Groundwater Investigations LLC · 614 N Nevada Ave. Ste 203 · Colorado Springs, CO 80903 (719) 338-1805

To: Christy Mullins
PO BOX 8203
Colorado Springs CO 80933

CC: Brian Gregg Sheldon
MONSON, CUMMINS & SHOHET, LLC
13511 Northgate Estates Dr., Ste. 250
Colorado Springs, Colorado 80921

RE: Denver Basin Groundwater Assessment

Date: August 16, 2018

The following presents the results of the groundwater evaluation a the 18.66-acre property having the address of 7680 Shoup Road Colorado Springs CO 80908 and situated in El Paso County (Property).

The purpose of this groundwater assessment is to determine the amount of Denver Basin groundwater underlying the Property and provide the depletion analysis to assess impact of pumping on surface water for proposed pumping of the Dawson aquifer to support an Augmentation Plan to accompany the water rights application.

Methodology

The Denver Basin atlas maps along with geophysical data, were used to verify the State's assessment tool (SB5) which generates the physical parameters of the groundwater aquifers. In addition, as the Dawson Aquifer is identified as not-non tributary the State-approved groundwater model (AUG3) was used to evaluate the amount of depletion the occurs to the hydraulically connected stream system.

Results

1. Aquifer Assessment
   The table below represents the total estimated amount of water that is available in each aquifer under the Property.

Table 1: Groundwater Quantification

Elevation 7460 Acres 18.66 SE ¼ SE ¼ Sec 8 T12S R65W

Denver Basin Aquifer	Elevation (ft amsl)		Net Sand	Depth (feet)		Total	100 Years	300 Years
	Bottom	Top	(ft)	Bottom	Top	(AF)	(AF)	(AF)
Dawson (NNT)	6645	6813	350	815	135	1306	13.1	4.4
Denver (NNT)	5718	6638	370	1742	823	1174	11.7	-
Arapahoe (NT)	5162	5652	255	2298	1808	809	8.1	-
Laramie Fox Hills (NT)	4596	4925	200	2864	2535	560	5.6	-

The Dawson and Denver aquifers are not non-tributary and pumping from these aquifers will require an augmentation plan. The Arapahoe and Laramie Fox Hills aquifers are non-tributary and all groundwater, minus 2 percent, may be pumped at a rate of depletion no greater than 100 years. As this is a new subdivision in El Paso County, there must be a 300-year water supply.

2. Stream Depletions and Augmentation
   The primary water supply will be from the not non-tributary Dawson aquifer. Actual stream depletions resulting from pumping will need to be augmented during the pumping period. Once pumping has ceased, the impact to the stream system continues as the aquifer recovers and augmentation is required to continue to offset those post-pumping depletions. The deeper non-tributary groundwater is the most feasible to reserve for this purpose. The deepest non-tributary aquifer, the Laramie Fox Hills, is calculated to yield 560 AF of groundwater which is overlain by the Arapahoe aquifer with 809 AF. Together, there is a maximum of 1360 AF. The amount available for augmentation of post pumping depletions is therefore 1332.8 AF (1360 AF minus 2 percent or 27.2 AF).

3. Depletion Analysis
   A stream depletion analysis for the not non-tributary Dawson aquifer was accomplished using the state's AUG3 groundwater model using a pumping rate of 3 AF/Yr for 300 years. Affected streams where depletion is greater than one tenth of one percent at the 100th year occurs in Monument (0.031AF/Yr), East Cherry (0.038 AF/Yr), West Cherry (0.12 AF/Yr), Sand (0.079 AF/Yr), Kettle (0.052 AF/Yr), Black Squirrel of UBSGMD (0.004 AF/Yr) and Kiowa (0.002 AF/Yr) Creeks. Cumulative depletions occur in Both the South Platte (0.052 AF/Yr) and Arkansas River (0.166 AF/Yr) Systems. The resulting maximum total stream depletion in the 300th year is 0.69 AF/Yr or 23 percent of the pumped amount.

Proposed Use and Existing Wells
The applicant is proposing to subdivide into three lots. Groundwater from the Denver Basin Bedrock aquifers will be used to provide domestic, commercial, industrial, agricultural, and all other beneficial uses.

There is an existing home on one of the three proposed lots that has a well with permit 163813-A for inside use for one single family dwelling, watering of domestic animals and irrigation of up to ¼ acre of lawn and gardens. The maximum annual amount 1 AF/Yr. This well will be re permitted under the adjudicated water rights and augmentation plan. A flow meter will be installed to monitor water use.

