0.95	0.06	<0.05	<0.05	<0.05	<0.05	0.73	4.33	0.24
magnesium			5.47	22.2	2.54	3.53	3.63	6.65	6.55	2.58	11.6	<0.10
manganese		0.05	0.18	1.64	<0.05	<0.05	<0.05	<0.05	<0.05	0.26	2.29	<0.05
mercury	0.002		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
nickel			<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
nitrate	10		0.26	<0.20	0.63	1.59		0.3	0.59	<0.20	<0.20	<0.20
nitrite	1		<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	0.02	0.01
potassium			6.5	12.9	4.4	4.4	4.1	2.1	1.7	6.5	10.4	0.7
sodium			17.8	43.7	9.72	9.52	9.67	19.2	21.2	68.7	27.5	83.5
sulfate		250	43	229	11	17		24	21	117	61	32
sulfide			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
TDS		500	210	570	116	120		206	192	404	378	214
thallium	0.002		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
All results in mg/L												
Field Parameters												
Temp. (C)			15.7	19.2	13.4	13.8		18.3	20.1	18.9	13.3	21.5
Temp (F)			60.3	66.6	56.1	56.8		64.9	68.2	66.0	55.9	70.7
SC (YSI) umhos/cm			282	697	138	188		268.8	253	546		359
EC (YSI) umhos/cm			233	595	108	145		234.3	231			331
pH		6.5-8.5	7.39		7.46	7.56		7.38	7.3	7.4	7.49	9.12
SC (Corning) umhos/cm								335	310	590	514	

* Sampled by Roylance Engineers

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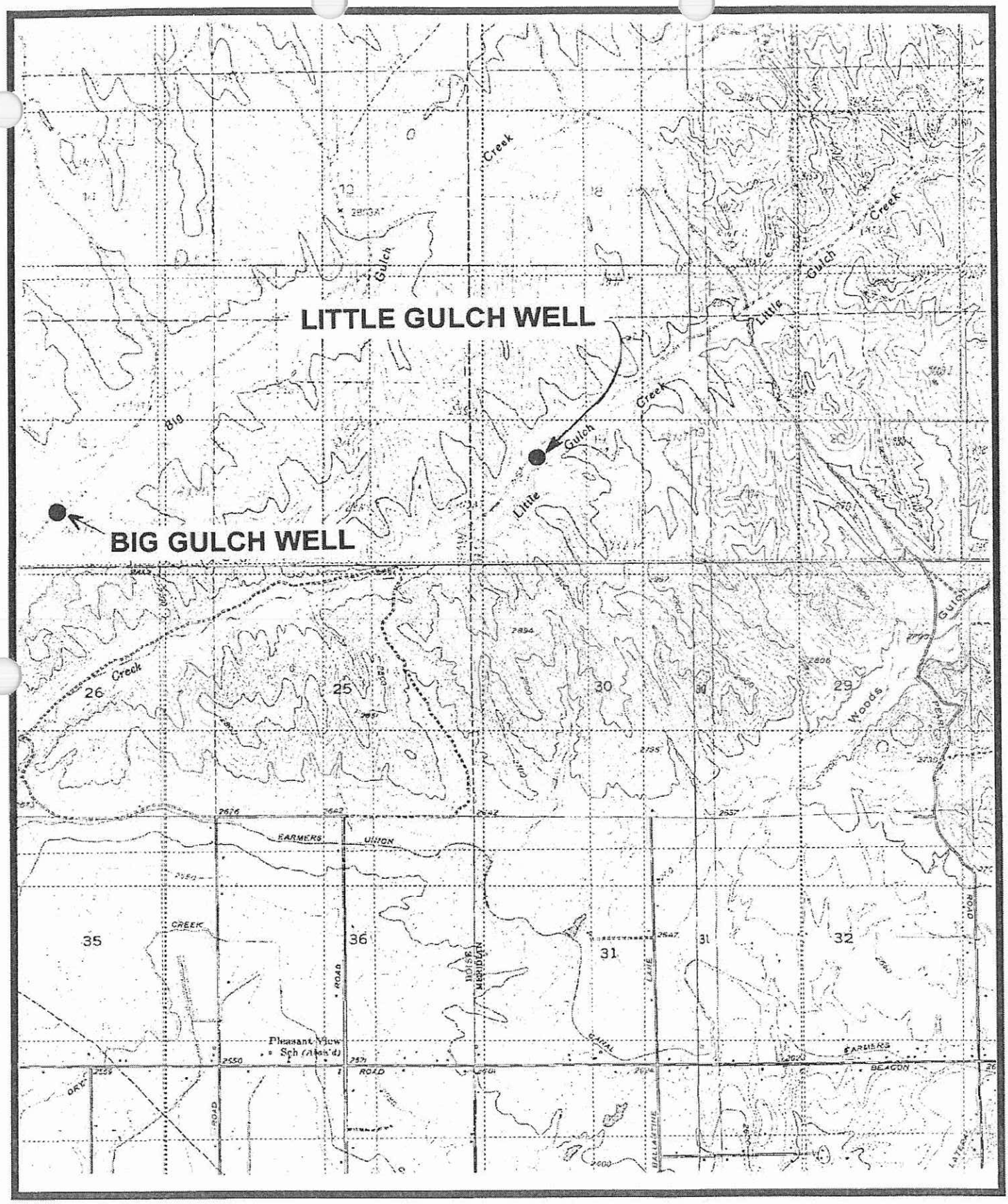


FIGURE 2
BIG GULCH AND LITTLE GULCH WELL LOCATIONS

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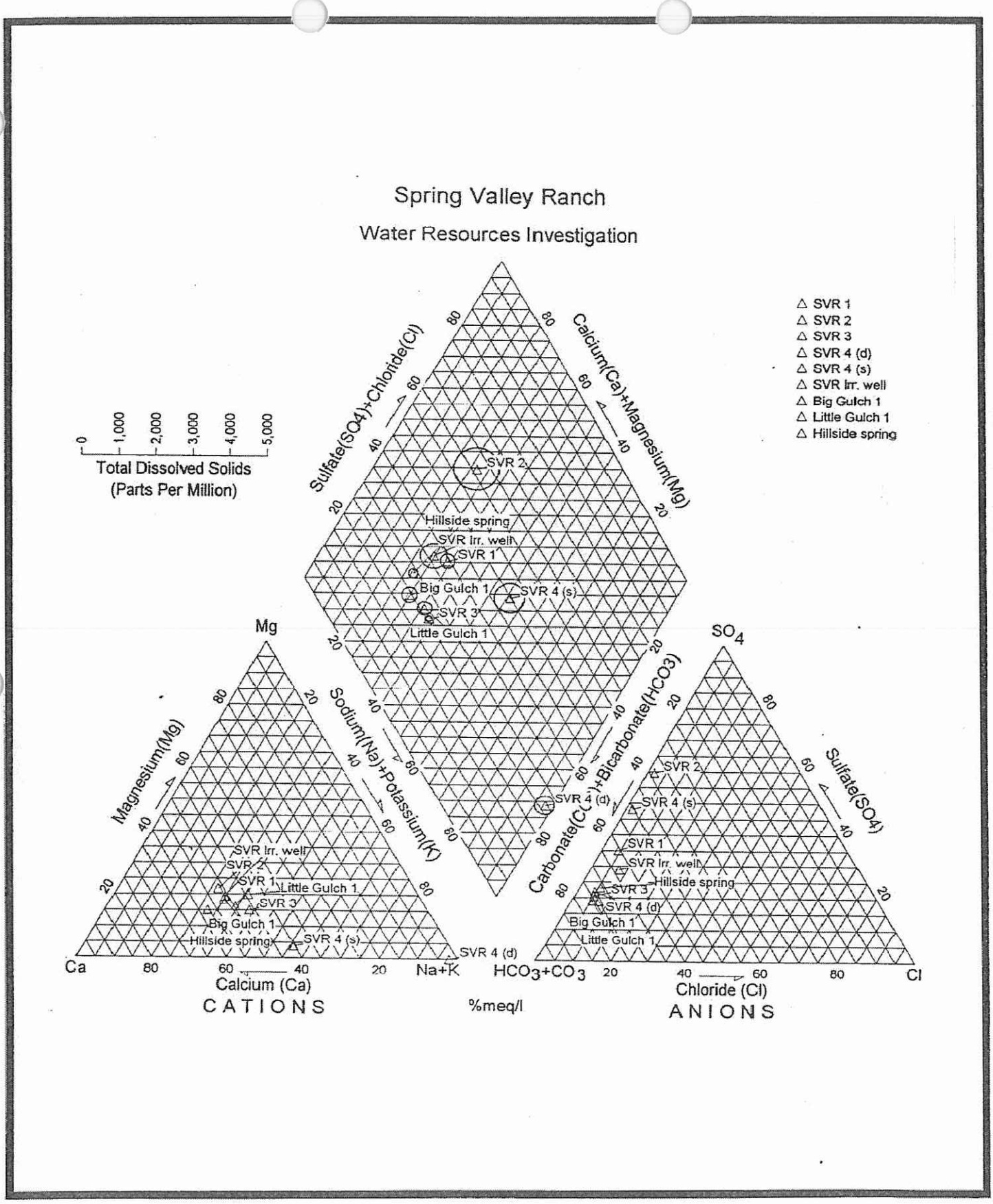


FIGURE 3
MAJOR ION COMPARISONS

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The comparisons in Figure 3 and on Table 2 suggest a similar chemistry exists at the Hillside Spring, SVR 3 and the Big and Little Gulch wells. This suggests the aquifer at the Big and Little Gulch wells is probably also a clean sand alluvial deposit.

The chemistry data also indicate the water produced from the Ranch Irrigation well and SVR 1 are similar, but that the aquifer tapped by SVR 4 (s, shallow) is isolated from the water-bearing zones in those wells. This chemistry separation is consistent with the uniqueness of the sand and gravel at SVR 4, the higher temperature at SVR4 (66 vs 56 F), and the lack of water level response in either SVR 1 or the Irrigation well when SVR 4 was pumped.

As shown on Figure 3, wells SVR 2 and the granite at SVR 4 (SVR 4 d, deep) also appear to be chemically isolated from the other wells.

MISCELLANEOUS COMMENTS

Exploration Well Construction

The wells completed as part of this exploration program were constructed to obtain a maximum amount of information at a minimum cost. Boreholes 1 and 2 were tested in an open-hole condition to prevent potential water-bearing zones from being excluded by solid casing. Boreholes 3 and 4 cased and screened prior to testing because the target formation was unstable. Boreholes 1 and 2 could have been cased and screened prior to testing in order to produce less suspended materials. However, this effort could have reduced the already low yield, would have added substantially to exploration program costs, but would have produced little, if any, additional information.

Well No. 4 was completed with the hope that it might eventually be utilized in a public water system. Although the site of the well is problematic for public water system approval (due to the close proximity of Spring Valley Creek), the well was constructed with heavy wall casing, stainless steel well screen, and a surface seal extending to 60 feet depth.

Value of Low Yield Wells

The value of constructing wells for public water system purposes in low-yield aquifers, such as tapped by Exploration Wells 1, 2 and 4, is debatable. Although a 40 gpm well may have the capacity to support domestic and landscape irrigation needs for 20 to 40 homes, the unit costs to construct and operate numerous low capacity sources is much higher than constructing and operating fewer high capacity sources. Thus, constructing and equipping 2 or 3 high capacity wells, even if distant from the place of use, is generally preferable to constructing numerous low capacity wells nearer to the place of use.

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CONCLUSIONS

Results from the first phase of exploration drilling and testing indicate the following.

1. A coarse-grained sand aquifer (i.e., the "Sandy Hill Aquifer") is present in the highlands approximately ¾ mile west of Spring Valley Ranch headquarters. This aquifer could be exploited for water supply in the first phase of the project. Based on a tested specific capacity of 52 gpm/ft, it appears that high capacity (200 gpm to 1000 gpm) wells can be constructed in this aquifer. However, the aquifer appears to extend over an area of less than one square mile. Therefore, the sustainability of this source is questionable. The minimum sustainable yield is estimated at 80 acre feet annually, based on the discharge from the Hillside Spring. Additional investigation is recommended in an attempt to further define the size and hydraulic characteristics of this aquifer. Treatment of arsenic in water from this aquifer may be required.

2. Testing of Exploration Well Nos. 1, 4, and the Ranch Irrigation Well indicate that aquifer conditions along the Highway 55 corridor through Spring Valley are not conducive to development of high capacity wells. Low capacity (20 to 60 gpm) wells could potentially be constructed in this area. Although it is probable that the "Spring Valley Aquifer" is laterally more extensive than the Sandy Hill Aquifer, the Spring Valley Aquifer has low productivity and is bounded by granitic rock to the northeast and southwest. As a result, sustainable yield from the aquifer is Spring Valley Aquifer questionable.

3. The Hillside Spring in Spring Valley could be considered for water supply purposes. The water could be captured at the spring and used directly (with treatment for arsenic) in a public water system. Alternatively, the discharge from the spring could be captured and pumped back to the vicinity of Exploration Well No. 3 for Sandy Hill Aquifer recharge purposes. Discharge from the spring (currently 50 gpm) is likely to be impacted by pumping from the Sandy Hill Aquifer.

4. Suspected aquifers in the Big Gulch and Little Gulch areas should be targeted as part of the ultimate water supply for the project. The aquifers in this area are anticipated to be productive and more sustainable than aquifers in the Spring Valley area.

5. Wells in Big Gulch and Little Gulch areas could be used as sources of recharge for the Sandy Hill Aquifer, allowing the Sandy Hill Aquifer to be recharged during low-demand winter months. Recharged water could be recovered from Sandy Hill Aquifer wells during high demand summer months.

PRIMARY RECOMMENDATIONS

1. Additional exploration wells are recommended to further characterize the Sandy Hill Aquifer. These wells include one full-size test well and approximately three small diameter exploration/observation wells. The full-size (16-inch) test well can be constructed within approximately 300 feet of Exploration Well No. 3. The three small-diameter (6-inch) wells could be constructed in the following locations.

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- One hole should be drilled near the existing sand pit, approximately 1300 feet east of Exploration Well No. 3. Target depth will be 150 feet.
- One hole should be drilled near the Orville Jackson homestead, approximately 2000 feet northwest of Exploration Well No. 3. Target depth will be 300 feet.
- One hole should be drilled 1500 feet south of Exploration Well No. 3. Target depth will be 500 feet.

Each of these wells should be preserved for long-term water-level observation purposes, which will be necessary for assessing the status of the aquifer as it is developed.

2. A long-term test of the full-size well in the Sandy Hill Aquifer is recommended. The test duration should be approximately three days to two weeks, with continuous monitoring of observation wells and spring discharge. The pumping rate for testing will depend on the productivity of the well, but a rate of 500 gpm to 1,000 gpm is probable.

3. An application for water right permit should be submitted for municipal or domestic use. Two points of diversion should be identified at the Sandy Hill Aquifer, along with one point of diversion at the spring, and up to three points of diversion in Spring Valley. The water right permit will need to describe the proposed development, including the number and location of lots. Processing of the application will likely require 4 to 8 months if the application is not protested.

4. An exploration drilling program should be conducted in the Big Gulch and Little Gulch areas to characterize water quality and aquifer characteristics. The program should include test borings at three locations and construction of at least one full-size production well. Water quality samples should be obtained from the test borings to determine water quality characteristics at various depths.

SECONDARY RECOMMENDATIONS

5. Surface geologic mapping is recommended to estimate the lateral extent of the Sandy Hill Aquifer and to identify any other potential drilling targets in the core area of the project.

6. Water levels in Spring Valley wells (Exploration Well Nos. 1 and 4, Highway Well, and Ranch Well) should be monitored on a bi-weekly basis throughout the 2003 irrigation season. At the same time, irrigation pumping from the Ranch Irrigation Well should be maximized to stress the aquifer. Response of the Spring Valley wells may provide indications of Spring Valley Aquifer sustainability.

7. A short-term (6-hour) test of the Highway Well could be conducted to characterize aquifer hydraulics and water quality at that location.

8. Down-hole video surveys of the Ranch Irrigation Well and the Highway Well could be used to document depth and construction. Geophysical logging of the Ranch Irrigation Well and the Highway Well could be considered if the camera surveys show extensive uncased sections within the wells.

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Appendix A
Well No. 1 Data

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Exploration Hole SVR 1

Spring Valley Ranch

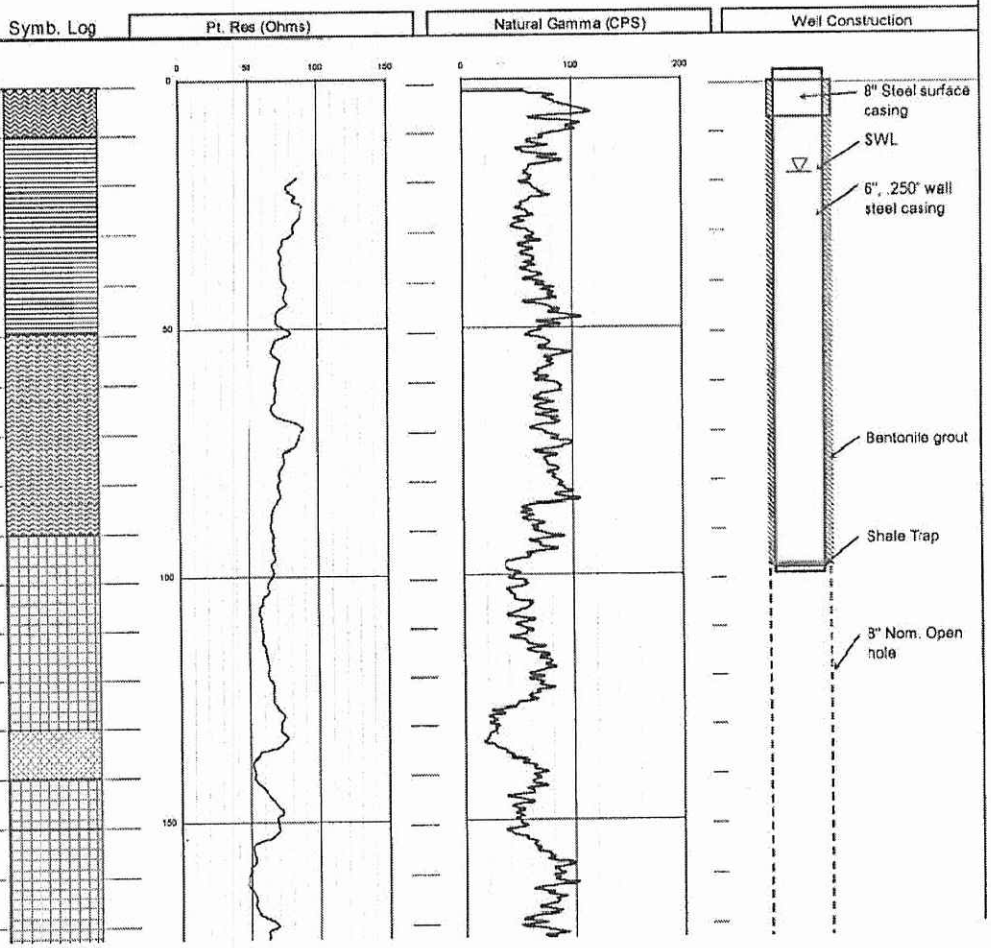
Drilled by: Stevens and Sons, Inc.
Logged by: C. Feast/Feast Geosciences, LLC
Geophysical logs by: Hydrologic, Inc.
Fluid level when logged: full
Casing when logged: 8" steel 0-5 ft, 8" open hole 5 - 445 ft.

Drilled Dates: 10/30/02 - 11/05/02
Drilling Method: Mud Rotary
Borehole size: 8" (nom.) 0 - 445 ft.

Depth Drilled: 445 ft
Depth Logged: 428 ft.
Static WL: ~ 20 ft. bgl

Location: Ada County, Idaho
T5N, R2E, NE 1/4, NW 1/4, Sect 18
GL. Elevation: ~3280 ft. msl.

Depth (ft)	Geologic log from rotary cuttings
0	Top soil over well graded gravel, fine-med., clasts of granite, qtz, and fine cemented SS, med. brown
10	Claystone, med-dark brown, hard, well cemented, fractured with FeMn coatings.
20	Claystone as above
30	Claystone as above, some poorly cemented ss and arkosic ss, white veinlets and coatings on fractures.
40	Claystone as above, less mineralization on fractures, med-dark brn.
50	Claystone -tuff?, abundant white-yellowish white vein filling minerals and FeMn coating on fracture faces, v.hard, med-drk brn to 56 ft then dark gray
60	Clayston-tuff as above, v.fine, med-drk brn and gray, FeMn coatings on fractures, no bedding planes.
70	Claystone, tuffaceous, med. gray, softer than above, v.fine, massive abundant white, elongated mineralilzed frags (petrified wood?).
80	Claystone -tuff , med. gray, v. fine, med-hard cementation, occ. med. brn clay ball, sote, occ. white mineralization and petrified wood frag, massive.
90	Tuff, med-drk gray, v.fine grained, massive, occ. coarse qtz grain, mod-well cemented, hard.
100	Tuff, as above, gray, hard, massive.
110	Tuff, as above, gray, hard, massive.
120	Tuff as above, larger grains
130	Sandstone, tuffaceous, silty -v. fine, as above, gray, hard, massive, soft @ 137-138.
140	Tuff as above, black glassy frags, aphanitic, rhyolite frags, arc shaped fractures, med-gray.
150	Tuff as above, mix of aphanitic glassy welded frags and rounded qtz grains.
160	Tuff, aphanitic groundmass with light xenoliths, hard @ 167m vugs with mineralization, med-dark gray.



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Exploration Hole SVR 1

Spring Valley Ranch

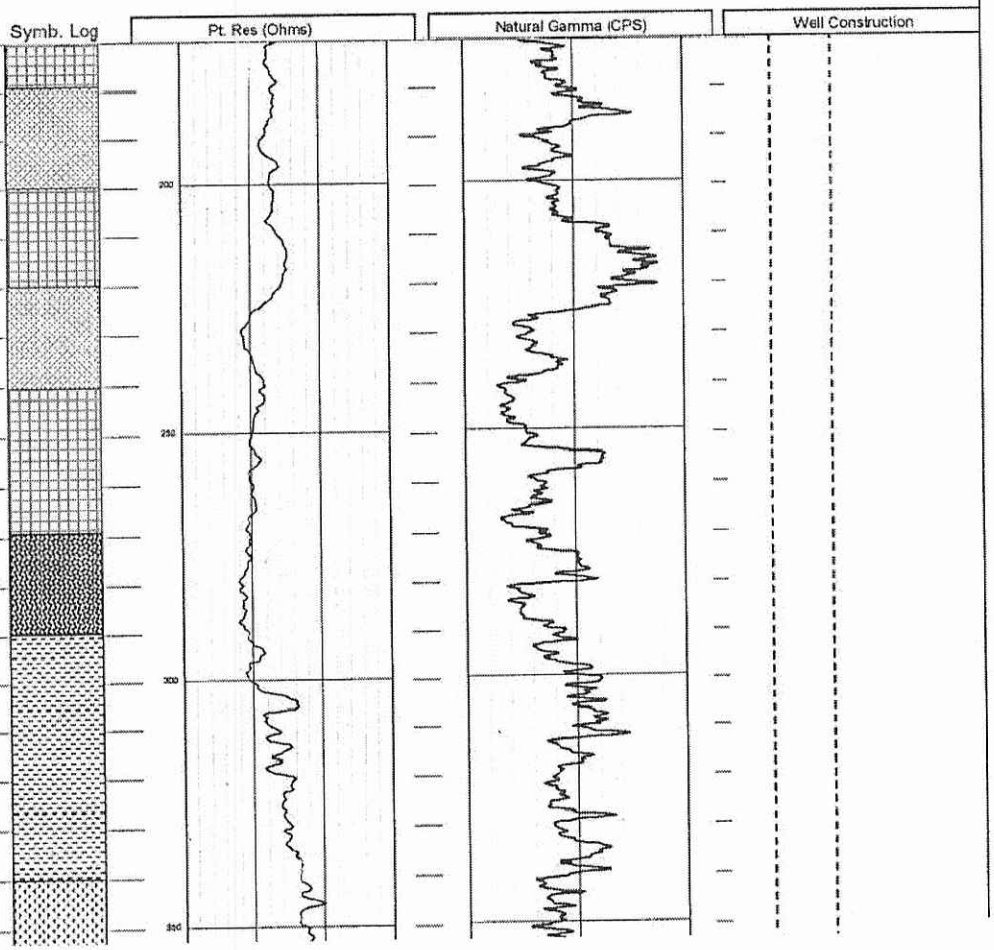
Drilled by: Stevens and Sons, Inc.
Logged by: C. Feast/Feast Geosciences, LLC
Geophysical logs by: Hydrologic, Inc.
Fluid level when logged: full
Casing when logged: 8" steel 0-5 ft, 8" open hole 5 - 445 ft.

Drilled Dates: 10/30/02 - 11/05/02
Drilling Method: Mud Rotary
Borehole size: 8" (nom.) 0 - 445 ft.

Depth Drilled: 445 ft
Depth Logged: 428 ft.
Static WL: ~ 20 ft. bgl

Location: Ada County, Idaho
T5N, R2E, NE 1/4, NW 1/4, Sect 18
GL. Elevation: ~3280 ft. msl.

Depth (ft)	Geologic log from rotary cuttings
170	Tuff as above, aphanitic to v.fine sand, glassy, vugs, med-drk gray, occ. xenoliths.
180	Tuffaceous SS-Siltstone, occ. lighter gray, aglomerate of dark frags, occ rounded qtz grain.
190	Tuffaceous SS-Siltstone as above, individual grains more apparent, occ qtz grain.
200	Tuff, as above, gray-brown.
210	Tuff, light and dark brownish gray, glassy, aphanitic tuff and gray clay.
220	Sandstone, light and dark gray, soft, fine, dirty, with clay balls.
230	Sandstone, gray, v. fine, with abundant clasts and inclusions of igneous rk frags, qtz grains.
240	Tuff, aphanitic, dark gray, glassy, occ. frothy looking lenticular black xtal inclusions.
250	Tuff as above, med-soft.
260	Sandstone, light gray, v.fine, soft, med and dark gray, hard at 267.
270	Breccia-gravel, mix of rock types incl. white granite with mica xtals, rhyolite and gray SS.
280	Gravel as above, more white lithic frags, soft @ 287.
290	Clay, gravelly and sandy, light gray, gravel frags predom. brick red rhyolite with qtz veins, sand is med gr, gray.
300	Clay and gravel as above, sticky clay, light grayish-brn, lithic frags of red rhyolite.
310	Clay, sandy and gravelly, sand is fine, salt and pepper, gravel is lithic frags of red rhyolite and gray ss.
320	Clay, gray, with fine gravel and coarse sand clasts predom. qtz sand.
330	Clay, sandy to clayey sand, light grey, clay matrix is soft, plastic, sand is mix of decomp granite (qtz and feldspars) and black glassy balls., sandy at 338.
340	Decomposed granite, Grus, light gray, clayey, v. coarse, much less clay than above, Cs sand- to fine gravel is pred. qtz and feldspars, gray clay.



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Exploration Hole SVR 1

Spring Valley Ranch

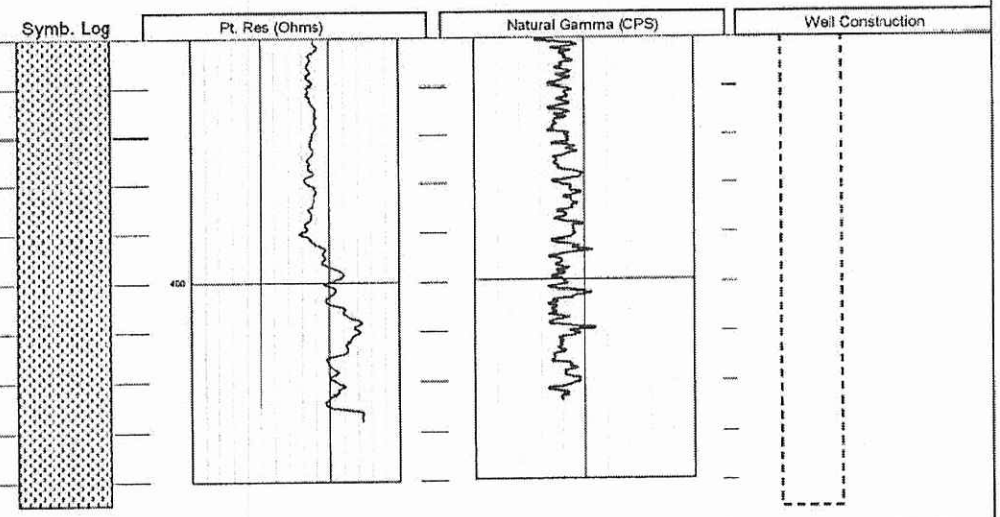
Drilled by: Stevens and Sons, Inc.
Logged by: C. Feast/Feast Geosciences, LLC
Geophysical logs by: Hydrologic, Inc.
Fluid level when logged: full
Casing when logged: 8" steel 0-5 ft, 8" open hole 5 - 445 ft.

Drilled Dates: 10/30/02 - 11/05/02
Drilling Method: Mud Rotary
Borehole size: 8" (nom.) 0 - 445 ft.

Depth Drilled: 445 ft
Depth Logged: 428 ft.
Static WL: ~ 20 ft. bgl

Location: Ada County, Idaho
T5N, R2E, NE 1/4, NW 1/4, Sect 18
GL. Elevation: ~3280 ft. msl.

Depth (ft)	Geologic log from rotary cuttings
350	Decomposed granite, Grus?, v. coarse, as above, grains slightly smaller and contains more brown qtz.
360	Decomposed granite, Grus?, as above, more clayey.
370	Decomposed granite, Grus? as above, less clay, v.coarse, rounded white and clear qtz.
380	Decomposed granite, Grus?, clayey, v. coarse, rounded qtz. clay is gray with occ yellow cley balls.
390	Decomposed granite, Grus?, white, v. coarse, much cleaner than above, qtz and feldspar xtals.
400	Decomposed granite, Grus?, v. coarse, clean-slightly dirty, angular qtz and feldspar xtals.
410	Decomposed granite, Grus? as above, v coarse, clayey.
420	Decomposed granite, Grus?, v. coarse, cleaner than above.
430	Decomposed granite, Grus?, v. coarse, cleaner than above.
440	Decomposed granite, Grus?, v. coarse, clayey. Bottom of hole at 445 ft.
450	



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Hydro Logic, Inc.

Geophysical Division

WELL NAME: Spring Valley–2002 Test Well #1

GEOPHYSICAL WELL LOG:	PERMANENT DATUM: Mean Sea Level	OTHER SERVICES:
Natural Gamma–Ray Point Resistance	LOG MEASURED FROM: Ground 3235 Feet above MSL	

COMPANY: Scanlan Engineering / Suncor
PROJECT: Spring Valley Ranch Wells
ORDERED BY: Chuck Feast

COUNTY: Ada STATE: Idaho

COORDINATES:
T5N, R2E Sec. 18
NE1/4,NW1/4
ELEVATION:
KB:
GL: 3235

WELL OWNER:
WELL: Spring Valley–2002 Test Well #1
LOCATION: 8.2mi N. of StateSt on Hwy55

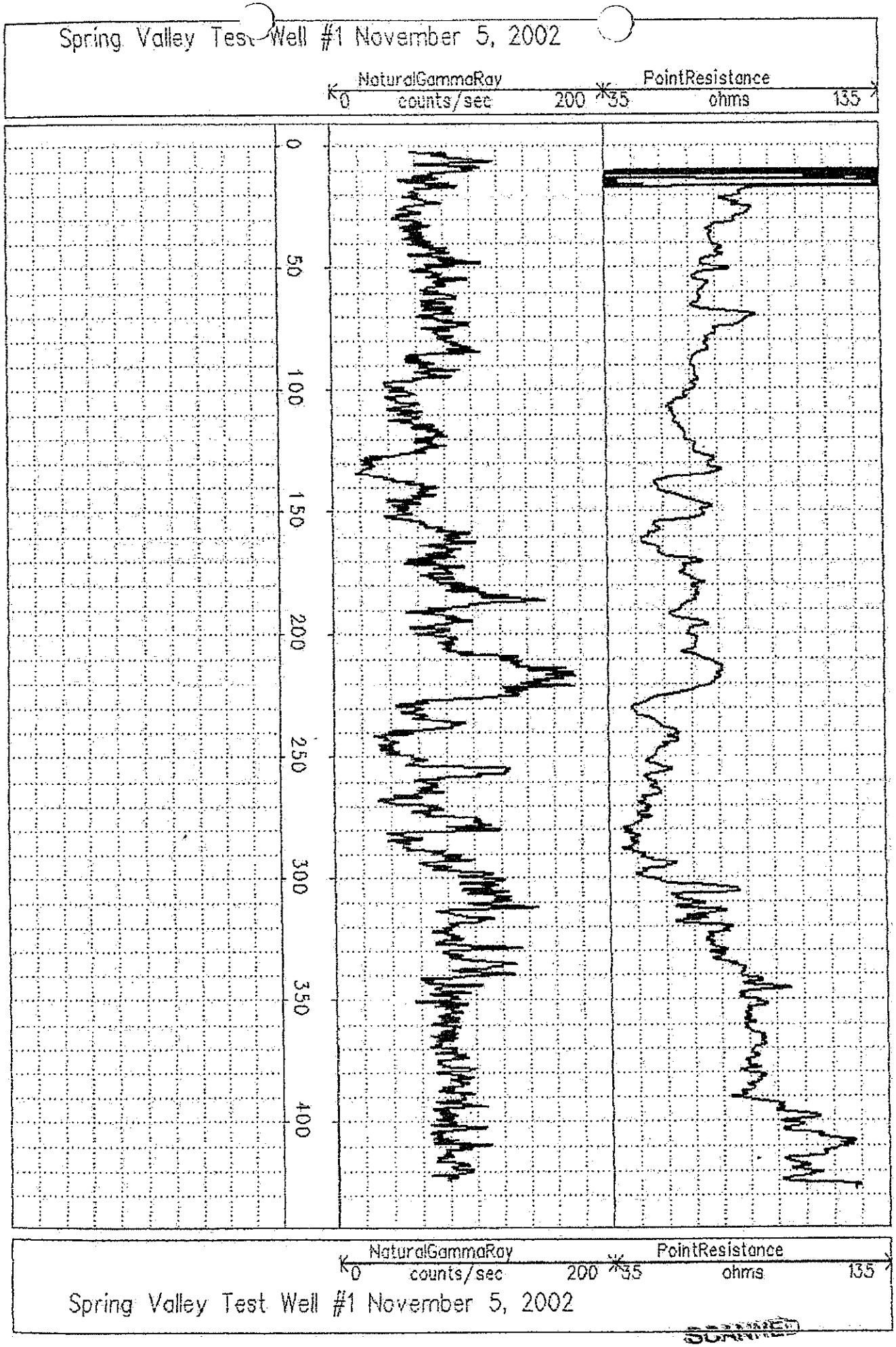
	Run No. 1		Run No. 1
Date	11/5/02	Fluid Level	hole full
Bottom logged Int.	428 ft. bgl	Fluid Nature	drilling mud
Top Logged Int.	1 ft. bgl	Fluid Viscosity	
Footage Logged	427 ft.	Fl. Resistivity	mud Cs=673uS
Bottom (Driller)	445 ft.	Fl. Res. at BHT	
Casing (from Log)	3 ft.	Fluid pH	NA
Casing (Driller)	3 ft.	Last Circulated	NA
Casing Size	8"	Bottom Hole Temp	
Bit Size	8"		
		LOGGED BY:	Brian Cavanagh
		WITNESSED BY:	Nick Stevens

REMARKS:
Datum = ground level

Hole circulation 20 min. prior to log

Drilled by Stevens and Sons, Boise, Id.
Nick Stevens Driller
Mud rotary drilled well
Hole drilled with mud
Drilled to 445 ft. 11/4/02

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Form 238-7
11/97

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Inspected by _____
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long:

WELL TAG NO. D 0025898 WELL #1
DRILLING PERMIT NO. 874391-788454.
Other IDWR No _____

2. OWNER:
Name Sun Cor Development
Address 80 East Rio Salado Pkwy. #410
City Tempe State AZ Zip 85281

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

Twp. 5 North XX or South ☐
Rge. 2 East XX or West ☐
Sec. 18 ____ 1/4 N/E 1/4 N/W 1/4
Gov't Lot ____ County Ada
Lat: : : Long: : :
Address of Well Site west side of hiway 55 in Spring Valley
City _____
Lot _____ Blk. _____ Sub. Name _____

4. USE:
☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other Test

5. TYPE OF WORK check all that apply. (Replacement, etc.)
XX New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD
☐ Air Rotary ☐ Cable XX Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL, FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
bentonite grout	0	98	7 sk	pumped

Was drive shoe used? ☐Y ☐ N Shoe Depth(s) _____
Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+2	98	250	steel	XX	☐	☐	☐
8	+1	5	250	steel	☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS
Perforations Method _____
Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
_____ ft. below ground Artesian pressure _____ lb.
Depth flow encountered 20 ft. Describe access port or control devices: _____

11. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Pumping Level	Time

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encountered _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
8	0	5	topsoil		X
	5	40	sandstone, brown		X
	40	85	sandstone, gray	X	
	85	125	shale like hard gray		X
	125	140	very fine sand	X	
	140	205	shale like, hard gray		X
	205	240	sandstone & gray clay		X
	240	260	shale like, hard gray		X
	260	270	sandstone, gravel, some clay		X
	270	340	granite, gravel, sandstone, rhyolite		
				X	
	340	350	clay w/ some sand & gravel	X	
	350	400	decomposed granite	X	
	400	445	increasingly harder		

Completed Depth 445 (Measurable)
Date: Started 10/21/02 Completed 11/27/02

13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Stevens & Sons Firm No. 153
Firm Official Ron Stevens Date 12/20/02
and
Driller or Operator _____
(Signature of Firm Official and/or Operator)

FORWARD WHITE COPY TO WATER RESOURCES

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OCT 01 2008

AQUIFER TEST DATA
Well No. 1, Spring Valley Ranch

Test conducted by: Scanlan Engineering, Feast Geosciences and Stevens Drilling

Flow measured by: Bucket and watch

Water levels measured by: Well sounder | Water level measure point: Top of temporary 1" PE access tube, +3' bgl.

Elevation: | Static WL (ft bmp): 19.8

Pump on: 11/8/2002 9:34 | Pump off: 11/8/2002 17:34

				WaterLevel Data				
Date	Time	t (mins)	t/t'	Ref (ft)	Measure (inch)	WL (ft bmp)	Drawdown (feet)	Comments
11/8/2002	9:33	-				19.8		Static water level
11/8/2002	9:34	0.0				19.8	0.0	Start test
11/8/2002	9:36	2				64.2	44.4	5 gal./4.9 sec = 61 gpm
11/8/2002	9:37	3				72.3	52.5	
11/8/2002	9:38	4				79.6	59.8	5 gal./5.5 sec = 55 gpm
11/8/2002	9:39	5				81.2	61.4	
11/8/2002	9:40	6				89.5	69.7	
11/8/2002	9:42	8				95.5	75.7	
11/8/2002	9:44	10				99.4	79.6	5 gal./5.7 sec = 53 gpm
11/8/2002	9:47	13				103.3	83.5	cloudy
11/8/2002	9:49	15				104.8	85.0	
11/8/2002	9:51	17				106.2	86.4	
11/8/2002	9:53	19				107.3	87.5	
11/8/2002	9:55	21				108.1	88.3	
11/8/2002	9:58	24				109.3	89.5	5 gal./5.7 sec = 53 gpm
11/8/2002	10:04	30				110.6	90.8	dirty
11/8/2002	10:06	32				111.1	91.3	slight odor
11/8/2002	10:08	34						5 gal./5.7 sec = 53 gpm; SC 305, T = 15.5°C, EC 250
11/8/2002	10:10	36				111.5	91.7	
11/8/2002	10:15	41				112.8	93.0	
11/8/2002	10:20	46				112.8	93.0	WL in ranch well = 14.16 ft below pump base at 10:22
11/8/2002	10:25	51				113.9	94.1	5 gal./5.9 sec = 51 gpm
11/8/2002	10:30	56				114.0	94.2	
11/8/2002	10:35	61				114.1	94.3	
11/8/2002	10:40	66				114.2	94.4	5 gal./5.9 sec = 51 gpm
11/8/2002	10:45	71				114.4	94.6	
11/8/2002	10:50	76				115.0	95.2	
11/8/2002	10:55	81				115.4	95.6	
11/8/2002	11:00	86				115.5	95.7	5 gal./5.9 sec = 51 gpm
11/8/2002	11:05	91				115.9	96.1	
11/8/2002	11:10	96				116.0	96.2	
11/8/2002	11:15	101				116.3	96.5	
11/8/2002	11:20	106				116.5	96.7	5 gal./5.9 sec = 51 gpm, T = 15.7°C,
11/8/2002	11:25	111				116.5	96.7	SC 292 umhos/cm, EC 239 umhos/cm
11/8/2002	11:30	116				116.8	97.0	
11/8/2002	11:35	121				116.9	97.1	
11/8/2002	11:40	126				117.0	97.2	
11/8/2002	11:45	131				117.0	97.2	
11/8/2002	11:50	136				117.3	97.5	5 gal./5.9 sec = 51 gpm
11/8/2002	11:55	141				117.6	97.8	
11/8/2002	12:00	146				117.8	98.0	
11/8/2002	12:10	156				118.1	98.3	
11/8/2002	12:20	166				118.2	98.4	
11/8/2002	12:30	176				118.5	98.7	
11/8/2002	12:40	186				118.7	98.9	
11/8/2002	12:50	196				118.8	99.0	
11/8/2002	13:00	206				118.1	98.3	5 gal./5.9 sec = 51 gpm
11/8/2002	13:10	216				119.0	99.2	
11/8/2002	13:20	226				119.2	99.4	
11/8/2002	13:30	236				119.3	99.5	
11/8/2002	13:40	246				119.8	100.0	
11/8/2002	13:50	256				119.9	100.1	cloudy
11/8/2002	14:00	266				119.9	100.1	5 gal./5.9 sec = 51 gpm
11/8/2002	14:10	276				120.0	100.2	
11/8/2002	14:20	286				120.0	100.2	
11/8/2002	14:30	296				120.3	100.5	
11/8/2002	14:40	306				120.4	100.6	
11/8/2002	14:50	316				120.6	100.8	
11/8/2002	15:00	326				120.8	101.0	5 gal./5.9 sec = 51 gpm
11/8/2002	15:10	336				120.8	101.0	
11/8/2002	15:20	346				120.8	101.0	
11/8/2002	15:30	356				121.1	101.3	

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OCT 01 2008

AQUIFER TEST DATA
Well No. 1, Spring Valley Ranch

Test conducted by: Scanlan Engineering, Feast Geosciences and Stevens Drilling

Flow measured by: Bucket and watch

Water levels measured by: Well sounder | Water level measure point: Top of temporary 1" PE access tube, +3' bgl.

Elevation: | Static WL (ft bmp): 19.8

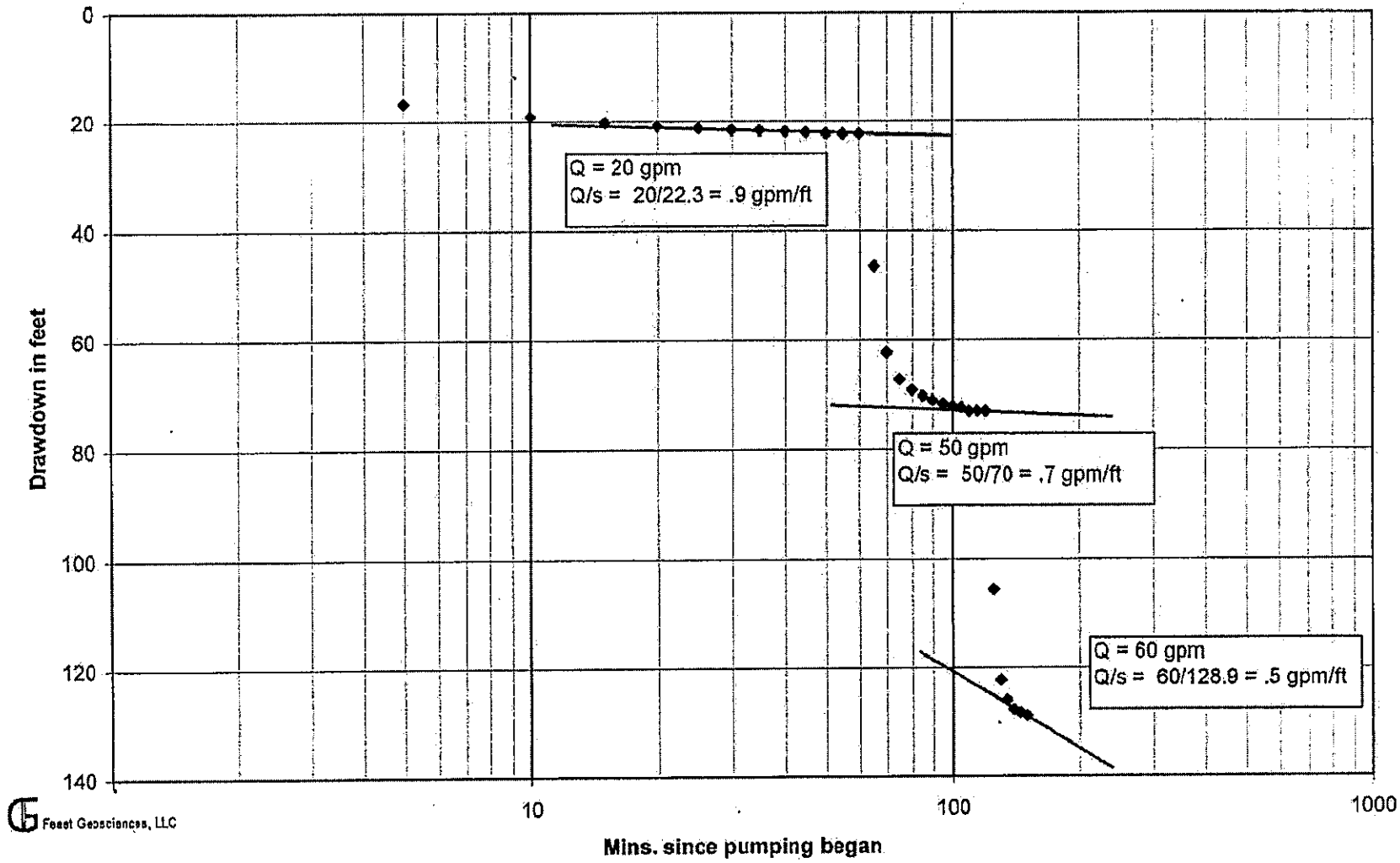
Pump on: 11/8/2002 9:34 | Pump off: 11/8/2002 17:34

				WaterLevel Data				
Date	Time	t (mins)	t/t'	Ref (ft)	Measure (inch)	WL (ft bmp)	Drawdown (feet)	Comments
11/8/2002	15:40	366				121.1	101.3	
11/8/2002	15:50	376				121.2	101.4	
11/8/2002	16:00	386				121.2	101.4	T = 15.7°C; SC 282 umhos/cm,
11/8/2002	16:10	396				121.4	101.6	EC 233 umhos/cm; pH = 7.39
11/8/2002	16:20	406				121.8	102.0	Took water sample at 16:15
11/8/2002	16:30	416				121.8	102.0	
11/8/2002	16:40	426				121.8	102.0	5 gal./5.9 sec = 51 gpm
11/8/2002	17:04	450				121.8	102.0	pump off; cloudy
Begin Recovery, pump off at:			11/8/2002	17:34				
11/8/2002	17:05	451	451.0			97.4	77.6	
11/8/2002	17:06	452	226.0			87.2	67.4	
11/8/2002	17:07	453	151.0			70.0	50.2	
11/8/2002	17:08	454	113.5			59.3	39.5	
11/8/2002	17:09	455	91.0			45.7	25.9	
11/8/2002	17:11	457	65.3			40.0	20.2	
11/8/2002	17:12	458	57.3			35.8	16.0	
11/8/2002	17:14	460	46.0			33.1	13.3	
11/8/2002	17:16	462	38.5			31.6	11.8	
11/8/2002	17:18	464	33.1			30.6	10.8	
11/8/2002	17:20	466	29.1			29.7	9.9	
11/8/2002	17:22	468	26.0			29.0	9.2	
11/8/2002	17:24	470	23.5			28.7	8.9	
11/8/2002	17:27	473	20.6			28.2	8.4	
11/8/2002	17:30	476	18.3			27.6	7.8	
11/8/2002	17:33	479	16.5			27.3	7.5	
11/8/2002	17:36	482	15.1			27.2	7.4	
11/8/2002	17:39	485	13.9			26.7	6.9	
11/8/2002	17:44	490	12.3			26.3	6.5	
11/8/2002	17:49	495	11.0			26.1	6.3	
11/8/2002	17:54	500	10.0			25.9	6.1	
11/8/2002	17:59	505	9.2			25.5	5.7	
11/8/2002	18:04	510	8.5			25.3	5.5	
11/8/2002	18:14	520	7.4			24.9	5.1	
11/8/2002	18:24	530	6.6			24.6	4.8	
11/8/2002	18:34	540	6.0			24.4	4.6	
11/8/2002	18:44	550	5.5			24.1	4.3	
11/8/2002	19:04	570	4.8			23.9	4.1	WL in ranch well = 14.15 ft below pump base at 18:55
11/8/2002	19:34	600	4.0			23.3	3.5	

Notes and Comments:
Well cased to 10 feet.

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SVR1 Step Test



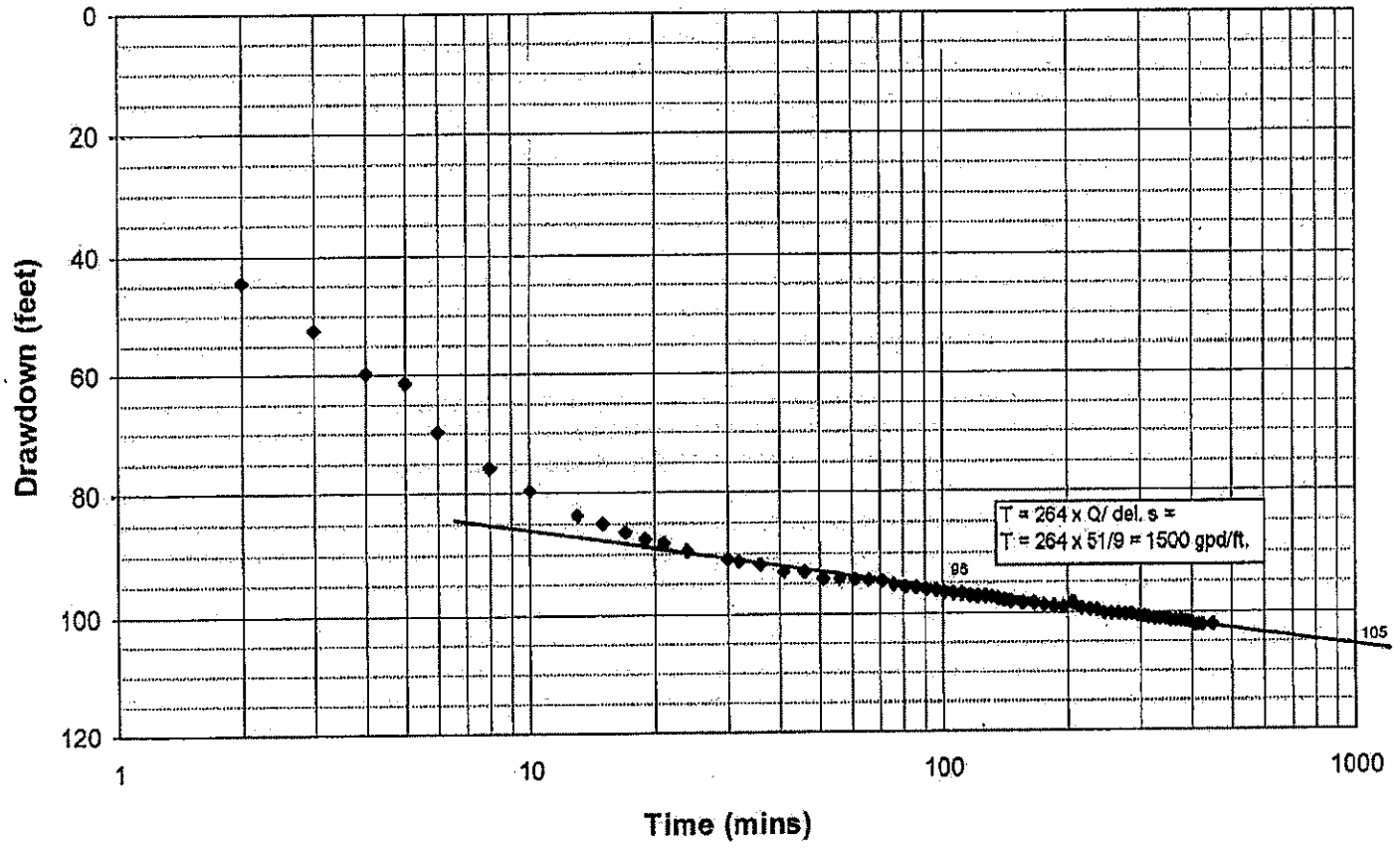
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Time - Drawdown

Spring Valley Ranch

Well No.1 (8" Test well), Q = 51 gpm

Test date: 11/8/02



Feast Geosciences, LLC

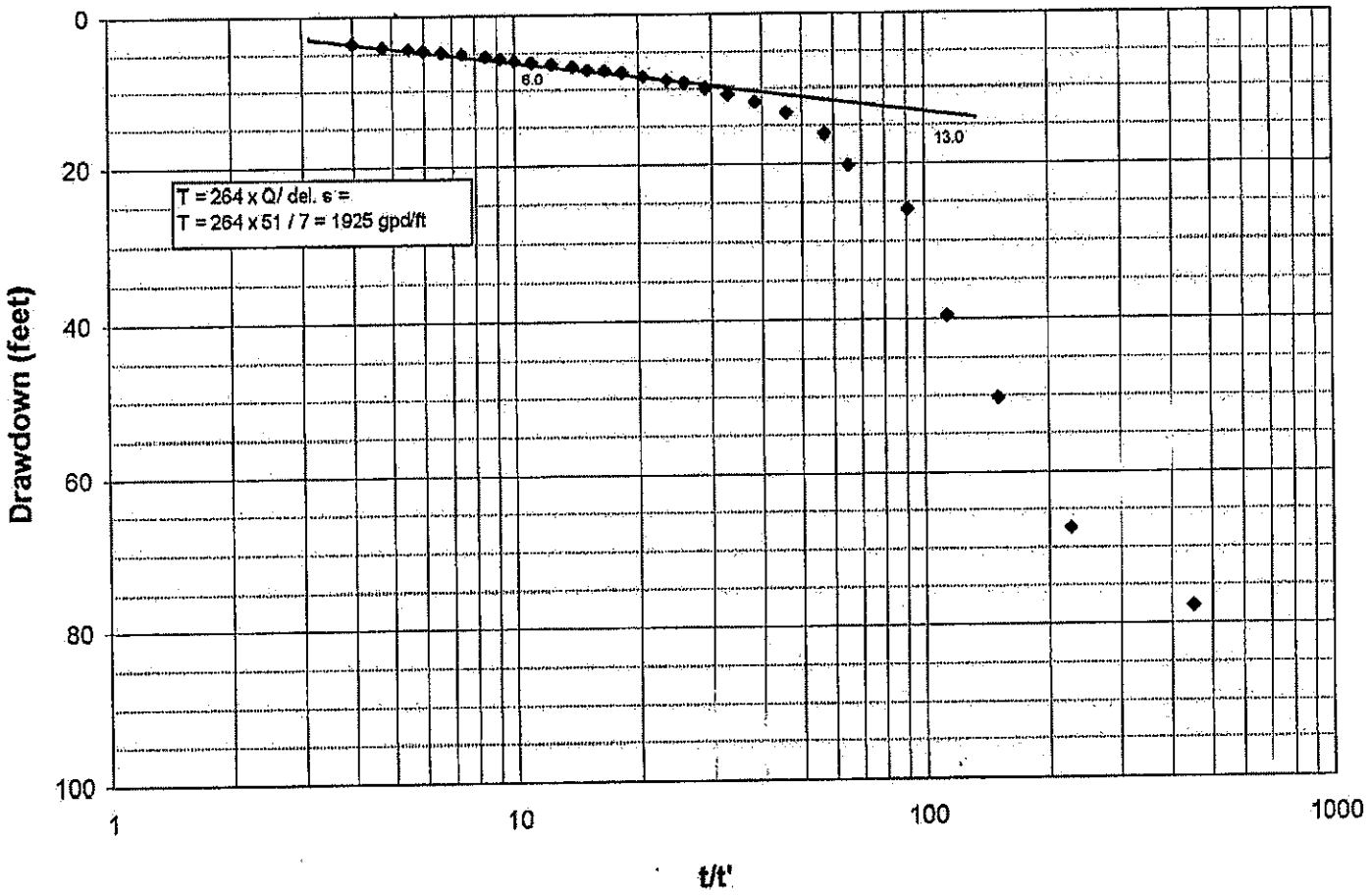
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OCT 0 1 2008

Time - Recovery

Spring Valley Ranch

Well No.1 (8" Test well), Q = 51 gpm

Test date: 11/8/02



Feast Geosciences, LLC

SCANNED
OCT 01 2008

ANALYTICAL LABORATORIES, INC.
1804 N. 33rd Street
Boise, Idaho 83703
Phone # (208) 342-5515

LABORATORY ANALYSIS REPORT
SAMPLE NUMBER - 42426

Attn. TERRY SCANLAN

SCANLAN ENGINEERING
600 EAST RIVER PARK LANE
SUITE 105
BOISE, ID 83706

Time of Collection: 16:15
Date of Collection: 11/08/02

Date Received: 11/09/02
Date Reported: 11/26/02

Collected by: C F

Submitted by: CHUCK FEAST

Source of Sample: SPRING VALLEY RANCH #1

Test Requested	FRDS # MCL	Analysis Result	Unit	MDL	Method	Date Completed	Analyst Initials
ANTIMONY FURNACE		<0.005	mg/L	0.005	EPA 200.9	11/19/02	DMB
ARSENIC FURNACE		0.008	mg/L	0.003	EPA 200.9	11/21/02	DMB
BARIUM		<0.05	mg/L	0.05	EPA 200.7	11/11/02	JH
BERYLLIUM FURNACE		<0.0005	mg/L	0.0005	EPA 200.9	11/14/02	DMB
CALCIUM		27.3	mg/L	0.10	EPA 200.7	11/14/02	JH
CHROMIUM FURNACE		<0.002	mg/L	0.002	EPA 200.9	11/14/02	DMB
IRON		0.06	mg/L	0.05	EPA 200.7	11/15/02	JH
MAGNESIUM		5.47	mg/L	0.10	EPA 200.7	11/14/02	JH
MANGANESE		0.18	mg/L	0.05	EPA 200.7	11/15/02	JH
MERCURY		<0.0002	mg/L	0.0002	EPA 245.1	11/11/02	KLZ
NICKEL		<0.02	mg/L	0.02	EPA 200.7	11/12/02	JH
POTASSIUM		6.5	mg/L	0.10	EPA 200.7	11/15/02	JH
SODIUM		17.8	mg/L	0.10	EPA 200.7	11/15/02	JH
THALLIUM FURNACE		<0.002	mg/L	0.002	EPA 200.9	11/14/02	DMB
AMMONIA DIRECT		0.18	mg/L	0.04	EPA 350.1	11/12/02	KDH
NITRATE N		0.26	mg/L	0.20	EPA 300.0	11/14/02	GMM
NITRITE N		<0.01	mg/L	0.01	SM 4500NO2-B	11/09/02	CSC
SULFIDE		<0.05	mg/L	0.05	SM 4500 D	11/11/02	JR
BICARBONATE		94.4	mg/L		SM 2320	11/11/02	GMM
CHLORIDE		4	mg/L	1	EPA 300.0	11/14/02	GMM
FLUORIDE DIRECT		0.44	mg/L	0.10	EPA 300.0	11/18/02	GMM
HARDNESS		99.5	mg/L	5.0	SM 2340	11/11/02	GMM
SULFATE		43	mg/L	1.0	EPA 300.0	11/14/02	GMM
TOTAL DISSOLVED SOLIDS		210	mg/L	25	EPA 160.1	11/13/02	CS

Michael D. Moore

THANK YOU FOR CHOOSING ANALYTICAL LABORATORIES, INC. FOR YOUR TESTING NEEDS.

PLEASE CONTACT MICHAEL MOORE IF YOU HAVE ANY QUESTIONS REGARDING
THIS REPORT OR ANY FUTURE ANALYTICAL NEEDS.

SCANNED
OCT 0 1 2008

ANALYTICAL LABORATORIES, INC.
1804 N. 33rd Street
Boise, Idaho 83703
Phone # (208) 342-5515

PUBLIC DRINKING WATER INORGANIC CHEMICAL ANALYSIS REPORT

ACUTE IOC CONTAMINANTS For Public Drinking Water Systems

FRDS	Contaminant	Result (mg/L)	MCL (mg/L)	MDL	Method	Analysis Date	Analyst	MONITORING REQUIREMENTS
1040	Nitrate	0.26	10.0	0.20	EPA 300.0	11/14/02	GMM	Ground water systems with nitrate levels below 5 mg/L must monitor nitrate annually. Surface water systems and systems with nitrate levels of 5 or more mg/L must monitor quarterly, unless otherwise advised in writing.
1041	Nitrite	ND	1.0	0.01	SM 4500NO2-B	11/09/02	CSC	Once per nine years unless advised otherwise.
1040	Total ($NO_3 + NO_2$)	---						
1055	Sulfate	43		1.0	EPA 300.0	11/14/02	GMM	Sulfate is in the process of becoming a regulated contaminant. Monitoring is not yet required.

LAB RESULT REPORTING CODES:

ND = Not detected within sensitivity of instrument

---- = No analysis performed for this contaminant

Numerical entry = Detection at level indicated

COMMENTS:

PWS #	
Lab Sample Tracking #	42426
Date Collected	11/08/02
Sample Type	Water
Date Received	11/09/02
Time Collected	16:15
Location Tag #	
Sample Collection Location	SPRING VALLEY RANCH #1
Date Reported by Lab	11/26/02
Jurisdiction	
PWS Contact Phone (208)	208-383-4140

Lab ID: ID00020

Kellie D. Hall 12/3/02

Signature of Lab Supervisor Date

Attn: TERRY SCANLAN
SCANLAN ENGINEERING
600 EAST RIVER PARK LANE
SUITE 105
BOISE, ID 83706

SCANNED
OCT 01 2008

ANALYTICAL LABORATORIES, INC.
1804 N. 33rd Street
Boise, Idaho 83703
Phone # (208) 342-5515

INORGANIC CHEMICAL ANALYSIS REPORT For Public Water Systems

PRIMARY IOC CONTAMINANTS (Mandatory, except for transient water systems)

FRDS	Contaminant	MCL(mg/L)	Result (mg/L)	MDL (mg/L)	Method	Analyst	Analysis Date	FRDS	Contaminant	MCL(mg/L)	Result (mg/L)	MDL (mg/L)	Method	Analyst	Analysis Date
1074	Antimony	0.006	ND	0.005	EPA 200.9	DMB	11/19/02	1036	Nickel	N/A	ND	0.02	EPA 200.7	JH	11/12/02
1005	Arsenic	0.05	0.008	0.003	EPA 200.9	DMB	11/21/02	1045	Selenium	0.05	---				
1010	Barium	2	ND	0.05	EPA 200.7	JH	11/11/02	1052	Sodium	N/A	17.8	0.10	EPA 200.7	JH	11/15/02
1075	Beryllium	0.004	ND	0.0005	EPA 200.9	DMB	11/14/02	1085	Thallium	0.002	ND	0.002	EPA 200.9	DMB	11/14/02
1015	Cadmium	0.005	---					1024	Cyanide	0.2	---				
1020	Chromium	0.1	ND	0.002	EPA 200.9	DMB	11/14/02	1025	Fluoride	4.0	0.44	0.10	EPA 300.0	GMM	11/18/02
1035	Mercury	0.002	ND	0.0002	EPA 245.1	KLZ	11/11/02								

SECONDARY AND OTHER IOC CONTAMINANTS (OPTIONAL)

1017	Chloride	4	1	EPA 300.0	GMM	11/14/02	1003	Ammonia (as N)	0.18	0.04	EPA 350.1	KDH	11/12/02
1905	Color	---					1016	Calcium (as $CaCO_3$)	27.3	0.10	EPA 200.7	JH	11/14/02
1027	Hydrogen Sulfide	---					1915	Hardness (as $CaCO_3$)	99.5	5.0	SM 2340	GMM	11/11/02
1028	Iron	0.06	0.05	EPA 200.7	JH	11/15/02	1031	Magnesium	5.47	0.10	EPA 200.7	JH	11/14/02
1032	Manganese	0.18	0.05	EPA 200.7	JH	11/15/02	1925	pH	---				
1920	Odor	---					1042	Potassium	6.5	0.10	EPA 200.7	JH	11/15/02
2905	Surfactants	---					1049	Silica (as SiO_2)	---				
1930	Dissolved Solids	210	25	EPA 160.1	CS	11/13/02	1030	Lead	---				
1095	Zinc	---					1022	Copper	---				
1050	Silver	---					1926	Conductive $\mu S/cm$	---				
1002	Aluminum	---					1997	Langlier Index	---				
1927	Alkalinity (as $CaCO_3$)	---											

LAB RESULT REPORTING CODES:

ND = Not detected within sensitivity of instrument

---- = No analysis performed for this contaminant

Numerical entry = Detection at level indicated

Nitric Acid Preservative ☑ Yes ☐ No

COMMENTS:

PWS #	
Lab Sample Tracking #	42426
Date Collected	11/08/02
Sample Type	Water
Date Received	11/09/02
Time Collected	16:15
Location Tag #	
Sample Collection Location	SPRING VALLEY RANCH #1
Date Reported by Lab	11/26/02
Jurisdiction	
PWS Contact Phone (208)	208-383-4140

Michael D. Thorn 12/2/02
Signature of Lab Supervisor Date

Lab ID: ID00020

Attn: TERRY SCANLAN
SCANLAN ENGINEERING
600 EAST RIVER PARK LANE
SUITE 105
BOISE, ID 83706

SCANNED
OCT 01 2008

SCHENG

CHAIN OF CUSTODY RECORD

ANALYTICAL LABS, INC.

1804 N. 33rd Street • Boise, ID 83703
(208) 342-5515 • Fax: (208) 342-5591 • 1-800-574-5773
Website: http://home.rmci.net/ali • E-mail: ali@rmci.net

CLIENT INFORMATION:	PROJECT INFORMATION:
Attn: Terry Scanlan	Project Manager: T. Scanlan
Company: Scanlan Engineering	Project Name: Spring Valley Ranch
Address: 600 East River Park Lane	Project Number:
Suite 105 Boise ID 83706	Purchase Order Number:
Phone: 383 4140 / Fax: 383 4156	Required Due Date: STD TAT
Sampled by: CF	Transported by: (Please print) CHUCK FEAST

ANALYSIS REQUESTED

Lab ID	Date Sampled	Time Sampled	Sample Description	Sample Matrix	Primary Inorganics	Major Ions	Hardness, TDS, Fe, Mn, Nitrate, Nitrite							Remarks:
	11/8/02	1615	Spring Valley Ranch #1	Ground Wtr	1	1	1	1						See attached list.
			42426											

Invoice to: *(If different than above address)*

Special Instructions: all bottles filtered in field through .45u filter
no preservatives added beyond what was provided by lab

ALLOCATIONS OF RISK: Analytical Laboratories, Inc. will perform preparation and testing services, obtain findings and prepare reports in accordance with Good Laboratory Practices (GLP). If, for any reason, Analytical Laboratories, Inc. errors in the conduct of a test or procedure their liability shall be limited to the cost of the test or procedure completed in error. Under no circumstance will Analytical Laboratories, Inc. be liable for any other cost associated with obtaining a sample or use of data.

SAMPLE RECEIPT	Note: Samples are discarded 21 days after results are reported. Hazardous samples will be returned to client or disposed of at client expense.			
Total # of Containers:	Relinquished By: (Signature) Chuck Feast	Date / Time 11/9/02 / 10:15	Received By: (Signature)	Date / Time /
Chains of Custody Seals: Y / N / NA	Company: Feast Geosciences, LLC		Company:	
Intact: Y / N / NA	Relinquished By: (Signature)	Date / Time /	Received at Laboratory By: (Signature) Matthew C Jones	Date / Time 11/9/02 10:45am
Temperature Received:	Company:			
Condition:				

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DEC 01 2008

Form 235-1 (Internet)
12/15/96 (LDT)

Drilling Permit I.D. Ta 00025898
Water Right Permit No.
Injection Permit No.

RECEIVED
OCT 21 2002
WATER RESOURCES WESTERN REGION

Well #1

874391-788454

State of Idaho
Department of Water Resources

APPLICATION FOR DRILLING PERMIT
(FOR THE CONSTRUCTION OF A WELL)

1. Owner (please print): SunCor Development Company, Attention: Jerry Ellsworth
2. Mailing Address: 80 East Rio Salado Parkway, Suite 410
City: Tempe State: AZ Zip Code: 85281 Telephone 480-317-6800
3. Proposed Well Location: Twp. 5N, Rge. 2E, Sec. 8, ___ 1/4 NE 1/4 NW
Govt Lot No. ___ County Ada Lat. ___ Long. ___
Street Address of Well Site west side of Highway 55 in Spring Valley City ___
Give at least name of road + Distance to Road or Landmark
Lot, block and subdivision ___
4. Proposed Use of Well:

[ ] DOMESTIC: The use of water for homes, organization camps, public campgrounds, livestock (1,000 head or less) and any other purpose in connection therewith, including irrigation of up to ½ acre of land, if the total use is not in excess of 13,000 gpd; or any other uses, if the total use does not exceed a diversion rate of 0.04 cfs and a diversion volume of 2500 gpd.

Domestic does not include water for multiple ownership subdivisions, mobile home parks, commercial or business establishments, unless the use does not exceed a diversion rate of 0.04 cfs and a diversion volume of 2500 gpd.

NON-DOMESTIC: [ ] Irrigation [ ] Municipal [ ] Industrial
[ ] Stock [X] Test [ ] Other ___ (Describe)
(Over 1,000 Head)

[ ] INJECTION

[ ] MONITORING: A well bore schematic and map is required for each blanket permit.
No. of proposed wells: ___

5. Well Construction Information:

A. [X] New well [ ] Modify [ ] Replace

B. Proposed Casing Diameter 6-inch Proposed Maximum Depth 1,000 feet

C. Anticipated bottom hole temperature:
[X] 85°F or less (Cold Water Well) [ ] 85°F to 212°F (Low Temp. Geo. Well) [ ] 212° F. or more (Geothermal Well)

6. Construction Start Date: October 28, 2002
7. Anticipated Well Driller: Stevens and Sons Well Drilling Driller's Lic. No. 153
NOTE: The actual well driller must be identified prior to drilling.
8. Applicant's Signature: Terry M Scanlan Date 10/21/02
Address (if different than owner): Scanlan Engineering 500 East River Park Lane, Suite 105
City: Boise State: ID Zip Code: 83706 Telephone 208-383-4140
Title: Consulting Engineer for SunCor Development Company
(Owner, Firm Representative, Other)

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OCT 01 2008

ACTION OF THE DEPARTMENT OF WATER RESOURCES

This Permit is Approved Date 10-28-02

If approved, this permit authorizes the construction or modification of a well subject to the following conditions. READ CAREFULLY!

GENERAL CONDITIONS:

1. This drilling permit is valid for two (2) months from the above approval date for the start of construction and is valid for one (1) year from the approval date for completion of the well unless an extension has been granted.
2. This permit does not constitute an approval of the District Health Department or the Idaho Department of Health and Welfare which may be required before construction of this well. All wells must be drilled a minimum distance of 100 feet from a drain field. Domestic and Public Water Supply wells must be drilled a minimum of 50 feet and 100 feet respectively from a septic tank.
3. The well shall be constructed by a driller currently licensed in the State of Idaho who must maintain a copy of the drilling permit at the drilling site.
4. Approval of this drilling permit does not authorize trespass on the land of another party.
5. This permit does not constitute other local, county, state or federal approvals which may be required for construction of a well.
6. This drilling permit does not represent a right to divert and use the water of the State of Idaho.
7. If a bottom hole temperature of 85° or greater is encountered, well construction shall cease and the well driller and the well owner shall contact the Department immediately.
8. Idaho Code, S 55-2201 - 55-2210 requires the applicant and/or his contractors to contact "Digline" (DigLine is a one-call center for utility notification) not less than 2 working days prior to the start of any excavation for this project. The "DigLine" Number for your area is 1-800-342-1585.

SPECIFIC CONDITIONS: 1) After completion and logging of the test hole, and prior to installation of any casing, screens or seals, a well design proposal shall be submitted for review and approval by IDWR. 2) This well shall not be completed as a permanent, completed well without specific approval from IDWR. 3) If this well is not completed, the hole shall be properly plugged.

For MANAGER
Signature of Authorized Department Representative WESTERN REGIONAL OFFICE

Receipt No. W029818 Receipted by KL Fee 200.00 Date 10/21/02

EXTENSION OF DRILLING PERMIT

Extension approved by _____ Approval Date _____

This extension expires: _____

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OCT 0 1 2008

Appendix B
Well No. 2 Data

SCANNED
OCT 01 2008

Exploration Hole SVR 2
Spring Valley Ranch

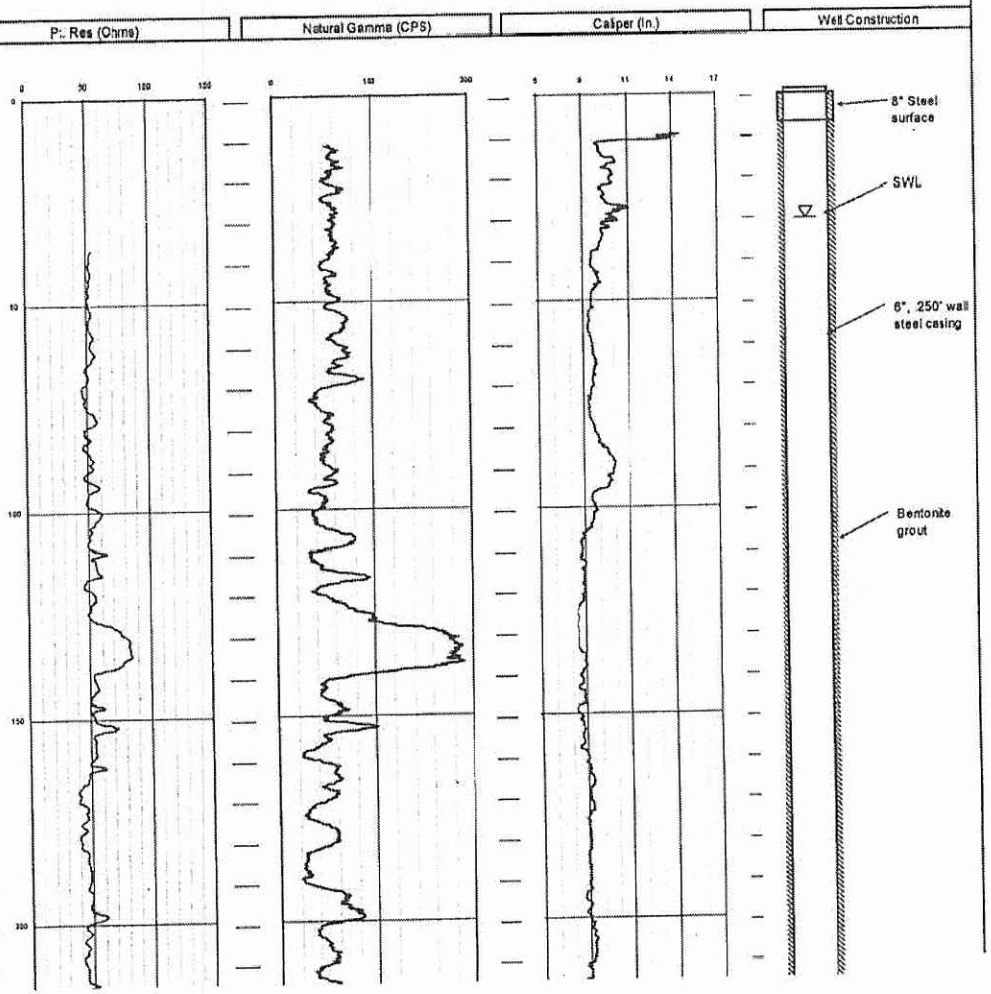
Drilled by: Stevens and Sons, Inc.
Logged by: C. Feast/Feast Geosciences, LLC
Geophysical logs by: Hydrologic, Inc.
Fluid level when logged: 3 ft bgl
Casing when logged: 8" steel 0-5 ft, 8" open hole 5 - 705 ft., 6" open hole 705-846 ft.

Drilled Dates: 11/12/02 - 11/22/02
Drilling Method: Mud Rotary
Borehole size: 8" (nom) 0 - 705 ft.
Borehole size: 6" (nom.) 705 - 846 ft.

Depth Drilled: 840 ft
Depth Logged: 846 ft.
Static WL: ~ 31 ft. bgl

Location: Gem County, Idaho
T6N, R1E, SW 1/4, SE 1/4, Sect 36
GL. Elevation: ~3580 ft. msl.

Depth (ft)	Geologic log from rotary cuttings
0	Topsoil, drk gray to 5 ft. over clay, sandy, med-brn, fn-cs sand, sticky brn clay.
10	Clay, med brn, sandy to gravelly, Cs-vCs fn gravel and sand size qtz, feld. and granite frags.
20	Clay, sandy, med brnish gray, Cs-vCs, sand of decomp. granite. Sandstone at 27 ft.
30	Sandstone, clayey, gravelly, soft-mod cemented, arkosic, light & drk gray grains of qtz and cs-vcs, soft @ 29 ft., Clay @ 35 ft.
40	Clay, sandy, brn, soft with gray poorly cemented, fine SS, bedded.
50	Clay, sandy, fine gravel size clasts of light gray SS
60	Sandstone, clayey, fine grained, poorly cemented, light and drk brn, clay is sticky, brn.
70	Clay, sandy, med-drk gray, sand is fn-cs.
80	Clay as above
90	Shale, soft with sandy clay, greenish brn.
100	Shale, soft with clay, greenish brn, occ bluish shale frag.
110	Shale, as above.
120	Shale as above, turning bluish gray, dry
130	Sandstone, poorly cemented, shaley, blue gray
140	Sand, clayey, fn-med, light and dark grains
150	Shale, soft, sandy, greenish to blueish gray
160	Shale, as above.
170	Shale, as above.
180	Shale, as above, softer and more clay.
190	Shale as above with platy, v.fine, SS, green and brown layers
200	Sandstone, poorly-mod cemented, v fine, shaley, greenish gray, with soft, brown, clayey zones,



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Exploration Hole SVR 2
Spring Valley Ranch

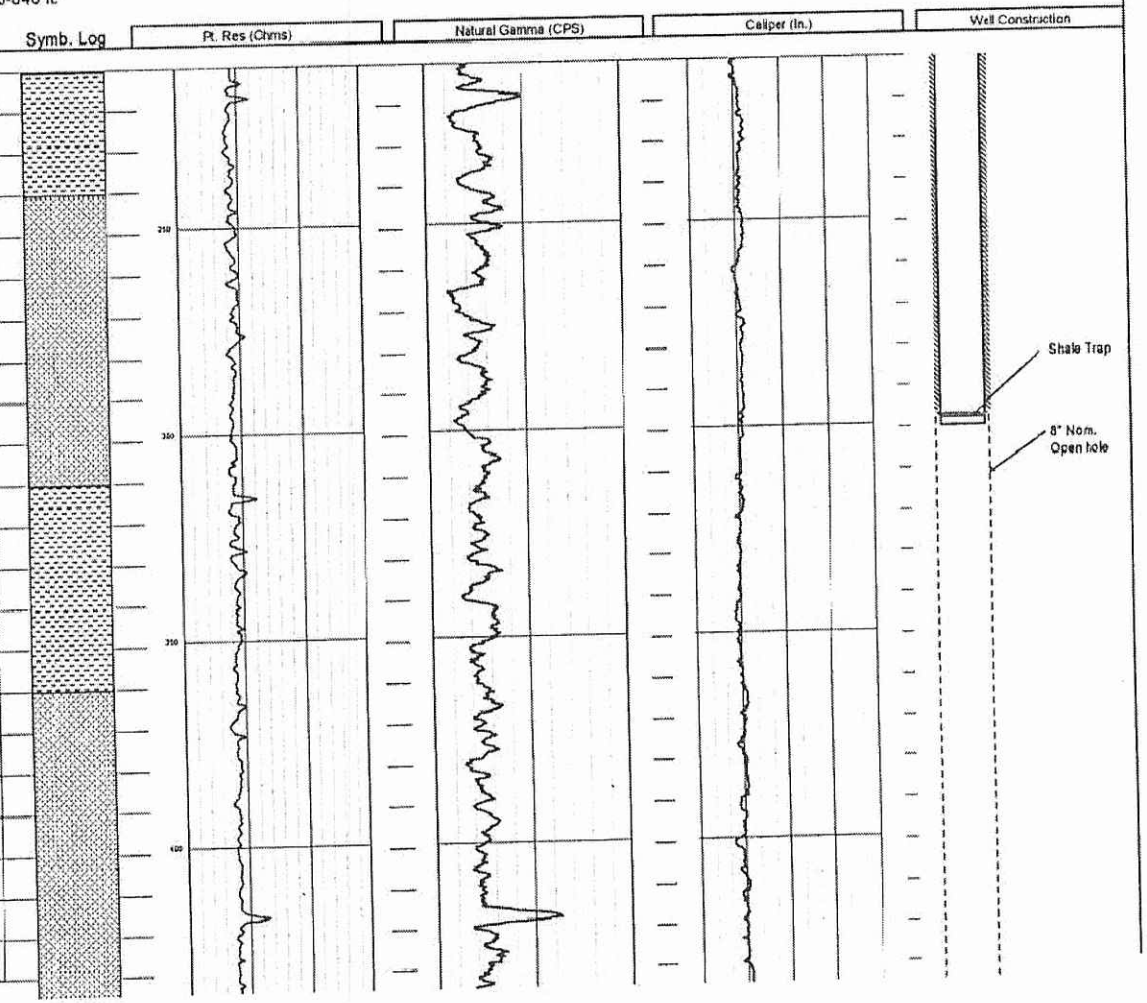
Drilled by: Stevens and Sons, Inc.
Logged by: C. Feast/Feast Geosciences, LLC
Geophysical logs by: Hydrologic, Inc.
Fluid level when logged: 3 ft bgl
Casing when logged: 8" steel 0-5 ft, 8" open hole 5 - 705 ft., 6" open hole 705-846 ft.

Drilled Dates: 11/12/02 - 11/22/02
Drilling Method: Mud Rotary
Borehole size: 8" (nom.) 0 - 705 ft.
Borehole size: 6" (nom.) 705 - 846 ft.

Depth Drilled: 840 ft
Depth Logged: 846 ft.
Static WL: ~ 31 ft. bgl

Location: Gem County, Idaho
T6N, R1E, SW 1/4, SE 1/4, Sect 36
GL. Elevation: ~3580 ft. msl.

Depth (ft)	Geologic log from rotary cuttings
210	Clay, with thin sandstone streaks and stria, soft, greenish gray.
220	Clay, light brn to gray green, plastic, with thin fine sandstone stringers.
230	Clay, greenish gray with thin SS and shale stringers
240	Sandstone, silty and clayey, finly bedded, grayish green.
250	Sandstone, as above with brn clay.
260	Sandstone, as above, less clay.
270	Sandstone, as above, softer, more soft brown clay balls.
280	Sandstone, as above, less clay.
290	Sandstone, as above.
300	Sandstone, as above.
310	Clay, with shale and sandstone stringers, greenish gray.
320	Clay, as above
330	Clay, greenish brn as above, with white clay balls.
340	Clay, soft, greenish brown.
350	Clay, as above.
360	Sandstone, clayey to shaley, greenish gray and moderately cemented, gray ss and siltstone clasts, thinly bedded.
370	Sandstone, as above.
380	Sandstone, as above.
390	Sandstone, as above.
400	Sandstone, as above.
410	Sandstone, as above.
420	Sandstone, as above, more clay.



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OCT 01 2008

Exploration Hole SVR 2
Spring Valley Ranch

Drilled by: Stevens and Sons, Inc.
Logged by: C. Feast/Feast Geosciences, LLC
Geophysical logs by: Hydrologic, Inc.
Fluid level when logged: 3 ft bgl
Casing when logged: 8" steel 0-5 ft, 8" open hole 5 - 705 ft., 6" open hole 705-846 ft.

Drilled Dates: 11/12/02 - 11/22/02
Drilling Method: Mud Rotary
Borehole size: 8" (nom.) 0 - 705 ft.
Borehole size: 6" (nom.) 705 - 846 ft.

Depth Drilled: 840 ft
Depth Logged: 846 ft.
Static WL: ~ 31 ft. bgl

Location: Gem County, Idaho
T6N, RIE, SW 1/4, SE 1/4, Sect 36
GL. Elevation: ~3580 ft. msl.

