REPORT OF THE ENGINEERING COMMITTEE
TO THE
KANSAS-NEBRASKA BIG BLUE RIVER COMPACT ADMINISTRATION

May 19, 2010

The Engineering Committee did not meet during the past year, and it was not given any special assignments from the Compact Administration. The 2009 data for this report were collected as provided by the United States Geological Survey (USGS) and the Lower Big Blue Natural Resource District (LBBNRD).

Review of Streamflow Data

The Compact sets forth the following streamflow targets at the stateline gaging stations:

	Big Blue River	Little Blue River
May	45 cfs	45 cfs
June	45 cfs	45 cfs
July	80 cfs	75 cfs
August	90 cfs	80 cfs
September	65 cfs	60 cfs

During the May thru September time period of the 2009 water year the mean daily streamflow at the Barneston gage on the Big Blue River (Exhibit A) exceeded the Compact target flows. Therefore, no water right administration was required. At the Hollenberg gage on the Little Blue River (Exhibit B) the flow fell below the 80 cfs target required by the Compact during the month of August on the 13th and returned only briefly above the target on the 18th and the 20th. Flows did return above the target for the remainder of the Compact period on August 30th. Administration notices were sent to junior surface water right holders on August 13, 2009, and on September 1, 2009 the basin was reopened to junior water rights.

Real-time and historical data for these gaging stations can be found at the following websites:
Little Blue River – http://waterdata.usgs.gov/ne/nwis/uv/?site no=06884025
Big Blue River – http://waterdata.usgs.gov/ne/nwis/uv/?site no=06882000

Review of Groundwater Data

The USGS provided the hydrographs for the well in Gage County, Nebraska (Exhibit C) and the well in Jefferson County, Nebraska (Exhibit D). The LBBNRD provided the groundwater levels for the Big Blue Basin near Beatrice (Exhibit E).

Review of wells in the Regulatory Reaches

Exhibit F is a listing of the wells within the regulatory reaches. There was one new well drilled in the Big Blue regulatory reach during this reporting period. The well was completed on 12-4-2009.

Respectfully submitted,

Bob Lytle, Chair	Jason Kepler, Member
Kansas	Nebraska

06882000 Big Blue River at Barneston, Nebr.—Continued

SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1933 - 2009	
Annual total	563,907		245,777			
Annual mean	1,541		673		847	
Highest annual mean					2,781	1993
Lowest annual mean					115	1934
Highest daily mean	15,900	Jul 18	8,760	Oct 24	50,000	Jun 9, 1941
Lowest daily mean	234	Jan 1	108	Aug 25	1.0	Nov 30, 1945
Annual seven-day minimum	237	Oct 3	132	Aug 22	15	Aug 3, 1934
Maximum peak flow			9,660	Jun 16	57,700	Jun 9, 1941
Maximum peak stage			14.04	Jun 16	[a]34.30	Jun 9, 1941
Annual runoff (ac-ft)	1,119,000		487,500		613,500	
10 percent exceeds	3,910		1,290		1,740	
50 percent exceeds	621		353		278	
90 percent exceeds	282		213		106	

[a] At site and datum then in use.

