

Appendix 2: Descriptive Information for Each Hydrographic Area within the Great Basin Carbonate and Alluvial Aquifer System Study Area

By Victor M. Heilweil and Susan G. Buto

Appendix 2 of

Conceptual Model of the Great Basin Carbonate and Alluvial Aquifer System

Edited by Victor M. Heilweil and Lynette E. Brooks

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Conversion Factors

Inch/Pound to SI

Multiply	By	To obtain
Length		
inch (in.)	2.54	centimeter (cm)
inch (in.)	25.4	millimeter (mm)
foot (ft)	0.3048	meter (m)
mile (mi)	1.609	kilometer (km)
Area		
acre	4,047	square meter (m ²)
acre	0.4047	hectare (ha)
square mile (mi ²)	2.590	square kilometer (km ²)
Volume		
gallon (gal)	3.785	liter (L)
gallon (gal)	0.003785	cubic meter (m ³)
gallon (gal)	3.785	cubic decimeter (dm ³)
cubic foot (ft ³)	28.32	cubic decimeter (dm ³)
cubic foot (ft ³)	0.02832	cubic meter (m ³)
acre-foot (acre-ft)	1,233	cubic meter (m ³)
acre-foot (acre-ft)	0.001233	cubic hectometer (hm ³)
Flow rate		
acre-foot per year (acre-ft/yr)	1,233	cubic meter per year (m ³ /yr)
acre-foot per year (acre-ft/yr)	0.001233	cubic hectometer per year (hm ³ /yr)
foot per year (ft/yr)	0.3048	meter per year (m/yr)
cubic foot per second (ft ³ /s)	0.02832	cubic meter per second (m ³ /s)
cubic foot per day (ft ³ /d)	0.02832	cubic meter per day (m ³ /d)
gallon per minute (gal/min)	0.06309	liter per second (L/s)
Hydraulic conductivity		
foot per day (ft/d)	0.3048	meter per day (m/d)
inch per day (in./d)	25.38	millimeter per day (mm/d)
Transmissivity*		
foot squared per day (ft ² /d)	0.09290	meter squared per day (m ² /d)

Note: The conversion factors given above are for the entire report. Not all listed conversion factors will be in any given chapter of this report.

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:

$$^{\circ}\text{F}=(1.8\times^{\circ}\text{C})+32$$

Temperature in degrees Fahrenheit (°F) may be converted to degrees Celsius (°C) as follows:

$$^{\circ}\text{C}=(^{\circ}\text{F}-32)/1.8$$

Temperature in kelvin (K) may be converted to degrees Fahrenheit (°F) as follows:

$$^{\circ}\text{F}=1.8\text{K}-459.67$$

Temperature in kelvin (K) may be converted to degrees Celsius (°C) as follows:

$$^{\circ}\text{C}=\text{K}-273.15$$

Vertical coordinate information is referenced to the North American Vertical Datum of 1988 (NAVD 88).

Horizontal coordinate information is referenced to the North American Datum of 1983 (NAD 83).

Altitude, as used in this report, refers to distance above the vertical datum.

*Transmissivity: The standard unit for transmissivity is cubic foot per day per square foot times foot of aquifer thickness [(ft³/d)/ft²]ft. In this report, the mathematically reduced form, foot squared per day (ft²/d), is used for convenience.

Appendix 2: Descriptive Information for Each Hydrographic Area within the Great Basin Carbonate and Alluvial Aquifer System Study Area

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Table A2–1. Descriptive information for each hydrographic area within the Great Basin carbonate and alluvial aquifer system study area.

[Latitude and longitude of centroid: geographic coordinate based on NAD83 horizontal datum. Mean altitude: based on NAVD88 vertical datum. Mean annual precipitation: based on PRISM average annual 1971–2000 precipitation (Daly and others, 2008¹). Abbreviations: mi², square miles; ft, feet; in., inches]

