

Baker City
Year 2005
Aquifer Storage and Recovery
Pilot Test Results - Limited License #009
April 2006
Prepared for Oregon Water Resources Department



Prepared by



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In association with



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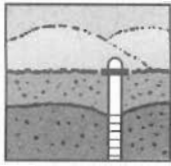
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Oregon Water Resources Department

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Summary

This report presents documentation of work completed during 2005 and early 2006 associated with the aquifer storage and recovery (ASR) pilot testing performed at the Baker City (City) ASR well (Reservoir Well). A summary of the results of ASR testing activities conducted in accordance with the approved *Aquifer Storage and Recovery Limited License Application and Pilot Test Work Plan* (ASR Work Plan) (GSI and Anderson Perry, 2003b) include the following:

- Two ASR tests were conducted during 2005/2006: Cycle 1 and Cycle 2.
- Cycle 1 – Short 2-day test to assess equipment performance and to assess initial water quality compatibility.
- Cycle 2 – Full-scale ASR test lasting 265 days:
 - Volume Injected – 160,500,000 gallons of mountain line water
 - Average Injection Rate – 800 gallons per minute (gpm)
 - Volume Recovered (pumped) – 122,200,000 gallons
 - Average Recovery Rate (pumping rate) – 1,178 gpm
 - Maximum recovery rate – 1,500 gpm
 - Water levels were monitored in the Reservoir Well and three observation wells to assess aquifer response to injection and pumping.
 - Periodically looked for springs and seeps in the area (none was found).
 - Source water turbidity was monitored continuously to ensure that turbid water did not enter the well. Reservoir Well performance was monitored to determine if clogging was a concern.
 - Samples of source water (mountain line) and stored water were collected periodically during the testing to assess water quality changes, compatibility, and compliance with water quality standards.
- Overall, the City's ASR system performed well and provided the City with more than 66 days of production, including 18 days of pumping at more than 1,500 gpm (2.2 million gallons per day [mgd]) from the Reservoir Well during high water demand periods in the summer and fall of 2005.
- ASR reduced the City's reliance on the watershed during the summer and fall and increased the amount of water available for other water users in the watershed.
- To our knowledge, there were no adverse impacts and no complaints were filed by senior or junior water rights holders during 2005. Additionally, there have been several positive articles written about the project in the local newspaper (see Appendix A).
- In our opinion, the testing results represent what we would expect to occur if the Reservoir Well were operated in a similar manner in the future. The ASR system

should be capable of storing up to 200 million gallons in the aquifer without adverse impacts to other groundwater users or surface water users in the watershed.

- Recovered water taste, odor, and color were significantly better than native groundwater. Recovered water quality met all drinking water standards.
- ASR provides the City with a reliable backup water source.
- ASR operation during 2006 should occur in the same manner as in 2005, except with a shorter storage period. Source water turbidity and Reservoir Well performance should be monitored on a regular basis to ensure that clogging does not occur. The well should be back flushed periodically (stop injection and turn on pump) if turbidity events occur or if injection efficiency drops off.

Based on the performance of the City's ASR system during 2005/2006, we recommend that the City apply for an ASR permit during 2006. The permit should allow for periodic injection throughout the year (up to 200 million gallons total) when water is available in the watershed to maintain high water levels in the Reservoir Well at all times. This will allow the well to maintain production at the higher rate (1,500 gpm) for an extended period of time, should it be needed for an emergency.

ASR Cycle 1 (February 1 and 2, 2005)

As outlined in the ASR Work Plan (GSI and Anderson Perry, 2003b), the City conducted a short-term ASR cycle test to verify the operation of all equipment and to provide assurance that source water and groundwater were compatible before long-term ASR testing was initiated. Beginning at approximately 10 a.m. on February 1, 2005, 399,661 gallons of water from the City's Mountain Line surface water source were injected at a rate of 827 gpm during an 8-hour period. The water was stored in the aquifer for approximately 13 hours and was fully recovered (recovery volume = 407,083 gallons) at an average rate of 1,784 gpm during a 4-hour period. See Table 1 for a summary of injection and recovery rates and volumes. Groundwater level response to ASR was monitored at the following monitoring wells: Reservoir Well, Ellingson Well, Paul Hill Well, and Briggs Well (see Figure 1). Monitoring was not conducted at the Golf Course Well because of access limitations (see *City of Baker City – Year 2005 ASR Activities* [GSI, 2005]).

Table 1 – Summary of ASR Cycle Testing During 2005 (Cycle 1 and Cycle 2)

Cycle Number	Start/ End of Injection	Start/End of Storage	Start/End of Recovery	ASR Volume Injected	ASR Volume Recovered	ASR Account Carryover ¹ to Next Year
Cycle 1	1-Feb-05	1-Feb-05	2-Feb-05	399,661	407,083	NA
	10 a.m.	6 p.m.	7 a.m.	Gallons	Gallons	
	1-Feb-05	2-Feb-05	2-Feb-05	Avg. Rate	Avg. Rate	
	6 p.m.	7 a.m.	11 a.m.	827 gpm	1,784 gpm	
Cycle 2	4-Feb-05	30-June-05	22-Aug-05	160.5 MG	122.2 MG	30.3 MG
	30-June-05	22-Aug-05	27-Oct-05	Avg. Rate	Avg. Rate	
				800 gpm	1,178 gpm	
Totals				160.9 MG	122.6 MG	30.3 MG

Note: MG = million gallons

¹Carryover volume is the water volume injected multiplied by 0.95 minus the volume recovered per condition 11 (A) in ASR Limited License #009.

Changes in groundwater elevation measured during Cycle 1 are presented in Figure 2. The Static water level elevation before ASR testing was 3,457 feet mean sea level (ft msl). Maximum groundwater elevation at the Reservoir Well during injection was 3,478 ft msl, which represents a total increase in groundwater level during the injection cycle of approximately 21 feet. As we commonly see during ASR testing, groundwater levels declined during the storage period as a result of the aquifer re-establishing a new equilibrium after injection. This resulted in a groundwater elevation of 3,460 ft msl at the end of the storage period. During the recovery (pumping) period, maximum drawdown in the Reservoir Well was 64 feet with a final pumping level elevation of 3,396 ft msl. After pumping ceased, groundwater levels fully recovered to the pre-ASR testing static water elevation of 3,457 ft msl within approximately 2,700 minutes (1.9 days) after the end of pumping. Groundwater level response during Cycle 1 was monitored at the Ellingson, Briggs, and Paul Hill wells, but little response was noted in the wells (see Figure 2). Based on observations during Cycle 2 testing, it appears that the Ellingson and Briggs wells respond to ASR activities at the City's well, but Cycle 1 was not long enough to result in a substantial groundwater level change at the wells. Aquifer response to ASR at the Paul Hill Well is not readily observable during Cycle 1 or Cycle 2. The Paul Hill Well is completed in alluvium and not the same aquifer as the other wells.

Water quality results for source water and groundwater are presented in Table 2 (presented at the end of this report). Laboratory reports are in Appendix B. No exceedances of water quality standards were noted during any phase of ASR testing. Based on the lack of significant changes in general water chemistry at the end of the recovery period, it does not appear that any precipitation reactions or any significant chemical interactions occurred during Cycle 1. Figure 3 illustrates the difference in specific conductance between the source water and native groundwater, and shows a mixing trend between source water at the beginning of the recovery period compared to native groundwater at the end of recovery. This demonstrates that injected water quality did not change significantly during the 13-hour storage period and that the recovered water was a mixture of the source water and native groundwater, becoming more similar to native groundwater as the recovery progressed. This mixing commonly occurs in heterogeneous basalt/volcanic aquifers.

ASR Cycle 2 (February 4 to October 27, 2005)

Following Cycle 1, a lengthy ASR cycle test was initiated to evaluate the aquifer's response during a longer testing period and at larger injection and recovery water volumes. Injection was initiated on February 4, 2005, and continued until June 20, 2005. During this period, 160.6 million gallons were injected at an average rate of 800 gpm. The water was stored in the aquifer from June 30 to August 22, 2005. Recovery initially began August 1, 2005, but a malfunction with the pump motor required pumping to stop on August 2, 2005, after only 2.3 million gallons were recovered. Recovery was reinitiated after the motor was replaced on August 22, 2005, and the well was pumped at an average rate of approximately 1,500 gpm until September 9, 2005. As a result of higher than expected drawdown at the well, the pumping rate was reduced to an average of 1,020 gpm from September 9, 2005, until January 22, 2006, for a total recovery volume of 122.2 million gallons. See Table 1 for a summary of injection and recovery rates and volumes. The total volume recovered represents 76 percent of the injected volume. As required by the ASR Limited License #009, the volume of water to be carried over to 2006 was calculated by reducing the volume of

water injected by 5 percent and subtracting the volume of water recovered for a total of 30.3 million gallons, which will be available for recovery in 2006/2007.

These results show that ASR has significantly improved the pumping capacity of the Reservoir Well. Before ASR activities, the Reservoir Well could produce only approximately 800 gpm after 2 to 3 weeks of pumping. With ASR, the well can sustain an average pumping rate of approximately 1,200 gpm (1.7 mgd) for at least 10 weeks. If the storage period is reduced from the 53 days that occurred during this test, the well should be capable of sustaining rates as high as 1,500 gpm for extended periods of time.

Changes in groundwater elevation at the Reservoir Well during Cycle 2 are presented in Figure 4. Static water level elevation before injection was 3,456 ft msl. During injection from February 4 to June 30, 2005, groundwater levels in the Reservoir Well increased a total of 155 feet to a final groundwater elevation of 3,611 ft msl at the end of injection. Changes in water level at the nearest observation wells show that the water level in the aquifer rose approximately 100 feet during the injection period. It should be noted that injection was stopped two times, from May 6 to May 12, 2005, and from May 22 to May 23, 2005, as a precaution because of elevated turbidity in the source water as a result of precipitation events in the watershed. Groundwater levels declined during the storage period from June 30 to August 22, 2005, as a result of aquifer re-equilibration to the injection stress.

Pumping stopped on August 2, 2005, because of a pump motor malfunction and did not start again until August 22, 2005, extending the storage period to a total of 53 days. At the end of the storage period on August 22, 2005, the groundwater elevation was at 3,488 ft msl, representing 32 feet of residual head above the pre-injection static water level ($3,488 \text{ ft} - 3,456 \text{ ft} = 32 \text{ ft}$). Maximum drawdown observed in the Reservoir Well during the recovery period was 241 feet and the final groundwater elevation was 3,247 ft msl on October 27, 2005, at the end of pumping.

Following the end of pumping, groundwater levels in the aquifer recovered to approximately 3,432 ft msl after 82 days (119 days after injection ended), which is approximately 24 feet lower than the pre-injection static water elevation. As shown on Figure 4, water levels would have likely recovered to at or above the pre-injection static water levels had the City not needed to pump the well to perform maintenance on its reservoir. In addition, Cycle 3 injection started on January 27, 2006, making it impossible to observe full recovery of the aquifer. Based on the recovery trend, it appears that given sufficient time (estimated additional 1.5 months), groundwater levels in the aquifer would have recovered to at or above the pre-injection static water level.

Monitoring Well Discussion

Figure 1 shows the location of each monitoring well used by the City during ASR cycle testing. Table 3 indicates maximum water level changes observed at the monitoring wells during Cycle 2.

Table 3 - Water Level Observations at ASR Monitoring Wells

Well ID	Distance From Reservoir Well	Static Water Level (SWL) 2005	Maximum Drawup above SWL Year 2005	Maximum Drawdown below SWL Year 2005
Ellingson Well (BAKE 1780)	1,400 feet	3,466 ft msl	103 feet	113 feet
Briggs Well (BAKE 1145)	870 feet	3,487 feet msl	78 feet	47 feet
Paul Hill Well (BAKE 1136)	3,300 feet	3,419 feet msl	NC	NC

NC = no significant change

msl = mean sea level

SWL = static water level

Drawup = water level rise above static level

Drawdown = water level decline below static level

The following discussion relates to changes in groundwater elevation at the three monitoring wells used during Cycle 2, as shown in Figure 4. Please note, the Golf Course Well (BAKE 1153) discussed in the ASR Work Plan (GSI and Anderson Perry, 2003b) could not be modified for monitoring and is not accessible because the vault is a confined space. For these reasons, the Golf Course Well was not monitored in 2005 and no longer will be included in the monitoring program (see GSI, 2005). During Cycle 2, groundwater elevation at Ellingson and Briggs wells changed in a manner consistent with observations at the Reservoir Well. The observed drawup and drawdown in Ellingson and Briggs wells associated with ASR testing did not cause any adverse impacts to the normal operation of these wells. In fact, it appears that higher pumping levels probably reduced pumping costs at the two wells.

Groundwater elevation changes at the Paul Hill Well during Cycle 2 could not be distinguished. Based on well log information, this well is completed in a different aquifer (alluvium rather than volcanic) that is not well connected to the ASR host aquifer.

ASR Cycle 2 Water Quality Analysis

Seven water samples were collected for water quality analysis during Cycle 2; three during injection, two during the storage period, and two during the recovery period. Table 4 (presented at the end of this report) shows native groundwater quality results from sampling done for the *Baker City Aquifer Storage and Recovery (ASR) Feasibility Report* (GSI and Perry Anderson, 2003a) and the results of water quality analysis for all samples collected during Cycle 2. No exceedances of water quality standards were noted in any samples collected during Cycle 2 testing. Radon concentrations measured before ASR testing and during recovery (samples C2R-1 and C2R-2) were noted above the proposed U.S. Environmental Protection Agency (EPA) maximum contaminant limit of 300 pCi/L. The proposed regulatory standard for radon in drinking water has been under consideration by the EPA for several years, but has not been enacted. This is a controversial standard and it is not known when or if this maximum contaminant level actually will be promulgated. Radon occurs naturally in the volcanic rocks of the aquifer and it easily diffuses into groundwater. It should be noted that water from the Reservoir Well is stored temporarily in a vented 4.5-

million-gallon reservoir before being distributed to customers. Aeration that occurs in the reservoir, along with mixing with mountain line water that contains no radon, likely reduces radon concentrations below the proposed EPA standard.

Laboratory reports for all analyzed samples collected during Cycle 2 are presented in Appendix B. Several field-acquired water quality parameters (temperature, specific conductance, pH, and oxidation reduction potential [ORP]) were measured an additional 27 times by Baker City staff members during Cycle 2. Results of additional field parameter measurements can be found in Table 5 (presented at the end of this report). A time series plot for specific conductance measured during injection and recovery is presented in Figure 5. While there is some variability in the source water specific conductance, this plot demonstrates the same mixing trend observed during Cycle 1. This indicates that little if any water chemistry changes occurred during Cycle 2 and only mixing between the source water and the native groundwater was evident. Overall, the quality of the water produced during recovery was excellent. There were no customer complaints, and informal taste testing performed by the City indicated that the taste of the recovered water throughout the test period was good. This is a significant improvement compared to periods in the past when City residents would complain about taste, odor, and color after only 2 weeks of pumping the well.

Year 2006 (ASR Cycle 3) Monitoring and Operation

The City began its third ASR cycle at the Reservoir Well on January 27, 2006. Rick Lusk, Oregon Water Resources Department (OWRD) Water Master, was notified at least 15 days before initiating ASR startup. The City plans to continue injection until June 30, 2006.

The City is targeting 175 million gallons of stored water for Cycle 3 during an approximate 150-day injection period. The City may elect to inject up to 200 million gallons until June 30, 2005, if there is an adequate volume of water available for ASR. Recovery is expected to begin in July and will continue through the fall until 95 percent of the stored water volume and carryover water volume from 2005 has been recovered. The City may continue pumping under its existing groundwater certificate (51748) after 95 percent of the stored ASR water is recovered, if water demand exceeds the supply from the Mountain Line.

Monitoring wells listed in the ASR Work Plan (GSI and Anderson Perry, 2003b) will be monitored during cycle testing in 2006, except for the Golf Course Well (BAKE 1153). As previously mentioned, the Golf Course Well could not be modified for monitoring and no longer will be included in the monitoring program. Water levels will be monitored at the Paul Hill Well (BAKE 1136), Ellingson Well (BAKE 1780), and Briggs Well (BAKE 1145) in accordance with the approved work plan. The Reservoir Well and Ellingson Well will be monitored with a pressure transducer and data logger. The Paul Hill and Briggs wells will be monitored with a manual water level meter on a weekly basis.

Water quality samples will be collected as indicated in Table 6 (presented at the end of this report), consistent with the sampling schedule presented in the approved ASR Work Plan (GSI and Anderson Perry, 2003b). All results of water quality analysis and water level monitoring will be presented in the 2006 ASR Report to be completed in February 2007.

ASR Permit Application

It is anticipated that the City will apply for an ASR permit during 2006 and will be preparing the permit application in the coming months. This report and the previously submitted ASR feasibility study report (GSI and Anderson Perry, 2003a) will provide the technical basis of the permit application. In our opinion, the testing results represent what we would expect to occur if the Reservoir well is operated in a similar manner in the future under an ASR permit. Based on the testing results, the ASR system should be capable of storing up to 200 million gallons in the aquifer without adverse impacts to other groundwater users and surface water users in the watershed. The ASR permit should allow for periodic injection throughout the year (up to 200 million gallons total) when water is available in the watershed to maintain high water levels in the Reservoir Well at all times. This will allow the well to maintain production at the higher rate (1,500 gpm) for an extended period of time, should it be needed for an emergency.

References

Groundwater Solutions, Inc. (GSI), and Anderson Perry & Associates. 2003a. *Baker City Aquifer Storage and Recovery (ASR) Feasibility Report*, for the City of Baker City. June 2003

Groundwater Solutions, Inc. (GSI), and Anderson Perry & Associates. 2003b. *Aquifer Storage and Recovery Limited License Application and Pilot Test Work Plan*, for the City of Baker City. September 2003.

Groundwater Solutions, Inc. (GSI). 2005. *City of Baker City – Year 2005 ASR Activities*, for the City of Baker City. April 2005

Tables

Table 2
Water Quality Results - ASR Cycle 1 Test
City of Baker City ASR Program

	Analyte	Lowest Regulatory Standard	Units	Regulatory Criteria	MDL	<div>Native Groundwater</div>	<div>Source Water (Mountain Line) BCRW-C1SW-1</div>	<div>Recovery Sample 1 BCRW-C1R-1</div>	<div>Recovery Sample 2 BCRW-C1R-2</div>	<div>Recovery Sample 3 BCRW-C1R-3</div>
					Date	7-Jan-05	1-Feb-05 17:00	2-Feb-05 7:20	2-Feb-05 9:05	2-Feb-05 10:00
Field Parameters	Temperature	None	Celsius	None	NA	16.6	2.9	6.6	10.5	12.9
	Conductivity	None	µS/cm	None	NA	269	103	103	177	251
	Dissolved Oxygen	None	mg/L	None	NA	1.7	9.7			7.14
	pH	6 - 8.5	Units	SMCL	NA	6.78	6.95	6.95	8.21	8
	Turbidity	1	NTU	MCL, MML	NA		<1			<1
Geochemical	ORP	None	mV	None	NA	-60	612	31	6	60
	Bicarbonate	None	mg/L	None	2	136	28			96
	Calcium	None	mg/L	None	0.1	30.5	16.1			26.3
	Carbonate	None	mg/L	None	2		<1			<1
	Chloride	250	mg/L	SMCL	1	2.99	0.52			2.64
	Hardness (as CaCO3)	250	mg/L	URC	4		40.3			65.8
	Magnesium	None	mg/L	None	0.05	15.5	2.07			12
	Nitrate as N	10	mg/L	MML	0.5		0.07			0.05
	Nitrite as N	1	mg/L	MCL	0.01		<0.02			<0.02
	Total Nitrate-Nitrite	10	mg/L	MML	--		0.07			0.05
	Potassium	None	mg/L	None	0.1	2	<0.5			1.5
	Silica	None	mg/L	None	0.2	29	7			23
	Sodium	20	mg/L	URC (advisory)	0.05	17.1	1.88			11.3
	Sulfate	250	mg/L	URC, SMCL	5	34.7	2.91			20.1
	Total Alkalinity	250	mg/L	SMCL	2	136	28			96
	Total Dissolved Solid	500	mg/L	SMCL	0.7	310	50			130
	Total Organic Carbon	None	mg/L	None	0.5	0.6	0.6			0.6
	Total Suspended Solids	None	mg/L	None	2	<1	<1			<1
Metals	Aluminum	0.05	mg/L	SMCL	0.05		<0.1			<0.1
	Antimony	0.006	mg/L	MCL	0.001		<0.005			<0.005
	Arsenic	0.05	mg/L	MCL, MML	0.002		<0.005			0.007
	Barium	1	mg/L	MCL, MML	0.05		<0.5			<0.5
	Beryllium	0.004	mg/L	MCL	0.0005		<0.0005			<0.0005
	Cadmium	0.005	mg/L	MCL, MML	0.001		<0.0005			<0.0005
	Chromium	0.05	mg/L	MCL, MML	0.002		<0.005			<0.005
	Copper	1.3	mg/L	MCL, MML	0.005		<0.1			<0.1
	Iron (Total)	None	mg/L	None	0.05	0.22	<0.1			<0.1
	Iron (Dissolved)	0.3	mg/L	SMCL	0.05		<0.1			<0.1
	Lead	0.015	mg/L	MCL, MML	0.001		<0.005			<0.005
	Manganese (Total)	None	mg/L	None	0.002		<0.05			<0.05
	Manganese (Dissolved)	0.05	mg/L	SMCL	0.002	0.1	<0.05			<0.05
	Mercury	0.002	mg/L	MCL, MML	0.0004		<0.001			<0.001
	Nickel	0.1	mg/L	MCL	0.004		<0.01			<0.01
	Selenium	0.01	mg/L	MCL, MML	0.002		<0.005			<0.005
	Silver	0.05	mg/L	MML, SMCL	0.005		<0.05			<0.05
	Thallium	0.002	mg/L	MCL	0.0006		<0.002			<0.002
	Zinc	5	mg/L	SMCL	0.01		<0.05			<0.05
Miscellaneous	Odor	3	TON	SMCL	1 ton		ND			ND
	Color	15	ACU	SMCL	5 color units		ND			ND
	Methylene Blue Active Substance	0.5	mg/L	SMCL	0.05		0.025			<0.01
	Corrosivity (Langelier Saturation Index)	Non-Corrosive	mg/L	SMCL	--		-1.87			-1.27
	Cyanide (as free cyanide)	0.2	mg/l	MCL			<0.2			<0.2
	Fluoride	2	mg/L	MCL, MML, SMCL	0.5		0.52			0.22

NOTE Indicates analyte not required during sampling event

mg/L = milligram per liter

MDL = Method Detection Limit

ND = Not detected at concentrations greater than the MDL

NT = Analyte not tested

MCL = Federal maximum contaminant level for drinking water

MML = DEQ's maximum measurable levels for groundwater

URC = State unregulated contaminant

SMCL = Federal secondary maximum contaminant levels for drinking water

UCMR = EPA unregulated contaminant monitoring regulations for drinking water

Samples are unfiltered unless noted (i.e., dissolved)