Depth (ft)	Geologic log from rotary cuttings
430	Sandstone, as above, less clay.
440	Sandstone, v fine-silty, finely bedded, with clay and shaley zones, med-greenish brown
450	Sandstone, as above.
460	Sandstone, as above.
470	Sandstone, as above.
480	Sandstone, as above.
490	Clay and fine bedded sandstone as above, brown.
500	Clay and fine bedded sandstone as above, abundant dark organic debris (bark?) at 498 ft, sticky gray clay.
510	Clay, as above, occ. shale and siltstone clast.
520	Clay, as above.
530	Clay, drk brn as above, more brn and gray sandstone stringers
540	Sandstone, light gray, fine grain, poorly cemented, brn clay balls.
550	Sandstone, clayey, v. fine, light gray.
560	Sandstone, as above, well indurated, some hard black basalt chips
570	Basalt, black, aphanitic with abundant small white porphorys and welded tuff
580	Basalt, as above, more tuff.
590	Tuff, welded and basalt, glassy occ vug, med gray, very hard.
600	Tuff and basalt as above, glassy, more porphoritic, light and dark gray frags.
610	Tuff as above.
620	Sandstone, clayey, light gray and hard, aphantic frags as above.
630	Sandstone, as above, less clay.
640	Sand, mix of lithologic frags as cs-vcs sand grains, light gray.

Symb. Log | Pt. Res (Ohms) | Natural Gamma (CPS) | Caliper (in.) | Well Construction

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OCT 0 1 2008

Exploration Hole SVR 2
Spring Valley Ranch

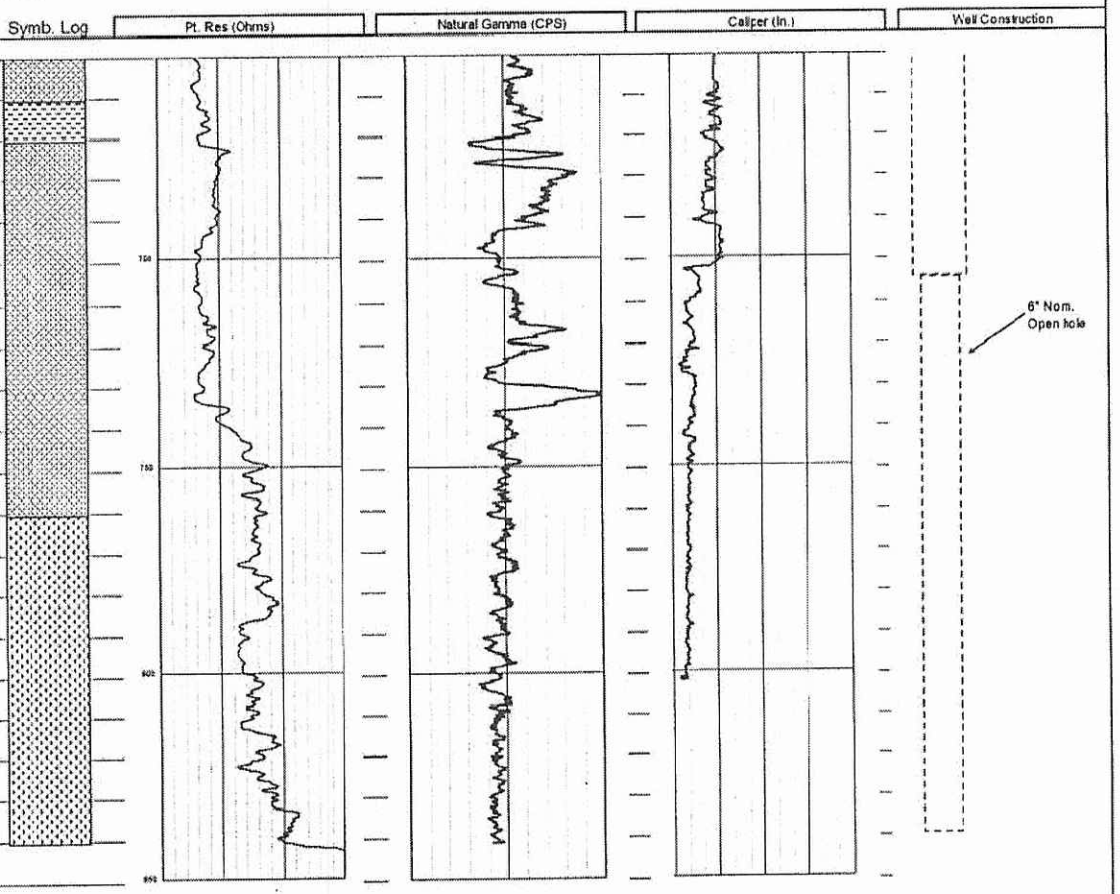
Drilled by: Stevens and Sons, Inc.
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Fluid level when logged: 3 ft bgl
Casing when logged: 8" steel 0-5 ft, 8" open hole 5 - 705 ft., 6" open hole 705-846 ft.

Drilled Dates: 11/12/02 - 11/22/02
Drilling Method: Mud Rotary
Borehole size: 8" (nom.) 0 - 705 ft.
Borehole size: 5" (nom.) 705 - 846 ft.

Depth Drilled: 840 ft
Depth Logged: 846 ft.
Static WL: ~ 31 ft. bgl

Location: Gem County, Idaho
T6N, R1E, SW 1/4, SE 1/4, Sect 36
GL. Elevation: ~3580 ft. msl.

Depth (ft)	Geologic log from rotary cuttings
650	Sandstone, v. fine, soft, bedded clay, light gray.
660	Clay, sandy, light-blue gray, sticky.
670	Sandstone, fine-med, variable color light-dark gray and with shaley claystone.
680	Sandstone and siltstone, light, dark and greenish gray clasts, occ. chert and light gray shale frags.
690	Sandstone, variable colors and textures as above.
700	Sandstone, as above.
710	Sandstone, as above, with dark gray aphantic frags.
720	Sandstone, as above, less frags.
730	Sandstone, as above, driller indicates very soft.
740	Sandstone, as above.
750	Sandstone, as above, abundant cs-vcs qtz grains.
760	Decomposed granite, grus?, vcs qtz and feldspar xtals, light gray
770	Decomposed granite, grus?, vcs qtz and feldspar xtals, light gray, drilled fast
780	Decomposed granite, grus?, vcs qtz and feldspar xtals, light gray, drilled fast
790	Decomposed granite, grus?, vcs qtz and feldspar xtals, light gray
800	Decomposed granite, grus?, vcs qtz and feldspar xtals, light gray
810	Decomposed granite, grus?, vcs qtz and feldspar xtals, light gray
820	Decomposed granite, grus?, vcs qtz and feldspar xtals, light gray
830	Decomposed granite, grus?, vcs qtz and feldspar xtals, light gray
840	
850	



SCANNED
OCT 0 1 2008

Hydro Logic, Inc.

Geophysical Division

WELL NAME: Spring Valley–2002 Test Well #2

GEOPHYSICAL WELL LOG:	PERMANENT DATUM: Mean Sea Level	OTHER SERVICES:
Natural Gamma–Ray Point Resistance Caliper	LOG MEASURED FROM: Ground 3676 Feet above MSL	

COMPANY: Scanlan Engineering / Suncor
PROJECT: Spring Valley Ranch Wells
ORDERED BY: Chuck Feast

COUNTY: Gem STATE: Idaho

COORDINATES:
T6N R1E Sec. 36
NE1/4, SE1/4
ELEVATION:
KB:
GL: 3676

WELL OWNER:
WELL: Spring Valley–2002 Test Well #2
LOCATION: T6N R1E SEC.36 NE1/4 SE1/4

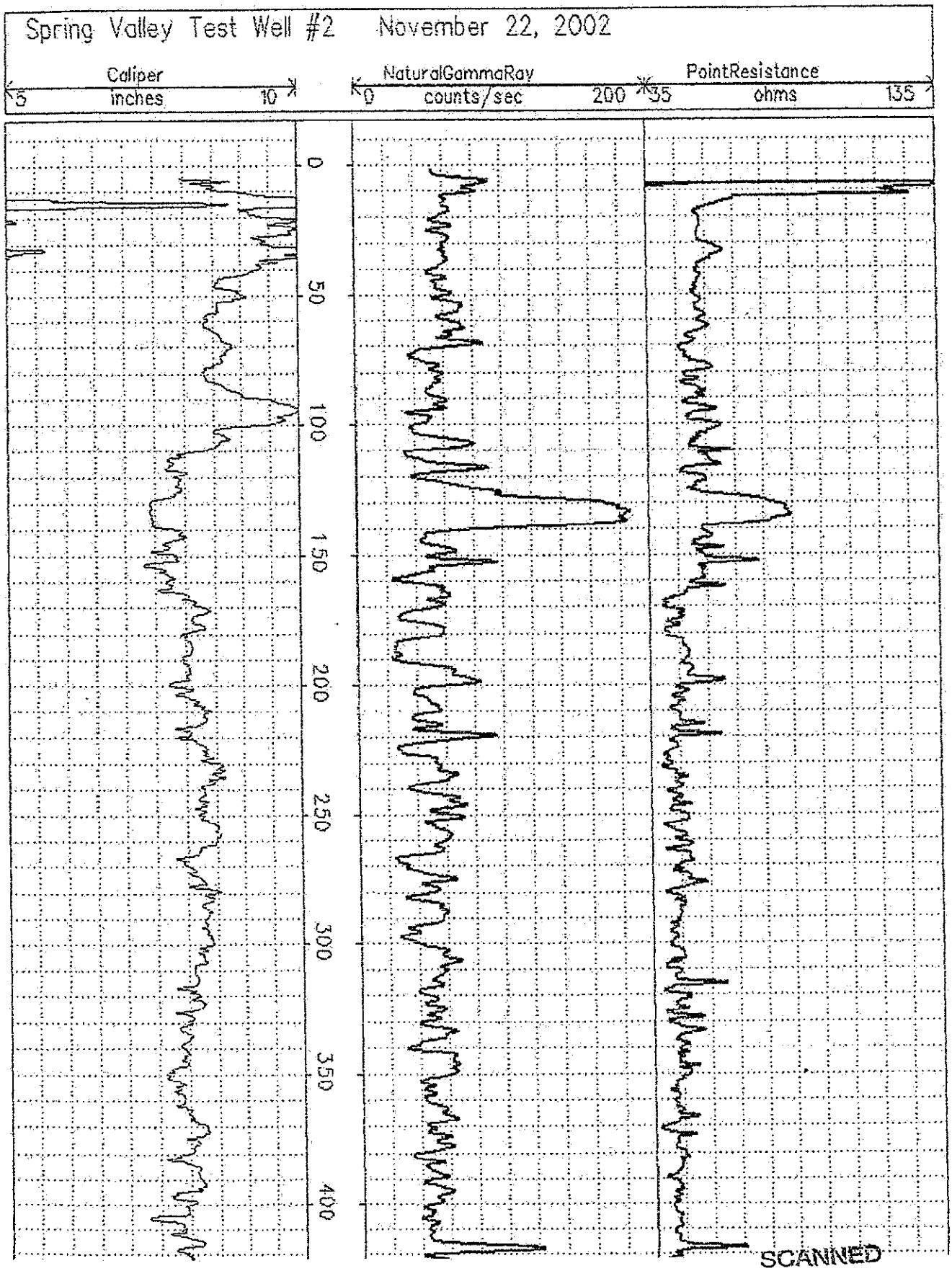
	Run No. 1		Run No. 1
Date	11/22/02	Fluid Level	3 ft. blw. grnd.
Bottom logged Int.	845.2 ft. bgl	Fluid Nature	drilling mud
Top Logged Int.	2.1 ft. bgl	Fluid Viscosity	
Footage Logged	843.1 ft	Fl. Resistivity	mud Cs=893uS
Bottom (Driller)	840 feet	Fl. Res. at BHT	
Casing (from Log)	5 feet	Fluid pH	NA
Casing (Driller)	5 feet	Last Circulated	NA
Casing Size	8–inch	Bottom Hole Temp	
Bit Size	8–inch; 6–inch		
		LOGGED BY:	Loren Pearson
		WITNESSED BY:	Chuck Feast

REMARKS:
Datum = ground level
Gamma and point resistance log scales ordered by Chuck Feast
Hole circulation 120 min. prior to log

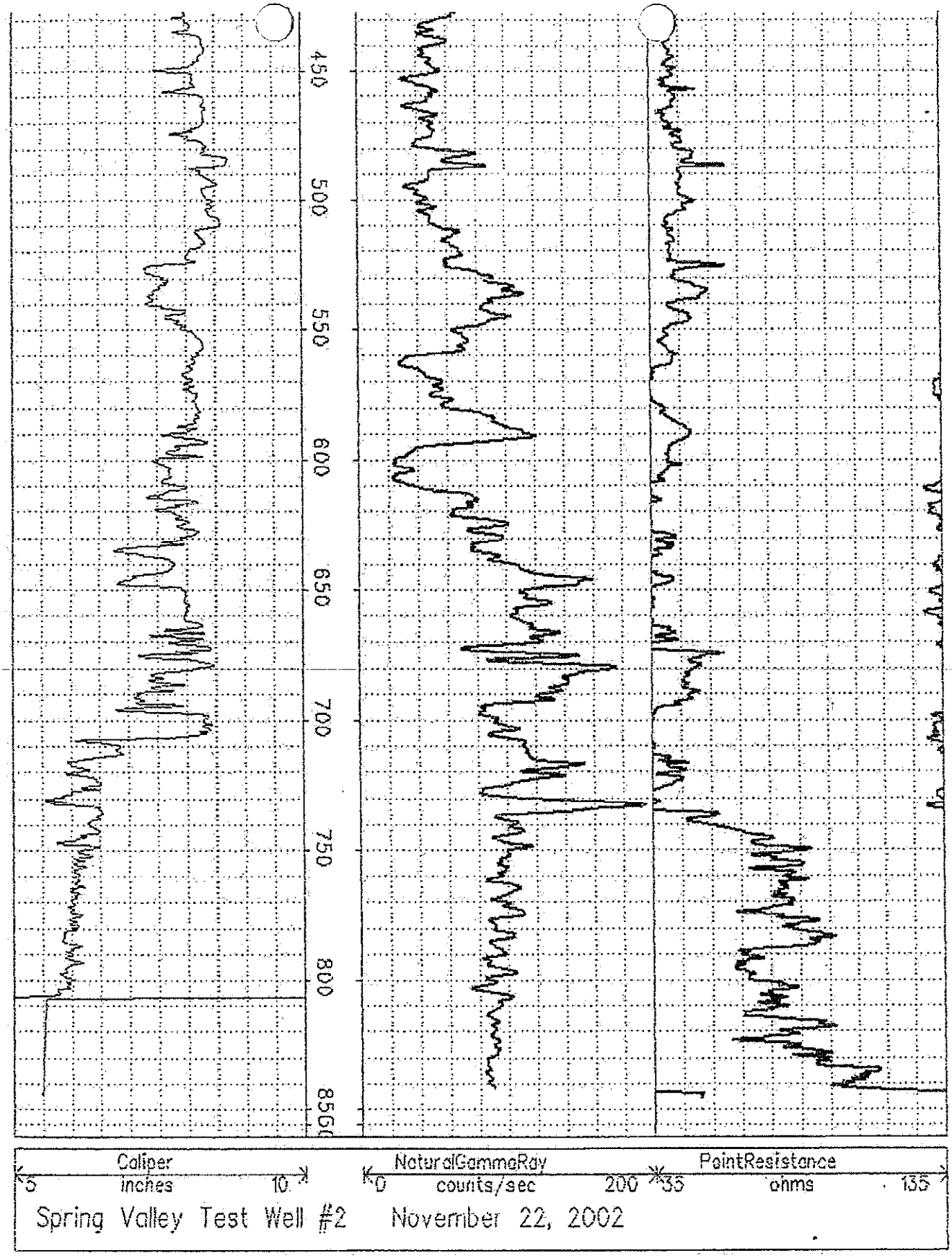
Drilled by Stevens and Sons, Boise, Id.
Nick Stevens Driller
Mud rotary drilled well

Drilled to 840 ft. 11/22/02

SCANNED
OCT 0 1 2008



SCANNED
OCT 0 7 2008



SCANNED
DEC 0 1 2008

Form 238-7
11/97

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT
WELL # 2

Office Use Only
Inspected by _____
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

0025899

1. WELL TAG NO. D ~~874392-788455~~
DRILLING PERMIT NO. ____-____-____-_____-_____
Other IDWR No. _____

2. OWNER:
Name Sun Cor Development Co
Address 80 East Rio Salado Pkwy #410
City Tempe State AZ Zip 85281

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

N / W / E / S

Twp. 6 North XX or South ☐
Rge. 1 East XX or West ☐
Sec. 36 ____ 1/4 N/E 1/4 S/E 1/4 (10 acres / 160 acres)
Gov't Lot ____ County Ada
Lat: : : Long: : :
Address of Well Site west side of hiway 55 in Spring Valley City _____
(Give at least name of road + Distance to Road or Landmark)

Lt. _____ Blk. _____ Sub. Name _____

4. USE:
☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other Test

5. TYPE OF WORK check all that apply (Replacement etc.)
XX New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD
☐ Air Rotary ☐ Cable XX Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL-FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
bentonite grout	0	300	11 sk	pumped

Was drive shoe used? ☐Y ☐ N Shoe Depth(s) _____
Was drive shoe seal tested? ☐ Y☐ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+2	300	250	steel	XX	☐	☐	☐
8	+1	5	250	steel	☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS
Perforations Method _____
Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
31 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: _____

11. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encounter _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y.	Water N
8	0	6	topsoil		X
	6	20	brown clayw/ gravel		X
	20	29	granite sand		X
	29	35	sand, some water	X	
	35	60	sandy clay w/ gravel		X
	60	70	sandstone, some brown clay		X
	70	90	clay, less sand		X
	90	120	shale, green gray		X
	120	130	sandstone		X
	130	140	fine sand	X	
	140	150	sandy clay		X
	150	200	shale green-gray-blue		X
	200	210	sandstone		X
	210	240	clay, sandstone		X
	240	310	sandstone, some clay		X
	310	360	gray clay, some sand		X
	360	440	sandstone		X
	440	540	brown clay		X
	540	570	sandstone, some clay		X
	570	610	hard basalt		X
	610	640	sandstone		X
	640	660	cemented sand	X	
	660	670	gray clay		X
	670	760	sandstone		X
	760	840	decomposed granite		X

Completed Depth 846' (Measurable)
Date: Started 11/5/02 Completed 11/27/02

13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Stevens & Sons Firm No. 153
Firm Official _____ Date 12/7/03
and
Driller or Operator _____ Date _____
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

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AQUIFER TEST DATA

Spring Valley Ranch - Test Well 2

Test conducted by: Stevens and Sons Drilling, Scanlan Engineering, Feast Geosciences, LLC

Flow measured by: 5 gallon bucket and watch

Water levels measured by: Well sounder | Water level measure point: Top of temporary sounding tube, ~3 ft bgl.

Elevation: | Static WL (ft bmp): 18.0 (Approximate)

Pump on: 11/26/02 11:45 Pump off: 11/26/02 17:20

Date	Time	Elapsed t (mins)	Rec. t (mins.)	t/t'	Water Level Data: Measure ()	WL (ft bmp)	Drawdown (feet)	Comments
11/26/02	11:00	-				18.0		Static water level (approx)
11/26/02	11:45	0				18.0	0.0	Start test (approx)
11/26/02	11:50	5				65.0	47.0	
11/26/02	11:55	10				75.0	57.0	
11/26/02	11:56	11				77.0	59.0	
11/26/02	12:01	16				80.0	62.0	More turbid
11/26/02	12:10	25				91.2	73.2	
11/26/02	12:15	30				93.0	75.0	
11/26/02	12:20	35				94.5	76.5	
11/26/02	12:25	40				95.7	77.7	
11/26/02	12:30	45				96.5	78.5	
11/26/02	12:35	50				99.7	81.7	
11/26/02	12:45	60				100.1	82.1	5g/7.5 sec = 40 gpm
11/26/02	12:52	67				100.9	82.9	18.8°C, SC 790
11/26/02	13:00	75				101.3	83.3	
11/26/02	13:07	82				102.2	84.2	
11/26/02	13:15	90				103.0	85.0	19.1°C, SC 765, EC 678
11/26/02	13:34	109				104.7	86.7	5g/7.5 sec = 40 gpm
11/26/02	13:50	125				105.5	87.5	
11/26/02	14:00	135				106.2	88.2	
11/26/02	14:15	150				107.1	89.1	
11/26/02	14:30	165				108.1	90.1	
11/26/02	14:45	180				109.9	91.9	
11/26/02	15:00	195				109.7	91.7	19.2°C, SC 675, EC 654
11/26/02	15:15	210				110.2	92.2	
11/26/02	15:30	225				110.7	92.7	
11/26/02	15:45	240				111.9	93.9	
11/26/02	16:00	255				110.3	92.3	19.3°C, SC 815, EC 725
11/26/02	16:15	270				109.7	91.7	
11/26/02	16:30	285				110.0	92.0	
11/26/02	16:45	300				112.0	94.0	
11/26/02	17:00	315				112.6	94.6	
11/26/02	17:17	332				113.3	95.3	
Begin Recovery, pump off at:			11/26/02	17:20				
11/26/02	17:21	336	1.0	336.0		112.6	93.1	
11/26/02	17:22	337	2.0	168.5		93.4	87.7	
11/26/02	17:23	338	3.0	112.7		81.3	82.8	
11/26/02	17:24	339	4.0	84.8		76.2	79.2	
11/26/02	17:26	341	6.0	56.8		71.7	73.7	
11/26/02	17:27	342	7.0	48.9		67.2	71.4	
11/26/02	17:30	345	10.0	34.5		64.2	67.1	
11/26/02	17:31	346	11.0	31.5		61.8	65.7	
11/26/02	17:33	348	13.0	26.8		59.2	63.8	
11/26/02	17:35	350	15.0	23.3		55.1	62.4	
11/26/02	17:38	353	18.0	19.6		51.2	60.6	
11/26/02	17:42	357	22.0	16.2		49.1	58.6	
11/26/02	17:45	360	25.0	14.4		46.1	57.5	

Notes and Comments:
Well cased to 10 ft., pump at ~130 ft.
11/27/02 Pump on @ 09:30
10:50 PWL 102.2 Took water sample
11:43 PWL 106.4 T 19°C,pH 6.8, EC 603 umhos/cm, SC 687 umhos/cm

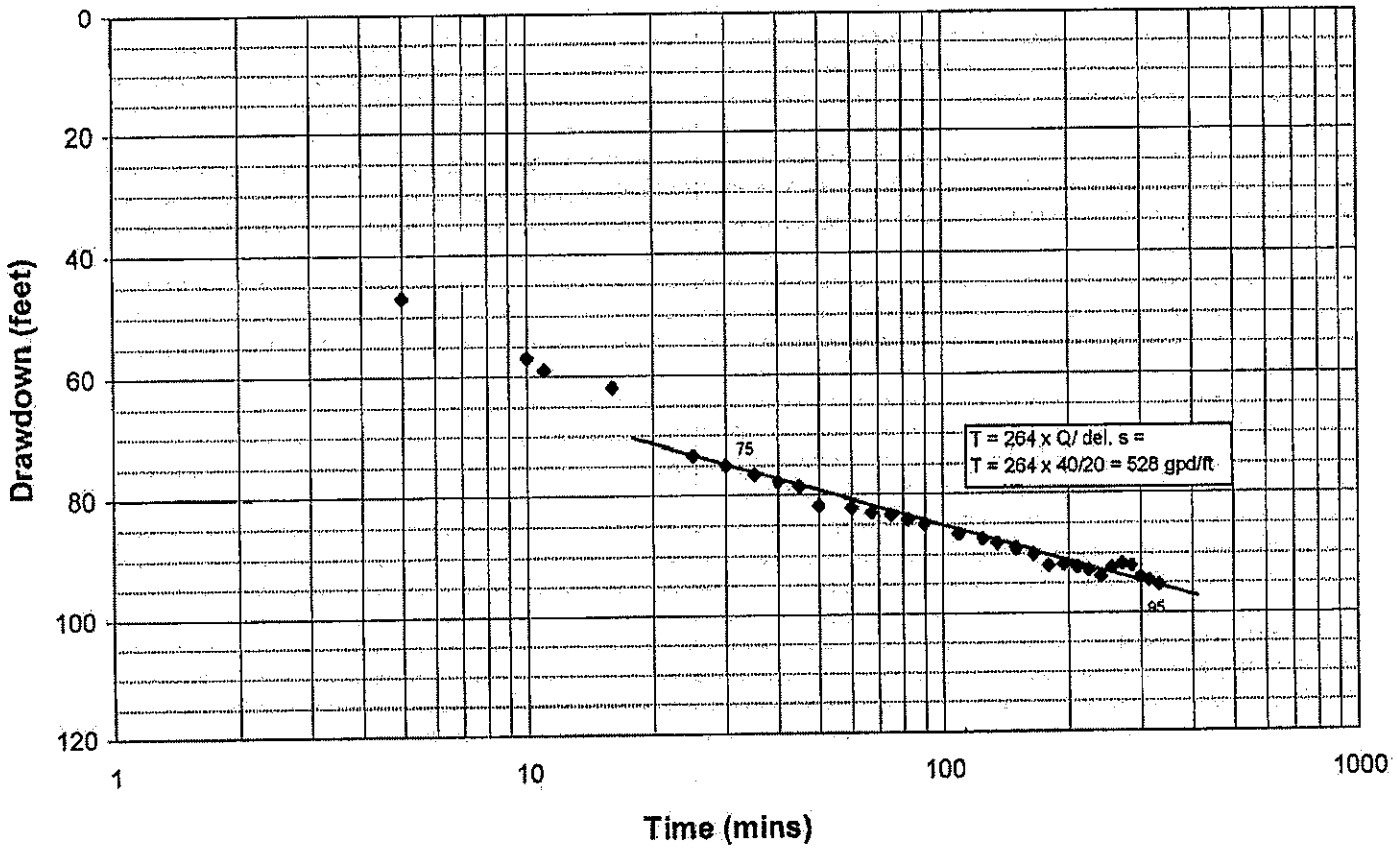
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Time - Drawdown

Spring Valley Ranch

Test Well 2, Q = 40 gpm

Test date: 11/26/02



Feast Geosciences, LLC

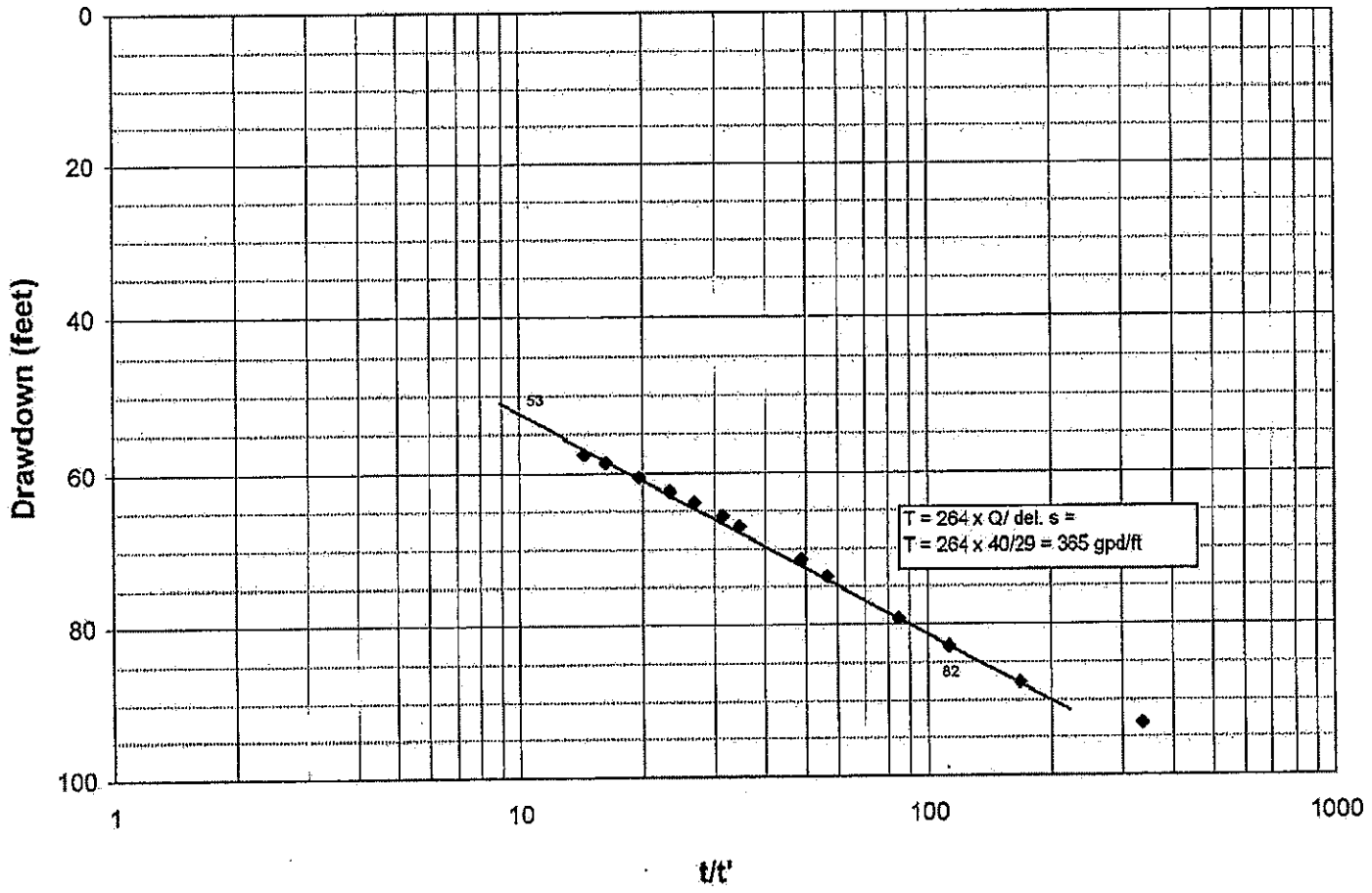
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Time - Recovery

Spring Valley Ranch

Test Well 2, Q = 40 gpm

Test date: 11/26/02



Feast Geosciences, LLC

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AQUIFER TEST DATA
Spring Valley Ranch - Test Well 2

Test conducted by: Feast Geosciences, LLC
Flow measured by: 5 gallon bucket and watch
Water levels measured by: Well sounder | Water level measure point: Top of temporary sounding tube, ~3 ft bgl.
Elevation: | Static WL (ft bmp): 35.1 (Approximate)
Pump on: 12/19/02 12:35 | Pump off: 12/19/02 15:05

Date	Time	Elapsed t (mins)	Rec. t (mins.)	t/t'	Water Level Data: Measure ()	WL (ft bmp)	Drawdown (feet)	Comments
12/19/02	12:15	-				35.1		SWL = 31.1 ft bgl
12/19/02	12:35	0				35.1	0.0	SWL = 31.1 ft bgl
12/19/02	12:36	1				95.0	59.9	V. Turbid
12/19/02	12:38	3				113.0	77.9	
12/19/02	12:40	5				145.5	110.4	
12/19/02	12:42	7				164.0	128.9	
12/19/02	12:45	10				172.0	136.9	
12/19/02	12:48	13				175.4	140.3	
12/19/02	12:50	15				176.8	141.7	
12/19/02	12:55	20				179.0	143.9	
12/19/02	13:00	25				180.5	145.4	
12/19/02	13:05	30				182.4	147.3	5g/6 sec = 50 gpm
12/19/02	13:10	35				182.9	147.8	19.2°C, SC 595 umhos/cm
12/19/02	13:15	40				183.8	148.7	
12/19/02	13:20	45				184.4	149.3	
12/19/02	13:25	50				185.5	150.4	
12/19/02	13:35	60				187.3	152.2	
12/19/02	13:45	70				188.7	153.6	
12/19/02	13:55	80				190.0	154.9	Clearing
12/19/02	14:05	90				190.8	155.7	
12/19/02	14:15	100				191.7	156.6	
12/19/02	14:20	105				192.3	157.2	
12/19/02	14:35	120				193.0	157.9	5g/6 sec = 50 gpm
12/19/02	14:50	135				194.0	158.9	19.2°C, SC 773 umhos/cm, EC 690 umhos/cm
12/19/02	15:05	150				195.0	159.9	
Begin Recovery, pump off at:			12/19/02	15:05				
12/19/02	15:06	151	1.0	151.0		143.7	108.6	
12/19/02	15:07	152	2.0	76.0		126.4	91.3	
12/19/02	15:08	153	3.0	51.0		119.3	84.2	
12/19/02	15:09	154	4.0	38.5		112.0	76.9	
12/19/02	15:10	155	5.0	31.0		106.2	71.1	
12/19/02	15:12	157	7.0	22.4		99.3	64.2	
12/19/02	15:14	159	9.0	17.7		93.8	58.7	
12/19/02	15:16	161	11.0	14.6		89.2	54.1	
12/19/02	15:18	163	13.0	12.5		85.5	50.4	
12/19/02	15:20	165	15.0	11.0		83.7	48.6	
12/19/02	15:22	167	17.0	9.8		80.3	45.2	
12/19/02	15:25	170	20.0	8.5		78.1	43.0	
12/19/02	15:28	173	23.0	7.5		75.8	40.7	
12/19/02	15:31	176	26.0	6.8		73.3	38.2	
12/19/02	15:35	180	30.0	6.0		70.8	35.7	
12/19/02	15:40	185	35.0	5.3		68.2	33.1	
12/19/02	15:45	190	40.0	4.8		65.8	30.7	
12/19/02	15:50	195	45.0	4.3		64.1	29.0	
12/19/02	15:55	200	50.0	4.0		62.1	27.0	
12/19/02	16:05	210	60.0	3.5		59.7	24.6	
12/19/02	16:15	220	70.0	3.1		57.1	22.0	
12/19/02	16:25	230	80.0	2.9		55.6	20.5	
12/19/02	16:40	245	95.0	2.6		53.4	18.3	
12/19/02	17:00	265	115.0	2.3		51.3	16.2	

Notes and Comments:
5 HP Pump at 210 ft.
Well cased to 300 feet.

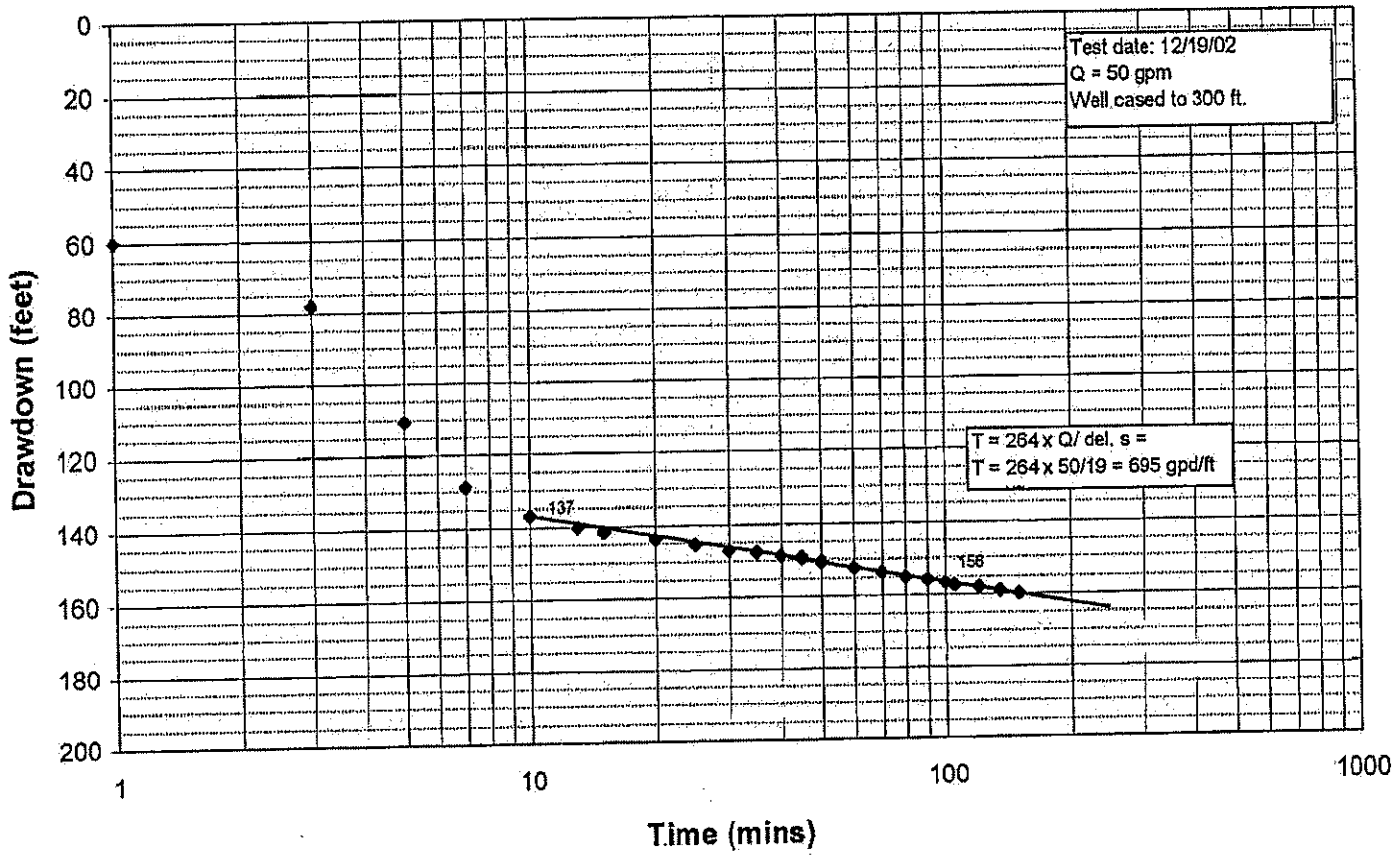
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Test Well 2

Spring Valley Ranch

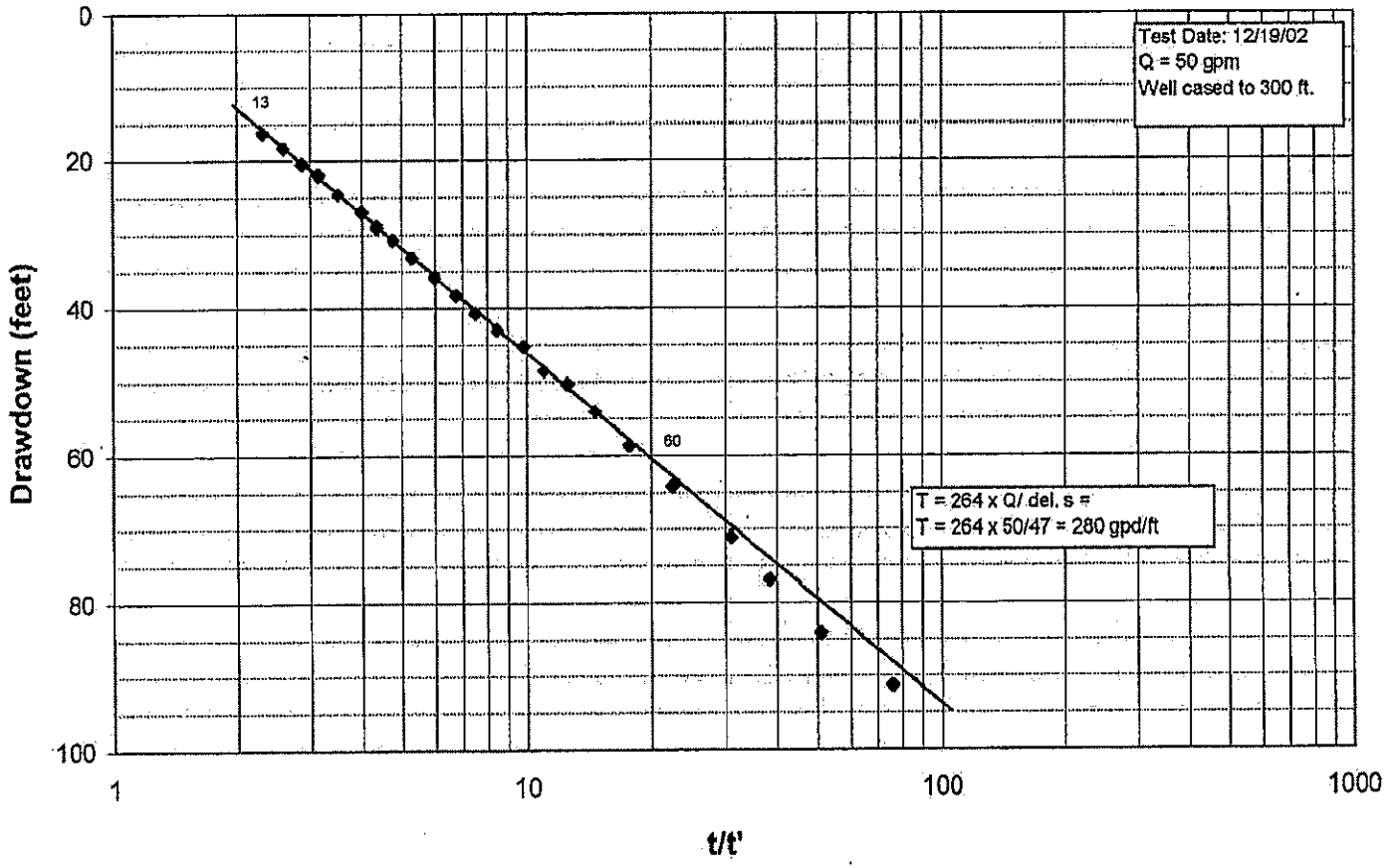
Time - Drawdown

2nd test



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Test Well 2
Spring Valley Ranch
Time - Recovery
2nd test



Feast Geosciences, LLC

SCANNED

ANALYTICAL LABORATORIES, INC.
1804 N. 33rd Street
Boise, Idaho 83703
Phone # (208) 342-5515

LABORATORY ANALYSIS REPORT
SAMPLE NUMBER - 45158

Attn. TERRY SCANLAN

SCANLAN ENGINEERING
600 EAST RIVER PARK LANE
SUITE 105
BOISE, ID 83706

Time of Collection: 11:00
Date of Collection: 11/27/02

Date Received: 11/27/02
Date Reported: 12/17/02

Collected by: CHUCK FEAST

Submitted by: CHUCK FEAST

Source of Sample: SVR 2 PROJECT:SPRING VALLEY RANCH GROUNDWATER

Test Requested	FRDS #	MCL	Analysis Result	Unit	MDL	Method	Date Completed	Analyst Initials
ANTIMONY FURNACE			<0.005	mg/L	0.005	EPA 200.9	12/10/02	DMB
ARSENIC FURNACE			0.016	mg/L	0.003	EPA 200.9	12/08/02	DMB
BARIUM			0.06	mg/L	0.05	EPA 200.7	12/03/02	JH
BERYLLIUM FURNACE			<0.0005	mg/L	0.0005	EPA 200.9	12/13/02	DMB
CALCIUM			85.6	mg/L	0.10	EPA 200.7	12/02/02	JH
CHROMIUM FURNACE			<0.002	mg/L	0.002	EPA 200.9	12/12/02	DMB
IRON			0.95	mg/L	0.05	EPA 200.7	12/06/02	JH
MAGNESIUM			22.2	mg/L	0.10	EPA 200.7	12/02/02	JH
MANGANESE			1.64	mg/L	0.05	EPA 200.7	12/06/02	JH
MERCURY			<0.0002	mg/L	0.0002	EPA 245.1	12/04/02	KLZ
NICKEL			<0.02	mg/L	0.02	EPA 200.7	12/04/02	JH
POTASSIUM			12.9	mg/L	0.10	EPA 200.7	12/02/02	JH
SODIUM			43.7	mg/L	0.10	EPA 200.7	12/02/02	JH
THALLIUM FURNACE			<0.002	mg/L	0.002	EPA 200.9	12/12/02	DMB
AMMONIA DIRECT			0.23	mg/L	0.04	EPA 350.1	12/06/02	KDH
NITRATE N			<0.20	mg/L	0.20	EPA 300.0	12/03/02	GMM
NITRITE N			<0.01	mg/L	0.01	SM 4500NO2-B	11/27/02	CSC
SULFIDE			<0.05	mg/L	0.05	SM 4500 D	12/03/02	CS
BICARBONATE			189	mg/L		SM 2320	12/03/02	GMM
CHLORIDE			5	mg/L	1	EPA 300.0	12/03/02	GMM
FLUORIDE DIRECT			0.34	mg/L	0.10	EPA 300.0	12/06/02	GMM
HARDNESS			319	mg/L	5.0	SM 2340	12/03/02	GMM
SULFATE			229	mg/L	1.0	EPA 300.0	12/06/02	GMM
TOTAL DISSOLVED SOLIDS			570	mg/L	25	EPA 160.1	12/03/02	JR

Michael D. Moore

THANK YOU FOR CHOOSING ANALYTICAL LABORATORIES, INC. FOR YOUR TESTING NEEDS.

PLEASE CONTACT MICHAEL MOORE IF YOU HAVE ANY QUESTIONS REGARDING
THIS REPORT OR ANY FUTURE ANALYTICAL NEEDS.

SCANNED
OCT 01 2008

ANALYTICAL LABORATORIES, INC.
1804 N. 33rd Street
Boise, Idaho 83703
Phone # (208) 342-5515

INORGANIC CHEMICAL ANALYSIS REPORT For Public Water Systems

PRIMARY IOC CONTAMINANTS (Mandatory, except for transient water systems)

FRDS	Contaminant	MCL(mg/L)	Result (mg/L)	MDL (mg/L)	Method	Ana-lyst	Analysis Date	FRDS	Contaminant	MCL(mg/L)	Result (mg/L)	MDL (mg/L)	Method	Ana-lyst	Analysis Date
1074	Antimony	0.006	ND	0.005	EPA 200.9	DMB	12/10/02	1036	Nickel	N/A	ND	0.02	EPA 200.7	JH	12/04/02
1005	Arsenic	0.05	0.016	0.003	EPA 200.9	DMB	12/08/02	1045	Selenium	0.05	---				
1010	Barium	2	0.06	0.05	EPA 200.7	JH	12/03/02	1052	Sodium	N/A	43.7	0.10	EPA 200.7	JH	12/02/02
1075	Beryllium	0.004	ND	0.0005	EPA 200.9	DMB	12/13/02	1085	Thallium	0.002	ND	0.002	EPA 200.9	DMB	12/12/02
1015	Cadmium	0.005	---					1024	Cyanide	0.2	---				
1020	Chromium	0.1	ND	0.002	EPA 200.9	DMB	12/12/02	1025	Fluoride	4.0	0.34	0.10	EPA 300.0	GMM	12/06/02
1035	Mercury	0.002	ND	0.0002	EPA 245.1	KLZ	12/04/02								

SECONDARY AND OTHER IOC CONTAMINANTS (OPTIONAL)

1017	Chloride	5	1	EPA 300.0	GMM	12/03/02	1003	Ammonia (as N)	0.23	0.04	EPA 350.1	KDH	12/06/02
1905	Color	---					1016	Calcium (as $CaCO_3$)	85.6	0.10	EPA 200.7	JH	12/02/02
1027	Hydrogen Sulfide	---					1915	Hardness (as $CaCO_3$)	319	5.0	SM 2340	GMM	12/03/02
1028	Iron	0.95	0.05	EPA 200.7	JH	12/06/02	1031	Magnesium	22.2	0.10	EPA 200.7	JH	12/02/02
1032	Manganese	1.64	0.05	EPA 200.7	JH	12/06/02	1925	pH	---				
1920	Odor	---					1042	Potassium	12.9	0.10	EPA 200.7	JH	12/02/02
2905	Surfactants	---					1049	Silica (as SiO_2)	---				
1930	Dissolved Solids	870	25	EPA 160.1	JR	12/03/02	1030	Lead	---				
1095	Zinc	---					1022	Copper	---				
1050	Silver	---					1926	Conductive μS/cm	---				
1002	Aluminum	---					1997	Langlier Index	---				
1927	Alkalinity (as $CaCO_3$)	---											

LAB RESULT REPORTING CODES:

ND = Not detected within sensitivity of instrument

--- = No analysis performed for this contaminant

Numerical entry = Detection at level indicated

Nitric Acid Preservative ☑ Yes ☐ No

PWS #	
Lab Sample Tracking #	45158
Date Collected	11/27/02
Sample Type	Water
Date Received	11/27/02
Time Collected	11:00
Location Tag #	
Sample Collection Location	SVR 2 PROJECT:SPRING VALLEY
Date Reported by Lab	12/17/02
Jurisdiction	
PWS Contact Phone (208)	208-383-4140

COMMENTS:

Michael N. Thorne 12/17/02
Signature of Lab Supervisor Date

Lab ID: ID00020

Attn: TERRY SCANLAN
SCANLAN ENGINEERING
600 EAST RIVER PARK LANE
SUITE 105
BOISE, ID 83706

SCANNED
OCT 0 1 2008

ANALYTICAL LABORATORIES, INC.
1804 N. 33rd Street
Boise, Idaho 83703
Phone # (208) 342-5515

PUBLIC DRINKING WATER INORGANIC CHEMICAL ANALYSIS REPORT

ACUTE IOC CONTAMINANTS For Public Drinking Water Systems

FRDS	Contaminant	Result (mg/L)	MCL (mg/L)	MDL	Method	Analysis Date	Analyst	MONITORING REQUIREMENTS
1040	Nitrate	ND	10.0	0.20	EPA 300.0	12/03/02	GMM	Ground water systems with nitrate levels below 5 mg/L must monitor nitrate annually. Surface water systems and systems with nitrate levels of 5 or more mg/L must monitor quarterly, unless otherwise advised in writing.
1041	Nitrite	ND	1.0	0.01	SM 4500NO2-B	11/27/02	CSC	Once per nine years unless advised otherwise.
1040	Total ($NO_3 + NO_2$)	---						
1055	Sulfate	229		1.0	EPA 300.0	12/06/02	GMM	Sulfate is in the process of becoming a regulated contaminant. Monitoring is not yet required.

LAB RESULT REPORTING CODES:

ND = Not detected within sensitivity of instrument

--- = No analysis performed for this contaminant

Numerical entry = Detection at level indicated

COMMENTS:

PWS #	
Lab Sample Tracking #	45158
Date Collected	11/27/02
Sample Type	Water
Date Received	11/27/02
Time Collected	11:00
Location Tag #	
Sample Collection Location	SVR 2 PROJECT:SPRING
Date Reported by Lab	12/17/02
Jurisdiction	
PWS Contact Phone (208)	208-383-4140

Lab ID: ID00020

Kellie D. Hall 12/17/02

Signature of Lab Supervisor Date

Attn: TERRY SCANLAN
SCANLAN ENGINEERING
600 EAST RIVER PARK LANE
SUITE 105
BOISE, ID 83706

SCANNED
OCT 01 2008

CHAIN OF CUSTODY RECORD

ANALYTICAL LABS, INC.

1804 N. 33rd Street • Boise, ID 83703
(208) 342-5515 • Fax: (208) 342-5591 • 1-800-574-5773
Website: http://home.rmci.net/ali • E-mail: ali@rmci.net

CLIENT INFORMATION:	PROJECT INFORMATION:
Attn: Terry Scanlan	Project Manager: T Scanlan
Company: Scanlan Eng.	Project Name: Spring Valley Ranch
Address: 600 ~~East~~ River Park Lane	Project Number:
Boise, ID 83706	Purchase Order Number:
Phone: 383 4140 Fax: 383 4156	Required Due Date:
Sampled by: Chuck Frost	Invoice to: *(If different than above address)*

ANALYSIS REQUESTED

Lab ID	Date Sampled	Time Sampled	Sample Description	Sample Matrix	Primary Emm.	Major Ions	Hardness, TDS, Fe	Nitrate, Nitrite, H2S	333	Remarks:
	11/27/02	11:00	SVR 2	Groundwater	X					See attached
			45158							list

Special Instructions: all nitrite - filtered in field w/ .45 micron filter
No preservatives added

ALLOCATIONS OF RISK: Analytical Laboratories, Inc. will perform preparation and testing services, obtain findings and prepare reports in accordance with Good Laboratory Practices (GLP). If, for any reason, Analytical Laboratories, Inc. errors in the conduct of a test or procedure their liability shall be limited to the cost of the test or procedure completed in error. Under no circumstance will Analytical Laboratories, Inc. be liable for any other cost associated with obtaining a sample or use of data.

SAMPLE RECEIPT	Note: Samples are discarded 21 days after results are reported. Hazardous samples will be returned to client or disposed of at client expense.			
Total # of Containers:	Relinquished By: *(Signature)* Chuck Frost	Date / Time	Received By: *(Signature)*	Date / Time
Chains of Custody Seals: Y / N / NA	Company: Frost Geosciences, LLC	11/27/02 1300	Company:	/
Intact: Y / N / NA	Relinquished By: *(Signature)*	Date / Time	Received at Laboratory By: *(Signature)*	Date / Time
Temperature Received:	Company:	/	Matthew C Jones	11/27/02 13:00
Condition:				

REV. 6-00 WHITE: STAYS WITH SAMPLE(S) YELLOW: LAB PINK: SAMPLER

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OCT 01 2008

12/16/96 (LDT) (Internet)

well #2

Drilling Permit I.D. Tag No. 2002S 899
Water Right Permit No.
Injection Permit No.

RECEIVED
OCT 2 1 2002
WATER RESOURCES WESTERN REGION

874392-788455

State of Idaho
Department of Water Resources

APPLICATION FOR DRILLING PERMIT
(FOR THE CONSTRUCTION OF A WELL)

1. Owner (please print): SunCor Development Company, Attention: Jerry Ellsworth
2. Mailing Address: 80 East Rio Salado Parkway, Suite 410
   City: Tempe State: AZ Zip Code: 85281 Telephone 480-317-6800
3. Proposed Well Location: Twp. 6N, Rge. 1E, Sec. 36, 1/4 NE 1/4 SE
   Govt Lot No. County Ada Lat. : : Long. : :
   Street Address of Well Site west side of Highway 55 in Spring Valley City
   Give at least name of road + Distance to Road or Landmark
   Lot, block and subdivision
4. Proposed Use of Well:

   [ ] DOMESTIC: The use of water for homes, organization camps, public campgrounds, livestock (1,000 head or less) and any other purpose in connection therewith, including irrigation of up to ½ acre of land, if the total use is not in excess of 13,000 gpd; or any other uses, if the total use does not exceed a diversion rate of 0.04 cfs and a diversion volume of 2500 gpd.

   Domestic does not include water for multiple ownership subdivisions, mobile home parks, commercial or business establishments, unless the use does not exceed a diversion rate of 0.04 cfs and a diversion volume of 2500 gpd.

   NON-DOMESTIC: [ ] Irrigation [ ] Municipal [ ] Industrial
   [ ] Stock (Over 1,000 Head) [X] Test [ ] Other (Describe)

   [ ] INJECTION

   [ ] MONITORING: A well bore schematic and map is required for each blanket permit.
   No. of proposed wells:

5. Well Construction Information:

   A. [X] New well [ ] Modify [ ] Replace

   B. Proposed Casing Diameter 6-inch Proposed Maximum Depth 1,000 feet

   C. Anticipated bottom hole temperature:
   [X] 85°F or less (Cold Water Well) [ ] 85°F to 212°F (Low Temp. Geo. Well) [ ] 212° F. or more (Geothermal Well)

6. Construction Start Date: October 28, 2002
7. Anticipated Well Driller: Stevens and Sons Well Drilling Driller's Lic. No. 153
   NOTE: The actual well driller must be identified prior to drilling.
8. Applicant's Signature: [signature] Date 10/21/02
   Address (if different than owner): Scanlan Engineering 800 East River Park Lane, Suite 105
   City: Boise State: ID Zip Code: 83706 Telephone 208-383-4140
   Title: Consulting Engineer for SunCor Development Company
   (Owner, Firm Representative, Other)

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ACTION OF THE DEPARTMENT OF WATER RESOURCES

This Permit is APPROVED. Date 11/8/02

If approved, this permit authorizes the construction or modification of a well subject to the following conditions. READ CAREFULLY!

GENERAL CONDITIONS:

1. This drilling permit is valid for two (2) months from the above approval date for the start of construction and is valid for one (1) year from the approval date for completion of the well unless an extension has been granted.
2. This permit does not constitute an approval of the District Health Department or the Idaho Department of Health and Welfare which may be required before construction of this well. All wells must be drilled a minimum distance of 100 feet from a drain field. Domestic and Public Water Supply wells must be drilled a minimum of 50 feet and 100 feet respectively from a septic tank.
3. The well shall be constructed by a driller currently licensed in the State of Idaho who must maintain a copy of the drilling permit at the drilling site.
4. Approval of this drilling permit does not authorize trespass on the land of another party.
5. This permit does not constitute other local, county, state or federal approvals which may be required for construction of a well.
6. This drilling permit does not represent a right to divert and use the water of the State of Idaho.
7. If a bottom hole temperature of 85° or greater is encountered, well construction shall cease and the well driller and the well owner shall contact the Department immediately.
8. Idaho Code, S 55-2201 - 55-2210 requires the applicant and/or his contractors to contact "Digline" (DigLine is a one-call center for utility notification) not less than 2 working days prior to the start of any excavation for this project. The "DigLine" Number for your area is 1-800-342-1585.

SPECIFIC CONDITIONS:

9. After completion of Logging of the test hole and prior to installation of any casing, screens or seals, a well design Proposal shall be submitted for review and approval by IDWR.
10. This well shall not be completed as a permanent, completed well without specific approval from IDWR.
11. If this well is not completed the hole shall be properly plugged.

For MANAGER
WESTERN REGIONAL OFFICE

Signature of Authorized Department Representative — Title

Receipt No. 0029818 Receipted by KH Fee 200.00 Date 10/21/02

EXTENSION OF DRILLING PERMIT

Extension approved by _____ Approval Date _____

This extension expires: _____

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OCT 01 2008

Exploration Hole SVR 3
Spring Valley Ranch

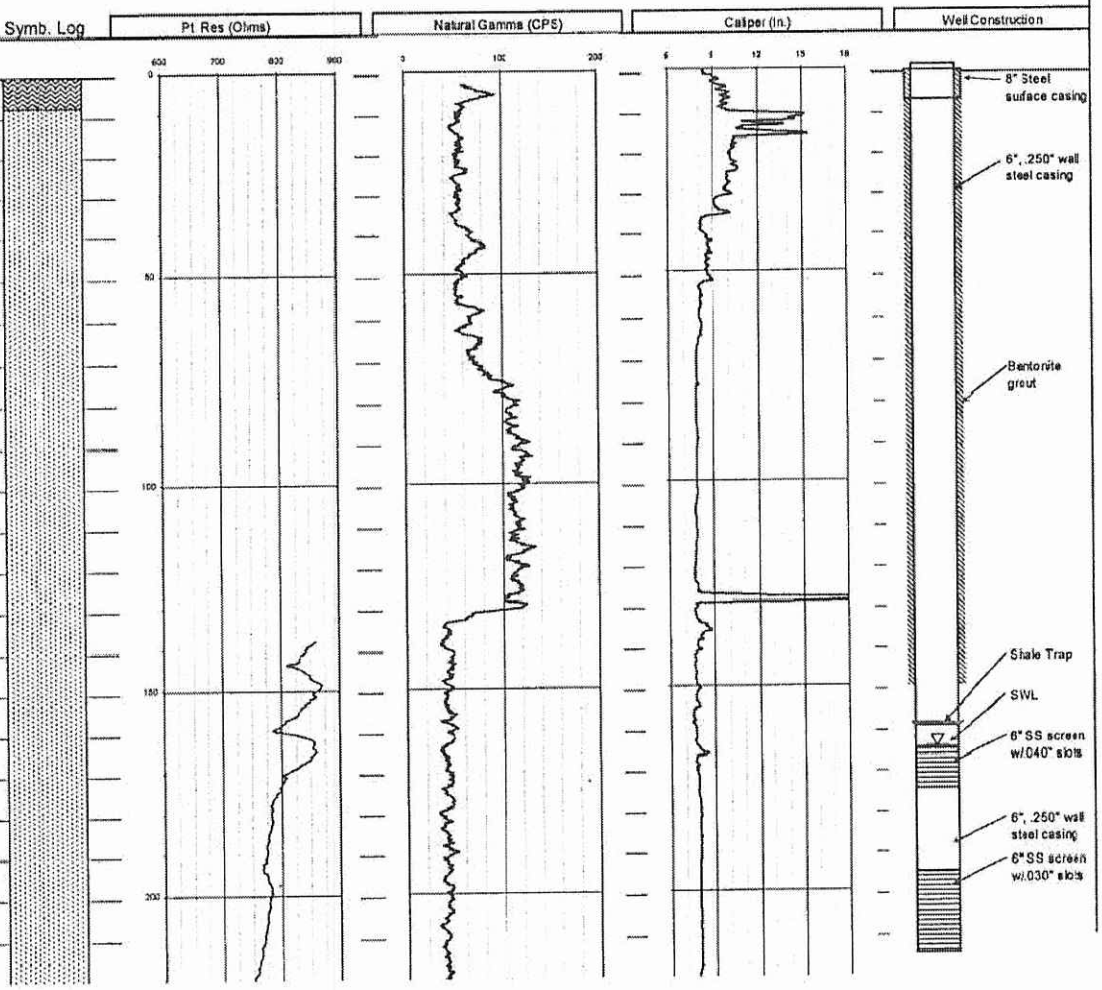
Drilled by: Stevens and Sons, Inc.
Logged by: C. Feast/Feasl Geosciences, LLC
Geophysical logs by: Hydrologic, Inc.
Fluid level when logged: 134 ft bgl
Casing when logged: 8" steel 0-5 ft, 8" open hole 5 - 957 ft.

Drilled Dates: 12/1/02 - 12/11/02
Drilling Method: Mud Rotary
Borehole size: 8" (nom.)

Depth Drilled: 970 ft
Depth Logged: 967 ft.
Static WL: ~ 175 ft. bgl

Location: Ada County, Idaho
T5N, R1E, SE 1/4, SE 1/4, Sect 1
GL Elevation: ~ 3590 ft. msl.

Depth (ft)	Geologic log from rotary cuttings
0	Topsoil, brown, clayey over coarse sand at 9 ft.
10	Sand, Cs-vCs, light brown, clean, ang-subang, qtz, feldspar & granite, white, clear and yellow grains, minor biotite
20	Sand as above
30	Sand as above
40	Sand as above, light brown, vCs to fine gravel size qtz, feldspar and granite frags.
50	Sand as above
60	Sand as above, occ light brown clay streak
70	Sand as above, light brown, vCs to fine gravel size qtz, feldspar and granite frags.
80	Sand as above
90	Sand and gravel, sand as above, multiple brown and gray quartzite and basalt frags
100	Sand as above with brown clay streaks
110	Sand and gravel as above, and fine, micaceous sand
120	Sand, fine, micaceous, tan clay 128-130.
130	Sand, light brown, well sorted clean, Cs-vCs, ang-subang, qtz and feldspar
140	Sand as above
150	Sand as above
160	Sand as above, slightly less coarse
170	Sand as above, light brown, Cs-vCs, ang-subang, qtz and feldspar
180	Sand as above
190	Sand as above
200	Sand as above



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Exploration Hole SVR 3
Spring Valley Ranch

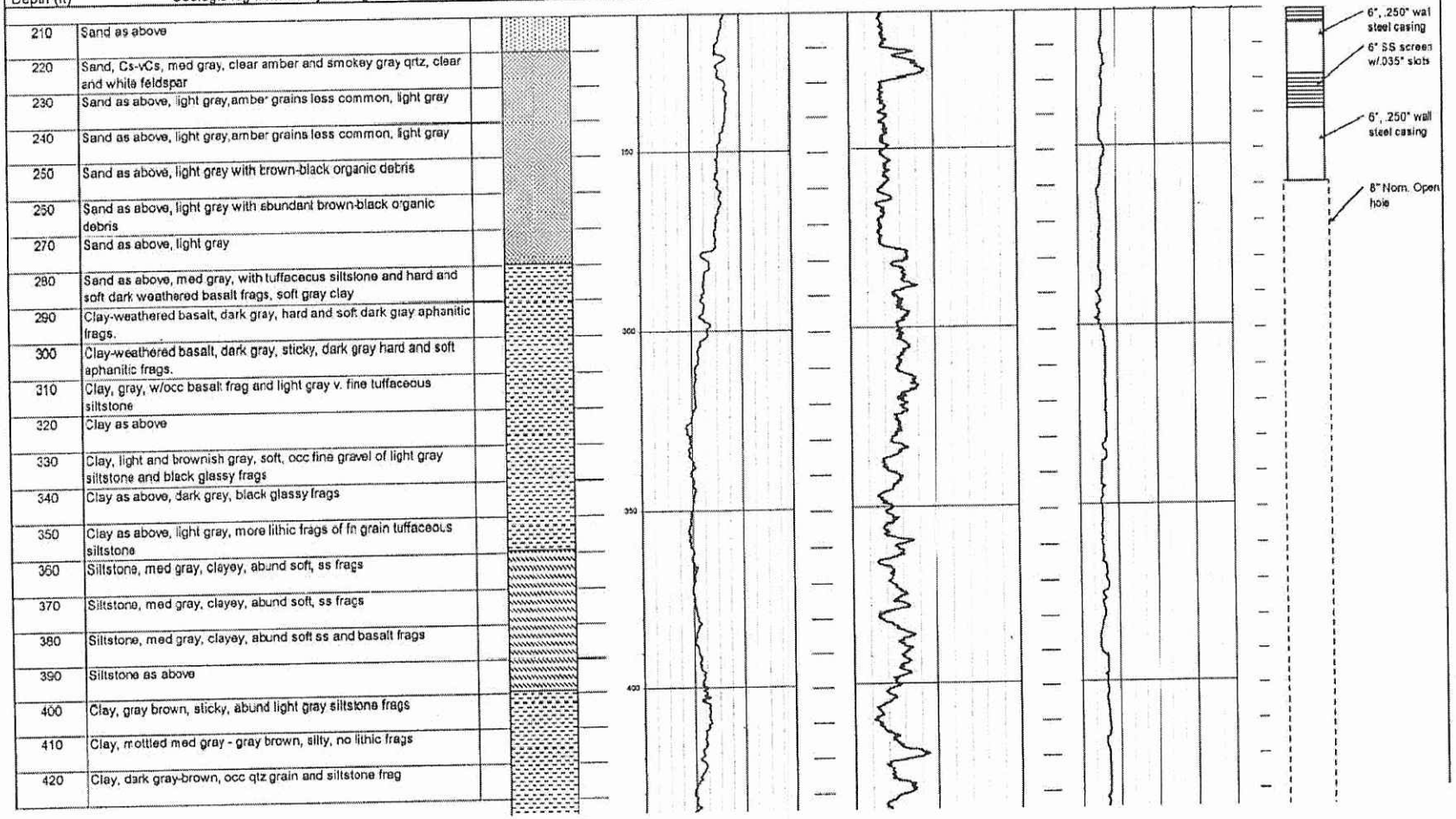
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Depth Logged: 967 ft.
Static WL: ~ 175 ft. bgl

Location: Ada County, Idaho
T5N, RIE, SE 1/4, SE 1/4, Sect 1
GL Elevation ~ 3590 ft. msl.

Depth (ft)	Geologic log from rotary cuttings
210	Sand as above
220	Sand, Cs-vCs, med gray, clear amber and smokey gray qrtz, clear and white feldspar
230	Sand as above, light gray,amber grains less common, light gray
240	Sand as above, light gray,amber grains less common, light gray
250	Sand as above, light gray with brown-black organic debris
260	Sand as above, light gray with abundant brown-black organic debris
270	Sand as above, light gray
280	Sand as above, med gray, with tuffaceous siltstone and hard and soft dark weathered basalt frags, soft gray clay
290	Clay-weathered basalt, dark gray, hard and soft dark gray aphanitic frags.
300	Clay-weathered basalt, dark gray, sticky, dark gray hard and soft aphanitic frags.
310	Clay, gray, w/occ basalt frag and light gray v. fine tuffaceous siltstone
320	Clay as above
330	Clay, light and brownish gray, soft, occ fine gravel of light gray siltstone and black glassy frags
340	Clay as above, dark grey, black glassy frags
350	Clay as above, light gray, more lithic frags of fn grain tuffaceous siltstone
360	Siltstone, med gray, clayey, abund soft, ss frags
370	Siltstone, med gray, clayey, abund soft, ss frags
380	Siltstone, med gray, clayey, abund soft ss and basalt frags
390	Siltstone as above
400	Clay, gray brown, sticky, abund light gray siltstone frags
410	Clay, mottled med gray - gray brown, silty, no lithic frags
420	Clay, dark gray-brown, occ qtz grain and siltstone frag



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Exploration Hole SVR 3
Spring Valley Ranch

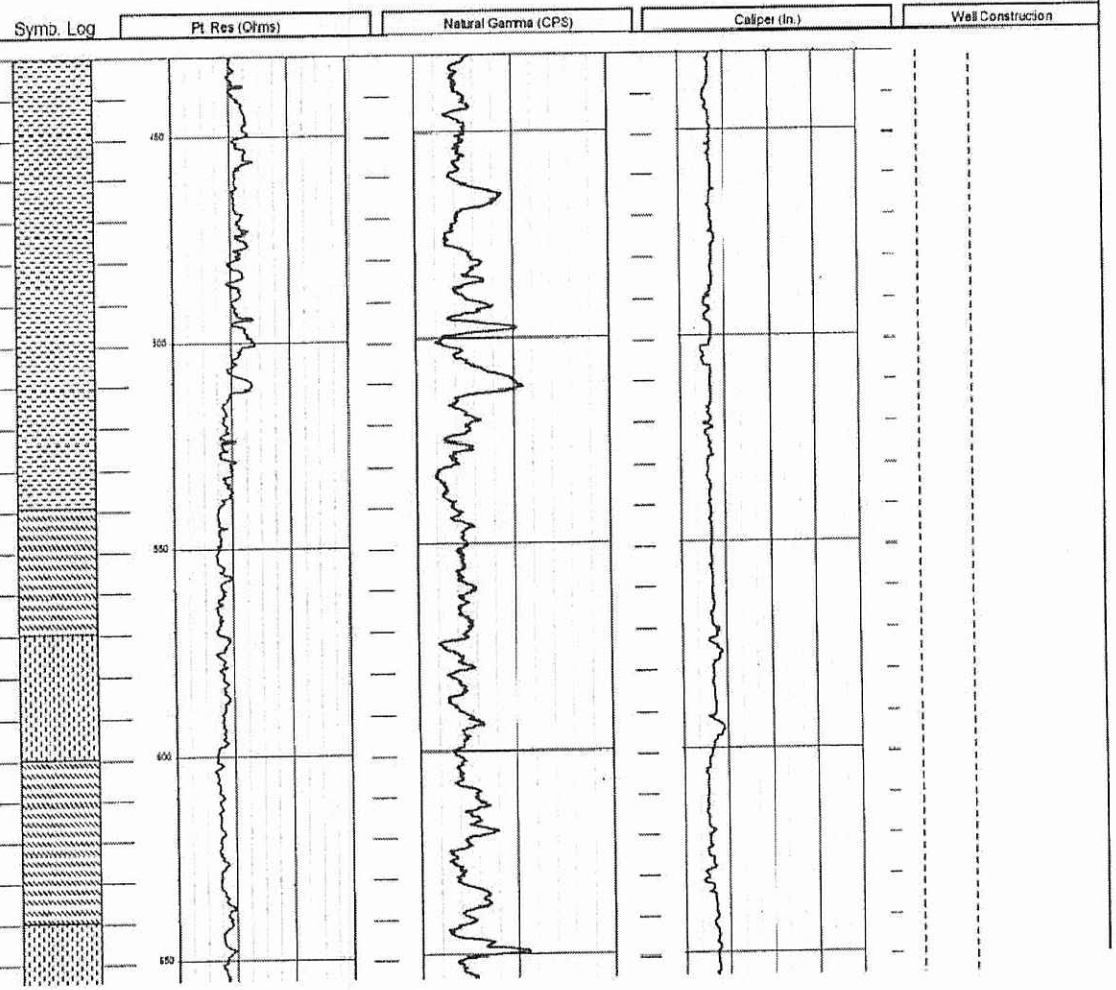
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Drilling Method: Mud Rotary
Borehole size: 8" (nom.)

Depth Drilled: 970 ft
Depth Logged: 967 ft.
Static WL: ~ 175 ft. bgl

Location: Ada County, Idaho
T5N, R1E, SE 1/4, SE 1/4, Sect 1
GL Elevation: ~ 3590 ft. msl.

Depth (ft)	Geologic log from rotary cuttings
430	Clay, mottled med gray - gray brown, silty, off-white and gray lithic frags
440	Clay, as above
450	Clay, greenish gray, sticky, occ fine grn ss frag
460	Clay, as above with light and dark gray ln ss frags
470	Clay as above, more lithic frags
480	Clay as above, more lithic frags
490	Clay, buff and gray with buff and gray siltstone frags
500	Clay, med gray, sticky, abundant ss and siltstone frags
510	Clay, with ss and siltstone frags as above
520	Clay, with ss and siltstone frags as above
530	Clay, brown, sticky, ss and siltstone frags as above with abundant dark brown organic debris
540	Siltstone, med gray, clayey
550	Siltstone as above
560	Siltstone as above, gray-brown
570	Shale, brown, platy with soft light graybrown ss frags
580	Shale, brown, platy less frags and more clay
590	Shale, med gray, clayey, soft
600	Siltstone, gray and brown, clayey
610	Siltstone, gray and white, clayey, occ Cs qtz grain
620	Siltstone, gray, clayey, no qtz grains
630	Siltstone, gray as above
640	Shale and siltstone, light brown, clayey



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Exploration Hole SVR 3
Spring Valley Ranch

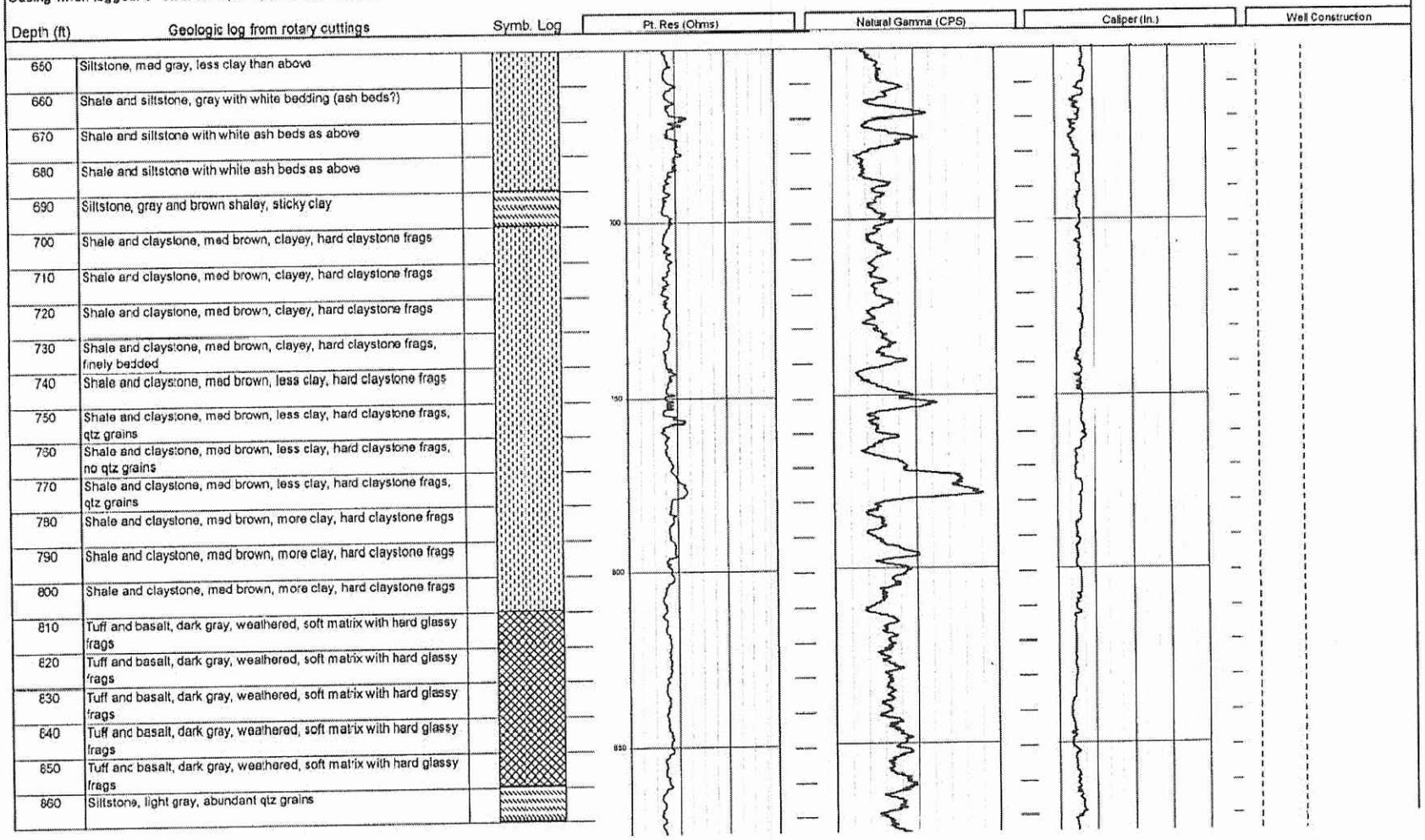
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Drilling Method: Mud Rotary
Borehole size: 8" (nom.)

Depth Drilled: 970 ft
Depth Logged: 967 ft.
Static WL: ~ 175 ft. bgl

Location: Ada County, Idaho
T5N, R1E, SE 1/4, SE 1/4, Sect 1
GL Elevation: ~ 3590 ft. msl.

Depth (ft)	Geologic log from rotary cuttings
650	Siltstone, med gray, less clay than above
660	Shale and siltstone, gray with white bedding (ash beds?)
670	Shale and siltstone with white ash beds as above
680	Shale and siltstone with white ash beds as above
690	Siltstone, gray and brown shaley, sticky clay
700	Shale and claystone, med brown, clayey, hard claystone frags
710	Shale and claystone, med brown, clayey, hard claystone frags
720	Shale and claystone, med brown, clayey, hard claystone frags
730	Shale and claystone, med brown, clayey, hard claystone frags, finely bedded
740	Shale and claystone, med brown, less clay, hard claystone frags
750	Shale and claystone, med brown, less clay, hard claystone frags, qtz grains
760	Shale and claystone, med brown, less clay, hard claystone frags, no qtz grains
770	Shale and claystone, med brown, less clay, hard claystone frags, qtz grains
780	Shale and claystone, med brown, more clay, hard claystone frags
790	Shale and claystone, med brown, more clay, hard claystone frags
800	Shale and claystone, med brown, more clay, hard claystone frags
810	Tuff and basalt, dark gray, weathered, soft matrix with hard glassy frags
820	Tuff and basalt, dark gray, weathered, soft matrix with hard glassy frags
830	Tuff and basalt, dark gray, weathered, soft matrix with hard glassy frags
840	Tuff and basalt, dark gray, weathered, soft matrix with hard glassy frags
850	Tuff and basalt, dark gray, weathered, soft matrix with hard glassy frags
860	Siltstone, light gray, abundant qtz grains



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OCT 0 1 2008

Exploration Hole SVR 3
Spring Valley Ranch

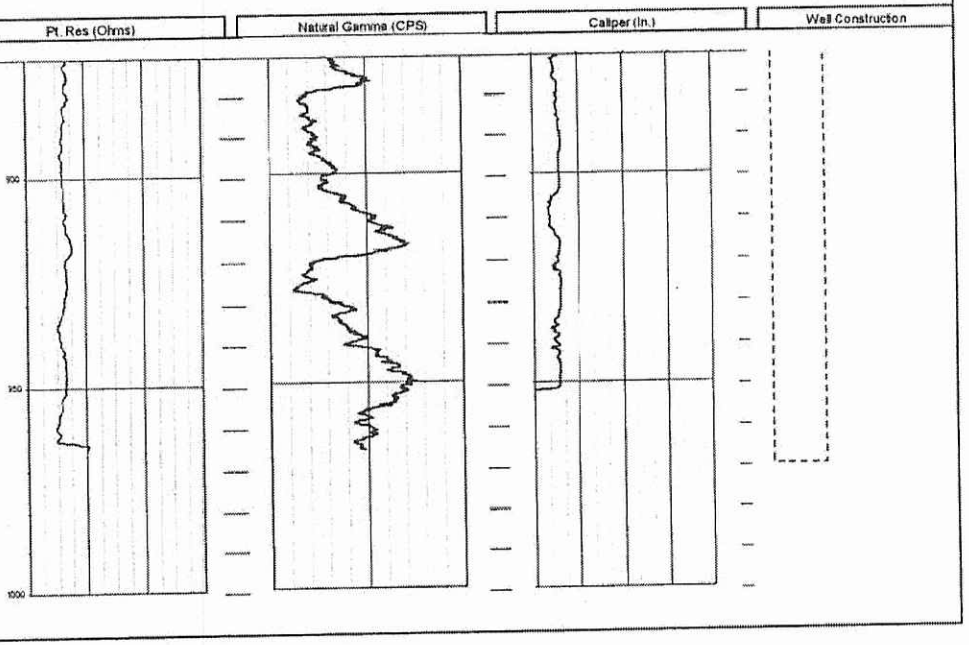
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Drilling Method: Mud Rotary
Borehole size: 8" (nom.)

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Static WL: ~ 175 ft. bgl

Location: Ada County, Idaho
T5N, R1E, SE 1/4, SE 1/4, Sect 1
GL Elevation: ~ 3590 ft. msl.

Depth (ft)	Geologic log from rotary cuttings
870	Tuffaceous SS, dark gray, Cs qtz grains
880	Tuffaceous SS, dark gray, Cs qtz grains
890	Siltstone and claystone, med gray-brown
900	Siltstone and claystone, med gray-brown
910	Siltstone as above with dark gray glassy frags
920	Siltstone as above with dark gray glassy frags
930	Clay with siltstone frags, med gray, soft.
940	Siltstone, med-light gray, less clay than above
950	Clay with siltstone frags, med gray, soft.
960	Clay with siltstone frags, med gray, soft.
970	
980	
990	
1000	



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OCT 0 1 2008

Hydro Logic, Inc.