Groundwater flow system name	Groundwater flow system number	Hydro-graphic area number	Hydrographic area name	Hydrographic subarea name	Latitude of centroid	Longitude of centroid	Area (mi²)	Mean altitude (ft)	Mean annual precipitation (in.)
Humboldt System	7	42	Marys River Area		41.33	-115.17	1,065	6,215	14
		43	Starr Valley Area		40.96	-115.23	326	6,400	18
		44	North Fork Area		41.27	-115.71	1,092	6,281	13
		45	Lamoille Valley		40.79	-115.46	253	6,432	17
		46	South Fork Area		40.56	-115.52	106	7,752	24
		47	Huntington Valley		40.27	-115.72	754	6,273	14
		48	Tenmile Creek Area		40.64	-115.77	386	5,839	13
		49	Elko Segment		40.82	-115.84	317	5,660	11
		50	Susie Creek Area		40.91	-115.99	222	5,953	12
		51	Maggie Creek Area		40.99	-116.16	393	6,076	13
		52	Marys Creek Area		40.68	-116.21	65	5,680	11
		53	Pine Valley		40.19	-116.23	1,023	6,212	13
		54	Crescent Valley		40.35	-116.55	746	5,536	11
		55	Carico Lake Valley		40.04	-116.93	384	5,986	12
		56	Upper Reese River Valley		39.35	-117.26	1,160	6,844	13
		59	Lower Reese River Valley		40.46	-116.96	586	5,294	10
		60	Whirlwind Valley		40.59	-116.60	95	5,403	11
		61	Boulder Flat		40.80	-116.48	551	5,227	10
		62	Rock Creek Valley		40.99	-116.64	452	5,556	12
		63	Willow Creek Valley		41.26	-116.56	399	5,956	14
Groundwater flow system subtotals							10,375	6,029	13
Monte Cristo Valley	23	136	Monte Cristo Valley		38.34	-117.81	282	6,046	9
Groundwater flow system subtotals							282	6,046	9
South-Central Marshes	24	117	Fish Lake Valley		37.67	-118.00	993	6,720	9
		118	Columbus Salt Marsh Valley		38.08	-118.01	366	5,483	6
		137A	Big Smoky Valley	Tonopah Flat	38.31	-117.47	1,609	5,854	8
		141	Ralston Valley		38.20	-117.02	969	6,261	8
		142	Alkali Spring Valley		37.85	-117.29	317	5,459	6
		143	Clayton Valley		37.71	-117.60	551	5,568	7
		149	Stone Cabin Valley		38.18	-116.68	985	6,333	9
Groundwater flow system subtotals							5,790	5,954	8

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Table A2-1. Descriptive information for each hydrographic area within the Great Basin carbonate and alluvial aquifer system study area.—Continued

[Latitude and longitude of centroid: geographic coordinate based on NAD83 horizontal datum. Mean altitude: based on NAVD88 vertical datum. Mean annual precipitation: based on PRISM average annual 1971–2000 precipitation (Daly and others, 2008¹). Abbreviations: mi², square miles; ft, feet; in., inches]