	Class	Analyte	Lowest Regulatory Standard	Units	Regulatory Criteria	MDL	Native Groundwater	BCRW-C2SW-1 Source Water	BCRW-C2SW-2 Source Water	BCRW-C2SW-3 Source Water	BCRW-C2T-1 Storage	BCRW-C2T-2 Storage	BCRW-C2R-1 Recovery	BCRW-C2R-2 Recovery
Approximate Date							29-Jan-03 10:00	2-Feb-05 10:30	23-Mar-05 10:00	29-Jun-05 10:00	11-Jul-05 09:30	27-Jul-05 11:30	21-Sep-05 11:00	26-Oct-05 11:00
Synthetic Organic Compounds (SOCs) Regulated SOCs		2,4,5-TP (Silvex)	0.01	mg/L	MCL, MML	0.0004	ND	ND		ND		ND	ND	ND
		2,4-D	0.07	mg/L	MCL, MML	0.0002	ND	ND		ND		ND	ND	ND
		Alachlor (Lasso)	0.002	mg/L	MCL	0.0004	ND	ND		ND		ND	ND	ND
		Atrazine	0.003	mg/L	MCL	0.0002	ND	ND		ND		ND	ND	ND
		Benzo(a)Pyrene	0.0002	mg/L	MCL	0.00004	ND	ND		ND		ND	ND	ND
		BHC-gamma (Lindane)	0.0002	mg/L	MCL, MML	0.00002	ND	ND		ND		ND	ND	ND
		Carbofuran	0.04	mg/L	MCL	0.001	ND	ND		ND		ND	ND	ND
		Chlordane	0.002	mg/L	MCL	0.0004	ND	ND		ND		ND	ND	ND
		Dalapon	0.2	mg/L	MCL	0.002	ND	ND		ND		ND	ND	ND
		Di(2-ethylhexyl)adipate (adipates)	0.4	mg/L	MCL	0.001	ND	ND		ND		ND	ND	ND
		Di(2-ethylhexyl)phthalate (phthalates)	0.006	mg/L	MCL	0.001	ND	ND		ND		ND	ND	ND
		Dibromochloropropane (DBCP)	0.0002	mg/L	MCL	0.00002	ND	ND		ND		ND	ND	ND
		Dinoseb	0.007	mg/L	MCL	0.0004	ND	ND		ND		ND	ND	ND
		Diquat	0.02	mg/L	MCL	0.0004	ND	ND		ND		ND	ND	ND
		Ethylene Dibromide (EDB)	0.00005	mg/L	MCL	0.00001	ND	ND		ND		ND	ND	ND
		Endothall	0.1	mg/L	MCL	0.01	ND	ND		ND		ND	ND	ND
		Endrin	0.0002	mg/L	MCL, MML	0.00002	ND	ND		ND		ND	ND	ND
		Glyphosate	0.7	mg/L	MCL	0.01	ND	ND		ND		ND	ND	ND
		Heptachlor	0.0004	mg/L	MCL	0.00004	ND	ND		ND		ND	ND	ND
		Heptachlor Epoxide	0.0002	mg/L	MCL	0.00002	ND	ND		ND		ND	ND	ND
		Hexachlorobenzene (HCB)	0.001	mg/L	MCL	0.0001	ND	ND		ND		ND	ND	ND
		Hexachlorocyclopentadiene	0.05	mg/L	MCL	0.0002	ND	ND		ND		ND	ND	ND
		Methoxychlor	0.04	mg/L	MCL, MML	0.0002	ND	ND		ND		ND	ND	ND
		Polychlorinated Biphenyls (PCBs)	0.0005	mg/L	MCL	0.0002	ND	ND		ND		ND	ND	ND
		Pentachlorophenol	0.001	mg/L	MCL	0.00008	ND	ND		ND		ND	ND	ND
		Picloram	0.5	mg/L	MCL	0.0002	ND	ND		ND		ND	ND	ND
		Simazine	0.004	mg/L	MCL	0.0001	ND	ND		ND		ND	ND	ND
		Toxaphene	0.003	mg/L	MCL, MML	0.001	ND	ND		ND		ND	ND	ND
		Vydate (Oxamyl)	0.2	mg/L	MCL	0.002	ND	ND		ND		ND	ND	ND
Volatile Organic Compounds (VOCs) Regulated VOCs		1,1,1-Trichloroethane	0.2	mg/L	MCL, MML	0.0005	ND	ND		ND		ND	ND	ND
		1,1,2-Trichloroethane	0.005	mg/L	MCL	0.0005	ND	ND		ND		ND	ND	ND
		1,1-Dichloroethylene	0.007	mg/L	MCL, MML	0.0005	ND	ND		ND		ND	ND	ND
		1,2,4-Trichlorobenzene	0.07	mg/L	MCL	0.0005	ND	ND		ND		ND	ND	ND
		1,2-Dichlorobenzene (o)	0.6	mg/L	MCL	0.0005	ND	ND		ND		ND	ND	ND
		1,2-Dichloroethane (EDC)	0.005	mg/L	MCL, MML	0.0005	ND	ND		ND		ND	ND	ND
		1,2-Dichloropropane	0.005	mg/L	MCL	0.0005	ND	ND		ND		ND	ND	ND
		1,4-Dichlorobenzene (p)	0.075	mg/L	MCL, MML	0.0005	ND	ND		ND		ND	ND	ND
		Benzene	0.005	mg/L	MCL, MML	0.0005	ND	ND		ND		ND	ND	ND
		Carbon Tetrachloride	0.005	mg/L	MCL, MML	0.0005	ND	ND		ND		ND	ND	ND
		Chlorobenzene (monochlorobenzene)	0.1	mg/L	MCL	0.0005	ND	ND		ND		ND	ND	ND
		cis-1,2-Dichloroethylene	0.07	mg/L	MCL	0.0005	ND	ND		ND		ND	ND	ND
		Ethylbenzene	0.7	mg/L	MCL	0.0005	ND	ND		ND		ND	ND	ND
		Dichloromethane (methylene chloride)	0.005	mg/L	MCL	0.0005	ND	ND		ND		ND	ND	ND
		Styrene	0.1	mg/L	MCL	0.0005	ND	ND		ND		ND	ND	ND
		Tetrachloroethylene	0.005	mg/L	MCL	0.0005	ND	ND		ND		ND	ND	ND
		Toluene	1	mg/L	MCL	0.0005	ND	ND		ND		ND	ND	ND
		trans-1,2-Dichloroethylene	0.1	mg/L	MCL	0.0005	ND	ND		ND		ND	ND	ND
		Trichloroethylene	0.005	mg/L	MCL, MML	0.0005	ND	ND		ND		ND	ND	ND
		Vinyl chloride	0.002	mg/L	MCL, MML	0.0005	ND	ND		ND		ND	ND	ND
		Total Xylenes	10	mg/L	MCL	0.0005	ND	ND		ND		ND	ND	ND

NOTE
Indicates analyte not required during sampling even Indicates analyte not required during sampling event
mg/L = milligram per liter
MDL = Method Detection Limit
ND = Not detected at concentrations greater than the MDL
NT = Analyte not tested
MCL = Federal maximum contaminant level for drinking water
MML = DEQ's maximum measurable levels for groundwater
URC = State unregulated contaminant
SMCL = Federal secondary maximum contaminant levels for drinking water
UCMR = EPA unregulated contaminant monitoring regulations for drinking water
Samples are unfiltered unless noted (i.e., dissolved)
1 = Combined Radium 226/228 and Uranium required after December 2003
2 = Only need to analyze if in a vulnerable area per OAR 333-61-0036, 6(b)(A) (i.e., near man-made radioactive sources, such as nuclear facilities - currently only selected systems along Columbia River classified as vulnerable)
3 = These compounds would be analyzed if Gross Alpha or Beta exceed an MCL.
* BCRW-C2SW-1 sample was collected pre-chlorination, result not accurate for injected water.
i = Major cation and anion charge balance not compliant with QC requirement of 5%
L = Field parameter data analysed at the laboratory



Table 4
Analyte List for ASR Pilot Test Cycle 2
City of Baker City ASR Program

	Class	Analyte	Lowest Regulatory Standard	Units	Regulatory Criteria	MDL	Native Groundwater	BCRW-C2SW-1 Source Water	BCRW-C2SW-2 Source Water	BCRW-C2SW-3 Source Water	BCRW-C2T-1 Storage	BCRW-C2T-2 Storage	BCRW-C2R-1 Recovery	BCRW-C2R-2 Recovery					
Approximate Date							29-Jan-03 10:00	2-Feb-05 10:30	23-Mar-05 10:00	29-Jun-05 10:00	11-Jul-05 09:30	27-Jul-05 11:30	21-Sep-05 11:00	26-Oct-05 11:00					
Bacteriological		Fecal Coliforms/E.Coli					<1	6/5	*										
		Total Coliform	<1/100 ML	CFU/100 ml	MML		<1	21	*										
Disinfection By-Products		Chloroform (Trichloromethane)	None	mg/L	URC	0.0005	ND												
THM		Bromodichloromethane	None	mg/L	None	0.0005	ND												
THM		Dibromochloromethane	None	mg/L	None	0.0005	ND												
THM		Bromoform (Tribromomethane)	None	mg/L	URC	0.0005	ND												
		Total Trihalomethanes	0.08	mg/L	MCL, MML	--	ND	ND	*	0.0199	0.0075	0.0281	0.0249	0.0074	0.0028				
HAA		Monochloroacetic Acid	None	mg/L	None	0.002	ND												
HAA		Dichloroacetic Acid	None	mg/L	None	0.001	ND												
HAA		Trichloroacetic Acid	None	mg/L	None	0.001	ND												
HAA		Monobromoacetic Acid	None	mg/L	None	0.001	ND												
HAA		Dibromoacetic Acid	None	mg/L	None	0.001	ND												
HAA		Total Haloacetic Acids	0.06	mg/L	MCL	--	ND	ND	*	0.024	0.12	0.006	0.002	ND	ND				
Field Parameters		Temperature	None	Celsius	None	NA	14.7	4		3.5	10.4	58	L	50	L	8.9	11.5		
		Conductivity	None	mS/cm	None	NA	315	77		100	83	151	L	147	L	212	259		
		Dissolved Oxygen	None	mg/L	None	NA	NT	10.8	L	NT	8.4	8.2	L	8.4	L		9	L	
		pH	6 - 8.5	Units	SMCL	NA	8.01	7.9		7.3	7.2	7.5	L	6.1	L	7.6	6.81		
		Turbidity	1	NTU	MCL, MML	NA	NT			0.412	0.5	140	L	4	L				
		ORP	None	mV	None	NA	NT	88		624	590	615	L	612	L	70	70		
Geochemical		Bicarbonate	None	mg/L	None	2	92	28	i		22	33	i	54	i	81	i	110	i
		Calcium	None	mg/L	None	0.1	30.9	16.4	i		13.2	18.2	i	19.9	i	26.4	i	29.5	i
		Carbonate	None	mg/L	None	2	<1	<1	i		<1	<1	i	<1	i	<1	i	<1	i
		Chloride	250	mg/L	SMCL	1	6	1.25	*i	1.25	0.83	1.91	i	2.18	i	<0.08	i	2.2	i
		Hardness (as CaCO3)	250	mg/L	URC	4	154	41	i		33	51	i	66.6	i	66	i	129	i
		Magnesium	None	mg/L	None	0.05	16.3	2.04	i		1.88	4.23	i	4.26	i	10.9	i	17	i
		Nitrate as N	10	mg/L	MML	0.5	<0.05	0.06	i		<0.03	0.21	i	0.36	i	0.13	i	<0.03	i
		Nitrite as N	1	mg/L	MCL	0.01	<0.002	<0.02	i		0.29	<0.02	i	<0.002	i	0.002	i	<0.02	i
		Total Nitrate-Nitrite	10	mg/L	MML	--		0.06	i		0.29	0.21	i	0.37	i	0.132	i	<0.03	i
		Potassium	None	mg/L	None	0.1	1.8	<0.5	i		<0.5	0.5	i	0.6	i	1	i	1.4	i
		Silica	None	mg/L	None	0.2	38.1	9			7.0	11		22		22		44	
		Sodium	20	mg/L	URC (advisory)	0.05	19	1.95	i		1.45	2.37	i	3.09	i	9.36	i	14.5	i
		Sulfate	250	mg/L	URC, SMCL	5	39	2.8	i		1.69	4.19	i	5.5	i	<0.08	i	21.7	i
		Total Alkalinity	250	mg/L	SMCL	2	92	28	i		22	33	i	54	i	81	i	110	i
		Total Dissolved Solid	500	mg/L	SMCL	0.7	184	40			40	30		60		150		190	
		Total Organic Carbon	None	mg/L	None	0.5	6.7	0.6			0.7	1.1		1		0.6		0.5	
		Total Suspended Solids	None	mg/L	None	2	<1	<1			<1	64		72		3		<1	
Metals		Aluminum	0.05	mg/L	SMCL	0.05	0.0071	<0.1			<0.1	0.4		<0.1		<0.1		<0.1	
		Antimony	0.006	mg/L	MCL	0.001	ND	<0.005			<0.005	<0.005		<0.005		<0.005		<0.005	
		Arsenic	0.05	mg/L	MCL, MML	0.002	0.006	<0.005			<0.005	<0.005		<0.005		<0.005		<0.005	
		Barium	1	mg/L	MCL, MML	0.05	ND	<0.5			<0.5	<0.5		<0.5		<0.5		<0.5	
		Beryllium	0.004	mg/L	MCL	0.0005	ND	<0.0005			<0.005	<0.0005		<0.0005		<0.0005		<0.0005	
		Cadmium	0.005	mg/L	MCL, MML	0.001	ND	<0.0005			<0.0005	<0.0005		<0.0005		<0.0005		<0.0005	
		Chromium	0.05	mg/L	MCL, MML	0.002	ND	<0.005			<0.005	<0.005		<0.005		<0.005		<0.005	
		Copper	1.3	mg/L	MCL, MML	0.005	ND	<0.1			<0.1	<0.1		<0.1		<0.1		<1	
		Iron (Total)	None	mg/L	None	0.05	<0.1	<0.1			<0.1	2.81		1.11		<0.1		<0.1	
		Iron (Dissolved)	0.3	mg/L	SMCL	0.05	<0.1	<0.1			<0.1	<0.1		<0.1		<0.1		<0.1	
		Lead	0.015	mg/L	MCL, MML	0.001	0.005	<0.005			<0.005	<0.005		0.005		<0.005		<0.005	
		Manganese (Total)	None	mg/L	None	0.002	0.12	<0.05			<0.05	0.12		<0.05		<0.05		<0.05	
		Manganese (Dissolved)	0.05	mg/L	SMCL	0.002	0.09	<0.05			<0.05	<0.05		<0.05		<0.05		<0.05	
		Mercury	0.002	mg/L	MCL, MML	0.0004	ND	<0.001			<0.001	<0.001		<0.001		<0.001		<0.001	
		Nickel	0.1	mg/L	MCL	0.004	ND	<0.01			<0.01	<0.01		<0.01		<0.01		<0.01	
		Selenium	0.01	mg/L	MCL, MML	0.002	ND	<0.005			<0.005	<0.005		<0.005		<0.005		<0.005	
		Silver	0.05	mg/L	MML, SMCL	0.005	ND	<0.05			<0.05	<0.05		<0.05		<0.05		<0.05	
		Thallium	0.002	mg/L	MCL	0.0006	ND	<0.002			<0.002	<0.002		<0.002		<0.002		<0.002	
Miscellaneous		Zinc	5	mg/L	SMCL	0.01	ND	<0.05			<0.05	<0.05		0.09		<0.05		<0.05	
		Odor	3	TON	SMCL	1 ton	ND	ND			ND			ND		ND		ND	
		Color	15	ACU	SMCL	5 color units	ND	ND			ND			ND		ND		ND	
		Methylene Blue Active Substance	0.5	mg/L	SMCL	0.05	NT	0.031			<0.01			0.01		<0.01		<0.01	
		Corrosivity (Langelier Saturation Index)	Non-Corrosive	mg/L	SMCL	--	0.23	-1.97			-2.1			-1.8		-0.42		-0.57	
		Cyanide (as free cyanide)	0.2	mg/l	MCL						<0.01			<0.01		<0.01		<0.01	
		Fluoride	2	mg/L	MCL, MML, SMCL	0.5	0.3	0.36			<0.01			0.05		<0.03		0.13	
Radionuclides		Combined Radium 226/228	5	pCi/L	MCL, MML			ND			ND			ND		ND		ND	
		Uranium ¹	0.03	mg/L	MCL			ND			ND			ND		ND		ND	
		Gross Alpha	15	pCi/L	MCL, MML	1.79	1.1	ND			1.1			1.2		ND		3.2	
		Beta/Photon emitters ²	4	mrem/yr	MCL		12.2												
		Gross Beta	50	pCi/L	MML	2.83													
		Radon		pCi/L	None	--	465	<100								649		591	

Table 5
Additional ASR Source Water Quality Testing During Injection - Cycle 2



	Analyte	Lowest Regulatory Standard	Units	Regulatory Criteria	MDL	Native Groundwater Quality Analysis	Source Water Quality Analysis	Source Water Quality Analysis	Source Water Quality Analysis	Source Water Quality Analysis	Source Water Quality Analysis	Source Water Quality Analysis	Source Water Quality Analysis	Source Water Quality Analysis	Source Water Quality Analysis	Source Water Quality Analysis	Source Water Quality Analysis	Source Water Quality Analysis	Source Water Quality Analysis	Source Water Quality Analysis
					Date	7-Jan-05	2-Feb-05	16-Mar-05	23-Mar-05	6-Apr-05	13-Apr-05	20-Apr-05	27-Apr-05	4-May-05	18-May-05	25-May-05	2-Jun-05	15-Jun-05	22-Jun-05	29-Jun-05
Field Parameters	Temperature	None	Celsius	None	NA	16.9	4	3.3	3.5	4.1	4	4.5	5.8	6.4	7.3	7	8.3	8.9	10	10.4
	Conductivity	None	mS/cm	None	NA	260	77	74	100	100	106	107	133	81	80	79	80	100	83	
	pH	6 - 8.5	Units	SMCL	NA	6.78	7.9	7.8	7.3	7.5	7.65	7.5	7.47	7.42	7.5	7.5	7.4	6.57	7.3	7.2
	Turbidity	1	NTU	MCL, MML	NA			0.174	0.412*	0.536	0.771	0.476	1.073*	0.726	0.8	0.546	0.361	0.643	0.4	0.5
	ORP	None	mV	None	NA	-58	88	634	624	588	551	568	538	NA	600	600	590	633	580	590

	Analyte	Lowest Regulatory Standard	Units	Regulatory Criteria	MDL	Recovery Water Quality Analysis	Recovery Water Quality Analysis	Recovery Water Quality Analysis	Recovery Water Quality Analysis	Recovery Water Quality Analysis	Recovery Water Quality Analysis	Recovery Water Quality Analysis	Recovery Water Quality Analysis	Recovery Water Quality Analysis	Recovery Water Quality Analysis	Recovery Water Quality Analysis	Recovery Water Quality Analysis	Recovery Water Quality Analysis	Recovery Water Quality Analysis	Recovery Water Quality Analysis
					Date	22-Aug-05	24-Aug-05	25-Aug-05	26-Aug-05	29-Aug-05	30-Aug-05	7-Sep-05	21-Sep-05	28-Sep-05	5-Oct-05	12-Oct-05	19-Oct-05	26-Oct-05		
Field Parameters	Temperature	None	Celsius	None	NA	8.3	8.5	8.3	8.3	8	8	8	8.9	9.1	10.5	10.7	11	11.5		
	Conductivity	None	mS/cm	None	NA	134	127	141	146	155	160	192	212	227	243	247	256	259		
	pH	6 - 8.5	Units	SMCL	NA	8.3	7.64	6.87	6.95	6.9	6.91	6.7	7.6	7.8	7.5	6.667	6.9	6.81		
	Turbidity	1	NTU	MCL, MML	NA															
	ORP	None	mV	None	NA	70	119	98	107	90	86	63	70		1	58	61	70		

NOTE

Indicates analyte not required during sampling event

* Turbidity measurement 3/24/05

* manual turbidity reading

mg/L = milligram per liter
MDL = Method Detection Limit
ND = Not detected at concentrations greater than the MDL
NT = Analyte not tested
MCL = Federal maximum contaminant level for drinking water
MML = DEQ's maximum measurable levels for groundwater
URC = State unregulated contaminant
SMCL = Federal secondary maximum contaminant levels for drinking water
UCMR = EPA unregulated contaminant monitoring regulations for drinking water
Samples are unfiltered unless noted (i.e., dissolved)

Table 6

ASR CYCLE 3 -- YEAR 2006 -- Baker City Reservoir Well Sampling Schedule

UPDATED
3/31/2006



Groundwater Solutions Inc.