Geophysical Division

WELL NAME: Spring Valley–2002 Test Well #3

GEOPHYSICAL WELL LOG:	PERMANENT DATUM: Mean Sea Level	OTHER SERVICES:
Natural Gamma–Ray Point Resistance Caliper	LOG MEASURED FROM: Ground 3602 Feet above MSL	

COMPANY: Scanlan Engineering / Suncor
PROJECT: Spring Valley Ranch Wells
ORDERED BY: Chuck Feast

COUNTY: Ada STATE: Idaho

COORDINATES:
T5N R1E Sec. 1
SE1/4, SE1/4
ELEVATION:
KB:
GL: 3602

WELL OWNER:
WELL: Spring Valley–2002 Test Well #3
LOCATION: T5N R1E SEC.1 SE1/4 SE1/4

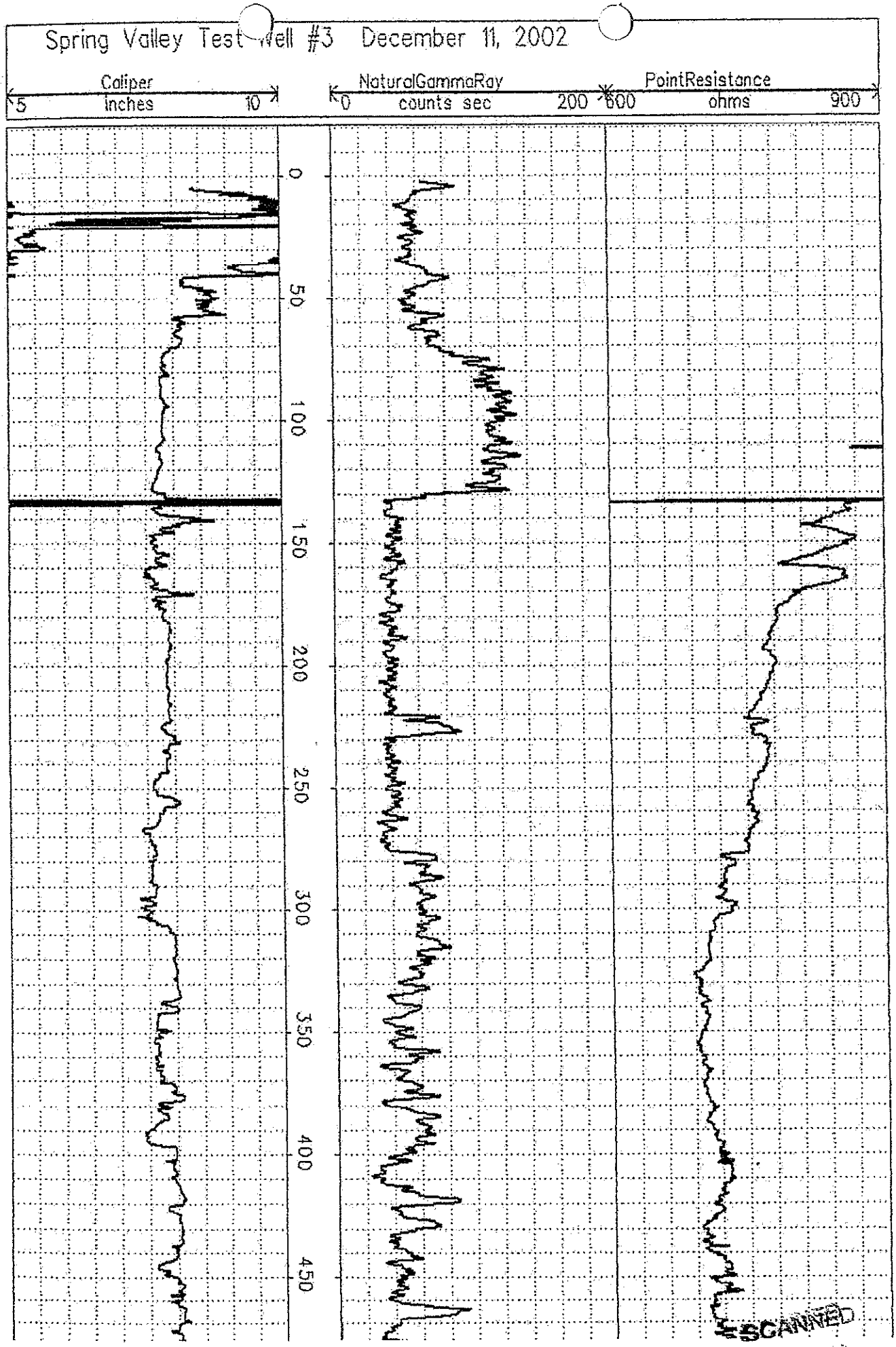
	Run No. 1		Run No. 1
Date	12/11/02	Fluid Level	134 feet b.g.l.
Bottom logged Int.	967 feet b.g.l.	Fluid Nature	drilling mud
Top Logged Int.	0 ft. bgl	Fluid Viscosity	
Footage Logged	967 feet	Fl. Resistivity	mud Cs=642uS
Bottom (Driller)	970 feet	Fl. Res. at BHT	
Casing (from Log)	3 feet	Fluid pH	NA
Casing (Driller)	5 feet	Last Circulated	NA
Casing Size	8–inch	Bottom Hole Temp	
Bit Size	8–inch		
		LOGGED BY:	Loren Pearson
		WITNESSED BY:	Chuck Feast

REMARKS:
Datum = ground level
Single point resistance log scale
ordered by Chuck Feast
Hole circulation 24 hours prior to log

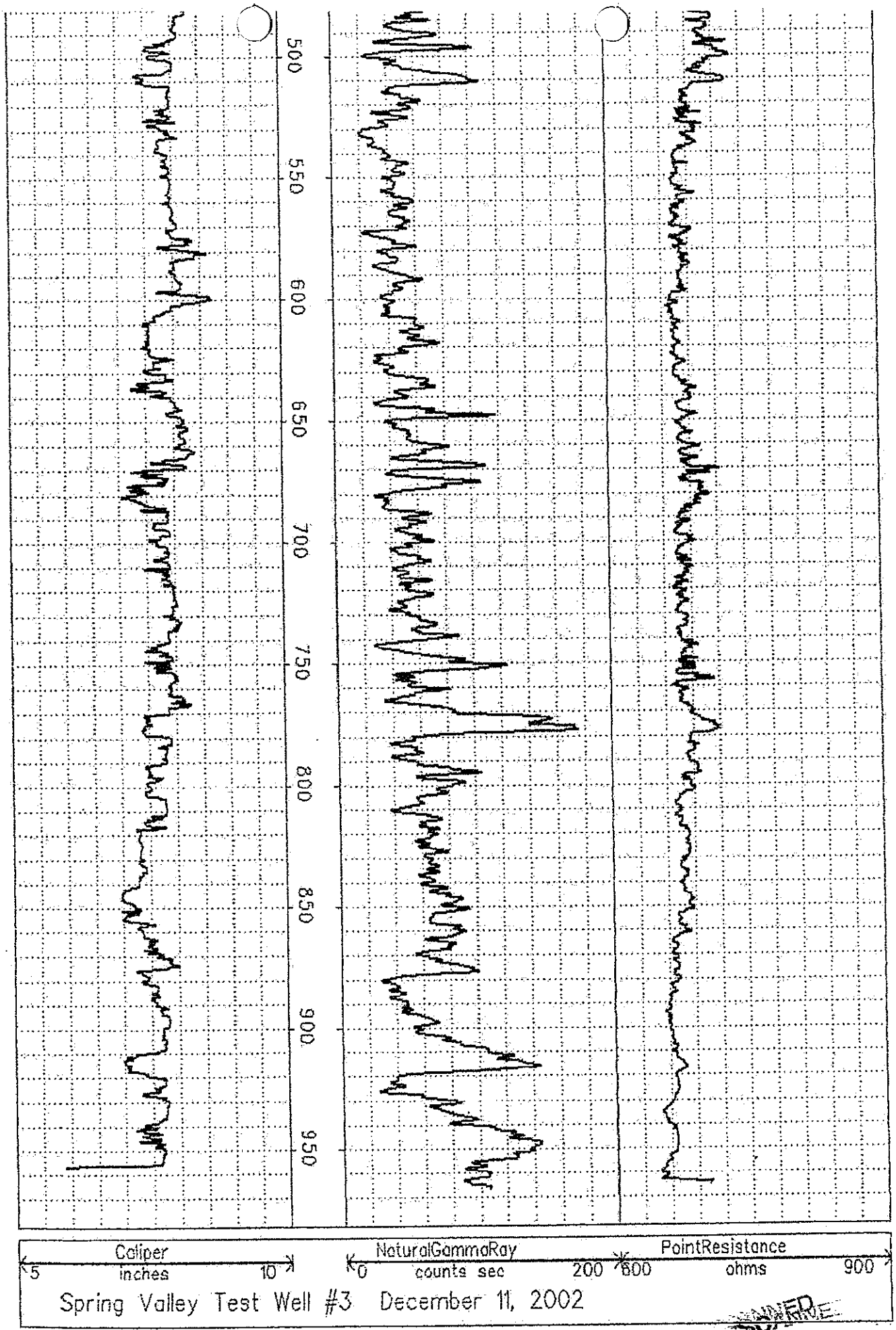
Drilled by Stevens and Sons, Boise, Id.
Nick Stevens Driller
Mud rotary drilled well

Drilled to 970 ft. 12/10/02

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OCT 01 2008



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OCT 07 2008



Spring Valley Test Well #3 December 11, 2002

SCANNED
OCT 01 2008

Form 238-7
11/97

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Inspected by _____
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

WELL TAG NO. D 0029004 W ELL #3
DRILLING PERMIT NO. 874852-789296
Other IDWR No. _____

2. OWNER:
Name Sun Cor Deyelopment Co
Address 80 Rio Salado Pkwy #410
City Tempe State AZ Zip 85281

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

N / W / E / S

Twp. 5 North XX or South ☐
Rge. 1 East XX or West ☐
Sec. 1 ____ 1/4 S/W 1/4 S/E 1/4 (10 acres / 40 acres / 160 acres)
Gov't Lot ____ County Ada
Lat: : : Long: : :
Address of Well Site 3/4 mile west of hiway 55
City _____
(One at least name of road - Distance to Road or Landmark)

Lt. _____ Blk. _____ Sub. Name Spring Valley Ranch area

4. USE:
☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other test

5. TYPE OF WORK check all that apply (Replacement etc.)
XX New Well ☐ Modify ☐ Abandonment ☐ Other _____

DRILL METHOD
☐ Air Rotary ☐ Cable XX Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
bentonite grout	0	150	12 sk pumped	

Was drive shoe used? ☐Y ☐ N Shoe Depth(s) _____
Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
8	+1	5	250	steel	XX	☐	XX	☐
6	+2	165	250	steel	☐	XX	XX	☐
6	175	195	250	steel	☐	XX	XX	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS
Perforations Method _____
Screens Screen Type Johnson v-wire

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
165	175	40		6	stnls	☐	XX
195	215	30		6	stnls	☐	XX
230	240	35		6	stnls	☐	XX

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
175' ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: _____

11. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Pumping Level	Time

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encounter _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
	0	9	topsoil		X
	9	220	sand (water at 185)		
	220	280	sand, some organic		X
	280	360	green clay, some sand		X
	360	400	siltstone, some clay		X
	400	540	gray-brown clay, some sand		X
	540	570	siltstone		X
	570	600	brown-gray shale		X
	600	640	siltstone		X
	640	690	shale		X
	690	700	siltstone		X
	700	810	shale, hard clay, brown-gray		X
	810	860	basalt, hard		X
	860	930	siltstone		X
	930	940	gray clay		X
	940	950	siltstone		X
	950	970	sticky gray clay		X

ANALYTICAL LABORATORIES, INC.
1804 N. 33rd Street
Boise, Idaho 83703
Phone # (208) 342-5515

LABORATORY ANALYSIS REPORT
SAMPLE NUMBER - 48593

Attn. TERRY SCANLAN

SCANLAN ENGINEERING
600 EAST RIVER PARK LANE
SUITE 105
BOISE, ID 83706

Time of Collection: 14:00
Date of Collection: 12/18/02

Date Received: 12/19/02
Date Reported: 01/10/03

Collected by: CHUCK FEAST

Submitted by: CHUCK FEAST

Source of Sample: SVR 3 PROJECT:SPRING VALLEY RANCH GROUNDWATER
FILTERED IN FIELD W/.45u

Test Requested	FRDS #	MCL	Analysis Result	Unit	MDL	Method	Date Completed	Analyst Initials
ANTIMONY FURNACE			<0.005	mg/L	0.005	EPA 200.9	01/06/03	DMB
ARSENIC FURNACE			0.038	mg/L	0.003	EPA 200.9	01/08/03	DMB
BARIUM			<0.05	mg/L	0.05	EPA 200.7	12/30/03	JH
BERYLLIUM FURNACE			<0.0005	mg/L	0.0005	EPA 200.9	01/10/03	DMB
CALCIUM			12.9	mg/L	0.10	EPA 200.7	12/26/02	JH
CHROMIUM FURNACE			<0.002	mg/L	0.002	EPA 200.9	12/28/02	DMB
IRON			0.06	mg/L	0.05	EPA 200.7	12/27/02	JH
MAGNESIUM			2.54	mg/L	0.10	EPA 200.7	12/26/02	JH
MANGANESE			<0.05	mg/L	0.05	EPA 200.7	12/27/02	JH
MERCURY			<0.0002	mg/L	0.0002	EPA 245.1	01/06/03	DMB
NICKEL			<0.02	mg/L	0.02	EPA 200.7	12/27/02	JH
POTASSIUM			4.4	mg/L	0.10	EPA 200.7	12/26/02	JH
SODIUM			9.72	mg/L	0.10	EPA 200.7	12/26/02	JH
THALLIUM FURNACE			<0.002	mg/L	0.002	EPA 200.9	12/29/02	DMB
AMMONIA DIRECT			<0.04	mg/L	0.04	EPA 350.1	12/24/02	KDH
NITRATE N			0.63	mg/L	0.20	EPA 300.0	12/30/02	GMM
NITRITE N			<0.01	mg/L	0.01	SM 4500NO2-B	12/19/02	CSC
SULFIDE			<0.05	mg/L	0.05	SM 4500 D	12/20/02	CS
BICARBONATE			50.4	mg/L		SM 2320	12/30/02	GMM
CHLORIDE			2	mg/L	1	EPA 300.0	12/30/02	GMM
FLUORIDE DIRECT			0.27	mg/L	0.10	EPA 300.0	12/30/02	GMM
HARDNESS			41.8	mg/L	5.0	SM 2340	12/30/02	GMM
SULFATE			11	mg/L	1.0	EPA 300.0	12/30/02	GMM
TOTAL DISSOLVED SOLIDS			116	mg/L	25	EPA 160.1	12/24/02	JR



THANK YOU FOR CHOOSING ANALYTICAL LABORATORIES, INC. FOR YOUR TESTING NEEDS.

PLEASE CONTACT MICHAEL MOORE IF YOU HAVE ANY QUESTIONS REGARDING
THIS REPORT OR ANY FUTURE ANALYTICAL NEEDS.

CHAIN OF CUSTODY RECORD

CLIENT INFORMATION:	PROJECT INFORMATION:
Attn: TERRY SCANLAN	Project Manager: Terry Scanlan
Company: SCANLAN ENGINEERING	Project Name: Spring Valley Ranch
Address: 600 EAST RIVER PARK LN	Project Number:
BOISE ID 83706	Purchase Order Number:
Phone: 383 4140 / 599 4501 Fax: 383 4156	Required Due Date:
Sampled by: Feast	Transported by: (Please print) HAND DEL

ANALYTICAL LABS, INC.
1804 N. 33rd Street • Boise, ID 83703
(208) 342-5515 • Fax: (208) 342-5591 • 1-800-574-5773
Website: http://home.rmci.net/ali • E-mail: ali@rmci.net

ANALYSIS REQUESTED

Lab ID	Date Sampled	Time Sampled	Sample Description	Sample Matrix	Primary Inorganics	Major Ions	Hardness, TDS, pH	Mn, NH3, H2S	NO3 NO2					Remarks:
48593	12/18/02	14:30	SVR 3	GROUNDWTR	X	X	X	X	X					See previous
48594	12/18/02	1645	SVR Spring #1	"	X	X	X	X	X					Spring Valley Ranch
														Samples for
														analytical list.

Invoice to: *(If different than above address)*

Special Instructions: SVR3 Filtered in field w/ .45u
Spring 1 UN Filtered

ALLOCATIONS OF RISK: Analytical Laboratories, Inc. will perform preparation and testing services, obtain findings and prepare reports in accordance with Good Laboratory Practices (GLP). If, for any reason, Analytical Laboratories, Inc. errors in the conduct of a test or procedure their liability shall be limited to the cost of the test or procedure completed in error. Under no circumstance will Analytical Laboratories, Inc. be liable for any other cost associated with obtaining a sample or use of data.

SAMPLE RECEIPT	Note: Samples are discarded 21 days after results are reported. Hazardous samples will be returned to client or disposed of at client expense.			
Total # of Containers:	Relinquished By: *(Signature)* Chuck Feast	Date / Time	Received By: *(Signature)*	Date / Time
Chains of Custody Seals: Y / N / NA	Company: Feast Geoservices Llc	12/19/02 1120	Company:	/
Intact: Y / N / NA	Relinquished By: *(Signature)*	Date / Time	Received at Laboratory By: *(Signature)*	Date / Time
Temperature Received:	Company:	/	Brenda Wright	11:20 12-19-02
Condition:				

Form 235-1
6/7/01

well #3

Drilling Permit No. 874852-789296
Drilling Permit Tag No. D002904
Water Right Permit No. _____
Injection Permit NO. _____

RECEIVED
NOV 27 2002
WATER RESOURCES
WESTERN REGION

State of Idaho Department of Water Resources

APPLICATION FOR DRILLING PERMIT

(FOR THE CONSTRUCTION OF A WELL)

1. Owner (please print): SunCor Development Company, Attention: Jerry Ellsworth
2. Mailing Address: 80 Rio Salado Parkway, Suite 410
   City: Tempe State: AZ Zip Code: 85281 Telephone 480-317-6800
3. Proposed Well Location: Twp: 5N Rge: 1E Sec: 1 ____ 1/4 SW 1/4 SE 1/4
   Gov't Lot No. ____ County Ada Lat. ____ : ____ : ____ Long. ____ : ____ : ____
   Street Address of Well Site 3/4 mi West of Hwy 55 City: ____
   Give at least the name of Road and Distance to Road or Landmark
   Lot, block and subdivision Spring Valley Ranch area
4. Proposed Use of Well:

[ ] Domestic: The use of water for homes, organization camps, public campgrounds, livestock (1,000 head or less) and for any other purpose in connection therewith, including irrigation of up to ½ acre of land, if the total use is not in excess of 13,000 gpd; or any other uses, if the total use does not exceed a diversion rate of 0.04 cfs and a diversion volume of 2500 gpd.

Domestic does not include water for multiple ownership subdivisions, mobile home parks, commercial or business establishments, unless the use does not exceed a diversion rate of 0.04 cfs and a diversion volume of 2500 gpd.

NON-DOMESTIC: [ ] Irrigation [ ] Municipal [ ] Industrial
[ ] Stock (Over 1,000 Head) [X] Test [ ] Other ____ (Describe)

[ ] INJECTION

[ ] MONITORING: A well bore schematic and map is required for each blanket permit.
Number of proposed wells: ____

5. Well Construction Information:
   A. [X] New well [ ] Modify [ ] Replace
   B. Proposed Casing Diameter 6-inch Proposed Maximum Depth 1000
   C. Anticipated bottom hole temperature:
   [X] 85°F or less (Cold water well) [ ] 85°F to 212° (Low temp. geo. well) [ ] 212° F or more (Geothermal well)
6. Construction Start Date: November 29, 2002
7. Anticipated Well Driller: Stevens and Sons Well Drilling Driller's Lic. No. 153
   NOTE: The actual well driller must be identified prior to drilling.
8. Applicant's Signature: Terry M Scanlan Date: 11/27/02
   Address (if different than owner): Scanlan Engineering, 600 E. River Park Lane # 105
   City: Boise State: ID Zip Code: 83706 Telephone: 208-383-4140
   Title: Consulting Engineer for SunCor Development Company
   (Owner, Firm Representative, Other)

ACTION OF THE DEPARTMENT OF WATER RESOURCE

This Permit is Approved. Date 11-27-02

If approved, this permit authorizes the construction or modification of a well subject to the following conditions. **READ CAREFULLY!**

GENERAL CONDITIONS:

1. This drilling permit is valid for two (2) months from the above approval date for the start of construction and is valid for one (1) year from the approval date for completion of the well unless an extension has been granted.
2. This permit does not constitute an approval of the District Health Department or the Idaho Department of Health and Welfare which may be required before construction of this well. All wells must be drilled a minimum distance of 100 feet from a drain field. Domestic and Public Water Supply wells must be drilled a minimum of 50 feet and 100 feet respectively from a septic tank.
3. The well shall be constructed by a driller currently licensed in the State of Idaho who must maintain a copy of the drilling permit at the drilling site.
4. Approval of this drilling permit does not authorize trespass on the land of another party.
5. This permit does not constitute other local, county, state or federal approvals which may be required for construction of a well.
6. This drilling permit does not represent a right to divert and use the water of the State of Idaho.
7. If a bottom hole temperature of 85° or greater is encountered, well construction shall cease and the well driller and the well owner shall contact the Department immediately.
8. Idaho Code, S 55-2201 – 55-2210 requires the applicant and/or his contractors to contact "Digline" (Digline is a one-call center for utility notification) not less than 2 working day prior to the start of any excavation for this project. The "Digline" number for your area is 1-800-342-1585.

SPECIFIC CONDITIONS:

9. After completion & Logging of the test hole and prior to installation of any casing, screens or seals, a well design Proposal shall be submitted for review & approval by IDWR
10. This well shall not be completed as a permanent, completed well without specific approval from IDWR.
11. If this well is not completed the hole shall be properly Abandoned.

For MANAGER
WESTERN REGIONAL OFFICE

Signature of Authorized Department Representative — Title

Receipt No. W029891 Receipted by KG Fee 200.00 Date 11/27/02

EXTENSION OF DRILLING PERMIT

Extension approved by _____ Approval Date _____

This extension expires: _____

Appendix D
Well No. 4 Data

Exploration Hole SVR 4

Spring Valley Ranch

Drilled by: Eddleston and Son, Inc.
Logged by: C. Feast/Feast Geosciences, LLC
Geophysical logs by: None
Fluid level when logged: NA
Casing when logged: NA

Drilled Dates: Jan. 31 - Mar. 5, 2003
Drilling Method: Air rotary 0-1035 ft.
Mud rotary 1035 - 1220 ft
Borehole size: 14", 0-60 ft.
8", 60-840 ft.
6", 840-1220 ft.

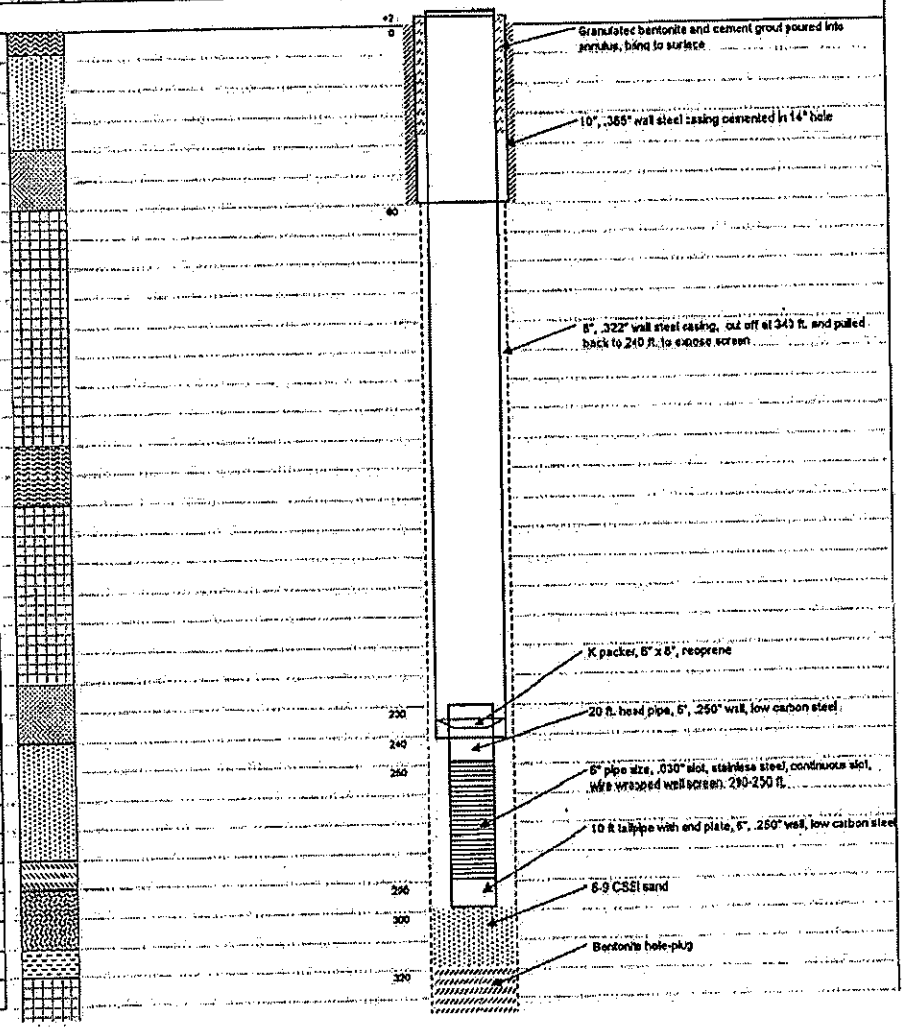
Depth Drilled: 1220 ft
Depth Logged: NA
Static WL: +2.0 ft. bgl

Location: Ada County, Idaho
15N, R2E, NW 1/4, SE 1/4, Sect 7
GL Elevation: ~ 3290 ft. msl.

Depth (ft)	Geologic log from rotary cuttings
0	Topsoil, brown-black, organic, clayey
10	Sand, Cs-vCs, clayey, gray
20	Sand as above
30	Sand as above
40	Siltstone and vCs Sand, occ. decomp. granite frag., dark gray.
50	Siltstone and sand as above
60	Tuff, hard, brittle, dark gray, aphanitic
70	No sample
80	Tuff as above
90	Tuff as above
100	Tuff, vitric, brittle, brown-gray
110	Tuff as above
120	Tuff as above
130	Tuff as above
140	Volcano-clastic siltstone and tuff, light-med brown
150	As above with occ qtz grains
160	Tuff, fine grained-aphanitic, hard, brown
170	Tuff as above with blue shale, gray-brown
180	Siltstone, sandy, qtz grains, gray brown
190	Tuff and sandstone, platey, hard, med brown
200	Tuff as above
210	Tuff as above
220	Siltstone, clayey, yellow brown
230	Siltstone as above
240	Sand, fine to coarse, reddish brown fine sand coarse white qtz sand
250	Sand and gravel, coarse sand, granitic gravel
260	Sand and gravel as above
270	Sand as above, light gray
280	Sandstone, soft, clayey; med gray
290	Granite cobbles and sand, granite is decomposed, clayey
300	Granite cobbles and sand, granite is decomposed, clayey
310	Clay with gravel, multi-lithic types, yellow brown
320	Tuff, vitric-welded, hard, med grey

Symb. Log

Well Construction



Exploration Hole SVR 4

Spring Valley Ranch

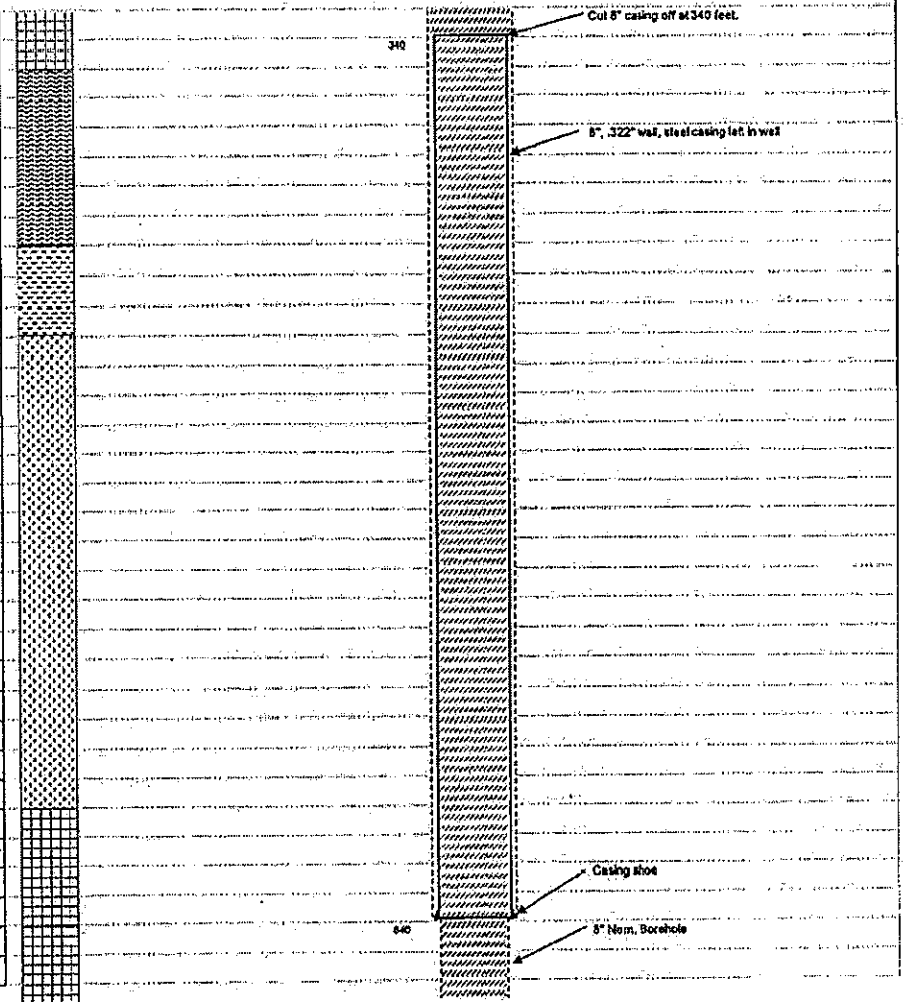
Drilled by: Hiddleston and Son, Inc.
Logged by: C. Feast/Feast Geosciences, LLC
Geophysical logs by: None
Fluid level when logged: NA
Casing when logged: NA

Drilled Dates: Jan. 31 - Mar. 5, 2003
Drilling Method: Air rotary 0-1035 ft.
Mud rotary 1035 - 1220 ft
Borehole size: 14", 0-60 ft.
8", 60-840 ft.
6", 840-1220 ft.

Depth Drilled: 1220 ft
Depth Logged: NA
Static WL: +2.0 ft. bgl

Location: Ada County, Idaho
T5N, R2E, NW 1/4, SE 1/4, Sec 7
GL Elevation: ~ 3250 ft. msl.

Depth (ft	Geologic log from rotary cuttings
330	Tuff as above,
340	Tuff as above with light brown tuff
350	Tuffaceous sediments, tuff as above, qtz grains, med gray
360	Tuffaceous sediments as above
370	Tuffaceous sediments as above
380	Tuffaceous sediments as above
390	Tuffaceous sediments as above
400	Tuffaceous sediments as above
410	Clay, abundant qtz and feldspar xtals and ang grains, gray, top of weathered granite?
420	Clay and ang qtz and feld xtals as above
430	Clay and ang qtz and feld xtals as above
440	Weathered granite, grus, qtz, feldspar and biotite xtals, clayey
450	Grus as above
460	Grus as above
470	Grus as above, clayey
480	Grus as above, clayey
490	Grus as above, less clay
500	Grus as above, clayey
510	Grus as above
520	Grus as above, clayey
530	Grus as above
540	Grus as above
550	Grus as above, clayey
560	Grus as above
570	Grus as above
580	Grus as above
590	Grus as above
600	Granite, clean qtz, white feldspar and biotite, .
610	Granite as above, variable colors from white, gray and yellowish white, not logged in detail
620	Granite as above
630	Granite as above
640	Granite as above
650	Granite as above



Exploration Hole SVR 4

Spring Valley Ranch

Drilled by: Hiddleston and Son, Inc.
Logged by: C. Feast/Feast Geosciences, LLC
Geophysical logs by: None
Fluid level when logged: NA
Casing when logged: NA

Drilled Dates: Jan. 31 - Mar. 5, 2003
Drilling Method: Air rotary 0-1035 ft.
Mud rotary 1035 - 1220 ft
Borehole size: 14", 0-60 ft.
8", 60-840 ft.
6", 840-1220 ft.

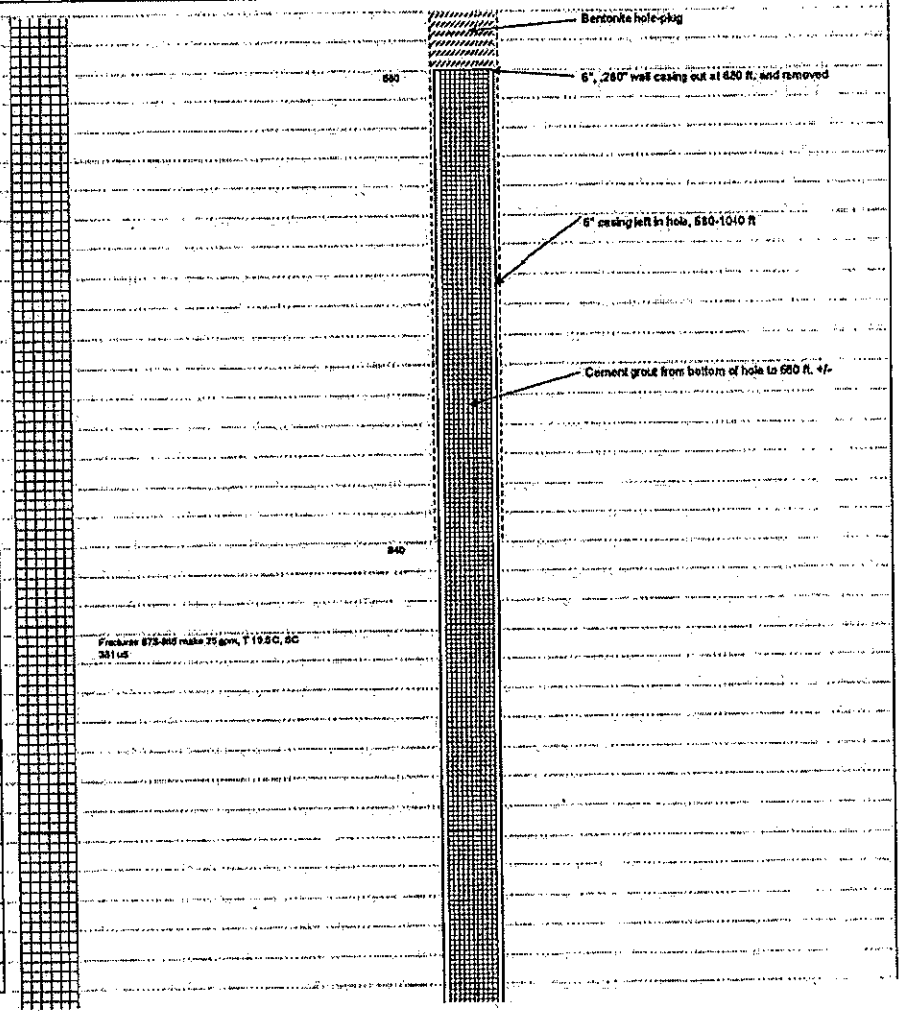
Depth Drilled: 1220 ft
Depth Logged: NA
Static WL: +2.0 ft. bgl

Location: Ada County, Idaho
TSN, R2E, NW 1/4, SE 1/4, Sect 7
GL Elevation: ~ 3250 ft. msl.

Depth (ft)	Geologic log from rotary cuttings
660	Granite as above
670	Granite as above
680	Granite as above
690	Granite as above
700	Granite as above
710	Granite as above
720	Granite as above
730	Granite as above
740	Granite as above
750	Granite as above
760	Granite as above
770	Granite as above
780	Granite as above
790	Granite as above
800	Granite as above
810	Granite as above
820	Granite as above
830	Granite as above
840	Granite as above
850	Granite as above
860	Granite as above
870	Granite as above
880	Granite as above
890	Granite as above
900	Granite as above
910	Granite as above
920	Granite as above
930	Granite as above
940	Granite as above
950	Granite as above
960	Granite as above
970	Granite as above
980	Granite as above

Symb: Log

Well Construction



Exploration Hole SVR 4

Spring Valley Ranch

Drilled by: Hiddleston and Son, Inc.
Logged by: C. Feast/Feast Geosciences LLC
Geophysical logs by: None
Fluid level when logged: NA
Casing when logged: NA

Drilled Dates: Jan. 31 - Mar. 5, 2003
Drilling Method: Air rotary 0-1035 ft.
Mud rotary 1035 - 1220 ft
Borehole size: 14", 0-60 ft.
8", 60-840 ft.
6", 840-1220 ft.

Depth Drilled: 1220 ft
Depth Logged: NA
Static WL: +2.0 ft. bgl

Location: Ada County, Idaho
T5N, R2E, NW 1/4, SE 1/4, Sect 7
GL Elevation: ~ 3290 ft. msl.

Depth (ft)	Geologic log from rotary cuttings
990	Granite as above
1000	Granite as above
1010	Granite as above
1020	Granite as above
1030	Granite as above
1040	Granite as above
1050	Granite as above
1060	Granite as above
1070	Granite as above
1080	Granite as above
1090	Granite as above
1100	Granite as above
1110	Granite as above
1120	Granite as above
1130	Granite as above
1140	Granite as above
1150	Granite as above
1160	Granite as above
1170	Granite as above
1180	Granite as above
1190	Granite as above
1200	Granite as above
1210	Granite as above
1220	Granite as above

Symb. Log

Fractures 990-995 make ~10 gpm, T 20.5 C, SC 275 uS

Fractures 1030-1035 make 3-5 gpm, T 23.5 C, SC 277 uS

1035

1156

Air Mist from 315 ft. Hole makes 10-15 gpm, leak sample, T 21.5 C, SC 350 uS

1220

Well Construction

5" Nom. Borehole

Formation hole fill

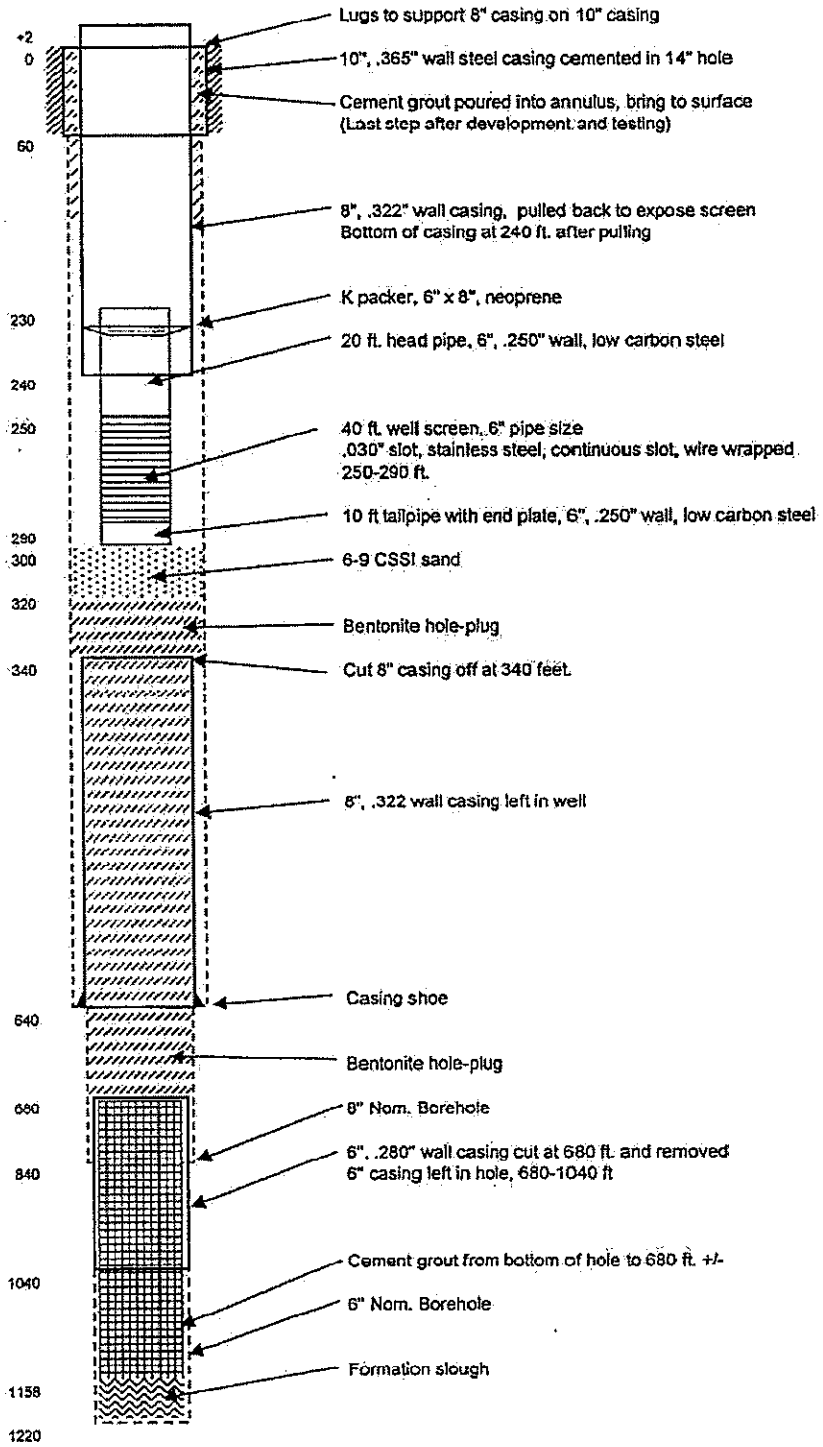
Total depth drilled

Well SVR-4

As Built Well Construction

Spring Valley Ranch

Constructed Jan.31 - Mar.5, 2003



04/01/2003

Form 238-7
3/93-C96

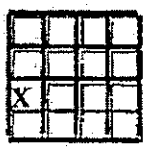
IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Inspected by _____
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. DRILLING PERMIT NO. - - - - ____ ____
Other IDWR No. D0029075

2. OWNER:
Name Suncore Development Co.
Address 80 E. Rio Saledo Pkwy. Suite #10
City Tempe State AZ Zip 85281

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location



Twp. 5 North X or South ☐
Rge. 2 East X or West ☐
Sec. 7 1/4 1/4 NW 1/4 SE 1/4
(10 acres) (40 acres) (80 acres)
Gov't lot ____ County Ada
Lat: : : Long: : :
Address of Well Site hwy 55 – Spring Valley Ranch
City Eagle
(Give at least name of road + Distance to Road or Landmark)
Lt. ____ Blk. ____ Sub. Name ____

4. USE:
☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection X Other Test

5. TYPE OF WORK check all that apply (Replacement etc.)
X New Well ☐ Modify ☐ Abandonment ☐ Other ____

6. DRILL METHOD
X Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other ____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
Cement	0	60	1.5 yds	Pumped

Was drive shoe used? ☐ Y X N Shoe Depth(s) ____
Was drive shoe seal tested? ☐ Y X N How? ____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
10.75	0	60	375	Steel	X	☐	X	☐
8.625	+1	255	332	Steel	X	☐	X	☐
6.625	235	255	250	Steel	☐	X	X	☐
6.625	295	305	250	Steel		X	X	

Length of Headpipe 21' Length of Tailpipe 10'

9. PERFORATIONS/SCREENS
☐ Perforations Method ____
X Screens Screen Type Johnson

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
255	295	.030		6"	SS	☐	X
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
75 ft. below ground Artesian Pressure ____ lb
Depth flow encountered ____ ft. Describe access port or control devices: ____

11. WELL TESTS:
☐ Pump ☐ Bailer X Air ☐ Flowing Artesian

Yield gal/min.	Drawdown	Pumping Level	Time
75- 100		305	3.5 hrs.

Water Temp. ____ Bottom hole temp. 64
Water Quality test or comments: ____
Depth first Water Encountered 75'

12. LITHOLOGIC LOG: (Describe repair or abandonment)

Bore Dia.	From	To	Remarks:Lithology, Water Quality & Temp.	Water Y	Water N
14	0	6	Top Soil		X
14	6	18	Blue Clay		X
14	18	62	Blue Shale		X
8	62	75	Sand Seam	X	
8	75	145	Fine Sand	X	
8	155	240	Gray Clay & Sand Stone		X
8	240	295	Course Sand Quartz	X	
8	295	920	Soft Gray & White Granite		X
8	920	1090	White & Brown Granite		X
6	1090	1140	Clear Granite	X	
6	1140	1220	Gray & White Granite	X	

Completed Depth: 305' (Measurable)
Date: Started 02-04-03 Completed 03-05-03

13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Hiddleston & Son, Inc. Firm No. 35
Firm Official ____ Date ____
Supervisor or Operator [signature] Date 4/3/03
(Sign once if Firm Official & Operator)

AQUIFER TEST DATA

Well No.: Spring Valley Ranch, Test Well SVR 4 — **Test 2, Q=80 gpm, t = 24 hours**

Test conducted by: Scanlan Engineering; Hiddleston Drilling and Pump Co.

Flow measured by: AOMAC dopler in-line flow meter

Water levels measured by: Well sounder — Water level measure point: Top of 1" poly tube

MP Elevation: 2.6 ft agl — Static WL (ft bmp): 1.12

Pump on: 03/14/03 8:57 — Pump off: 03/15/03 9:00

				Water Level Data				
Date	Time	t (mins)	t/t'	Ref (ft.)	Measure (in.)	WL (ft bmp)	Drawdown (feet)	Comments
03/15/03	3:00	1083		198.0	1.5	198.1	197.0	Q = 80 gpm
03/15/03	3:30	1113		198.0	10.0	198.8	197.7	Q = 80 gpm
03/15/03	4:00	1143		198.0	11.0	198.9	197.8	Q = 80 gpm
03/15/03	4:30	1173		199.0	3.0	199.3	198.1	Q = 80 gpm
03/15/03	5:00	1203		199.0	3.5	199.3	198.2	
03/15/03	5:30	1233		199.0	7.0	199.6	198.5	
03/15/03	6:00	1263		199.0	10.0	199.8	198.7	
03/15/03	6:30	1293		200.0	4.0	200.3	199.2	
03/15/03	7:00	1323		200.0	7.0	200.6	199.5	
03/15/03	7:30	1353		200.0	11.5	201.0	199.8	Q = 80 gpm
03/15/03	8:00	1383		201.0	0.5	201.0	199.9	Q = 80 gpm
03/15/03	8:30	1413		201.0	4.0	201.3	200.2	@08:40; Q = 5g/3.6s T = 19.0 C, SC 546, EC = 484 umhos/cm
03/15/03	9:00	1443				201.8	200.7	Q = 80 gpm
Begin Recovery, pump off at:			03/15/03	9:00				
03/15/03	9:01	1444	1444.0	120.0	44.0	167.40	166.3	
03/15/03	9:02	1445	722.5	125.0	3.0	170.39	169.3	
03/15/03	9:03	1446	482.0	120.0	52.5	170.30	169.2	
03/15/03	9:04	1447	361.8	120.0	34.5	169.61	168.5	
03/15/03	9:05	1448	289.6	120.0	19.0	168.69	167.6	
03/15/03	9:06	1449	241.5	120.0	0.0	167.52	166.4	
03/15/03	9:07	1450	207.1	115.0	47.5	166.58	165.5	
03/15/03	9:08	1451	181.4	115.0	29.0	165.72	164.6	
03/15/03	9:09	1452	161.3	115.0	13.0	165.01	163.9	
03/15/03	9:10	1453	145.3	110.0	53.0	164.26	163.1	
03/15/03	9:12	1455	121.3	110.0	43.0	162.80	161.7	
03/15/03	9:14	1457	104.1	110.0	25.0	161.38	160.3	
03/15/03	9:16	1459	91.2	110.0	8.0	160.18	159.1	
03/15/03	9:18	1461	81.2	105.0	46.0	159.10	158.0	
03/15/03	9:20	1463	73.2	105.0	21.0	158.01	156.9	
03/15/03	9:22	1465	66.6	105.0	0.0	156.96	155.8	
03/15/03	9:25	1468	58.7	100.0	47.0	155.58	154.5	
03/15/03	9:28	1471	52.5	100.0	29.0	154.80	153.7	
03/15/03	9:30	1473	49.1	100.0	16.5	153.57	152.5	
03/15/03	9:35	1478	42.2	100.0	5.0	151.77	150.7	
03/15/03	9:40	1483	37.1	95.0	41.0	150.26	149.1	
03/15/03	9:45	1488	33.1	90.0	47.0	148.75	147.6	
03/15/03	9:50	1493	29.9	90.0	14.5	147.33	146.2	
03/15/03	9:55	1498	27.2	100.0	16.5	146.11	145.0	
03/15/03	10:00	1503	25.1	100.0	5.0	144.96	143.8	
03/15/03	10:05	1508	23.2	95.0	41.0	143.93	142.8	
03/15/03	10:10	1513	21.6	90.0	47.0	142.95	141.8	
03/15/03	10:15	1518	20.2	90.0	14.5	142.10	141.0	
03/15/03	10:20	1523	19.0	100.0	16.5	141.27	140.2	
03/15/03	10:25	1528	18.0	100.0	5.0	140.49	139.4	
03/15/03	10:30	1533	17.0	95.0	41.0	139.78	138.7	
03/15/03	10:40	1543	15.4	90.0	47.0	138.36	137.2	
03/15/03	10:50	1553	14.1	90.0	14.5	137.21	136.1	
03/15/03	11:00	1563	13.0	100.0	16.5	136.06	134.9	
03/15/03	11:10	1573	12.1	100.0	5.0	134.45	133.3	
03/15/03	11:20	1583	11.3	95.0	41.0	134.22	133.1	
03/15/03	11:30	1593	10.6	90.0	47.0	133.37	132.3	
03/15/03	11:40	1603	10.0	90.0	14.5	132.69	131.6	
03/15/03	12:00	1623	9.0	90.0	14.5	131.30	130.2	
03/20/03	17:07	9130	1.2	90.0	47.0	64.35	63.2	
03/23/03	14:30	13293	1.1	90.0	14.5	39.41	38.3	

Notes and Comments:
Pump at ~210 ft.
SWL ~ +2 ft gl.

AQUIFER TEST DATA

Well No.: Spring Valley Ranch, Test Well SVR 4 — **Test 1, Q=100 gpm, t = 3 hours**

Test conducted by: Feast Geosciences, LLC; Hiddleston Drilling and Pump Co.

Flow measured by: AOMAC dopler in-line flow meter, and inline totalizing flow meter

Water levels measured by: Well sounder — Water level measure point: Top of 1" poly tube

MP Elevation: 31" agl — Static WL (ft bmp): 43.4

Pump on: 03/06/03 11:10 — Pump off: 03/06/03 14:10

				Water Level Data				
Date	Time	t (mins)	t/t'	Ref (ft.)	Measure (in.)	WL (ft bmp)	Drawdown (feet)	Comments
03/06/03	10:55	-		45.0	-15.0	43.8		Static water level, still recovering from development
03/06/03	11:10	0		40.0	41.0	43.4	0.0	Static water level, start test, Q = 99 gpm
03/06/03	11:11	1		70.0	42.0	73.5	30.1	
03/06/03	11:12	2		75.0	-6.0	74.5	31.1	
03/06/03	11:13	3		75.0	8.0	75.5	32.1	Q = 88 gpm
03/06/03	11:15	5		75.0	30.0	77.5	34.1	Adj. Q = 101 gpm
03/06/03	11:16	6		80.0	13.0	81.1	37.7	
03/06/03	11:17	7		80.0	44.0	83.7	40.3	
03/06/03	11:19	9		85.0	12.0	86.0	42.6	Q = 99 gpm
03/06/03	11:21	11		85.0	36.5	88.0	44.6	
03/06/03	11:24	14		90.0	3.0	90.3	46.9	Q = 97 gpm
03/06/03	11:26	16		90.0	21.0	91.8	48.4	Q = 97 gpm
03/06/03	11:28	18		90.0	36.0	93.0	49.6	Q = 96 gpm
03/06/03	11:32	22		95.0	4.5	95.4	52.0	Q = 95 gpm
03/06/03	11:35	25		95.0	27.0	97.3	53.9	Q = 96 gpm
03/06/03	11:40	30		100.0	-5.5	99.5	56.1	Q = 95 gpm; T = 66F, SC 615 umhos/cm, pH = 7.6
03/06/03	11:44	34		100.0	21.0	101.8	58.4	
03/06/03	11:50	40		105.0	-6.5	104.5	61.1	Q = 94 gpm
03/06/03	11:55	45		105.0	37.0	108.1	64.7	Adj. Q = 100 gpm
03/06/03	12:00	50		110.0	9.5	110.8	67.4	Q = 97 gpm
03/06/03	12:05	55		110.0	34.5	112.9	69.5	Q = 97 gpm
03/06/03	12:13	63		115.0	11.0	115.9	72.5	Q = 95 gpm
03/06/03	12:21	71		115.0	52.0	119.3	75.9	Q= 94, Adj. Q = 100 gpm
03/06/03	12:31	81		125.0	0.0	125.0	81.6	
03/06/03	12:41	91		125.0	39.0	128.3	84.9	T = 66F, SC 600 umhos/cm, pH = 7.5
03/06/03	12:51	101		130.0	19.0	131.6	88.2	Q = 95 gpm
03/06/03	13:06	116		135.0	17.5	136.5	93.1	Q= 94, Adj. Q = 100 gpm
03/06/03	13:16	126		140.0	31.0	142.6	99.2	Q = 99 gpm; T = 66F, SC 590 umhos/cm, pH = 7.4
03/06/03	13:26	136		145.0	12.0	146.0	102.6	Took WQ sample
03/06/03	13:36	146		145.0	46.0	148.8	105.4	Q = 96 gpm
03/06/03	13:46	156		150.0	22.0	151.8	108.4	Q = 95 gpm
03/06/03	14:00	170		155.0	4.0	155.3	111.9	Q = 94 gpm
03/06/03	14:10	180		155.0	34.5	157.9	114.5	Q = 93 gpm
Begin Recovery, pump off at:			03/06/03	14:10				
03/06/03	14:11	1	181.0	120.0	44.0	123.7	80.3	
03/06/03	14:12	2	91.0	125.0	3.0	125.3	81.9	
03/06/03	14:13	3	61.0	120.0	52.5	124.4	81.0	
03/06/03	14:14	4	46.0	120.0	34.5	122.9	79.5	
03/06/03	14:15	5	37.0	120.0	19.0	121.6	78.2	
03/06/03	14:17	7	26.7	120.0	0.0	120.0	76.6	
03/06/03	14:19	9	21.0	115.0	47.5	119.0	75.6	
03/06/03	14:21	11	17.4	115.0	29.0	117.4	74.0	
03/06/03	14:24	14	13.9	115.0	13.0	116.1	72.7	
03/06/03	14:27	17	11.6	110.0	53.0	114.4	71.0	
03/06/03	14:30	20	10.0	110.0	43.0	113.6	70.2	
03/06/03	14:35	25	8.2	110.0	25.0	112.1	68.7	
03/06/03	14:40	30	7.0	110.0	8.0	110.7	67.3	
03/06/03	14:50	40	5.5	105.0	46.0	108.8	65.4	
03/06/03	15:00	50	4.6	105.0	21.0	106.8	63.4	
03/06/03	15:10	60	4.0	105.0	0.0	105.0	61.6	
03/06/03	15:20	70	3.6	100.0	47.0	103.9	60.5	
03/06/03	15:30	80	3.3	100.0	29.0	102.4	59.0	
03/06/03	15:40	90	3.0	100.0	16.5	101.4	58.0	
03/06/03	15:50	100	2.8	100.0	5.0	100.4	57.0	
03/06/03	16:10	120	2.5	95.0	41.0	98.4	55.0	
03/06/03	17:10	180	2.0	90.0	47.0	93.9	50.5	
03/06/03	17:50	220	1.8	90.0	14.5	91.2	47.8	
03/08/03	12:00	1900	1.1	35	15.0	36.3	-7.2	

Notes and Comments:

Pump at ~210 ft.

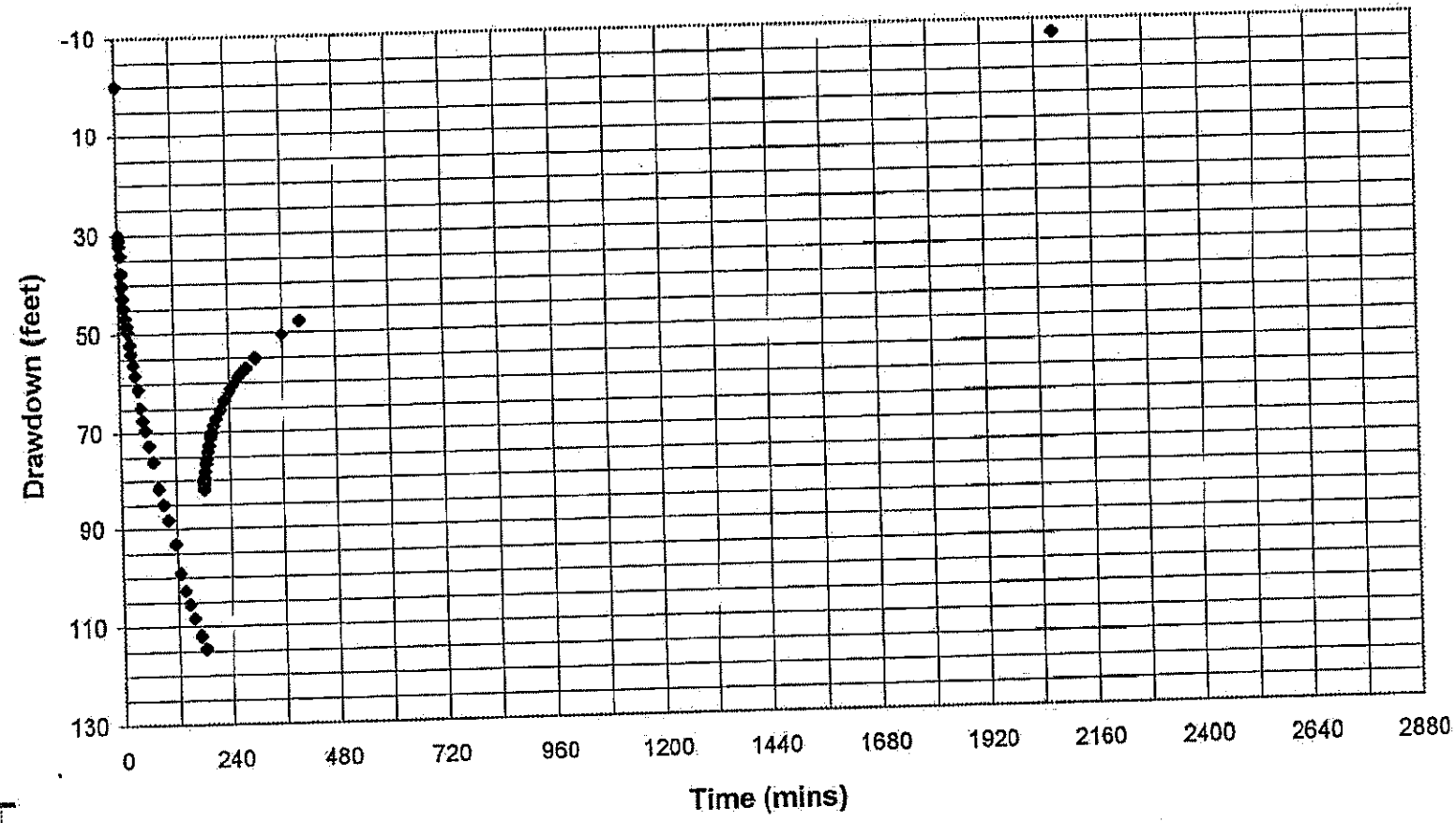
SWL still recovering from development, approx. true static = +2 ft gl.

Drawdown and Recovery

Spring Valley Ranch

Test Well SVR 4, Q = 100 gpm

Test date: 3/6/03



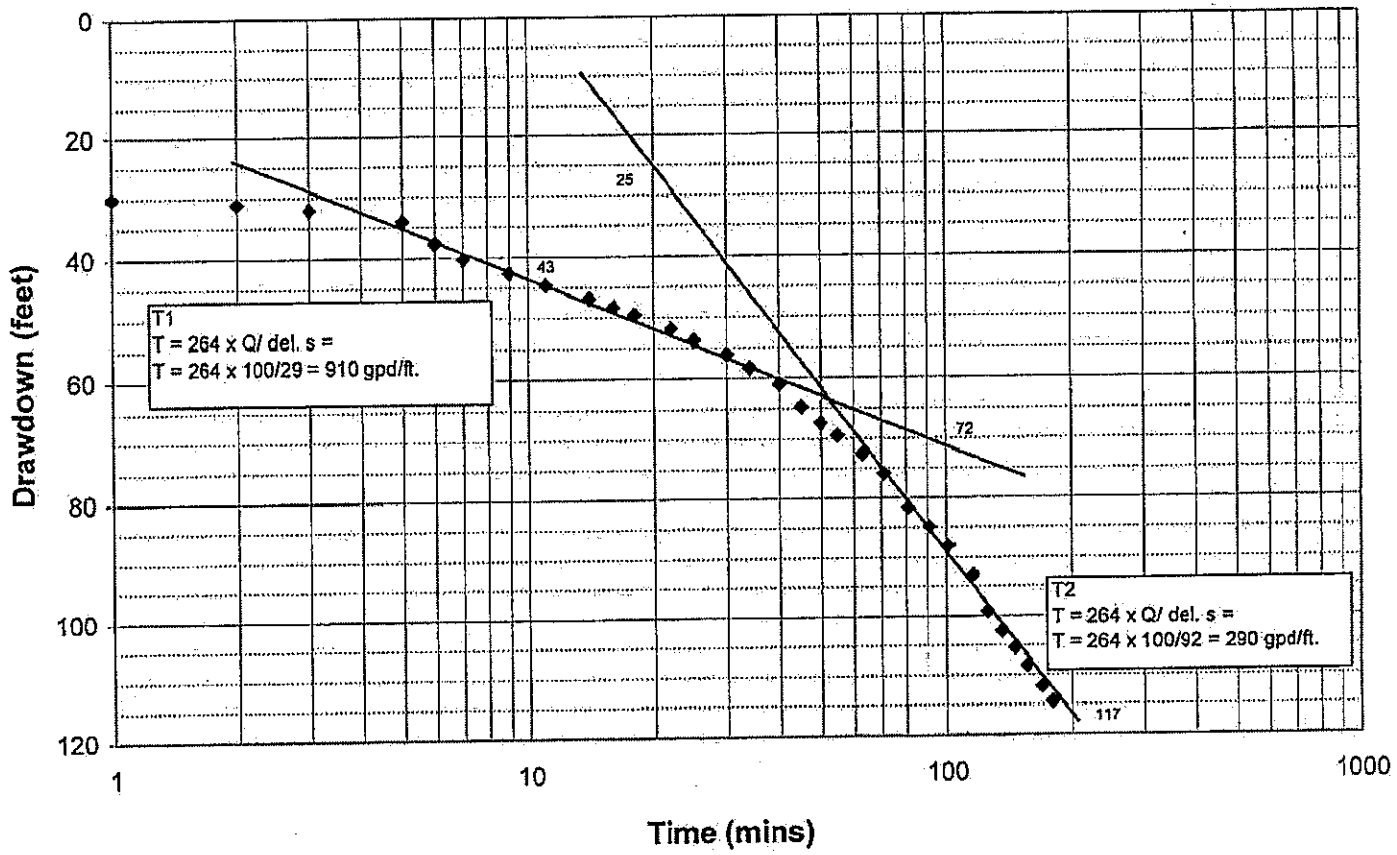
Feast Geosciences, LLC

Time - Drawdown

Spring Valley Ranch

Test Well SVR 4, Q = 100 gpm

Test date: 3/6/03



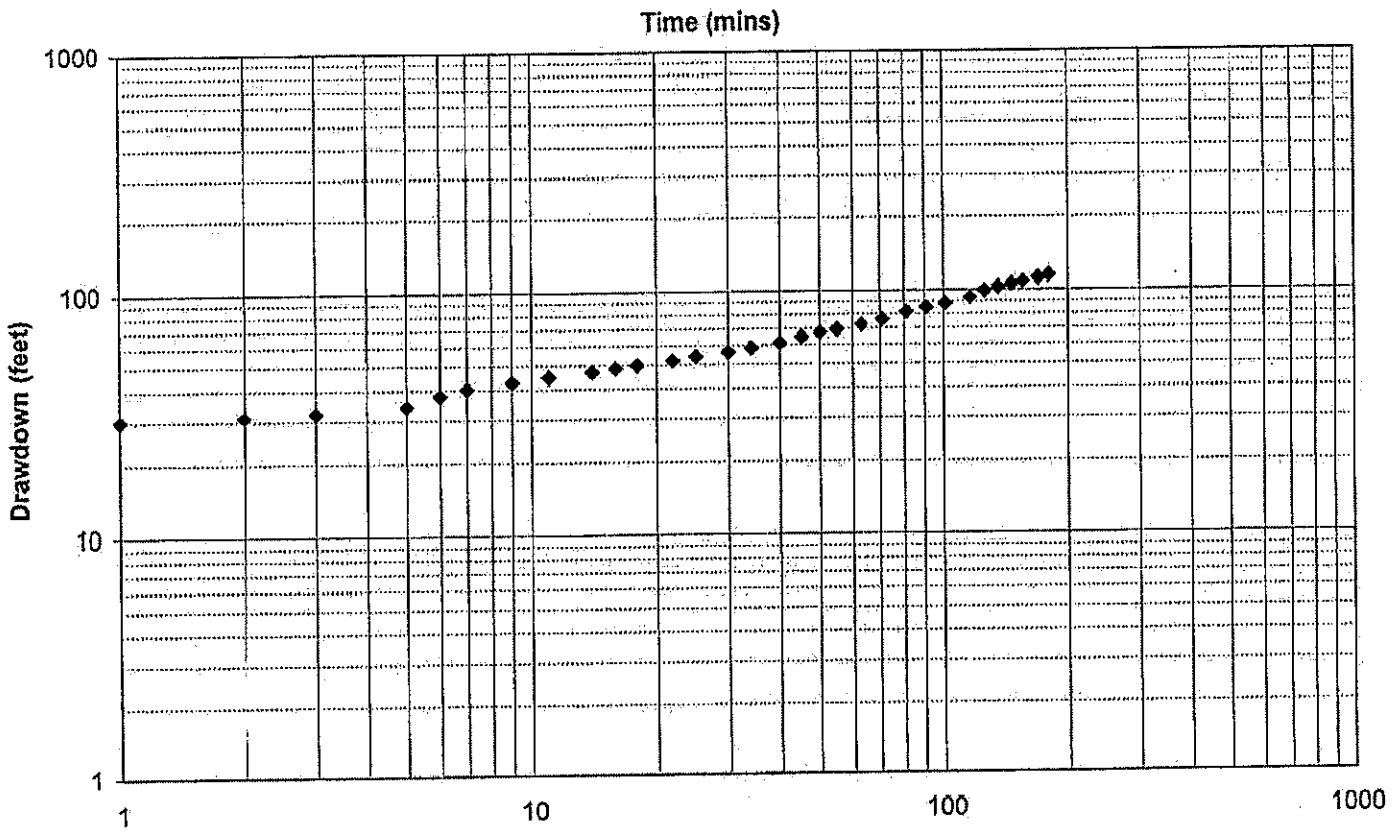
Feast Geosciences, LLC

Time - Drawdown

Spring Valley Ranch

Test Well SVR 4, Q = 100 gpm

Test date: 3/6/03



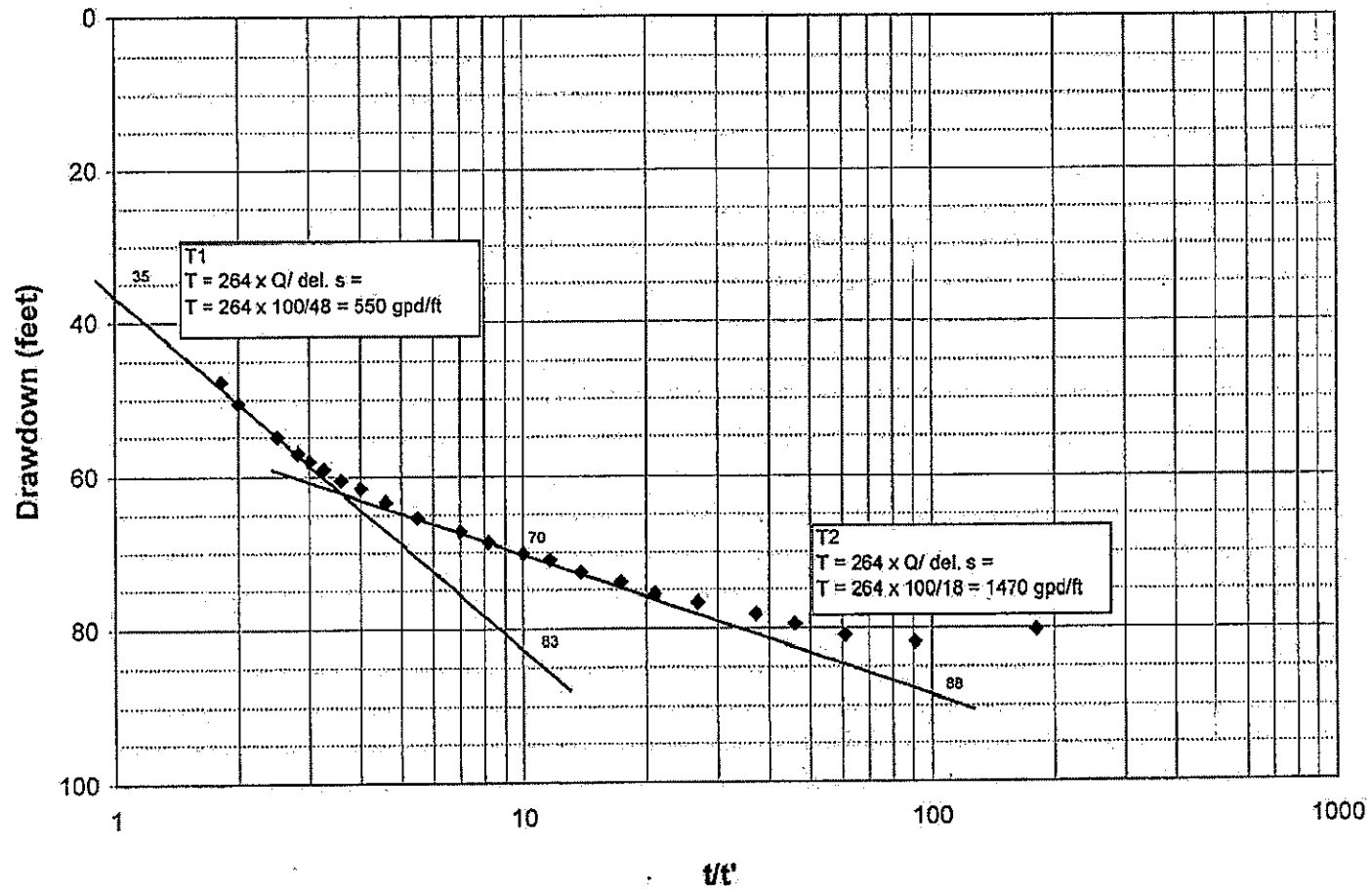
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Time - Recovery

Spring Valley Ranch

Test Well SVR 4, Q = 100 gpm

Test date: 3/6/03



Feast Geosciences, LLC

AQUIFER TEST DATA

Well No.: Spring Valley Ranch, Test Well SVR 4 — **Test 2, Q=80 gpm, t = 24 hours**

Test conducted by: Scanlan Engineering; Hiddleston Drilling and Pump Co.

Flow measured by: AOMAC dopler in-line flow meter

Water levels measured by: Well sounder — Water level measure point: Top of 1" poly tube

MP Elevation: 2.6 ft agl — Static WL (ft bmp): 1.12

Pump on: 03/14/03 8:57 — Pump off: 03/15/03 9:00

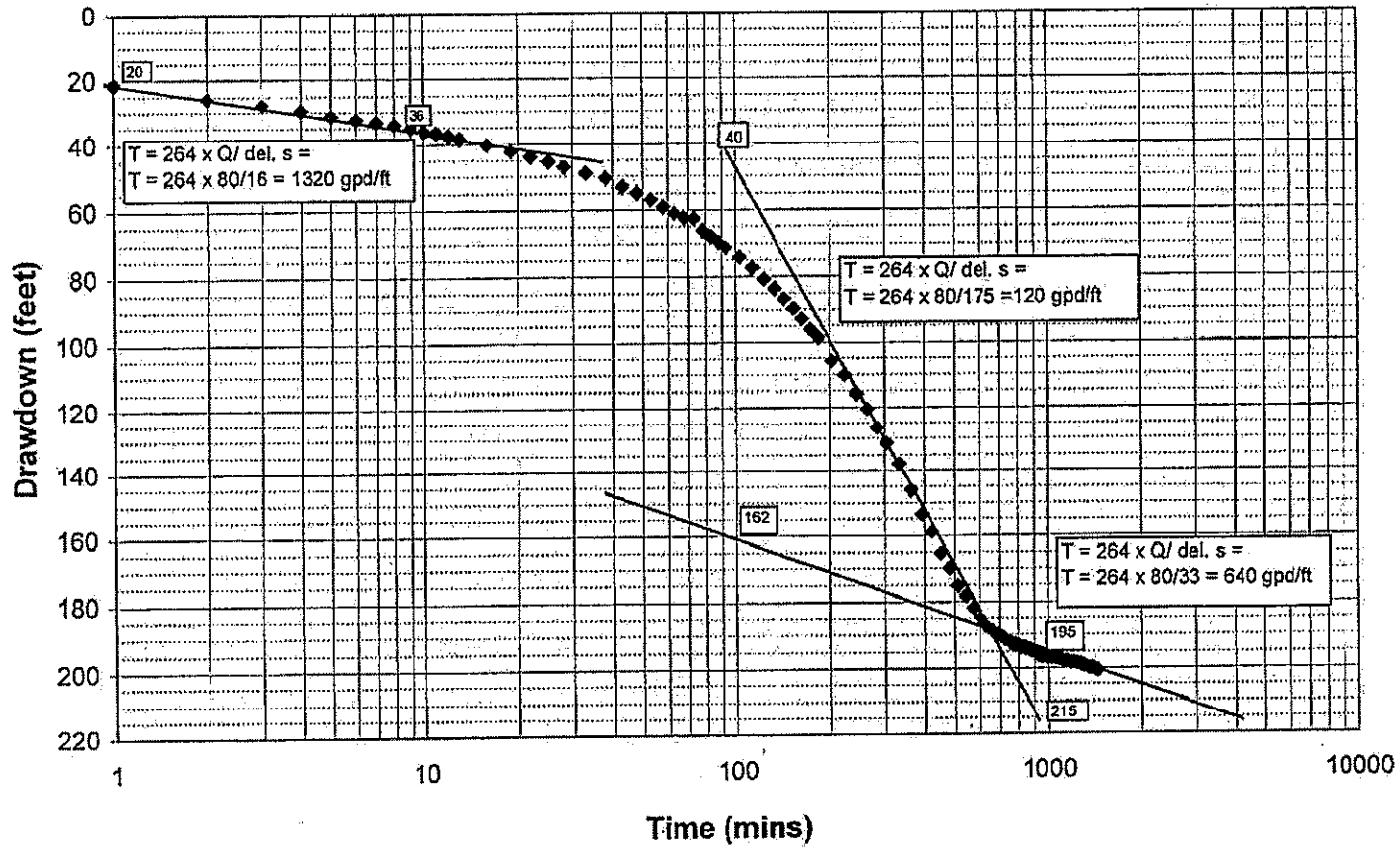
				Water Level Data				
Date	Time	t (mins)	t/t'	Ref (ft.)	Measure (in.)	WL (ft bmp)	Drawdown (feet)	Comments
03/14/03	8:56	-				1.1		Static water level
03/14/03	8:58	1				22.6	21.5	Start test, Q = 86 gpm
03/14/03	8:59	2				27.0	25.9	Q = 81 gpm
03/14/03	9:00	3		28.0	11.0	28.9	27.8	Q = 80 gpm
03/14/03	9:01	4		30.0	8.0	30.7	29.5	Q = 79 gpm
03/14/03	9:02	5		32.0	6.0	32.5	31.4	Q = 81 gpm
03/14/03	9:03	6		33.0	7.0	33.6	32.5	Q = 81 gpm
03/14/03	9:04	7		34.0	6.0	34.5	33.4	Q = 80 gpm
03/14/03	9:05	8		35.0	4.0	35.3	34.2	Q = 80 gpm
03/14/03	9:06	9		36.0	3.5	36.3	35.2	
03/14/03	9:07	10		37.0	2.0	37.2	36.0	Q = 80 gpm
03/14/03	9:08	11		37.0	9.0	37.8	36.6	Q = 79 gpm
03/14/03	9:09	12		38.0	9.5	38.8	37.7	Q = 81 gpm
03/14/03	9:10	13		39.0	7.0	39.6	38.5	
03/14/03	9:13	16		41.0	3.0	41.3	40.1	Q = 80 gpm
03/14/03	9:16	19		43.0	3.5	43.3	42.2	Q = 81 gpm
03/14/03	9:19	22		45.0	0.5	45.0	43.9	Q = 81 gpm
03/14/03	9:22	25		46.0	6.5	46.5	45.4	Q = 80 gpm
03/14/03	9:25	28		48.0	3.0	48.3	47.1	Q = 80 gpm
03/14/03	9:30	33		50.0	2.0	50.2	49.0	@ 09:27:Q = 5g/3.5s T = 18.9 C, SC 562, EC = 497 umhos/cm
03/14/03	9:35	38		51.0	8.0	51.7	50.5	Q = 78 gpm
03/14/03	9:40	43		54.0	3.0	54.3	53.1	
03/14/03	9:45	48		56.0	2.0	56.2	55.0	
03/14/03	9:50	53		58.0	1.5	58.1	57.0	
03/14/03	9:55	58		60.0	3.0	60.3	59.1	
03/14/03	10:00	63		62.0	2.0	62.2	61.0	
03/14/03	10:05	68		63.0	7.0	63.6	62.5	Q = 80 gpm
03/14/03	10:10	73		63.0	9.0	63.8	62.6	Q = 80 gpm
03/14/03	10:15	78		67.0	4.0	67.3	66.2	Q = 80 gpm
03/14/03	10:20	83		69.0	2.0	69.2	68.0	Q = 80 gpm
03/14/03	10:25	88		70.0	11.0	70.9	69.8	Q = 80 gpm
03/14/03	10:30	93		72.0	4.0	72.3	71.2	Q = 80 gpm
03/14/03	10:40	103		75.0	3.0	75.3	74.1	Q = 80 gpm
03/14/03	10:50	113		78.0	6.0	78.5	77.4	Q = 80 gpm
03/14/03	11:00	123		82.0	1.0	82.1	81.0	Q = 80 gpm
03/14/03	11:10	133		84.0	11.0	84.9	83.8	Q = 80 gpm
03/14/03	11:20	143		87.0	10.0	87.8	86.7	Q = 80 gpm
03/14/03	11:30	153		90.0	9.0	90.8	89.6	Q = 80 gpm
03/14/03	11:40	163		93.0	11.0	93.9	92.8	Q = 80 gpm
03/14/03	11:50	173		97.0	4.0	97.3	96.2	Q = 80 gpm
03/14/03	12:00	183		99.0	9.0	99.8	98.6	Q = 80 gpm
03/14/03	12:20	203		106.0	11.0	106.9	105.8	Q = 80 gpm
03/14/03	12:40	223		111.0	4.0	111.3	110.2	Q = 80 gpm
03/14/03	13:00	243		116.0	10.5	116.9	115.8	Q = 80 gpm
03/14/03	13:20	263		121.0	8.0	121.7	120.5	Q = 80 gpm
03/14/03	13:40	283		127.0	9.0	127.8	126.6	Q = 80 gpm
03/14/03	14:00	303		132.0	6.0	132.5	131.4	Q = 80 gpm
03/14/03	14:30	333		139.0	0.0	139.0	137.9	Q = 80 gpm
03/14/03	15:00	363		147.0	2.0	147.2	146.0	Q = 80 gpm
03/14/03	15:30	393		154.0	8.0	154.7	153.5	Q = 80 gpm
03/14/03	16:00	423		160.0	1.0	160.1	159.0	Q = 80 gpm
03/14/03	16:30	453		166.0	6.0	166.5	165.4	Q = 80 gpm
03/14/03	17:00	483		171.0	1.0	171.1	170.0	Q = 80 gpm
03/14/03	17:30	513		176.0	4.5	176.4	175.3	Q = 80 gpm
03/14/03	18:00	543		179.0	4.0	179.3	178.2	Q = 80 gpm
03/14/03	18:30	573		183.0	0.5	183.0	181.9	Q = 80 gpm
03/14/03	19:00	603		186.0	0.0	186.0	184.9	Q = 80 gpm
03/14/03	19:30	633		188.0	6.0	188.5	187.4	Q = 80 gpm
03/14/03	20:00	663		189.0	10.0	189.8	188.7	Q = 80 gpm
03/14/03	20:30	693		190.0	11.0	190.9	189.8	Q = 80 gpm
03/14/03	21:00	723		192.0	5.0	192.4	191.3	Q = 80 gpm
03/14/03	21:30	753		193.0	6.0	193.5	192.4	Q = 80 gpm
03/14/03	22:00	783		194.0	2.5	194.2	193.1	Q = 80 gpm
03/14/03	22:30	813		194.0	9.0	194.8	193.6	Q = 80 gpm
03/14/03	23:00	843		195.0	1.0	195.1	194.0	Q = 80 gpm
03/14/03	23:30	873		195.0	9.0	195.8	194.6	Q = 80 gpm
03/15/03	0:00	903		196.0	5.0	196.4	195.3	Q = 80 gpm
03/15/03	0:30	933		197.0	2.5	197.2	196.1	Q = 80 gpm
03/15/03	1:00	963		197.0	6.0	197.5	196.4	Q = 80 gpm
03/15/03	1:30	993		197.0	8.5	197.7	196.6	Q = 80 gpm
03/15/03	2:00	1023		197.0	10.0	197.8	196.7	Q = 80 gpm
03/15/03	2:30	1053		198.0	1.0	198.1	197.0	Q = 80 gpm

Time - Drawdown

Spring Valley Ranch

Test Well SVR 4, Q = 80 gpm

Test date: 3/14-15/03



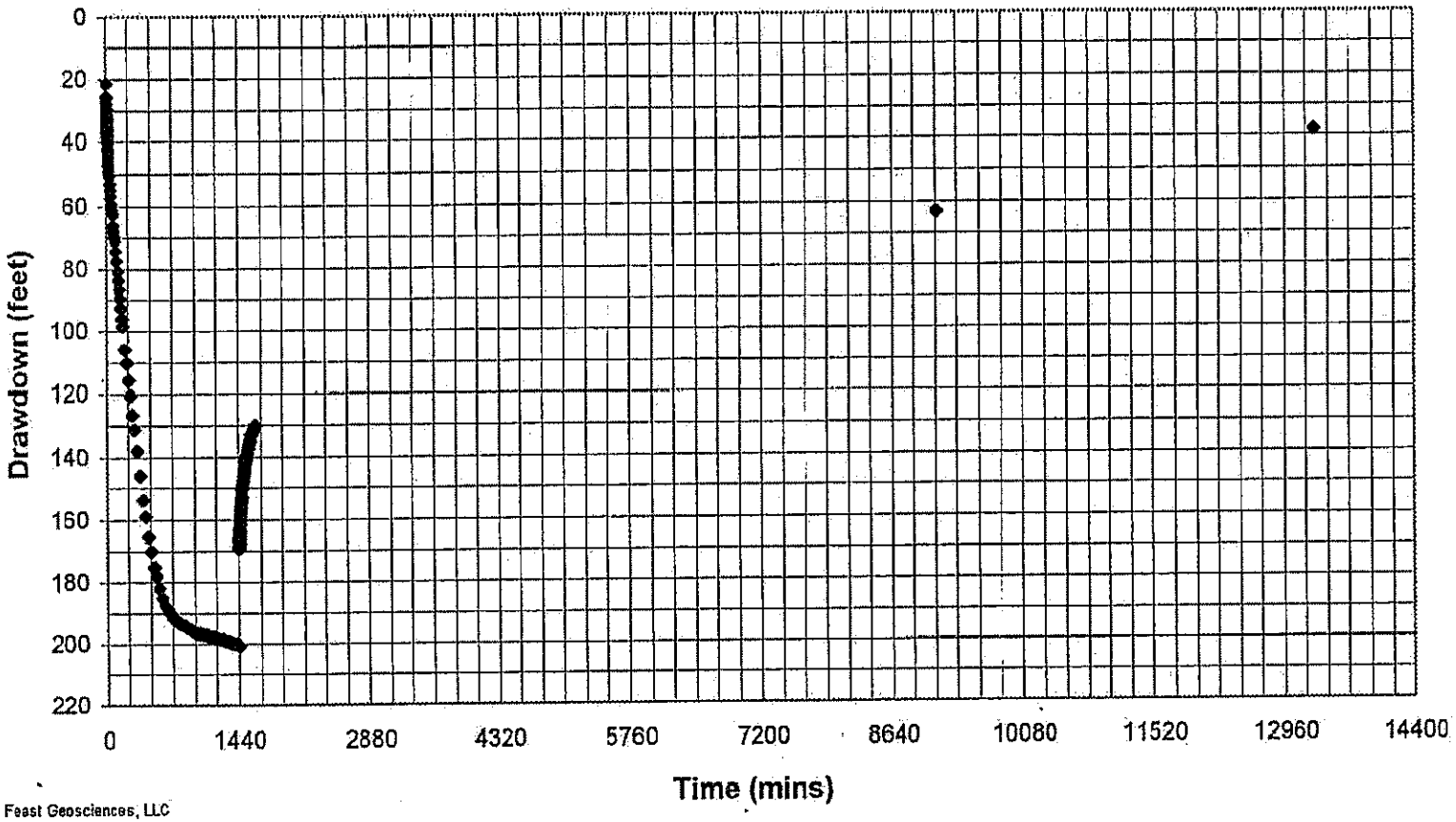
Feast Geosciences, LLC

Drawdown and Recovery

Spring Valley Ranch

Test Well SVR 4, Q = 80 gpm

Test date: 3/14-15/03



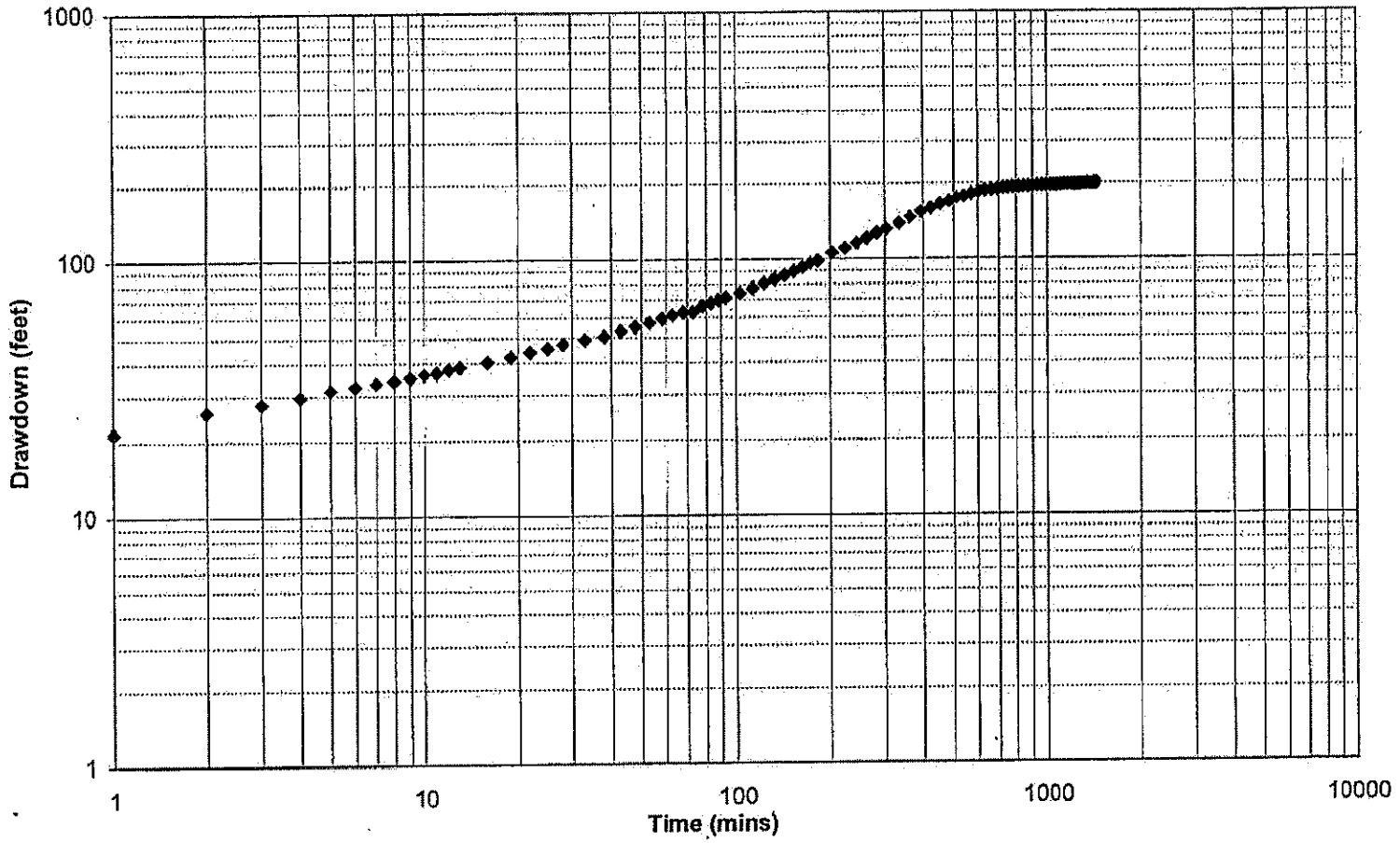
Feast Geosciences, LLC

Time - Drawdown

Spring Valley Ranch

Test Well SVR 4, Q = 80 gpm

Test date: 3/14-15/03



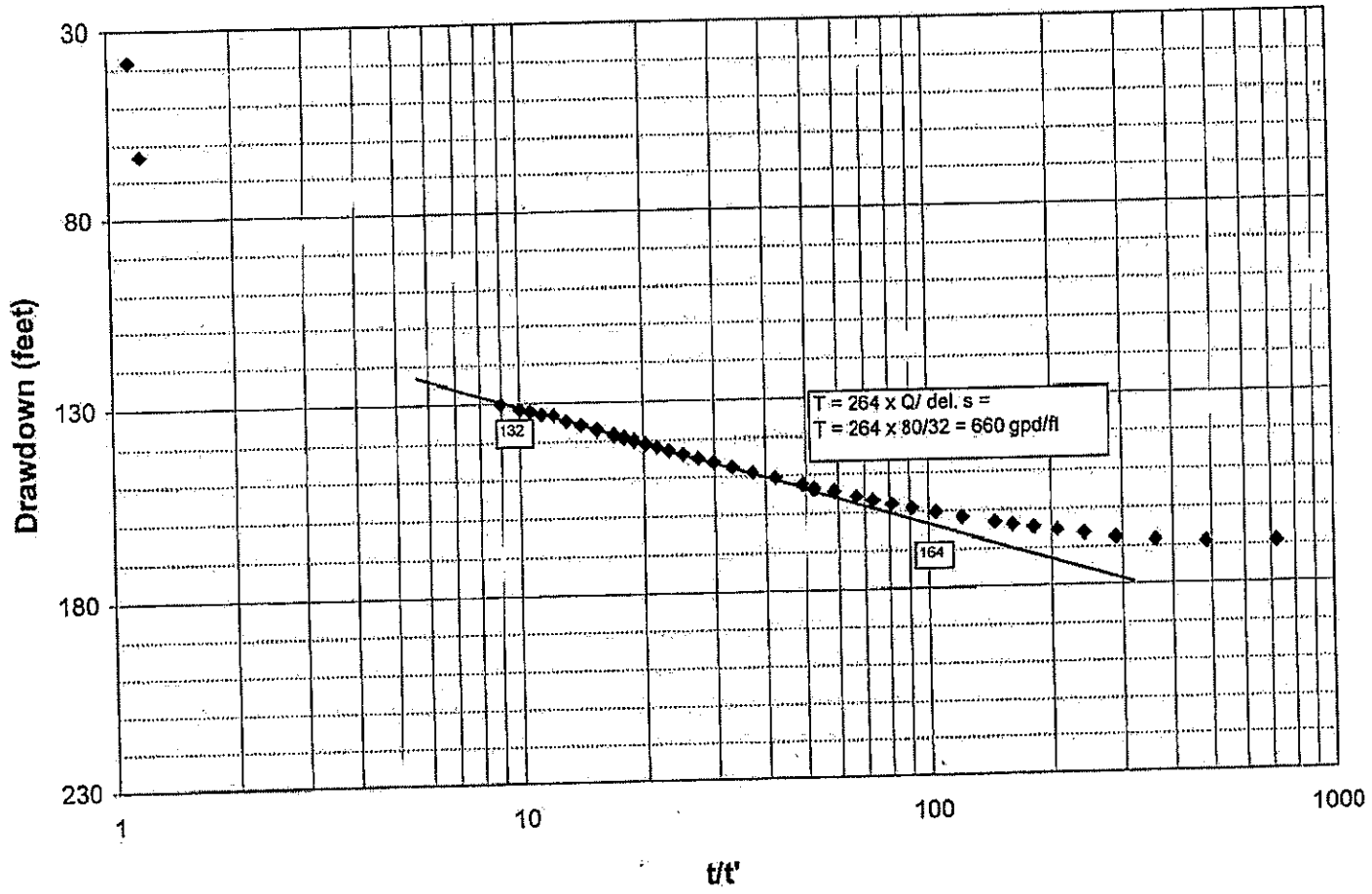
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Time - Recovery

Spring Valley Ranch

Test Well SVR 4, Q = 80 gpm

Test date: 3/14-15//03



Feast Geosciences, LLC

Analytical Laboratories, Inc.