Groundwater flow system name	Groundwater flow system number	Hydro-graphic area number	Hydrographic area name	Hydrographic subarea name	Latitude of centroid	Longitude of centroid	Area (mi²)	Mean altitude (ft)	Mean annual precipitation (in.)
Grass Valley	25	138	Grass Valley		39.84	-116.72	598	6,386	12
Groundwater flow system subtotals							598	6,386	12
Northern Big Smoky Valley	26	137B	Northern Big Smoky Valley		39.10	-117.02	1,313	6,780	13
Groundwater flow system subtotals							1,313	6,780	13
Diamond Valley	27	139	Kobeh Valley		39.61	-116.42	881	6,649	12
		140A	Monitor Valley	Northern Part	39.16	-116.63	530	7,385	14
		140B	Monitor Valley	Southern Part	38.76	-116.76	523	7,788	15
		151	Antelope Valley		39.28	-116.29	446	7,129	11
		152	Stevens Basin		39.47	-116.08	20	7,567	17
		153	Diamond Valley		39.82	-115.97	756	6,339	13
Groundwater flow system subtotals							3,156	7,143	13
Death Valley	28	144	Lida Valley		37.49	-117.31	535	5,571	7
		145	Stonewall Flat		37.63	-116.94	370	5,397	7
		146	Sarcobatus Flat		37.22	-116.98	806	4,843	6
		147	Gold Flat		37.50	-116.50	678	5,749	9
		148	Cactus Flat		37.77	-116.63	382	5,855	8
		157	Kawich Valley		37.49	-116.22	351	6,039	10
		158A	Emigrant Valley	Groom Lake Valley	37.31	-115.87	654	5,385	9
		158B	Emigrant Valley	Papoose Lake Valley	37.08	-115.81	109	4,949	9
		159	Yucca Flat		37.09	-116.08	310	4,779	8
		160	Frenchman Flat		36.85	-115.96	460	4,186	8
		161	Indian Springs Valley		36.69	-115.72	650	4,444	9
		162	Pahrump Valley		36.15	-115.89	1,006	4,090	9
		168	Three Lakes Valley	Northern Part	36.88	-115.43	298	4,433	8
		169A	Tikapoo Valley	Northern Part	37.37	-115.52	615	5,085	10
		169B	Tikapoo Valley	Southern Part	36.98	-115.24	368	4,380	8
		170	Penoyer Valley		37.73	-115.80	698	5,631	9
		173A	Railroad Valley	Southern Part	37.90	-116.09	595	5,896	9
		211	Three Lakes Valley	Southern Part	36.58	-115.49	313	4,391	7
		225	Mercury Valley		36.61	-116.03	108	3,937	8
		226	Rock Valley		36.69	-116.23	86	3,548	6
		227A	Fortymile Canyon	Jackass Flats	36.82	-116.34	283	3,988	6
227B	Fortymile Canyon	Buckboard Mesa	37.11	-116.34	242	5,763	11		
228	Oasis Valley		37.10	-116.62	467	4,965	9		
229	Crater Flat		36.83	-116.56	183	3,775	6		
230	Amargosa Desert		36.52	-116.49	1,363	3,019	5		
240	Chicago Valley		35.99	-116.14	108	2,617	6		
241	California Valley		35.83	-116.01	139	3,362	7		

Table A2-1. Descriptive information for each hydrographic area within the Great Basin carbonate and alluvial aquifer system study area.—Continued

[Latitude and longitude of centroid: geographic coordinate based on NAD83 horizontal datum. Mean altitude: based on NAVD88 vertical datum. Mean annual precipitation: based on PRISM average annual 1971–2000 precipitation (Daly and others, 2008¹). Abbreviations: mi², square miles; ft, feet; in., inches]

Groundwater flow system name	Groundwater flow system number	Hydro-graphic area number	Hydrographic area name	Hydrographic subarea name	Latitude of centroid	Longitude of centroid	Area (mi²)	Mean altitude (ft)	Mean annual precipitation (in.)
Death Valley—Continued	28	242	Lower Amargosa Valley		35.98	-116.33	466	2,475	6
		243	Death Valley		36.39	-116.99	3,943	2,815	5
		244	Valjean Valley		35.60	-116.06	405	2,152	5
		245	Shadow Valley		35.50	-115.70	371	3,959	7
Groundwater flow system subtotals							17,362	4,435	8
Newark Valley	29	154	Newark Valley		39.54	-115.67	793	6,518	12
		155A	Little Smoky Valley	Northern Part	39.15	-116.03	590	6,799	10
		155B	Little Smoky Valley	Central Part	38.84	-116.07	63	6,835	9
Groundwater flow system subtotals							1,446	6,717	10
Railroad Valley	30	150	Little Fish Lake Valley		38.82	-116.43	430	7,518	12
		155C	Little Smoky Valley	Southern Part	38.66	-115.98	502	6,364	8
		156	Hot Creek Valley		38.39	-116.29	1,047	6,412	9
		173B	Railroad Valley	Northern Part	38.64	-115.68	2,141	5,992	10
Groundwater flow system subtotals							4,120	6,571	10
Independence Valley	32	177	Clover Valley		40.80	-114.97	479	6,239	15
		188	Independence Valley		40.89	-114.72	561	6,176	13
Groundwater flow system subtotals							1,040	6,208	14
Ruby Valley	33	176	Ruby Valley		40.36	-115.31	1,027	6,627	16
		178A	Butte Valley	Northern Part	40.36	-114.98	273	6,544	13
Groundwater flow system subtotals							1,300	6,585	15
Colorado	34	164A	Ivanpah Valley	Northern Part	35.75	-115.37	247	3,829	8
		164B	Ivanpah Valley	Southern Part	35.45	-115.38	506	3,789	7
		165	Jean Lake Valley		35.77	-115.25	97	3,384	7
		166	Hidden Valley	South	35.83	-115.16	35	3,333	6
		167	Eldorado Valley		35.75	-114.97	524	2,928	6
		171	Coal Valley		37.93	-115.31	463	5,568	11
		172	Garden Valley		38.06	-115.52	496	6,191	13
		174	Jakes Valley		39.30	-115.28	421	7,018	13
		175	Long Valley		39.76	-115.38	665	6,694	13
		180	Cave Valley		38.57	-114.86	353	6,841	14
		181	Dry Lake Valley		37.96	-114.76	891	5,505	12
		182	Delamar Valley		37.45	-114.88	382	5,278	12
		183	Lake Valley		38.50	-114.57	550	6,531	14
		198	Dry Valley		37.87	-114.22	113	6,061	14
		199	Rose Valley		37.93	-114.24	12	5,789	14
		200	Eagle Valley		37.97	-114.17	54	6,436	16
		201	Spring Valley		38.17	-114.20	285	6,913	16
		202	Patterson Valley		38.09	-114.46	427	6,247	14
		203	Panaca Valley		37.75	-114.43	337	5,514	13
		204	Clover Valley		37.54	-114.29	361	5,803	16
		205	Lower Meadow Valley Wash		37.15	-114.57	975	3,981	11
		206	Kane Springs Valley		37.21	-114.73	234	4,472	12