Input Values in Yellow Cells

Expected AVERAGE Injection Rate:	800	(gpm)		
Expected AVERAGE Recovery Rate:	1500	(gpm)		
Expected Injection Start Date	Friday 1/27/2006 12:00 PM			
Expected Injection End Date	Friday 6/30/06 12:00 PM			
Expected Elapsed Injection Days		154	days	
Expected Elapsed Injection Hours		3696	hours	
		177,408,000	gallons injected at injection rate	
		177.4	MG	
Total Planned Injection Volume (MG)				207.7 Stored Vol. MG+Carryover
Expected Storage Start Date	Friday 6/30/06 12:00 PM			
Expected Storage End Date	Friday 6/30/06 12:00 PM			
Expected Elapsed Storage Days				
Expected Elapsed Storage Hours		0		
Total Planned Recovery Volume		198.84		Assume 95% Recovered
Expected Recovery Start Date	Friday 6/30/06 12:00 PM			
Expected Days Required to Recover 100% of Injection Volume	Wednesday 10/4/06 3:52 PM	96		
Expected Days Required to Recover Planned Volume	Saturday 9/30/06 1:18 PM	92		Assumes single-batch recovery

Water Quality Monitoring Program

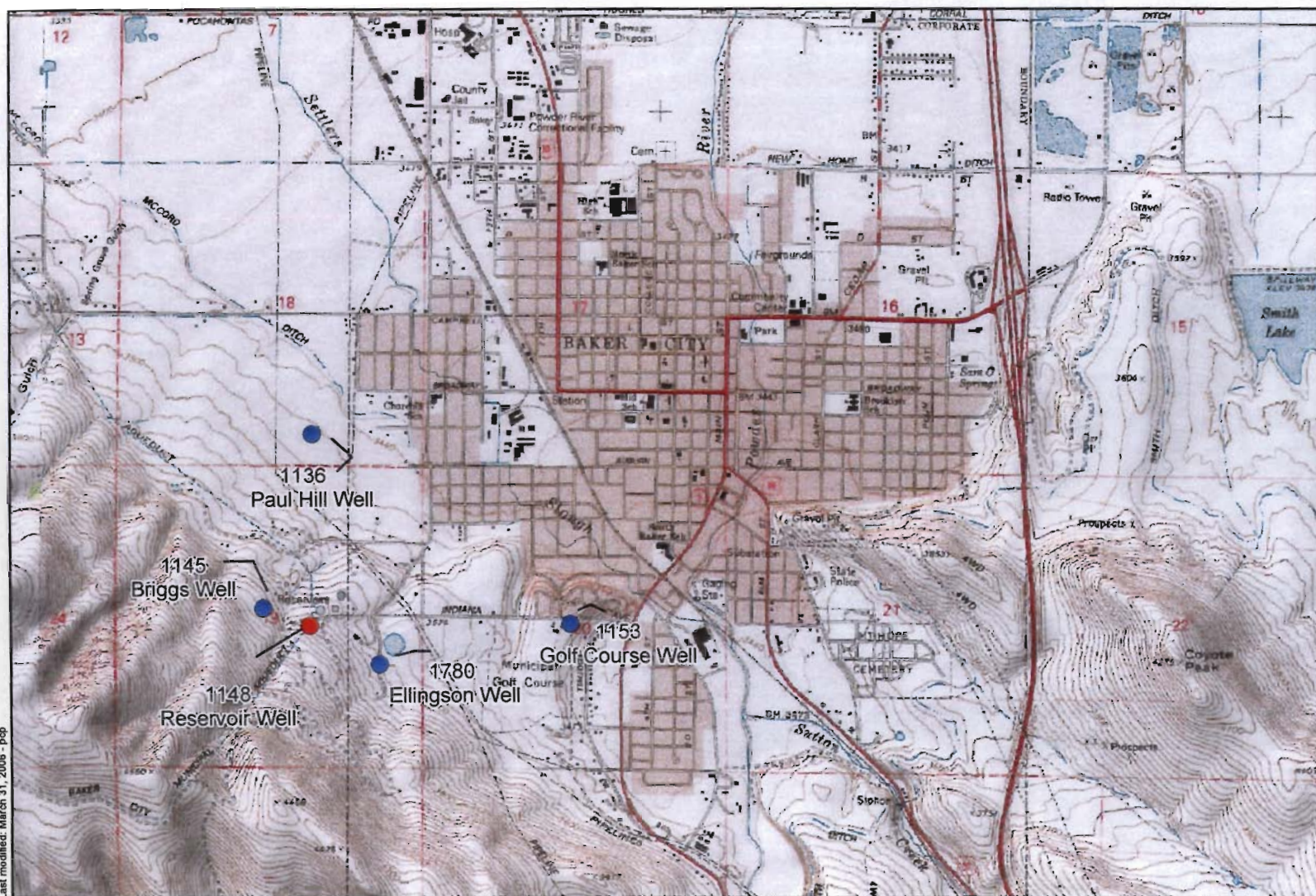
Water Type	Progress Point	Date	Elapsed Days	Analysis	Sample ID	Date Collected	Bottles Verified?	Comments
Baseline Groundwater								
GW		Friday 1/27/06	0	FP, GC, DBP, Radon	BCRW-C3GW			
Injection Period								
Source	0%	Friday 1/27/06	0	FP, GC, DBP, & SDWA, Radon	BCRW-C3SW-1			
Source	50%	Sunday 4/16/06	79	FP only	BCRW-C3SW-2			
Source	99%	Thursday 6/29/06	153	FP, GC, DBP, & SDWA,	BCRW-C3SW-3			
Storage Period								
Stored	90%	Friday 6/30/06	0	FP, GC, DBP, SDWA, Radon	BCRW-C3T-1			
Recovery Period								
Recovered	47%	Monday 8/14/06	45	FP, GC, DBP, SDWA, Radon	BCRW-C3R-1			
Recovered	95%	Friday 9/29/06	91	FP, GC, DBP, SDWA, Radon	BCRW-C3R-2			

Notes:

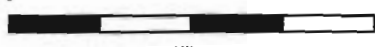
FP = Field Parameters
 GC = Geochemical Parameters
 DBP = Disinfection By-Products
 SDWA = Safe Drinking Water Act Parameters (DHS, DEQ MML, Federal SMCL)
 UCMR = EPA Unregulated Contaminant Monitoring Regulations parameters
 Radon = Radon in drinking water analysis, SM 7500 or EPA 913.0

Figures

P:\145 - Baker City\GIS\basemap.mxd
Last modified: March 31, 2006 - psp



Scale 2" = 1 Mile



Miles

Legend

- ASR Well
- Monitoring Wells

Figure 1
General Location Map
Baker City ASR

Distance and direction from ASR well:

Ellingson Well: 1,397 ft ESE

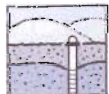
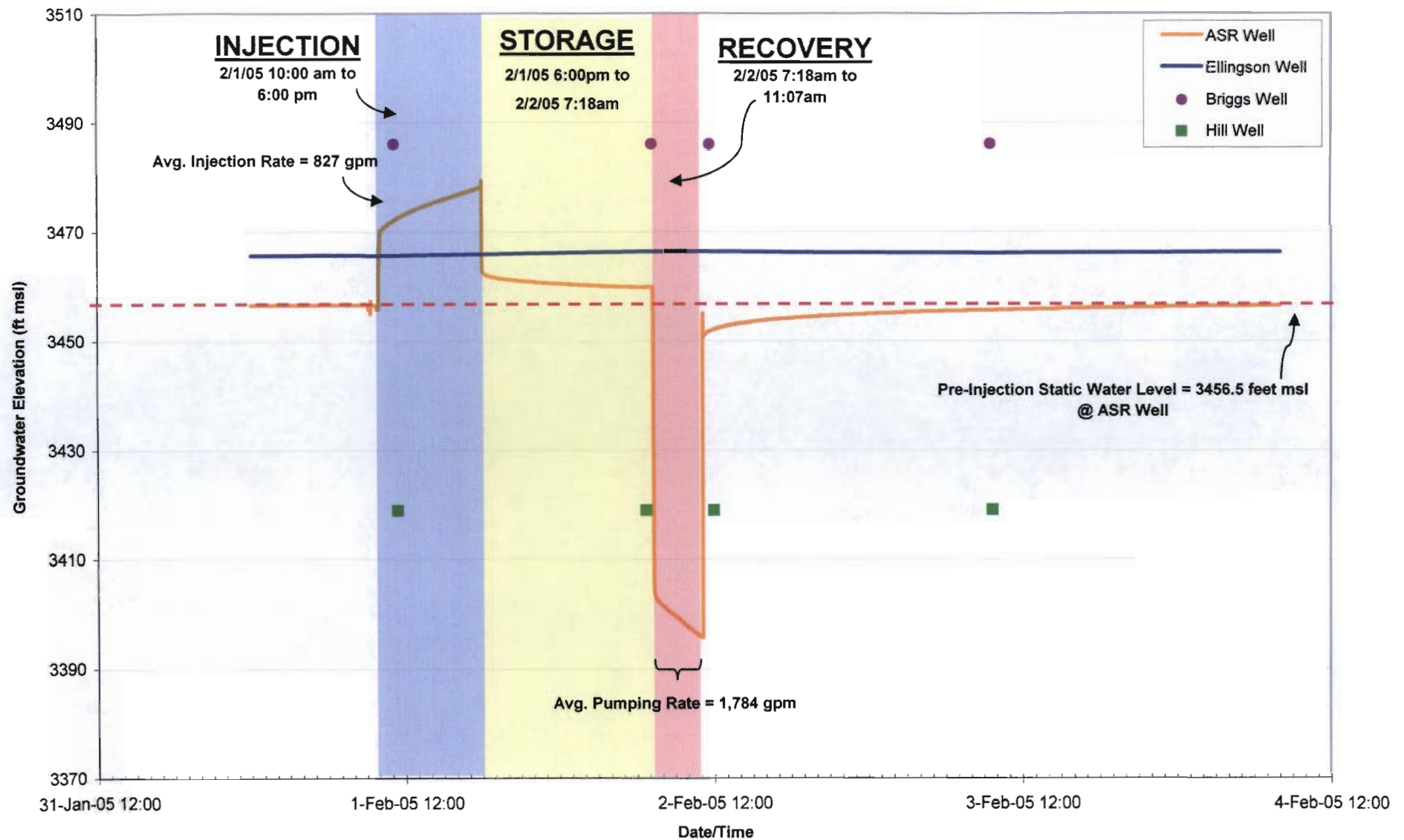
Briggs Well: 868 ft WNW

Hill Well: 3,354 ft N

Baker City ASR Program

Groundwater Elevation

ASR Cycle 1 (Feb. 1 - Feb. 2, 2005)

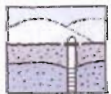
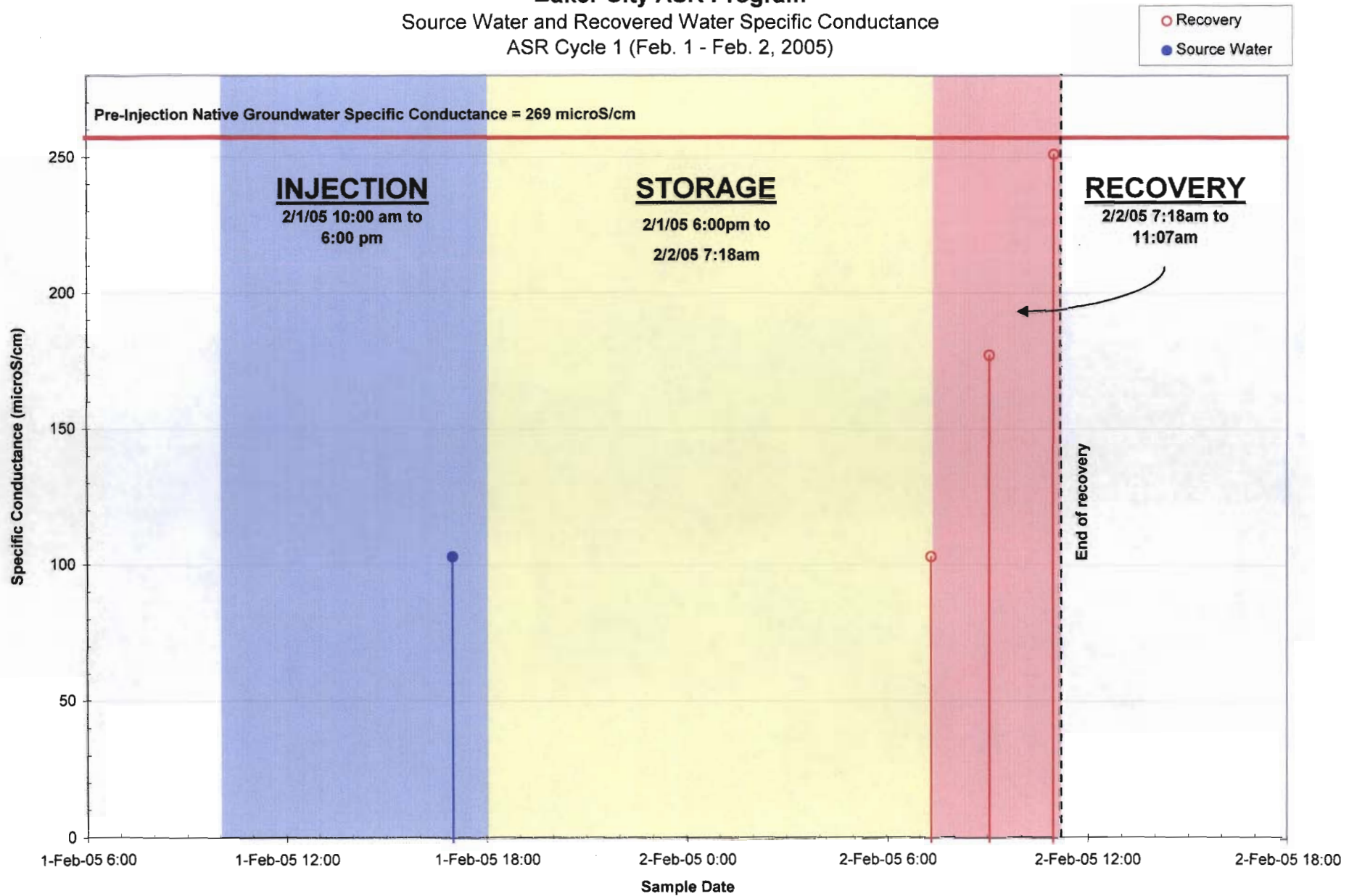


Groundwater Solutions, Inc.

P:\145 - Baker City\002\Hydro Data\Cycle1_Data.xls
Last Modified: 5/5/2006 - pcp

Figure 2. Water levels in monitoring wells during ASR Cycle 1.

Baker City ASR Program
Source Water and Recovered Water Specific Conductance
ASR Cycle 1 (Feb. 1 - Feb. 2, 2005)



Groundwater Solutions, Inc.

P:\145 - Baker City\002\Analytical_Data\Waterquality_results_2005.xls
Last modified: 5/5/2006 - pcp

Figure 3. Time-series plot of specific conductance for ASR Cycle 1.

Distance and direction from ASR well:

Ellingson Well: 1,397 ft ESE

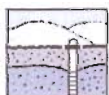
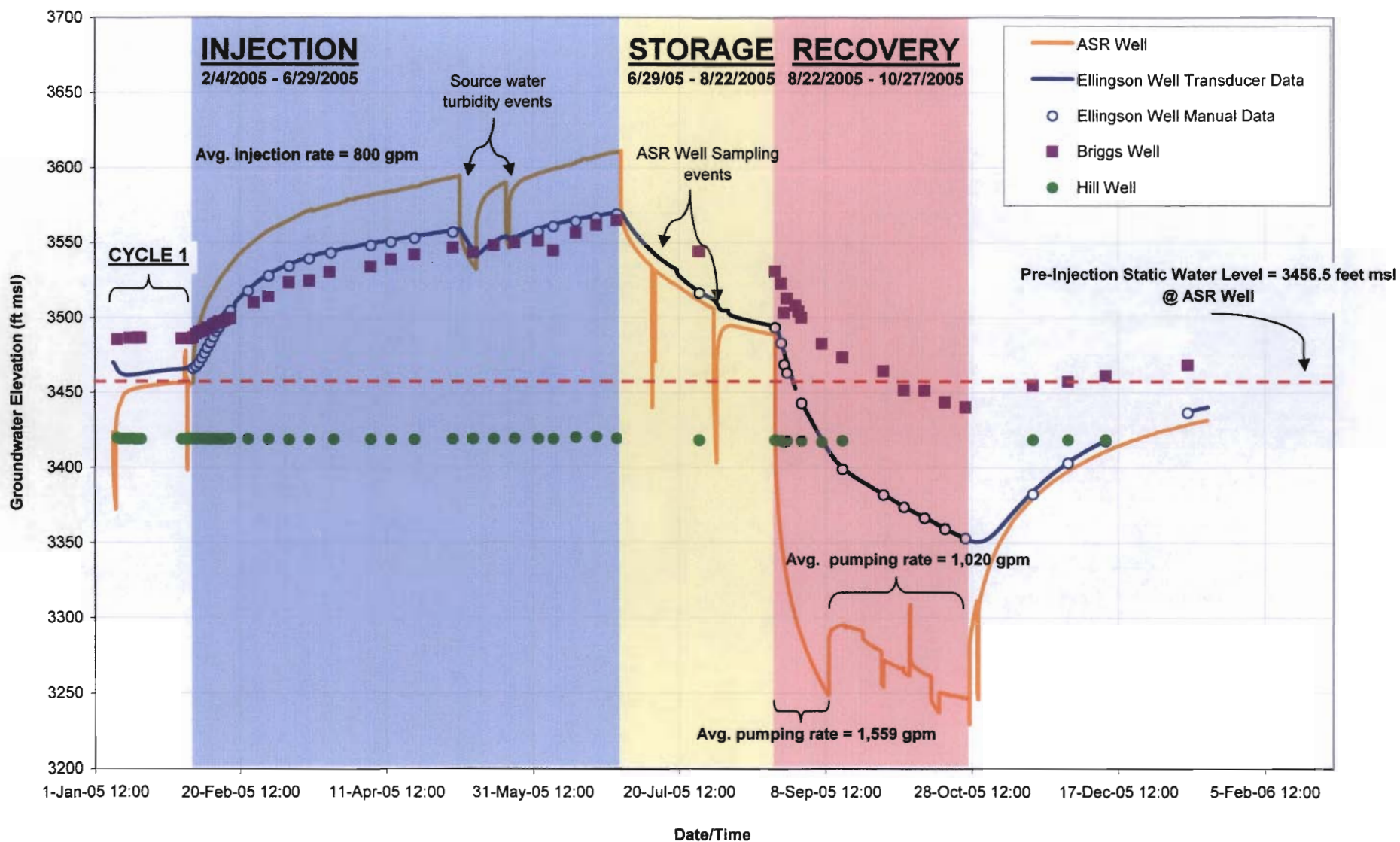
Briggs Well: 868 ft WNW

Hill Well: 3,354 ft N

Baker City ASR Program

Groundwater Elevation

ASR Cycle 2 (2005)



Groundwater Solutions, Inc.

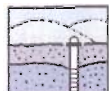
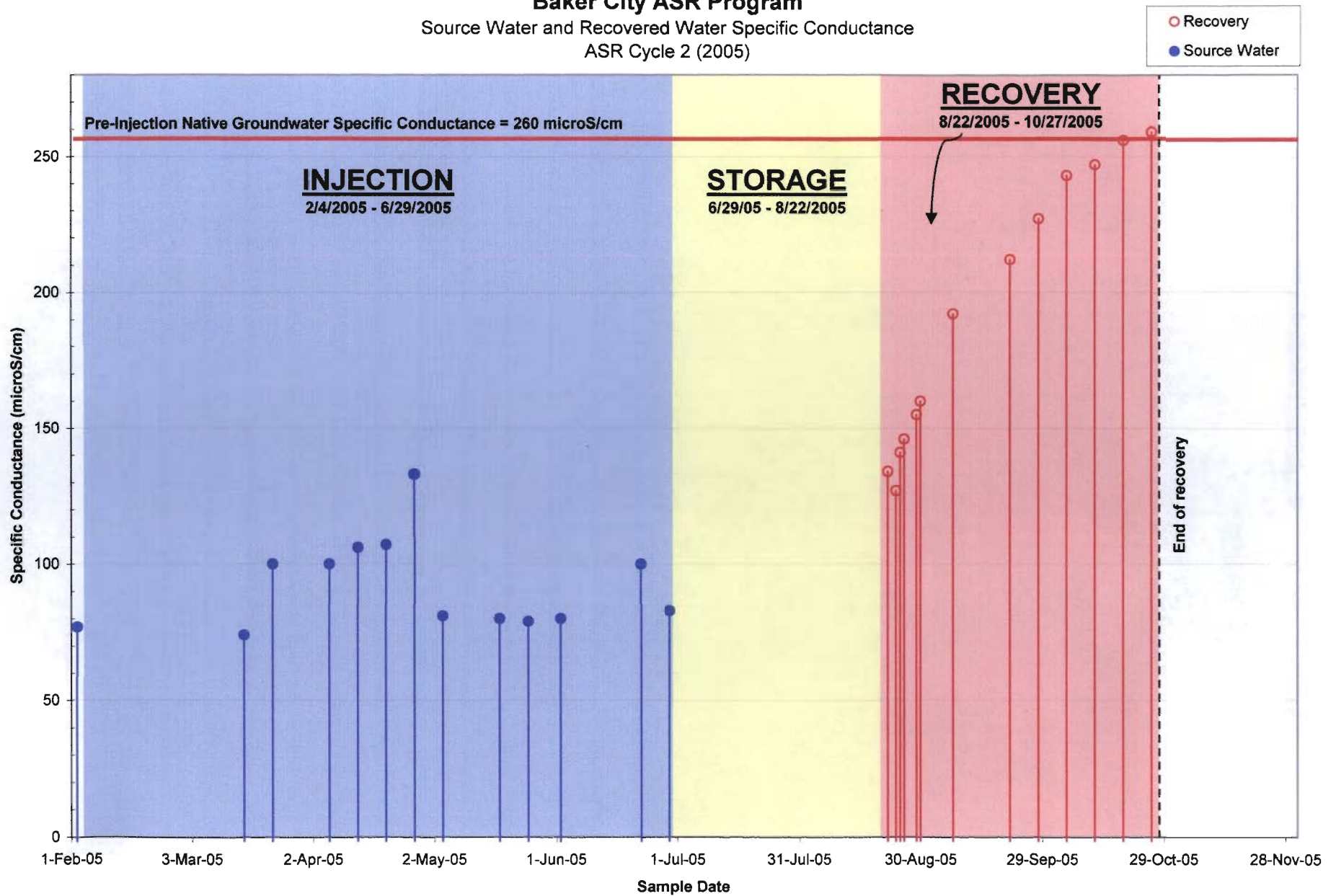
P:\145 - Baker City\002\Hydro Data\2005_data_final.xls
Last modified: 5/5/2006 - pcg

Figure 4. Water levels in monitoring wells during ASR Cycle 2.

Baker City ASR Program

Source Water and Recovered Water Specific Conductance

ASR Cycle 2 (2005)



Groundwater Solutions, Inc.

Figure 5. Time-series plot for specific conductance for ASR Cycle 2.

Appendix A

Tests find drinking-water well is working fine

City well is ready to receive its first infusion of mountain water

At 10:30 a.m. last year, the city's first mountain water well was tested. The test was successful, and the well is now ready to receive its first infusion of mountain water.

Having proved to be a success, the well is now ready to receive its first infusion of mountain water. The test was successful, and the well is now ready to receive its first infusion of mountain water.

At 10:30 a.m. last year, the city's first mountain water well was tested. The test was successful, and the well is now ready to receive its first infusion of mountain water.

Having proved to be a success, the well is now ready to receive its first infusion of mountain water. The test was successful, and the well is now ready to receive its first infusion of mountain water.

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Editor City Herald 1-12

See City well 1-12

Water flowing into city well

□ Intended use of
\$660,000 project
gets under way

By JAYSON JACOBY
Of the Baker City Herald

Some sultry day this summer, you — or possibly your petunias — will sip cool water that's had the sort of adventure a person might pay a travel agent to arrange.

The water that soothes your parched throat will already have ambled across mountain meadows and trickled through fragrant forests and finally journeyed, though not all the way to the center of the Earth, closer to it than you'll probably ever get.

If you live in Baker City you helped pay the \$660,000 fare for all that meandering.

But city officials are confident your investment will pay off at the faucet.

And if a forest fire or other catastrophe ever prevents the city from tapping the dozen streams and springs in the Elkhorn Mountains that supply most of the city's water, that \$660,000 might seem like a bargain.

Engineers call the process "aquifer storage and recovery," but there's a three-part description that's a bit easier to digest. The first two parts are under way as you read these words:

First, the city is diverting

See Well/Page 5

2-11-
Baker City Herald

Well: City hopes to store 100 million gallons

Continued from Page 1

water from the mountains into a pipe that descends to town.

Second, the city is dumping that water — about 1.1 million gallons per day — into its 800-foot-deep well.

For the final part, scheduled to start in August, the city will pump the mountain water out of the well and into the pipes that lead to your faucets (and to your petunias).

Now you might well ask: "Aren't wells places to get water from, not put water in?"

It's a question Mayor Charles Hofmann said he has fielded several times since the city embarked on its aquifer-filling project about two years ago.

"I've had people say, 'pouring water down a hole — what's that?'" Hofmann said during an interview last month. "People have told me they think it's the single biggest mistake the city has made."

And although Hofmann voted to pursue the well-filling project, he admits it was difficult to decide to spend close to three quarters of a million dollars to bring more water to a city where most lawns stay green even during droughts.

"This one personally tore me up," Hofmann said. "I hope it works."

Like Hofmann, Tim Collins, the city's public works director, understands that most people consider wells places where you withdraw water, not deposit it.