Augmentation
In-home use will be 0.26 AF/Yr; assuming a 10 percent loss due to consumption, an expected amount of return flows for augmentation during pumping is 0.23 AF/yr per home or a total of 0.69 AF/Yr. This is sufficient to meet the maximum total stream depletion of 0.69 AF that occurs in the 300th year of pumping and thereby prevent injury to surface water rights. Return flows will accrue to Burgess River, a tributary to Kettle Creek in the Arkansas River system.

Post-Pumping Reserves
Based on groundwater modeling, augmentation of actual stream depletions during the 300 year pumping period will amount to 102.8 AF. The amount to be reserved for post pumping depletions is 900AF – 103 AF or 797 AF of Non Tributary groundwater. All of the available 549 AF of groundwater in the Laramie fox Hills aquifer and 248 AF of the Arapahoe aquifer groundwater will be reserved to meet post-pumping depletions.

Sincerely,

Julia M. Murphy, MS PG
Professional Geologist /Hydrogeologist

Form No. 1
GW6-25

OFFICE OF THE STATE ENGINEER
COLORADO DIVISION OF WATER RESOURCES

818 Centennial Bldg., 1313 Sherman St., Denver, Colorado 80203
(303) 866-3581

150

WELL PERMIT NUMBER 163813 . . A

DIV. 2 CNTY. 21 WD 10 DES. BASIN ___ MD ___

APPLICANT

Lot: Block: Filing: Subdiv:

APPROVED WELL LOCATION

COUNTY EL PASO

SE 1/4 SE 1/4 Section 8

Twp 12 S , Range 65 W 6thP.M.

DISTANCES FROM SECTION LINES

190 Ft. from South Section Line

230 Ft. from East Section Line

PAUL O JR & VIRGINIA B PEASE
18450 CLEMENTS RD
COLO SPRGS, CO 80928

719/683-2314

PERMIT TO CONSTRUCT A WELL

ISSUANCE OF THIS PERMIT DOES NOT CONFER A WATER RIGHT

CONDITIONS OF APPROVAL

1) This well shall be used in such a way as to cause no material injury to existing water rights. The issuance of the permit does not assure the applicant that no injury will occur to another vested water right or preclude another owner of a vested water right from seeking relief in a civil court action.

2) The construction of this well shall be in compliance with the Water Well Construction and Pump Installation Rules 2 CCR 402-2, unless approval of a variance has been granted by the State Board of Examiners of Water Well Construction and Pump Installation Contractors in accordance with Rule 17.

3) Approved pursuant to CRS 37-92-602(3)(c) for the relocation of an existing well, permit no. 163813 **(case no. W-2847, Well No. 1)**. The old well must be plugged and abandoned according to the Water Well Construction and Pump Installation Rules within ninety (90) days of completion of the new well. The enclosed well abandonment report form must be completed affirming that the old well was plugged and abandoned.

4) The depth of this well shall not exceed 830 feet which corresponds to the base of the Dawson aquifer.

5) The use of ground water from this well is limited to ordinary household purposes inside one (1) single family dwelling, the watering of domestic animals, and the irrigation of not more than 10,890 square feet (1/4 acre) of home gardens and lawns.

6) The maximum pumping rate shall not exceed 5 GPM, pursuant to case no. W-2847, Well No. 1.

7) The average annual amount of ground water to be withdrawn shall not exceed 1.0 acre-feet.

8) This well shall be constructed not more than 200 feet from the location specified on this permit.

Note: Verbal approval no. 92VE072 was granted on March 23, 1992 to construct this well.

JWB. 4/7/92

APPROVED: JWB

Hal D. Simpson
State Engineer (Acting)