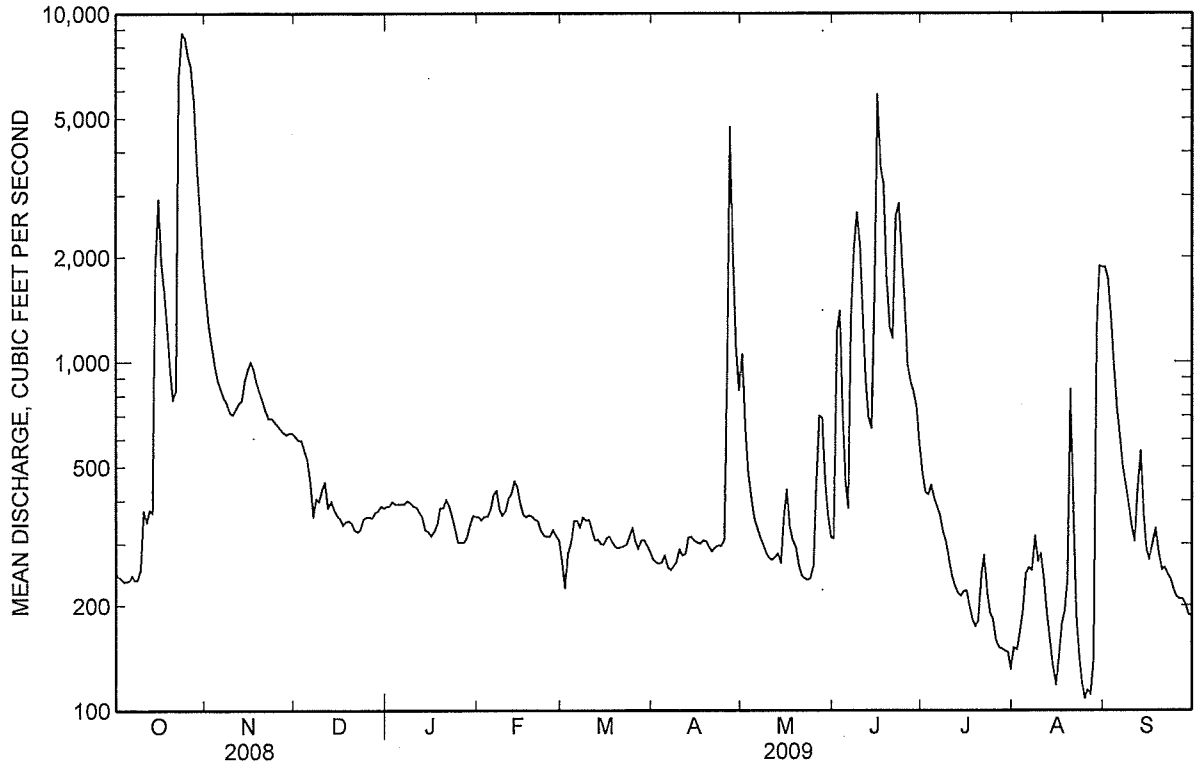


EXHIBIT A

06882000 Big Blue River at Barneston, Nebr.—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	254	1,540	612	e386	359	e267	272	1,050	312	487	151	1,870
2	243	1,270	596	e386	e352	e225	267	651	1,220	424	149	1,730
3	239	1,100	597	e397	e361	e282	264	484	1,400	417	167	1,330
4	234	977	e557	e392	e361	e305	266	408	674	443	191	976
5	235	889	e526	e392	379	350	278	357	450	404	247	729
6	236	835	e452	e392	416	350	257	335	381	383	256	612
7	244	791	e361	e392	428	335	253	313	1,310	362	252	502
8	237	763	e405	e400	378	358	259	299	2,130	325	316	443
9	237	717	e397	e395	363	351	265	283	2,670	302	268	392
10	253	707	e429	e386	375	352	290	274	2,130	269	281	340
11	374	730	452	e383	406	331	278	270	1,360	241	238	306
12	347	761	382	e370	418	307	282	275	893	227	191	436
13	376	776	398	e360	456	309	313	282	698	217	160	554
14	369	883	e377	e330	438	301	315	265	647	213	135	359
15	1,890	953	e363	e326	397	299	308	363	1,630	219	118	288
16	2,920	1,000	e355	e317	365	312	303	430	5,830	221	141	271
17	1,920	953	e340	e326	359	316	301	337	3,600	198	177	302
18	1,570	870	e348	e344	364	304	307	309	3,230	182	192	332
19	1,240	823	e350	381	361	295	306	294	1,750	174	236	282
20	946	777	e346	382	353	292	294	261	1,250	180	833	253
21	779	728	e330	403	350	294	286	244	1,170	245	368	257
22	829	689	e325	385	328	296	293	239	2,600	278	188	247
23	6,520	690	e331	359	318	300	297	237	2,840	217	142	238
24	8,760	674	e353	e333	315	315	297	239	2,030	190	119	222
25	8,500	659	e359	e304	316	334	308	259	1,520	182	108	212
26	7,550	643	e359	e303	330	306	943	428	978	159	114	209
27	7,000	628	e357	e303	317	291	4,700	701	882	151	111	209
28	5,440	620	e370	e314	308	307	2,020	691	825	150	140	202
29	3,630	628	e375	e340	---	308	1,110	455	740	148	1,230	188
30	2,650	625	e386	362	---	297	832	362	583	147	1,880	186
31	1,900	---	e381	361	---	285	---	314	---	131	1,870	---
Total	67,922	24,699	12,569	11,204	10,271	9,574	16,764	11,709	47,733	7,886	10,969	14,477
Mean	2,191	823	405	361	367	309	559	378	1,591	254	354	483
Max	8,760	1,540	612	403	456	358	4,700	1,050	5,830	487	1,880	1,870
Min	234	620	325	303	308	225	253	237	312	131	108	186
Ac-ft	134,700	48,990	24,930	22,220	20,370	18,990	33,250	23,220	94,680	15,640	21,760	28,720