But Collins said the city's well, which was drilled in 1977, doesn't spew out water the way it did in its youth.

For the past several years, in fact, whenever the city tapped the well continuously for more than a week or so, its flow dwindled and the water became tinged with manganese and iron, which, though not harmful to people,

How's it work?



can stain clothes.

This problem prompted Collins' predecessor, Dick Fleming, to research aquifer storage and recovery. In 2003 Fleming convinced the City Council to test the technology that several other Oregon cities, including Pendleton and Tigard, are using.

Fleming's plan, later confirmed as plausible by an engineering firm the city hired, is to replenish the well's aquifer with water from those mountain streams, which for more than a century have served as the city's main water source.

Engineers also concluded that the mountain water, while it waits down in the well, will retain the refreshingly chilly temperature and the purity that distinguish it from the stuff that drips from most other cities' taps. Baker City is one of just four cities in Oregon with surface water so pure it need not be filtered to meet federal drinking-water standards.

And now, almost two years after Fleming sold the plan to the City Council, that mountain water is pouring into the well.

Last year Oregon's Water Resources Department issued

the city a five-year license that allows the city to dump mountain water down the well between Nov. 1 and June 30.

That license prohibits the city from refilling the well aquifer with mountain water between July 1 and Oct. 31. The purpose of that limitation is to preserve water for Baker Valley farmers and ranchers who irrigate from the same mountain streams the city uses.

Baker County Watermaster Rick Lusk also can curtail the city's aquifer-filling earlier than June 30 if that's necessary to ensure irrigators have water for their fields, Collins said.

He expects that this year, with Elkhorn Mountain snowpacks at near record lows, and water shortages therefore likely, the city won't be allowed to continue putting mountain water into the well clear through June.

(The restrictions apply to aquifer-filling only — the city can use as much mountain water as it needs as long as the water flows directly to residents rather than down the well.)

Lusk said Collins probably is right, although predicting how much water will be available, and when irrigators will ask for that water, is impossible.

"I'm not sure how it's going to pan out because we haven't gone through it yet," Lusk said. "We'll know a lot more every year."

He said that in extremely dry years, the city might be able to pump mountain water into the well through June 30 because so little water would be available downstream that farmers and ranchers wouldn't be able to make "beneficial use" of the water, as required by state law.

And in extremely wet years, Lusk said, there ought to be enough water to replenish the city's aquifer and irri-

gate fields.

Most years, though, are neither abnormally damp nor dry, Lusk said. In those years he said he might have to cap the city's well earlier than June 30. Or he might not.

"It's not in my hands — it's in nature's hands," Lusk said.

Although Collins anticipates an early shutoff this year, he figures the city will dump close to 100 million gallons of mountain water into the well before Lusk cuts off the city (the state license allows up to 200 million gallons per year). At the current rate of about 1.1 million gallons per day, the city would reach the 100-million-gallon level by about May 1.

That's enough water to satisfy the thirsts of the city's people (and their petunias) for about a month during the summer, or about two and a half months during the cooler seasons, Collins said.

He said the city intends to start using the stored mountain water in August, when demand for water usually peaks, while the flow in Elkhorn streams plummets.

In the past few years, as the well's production declined, the city dealt with that late-summer dilemma by diverting more water from Goodrich Lake, high in the Elkhorns. Goodrich holds about 210 million gallons.

Collins said the replenished well aquifer will serve as a second reservoir — a reservoir the city would desperately need, along with Goodrich, were a forest fire ever to singe the watershed and render, at least temporarily, water from the mountain streams unfit for drinking.

City officials also hope that by topping off the aquifer every spring, the city will use less mountain water during summer and leave more in the streams for the farmers and ranchers.

Water

Continued from Page 1

aquifer storage and recovery. The water the city pumped from the well on Aug. 1 and paid for was about 47 degrees, Collins said. With a temperature as mountain water (during summer, it runs a bit chiller during winter), and about seven degrees cooler than the water the well used to produce.

And tests showed the mineral content in the well water was "virtually identical" to mountain water, Collins said.

In the past, by using water continuously for more than a week or two, the water became tinged with iron and manganese. Although neither metallic element was present in unhealthy concentrations, the well water was capable of staining clothes.

Supplying residents with cooler water was not city officials' only goal, however.

When former public works director Dick Fleming pitched aquifer storage and recovery to the City Council a few years ago, he emphasized another benefit: Turning the well into the city's second major water source.

Until this year, the city's only reservoir was Goodrich Lake, high in the Elkhorns. Goodrich, a natural lake which the city had been damming for its own use, was in a state of decay.

Goodrich Lake, a natural lake which the city had been damming for its own use, was in a state of decay.

scored the water in order these streams temporarily, especially in drinking water.

The well, which means to pump water even in winter, could mean the difference between the city's water supply and a disaster. The city's water supply is protected by a series of concrete walls and pipes. Due to the cost of the water, Valley farmers and ranchers who irrigate their crops in the summer, the city's water supply is protected by a series of concrete walls and pipes.

But Collins said that the city's water supply is protected by a series of concrete walls and pipes. Due to the cost of the water, Valley farmers and ranchers who irrigate their crops in the summer, the city's water supply is protected by a series of concrete walls and pipes.

The five-year license that the city received from the Oregon Department of Geology and Mineral Industries allows the city to draw mountain water into the well from Nov. 1 through June 30. The purpose of that restriction, Collins said, is to ensure the city doesn't use the water much more than the peak of the irrigation season.

When that license expires, the city could, in theory, draw mountain water down to the city any time. Collins said, he said city officials are working to avoid creating a water shortage.

Goodrich Lake, a natural lake which the city had been damming for its own use, was in a state of decay.

Mountain water in mountain water out

Elkhorn Mountain water being pumped from aquifer

By JASON JACOBY
Of the Baker City Herald

Wondering about your dividend from Baker City's \$160,000 investment in something called "aquifer storage and recovery?" You're drinking it.

Or at least washing your hands with it. For the first time the city is filling your pipes with water that flowed through the Elkhorn Mountains, then poured down a well, where it was mixed with a pump pushed it back above ground.

Well, actually it's the second time. The city started tapping this well to recover water on Aug. 1, but a pump motor malfunction forced officials to postpone a test they expected would last a few months.

The city stockpiled about 160 million gallons of water from mountain streams and springs between late January and the end of June, said Tim Collins, the city's public works director.

And based on that abbreviated day-and-a-half experiment at the beginning of August, the city's aquifer storage and recovery plan seems capable of fulfilling the potential that persuaded the City Council to spend these dollars over the past two years.

The well supplied water at a rate of 2.3 million gallons per day, Collins said — about half the volume city residents have been going through during the recent warm weather.

Even more important, though, is what sort of water it was.

Collins said the mountain water, despite its temporary confinement down the well, stayed cold and clear, just as city officials hoped it would.

Mountain water in, mountain water out, he said. These six words basically cover the concept of

See Water / Page 3

City thinks investment in well was worth it

City can now dump mountain water down well, pump it up later

By JAYSON JACOBY
Of the Baker City Herald

Baker City officials believe they've proved that a hole in the ground can hold drinking water just as well as the city's above-ground tanks can.

Maybe even better.

The hole certainly handles more water — 160 million gallons, 22 times the combined capacity of 7.1 million gallons for the city's two above-ground reservoirs.



Tim Collins
Public works
director

The hole's cheaper, too.

Though hardly inexpensive at about \$850,000, the city's investment in its underground reservoir the past few years is paltry compared with the \$3.7 million it spent to build a four-million-gallon above-ground tank in 1992.

The city is still paying off that bill, with the last installment due in December 2006.

The hole in question is an 800-foot-deep well the city drilled in the late 1970s near those two reservoirs, on a hill at the southwest corner of town.

In late October the city finished its first full-scale test of a new way to use that well.

It's a concept that officials say should keep faucets flowing during the most dire drought — and which could spare the city the multimillion-dollar bill for building a water filtration plant if a forest fire ever ravages the Elkhorn Mountains, where the city gets most of its water.

12-6 Baker City Herald

If Tim Collins were grading the well based on the recent test, which involved dumping 160 million gallons of mountain water into the well, then pumping most of that water back to the surface and into the city's supply pipes months later, he'd put it on the dean's list.

See City well/Page 5

City Well:

Continued from Page 1

Collins is the city's public works director.

He said this year's experiment showed that the city's \$850,000 investment paid precisely the dividends the city's consultant said it could: The well discharges more water than it did before.

Water flowed at a rate of 1,800 gallons per minute (gpm) for a month, and maintained a 1,000-gpm pace for more than three months.

Before the well was fortified with mountain water, it couldn't keep up even the 1,000-gpm rate for more than a couple weeks.

But now the well water, with its mountain origin, is also colder, and more pure, than the groundwater the well used to spew out, Collins said.

The 160-million-gallon total is about as much water as city residents use in a month during the hottest part of summer.

In winter, when lawn-watering is impractical, and harmful to hoses, 160 million gallons would last about four months.

Based on this year's test, the city should be able to continue storing that much mountain water in the well during winter and spring, and then using it during the dog days of sum-

'Baker City's system has been performing very well.'

— Jeff Barry, Groundwater Solutions Inc.,
the city's consultant on aquifer storage

mer, said Jeff Barry, an engineer from Groundwater Solutions Inc., the Portland firm the city hired to oversee the experiment.

"Baker City's system has been performing very well," Barry said.

In fact, Barry said Baker City could become the first of the 10 Oregon cities that have tried this technology to apply for a permanent permit from the Oregon Water Resources Department.

Baker City's current test license, which the state agency granted last year, lasts for five years.

Collins said city officials plan to apply for a permanent permit as soon as this spring. He said they also intend to start refilling the well aquifer later this month.

Although the city has for more than a century obtained most of its water from springs and streams in the Elkhorns, about 10 miles west of town, the city taps the well occasionally to supplement the moun-

tain supply.

But since 1977 the average water level in the well dropped by about 80 feet. And starting several years ago, when the city used the well for more than a few weeks in a row, the well produced less water that was warmer than mountain water and contained more dissolved minerals and elements.

The most distinct problem with well water was its higher concentrations of iron and manganese, compared with mountain water. Those concentrations weren't high enough to pose a health hazard to people, but the metallic elements could, like a red sock tossed into the washer with the whites, stain clothes.

About three years ago Dick Fleming, then the city's public works director, introduced to the City Council a concept called "aquifer storage and recovery."

The basic idea is to divert water from one source — those Elkhorn Mountain streams and springs, in Baker City's

case — into a well, then pump the water back to the surface when it's needed.

Fleming's goal, though, wasn't merely to prevent people from unwittingly turning their white undergarments pink.

He was more worried about wildfire.

City officials have known for decades that a big fire in the 10,000-acre watershed probably would foul streams with ash and mud, rendering them, at least for a year or two, unfit as drinking water.

In that case the city would have to rely on two main sources: the well, and Goodrich Lake, a reservoir in the Elkhorns that holds about 210 million gallons and, because it lies above the heaviest timber, isn't as vulnerable to fire as most parts of the watershed.

But Fleming, having watched the well's production plummet after just a couple weeks, figured that it could not quench the city's thirst were a wildfire to temporarily wreck the watershed.

The city's other option in such a situation would be to start filtering the mountain water, at an estimated cost of at least a few million dollars.

Now, Baker City is one of just four Oregon cities with surface water so pure it need not be filtered to meet federal drinking water standards (the others are Bend, Portland and Reedsport).

Appendix B

Sample ID: BCRW-C1SW-1
Sample Date: February 1, 2005

MAGIC VALLEY LABS
210 Addison Ave / PO Box 1867
Twin Falls ID 83303-1867
Phone: (208) 733-4250
Fax: (208) 734-2539

BAKER CITY OF

P.O. BOX 650

BAKER CITY OR 97814

Collection Date	2/2/2005 2/1/05	Received Date	2/2/2005	Location	
Collection Time	10:00 AM	Received Time	6:00 PM	SPECIAL PROJECT - SOURCE WATER MTN LINE	
Sample #	Test / Method Code	Results in mg/L	Date Analyzed	Analyst	
487891	TEMP. epa170.1	12.0C	2/2/2005	KE	
487892	CONDUCTIVITY	116uS	2/3/2005	GF	
487893	DISS. OXYGEN EPA360.1	9.7	2/3/2005	MW	
487894	pH EPA150.1	7.1	2/3/2005	RB	
487895	TURBIDITY	< 1	2/3/2005	RB	
487896	ORP	683mV	2/3/2005	GF	
487897	BICARBONATE	28	2/4/2005	EB	
487898	CALCIUM SM3111D	16.1	2/22/2005	RB	
487899	CARBONATE	< 1	2/8/2005	EB	
4878910	CHLORIDE EPA300.0	0.52	2/3/2005	GF	

Signature



Report Date: Thursday, March 17, 2005

MAGIC VALLEY LABS**210 Addison Ave / PO Box 1867****Twin Falls ID 83303-1867****Phone: (208) 733-4250****Fax: (208) 734-2539**

4878911	HARDNESS (CaCo3)	40.3	2/22/2005	RB
4878912	MAGNESIUM SM3111B	2.07	2/19/2005	RB
4878913	NITRATE/N EPA300.0	0.07	2/3/2005	GF
4878914	NITRITE/N EPA300.0	<0.02	2/3/2005	GF
4878915	NITRATE/N + NITRITE/N	0.07	2/3/2005	GF
4878916	POTASSIUM SM3111B	<0.5	2/9/2005	RB
4878917	SILICA	7.0	2/7/2005	GF
4878918	SODIUM SM3111B	1.88	2/8/2005	RB
4878919	SULFATE EPA300.0	2.91	2/3/2005	GF
4878920	ALKALINITY SM2320B	28	2/4/2005	EB
4878921	TDS SM2540C	50	2/3/2005	KC
4878922	TOC	0.6	2/10/2005	KJR
4878923	TSS EPA160.2	< 1	2/3/2005	KC
4878924	ALUMINIUM	<0.1	2/10/2005	RLH
4878925	ANTIMONY	<0.005	2/14/2005	RB

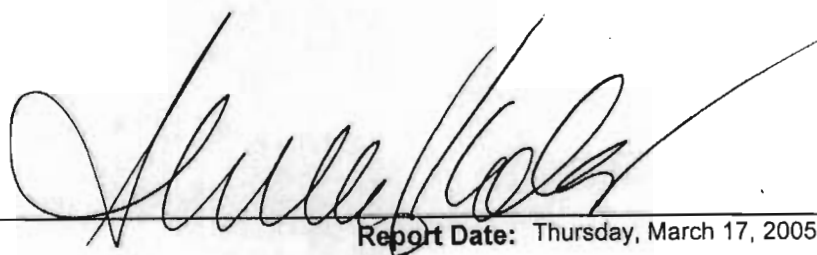
Signature

Report Date: Thursday, March 17, 2005

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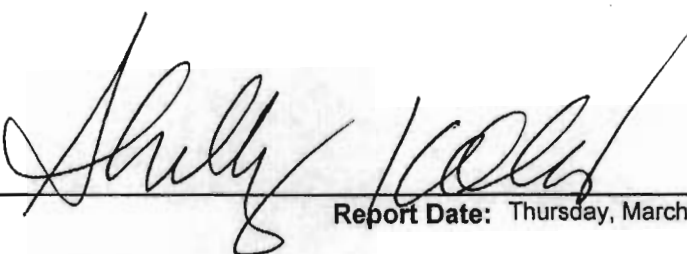
4878926	ARSENIC	<0.005	2/10/2005	RB
4878927	BARIUM	<0.5	2/8/2005	RB
4878928	BERYLLIUM	<0.0005	2/18/2005	RB
4878929	CADMIUM	<0.0005	2/15/2005	RB
4878930	CHROMIUM	<0.005	2/16/2005	RB
4878931	COPPER	<0.1	2/4/2005	RB
4878932	TOTAL IRON	<0.1	2/5/2005	RB
4878933	DISSOLVED IRON SM3111B	<0.1	2/5/2005	RB
4878934	TOTAL MANGANESE	<0.05	2/4/2005	RB
4878935	DISSOLVED MN SM3111B	<0.05	2/4/2005	RB
4878936	MERCURY	<0.001	2/4/2005	RB
4878937	NICKEL	<0.01	2/11/2005	RB
4878938	SELENIUM	<0.005	2/11/2005	RB
4878939	SILVER	<0.05	2/22/2005	RB
4878940	THALLIUM	<0.002	2/14/2005	RB

Signature


Report Date: Thursday, March 17, 2005

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4878941	ZINC	<0.05	2/23/2005	RB
4878942	ODOR	ND	2/3/2005	RB
4878943	COLOR	ND	2/3/2005	RB
4878944	SURFACTANTS	0.025	2/7/2005	GF
4878945	LANGLIER INDEX	-1.87	2/26/2005	RB
4878946	CYANIDE	<0.2	2/10/2005	KJP
4878947	FLUORIDE	0.52	2/3/2005	GF
4878948	LEAD	<0.005	2/17/2005	RB

Signature
Report Date: Thursday, March 17, 2005

Sample ID: BCRW-C1R-3
Sample Date: February 2, 2005

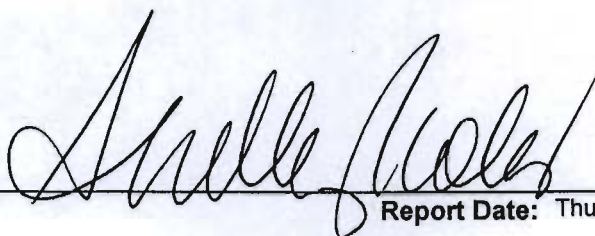
MAGIC VALLEY LABS
210 Addison Ave / PO Box 1867
Twin Falls ID 83303-1867
Phone: (208) 733-4250
Fax: (208) 734-2539

BAKER CITY OF

P.O. BOX 650
BAKER CITY OR 97814

Collection Date 2/2/2005		Received Date 2/2/2005	Location	
Collection Time 10:00 AM		Received Time 6:00 PM	SPECIAL PROJECT - WELL	
Sample #	Test / Method Code	Results in mg/L	Date Analyzed	Analyst
487881	TEMP. epa170.1	12.0C	2/2/2005	KE
487882	CONDUCTIVITY	251uS	2/3/2005	GF
487883	DISS. OXYGEN EPA360.1	7.14	2/3/2005	MW
487884	pH EPA150.1	7.0	2/3/2005	RB
487885	TURBIDITY	< 1	2/3/2005	RB
487886	ORP	6535mV	2/3/2005	GF
487887	BICARBONATE	96	2/4/2005	EB
487888	CALCIUM SM3111D	26.3	2/22/2005	RB
487889	CARBONATE	< 1	2/8/2005	EB
4878810	CHLORIDE EPA300.0	2.64	2/3/2005	GF

Signature

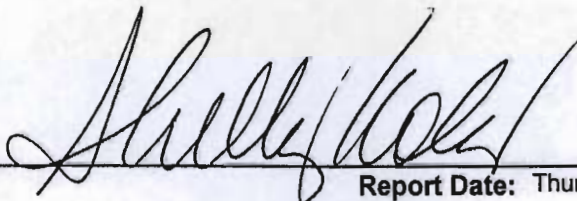


Report Date: Thursday, March 17, 2005

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Phone: (208) 733-4250
Fax: (208) 734-2539

4878811	HARDNESS (CaCo3)	65.8	2/22/2005	RB
4878812	MAGNESIUM SM3111B	12.0	2/19/2005	RB
4878813	NITRATE/N EPA300.0	0.05	2/3/2005	GF
4878814	NITRITE/N EPA300.0	<0.02	2/3/2005	GF
4878815	NITRATE/N + NITRITE/N	0.05	2/3/2005	GF
4878816	POTASSIUM SM3111B	1.5	2/9/2005	RB
4878817	SILICA	23	2/7/2005	GF
4878818	SODIUM SM3111B	11.3	2/8/2005	RB
4878819	SULFATE EPA300.0	20.1	2/3/2005	GF
4878820	ALKALINITY SM2320B	96	2/4/2005	EB
4878821	TDS SM2540C	130	2/3/2005	KC
4878822	TOC	0.6	2/10/2005	KJR
4878823	TSS EPA160.2	< 1	2/3/2005	KC
4878824	ALUMINIUM	<0.1	2/10/2005	RLH
4878825	ANTIMONY	<0.005	2/14/2005	RB

Signature

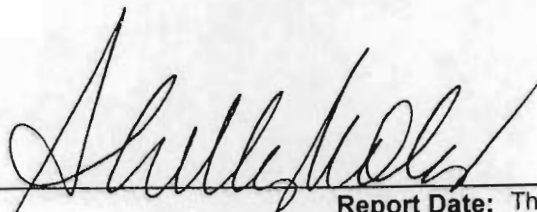


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MAGIC VALLEY LABS
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Twin Falls ID 83303-1867
Phone: (208) 733-4250
Fax: (208) 734-2539

4878826	ARSENIC	0.007	2/10/2005	RB
4878827	BARIUM	<0.5	2/8/2005	RB
4878828	BERYLLIUM	<0.0005	2/18/2005	RB
4878829	CADMIUM	<0.0005	2/15/2005	RB
4878830	CHROMIUM	<0.005	2/16/2005	RB
4878831	COPPER	<0.1	2/4/2005	RB
4878832	TOTAL IRON	<0.1	2/5/2005	RB
4878833	DISSOLVED IRON SM3111B	<0.1	2/5/2005	RB
4878834	TOTAL MANGANESE	<0.05	2/4/2005	RB
4878835	DISSOLVED MN SM3111B	<0.05	2/4/2005	RB
4878836	MERCURY	<0.001	2/4/2005	RB
4878837	NICKEL	<0.01	2/11/2005	RB
4878838	SELENIUM	<0.005	2/11/2005	RB
4878839	SILVER	<0.05	2/22/2005	RB
4878840	THALLIUM	<0.002	2/14/2005	RB

Signature



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Phone: (208) 733-4250

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4878841	ZINC	<0.05	2/23/2005	RB
4878842	ODOR	ND	2/3/2005	RB
4878843	COLOR	ND	2/3/2005	RB
4878844	SURFACTANTS	<0.01	2/7/2005	GF
4878845	LANGLIER INDEX	-1.27	2/26/2005	RB
4878846	CYANIDE	<0.2	2/10/2005	KJP
4878847	FLUORIDE	0.22	2/3/2005	GF
4878848	LEAD	<0.005	2/17/2005	RB
4678849	FILTER	*		

Signature

Report Date: Thursday, March 17, 2005

Sample ID: BCRW-C2SW-1
Sample Date: February 2, 2005

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Phone: (208) 733-4250
Fax: (208) 734-2539

BAKER CITY OF

P.O. BOX 650

BAKER CITY OR 97814

Collection Date	2/2/2005	Received Date	2/2/2005	Location	
Collection Time	10:30 AM	Received Time	6:00 PM	SOURCE MTN LINE	
Sample #	Test / Method Code	Results in mg/L	Date Analyzed	Analyst	
488291	TEMP. epa170.1	12.0C	2/2/2005	KE	
488292	CONDUCTIVITY	123uS	2/3/2005	GF	
488293	DISS. OXYGEN EPA360.1	10.8	2/3/2005	MW	
488294	pH EPA150.1	7.0	2/3/2005	RB	
488295	TURBIDITY	< 1	2/3/2005	RB	
488296	ORP	665mV	2/3/2005	GF	
488297	BICARBONATE	28	2/4/2005	EB	
488298	CALCIUM SM3111D	16.4	2/22/2005	RB	
488299	CARBONATE	< 1	2/8/2005	EB	
4882910	CHLORIDE EPA300.0	0.24	2/3/2005	GF	