Bruce E. DeBrine
By

Receipt No. 0336809B

DATE ISSUED APR 21 1992

EXPIRATION DATE APR 21 1994

Summary of Total Depletion from Pumping 3 AF/Yr for 300 Yrs

Year	Depletion as a % of Pumping	Annual Depletion (AF/YR)	Year	Depletion as a % of Pumping	Annual Depletion (AF/YR)	Year	Depletion as a % of Pumping	Annual Depletion (AF/YR)	Year	Depletion as a % of Pumping	Annual Depletion (AF/YR)
1	0.01	0.000	226	17.73	0.532	451	20.34	0.610	676	14.80	0.444
2	0.02	0.001	227	17.80	0.534	452	20.31	0.609	677	14.78	0.443
3	0.03	0.001	228	17.88	0.536	453	20.28	0.608	678	14.76	0.443
4	0.05	0.002	229	17.95	0.539	454	20.25	0.607	679	14.74	0.442
5	0.07	0.002	230	18.03	0.541	455	20.21	0.606	680	14.72	0.442
6	0.10	0.003	231	18.10	0.543	456	20.18	0.606	681	14.70	0.441
7	0.12	0.004	232	18.18	0.545	457	20.15	0.605	682	14.68	0.440
8	0.16	0.005	233	18.25	0.548	458	20.12	0.604	683	14.66	0.440
9	0.19	0.006	234	18.32	0.550	459	20.09	0.603	684	14.64	0.439
10	0.23	0.007	235	18.40	0.552	460	20.06	0.602	685	14.62	0.439
11	0.26	0.008	236	18.47	0.554	461	20.03	0.601	686	14.61	0.438
12	0.30	0.009	237	18.55	0.556	462	20.00	0.600	687	14.59	0.438
13	0.35	0.010	238	18.62	0.559	463	19.97	0.599	688	14.57	0.437
14	0.39	0.012	239	18.69	0.561	464	19.94	0.598	689	14.55	0.436
15	0.44	0.013	240	18.77	0.563	465	19.91	0.597	690	14.53	0.436
16	0.49	0.015	241	18.84	0.565	466	19.88	0.596	691	14.51	0.435
17	0.54	0.016	242	18.91	0.567	467	19.85	0.596	692	14.49	0.435
18	0.60	0.018	243	18.99	0.570	468	19.82	0.595	693	14.47	0.434
19	0.65	0.020	244	19.06	0.572	469	19.79	0.594	694	14.45	0.434
20	0.71	0.021	245	19.13	0.574	470	19.76	0.593	695	14.44	0.433
21	0.77	0.023	246	19.21	0.576	471	19.73	0.592	696	14.42	0.433
22	0.83	0.025	247	19.28	0.578	472	19.70	0.591	697	14.40	0.432
23	0.89	0.027	248	19.35	0.581	473	19.67	0.590	698	14.38	0.431
24	0.95	0.029	249	19.42	0.583	474	19.64	0.589	699	14.36	0.431
25	1.02	0.030	250	19.50	0.585	475	19.61	0.588	700	14.34	0.430
26	1.08	0.032	251	19.57	0.587	476	19.58	0.587	701	14.32	0.430
27	1.15	0.034	252	19.64	0.589	477	19.55	0.587	702	14.31	0.429
28	1.21	0.036	253	19.71	0.591	478	19.52	0.586	703	14.29	0.429
29	1.28	0.038	254	19.79	0.594	479	19.50	0.585	704	14.27	0.428
30	1.35	0.041	255	19.86	0.596	480	19.47	0.584	705	14.25	0.428
31	1.42	0.043	256	19.93	0.598	481	19.44	0.583	706	14.23	0.427
32	1.49	0.045	257	20.00	0.600	482	19.41	0.582	707	14.21	0.426
33	1.57	0.047	258	20.07	0.602	483	19.38	0.581	708	14.19	0.426
34	1.64	0.049	259	20.14	0.604	484	19.35	0.581	709	14.18	0.425
35	1.71	0.051	260	20.21	0.606	485	19.32	0.580	710	14.16	0.425
36	1.79	0.054	261	20.28	0.609	486	19.29	0.579	711	14.14	0.424
37	1.86	0.056	262	20.35	0.611	487	19.26	0.578	712	14.12	0.424
38	1.94	0.058	263	20.43	0.613	488	19.23	0.577	713	14.10	0.423
39	2.02	0.060	264	20.50	0.615	489	19.21	0.576	714	14.09	0.423
40	2.09	0.063	265	20.57	0.617	490	19.18	0.575	715	14.07	0.422
41	2.17	0.065	266	20.64	0.619	491	19.15	0.574	716	14.05	0.421
42	2.25	0.067	267	20.71	0.621	492	19.12	0.574	717	14.03	0.421
43	2.33	0.070	268	20.78	0.623	493	19.09	0.573	718	14.01	0.420
44	2.41	0.072	269	20.85	0.625	494	19.06	0.572	719	13.99	0.420
45	2.49	0.075	270	20.92	0.628	495	19.03	0.571	720	13.98	0.419
46	2.57	0.077	271	20.99	0.630	496	19.01	0.570	721	13.96	0.419
47	2.65	0.080	272	21.06	0.632	497	18.98	0.569	722	13.94	0.418
48	2.73	0.082	273	21.13	0.634	498	18.95	0.568	723	13.92	0.418
49	2.82	0.084	274	21.20	0.636	499	18.92	0.568	724	13.90	0.417
50	2.90	0.087	275	21.27	0.638	500	18.89	0.567	725	13.89	0.417
51	2.98	0.089	276	21.34	0.640	501	18.87	0.566	726	13.87	0.416
52	3.06	0.092	277	21.41	0.642	502	18.84	0.565	727	13.85	0.416
53	3.15	0.094	278	21.48	0.644	503	18.81	0.564	728	13.83	0.415
54	3.23	0.097	279	21.54	0.646	504	18.78	0.563	729	13.82	0.415
55	3.32	0.099	280	21.61	0.648	505	18.75	0.563	730	13.80	0.414
56	3.40	0.102	281	21.68	0.650	506	18.73	0.562	731	13.78	0.413