1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515

Attn: TERRY SCANLAN
SCANLAN ENGINEERING
600 EAST RIVER PARK LANE
SUITE 105
BOISE, ID 83706

Collected By: CHUCK FEAST
Submitted By: CHUCK FEAST

Source of Sample:
SVR 4 GROUNDWATER PROJECT:SPRING VALLEY RANCH

Time of Collection: 13:00
Date of Collection: 03/06/2003
Date Received: 03/07/2003
Report Date: 03/31/2003

Laboratory Analysis Report

Sample Number: 0309661

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Arsenic Furnace		< 0.003	mg/L	0.003	SM 3113 B	03/24/2003	DMB
Beryllium Furnace		<0.0005	mg/L	0.0005	SM 3113 B	03/19/2003	DMB
Antimony Furnace		<0.005	mg/L	0.005	SM 3113 B	03/18/2003	DMB
Sodium, Na		68.7	mg/L	0.1	EPA 200.7	03/10/2003	JH
Chromium Furnace		< 0.002	mg/L	0.002	SM 3113 B	03/27/2003	DMB
Mercury, Hg	0.002	<0.0002	mg/L	0.0002	EPA 245.1	03/13/2003	KLZ
Nickel, Ni		< 0.02	mg/L	0.02	EPA 200.7	03/28/2003	JH
Thallium Furnace		< 0.002	mg/L	0.002	SM 3113 B	03/28/2003	DMB
Calcium, Ca		45.6	mg/L	0.1	EPA 200.7	03/10/2003	JH
Magnesium, Mg		2.58	mg/L	0.1	EPA 200.7	03/10/2003	JH
Iron, Fe		0.73	mg/L	0.05	EPA 200.7	03/21/2003	JH
Manganese, Mn		0.26	mg/L	0.05	EPA 200.7	03/21/2003	JH

Laboratory Analysis Report

Sample Number: 0309661

Test Requested	MCL		Analysis Result	Units	MDL	Method	Date Completed	Analyst
Barium, Ba		<	0.05	mg/L	0.05	EPA 200.7	03/08/2003	JH
Potassium, K			6.5	mg/L	0.5	EPA 200.7	03/10/2003	JH
Nitrate (as N)	10.0		<0.20	mg/L	0.2	EPA 300.1	03/07/2003	GMM
Nitrite (as N)	1.00		<0.01	mg/L	0.01	SM4500 NO2-	03/07/2003	CSC
Ammonia Direct (as N)			0.46	mg/L	0.04	EPA 350.1	03/11/2003	GMM
Fluoride, F	4.0		0.17	mg/L	0.1	EPA 300.1	03/11/2003	GMM
Bicarbonate			155	mg/L		SM 2320	03/16/2003	KDH
Hardness			19.0	mg/L	5	SM 2340	03/14/2003	KDH
Chloride, Cl			3	mg/L	1	EPA 300.1	03/14/2003	GMM
Sulfate, SO4			117	mg/L	1	EPA 300.1	03/15/2003	GMM
Total Dissolved Solids			404	mg/L	25	160.1	03/11/2003	JR
Sulfide, Dissolved (as H2S)			<0.05	mg/L	0.05	SM 4500-S2 D	03/10/2003	JR

Michael Moore

Thank you for choosing Analytical Laboratories for your testing needs.
If you have any questions concerning this report,
please contact: **Michael Moore**

CHAIN OF CUSTODY RECORD

CLIENT INFORMATION:	PROJECT INFORMATION:
Attn: TERRY SCANLAN	Project Manager:
Company: SCANLAN ENGINEERING	Project Name: Spring Valley Ranch
Address: 600 E. RIVERSIDE PARK LANE, SUITE 105	Project Number:
BOISE, ID 83706	Purchase Order Number:
Phone: 383-4140 / Fax: 383-4156	Required Due Date:
Sampled by: Chuck Feast	Transported by: (Please print) HAND DELIVERED

ANALYTICAL LABS, INC.
1804 N. 33rd Street • Boise, ID 83703
(208) 342-5515 • Fax: (208) 342-5591 • 1-800-574-5773
Website: http://home.rmci.net/ali • E-mail: ali@rmci.net

ANALYSIS REQUESTED

Lab ID	Date Sampled	Time Sampled	Sample Description	Sample Matrix	As-F, Be-F, BA	Sb-F, Na, Ce-F	F, Hg, NI	TL-F, NO3, NO2	Ca, Mg, K, Bicarb	SO4, Hard, TDS	Fe, Mn, NH4	H2S-D, Cl	Remarks:
96601	3/6/03	13:00	SVR 4	Groundwater	X	X	X	X	X	X	X	X	
96602	3/6/03	16:35	SVR Irrigation Well	"	X	X	X	X	X	X	X	X	

Invoice to: *(If different than above address)*

Special Instructions: All samples filtered through .45um, filtered in field, not preserved

ALLOCATIONS OF RISK: Analytical Laboratories, Inc. will perform preparation and testing services, obtain findings and prepare reports in accordance with Good Laboratory Practices (GLP). If, for any reason, Analytical Laboratories, Inc. errors in the conduct of a test or procedure their liability shall be limited to the cost of the test or procedure completed in error. Under no circumstance will Analytical Laboratories, Inc. be liable for any other cost associated with obtaining a sample or use of data.

SAMPLE RECEIPT	Note: Samples are discarded 21 days after results are reported. Hazardous samples will be returned to client or disposed of at client expense.			
Total # of Containers:	Relinquished By: *(Signature)* Chuck Feast	Date / Time 3/7/03 10:45	Received By: *(Signature)*	Date / Time /
Chains of Custody Seals: Y / N / NA	Company: Feast Geosciences LLC		Company:	
Intact: Y / N / NA	Relinquished By: *(Signature)*	Date / Time /	Received at Laboratory By: *(Signature)*	Date / Time 3/7/03 10:45
Temperature Received:	Company:			
Condition:				

ANALYTICAL LABORATORIES, INC.
1804 N. 33rd Street
Boise, Idaho 83703
Phone # (208) 342-5515

LABORATORY ANALYSIS REPORT
SAMPLE NUMBER - 8082

Attn. TERRY SCANLAN

SCANLAN ENGINEERING
600 EAST RIVER PARK LANE
SUITE 105
BOISE, ID 83706

Time of Collection: 14:50
Date of Collection: 02/25/03

Date Received: 02/26/03
Date Reported: 03/20/03

Collected by: CHUCK FEAST

Submitted by: CHUCK FEAST

Source of Sample: SVR 4 (DEEP) GROUND WATER PROJECT: SPRING VALLEY RANCH

Test Requested	FRDS #	MCL	Analysis Result	Unit	MDL	Method	Date Completed	Analyst Initials
ANTIMONY FURNACE			<0.005	mg/L	0.005	EPA 200.9	03/18/03	DMB
ARSENIC FURNACE			0.004	mg/L	0.003	EPA 200.9	03/12/03	DMB
BARIUM			<0.05	mg/L	0.05	EPA 200.7	03/04/03	JH
BERYLLIUM FURNACE			<0.0005	mg/L	0.0005	EPA 200.9	03/04/03	DMB
CALCIUM			1.58	mg/L	0.10	EPA 200.7	03/05/03	JH
CHROMIUM FURNACE			<0.002	mg/L	0.002	EPA 200.9	03/06/03	DMB
IRON			0.24	mg/L	0.05	EPA 200.7	03/04/03	JH
MAGNESIUM			<0.10	mg/L	0.10	EPA 200.7	03/05/03	JH
MANGANESE			<0.05	mg/L	0.05	EPA 200.7	03/04/03	JH
MERCURY			<0.0002	mg/L	0.0002	EPA 245.1	02/28/03	KLZ
NICKEL			<0.02	mg/L	0.02	EPA 200.7	03/04/03	JH
POTASSIUM			0.7	mg/L	0.5	EPA 200.7	03/05/03	JH
SODIUM			83.5	mg/L	0.10	EPA 200.7	03/05/03	JH
THALLIUM FURNACE			<0.002	mg/L	0.002	EPA 200.9	03/05/03	DMB
AMMONIA DIRECT			0.04	mg/L	0.04	EPA 350.1	03/04/03	GMM
NITRATE N			<0.20	mg/L	0.20	EPA 300.0	02/27/03	GMM
NITRITE N			0.01	mg/L	0.01	SM 4500NO2-B	02/26/03	CSC
SULFIDE			<0.05	mg/L	0.05	SM 4500 D	02/27/03	JR
BICARBONATE			136	mg/L		SM 2320	03/07/03	KDH
CHLORIDE			5	mg/L	1	EPA 300.0	03/04/03	GMM
FLUORIDE DIRECT			0.97	mg/L	0.10	EPA 300.0	02/27/03	GMM
HARDNESS			5.0	mg/L	5.0	SM 2340	03/07/03	KDH
SULFATE			32	mg/L	1.0	EPA 300.0	03/04/03	GMM
TOTAL DISSOLVED SOLIDS			214	mg/L	25	EPA 160.1	03/01/03	CS

THANK YOU FOR CHOOSING ANALYTICAL LABORATORIES, INC. FOR YOUR TESTING NEEDS.

PLEASE CONTACT MICHAEL MOORE IF YOU HAVE ANY QUESTIONS REGARDING THIS REPORT OR ANY FUTURE ANALYTICAL NEEDS.

ANALYTICAL LABORATORIES, INC.
1804 N. 33rd Street
Boise, Idaho 83703
Phone # (208) 342-5515

INORGANIC CHEMICAL ANALYSIS REPORT For Public Water Systems

PRIMARY IOC CONTAMINANTS (Mandatory, except for transient water systems)

FRDS	Contaminant	MCL(mg/L)	Result (mg/L)	MDL (mg/L)	Method	Analyst	Analysis Date
1074	Antimony	0.006	ND	0.005	EPA 200.9	DMB	03/18/03
1005	Arsenic	0.05	0.004	0.003	EPA 200.9	DMB	03/12/03
1010	Barium	2	ND	0.05	EPA 200.7	JH	03/04/03
1075	Beryllium	0.004	ND	0.0005	EPA 200.9	DMB	03/04/03
1015	Cadmium	0.005	---				
1020	Chromium	0.1	ND	0.002	EPA 200.9	DMB	03/06/03
1035	Mercury	0.002	ND	0.0002	EPA 245.1	KLZ	02/28/03
1036	Nickel	N/A	ND	0.02	EPA 200.7	JH	03/04/03
1045	Selenium	0.05	---				
1052	Sodium	N/A	83.5	0.10	EPA 200.7	JH	03/05/03
1085	Thallium	0.002	ND	0.002	EPA 200.9	DMB	03/05/03
1024	Cyanide	0.2	---				
1025	Fluoride	4.0	0.97	0.10	EPA 300.0	GMM	02/27/03

SECONDARY AND OTHER IOC CONTAMINANTS (OPTIONAL)

1017	Chloride	5	1	EPA 300.0	GMM	03/04/03
1905	Color	---				
1027	Hydrogen Sulfide	---				
1028	Iron	0.24	0.05	EPA 200.7	JH	03/04/03
1032	Manganese	ND	0.05	EPA 200.7	JH	03/04/03
1920	Odor	---				
2905	Surfactants	---				
1930	Dissolved Solids	214	25	EPA 160.1	CS	03/01/03
1095	Zinc	---				
1050	Silver	---				
1002	Aluminum	---				
1927	Alkalinity (as $CaCO_3$)	---				
1003	Ammonia (as N)	0.04	0.04	EPA 350.1	GMM	03/04/03
1016	Calcium (as $CaCO_3$)	1.58	0.10	EPA 200.7	JH	03/05/03
1915	Hardness (as $CaCO_3$)	5.0	5.0	SM 2340	KDH	03/07/03
1031	Magnesium	ND	0.10	EPA 200.7	JH	03/05/03
1925	pH	---				
1042	Potassium	0.7	0.5	EPA 200.7	JH	03/05/03
1049	Silica (as SiO_2)	---				
1030	Lead	---				
1022	Copper	---				
1926	Conductive $\mu S/cm$	---				
1997	Langlier Index	---				

LAB RESULT REPORTING CODES:

ND = Not detected within sensitivity of instrument

---- = No analysis performed for this contaminant

Numerical entry = Detection at level indicated

Nitric Acid Preservative ☑ Yes ☐ No

COMMENTS:

PWS #	
Lab Sample Tracking #	8082
Date Collected	02/25/03
Sample Type	Water
Date Received	02/26/03
Time Collected	14:50
Location Tag #	
Sample Collection Location	SVR 4 (DEEP) GROUND WATER
Date Reported by Lab	03/20/03
Jurisdiction	
PWS Contact Phone (208)	208-383-4140

Michael Moss 3/25/2003
Signature of Lab Supervisor Date

Lab ID: ID00020

Attn: TERRY SCANLAN
SCANLAN ENGINEERING
600 EAST RIVER PARK LANE
SUITE 105
BOISE, ID 83706

ANALYTICAL LABORATORIES, INC.
1804 N. 33rd Street
Boise, Idaho 83703
Phone # (208) 342-5515

PUBLIC DRINKING WATER INORGANIC CHEMICAL ANALYSIS REPORT

ACUTE IOC CONTAMINANTS For Public Drinking Water Systems

FRDS	Contaminant	Result (mg/L)	MCL (mg/L)	MDL	Method	Analysis Date	Analyst	MONITORING REQUIREMENTS
1040	Nitrate	ND	10.0	0.20	EPA 300.0	02/27/03	GMM	Ground water systems with nitrate levels below 5 mg/L must monitor nitrate annually. Surface water systems and systems with nitrate levels of 5 or more mg/L must monitor quarterly, unless otherwise advised in writing.
1041	Nitrite	0.01	1.0	0.01	SM 4500NO2-B	02/26/03	CSC	Once per nine years unless advised otherwise.
1040	Total ($NO_3 + NO_2$)	---						
1055	Sulfate	32		1.0	EPA 300.0	03/04/03	GMM	Sulfate is in the process of becoming a regulated contaminant. Monitoring is not yet required.

LAB RESULT REPORTING CODES:

ND = Not detected within sensitivity of instrument

---- = No analysis performed for this contaminant

Numerical entry = Detection at level indicated

COMMENTS:

PWS #	
Lab Sample Tracking #	8082
Date Collected	02/25/03
Sample Type	Water
Date Received	02/26/03
Time Collected	14:50
Location Tag #	
Sample Collection Location	SVR 4 (DEEP) GROUND WATER
Date Reported by Lab	03/20/03
Jurisdiction	
PWS Contact Phone (208)	208-383-4140

Lab ID: ID00020

Michael Mercer 3/25/2003

Signature of Lab Supervisor Date

Attn: TERRY SCANLAN
SCANLAN ENGINEERING
600 EAST RIVER PARK LANE
SUITE 105
BOISE, ID 83706

CHAIN OF CUSTODY RECORD

CLIENT INFORMATION:	PROJECT INFORMATION:
Attn: TERRY SCANLAN	Project Manager:
Company: SCANLAN ENGINEERING	Project Name: SPRING Valley Ranch
Address: 600 E. RIVER PARK LANE SUITE 105 BOISE, ID 83706	Project Number:
	Purchase Order Number:
Phone: 383-4140 Fax: 383-4156	Required Due Date:
Sampled by: CHUCK FEAST	Transported by: (Please print) HAND DELIVERED

ANALYTICAL LABS, INC.

1804 N. 33rd Street • Boise, ID 83703
(208) 342-5515 • Fax: (208) 342-5591 • 1-800-574-5773
Website: http://home.rmci.net/ali • E-mail: ali@rmci.net

ANALYSIS REQUESTED

Lab ID	Date Sampled	Time Sampled	Sample Description	Sample Matrix	As-F, Be-F, Ba	Sb-F, Na, Cr-F	F, Hg, NI	Tl-F, NO3, NO2	Ca, Mg, K, Bicarb	604, Hard, TDS	Fe, Mn, NH4	H2S-D, Cl		Remarks:
	2/25/03	14:50	SVR 4 (deep)	GROUND WATER	X	X	X	X	X	X	X	X		8082

Invoice to: *(If different than above address)*

Special Instructions:
Filtered through .45µm, not preserved

ALLOCATIONS OF RISK: Analytical Laboratories, Inc. will perform preparation and testing services, obtain findings and prepare reports in accordance with Good Laboratory Practices (GLP). If, for any reason, Analytical Laboratories, Inc. errors in the conduct of a test or procedure their liability shall be limited to the cost of the test or procedure completed in error. Under no circumstance will Analytical Laboratories, Inc. be liable for any other cost associated with obtaining a sample or use of data.

SAMPLE RECEIPT	Note: Samples are discarded 21 days after results are reported. Hazardous samples will be returned to client or disposed of at client expense.			
Total # of Containers:	Relinquished By: *(Signature)* Chuck Feast	Date / Time 2/26/03 12:00	Received By: *(Signature)*	Date / Time /
Chains of Custody Seals: Y / N / NA	Company: Feast Geosciences, LLC		Company:	
Intact: Y / N / NA	Relinquished By: *(Signature)*	Date / Time /	Received at Laboratory By: *(Signature)* Matthew C. Jong	Date / Time 2/26/03 14:20
Temperature Received:	Company:			
Condition:				

Well #4

Form 235-1
6/7/01

RECEIVED

JAN 16 2003

WATER RESOURCES
WESTERN REGION

Drilling Permit No. 875297-79090I

Drilling Permit Tag No. D0029025

Water Right Permit No. _____

Injection Permit NO. _____

State of Idaho Department of Water Resources

APPLICATION FOR DRILLING PERMIT

(FOR THE CONSTRUCTION OF A WELL)

1. Owner (please print): SunCor Development Company, Attention: Jerry Ellsworth

2. Mailing Address: 80 East Rio Salado Parkway, Suite 410

City: Tempe State: AZ Zip Code: 85281 Telephone 480-317-6800

3. Proposed Well Location: Twp: 5N Rge: 2E Sec: 7 ____ 1/4 NW 1/4 SE 1/4

Gov't Lot No. _____ County Ada Lat. ____ : ____ : ____ Long. ____ : ____ : ____

Street Address of Well Site Highway 55 City: 7 mi NE of Eagle
Give at least the name of Road and Distance to Road or Landmark

Lot, block and subdivision Spring Valley Ranch

4. Proposed Use of Well:

[ ] Domestic: The use of water for homes, organization camps, public campgrounds, livestock (1,000 head or less) and for any other purpose in connection therewith, including irrigation of up to ½ acre of land, if the total use is not in excess of 13,000 gpd; or any other uses, if the total use does not exceed a diversion rate of 0.04 cfs and a diversion volume of 2500 gpd.

Domestic does not include water for multiple ownership subdivisions, mobile home parks, commercial or business establishments, unless the use does not exceed a diversion rate of 0.04 cfs and a diversion volume of 2500 gpd.

NON-DOMESTIC: [ ] Irrigation [ ] Municipal [ ] Industrial
[ ] Stock (Over 1,000 Head) [X] Test [ ] Other _____ (Describe)

[ ] INJECTION

[ ] MONITORING: A well bore schematic and map is required for each blanket permit.
Number of proposed wells: _____

5. Well Construction Information:

A. [X] New well [ ] Modify [ ] Replace

B. Proposed Casing Diameter 10" surface 8" casing, 6" liner (if necessary) Proposed Maximum Depth 1200 feet

C. Anticipated bottom hole temperature:
[X] 85°F or less (Cold water well) [ ] 85°F to 212° (Low temp. geo. well) [ ] 212° F or more (Geothermal well)

6. Construction Start Date: 1/21/03

7. Anticipated Well Driller: Hiddleston Drilling and Pump Company Driller's Lic. No. 35
NOTE: The actual well driller must be identified prior to drilling.

8. Applicant's Signature: Jerry M Heanlar Date: 1/14/03

Address (if different than owner): 600 East River Park Lane, Suite 105

City: Boise State: ID Zip Code: 83706 Telephone: 208-383-4140

Title: Consulting Engineer for SunCor Development Company
(Owner, Firm Representative, Other)

ACTION OF THE DEPARTMENT OF WATER RESOURCE

This Permit is Approved Date 1-23-03

If approved, this permit authorizes the construction or modification of a well subject to the following conditions. **READ CAREFULLY!**

GENERAL CONDITIONS:

1. This drilling permit is valid for two (2) months from the above approval date for the start of construction and is valid for one (1) year from the approval date for completion of the well unless an extension has been granted.
2. This permit does not constitute an approval of the District Health Department or the Idaho Department of Health and Welfare which may be required before construction of this well. All wells must be drilled a minimum distance of 100 feet from a drain field. Domestic and Public Water Supply wells must be drilled a minimum of 50 feet and 100 feet respectively from a septic tank.
3. The well shall be constructed by a driller currently licensed in the State of Idaho who must maintain a copy of the drilling permit at the drilling site.
4. Approval of this drilling permit does not authorize trespass on the land of another party.
5. This permit does not constitute other local, county, state or federal approvals which may be required for construction of a well.
6. This drilling permit does not represent a right to divert and use the water of the State of Idaho.
7. If a bottom hole temperature of 85° or greater is encountered, well construction shall cease and the well driller and the well owner shall contact the Department immediately.
8. Idaho Code, S 55-2201 – 55-2210 requires the applicant and/or his contractors to contact "Digline" (Digline is a one-call center for utility notification) not less than 2 working day prior to the start of any excavation for this project. The "Digline" number for your area is 1-800-342-1585.

SPECIFIC CONDITIONS:

9) This well shall not be used as a production well without Specific approval from IDu
10) Any Casing installed Shall be properly Sealed to prevent mixi of different aquifers.

RB Wm Smith For MANAGER WESTERN REGIONAL OFFICE

Signature of Authorized Department Representative — Title

Receipt No. W029979 Receipted by KG Fee 200.00 Date 1/16/03

EXTENSION OF DRILLING PERMIT

Extension approved by _____ Approval Date _____

This extension expires: _____

Appendix E
Hillside Spring Data

ANALYTICAL LABORATORIES, INC.
1804 N. 33rd Street
Boise, Idaho 83703
Phone # (208) 342-5515

LABORATORY ANALYSIS REPORT
SAMPLE NUMBER - 48594

Attn. TERRY SCANLAN

SCANLAN ENGINEERING
600 EAST RIVER PARK LANE
SUITE 105
BOISE, ID 83706

Time of Collection: 16:45
Date of Collection: 12/18/02

Date Received: 12/19/02
Date Reported: 01/10/03

Collected by: CHUCK FEAST

Submitted by: CHUCK FEAST

Source of Sample: SVR SPRING #1 PROJECT:SPRING VALLEY RANCH
GROUNDWATER
UNFILTERED

Test Requested	FRDS #	MCL	Analysis Result	Unit	MDL	Method	Date Completed	Analyst Initials
ANTIMONY FURNACE			<0.005	mg/L	0.005	EPA 200.9	01/06/03	DMB
ARSENIC FURNACE			0.021	mg/L	0.003	EPA 200.9	01/08/03	DMB
BARIUM			<0.05	mg/L	0.05	EPA 200.7	12/30/03	JH
BERYLLIUM FURNACE			<0.0005	mg/L	0.0005	EPA 200.9	01/10/03	DMB
CALCIUM			22.2	mg/L	0.10	EPA 200.7	12/26/02	JH
CHROMIUM FURNACE			<0.002	mg/L	0.002	EPA 200.9	12/28/02	DMB
IRON			<0.05	mg/L	0.05	EPA 200.7	12/27/02	JH
MAGNESIUM			3.53	mg/L	0.10	EPA 200.7	12/26/02	JH
MANGANESE			<0.05	mg/L	0.05	EPA 200.7	12/27/02	JH
MERCURY			<0.0002	mg/L	0.0002	EPA 245.1	01/06/03	DMB
NICKEL			<0.02	mg/L	0.02	EPA 200.7	12/27/02	JH
POTASSIUM			4.4	mg/L	0.10	EPA 200.7	12/26/02	JH
SODIUM			9.52	mg/L	0.10	EPA 200.7	12/26/02	JH
THALLIUM FURNACE			<0.002	mg/L	0.002	EPA 200.9	12/29/02	DMB
AMMONIA DIRECT			<0.04	mg/L	0.04	EPA 350.1	12/24/02	KDH
NITRATE N			1.59	mg/L	0.20	EPA 300.0	12/30/02	GMM
NITRITE N			<0.01	mg/L	0.01	SM 4500NO2-B	12/19/02	CSC
SULFIDE			<0.05	mg/L	0.05	SM 4500 D	12/20/02	CS
BICARBONATE			66.2	mg/L		SM 2320	12/30/02	GMM
CHLORIDE			3	mg/L	1	EPA 300.0	12/30/02	GMM
FLUORIDE DIRECT			0.33	mg/L	0.10	EPA 300.0	12/30/02	GMM
HARDNESS			67.7	mg/L	5.0	SM 2340	12/30/02	GMM
SULFATE			17	mg/L	1.0	EPA 300.0	12/30/02	GMM
TOTAL DISSOLVED SOLIDS			120	mg/L	25	EPA 160.1	12/24/02	JR

THANK YOU FOR CHOOSING ANALYTICAL LABORATORIES, INC. FOR YOUR TESTING NEEDS.

PLEASE CONTACT MICHAEL MOORE IF YOU HAVE ANY QUESTIONS REGARDING
THIS REPORT OR ANY FUTURE ANALYTICAL NEEDS.

Appendix F
Ranch Irrigation Well Data

AQUIFER TEST DATA
Spring Valley Ranch -12" Ranch Well

Test conducted by: Feast Geosciences, LLC
Flow measured by: 20 gallon bucket and watch
Water levels measured by: Well sounder | Water level measure point: Top of wood blocking on pump column support. ~.5 ft bgl.
Elevation: | Static WL (ft bmp): 18.0
Pump on: 12/05/02 14:25 | Pump off: 12/05/02 16:55

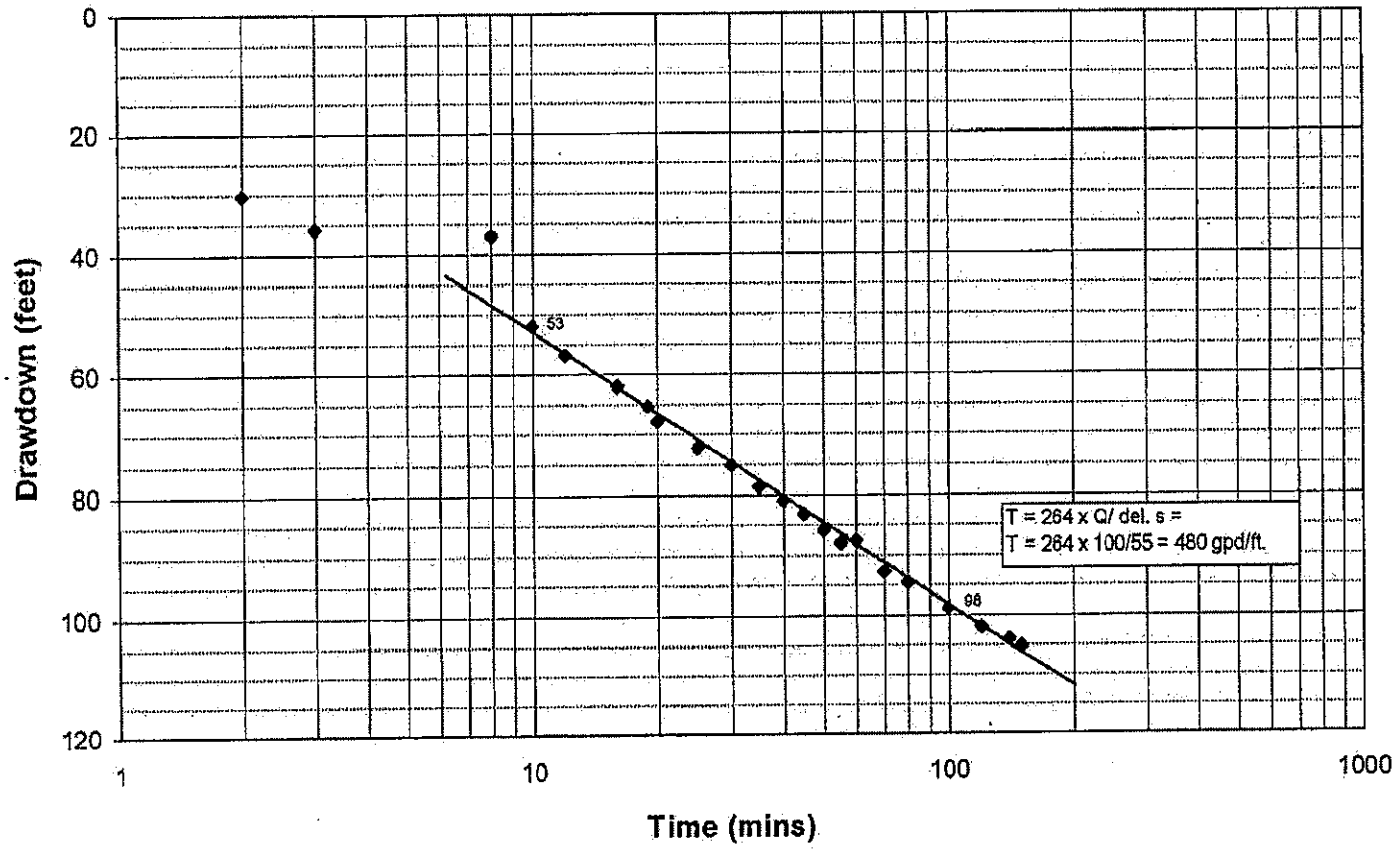
				Water Level Data				
Date	Time	t (mins)	t/t'	Ref ()	Measure ()	WL (ft bmp)	Drawdown (feet)	Comments
12/05/02	14:15	-				18.0		Static water level
12/05/02	14:25	0				18.0	0.0	Start test
12/05/02	14:27	2				48.2	30.2	
12/05/02	14:28	3				53.8	35.8	
12/05/02	14:33	8				55.0	37.0	Cascading wtr.
12/05/02	14:35	10				70.0	52.0	
12/05/02	14:37	12				74.8	56.8	
12/05/02	14:41	16				80.0	62.0	Q = 20 gal/12 sec.
12/05/02	14:44	19				83.3	65.3	
12/05/02	14:45	20				85.8	67.8	
12/05/02	14:50	25				90.2	72.2	Q = 17 gal/11 sec.
12/05/02	14:55	30				93.1	75.1	
12/05/02	15:00	35				96.6	78.6	Q = 20 gal/12 sec.
12/05/02	15:05	40				98.9	80.9	T = 13.5°C,SC 450 umhos/cm, EC 350 umhos/cm
12/05/02	15:10	45				101.1	83.1	
12/05/02	15:15	50				103.9	85.9	Cascading wtr
12/05/02	15:20	55				105.9	87.9	
12/05/02	15:25	60				105.5	87.5	Q = 20 gal/13 sec.
12/05/02	15:35	70				110.7	92.7	
12/05/02	15:45	80				112.6	94.6	
12/05/02	16:05	100				116.8	98.8	
12/05/02	16:25	120				119.9	101.9	Q = 20 gal/12 sec.
12/05/02	16:45	140				122.0	104.0	T = 13.7°C, SC 450 umhos/cm, EC 350 umhos/cm
12/05/02	16:55	150				123.1	105.1	
Begin Recovery, pump off at:			12/05/02	16:55				
12/05/02	16:56	1	151.0			112.6	94.6	
12/05/02	16:57	2	76.0			93.4	76.4	
12/05/02	16:59	4	38.5			81.3	63.3	
12/05/02	17:00	5	31.0			76.2	58.2	
12/05/02	17:01	6	26.0			71.7	53.7	
12/05/02	17:02	7	22.4			67.2	49.2	
12/05/02	17:03	8	19.8			64.2	46.2	
12/05/02	17:04	9	17.7			61.8	43.8	
12/05/02	17:05	10	16.0			59.2	41.2	
12/05/02	17:07	12	13.5			55.1	37.1	
12/05/02	17:09	14	11.7			51.2	33.2	
12/05/02	17:11	16	10.4			49.1	31.1	
12/05/02	17:14	19	8.9			46.1	28.1	
12/05/02	17:17	22	7.8			44.0	26.0	
12/05/02	17:20	25	7.0			42.6	24.6	
12/05/02	17:23	28	6.4			41.0	23.0	
12/05/02	17:26	31	5.8			39.6	21.6	
12/05/02	17:30	35	5.3			38.7	20.7	
12/05/02	17:35	40	4.8			36.9	18.9	
12/05/02	17:40	45	4.3			35.7	17.7	
12/05/02	17:45	50	4.0			34.7	16.7	
12/05/02	17:55	60	3.5			32.9	14.9	
12/05/02	18:05	70	3.1			31.9	13.9	

Notes and Comments:
Pump at ~190 ft.
Well being used periodically for drilling water, water level at start of test at 18' ft and still rising. SWL about 15' from previous meas.

Time - Drawdown

Spring Valley Ranch
12" Supply Well, Q = 100 gpm

Test data: 12/5/02



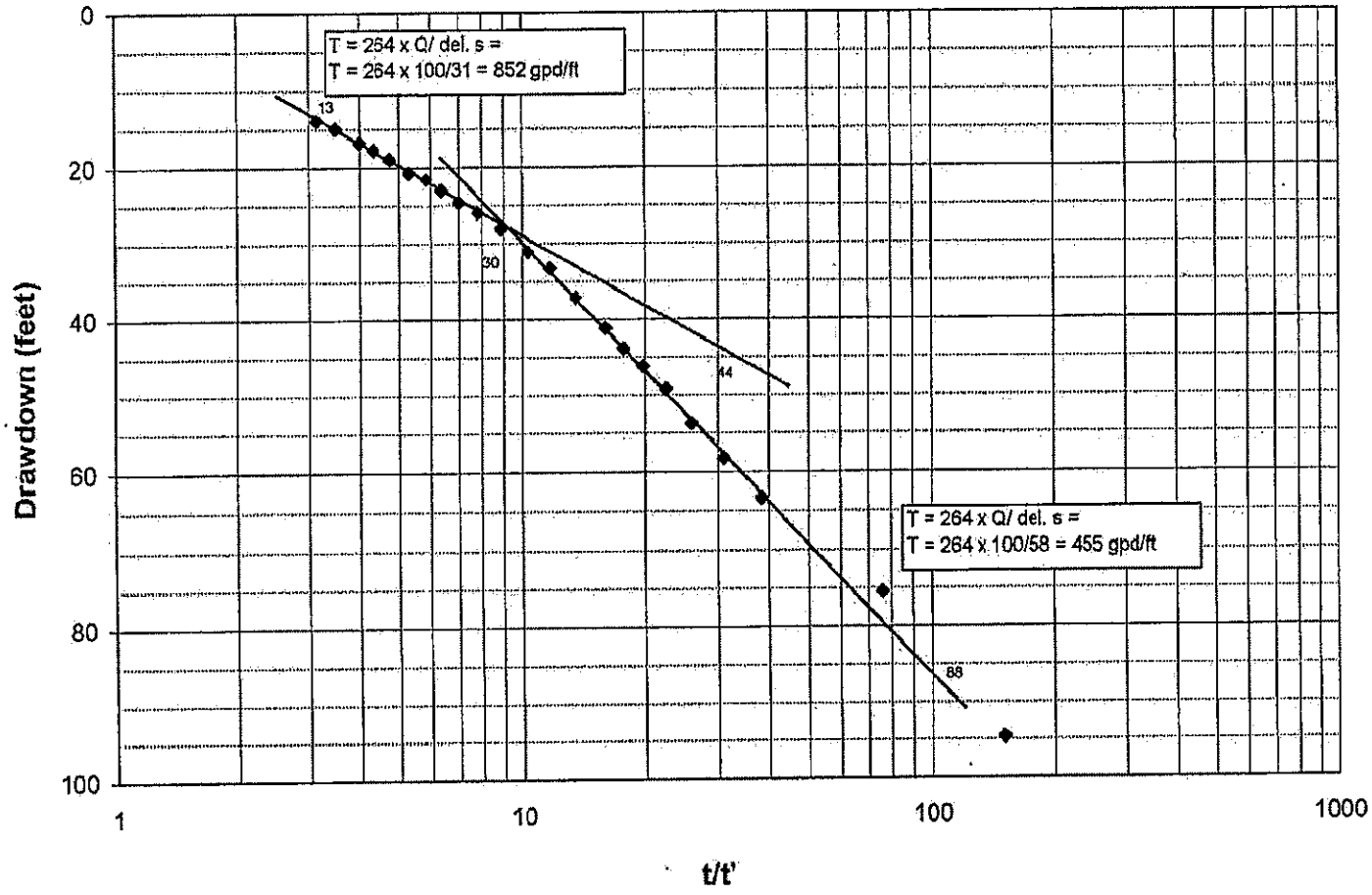
Feast Geosciences, LLC

Time - Recovery

Spring Valley Ranch

12" Supply Well, Q = 100 gpm

Test date: 12/5/02



Feast Geosciences, LLC

Analytical Laboratories, Inc.

1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515

Attn: TERRY SCANLAN
SCANLAN ENGINEERING
600 EAST RIVER PARK LANE
SUITE 105
BOISE, ID 83706

Collected By: CHUCK FEAST
Submitted By: CHUCK FEAST

Source of Sample:
SVR IRRIGATION WELL PROJECT:SPRING VALLEY RANCH

Time of Collection: 16:35
Date of Collection: 03/06/2003
Date Received: 03/07/2003
Report Date: 03/31/2003

Laboratory Analysis Report

Sample Number: 0309662

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Arsenic Furnace		0.006	mg/L	0.003	SM 3113 B	03/24/2003	DMB
Beryllium Furnace		<0.0005	mg/L	0.0005	SM 3113 B	03/19/2003	DMB
Barium, Ba		0.22	mg/L	0.05	EPA 200.7	03/08/2003	JH
Antimony Furnace		<0.005	mg/L	0.005	SM 3113 B	03/18/2003	DMB
Sodium, Na		27.5	mg/L	0.1	EPA 200.7	03/10/2003	JH
Chromium Furnace		< 0.002	mg/L	0.002	SM 3113 B	03/27/2003	DMB
Mercury, Hg	0.002	<0.0002	mg/L	0.0002	EPA 245.1	03/13/2003	KLZ
Thallium Furnace		< 0.002	mg/L	0.002	SM 3113 B	03/28/2003	DMB
Calcium, Ca		50.0	mg/L	0.1	EPA 200.7	03/10/2003	JH
Magnesium, Mg		11.6	mg/L	0.1	EPA 200.7	03/10/2003	JH
Potassium, K		10.4	mg/L	0.5	EPA 200.7	03/10/2003	JH
Iron, Fe		4.33	mg/L	0.05	EPA 200.7	03/21/2003	JH

Laboratory Analysis Report

Sample Number: 0309662

Test Requested	MCL		Analysis Result	Units	MDL	Method	Date Completed	Analyst
Manganese, Mn			2.29	mg/L	0.05	EPA 200.7	03/21/2003	JH
Nickel, Ni		<	0.02	mg/L	0.02	EPA 200.7	03/28/2003	JH
Nitrate (as N)	10.0		<0.20	mg/L	0.2	EPA 300.1	03/07/2003	GMM
Nitrite (as N)	1.00		0.02	mg/L	0.01	SM4500 NO2-	03/07/2003	CSC
Ammonia Direct (as N)			0.75	mg/L	0.04	EPA 350.1	03/11/2003	GMM
Fluoride, F	4.0		0.79	mg/L	0.1	EPA 300.1	03/11/2003	GMM
Bicarbonate			169	mg/L		SM 2320	03/16/2003	KDH
Hardness			125	mg/L	5	SM 2340	03/14/2003	KDH
Chloride, Cl			12	mg/L	1	EPA 300.1	03/14/2003	GMM
Sulfate, SO4			61	mg/L	1	EPA 300.1	03/14/2003	GMM
Total Dissolved Solids			378	mg/L	25	160.1	03/11/2003	JR
Sulfide, Dissolved (as H2S)			<0.05	mg/L	0.05	SM 4500-S2 D	03/10/2003	JR

Michael Moore

Thank you for choosing Analytical Laboratories for your testing needs.
If you have any questions concerning this report,
please contact: **Michael Moore**

Appendix G
Big Gulch Stockwater Well Data

ANALYTICAL LABORATORIES, INC.
1804 N. 33rd Street
Boise, Idaho 83703
Phone # (208) 342-5515

LABORATORY ANALYSIS REPORT
SAMPLE NUMBER - 6548

Attn. TERRY SCANLAN

SCANLAN ENGINEERING
600 EAST RIVER PARK LANE
SUITE 105
BOISE, ID 83706

Time of Collection: 11:00
Date of Collection: 02/14/03

Date Received: 02/14/03
Date Reported: 02/26/03

Collected by: C FEAST

Submitted by: C FEAST

Source of Sample: PROJECT NAME:SPRING VALLEY RANCH BIG GULCH 1

Test Requested	FRDS #	MCL	Analysis Result	Unit	MDL	Method	Date Completed	Analyst Initials
ANTIMONY FURNACE			<0.005	mg/L	0.005	EPA 200.9	02/24/03	DMB
ARSENIC FURNACE			0.005	mg/L	0.003	EPA 200.9	02/21/03	DMB
BARIUM			0.05	mg/L	0.05	EPA 200.7	02/18/03	JH
BERYLLIUM FURNACE			<0.0005	mg/L	0.0005	EPA 200.9	02/18/03	DMB
CALCIUM			30.8	mg/L	0.10	EPA 200.7	02/19/03	JH
CHROMIUM FURNACE			<0.002	mg/L	0.002	EPA 200.9	02/26/03	DMB
IRON			<0.05	mg/L	0.05	EPA 200.7	02/21/03	JH
MAGNESIUM			6.65	mg/L	0.10	EPA 200.7	02/19/03	JH
MANGANESE			<0.05	mg/L	0.05	EPA 200.7	02/21/03	JH
MERCURY			<0.0002	mg/L	0.0002	EPA 245.1	02/20/03	KLZ
NICKEL			<0.02	mg/L	0.02	EPA 200.7	02/19/03	JH
POTASSIUM			2.1	mg/L	0.5	EPA 200.7	02/19/03	JH
SODIUM			19.2	mg/L	0.10	EPA 200.7	02/19/03	JH
THALLIUM FURNACE			<0.002	mg/L	0.002	EPA 200.9	02/18/03	DMB
AMMONIA DIRECT			<0.04	mg/L	0.04	EPA 350.1	02/18/03	GMM
NITRATE N			0.30	mg/L	0.20	EPA 300.0	02/14/03	GMM
NITRITE N			<0.01	mg/L	0.01	SM 4500NO2-B	02/14/03	CSC
SULFIDE			<0.05	mg/L	0.05	SM 4500 D	02/17/03	JR
BICARBONATE			121	mg/L		SM 2320	02/20/03	GMM
CHLORIDE			5	mg/L	1	EPA 300.0	02/18/03	GMM
FLUORIDE DIRECT			0.60	mg/L	0.10	EPA 300.0	02/21/03	GMM
HARDNESS			107	mg/L	5.0	SM 2340	02/20/03	GMM
SULFATE			24	mg/L	1.0	EPA 300.0	02/18/03	GMM
TOTAL DISSOLVED SOLIDS			206	mg/L	25	EPA 160.1	02/18/03	RG

Michael D. Moore

THANK YOU FOR CHOOSING ANALYTICAL LABORATORIES, INC. FOR YOUR TESTING NEEDS.

PLEASE CONTACT MICHAEL MOORE IF YOU HAVE ANY QUESTIONS REGARDING
THIS REPORT OR ANY FUTURE ANALYTICAL NEEDS.

ANALYTICAL LABORATORIES, INC.
1804 N. 33rd Street
Boise, Idaho 83703
Phone # (208) 342-5515

INORGANIC CHEMICAL ANALYSIS REPORT For Public Water Systems

PRIMARY IOC CONTAMINANTS (Mandatory, except for transient water systems)

FRDS	Contaminant	MCL(mg/L)	Result (mg/L)	MDL (mg/L)	Method	Ana-lyst	Analysis Date	FRDS	Contaminant	MCL(mg/L)	Result (mg/L)	MDL (mg/L)	Method	Ana-lyst	Analysis Date
1074	Antimony	0.006	ND	0.005	EPA 200.9	DMB	02/24/03	1036	Nickel	N/A	ND	0.02	EPA 200.7	JH	02/19/03
1005	Arsenic	0.05	0.005	0.003	EPA 200.9	DMB	02/21/03	1045	Selenium	0.05	---				
1010	Barium	2	0.05	0.05	EPA 200.7	JH	02/18/03	1052	Sodium	N/A	19.2	0.10	EPA 200.7	JH	02/19/03
1075	Beryllium	0.004	ND	0.0005	EPA 200.9	DMB	02/18/03	1085	Thallium	0.002	ND	0.002	EPA 200.9	DMB	02/18/03
1015	Cadmium	0.005	---					1024	Cyanide	0.2	---				
1020	Chromium	0.1	ND	0.002	EPA 200.9	DMB	02/26/03	1025	Fluoride	4.0	0.60	0.10	EPA 300.0	GMM	02/21/03
1035	Mercury	0.002	ND	0.0002	EPA 245.1	KLZ	02/20/03								

SECONDARY AND OTHER IOC CONTAMINANTS (OPTIONAL)

1017	Chloride	5	1	EPA 300.0	GMM	02/18/03	1003	Ammonia (as N)	ND	0.04	EPA 350.1	GMM	02/18/03
1905	Color	---					1016	Calcium (as $CaCO_3$)	30.8	0.10	EPA 200.7	JH	02/19/03
1027	Hydrogen Sulfide	---					1915	Hardness (as $CaCO_3$)	107	5.0	SM 2340	GMM	02/20/03
1028	Iron	ND	0.05	EPA 200.7	JH	02/21/03	1031	Magnesium	6.65	0.10	EPA 200.7	JH	02/19/03
1032	Manganese	ND	0.05	EPA 200.7	JH	02/21/03	1925	pH	---				
1920	Odor	---					1042	Potassium	2.1	0.5	EPA 200.7	JH	02/19/03
2905	Surfactants	---					1049	Silica (as SiO_2)	---				
1930	Dissolved Solids	206	25	EPA 160.1	RG	02/18/03	1030	Lead	---				
1095	Zinc	---					1022	Copper	---				
1050	Silver	---					1926	Conductive μS/cm	---				
1002	Aluminum	---					1997	Langlier Index	---				
1927	Alkalinity (as $CaCO_3$)	---											

LAB RESULT REPORTING CODES:

ND = Not detected within sensitivity of instrument

--- = No analysis performed for this contaminant

Numerical entry = Detection at level indicated

Nitric Acid Preservative ☑ Yes ☐ No

COMMENTS:

PWS #	
Lab Sample Tracking #	6548
Date Collected	02/14/03
Sample Type	Water
Date Received	02/14/03
Time Collected	11:00
Location Tag #	
Sample Collection Location	PROJECT NAME:SPRING VALLEY
Date Reported by Lab	02/26/03
Jurisdiction	
PWS Contact Phone (208)	208-383-4140

Michael A. Moore 2/26/03
Signature of Lab Supervisor Date

Lab ID: ID00020

Attn: TERRY SCANLAN
SCANLAN ENGINEERING
600 EAST RIVER PARK LANE
SUITE 105
BOISE, ID 83706

CHAIN OF CUSTODY RECORD

CLIENT INFORMATION:	PROJECT INFORMATION:
Attn: Terry Scanlan	Project Manager:
Company: Scanlan Engineering	Project Name: Spring Valley Ranch
Address: 600 E River Park Ln Suite 105 Boise, ID 83706	Project Number:
	Purchase Order Number:
Phone: 383-4140 Fax: 383-4156	Required Due Date:
Sampled by: C. Feast	Transported by: (Please print) CHUCK FEAST

ANALYTICAL LABS, INC.
1804 N. 33rd Street • Boise, ID 83703
(208) 342-5515 • Fax: (208) 342-5591 • 1-800-574-5773
Website: http://home.rmci.net/ali • E-mail: ali@rmci.net

ANALYSIS REQUESTED

Lab ID	Date Sampled	Time Sampled	Sample Description	Sample Matrix	Remarks:
	2/14/03	11:00	Big Gulch 1	Groundwtr	See 6548
	2/14/03	12:00	Little Gulch 1	"	6549

See Previous Analyses for SVR (Spring Valley Ranch)

Invoice to: *(If different than above address)*

Special Instructions: See all samples filtered through .45u filter at time of sampling. Sample # 4242G

ALLOCATIONS OF RISK: Analytical Laboratories, Inc. will perform preparation and testing services, obtain findings and prepare reports in accordance with Good Laboratory Practices (GLP). If, for any reason, Analytical Laboratories, Inc. errors in the conduct of a test or procedure their liability shall be limited to the cost of the test or procedure completed in error. Under no circumstance will Analytical Laboratories, Inc. be liable for any other cost associated with obtaining a sample or use of data.

SAMPLE RECEIPT	Note: Samples are discarded 21 days after results are reported. Hazardous samples will be returned to client or disposed of at client expense.			
Total # of Containers:	Relinquished By: (Signature) Chuck Feast	Date / Time	Received By: (Signature)	Date / Time
Chains of Custody Seals: Y / N / NA	Company: Feast Geosciences	2/14/03 13:30	Company: ali	/
Intact: Y / N / NA	Relinquished By: (Signature)	Date / Time	Received at Laboratory By: (Signature)	Date / Time
Temperature Received:	Company:	/	Mary Roberts	2/14/03 14:00
Condition:				

Appendix H
Little Gulch Stockwater Well Data

ANALYTICAL LABORATORIES, INC.

1804 N. 33rd Street
Boise, Idaho 83703
Phone # (208) 342-5515

LABORATORY ANALYSIS REPORT
SAMPLE NUMBER - 6549

Attn. TERRY SCANLAN

SCANLAN ENGINEERING
600 EAST RIVER PARK LANE
SUITE 105
BOISE, ID 83706

Time of Collection: 12:00
Date of Collection: 02/14/03

Date Received: 02/14/03
Date Reported: 02/26/03

Collected by: C FEAST

Submitted by: C FEAST

Source of Sample: PROJECT NAME:SPRING VALLEY RANCH LITTLE GULCH 1

Test Requested	FRDS #	MCL	Analysis Result	Unit	MDL	Method	Date Completed	Analyst Initials
ANTIMONY FURNACE			<0.005	mg/L	0.005	EPA 200.9	02/24/03	DMB
ARSENIC FURNACE			0.006	mg/L	0.003	EPA 200.9	02/21/03	DMB
BARIUM			<0.05	mg/L	0.05	EPA 200.7	02/18/03	JH
BERYLLIUM FURNACE			<0.0005	mg/L	0.0005	EPA 200.9	02/18/03	DMB
CALCIUM			23.9	mg/L	0.10	EPA 200.7	02/19/03	JH
CHROMIUM FURNACE			0.004	mg/L	0.002	EPA 200.9	02/26/03	DMB
IRON			<0.05	mg/L	0.05	EPA 200.7	02/21/03	JH
MAGNESIUM			6.55	mg/L	0.10	EPA 200.7	02/19/03	JH
MANGANESE			<0.05	mg/L	0.05	EPA 200.7	02/21/03	JH
MERCURY			<0.0002	mg/L	0.0002	EPA 245.1	02/20/03	KLZ
NICKEL			<0.02	mg/L	0.02	EPA 200.7	02/19/03	JH
POTASSIUM			1.7	mg/L	0.5	EPA 200.7	02/19/03	JH
SODIUM			21.2	mg/L	0.10	EPA 200.7	02/19/03	JH
THALLIUM FURNACE			<0.002	mg/L	0.002	EPA 200.9	02/18/03	DMB
AMMONIA DIRECT			<0.04	mg/L	0.04	EPA 350.1	02/18/03	GMM
NITRATE N			0.59	mg/L	0.20	EPA 300.0	02/14/03	GMM
NITRITE N			<0.01	mg/L	0.01	SM 4500NO2-B	02/14/03	CSC
SULFIDE			<0.05	mg/L	0.05	SM 4500 D	02/17/03	JR
BICARBONATE			104	mg/L		SM 2320	02/20/03	GMM
CHLORIDE			6	mg/L	1	EPA 300.0	02/18/03	GMM
FLUORIDE DIRECT			0.59	mg/L	0.10	EPA 300.0	02/21/03	GMM
HARDNESS			89.7	mg/L	5.0	SM 2340	02/20/03	GMM
SULFATE			21	mg/L	1.0	EPA 300.0	02/18/03	GMM
TOTAL DISSOLVED SOLIDS			192	mg/L	25	EPA 160.1	02/18/03	RG

Michael D. Moore

THANK YOU FOR CHOOSING ANALYTICAL LABORATORIES, INC. FOR YOUR TESTING NEEDS.

PLEASE CONTACT MICHAEL MOORE IF YOU HAVE ANY QUESTIONS REGARDING
THIS REPORT OR ANY FUTURE ANALYTICAL NEEDS.

ANALYTICAL LABORATORIES, INC.
1804 N. 33rd Street
Boise, Idaho 83703
Phone # (208) 342-5515

INORGANIC CHEMICAL ANALYSIS REPORT For Public Water Systems

PRIMARY IOC CONTAMINANTS (Mandatory, except for transient water systems)

FRDS	Contaminant	MCL(mg/L)	Result (mg/L)	MDL (mg/L)	Method	Ana-lyst	Analysis Date	FRDS	Contaminant	MCL(mg/L)	Result (mg/L)	MDL (mg/L)	Method	Ana-lyst	Analysis Date
1074	Antimony	0.006	ND	0.005	EPA 200.9	DMB	02/24/03	1036	Nickel	N/A	ND	0.02	EPA 200.7	JH	02/19/03
1005	Arsenic	0.05	0.006	0.003	EPA 200.9	DMB	02/21/03	1045	Selenium	0.05	---				
1010	Barium	2	ND	0.05	EPA 200.7	JH	02/18/03	1052	Sodium	N/A	21.2	0.10	EPA 200.7	JH	02/19/03
1075	Beryllium	0.004	ND	0.0005	EPA 200.9	DMB	02/18/03	1085	Thallium	0.002	ND	0.002	EPA 200.9	DMB	02/18/03
1015	Cadmium	0.005	---					1024	Cyanide	0.2	---				
1020	Chromium	0.1	0.004	0.002	EPA 200.9	DMB	02/26/03	1025	Fluoride	4.0	0.59	0.10	EPA 300.0	GMM	02/21/03
1035	Mercury	0.002	ND	0.0002	EPA 245.1	KLZ	02/20/03								

SECONDARY AND OTHER IOC CONTAMINANTS (OPTIONAL)

1017	Chloride	6	1	EPA 300.0	GMM	02/18/03	1003	Ammonia (as N)	ND	0.04	EPA 350.1	GMM	02/18/03
1905	Color	---					1016	Calcium (as $CaCO_3$)	23.9	0.10	EPA 200.7	JH	02/19/03
1027	Hydrogen Sulfide	---					1915	Hardness (as $CaCO_3$)	89.7	5.0	SM 2340	GMM	02/20/03
1028	Iron	ND	0.05	EPA 200.7	JH	02/21/03	1031	Magnesium	6.55	0.10	EPA 200.7	JH	02/19/03
1032	Manganese	ND	0.05	EPA 200.7	JH	02/21/03	1925	pH	---				
1920	Odor	---					1042	Potassium	1.7	0.5	EPA 200.7	JH	02/19/03
2905	Surfactants	---					1049	Silica (as SiO_2)	---				
1930	Dissolved Solids	192	25	EPA 160.1	RG	02/18/03	1030	Lead	---				
1095	Zinc	---					1022	Copper	---				
1050	Silver	---					1926	Conductive μS/cm	---				
1002	Aluminum	---					1997	Langlier Index	---				
1927	Alkalinity (as $CaCO_3$)	---											

LAB RESULT REPORTING CODES:

ND = Not detected within sensitivity of instrument

--- = No analysis performed for this contaminant

Numerical entry = Detection at level indicated

Nitric Acid Preservative ☑ Yes ☐ No

PWS #	
Lab Sample Tracking #	6549
Date Collected	02/14/03
Sample Type	Water
Date Received	02/14/03
Time Collected	12:00
Location Tag #	
Sample Collection Location	PROJECT NAME:SPRING VALLEY
Date Reported by Lab	02/26/03
Jurisdiction	
PWS Contact Phone (208)	208-383-4140

COMMENTS:

Michael D. Morris 2/26/03
Signature of Lab Supervisor Date

Lab ID: ID00020

Attn: TERRY SCANLAN
SCANLAN ENGINEERING
600 EAST RIVER PARK LANE
SUITE 105
BOISE, ID 83706

AQUIFER EVALUATION IN THE BIG GULCH AND LITTLE GULCH AREAS OF SPRING VALLEY RANCH



October 2004

Department of Water Resources
APPLICANT'S
Exhibit 27
Date Admitted 10-31-06
DAN

SPF Water Engineering, LLC
water resource consultants

AQUIFER EVALUATION IN THE BIG GULCH AND LITTLE GULCH AREAS OF SPRING VALLEY RANCH

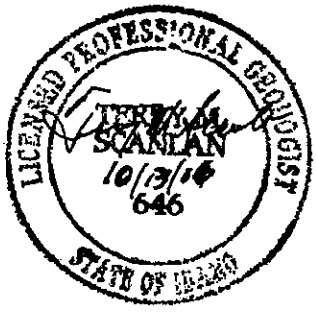
Prepared for

SunCor Development Company
SunCor Idaho, LLC
485 East Riverside Drive, Suite 300
Eagle, ID 83616

Prepared by

SPF Water Engineering, LLC
600 East River Park Lane
Boise, ID 83706

October 2004





SPF Water Engineering, LLC
water resource consultants

EXECUTIVE SUMMARY

SunCor Development Company is evaluating development potential for the Spring Valley Ranch property, which is located northwest of Boise, Idaho. The western portion of the Spring Valley Ranch property extends into portions of Little Gulch and Big Gulch. Surface water in both of these gulches drain southwestward into the Lower Boise River Basin. SPF Water Engineering, LLC (SPF) conducted exploration drilling, well testing, and water chemistry analyses to identify and evaluate potential water supplies for the Spring Valley Ranch project.

Two general aquifers are present in the western portion of Spring Valley Ranch. The Willow Creek aquifer is found in a sequence of thick, coarse-grained sand beds with occasional fine gravel zones. Spring Valley Ranch exploration wells SVR 6 and SVR 10 tap this aquifer. Spring Valley Ranch exploration wells penetrating the Northern Margin aquifers, characterized by interbedded sand, silt, and clay sediments, and typically underlain by a very thick clay, include SVR 7 and SVR 9 (and possibly the lower sections of SVR 10).

The Willow Creek Aquifer is also characterized by water levels substantially lower than surrounding Northern Margin aquifers. Furthermore, water chemistry and temperatures in the Willow Creek Aquifer are different than Northern Margin aquifers. Potentiometric surface contours indicate ground water flow from the Willow Creek Aquifer toward the Payette River Valley. Ground water reaching the Willow Creek Aquifer from the upper Willow Creek drainage appears to be tributary to the Payette River, not the Boise River.

These aquifers represent a substantial water resource for initial development of the Spring Valley Ranch project area. High capacity wells, with sustainable yields likely in excess of 2,000 gpm, can be constructed in the Willow Creek aquifer and in some areas of the Northern Margin aquifers.

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1. INTRODUCTION

1.1. Background

SunCor Development Company is evaluating development potential of the Spring Valley Ranch property located northwest of Boise, Idaho. The property consists of more than 30,000 acres located in Ada, Gem, and Boise Counties. The western portion of Spring Valley Ranch property extends into portions of Little Gulch and Big Gulch, both of which drain southwestward into the Lower Boise River Basin (Figure 1). Although remote from the initial project development area along State Highway 55, this area was suspected of having productive aquifers.

1.2. Purpose and Objectives

The purpose of the hydrologic analyses described in this report was to identify and evaluate potential water supplies for the Spring Valley Ranch project. The general objective was to evaluate potential water resources in the Little and Big Gulch portions of the ranch. Specific objectives of this investigation included the following:

1. Drill and construct four exploration wells in Big Gulch and Little Gulch areas.
2. Document lithology, collect and analyze water chemistry, and conduct well tests in each new exploration well.
3. Evaluate potential for ground water production in Big Gulch and Little Gulch areas on the basis of exploration well data.

This report presents data, results, and conclusions from the drilling, construction, and testing of four exploration wells in the western portion of the Spring Valley Ranch (Table 1). Potentiometric surface maps and water chemistry tables also include data from other wells in the vicinity of Big and Little Gulch.

1.3. Aquifers in the Western Portion of the Spring Valley Ranch

A number of wells in the Willow Creek Valley (Figure 2) penetrate a highly productive, coarse-grained sedimentary aquifer. The aquifer is tapped by wells located along Chaparral Road between Highway 16 and the confluence of the North and South Forks of Willow Creek. This aquifer, referred herein as the Willow Creek Aquifer, has been developed by high-capacity wells on the Lynn Ranch in the Willow Creek Valley. These wells penetrate a highly productive aquifer that is found in a sequence of thick, coarse-grained sand beds with occasional fine gravel zones. The water produced from wells in the aquifer is warm (e.g., 75°F to 85°F). Wells tapping the aquifer in Willow Creek Valley generally have static water level elevations of 2400 feet with

depths to water ranging from about 325 to 425 feet below ground surface, depending on local topography.

Date	Item
February – March 2004	Exploration Well SVR 6 (8-inch x 740 feet) constructed in Big Gulch and test pumped at 350 gpm for 24 hours with 3 feet of drawdown
March – April 2004	Exploration Well SVR 7 (8-inch x 810 feet) constructed in lower Big Gulch and test pumped at 500 gpm for 22 hours, resulting in 30 feet of drawdown.
June – August 2004	Drilling of SVR 9 (8-inch x 805 feet; Little Gulch) and SVR 10 (8-inch; upper Big Gulch); 3-hour pumping test in SVR 9 at 43 gpm with 13 feet of drawdown; 24-hour test of SVR 10 at 55 gpm and 60 feet of drawdown.

Table 1: Spring Valley Ranch Project – western area exploration drilling.

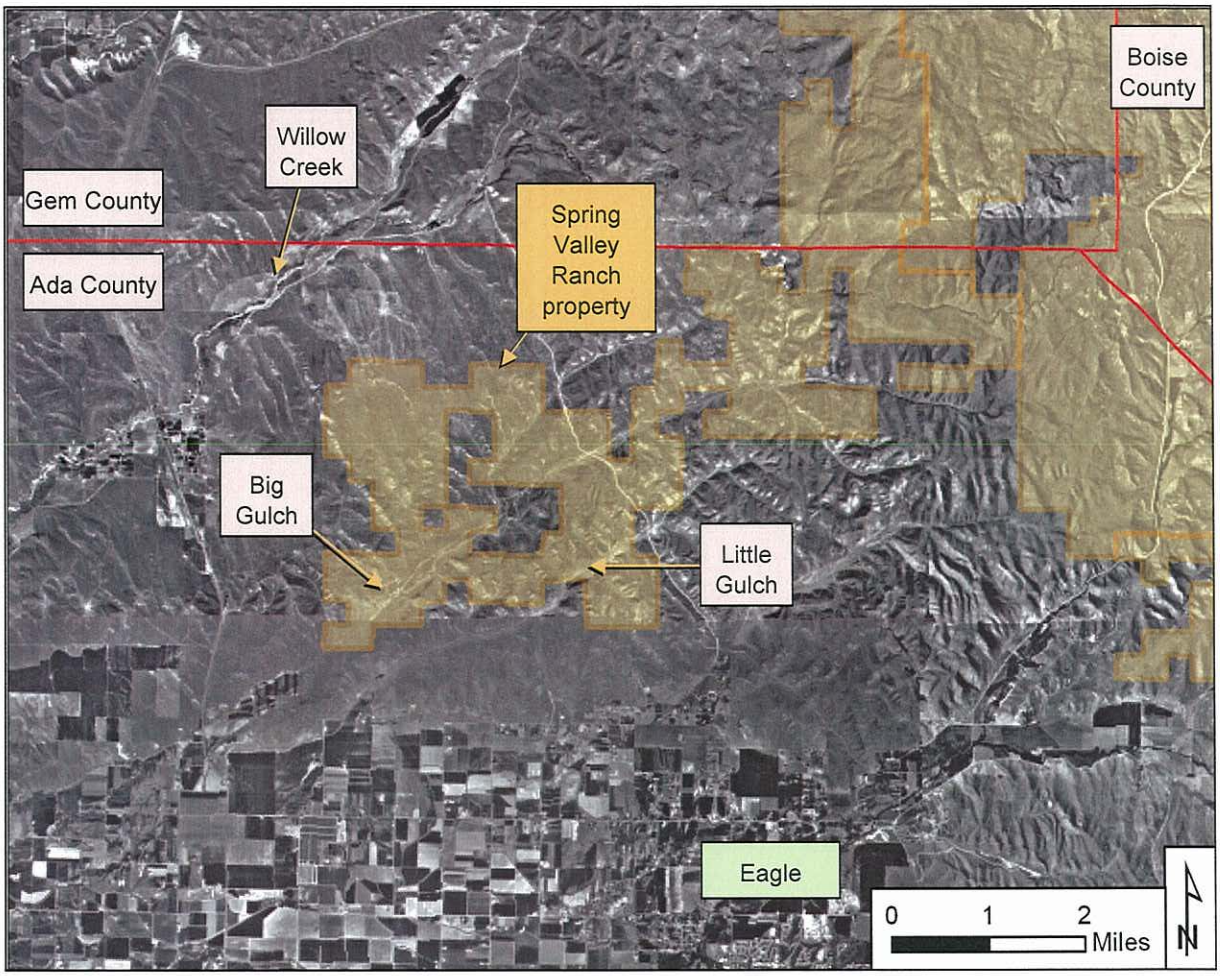


Figure 1: Western Spring Valley Ranch area.

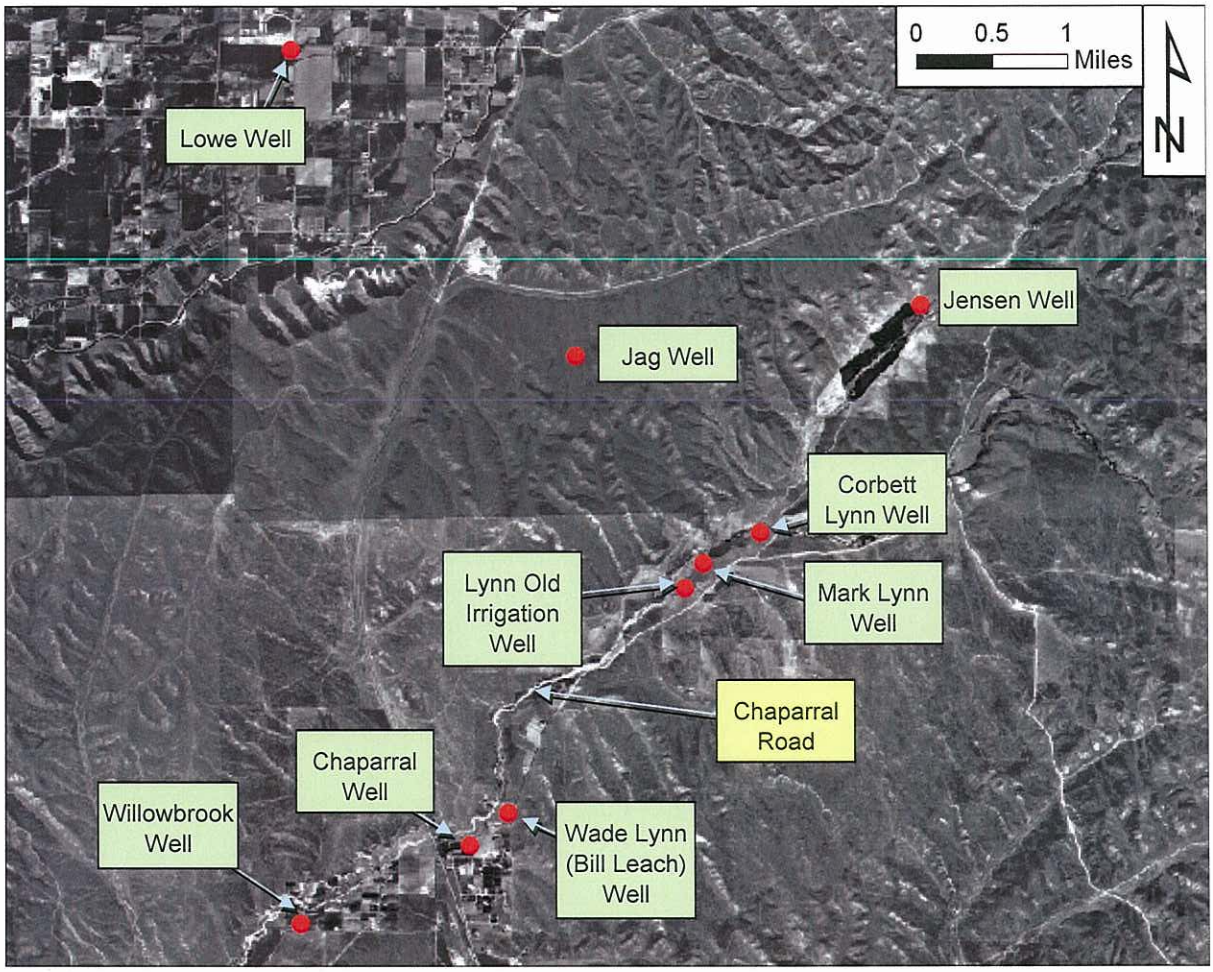


Figure 2: Willow Creek wells.

South of the Spring Valley Ranch property, numerous wells along the northern margin of the Boise Foothills (e.g., wells in the areas north of the Boise River between Eagle and Star) draw water from one or more aquifers characterized by interbedded sand, silt, and clay sediments, and typically underlain by a very thick (hundreds of feet) unit of gray (sometimes described as blue) clay. The clay is associated with the mudstone facies of the Terteling Springs Formation (Burnham and Wood, 1992). The sediments found in these aquifers, referred to herein as the "Northern Margin" aquifers (Squires et al., 1992), appear to belong to Idaho Group sediments found throughout the Boise Valley. These Northern Margin Aquifer sediments may contain productive, coarse grained layers, but are commonly interbedded with silt and clay layers. The interbedded sand, silt, and clay layers form productive cold water aquifers. Wells located in the Boise Valley in the areas north of Eagle and Star typically draw water from these Northern Margin Aquifers.

The Willow Creek Aquifer differs from the Northern Margin aquifers in several ways. The Willow Creek Aquifer contains a much thicker profile of coarse-grained sediments. Water levels in wells tapping the Willow Creek Aquifer along Chaparral Road are

approximately 150 feet lower than in wells just to the south (e.g., Chaparral and Willowbrook subdivisions). Water levels in the Willow Creek Aquifer appear to be very similar to ground water levels in the Payette River Valley near Emmett.

Ground water development potential north of the Willow Creek aquifer is poor. Published geologic maps (Savage, 1958) and reconnaissance investigation for this project (Scanlan, July 11, 2002) suggest that the area northeast of the Willow Creek Aquifer consists primarily of Miocene-age volcanic rocks (Columbia River basalt and Owyhee rhyolite), Miocene-age sedimentary rocks (Poison Creek formation and Payette formation), and Cretaceous-age granitic rocks of the Idaho Batholith. These rock units extend from the upper reaches of Big Gulch north to beyond Pearl. Significant aquifers have not been identified within these rock units.

2. WELL CONSTRUCTION

This section describes the drilling and construction of exploration wells SVR 6, SVR 7, SVR 9, and SVR 10 in the western portion of the Spring Valley Ranch. Well locations are listed in Table 2, and shown in Figure 3.

2.1. Exploration Well SVR 6

SVR 6 was the first exploration well drilled in the western portion of Spring Valley Ranch. The purpose of SVR 6 was to provide definition of local stratigraphy and explore for water-bearing zones in this area.

Well	Drainage	Location	Additional Description
SVR 6	Big Gulch	SE ¼, NW ¼, Section 13, T5N R1W	1 mile SW of Willow Creek Road
SVR 7	Big Gulch	NE ¼, SW ¼, Section 23, T5N R1W	2.5 miles SW of Willow Creek Road
SVR 9	Little Gulch	SW ¼, NE ¼, Section 19, T5N R1E	0.5 mile SW of Willow Creek Road
SVR 10	Big Gulch	SW ¼, SW ¼, Section 8, T5N R1E	0.5 mile NE of Willow Creek Road

Table 2: Big Gulch and Little Gulch exploratory well locations.

2.1.1. Construction

SVR 6 (IDWR Tag No. 0030892) was drilled by Adamson Pump and Drilling (Nampa, ID) between January 26 and February 27, 2004, using the air-rotary method. The

borehole was overbored from 0 to 105 feet. Casing (8-inch diameter, 0.250-inch wall thickness) was driven to a depth of 738 feet. A sand and cement mixture was placed from 730 to 740 feet to plug the bottom of the casing because of heaving sand. The casing was perforated with a star perforator from 560 to 720 feet. The annular space between the casing and borehole sides above 105 feet was sealed with 3,150 pounds of bentonite. The static water level was recorded at 455 feet below ground surface. The first water encountered by the driller was recorded as 560 feet, although this probably reflects the drilling method; the first water encountered is almost certainly the same as the observed static level (455 feet).

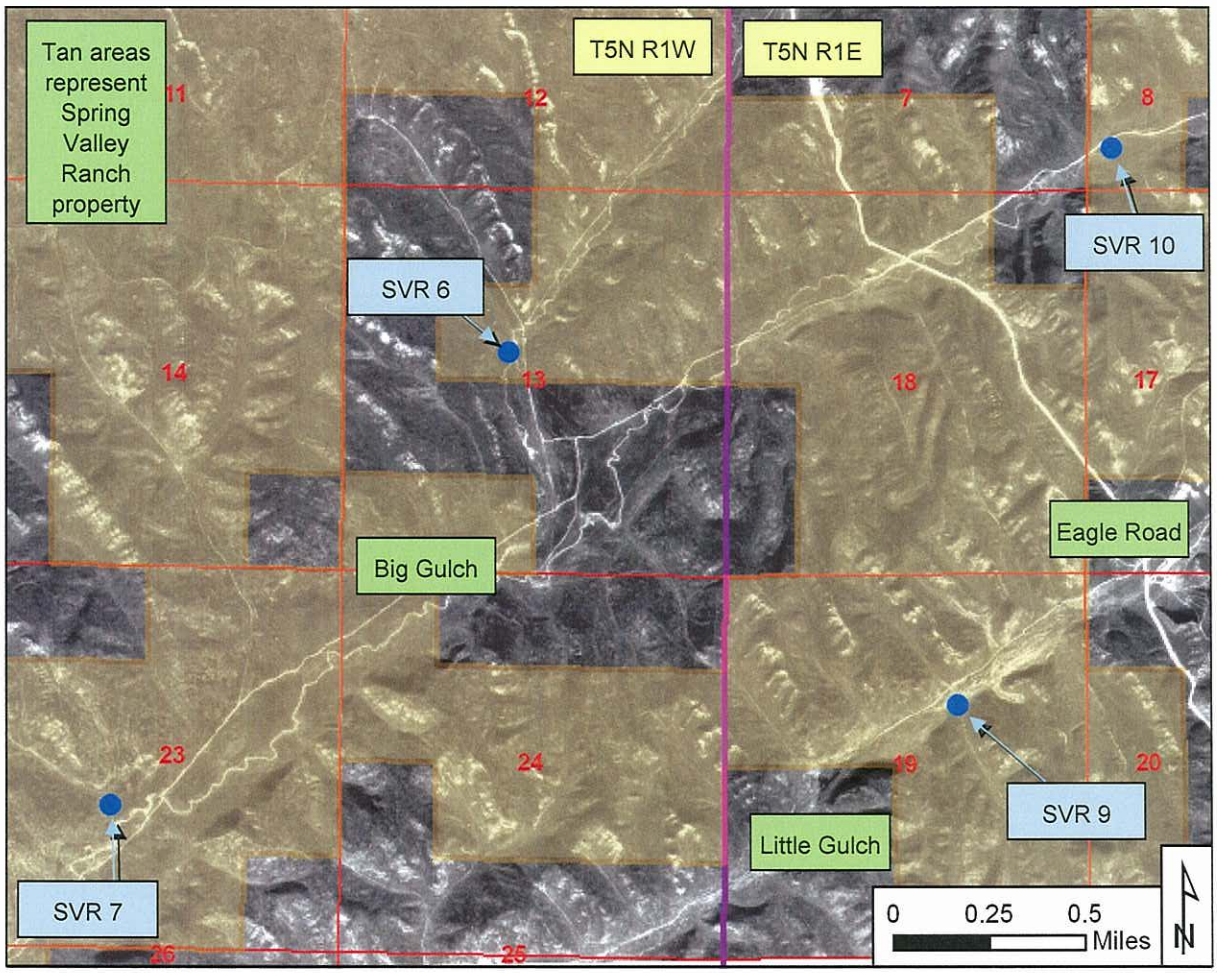


Figure 3: Locations of Exploration Wells SVR 6, 7, 9, and 10.

The lithologic materials encountered by this borehole included coarse subrounded quartz sand with fine to medium gravel; gravel (less than 1-inch diameters); and occasional iron oxide clay sediments. Sediment coloring generally varied from brown to gray with occasional iron oxide staining.

2.1.2. Well Test

A 24-hour pumping test was conducted at this well, followed by a 2-hour recovery test. During the pumping test, SVR 6 experienced a maximum water level drawdown of 2.82 feet with an average discharge rate of 358 gpm during the pumping test. Most of the drawdown can be attributed to head losses in the well bore. The aquifer recovered to within 0.16 feet of the original static level within 3 minutes after turning the pump off. The estimated transmissivity was very large: greater than 1.8×10^6 gpd/ft.

2.1.3. Water Chemistry

Water samples were collected from SVR 6 during the pumping test for water quality analyses, which included testing for public drinking water system inorganic chemical constituents. Results are summarized in Table 3; full results are provided in Appendix A. The laboratory analyses from SVR 6 generally indicated good quality water, with the exception of arsenic (0.067 mg/L).

The water temperature is of particular interest in SVR 6. The water temperature was originally measured at 81°F. Following well completion, a temperature profile of the well bore was conducted. The water temperature ranged from 87.6 degrees at 460 feet to 80.4 degrees at 727 feet. A decrease in temperature with depth is not typical of most aquifers. The decreasing temperature with depth may reflect geothermal inflow near the top of the Willow Creek Aquifer or thermal stratification within the aquifer.

2.1.4. Discussion

Results of drilling and test pumping Exploration Well SVR 6 suggest that the potential for municipal production at this site is very high. However, the arsenic level exceeded both the current and future maximum contaminant levels, and will require treatment for public water system use. Otherwise, water quality (based on inorganic constituents) appears to be acceptable for public water system use. The deep water table (455 feet) will result in a high pumping lift.

2.2. Exploration Well SVR 7

Exploration well SVR 6 clearly penetrated a highly productive aquifer. The purpose of SVR 7 was to determine whether this aquifer extended to the southwest to near the southern boundary of the Spring Valley Ranch property. SVR 7 was drilled approximately 1.6 miles to the southwest of SVR 6 in Big Gulch (Figure 3), at a location approximately 850 feet north of the Big Gulch stockwater well.