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 2009, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	562	308	239	285	616	1,287	846	1,321	2,026	1,287	690	689
Max	7,451	1,526	851	1,596	2,876	10,560	5,280	5,207	10,460	12,270	5,227	3,420
(WY)	(1974)	(1999)	(1998)	(1973)	(1984)	(1979)	(1984)	(1995)	(1951)	(1993)	(1954)	(1989)
Min	61.5	77.5	87.4	67.6	116	137	132	96.0	69.3	30.7	21.1	50.6
(WY)	(1941)	(1937)	(1977)	(1937)	(1940)	(1968)	(1934)	(1934)	(1934)	(1934)	(1934)	(1939)

EXHIBIT A

06884025 Little Blue River at Hollenberg, KS—Continued

SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1975 - 2009	
Annual total	301,921		141,474			
Annual mean	825		388		500	
Highest annual mean					1,891	1993
Lowest annual mean					173	2006
Highest daily mean	13,200	Jul 18	12,400	Oct 23	39,300	Jul 26, 1992
Lowest daily mean	178	Oct 6	58	Aug 23	26	Oct 1, 1991
Annual seven-day minimum	180	Oct 4	64	Aug 23	27	Sep 27, 1991
Maximum peak flow			12,900	Oct 23	47,800	Jul 26, 1992
Maximum peak stage			13.01	Oct 23	21.21	Jul 26, 1992
Annual runoff (ac-ft)	598,900		280,600		362,300	
10 percent exceeds	1,620		539		840	
50 percent exceeds	367		229		200	
90 percent exceeds	226		104		102	