TOTAL COLIFORM = 21 MPN/100ML
FECAL COLIFORM = 6 CFU/100ML
E-COLI = 5 MPN/100ML

Signature

Report Date: Thursday, March 17, 2005

MAGIC VALLEY LABS
210 Addison Ave / PO Box 1867
Twin Falls ID 83303-1867
Phone: (208) 733-4250
Fax: (208) 734-2539

4882911	HARDNESS (CaCo3)	41.0	2/22/2005	RB
4882912	MAGNESIUM SM3111B	2.04	2/19/2005	RB
4882913	NITRATE/N EPA300.0	0.06	2/3/2005	GF
4882914	NITRITE/N EPA300.0	<0.02	2/3/2005	GF
4882915	NITRATE/N + NITRITE/N	0.06	2/3/2005	GF
4882916	POTASSIUM SM3111B	<0.5	2/9/2005	RB
4882917	SILICA	9.0	2/7/2005	GF
4882918	SODIUM SM3111B	1.95	2/8/2005	RB
4882919	SULFATE EPA300.0	2.80	2/3/2005	GF
4882920	ALKALINITY SM2320B	28	2/4/2005	EB
4882921	TDS SM2540C	40	2/3/2005	KC
4882922	TOC	0.6	2/10/2005	KJR
4882923	TSS EPA160.2	< 1	2/3/2005	KC
4882924	ALUMINIUM	<0.1	2/10/2005	RLH
4882925	ANTIMONY	<0.005	2/14/2005	RB

TOTAL COLIFORM = 21 MPN/100ML
FECAL COLIFORM = 6 CFU/100ML
E-COLI = 5 MPN/100ML

Signature

Report Date: Thursday, March 17, 2005

MAGIC VALLEY LABS
210 Addison Ave / PO Box 1867
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4882926	ARSENIC	<0.005	2/10/2005	RB
4882927	BARIUM	<0.5	2/8/2005	RB
4882928	BERYLLIUM	<0.0005	2/18/2005	RB
4882929	CADMIUM	<0.0005	2/15/2005	RB
4882930	CHROMIUM	<0.005	2/16/2005	RB
4882931	COPPER	<0.1	2/4/2005	RB
4882932	TOTAL IRON	<0.1	2/5/2005	RB
4882933	DISSOLVED IRON SM3111B	<0.1	2/5/2005	RB
4882934	TOTAL MANGANESE	<0.05	2/4/2005	RB
4882935	DISSOLVED MN SM3111B	<0.05	2/4/2005	RB
4882936	MERCURY	<0.001	2/4/2005	RB
4882937	NICKEL	<0.01	2/11/2005	RB
4882938	SELENIUM	<0.005	2/11/2005	RB
4882939	SILVER	<0.05	2/22/2005	RB
4882940	THALLIUM	<0.002	2/14/2005	RB

TOTAL COLIFORM = 21 MPN/100ML
FECAL COLIFORM = 6 CFU/100ML
E-COLI = 5 MPN/100ML

Signature

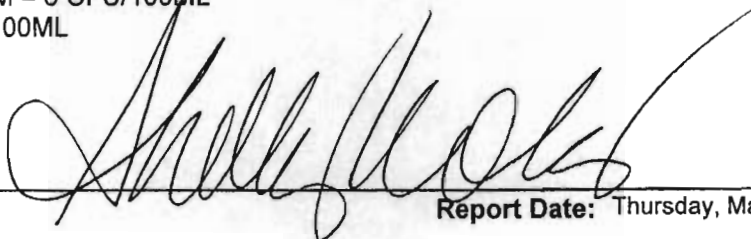
Report Date: Thursday, March 17, 2005

MAGIC VALLEY LABS
210 Addison Ave / PO Box 1867
Twin Falls ID 83303-1867
Phone: (208) 733-4250
Fax: (208) 734-2539

4882941	ZINC	<0.05	2/23/2005	RB
4882942	ODOR	ND	2/3/2005	RB
4882943	COLOR	ND	2/3/2005	RB
4882944	SURFACTANTS	0.031	2/7/2005	GF
4882945	LANGLIER INDEX	-1.97	2/26/2005	RB
4882946	CYANIDE	<0.2	2/10/2005	KJP
4882947	FLUORIDE	0.36	2/3/2005	GF
4882948	LEAD	<0.005	2/17/2005	RB
4882949	FILTER	*		

TOTAL COLIFORM = 21 MPN/100ML
FECAL COLIFORM = 6 CFU/100ML
E-COLI = 5 MPN/100ML

Signature



Report Date: Thursday, March 17, 2005



Magic Valley Labs, Inc
210 Addison Ave PO Box 1867
Twin Falls, ID 83301
ID 100001

Total Trihalomethanes and Haloacetic Acids

TO BE FILLED IN BY PERSON SUBMITTING SAMPLE:	
PWS ID #:	4100073
Water System	BAKER CITY OF
Address	P.O. BOX 650
City, State, Zip	BAKER CITY OR 97814
SAMPLE IDENTIFICATION: (Listed below sample results)	
Sampled by:	
Date Collected: 2/2/2005	Time Collected: 10:30:00 AM
TO BE COMPLETED BY LABORATORY:	
Date Received in Lab: 2/2/2005	Date Analyzed: THM: 2/9/05 HAA: 2/15/05
Lab sample ID#: 488321 (Listed below)	Analysts: THM: * HAA: *

	Method:	EPA 524.2	Method detection limit (mg/l):	0.0005
THMs	Sample results (mg/l)			
	#1	#2	#3	#4
CHCl ₃				
CHBrCl ₂				
CHBr ₂ Cl				
CHBr ₃				
Total THM 2950	ND			

HALOACETIC ACIDS	Method: SM 6251B		Method detection limit (mg/l): 0.001	
	Sample results (mg/l)			
	#1	#2	#3	#4
MCAA				
DCAA				
TCAA				
MBAA				
DBAA				
Total HAA5 2456	ND			

Sample Location	#1: SOURCE MTN LINE
	#2:
	#3:
	#4:
Identify DBP MAX location with * or other designation	
Reviewed by: <i>[Signature]</i>	Date: 3-5-05



MAGIC VALLEY LABS

210 Addison Box 1867

Twin Falls, ID 83301

ID 100001

System ID #: 4100073	Entry Point or Source ID:	Source name(s):
Water System BAKER CITY OF		
Address P.O. BOX 650		
City, State, Zip BAKER CITY OR 97814		
Sample Identification		
Sampled at: SOURCE MTN LINE		Sampled by:
Date Collected: 2/2/2005		Time collected: 10:30:00 AM
Date recieved: 2/2/2005		Date analyzed:
Sample Composition:		Single
Lab sample ID #: 48831		Sample Compositied: No

Synthetic Organic Chemicals

Regulated						
Contaminant	Code	MCL mg/l	Analysis mg/l	LRL	Method	Analyst
2,4-D	2105	0.07	ND	0.0001	515.3	*
2,4,5-TP Silvex	2110	0.05	ND	0.0001	515.3	*
Adipates	2035	0.4	ND	0.002	525.2	*
Alachlor (Lasso)	2051	0.002	ND	0.0001	525.2	*
Atrazine	2050	0.003	ND	0.0001	525.2	*
Benzo(A)Pyrene	2306	0.0002	ND	0.00002	525.2	*
BHC-gamma (Lindane)	2010	0.0002	ND	0.00002	505	*
Carbofuran	2046	0.04	ND	0.0009	531.1	*
Chlordane	2959	0.002	ND	0.0001	505	*
Dalapon	2031	0.2	ND	0.001	515.3	*
Dibromochloropropane	2931	0.0002	ND	0.00002	504.1	*
Dinoseb	2041	0.007	ND	0.0001	515.3	*
Dioxin	2063	3x10 ⁻⁸				
Diquat	2032	0.02	ND	0.0004	549.2	*
Endothall	2033	0.1	ND	0.009	548.1	*
Endrin	2005	0.002	ND	0.00003	505	*
Ethylene Dibromide (EDB)	2946	0.00005	ND	0.00001	504.1	*
Glyphosate	2034	0.7	ND	0.006	547	*

Heptachlor Epoxide	2067	0.0002	ND	0.00002	505	*
Heptachlor	2065	0.0004	ND	0.00004	505	*
Hexachlorobenzene (HCB)	2274	0.001	ND	0.0001	525.2	*
Hexachlorocyclopentadiene	2042	0.05	ND	0.0001	525.2	*
Methoxychlor	2015	0.04	ND	0.0001	505	*
Pentachlorophenol	2326	0.001	ND	0.00004	515.3	*
Phthalates	2039	0.006	ND	0.0006	525.2	*
Picloram	2040	0.5	ND	0.0001	515.3	*
Polychlorinated Biphenyls	2383	0.0005	ND	0.00001	505	*
Simazine	2037	0.004	ND	0.00007	525.5	*
Toxaphene	2020	0.003	ND	0.001	505	*
Vydate	2036	0.2	ND	0.002	531.1	*

Unregulated

Contaminant	Code	Analysis mg/l	Method	MDL	Analyst
3-Hydroxycarbofuran	2066	ND	531.1	0.004	*
Aldicarb	2047	ND	531.1	0.002	*
Aldicarb Sulfoxide	2043	ND	531.1	0.003	*
Aldicarb Sulfone	2044	ND	531.1	0.001	*
Aldrin	2356	ND	505	0.0001	*
Butachlor	2076	ND	507	0.001	*
Carbaryl	2021	ND	531.1	0.004	*
Dicamba	2440	ND	515.1	0.005	*
Dieldrin	2070	ND	505	0.0001	*
Methomyl	2022	ND	531.1	0.004	*
Metolachlor	2045	ND	507	0.002	*
Metribuzin	2595	ND	507	0.001	*
Propachlor	2077	ND	507	0.001	*

BAKER CITY OF 488311

*ORELAP #ID200001

Signature / Date:

Handwritten signature 3-5-05



Magic Valley Labs
210 Addison Box 1867
Twin Falls, ID 83301
ID 100001

Water System ID #: 4100073	Source ID:	Source name(s):			
Water System	BAKER CITY OF				
Address	P.O. BOX 650				
City, State, Zip	BAKER CITY OR 97814				
Sample Identification					
Sampled at: SOURCE MTN LINE	Sampled by:				
Date Collected: 2/2/2005	Time collected: 10:30:00 AM				
Date received: 2/2/2005	Date analyzed:				
Sample Composition:	Single				
Lab sample ID #: 48832	Sample Compositd : No				
Volatile Organic Chemicals					
MDL for all test = 0.0005					
Regulated VOCs					
Contaminant	Code	MCL mg/l	Analysis mg/l	Method	Analyst
1,1-Dichloroethylene	2977	0.007	ND	524.2	*Anatek
1,1,1-Trichloroethane	2981	0.2	ND	524.2	*Anatek
1,1,2-Trichloroethane	2985	0.005	ND	524.2	*Anatek
1,2 Dichloroethane	2980	0.005	ND	524.2	*Anatek
1,2 Dichloropropane	2983	0.005	ND	524.2	*Anatek
1,2,4-Trichlorobenzene	2378	0.07	ND	524.2	*Anatek
Benzene	2990	0.005	ND	524.2	*Anatek
Carbon Tetrachloride	2982	0.005	ND	524.2	*Anatek
Cis-1,2-Dichloroethylene	2380	0.07	ND	524.2	*Anatek
Methylene Chloride	2964	0.005	ND	524.2	*Anatek
Ethylbenzene	2992	0.7	ND	524.2	*Anatek
Chlorobenzene	2989	0.1	ND	524.2	*Anatek
1-2-Dichlorobenzene	2968	0.6	ND	524.2	*Anatek
1-4-Dichlorobenzene	2969	0.075	ND	524.2	*Anatek
Styrene	2996	0.1	ND	524.2	*Anatek
Tetrachloroethylene	2987	0.005	ND	524.2	*Anatek
Toluene	2991	1.0	ND	524.2	*Anatek
Total Xylenes	2955	10.0	ND	524.2	*Anatek
Trans-1,2-Dichloroethylene	2979	0.1	ND	524.2	*Anatek

Trichloroethylene	2984	0.005	ND	524.2	*Anatek
Vinyl Chloride	2976	0.002	ND	524.2	*Anatek
Unregulated					
Contaminant	Code	Analysis mg/l	Method	Analyst	
1,1-Dichloroethane	2978	ND	524.2	*Anatek	
1,1-Dichloropropene	2410		524.2	*Anatek	
1,1,1,2-Tetrachloroethane	2986		524.2	*Anatek	
1,1,2,2-Tetrachloroethane	2988		524.2	*Anatek	
1,2,3-Trichloropropane	2414		524.2	*Anatek	
1,3-Dichloropropane	2412		524.2	*Anatek	
Trans-1,3-Dichloropropene	2224		524.2	*Anatek	
Cis-1,3-Dichloropropene	2413			*Anatek	
2,2-Dichloropropane	2416		524.2	*Anatek	
Bromobenzene	2993		524.2	*Anatek	
Bromodichloromethane	2943		524.2	*Anatek	
Bromoform	2942		524.2	*Anatek	
Bromomethane	2214		524.2	*Anatek	
Chloroethane	2216		524.2	*Anatek	
Chloroform	2941		524.2	*Anatek	
Chloromethane	2210		524.2	*Anatek	
Dibromochloromethane	2944		524.2	*Anatek	
Dibromomethane	2408		524.2	*Anatek	
1,3-Dichlorobenzene	2967		524.2	*Anatek	
2-Chlorotoluene	2965		524.2	*Anatek	
4-Chlorotoluene	2966		524.2	*Anatek	

Comments: *ORELAP # ID200001

Signature: [Handwritten Signature] Date: 3-5-05

H:\home\m\meyer\results\c06 3/10/93

LAB FEDERAL ID #ID00911

LAB SAMPLE # 488301

DATE LAB REC'D SAMPLE: 2/2/2005

DATE REPORTED BY LAB: 3/11/2005

COMPLIANCE SAMPLE

☒ YES
☐ NO

☐ REPLACEMENT SAMPLE

COLLECTION DATE: 2/2/2005

COLLECTION TIME: 10:30:00 AM
(24 hour clock)

SAMPLE TYPE: RADIS

☐ PRIVATE

☒ PUBLIC

PWS#: 4100073

PWS NAME: BAKER CITY OF

SAMPLING POINT/LOCATION: SOURCE MTN

TAG #/FACILITY ID:

COLLECTOR'S NAME:

CONTACT PHONE #:

**MAGIC VALLEY LABS, INC.**

210 Addison Ave. PO Box 1867

Twin Falls ID 83301

Phone: 208-733-4250

Fax: 208-734-8539

PUBLIC DRINKING WATER SYSTEM RADIOLOGICAL ANALYSIS REPORT:

FRDS	CONTAMINANT	RESULT µg/L	RESULT pCi/L	MCL	ANALYSIS DATE	ANALYSIS T	METHOD
4002	Gross Alpha Activity (includes radium and uranium)		ND		2/16/05	*	E900.0
4006	Uranium, Combined convert to activity; multiply concentration in µg/L x 0.67 (required if gross alpha exceeds 15pCi/L)						
4000	Net Alpha subtract Uranium activity from Gross alpha activity (includes radium but excludes uranium)	ND		30 µg/L	2/15/05	*	E200.8
4020	Radium-226 (required if alpha activity is greater than 5pCi/L)			15 pCi/L			
4030	Radium-228				2/16/05	*	E903.0
					2/16/05	*	E904.0
4010	Radium, Combined (226 & 228) add results of Ra-226 and Ra-228			5 pCi/L			
4100	Gross Beta/Photon Activity (required to measure major isotopes if activity exceeds 50pCi/L)			4 mREM			

ND = Not detected within sensitivity of instrument

No analysis performed

*TEST PERFORMED BY

ENERGY LABS

Brenda Ellis 3-15-05

Signature of Laboratory Supervisor Date

BAKER CITY OF

P.O. BOX 650

BAKER CITY OR 97814

COMPOSITE SAMPLE DATES:

1ST Quarterly Sample:

2nd Quarterly Sample:

3rd Quarterly Sample:

Enter 4th Quarter or latest sample date beside

Collection Date at top of form

 BAKER CITY OF
 P.O. BOX 650
 BAKER CITY OR 97814

MAGIC VALLEY LABS

210 Addison Ave / PO Box 1867

Twin Falls ID 83303-1867

Phone: (208) 733-4250

Fax: (208) 734-2539

BAKER CITY OF

P.O. BOX 650

BAKER CITY OR 97814

Collection Date	2/2/2005	Received Date	2/2/2005	Location	
Collection Time	10:30 AM	Received Time	6:00 PM	SPECIAL PROJECT - SOURCE	
				MTN LINE	
Sample #	Test / Method Code	Results in mg/L	Date Analyzed	Analyst	
487921	RADON	<100	2/4/2005	DB	

Signature



Report Date: Thursday, March 17, 2005

Sample ID: BCRW-C2SW-2
Sample Date: March 23, 2005



Magic Valley Labs, Inc
 210 Addison Ave PO Box 1867
 Twin Falls, ID 83301
 ID 100001

Total Trihalomethanes and Haloacetic Acids

TO BE FILLED IN BY PERSON SUBMITTING SAMPLE:			
PWS ID #:	4100073		
Water System	BAKER CITY OF		
Address	P.O. BOX 650		
City, State, Zip	BAKER CITY OR 97814		
SAMPLE IDENTIFICATION:		(Listed below sample results)	
Sampled by:			
Date Collected:	3/23/2005	Time Collected:	10:00:00 AM
TO BE COMPLETED BY LABORATORY:			
Date Received in Lab:	3/23/2005	Date Analyzed:	THM: HAA:
Lab sample ID#:	500141 (Listed below)	Analysts:	THM: * HAA: *

	Method:	EPA 524.2	Method detection limit (mg/l):	0.0005
THMs	Sample results (mg/l)			
	#1	#2	#3	#4
CHCl ₃				
CHBrCl ₂				
CHBr ₂ Cl				
CHBr ₃				
Total THM 2950	0.0199			

	Method:	SM 6251B	Method detection limit (mg/l):	0.001
HALOACETIC ACIDS	Sample results (mg/l)			
	#1	#2	#3	#4
MCAA				
DCAA				
TCAA				
MBAA				
DBAA				
Total HAA5 2456	0.024			

Sample Location	#1: GROUND WATER PROJECT - INJECTION WELL
	#2:
	#3:
	#4:
Identify DBP MAX location with * or other designation	
Reviewed by: <i>Brenda Ellis</i>	Date: 4-27-05

MAGIC VALLEY LABS
210 Addison Ave / PO Box 1867
Twin Falls ID 83303-1867
Phone: (208) 733-4250
Fax: (208) 734-2539

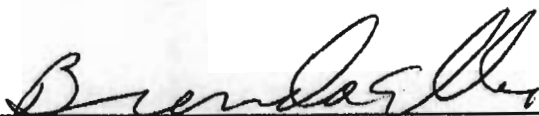
BAKER CITY OF

P.O. BOX 650
BAKER CITY OR 97814

Collection Date	3/23/2005	Received Date	3/23/2005	Location	
Collection Time	10:00 AM	Received Time	10:00 AM	GROUND WATER PROJECT -	
				INJECTION WELL	
Sample #	Test / Method Code	Results in mg/L	Date Analyzed	Analyst	
500151	CHLORIDE EPA300.0	1.25	3/25/2005	GF	

TOTAL COLIFORM < 1 MPN/100ML
FECAL COLIFORM < 1 CFU/100ML
E-COLI < 1 MPN/100ML

Signature



Report Date: Tuesday, April 26, 2005

Sample ID: BCRW-C2SW-3
Sample Date: June 29, 2005



MAGIC VALLEY LABS

210 Addison Box 1867

Twin Falls, ID 83301

ID 100001

System ID #: 4100073	Entry Point or Source ID:	Source name(s):
Water System BAKER CITY OF		
Address P.O. BOX 650		
City, State, Zip BAKER CITY OR 97814		
Sample Identification		
Sampled at: SOURCE / OLD MOUNTAIN LINE		Sampled by: KEN ELLIS
Date Collected: 6/29/2005		Time collected: 10:00:00 AM
Date recieved: 6/29/2005		Date analyzed:
Sample Composition:		Single
Lab sample ID #: 52488		Sample Composited: No

Synthetic Organic Chemicals

Regulated

Contaminant	Code	MCL mg/l	Analysis mg/l	LRL	Method	Analyst
2,4-D	2105	0.07	ND	0.0001	515.3	*
2,4,5-TP Silvex	2110	0.05	ND	0.0001	515.3	*
Adipates	2035	0.4	ND	0.002	525.2	*
Alachlor (Lasso)	2051	0.002	ND	0.0001	525.2	*
Atrazine	2050	0.003	ND	0.0001	525.2	*
Benzo(A)Pyrene	2306	0.0002	ND	0.00002	525.2	*
BHC-gamma (Lindane)	2010	0.0002	ND	0.00002	505	*
Carbofuran	2046	0.04	ND	0.0009	531.1	*
Chlordane	2959	0.002	ND	0.0001	505	*
Dalapon	2031	0.2	ND	0.001	515.3	*
Dibromochloropropane	2931	0.0002	ND	0.00002	504.1	*
Dinoseb	2041	0.007	ND	0.0001	515.3	*
Dioxin	2063	3x10 ⁻⁸				
Diquat	2032	0.02	ND	0.0004	549.2	*
Endothall	2033	0.1	ND	0.009	548.1	*
Endrin	2005	0.002	ND	0.00003	505	*
Ethylene Dibromide (EDB)	2946	0.00005	ND	0.00001	504.1	*
Glyphosate	2034	0.7	ND	0.006	547	*

Heptachlor Epoxide	2067	0.0002	ND	0.00002	505	*
Heptachlor	2065	0.0004	ND	0.00004	505	*
Hexachlorobenzene (HCB)	2274	0.001	ND	0.0001	525.2	*
Hexachlorocyclopentadiene	2042	0.05	ND	0.0001	525.2	*
Methoxychlor	2015	0.04	ND	0.0001	505	*
Pentachlorophenol	2326	0.001	ND	0.00004	515.3	*
Phthalates	2039	0.006	ND	0.0006	525.2	*
Picloram	2040	0.5	ND	0.0001	515.3	*
Polychlorinated Biphenyls	2383	0.0005	ND	0.00001	505	*
Simazine	2037	0.004	ND	0.00007	525.5	*
Toxaphene	2020	0.003	ND	0.001	505	*
Vydate	2036	0.2	ND	0.002	531.1	*

ANALYST	DATE	METHOD
*	7/7/2005	504.1
*	7/13/2005	50
*	7/8/2005	515.3
*	7/13/2005	525.2

*Test performed by Anatek Labs, Inc ORELAP #ID200001

Stan G. Allen 8-15-05
Signature Date:

LAB FEDERAL ID #ID00911
 DATE LAB REC'D SAMPLE 6/29/2005
 COMPLIANCE SAMPLE ☒ YES ☐ NO
 COLLECTION DATE 6/29/2005
 SAMPLE TYPE RADS
 PWS# 4100073
 SAMPLING POINT/LOCATION SOURCE / OLD MOUNTAIN LINE
 COLLECTOR'S NAME KEN ELLIS
 LAB SAMPLE # 524871
 DATE REPORTED BY LAB 9/14/2005
 REPLACEMENT SAMPLE ☐
 COLLECTION TIME 10:00:00 AM
 (24 hour clock)
 PRIVATE ☐ PUBLIC ☒
 PWS NAME BAKER CITY OF
 TAG #/FACILITY ID
 CONTACT PHONE #



MAGIC VALLEY LABS, INC.
 210 Addison Ave. PO Box 1867
 Twin Falls ID 83301
 Phone: 208-733-4250
 Fax: 208-734-8539

PUBLIC DRINKING WATER SYSTEM RADIOLOGICAL ANALYSIS REPORT:

FRDS	CONTAMINANT	RESULT	RESULT	MCL	ANALYSIS	ANALYS	METHOD
4002	Gross Alpha Activity (includes radium and uranium)	µg/L	pc/L		DATE	T	
4006	Uranium, Combined convert to activity, multiply concentration in µg/L x 0.67 (required if gross alpha exceeds 15pCi/L)	ND	1.1	30 µg/L	07/15/05	*	E900.0
4000	Net Alpha subtract Uranium activity from Gross alpha activity (includes radium but excludes uranium)			15 pCi/L	8/10/05	**	E200.8
4020	Radium-226 (required if alpha activity is greater than 5pCi/L)		ND		8/4/05	**	E903.0
4030	Radium-228		ND		8/4/05	**	E904.0
4010	Radium, Combined (226 & 228) add results of Ra-226 and Ra-228		ND	5 pCi/L			
4100	Gross Beta/Photon Activity (required to measure major isotopes if activity exceeds 50pCi/L)			4 mREM			

ND = Not detected within sensitivity of instrument

Signature of Laboratory Supervisor Date

BAKER CITY OF

P.O. BOX 650

BAKER CITY OR 97814

(Reserved for comments/notebooks)

TEST PERFORMED BY

*Bureau of Laboratories

**ENERGY LABORATORIES

COMPOSITE SAMPLE

DATES:

1ST Quarterly Sample:

2nd Quarterly Sample:

3rd Quarterly Sample:

Enter 4th Quarter or latest sample date beside

Collection Date at top of form

BAKER CITY OF
 P.O. BOX 650
 BAKER CITY OR 97814

MAGIC VALLEY LABS

210 Addison Ave / PO Box 1867

Twin Falls ID 83303-1867

Phone: (208) 733-4250

Fax: (208) 734-2539


BAKER CITY OF

P.O. BOX 650

BAKER CITY OR 97814

Collection Date	6/29/2005	Received Date	6/29/2005	Location	
Collection Time	10:00 AM	Received Time	6:00 PM	SOURCE/OLD MOUNTAIN LINE	
Sample #	Test / Method Code	Results in mg/L	Date Analyzed	Analyst	
539371	ALUMINIUM	<0.1	8/2/2005	JJW	

Signature


Report Date: Wednesday, September 14, 2005



Magic Valley Labs, Inc
210 Addison Ave PO Box 1867
Twin Falls, ID 83301
ID 100001

Total Trihalomethanes and Haloacetic Acids

TO BE FILLED IN BY PERSON SUBMITTING SAMPLE:

PWS ID #: 4100073

Water System BAKER CITY OF

Address P.O. BOX 650

City, State, Zip BAKER CITY OR 97814

SAMPLE IDENTIFICATION: (Listed below sample results)

Sampled by: KEN ELLIS

Date Collected: 6/29/2005

Time Collected: 10:00:00 AM

TO BE COMPLETED BY LABORATORY:

Date Received in Lab: 6/29/2005

Date Analyzed: THM: 7/7/05 HAA: 7/6/05

Lab sample ID#: 524901

(Listed below)

Analysts:

THM: *

HAA: *

	Method:	EPA 524.2	Method detection limit (mg/l):	0.0005
THMs	Sample results (mg/l)			
	#1	#2	#3	#4
CHCl ₃				
CHBrCl ₂				
CHBr ₂ Cl				
CHBr ₃				
Total THM 2950	0.0075			

HALOACETIC ACIDS	Method: SM 6251B		Method detection limit (mg/l): 0.001	
	Sample results (mg/l)			
	#1	#2	#3	#4
MCAA				
DCAA				
TCAA				
MBAA				
DBAA				
Total HAA5 2456	0.012			

Sample Location	#1: SOURCE / OLD MOUNTAIN LINE
	#2:
	#3:
	#4:
Identify DBPMAx location with * or other designation	
Reviewed by: <i>Brenda Kelly</i>	Date: 8-16-05



Magic Valley Labs
210 Addison Box 1867
Twin Falls, ID 83301
ID 100001

Water System ID #: 4100073	Source ID:	Source name(s):			
Water System	BAKER CITY OF				
Address	P.O. BOX 650				
City, State, Zip	BAKER CITY OR 97814				
Sample Identification					
Sampled at: SOURCE / OLD MOUNTAIN LINE	Sampled by: KEN ELLIS				
Date Collected: 6/29/2005	Time collected: 10:00:00 AM				
Date received: 6/29/2005	Date analyzed: 7/7/05				
Sample Composition:	Single				
Lab sample ID #: 52489	Sample Compositied : No				
Volatile Organic Chemicals					
MDL for all test = 0.0005					
Regulated VOCs					
Contaminant	Code	MCL mg/l	Analysis mg/l	Method	Analyst
1,1-Dichloroethylene	2977	0.007	ND	524.2	*
1,1,1-Trichloroethane	2981	0.2	ND	524.2	*
1,1,2-Trichloroethane	2985	0.005	ND	524.2	*
1,2 Dichloroethane	2980	0.005	ND	524.2	*
1,2 Dichloropropane	2983	0.005	ND	524.2	*
1,2,4-Trichlorobenzene	2378	0.07	ND	524.2	*
Benzene	2990	0.005	ND	524.2	*
Carbon Tetrachloride	2982	0.005	ND	524.2	*
Cis-1,2-Dichloroethylene	2380	0.07	ND	524.2	*
Methylene Chloride	2964	0.005	ND	524.2	*
Ethylbenzene	2992	0.7	ND	524.2	*
Chlorobenzene	2989	0.1	ND	524.2	*
1-2-Dichlorobenzene	2968	0.6	ND	524.2	*
1-4-Dichlorobenzene	2969	0.075	ND	524.2	*
Styrene	2996	0.1	ND	524.2	*
Tetrachloroethylene	2987	0.005	ND	524.2	*
Toluene	2991	1.0	ND	524.2	*
Total Xylenes	2955	10.0	ND	524.2	*
Trans-1,2-Dichloroethylene	2979	0.1	ND	524.2	*

Trichloroethylene	2984	0.005	ND	524.2	*
Vinyl Chloride	2976	0.002	ND	524.2	*

Comments: *Test performed by Anatek Labs ORELAP # ID200001

Trinidad Ellis 8-15-05
Signature / Date:

H: home mic never results vne 3/10/93

LAB FEDERAL ID #ID00911 LAB SAMPLE # 524871

DATE LAB RECD SAMPLE: 6/29/2005 DATE REPORTED BY LAB: 8/2/2005

COMPLIANCE SAMPLE ☒ YES ☐ REPLACEMENT SAMPLE

COLLECTION DATE: 6/29/2005 COLLECTION TIME: 10:00:00 AM
(24 hour clock)

SAMPLE TYPE: RADS ☐ PRIVATE ☒ PUBLIC

PWS#: 4100073 PWS NAME: BAKER CITY OF

SAMPLING POINT/LOCATION: SOURCE / OLD MOUNTAIN TAG #/FACILITY ID:

COLLECTOR'S NAME: CONTACT PHONE #:

KEN ELLIS



MAGIC VALLEY LABS, INC.
 210 Addison Ave. PO Box 1867
 Twin Falls ID 83301
 Phone: 208-733-4250
 Fax: 208-734-8539

PUBLIC DRINKING WATER SYSTEM RADIOLOGICAL ANALYSIS REPORT:

FRDS	CONTAMINANT	RESULT µg/L	RESULT pCi/L	MCL	ANALYSIS DATE	ANALYSIS T	METHOD
4002	Gross Alpha Activity (includes radium and uranium)		1.1		07/15/05	*	E900.0
4006	Uranium, Combined convert to activity, multiply concentration in µg/L x 0.67 (required if gross alpha exceeds 15pCi/L)			30 µg/L		*	E200.8
4000	Net Alpha subtract Uranium activity from Gross alpha activity (includes radium but excludes uranium)			15 pCi/L		*	E903.0
4020	Radium-226 (required if alpha activity is greater than 5pCi/L)					*	E904.0
4030	Radium-228						
4010	Radium, Combined (226 & 228) add results of Ra-226 and Ra-228			5 pCi/L			
4100	Gross Beta/Photon Activity (required to measure major isotopes if activity exceeds 50pCi/L)			4 mREM			

ND = Not detected within sensitivity of instrument

... = No analysis performed

Signature of Laboratory Supervisor Date

Ken Ellis 8-2-05

*TEST PERFORMED BY

Bureau of Laboratories

(Reserved for
comments/notations)

COMPOSITE SAMPLE

DATES:

1ST Quarterly Sample:
 2nd Quarterly Sample:
 3rd Quarterly Sample:
 Enter 4th Quarter or latest
 sample date beside

Collection Date at top of form

BAKER CITY OF
 P. O. BOX 650
 BAKER CITY OR 97814

BAKER CITY OF
 P. O. BOX 650
 BAKER CITY OR 97814

MAGIC VALLEY LABS

210 Addison Ave / PO Box 1867

Twin Falls ID 83303-1867

Phone: (208) 733-4250

Fax: (208) 734-2539

**CHUCK EVERSON
BAKER CITY OF****P.O. BOX 650
BAKER CITY OR 97814**

Collection Date	6/29/2005	Received Date	6/29/2005	Location	
Collection Time	10:00 AM	Received Time	6:00 PM	SOURCE / OLD MOUNTAIN LINE	
Sample #	Test / Method Code	Results in mg/L	Date Analyzed	Analyst	
524861	ODOR	ND	6/30/2005	RB	
524862	COLOR	ND	6/30/2005	RB	
524863	SURFACTANTS EPA425.1	<0.01	6/30/2005	GF	
524864	LANGLIER INDEX	-2.1	8/23/2005	RB	
524865	CYANIDE	<0.01	7/6/2005	ETL	
524866	FLUORIDE EPA300.0	<0.01	6/30/2005	GF	

Signature

Report Date: Tuesday, September 20, 2005

MAGIC VALLEY LABS

210 Addison Ave / PO Box 1867

Twin Falls ID 83303-1867

Phone: (208) 733-4250

Fax: (208) 734-2539

CHUCK EVERSON

BAKER CITY OF

P.O. BOX 650

BAKER CITY OR 97814

Collection Date	6/29/2005	Received Date	6/29/2005	Location	
Collection Time	10:00 AM	Received Time	6:00 PM	SOURCE / OLD MOUNTAIN LINE	
Sample #	Test / Method Code	Results in mg/L	Date Analyzed	Analyst	
524851	THALLIUM EPA200.9	<0.002	7/7/2005	RB	
524851	ANTIMONY	<0.005	7/2/2005	RB	
524852	ARSENIC EPA 200.9	<0.005	7/1/2005	RB	
524853	BARIUM SM3111D	< 0.5	7/7/2005	RB	
524854	BERYLLIUM EPA200.9	<0.005	7/5/2005	RB	
524855	CADMIUM SM3113B	<0.0005	7/6/2005	RB	
524856	CHROMIUM SM3113B	<0.005	7/6/2005	RB	
524857	COPPER SM3111B	<0.1	6/30/2005	RB	
524858	TOTAL IRON	<0.1	7/1/2005	RB	
524859	DISSOLVED IRON SM3111B	<0.1	7/1/2005	RB	

Signature

Report Date: Tuesday, August 23, 2005

MAGIC VALLEY LABS

210 Addison Ave / PO Box 1867

Twin Falls ID 83303-1867

Phone: (208) 733-4250

Fax: (208) 734-2539

CHUCK EVERSON

BAKER CITY OF

P.O. BOX 650

BAKER CITY OR 97814

Collection Date 6/29/2005		Received Date 6/29/2005	Location	
Collection Time 10:00 AM		Received Time 6:00 PM	SOURCE / OLD MOUNTAIN LINE	
Sample #	Test / Method Code	Results in mg/L	Date Analyzed	Analyst
524921	TOC	0.7	7/11/2005	KJR

Signature

Report Date: Friday, August 26, 2005

MAGIC VALLEY LABS

210 Addison Ave / PO Box 1867

Twin Falls ID 83303-1867

Phone: (208) 733-4250

Fax: (208) 734-2539

CHUCK EVERSON

BAKER CITY OF

P.O. BOX 650

BAKER CITY OR 97814

Collection Date	6/29/2005	Received Date	6/29/2005	Location	
Collection Time	10:00 AM	Received Time	6:00 PM	SOURCE / OLD MOUNTAIN LINE	
Sample #	Test / Method Code	Results in mg/L	Date Analyzed	Analyst	
524911	TEMP SM2550B	58 C	6/29/2005	KE	
524912	CONDUCTIVITY SM2510B	114uS	7/5/2005	GF	
524913	DISS. OXYGEN SM45000G	8.4	6/30/2005	EB	
524914	pH SM4500H+B	6.2	6/30/2005	EB	
524915	TURBIDITY EPA180.1	< 1 NTU	6/30/2005	RB	
524916	ORP	706mV	6/30/2005	GF	
524917	BICARBONATE SM2320B	22	7/1/2005	EB	
524918	CALCIUM SM3111D	13.2	7/9/2005	RB	
524919	CARBONATE SM2320B	< 1	7/1/2005	EB	
5249110	CHLORIDE EPA300.0	0.83	6/30/2005	GF	

Signature

Report Date: Friday, August 26, 2005

MAGIC VALLEY LABS

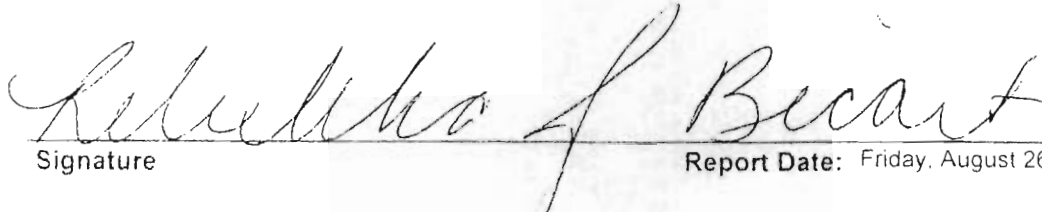
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Phone: (208) 733-4250

Fax: (208) 734-2539

5249111	HARDNESS (CaCo3)	33	7/9/2005	RB
5249112	MAGNESIUM SM3111B	1.88	7/9/2005	RB
5249113	NITRATE/N EPA300.0	<0.03	6/30/2005	GF
5249114	NITRITE/N EPA300.0	0.29	6/30/2005	GF
5249115	NITRATE/N + NITRITE/N	0.29	6/30/2005	GF
5249116	POTASSIUM SM3111B	<0.5	7/9/2005	RB
5249117	SILICA EPA370.1	7.0	7/5/2005	GF
5249118	SODIUM SM3111B	1.45	7/7/2005	RB
5249119	SULFATE EPA300.0	1.69	6/30/2005	GF
5249120	SULFATE EPA300.0	1.69	6/30/2005	GF
5249121	ALKALINITY SM2320B	22	7/1/2005	EB
5249122	TDS SM2540C	40	7/1/2005	EB
5249123	TSS SM2540D	< 1	7/1/2005	EB


Signature

Report Date: Friday, August 26, 2005

Sample ID: BCRW-C2T-1
Sample Date: July 11, 2005

MAGIC VALLEY LABS

210 Addison Ave / PO Box 1867

Twin Falls ID 83303-1867

Phone: (208) 733-4250

Fax: (208) 734-2539

CHUCK EVERSON**BAKER CITY OF****P.O. BOX 650****BAKER CITY OR 97814**

Collection Date	7/11/2005	Received Date	7/11/2005	Location	
Collection Time	9:30 AM	Received Time	6:00 PM	RESERVOIR WELL - WELL HEAD	
Sample #	Test / Method Code	Results in mg/L	Date Analyzed	Analyst	
527351	TEMP. SM2550B	58 C	7/11/2005	KE	
527352	CONDUCTIVITY SM2510B	151uS	7/14/2005	TF	
527353	DISS. OXYGEN SM45000G	8.2	7/12/2005	EB	
527354	pH SM4500H+B	7.5	7/12/2005	EB	
527355	TURBIDITY EPA180.1	140	7/13/2005	RB	
527356	ORP	615mV	7/13/2005	GF	
527357	BICARBONATE SM2320B	33	7/13/2005	JD	
527358	CALCIUM SM3111D	18.2	7/26/2005	RB	
527359	CARBONATE SM2320B	< 1	7/13/2005	JD	
5273510	CHLORIDE EPA300.0	1.91	7/13/2005	GF	

Signature

Report Date: Tuesday, August 23, 2005

MAGIC VALLEY LABS

210 Addison Ave / PO Box 1867

Twin Falls ID 83303-1867

Phone: (208) 733-4250

Fax: (208) 734-2539

5273511	HARDNESS (CaCo3)	51	7/14/2005	GF
5273512	MAGNESIUM SM3111B	4.23	7/26/2005	RB
5273513	NITRATE/N EPA300.0	0.21	7/12/2005	GF
5273514	NITRITE/N EPA300.0	<0.02	7/13/2005	GF
5273515	NITRATE/N + NITRITE/N	0.21	7/13/2005	GF
5273516	POTASSIUM SM3111B	0.5	7/25/2005	RB
5273517	SILICA EPA370 1	11.0	7/18/2005	TF
5273518	SODIUM SM3111B	2.37	7/25/2005	RB
5273519	SULFATE EPA300 0	4.19	7/13/2005	GF
5273520	ALKALINITY SM2320B	33	7/13/2005	JD
5273521	TDS SM2540C	30	7/13/2005	EB
5273522	TSS SM2540D	64	7/12/2005	JD

Signature

Report Date: Tuesday, August 23, 2005

MAGIC VALLEY LABS

210 Addison Ave / PO Box 1867

Twin Falls ID 83303-1867

Phone: (208) 733-4250

Fax: (208) 734-2539

BAKER CITY OF

P.O. BOX 650

BAKER CITY OR 97814

Collection Date	7/11/2005	Received Date	7/11/2005	Location	
Collection Time	9:30 AM	Received Time	6:00 PM	RESERVOIR WELL - WELL HEAD	
Sample #	Test / Method Code	Results in mg/L	Date Analyzed	Analyst	
539381	ALUMINIUM	0.4	8/3/2005	CAR	

Signature

Report Date: Wednesday, September 14, 2005

MAGIC VALLEY LABS

210 Addison Ave / PO Box 1867

Twin Falls ID 83303-1867

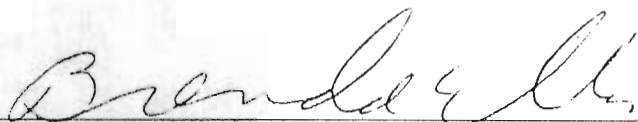
Phone: (208) 733-4250

Fax: (208) 734-2539

**CHUCK EVERSON
BAKER CITY OF****P.O. BOX 650
BAKER CITY OR 97814**

Collection Date	7/11/2005	Received Date	7/11/2005	Location	
Collection Time	9:30 AM	Received Time	6:00 PM	RESERVOIR WELL - WELL HEAD	
Sample #	Test / Method Code	Results in mg/L	Date Analyzed	Analyst	
527361	TOC	1.1	7/20/2005	KJR	

Signature



Report Date: Tuesday, August 23, 2005

MAGIC VALLEY LABS

210 Addison Ave / PO Box 1867

Twin Falls ID 83303-1867

Phone: (208) 733-4250

Fax: (208) 734-2539

CHUCK EVERSON
BAKER CITY OFP.O. BOX 650
BAKER CITY OR 97814

Collection Date	7/11/2005	Received Date	7/11/2005	Location	
Collection Time	9:30 AM	Received Time	6:00 PM	RESERVOIR WELL - WELL HEAD	
Sample #	Test / Method Code	Results in mg/L	Date Analyzed	Analyst	
527371	ANTIMONY	<0.005	7/16/2005	RB	
527372	ARSENIC EPA 200.9	<0.005	7/15/2005	RB	
527373	BARIUM SM3111D	<0.5	7/26/2005	RB	
527374	BERYLLIUM EPA200.9	<0.0005	7/20/2005	RB	
527375	CADMIUM SM3113B	<0.0005	7/26/2005	RB	
527376	CHROMIUM SM3113B	<0.005	7/23/2005	RB	
527377	COPPER SM3111B	<0.1	7/27/2005	RB	
527378	TOTAL IRON	2.81	7/25/2005	RB	
527379	DISSOLVED IRON SM3111B	<0.1	7/25/2005	RB	
5273710	TOTAL MANGANESE SM3111B	0.12	7/25/2005	RB	

Signature

Report Date: Tuesday, August 23, 2005

MAGIC VALLEY LABS

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Twin Falls ID 83303-1867

Phone: (208) 733-4250

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5273711	DISSOLVED MN SM3111B	<0.05	7/25/2005	RB
5273712	LEAD SM3113B	<0.005	7/19/2005	RB
5273713	MERCURY EPA245.1	<0.001	7/28/2005	RB
5273714	NICKEL SM3113B	<0.01	7/19/2005	RB
5273715	SELENIUM EPA200.9	<0.005	7/26/2005	RB
5273716	SILVER SM3111B	<0.05	7/27/2005	RB
5273717	THALLIUM EPA200.9	<0.002	7/23/2005	RB
5273718	ZINC SM3111B	<0.05	7/27/2005	RB
5273719	FILTER	*		
5273720	DIGESTION	*		

Signature

Report Date: Tuesday, August 23, 2005



Magic Valley Labs, Inc
210 Addison Ave PO Box 1867
Twin Falls, ID 83301
ID 100001

Total Trihalomethanes and Haloacetic Acids

TO BE FILLED IN BY PERSON SUBMITTING SAMPLE:

PWS ID #: 4100073

Water System **BAKER CITY OF**

Address **P.O. BOX 650**

City, State, Zip **BAKER CITY OR 97814**

SAMPLE IDENTIFICATION: (Listed below sample results)

Sampled by:

Date Collected: 7/11/2005

Time Collected: 9:30:00 AM

TO BE COMPLETED BY LABORATORY:

Date Received in Lab: 7/11/2005

Date Analyzed: THM: 7/20/05 HAA: 7/25/05

Lab sample ID#: 527341

(Listed below)

Analysts: THM: *

HAA: *

	Method:	EPA 524.2	Method detection limit (mg/l):	0.0005
THMs	Sample results (mg/l)			
	#1	#2	#3	#4
CHCl ₃				
CHBrCl ₂				
CHBr ₂ Cl				
CHBr ₃				
Total THM 2950	0.0281			

HALOACETIC ACIDS	Method: SM 6251B		Method detection limit (mg/l): 0.001	
	Sample results (mg/l)			
	#1	#2	#3	#4
MCAA				
DCAA				
TCAA				
MBAA				
DBAA				
Total HAA5 2456	0.006			