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Table A2-1. Descriptive information for each hydrographic area within the Great Basin carbonate and alluvial aquifer system study area.—Continued

[Latitude and longitude of centroid: geographic coordinate based on NAD83 horizontal datum. Mean altitude: based on NAVD88 vertical datum. Mean annual precipitation: based on PRISM average annual 1971–2000 precipitation (Daly and others, 2008¹). Abbreviations: mi², square miles; ft, feet; in., inches]

Groundwater flow system name	Groundwater flow system number	Hydro-graphic area number	Hydrographic area name	Hydrographic subarea name	Latitude of centroid	Longitude of centroid	Area (mi²)	Mean altitude (ft)	Mean annual precipitation (in.)
Colorado—Continued	34	207	White River Valley		38.70	-115.15	1,595	6,225	12
		208	Pahroc Valley		37.96	-115.04	515	5,493	11
		209	Pahranagat Valley		37.44	-115.18	768	4,729	10
		210	Coyote Spring Valley		36.90	-114.98	657	3,839	8
		212	Las Vegas Valley		36.24	-115.26	1,537	3,842	8
		215	Black Mountains Area		36.25	-114.66	633	2,026	6
		216	Garnet Valley		36.44	-114.93	157	2,937	7
		217	Hidden Valley	North	36.53	-114.98	77	3,603	8
		218	California Wash		36.51	-114.73	311	2,354	6
		219	Muddy River Springs Area		36.72	-114.78	92	2,519	6
		220	Lower Moapa Valley		36.64	-114.49	253	2,025	6
		221	Tule Desert		37.17	-114.29	184	4,009	12
		222	Virgin River Valley		37.08	-114.11	1,299	3,547	11
Groundwater flow system subtotals							16,508	4,722	11
Goshute Valley	35	178B	Butte Valley	Southern Part	39.83	-115.09	747	6,780	13
		179	Steptoe Valley		39.62	-114.78	1,958	6,994	12
		187	Goshute Valley		40.68	-114.51	953	6,108	11
Groundwater flow system subtotals							3,658	6,627	12
Mesquite Valley	36	163	Mesquite Valley		35.81	-115.64	457	3,634	8
Groundwater flow system subtotals							457	3,634	8
Great Salt Lake Desert	37	184	Spring Valley		39.23	-114.46	1,700	6,771	13
		185	Tippett Valley		39.86	-114.31	347	6,364	11
		186A	Antelope Valley	Southern Part	40.13	-114.30	123	6,232	11
		186B	Antelope Valley	Northern Valley	40.31	-114.40	268	6,160	11
		189A	Thousand Springs Valley	Herrell-Brush Creek	41.40	-114.80	173	6,260	14
		189B	Thousand Springs Valley	Toano-Rock Spring	41.47	-114.51	621	6,021	12
		189C	Thousand Springs Valley	Rocky Butte Area	41.48	-114.34	177	5,875	11
		189D	Thousand Springs Valley	Montello-Crittenden	41.36	-114.18	573	5,690	11
		191	Pilot Creek Valley		40.98	-114.18	329	5,397	11
		251	Grouse Creek Valley		41.61	-113.88	524	5,704	12
		252	Pilot Valley		41.09	-113.93	495	4,732	8
		253	Deep Creek Valley		40.01	-114.04	453	6,214	12
		254	Snake Valley		39.09	-113.95	3,685	6,192	12
		255	Pine Valley		38.44	-113.74	738	6,318	12
		256	Wah Wah Valley		38.55	-113.43	605	5,762	10
		257	Tule Valley		39.31	-113.52	943	5,316	10
		258	Fish Springs Flat		39.78	-113.26	632	4,900	10