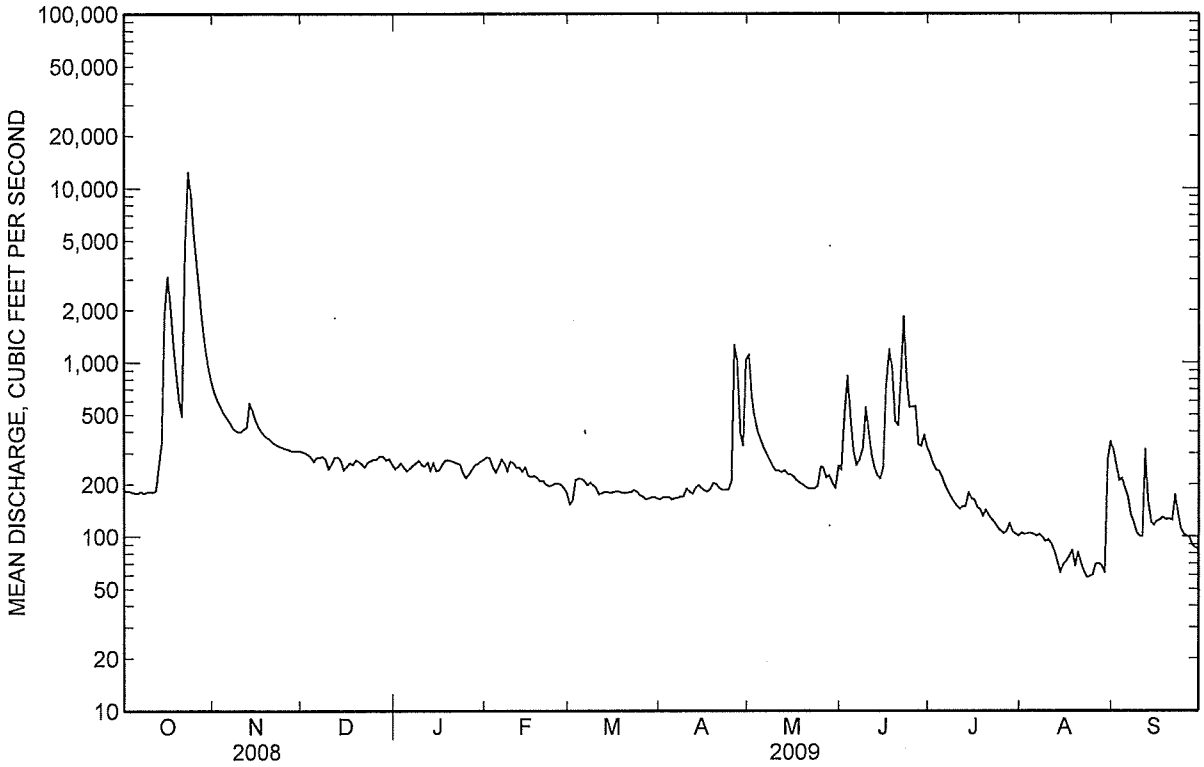


EXHIBIT B

06884025 Little Blue River at Hollenberg, KS—Continued

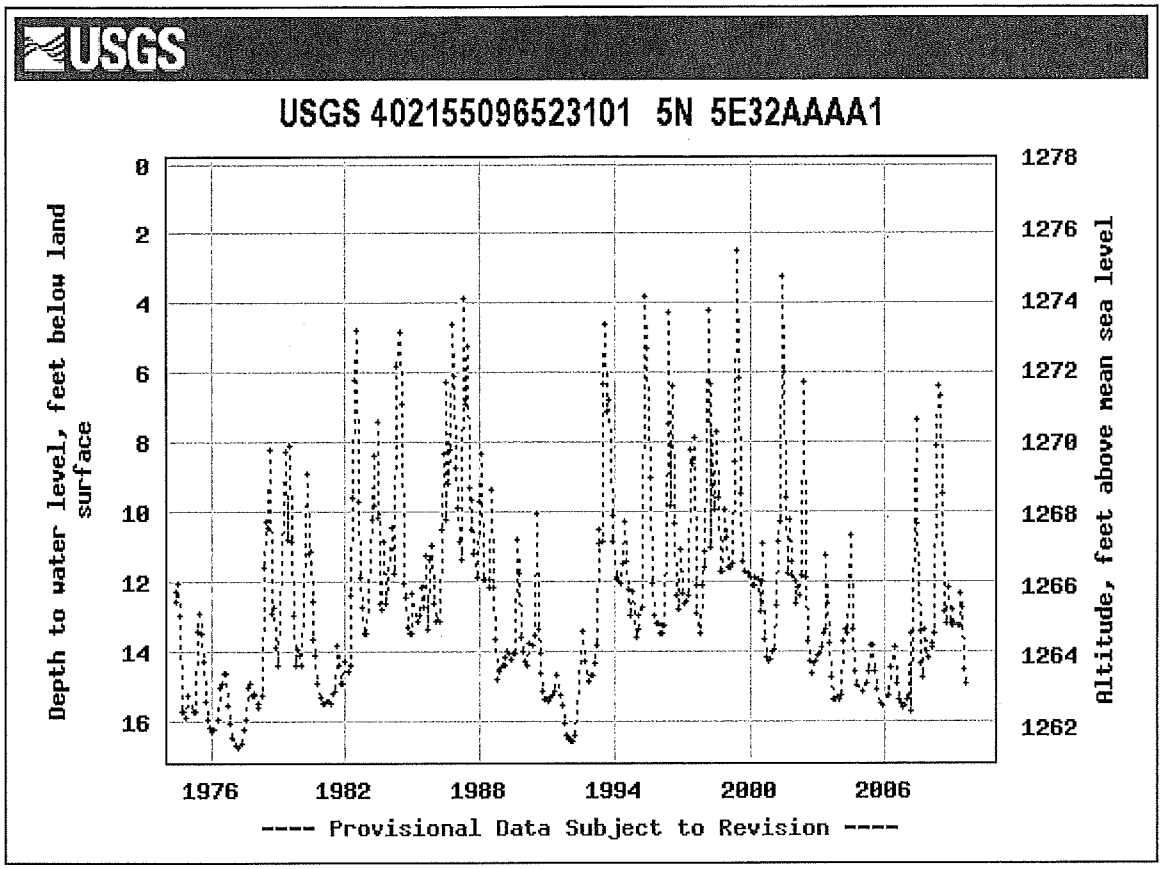
DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	186	676	307	e246	e286	e153	164	1,110	241	298	105	315
2	183	607	303	e253	e282	e160	168	633	520	261	103	254
3	183	558	297	e265	e251	211	169	487	835	242	104	210
4	180	516	286	e248	e234	215	169	401	469	239	105	216
5	179	488	270	e238	e253	215	163	359	312	220	103	190
6	178	458	285	e247	e278	208	166	326	258	197	101	170
7	182	426	284	e258	e262	197	167	297	276	182	103	134
8	178	409	288	e264	e237	204	170	276	323	169	99	119
9	180	401	280	e274	e270	198	170	255	549	160	94	105
10	182	398	245	e258	e265	191	188	241	392	150	96	101
11	180	415	262	e254	e250	175	181	239	296	144	91	100
12	184	423	285	e267	e250	178	176	235	251	149	82	317
13	255	586	287	e238	e236	181	191	240	226	149	72	161
14	342	532	274	e266	e250	180	197	229	215	179	62	121
15	1,860	462	e242	e238	225	179	190	229	248	165	69	116
16	3,100	424	e253	e242	220	180	184	222	738	163	72	122
17	2,180	400	e265	e259	224	182	181	211	1,190	147	77	124
18	1,250	382	e259	e274	218	181	188	204	929	143	83	129
19	851	371	e275	e277	208	179	203	199	461	131	68	125
20	605	363	e271	e273	209	178	200	193	438	142	81	126
21	494	349	e262	e269	200	180	190	189	909	132	70	124