Constituent	MCL	SMCL	SVR 6	SVR 7	SVR 9	SVR 10	Lynn Old Irrig. Well	Wade Lynn Well	Corbett Lynn Well
Date			3/16/04	4/21/04	6/23/04	8/19/04	6/7/04	6/7/04	6/7/04
Arsenic	0.01*		0.067	<0.005	<0.005	0.012	.014	<0.005	0.027
Ammonia			0.13	<0.04	0.10	<0.04	<0.04	0.58	0.05
Antimony	0.006		<0.005	<0.005	<0.005	<0.005			
Barium	2		<0.05	<0.05	0.10	<0.05			
Beryllium	0.004		<0.0005	<0.0005	<0.0005	<0.0005			
Cadmium	0.005		<0.0005	<0.0005	<0.0005	<0.0005			
Calcium			9.71	29.1	24.9	17.1	17.1	17.2	20.9
Chromium	0.1		<0.002	<0.002	<0.002	0.002			
Iron		0.3	0.09	0.11	0.60	0.36	<0.05	0.08	0.05
Lead	0		<0.005						
Magnesium			0.69	8.19	10.4	3.20	0.45	2.84	0.24
Manganese		0.05	<0.05	<0.05	0.12	<0.05	<0.05	0.19	<0.05
Mercury	0.002		<0.0002	<0.0002	<0.0002	<0.0002			
Molybdenum			<0.05						
Nickel			<0.02	<0.02	<0.02	<0.02			
Potassium			1.5	2.0	2.0	2.4	1.0	2.0	1.3
Selenium	0.05		<0.005		<0.005	<0.005			
Silica			36.2				36.4	37.4	40.3
Sodium			27.8	22.9	26.9	12.3	40.9	30.3	27.8
Thallium	0.002		<0.002	<0.002	<0.002	<0.002			
Vanadium			<0.05						
Nitrate	10		1.09	0.31	<0.2	5.2	1.3	<0.2	<0.2
Nitrite	1		0.02	<0.01	<0.01	<0.01			
Phosphate			<0.05						
Alkalinity			58.8						
Bicarbonate			58.8	114	107	53.5	94.1	124	77.2
Chloride		250	5	5	10	2	6	3	4
Fluoride	4	2	0.95	0.44	0.45	0.24	4.09	0.3	1.71
Hardness			<0.05	110	102	51.8	45.6	55.4	54.4
Sulfate		250	13	24	44	<1	19	1	29
Sulfide			<0.05	<0.05		<0.05			
TDS		500	98	212	216	70	154	154	120
TSS			<3						
Conductivity (lab)					336				
Field Parameters									
Temp. (C)			27.3	20.1	20	24.4	27.9	30.5	29.8
Temp (F)			81.1	68.1	68	75.9	82.2	86.9	85.6
SC umhos/cm			182.1	300			280	254	245
EC umhos/cm			190.5			160	296	278	270
pH		6.5-8.5	7.67	7.0		7.64	7.9	7.3	7.6

Table 3: Selected water quality parameters.

2.2.1. Construction

SVR 7 (Well Tag No. 0031062) was drilled and constructed (Figure 4) between March 10 and April 10, 2004 by Adamson Pump and Drilling Company using the mud rotary method. An 8-inch diameter open borehole was drilled to a depth of 815 feet for exploration purposes. The borehole penetrated alternating layers of sand, silt, and gray-brown clay to a depth of approximately 270 feet, and a very coarse, clean, brown sand from a depth of 270 feet to 340 feet. The coarse sand was underlain by medium gray (bluish) clay with occasional fine sand and silt.

The zone from 270 to 340 feet was recognized as a potential producing zone. Well cuttings and a geophysical log for the section below 340 feet did not suggest significant production potential. Based on these determinations, a decision was made to complete a test well from 280 to 350 feet. The first step in well completion was to abandon the lower exploratory borehole by pressure grouting with bentonite from 815 feet to 380 feet. The borehole above 380 feet was then reamed to a 12-inch diameter. The well was constructed with 8-inch diameter shutter screen from 280 to 340 feet, 8-inch diameter torch perforated casing from 340 to 350 feet, and 8-inch diameter blank casing extending to above ground surface. A 5/16-inch gravel pack was installed in the annular space from 242 to 380 feet. A bentonite grout seal was pumped in place from 242 feet to ground surface.



Figure 4: Construction of SVR 7.

Following well completion, the well was developed by air-lift pumping at a rate of 100 to 200 gpm for two hours. The static water level following completion was noted at 161 feet below ground surface.

2.2.2. Well Test

A pumping test was conducted in SVR 7 for a period of 22 hours and 15 minutes. The test began as a step-rate test, with an initial discharge rate of 300 gpm for 25 minutes, followed by a rate of 400 gpm for 30 minutes, and a rate of 500 gpm for the remainder of the test period. Water levels were monitored in both the pumping well and in a stockwater well located approximately 850 feet south of SVR 7. The maximum pumping drawdown in SVR 7 was approximately 30 feet. The water level recovered to within 1.5 feet of the pre-pumping static level within minutes after turning the pump off, and to within 0.31 feet of the static level after 7.25 hours. Transmissivity was estimated to be over 300,000 gpd/day in the pumping well, and approximately 240,000 to 300,000 gpd/ft based on observation well drawdown and recovery data.

2.2.3. Chemistry

The chemistry (Table 3) of water produced from this well is excellent. Arsenic concentrations are below the detection limit, and the total dissolved solids are more than double the level found in SVR 6. Temperature was measured at 68°F. The water is richer in calcium and magnesium than the water in SVR 6, but contains less sodium.

2.2.4. Discussion

The aquifer penetrated by SVR 7 appears to be substantially different than the aquifer encountered by SVR 6 just 1.6 miles to the northeast. These differences are apparent in water levels, water chemistry, and lithology. Water levels in SVR 7 are approximately 170 feet higher than in SVR 6. Water chemistry is substantially different – SVR 7 lacks the arsenic found in SVR 6, and has higher TDS levels. The thick gray clay zone encountered in at depth in SVR 7 was not found in SVR 6.

Results of drilling and test pumping of Exploration Well SVR 7 suggest that the potential for municipal production at this site is high. Based on initial chemistry analyses, water from SVR 7 would not require treatment for arsenic.

2.3. Exploration Well SVR 9

Two different aquifers were identified with exploration wells SVR 6 and SVR 7. The purpose of SVR 9 was to determine whether either of these aquifers extended into the Little Gulch area of the Spring Valley Ranch property.

2.3.1. Construction

Exploration well SVR 9 (IDWR Tag No. D0031492) was drilled by Stevens and Sons Well Drilling using the mud-rotary method. Drilling began with an exploratory borehole that was advanced to a depth of 810 feet. Examination of a geophysical log and well cuttings suggest that no water-bearing zones are present below 265 feet. The borehole was abandoned below 265 by filling with bentonite grout. The borehole above 265 feet was then reamed to a 12" diameter, cased with 8-inch steel to 235 feet, and two 10-foot sections of stainless-steel wire-wrapped screen were placed between 235 and 245 feet and between 253 and 263 feet. A driller's report and other information for this well are included in Appendix C.

The well was developed by pumping and surging. The static water level following development was observed at 192 feet below ground surface.

The borehole penetrated a variety of fine to coarse sands, clay, clayey sands, and sandy clays to a depth of approximately 270 feet. From 270 feet to 810 feet the borehole encountered almost continuous medium gray clay, with occasional silt and fine sand. The continuous clay is probably associated with mudstone facies of the Terteling Springs Formation (Burnham and Wood, 1992). Based on lithology, the most productive horizon in this well appears to be the zone from approximately 190 feet (i.e., the static water level) to 265 feet, consisting of reddish brown to light brown, fine to coarse sands with occasional clay stringers.

2.3.2. Well Test

A 3-hour pumping test was conducted in this well on 6/23/04, followed by a 25 minute recovery test. During the pumping test, SVR 9 experienced a maximum water level drawdown of 13.9 feet at an average discharge rate of 43 gpm. Pumping water levels quickly stabilized at about 211 feet below ground surface and remained stable during the test. Within 13 minutes after the pump was stopped water levels were at pre-test levels and stable. Most of the drawdown in the well during pumping appears to be related to well loss. Transmissivity was estimated to be 4,500-20,000 gpd/ft. However, the short test duration, stable pumping water levels, and immediate recovery renders the transmissivity estimate uncertain.

2.3.3. Chemistry

Water samples were collected on June 23, 2004 from SVR 9 for water quality analyses, which included testing for public drinking water system inorganic chemical constituents. Laboratory results indicate elevated iron and manganese concentrations, but otherwise excellent water chemistry (Table 3). The water temperature during test pumping on 6/23/04 was 68°F (20°C).

The driller measured the bottom-hole temperature (at 810 feet below ground surface) by running a bit to the bottom of the borehole, then pulling up and measuring the temperature of a chunk of clay attached to the bit. He recorded a temperature of 93°F

in the clay. The actual temperature of the clay is probably higher (but cooled as the bit was retracted to ground surface).

2.3.4. Discussion

SVR 9 encountered a zone of relatively productive sands from approximately 190 to 265 feet, but the saturated thickness is less than 75 feet. Based on this exploration well, the highly productive aquifer encountered in Big Gulch does not extend into Little Gulch. The well test indicates the aquifer at SVR 9 may be capable of yielding more than 100 gpm but the aquifer is thin and static water levels are near the top of the aquifer. Consequently, long-term production potential is limited. Based on these findings, additional exploration for municipal water supplies in Little Gulch does not appear warranted.

2.4. Exploration Well SVR 10

Exploration well SVR 10 is located approximately 3.2 miles from SVR 7 and approximately 2 miles from SVR 6 in the upper portion of Big Gulch. The purpose of this well was to determine whether the highly productive aquifer encountered in SVR 6 extends into the upper portion of Big Gulch.

2.4.1. Construction

Two boreholes were drilled at the site for SVR 10. The first was drilled by Adamson Pump and Drilling Company beginning on June 7, 2004 using the air-rotary method (Figure 5). As a first step, a nominal 12-inch open hole was drilled with air-rotary to 100 feet. Casing (8-inch diameter, 0.250-inch wall thickness) was then set in the open hole, and then advanced to a depth of 620 feet using air-rotary drill and drive methods. Below 620 feet, an open borehole was advanced to 680 feet. Because of slow drilling at 680 feet the driller decided to change to a different type bit. While pulling the drill pipe and bit from the hole it became stuck at a depth of 520 feet. The driller attempted to drill through the obstruction for about 4 days then decided he would not be able to do so. Consequently he put backwards rotation on the drill pipe and unscrewed it, and was able to retrieve 260 feet of drill pipe. Apparently the casing broke or buckled at 520 feet. It may be possible to use the well for measuring water levels but for all intents and purposes the original well was lost. The driller moved forward about 25 feet and began a replacement well on June 29, 2004.

The replacement well for SVR 10 (IDWR Tag No. 0031220) was drilled using the mud rotary drilling method. A 12-inch diameter borehole was drilled to a depth of 600 feet. An 8-inch well casing was set and sealed to 600 feet, and the casing was sealed in place with bentonite grout. The well was then extended with 8-inch diameter bit to a total depth of 1,005 feet. A single-point resistivity geophysical log was conducted on the borehole below 600 feet.



Figure 5: SVR 10 well site.

Analysis of the drill cuttings and geophysical log shows that the borehole penetrated primarily coarse-grained sand with minor layers of clay and fine gravel from surface to approximately 675 feet. From 675 to 1,005 feet, the borehole penetrated primarily dark gray clay, with clayey sand between 800 and 880 feet. The section above 675 feet appears to be similar to the sediments encountered throughout the 740 feet of section penetrated by SVR 6, the sediments above 340 feet in SVR 7, and the sediments above 240 feet in SVR 9. Similarly, the sediments below 675 feet are similar to the dark gray sediments found below 340 feet in SVR 7 and below 240 feet in SVR 9.

The driller described substantially more clay in the second SVR 10 borehole than in the first borehole (which were approximately 25 feet apart). We attribute the difference in the driller's description to the appearance of cuttings produced by the mud-rotary drilling method as compared to cuttings from the air-rotary drilling method used in the first borehole.

Based on interpretation of the cuttings and geophysics, the driller was instructed to backfill the borehole to approximately 665 feet, and install 6-inch screen and casing between 580 and 665 feet. Proposed screen intervals were 655 to 665 feet and 605 to 625 feet. Unfortunately, the screen assembly became stuck during installation and the screens were installed from 580 to 600 feet (inside of the 8-inch pipe) and from 630 to 640 feet (in a zone consisting primarily of clay). The well was subsequently developed by air-lift pumping at a rate of 50 gpm. As with SVR 9, most of the

drawdown during test pumping can be attributed to well loss rather than aquifer drawdown.

2.4.2. Well Test

The well was test pumped for approximately 24 hours at a rate of 55 gpm. Water level declined approximately 60 feet during the first 8 minutes and then stabilized for the remainder of the test. Upon stopping the pump, the water level recovered to static water level within 8 minutes. Static water level was 485 feet below top of casing.

2.4.3. Chemistry

Water samples were collected during test pumping on August 19, 2004. Water chemistry analysis results (Table 3) indicated an arsenic concentration (0.012 mg/L) that exceeds the current standard (0.010 mg/L), but is not nearly as great as the arsenic concentration in SVR 6 (0.067 mg/L). The arsenic concentration is more similar to that in the Lynn Old Irrigation Well and the Corbett Lynn Well (0.014 and 0.027 mg/L, respectively). The iron concentration in SVR 10 (0.36 mg/L) exceeded the secondary standard for iron (0.3 mg/L), although the iron concentration in SVR 10 was less than in SVR 9 (0.60 mg/L). Interestingly, water from SVR 10 contained elevated nitrate (5.2 mg/L), which does not exceed the maximum contaminant level of 10 mg/L but is unusually high for ground water underlying open rangeland (background concentrations of nitrate are generally less than 0.20 mg/L).

There is increasing concern about the presence of radiological constituents in some Treasure Valley ground water. Water from SVR 10 was analyzed for uranium, radium 226, and radium 228. None of these constituents were detected in SVR 10 samples.

2.4.4. Discussion

The uppermost 675 feet of SVR 10 appears to penetrate the coarse-grained sands (with minor layers of clay and fine gravel) that typify the Willow Creek Aquifer. These were the same coarse-grained sediments encountered in the entire SVR 6 borehole, and in the upper portions of SVR 7 and SVR 9.

The lower portion of the SVR 10 borehole penetrated several hundred feet of thick, bluish-to-light gray clay associated with the lacustrine Idaho Group sediments (mudstone facies of the Terteling Springs Formation). It is therefore likely that this clay sequence underlies the entire Willow Creek Aquifer, even though the clay was not encountered in SVR 6.

The coarse-grained sediments typifying the Willow Creek Aquifer are clearly thinning toward the east. Water levels are above the aquifer-clay transition in SVR 10, but largely below the coarse-grained sediments in SVR 7 and SVR 9. The saturated section of the aquifer is approximately 150 feet thick at SVR 10.

The response to test pumping SVR 10 suggests that the well has poor hydraulic connection to a highly transmissive aquifer. Aquifer parameters could not be accurately quantified from this test. It appears that the aquifer zones penetrated by the well are productive (based on drill cuttings and the geophysical logs), which is not reflected in the test pumping. The low productivity of the test well probably reflects a problem with well completion (e.g., incorrect screen placement) rather than aquifer productivity.

The water chemistry in SVR 10 (Table 3) shows some characteristics of water in other Willow Creek Aquifer wells (e.g., SVR 6 and the three Lynn wells on Chaparral Road). Water in SVR 10 contained elevated arsenic concentrations, relatively low TDS levels, and greater bicarbonate concentrations than the two test wells that appear to be completed in the Northern Margin aquifers (SVR 7 and SVR 9). Water in SVR 10 also has a warm temperature (76 °F), although not quite as warm as the SVR 6 and the other Willow Creek Aquifer wells. However, the iron concentration in SVR 10 is similar to SVR 7 and SVR 9. Water chemistry in SVR 10 probably reflects mixing between waters in the Willow Creek Aquifer and Northern Margin aquifers. Alternatively, the water in SVR 10 may be a mixture of surface recharge from the Big Gulch watershed and upwelling of older geothermal water.

3. HYDROGEOLOGICAL CHARACTERIZATION

3.1. Introduction

Four exploratory wells (SVR 6, SVR 7, SVR 9, and SVR 10) were drilled in the Big and Little Gulch area of Spring Valley Ranch ("Western Ranch Area") as part of this project. General lithologic descriptions, well testing results, and water chemistry results were presented in Section 2.

This section presents a discussion of aquifer characteristics in the Western Ranch Area. The discussion is based on exploratory drilling results, water level data, geological cross-sections, and water chemistry. The purpose of the discussion is to evaluate the extent of water supply and possible sustainable yield from this area.

3.2. Western Spring Valley Ranch Wells

Based on similarities in geology, temperature, chemistry, and water levels, it appears that wells SVR 6 and SVR 10 in the Big Gulch area encountered the Willow Creek Aquifer (see Section 1.3 for a general description of the Willow Creek Aquifer). SVR 6 penetrated a very thick, coarse grained, subangular quartz sediment aquifer with a deep static water level (455 feet at SVR 6), very high transmissivity, and warm temperatures (81°F). The high transmissivity is apparent from both the pumping test

response at SVR 6 (T>1,000,000 gpd/ft) and a nearly flat water table (see Section 2.1.2). Saturated aquifer thickness at SVR 6 is more than 285 feet.

Wells SVR 7 and SVR 9 penetrate sediments that are similar to (and probably the same as) the Northern Margin aquifers found in the northern portion of the Boise River Valley. The wells penetrated interbedded sand, silt, and clay zones, underlain by the massive clay sequence associated with the mudstone facies of the Terteling Springs Formation (Burnham and Wood, 1992). The water-bearing section of the aquifer appears to be 200 to 300 feet thick at SVR 7 in lower Big Gulch. The water-bearing section was less than 100 feet thick at SVR 9 in Little Gulch, suggesting that the aquifer "pinches out" to the northeast, and has little development potential in that area. More than 500 feet of low permeability clay or mudstone underlie the water-bearing section in SVR 9.

SVR 10 penetrates coarse-grained Willow Creek Aquifer sediments seen in SVR 6, but also extends into the thick clay sequence associated with Idaho Group lacustrine deposits (Terteling Springs mudstone facies) found in SVR 7 and SVR 9. Thick, coarse-grained sediments clearly diminish to the east, suggesting that SVR 10 is near the eastern margin of the Willow Creek Aquifer.

3.3. Water Chemistry

Water chemistry in the western portion of Spring Valley Ranch was evaluated using project data and data available from previous water quality sampling by the IDWR, USGS, and other agencies. Project data included water chemistry analyses from SVR 6, SVR 7, SVR 9, SVR 10, the ranch's two stockwater wells in Big Gulch and Little Gulch (see Scanlan Engineering, April, 2003), and the Corbett Lynn Well, Lynn Old Irrigation Well , and Wade Lynn Well in the Willow Creek drainage (see Figure 6).

A number of differences were apparent between water drawn from the hypothesized Willow Creek Aquifer and the Northern Margin aquifers. First, ground water from the Willow Creek Aquifer had water temperatures greater than 81.1°F (the highest temperature of 86.9°F was measured in the Wade Lynn Well). In contrast, water temperatures in the Northern Margin Aquifers are lower (e.g., SVR 7 and SVR 9 had water temperatures of 68°F). SVR 10 had a water temperature (75.9°F), which is between the elevated temperatures of the Willow Creek Aquifer wells (e.g., SVR 6) and the Northern Margin wells (e.g., SVR 7 and SVR 9).

Second, anion and cation compositions (Figure 7,) were similar for all of the wells thought to draw water from Northern Margin aquifers (SVR 6, SVR 7, SVR 9, and the Big Gulch and Little Gulch stockwater wells), although SVR 9 had a greater chloride concentration than the others in this group. Waters from wells thought to penetrate the Willow Creek Aquifer had different anion and cation compositions than those from the Northern Margin aquifers. Interestingly, anion and cation compositions were also different among waters from the Willow Creek Aquifer, suggesting that mixing occurs as water flows into the Willow Creek Aquifer.

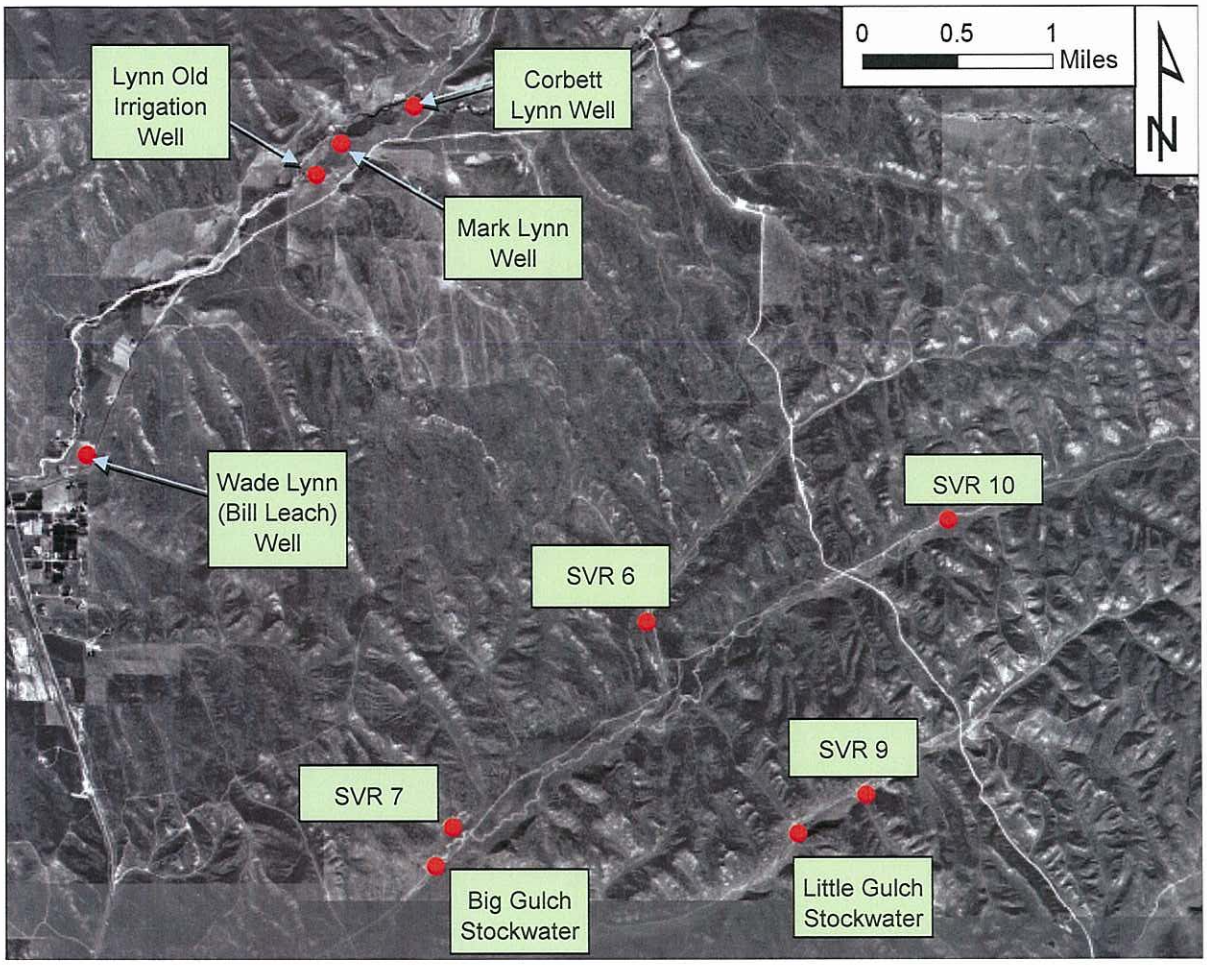


Figure 6: Well locations for water chemistry data.

TDS concentrations in all of the wells associated with Northern Margin aquifers were over 200 mg/L (with the exception of the Little Gulch Stockwater well, which had a TDS concentration of 192 mg/L). In contrast, water from wells in the Willow Creek Aquifer had TDS concentrations less than 154 mg/L (SVR 6 and SVR 10 contained 98 and 70 mg/L, respectively).

SVR 6, SVR 10, the Lynn Old Irrigation Well, and the Corbett Lynn Well showed elevated arsenic levels (water from all 4 wells exceeded the current arsenic MCL of 0.010 mg/L, which will be enforced beginning in 2006). In comparison, the arsenic concentrations in SVR 7 and SVR 9 were below the detection limit of 0.005 mg/L. The Big and Little Gulch Stockwater wells had arsenic concentrations of 0.005 and 0.006 mg/L, respectively.

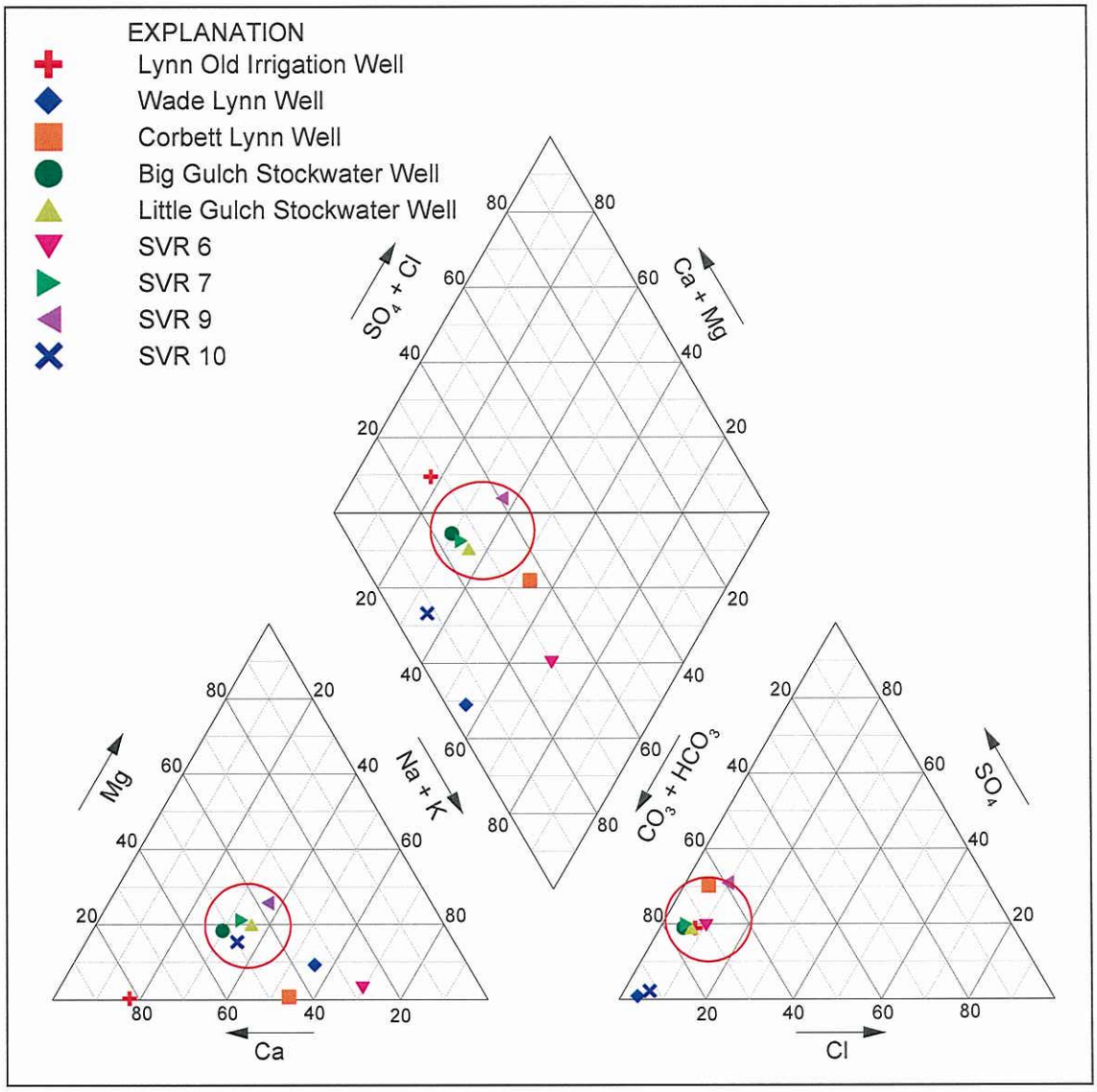


Figure 7: Anion and cation data from wells in the western portion of Spring Valley Ranch, with Northern Margin Aquifer wells circled.

Regional arsenic values, based on water chemistry results from Spring Valley Ranch wells and IDWR data, are shown in Figure 8. A number of wells north of Eagle and Star at the base of the Boise Foothills contain arsenic concentrations ranging from 0.010 to 0.050 mg/L – the highest observed value was 0.027 mg/L. Similarly, Spring Valley Ranch wells in the Sandy Hill area and the associated spring that supplies the ranch headquarters all contain arsenic concentrations exceeding 0.010 mg/L.

The water chemistry in the Wade Lynn well seemed somewhat anomalous. The water level and temperature were consistent with the Willow Creek Aquifer, but the well had low arsenic levels (below detection limit). Several other water chemistry constituents in the Wade Lynn wells also indicate water chemistry similarities with the Northern

Margin Aquifers (e.g., magnesium bicarbonate). These similarities in the Wade Lynn Well may reflect dilution from subsurface inflows from the south.

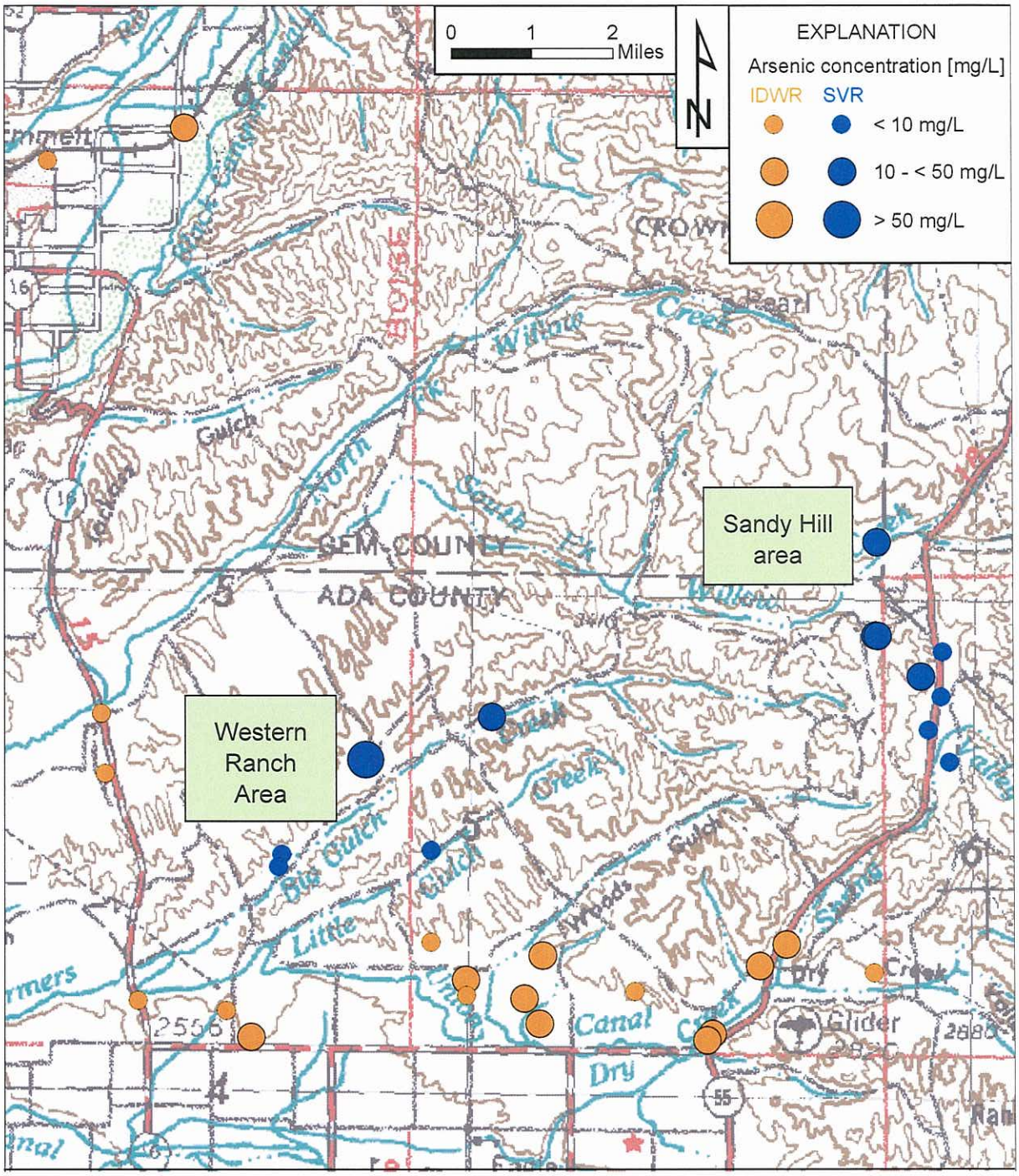


Figure 8: Arsenic levels in the area north of Eagle, Idaho.

Fluoride is a constituent frequently associated with geothermal water. Water temperatures in the Willow Creek Aquifer (e.g., SVR 6) were found to be higher than in the Northern Margin Aquifer. The fluoride concentration in SVR 6 (0.95 mg/L) was twice that found in SVR 7 (0.44 mg/L). Fluoride concentrations in the Lynn Old Irrigation Well and the Corbett Lynn Well were 4.09 and 1.71 mg/L, respectively. This, along with elevated water temperatures, suggests that there probably is geothermal inflow into the Willow Creek Aquifer. Interestingly, despite a somewhat elevated temperature, the fluoride concentration in SVR 10 (0.24 mg/L) was lower than SVR 7 and SVR 9 (0.44 and 0.45 mg/L, respectively).

In summary, water chemistry in wells associated with the Willow Creek Aquifer appear to be different from water in wells associated with Northern Margin Aquifers. The differences include different water temperatures, higher arsenic concentrations, and generally lower TDS levels.

From a water production perspective, water quality in SVR 6 (reflecting the Willow Creek Aquifer) is generally good, with relatively low total dissolved solids, low iron, and low manganese. However, the arsenic concentrations exceed both current and future arsenic standards, and will require treatment prior to municipal use. Water quality in SVR 7, Big Gulch Stock Well, and Little Gulch Stock Well (Northern Margin aquifers) is excellent, although TDS values are higher (but still well within municipal standards) than those found in the Willow Creek wells. Arsenic, if present in water samples from these wells, is below the U.S. Environmental Protection Agency (EPA) Maximum Contaminant Level (MCL). Water in SVR 10 has characteristics of both the Willow Creek Aquifer (elevated temperature and arsenic, low TDS) and Northern Margin aquifers (low fluoride and elevated iron).

Temperature also may be an issue of concern for development of the Willow Creek Aquifer. Temperatures appear to range from approximately 75°F to 90°F. Groundwater with a temperature of more than 85 degrees F is classified as low-temperature geothermal. There are regulatory restrictions on the use of such water for non-heating uses. Exemptions from rules restricting the use of low-temperature geothermal water can be obtained in instances where there is no other practical water source. Temperature is not an issue of concern for wells in the Northern Margin aquifer. Water temperature from SVR 7 was 68 degrees, which is very suitable for municipal use.

3.4. Regional Water Levels

A potentiometric surface map that includes the Western Ranch Area was developed using water level data obtained from exploration wells and existing wells (Figure 9). In general, hydraulic gradients indicate ground water flow from northeast to southwest, reflecting local topography. However, a local depression is apparent in the middle section of Big Gulch and a portion of Willow Creek – the area identified as the Willow Creek Aquifer. Wells with available water level data completed in this aquifer (SVR 6, three Willow Creek wells, and the Jag well; see Figure 9) all indicate a water elevation

consistent with the Payette River Valley near Emmett. Potentiometric surface contours indicate ground water flow in the Willow Creek Aquifer toward the Payette River. Water level data from Little Gulch wells indicate ground water flow from the Boise Foothills into the Lower Boise River Valley.

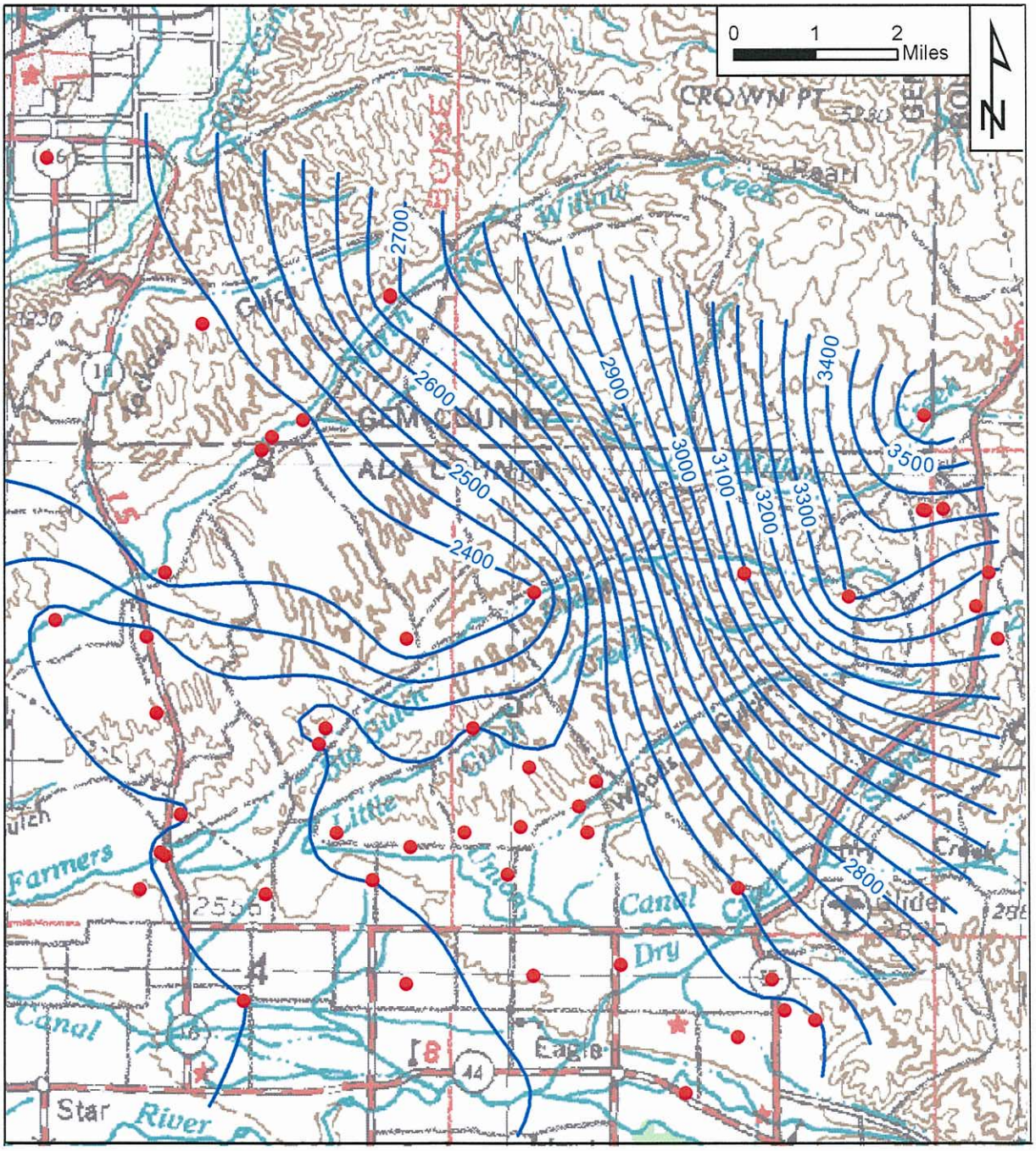


Figure 9: Water levels in the area north of Eagle, Idaho.

3.5. Areal Extent

Several cross sections were drawn to help evaluate areal extent of the Willow Creek and Northern Margin Aquifers in the western portions of Spring Valley Ranch (Figure 10, Appendix E). Based on available lithologic and water level (Figure 8) information, the Willow Creek Aquifer appears to extend from the middle portion of Big Gulch toward the Payette River Valley near Emmett. The Willow Creek Aquifer sediments were not apparent in wells SVR 7 (lower Big Gulch) or SVR 9 (Little Gulch), although it is possible that the sands in the upper portions of these wells reflect a transition between the predominantly coarse-grained sands of the Willow Creek aquifer and the medium- and fine-grained sands typical of the Northern margin aquifers. The Willow Creek sediments were also not present in the Jag well, which is located between the Payette Valley and the Willow Creek Aquifer area. However, the water level in the Jag Well indicates that the Jag Well area is hydraulically connected to the Willow Creek Aquifer.

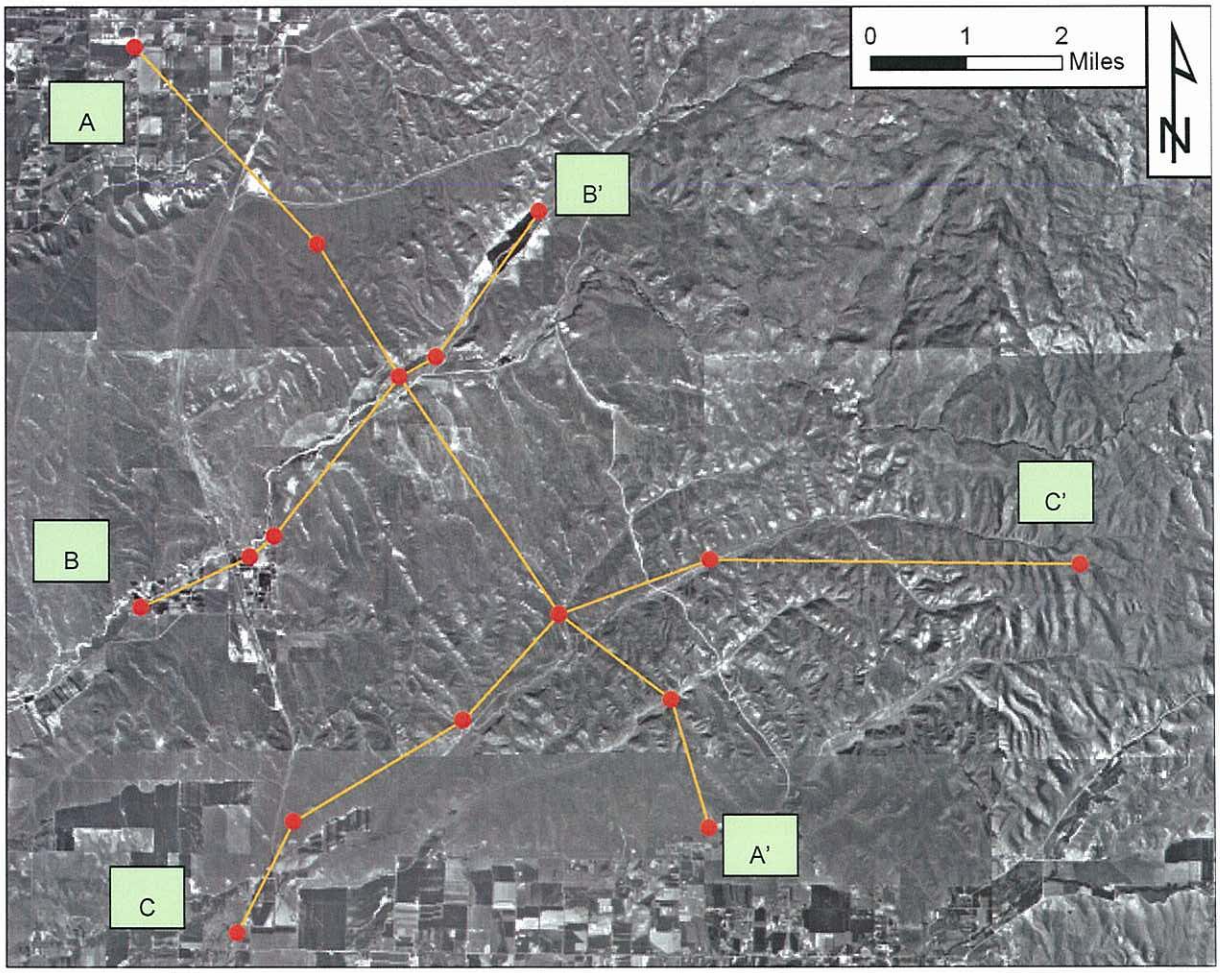


Figure 10: Cross section locations.

Hydraulic gradients north of the Willow Creek Aquifer are steep, generally suggesting both low permeability rock types and high topographic relief. The northern extent of the Willow Creek Aquifer can be defined by the change from high gradient to low gradient in Figure 9.

The Northern Margin aquifers are areally extensive to the south, southeast, and southwest from the Willow Creek Aquifer. Similar lithology is observed in wells between the Boise Foothills and the Boise Valley, from West Boise to beyond Star.

3.6. Hydraulic Discontinuity

Water levels in the Willow Creek Aquifer are substantially lower than water levels in the Northern Margin aquifers, as typified by water levels in SVR 6 and SVR 7. For example, water levels in SVR 6 are approximately 170 feet lower than in SVR 7, which is located about 1.5 miles southwest of SVR 6. These differences, combined with lithologic differences, suggest a hydrogeologic discontinuity between the Northern Margin aquifer in lower Big Gulch and the Willow Creek Aquifer. The nature of the discontinuity is unclear at this time. Given the sediments encountered in the Big and Little Gulch wells, faulting seems most likely. The discontinuity juxtaposes the coarse-grained alluvial sands and gravels of the Willow Creek Aquifer against the layered lake-bed and deltaic sediments of the Northern Margin aquifer. A similar discontinuity likely forms the northeast boundary of the Willow Creek Aquifer. The apparent boundary follows the northwest trend of the fault system that defines the northern edge of the Snake River Plain.

4. CONCLUSIONS

The following conclusions can be drawn as a result of this investigation:

1. The western portion of the Spring Valley Ranch overlies a geologically-complex, hydrologically unexplored area. At least two aquifers are present in the western portion of the Spring Valley Ranch - the Willow Creek Aquifer and one or more aquifers associated with Northern Margin Aquifers found in other areas north of Eagle.
2. The aquifers represent a significant water resource.
3. The Willow Creek Aquifer is identified by water levels substantially lower than surrounding Northern Margin aquifers.
4. Water chemistry and temperature characteristics in the Willow Creek Aquifer are different than Northern Margin aquifers.
5. Potentiometric surface contours indicate ground water flow from the Willow Creek Aquifer toward the Payette River Valley.

6. Ground water reaching the Willow Creek Aquifer from the upper Willow Creek drainage appears to be tributary to the Payette River, not the Boise River.
7. High capacity wells can be constructed in both the Willow Creek and Northern Margin aquifers.

5. REFERENCES

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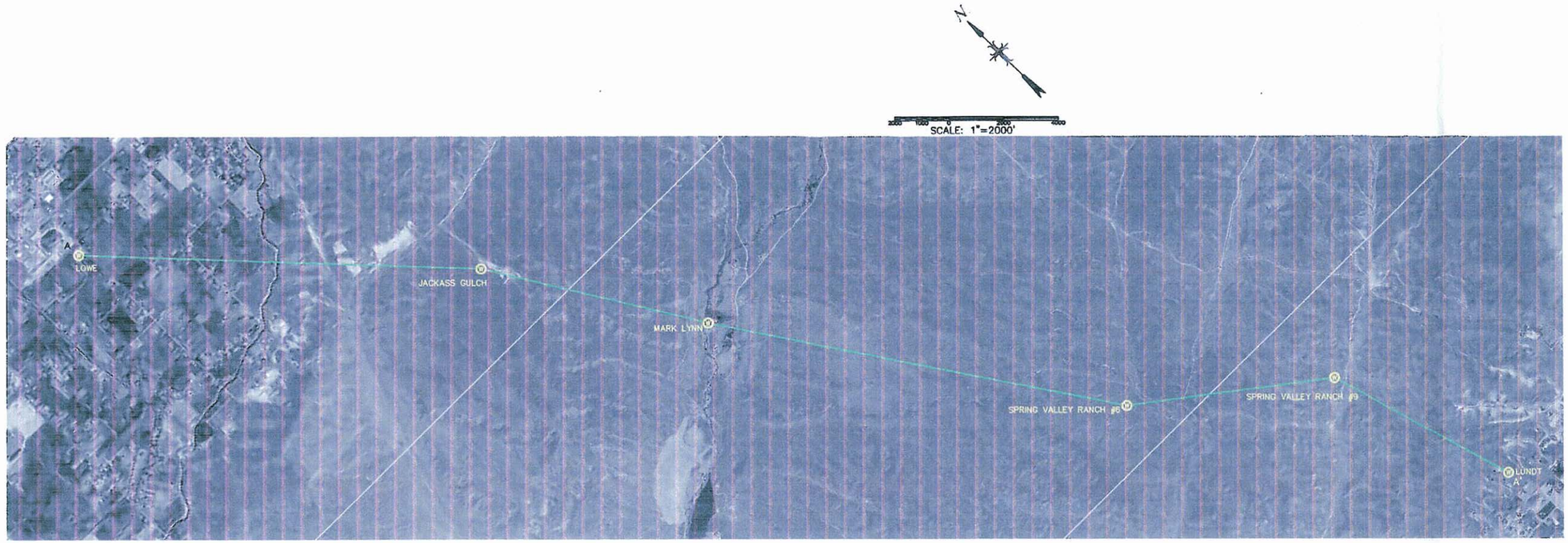
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Urban, S.M. and Petrich, C.R., 1998. 1996 Water Budget for the Treasure Valley Aquifer System, Idaho Department of Water Resources Research Report.

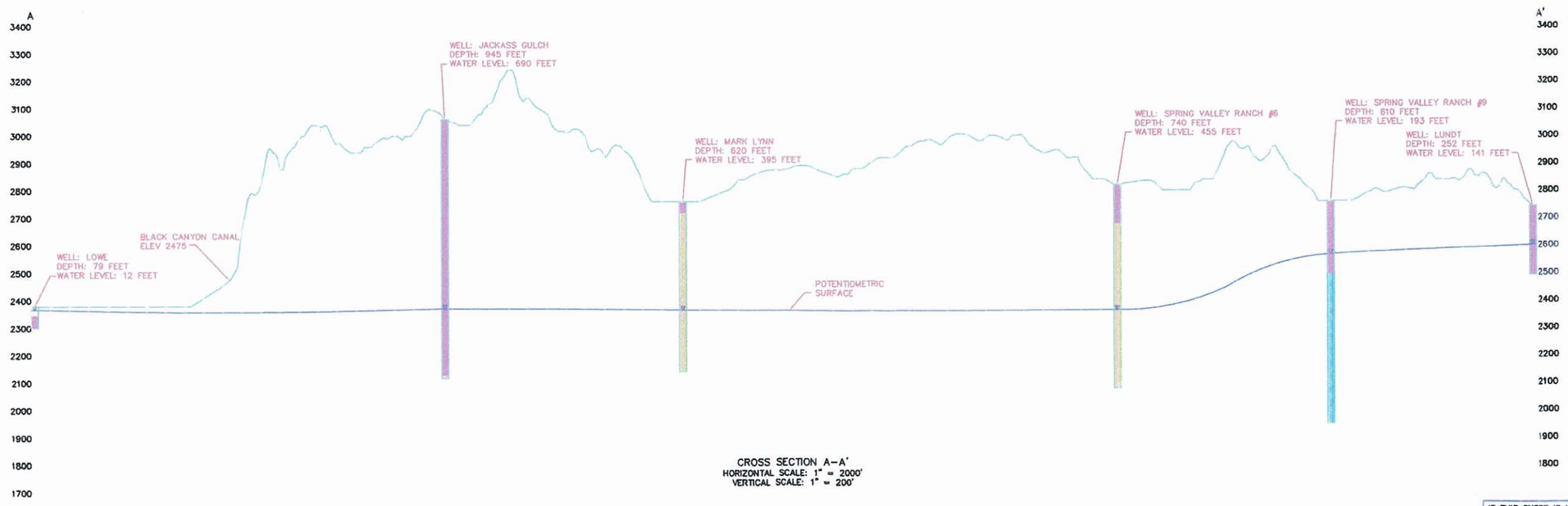
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- GRANITE
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CROSS SECTION A-A'

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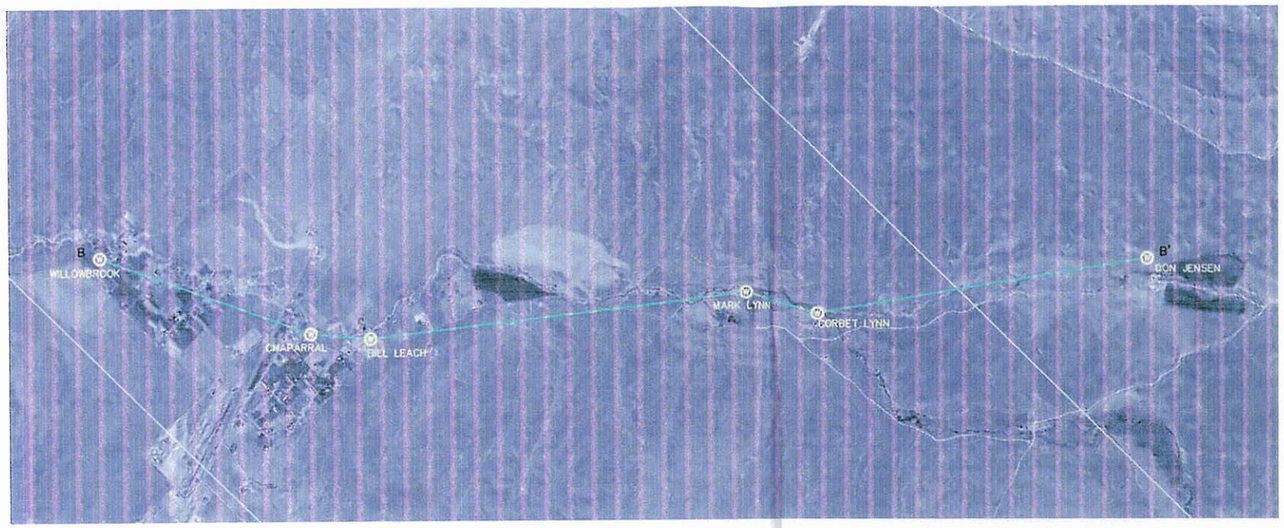
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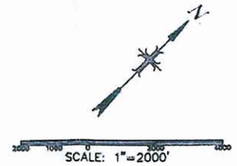
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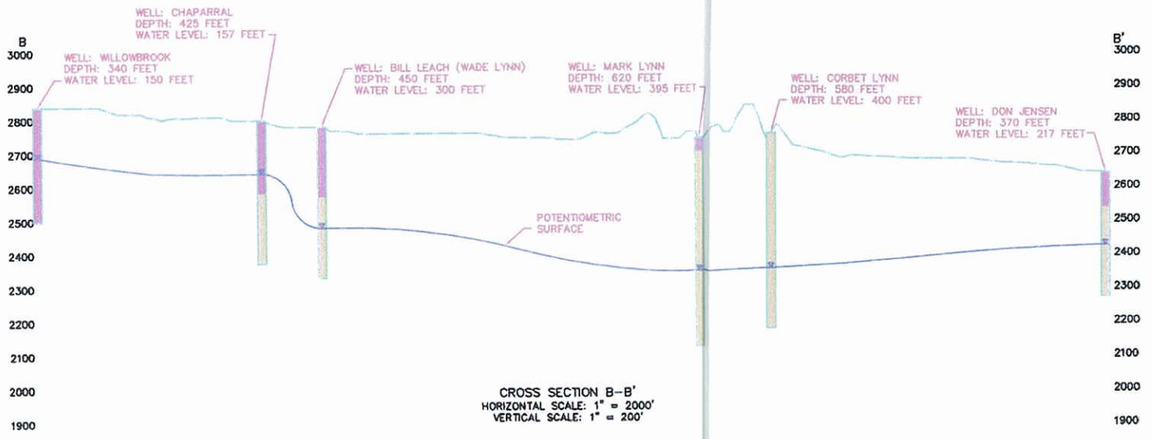
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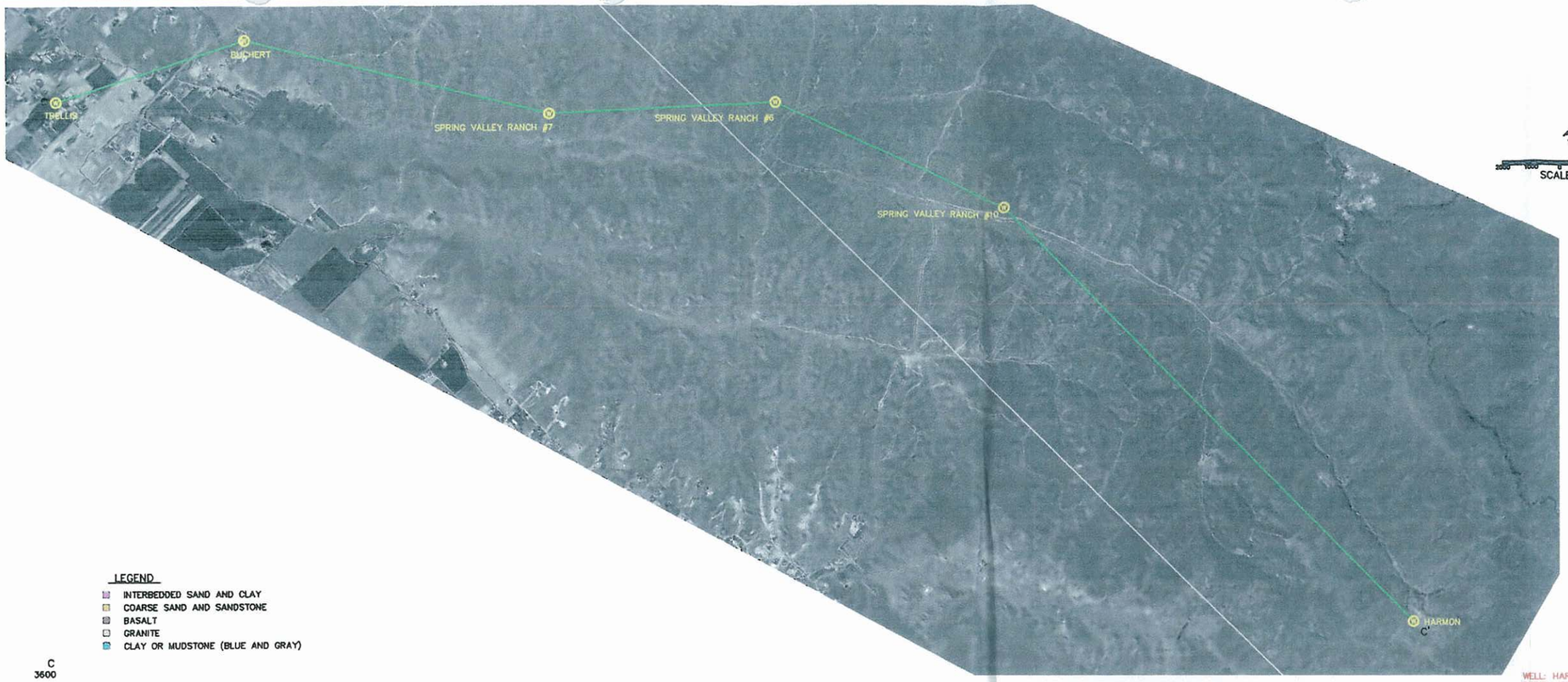
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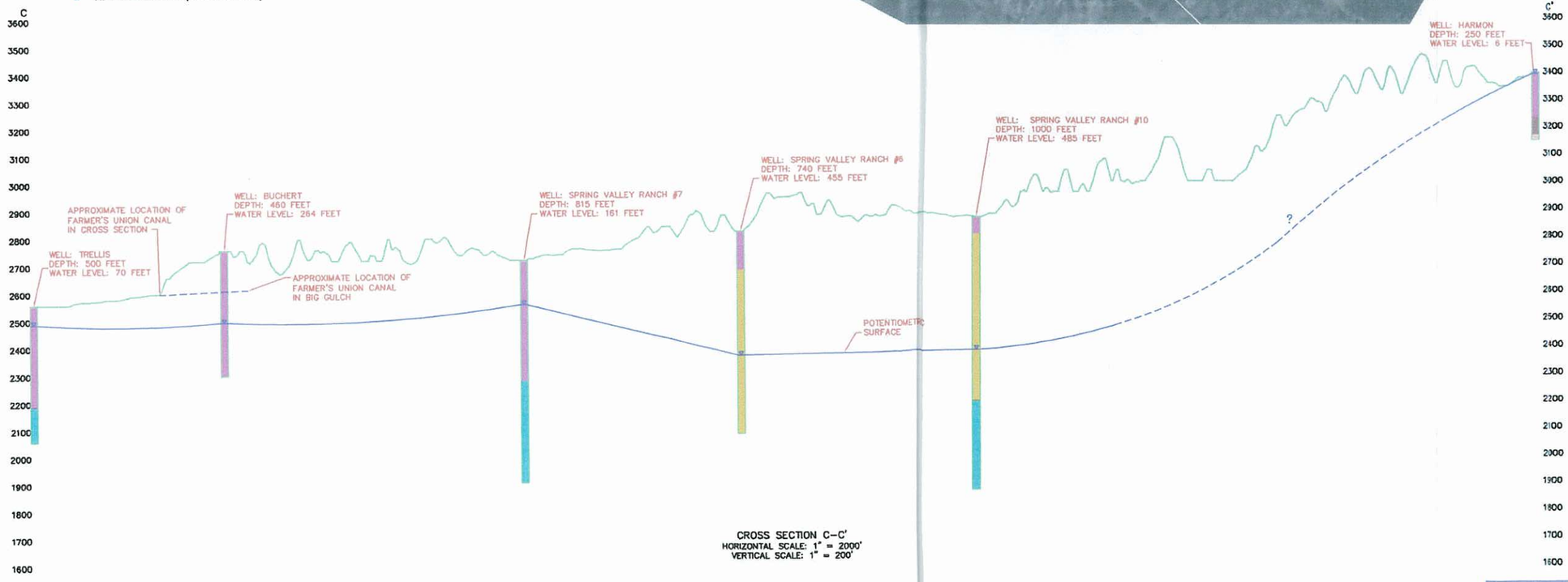
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Appendix A
Supplementary Data
Spring Valley Ranch Exploration Well SVR 6

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No. 809803 NE
Inspected by
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0030892
DRILLING PERMIT NO.
Water Right or Injection Well No.

2. OWNER:
Name Spring Valley Development LLC
Address 485 E. Riverside Dr
City Eagle State Id Zip 83616

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 5 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 13 NE 1/4 SE 1/4 NW 1/4 SW 1/4
Gov't Lot ____ County Ada
Lat: : : Long: : :
Address of Well Site 1 mile SW of Willow Creek Rd
Big Gulch City Eagle
(Use all road names + Distance to Road or Landmark)
Lt. ____ Blk: ____ Sub. Name ____

4. USE:
☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☒ Other test

5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other

6. DRILL METHOD:
☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
Bentonite	0	105	3150#	overbore

Was drive shoe used? ☒Y ☐N Shoe Depth(s) 738'
Was drive shoe seal tested? ☐Y ☒N How?

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
8"	+2	738'	250	Steel	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe ____ Length of Tailpipe ____
Packer ☐Y ☐N Type ____

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method STAR PERF 4 ROWS @ 10 PER 90 PERFS
Screen Type & Method of Installation none PER ROW

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
560	580	1/4	360	8"	.250 WALL	☒	☐
580	600	1/4	360	8"	CASING	☒	☐
600	620	1/4	360	8"	"	☒	☐
620-640		1/4	360	8"	"	☒	

Filter Material	From	To	Weight / Volume	Placement Method
Continued	on page	2		

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
455 ft. below ground Artesian pressure ____ lb.
Depth flow encountered ____ ft. Describe access port or control devices:
Steel plate

12. WELL TESTS:
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
175			6 hours

Water Temp. 80° Bottom hole temp. ____
Water Quality test or comments: Iron 5 PH 7.5
Grams 2 Depth first Water Encounter 590'

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
12	0	10	Sandy soil		
"	10	96	tan clay		
"	96	105	blue clay		
8	105	134	blue clay		
"	134	140	tan clay		
"	140	195	pea gravel & clay		
"	195	360	U gray sand & clay		
"	360	367	coarse sand & clay like pea gravel		
"	367	505	Fine & coarse sand		
"	505	540	larger pea gravel		
"	540	590	pea gravel w/ large Sand quartz		
"	590	595	quartz sand	X	
"	595	605	Finer tan Sand		
"	605	620	quartz sand	X	
"	620	640	Finer sand	X	
"	640	645	quartz Sand	X	
"	645	655	quartz sand & some pea gravel	X	
"	655	660	gravel & quartz sand	X	
"	660	670	big sand		
"	670	680	big sand	X	
"	680	685	big sand		
"	685	690	big sand	X	
"	690	730	big sand	X	
"	730	740	big sand	X	
			Due to heaving sand - a mixture of sand & cement was placed from 730' to 740		

RECEIVED
MAR 19 2004
WATER RESOURCES (Measurable)
WESTERN REGION

Completed Depth 730' Completed
Date: Started 01-26-04 Completed 02-27-04

14. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.
Company Name Adamson Pump & Drilling Rig No. 457
Principal Driller Dave Adamson Date 3.15.04
and
Driller or Operator II Dave Adamson Date 3.15.04
Operator I ____ Date ____
Principal Driller and Rig Operator *Required.*
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No. _____
Inspected by _____
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0030892 pg 2
DRILLING PERMIT NO. _____
Water Right or Injection Well No. _____

2. OWNER:
Name Spring Valley Development LLC
Address 485 E. Riverside Dr
City Eagle State Id Zip 83616

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 5 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 13 1/4 (0 acres) SE 1/4 (0 acres) NW 1/4 (160 acres)
Gov't Lot _____ County Ada
Lat: : : Long: :
Address of Well Site 1 mile SW of Willow Creek Rd
Big Gulch (Give name of road - Distance to Road or Landmark) City Eagle
Lt. ____ Blk. ____ Sub. Name _____

4. USE:
☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☒ Other test

5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD:
☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method

Was drive shoe used? ☐Y ☐N Shoe Depth(s) _____
Was drive shoe seal tested? ☐Y ☐N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____
Packer ☐Y ☐N Type _____

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method STAR PERF. 4 ROWS @ JOINT 90 DEGREES
Screen Type & Method of Installation PER. ROW (360)

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
640	660	1/4	360	8"	.250 WALL	☒	☐
660	680	1/4	360	8"	CASING	☒	☐
680	700	1/4	360	8"	"	☒	☐
700 - 720		1/4	360	8"	"	☒	☐

Filter Material	From	To	Weight / Volume	Placement Method
720 - 730				

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
_____ ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: _____

12. WELL TESTS:
☐ Pump ☐ Baller ☐ Air ☐ Flowing Artesian

Yield gal/min.	Drawdown	Pumping Level	Time

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encounter _____

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N

Completed Depth _____ (Measurable)
Date: Started _____ Completed _____

14. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.
Company Name Adamson Pump & Drilling Firm No. 457
Principal Driller Dave Adamson Date 3-15-04
and
Driller or Operator II Dave Adamson Date 3-15-04
Operator I _____ Date _____
Principal Driller and Rig Operator *Required.*
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

Exploration Hole SVR 6E
Spring Valley Ranch

Drilled by: Adamson Pump and Drilling.
Logged by: C. Feast/Feast Geosciences, LLC
Geophysical logs by: Not logged
Fluid level when logged: n/a.
Casing when logged: n/a.

Drilled Dates:
Drilling Method: Air Rotary
Borehole size: 8" (nom.) 0 - 740 ft.

Depth Drilled: 740 ft
Depth Logged: n/a
Static WL: ~ 445 ft. bgl

Location: Ada County, Idaho
T5N, R1W, SE1/4, NW1/4, Section 13
GL. Elevation: ~ 2820 ft. msl.

Depth (ft)	Geologic log from rotary cuttings	Symb. Log	Pt. Res (Ohms)	Natural Gamma (CPS)	Well Construction
			No geophysical logs		
0	Top soil over clay, soft, plastic, coarse qtz. sand grains, buff-yellow brown.				16" Overbore
10					
20					10" casing
30					
40					
50					8", .250" wall steel casing
60					
70					
80					Bentonite slurry
90	Silt, clayey, micaceous, medium gray.				
100					
110					
120					
130	Sand and gravel, coarse, subrounded qtz sand with fine to medium gravel, coarse gravel (1" minus) at numerous				
140	Color varies from brown to gray and occasional iron oxide clays as shown				
150					
160					
170					
180					
190	Clayey weathered granite cobbles				
200					
210					
220					
230					
240					
250					
260					
270					
280					
290					
300		Iron oxide clay			
310					
320					
330					
340					
350					
360					
370					
380					
390					
400					

Exploration Hole SVR 6E

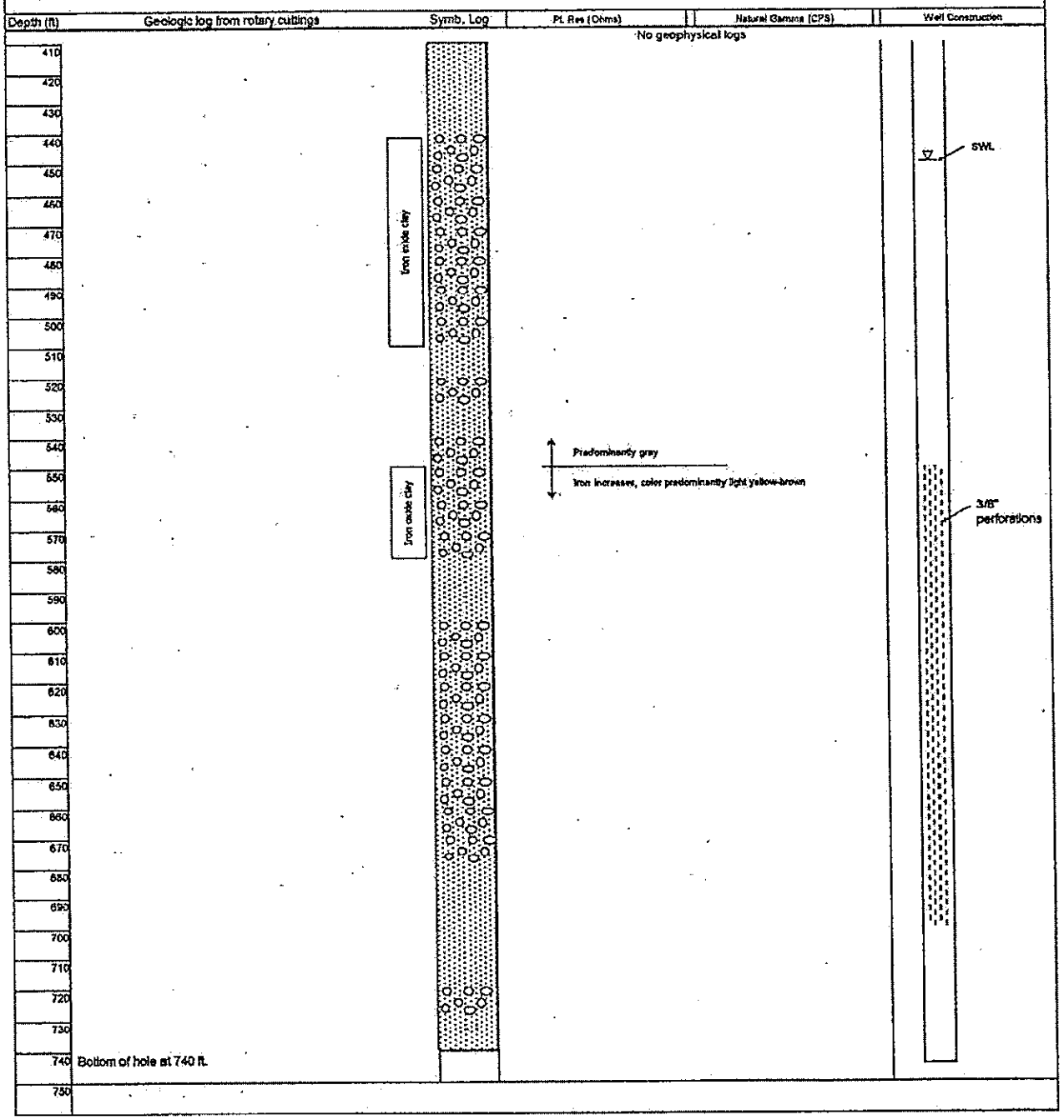
Spring Valley Ranch

Drilled by: Adamson Pump and Drilling.
Logged by: C. Feast/Feast Geosciences, LLC
Geophysical logs by: Not logged
Fluid level when logged: n/a
Casing when logged: n/a

Drilled Dates:
Drilling Method: Air Rotary
Borehole size: 8" (nom.) 0 - 740 ft.

Depth Drilled: 740 ft
Depth Logged: n/a
Static WL: ~ 445 ft. bgl

Location: Ada County, Idaho
T5N, R1W, SE1/4, NW1/4, Section 13
GL Elevation: ~ 2820 ft. msl.



Subj: **Exploration Well No. 6 (Big Gulch) temperature survey**
Date: 3/9/2004 5:46:34 PM Mountain Standard Time
From: TM SCANLAN
To: bob.taunton@suncoraz.com
CC: jerry.ellsworth@suncoraz.com, duane.black@suncoraz.com, cfeast@cableone.net

At the request of Idaho Department of Water Resources, Adamson conducted a temperature survey of Exploration Well No. 6 today. The results were surprising because the temperature decreased with depth as follows:

Depth (ft)	Temperature Degrees (F)
460	87.6
480	87.7
500	87.6
520	86.4
540	85.4
560	84.3
580	83.6
600	82.9
620	82.6
640	82.2
660	81.6
680	80.9
700	81.0
720	81.0
727	80.4

The test pump installation began this afternoon, and will be finished tomorrow. Apparently there is a delay in getting the generator for the test pump. Therefore, test puming will not occur until Friday or Monday.