Sample Location	#1: RESERVOIR WELL - WELL HEAD
	#2:
	#3:
	#4:
Identify DBP MAX location with * or other designation	
Reviewed by: <i>Brenda G. G. G.</i>	Date: 8-15-05

Sample ID: BCRW-C2T-2
Sample Date: July 27, 2005



Magic Valley Labs
210 Addison Box 1867
Twin Falls, ID 83301
ID 100001

Water System ID #: 4100073	Source ID:	Source name(s):			
Water System	BAKER CITY OF				
Address	P.O. BOX 650				
City, State, Zip	BAKER CITY OR 97814				
Sample Identification					
Sampled at: RESERVOIR WELL	Sampled by: KEN ELLIS				
Date Collected: 7/27/2005	Time collected: 11:30:00 AM				
Date received: 7/27/2005	Date analyzed: 8/2/05				
Sample Composition:	Single				
Lab sample ID #: 53325	Sample Compositd : No				
Volatile Organic Chemicals					
MDL for all test = 0.0005					
Regulated VOCs					
Contaminant	Code	MCL mg/l	Analysis mg/l	Method	Analyst
1,1-Dichloroethylene	2977	0.007	ND	524.2	*
1,1,1-Trichloroethane	2981	0.2	ND	524.2	*
1,1,2-Trichloroethane	2985	0.005	ND	524.2	*
1,2 Dichloroethane	2980	0.005	ND	524.2	*
1,2 Dichloropropane	2983	0.005	ND	524.2	*
1,2,4-Trichlorobenzene	2378	0.07	ND	524.2	*
Benzene	2990	0.005	ND	524.2	*
Carbon Tetrachloride	2982	0.005	ND	524.2	*
Cis-1,2-Dichloroethylene	2380	0.07	ND	524.2	*
Methylene Chloride	2964	0.005	ND	524.2	*
Ethylbenzene	2992	0.7	ND	524.2	*
Chlorobenzene	2989	0.1	ND	524.2	*
1-2-Dichlorobenzene	2968	0.6	ND	524.2	*
1-4-Dichlorobenzene	2969	0.075	ND	524.2	*
Styrene	2996	0.1	ND	524.2	*
Tetrachloroethylene	2987	0.005	ND	524.2	*
Toluene	2991	1.0	ND	524.2	*
Total Xylenes	2955	10.0	ND	524.2	*
Trans-1,2-Dichloroethylene	2979	0.1	ND	524.2	*

Trichloroethylene	2984	0.005	ND	524.2	*
Vinyl Chloride	2976	0.002	ND	524.2	*

Comments: *Test performed by Anatek Labs ORELAP # ID200001

Brenda Ellis 9-15-05
 Signature Date:

H:\home\mc\meyer\results\vol 3\10093



MAGIC VALLEY LABS

210 Addison Box 1867

Twin Falls, ID 83301

ID 100001

System ID #: 4100073	Entry Point or Source ID:	Source name(s):
Water System BAKER CITY OF		
Address P.O. BOX 650		
City, State, Zip BAKER CITY OR 97814		
Sample Identification		
Sampled at: RESERVOIR WELL		Sampled by: KEN ELLIS
Date Collected: 7/27/2005		Time collected: 11:30:00 AM
Date recieved: 7/27/2005		Date analyzed:
Sample Composition:		Single
Lab sample ID #: 53324		Sample Compositied: No

Synthetic Organic Chemicals

Regulated

Contaminant	Code	MCL mg/l	Analysis mg/l	LRL	Method	Analyst
2,4-D	2105	0.07	ND	0.0001	515.3	*
2,4,5-TP Silvex	2110	0.05	ND	0.0001	515.3	*
Adipates	2035	0.4	ND	0.002	525.2	*
Alachlor (Lasso)	2051	0.002	ND	0.0001	525.2	*
Atrazine	2050	0.003	ND	0.0001	525.2	*
Benzo(A)Pyrene	2306	0.0002	ND	0.00002	525.2	*
BHC-gamma (Lindane)	2010	0.0002	ND	0.00002	505	*
Carbofuran	2046	0.04	ND	0.0009	531.1	*
Chlordane	2959	0.002	ND	0.0001	505	*
Dalapon	2031	0.2	ND	0.001	515.3	*
Dibromochloropropane	2931	0.0002	ND	0.00002	504.1	*
Dinoseb	2041	0.007	ND	0.0001	515.3	*
Dioxin	2063	3x10 ⁻⁸				
Diquat	2032	0.02	ND	0.0004	549.2	*
Endothall	2033	0.1	ND	0.009	548.1	*
Endrin	2005	0.002	ND	0.00003	505	*
Ethylene Dibromide (EDB)	2946	0.00005	ND	0.00001	504.1	*
Glyphosate	2034	0.7	ND	0.006	547	*

Heptachlor Epoxide	2067	0.0002	ND	0.00002	505	*
Heptachlor	2065	0.0004	ND	0.00004	505	*
Hexachlorobenzene (HCB)	2274	0.001	ND	0.0001	525.2	*
Hexachlorocyclopentadiene	2042	0.05	ND	0.0001	525.2	*
Methoxychlor	2015	0.04	ND	0.0001	505	*
Pentachlorophenol	2326	0.001	ND	0.00004	515.3	*
Phthalates	2039	0.006	ND	0.0006	525.2	*
Picloram	2040	0.5	ND	0.0001	515.3	*
Polychlorinated Biphenyls	2383	0.0005	ND	0.00001	505	*
Simazine	2037	0.004	ND	0.00007	525.5	*
Toxaphene	2020	0.003	ND	0.001	505	*
Vydate	2036	0.2	ND	0.002	531.1	*

ANALYST	DATE	METHOD	ANALYST	DATE	METHOD
*	8/5/2005	515.3	*	8/2/2005	504.1
*	8/12/2005	525.2	*	8/11/2005	549.2
*	8/3/2005	505	*	8/11/2005	548.1
*	8/10/2005	531.1	*	8/8/2005	547

*Test performed by Anatek Labs, Inc ORELAP #ID200001

Signature Date:

Brandon Ellis 9-15-05



Magic Valley Labs, Inc
210 Addison Ave PO Box 1867
Twin Falls, ID 83301
ID 100001

Total Trihalomethanes and Haloacetic Acids

TO BE FILLED IN BY PERSON SUBMITTING SAMPLE:	
PWS ID #:	4100073
Water System	BAKER CITY OF
Address	P.O. BOX 650
City, State, Zip	BAKER CITY OR 97814
SAMPLE IDENTIFICATION: (Listed below sample results)	
Sampled by:	KEN ELLIS
Date Collected:	7/27/2005
Time Collected:	11:30:00 AM
TO BE COMPLETED BY LABORATORY:	
Date Received in Lab:	7/27/2005
Date Analyzed:	THM: 8/2/05 HAA: 8/8/05
Lab sample ID#:	533191 (Listed below)
Analysts:	THM: * HAA: *

	Method:	EPA 524.2	Method detection limit (mg/l):	0.0005
THMs	Sample results (mg/l)			
	#1	#2	#3	#4
CHCl ₃				
CHBrCl ₂				
CHBr ₂ Cl				
CHBr ₃				
Total THM	0.0249			
2950				

	Method:	SM 6251B	Method detection limit (mg/l):	0.001
HALOACETIC ACIDS	Sample results (mg/l)			
	#1	#2	#3	#4
MCAA				
DCAA				
TCAA				
MBAA				
DBAA				
Total HAA5	0.002			
2456				

Sample Location	#1: RESERVOIR WELL
	#2:
	#3:
	#4:
Identify DBP MAX location with * or other designation	
Reviewed by:	Date: 9-15-05

LAB FEDERAL ID #ID00911
 DATE LAB REC'D SAMPLE: 7/27/2005
 COMPLIANCE SAMPLE

LAB SAMPLE # 533231
 DATE REPORTED BY LAB: 9/14/2005

COLLECTION DATE: 7/27/2005
 COLLECTION TIME: 11:30:00 AM
 (24 hour clock)

SAMPLE TYPE: RADS
 PWS NAME: BAKER CITY OF
 PWS#: 4100073
 SAMPLING POINT/LOCATION: RESERVOIR WELL
 COLLECTOR'S NAME: KEN ELLIS
 TAG #/FACILITY ID:
 CONTACT PHONE #:

☒ YES
☐ NO
☐ REPLACEMENT SAMPLE
☐ PRIVATE
☒ PUBLIC



MAGIC VALLEY LABS, INC.
 210 Addison Ave. PO Box 1867
 Twin Falls ID 83301
 Phone: 208-733-4250
 Fax: 208-734-8539

PUBLIC DRINKING WATER SYSTEM RADIOLOGICAL ANALYSIS REPORT:

FRDS	CONTAMINANT	RESULT	RESULT	MCL	ANALYSIS	ANALYS	METHOD
4002	Gross Alpha Activity (includes radium and uranium)	µg/L	pc/L		DATE	*	E900.0
4006	Uranium, Combined convert to activity, multiply concentration in µg/L x 0.67 (required if gross alpha exceeds 15pCi/L)	ND		30 µg/L	8/10/05	*	E200.8
4000	Net Alpha subtract Uranium activity from Gross alpha activity (includes radium but excludes uranium)			15 pCi/L			
4020	Radium-226 (required if alpha activity is greater than 5pCi/L)		ND		8/4/05	*	E903.0
4030	Radium-228		ND		8/4/05	*	E904.0
4010	Radium, Combined (226 & 228) add results of Ra-226 and Ra-228		ND	5 pCi/L			
4100	Gross Beta/Photon Activity (required to measure major isotopes if activity exceeds 50pCi/L)			4 mREM			

ND = Not detected within sensitivity of instrument

*TEST PERFORMED BY
 ENERGY LABS

Signature of Laboratory Supervisor: *Ken Ellis* Date: 9-15-05

BAKER CITY OF
 P.O. BOX 650
 BAKER CITY OR 97814

(Reserved for
 comments/notations)

COMPOSITE SAMPLE
 DATES:
 1ST Quarterly Sample
 2nd Quarterly Sample
 3rd Quarterly Sample
 Enter 4th Quarter or latest
 sample date beside
 Collection Date at top of form

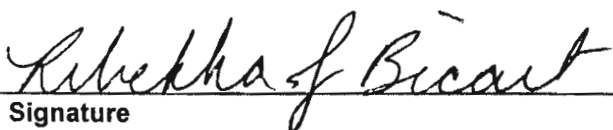
BAKER CITY OF
 P.O. BOX 650
 BAKER CITY OR 97814

MAGIC VALLEY LABS
210 Addison Ave / PO Box 1867
Twin Falls ID 83303-1867
Phone: (208) 733-4250
Fax: (208) 734-2539

CHUCK EVERSON
BAKER CITY OF

P.O. BOX 650
BAKER CITY OR 97814

Collection Date 7/27/2005		Received Date 7/27/2005	Location	
Collection Time 11:30 AM		Received Time 4:45 PM	RESERVOIR WELL	
Sample #	Test / Method Code	Results in mg/L	Date Analyzed	Analyst
533181	ALUMINIUM	<0.1	8/2/2005	*
533182	ANTIMONY	<0.005	8/17/2005	RB
533183	ARSENIC EPA 200.9	<0.005	7/30/2005	RB
533184	BARIUM SM3111D	<0.5	8/16/2005	RB
533185	BERYLLIUM EPA200.9	<0.0005	8/19/2005	RB
533186	CADMIUM SM3113B	<0.0005	8/25/2005	RB
533187	CHROMIUM SM3113B	<0.005	8/23/2005	RB
533188	COPPER SM3111B	<0.1	7/29/2005	RB
533189	TOTAL IRON	1.11	7/29/2005	RB
5331810	DISSOLVED IRON SM3111B	<0.1	8/27/2005	RB


Signature

Report Date: Friday, January 20, 2006

MAGIC VALLEY LABS

210 Addison Ave / PO Box 1867

Twin Falls ID 83303-1867

Phone: (208) 733-4250

Fax: (208) 734-2539

5331811	TOTAL MANGANESE SM3111B	<0.05	7/30/2005	RB
5331812	DISSOLVED MN SM3111B	<0.05	7/30/2005	RB
5331813	LEAD SM3113B	0.005	7/28/2005	RB
5331814	MERCURY EPA245.1	<0.001	7/28/2005	RB
5331815	NICKEL SM3113B	<0.01	8/24/2005	RB
5331816	SELENIUM EPA200.9	<0.005	8/16/2005	RB
5331817	SILVER SM3111B	<0.05	9/1/2005	RB
5331818	THALLIUM EPA200.9	<0.002	8/31/2005	RB
5331819	ZINC SM3111B	0.09	9/1/2005	RB
5331820	FILTER	*		

Ashika B. B. B.
Signature

Report Date: Friday, January 20, 2006

MAGIC VALLEY LABS

210 Addison Ave / PO Box 1867

Twin Falls ID 83303-1867

Phone: (208) 733-4250

Fax: (208) 734-2539

CHUCK EVERSON

BAKER CITY OF

P.O. BOX 650

BAKER CITY OR 97814

Collection Date	7/27/2005	Received Date	7/27/2005	Location	
Collection Time	11:30 AM	Received Time	4:45 PM	RESERVOIR WELL	
Sample #	Test / Method Code	Results in mg/L	Date Analyzed	Analyst	
533201	TEMP SM2550B	50 C	7/27/2005	KE	
533202	CONDUCTIVITY SM2510B	147 μ S	7/28/2005	TF	
533203	DISS. OXYGEN SM45000G	8.4	7/28/2005	JD	
533204	pH SM4500H+B	6.1	7/28/2005	JD	
533205	TURBIDITY EPA180.1	4.0 NTU	7/29/2005	TF	
533206	ORP	612mV	8/2/2005	GF	
533207	BICARBONATE SM2320B	54	7/28/2005	JD	
533208	CALCIUM SM3111D	19.9	8/24/2005	RB	
533209	CARBONATE SM2320B	< 1	7/28/2005	JD	
5332010	CHLORIDE EPA300.0	2.18	8/2/2005	GF	

Signature

Report Date: Friday, August 26, 2005

MAGIC VALLEY LABS

210 Addison Ave / PO Box 1867

Twin Falls ID 83303-1867

Phone: (208) 733-4250

Fax: (208) 734-2539

5332011	HARDNESS EPA130.2	66.6	7/29/2005	GF
5332012	MAGNESIUM SM3111B	4.26	7/28/2005	RB
5332013	NITRATE/N SM4500	0.36	7/29/2005	TF
5332014	NITRITE/N SM4500	<0.002	7/27/2005	TF
5332015	NITRATE/N + NITRITE/N	0.37	7/29/2005	TF
5332016	POTASSIUM SM3111B	0.6	7/30/2005	RB
5332017	SILICA EPA370.1	22.0	8/2/2005	TF
5332018	SODIUM SM3111B	3.09	7/30/2005	RB
5332019	SULFATE EPA300.0	5.50	8/2/2005	GF
5332020	ALKALINITY SM2320B	54	7/28/2005	JD
5332021	TDS SM2540C	60	7/28/2005	JD
5332022	TSS SM2540D	72	7/28/2005	JD

Signature

Report Date: Friday, August 26, 2005

MAGIC VALLEY LABS

210 Addison Ave / PO Box 1867

Twin Falls ID 83303-1867

Phone: (208) 733-4250

Fax: (208) 734-2539

CHUCK EVERSON

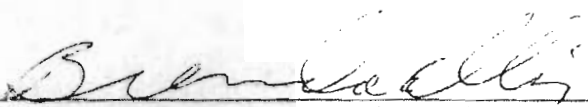
BAKER CITY OF

P.O. BOX 650

BAKER CITY OR 97814

Collection Date 7/27/2005		Received Date 7/27/2005	Location	
Collection Time 11:30 AM		Received Time 4:45 PM	RESERVOIR WELL	
Sample #	Test / Method Code	Results in mg/L	Date Analyzed	Analyst
533211	TOC	1.0	8/10/2005	KJR

Signature


Report Date: Wednesday, September 14, 2005

Sample ID: BCRW-C2R-1
Sample Date: September 21, 2005

MAGIC VALLEY LABS
210 Addison Ave / PO Box 1867
Twin Falls ID 83303-1867
Phone: (208) 733-4250
Fax: (208) 734-2539

CHUCK EVERSON
BAKER CITY OF

P.O. BOX 650
BAKER CITY OR 97814

Collection Date	8/22/2005 9/21/05	Received Date	9/21/2005	Location	
Collection Time	11:00 AM	Received Time	6:00 PM	WELL	
Sample #	Test / Method Code	Results in mg/L	Date Analyzed	Analyst	
550381	BICARBONATE SM2320B	81	9/23/2005	JD	
550382	CALCIUM SM3111D	26.4	9/28/2005	RB	
550383	CARBONATE SM2320B	< 1	9/23/2005	JD	
550384	CHLORIDE EPA300.0	<0.08	9/27/2005	TF	
550385	HARDNESS (CaCo3)	66.0	9/28/2005	RB	
550386	MAGNESIUM SM3111B	10.9	10/4/2005	RB	
550387	NITRATE/N SM4500	0.13	9/23/2005	SK	
550388	NITRITE/N SM4500	0.002	9/24/2005	GF	
550389	NITRATE/N + NITRITE/N	0.13	9/23/2005	SK	
5503810	POTASSIUM SM3111B	1.0	10/5/2005	RB	

Signature

Report Date: Friday, December 02, 2005

MAGIC VALLEY LABS

210 Addison Ave / PO Box 1867

Twin Falls ID 83303-1867

Phone: (208) 733-4250

Fax: (208) 734-2539

5503811	SILICA EPA370.1	22.0	9/26/2005	TF
5503812	SODIUM SM3111B	9.36	9/30/2005	RB
5503813	SULFATE EPA300.0	<0.08	9/27/2005	TF
5503814	ALKALINITY SM2320B	81	9/23/2005	JD
5503815	TDS SM2540C	150	9/23/2005	JD
5503816	TOC	0.6	10/4/2005	KJR
5503817	TSS SM2540D	3	9/23/2005	JD

Signature

Report Date: Friday, December 02, 2005

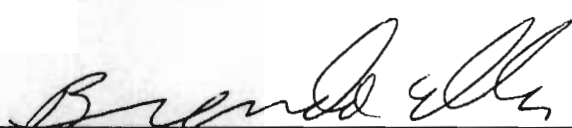
MAGIC VALLEY LABS
210 Addison Ave / PO Box 1867
Twin Falls ID 83303-1867
Phone: (208) 733-4250
Fax: (208) 734-2539

CHUCK EVERSON
BAKER CITY OF

P.O. BOX 650
BAKER CITY OR 97814

Collection Date 8/22/2005 ^{9/21/05}		Received Date	9/21/2005	Location
Collection Time 11:00 AM		Received Time	6:00 PM	WELL
Sample #	Test / Method Code	Results in mg/L	Date Analyzed	Analyst
550391	ALUMINIUM	<0.1	10/4/2005	RAS
550392	ANTIMONY	<0.005	10/14/2005	RB
550393	ARSENIC EPA 200.9	<0.005	9/29/2005	RB
550394	BARIUM SM3111D	<0.5	9/29/2005	RB
550395	BERYLLIUM EPA200.9	<0.0005	10/8/2005	RB
550396	CADMIUM SM3113B	<0.0005	10/6/2005	RB
550397	CHROMIUM SM3113B	<0.005	10/8/2005	RB
550398	COPPER SM3111B	<0.1	9/24/2005	RB
550399	TOTAL IRON	<0.1	10/7/2005	RB
5503910	DISSOLVED IRON SM3111B	<0.1	10/7/2005	RB

Signature


Report Date: Thursday, December 29, 2005

MAGIC VALLEY LABS

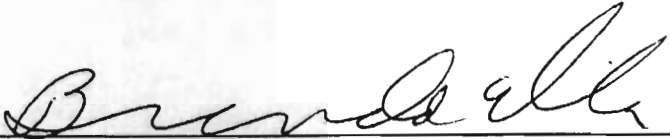
210 Addison Ave / PO Box 1867

Twin Falls ID 83303-1867

Phone: (208) 733-4250

Fax: (208) 734-2539

5503911	LEAD SM3113B	<0.005	10/5/2005	RB
5503912	TOTAL MANGANESE SM3111B	<0.05	10/7/2005	RB
5503913	DISSOLVED MN SM3111B	<0.05	10/7/2005	RB
5503914	MERCURY EPA245.1	<0.001	9/24/2005	RB
5503915	NICKEL SM3113B	<0.01	10/11/2005	RB
5503916	SELENIUM EPA200.9	<0.005	10/4/2005	RB
5503917	SILVER SM3111B	<0.05	10/8/2005	RB
5503918	THALLIUM EPA200.9	<0.002	10/15/2005	RB
5503919	ZINC SM3111B	<0.05	10/7/2005	TF
5503920	ODOR	ND	9/24/2005	RB
5503921	COLOR	ND	9/24/2005	RB
5503922	SURFACTANTS EPA425.1	<0.01	9/26/2005	TF
5503923	LANGLIER INDEX	-0.42	12/6/2005	RB
5503924	CYANIDE	<0.01	10/11/2005	ETL
5503925	FLUORIDE EPA300.0	<0.03	9/27/2005	TF


Signature

Report Date: Thursday, December 29, 2005



Magic Valley Labs
210 Addison Box 1867
Twin Falls, ID 83301
ID 100001

Water System ID #: 4100073	Source ID:	Source name(s):			
Water System	BAKER CITY OF				
Address	P.O. BOX 650				
City, State, Zip	BAKER CITY OR 97814				
Sample Identification					
Sampled at: WELL	Sampled by: KEN ELLIS				
Date Collected: 9/21/2005	Time collected: 11:00:00 AM				
Date received: 9/21/2005	Date analyzed: 10/4/05				
Sample Composition:	Single				
Lab sample ID #: 55061	Sample Composited : No				
Volatile Organic Chemicals					
MDL for all test = 0.0005					
Regulated VOCs					
Contaminant	Code	MCL mg/l	Analysis mg/l	Method	Analyst
1,1-Dichloroethylene	2977	0.007	ND	524.2	*
1,1,1-Trichloroethane	2981	0.2	ND	524.2	*
1,1,2-Trichloroethane	2985	0.005	ND	524.2	*
1,2 Dichloroethane	2980	0.005	ND	524.2	*
1,2 Dichloropropane	2983	0.005	ND	524.2	*
1,2,4-Trichlorobenzene	2378	0.07	ND	524.2	*
Benzene	2990	0.005	ND	524.2	*
Carbon Tetrachloride	2982	0.005	ND	524.2	*
Cis-1,2-Dichloroethylene	2380	0.07	ND	524.2	*
Methylene Chloride	2964	0.005	ND	524.2	*
Ethylbenzene	2992	0.7	ND	524.2	*
Chlorobenzene	2989	0.1	ND	524.2	*
1-2-Dichlorobenzene	2968	0.6	ND	524.2	*
1-4-Dichlorobenzene	2969	0.075	ND	524.2	*
Styrene	2996	0.1	ND	524.2	*
Tetrachloroethylene	2987	0.005	ND	524.2	*
Toluene	2991	1.0	ND	524.2	*
Total Xylenes	2955	10.0	ND	524.2	*
Trans-1,2-Dichloroethylene	2979	0.1	ND	524.2	*