22	4,820	340	e251	e264	195	180	185	188	1,840	125	63	173
23	12,400	333	e267	e260	196	185	186	189	788	119	58	134
24	8,910	328	e273	e231	201	181	186	195	553	112	59	110
25	5,230	322	e279	e217	202	173	208	252	557	108	60	103
26	3,590	319	e279	e229	199	170	1,260	249	562	104	69	101
27	2,360	314	e291	e244	191	164	1,040	218	338	108	70	98
28	1,580	310	e290	e259	e178	165	396	225	331	119	68	89
29	1,170	311	e276	e262	---	168	334	202	382	107	62	86
30	937	311	e280	e271	---	169	1,030	190	324	103	279	85
31	779	---	e258	e277	---	165	---	255	---	101	350	---
Total	54,888	12,532	8,524	7,922	6,470	5,645	8,600	8,938	15,751	4,868	2,978	4,358
Mean	1,771	418	275	256	231	182	287	288	525	157	96.1	145
Max	12,400	676	307	277	286	215	1,260	1,110	1,840	298	350	317
Min	178	310	242	217	178	153	163	188	215	101	58	85
Ac-ft	108,900	24,860	16,910	15,710	12,830	11,200	17,060	17,730	31,240	9,660	5,910	8,640

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2009, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	344	232	177	178	317	701	503	799	930	925	512	368
Max	2,163	1,113	424	576	1,059	3,816	2,379	2,302	4,373	9,014	2,572	1,320
(WY)	(1987)	(1997)	(1993)	(1984)	(1993)	(1993)	(1987)	(1995)	(1984)	(1993)	(1985)	(1977)
Min	45.3	81.1	96.7	98.5	115	118	123	108	151	83.8	72.5	32.0
(WY)	(1992)	(1992)	(2001)	(1977)	(1992)	(1981)	(2003)	(1992)	(1981)	(2002)	(1991)	(1991)