Summary of Total Depletion from Pumping 3 AF/Yr for 300 Yrs

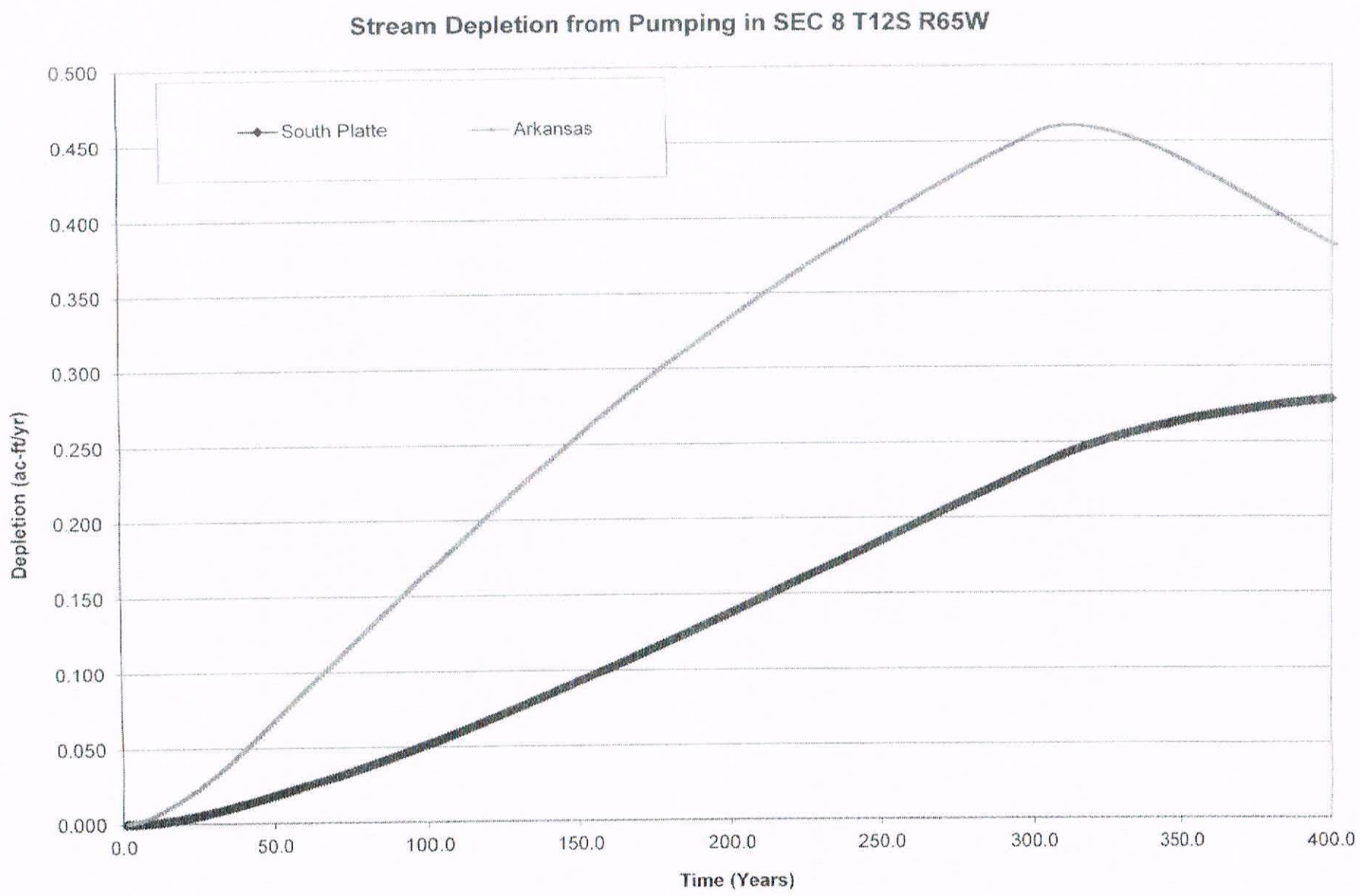
Year	Depletion as a % of Pumping	Annual Depletion (AF/YR)	Year	Depletion as a % of Pumping	Annual Depletion (AF/YR)	Year	Depletion as a % of Pumping	Annual Depletion (AF/YR)	Year	Depletion as a % of Pumping	Annual Depletion (AF/YR)
57	3.48	0.104	282	21.75	0.653	507	18.70	0.561	732	13.76	0.413
58	3.57	0.107	283	21.82	0.655	508	18.67	0.560	733	13.75	0.412
59	3.65	0.110	284	21.89	0.657	509	18.65	0.559	734	13.73	0.412
60	3.74	0.112	285	21.96	0.659	510	18.62	0.559	735	13.71	0.411
61	3.83	0.115	286	22.02	0.661	511	18.59	0.558	736	13.69	0.411
62	3.91	0.117	287	22.09	0.663	512	18.56	0.557	737	13.68	0.410
63	4.00	0.120	288	22.16	0.665	513	18.54	0.556	738	13.66	0.410
64	4.08	0.123	289	22.23	0.667	514	18.51	0.555	739	13.64	0.409
65	4.17	0.125	290	22.30	0.669	515	18.48	0.554	740	13.62	0.409
66	4.26	0.128	291	22.36	0.671	516	18.45	0.554	741	13.61	0.408
67	4.34	0.130	292	22.43	0.673	517	18.43	0.553	742	13.59	0.408
68	4.43	0.133	293	22.50	0.675	518	18.40	0.552	743	13.57	0.407
69	4.52	0.136	294	22.57	0.677	519	18.37	0.551	744	13.55	0.407
70	4.61	0.138	295	22.63	0.679	520	18.35	0.550	745	13.54	0.406
71	4.69	0.141	296	22.70	0.681	521	18.32	0.550	746	13.52	0.406
72	4.78	0.143	297	22.77	0.683	522	18.29	0.549	747	13.50	0.405
73	4.87	0.146	298	22.84	0.685	523	18.27	0.548	748	13.49	0.405
74	4.96	0.149	299	22.90	0.687	524	18.24	0.547	749	13.47	0.404
75	5.05	0.151	300	22.97	0.689	525	18.21	0.546	750	13.45	0.404
76	5.13	0.154	301	23.03	0.691	526	18.19	0.546	751	13.44	0.403
77	5.22	0.157	302	23.09	0.693	527	18.16	0.545	752	13.42	0.403
78	5.31	0.159	303	23.14	0.694	528	18.14	0.544	753	13.40	0.402
79	5.40	0.162	304	23.19	0.696	529	18.11	0.543	754	13.39	0.402
80	5.49	0.165	305	23.24	0.697	530	18.08	0.542	755	13.37	0.401
81	5.58	0.167	306	23.28	0.698	531	18.06	0.542	756	13.35	0.401
