

MBMG RI 32  
Appendix D. Estimates of Vertical Seepage into and out of the  
Deep Alluvial Aquifer

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	GWIC ID*	Latitude	Longitude	GS ALT (ft)	TD (ft)	Delta Head (ft)	Aquitard Thickness	K (ft/d)	i	SWL Shallow Aquifer System	Potentiometric Surface Deep Aquifer	Head Difference (ft)	Last SWL Date
*Wells where the vertical gradient is downward between shallow aquifers and the deep aquifer	6450	48.2894	-114.2308	2955	31.4	-1.3	50	0.0007	-0.03	2948.67	2950	-1.33	1996
	80715	48.1201	-114.0898	2989	50	5.1	150	0.0007	0.03	2965.09	2960	5.09	2002
	83599	48.2738	-114.1738	3056	128	32.5	200	0.0007	0.16	3012.52	2980	32.52	1996
	83808	48.2325	-114.1091	3088	120	0.1	120	0.0007	0.00	3000.12	3000	0.12	1997
	83917	48.2922	-114.305	3029	12	94.3	200	0.0007	0.47	3024.3	2930	94.3	1996
	83963	48.2872	-114.2747	2955	30	10.2	140	0.0007	0.07	2950.16	2940	10.16	1996
	84308	48.2291	-114.3191	2967	60	24.3	200	0.0007	0.12	2944.31	2920	24.31	1996
	137862	48.2886	-114.3069	3037	87	69.3	200	0.0007	0.35	2999.3	2930	69.3	1996
	154968	48.2957	-114.2059	3043	80	32.5	96	0.0007	0.34	3002.49	2970	32.49	2002
	AVERAGE:									0.17			
Estimated downward flow through the confining unit in the northern area, which has a downward gradient.											AREA (acres)	65790	
											FLOW (ft <sup>3</sup> /day)	339135	
											FLOW (acre-feet/year)	2842	
Wells where the vertical gradient is upward between shallow aquifers and the deep aquifer.	6386	48.10980277	-114.18095	2906	23	-9.5	350	0.0007	-0.03	2890.5	2900	-9.5	2011
	6390	48.0953	-114.1887	2903	18	-3.3	600	0.0007	-0.01	2896.74	2900	-3.26	2003
	6392	48.1241	-114.2011	2908	28	-18.6	300	0.0007	-0.06	2891.45	2910	-18.55	1996
	6394	48.1173	-114.2118	2905	20	-16.5	400	0.0007	-0.04	2893.54	2910	-16.46	2003
	6419	48.21309875	-114.272463	2916.29	23	-14.2	100	0.0007	-0.14	2905.79	2920	-14.21	2011
	6454	48.2552	-114.2538	2938	45	-6.5	200	0.0007	-0.03	2933.47	2940	-6.53	1996
	6455	48.25475549	-114.254561	2936.87	22	-15.3	200	0.0007	-0.08	2924.67	2940	-15.33	2011
	80972	48.0944	-114.2308	2914	35	-4.2	200	0.0007	-0.02	2895.8	2900	-4.2	1996
	81665	48.2247	-114.193	2963	64	-5.5	100	0.0007	-0.05	2944.51	2950	-5.49	1997
	81791	48.1756	-114.1959	2907	21	-22.3	200	0.0007	-0.11	2897.75	2920	-22.25	2002
	82631	48.1452	-114.2491	2902	19	-18.1	200	0.0007	-0.09	2891.93	2910	-18.07	1996
	120651	48.1177	-114.225	2912	46	-15.6	300	0.0007	-0.05	2894.39	2910	-15.61	1996
	122742	48.1386	-114.1947	2898	33	-22.8	400	0.0007	-0.06	2887.17	2910	-22.83	1996
	125938	48.2358	-114.2122	2968	64	-29.0	60	0.0007	-0.48	2921.04	2950	-28.96	2003
	130565	48.1875	-114.2872	2907	76	-18.8	200	0.0007	-0.09	2901.23	2920	-18.77	1996
	155329	48.1872	-114.2875	2900	21.6	-28.2	200	0.0007	-0.14	2891.78	2920	-28.22	1996
	155330	48.1872	-114.2872	2904	23	-21.0	200	0.0007	-0.10	2899.03	2920	-20.97	1996
	156196	48.095	-114.2227	2914	31	-4.8	200	0.0007	-0.02	2895.18	2900	-4.82	1996
	168764	48.10415822	-114.181276	2903	76	-7.9	400	0.0007	-0.02	2892.07	2900	-7.93	2011
	256774	48.09635384	-114.215004	2911.89	48	-6.1	200	0.0007	-0.03	2893.88	2900	-6.12	2011
260891	48.10353169	-114.182	2907.86	80	-8.4	400	0.0007	-0.02	2891.65	2900	-8.35	2011	
262324	48.1965531	-114.216916	2948.84	66	1.3	140	0.0007	0.01	2921.34	2920	1.34	2011	
262421	48.09150156	-114.176654	2895.65	30.7	-6.5	400	0.0007	-0.02	2893.55	2900	-6.45	2011	
702739	48.0952	-114.2005	2909	20	-2.0	200	0.0007	-0.01	2897.99	2900	-2.01	1996	
AVERAGE:									-0.07				
Estimated upward flow through the confining unit in the southern area, which has an upward gradient.											AREA (acres)	55091	
											FLOW (ft <sup>3</sup> /d)	-119551	
											FLOW (acre-ft/yr)	-1002	

Head difference is the difference between the shallow aquifer water-level altitude and the deep aquifer water-level altitude at these well locations.

It is based on the potentiometric map of the deep aquifer and the water levels in these shallow aquifer wells.

Water-level data for shallow aquifers is limited within the study area. Older data were used to help delineate areas of upward and downward gradient.