AQUIFER TEST DATA

Well No: Spring Valley Ranch, Test well SVR 6 Qave = 358 gpm

Test conducted by: SPF Water Engineering and Adamson Pump and Drilling Company

Flow measured by: McCrometer flow meter - totalizer

Water levels measured by: well sounder Water level measure point: top of casing

MP elevation: 2 ft agl Static WL: 452.18 [ft]

Pump on: 3/23/2004 11:45 Pump off: 3/24/2004 11:45

Date	Time	t [min]	t' [min]	t/t'	Water Level Data				totalizer [ft^3]	Comments
					Ref [ft]	Measure [in]	WL [ft]	Drawdown [ft]		temperature data: F taken by spf, F-A taken by Adamson
3/23/2004	11:30	-					452.18		80	T=84.3F-A, slightly cloudy
3/23/2004	11:45	0					452.18	0.00		
3/23/2004	11:46	1					454.90	2.72		
3/23/2004	11:47	2					454.91	2.73		
3/23/2004	11:48	3					454.90	2.72		
3/23/2004	11:49	4					454.90	2.72		
3/23/2004	11:50	5					454.90	2.72		
3/23/2004	11:51	6					454.91	2.73		
3/23/2004	11:52	7					454.90	2.72		
3/23/2004	11:53	8					454.90	2.72		
3/23/2004	11:54	9					454.88	2.70		
3/23/2004	11:55	10					454.89	2.71		T=81.3F/83.4F-A,ph=7.13,EC/SC=192.7/184.1, clear
3/23/2004	11:57	12					454.88	2.70		
3/23/2004	11:59	14					454.88	2.70		
3/23/2004	12:01	16					454.88	2.70		
3/23/2004	12:03	18					454.89	2.71		
3/23/2004	12:05	20					454.89	2.71		T=81.3F/83.4F-A,ph=7.35,EC/SC=190.4/182.1
3/23/2004	12:07	22					454.89	2.71		
3/23/2004	12:09	24					454.89	2.71		
3/23/2004	12:11	26					454.89	2.71		
3/23/2004	12:13	28					454.89	2.71	1480	T=81.1F/83.6F-A,ph=7.48,EC/SC=189.7/181.7
3/23/2004	12:15	30					454.89	2.71		
3/23/2004	12:20	35					454.89	2.71		T=81.5F/83.5F-A,ph=7.58,EC/SC=189.5/180.9, clear
3/23/2004	12:25	40					454.90	2.72	2200	T=81.3F/82.9F-A,ph=7.58,EC/SC=189.2/180.9
3/23/2004	12:30	45					454.89	2.71		T=81.3F/82.9F-A,ph=7.6,EC/SC=188.4/180.1
3/23/2004	12:35	50					454.89	2.71		
3/23/2004	12:40	55					454.89	2.71	2920	T=81.3F/82.8F-A,ph=7.6,EC/SC=188.4/180.2
3/23/2004	12:45	60					454.89	2.71		T=81.1F/83F-A,ph=7.64,EC/SC=188.4/180.3
3/23/2004	12:50	65					454.88	2.70		T=81.5F/83.1F-A,ph=7.67,EC/SC=188.4/180.1
3/23/2004	12:55	70					454.89	2.71	3830	T=81.5F/83.1F-A,ph=7.68,EC/SC=188.6/180.1, clear
3/23/2004	13:00	75					454.91	2.73		T=81.1F/82.8F-A,ph=7.67,EC/SC=188.1/180.1
3/23/2004	13:05	80					454.91	2.73		T=81.1F/82.4F-A,ph=7.66,EC/SC=188.6/180.6
3/23/2004	13:10	85					454.92	2.74	4350	T=81.1F/82.3F-A,ph=7.65,EC/SC=188.5/180.5
3/23/2004	13:15	90					454.91	2.73		
3/23/2004	13:25	100					454.91	2.73		T=81.1F/82.7F-A,ph=7.62,EC/SC=188.9/180.9, clear
3/23/2004	13:35	110					454.90	2.72	5790	
3/23/2004	13:45	120					454.90	2.72		T=81.1F/82.7F A,ph=7.74,EC/SC=189.4/181.4
3/23/2004	13:55	130					454.90	2.72		
3/23/2004	14:05	140					454.90	2.72	7220	T=81.1F/82.4F-A,ph=7.62,EC/SC=190/182.1
3/23/2004	14:15	150					454.89	2.71		T=81.1F/82.3F-A,ph=7.64,EC/SC=190/181.7
3/23/2004	14:25	160					454.91	2.73		T=81.3F/81.5F-A,ph=7.65,EC/SC=190.5/182.1
3/23/2004	14:35	170					454.90	2.72	8660	T=81.1F/81.9F-A,ph=7.67,EC/SC=190.2/182.2
3/23/2004	14:45	180					454.89	2.71	9410	T=81.9F-A, Adamson Pump and Drilling measurements
3/23/2004	15:00	195					454.96	2.78	10830	T=82.6F-A
3/23/2004	15:30	225					454.92	2.74	12240	T=81.8F-A
3/23/2004	16:00	255					454.92	2.74	13660	T=81.4F-A
3/23/2004	16:30	285					454.92	2.74	15120	T=81.2F-A
3/23/2004	17:00	315					454.98	2.80	17880	T=81.9F-A
3/23/2004	18:00	375					455.00	2.82	20950	T=81.7F-A
3/23/2004	19:00	435					455.00	2.82	23740	T=81F-A
3/23/2004	20:00	495					455.00	2.82	29340	T=80.2F-A
3/23/2004	22:00	615					455.00	2.82	35330	T=81.1F-A
3/24/2004	0:00	735					455.00	2.82	41540	T=79.7F-A
3/24/2004	2:00	855					455.00	2.82	46890	T=81.2F-A
3/24/2004	4:00	975					455.00	2.82	52720	T=80.8F-A
3/24/2004	6:00	1095					455.00	2.82	58070	T=81.5F-A
3/24/2004	8:00	1215					455.00	2.82	60960	T=81.9F-A
3/24/2004	9:00	1275					455.00	2.82	63900	T=81.8F-A
3/24/2004	10:00	1335					455.00	2.82	66650	T=81.2F-A
3/24/2004	11:00	1395					455.00	2.82	68910	T=80.9F/81.6F-A,ph=7.33,EC/SC=197.7/189.9, ph not cal.
3/24/2004	11:45	1440					455.00	2.82		recovery
3/24/2004	11:46	1441	1	1441			451.23	-0.95		
3/24/2004	11:46:30	1441.5	1.5	961			451.70	-0.48		
3/24/2004	11:47	1442	2	721			451.94	-0.24		
3/24/2004	11:47:30	1442.5	2.5	577			452.34	0.16		
3/24/2004	11:48	1443	3	481			452.35	0.17		
3/24/2004	11:48:30	1443.5	3.5	412			452.34	0.16		
3/24/2004	11:49	1444	4	361			452.34	0.16		
3/24/2004	11:49:30	1444.5	4.5	321			452.34	0.16		
3/24/2004	11:50	1445	5	289			452.34	0.16		

AQUIFER TEST DATA

Well No: Spring Valley Ranch, Test well SVR 6 Qave = 358 gpm

Test conducted by: SPF Water Engineering and Adamson Pump and Drilling Company

Flow measured by: McCrometer flow meter - totalizer

Water levels measured by: well sounder Water level measure point: top of casing

MP elevation: 2 ft agl Static WL: 452.18 [ft]

Pump on: 3/23/2004 11:45 Pump off: 3/24/2004 11:45

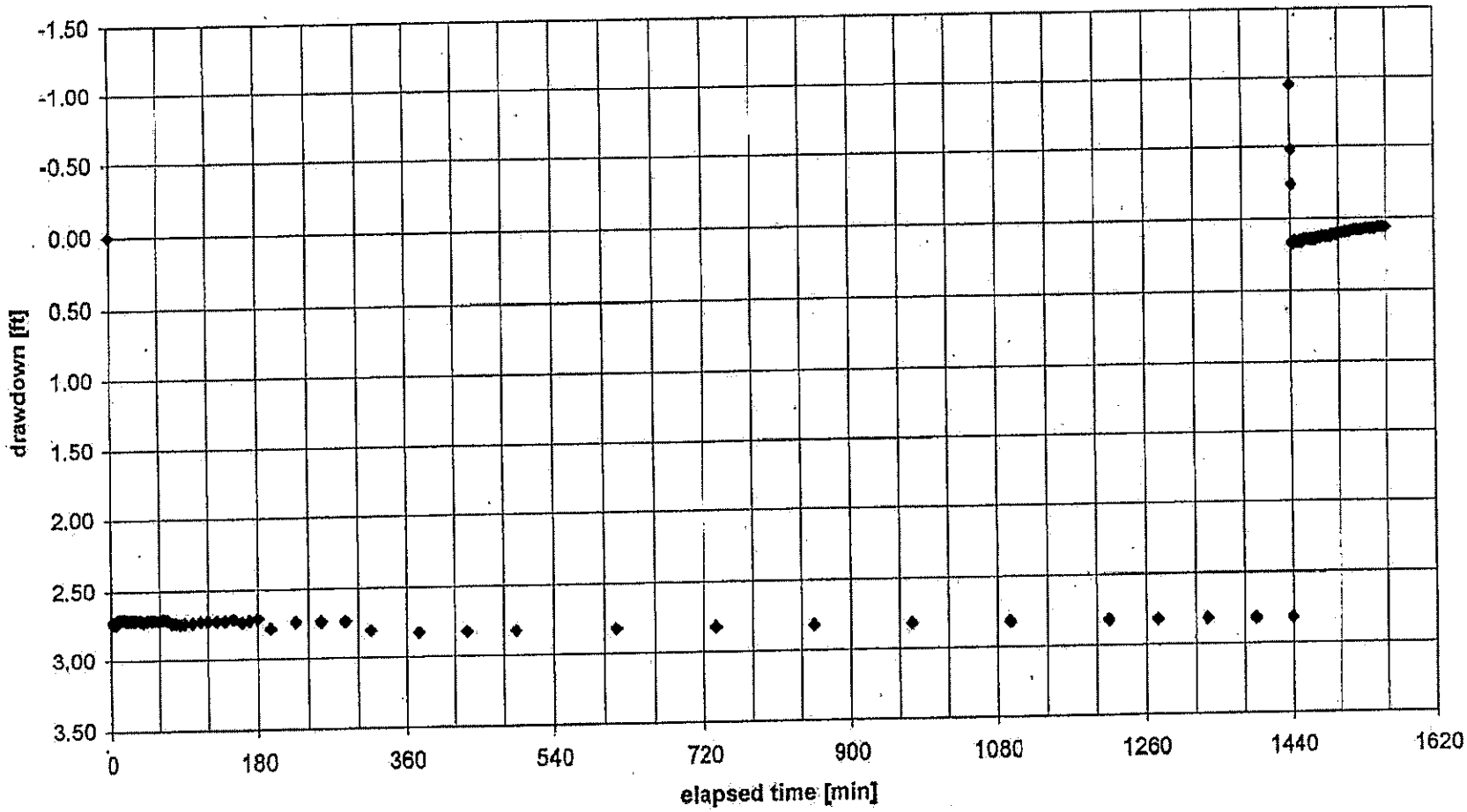
Date	Time	t [min]	t' [min]	t/t'	Water Level Data				totalizer [ft^3]	Comments temperature data: F taken by spf, F-A taken by Adamson
					Ref [ft]	Measure [in]	WL [ft]	Drawdown [ft]		
3/24/2004	11:51	1446	6	241			452.34	0.16		
3/24/2004	11:52	1447	7	207			452.33	0.15		
3/24/2004	11:53	1448	8	181			452.34	0.16		
3/24/2004	11:54	1449	9	161			452.34	0.16		
3/24/2004	11:55	1450	10	145			452.34	0.16		
3/24/2004	11:56	1451	11	132			452.34	0.16		
3/24/2004	11:57	1452	12	121			452.34	0.16		
3/24/2004	11:58	1453	13	112			452.33	0.15		
3/24/2004	11:59	1454	14	104			452.33	0.15		
3/24/2004	12:00	1455	15	97			452.34	0.16		
3/24/2004	12:01	1456	16	91			452.33	0.15		
3/24/2004	12:02	1457	17	86			452.33	0.15		
3/24/2004	12:03	1458	18	81			452.32	0.14		
3/24/2004	12:04	1459	19	77			452.32	0.14		
3/24/2004	12:05	1460	20	73			452.32	0.14		
3/24/2004	12:07	1462	22	66			452.32	0.14		
3/24/2004	12:09	1464	24	61			452.32	0.14		
3/24/2004	12:11	1466	26	56			452.32	0.14		
3/24/2004	12:13	1468	28	52			452.32	0.14		
3/24/2004	12:15	1470	30	49			452.32	0.14		
3/24/2004	12:17	1472	32	46			452.32	0.14		
3/24/2004	12:19	1474	34	43			452.31	0.13		
3/24/2004	12:21	1476	36	41			452.31	0.13		
3/24/2004	12:23	1478	38	39			452.31	0.13		
3/24/2004	12:25	1480	40	37			452.30	0.12		
3/24/2004	12:27	1482	42	35			452.30	0.12		
3/24/2004	12:29	1484	44	34			452.30	0.12		
3/24/2004	12:31	1486	46	32			452.30	0.12		
3/24/2004	12:33	1488	48	31			452.30	0.12		
3/24/2004	12:35	1490	50	30			452.30	0.12		
3/24/2004	12:37	1492	52	29			452.29	0.11		
3/24/2004	12:39	1494	54	28			452.29	0.11		
3/24/2004	12:41	1496	56	27			452.29	0.11		
3/24/2004	12:43	1498	58	26			452.29	0.11		
3/24/2004	12:45	1500	60	25			452.28	0.10		
3/24/2004	12:50	1505	65	23			452.28	0.10		
3/24/2004	12:55	1510	70	22			452.27	0.09		
3/24/2004	13:00	1515	75	20			452.27	0.09		
3/24/2004	13:05	1520	80	19			452.26	0.08		
3/24/2004	13:10	1525	85	18			452.26	0.08		
3/24/2004	13:15	1530	90	17			452.26	0.08		
3/24/2004	13:20	1535	95	16			452.25	0.07		
3/24/2004	13:25	1540	100	15			452.25	0.07		
3/24/2004	13:30	1545	105	15			452.25	0.07		
3/24/2004	13:35	1550	110	14			452.24	0.06		
3/24/2004	13:40	1555	115	14			452.24	0.06		
3/24/2004	13:45	1560	120	13			452.24	0.06		

Drawdown and Recovery

Spring Valley Ranch

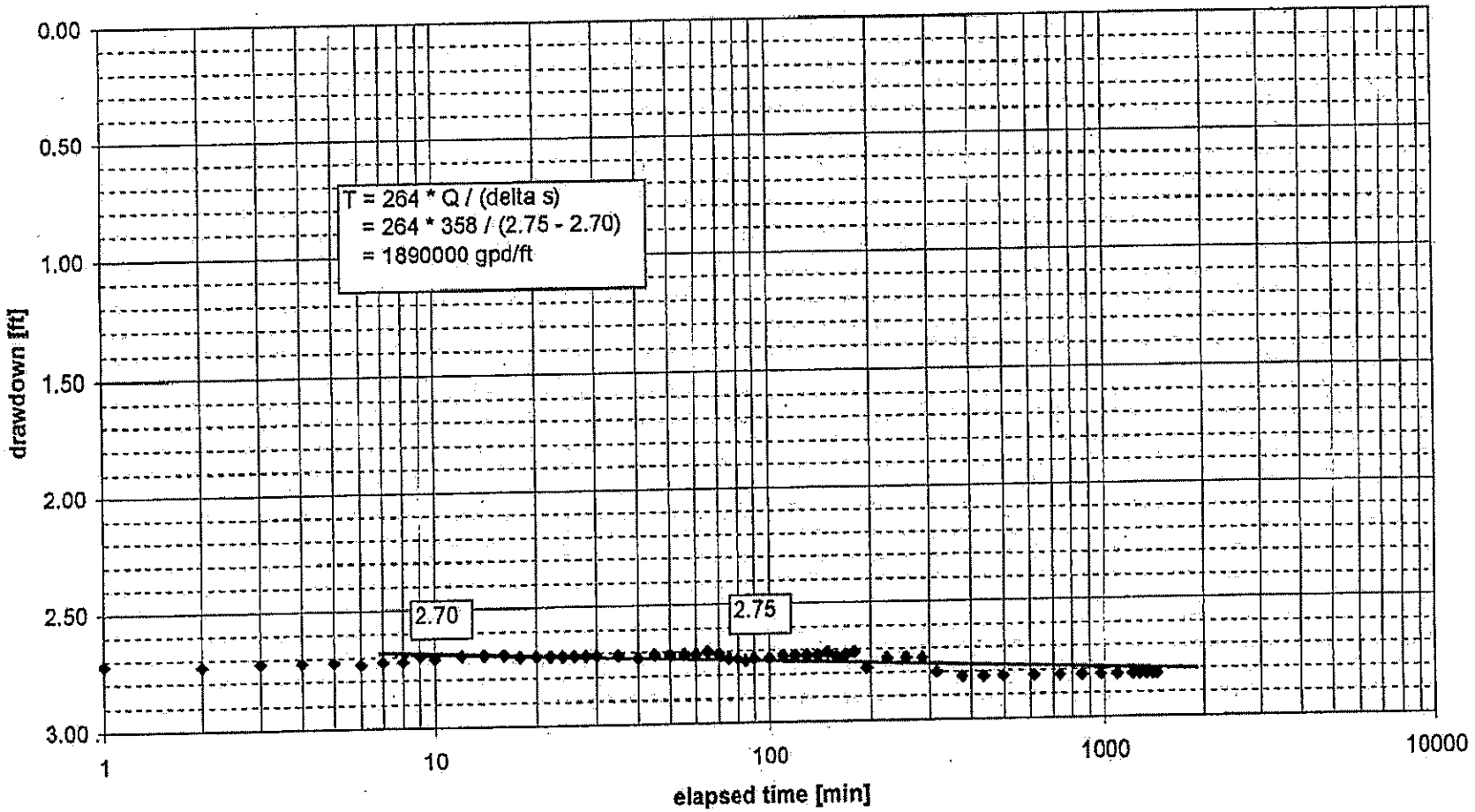
Test Well SVR 6, Qave = 358 gpm

Test date: March 23-24, 2004



Time - Drawdown

Spring Valley Ranch
Test well SVR 6, Qave = 358 gpm
Test date: March 23-24, 2004

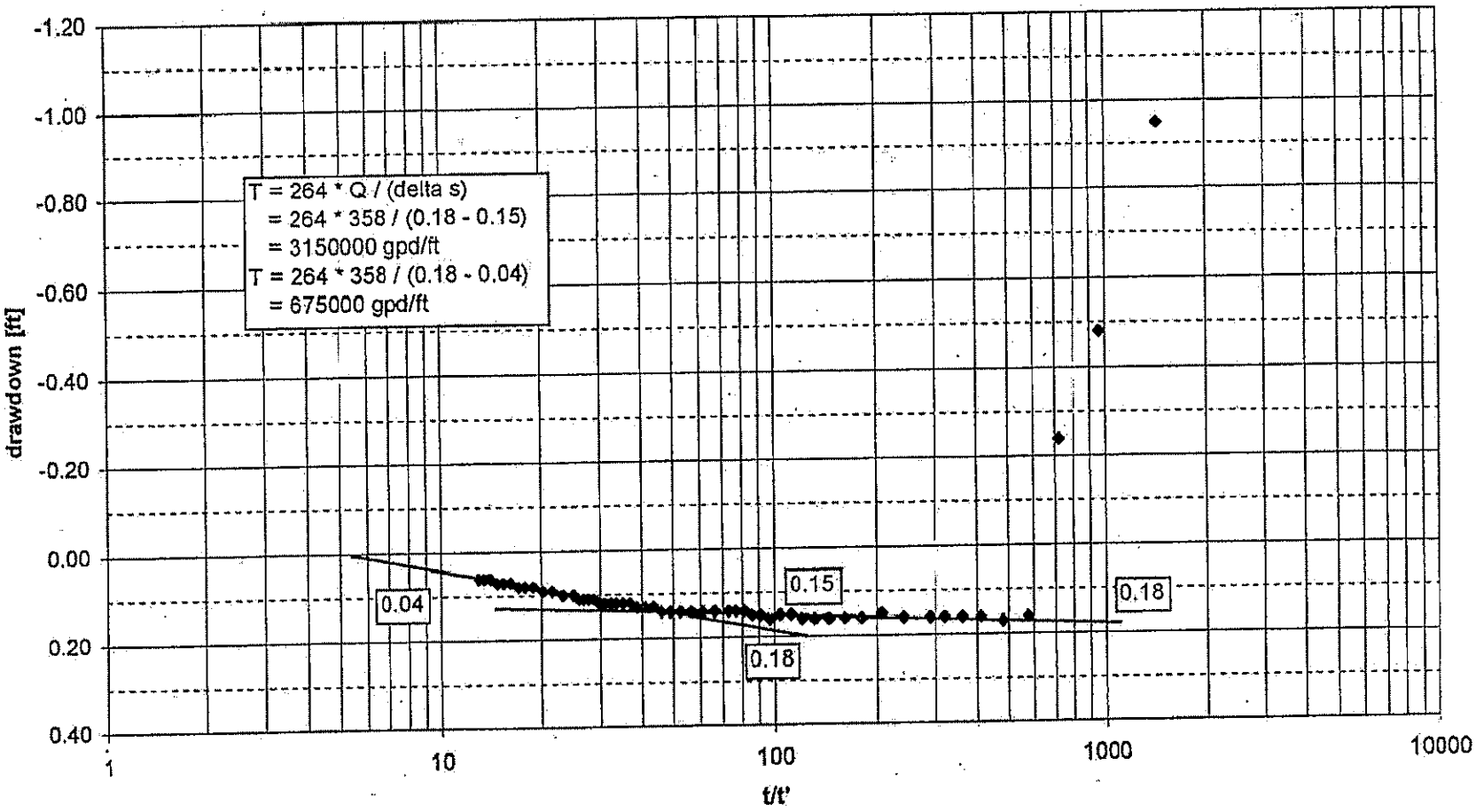


Time - Recovery

Spring Valley Ranch

Test well SVR 6

Test date: March 23-24, 2004



Analytical Laboratories, Inc.
1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515
http://www.analyticallaboratories.com

Attn: TERRY SCANLAN
SCANLAN ENGINEERING
600 E RIVER PARK LN STE 105
BOISE, ID 83706

Collected By: M MOORE
Submitted By: M MOORE

Source of Sample:
BIG GULCH ~~#8~~
Exploration well 6
(Site W8)

Time of Collection: 16:00
Date of Collection: 3/16/2004
Date Received: 3/17/2004
Report Date: 3/31/2004

PWS:

Laboratory Analysis Report

Sample Number: 0407816

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Antimony Furnace		< 0.005	mg/L	0.005	SM 3113 B	3/24/2004	DMB
Arsenic Furnace		0.067	mg/L	0.003	SM 3113 B	3/19/2004	DMB
Barium, Ba		< 0.05	mg/L	0.05	EPA 200.7	3/19/2004	JH
Beryllium Furnace		< 0.0005	mg/L	0.0005	SM 3113 B	3/27/2004	DMB
Cadmium Furnace		< 0.0005	mg/L	0.0005	SM 3113 B	3/31/2004	DMB
Calcium, Ca		9.71	mg/L	0.10	EPA 200.7	3/20/2004	JH
Chromium Furnace		< 0.002	mg/L	0.002	SM 3113 B	3/23/2004	DMB
Iron, Fe		0.09	mg/L	0.05	EPA 200.7	3/18/2004	JH
Lead Furnace		< 0.005	mg/L	0.005	SM 3113 B	3/22/2004	DMB
Magnesium, Mg		0.69	mg/L	0.10	EPA 200.7	3/20/2004	JH
Manganese, Mn		< 0.05	mg/L	0.05	EPA 200.7	3/18/2004	JH
Mercury, Hg		< 0.0002	mg/L	0.0002	EPA 245.1	3/24/2004	SS
Molybdenum, Mo		< 0.05	mg/L	0.05	EPA 200.7	3/31/2004	JH
Nickel, Ni		< 0.02	mg/L	0.02	EPA 200.7	3/22/2004	JH
Potassium, K		1.5	mg/L	0.5	EPA 200.7	3/20/2004	JH
Selenium Furnace		< 0.005	mg/L	0.005	SM 3113 B	3/22/2004	DMB
Silica		36.2	mg/L	0.3	EPA 200.7	3/31/2004	JH
Sodium, Na		27.8	mg/L	0.10	EPA 200.7	3/20/2004	JH
Thallium Furnace		< 0.002	mg/L	0.002	SM 3113 B	3/28/2004	DMB
Vanadium, V		< 0.05	mg/L	0.05	EPA 200.7	3/31/2004	JH

MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated

Analytical Laboratories, Inc.
1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515
http://www.analyticallaboratories.com

Laboratory Analysis Report

Sample Number: 0407817

Attn: TERRY SCANLAN
SCANLAN ENGINEERING
600 E RIVER PARK LN STE 105
BOISE, ID 83706

Collected By: M MOORE
Submitted By: M MOORE

Source of Sample:
BIG GULCH #8
SVR 6

Time of Collection: 16:00
Date of Collection: 3/16/2004
Date Received: 3/17/2004
Report Date: 4/14/2004

PWS:

ELI-TESTING PERFORMED AT ENERGY LABORATORIES, INC. RESULTS RECEIVED 04/13/04.
*ND=NONE DETECTED @ 0.2 pCi/L.

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Uranium-Total		3	pCi/L	0.2	EPA 908.1	3/26/2004	ELI

Michael D. Moore

Thank you for choosing Analytical Laboratories for your testing needs.

If you have any questions about this report, or any future analytical needs, please contact: Michael Moore

MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated

Lab Federal ID#:	WY00002	Lab Sample	0407817
Date Lab Rec'd Sample:	3/17/2004	Date Reported by Lab:	04/02/04
Compliance Sample: [X] Yes [ ] No		Replacement Sample	[ ]
Collection Date:	3/16/2004	Time Collected:	16:00
Sample Type: [ ] CO-confirmation [ ] RP-repeat [X] RT-routine [ ] DU-duplicate [ ] SP-special [ ] Other			
PWS #:		PWS Name: SCANLAN ENGINEERING	
Sampling Point/Location: BIG GULCH #8 SURG		Tag # / Facility ID:	
Collector's Name: M MOORE		Contact Phone #: (208)342-5515	

Analytical Laboratories, Inc.
1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515

PUBLIC DRINKING WATER SYSTEM RADIOLOGICAL ANALYSIS REPORT

FRDS Number	CONTAMINANT	Result ug/L	Result pCi/L	MCL	Analysis Date	Analyst	Method
4002	Gross Alpha Activity *(Includes Radium and Uranium)*		--				
4006	Uranium (measure if gross alpha exceeds 15 pCi/L; activity = 1.0 x concentration ug/L	3.	3	20	3/26/2004	ELI	EPA 908.1
4000	Adjusted Gross Alpha (Subtract Uranium activity level from Gross Alpha Activity above)		--				
4020	Radium-226 *(Required if Alpha activity is greater than 5pCi/L)*		--				
4030	Radium-228 (measure if radium 226 exceeds 3 pCi/L)		--				
4010	Total Measured Radium (Sum of Ra-226 and Ra-228)		--				
4100	Beta/Photon Activity *(Measure major constituents if activity exceeds 50 pCi/L)*		--				

ND = Not detected within sensitivity of instrument
-- = No analysis performed for this contaminant

ELI-TESTING PERFORMED AT ENERGY LABORATORIES, INC. RESULTS RECEIVED 04/13/04.
*ND=NONE DETECTED @ 0.2 pCi/L.

Michael D. Moore 4/16/04
Lab Supervisor's Signature Date

CC:

Analytical Laboratories, Inc.
1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515
http://www.analyticallaboratories.com

Laboratory Analysis Report

Sample Number: 0405853

Attn: TERRY SCANLAN
SCANLAN ENGINEERING
600 E RIVER PARK LA STE 105
BOISE, ID 83706

Collected By: T SCANLAN
Submitted By: T SCANLAN

Source of Sample:
BIG GULCH WELL #6
(Air lift Sample)

Time of Collection: 16:00
Date of Collection: 2/26/2004
Date Received: 2/26/2004
Report Date: 3/1/2004

PWS:

SAMPLE RCVD IN MICROBIOLOGICAL TESTING BOTTLES RINSED TO REMOVE SODIUM THIOSULFATE PRESERVATIVE.

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Arsenic Furnace		0.023	mg/L	0.003	SM 3113 B	2/29/2004	DMB
Fluoride, F		1.09	mg/L	0.10	EPA 300.0	2/27/2004	WW

MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated

Thank you for choosing Analytical Laboratories for your testing needs.

If you have any questions about this report, or any future analytical needs, please contact. Michael Moore

Big Gulch / Western We fm
Well # 6E 1 of 3

Printed 12/30/2003
Drilling Permit No. 809803
Well Tag No. D0030892
Well ID # 380535
Water Right No.
Receipt #
Approved Date 12/22/2003

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
DRILLING PERMIT

Relationship: Applicant
Name: SPRING VALLEY DEVELOPMENT LLC
Address: 485 EAST RIVERSIDE DR
EAGLE ID 83616
Phone: (208)939-0343

Proposed Well Location: Township 05N, Range 01W, Section 13, SE, NW
COUNTY ADA

Street Address of Well Site: 1 MILE SW OF WILLOW CREEK RD BIG GULCH
EAGLE ID

Proposed Use of Well: Test

Well Construction Information:

A. New Well
B. Proposed Surface Diameter: 8 inches. Proposed Depth 800 Feet
C. Anticipated Bottom Hole Temperature: 85F and less

Construction Start Date: Dec 22 2003

Anticipated Well Drilling Company: ADAMSON PUMP & DRILLING (No. 457)

Applicant's Signature: See original Apl. Date 12/14/03

Title: AW

Well ID # 380535

Well Tag No. D0030892

ACTION OF THE DEPARTMENT OF WATER RESOURCES

This permit is Approved on Monday, December 22, 2003.

1. This drilling permit is valid for two (2) months from the approval date for the start of construction and is valid for one (1) year from the approval date for completion of the well unless an extension has been granted.
2. This permit does not constitute an approval of the local Health District or the Idaho Department of Environmental Quality which may be required prior to construction of this well. The local Health District should be contacted for septic tank/drainfield locations. Domestic wells must not be drilled closer than 100 ft. from any drainfield and 50 ft. from any septic tank. Public Water Supply wells must not be drilled closer than 100 ft. from any drainfield or septic tank.
3. The well shall be constructed by a driller currently licensed in the state of Idaho who must maintain a copy of the drilling permit at the drilling site.
4. Approval of this drilling permit does not authorize trespass on the land of another party.
5. This permit does not constitute other local, county, state or federal approvals that may be required for construction of a well.
6. This drilling permit does not represent a right to divert and use the water of the State of Idaho. If the well being drilled is associated with approved water rights(s) use of the well must comply with conditions of said water right(s).
7. If a bottom hole temperature of 85 Degrees F (29.44 oC) or greater is encountered, well construction shall cease and the well driller and the well owner shall contact the Department of Water Resources immediately.
8. Idaho Code, S 55-2201 - 55-2210 requires the applicant and/or its contractors to contact "Dig-line" (Dig-Line is a one-call center for utility notification) not less than 2 working days prior to the start of any excavation for this project. The "Dig-Line " Number for this location is 1-800-342-1585
9. The well tag for the drilling permit/start card shall be securely and permanently attached to the well casing through welding or by the use of four closed end domed stainless steel pop rivets. The tag attachment will be done at the time of completion of the well, and prior to removing the drill rig from the drill site.
10. This drilling permit has been approved for construction or drilling of an exploratory well intended to be used for collecting geologic, hydrologic or water quality data.

11. No water shall be produced from this well or any fluid injected into this well without specific written authorization from the Department.
12. Any surface casing installed in this well shall not exceed 8 inches nominal diameter.
13. All casing strings installed in this well shall be sealed their entire length with approved seal material and by positive means of placement unless otherwise authorized by this drilling permit.
14. A drilling prospectus including a schematic diagram and construction narrative describing all pertinent features of the well including drilling methods, seal material and placement methods, casing schedules and specifications shall be submitted for review by the department and attached to this drilling permit prior to the start of construction.
15. No casing installed in this well shall be drilled and driven through multiple aquifers, unless it is completely removed and the borehole is properly sealed or the casing is perforated at appropriate intervals and pressure grouted with approved grout. Drilling and driving casing may be allowed above the water table or where multiple aquifers are

Well ID # 380535

not encountered provided that the casing is sealed as required by administrative rules.

16. This well shall be properly plugged in accordance with a plan approved by the department at least 30 days prior to the expiration of the bond.
17. The bond secured for abandonment of this well shall be valid for the entire time the well remains open. The Department will give the well owner 60 days notice prior to the expiration of the bond that the well must be properly plugged. If the well owner has not properly plugged the well at least 30 days prior to the expiration of the bond, the Director may commence action to attach the bond and hire a licensed driller to properly plug the well.
18. Drilling of this well shall not commence until the Department has received a document from the surety company or bank stating that the bond is in full force and effect and the Department has determined the amount of the bond is sufficient.

19. This drilling permit is not valid unless the well owner has secured a bond in favor of the Director in an amount sufficient for proper plugging and abandonment of this well. The bond shall remain in effect and accessible by the Director until this well is plugged. The bond amount for this well shall be at least $7200

Signature of Authorized Dept. Representative

Sr. WR Agent
Title

Appendix B
Supplementary Data
Spring Valley Ranch Exploration Well SVR 7

Analytical Laboratories, Inc.
1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515

Attn: TERRY SCANLAN, P.E.,P.G.
S P F WATER ENGINEERING, LLC
600 E RIVER PARK LN STE 105
BOISE, ID 83706

Collected By: C FEAST
Submitted By: C FEAST

Source of Sample:
SPRING VALLEY RANCH #7

Time of Collection: 12:45
Date of Collection: 4/21/2004
Date Received: 4/22/2004
Report Date: 5/25/2004

PWS:

Laboratory Analysis Report

Sample Number: 0412351

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Antimony Furnace	0.006	<0.005	mg/L	0.005	SM 3113 B	5/13/2004	DMB
Arsenic Furnace	0.05	<0.005	mg/L	0.005	SM 3113 B	4/29/2004	JH
Barium, Ba	2	<0.05	mg/L	0.05	EPA 200.7	4/27/2004	JH
Beryllium Furnace	0.004	<0.0005	mg/L	0.0005	SM 3113 B	5/10/2004	DMB
Calcium, Ca	UR	29.1	mg/L	0.10	EPA 200.7	4/23/2004	JH
Chromium Furnace	0.1	<0.002	mg/L	0.002	SM 3113 B	5/6/2004	DMB
Iron, Fe	UR	0.11	mg/L	0.05	EPA 200.7	4/26/2004	JH
Magnesium, Mg	UR	8.19	mg/L	0.10	EPA 200.7	4/23/2004	JH
Manganese, Mn	UR	<0.05	mg/L	0.05	EPA 200.7	4/26/2004	JH
Mercury, Hg	0.002	<0.0002	mg/L	0.0002	EPA 245.1	4/29/2004	SS
Nickel, Ni	UR	<0.02	mg/L	0.02	EPA 200.7	4/26/2004	JH
Potassium, K	UR	2.0	mg/L	0.5	EPA 200.7	4/23/2004	JH
Sodium, Na	UR	22.9	mg/L	0.10	EPA 200.7	4/23/2004	JH
Thallium Furnace	0.002	<0.002	mg/L	0.002	SM 3113 B	5/10/2004	DMB
Cadmium Furnace	0.005	<0.0005	mg/L	0.0005	SM 3113 B	5/22/2004	DMB
Ammonia Direct (as N)	UR	<0.04	mg/L	0.04	EPA 350.1	4/28/2004	WW

MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No. 811501
Inspected by
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. 003162
DRILLING PERMIT NO.
Water Right or Injection Well No.

2. OWNER:
Name Spring Valley Development LLC
Address 485 E. Riverside Dr Suite # 300
City Eagle State Id Zip 83616

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 5 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 23 ____ 1/4 NE 1/4 SW 1/4
Gov't Lot ____ County Ada
Lat: : : Long: : :
Address of Well Site Big Gulch SW of Wilson Creek Rd City Eagle
(Give street name or road + Distance to Road or Landmark)
Lt. ____ Blk. ____ Sub. Name ____

4. USE:
☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☒ Other Test

5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other

6. DRILL METHOD:
☐ Air Rotary ☐ Cable ☒ Mud Rotary ☐ Other

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
30% Grout	815	380	—	Pressure Grout
30% Grout	240	0	—	Pressure Grout

Was drive shoe used? ☐Y ☐N Shoe Depth(s)
Was drive shoe seal tested? ☐Y ☐N How?

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
8"	+2	278	250	Steel	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe ____ Length of Tailpipe ____
Packer ☐Y ☐N Type

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method Perf. 8" Casing, 10 ft
Screen Type & Method of Installation Shutter Screen 60 ft

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
280	340	1/8	many	8"	Steel	☐	☐
340	350	1/8	60	8"	Steel	☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method
8/16 Pea Gravel	380	242	—	Pour

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
161 ft. below ground Artesian pressure ____ lb.
Depth flow encountered ____ ft. Describe access port or control devices:
well cap

12. WELL TESTS:
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
100-200			1 hour

Water Temp. 72° Bottom hole temp.
Water Quality test or comments: From .5 PH 7.5 Grains 5 Depth first Water Encounter

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
12	0	3	top soil & clay		
"	3	30	coarse sand		
"	30	55	brown clay		
"	55	60	sand		
"	60	70	brown clay		
"	70	120	soft & hard clay layers		
"	120	130	sand & clay		
"	130	135	coarse sand		
"	135	150	clay		
"	150	190	clay w/some sand layers		
"	190	200	sand		
"	200	210	clay w/sand		
"	210	280	coarse sand w/little clay		
"	280	290	coarse sand		
"	290	340	coarse sand		
"	340	350	bluish coarse sand w/some wood		
"	350	380	coarse blue sand		
"	380	440	coarse blue sand		
"	440	470	blue clay		
"	470	815	blue clay		

RECEIVED
APR 19 2004
WATER RESOURCES
WESTERN REGION

Completed Depth 350' (Measurable)
Date: Started 3/10/04 Completed 4.10.04

14. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Adamson Pump & Drill Firm No. 457
Principal Driller Dave Adamson Date 4.15.04
and
Driller or Operator II Dave Adamson Date 4.15.04
Operator I ____ Date ____
Principal Driller and Rig Operator *Required.*
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

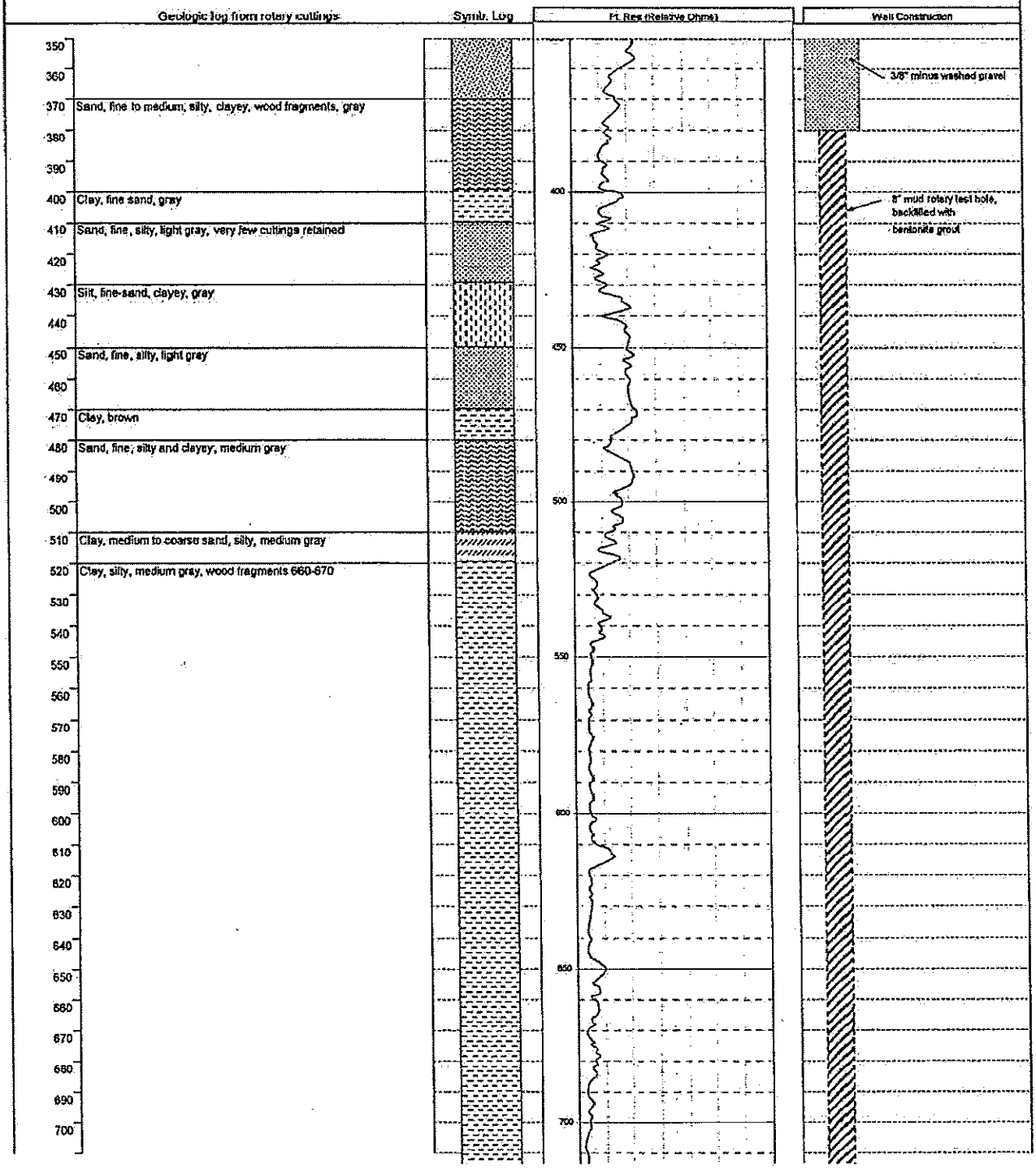
Exploration Hole SVR 7
Spring Valley Ranch

Drilled by: Adamson Pump and Drilling.
Logged by: C. Feast/Feast Geosciences, LLC
Geophysical logs by: Stevens and Sons Drilling
Fluid level when logged: +2 ft bgl
Casing when logged: 8" steel 0-5 ft, 8" open hole 5 - 810 ft.

Drilled Dates: 3/18-4/10/04
Drilling Method: Mud Rotary
Borehole size: 8" (nom.)
Borehole reamed to 12" for completion

Depth Drilled: 810 ft
Depth Logged: 805 ft.
Static WL: ~ 150 ft. bgl

Location: Ada County, Idaho
T5N, R1W, NE 1/4, SW 1/4, Sect 23
GL Elevation: ~ 2700 ft. msl.



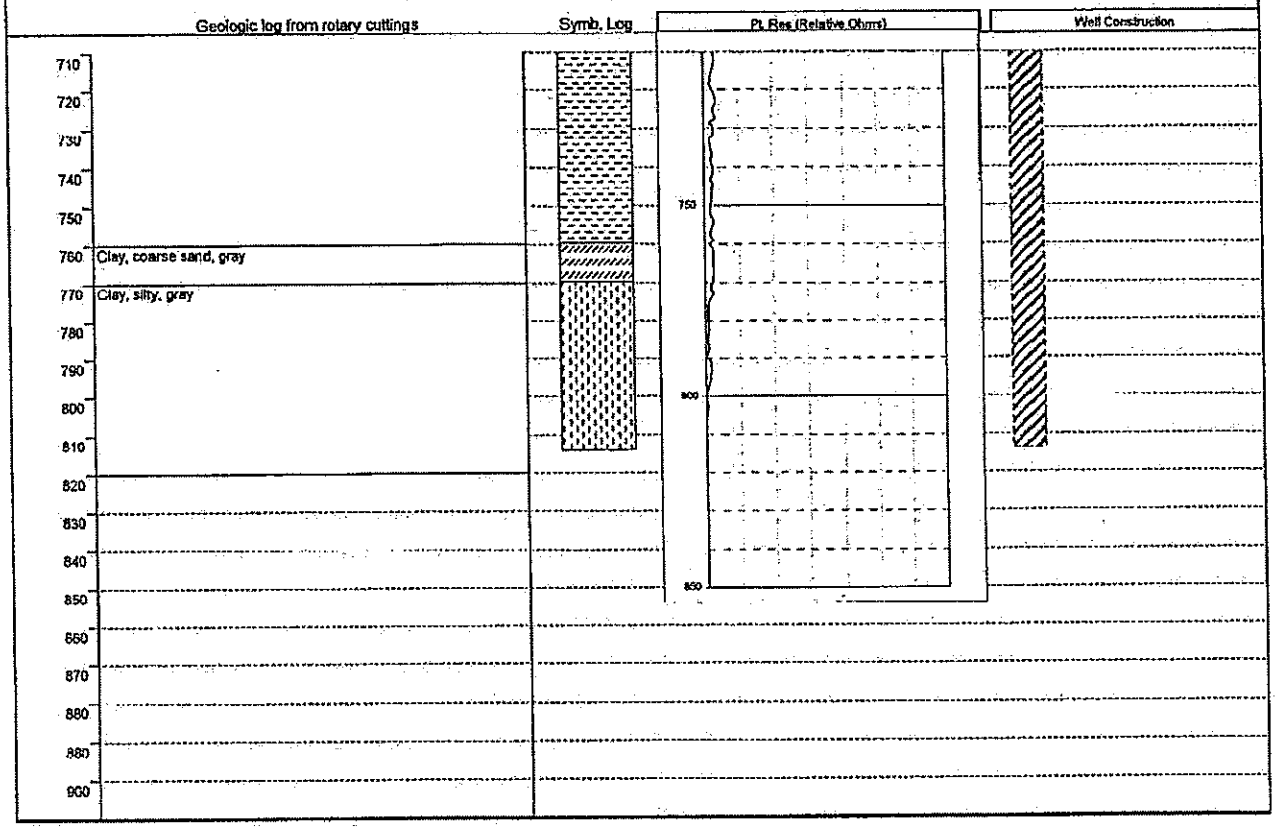
Exploration Hole SVR 7
Spring Valley Ranch

Drilled by: Adamson Pump and Drilling.
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Fluid level when logged: +2 ft bgl
Casing when logged: 8" steel 0-5 ft, 8" open hole 5 - 810 ft.

Drilled Dates: 3/18-4/10/04
Drilling Method: Mud Rotary
Borehole size: 8" (nom.)
Borehole reamed to 12" for completion

Depth Drilled: 810 ft
Depth Logged: 805 ft.
Static WL: ~ 150 ft. bgl

Location: Ada County, Idaho
T5N, R1W, NE 1/4, SW 1/4, Sec 23
GL Elevation: ~ 2700 ft. msl.



AQUIFER TEST DATA

Well No.: Spring Valley Ranch, Test Well SVR 7 — Q=500 gpm, t = 22 hours 15 min.

Test conducted by: Feast Geosciences; Adamson Pump and Drilling Co.

Flow measured by: In-line flow meter

Water levels measured by: Well sounder — Water level measure point: Top of 1" PVC tube

MP Elevation: 3.0 ft agl — Static WL (ft bmp): 163.71

Pump on: 04/21/04 11:00 — Pump off: 04/22/04 9:44

				Water Level Data				
Date	Time	t (mins)	t/t'	Ref (ft.)	Measure (in.)	WL (ft bmp)	Drawdown (feet)	Comments
04/21/04	10:55	0		160.0	42.5	163.54		Static water level: Meter start 68950 cf
04/21/04	10:30	0		160.0	44.5	163.71	0.0	Start test, Q = 86 gpm
04/21/04	11:01	1		180	10	180.83	17.12	Q = 300 gpm
04/21/04	11:02	2		180	28	182.33	18.62	
04/21/04	11:03	3		180	31	182.58	18.87	
04/21/04	11:05	5		180	32	182.67	18.96	
04/21/04	11:06	6		180	33	182.75	19.04	
04/21/04	11:08	8		180	32	182.67	18.96	
04/21/04	11:09	9		180	31	182.58	18.87	
04/21/04	11:11	11		180	31	182.58	18.87	
04/21/04	11:13	13		180	31	182.58	18.87	
04/21/04	11:15	15		180	31.5	182.63	18.92	
04/21/04	11:17	17		180	30.5	182.54	18.83	
04/21/04	11:20	20		180	32.5	182.71	19.00	Clear, T 68.7°F
04/21/04	11:22	22		180	31.5	182.63	18.92	
04/21/04	11:25	25		180	29	182.42	18.71	Increase Q to 400 gpm
04/21/04	11:26	26		190	-9.5	189.21	25.50	
04/21/04	11:27	27		190	-8	189.33	25.62	
04/21/04	11:29	29		190	-9	189.25	25.54	
04/21/04	11:31	31		190	-9.5	189.21	25.50	
04/21/04	11:33	33		190	-12	189.00	25.29	
04/21/04	11:35	35		190	-11	189.08	25.37	
04/21/04	11:37	37		190	-12.5	188.96	25.25	
04/21/04	11:40	40		190	-12.5	188.96	25.25	
04/21/04	11:45	45		190	-14	188.83	25.12	
04/21/04	11:50	50		190	-12.5	188.96	25.25	
04/21/04	11:55	55		190	-13	188.92	25.21	Increase Q to max, ~500 gpm
04/21/04	11:56	56		195	-3.5	194.71	31.00	
04/21/04	11:57	57		195	-5	194.58	30.87	
04/21/04	12:00	60		195	-5	194.58	30.87	
04/21/04	12:05	65		195	-8	194.33	30.62	
04/21/04	12:10	70		195	-9	194.25	30.54	
04/21/04	12:18	78		195	-9	194.25	30.54	
04/21/04	12:25	85		195	-11	194.08	30.37	
04/21/04	12:30	90		195	-11	194.08	30.37	
04/21/04	12:43	103		195	-11	194.08	30.37	Sample @ 12:45
04/21/04	12:55	115		195	-12.5	193.96	30.25	T 68.1°F, pH=7.00, SC=300 µs
04/21/04	13:25	145		195	-14	193.83	30.12	
04/21/04	13:50	170		195	-13	193.92	30.21	
04/21/04	14:15	195		195	-15	193.75	30.04	
04/21/04	15:00	240		195	-15	193.75	30.04	
04/21/04	15:30	270		195	-16	193.67	29.96	
04/21/04	16:00	300		195	-17	193.58	29.87	
04/21/04	17:00	360		195	-17.125	193.57	29.86	
04/21/04	18:00	420		195	-16.75	193.60	29.89	
04/21/04	19:00	480		195	-17	193.58	29.87	
04/21/04	20:00	540		195	-17	193.58	29.87	
04/21/04	21:00	600		195	-18	193.50	29.79	
04/21/04	22:00	660		195	-16.5	193.63	29.92	
04/21/04	23:00	720		195	-18	193.50	29.79	
04/22/04	0:00	780		195	-17	193.58	29.87	
04/22/04	1:00	840		195	-18	193.50	29.79	
04/22/04	2:00	900		195	-18	193.50	29.79	
04/22/04	3:00	960		195	-18	193.50	29.79	
04/22/04	4:00	1020		195	-17	193.58	29.87	
04/22/04	5:00	1080		195	-17	193.58	29.87	
04/22/04	6:00	1140		195	-17	193.58	29.87	
04/22/04	7:00	1200		195	-17	193.58	29.87	
04/22/04	8:00	1260		195	-18	193.50	29.79	
04/22/04	9:11	1331		195	-16.75	193.60	29.89	
04/22/04	9:44	1364		195	-17	193.58	29.87	Meter end 15647 cf
Begin Recovery, pump off at:			04/22/04	9:44				
04/22/04	9:45	1365	1365.0	160	27	162.25	-1.46	
04/22/04	9:47	1367	455.7	165	2	165.17	1.46	
04/22/04	9:48	1368	342.0	165	1.5	165.13	1.41	
04/22/04	9:50	1370	228.3	165	-2	164.83	1.12	

AQUIFER TEST DATA

Well No.: Spring Valley Ranch, Test Well SVR 7 — **Q=500 gpm, t = 22 hours 15 min.**

Test conducted by: Feast Geosciences; Adamson Pump and Drilling Co.

Flow measured by: In-line flow meter

Water levels measured by: Well sounder — Water level measure point: Top of 1" PVC tube

MP Elevation: 3.0 ft agl — Static WL (ft bmp): 163.71

Pump on: 04/21/04 11:00 — Pump off: 04/22/04 9:44

				Water Level Data				
Date	Time	t (mins)	t/t'	Ref (ft.)	Measure (in.)	WL (ft bmp)	Drawdown (feet)	Comments
04/22/04	9:52	1372	171.5	165	-3	164.75	1.04	
04/22/04	9:54	1374	137.4	165	-4	164.67	0.96	
04/22/04	9:55	1375	125.0	165	-4.5	164.63	0.91	
04/22/04	9:56	1376	114.7	165	-5	164.58	0.87	
04/22/04	9:58	1378	98.4	165	-6	164.50	0.79	
04/22/04	10:00	1380	86.3	165	-6.5	164.46	0.75	
04/22/04	10:02	1382	76.8	165	-6.75	164.44	0.73	
04/22/04	10:04	1384	69.2	165	-7	164.42	0.71	
04/22/04	10:06	1386	63.0	165	-7.25	164.40	0.69	
04/22/04	10:09	1389	55.6	165	-7.75	164.35	0.64	
04/22/04	10:12	1392	49.7	165	-8	164.33	0.62	
04/22/04	10:15	1395	45.0	165	-8.25	164.31	0.60	
04/22/04	10:19	1399	40.0	165	-8.75	164.27	0.56	
04/22/04	10:22	1402	36.9	165	-9	164.25	0.54	
04/22/04	10:25	1405	34.3	165	-9	164.25	0.54	
04/22/04	10:30	1410	30.7	165	-9.25	164.23	0.52	
04/22/04	10:35	1415	27.7	165	-9.25	164.23	0.52	
04/22/04	10:40	1420	25.4	165	-9.25	164.23	0.52	
04/22/04	10:50	1430	21.7	165	-9.5	164.21	0.50	
04/22/04	11:00	1440	18.9	165	-10	164.17	0.46	
04/22/04	11:20	1460	15.2	165	-10.25	164.15	0.44	
04/22/04	11:35	1475	13.3	165	-10.25	164.15	0.44	
04/22/04	12:05	1505	10.7	165	-10.25	164.15	0.44	
04/22/04	12:25	1525	9.5	165	-10.5	164.13	0.41	
04/22/04	12:50	1550	8.3	165	-10.5	164.13	0.41	
04/22/04	13:00	1560	8.0	165	-10.5	164.13	0.41	
04/22/04	13:30	1590	7.0	165	-10.75	164.10	0.39	
04/22/04	14:00	1620	6.3	165	-11	164.08	0.37	
04/23/04	14:30	1650	5.8	165	-11.25	164.06	0.35	
04/23/04	15:00	1680	5.3	165	-11.25	164.06	0.35	
04/23/04	16:00	1740	4.6	165	-11.5	164.04	0.33	
04/23/04	17:00	1800	4.1	165	-11.75	164.02	0.31	

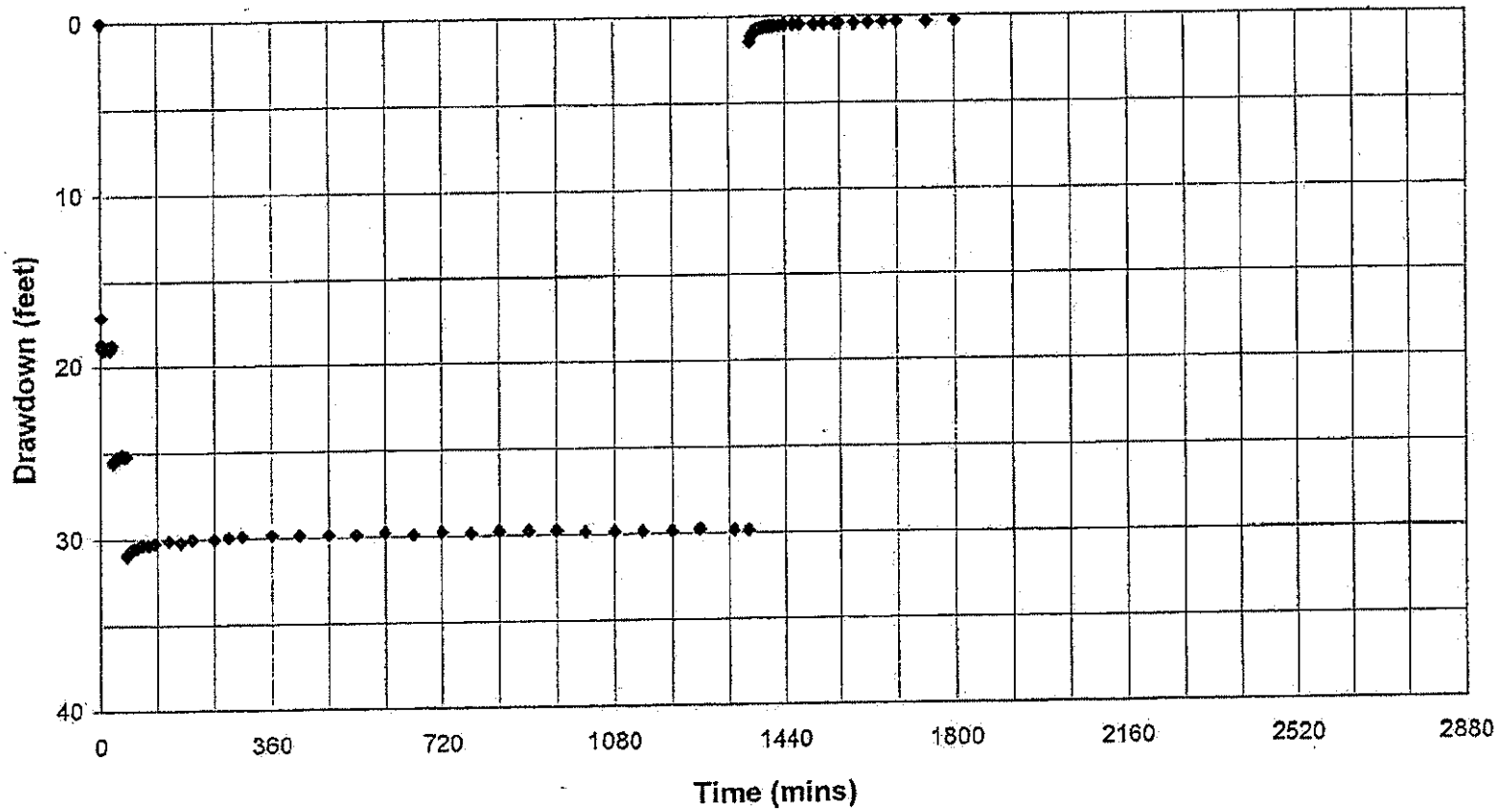
Notes and Comments:
Pump at -282 ft.

Drawdown and Recovery

Spring Valley Ranch

Test Well SVR 7, Q = 500 gpm)

Test date: 4/21-4/22/04

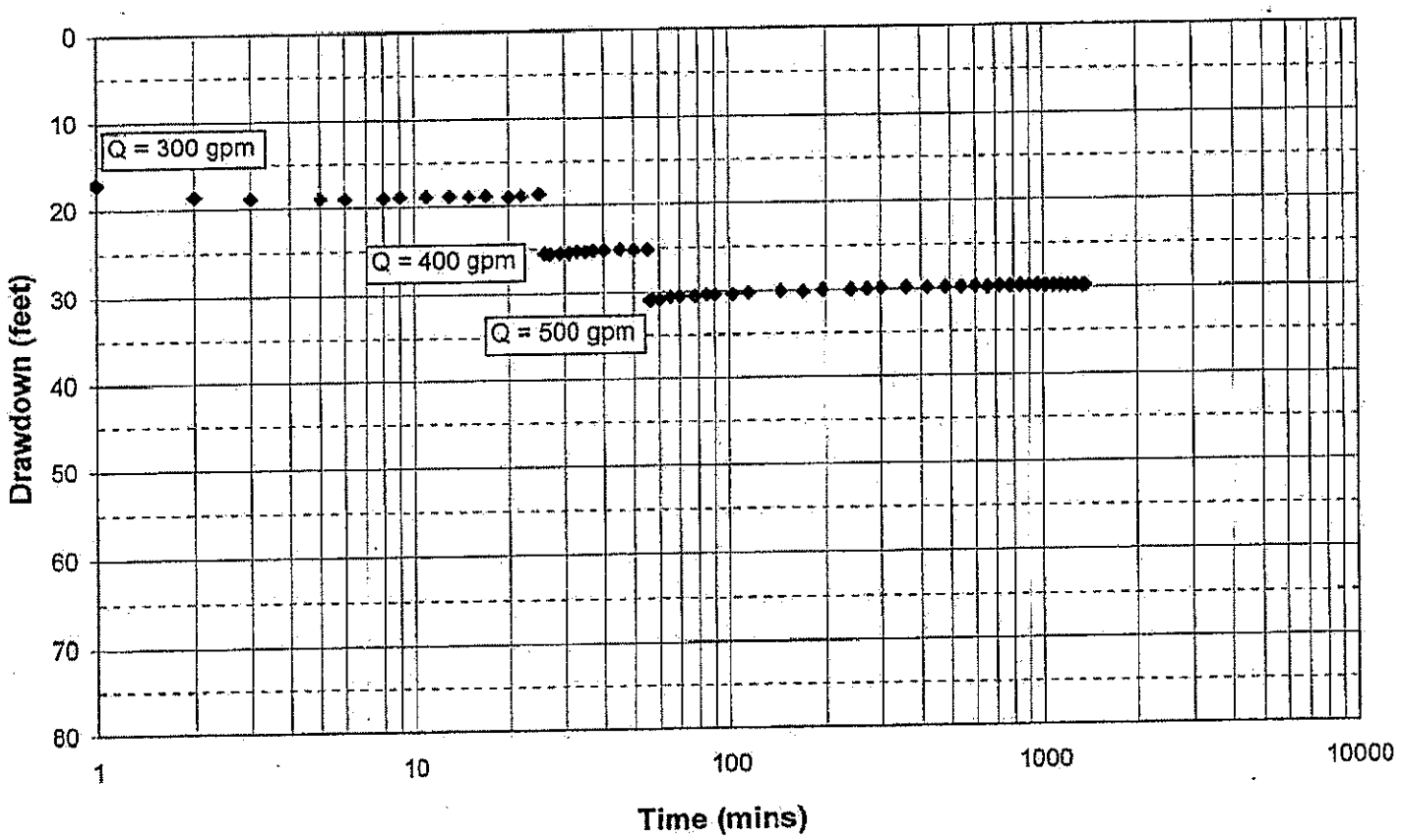


Time - Drawdown

Spring Valley Ranch

Test Well SVR 7, Q = 500 gpm

Test date: 4/21-4/22/2004

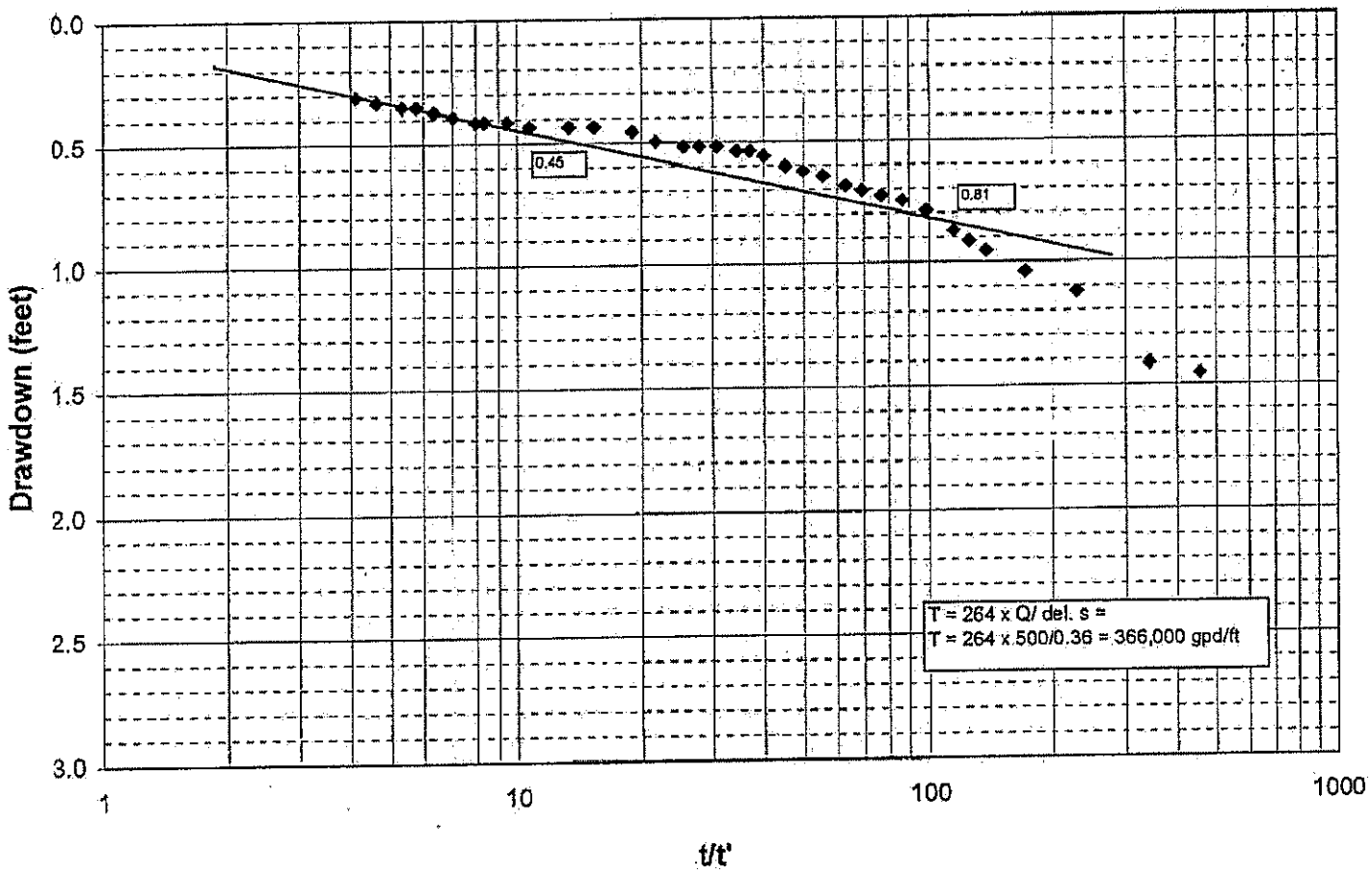


Time - Recovery

Spring Valley Ranch

Test Well SVR 7, Q = 500 gpm

Test date: 4/21-4/22/04



AQUIFER TEST DATA

Well No.: Stock well, observation well for SVR 7 — Q=500 gpm, t = 22 hours 15 min.

Test conducted by: Feast Geosciences; Adamson Pump and Drilling Co.

Flow measured by: Observation well, Radius = 845 ft

Water levels measured by: Well sounder — Water level measure point: Top of 4" well seal

MP Elevation: 1.0 ft agl — Static WL (ft bmp): 150.00

Pump on: 04/21/04 11:00 — Pump off: 04/22/04 9:44

				Water Level Data				
Date	Time	t (mins)	t/t'	Ref (ft.)	Measure (in.)	WL (ft bmp)	Drawdown (feet)	Comments
04/21/04	13:05	0		150	1	150.08		Had to cut lock, missed first part of pumping period
04/21/04	13:10	0		150	0	150.00	0.0	
04/21/04	13:15	135		150	0	150.00	0.00	
04/21/04	13:20	140		150	0	150.00	0.00	
04/21/04	13:30	150		150	0	150.00	0.00	
04/21/04	13:45	165		150	0	150.00	0.00	
04/21/04	14:00	180		150	1	150.08	0.08	
04/21/04	14:30	210		150	1	150.08	0.08	
04/21/04	15:00	240		150	1.5	150.13	0.13	
04/21/04	15:40	280		150	1.5	150.13	0.13	
04/21/04	16:00	300		150	1.5	150.13	0.13	
04/21/04	18:00	420		150	2	150.17	0.17	
04/21/04	20:00	540		150	2	150.17	0.17	
04/21/04	22:00	660		150	3	150.25	0.25	
04/22/04	0:00	780		150	4	150.33	0.33	
04/22/04	2:00	900		150	5.25	150.44	0.44	
04/22/04	4:00	1020		150	5.5	150.46	0.46	
04/22/04	6:00	1140		150	6	150.50	0.50	
04/22/04	9:20	1340		150	6.5	150.54	0.54	
Begin Recovery, pump off at:			04/22/04	9:44				
04/22/04	9:57	1377	37.2	150	6.5	150.54	0.54	
04/22/04	10:04	1384	31.5	150	6	150.50	0.50	
04/22/04	10:14	1394	25.8	150	5.5	150.46	0.46	
04/22/04	10:24	1404	21.9	150	5	150.42	0.42	
04/22/04	10:55	1435	15.1	150	4.25	150.35	0.35	
04/22/04	11:30	1470	11.3	150	3.5	150.29	0.29	
04/22/04	11:55	1495	9.6	150	3.25	150.27	0.27	
04/22/04	12:25	1525	8.2	150	3	150.25	0.25	
04/22/04	12:55	1555	7.2	150	2.75	150.23	0.23	
04/22/04	13:35	1595	6.3	150	2.5	150.21	0.21	
04/22/04	14:10	1630	5.6	150	2.25	150.19	0.19	
04/22/04	14:35	1655	5.3	150	2	150.17	0.17	
04/22/04	15:05	1685	4.9	150	1.75	150.15	0.15	
04/22/04	16:10	1750	4.3	150	1.5	150.13	0.13	
04/22/04	17:05	1805	3.9	150	1.25	150.10	0.10	

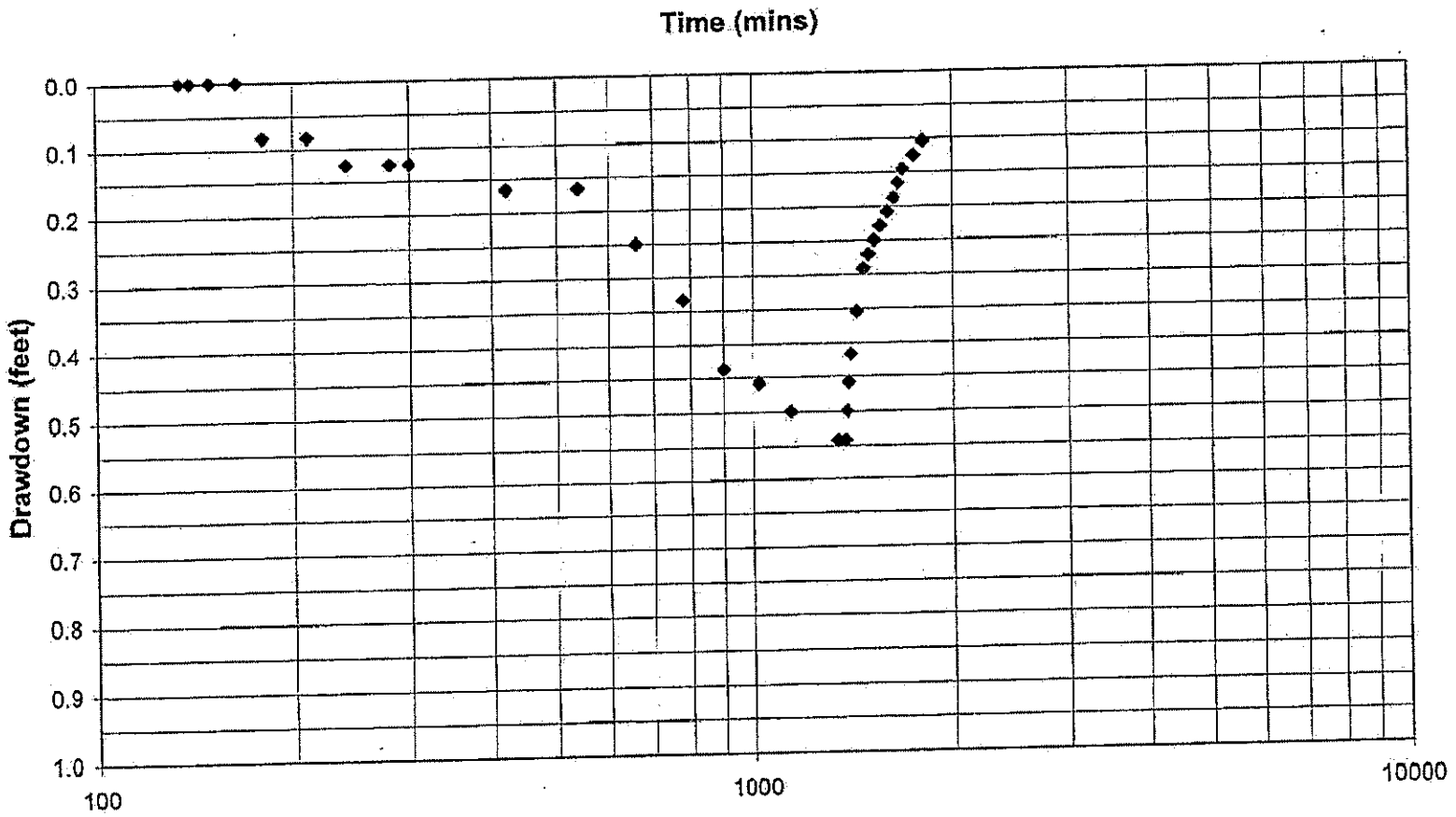
Notes and Comments:
Pump at ~282 ft.
SWL ~ +2 ft gl.

Drawdown and Recovery

Spring Valley Ranch

Obs. Well for SVR 7, Q = 500 gpm)

Test date: 4/21-4/22/04

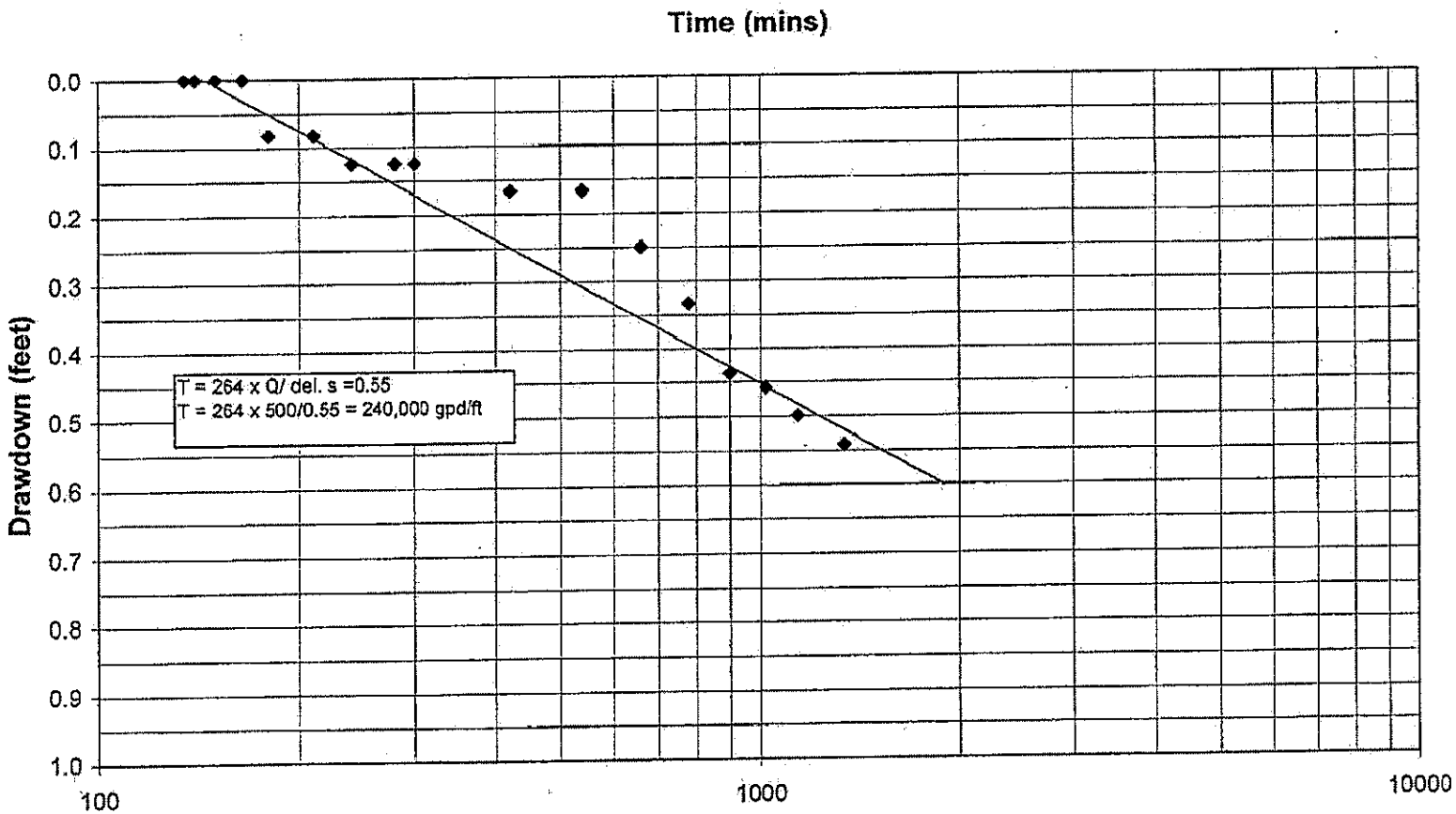


Drawdown

Spring Valley Ranch

Obs. Well for SVR 7, Q = 500 gpm

Test date: 4/21-4/22/04

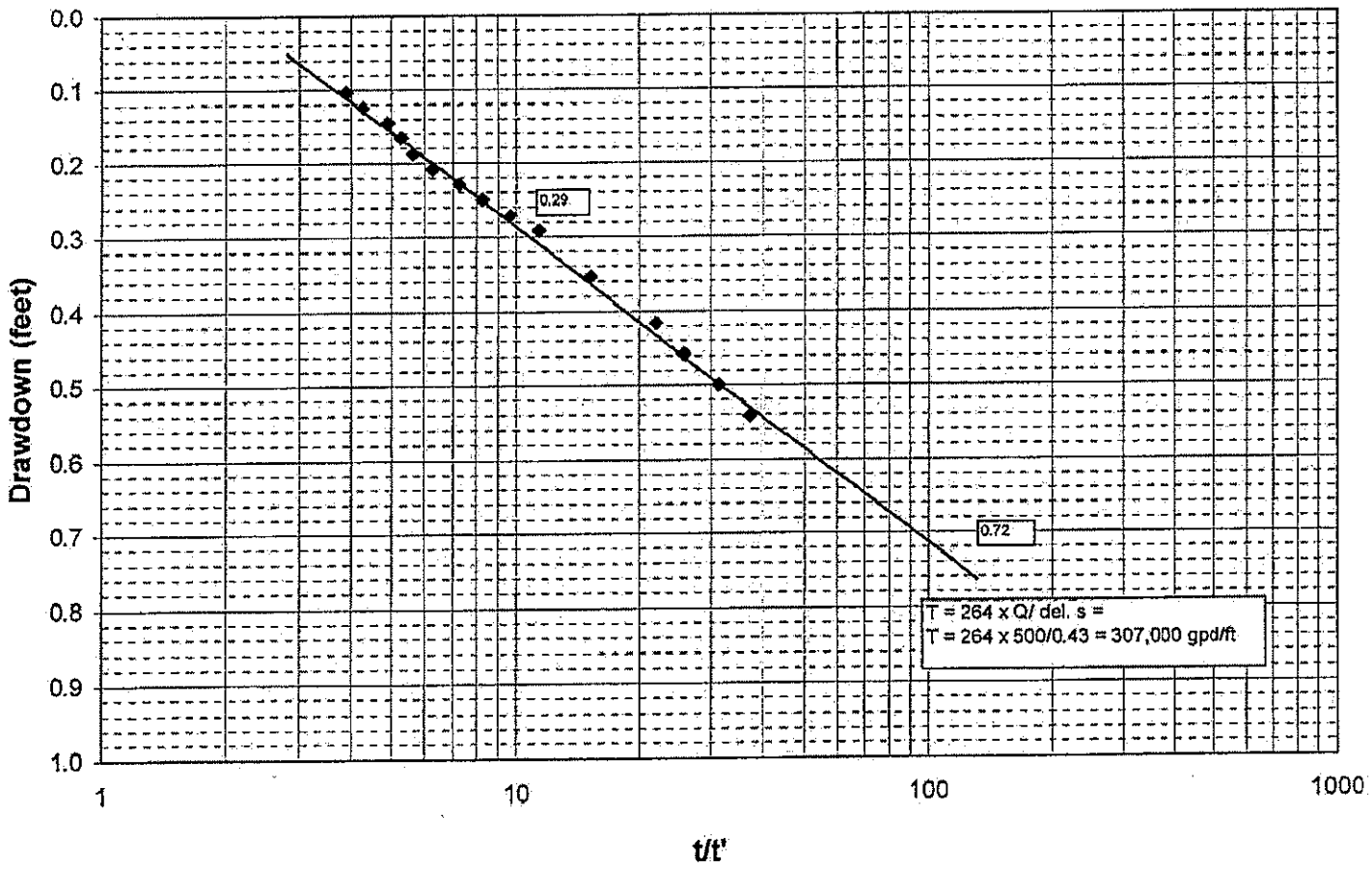


Time - Recovery

Spring Valley Ranch

Obs. Well for SVR 7, Q = 500 gpm

Test date: 4/21-4/22/04



Laboratory Analysis Report

Sample Number: 0412351

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Nitrate (as N)	10	0.31	mg/L	0.20	EPA 300.0	4/22/2004	WW
Nitrite (as N)	1.00	<0.01	mg/L	0.01	EPA 353.2	4/22/2004	WW
Bicarbonate		114	mg/L		SM 2320	4/28/2004	ARR
Chloride, Cl	UR	5	mg/L	1	EPA 300.0	4/22/2004	WW
Fluoride, F	4.0	0.44	mg/L	0.10	EPA 300.0	4/27/2004	WW
Sulfate, SO4	UR	24	mg/L	1	EPA 300.0	4/22/2004	WW
Hardness	UR	110	mg/L	5.0	SM 2340	4/28/2004	ARR
Sulfide, Dissolved (as H2S)		<0.05	mg/L	0.05	SM 4500-S2 D	4/22/2004	RG
Total Dissolved Solids	UR	212	mg/L	25	EPA 160.1	4/24/2004	DLR

MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated

Michael D. Moore

Thank you for choosing Analytical Laboratories for your testing needs.

If you have any questions concerning this report,
please contact: Michael Moore

LAB FEDERAL ID#: ID00020	LAB SAMPLE #: 0412351
DATE LAB REC'D SAMPLE: 4/22/2004	DATE REPORTED BY LAB: 5/25/2004
COMPLIANCE SAMPLE ☐ YES ☐ NO	REPLACEMENT SAMPLE ☐
COLLECTION DATE: 4/21/2004	COLLECTION TIME: 12:45 (24 hour clock)
SAMPLE TYPE: ☐ CO-confirmation ☐ RP-repeat ☐ RT-routine ☐ DU-duplicate ☐ SP-special ☐ Other	
PWS#:	PWS NAME: S P F WATER ENGINEERING, LLC
SAMPLING POINT/LOCATION: SPRING VALLEY RANCH #7	TAG #/FACILITY ID:
COLLECTOR'S NAME: C FEAST	CONTACT PHONE # (208) 383-4140

Analytical Laboratories, Inc.
1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515
http://www.analyticallaboratories.com

PUBLIC DRINKING WATER SYSTEM INORGANIC CHEMICAL (IOC) ANALYSIS REPORT:

Phase II

FRDS	Contaminant Name	Result*	Method	MCL*	MDL*	Analysis Date	Analyst
1010	Barium	ND	EPA 200.7	2	0.05	4/27/2004	JH
1015	Cadmium	ND	SM 3113 B	0.005	0.0005	5/22/2004	DMB
1020	Chromium	ND	SM 3113 B	0.1	0.002	5/6/2004	DMB
1035	Mercury	ND	EPA 245.1	0.002	0.0002	4/29/2004	SS
1038	Tl(N02/N03)	—		10			
1040	Nitrate	0.31	EPA 300.0	10	0.2	4/22/2004	WW
1041	Nitrite	ND	EPA 353.2	1.0	0.01	4/22/2004	WW
1045	Selenium	—		0.05			
1024	Cyanide	—		0.2			

Phase V

FRDS	Contaminant Name	Result*	Method	MCL*	MDL*	Analysis Date	Analyst
1085	Thallium	ND	SM 3113 B	0.002	0.002	5/10/2004	DMB
1075	Beryllium	ND	SM 3113 B	0.004	0.0005	5/10/2004	DMB
1074	Antimony	ND	SM 3113 B	0.006	0.005	5/13/2004	DMB
1036	Nickel	ND	EPA 200.7	n/a	0.02	4/26/2004	JH

Other IOCs

FRDS	Contaminant Name	Result*	Method	MCL*	MDL*	Analysis Date	Analyst
1052	Sodium	22.9	EPA 200.7	n/a	0.1	4/23/2004	JH
1025	Fluoride	0.44	EPA 300.0	4.0	0.1	4/27/2004	WW
1005	Arsenic	ND	SM 3113 B	0.05	0.005	4/29/2004	JH

Secondary IOCs (optional)

FRDS	Contaminant Name	Result*	Method	MCL*	MDL*	Analysis Date	Analyst
1050	Silver	—		0.1			
1049	Silica, As SiO2	—					
1042	Potassium	2.0	EPA 200.7		0.5	4/23/2004	JH
1032	Manganese	ND	EPA 200.7	0.05	0.05	4/26/2004	JH
1031	Magnesium	8.19	EPA 200.7		0.1	4/23/2004	JH
1028	Iron	0.11	EPA 200.7	0.3	0.05	4/26/2004	JH
1027	Hydrogen Sulfide	ND	SM 4500-S		0.05	4/22/2004	RG
1022	Copper	—		1.0			
1017	Chloride	5	EPA 300.0	250	1	4/22/2004	WW
1016	Calcium	29.1	EPA 200.7		0.1	4/23/2004	JH
1003	Ammonia as N	ND	EPA 350.1		0.04	4/28/2004	WW
1002	Aluminum	—		0.05-			

FRDS	Contaminant Name	Result*	Method	MCL*	MDL*	Analysis Date	Analyst
2905	Surfactants	—					
1997	Langlier Index	—					
1930	Dissolved Solids	212	EPA 160.1	500	25	4/24/2004	DLR
1927	Alkalinity as CaC03	—					
1926	Conductivity uS/cm	—					
1925	pH	—		6.5-8.			
1920	Odor (Threshold #)	—		3			
1915	Hardness as CaC03	110	SM 2340		5	4/28/2004	ARR
1905	Color	—		15c.u.			
1095	Zinc	—		5			
1055	Sulfate	24	EPA 300.0	250	1	4/22/2004	WW

*Reported in mg/L unless otherwise noted
ND = Not detected within sensitivity of instrument
— = No analysis performed
MDL = Method detection limit

TERRY SCANLAN, P.E.,P.G.
S P F WATER ENGINEERING, LLC
600 E RIVER PARK LN STE 105
BOISE, ID, 83706

Signature of Laboratory Supervisor

5/27/04
Date

Well #7E

Printed 03/15/2004
Drilling Permit No. 811501
Well Tag No. D0031062
Well ID # 382205
Water Right No.
Receipt # W031368
Approved Date March 15, 2004

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
DRILLING PERMIT

Relationship: Applicant
Name: SPRING VALLEY DEVELOPMENT LLC
Address: 485 EAST RIVERSIDE DR
EAGLE ID 83616

Phone: (208) 939-0343

Proposed Well Location: Township 05N, Range 01W, Section 23, NE, SW
COUNTY ADA Sub Name WELL #7

Street Address of Well Site: BIG GULCH SW OF WILLOW CREEK RD
EAGLE ID

Proposed Use of Well: Test

Well Construction Information:

A. New Well
B. Proposed Surface Diameter: 8 Inches. Proposed Depth 800 Feet.
C. Anticipated Bottom Hole Temperature: 85F and less

Construction Start Date: Mar 12 2004

Anticipated Well Drilling Company: ADAMSON PUMP & DRILLING (No. 457)

Applicant's Signature: ___See original application_____ Date _____

Title: _____

Well Tag No. D0031062

ACTION OF THE DEPARTMENT OF WATER RESOURCES

This permit is Approved on Monday, March 15, 2004.

1. This drilling permit is valid for two (2) months from the approval date for the start of construction and is valid for one (1) year from the approval date for completion of the well unless an extension has been granted.
2. This permit does not constitute an approval of the local Health District or the Idaho Department of Environmental Quality which may be required prior to construction of this well. The local Health District should be contacted for septic tank/drainfield locations. Domestic wells must not be drilled closer than 100 ft. from any drainfield and 50 ft. from any septic tank. Public Water Supply wells must not be drilled closer than 100 ft. from any drainfield or septic tank.
3. The well shall be constructed by a driller currently licensed in the state of Idaho who must maintain a copy of the drilling permit at the drilling site.
4. Approval of this drilling permit does not authorize trespass on the land of another party.
5. This permit does not constitute other local, county, state or federal approvals that may be required for construction of a well.
6. This drilling permit does not represent a right to divert and use the water of the State of Idaho. If the well being drilled is associated with approved water rights(s) use of the well must comply with conditions of said water right(s).
7. If a bottom hole temperature of 85 Degrees F (29.44 oC) or greater is encountered, well construction shall cease and the well driller and the well owner shall contact the Department of Water Resources immediately.
8. Idaho Code, S 55-2201 - 55-2210 requires the applicant and/or its contractors to contact "Dig-line" (Dig-Line is a one-call center for utility notification) not less than 2 working days prior to the start of any excavation for this project. The "Dig-Line " Number for this location is 1-800-342-1585
9. The well tag for the drilling permit/start card shall be securely and permanently attached to the well casing through welding or by the use of four closed end domed stainless steel pop rivets. The tag attachment will be done at the time of completion of the well, and prior to removing the drill rig from the drill site.
10. This drilling permit has been approved for construction or drilling of an exploratory well intended to be used for collecting geologic, hydrologic or water quality data.
11. No water shall be produced from this well or any fluid injected into this well without specific written authorization from the Department.
12. Any surface casing installed in this well shall not exceed 8 inches nominal diameter.
13. All casing strings installed in this well shall be sealed their entire length with approved seal material and by positive means of placement unless otherwise authorized by this drilling permit.
14. A drilling prospectus including a schematic diagram and construction narrative describing all pertinent features of the well including drilling methods, seal material and placement methods, casing schedules and specifications shall be submitted for review by the department and attached to this drilling permit prior to the start of construction.
15. No casing installed in this well shall be drilled and driven through multiple aquifers, unless it is completely removed and the borehole is properly sealed or the casing is perforated at appropriate intervals and pressure grouted with approved grout. Drilling and driving casing may be allowed above the water table or where multiple aquifers are not encountered provided that the casing is sealed as required by administrative rules.

16. This well shall be properly plugged in accordance with a plan approved by the department at least 30 days prior to the expiration of the bond.
17. The bond secured for abandonment of this well shall be valid for the entire time the well remains open. The Department will give the well owner 60 days notice prior to the expiration of the bond that the well must be properly plugged. If the well owner has not properly plugged the well at least 30 days prior to the expiration of the bond, the Director may commence action to attach the bond and hire a licensed driller to properly plug the well.
18. Drilling of this well shall not commence until the Department has received a document from the surety company or bank stating that the bond is in full force and effect and the Department has determined the amount of the bond is sufficient.
19. This drilling permit is not valid unless the well owner has secured a bond in favor of the Director in an amount sufficient for proper plugging and abandonment of this well. The bond shall remain in effect and accessible by the Director until this well is plugged. The bond amount for this well shall be at least $5,600.

Signature of Authorized Dept Representative

Sr WR Agent
Title

Appendix C
Supplementary Data
Spring Valley Ranch Exploration Well SVR 9

Form 238-7
5.02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No:
Inspected by
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

WELL TAG NO. D 0031492
DRILLING PERMIT NO. 815596
Water Right or Injection Well No. 386274

2. OWNER:
Name SUNCOR
Address 485 E Riverside Dr. #300
City Eagle State ID Zip 83616

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 5 North XX or South ☐
Rge. 1 East XX or West ☐
Sec. 9 NE 1/4 SW 1/4 NW 1/4 SE 1/4
Gov't Lot ____ County Ada
Lat: : : Long: : :
Address of Well Site ½ mile SW of Willow Creek Rd City Eagle
Subdivision - Name - Section Reserved Landmark
Lot ____ Blk ____ Sub. Name ____

4. USE:
☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection XX Other test #9

5. TYPE OF WORK check all that apply (Replacement etc.)
XX New Well ☐ Modify ☐ Abandonment ☐ Other ____

6. DRILL METHOD:
☐ Air Rotary ☐ Cable XX Mud Rotary ☐ Other ____

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
bentanite grout	806	265	1250 gal	pumped
bentanite grout	215	0	300 gal	pumped

Was drive shoe used? ☐Y ☐N Shoe Depth(s) ____
Was drive shoe seal tested? ☐Y ☐N How? ____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
8"	+2	235	250	steel	XX	☐	XX	☐
6"	245	253	250	steel	XX	☐	XX	☐
					☐	☐	☐	☐

Length of Headpipe +2 Length of Tailpipe 0
Packer ☐Y ☐N Type ____

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method ____
Screen Type & Method of Installation stainless

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
235	245	30		6"	stnls	XX	☐
253	263	30		6"	stnls	XX	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method
#8-12 sand			3000#	

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
193' 4" ft. below ground Artesian pressure ____ lb.
Depth flow encountered 198 ft. Describe access port or control devices: ____

12. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
XX 43	14'	207	4½ hr

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: ____
Depth first Water Encounter ____

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
8	0	10	topsoil, sandy clay		X
	10	27	sand, brown clay		X
	27	60	tan gray clay		X
	60	90	sandy brown clay w/ gray streaks		X
	90	104	gray clay		X
	104	110	sandy brown clay		X
	110	155	coarse sand w/ gray streaks		X
	155	198	coarse to medium sand w/ clay streaks	X	
	198	210	reddish sand	X	
	210	243	fine sand w/ clay streaks	X	
	243	265	sand w/ wood, clay streaks	X	
	265	430	silty gray blue clay		X
	430	530	sticky gray blue clay		X
	530	531	hard shale		X
	531	780	gray blue clay		X
	780	781	hard shale		X
	781	806	gray blue clay		X
			topped with chips 20 sks		

Completed Depth 806 drilled, 263 cased (Measurat
Date: Started 6/ 104 Completed 6/25/04

14. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.
Company Name Stevens & Sons Firm No. 15
Principal Driller ____ Date 6/28/
and
Driller or Operator II ____ Date ____
Operator I ____ Date ____
Principal Driller and Rig Operator I required.
Operator I must have completed Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

Exploration Hole SVR 9

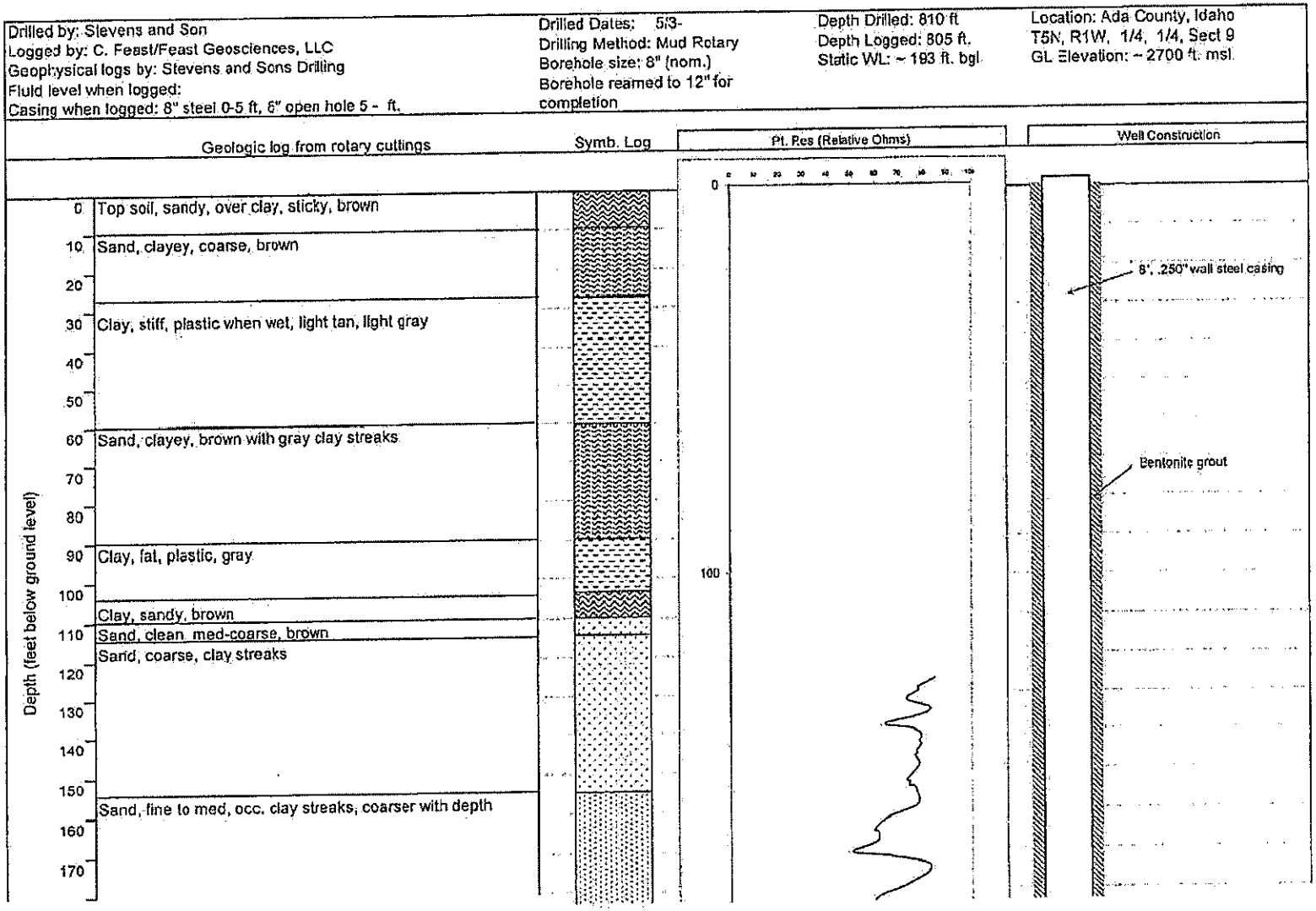
Spring Valley Ranch

Drilled by: Stevens and Son
Logged by: C. Feast/Feast Geosciences, LLC
Geophysical logs by: Stevens and Sons Drilling
Fluid level when logged:
Casing when logged: 8" steel 0-5 ft, 6" open hole 5 - ft.