82	5.67	0.170	307	23.32	0.699	532	18.03	0.541	757	13.33	0.400
83	5.76	0.173	308	23.35	0.701	533	18.01	0.540	758	13.32	0.400
84	5.85	0.175	309	23.39	0.702	534	17.98	0.539	759	13.30	0.399
85	5.94	0.178	310	23.42	0.703	535	17.95	0.539	760	13.28	0.399
86	6.03	0.181	311	23.44	0.703	536	17.93	0.538	761	13.27	0.398
87	6.11	0.183	312	23.47	0.704	537	17.90	0.537	762	13.25	0.398
88	6.20	0.186	313	23.49	0.705	538	17.87	0.536	763	13.23	0.397
89	6.29	0.189	314	23.51	0.705	539	17.85	0.536	764	13.22	0.396
90	6.38	0.191	315	23.53	0.706	540	17.82	0.535	765	13.20	0.396
91	6.47	0.194	316	23.55	0.706	541	17.80	0.534	766	13.18	0.395
92	6.56	0.197	317	23.56	0.707	542	17.77	0.533	767	13.17	0.395
93	6.65	0.200	318	23.57	0.707	543	17.75	0.532	768	13.15	0.395
94	6.74	0.202	319	23.59	0.708	544	17.72	0.532	769	13.13	0.394
95	6.83	0.205	320	23.59	0.708	545	17.70	0.531	770	13.12	0.394
96	6.92	0.208	321	23.60	0.708	546	17.67	0.530	771	13.10	0.393
97	7.01	0.210	322	23.61	0.708	547	17.65	0.529	772	13.08	0.393
98	7.10	0.213	323	23.61	0.708	548	17.62	0.529	773	13.07	0.392
99	7.19	0.216	324	23.61	0.708	549	17.60	0.528	774	13.05	0.392
100	7.28	0.218	325	23.62	0.708	550	17.57	0.527	775	13.04	0.391
101	7.37	0.221	326	23.62	0.708	551	17.55	0.526	776	13.02	0.391
102	7.46	0.224	327	23.61	0.708	552	17.52	0.526	777	13.00	0.390
103	7.55	0.226	328	23.61	0.708	553	17.50	0.525	778	12.99	0.390
104	7.64	0.229	329	23.61	0.708	554	17.47	0.524	779	12.97	0.389
105	7.72	0.232	330	23.60	0.708	555	17.45	0.523	780	12.95	0.389
106	7.81	0.234	331	23.60	0.708	556	17.42	0.523	781	12.94	0.388
107	7.90	0.237	332	23.59	0.708	557	17.40	0.522	782	12.92	0.388
108	7.99	0.240	333	23.58	0.708	558	17.37	0.521	783	12.91	0.387
109	8.08	0.242	334	23.57	0.707	559	17.35	0.520	784	12.89	0.387
110	8.17	0.245	335	23.57	0.707	560	17.32	0.520	785	12.87	0.386
111	8.26	0.248	336	23.55	0.707	561	17.30	0.519	786	12.86	0.386
112	8.35	0.250	337	23.55	0.706	562	17.27	0.518	787	12.84	0.385