Table A2-1. Descriptive information for each hydrographic area within the Great Basin carbonate and alluvial aquifer system study area.—Continued

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Groundwater flow system name	Groundwater flow system number	Hydro-graphic area number	Hydrographic area name	Hydrographic subarea name	Latitude of centroid	Longitude of centroid	Area (mi²)	Mean altitude (ft)	Mean annual precipitation (in.)
Great Salt Lake Desert—Continued		259	Dugway-Government Creek Valley		40.02	-112.90	1,171	4,990	11
		260A	Park Valley	West Park Valley	41.53	-113.49	644	4,967	10
		261A	Great Salt Lake Desert	West Part	40.65	-113.57	4,648	4,486	9
Groundwater flow system subtotals							18,849	5,718	11
Great Salt Lake	38	260B	Park Valley	East Park Valley	41.72	-113.31	502	5,360	12
		261B	Great Salt Lake Desert	East Part	41.26	-113.02	199	4,447	12
		262	Tooele Valley		40.61	-112.43	472	5,159	18
		263	Rush Valley		40.20	-112.38	717	5,924	17
		264	Cedar Valley		40.25	-112.09	316	5,691	17
		265	Utah Valley Area		40.10	-111.64	1,785	6,266	22
		266	Northern Juab Valley		39.74	-111.81	316	6,358	19
		267	Salt Lake Valley		40.66	-111.92	769	5,651	23
		268	East Shore Area		41.15	-112.02	577	4,861	23
		269	West Shore Area		40.94	-112.77	201	4,426	12
		270	Skull Valley		40.47	-112.77	806	5,188	15
		271	Sink Valley		40.93	-112.95	168	4,625	12
		272	Cache Valley		41.90	-111.78	1,889	6,113	26
		273	Malad-Lower Bear River Area		41.91	-112.24	1,252	5,168	20
		274	Pocatello Valley		42.08	-112.49	111	5,532	20
		275	Blue Creek Valley		41.84	-112.46	218	5,150	18
		276	Hansel and North Rozel Flat		41.76	-112.67	234	4,815	15
		277	Promontory Mountains Area		41.50	-112.53	376	4,777	15
		278	Curlew Valley		42.02	-112.87	1,146	5,121	15
		279	Great Salt Lake		41.17	-112.54	1,768	4,222	13
Groundwater flow system subtotals							13,823	5,243	17
Sevier Lake	39	280	Beryl-Enterprise Area		37.83	-113.61	2,094	5,785	14
		281	Parowan Valley		37.95	-112.73	515	7,080	17
		282	Cedar City Valley		37.77	-113.05	541	6,509	16
		283	Beaver Valley		38.30	-112.63	550	7,298	19
		284	Milford Area		38.43	-113.00	1,294	5,680	12
		285	Leamington Canyon		39.44	-112.02	829	6,023	16
		286	Pavant Valley		38.98	-112.33	683	5,969	17
		287	Sevier Desert		39.28	-112.78	3,969	5,115	11
Groundwater flow system subtotals							10,475	6,182	15

¹ Daly, C., Halbleib, M., Smith, J.I., Gibson, W.P., Doggett, M.K., Taylor, G.H., Curtis, J., and Pasteris, P.A., 2008, Physiographically-sensitive mapping of temperature and precipitation across the conterminous United States: International Journal of Climatology, doi: 10.1002/joc.1688, accessed January 20, 2009 at <http://onlinelibrary.wiley.com/doi/10.1002/joc.1688/pdf>.