Drilled Dates: 5/3-
Drilling Method: Mud Rotary
Borehole size: 8" (nom.)
Borehole reamed to 12" for completion

Depth Drilled: 810 ft
Depth Logged: 805 ft.
Static WL: ~ 193 ft. bgl

Location: Ada County, Idaho
T5N, R1W, 1/4, 1/4, Sect 9
GL Elevation: ~ 2700 ft. msl



Exploration Hole SVR 9

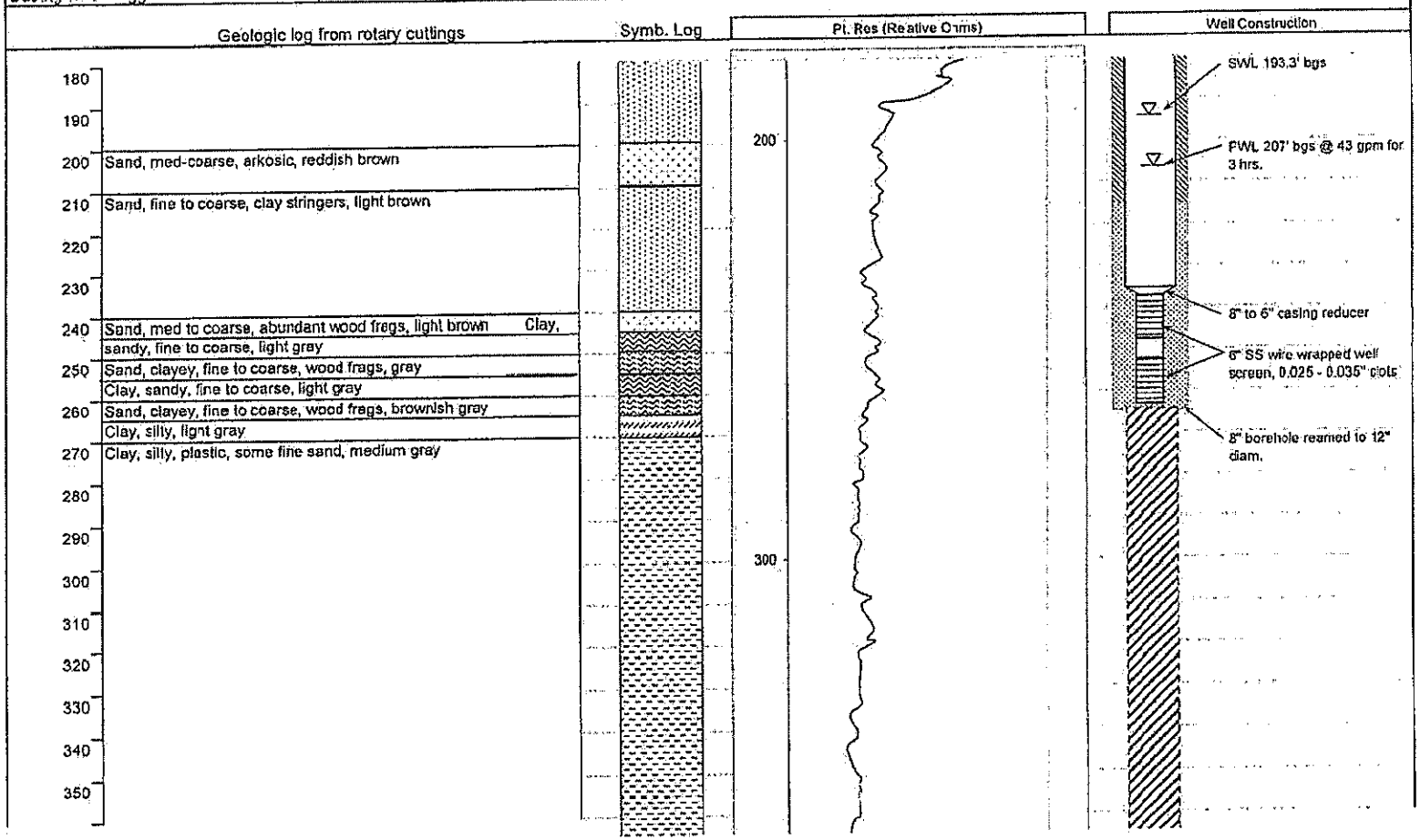
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T5N, R1W, 1/4, 1/4, Sect 9
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Exploration Hole SVR 9

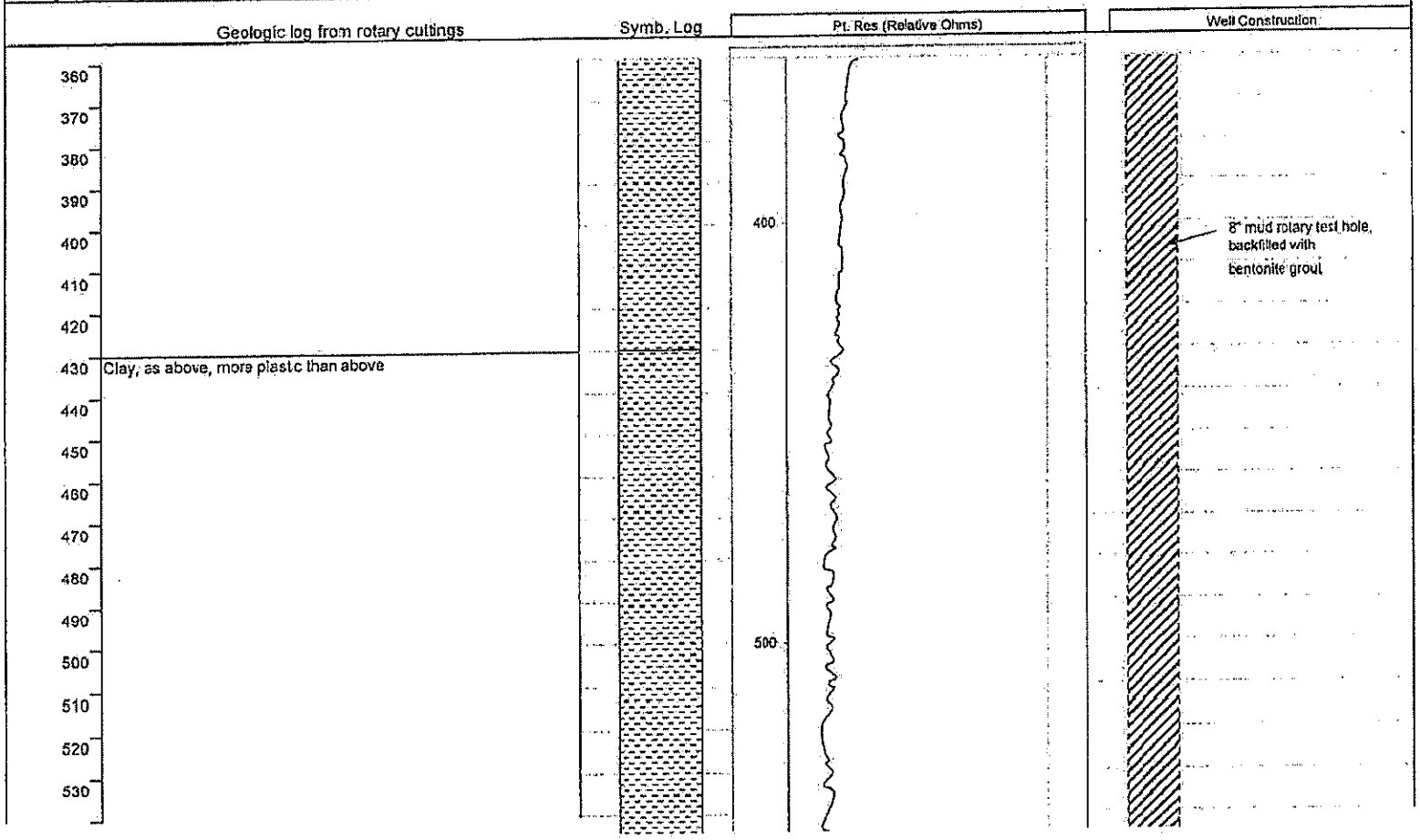
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Drilling Method: Mud Rotary
Borehole size: 8" (nom.)
Borehole reamed to 12" for completion

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Depth Logged: 805 ft.
Static WL: ~ 193 ft. bgl

Location: Ada County, Idaho
T5N, R1W, 1/4, 1/4, Sect 9
GL Elevation: ~ 2700 ft. msl.



Exploration Hole SVR 9

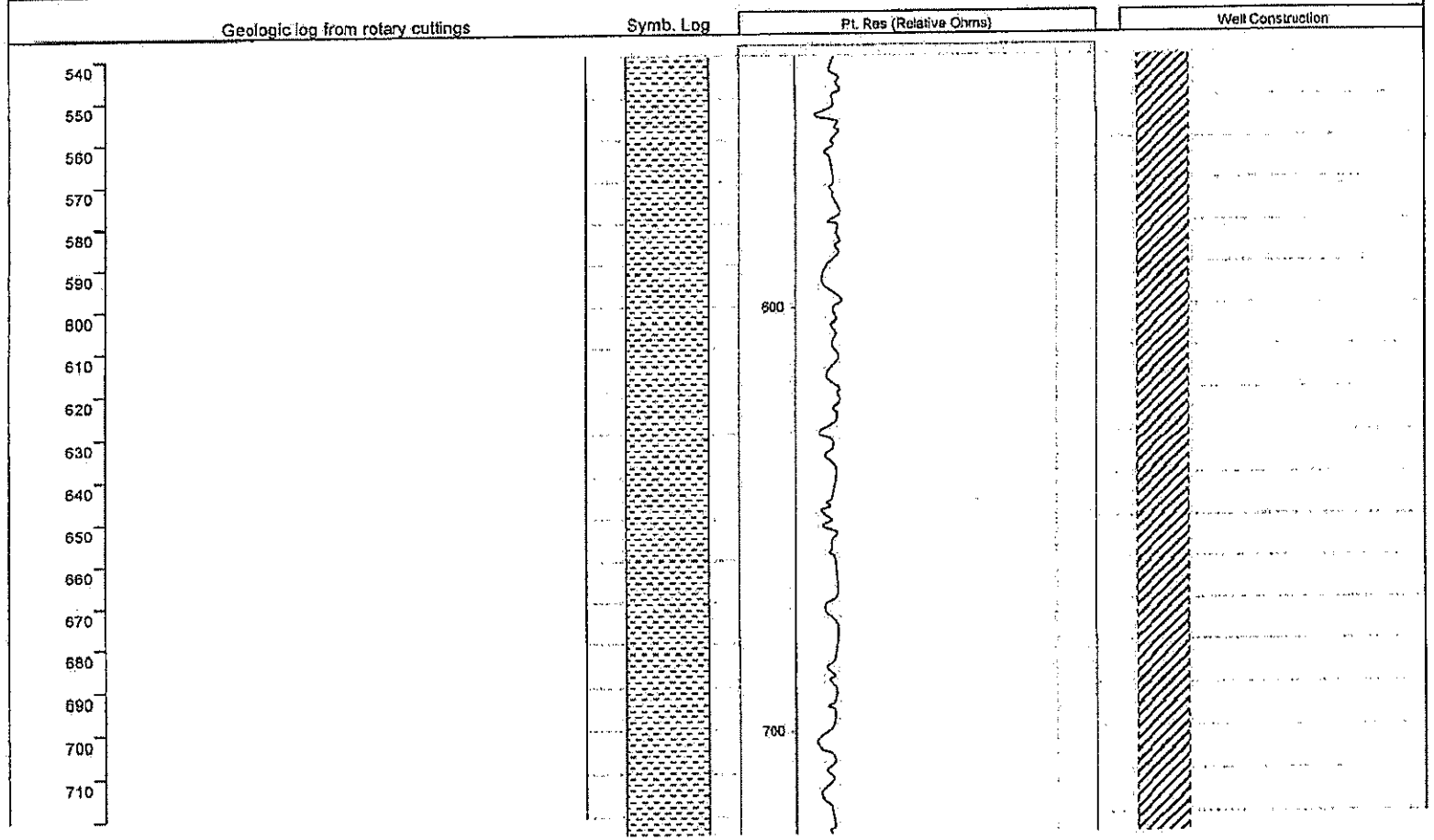
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Drilled Dates: 5/3-
Drilling Method: Mud Rotary
Borehole size: 8" (nom.)
Borehole reamed to 12" for completion

Depth Drilled: 810 ft.
Depth Logged: 805 ft.
Static WL: ~ 193 ft. bgl

Location: Ada County, Idaho
T5N, R1W, 1/4, 1/4, Sect 9
GL Elevation: ~ 2700 ft. msl.



Exploration Hole SVR 9

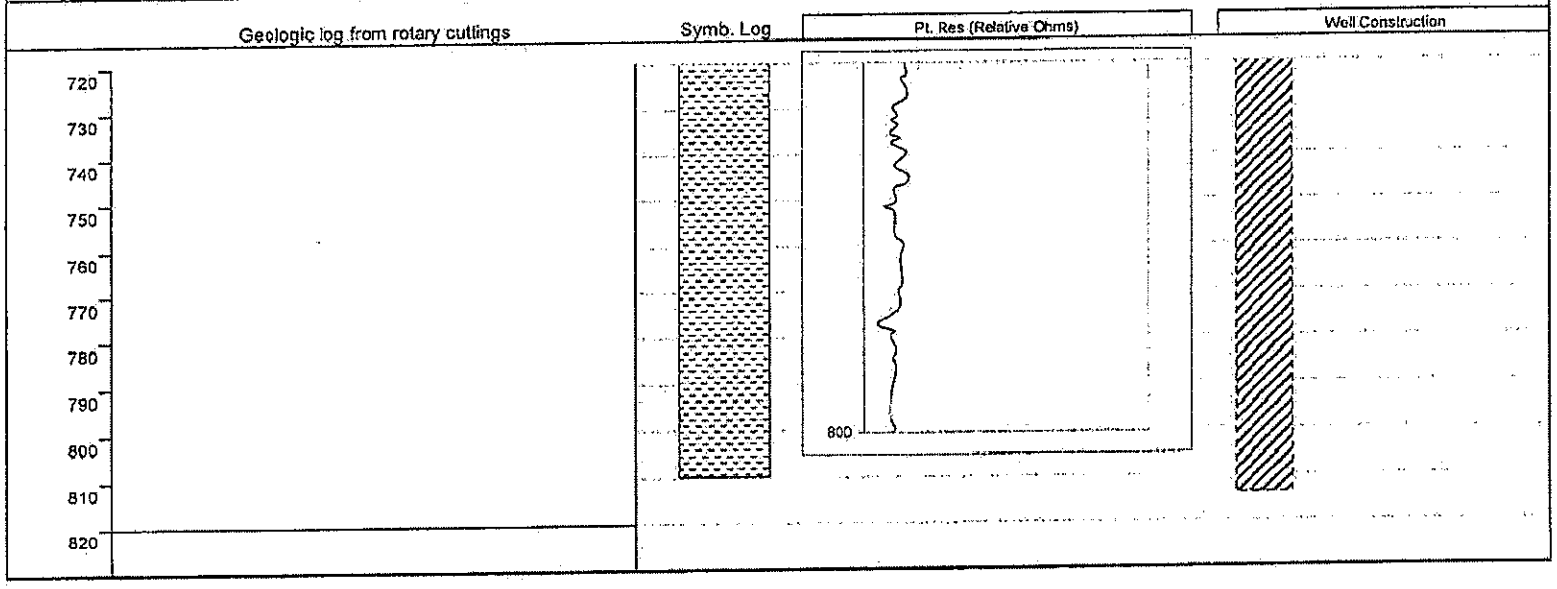
Spring Valley Ranch

Drilled by: Stevens and Son
Logged by: C. Feast/Feast Geosciences, LLC
Geophysical logs by: Stevens and Sons Drilling
Fluid level when logged:
Casing when logged: 8" steel 0-5 ft, 8" open hole 5 - ft.

Drilled Dates: 5/3-
Drilling Method: Mud Rotary
Borehole size; 8" (nom.)
Borehole reamed to 12" for completion

Depth Drilled: 810 ft
Depth Logged: 805 ft.
Static WL: ~ 193 ft. bgl

Location: Ada County, Idaho
T5N, R1W, 1/4, 1/4, Sect 9
GL Elevation: ~ 2700 ft. msl.



AQUIFER TEST DATA

Well No.: Spring Valley Ranch, Test Well SVR 9 — Q=43 gpm, t = 3 hours

Test conducted by: Feast Geosciences, Stevens and Son Drilling Co.

Flow measured by: Bucket and watch

Water levels measured by: Well sounder — Water level measure point: Top of 1" poly tube

MP Elevation: 4.0 ft agl — Static WL (ft bmp): 197.33

Pump on: 06/23/04 9:20 — Pump off: 06/23/04 12:40

Date	Time	t (mins)	t/t'	Water Level Data: Ref (ft.)	Measure (in.)	WL (ft bmp)	Drawdown (feet)	Comments
02/04/04	9:10	-		197	4.00	197.3		Static water level
06/23/04	9:25	5		211	10.00	211.8	14.5	Start test, Q = surging/high Q as pump column fills
06/23/04	9:30	10		211		211.0	13.7	Throttle Q = 43 gpm
06/23/04	9:31	11		211	0.25	211.0	13.7	
06/23/04	9:32	12		211		211.0	13.7	
06/23/04	9:33	13		210	11.00	210.9	13.6	
06/23/04	9:34	14		210	11.00	210.9	13.6	
06/23/04	9:36	16		210	10.50	210.9	13.5	
06/23/04	9:37	17		210	10.25	210.9	13.5	
06/23/04	9:38	18		210	10.00	210.8	13.5	
06/23/04	9:39	19		210	10.25	210.9	13.5	
06/23/04	9:40	20		210	10.00	210.8	13.5	
06/23/04	9:41	21		210	10.00	210.8	13.5	
06/23/04	9:42	22		210	10.00	210.8	13.5	
06/23/04	9:43	23		210	10.50	210.9	13.5	
06/23/04	9:44	24		210	11.00	210.9	13.6	
06/23/04	9:45	25		210	10.75	210.9	13.6	
06/23/04	9:50	30		211	1.00	211.1	13.8	
06/23/04	9:55	35		211	0.50	211.0	13.7	
06/23/04	10:00	40		211	1.25	211.1	13.8	
06/23/04	10:05	45		211	1.50	211.1	13.8	
06/23/04	10:10	50		211	2.25	211.2	13.9	
06/23/04	10:15	55		211	2.00	211.2	13.8	
06/23/04	10:20	60		211	1.75	211.1	13.8	
06/23/04	10:25	65		211	2.00	211.2	13.8	
06/23/04	10:30	70		211	1.50	211.1	13.8	
06/23/04	10:35	75		211	1.50	211.1	13.8	
06/23/04	10:40	80		211	1.50	211.1	13.8	
06/23/04	10:45	85		211	2.00	211.2	13.8	
06/23/04	10:50	90		211	2.25	211.2	13.9	
06/23/04	10:55	95		211	3.00	211.3	13.9	
06/23/04	11:00	100		211	3.00	211.3	13.9	
06/23/04	11:10	110		211	2.75	211.2	13.9	
06/23/04	11:20	120		211	2.50	211.2	13.9	
06/23/04	11:30	130		211	3.25	211.3	13.9	
06/23/04	11:40	140		211	2.00	211.2	13.8	
06/23/04	11:50	150		211	1.75	211.1	13.8	
06/23/04	12:00	160		211	1.00	211.1	13.8	
06/23/04	12:10	170		211	1.00	211.1	13.8	Collected sample, T 68 F, pH, nm SC nm
06/23/04	12:20	180		211	1.25	211.1	13.8	
06/23/04	12:30	190		211	1.25	211.1	13.8	
06/23/04	12:40	200		211	1.25	211.1	13.8	Stopped test
Begin Recovery, pump off at:			06/23/04	12:40				
06/23/04	12:41	201	201	170.0		170.00	-27.3	
06/23/04	12:42	202	101	180.0	6.3	180.52	-16.8	
06/23/04	12:43	203	68	190.0	1.0	190.08	-7.3	
06/23/04	12:44	204	51	192.0	1.0	192.08	-5.3	
06/23/04	12:45	205	41	194.0	4.5	194.38	-3.0	
06/23/04	12:46	206	34	195.0	10.0	195.83	-1.5	
06/23/04	12:47	207	30	196.0	5.3	196.44	-0.9	
06/23/04	12:48	208	26	196.0	10.0	196.83	-0.5	
06/23/04	12:49	209	23	197.0	1.0	197.08	-0.3	
06/23/04	12:50	210	21	197.0	3.3	197.27	-0.1	
06/23/04	12:51	211	19	197.0	3.3	197.27	-0.1	
06/23/04	12:53	213	16	197.0	4.0	197.33	0.0	
06/23/04	12:55	215	14	197.0	4.0	197.33	0.0	
06/23/04	12:57	217	13	197.0	4.0	197.33	0.0	
06/23/04	12:59	219	12	197.0	4.0	197.33	0.0	
06/23/04	13:05	225	9	197.0	4.0	197.33	0.0	

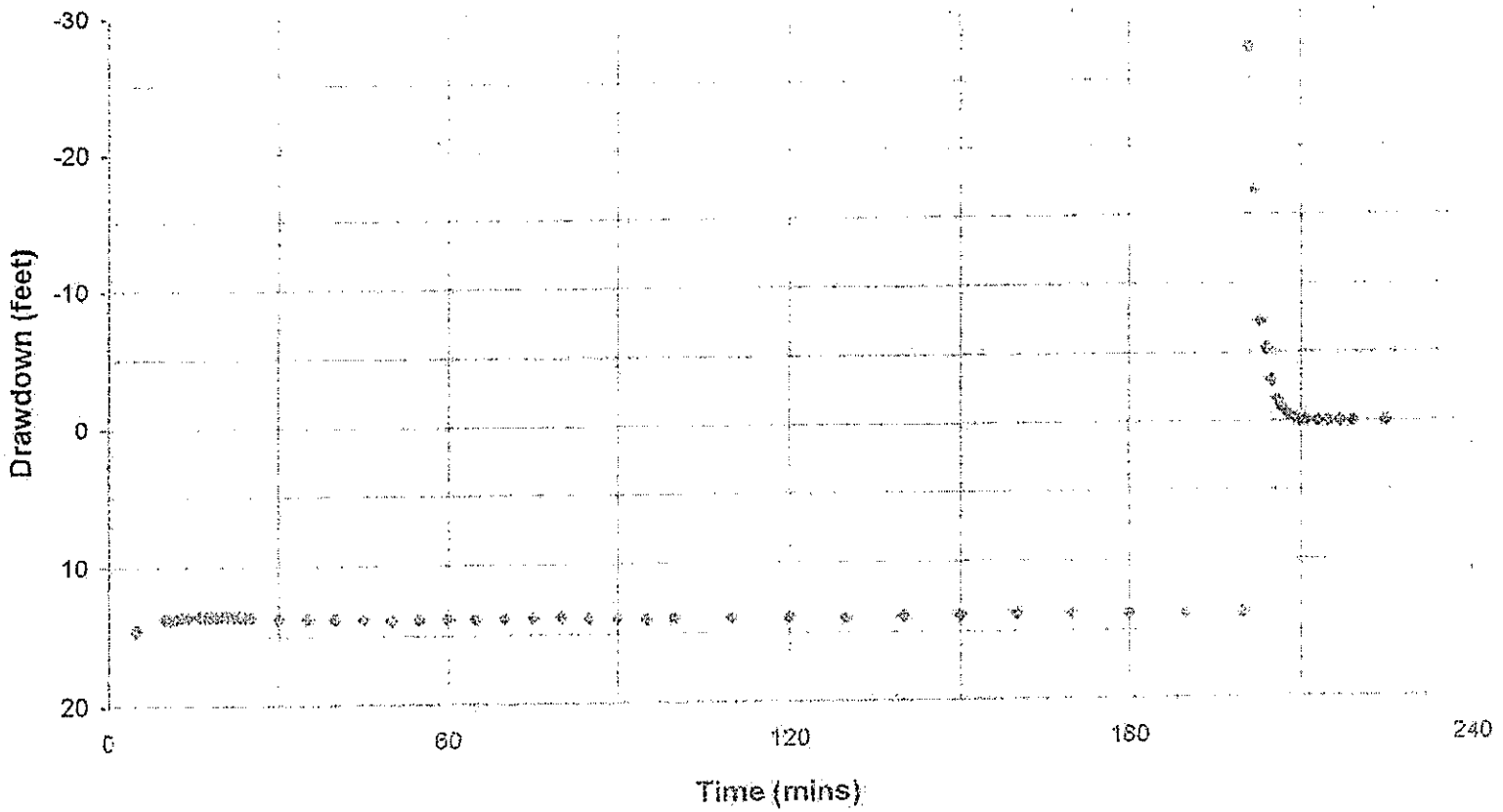
Notes and Comments:
Pump at ~225 ft.
Recovery data affected by drainage from 4" pump column.

Drawdown and Recovery

Spring Valley Ranch

Test Well SVR 9, Q = 43 gpm)

Test date: 6/23/2004



9E

Printed 05/24/2004
Drilling Permit No. 815596
Well Tag No. D0031492
Well ID # 386274
Water Right No.
Receipt # W031747
Approved Date 05/25/2004

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
DRILLING PERMIT

Relationship: Applicant
Name: SUNCOR
Address: 485 EAST RIVERSIDE DR SUITE 300
EAGLE ID 83616

Phone: (208)939-0343

Proposed Well Location: Township 05N, Range 01E, Section 9, SW, NE
COUNTY ADA Sub Name TEST WELL 9

Street Address of Well Site: 1/2 MILE SW OF WILLOW CREEK RD
EAGLE ID

Proposed Use of Well: Test

Well Construction Information:

A. New Well
B. Proposed Surface Diameter: 8 Inches. Proposed Depth 800 Feet.
C. Anticipated Bottom Hole Temperature: 85F and less

Construction Start Date: May 25 2004

Anticipated Well Drilling Company: STEVENS & SONS WELL DRILLING INC (No. 153)

Applicant's Signature: See original application Date _____

Title: _____

9E

Well ID # 386274

Well Tag No. D0031492

ACTION OF THE DEPARTMENT OF WATER RESOURCES

This permit is Approved on Tuesday, May 25, 2004.

1. This drilling permit is valid for two (2) months from the approval date for the start of construction and is valid for one (1) year from the approval date for completion of the well unless an extension has been granted.
2. This permit does not constitute an approval of the local Health District or the Idaho Department of Environmental Quality which may be required prior to construction of this well. The local Health District should be contacted for septic tank/drainfield locations. Domestic wells must not be drilled closer than 100 ft. from any drainfield and 50 ft. from any septic tank. Public Water Supply wells must not be drilled closer than 100 ft. from any drainfield or septic tank.
3. The well shall be constructed by a driller currently licensed in the state of Idaho who must maintain a copy of the drilling permit at the drilling site.
4. Approval of this drilling permit does not authorize trespass on the land of another party.
5. This permit does not constitute other local, county, state or federal approvals that may be required for construction of a well.
6. This drilling permit does not represent a right to divert and use the water of the State of Idaho. If the well being drilled is associated with approved water rights(s) use of the well must comply with conditions of said water right(s).
7. If a bottom hole temperature of 85 Degrees F (29.44 oC) or greater is encountered, well construction shall cease and the well driller and the well owner shall contact the Department of Water Resources immediately.
8. Idaho Code, S 55-2201 - 55-2210 requires the applicant and/or its contractors to contact "Dig-line" (Dig-Line is a one-call center for utility notification) not less than 2 working days prior to the start of any excavation for this project. The "Dig-Line " Number for this location is 1-800-342-1585
9. Please be advised that this drilling permit should be considered and treated as a preliminary permit. If you are in disagreement with this preliminary permit you have fourteen (14) days of the service date of this permit to petition the Idaho Department of Water Resources for reconsideration, pursuant to Section 67-5243, Idaho Code.
10. The well tag for the drilling permit/start card shall be securely and permanently attached to the well casing through welding or by the use of four closed end domed stainless steel pop rivets. The tag attachment will be done at the time of completion of the well, and prior to removing the drill rig from the drill site.
11. This drilling permit has been approved for construction or drilling of an exploratory well intended to be used for collecting geologic, hydrologic or water quality data.
12. No water shall be produced from this well or any fluid injected into this well without specific written authorization from the Department.
13. Any surface casing installed in this well shall not exceed 8 inches nominal diameter.
14. All casing strings installed in this well shall be sealed their entire length with approved seal material and by positive means of placement unless otherwise authorized by this drilling permit.
15. A drilling prospectus including a schematic diagram and construction narrative describing all pertinent features of the well including drilling methods, seal material and placement methods, casing schedules and specifications shall be submitted for review by the Department and attached to this drilling permit prior to the start of construction.

16. No casing installed in this well shall be drilled and driven through multiple aquifers, unless it is completely removed and the borehole is properly sealed or the casing is perforated at appropriate intervals and pressure grouted with approved grout. Drilling and driving casing may be allowed above the water table or where multiple aquifers are not encountered provided that the casing is sealed as required by administrative rules.
17. This well shall be properly plugged in accordance with a plan approved by the department at least 30 days prior to the expiration of the bond.
18. The bond secured for abandonment of this well shall be valid for the entire time the well remains open. The Department will give the well owner 60 days notice prior to the expiration of the bond that the well must be properly plugged. If the well owner has not properly plugged the well at least 30 days prior to he expiration of the bond, the Director may commence action to attached the bond and hire a licensed driller to properly plug the well.
19. Drilling of this well shall not commence until the Department has received a document from the surety company or bank stating that the bond is in full force and effect and the Department has determined the amount of the bond is sufficient.
20. This drilling permit is not valid unless the well owner has secured a bond in favor of the Director in an amount sufficient for proper plugging and abandonment of the well. The bond shall remain in effect and accessible by the Director until this well is plugged. The bond amount for this well shall be at least $7,200.

Signature of Authorized Dept.Representative

Sr WR Agent
Title

Analytical Laboratories, Inc.
1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515

Attn: TERRY SCANLAN, P.E.,P.G
S P F WATER ENGINEERING, LLC
600 E RIVER PARK LN STE 105
BOISE, ID 83706

Collected By: C FEAST
Submitted By: C FEAST

Source of Sample:

PROJECT: SPRING VALLEY RANCH SVR 9 (AS DISSOLVED)

Time of Collection: 12:15
Date of Collection: 6/23/2004
Date Received: 6/23/2004
Report Date: 7/19/2004

PWS:

Laboratory Analysis Report

Sample Number: 0420336

SAMPLE FILTERED USING 0.45 UM FILTER PRIOR TO ANALYSIS.

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Arsenic Furnace	0.05	<0.005	mg/L	0.005	SM 3113 B	6/27/2004	DMB
Beryllium Furnace	0.004	<0.0005	mg/L	0.0005	SM 3113 B	6/28/2004	DMB
Barium, Ba	2	0.10	mg/L	0.05	EPA 200.7	7/7/2004	JH
Antimony Furnace	0.006	<0.005	mg/L	0.005	SM 3113 B	7/6/2004	DMB
Chromium Furnace	0.1	<0.002	mg/L	0.002	SM 3113 B	7/1/2004	DMB
Mercury, Hg	0.002	<0.0002	mg/L	0.0002	EPA 245.1	6/30/2004	DMB
Iron, Fe	UR	0.60	mg/L	0.05	EPA 200.7	7/1/2004	JH
Manganese, Mn	UR	0.12	mg/L	0.05	EPA 200.7	7/1/2004	JH
Nickel, Ni	UR	<0.02	mg/L	0.02	EPA 200.7	7/1/2004	JH
Thallium Furnace	0.002	<0.002	mg/L	0.002	EPA 200.9	6/29/2004	DMB
Sodium, Na	UR	26.9	mg/L	0.10	EPA 200.7	6/28/2004	JH
Calcium, Ca	UR	24.9	mg/L	0.10	EPA 200.7	6/28/2004	JH
Magnesium, Mg	UR	10.4	mg/L	0.10	EPA 200.7	6/28/2004	JH
Potassium, K	UR	2.0	mg/L	0.5	EPA 200.7	6/28/2004	JH
Metals Filtering		*				6/23/2004	KC
Cadmium Furnace	0.005	<0.0005	mg/L	0.0005	SM 3113 B	7/17/2004	DMB

MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated

Laboratory Analysis Report

Sample Number: 0420336

SAMPLE FILTERED USING 0.45 UM FILTER PRIOR TO ANALYSIS.

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Selenium Furnace	0.05	<0.005	mg/L	0.005	SM 3113 B	7/15/2004	DMB
Nitrate (as N)	10	<0.2	mg/L	0.2	EPA 300.0	6/24/2004	WW
Nitrite (as N)	1.00	<0.01	mg/L	0.01	EPA 353.2	6/25/2004	ARR
Ammonia Direct (as N)	UR	0.10	mg/L	0.04	EPA 350.1	6/25/2004	WW
Fluoride, F	4.0	0.45	mg/L	0.10	EPA 300.0	6/25/2004	WW
Bicarbonate		107	mg/L		SM 2320	6/29/2004	ARR
Sulfate, SO4	UR	44	mg/L	1	EPA 300.0	6/24/2004	WW
Chloride, Cl	UR	10	mg/L	1	EPA 300.0	6/24/2004	WW
pH	UR	2.5	S.U.		EPA 150.1	6/25/2004	WW
Conductivity	UR	336	umhos	2	EPA 120.1	6/24/2004	WW
Hardness	UR	102	mg/L	5.0	SM 2340	6/29/2004	ARR
Total Dissolved Solids	UR	216	mg/L	25	EPA 160.1	6/25/2004	DLR

MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated

Thank you for choosing Analytical Laboratories for your testing needs.
If you have any questions concerning this report,
please contact: Michael Moore

Analytical Laboratories, Inc.
1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515
http://www.analyticallaboratories.com

Laboratory Analysis Report

Sample Number: 0420337

Attn: TERRY SCANLAN, P.E.,
S P F WATER ENGINEERING, LLC
600 E RIVER PARK LN STE 105
BOISE, ID 83706

Collected By: C FEAST
Submitted By: C FEAST

Source of Sample:
PROJECT: SPRING VALLEY RANCH SVR 9 (UNFILTERED)

Time of Collection: 12:15
Date of Collection: 6/23/2004
Date Received: 6/23/2004
Report Date: 6/28/2004

PWS:

SAMPLE COULD NOT BE FILTERED; IT WAS COLLECTED IN A PREPRESERVED BOTTLE.

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Sulfide, Dissolved (as H2S)		<0.05	mg/L	0.05	SM 4500-S2 D	6/25/2004	DLR

MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated

Thank you for choosing Analytical Laboratories for your testing needs.

If you have any questions about this report, or any future analytical needs, please contact: Michael Moore

Appendix D
Supplementary Data
Spring Valley Ranch Exploration Well SVR 10

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No. 815597
Inspected by _____
Twp _____ Rge _____ Sec _____
_____ 1/4 _____ 1/4 _____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 00031493
DRILLING PERMIT NO. 815597
Water Right or Injection Well No. _____

2. OWNER:
Name SUNCOR
Address 485 EAST RIVERSIDE DR SUITE 300
City EAGLE ID State ID Zip 83616

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 05 North ☒ or South ☐
Rge. 01 East ☒ or West ☐
Sec. 8 SW 1/4 (10 acres) SW 1/4 (40 acres) _____ 1/4 (160 acres)
Gov't Lot _____ County ADA
Lat: : : Long: : :
Address of Well Site 1/2 MILE NE OF WILLOW CREEK RD City EAGLE
(One of least name of road ; Distance to Road or Landmark)
Lt: _____ Blk. _____ Sub. Name: _____

4. USE:
☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other TEST WELL

5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD:
☐ Air Rotary ☐ Cable ☒ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
30% B. Grout	1	520	4000 LB	PRESSURE GROUTED
30% B. Grout	1000	770	1470 LB	PRESSURE GROUTED

Was drive shoe used? ☒Y ☐N Shoe Depth(s) _____
Was drive shoe seal tested? ☐Y ☒N How? _____
GRAVEL 3/8 FROM 770 TO 6666

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
8"	+2	600	.250	STEEL	☒	☐	☐	☐
6"	630	600	.250	STEEL	☐	☒	☒	☐
					☐	☐	☐	☐

Length of Headpipe 25 FT Length of Tailpipe 0
Packer ☒Y ☐N Type _____

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method _____
Screen Type & Method of Installation STAINLESS STEEL

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
640	680	.40	—	6"	STAINLESS	☐	☐
600	580	.30	—	6"	STAINLESS	☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method
NONE				

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
485 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: _____
well cap

12. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
AIR 50 GPM	—	—	—

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encounter _____

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
12	1	15	TOP SOIL & SAND		
	15	35	SANDY CLAY		
	35	360	COARSE SAND		
	360	380	COARSE SAND & CLAY		
	380	480	COARSE SAND & CLAY MIX		
	480	490	COARSE SAND & CLAY MIX		
	490	505	TAN CLAY		
	505	520	SAND & CLAY MIX		
	520	530	SAND		
	530	560	SAND & CLAY		
	560	590	MORE SAND LESS CLAY COARSE		
	590	620	CLAY TAN & WHITE		
	620	632	CLAY W/ SAND STREAKS		
	632	640	SHORT SAND STREAKS IN CLAY		
	640	660	TAN CLAY		
	660	670	TAN CLAY		
	670	680	SOFT WHITISH CLAY		
	680	687	WHITISH CLAY & BLUE CLAY-SAND		
	687	690	HARD CLAY BLUISH		
	690	715	BLUE CLAY - COARSE SAND		
	715	740	BLUE CLAY HARD & SOFT		
	740	760	BLUE CLAY		
	760	800	BLUE CLAY		
	800	825	BLUE CLAY SHORT SOFT SPOTS		
	825	835	BLUE CLAY		
	835	860	BLUE & WHITE CLAY		
	860	880	BLUE CLAY W/ COARSE SAND		
	880	920	SOFT BLUE CLAY		
	920	940	BLUE CLAY		
	940	980	BLUE CLAY		
	980	1005	BLUE CLAY		

RECEIVED
AUG 16 2004
WATER RESOURCES
WESTERN REGION

Completed Depth 770 (Measurable)
Date: Started 6-7-04 Completed 7-29-04

14. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name ADAMSON PUMP & DRILLING Firm No. 467
Principal Driller Dave Adamson Date 7-30-04
and
Driller or Operator II Dave Adamson Date 7-30-04
Operator I _____ Date _____
Principal Driller and Rig Operator *Required*.
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

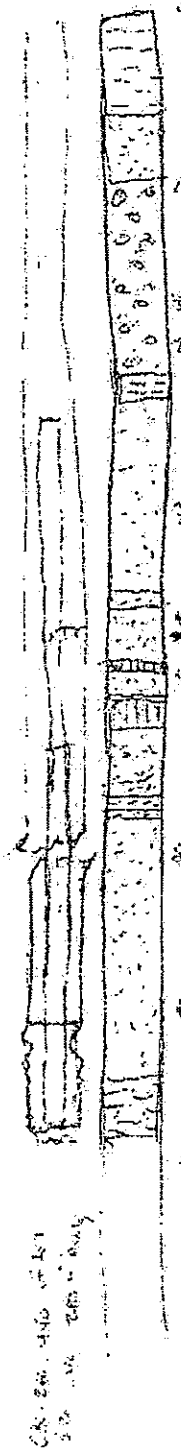
SECOND SWR-10 WELL

(First SVRID Well)

Feast Geosciences, LLC
9716 Tower Lane, Boise, ID 83709
Tel: 208 362-4551, Fax: 208 362-0348

Subject: SVRID (Adamson's Log)

Drawn by:
Date: 6/28/04
Project No.:
Page: ___ of ___



0 - 15	Brown clay
15 - 60	Tan clay w/ coarse sand
60 - 63	Coarse sand, hard drilling, 62-63
63 - 100	Coarse sand (dry) & tan clay (steady drilling)
100 - 110	pea gravel, quartz color, coarse sand
110 - 220	Gravel, pea gravel and sand
220 - 235	Sandy clay (coarse) tan
235 - 260	Sand (whitish) quartz
260 - 280	Sand quartz, white
280 - 305	Sand, quartz, hard drilling, casing tight 278-290
305 - 340	Sand as above, casing easier to drive
340 - 347	Sand as above, soft
347 - 355	Coarse sand & gray clay
355 - 380	Coarse sand
380 - 390	Coarse sand, water at start up
390 - 395	Siltstone & coarse sand
395 - 405	Coarse sand, hard drilling, some gray clay
405 - 418	Coarse sand, occ clay chunk
418 - 420	Tan clay
420 - 435	Siltstone & coarse sand
435 - 440	coarse sand, "holding together"
440 - 460	Coarse sand some fine sand, siltstone fragments
460 - 470	coarse sand w/ bedded clay & siltstone
470 - 475	clay & siltstone w/ minor coarse sand
475 - 481	clay w/ coarse sand

drilled open hole, hole stayed open, Adamson said Christmas P.C. said put casing down, casing fell 465 470 then got tight 475 - 478

481 - 485	Sand & clay pieces, hard drilling
485 - 498	Sand, easy drilling
498 - 520	Sand, casing fell "a little coarse sand"
520 - 540	Coarse sand, pumped water @ 540 (30 gpm)
540 - 555	Coarse sand, casing fell
555 - 600	coarse sand, drilling harder
600 - 620	coarse sand, very hard drilling, thinks sand is outside casing
620 - 650	Coarse sand w/ minor clay
650 - 660	Coarse sand & clay interbeds
660 - 680	Coarse sand & white clay

Tripped hole to change bits, drill pipe stuck @ 520, unable to remove after 1 hr, backed off & pulled 200 ft drill pipe

Exploration Hole SVR 10

Spring Valley Ranch

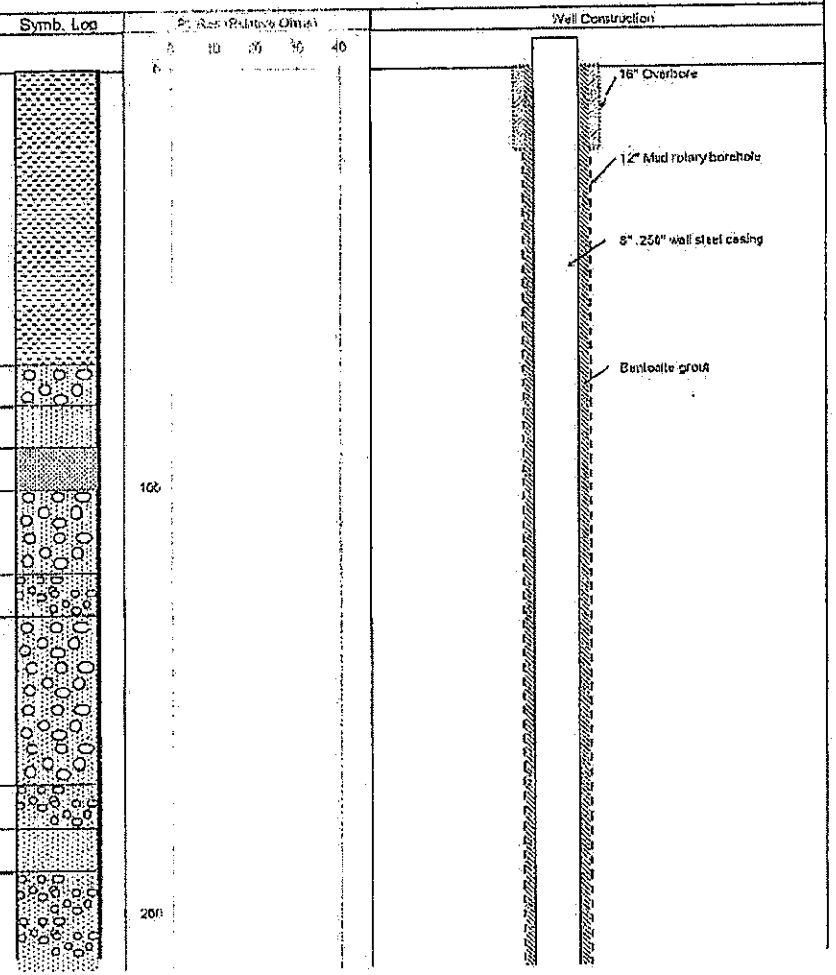
Drilled by: Adamson Pump and Drilling.
Logged by C. Feast/Feast Geosciences, LLC
Geophysical logs by: Stevens and Son
Fluid level when logged: Surface
Casing when logged: 600 ft

Drilled Dates: 6/7 - 7/2/04
Drilling Method: Mud Rotary
Borehole size: 12" (nom.) 0 - 1005 ft

Depth Drilled: 1005 ft
Depth Logged: 960 ft.
Static W.L.: ~ 485 ft. bgl

Location: Ada County, Idaho
T 5 N, R 1 E, sw1/4, sw1/4, Sect. 8
GL. Elevation: ~ 2,870 ft. msl.

Depth (ft)	Geologic log from rotary cuttings	Symb. Log
0	Top soil over clay, soft, plastic, coarse qtz. sand grains, buff-yellow brown.	
70	Sand and gravel, cs-vcs sand, fine gravel, clean, light gray	
80	Sand, cs-vcs, clean, light gray	
90	Sand, med-cs, minor lithic, light brown	
100	Sand and gravel, cs-vcs sand, med-cs gravel, clean, light gray	
120	Sand and gravel, cs-vcs sand, med gravel, clean, light gray	
130	Sand and gravel, cs-vcs sand, med-cs gravel, clean, light gray	
170	Sand and gravel, cs-vcs sand, fine gravel, clean, light gray	
180	Sand, cs-vcs, clean, light gray	
190	Sand and gravel, cs-vcs, fine gravel, clean, light gray	



Exploration Hole SVR 10

Spring Valley Ranch

Drilled by: Adamson Pump and Drilling.
Logged by: C. Feast/Feast Geosciences, LLC
Geophysical logs by: Stevens and Son
Fluid level when logged: Surface
Casing when logged: 600 ft

Drilled Dates: 6/7 - 7/25/04
Drilling Method: Mud Rotary
Borehole size: 12" (nom.) 0 - 1005 ft.

Depth Drilled: 1005 ft
Depth Logged: 960 ft.
Static WL: ~ 485 ft. bgl

Location: Ada County, Idaho
T 5 N, R 1 E, sw1/4, sw1/4, Sect. 8
GL. Elevation: ~ 2,870 ft. msl.

Depth (ft)	Geologic log from rotary cuttings
210	
220	Sand and gravel, med-cs sand, fine gravel, minor clay, light brown
230	Sand and gravel, med-cs sand, fine gravel, clean, light brown
240	Sand and gravel, cs-vcs, sand, fine gravel, minor silt, light gray
250	
260	Sand and gravel, cs-vcs, fine gravel, clean, light gray
270	
280	
290	Sand and gravel, cs-vcs, sand, fine gravel, minor silt, light gray
300	Sand, cs-vcs, clean, light gray
310	Sand and gravel, cs-vcs, fine gravel, clean, light gray
320	
330	Sand, cs-vcs, clean, light gray
340	Sand, cs-vcs, clayey, gray
350	
360	Sand and gravel, cs-vcs, fine gravel, clean, gray
370	Sand and gravel, cs-vcs, fine to med gravel, clayey, gray
380	
390	
400	Sand and gravel, cs-vcs, fine gravel, clean, gray
410	Clay, sandy, gray
420	Sand, clayey, cs sand, gray

Symb. Log

Pt. Res (Resistivity Ohms)

350

400

Well Construction

Exploration Hole SVR 10

Spring Valley Ranch

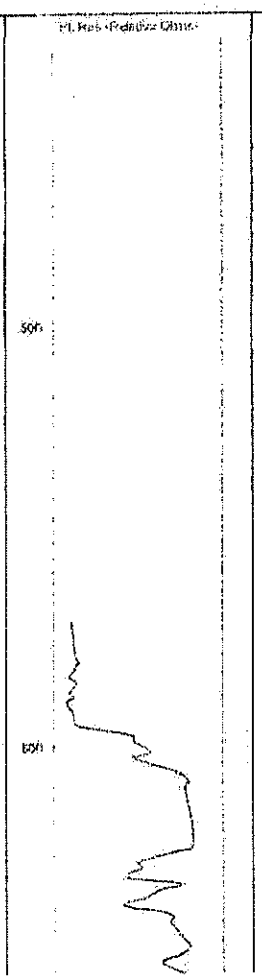
Drilled by: Adamson Pump and Drilling.
Logged by: C. Feast/Feast Geosciences, LLC
Geophysical logs by: Stevens and Son
Fluid level when logged: Surface
Casing when logged: 600 ft

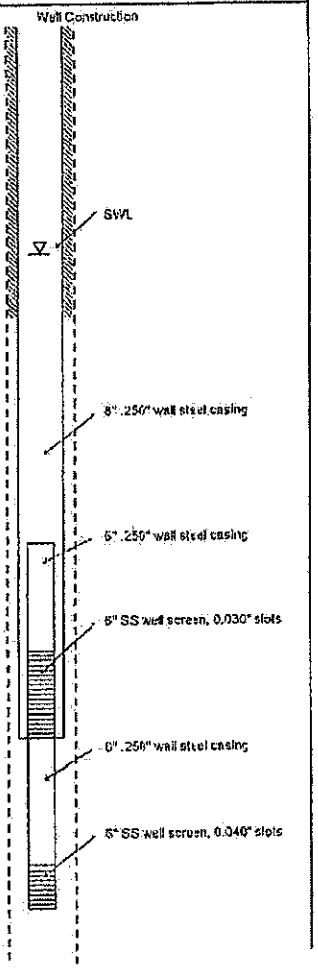
Drilled Dates: 6/7 - 7/29/04
Drilling Method: Mud Rotary
Borehole size: 12" (nom.) 0 - 1005 ft.

Depth Drilled: 1005 ft
Depth Logged: 960 ft.
Static WL: ~ 485 ft. bgl

Location: Ada County, Idaho
T 5 N, R 1 E, sw1/4, sw1/4, Sect. 8
GL. Elevation: ~ 2,670 ft. msl.

Depth (ft)	Geologic log from rotary cuttings
450	
440	
450	Sand, cs-vcs, clean, light gray
460	
470	Sand, clayey, cs sand, gray
480	Sand and gravel, cs-vcs, fine gravel, clean, gray
490	
500	
510	Sand, cs-vcs, clean, light gray
520	Clay, sandy, gray
530	Sand, cs-vcs, clean, light gray
540	Sand and gravel, cs-vcs, fine gravel, clean, gray
550	Sand, cs-vcs, clean, light gray
560	
570	
580	
590	
600	
610	
620	Sand, cs-vcs, clayey, light gray
630	
640	Clay, sandy, v. light gray, dries white





Exploration Hole SVR 10

Spring Valley Ranch

Drilled by: Adamson Pump and Drilling.
Logged by: C. Feast/Feast Geosciences, LLC
Geophysical logs by: Stevens and Son
Fluid level when logged: Surface
Casing when logged: 600 ft

Drilled Dates: 6/7 - 7/25/04
Drilling Method: Mud Rotary
Borehole size: 12" (nom.) 0 - 1005 ft

Depth Drilled: 1005 ft
Depth Logged: 960 ft.
Static WL: ~ 485 ft. bgl

Location: Ada County, Idaho
T 5 N, R 1 E, sw1/4, sw1/4, Sect. 8
GL. Elevation: ~ 2,870 ft. msl.

Depth (ft)	Geologic log from rotary cuttings
650	
660	
670	
680	
690	Clay, sandy, med - dark gray
700	
710	
720	Clay, med-dark gray
730	
740	
750	
760	
770	
780	
790	
800	
810	
820	Sand, clayey, cs sand, med-dark gray
830	
840	
850	
860	

Symb. Log

Ft. Real Resistivity Ohms

700

800

Well Construction

3/8" Gravel

Bentonite grout

Exploration Hole SVR 10
Spring Valley Ranch

Drilled by: Adamson Pump and Drilling.
Logged by: C. Feast/Feast Geosciences, LLC
Geophysical logs by: Stevens and Son
Fluid level when logged: Surface
Casing when logged: 600 ft

Drilled Dates: 6/7 - 7/[illegible]/94
Drilling Method: Mud Rotary
Borehole size: 12" (nom.) 0 - 1005 ft

Depth Drilled: 1005 ft
Depth Logged: 960 ft.
Static WL: ~ 485 ft. bgl

Location: Ada County, Idaho
T 5 N, R 1 E, sw1/4, sw1/4, Sect. 8
GL. Elevation: ~ 2,870 ft. msl.

Depth (ft)	Geologic log from rotary cuttings	Symb. Log	Gamma Ray (API)	Well Construction
870	Clay, med-dark gray			
880				
890				
900			900	
910				
920				
930				
940				
950				
960				
970				
980				
990				
1000			1000	

AQUIFER TEST DATA

Well No.: Spring Valley Ranch, Test Well SVR 10 — Q = 55 gpm, t = 24 hours

Test conducted by: Adamson Pump and Drilling Co.

Flow measured by: Bucket and watch

Water levels measured by: Well sounder — Water level measure point: Top of 1" poly tube

MP Elevation: 3.0 ft agl — Static WL (ft bmp): 485.08

Pump on: 08/19/04 11:32 — Pump off: 08/20/04 11:33

				Water Level Data				
Date	Time	t (mins)	t/t'	Ref (ft.)	Measure (in.)	WL (ft bmp)	Drawdown (feet)	Comments
08/19/04	11:00	-		485	1	485.1		Static water level
08/19/04	11:30	-		485	1	485.1	0.0	SWL meter 015670
08/19/04	11:32	0		520		520.0	34.9	Q = 55 gpm
08/19/04	11:33	1		526		526.0	40.9	
08/19/04	11:35	3		532		532.0	46.9	
08/19/04	11:37	5		536		536.0	50.9	
08/19/04	11:38	6		540		540.0	54.9	
08/19/04	11:39	7		543		543.0	57.9	Q = 55 gpm
08/19/04	11:40	8		544	11	544.9	59.8	Q = 55 gpm
08/19/04	11:45	13		544	11	544.9	59.8	
08/19/04	12:25	53		544	11	544.9	59.8	
08/19/04	13:00	88		544	11	544.9	59.8	
08/19/04	13:30	118		544	10.75	544.9	59.8	Q = 55 gpm
08/19/04	14:00	148		544	10.50	544.9	59.8	Q = 55 gpm, water clear
08/19/04	14:30	178		544	10	544.8	59.8	
08/19/04	15:00	208		544	10	544.8	59.8	
08/19/04	15:30	238		544	11	544.9	59.8	Water meter stuck
08/19/04	16:00	268		544	11	544.9	59.8	Q = 55 gpm, water clear
08/19/04	16:30	298		545	10.5	545.9	60.8	
08/19/04	17:00	328		545	11	545.9	60.8	
08/19/04	17:30	358		545	11	545.9	60.8	
08/19/04	18:00	388		544	11	544.9	59.8	
08/19/04	18:30	418		544	10.5	544.9	59.8	
08/19/04	19:00	448		544	10.5	544.9	59.8	
08/19/04	19:30	478		544	10	544.8	59.8	
08/19/04	20:00	508		545		545.0	59.9	
08/19/04	20:30	538		545		545.0	59.9	Sampled; T 24.4 °C (75.9°F), EC 160 µS, pH 7.64
08/19/04	21:00	568		545		545.0	59.9	
08/19/04	21:30	598		545		545.0	59.9	
08/19/04	22:00	628		545		545.0	59.9	the same meter reading as at 22:00
08/19/04	22:30	658		545		545.0	59.9	the same meter reading as at 22:00
08/19/04	23:30	718		545		545.0	59.9	
08/20/04	0:30	778		545		545.0	59.9	
08/20/04	1:30	838		545		545.0	59.9	
08/20/04	2:30	898		545		545.0	59.9	
08/20/04	3:30	958		545		545.0	59.9	
08/20/04	4:30	1018		545		545.0	59.9	
08/20/04	5:30	1078		545		545.0	59.9	
08/20/04	6:30	1138		545		545.0	59.9	
08/20/04	7:30	1198		545		545.0	59.9	still having meter problems
08/20/04	8:20	1248		545		545.0	59.9	meter working again
08/20/04	8:30	1258		545		545.0	59.9	
08/20/04	9:30	1318		545		545.0	59.9	Meter 16013
08/20/04	10:30	1378		545		545.0	59.9	Meter 16043
08/20/04	11:32	1440		545		545.0	59.9	Meter 16071
08/20/04	11:33	1441		545		545.0	59.9	Stopped test
Begin Recovery, pump off at:			08/20/04	11:33				
08/20/04	11:34	1442	1442	525.0		525.0	39.9	
08/20/04	11:35	1443	722	510.0		510.0	24.9	
08/20/04	11:36	1444	481	500.9		500.9	15.8	
08/20/04	11:37	1445	361	493.7		493.7	8.6	
08/20/04	11:38	1446	289	489.0		489.0	3.9	
08/20/04	11:39	1447	241	486.4		486.4	1.3	
08/20/04	11:41	1449	181	485.3		485.3	0.2	
08/20/04	11:45	1453	121	485.1		485.1	0.0	
08/20/04	11:46	1454	112	485.1		485.1	0.0	
08/20/04	11:47	1455	104	485.0		485.0	-0.1	
08/20/04	11:49	1457	91	485.1		485.1	0.0	
08/20/04	11:51	1459	81	485.1		485.1	0.0	
08/20/04	11:53	1461	73	485.1		485.1	0.0	
08/20/04	11:57	1465	61	485.1		485.1	0.0	
08/20/04	12:03	1471	49	485.1		485.1	0.0	

Notes and Comments:

Pump at ~565 ft.

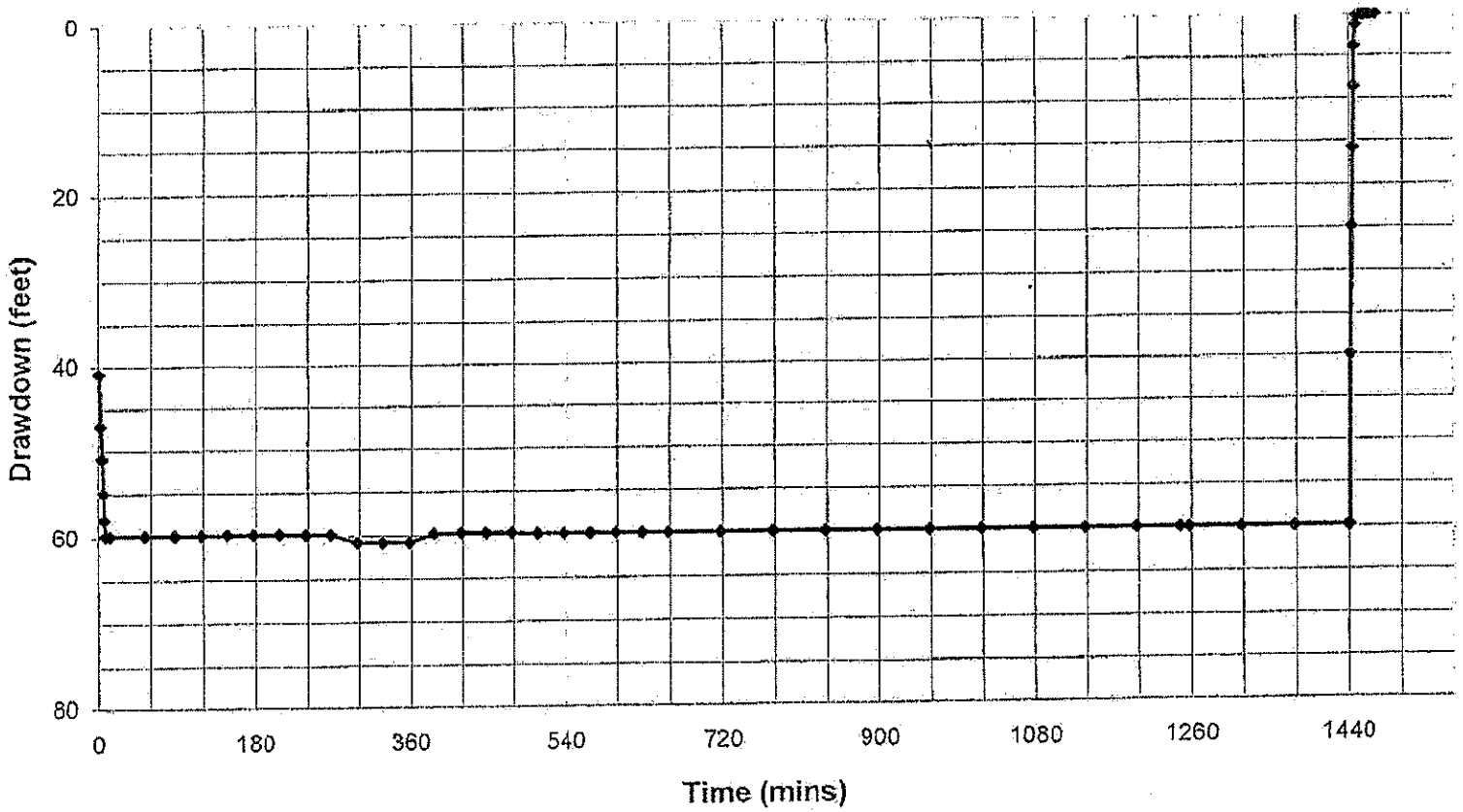
Recovery data affected by drainage from 4" pump column.

Drawdown and Recovery

Spring Valley Ranch

Test Well SVR 10, Q = 55 gpm)

Test date: 8/19/2004

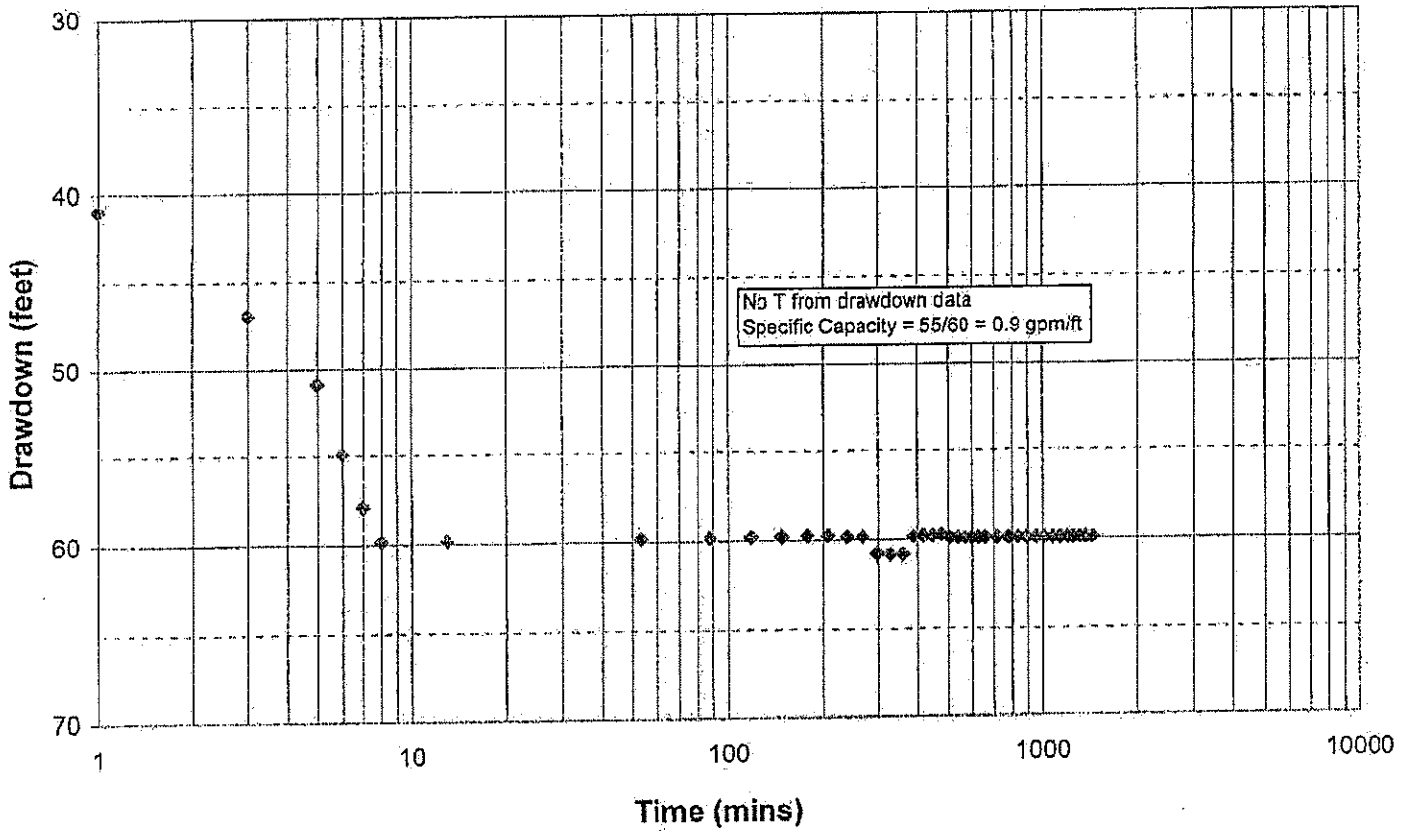


Time - Drawdown

Spring Valley Ranch

Test Well SVR 10, Q = 55 gpm

Test date: 8/19/2004

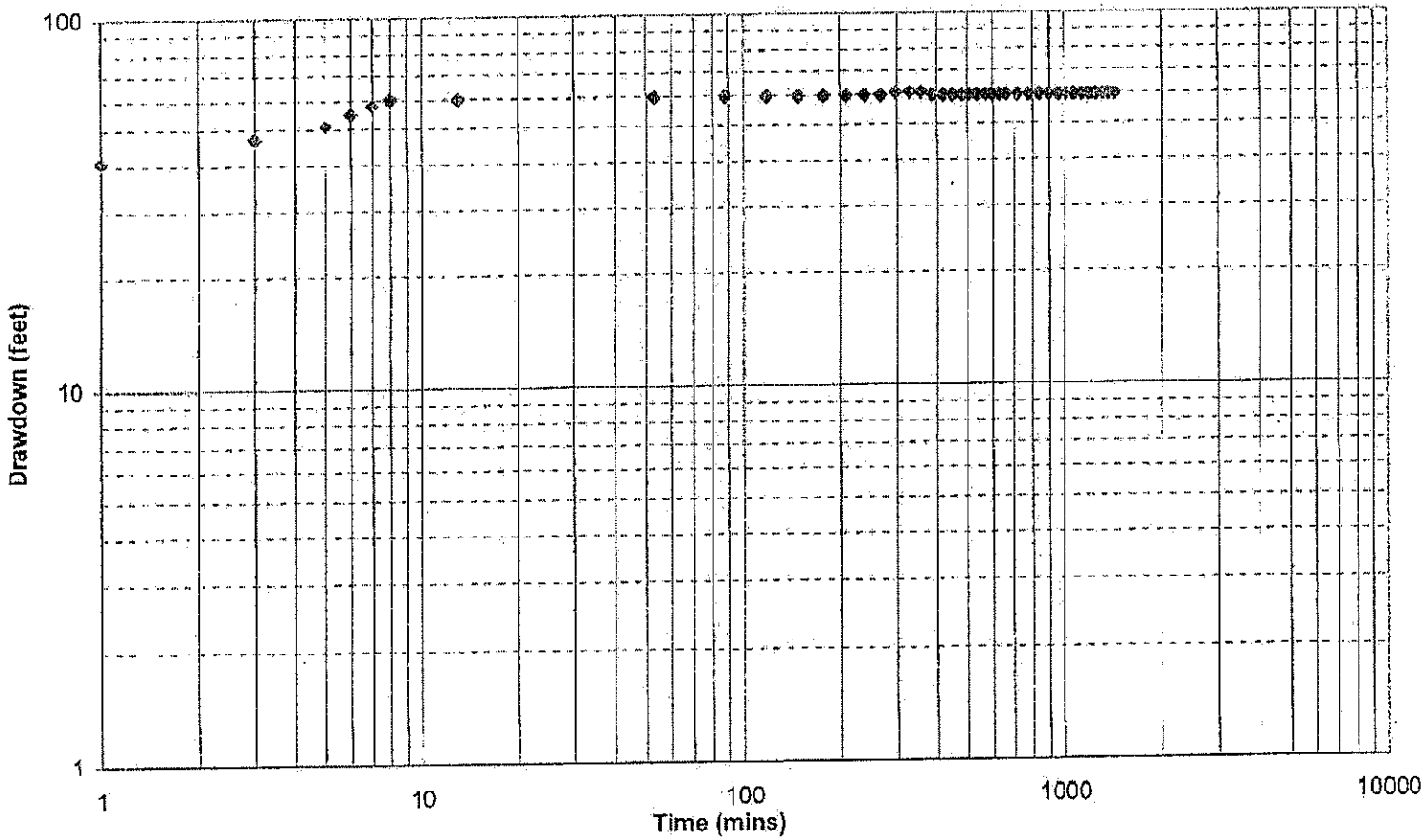


Time - Drawdown

Spring Valley Ranch

Test Well SVR 10, Q = 55 gpm

Test date: 8/19/2004

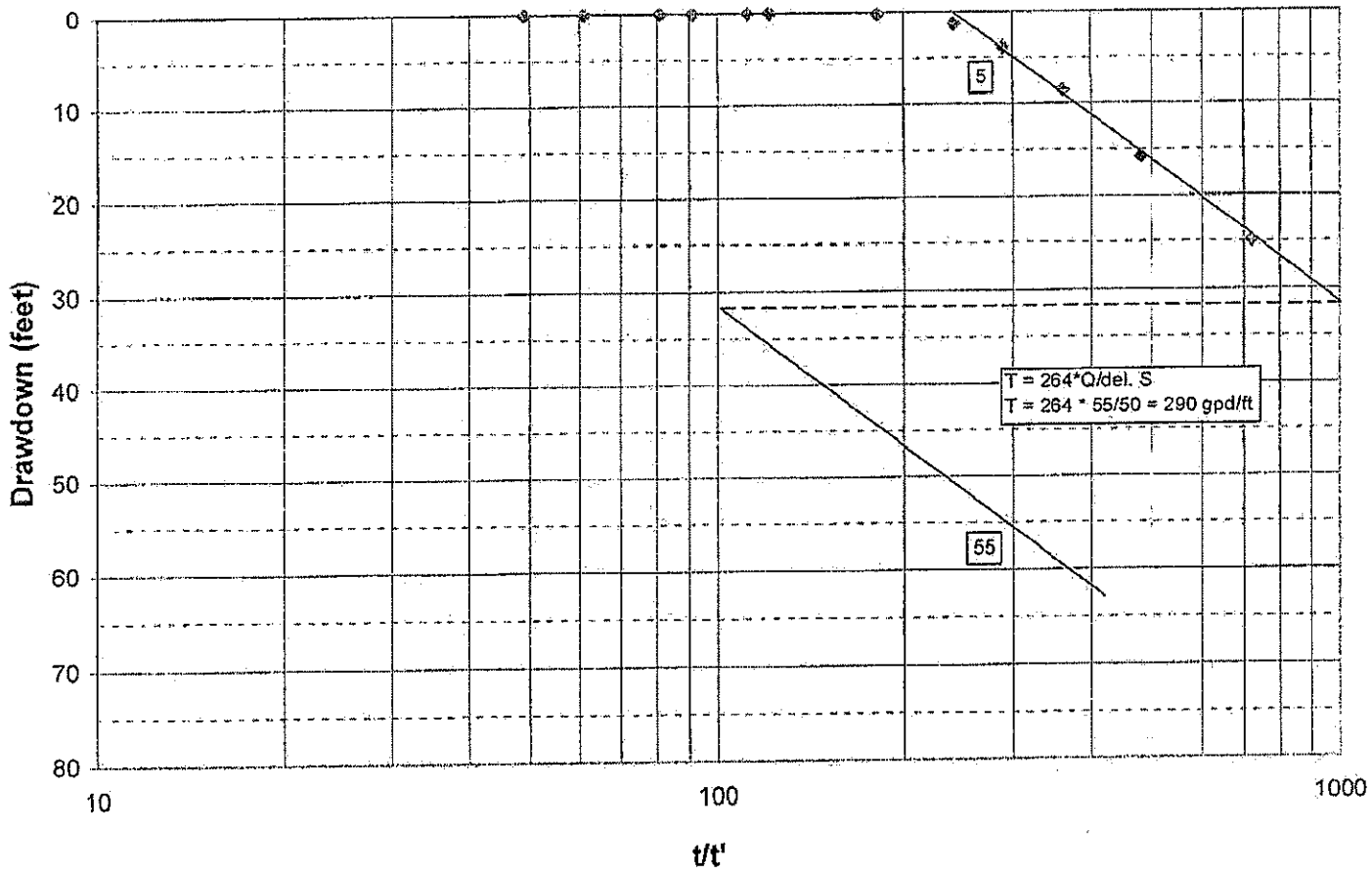


Time - Recovery

Spring Valley Ranch

Test Well SVR 10, Q = 55 gpm

Test date: 8/19/2004



Analytical Laboratories, Inc.
1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515

Attn: TERRY SCANLAN, P.E.,
S P F WATER ENGINEERING, LLC
600 E RIVER PARK LN STE 105
BOISE, ID 83706

Collected By: C FEAST
Submitted By: C FEAST

Source of Sample:

PROJECT: SPRING VALLEY RANCH SUR-10

Time of Collection: 20:30
Date of Collection: 8/19/2004
Date Received: 8/20/2004
Report Date: 9/7/2004

PWS:

Laboratory Analysis Report

Sample Number: 0428005

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Antimony Furnace	0.006	<0.005	mg/L	0.005	SM 3113 B	8/31/2004	DMB
Arsenic Furnace	0.05	0.012	mg/L	0.005	SM 3113 B	9/1/2004	DMB
Barium, Ba	2	<0.05	mg/L	0.05	EPA 200.7	8/30/2004	JH
Calcium, Ca	UR	17.1	mg/L	0.10	EPA 200.7	8/23/2004	JH
Chromium Furnace	0.1	0.002	mg/L	0.002	SM 3113 B	8/26/2004	DMB
Iron, Fe	UR	0.36	mg/L	0.05	EPA 200.7	9/2/2004	JH
Magnesium, Mg	UR	3.20	mg/L	0.10	EPA 200.7	8/23/2004	JH
Manganese, Mn	UR	<0.05	mg/L	0.05	EPA 200.7	9/2/2004	JH
Mercury, Hg	0.002	<0.0002	mg/L	0.0002	EPA 245.1	9/1/2004	KC
Nickel, Ni	UR	<0.02	mg/L	0.02	EPA 200.7	8/23/2004	JH
Potassium, K	UR	2.4	mg/L	0.5	EPA 200.7	8/23/2004	JH
Sodium, Na	UR	12.3	mg/L	0.10	EPA 200.7	8/23/2004	JH
Thallium Furnace	0.002	<0.002	mg/L	0.002	EPA 200.9	8/29/2004	DMB
Cadmium Furnace	0.005	<0.0005	mg/L	0.0005	SM 3113 B	8/26/2004	DMB
Beryllium Furnace	0.004	<0.0005	mg/L	0.0005	SM 3113 B	8/27/2004	DMB
Selenium Furnace	0.05	<0.005	mg/L	0.005	SM 3113 B	9/1/2004	DMB

MCL = Maximum Contamination Level
MDL = Method Minimum Detection Limit
UR = Unregulated

Laboratory Analysis Report

Sample Number: 0428005

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Ammonia Direct (as N)	UR	<0.04	mg/L	0.04	EPA 350.1	8/23/2004	WW
Nitrate (as N)	10	5.2	mg/L	0.2	EPA 300.0	8/20/2004	WW
Monitoring recommended.							
Nitrite (as N)	1.00	<0.01	mg/L	0.01	EPA 353.2	8/20/2004	ARR
Hardness	UR	51.8	mg/L	5.0	SM 2340	8/26/2004	ARR
Bicarbonate		53.5	mg/L		SM 2320	8/26/2004	ARR
Chloride, Cl	UR	2	mg/L	1	EPA 300.0	8/24/2004	WW
Fluoride, F	4.0	0.24	mg/L	0.10	EPA 300.0	8/30/2004	WW
Sulfate, SO4	UR	<1	mg/L	1	EPA 300.0	8/24/2004	WW
Sulfide	UR	<0.05	mg/L	2	SM 4500-S2 D	8/23/2004	PM
Total Dissolved Solids	UR	70	mg/L	25	EPA 160.1	8/24/2004	PM

MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated

Thank you for choosing Analytical Laboratories for your testing needs.
If you have any questions concerning this report,
please contact: Michael Moore

LAB FEDERAL ID#: ID00020	LAB SAMPLE #: 0428005
DATE LAB REC'D SAMPLE: 8/20/2004	DATE REPORTED BY LAB: 9/7/2004

COMPLIANCE SAMPLE YES NO REPLACEMENT SAMPLE

COLLECTION DATE: 8/19/2004 COLLECTION TIME: 20:30 (24 hour clock)

SAMPLE TYPE: CO-confirmation RP-repeat
RT-routine DU-duplicate SP-special Other

PWS#: PWS NAME:

SAMPLING POINT/LOCATION: TAG #/FACILITY ID:

PRCJECT: SPRING VALLEY RANCH SUR-10

COLLECTOR'S NAME: C FEAST CONTACT PHONE # (208) 383-4140



Analytical Laboratories, Inc.
1804 N. 33rd Stree:
Boise, Idaho 83703
Phone (208) 342-5515
http://www.analyticallaboratories.com

PUBLIC DRINKING WATER SYSTEM INORGANIC CHEMICAL (IOC) ANALYSIS REPORT:

Phase II							
FRDS	Contaminant Name	Result*	Method	MCL*	MDL*	Analysis Date	Analyst
1010	Barium	ND	EPA 200.7	2	0.05	8/30/2004	JH
1015	Cadmium	ND	SM 3113 B	0.005	0.0005	8/26/2004	DMB
1020	Chromium	0.002	SM 3113 B	0.1	0.002	8/26/2004	DMB
1035	Mercury	ND	EPA 245.1	0.002	0.0002	9/1/2004	KC
1038	Tl(N02/N03)	---		10			
1040	Nitrate	5.2	EPA 300.0	10	0.2	8/20/2004	WW
1041	Nitrite	ND	EPA 353.2	1.0	0.01	8/20/2004	ARR
1045	Selenium	ND	SM 3113 B	0.05	0.005	9/1/2004	DMB
1024	Cyanide	---		0.2			
1050	Silver	---		0.1			
1049	Silica, As SiO2	---					
1042	Potassium	2.4	EPA 200.7		0.5	8/23/2004	JH
1032	Manganese	ND	EPA 200.7	0.05	0.05	9/2/2004	JH
1031	Magnesium	3.20	EPA 200.7		0.1	8/23/2004	JH
1028	Iron	0.36	EPA 200.7	0.3	0.05	9/2/2004	JH
1027	Hydrogen Sulfide	ND	SM 4500-S		0.05	8/23/2004	PM
1022	Copper	---		1.0			
1017	Chloride	2	EPA 300.0	250	1	8/24/2004	WW
1016	Calcium	17.1	EPA 200.7		0.1	8/23/2004	JH
1003	Ammonia as N	ND	EPA 350.1		0.04	8/23/2004	WW
1002	Aluminum	---		0.05-			

Phase V							
FRDS	Contaminant Name	Result*	Method	MCL*	MDL*	Analysis Date	Analyst
1085	Thallium	ND	EPA 200.9	0.002	0.002	8/29/2004	DMB
1075	Beryllium	ND	SM 3113 B	0.004	0.0005	8/27/2004	DMB
1074	Antimony	ND	SM 3113 B	0.006	0.005	8/31/2004	DMB
1036	Nickel	ND	EPA 200.7	n/a	0.02	8/23/2004	JH
Other IOCs							
1052	Sodium	12.3	EPA 200.7	n/a	0.1	8/23/2004	JH
1025	Fluoride	0.24	EPA 300.0	4.0	0.1	8/30/2004	WW
1005	Arsenic	0.012	SM 3113 B	0.05	0.005	9/1/2004	DMB
Secondary IOCs (optional)							
2905	Surfactants	---					
1997	Langlier Index	---					
1930	Dissolved Solids	70	EPA 160.1	500	25	8/24/2004	PM
1927	Alkalinity as CaC03	---					
1926	Conductivity uS/cm	---					
1925	pH	---		6.5-8.			
1920	Odor (Threshold #)	---		3			
1915	Hardness as CaC03	51.8	SM 2340		5	8/26/2004	ARR
1905	Color	---		15c.u.			
1095	Zinc	---		5			
1055	Sulfate	ND	EPA 300.0	250	1	8/24/2004	WW

*Reported in mg/L unless otherwise noted
ND = Not detected within sensitivity of instrument
--- = No analysis performed
MDL = Method detection limit

TERRY SCANLAN, P.E.,
S P F WATER ENGINEERING, LLC
600 E RIVER PARK LN STE 105
BOISE, ID, 83706

Signature of Laboratory Supervisor 9/5/04 Date

Analytical Laboratories, Inc.
1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515
http://www.analyticallaboratories.com

Laboratory Analysis Report

Sample Number: 0428002

Attn: TERRY SCANLAN, P.E.,P.G.
S P F WATER ENGINEERING, LLC
600 E RIVER PARK LN STE 105
BOISE, ID 83706

Collected By: C FEAST
Submitted By: C FEAST

Source of Sample:
PROJECT: SPRING VALLEY RANCH SUR-10

Time of Collection: 20:30
Date of Collection: 8/19/2004
Date Received: 8/20/2004
Report Date: 9/22/2004

PWS:

ELI-TESTING PERFORMED AT ENERGY LABORATORIES, INC. RESULTS RECEIVED 09/22/04.
*ND=NONE DETECTED @ 0.2 pCi/L.

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Uranium-Total		*ND	pCi/L	0.2	EPA 908.1	9/7/2004	ELI

MCL = Maximum Contamination Level
MDL = Method Minimum Detection Limit
UR = Unregulated

Michael Moore

Thank you for choosing Analytical Laboratories for your testing needs.