Summary of Total Depletion from Pumping 3 AF/Yr for 300 Yrs

Year	Depletion as a % of Pumping	Annual Depletion (AF/YR)	Year	Depletion as a % of Pumping	Annual Depletion (AF/YR)	Year	Depletion as a % of Pumping	Annual Depletion (AF/YR)	Year	Depletion as a % of Pumping	Annual Depletion (AF/YR)
113	8.44	0.253	338	23.53	0.706	563	17.25	0.517	788	12.83	0.385
114	8.52	0.256	339	23.52	0.706	564	17.23	0.517	789	12.81	0.384
115	8.61	0.258	340	23.51	0.705	565	17.20	0.516	790	12.79	0.384
116	8.70	0.261	341	23.49	0.705	566	17.18	0.515	791	12.78	0.383
117	8.79	0.264	342	23.48	0.704	567	17.15	0.515	792	12.76	0.383
118	8.88	0.266	343	23.46	0.704	568	17.13	0.514	793	12.75	0.382
119	8.97	0.269	344	23.45	0.703	569	17.10	0.513	794	12.73	0.382
120	9.06	0.272	345	23.43	0.703	570	17.08	0.512	795	12.71	0.381
121	9.14	0.274	346	23.41	0.702	571	17.06	0.512	796	12.70	0.381
122	9.23	0.277	347	23.39	0.702	572	17.03	0.511	797	12.68	0.380
123	9.32	0.280	348	23.37	0.701	573	17.01	0.510	798	12.67	0.380
124	9.41	0.282	349	23.36	0.701	574	16.99	0.510	799	12.65	0.380
125	9.50	0.285	350	23.34	0.700	575	16.96	0.509	800	12.63	0.379
126	9.58	0.287	351	23.32	0.699	576	16.94	0.508	801	12.62	0.379
127	9.67	0.290	352	23.30	0.699	577	16.91	0.507	802	12.60	0.378
128	9.76	0.293	353	23.27	0.698	578	16.89	0.507	803	12.59	0.378
129	9.85	0.295	354	23.25	0.698	579	16.87	0.506	804	12.57	0.377
130	9.93	0.298	355	23.23	0.697	580	16.84	0.505	805	12.56	0.377
131	10.02	0.301	356	23.21	0.696	581	16.82	0.505	806	12.54	0.376
132	10.11	0.303	357	23.19	0.696	582	16.80	0.504	807	12.53	0.376
133	10.19	0.306	358	23.16	0.695	583	16.77	0.503	808	12.51	0.375
134	10.28	0.308	359	23.14	0.694	584	16.75	0.503	809	12.49	0.375
135	10.37	0.311	360	23.12	0.693	585	16.73	0.502	810	12.48	0.374
136	10.45	0.314	361	23.09	0.693	586	16.70	0.501	811	12.47	0.374
137	10.54	0.316	362	23.06	0.692	587	16.68	0.500	812	12.45	0.373
138	10.63	0.319	363	23.04	0.691	588	16.66	0.500	813	12.43	0.373
139	10.71	0.321	364	23.01	0.690	589	16.64	0.499	814	12.42	0.373
140	10.80	0.324	365	22.99	0.690	590	16.61	0.498	815	12.40	0.372
141	10.88	0.327	366	22.96	0.689	591	16.59	0.498	816	12.39	0.372
142	10.97	0.329	367	22.94	0.688	592	16.57	0.497	817	12.37	0.371
143	11.06	0.332	368	22.91	0.687	593	16.54	0.496	818	12.36	0.371
144	11.14	0.334	369	22.88	0.686	594	16.52	0.496	819	12.34	0.370
145	11.23	0.337	370	22.85	0.686	595	16.50	0.495	820	12.33	0.370
146	11.31	0.339	371	22.83	0.685	596	16.47	0.494	821	12.31	0.369
147	11.40	0.342	372	22.80	0.684	597	16.45	0.494	822	12.30	0.369
148	11.48	0.344	373	22.77	0.683	598	16.43	0.493	823	12.28	0.368
149	11.57	0.347	374	22.74	0.682	599	16.41	0.492	824	12.27	0.368
150	11.65	0.350	375	22.71	0.681	600	16.38	0.492	825	12.25	0.368
151	11.74	0.352	376	22.69	0.681	601	16.36	0.491	826	12.24	0.367
152	11.82	0.355	377	22.66	0.680	602	16.34	0.490	827	12.22	0.367
153	11.91	0.357	378	22.63	0.679	603	16.32	0.490	828	12.20	0.366
154	11.99	0.360	379	22.60	0.678	604	16.30	0.489	829	12.19	0.366
155	12.07	0.362	380	22.57	0.677	605	16.27	0.488	830	12.18	0.365
156	12.16	0.365	381	22.54	0.676	606	16.25	0.487	831	12.16	0.365
157	12.24	0.367	382	22.51	0.675	607	16.23	0.487	832	12.15	0.364
158	12.33	0.370	383	22.48	0.674	608	16.21	0.486	833	12.13	0.364
159	12.41	0.372	384	22.45	0.673	609	16.18	0.486	834	12.12	0.363
160	12.49	0.375	385	22.42	0.673	610	16.16	0.485	835	12.10	0.363
161	12.58	0.377	386	22.39	0.672	611	16.14	0.484	836	12.09	0.363
162	12.66	0.380	387	22.36	0.671	612	16.12	0.484	837	12.07	0.362
163	12.75	0.382	388	22.33	0.670	613	16.10	0.483	838	12.06	0.362
164	12.83	0.385	389	22.30	0.669	614	16.07	0.482	839	12.04	0.361
165	12.91	0.387	390	22.27	0.668	615	16.05	0.482	840	12.03	0.361
166	12.99	0.390	391	22.24	0.667	616	16.03	0.481	841	12.01	0.360
167	13.08	0.392	392	22.20	0.666	617	16.01	0.480	842	12.00	0.360
168	13.16	0.395	393	22.17	0.665	618	15.99	0.480	843	11.98	0.359