EXHIBIT B


USGS
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Depth to water level, feet below land surface
0
2
4
6
8
10
12
14
16
Altitude, feet above mean sea level
1278
1276
1274
1272
1270
1268
1266
1264
1262
1976
1982
1988
1994
2000
2006
---- Provisional Data Subject to Revision ----

EXHIBIT C

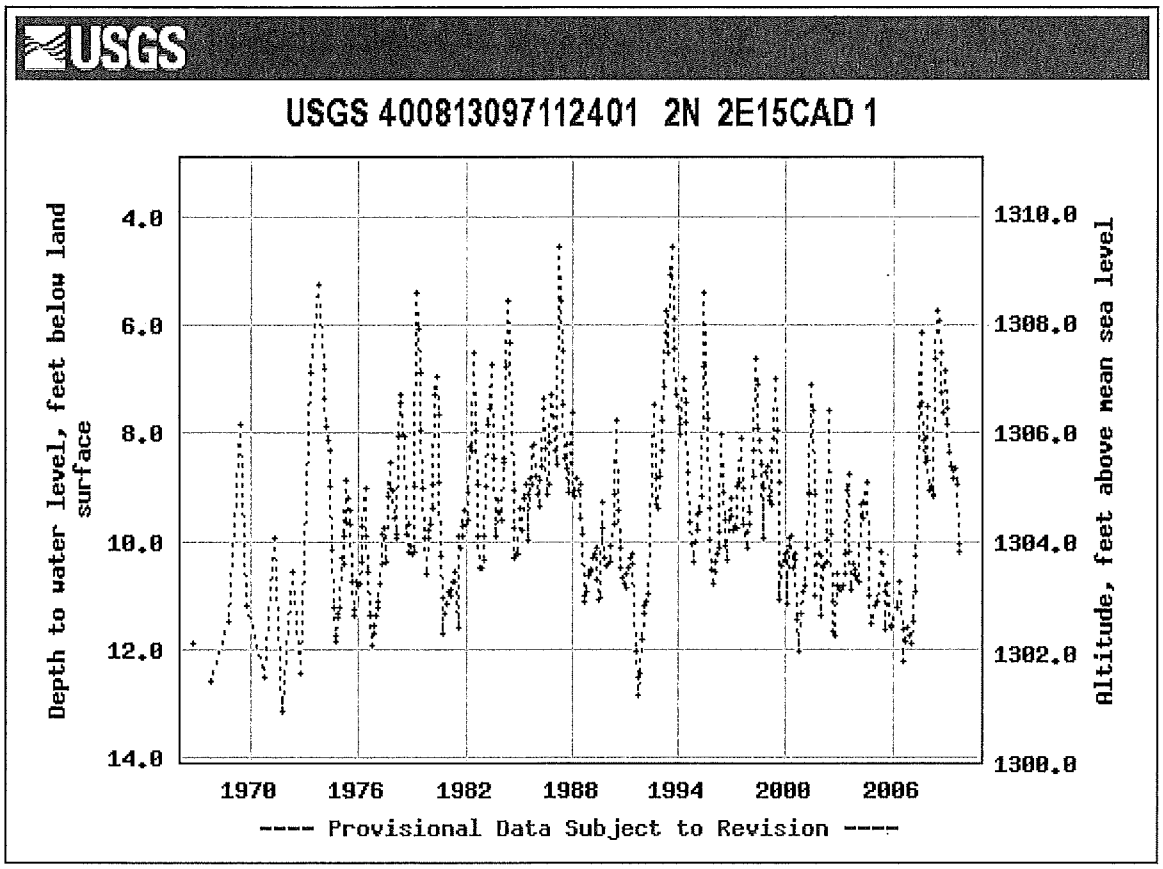
USGS
USGS 400813097112401 2N 2E15CAD 1
Depth to water level, feet below land surface
4.0
6.0
8.0
10.0
12.0
14.0
Altitude, feet above mean sea level
1310.0
1308.0
1306.0
1304.0
1302.0
1300.0
1970
1976
1982
1988
1994
2000
2006
---- Provisional Data Subject to Revision ----