If you have any questions about this report, or any future analytical needs, please contact: Michael Moore

Lab Federal ID#:	WY00002	Lab Sample	0428002
Date Lab Rec'd Sample:	8/20/2004	Date Reported by Lab:	09/15/04
Compliance Sample:	|X| Yes | | No	Replacement Sample	| |
Collection Date:	8/19/2004	Time Collected:	20:30
Sample Type:	| | CO-confirmation	| | RP-repeat	
|X| RT-routine	| | DU-duplicate	| | SP-special	| | Other
PWS #:	PWS Name: S P F WATER ENGINEERING, LLC		
Sampling Point/Location: SPRING VALLEY RANCH SUR-10		Tag # / Facility ID:	
Collector's Name: C FEAST		Contact Phone #: (208) 383-4140	

Analytical Laboratories, Inc.
1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515

PUBLIC DRINKING WATER SYSTEM RADIOLOGICAL ANALYSIS REPORT

FRDS Number	CONTAMINANT	Result ug/L	Result pCi/L	MCL	Analysis Date	Analyst	Method
4002	Gross Alpha Activity *(Includes Radium and Uranium)*		--				
4006	Uranium (measure if gross alpha exceeds 15 pCi/L; activity = 1.0 x concentration ug/L	*ND	*ND	30	9/7/2004	ELI	EPA 908.*
4000	Adjusted Gross Alpha (Subtract Uranium activity level from Gross Alpha Activity above)		--				
4020	Radium-226 *(Required if Alpha activity is greater than 5pCi/L)*		--				
4030	Radium-228 (measure if radium 226 exceeds 3 pCi/L)		--				
4010	Total Measured Radium (Sum of Ra-226 and Ra-228)		--				
4100	Beta/Photon Activity *(Measure major constituents if activity exceeds 50 pCi/L)*		--				

Michael Moore 9/24/04
Lab Supervisor's Signature Date

ND = Not detected within sensitivity of instrument
-- = No analysis performed for this contaminant

ELI-TESTING PERFORMED AT ENERGY LABORATORIES, INC. RESULTS RECEIVED 09/22/04.
*ND=NONE DETECTED @ 0.2 pCi/L.

Attn: TERRY SCANLAN, P.E.,P.G.
S P F WATER ENGINEERING, LLC
600 E RIVER PARK LN STE 105
BOISE, ID 83706

CC:

Analytical Laboratories, Inc.
1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515
http://www.analyticallaboratories.com

Laboratory Analysis Report

Sample Number: 0428003

Attn: TERRY SCANLAN, P.E.,
S P F WATER ENGINEERING, LLC
600 E RIVER PARK LN STE 105
BOISE, ID 83706

Collected By: C FEAST
Submitted By: C FEAST

Source of Sample:
PROJECT: SPRING VALLEY RANCH SUR-10

Time of Collection: 20:30
Date of Collection: 8/19/2004
Date Received: 8/20/2004
Report Date: 9/22/2004

PWS:

ELI-TESTING PERFORMED AT ENERGY LABORATORIES, INC. RESULTS RECEIVED 09/22/04.
*ND=NONE DETECTED @ 0.2 pCi/L. **ND=NONE DETECTED @ 1.0 pCi/L.

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Radium 226		*ND	pCi/L	0.2	EPA 903.0	8/25/2004	ELI
Radium 228		**ND	pCi/L	1	EPA 904.0	8/31/2004	ELI

MCL = Maximum Contamination Level
MDL = Method Minimum Detection Limit
UR = Unregulated

Thank you for choosing Analytical Laboratories for your testing needs.

If you have any questions about this report, or any future analytical needs, please contact: Michael Moore

Lab Federal ID#:	WY00002	Lab Sample	0428003
Date Lab Rec'd Sample:	8/20/2004	Date Reported by Lab:	09/13/04
Compliance Sample:	X Yes ☐ No	Replacement Sample	☐
Collection Date:	8/19/2004	Time Collected:	20:30
Sample Type:	☐ CO-confirmation	☐ RP-repeat	
X RT-routine	☐ DU-duplicate	☐ SP-special	☐ Other
PWS #:	PWS Name:	S P F WATER ENGINEERING, LLC	
Sampling Point/Location: SPRING VALLEY RANCH SUR-10		Tag # / Facility ID:	
Collector's Name: C FEAST		Contact Phone #:	(208) 383-4140

Analytical Laboratories, Inc.
1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-55[illegible]5

PUBLIC DRINKING WATER SYSTEM RADIOLOGICAL ANALYSIS REPORT

FRDS Number	CONTAMINANT	Result ug/L	Result pCi/L	MCL	Analysis Date	Analyst	Method
4002	Gross Alpha Activity (Includes Radium and Uranium)		--				
4006	Uranium (measure if gross alpha exceeds 15 pCi/L; activity = 1.0 x concentration ug/L	--	--				
4000	Adjusted Gross Alpha (Subtract Uranium activity level from Gross Alpha Activity above)		--				
4020	Radium-226 (Required if Alpha activity is greater than 5pCi/L)		*ND		8/25/2004	ELI	EPA 903.0
4030	Radium-228 (measure if radium 226 exceeds 3 pCi/L)		**ND		8/31/2004	ELI	EPA 904.0
4010	Total Measured Radium (Sum of Ra-226 and Ra-228)		--				
4100	Beta/Photon Activity (Measure major constituents if activity exceeds 50 pCi/L)		--				

Michael D. Heaps 9/24/04

Lab Supervisor's Signature Date

ND = Not detected within sensitivity of instrument
-- = No analysis performed for this contaminant

ELI-TESTING PERFORMED AT ENERGY LABORATORIES, INC. RESULTS RECEIVED 09/22/04.
*ND=NONE DETECTED @ 0.2 pCi/L. **ND=NONE DETECTED @ 1.0 pCi/L.

Attn: TERRY SCANLAN, P.E.,
S P F WATER ENGINEERING, LLC
600 E RIVER PARK LN STE 105
BOISE, ID 83706

CC:

10E

Printed 05/24/2004
Drilling Permit No. 815687
Well Tag No. D0031493
Well ID # 388275
Water Right No.
Receipt # W031747
Approved Date 05/25/2004

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
DRILLING PERMIT

Relationship: Applicant
Name: SUNCOR
Address: 486 EAST RIVERSIDE DR SUITE 300
EAGLE ID 83616

Phone: (208)939-0343

Proposed Well Location: Township 05N, Range 01E, Section 8, SW, SW
COUNTY ADA TEST WELL #10

Street Address of Well Site: 1/2 MILE NE OF WILLOW CREEK RD
EAGLE ID

Proposed Use of Well: Test

Well Construction Information:

A. New Well
B. Proposed Surface Diameter: 8 Inches. Proposed Depth 800 Feet.
C. Anticipated Bottom Hole Temperature: 85F and less

Construction Start Date: Jun 01 2004

Anticipated Well Drilling Company: ADAMSON PUMP & DRILLING (No. 457)

Applicant's Signature: See original application Date _____

Title: _____

Well ID # 386275

Well Tag No. D0031493

ACTION OF THE DEPARTMENT OF WATER RESOURCES

This permit is Approved on Tuesday, May 25, 2004.

1. This drilling permit is valid for two (2) months from the approval date for the start of construction and is valid for one (1) year from the approval date for completion of the well unless an extension has been granted.
2. This permit does not constitute an approval of the local Health District or the Idaho Department of Environmental Quality which may be required prior to construction of this well. The local Health District should be contacted for septic tank/drainfield locations. Domestic wells must not be drilled closer than 100 ft. from any drainfield and 50 ft. from any septic tank. Public Water Supply wells must not be drilled closer than 100 ft. from any drainfield or septic tank.
3. The well shall be constructed by a driller currently licensed in the state of Idaho who must maintain a copy of the drilling permit at the drilling site.
4. Approval of this drilling permit does not authorize trespass on the land of another party.
5. This permit does not constitute other local, county, state or federal approvals that may be required for construction of a well.
6. This drilling permit does not represent a right to divert and use the water of the State of Idaho. If the well being drilled is associated with approved water rights(s) use of the well must comply with conditions of said water right(s).
7. If a bottom hole temperature of 85 Degrees F (29.44 oC) or greater is encountered, well construction shall cease and the well driller and the well owner shall contact the Department of Water Resources immediately.
8. Idaho Code, S 55-2201 - 55-2210 requires the applicant and/or its contractors to contact "Dig-line" (Dig-Line is a one-call center for utility notification) not less than 2 working days prior to the start of any excavation for this project. The "Dig-Line " Number for this location is 1-800-342-1585
9. Please be advised that this drilling permit should be considered and treated as a preliminary permit. If you are in disagreement with this preliminary permit you have fourteen (14) days of the service date of this permit to petition the Idaho Department of Water Resources for reconsideration, pursuant to Section 67-5243, Idaho Code.
10. The well tag for the drilling permit/start card shall be securely and permanently attached to the well casing through welding or by the use of four closed end domed stainless steel pop rivets. The tag attachment will be done at the time of completion of the well, and prior to removing the drill rig from the drill site.
11. This drilling permit has been approved for construction or drilling of an exploratory well intended to be used for collecting geologic, hydrologic or water quality data.
12. No water shall be produced from this well or any fluid injected into this well without specific written authorization from the Department.
13. Any surface casing installed in this well shall not exceed 8 inches nominal diameter.
14. All casing strings installed in this well shall be sealed their entire length with approved seal material and by positive means of placement unless otherwise authorized by this drilling permit.
15. A drilling prospectus including a schematic diagram and construction narrative describing all pertinent features of the well including drilling methods, seal material and placement methods, casing schedules and specifications shall be submitted for review by the Department and attached to this drilling permit prior to the start of construction.

16. No casing installed in this well shall be drilled and driven through multiple aquifers, unless it is completely removed and the borehole is properly sealed or the casing is perforated at appropriate intervals and pressure grouted with approved grout. Drilling and driving casing may be allowed above the water table or where multiple aquifers are not encountered provided that the casing is sealed as required by administrative rules.
17. This well shall be properly plugged in accordance with a plan approved by the department at least 30 days prior to the expiration of the bond.
18. The bond secured for abandonment of this well shall be valid for the entire time the well remains open. The Department will give the well owner 60 days notice prior to the expiration of the bond that the well must be properly plugged. If the well owner has not properly plugged the well at least 30 days prior to the expiration of the bond, the Director may commence action to attached the bond and hire a licensed driller to properly plug the well.
19. Drilling of this well shall not commence until the Department has received a document from the surety company or bank stating that the bond is in full force and effect and the Department has determined the amount of the bond is sufficient.
20. This drilling permit is not valid unless the well owner has secured a bond in favor of the Director in an amount sufficient for proper plugging and abandonment of the well. The bond shall remain in effect and accessible by the Director until this well is plugged. The bond amount for this well shall be at least $7,200.

Signature of Authorized Dept Representative

Sr WR Agent
Title

Appendix E
Geologic Cross Section Well Logs

Form 238-7
1/94

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

or Ball Point Pen

092975

1. DRILLING PERMIT NO. 65-94-W-0142-000
Other IDWR No.

2. OWNER:
Name Stover Love
Address 507 W 12th.
City Emmett State Id Zip 83617

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

N / W / E / S

Twp. 5 North ☐ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 18 NE 1/4 NW 1/4 1/4
Gov't Lot County Gem

Address of Well Site same
City Emmett
(Give at least name of road + Distance to Road or Landmark)

Lt. Blk. Sub. Name

4. PROPOSED USE:
☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

5. TYPE OF WORK
☐ New Well ☐ Modify or Repair ☒ Replacement ☐ Abandonment

6. DRILL METHOD
☐ Mud Rotary ☒ Air Rotary ☒ Cable ☐ Other

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
Bent.	0	20	200	Pour

Was drive shoe used? Y ☒ N ☐
Was drive shoe seal tested? Y ☐ N ☒ How?

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+1	72	250	Steel	☐	☐	☒	☐
5	67	72	258	Steel	☐	☐	☒	☐
5	72	79	258	Steel	☐	☐	☒	☐

Length of Headpipe 4' 8" Length of Tailpipe 2'

9. PERFORATIONS/SCREENS
☐ Perforations Method
☒ Screens Screen Type 304 Stainless

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
72	77	.020		5		☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
12 ft. below ground Artesian pressure lb.
Depth flow encountered ft. Describe access port or control devices: 4220 Seal

11. WELL TESTS:
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Pumping Level	Time
70			1

Water Temp. Bottom hole temp.
Water Quality test or comments:

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
6	0	2	Top Soil		X
	2	22	Gravel		X
	22	32	Gravel	X	
	32	33	Clay		X
	33	67	Course Sand	X	
	67	77	Blue Sand	X	
	77	79	Blue Clay		X

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SEP 15 1994
Department of Water Resources

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JUN 17 1994
WATER RESOURCES
WESTERN REGION

FEB 09 1995

Completed Depth 79 (Measurable)
Date: Started May 19, 1994 Completed 5-20-94

13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Dennis Phipps Well Drill Firm No 232
Firm Official [signature] Date 6-14-94
and
Supervisor or Operator [signature] Date 6/14/94
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

057561

Form 238-7
3/95

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

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WATER RESOURCES
WESTERN REGION

1 of 3

Office Use Only
Inspected by _____
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. DRILLING PERMIT NO. 65-96-W-0167-000
Other IDWR No. _____

2. OWNER: Case Hauson
Name GEM Co BOARD OF COMMISSIONERS
Address 411 THIRD STREET SO
City NAMPA State ID Zip 83651

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

N / W / E / S

Twp. 6 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 28 NE 1/4 (10 acres) NE 1/4 (40 acres) W 1/4 (160 acres)
Gov't Lot ____ County ____
Lat: : : Long: : :
Address of Well Site JACK ASS GULCH RD (TRANSFER STN) City EMMETT
(Give at least name of road + Distance to Road or Landmark)

Lt. ____ Blk. ____ Sub. Name ____

4. USE:
☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other ____

5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other ____

6. DRILL METHOD
☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other ____

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
BENTONITE	0	18	900#	OVER BORE

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) ____
Was drive shoe seal tested? ☐ Y ☐ N How? ____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
8	+2	920	.25	STEEL	☒	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe ____ Length of Tailpipe ____

9. PERFORATIONS/SCREENS
☐ Perforations Method ____
☐ Screens Screen Type ____

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Department of Water Resources

From	To	Slot Size	Number	Diameter	Material
NONE					

Casing ☐ ☐ Liner ☐ ☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
690 ft. below ground Artesian pressure ____ lb.
Depth flow encountered ____ ft. Describe access port or control devices: ____

11. WELL TESTS:
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Pumping Level	Time
40			4 HRS

Water Temp. 72° Bottom hole temp. ____
Water Quality test or comments: 10 IRON / 7.5 PH / 15 GRAINS
Depth first Water Encountered 181

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
12	0	1	TOP SOIL - GRAVEL		
	1	16	DK BROWN CLAY - VERY HARD		
	16	18	SAND		
8	18	52	SANDY CLAY - SOFT		
	52	65	SAND - COARSE		
	65	72	CLAY		
	72	120	SAND - COARSE		
	120	121	CLAY		
	121	124	SAND - COARSE		
	124	125	CLAY		
	125	140	SAND & CLAY PCS - SAME		
	140	147	SANDY CLAY -		
	147	158	CLAY		
	158	162	SAND - SAME		
	162	168	CLAY		
	168	177	SAND & CLAY STREAKS		
	177	181	SANDY CLAY		
	181	188	SAND - COARSE	X	
	188	194	SANDY CLAY - COARSE		
	194	201	CLAY		
	201	204	SANDY CLAY		
	204	214	SAND	WA	
	214	242	CLAY		
	242	244	SAND - SAME		
	244	262	CLAY		
	262	266	SAND - SAME		
	266	277	SAND CLAY		
	277	287	CLAY		
	287	290	SAND - SAME		
	290	300	CLAY - SANDY		
	300	305	CLAY - HARD @ 6 1996		
	305	308	SAND		
			CONTINUED		

MICROFILMED

Completed Depth 945 (Measurable)
Date: Started 7-1-96 Completed 7-15-96

13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name ADAMSON PUMP & DRILLING Firm No. 0457
Firm Official Dave Adamson Date 8-20-96
and
Supervisor or Operator W. Bill Jaime Date ____
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Form 238-7
3/95

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

RECEIVED
OCT 0 8 1996
WATER RESOURCES
WESTERN REGION

Office Use Only
Inspected by _____
Twp____ Rge____ Sec____
____1/4 ____1/4 ____1/4
Lat: : : Long: : :

1. DRILLING PERMIT NO. 65-96-W-0167-000
Other IDWR No. _____

2. OWNER:
Name GEM Co BOARD of Commiss
Address _____
City _____ State ____ Zip ____

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

N / W / E / S

Twp. 6 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 28, ____ 10 acres ____1/4 40 acres ____1/4 160 acres ____1/4
Gov't Lot ____ County _____
Lat: : : Long: : :
Address of Well Site _____
City _____
(Give at least name of road + Distance to Road or Landmark)

Lt. _____ Blk. _____ Sub. Name _____

4. USE:
☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK check all that apply (Replacement etc.)
☐ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD
☐ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD

Was drive shoe used? ☐Y ☐N Shoe Depth(s) _____
Was drive shoe seal tested? ☐Y ☐N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

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Department of Water Resources

9. PERFORATIONS/SCREENS
☐ Perforations Method _____
☐ Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material		
						☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
____ ft. below ground Artesian pressure ____ lb.
Depth flow encountered ____ ft. Describe access port or control devices: _____

11. WELL TESTING
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encountered _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
8	308	317	CLAY		
	317	333	BLUE CLAY		
	333	342	SAND CLAY - SUPER SOFT		
	342	375	SAND - COARSE		
	375	381	SANDY CLAY		
	381	387	SAND		
	387	393	CLAY		
	393	403	BLUE CLAY		
	403	422	BROWN COARSE SAND & BLUE CLAY LAYERS		
	422	424	BROWN CLAY		
	424	431	SAND - COARSE		
	431	436	CLAY		
	436	442	SAND - COARSE		
	442	455	CLAY		
	455	462	SAND / CLAY		
	462	464	~~CLAY~~ SAND		
	464	470	~~SAND~~ CLAY		
	470	480	~~CLAY~~ SAND		
	480	490	~~SAND~~ SAND-CLAY		
	490	498	SANDY ~~CLAY~~ BLUE CLAY		
	498	520	SAND W/SMALL CLAY LAYERS ~~AS~~ COARSE 2-3		
	520	522	CLAY		
	522	532	SAND		
	532	534	CLAY		
	534	552	SAND		
	552	570	SANDY CLAY		
	570	580	SAND - FINER BUT COARSE		
	580	581	CLAY		
	581	594	SANDY CLAY		
	594	602	CLAY		
	602	642	SAND + CLAY ~~SILT~~ STREAKED		
	642	700	SANDY CLAY		
			CONTINUED		

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Completed Depth _____ (Measurable)
Date: Started _____ Completed _____

13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Addison Pump & Drilling Firm No. 457
Firm Official Dave Addison Date 8-26-96
and
Supervisor or Operator W D Barker Date _____
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

057563 RG 3 of 3

Form 238-7
3/95

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

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OCT 08 1996
WATER RESOURCES
WESTERN REGION

Office Use Only
Inspected by _____
Twp ____ Rge ____ Sec ____
____1/4 ____1/4 ____1/4
Lat: : : Long: : :

1. DRILLING PERMIT NO. 65-96 W.0167.000
Other IDWR No. _____

2. OWNER:
Name Elm Co Board of Commissioners
Address _____
City _____ State ____ Zip ____

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

N / W / E / S

Twp. 6 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 28 , ____1/4 ____1/4 ____1/4
(10 acres / 40 acres / 160 acres)
Gov't Lot ____ County _____
Lat: : : Long: : :
Address of Well Site _____
_____ City _____
(Give at least name of road + Distance to Road or Landmark)

Lt. _____ Blk. _____ Sub. Name _____

4. USE:
☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☒ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK check all that apply (Replacement etc.)
☐ New Well ☒ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD
☐ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	

Was drive shoe used? ☐ Y ☐ N Shoe Depth(s) _____
Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS
☐ Perforations Method _____
☐ Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
____ ft. below ground Artesian pressure ____ lb.
Depth flow encountered ____ ft. Describe access port or control devices: _____

11. WATER LEVEL & PRODUCTION TEST DATA
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____
_____ Depth first Water Encountered _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
8	700	714	BLUE CLAY		
5	714	724	SAND		
	724	739	SANDY CLAY		
	739	782	SANDY CLAY - MOSTLY SAND		
	782	786	SAND		
	786	794	CLAY		
	794	806	SAND		
	806	822	SANDY CLAY	✱	5-7
	822	840	COARSE SAND & BLUE CLAY		
	840	844	SAND	✱	16-20
	844	865	BLUE CLAY		
	865	872	SAND	✱	10-15
	872	890	BLUE CLAY		
	890	913	SAND	✱	15
	913	933	BLUE CLAY		
	933	945	SAND - COARSE	✱	40-45

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Department of Water Resources

MICROFILMED
DEC 06 1996

Completed Depth _____ (Measurable)
Date: Started _____ Completed _____

13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Johnson Pump & Drilling Firm No. 457
Firm Official Dave Johnson Date 8-26-96
and
Supervisor or Operator W D Bill Parker Date _____
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

WELL DRILLER'S REPORT

WATER RESOURCES
WESTERN REGION

NOV 15 1993
Department of Water Resources

1. DRILLING PERMIT NO. 63-93-W-0619-000
Other IDWR No.

OWNER:
Name MARK LYNN
Address 6500 CHAPPARRAL
City EAGLE State ID Zip 83616

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

T. 5N North ☒ or South ☐
R. 1W East ☐ or West ☒
Sec. 3, 1/4 SE 1/4 NE 1/4
Gov't Lot ____ County CANYON

Address of Well Site 6500 CHAPPARRAL, EAGLE, ID.
(Give at least Direction + Distance to Road or Landmark)

Lot No. ____ Block No. ____ Subd. Name ____

4. PROPOSED USE:
☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other ____

5. TYPE OF WORK
☒ New Well ☐ Modify or Repair ☐ Replacement ☐ Abandonment

6. DRILL METHOD
☐ Mud Rotary ☒ Air Rotary ☒ Cable ☐ Other ____

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
BENT & CEMENT	200	170		POURED
CEMENT & BENT	170	150		PUMPED
BENT & CEMENT	150	140		POURED
SURFACE SEAL AROUND 12" TO				20'

Was drive shoe seal tested? Yes ☐ No ☒ How? ____

8. CASING/LINER:

Diameter	From	To	Guage	Casing	Liner	Steel	Plastic	Welded	Threaded
12	+1	79	250	X		☒	☐	☒	☐
8	+2	551	250	X		☒	☐	☒	☐
6	523	543				☐	☐	☐	☐
6	573	623				☐	☐	☐	☐

Final location of shoes 551
Top Packer or Headpipe 523 Bottom Tailpipe 623

9. PERFORATIONS/SCREENS
☐ Perforations Method ____
☒ Screens Type 304 Material STAINLESS

From	To	Slot Size	Number	Diameter	Tele/Pipe Size	Casing	Liner
543	563	.040		6	PIPE	☐	☒
563	573	.030		6	PIPE	☐	☒
						☐	☐
						☐	☐

10. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Depth	Time
NO TEST			

Temperature of water ____ Was a water analysis done? Yes ☐ No ☐
By whom? ____
Water Quality (odor, etc.) ____
Bottom Hole Temperature ____

11. STATIC WATER LEVEL:
395 ft. below surface Depth artesian flow found ____
Artesian pressure ____ lb. Describe access port ____
Describe Controlling Devices: ____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	GPM	SV
14	0	5	TOP SOIL		
14	5	25	SAND & GRAVEL		
12	25	40	SANDY YELLOW CLAY		
12	40	60	SANDSTONE		
12	60	79	LOOSE SAND		
12	79	180	SANDSTONE		
12	180	235	COURSE SAND		
8	235	240	SANDSTONE		
8	240	250	SAND & PEA GRAVEL		
8	250	300	SANDSTONE		
8	300	320	SANDY BROWN CLAY		
8	320	340	SANDSTONE		
8	340	350	SANDY BROWN CLAY		
8	350	380	SANDSTONE		
8	380	385	SAND		
8	385	400	SANDSTONE		
8	400	410	SAND & GRAVEL		
8	410	440	SANDSTONE		
8	440	450	BROWN SAND	?	39
8	450	480	SANDSTONE		39
8	480	485	FINE SAND		39
8	485	540	BLACK SANDSTONE		39
8	540	550	COURSE SAND		39
8	550	570	COURSE SAND & GRAVEL		39
8	570	590	COURSE SAND		39
8	590	600	COURSE BROWN SAND		39
8	600	620	BROWN SAND		39

Date: Started 7-10-93 Completed 10-18-93

13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name BILL DOTY DRILLING CO., INC. Firm No. 42
Firm Official [signature] Date 11-1-93
and
Supervisor or Operator [signature] Date 11-1-93
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No. 809803 ME
Inspected by
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0030892
DRILLING PERMIT NO.
Water Right or Injection Well No.

2. OWNER:
Name Spring Valley Development LLC
Address 485 E. Riverside Dr
City Eagle State Id Zip 83616

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 5 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 13 1/4 (10 acres) SE 1/4 (40 acres) NW 1/4 (160 acres)
Gov't Lot ____ County Ada
Lat: : : Long: : :
Address of Well Site 1 mile SW of Willow Creek Rd
Big Gulch City Eagle
Lt. ____ Blk: ____ Sub. Name ____

4. USE:
☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☒ Other test

5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other

6. DRILL METHOD:
☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
Bentonite	0	105	3/50 #	over bore

Was drive shoe used? ☒Y ☐N Shoe Depth(s) 738'
Was drive shoe seal tested? ☐Y ☒N How?

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
8"	+2	738'	250	Steel	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe ____ Length of Tailpipe ____
Packer ☐Y ☐N Type ____

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method STAR PERF. 4 ROWS @ 90 PERS
Screen Type & Method of Installation none PER ROW

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
560	580	1/4	360	8"	.250 WALL	☒	☐
580	600	1/4	360	8"	CASING	☒	☐
600	620	1/4	360	8"	"	☒	☐
620-640		1/4	360	8"	"	☒	

Filter Material	From	To	Weight / Volume	Placement Method
Continued on page 2				

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
455 ft. below ground Artesian pressure ____ lb.
Depth flow encountered ____ ft. Describe access port or control devices:
Steel plate

12. WELL TESTS:
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min:	Drawdown	Pumping Level	Time
175			6 hours

Water Temp. 80° Bottom hole temp.
Water Quality test or comments: Iron 5 PH 7.5 Grams 7
Depth first Water Encounter 590'

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
12	0	10	sandy soil		
"	10	96	tan clay		
"	96	105	blue clay		
8	105	134	blue clay		
"	134	140	tan clay		
"	140	195	pea gravel & clay		
"	195	360	Lt gray sand & clay		
"	360	367	coarse sand & clay like pea gravel		
"	367	505	Fine & coarse sand		
"	505	540	larger pea gravel		
"	540	590	pea gravel w/ large sand quartz		
"	590	595	quartz sand	X	
"	595	605	Finer tan sand		
"	605	620	quartz sand	X	
"	620	640	Finer sand	X	
"	640	645	quartz sand	X	
"	645	655	quartz sand & some pea gravel	X	
"	655	660	gravel & quartz sand	X	
"	660	670	big sand		
"	670	680	big sand	X	
"	680	685	big sand		
"	685	690	big sand	X	
"	690	730	big sand	X	
"	730	740	big sand	X	

Due to heaving sand - A mixture of sand & cement was placed from 730' to 740

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WATER RESOURCES (Measurable)
WESTERN REGION

Completed Depth 730' Completed
Date: Started 01-26-04 02-27-04

14. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.
Company Name Adamson Pump & Drilling Rig No. 457
Principal Driller Dave Adamson Date 3-15-04
and
Driller or Operator II Dave Adamson Date 3-15-04
Operator I ____ Date ____
Principal Driller and Rig Operator *Required*.
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No. _____
Inspected by _____
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0030892 pg 2
DRILLING PERMIT NO. _____
Water Right or Injection Well No. _____

2. OWNER:
Name Spring Valley Development LLC
Address 485 E. Riverside Dr
City Eagle State Id Zip 83616

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 5 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 13 ____ 1/4 SE 1/4 (10 acres) NW 1/4 (160 acres)
Gov't Lot ____ County Ada
Lat: : : Long: :
Address of Well Site 1 mile SW of Willow Creek Rd
Big Gulch City Eagle
Lt. ____ Blk. ____ Sub. Name ____

4. USE:
☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☒ Other test

5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other ____

6. DRILL METHOD:
☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other ____

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method

Was drive shoe used? ☐Y ☐N Shoe Depth(s) ____
Was drive shoe seal tested? ☐Y ☐N How? ____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe ____ Length of Tailpipe ____
Packer ☐Y ☐N Type ____

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method SAW PERF. 4 ROWS @ JOINT 90 DEGS
Screen Type & Method of Installation PER ROW (360)

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
640	660	1/4	360	8"	.250 WALL	☒	☐
660	680	1/4	360	8"	CASING	☒	☐
680	700	1/4	360	8"	"	☒	☐
700 - 720		1/4	360	8"	"	X	

Filter Material	From	To	Weight / Volume	Placement Method
720 - 730				

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
____ ft. below ground Artesian pressure ____ lb.
Depth flow encountered ____ ft. Describe access port or control devices: ____

12. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: ____
Depth first Water Encounter ____

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N

Completed Depth ____ (Measurable)
Date: Started ____ Completed ____

14. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Adamson Pump & Drilling Firm No. 457
Principal Driller Dave Adamson Date 3-15-04
and
Driller or Operator II Dave Adamson Date 3-15-04
Operator I ____ Date ____

Principal Driller and Rig Operator *Required*.
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

Form 238-7
5.02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No. _____
Inspected by _____
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

WELL TAG NO. D 0031492
DRILLING PERMIT NO. 815596
Water Right or Injection Well No. 386274

2. OWNER:
Name SUNCOR
Address 485 E Riverside Dr. #300
City Eagle State ID Zip 83616

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 5 North XX or South ☐
Rge. 1 East XX or West ☐
Sec. 9 NW 1/4 SW 1/4 NW 1/4
Gov't Lot ____ County Ada
Lat: : : Long: :
Address of Well Site ½ mile SW of Willow Creek Rd
City Eagle
Give at least two street - distance to Road or subdivision
Lt. ____ Blk. ____ Sub. Name ____

4. USE:
☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection XX Other test #9

5. TYPE OF WORK check all that apply (Replacement etc.)
XX New Well ☐ Modify ☐ Abandonment ☐ Other ____

6. DRILL METHOD:
☐ Air Rotary ☐ Cable XX Mud Rotary ☐ Other ____

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
bentanite grout	806	265	1250 gal	pumped
bentanite grout	215	0	300 gal	pumped

Was drive shoe used? ☐ Y ☐ N Shoe Depth(s) ____
Was drive shoe seal tested? ☐ Y ☐ N How? ____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
8"	+2	235	250	steel	XX	☐	XX	☐
6"	215	253	250	steel	XX	☐	XX	☐
					☐	☐	☐	☐

Length of Headpipe +2 Length of Tailpipe 0
Packer ☐ Y ☐ N Type ____

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method ____
Screen Type & Method of Installation stainless

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
235	245	30		6"	stnls	XX	☐
253	263	30		6"	stnls	XX	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method
#8-12 sand			3000#	

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
193 1/4 ft. below ground Artesian pressure ____ lb.
Depth flow encountered 198 ft. Describe access port or control devices: ____

12. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
XX			
43	14'	207	4½hr

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: ____
Depth first Water Encounter ____

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
8	0	10	topsoil, sandy clay		X
	10	27	sand, brown clay		X
	27	60	tan gray clay		X
	60	90	sandy brown clay w/ gray streaks		X
	90	104	gray clay		X
	104	110	sandy brown clay		X
	110	155	coarse sand w/ gray streaks		X
	155	198	coarse to medium sand w/ clay streaks	X	
				X	
	198	210	reddish sand	X	
	210	243	fine sand w/ clay streaks	X	
	243	265	sand w/ wood, clay streaks	X	
	265	430	silty gray blue clay		X
	430	530	sticky gray blue clay		X
	530	531	hard shale		X
	531	780	gray blue clay		X
	780	781	hard shale		X
	781	806	gray blue clay		
			topped with chips 20 sks		

Completed Depth 806 drilled, 263 cased (Measurable)
Date: Started 6/ /04 Completed 6/25/04

14. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.
Company Name Stevens & Sons Firm No. 153
Principal Driller and/or Driller or Operator II ____ Date 6/28/0
Operator I ____ Date ____
Principal Driller and Rig Operator required. Operator I must have the authority of Driller/Operator II.

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Form 238-7
7/94

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

RECEIVED
AUG 22 1995
WATER RESOURCES
WESTERN REGION

Use Typewriter or Ball Point Pen

1. DRILLING PERMIT NO. 63-95-W-0611-000
Other IDWR No.

2. OWNER:
Name HOLMES LUNDT
Address P.O. BOX 45164
City BOISE State ID Zip ~~83707~~ 83711-5164

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

N / W / E / S

Twp. 5 North ☒ or South ☐
Rge. 1 East ☒ or West ☐
Sec. 29, 1/4 NE (10 acres) 1/4 SW (40 acres) 1/4 (160 acres)
Gov't Lot ____ County ADA

Address of Well Site
City ~~ADA~~ EAGLE
(Give at least name of road + Distance to Road or Landmark)

Lt. 7 Blk. 1 Sub. Name STILLWELL ESTATE #4

4. PROPOSED USE:
☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

5. TYPE OF WORK
☒ New Well ☐ Modify or Repair ☐ Replacement ☐ Abandonment

6. DRILL METHOD
☐ Mud Rotary ☒ Air Rotary ☐ Cable ☐ Other

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
BENTONITE	0	18	300 lbs	OVERDRILL

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s)
Was drive shoe seal tested? Y☐ N☐ How?

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	1½	239	.25	STEEL	☒	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe 5' Length of Tailpipe 1'

9. PERFORATIONS/SCREENS
☐ Perforations Method WASH-IN
☒ Screens Screen Type STAINLESS STEEL

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
~~239~~	~~241~~	.250				☐	☐
241	251	.020	—	5"	ST STEEL	☐	☒
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
141 ft. below ground Artesian pressure ____ lb.
Depth flow encountered ____ ft. Describe access port or control devices:

11. WELL TESTS:
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
40	—	235	1 HR

Water Temp. 54° Bottom hole temp. 54°
Water Quality test or comments:

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
8	0	2	TOP SOIL		
	2	18	BRN CLAY		
6	18	67	BRN CLAY		
	67	76	BRN SANDY CLAY		
	76	115	BRN SAND		
	115	155	BRN CLAY		
	155	161	SAND		
	161	173	BRN CLAY		
	173	181	FINE SAND		
	181	183	BRN CLAY		
	183	184	FINE SAND		
	184	186	HARD BROWN CLAY		
	186	197	SANDY CLAY		
	197	201	ORANGE SAND		
	201	203	TAN CLAY		
	203	207	SAND W/CLAY STRINGERS		
	207	218	SAND		
	218	223	TAN CLAY		
	223	227	FINE SAND		
	227	237	COARSE SAND		
	237	238	TAN CLAY		
	238	252	SAND		

Completed Depth 252 FT. (Measurable)
Date: Started 8-9-95 Completed 8-16-95

13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name COGNSE WELL DRILLING Firm No. 409
Firm Official Gary E. Cognse Date 8-16-95
and
Supervisor or Operator ____ Date ____
(Sign once if Firm Official & Operator)

2. WELL OWNER
Name WILLOW BROOK WATER CORP.
Address PEARL ROUTE EAGLE, ID 83616
Drilling Permit No. 83-92-W-032
Water Right Permit No. _____

Static water level 150 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____
Describe artesian or temperature zones below.

3. NATURE OF WORK
☒ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase
☐ Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

8. WELL TEST DATA
☒ Pump ☐ Bailer ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
50 GAL	325'	½ HR.

4. PROPOSED USE
☐ Domestic ☐ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☒ Other GRAVEL CHUTE (specify type)

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	20	SAND		X
6	20	100	SAND, SOME CLAY		X
6	100	160	CLAY WITH SAND SEAMS		X
6	160	200	SAND	X	
6	200	210	BLUE CLAY		X
6	210	280	SAND WITH SOME CLAY STINGERS	X	
6	280	310	COURSE SAND WITH PEA GRAVEL	X	
6	310	318	CLAY (SANDY WITH PEA GRAVEL)		X
6	318	340	SAND		

5. METHOD DRILLED
☒ Rotary ☒ Air ☐ Hydraulic ☐ Reverse rotary
☐ Cable ☐ Dug ☐ Other _____

6. WELL CONSTRUCTION
Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 inches	+ 2.5 feet	237.5 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation _____ inches by _____ inches

Number		From	To
_____	perforations	_____ feet	_____ feet
_____	perforations	_____ feet	_____ feet
_____	perforations	_____ feet	_____ feet

Well screen installed? ☐ Yes ☒ No
Manufacturer's name _____
Type _____ Model No. _____
Diameter ___ Slot size ___ Set from _____ feet to _____ feet
Diameter ___ Slot size ___ Set from _____ feet to _____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet
Surface seal depth 20' Material used in seal: ☐ Cement grout ☒ Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing ☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between strata
Describe access port _____

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JUL 22 1992
Department of Water Resources

SHIPPED FEB 03 1992

10.
Work started 1-9-92 finished 1-14-92

7. LOCATION OF WELL
Sketch map location must agree with written location.

N
W E
S

Subdivision Name _____
Lot No. _____ Block No. _____
County ADA
SE ¼ NW ¼ Sec. 17, T. 5 N ☒ S ☐ R. 1 E ☐ W ☒

11. DRILLERS CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.
BILL DUTY
Firm Name DRILLING CO., INC. Firm No. 42
106 CALLOWAY
Address CALDWELL, ID. 83605 Date 1-31-92
Signed by (Firm Official) _____
and
(Operator) _____

USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT

WELL OWNER
Name CHAPARELL WATER USERS ASSN.
Address P.O. BOX 507 EAGLE ID 83616
Drilling Permit No. 63-91-W-088
Water Right Permit No. 63-07700

NATURE OF WORK — REPLACEMENT
☒ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase
☐ Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

PROPOSED USE — IRRIGATION
☐ Domestic ☐ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

METHOD DRILLED — REVERSE ROTARY
☒ Rotary ☐ Air ☐ Hydraulic ☐ Reverse rotary
☐ Cable ☐ Dug ☐ Other _____

WELL CONSTRUCTION — SEE ATTACHED
Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
_____ inches	_____ inches +	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used? ☐ Yes ☒ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☒ Yes ☐ No
Manufacturer's name ROSCOE MOSS
Type CONTINOUS WIRE Model No. HEAVY
Diameter ___ Slot size ___ Set from ___ feet to ___ feet
Diameter ___ Slot size ___ Set from ___ feet to ___ feet
Gravel packed? ☒ Yes ☐ No ☐ Size of gravel 3/8
Placed from 425 feet to 110 feet
Surface seal depth 110 Material used in seal: ☐ Cement grout ☐ Bentonite ☒ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing ☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between strata
Describe access port 2" PIPE

7. WATER LEVEL
Static water level 157 feet below land surface.
Flowing? ☐ Yes ☐ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____
Describe artesian or temperature zones below.

8. WELL TEST DATA — NOT AVAILABLE
☐ Pump ☐ Bailer ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
28					
	0	5	TOPSOIL		X
	5	10	SANDY LOAM		X
	10	13	SAND & GRAVEL		X
	13	25	SAND W/ CLAY STREAKS		X
	25	55	FINE TO COARSE SAND		X
	55	65	FINE TO MED. SAND		X
	65	85	COARSE SAND		X
	85	91	BROWN CLAY		X
	91	105	MEDIUM SAND		X
	105	155	COARSE SAND		X
	155	175	BROWN CLAY		X
	175	215	GRAY CLAY		X
	215	215	BROWN CLAY		X
	215	225	COARSE GOLDEN SAND	X	
	225	235	COARSE SAND & PEA GRV.	X	
	235	265	FINE TO CRSE SAND	X	
	265	269	LITE BRN CLAY		X
	269	425	COARSE SAND & PEA GRV.	X	

SEP 0 1991
Department of Water Resources
Western Regional Office

10. Work started 9/4/91 finished 9/14/91

LOCATION OF WELL
Sketch map location must agree with written location.
N / W / E / S
Subdivision Name _____
Lot No. _____ Block No. _____
County ADA
¼ ¼ Sec. _____, T. _____ N ☐ S ☐, R. _____ E ☐ W ☐

11. DRILLERS CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.
Firm Name PETE COPE DRILLING Firm No. 213
Address 6505 W CHINDEN Date 9/9/91
Signed by (Firm Official) Joseph Jones
and
(Operator) Joseph Jones

USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT

Chaparell Water users Assn.
P.O. Box 507
Eagle ID 83616
Permit# 63-91-w-088

"16"casing record .250 wall welded

1	-	285	286
305	-	325	20
335	-	350	15
360	-	375	15
385	-	395	10
415	-	425	10
			356 total casing

16" Screen record .40 slot Roscoe Moss Continous wire.

285	-	305	20
325	-	335	10
350	-	360	10
375	-	385	10
395	-	415	20
			70 total screen

426 total screen+casing

FEB 1 1967
Department of Reclamation

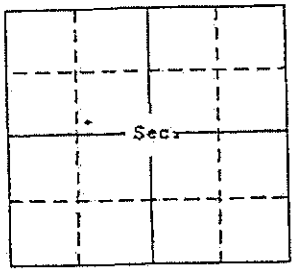
REPORT OF WELL DRILLER
State of Idaho

State law requires that this report shall be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

WELL OWNER:
Name Bill Leach
Address Star Willow Creek Road, Hwy. #16

Owner's Permit No. G 32284
NATURE OF WORK (check): Replacement well [X]
New well [X] Deepened [ ] Abandoned [ ]
Water is to be used for: Domes. & Irrigation
METHOD OF CONSTRUCTION: Rotary [ ] Cable [X]
Dug [ ] Other (explain)
CASING SCHEDULE: Threaded [ ] Welded [X]
8in. "Diam. from 0 ft. to 390 ft.
"Diam. from ft. to ft.
"Diam. from ft. to ft.
"Diam. from ft. to ft.
Thickness of casing: .250 in Material:
Steel [X] concrete [ ] wood [ ] other [ ]
PERFORATED? Yes [ ] No [X] Type of perforator used: (explain)
Size of perforations: " by "
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
WAS SCREEN INSTALLED? Yes [ ] No [X]
Manufacturer's name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.
CONSTRUCTION: Well gravel packed? Yes [ ] No [X] size of gravel Gravel placed from ft. to ft. Surface seal provided? Yes [ ] No [ ] To what depth? ft. Material used in seal: Cased through clay
Did any strata contain unusable water? Yes [ ] No [X] Type of water:
Depth of strata ft. Method of sealing strata off:
Surface casing used? Yes [X] No [ ]
Cemented in place? Yes [ ] No [X]

Locate well in section



LOCATION OF WELL: County Ada
~~S.E.¼ N.E.¼~~ Sec. 29 T. 5 N/S R. 1 E/W
~~SE NE~~
Use other side for additional remarks

Size of drilled hole: 8in. Total depth of well: 450 ft. Standing water level below ground: 300 ft. Temp. Fahr. 85 ° Test delivery: gpm or cfs Pump? [ ] Bail [ ]
Size of pump and motor used to make test:
1/30/1967 not tested
Length of time of test: Hrs. Min.
Drawdown: ft. Artesian pressure: ft. above land surface Give flow cfs or gpm. Shutoff pressure:
Controlled by: Valve [ ] Cap [ ] Plug [ ]
No control [ ] Does well leak around casing?
Yes [ ] No [X]

31529

DEPTH FROM FEET	DEPTH TO FEET	MATERIAL	WATER YES OR NO
0	10	Sandy topsoil	no
10	14	sand & corse gravel	no *
14	50	clay	no
50	80	sand & clay	no
80	85	wet sand	yes *
85	130	clay	no
130	185	sand & clay	no
185	192	Corse wet sand	yes *
192	207	Blueish clay & sand	no
207	335	Corse sand & brown clay	no
335	365	Corse sand	yes
365	371	clay	no
371	377	sand	yes
377	382	clay	no
382	387	sand	yes
387	397	clay	no
397	450	Sand stone	yes

* Note; Seasonal water

Work started: October 1, 1966
Work finished: October 14, 1966
Well Driller's Statement: This well was drilled under my supervision and this report is true to the best of my knowledge.
Name: C. F. Baker
Address: Box 41, Middleton, Idaho
Signed by: C. F. Baker
License No. 175 Date: 9 Jan. 1967

USGS

WESTERN REGION

Department of Water Resources

. DRILLING PERMIT NO. 63-93-W-0619-000

Other IDWR No.

2. OWNER:
e MARK LYNN
ess 6500 CHAPPARRAL
City EAGLE State ID Zip 83616

. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N

S

T. 5N North ☒ or South ☐
R. 1W East ☐ or West ☒
Sec. 3 1/4 SE 1/4 NE 1/4
Gov't Lot County CANYON

ddress of Well Site 6500 CHAPPARRAL, EAGLE, ID.

(Give at least Direction + Distance to Road or Landmark)

ot No. Block No. Subd. Name

4. PROPOSED USE:
☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

5. TYPE OF WORK
☒ New Well ☐ Modify or Repair ☐ Replacement ☐ Abandonment

. DRILL METHOD
☐ Mud Rotary ☒ Air Rotary ☒ Cable ☐ Other

SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
BENT & CEMENT	200	170		POURED
CEMENT & BENT	170	150		PUMPED
BENT & CEMENT	150	140		POURED
SURFACE SEAL AROUND 12" TO 20'				

Was drive shoe seal tested? Y☐ N☒ How?

. CASING/LINER:

Diameter	From	To	Guage	Casing	Liner	Steel	Plastic	Welded	Threaded
12	+1	79	250	X		☒	☐	☒	☐
8	+2	551	250	X		☒	☐	☒	☐
6	523	543				☐	☐	☐	☐
6	573	623				☐	☐	☐	☐

inal location of shoes 551
op Packer or Headpipe 523 Bottom Tailpipe 623

. PERFORATIONS/SCREENS
☐ Perforations Method
☒ Screens Type 304 Material STAINLESS

From	To	Slot Size	Number	Diameter	Tele/Pipe Size	Casing	Liner
543	563	.040		6	PIPE	☐	☒
563	573	.030		6	PIPE	☐	☒
						☐	☐
						☐	☐

10. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min.	Drawdown	Pumping Depth	Time
NO TEST			

Temperature of water Was a water analysis done? Yes☐ No☐
By whom?
Water Quality (odor, etc.)
Bottom Hole Temperature

11. STATIC WATER LEVEL:
395 ft. below surface Depth artesian flow found
Artesian pressure lb. Describe access port
Describe Controlling Devices:

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	GP
12	0	5	TOP SOIL	
12	5	25	SAND & GRAVEL	
12	25	40	SANDY YELLOW CLAY	
12	40	60	SANDSTONE	
12	60	79	LOOSE SAND	
12	79	180	SANDSTONE	
12	180	235	COURSE SAND	
8	235	240	SANDSTONE	
8	240	250	SAND & PEA GRAVEL	
8	250	300	SANDSTONE	
8	300	320	SANDY BROWN CLAY	
8	320	340	SANDSTONE	
8	340	350	SANDY BROWN CLAY	
8	350	380	SANDSTONE	
8	380	385	SAND	
8	385	400	SANDSTONE	
8	400	410	SAND & GRAVEL	
8	410	440	SANDSTONE	
8	440	450	BROWN SAND	
8	450	480	SANDSTONE	
8	480	485	FINE SAND	
8	485	540	BLACK SANDSTONE	
8	540	550	COURSE SAND	
8	550	570	COURSE SAND & GRAVEL	
8	570	590	COURSE SAND	
8	590	600	COURSE BROWN SAND	
8	600	620	BROWN SAND	

Date: Started 7-10-93 Completed 10-18-93

13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied the time the rig was removed.

Firm Name BILL DOTY DRILLING CO., INC. Firm No. 4
Firm Official Date 11-1-
and
Supervisor or Operato Date 11-1-
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name MARK LYNN

Address 3631 SKYLINE DR EAGLE, ID 83616

Drilling Permit No. 63-93-W-0132

Water Right Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase ☐ Modification
☐ Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.)

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Monitor
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED

☒ Rotary ☐ Air ☐ Auger ☐ Reverse rotary
☐ Cable ☐ Mud ☐ Other _____ (backhoe, hydraulic, etc.)

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	8 inches	+ 1 feet	480 feet
.250 inches	6 inches	+2 feet	540 feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation? _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☐ Yes ☒ No
Manufacturer _____ Type _____
Top Packer or Headpipe _____
Bottom of Tailpipe _____

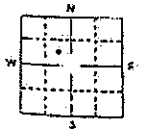
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet

Surface seal depth 40 Material used in seal: ☐ Cement grout ☒ Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing ☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between strata

Describe access port _____

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____
Lot No. _____ Block No. _____
County GEM
Address of Well Site _____ (give at least name of road)
T. 6N N ☒ or S ☐
SE ¼ NW ¼ Sec. 35, R. 1W E ☐ or W ☒

7. WATER LEVEL

Static water level 400 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
40	500	2 HRS.

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
12	0	2	SANDY TOP SOIL		X
12	2	40	SAND & GRAVEL		X
8	40	280	DECOMPOSED GRANITE SAND		X
8	280	315	BROWN SANDSTONE		X
8	315	420	DECOMPOSED GRANITE SAND		X
8	420	426	BROKEN BROWN ROCK	X	
8	426	460	DECOMPOSED GRANITE SAND	X	
8	460	480	LIGHT COLORED SANDSTONE	X	
6	480	530	DECOMPOSED FINE GRANITE SAND	X	
6	530	560	HARD GRAY SANDSTONE	X	
6	560	580	COURSE LOOSE GRANITE SAND	X	

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JUN 23 1993
Department of Water Resources
Western Regional Office

10.

Work started 4-19-93 finished 6-5-93

11. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

BILL DUTY DRILLING
Firm Name CO. INC Firm No. 42
Address 106 CALLOWAY CALDWELL, ID 83605 Date 6-17-93
Signed by Drilling Supervisor _____
and
(Operator) _____
(If different than the Drilling Supervisor)

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1 of 2

1. WELL OWNER

Name Dou B. Jensen

Address Rt. 1, Star, ID 83669

Owner's Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Abandoned (describe method of abandoning) _____

3. PROPOSED USE

☐ Domestic ☒ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED

☐ Rotary ☐ Air ☐ Hydraulic ☒ Reverse rotary
☐ Cable ☐ Dug ☐ Other _____

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter		From	To
.250 inches	16 inches	+	2 feet	30 feet
.250 inches	16 inches		70 feet	110 feet
.250 inches	16 inches		150 feet	180 feet
.250 inches	16 inches		190 feet	220 feet

Was casing drive shoe used? ☐ Yes ☒ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation _____ inches by _____ inches

Number		From	To
_____	perforations	_____ feet	_____ feet
_____	perforations	_____ feet	_____ feet
_____	perforations	_____ feet	_____ feet

Well screen installed? ☒ Yes ☐ No
Manufacturer's name Roscoe Moss
Type _____ Model No. _____
Diameter 16 Slot size 80 Set from 30 feet to 70 feet
Diameter 16 Slot size 80 Set from 110 feet to 150 feet
Diameter 16 Slot size 80 Set from 180 feet to 190 feet
Gravel packed? ☒ Yes ☐ No ☐ Size of gravel 3/8 minus
Placed from 20 feet to 370 feet
Surface seal depth 20' Material used in seal: ☐ Cement grout ☒ Puddling clay ☐ Well cuttings
Seating procedure used: ☐ Slurry pit ☐ Temp. surface casing ☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between strata
Describe access port 2" pipe welded on side of casing

7. WATER LEVEL

Static water level _____ feet below land surface.
Flowing? ☐ Yes ☐ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
28	0	11	Topsoil & Dirt		
	11	33	Brn. Clay w/some Sand		
	33	69	Sand Med. to Crse. w/some Pea Gravel		
	69	104	Brn. Clay w/some Sand		
	104	109	Sand Med. to Crse. w/some Clay		
	109	148	Sand Fine to Med.		
	148	161	Clay, Shale & some Sand		
	161	181	Sand & Clay mixed		
	181	190	Sand Med. to Crse.		
	190	201	Sand Fine to Med. w/Sandstone & Clay		
	201	204	Sand Med. to Crse.		
	204	217	Sand Fine to Med. s/some Clay		
	217	256	Sand Med. to Crse.		
	256	259	Sand Fine & some Sandstone		
	259	262	Sand Med. to Crse.		
	262	270	Blue & Brn. Clay w/some Sand		
	270	288	Sand Fine to Med. & Pea Gravel		
	288	317	Sand Med. to Crse. w/Pea Gravel		
	317	336	Sand Med. to Crse.		
	336	344	Blue Clay w/some Sand		
	344	354	Sand Crse.		
	354	370	Crse. Sand & Pea Gravel w/some Clay		

10. Work started 2-1-80 finished 2-20-80

30 days after the completion or abandonment of the we

WELL OWNER

Name Don B. Jensen

Address

Owner's Permit No.

NATURE OF WORK

OK

☐ New well ☐ Deepened ☐ Replacement
☐ Abandoned (describe method of abandoning)

PROPOSED USE

OK

☐ Domestic ☐ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other (specify type)

METHOD DRILLED

OK

☐ Rotary ☐ Air ☐ Hydraulic ☐ Reverse rotary
☐ Cable ☐ Dug ☐ Other

WELL CONSTRUCTION

Casing schedule: ☐ Steel ☐ Concrete ☐ Other

Thickness		Diameter		From		To	
.250	inches	16	inches	+ 260	feet	290	feet
.250	inches	16	inches	330	feet	340	feet
.250	inches	16	inches	360	feet	366	feet
	inches		inches		feet		feet

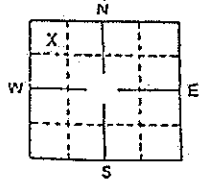
Was casing drive shoe used? ☐ Yes ☐ No
Was a packer or seal used? ☐ Yes ☐ No
Perforated? ☐ Yes ☐ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation inches by inches

Number		From		To	
	perforations		feet		feet
	perforations		feet		feet
	perforations		feet		feet

Well screen installed? ☐ Yes ☐ No
Manufacturer's name
Type Model No.
Diameter 16 Slot size 80 Set from 220 feet to 260 feet
Diameter 16 Slot size 80 Set from 290 feet to 330 feet
Diameter 16 Slot size 80 Set from 340 feet to 360 feet
Gravel packed? ☐ Yes ☐ No ☐ Size of gravel
Placed from feet to feet
Surface seal depth OK Material used in seal: ☐ Cement grout ☐ Puddling clay ☐ Well cuttings
Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing ☐ Overbore to seal depth
Method of joining casing: ☐ Threaded ☐ Welded ☐ Solvent Weld ☐ Cemented between strata
Describe access port

LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name

Lot No. Block No.

unty Cem

¼ ¼ NW ¼ Sec. 25 T. 6N N/S, R. 1W E/W.

7. WATER LEVEL

Static water level 17 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow
Artesian closed-in pressure p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature °F. Quality

8. WELL TEST DATA

☒ Pump ☐ Bailer ☐ Air ☐ Other

Discharge G.P.M.	Pumping Level	Hours Pumped
700	278'	8 hrs.

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
			OK		

10.

Work started finished

11. DRILLERS CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Pete Cope Drilling Co., Inc. Firm No. 213
Address P.O. Box 561 Meridian, ID 83642 Date 2-21-80
Signed by (Firm Official)
and
(Operator)

USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT

Form 238-7
11/97

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Inspected by _____
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

0029062

1. WELL TAG NO. D _____
DRILLING PERMIT NO. 782882
Other IDWR No. 63-31511

2. OWNER:
Name Donald B Jensen/Trellis Sub.
Address 8661 W Beacon Light RD
City ~~Middleton~~ Star State ID Zip 83669

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

N / W / E / S

Twp. 5 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 33 1/4 S/W 1/4 S/E 1/4
Gov't Lot ____ County Ada
Lat: : : Long: : :
Address of Well Site 1200' west, 600' northof intersection beacon Lt & Hwy 16 City Star
(Give at least name of road + Distance to Road or Landmark)
Lt. ____ Blk. ____ Sub. Name unplatted

4. USE:
☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other 48 lot subgolf pro shop

5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other ____

6. DRILL METHOD
☐ Air Rotary ☐ Cable ☒ Mud Rotary ☐ Other ____

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
bentonite grout	0	326	90 sk	pumped
#6-9 sand	318	364	1900#	poured

Was drive shoe used? ☐Y ☒N Shoe Depth(s) ____
Was drive shoe seal tested? ☐ Y ☐ ~~XX~~ N How? ____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
12"	+2	326'6"	375	steel	☒	☐	☒	☐
8	318	339	322	steel	☐	☒	☒	☐
8	359	364	322	steel	☐	☒	☒	☐

Length of Headpipe 21' Length of Tailpipe 5'

9. PERFORATIONS/SCREENS
Perforations Method ____
Screens Screen Type Johnson V wire

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
339	359	45		8	stnls	☐	☒
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
70 ft. below ground Artesian pressure ____ lb.
Depth flow encountered ____ ft. Describe access port or control devices: ____

11. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min.	Drawdown	Pumping Level	Time
950	100	170	2 Hour

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: ____
Depth first Water Encounter ____

12. LITHOLOGIC LOG: (Describe repairs or abandonment) Wa

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y
17	0	2	brown clay topsoil	
	2	11	tan sand	
	11	42	sand & ½" gravel	
	42	46	gravel & sand	
	46	48	brown clay & gravel	
	48	80	sand & gravel	X
	80	87	brown clay	
	87	106	gravel	X
	106	129	tan clay & gravel	
	129	138	blue clay	
	138	156	tan clay	
	156	175	blue clay	
	175	185	brown clay	
	185	193	sand	X
	193	217	blue clay	
	217	222	sand & gravel	X
	222	310	blue clay with sand streaks	X
12	310	339	brown clay & blue clay	
	339	359	coarse sand & gravel	X
8	359	373	tan clay	
	373	500	blue clay& fine sand streaks	X
			swedge packer 10" pipe 5' long	

RECEIVED
MAR 26 2003
WATER RESOURCES
WESTERN REGION

SCANNED
APR 01 2003

Completed Depth 364 (Measura
Date: Started 1/17/03 Completed 3/19/03

13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.
Company Name Stevens & Sons Firm No. 15
Firm Official _____ Date 3/20/03
and
Driller or Operator _____ Date
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Form 238-7
3/95 C96

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Inspected by _____
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. DRILLING PERMIT NO. 0-0-2-9012-
Other IDWR No. _____

2. OWNER:
Name Trae and Johnna Buchert
Address 5446 N. Emmett Hwy.
City Eagle State ID Zip 83616

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location

N
W E
S

Twp. 5 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 28 1/4 (10 acres) SW 1/4 (40 acres) NE 1/4 (Tool acres)
Gov't lot ____ County Ada
Lat: : : Long: : :
Address of Well Site 5446 N. Emmett Hwy
City Eagle
(Give at least name of road + Distance to Road or Landmark)
Lt. ____ Blk. ____ Sub. Name ____

4. USE:
☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other ____

5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other ____

6. DRILL METHOD
☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other ____

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
Bentonite	0	100	10001bs	Poured

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 448ft
Was drive shoe seal tested? ☐ Y ☐ N How? ____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	448	.250	Steel	☒	☐	☒	☐
5"	425	450	.258	Steel	☒	☐	☒	☐
					☐	☐	☐	☐

Length of Headpipe 5ft Length of Tailpipe —

9. PERFORATIONS/SCREENS
☐ Perforations Method ____
☒ Screens Screen Type johnson

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
450	460	.012	—	5"	SS	☐	☒
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
264ft below ground Artesian Pressure ____ lb
Depth flow encountered ____ ft. Describe access port or control devices: ____

11. WELL TESTS:
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Pumping Level	Time
75GPM	—	458	2hours

Water Temp. 60DegF Bottom hole temp. ____
Water Quality test or comments: ____
Depth first Water Encountered 264ft

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temp.	Water Y	Water N
10"	0	2	Top Soil		X
"	2	20	Sandy Clay		X
8"	20	26	Sandy Clay		X
"	26	63	Coarse Sand		X
"	63	156	Tan Clay with Sand Strips		X
"	156	170	Coarse Sand		X
"	170	243	Sandy Clay		X
"	243	280	Coarse Sand	X	
"	280	328	Tan Clay		X
"	328	360	Blue Clay		X
"	360	370	Coarse Sand	X	
6"	370	410	Blue Clay		X
"	410	418	Sand	X	
"	418	426	Blue Clay		X
"	426	430	Fine Gray Sand	X	
"	430	448	Blue Clay		X
"	448	460	Gray Sand	X	

RECEIVED
JAN 09 2003
WATER RESOURCES WESTERN REGION

Completed Depth: ____ (Measurable)
Date: Started 12-18-02 Completed 12-30-02

13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name COONSE WELL DRILLING Firm No. 409
Firm Official [signature] Date 1-3-03
Supervisor or Operator [signature] Date 1-3-03
(Sign once if Firm Official & Operator)

Date: 1/3/03 Time: 9:03 AM

Form 238-7
8/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Well ID No. _____
Inspected by _____
Twp _____ Rge _____ Sec _____
_____ 1/4 _____ 1/4 _____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 023062
DRILLING PERMIT NO. _____
Water Right or Injection Well No. _____

2. OWNER:
Name Spring Valley Development LLC
Address 485 E Riverside Dr Suite # 300
City Eagle State Id Zip 83616

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 5 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 23 1/4 NE 1/4 SW 1/4
Govt Lot _____ County Ada
Lat: : : Long:
Address of Well Site Big Gulch SW of Willard Creek Rd City Eagle
Lt. _____ Blk. _____ Sub. Name _____

4. USE:
☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☒ Other Test

5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD:
☐ Air Rotary ☐ Cable ☒ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
30% Grout	315	350	—	Pressure Grout
30% Grout	240	0	—	Pressure Grout

Was drive shoe used? ☐Y ☐N Shoe Depth(s)
Was drive shoe seal tested? ☐Y ☐N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
8"	+2	278	250	Steel	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____
Packer ☐Y ☐N Type _____

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method Pre 8" Casing 10 FT
Screen Type & Method of Installation Shutter Screen 60 FT

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
280	340	1/8		8"	Steel	☐	☐
340	350	1/8	60	8"	Steel	☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method
5/16 Pea Gravel	340	242	—	Pour

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
161 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: Well Cap

12. WELL TESTS:
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min.	Drawdown	Pumping Level	Time
100-200			1 hour

Water Temp. 72° Bottom hole temp. _____
Water Quality test or comments: From .5 PH 7.5 Grains 5
Depth first Water Encounter _____

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
12	0	3	top soil & clay		
"	3	30	Coarse Sand		
"	30	55	brown clay		
"	55	60	sand		
"	60	70	brown clay		
"	70	120	soft & hard clay layers		
"	120	130	sand & clay		
"	130	135	coarse sand		
"	135	150	clay		
"	150	190	clay w/some sand layers		
"	190	210	sand		
"	210	216	clay w/sand		
"	216	280	coarse sand w/little clay		
"	280	290	coarse sand		
"	290	340	coarse sand		
"	340	350	bluish coarse sand w/some wood		
"	250	336	coarse blue sand		
"	950	440	coarse blue sand		
"	440	470	blue clay		
"	470	815	blue clay		

RECEIVED
APR 19 2004
WATER RESOURCES
WESTERN REGION

Completed Depth 350' (Measurable)
Date: Started 3/10/04 Completed 4-10-04

14. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.
Company Name Adamson Pump & Drill Firm No. 45
Principal Driller Dave Adamson Date 4-15-04
and
Driller or Operator II Dave Adamson Date 4-15-04
Operator I _____ Date _____
Principal Driller and Rig Operator *Required*.
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Well ID No. 8U22U5 AAL
Inspected by
Twp. ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0030892
DRILLING PERMIT NO.
Water Right or Injection Well No.

2. OWNER:
Name Spring Valley Development LLC
Address 485 E. Riverside Dr.
City Eagle State Id Zip 83616

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 5 North X or South ☐
Rge. 1 East ☐ or West X
Sec. 13 1/4 SE 1/4 NW 1/4
Gov't Lot ____ County Ada
Lat: : : Long: : :
Address of Well Site 1 mile SW of Willow Creek Rd
Big Gulch City Eagle
LL ____ Blk: ____ Sub. Name ____

4. USE:
☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection X Other test

5. TYPE OF WORK check all that apply (Replacement etc.)
X New Well ☐ Modify ☐ Abandonment ☐ Other

6. DRILL METHOD:
X Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
Bentonite	0	105	3150#	overbore

Was drive shoe used? X Y ☐ N Shoe Depth(s) 738'
Was drive shoe seal tested? ☐ Y X N How?

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
8"	+2	738'	.250	Steel	X	☐	X	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe ____ Length of Tailpipe ____
Packer ☐ Y ☐ N Type ____

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method STAR PERF 4 ROWS @ 90 PERFS
Screen Type & Method of Installation NONE PER ROW

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
560	580	1/4	360	8"	.250 WALL	X	☐
580	600	1/4	360	8"	CASING	X	☐
600	620	1/4	360	8"	"	X	☐
620-640		1/4	360	8"	"	X	

Filter Material	From	To	Weight / Volume	Placement Method
Continued on page 2.				

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
455 ft. below ground Artesian pressure ____ lb.
Depth flow encountered ____ ft. Describe access port or control devices:
Steel plate.

12. WELL TESTS:
☐ Pump ☐ Bailer X Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
175			6 hours

Water Temp. 82° Bottom hole temp. ____
Water Quality test or comments: Iron .5 PH 7.5
Grams 7 Depth first Water Encountered 59'

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
12	0	10	sandy soil		
"	10	96	tan clay		
"	96	105	blue clay		
8	105	134	blue clay		
"	134	140	tan clay		
"	140	195	pea gravel & clay		
"	195	360	tan clay sand & clay		
"	360	367	loose sand & clay like pea gravel		
"	367	505	Fine & coarse sand		
"	505	540	larger pea gravel		
"	540	590	pea gravel w/ large sand quartz		
"	590	595	quartz sand	X	
"	595	605	Finer tan sand		
"	605	620	quartz sand	X	
"	620	640	Finer sand	X	
"	640	645	quartz sand	X	
"	645	655	quartz sand & some pea gravel	X	
"	655	660	gravel & quartz sand	X	
"	660	670	big sand		
"	670	680	big sand	X	
"	680	685	big sand		
"	685	690	big sand	X	
"	690	730	big sand	X	
"	730	740	big sand	X	

Due to heaving sand - a mixture of sand & cement was placed from 730' to 716'

RECEIVED
MAR 19 2004
WATER RESOURCES (Measurable)
WESTERN REGION

Completed Depth 730' Completed
Date: Started 01-26-04 Completed 02-27-04

14. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.
Company Name Adamson Pump & Drill Rig No. 457
Principal Driller Dave Adamson Date 3-15-04
and
Driller or Operator II Dave Adamson Date 3-15-04
Operator I ____ Date ____
Principal Driller and Rig Operator *Required.*
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Well ID No. _____
Inspected by _____
Twp _____ Rge _____ Sec _____
_____ 1/4 _____ 1/4 _____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. 0 0030892 pg 2
DRILLING PERMIT NO. _____
Water Right or Injection Well No. _____

2. OWNER:
Name Spring Valley Development LLC
Address 7485 E. Riverside Dr
City Eagle State Id Zip 83616

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 5 North X or South ☐
Rge. 1 East ☐ or West X
Sec. 13 ____ 1/4 SE 1/4 NW 1/4
Gov't Lot _____ County Ada
Lat: : : Long: :
Address of Well Site 1 mile SW of Willow Creek Rd
Big Gulch City Eagle
Lt: _____ Blk. _____ Sub. Name _____

4. USE:
☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection X Other test

5. TYPE OF WORK check all that apply (Replacement etc.)
X New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD:
X Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method

Was drive shoe used? ☐Y ☐N Shoe Depth(s) _____
Was drive shoe seal tested? ☐Y ☐N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____
Packer ☐Y ☐N Type _____

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method STAR PERF. 4 ROWS @ JOINT 90 DEGREES
Screen Type & Method of Installation PER ROW (360)

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
640	660	1/4	360	8"	.250 WALL	X	☐
660	680	1/4	360	8"	CASING	X	☐
680	700	1/4	360	8"	"	X	☐
700	720	1/4	360	8"	"	X	

Filter Material	From	To	Weight / Volume	Placement Method
720 - 730				

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
_____ ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: _____

12. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encounter _____

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N

Completed Depth _____ (Measurable)
Date: Started _____ Completed _____

14. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.
Company Name Adamson Pump & Drilling Firm No. 457
Principal Driller Dave Adamson Date 3-15-04
and
Driller or Operator II Dave Adamson Date 3-15-04
Operator I _____ Date _____
Principal Driller and Rig Operator *Required*.
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No. 815597
Inspected by
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0031493
DRILLING PERMIT NO. 815597
Water Right or Injection Well No.

2. OWNER:
Name SUNCOR
Address 485 EAST RIVERSIDE DR SUITE 300
City EAGLE ID State ID Zip 83616

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 05 North ☒ or South ☐
Rge. 01 East ☒ or West ☐
Sec. 8 SW 1/4 (10 acres) SW 1/4 (40 acres) ____ 1/4 (160 acres)
Gov't Lot ____ County ADA
Lat: : : Long: : :
Address of Well Site 1/2 MILE NE OF WILLOW CREEK RD City EAGLE
(Give cross road name of road & Distance to Road or Landmark)
Lt: ____ Blk. ____ Sub. Name ____

4. USE:
☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other TEST WELL

5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other ____

6. DRILL METHOD:
☐ Air Rotary ☐ Cable ☒ Mud Rotary ☐ Other ____

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
30% B. GROUT	1	500	4000 LB	PRESSURE GROUTED
20% B. GROUT	1000	770	1470 LB	PRESSURE GROUTED

Was drive shoe used? ☒Y ☐N Shoe Depth(s) ____
Was drive shoe seal tested? ☐Y ☒N How? ____
GRAVEL 3/8 FROM 770 TO 6606

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
8"	+2	600	.250	STEEL	☒	☐	☐	☐
6"	630	600	.250	STEEL	☐	☒	☒	☐
					☐	☐	☐	☐

Length of Headpipe 25 FT Length of Tailpipe 0
Packer ☒Y ☐N Type ____

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method ____
Screen Type & Method of Installation STAINLESS STEEL

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
640	680	.40	—	6"	STAINLESS	☐	☐
600	580	.30	—	6"	STAINLESS	☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method
NONE				

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
485 ft. below ground Artesian pressure ____ lb.
Depth flow encountered ____ ft. Describe access port or control devices: ____
well cap

12. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
AIR 50 GPM	—	—	—

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: ____
Depth first Water Encounter ____

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Sore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
12	1	15	TOP SOIL & SAND		
	15	35	SANDY CLAY		
	35	360	COARSE SAND		
	360	380	COARSE SAND & CLAY		
	380	480	COARSE SAND & CLAY MIX		
	480	490	COARSE SAND & CLAY MIX		
	490	505	TAN CLAY		
	505	520	SAND & CLAY MIX		
	520	530	SAND		
	530	560	SAND & CLAY		
	560	590	MORE SAND LESS CLAY COARSE		
	590	620	CLAY TAN & WHITE		
	620	632	CLAY W/ SAND STREAKS		
	632	640	SHORT SAND STREAKS IN CLAY		
	640	660	TAN CLAY		
	660	670	TAN CLAY		
	670	680	SOFT WHITISH CLAY		
	680	687	WHITISH CLAY & BLUE CLAY - SAND		
	687	690	HARD CLAY BLUISH		
	690	715	BLUE CLAY - COARSE SAND		
	715	740	BLUE CLAY HARD & SOFT		
	740	760	BLUE CLAY		
	760	800	BLUE CLAY		
	800	825	BLUE CLAY SHORT SOFT SPOTS		
	825	835	BLUE CLAY		
	835	860	BLUE & WHITE CLAY		
	860	880	BLUE CLAY W/ COARSE SAND		
	880	920	SOFT BLUE CLAY		
	920	940	BLUE CLAY		
	940	980	BLUE CLAY		
	980	1005	BLUE CLAY		

Completed Depth 770 (Measurable)
Date: Started 6-7-04 Completed 7-29-04

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WESTERN REGION

14. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.
Company Name ADAMSON PUMP & DRILLING Firm No. 457
Principal Driller Dave Adamson Date 7-30-04
and
Driller or Operator II Dave Adamson Date 7-30-04
Operator I ____ Date ____
Principal Driller and Rig Operator *Required*.
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

SECOND SVR-10 WELL

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

WELL OWNER
Name Bob Herman
Address P.O. Box 7227 Boise
Drilling Permit No. 63-93-W-0705
Water Right Permit No. _____

NATURE OF WORK
☒ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase ☐ Modification
☐ Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.)

PROPOSED USE
☒ Domestic ☐ Irrigation ☐ Monitor
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

METHOD DRILLED
☒ Rotary ☒ Air ☐ Auger ☐ Reverse rotary
☐ Cable ☐ Mud ☐ Other _____ (backhoe, hydraulic, etc.)

WELL CONSTRUCTION
Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	10 inches	+ 1 feet	28 feet
.250 inches	6 inches	+ 2 feet	34 feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☐ Yes ☐ No
Perforated? No ☐ Yes ☐ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation? _____ inches by _____ inches

Number		From	To
_____	perforations	_____ feet	_____ feet
_____	perforations	_____ feet	_____ feet
_____	perforations	_____ feet	_____ feet

Well screen installed? ☐ Yes ☒ No
Manufacturer _____ Type _____
Top Packer or Headpipe _____
Bottom of Tailpipe _____
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Gravel packed? ☐ Yes ☐ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet
Surface seal depth 25 Material used in seal: ☒ Cement grout
☐ Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit
☐ Temp. surface casing ☒ Overbore to seal depth
Method of joining casing: ☐ Threaded ☐ Welded
☐ Solvent Weld ☐ Cemented between strata
Describe access port Sani Seal

7. WATER LEVEL
Static water level 6 feet below land surface.
Flowing? ☐ Yes ☐ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature 54 °F. Quality good
Describe artesian or temperature zones below.

8. WELL TEST DATA
☐ Pump ☐ Bailer ☒ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
190	180	4

9. LITHOLOGIC LOG

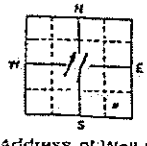
Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
14	0	25	Brown Clay		X
8	25	50	Brown Clay		X
8	50	65	Granite, Soft		X
8	65	75	Granite, Soft		X
8	75	100	Red & White Clay		X
8	100	105	White Clay		X
8	105	220	Basalt Type	X	
8	220	230	Granite		X
			Water RS-153		
			215-22		

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10.
Work started 8-15-93 finished 9-7-93

11. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.
Firm Name Frank Shelly Firm No. 326
Address 900 N 14th Payette Date _____
Signed by Drilling Supervisor _____
and
(Operator) _____ (if different than the Drilling Supervisor)

LOCATION OF WELL
Sketch map location must agree with written location.



Subdivision Name _____
Lot No. _____ Block No. _____
County _____
Address of Well Site SMI north end
(give at least name of road)
¼ SE ¼ Sec. 11, T. 8 ☐ N ☒ or S ☐
R. 1 ☐ E ☒ or W ☐

Appendix F
Additional Water Chemistry Data

Analytical Laboratories, Inc.
1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515
http://www.analyticallaboratories.com

Laboratory Analysis Report

Sample Number: 0418190

Attn: TERRY SCANLAN, P.E.,
S P F WATER ENGINEERING, LLC
600 E RIVER PARK LN STE 105
BOISE, ID 83706

Collected By: T SCANLAN
Submitted By: T SCANLAN

Source of Sample:
WADE LYNN WELL

Time of Collection: 14:15
Date of Collection: 6/7/2004
Date Received: 6/7/2004
Report Date: 6/21/2004

PWS:

FIELD TEMP=30.5 C FIELD EC = 278 US FIELD SC = 254 US

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Arsenic Furnace		<0.005	mg/L	0.005	SM 3113 B	6/19/2004	DMB
Calcium, Ca		17.2	mg/L	0.10	EPA 200.7	6/11/2004	JH
Iron, Fe		0.08	mg/L	0.05	EPA 200.7	6/11/2004	JH
Magnesium, Mg		2.84	mg/L	0.10	EPA 200.7	6/11/2004	JH
Manganese, Mn		0.19	mg/L	0.05	EPA 200.7	6/11/2004	JH
Potassium, K		2.0	mg/L	0.5	EPA 200.7	6/11/2004	JH
Silica		37.4	mg/L	0.25	EPA 200.7	6/14/2004	JH
Sodium, Na		30.3	mg/L	0.10	EPA 200.7	6/11/2004	JH
Nitrate (as N)		<0.2	mg/L	0.2	EPA 300.0	6/8/2004	WW
Ammonia Direct (as N)		0.58	mg/L	0.04	EPA 350.1	6/11/2004	WW
Bicarbonate		124	mg/L		SM 2320	6/11/2004	ARR
Chloride, Cl		3	mg/L	1	EPA 300.0	6/11/2004	WW
Fluoride, F		0.30	mg/L	0.10	EPA 300.0	6/10/2004	WW
Hardness		55.4	mg/L	5.0	SM 2340	6/11/2004	ARR
pH		7.3	S.U.		EPA 150.1	6/8/2004	ARR
Sulfate, SO4		1	mg/L	1	EPA 300.0	6/11/2004	WW
Total Dissolved Solids		154	mg/L	25	EPA 160.1	6/10/2004	DLR

Michael D. Moore

Thank you for choosing Analytical Laboratories for your testing needs.

If you have any questions about this report, or any future analytical needs, please contact: Michael Moore

MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated

Analytical Laboratories, Inc.
1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515
http://www.analyticallaboratories.com

Laboratory Analysis Report

Sample Number: 0418188

Attn: TERRY SCANLAN, P.E.,P.G.
S P F WATER ENGINEERING, LLC
600 E RIVER PARK LN STE 105
BOISE, ID 83706

Collected By: T SCANLAN
Submitted By: T SCANLAN

Source of Sample:
CORBETT LYNN WELL

Time of Collection: 12:20
Date of Collection: 6/7/2004
Date Received: 6/7/2004
Report Date: 6/21/2004

PWS:

FIELD TEMP=29.8 C FIELD EC = 270 US FIELD SC = 248 US

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Arsenic Furnace		0.027	mg/L	0.005	SM 3113 B	6/19/2004	DMB
Calcium, Ca		20.9	mg/L	0.10	EPA 200.7	6/11/2004	JH
Iron, Fe		0.05	mg/L	0.05	EPA 200.7	6/11/2004	JH
Magnesium, Mg		0.24	mg/L	0.10	EPA 200.7	6/11/2004	JH
Manganese, Mn		<0.05	mg/L	0.05	EPA 200.7	6/11/2004	JH
Potassium, K		1.3	mg/L	0.5	EPA 200.7	6/11/2004	JH
Silica		40.3	mg/L	0.25	EPA 200.7	6/14/2004	JH
Sodium, Na		27.8	mg/L	0.10	EPA 200.7	6/11/2004	JH
Nitrate (as N)		<0.2	mg/L	0.2	EPA 300.0	6/8/2004	WW
Ammonia Direct (as N)		0.05	mg/L	0.04	EPA 350.1	6/11/2004	WW
Bicarbonate		77.2	mg/L		SM 2320	6/11/2004	ARR
Chloride, Cl		4	mg/L	1	EPA 300.0	6/11/2004	WW
Fluoride, F		1.71	mg/L	0.10	EPA 300.0	6/10/2004	WW
Hardness		54.4	mg/L	5.0	SM 2340	6/11/2004	ARR
pH		7.6	S.U.		EPA 150.1	6/8/2004	ARR
Sulfate, SO4		29	mg/L	1	EPA 300.0	6/11/2004	WW
Total Dissolved Solids		120	mg/L	25	EPA 160.1	6/10/2004	DLR

Michael O. Moore

Thank you for choosing Analytical Laboratories for your testing needs.

If you have any questions about this report, or any future analytical needs, please contact: Michael Moore

MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated

Analytical Laboratories, Inc.
1804 N. 33rd Street
Boise, Idaho 83703
Phone (208) 342-5515
http://www.analyticallaboratories.com

Laboratory Analysis Report

Sample Number: 0418189

Attn: TERRY SCANLAN, P.E.,
S P F WATER ENGINEERING, LLC
600 E RIVER PARK LN STE 105
BOISE, ID 83706

Collected By: T SCANLAN
Submitted By: T SCANLAN

Source of Sample:
LYNN OLD IRRIGATION WELL

Time of Collection: 12:50
Date of Collection: 6/7/2004
Date Received: 6/7/2004
Report Date: 6/21/2004

PWS:

FIELD TEMP=27.9 C FIELD EC = 296 US FIELD SC = 280 US

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Arsenic Furnace		0.014	mg/L	0.005	SM 3113 B	6/19/2004	DMB
Calcium, Ca		17.1	mg/L	0.10	EPA 200.7	6/11/2004	JH
Iron, Fe		<0.05	mg/L	0.05	EPA 200.7	6/11/2004	JH
Magnesium, Mg		0.45	mg/L	0.10	EPA 200.7	6/11/2004	JH
Manganese, Mn		<0.05	mg/L	0.05	EPA 200.7	6/11/2004	JH
Potassium, K		1.0	mg/L	0.5	EPA 200.7	6/11/2004	JH
Silica		36.4	mg/L	0.25	EPA 200.7	6/14/2004	JH
Sodium, Na		40.9	mg/L	0.10	EPA 200.7	6/11/2004	JH
Nitrate (as N)		1.3	mg/L	0.2	EPA 300.0	6/8/2004	WW
Ammonia Direct (as N)		<0.04	mg/L	0.04	EPA 350.1	6/11/2004	WW
Bicarbonate		94.1	mg/L		SM 2320	6/11/2004	ARR
Chloride, Cl		6	mg/L	1	EPA 300.0	6/11/2004	WW
Fluoride, F MCL exceeded.		4.09	mg/L	0.10	EPA 300.0	6/10/2004	WW
Hardness		45.6	mg/L	5.0	SM 2340	6/11/2004	ARR
pH		7.9	S.U.		EPA 150.1	6/8/2004	ARR
Sulfate, SO4		19	mg/L	1	EPA 300.0	6/11/2004	WW
Total Dissolved Solids		154	mg/L	25	EPA 160.1	6/10/2004	DLR

Michael D. Moore

Thank you for choosing Analytical Laboratories for your testing needs.

If you have any questions about this report, or any future analytical needs, please contact: Michael Moore

MCL = Maximum Contamination Level
MDL = Method/Minimum Detection Limit
UR = Unregulated

ANALYTICAL LABORATORIES, INC.
1804 N. 33rd Street
Boise, Idaho 83703
Phone # (208) 342-5515

LABORATORY ANALYSIS REPORT
SAMPLE NUMBER - 6549

Attn. TERRY SCANLAN

SCANLAN ENGINEERING
600 EAST RIVER PARK LANE
SUITE 105
BOISE, ID 83706

Time of Collection: 12:00
Date of Collection: 02/14/03

Date Received: 02/14/03
Date Reported: 02/26/03

Collected by: C FEAST

Submitted by: C FEAST

Source of Sample: PROJECT NAME:SPRING VALLEY RANCH LITTLE GULCH 1

Test Requested	FRDS #	MCL	Analysis Result	Unit	MDL	Method	Date Completed	Analyst Initials
ANTIMONY FURNACE			<0.005	mg/L	0.005	EPA 200.9	02/24/03	DMB
ARSENIC FURNACE			0.006	mg/L	0.003	EPA 200.9	02/21/03	DMB
BARIUM			<0.05	mg/L	0.05	EPA 200.7	02/18/03	JH
BERYLLIUM FURNACE			<0.0005	mg/L	0.0005	EPA 200.9	02/18/03	DMB
CALCIUM			23.9	mg/L	0.10	EPA 200.7	02/19/03	JH
CHROMIUM FURNACE			0.004	mg/L	0.002	EPA 200.9	02/26/03	DMB
IRON			<0.05	mg/L	0.05	EPA 200.7	02/21/03	JH
MAGNESIUM			6.55	mg/L	0.10	EPA 200.7	02/19/03	JH
MANGANESE			<0.05	mg/L	0.05	EPA 200.7	02/21/03	JH
MERCURY			<0.0002	mg/L	0.0002	EPA 245.1	02/20/03	KLZ
NICKEL			<0.02	mg/L	0.02	EPA 200.7	02/19/03	JH
POTASSIUM			1.7	mg/L	0.5	EPA 200.7	02/19/03	JH
SODIUM			21.2	mg/L	0.10	EPA 200.7	02/19/03	JH
THALLIUM FURNACE			<0.002	mg/L	0.002	EPA 200.9	02/18/03	DMB
AMMONIA DIRECT			<0.04	mg/L	0.04	EPA 350.1	02/18/03	GMM
NITRATE N			0.59	mg/L	0.20	EPA 300.0	02/14/03	GMM
NITRITE N			<0.01	mg/L	0.01	SM 4500NO2-B	02/14/03	CSC
SULFIDE			<0.05	mg/L	0.05	SM 4500 D	02/17/03	JR
BICARBONATE			104	mg/L		SM 2320	02/20/03	GMM
CHLORIDE			6	mg/L	1	EPA 300.0	02/18/03	GMM
FLUORIDE DIRECT			0.59	mg/L	0.10	EPA 300.0	02/21/03	GMM
HARDNESS			89.7	mg/L	5.0	SM 2340	02/20/03	GMM
SULFATE			21	mg/L	1.0	EPA 300.0	02/18/03	GMM
TOTAL DISSOLVED SOLIDS			192	mg/L	25	EPA 160.1	02/18/03	RG

Michael D. Moore

THANK YOU FOR CHOOSING ANALYTICAL LABORATORIES, INC. FOR YOUR TESTING NEEDS.

PLEASE CONTACT MICHAEL MOORE IF YOU HAVE ANY QUESTIONS REGARDING THIS REPORT OR ANY FUTURE ANALYTICAL NEEDS.