Summary of Total Depletion from Pumping 3 AF/Yr for 300 Yrs

Year	Depletion as a % of Pumping	Annual Depletion (AF/YR)	Year	Depletion as a % of Pumping	Annual Depletion (AF/YR)	Year	Depletion as a % of Pumping	Annual Depletion (AF/YR)	Year	Depletion as a % of Pumping	Annual Depletion (AF/YR)
169	13.24	0.397	394	22.14	0.664	619	15.96	0.479	844	11.97	0.359
170	13.32	0.400	395	22.11	0.663	620	15.94	0.478	845	11.95	0.359
171	13.40	0.402	396	22.08	0.662	621	15.92	0.478	846	11.94	0.358
172	13.49	0.405	397	22.05	0.661	622	15.90	0.477	847	11.92	0.358
173	13.57	0.407	398	22.02	0.660	623	15.88	0.476	848	11.91	0.357
174	13.65	0.410	399	21.99	0.660	624	15.86	0.476	849	11.90	0.357
175	13.73	0.412	400	21.95	0.659	625	15.84	0.475	850	11.88	0.356
176	13.82	0.414	401	21.92	0.658	626	15.82	0.474	851	11.87	0.356
177	13.90	0.417	402	21.89	0.657	627	15.79	0.474	852	11.85	0.356
178	13.98	0.419	403	21.86	0.656	628	15.77	0.473	853	11.84	0.355
179	14.06	0.422	404	21.83	0.655	629	15.75	0.473	854	11.82	0.355
180	14.14	0.424	405	21.79	0.654	630	15.73	0.472	855	11.81	0.354
181	14.22	0.427	406	21.76	0.653	631	15.71	0.471	856	11.79	0.354
182	14.30	0.429	407	21.73	0.652	632	15.69	0.471	857	11.78	0.353
183	14.38	0.431	408	21.70	0.651	633	15.67	0.470	858	11.77	0.353
184	14.46	0.434	409	21.67	0.650	634	15.65	0.469	859	11.75	0.353
185	14.54	0.436	410	21.63	0.649	635	15.62	0.469	860	11.74	0.352
186	14.62	0.439	411	21.60	0.648	636	15.60	0.468	861	11.72	0.352
187	14.70	0.441	412	21.57	0.647	637	15.58	0.467	862	11.71	0.351
188	14.78	0.444	413	21.54	0.646	638	15.56	0.467	863	11.70	0.351
189	14.86	0.446	414	21.51	0.645	639	15.54	0.466	864	11.68	0.350
190	14.94	0.448	415	21.48	0.644	640	15.52	0.466	865	11.67	0.350
191	15.02	0.451	416	21.44	0.643	641	15.50	0.465	866	11.65	0.350
192	15.10	0.453	417	21.41	0.642	642	15.48	0.464	867	11.64	0.349
193	15.18	0.455	418	21.38	0.641	643	15.46	0.464	868	11.62	0.349
194	15.26	0.458	419	21.35	0.640	644	15.44	0.463	869	11.61	0.348
195	15.34	0.460	420	21.32	0.639	645	15.42	0.462	870	11.59	0.348