EXHIBIT D

STATIC WATER LEVELS 2009

LEGAL	SECTION	SITE	TYPE	Spring 2009	Fall 09
4N-5E	2	AAAA	OW	93.46	95.29
4N-5E	2	DDAA	IW	17.99	19.66
4N-5E	3	CDBC	IW	-	
4N-5E	3	DAAA	IW	18.95	19.95
4N-5E	4	AAAA	OW	14.44	15.84
4N-5E	4	BBBC	IW	20.16	22.49
4N-5E	7	BBAA	IW	88.11	87.19
4N-5E	9	CBCC	IW	72.35	74.97
4N-5E	10	DDAA	IW	26.46	29.37
4N-5E	11	DACA	IW	16.86	17.25
4N-5E	12	CCCD	OW	14.39	14.66
4N-5E	14	ABBB	IW	13.66	14.88
4N-5E	14	DDDD	OW	-	
4N-5E	22	BCCC	IW	70.39	73.5
4N-5E	25	AACD	IW	19.08	20.22
4N-6E	6	CBBB	IW	93.91	95.5
4N-6E	8	AABB	IW	95.33	96.94
4N-6E	18	DDCC	OW	8.81	8.72
5N-4E	12	ABBA	IW	18.82	19.59
5N-4E	13	BADD	IW	15.79	16.57
5N-4E	15	DBBB	IW	17.84	19.15
5N-4E	22	DCCC	IW	49.44	61.1
5N-4E	23	BABB	IW	15.75	16.76
5N-4E	24	AACD	IW	18.41	18.86
5N-4E	25	DADA	IW	49.56	50.67
5N-5E	7	CADD	IW	61.42	67.4
5N-5E	16	CBBA	IW	75.02	80.73
5N-5E	17	ABBB	IW	44.41	49.3
5N-5E	17	CDAA	OW	70.63	76.11
5N-5E	20	BCCD	IW	23.39	19.9
5N-5E	21	DDBB	IW	53.44	57.29
5N-5E	29	CBBB	IW	13.68	15.99
5N-5E	33	AADD	IW	20.33	20.29
5N-5E	35	ABBB	IW	104.42	107.64

EXHIBIT E

Big Blue River Regulatory Area Wells					
Registration Number	Location T-R-S	Completion Date	Depth (FT)	Registration Pumping Capacity (GPM)	Filing Date
G-036485	4N-5E-11BC	3/28/1972	82	750	4/24/1972
G-038314	4N-5E-2DD	1/16/1973	188	1,300	1/29/1973
G-047820	4N-5E-12BB	11/1/1975	117	1,200	12/4/1975
G-050086	5N-5E-33AD	5/26/1976	123	800	6/9/1976
G-054047	4N-5E-24BB	3/1/1976	84	800	1/6/1977
G-054260	4N-5E-14AA	6/1/1974	70	800	1/14/1977
G-054261	4N-5E-14AB	5/2/1970	70	800	1/14/1977
G-056152	4N-5E-4BB	4/14/1977	91	1,000	5/11/1977
G-059128	5N-5E-29AA	4/25/1977	60	400	1/4/1978
G-059727	5N-5E-33CB	4/19/1978	91	1,200	4/20/1978
G-081769	4N-5E-13CD	4/22/1994	65	250	6/24/1994
G-100788	5N-5E-29AB	3/19/1999	65	500	6/2/1999
G-110669	4N-5E-13CC	7/12/1995	64	375	6/29/2001
G-110847	4N-5E-3DA	5/4/1979	82	800	7/2/2001
G-110849	5N-5E-29DD	4/30/1983	102	800	7/2/2001
G-151969	5N-5E-33BB	12/11/2008	112	800	1/20/2009
G-155061*	4N-5E-10BB	12/4/2009	98	800	1/27/2010

Little Blue River Regulatory Area Wells					
Registration Number	Location T-R-S	Completion Date	Depth (FT)	Registration Pumping Capacity (GPM)	Filing Date
G-058158	2N-2E-16AD	8/15/1977	29	650	9/6/1977
G-139240	2N-2E-9DD	0/0/1956	50	400	3/23/2006

* G-155061 is a new registered well

EXHIBIT F