Trichloroethylene	2984	0.005	ND	524.2	*
Vinyl Chloride	2976	0.002	ND	524.2	*

Comments: *Test performed by Anatek Labs ORELAP # ID200001

Brandon Ellis 30-05
Signature / Date:

11 home inc meyer results voc 3/10/93



MAGIC VALLEY LABS

210 Addison Box 1867

Twin Falls, ID 83301

ID 100001

System ID #: 4100073	Entry Point or Source ID:	Source name(s):
Water System BAKER CITY OF		
Address P.O. BOX 650		
City, State, Zip BAKER CITY OR 97814		
Sample Identification		
Sampled at: WELL	Sampled by: KEN ELLIS	
Date Collected: 9/21/2005	Time collected: 11:00:00 AM	
Date recieved: 9/21/2005	Date analyzed:	
Sample Composition:	Single	
Lab sample ID #: 55060	Sample Compositied: No	

Synthetic Organic Chemicals

Regulated

Contaminant	Code	MCL mg/l	Analysis mg/l	LRL	Method	Analyst
2,4-D	2105	0.07	ND	0.0001	515.3	*
2,4,5-TP Silvex	2110	0.05	ND	0.0001	515.3	*
Adipates	2035	0.4	ND	0.002	525.2	*
Alachlor (Lasso)	2051	0.002	ND	0.0001	525.2	*
Atrazine	2050	0.003	ND	0.0001	525.2	*
Benzo(A)Pyrene	2306	0.0002	ND	0.00002	525.2	*
BHC-gamma (Lindane)	2010	0.0002	ND	0.00002	505	*
Carbofuran	2046	0.04	ND	0.0009	531.1	*
Chlordane	2959	0.002	ND	0.0001	505	*
Dalapon	2031	0.2	ND	0.001	515.3	*
Dibromochloropropane	2931	0.0002	ND	0.00002	504.1	*
Dinoseb	2041	0.007	ND	0.0001	515.3	*
Dioxin	2063	3x10 ⁻⁸				
Diquat	2032	0.02	ND	0.0004	549.2	*
Endothall	2033	0.1	ND	0.009	548.1	*
Endrin	2005	0.002	ND	0.00003	505	*
Ethylene Dibromide (EDB)	2946	0.00005	ND	0.00001	504.1	*
Glyphosate	2034	0.7	ND	0.006	547	*

Heptachlor Epoxide	2067	0.0002	ND	0.00002	505	*
Heptachlor	2065	0.0004	ND	0.00004	505	*
Hexachlorobenzene (HCB)	2274	0.001	ND	0.0001	525.2	*
Hexachlorocyclopentadiene	2042	0.05	ND	0.0001	525.2	*
Methoxychlor	2015	0.04	ND	0.0001	505	*
Pentachlorophenol	2326	0.001	ND	0.00004	515.3	*
Phthalates	2039	0.006	ND	0.0006	525.2	*
Picloram	2040	0.5	ND	0.0001	515.3	*
Polychlorinated Biphenyls	2383	0.0005	ND	0.00001	505	*
Simazine	2037	0.004	ND	0.00007	525.5	*
Toxaphene	2020	0.003	ND	0.001	505	*
Vydate	2036	0.2	ND	0.002	531.1	*

ANALYST	DATE	METHOD	ANALYST	DATE	METHOD
*	10/11/2005	515.3	*	9/29/2005	504.1
*	10/6/2005	525.2	*	9/28/2005	549.2
*	10/10/2005	505	*	10/4/2005	549.1
*	10/6/2005	531.1	*	10/6/2005	547

*Test performed by Anatek Labs, Inc ORELAP #ID200001

Signature: _____ Date: _____

11-30-05

LAB FEDERAL ID #ID00911		LAB SAMPLE #: 550401	
DATE LAB REC'D SAMPLE: 9/21/2005		DATE REPORTED BY LAB: 2/24/2006	
COMPLIANCE SAMPLE		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
COLLECTION DATE: 8/22/2005		COLLECTION TIME: 11:00:00 AM (24 hour clock)	
SAMPLE TYPE: RADS	<input type="checkbox"/> PRIVATE <input checked="" type="checkbox"/> PUBLIC		
PWS#: 4100073	PWS NAME: BAKER CITY OF		
SAMPLING POINT/LOCATION: WELL	TAG #/FACILITY ID:		
COLLECTOR'S NAME: KEN ELLIS	CONTACT PHONE #:		



MAGIC VALLEY LABS, INC.
 210 Addison Ave. PO Box 1867
 Twin Falls ID 83301
 Phone: 208-733-4250
 Fax: 208-734-8539

PUBLIC DRINKING WATER SYSTEM RADIOLOGICAL ANALYSIS REPORT:

FRDS	CONTAMINANT	RESULT	RESULT	MCL	ANALYSIS	ANALYS	METHOD
4002	Gross Alpha Activity (includes radium and uranium)	µg/L	pCi/L		DATE	T	
4006	Uranium, Combined convert to activity; multiply concentration in µg/L x 0.67 (required if gross alpha exceeds 15pCi/L)	ND	ND	30 µg/L	10/17/05	*	E900.0
4000	Net Alpha subtract Uranium activity from Gross alpha activity (includes radium but excludes uranium)			15 pCi/L	10/13/05	*	E200.8
4020	Radium-226 (required if alpha activity is greater than 5pCi/L)		ND		10/13/05	*	E903.0
4030	Radium-228		ND		10/13/05	*	E904.0
4010	Radium, Combined (226 & 228) add results of Ra-226 and Ra-228		ND	5 pCi/L			
4100	Gross Beta/Photon Activity (required to measure major isotopes if activity exceeds 50pCi/L)			4 mREM			

ND = Not detected within sensitivity of instrument

*TEST PERFORMED BY

ENERGY LABS

COMPOSITE SAMPLE
 DATES:

Signature of Laboratory Supervisor Date

BAKER CITY OF

P.O. BOX 650

BAKER CITY OR 97814

(Reserved for
 comments/notations)

1st Quarterly Sample:	
2nd Quarterly Sample:	
3rd Quarterly Sample:	
Enter 4th Quarter or latest sample date beside	
Collection Date at top of form	

BAKER CITY OF
 P.O. BOX 650
 BAKER CITY OR 97814

Sample ID: BCRW-C2R-2
Sample Date: October 26, 2005

MAGIC VALLEY LABS
210 Addison Ave / PO Box 1867
Twin Falls ID 83303-1867
Phone: (208) 733-4250
Fax: (208) 734-2539

BAKER CITY OF

**P.O. BOX 650
BAKER CITY OR 97814**

Collection Date	10/26/2005	Received Date	10/26/2005	Location	
Collection Time		Received Time	6 :00 PM	RESERVOIR WELL	
Sample #	Test / Method Code	Results in mg/L	Date Analyzed	Analyst	
563321	FLUORIDE EPA300.0	0.13	10/27/2005	GF	
563322	LANGLIER INDEX	-0.57	12/6/2005	RB	
563323	SURFACTANTS EPA425.1	<0.01	10/31/2005	GF	
563324	ODOR	ND	10/29/2005	RB	
563325	TEMP. SM2550B	50	10/27/2005	KE	
563326	CONDUCTIVITY SM2510B	660uS	10/27/2005	TF	
563327	DISSOLVED OXYGEN	9.0	10/27/2005	JD	
563328	pH SM4500H+B	6.9	10/26/2005	JD	
563329	TURBIDITY EPA180.1	<1	10/27/2005	RB	
5633210	ORP	600.4	10/31/2005	GF	

Signature

Report Date: Monday, February 27, 2006

MAGIC VALLEY LABS
210 Addison Ave / PO Box 1867
Twin Falls ID 83303-1867
Phone: (208) 733-4250
Fax: (208) 734-2539

5633211	BICARBONATE SM2320B	110	10/28/2005	JD
5633212	CALCIUM SM3111D	29.5	11/10/2005	RB
5633213	CARBONATE SM2320B	<1	10/28/2005	JD
5633214	CHLORIDE EPA300.0	2.20	10/26/2005	GF
5633215	HARDNESS EPA130.2	129	10/31/2005	GF
5633216	MAGNESIUM SM3111B	17.0	11/11/2005	RB
5633217	NITRATE/N EPA300.0	<0.03	10/27/2005	GF
5633218	NITRITE/N EPA300.0	<0.02	10/27/2005	GF
5633219	NITRATE/N + NITRITE/N	<0.03	10/27/2005	GF
5633220	POTASSIUM SM3111B	1.4	11/9/2005	RB
5633221	SILICA EPA370.1	44.0	11/2/2005	GF
5633222	SODIUM SM3111B	14.5	11/8/2005	RB
5633223	SULFATE EPA300.0	21.7	10/27/2005	GF
5633224	ALKALINITY SM2320B	110	10/28/2005	JD
5633225	TDS SM2540C	190	10/28/2005	JD
5633226	ANTIMONY	<0.005	11/4/2005	RB

Signature

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5633227	ARSENIC EPA 200.9	<0.005	11/3/2005	RB
5633228	BARIUM SM3111D	<0.5	11/10/2005	RB
5633229	BERYLLIUM EPA200.9	<0.0005	11/18/2005	RB
5633230	CADMIUM SM3113B	<0.0005	10/27/2005	RB
5633231	CHROMIUM 503	255mg/kg dry	11/1/2005	RB
5633232	COPPER SM3111B	<1	11/2/2005	RB
5633233	TOTAL IRON	<0.1	10/29/2005	RB
5633234	DISSOLVED IRON SM3111B	<0.1	10/29/2005	RB
5633235	LEAD SM3113B	<0.005	11/2/2005	RB
5633236	TOTAL MANGANESE SM3111B	<0.05	10/29/2005	RB
5633237	DISSOLVED MN SM3111B	<0.05	10/29/2005	RB
5633238	MERCURY EPA245.1	<0.001	11/3/2005	RB
5633239	NICKEL SM3113B	<0.01	10/28/2005	RB
5633240	SELENIUM EPA200.9	<0.005	11/3/2005	RB
5633241	SILVER SM3111B	<0.05	11/2/2005	RB
5633242	THALLIUM EPA200.9	<0.002	11/18/2005	RB

Signature

Report Date: Monday, February 27, 2006

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5633243	ZINC SM3111B	<0.05	11/11/2005	RB
5633244	COLOR	ND	10/29/2005	RB
5633245	TSS SM2540D	<1	11/2/2005	JD

Signature

Report Date: Monday, February 27, 2006

MAGIC VALLEY LABS
210 Addison Ave / PO Box 1867
Twin Falls ID 83303-1867
Phone: (208) 733-4250
Fax: (208) 734-2539

BAKER CITY OF

P.O. BOX 650
BAKER CITY OR 97814

Collection Date	10/26/2005	Received Date	10/26/2005	Location	
Collection Time		Received Time	6 :00 PM	RESERVOIR WELL	
Sample #	Test / Method Code	Results in mg/L	Date Analyzed	Analyst	
563261	THM	0.0028	11/8/2005	SAT	
563262	HAA	ND	11/8/2005	SAT	

TOTAL COLIFORM < 1 MPN/100ML
FECAL COLIFORM < 1 CFU/100ML
E-COLI < 1 MPN/100ML

Signature

Report Date: Monday, February 27, 2006

MAGIC VALLEY LABS

210 Addison Ave / PO Box 1867

Twin Falls ID 83303-1867

Phone: (208) 733-4250

Fax: (208) 734-2539

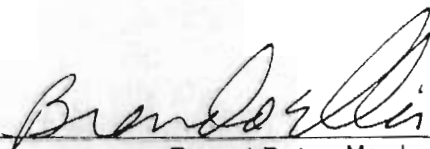
BAKER CITY OF

P.O. BOX 650

BAKER CITY OR 97814

Collection Date	10/26/2005	Received Date	10/26/2005	Location	
Collection Time		Received Time	6:00 PM	RESERVOIR WELL	
Sample #	Test / Method Code	Results in mg/L	Date Analyzed	Analyst	
563291	CYANIDE	<0.01	11/15/2005	KAS	

Signature



Report Date: Monday, December 12, 2005

MAGIC VALLEY LABS
210 Addison Ave / PO Box 1867
Twin Falls ID 83303-1867
Phone: (208) 733-4250
Fax: (208) 734-2539

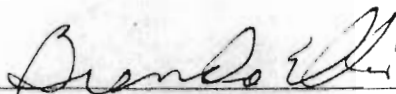
BAKER CITY OF

P.O. BOX 650

BAKER CITY OR 97814

Collection Date 10/26/2005		Received Date 10/26/2005	Location	
Collection Time		Received Time 6.00 PM	RESERVOIR WELL	
Sample #	Test / Method Code	Results in mg/L	Date Analyzed	Analyst
563271	TOC	0.5	11/9/2005	KJR
563272	ALUMINIUM	<0.10	11/9/2005	KC

Signature



Report Date: Monday, December 12, 2005



Magic Valley Labs, Inc
210 Addison Ave PO Box 1867
Twin Falls, ID 83301
ID 100001

Total Trihalomethanes and Haloacetic Acids

TO BE FILLED IN BY PERSON SUBMITTING SAMPLE:

PWS ID #: 4100073
Water System **BAKER CITY OF**
Address **P.O. BOX 650**
City, State, Zip **BAKER CITY OR 97814**

SAMPLE IDENTIFICATION: (Listed below sample results)

Sampled by: **KEN ELLIS**
Date Collected: 10/26/2005 Time Collected: 12:00:00 AM

TO BE COMPLETED BY LABORATORY:

Date Received in Lab: 10/26/2005 Date Analyzed: THM: HAA:
Lab sample ID#: **563261** (Listed below) Analysts: THM: * HAA: *

	Method: EPA 524.2		Method detection limit (mg/l): 0.0005	
THMs	Sample results (mg/l)			
	#1	#2	#3	#4
CHCl ₃				
CHBrCl ₂				
CHBr ₂ Cl				
CHBr ₃				
Total THM 2950	0.0028			

HALOACETIC ACIDS	Method: SM 6251B		Method detection limit (mg/l): 0.001	
	Sample results (mg/l)			
	#1	#2	#3	#4
MCAA				
DCAA				
TCAA				
MBAA				
DBAA				
Total HAA5 2456	ND			

Sample Location #1: **RESERVOIR WELL**
#2:
#3:
#4:

Identify DBP MAX location with * or other designation

Reviewed by:

Brandon Ellis

Date:

12-14-05



Magic Valley Labs
210 Addison Box 1867
Twin Falls, ID 83301
ID 100001

Water System ID #: 4100073	Source ID:	Source name(s):			
Water System	BAKER CITY OF				
Address	P.O. BOX 650				
City, State, Zip	BAKER CITY OR 97814				
Sample Identification					
Sampled at: RESERVOIR WELL	Sampled by: KEN ELLIS				
Date Collected: 10/26/2005	Time collected:				
Date received: 10/26/2005	Date analyzed:				
Sample Composition:	Single				
Lab sample ID #: 56328	Sample Composited : No				
Volatile Organic Chemicals					
MDL for all test = 0.0005					
Regulated VOCs					
Contaminant	Code	MCL mg/l	Analysis mg/l	Method	Analyst
1,1-Dichloroethylene	2977	0.007	ND	524.2	*
1,1,1-Trichloroethane	2981	0.2	ND	524.2	*
1,1,2-Trichloroethane	2985	0.005	ND	524.2	*
1,2 Dichloroethane	2980	0.005	ND	524.2	*
1,2 Dichloropropane	2983	0.005	ND	524.2	*
1,2,4-Trichlorobenzene	2378	0.07	ND	524.2	*
Benzene	2990	0.005	ND	524.2	*
Carbon Tetrachloride	2982	0.005	ND	524.2	*
Cis-1,2-Dichloroethylene	2380	0.07	ND	524.2	*
Methylene Chloride	2964	0.005	ND	524.2	*
Ethylbenzene	2992	0.7	ND	524.2	*
Chlorobenzene	2989	0.1	ND	524.2	*
1,2-Dichlorobenzene	2968	0.6	ND	524.2	*
1,4-Dichlorobenzene	2969	0.075	ND	524.2	*
Styrene	2996	0.1	ND	524.2	*
Tetrachloroethylene	2987	0.005	ND	524.2	*
Toluene	2991	1.0	ND	524.2	*
Total Xylenes	2955	10.0	ND	524.2	*
Trans-1,2-Dichloroethylene	2979	0.1	ND	524.2	*

Trichloroethylene	2984	0.005	ND	524.2	*
Vinyl Chloride	2976	0.002	ND	524.2	*

Comments: *Test performed by Anatek Labs ORELAP # ID200001

Brenda Ellis 12-14-05
Signature / Date:

H:\home\m\mev\results\c0e_3710\03



MAGIC VALLEY LABS

210 Addison Box 1867

Twin Falls, ID 83301

ID 100001

System ID #: 4100073	Entry Point or Source ID:	Source name(s):
Water System BAKER CITY OF		
Address P.O. BOX 650		
City, State, Zip - BAKER CITY OR 97814		
Sample Identification		
Sampled at: RESERVOIR WELL		Sampled by: KEN ELLIS
Date Collected: 10/26/2005		Time collected:
Date recieved: 10/26/2005		Date analyzed:
Sample Composition:		Single
Lab sample ID #: 56330		Sample Compositied: No

Synthetic Organic Chemicals

Regulated

Contaminant	Code	MCL mg/l	Analysis mg/l	LRL	Method	Analyst
2,4-D	2105	0.07	ND	0.0001	515.3	*
2,4,5-TP Silvex	2110	0.05	ND	0.0001	515.3	*
Adipates	2035	0.4	ND	0.002	525.2	*
Alachlor (Lasso)	2051	0.002	ND	0.0001	525.2	*
Atrazine	2050	0.003	ND	0.0001	525.2	*
Benzo(A)Pyrene	2306	0.0002	ND	0.00002	525.2	*
BHC-gamma (Lindane)	2010	0.0002	ND	0.00002	505	*
Carbofuran	2046	0.04	ND	0.0009	531.1	*
Chlordane	2959	0.002	ND	0.0001	505	*
Dalapon	2031	0.2	ND	0.001	515.3	*
Dibromochloropropane	2931	0.0002	ND	0.00002	504.1	*
Dinoseb	2041	0.007	ND	0.0001	515.3	*
Dioxin	2063	3x10 ⁻⁸				
Diquat	2032	0.02	ND	0.0004	549.2	*
Endothall	2033	0.1	ND	0.009	548.1	*
Endrin	2005	0.002	ND	0.00003	505	*
Ethylene Dibromide (EDB)	2946	0.00005	ND	0.00001	504.1	*
Glyphosate	2034	0.7	ND	0.006	547	*

Heptachlor Epoxide	2067	0.0002	ND	0.00002	505	*
Heptachlor	2065	0.0004	ND	0.00004	505	*
Hexachlorobenzene (HCB)	2274	0.001	ND	0.0001	525.2	*
Hexachlorocyclopentadiene	2042	0.05	ND	0.0001	525.2	*
Methoxychlor	2015	0.04	ND	0.0001	505	*
Pentachlorophenol	2326	0.001	ND	0.00004	515.3	*
Phthalates	2039	0.006	ND	0.0006	525.2	*
Picloram	2040	0.5	ND	0.0001	515.3	*
Polychlorinated Biphenyls	2383	0.0005	ND	0.00001	505	*
Simazine	2037	0.004	ND	0.00007	525.5	*
Toxaphene	2020	0.003	ND	0.001	505	*
Wdate	2036	0.2	ND	0.002	531.1	*

ANALYST	DATE	METHOD	ANALYST	DATE	METHOD
*	11/10/2005	515.3	*	11/8/2005	504.1
*	11/11/2005	525.2	*	10/9/2005	549.2
*	11/15/2005	505	*	11/8/2005	548.1
*	11/16/2005	531.1	*	11/14/2005	547

*Test performed by Anatek Labs, Inc ORELAP #ID200001

Brendo Ellis 12-14-05
Signature Date:

LAB FEDERAL ID #ID00911		LAB SAMPLE #:		563331
DATE LAB RECD SAMPLE: 10/26/2005		DATE REPORTED BY LAB: 2/24/2006		
COMPLIANCE SAMPLE		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		<input type="checkbox"/> REPLACEMENT SAMPLE
COLLECTION DATE: 10/26/2005		COLLECTION TIME: 12:00:00 AM (24 hour clock)		
SAMPLE TYPE: RADS	<input type="checkbox"/> PRIVATE <input checked="" type="checkbox"/> PUBLIC		PWS NAME: BAKER CITY OF	
PWS#: 4100073	RESERVOIR WELL		TAG #/FACILITY ID:	
COLLECTOR'S NAME: KEN ELLIS		CONTACT PHONE #:		



MAGIC VALLEY LABS, INC.
 210 Addison Ave. PO Box 1867
 Twin Falls ID 83301
 Phone: 208-733-4250
 Fax: 208-734-8539

PUBLIC DRINKING WATER SYSTEM RADIOLOGICAL ANALYSIS REPORT:

FRDS	CONTAMINANT	RESULT µg/L	RESULT pCi/L	MCL	ANALYSIS DATE	ANALYS T	METHOD
4002	Gross Alpha Activity (includes radium and uranium)	ND	3.2	30 µg/L	11/16/05	*	E900.0
4006	Uranium, Combined convert to activity: multiply concentration in µg/L x 0.67 (required if gross alpha exceeds 15pCi/L)	ND		15 pCi/L	11/15/05	*	E200.8
4000	Net Alpha subtract Uranium activity from Gross alpha activity (includes radium but excludes uranium)		ND		11/11/05	*	E903.0
4020	Radium-226 (required if alpha activity is greater than 5pCi/L)		ND		11/11/05	*	E904.0
4030	Radium-228		ND				
4010	Radium, Combined (226 & 228) add results of Ra-226 and Ra-228		ND	5 pCi/L			
4100	Gross Beta/Photon Activity (required to measure major isotopes if activity exceeds 50pCi/L)			4 mREM			

ND = Not detected within sensitivity of instrument

* TEST PERFORMED BY
ENERGY LABS

— = No analysis performed

Signature of Laboratory Supervisor Date

Ken Ellis 3-10-06

BAKER CITY OF

P.O. BOX 650

BAKER CITY OR 97814

(Reserved for
comments/notations)

COMPOSITE SAMPLE	
DATES:	
1st Quarterly Sample:	
2nd Quarterly Sample:	
3rd Quarterly Sample:	
Enter 4th Quarter or latest sample date beside	
Collection Date at top of form	

BAKER CITY OF
 P.O. BOX 650
 BAKER CITY OR 97814

MAGIC VALLEY LABS

210 Addison Ave / PO Box 1867

Twin Falls ID 83303-1867

Phone: (208) 733-4250

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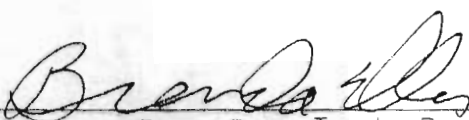
BAKER CITY OF

P.O. BOX 650

BAKER CITY OR 97814

Collection Date	10/26/2005	Received Date	10/26/2005	Location	
Collection Time		Received Time	6:00 PM	RESERVOIR WELL	
Sample #	Test / Method Code	Results in mg/L	Date Analyzed	Analyst	
563311	RADON	591 pCi/L	10/27/2005	DB	

Signature



Report Date: Tuesday, December 13, 2005