196	15.42	0.463	421	21.28	0.639	646	15.40	0.462	871	11.58	0.347
197	15.50	0.465	422	21.25	0.638	647	15.38	0.461	872	11.57	0.347
198	15.58	0.467	423	21.22	0.637	648	15.36	0.461	873	11.55	0.347
199	15.66	0.470	424	21.19	0.636	649	15.33	0.460	874	11.54	0.346
200	15.73	0.472	425	21.16	0.635	650	15.32	0.459	875	11.52	0.346
201	15.81	0.474	426	21.12	0.634	651	15.29	0.459	876	11.51	0.345
202	15.89	0.477	427	21.09	0.633	652	15.27	0.458	877	11.50	0.345
203	15.97	0.479	428	21.06	0.632	653	15.25	0.458	878	11.48	0.344
204	16.05	0.481	429	21.03	0.631	654	15.23	0.457	879	11.47	0.344
205	16.12	0.484	430	21.00	0.630	655	15.21	0.456	880	11.46	0.344
206	16.20	0.486	431	20.97	0.629	656	15.19	0.456	881	11.44	0.343
207	16.28	0.488	432	20.93	0.628	657	15.17	0.455	882	11.43	0.343
208	16.36	0.491	433	20.90	0.627	658	15.15	0.455	883	11.41	0.342
209	16.43	0.493	434	20.87	0.626	659	15.13	0.454	884	11.40	0.342
210	16.51	0.495	435	20.84	0.625	660	15.11	0.453	885	11.39	0.342
211	16.59	0.498	436	20.81	0.624	661	15.09	0.453	886	11.37	0.341
212	16.67	0.500	437	20.78	0.623	662	15.07	0.452	887	11.36	0.341
213	16.74	0.502	438	20.74	0.622	663	15.05	0.452	888	11.35	0.340
214	16.82	0.505	439	20.71	0.621	664	15.03	0.451	889	11.33	0.340
215	16.89	0.507	440	20.68	0.620	665	15.01	0.450	890	11.32	0.340
216	16.97	0.509	441	20.65	0.619	666	14.99	0.450	891	11.30	0.339
217	17.05	0.511	442	20.62	0.619	667	14.97	0.449	892	11.29	0.339
218	17.12	0.514	443	20.59	0.618	668	14.95	0.449	893	11.28	0.338
219	17.20	0.516	444	20.56	0.617	669	14.93	0.448	894	11.26	0.338
220	17.28	0.518	445	20.52	0.616	670	14.91	0.447	895	11.25	0.337
221	17.35	0.521	446	20.49	0.615	671	14.89	0.447	896	11.24	0.337
222	17.43	0.523	447	20.46	0.614	672	14.88	0.446	897	11.22	0.337
223	17.50	0.525	448	20.43	0.613	673	14.86	0.446	898	11.21	0.336
224	17.58	0.527	449	20.40	0.612	674	14.84	0.445	899	11.20	0.336


Stream Depletion from Pumping in SEC 8 T12S R65W
South Platte
Arkansas
Depletion (ac-ft/yr)
0.500
0.450
0.400
0.350
0.300
0.250
0.200
0.150
0.100
0.050
0.000
0.0
50.0
100.0
150.0
200.0
250.0
300.0
350.0
400.0
Time (Years)