Water-Data Report 2011

422925088255402 Local number 3-HEB-D

Sand and gravel aquifers (glaciated regions)
Quaternary System

McHenry County, IL

LOCATION.--Lat 42°29′25″, long 88°25′54″ referenced to North American Datum of 1983, in NW ¼ SW ¼ SW ¼ sec.4, T.46 N., R.7 E., McHenry County, IL, Hydrologic Unit 07120006, 93 feet east of Freeman Road and 24 feet north of farm lane on McHenry County Conservation District property, 0.3 miles south of Illinois/Wisconsin State Line Road, 1.2 miles north of Hebron, and 0.1 miles north of DeYoung Creek. Owner: McHenry County.

GROUNDWATER RECORDS

WELL CHARACTERISTICS.--Depth 94.4 ft. Upper casing diameter undefined; top of first opening 89.4 ft, bottom of last opening 93.9 ft. Well-casing includes 2-inch schedule 40 PVC pipe, 6 in. diameter borehole with bentonite seal, artesian observation well.

DATUM.--Land-surface datum is 867.93 ft above North American Vertical Datum of 1988. Measuring point: Top of PVC well casing, 2.58 ft above land-surface datum, April 15, 2009 to present.

PERIOD OF RECORD.--
GROUND-WATER LEVELS: April 2009 to current year.
GROUND-WATER QUALITY:
CHEMICAL: Water year 2011.

GAGE.--Water level recorder and radio telemeter.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, -16.56 ft below land-surface datum, June 24, 2009; lowest, -11.67 ft below land-surface datum, February 14, 2011.

EXTREMES FOR CURRENT YEAR.--Water Year 2009: Highest recorded water level, -16.56 ft below land-surface datum, June 24; lowest recorded, -13.67 ft below land-surface datum, September 30.

Water Year 2010: Highest water level, -14.97 ft below land-surface datum, March 22; lowest, -12.92 ft below land-surface datum, September 30.

Water Year 2011: Highest water level, -13.85 ft below land-surface datum, May 9, 10; lowest, -11.67 ft below land-surface datum, February 14.

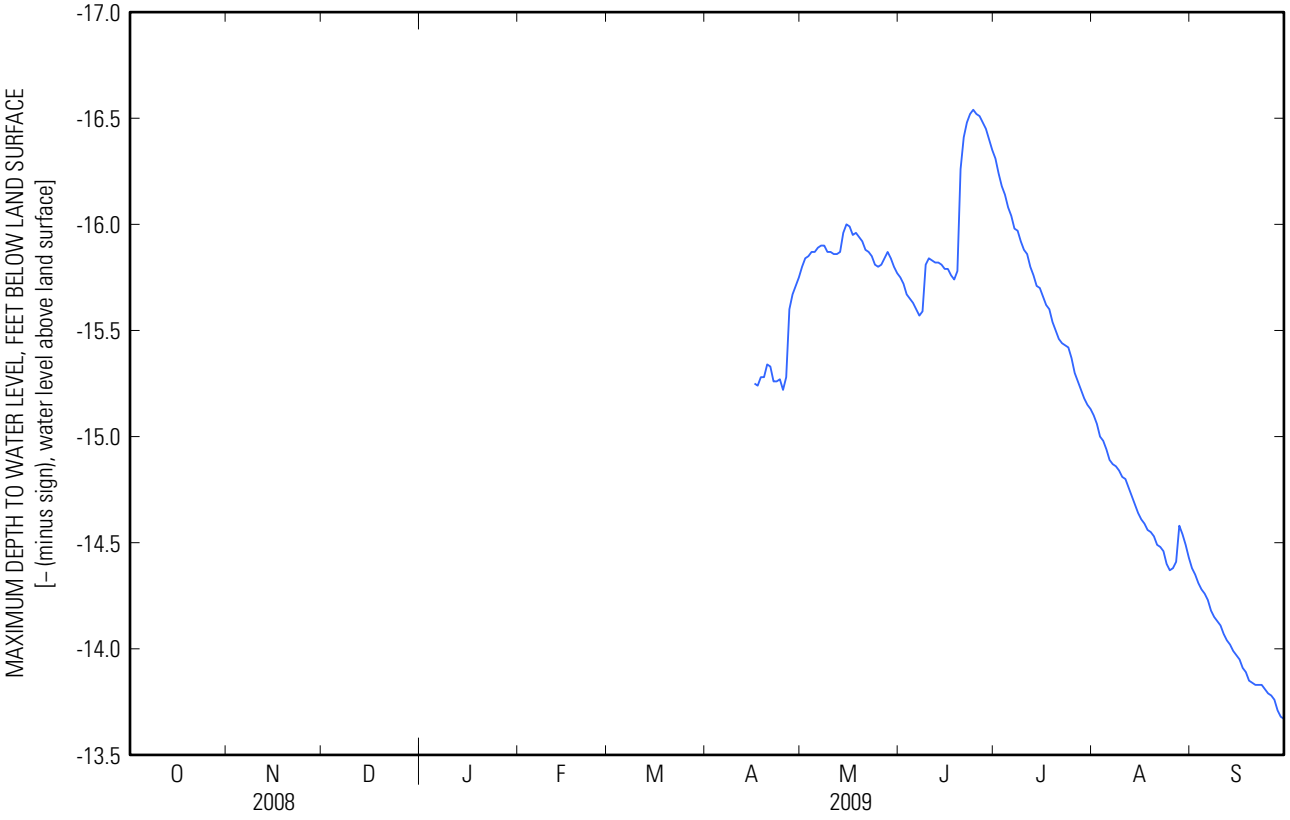
Suggested citation: U.S. Geological Survey, 2012, Water-resources data for the United States, Water Year 2011: U.S. Geological Survey Water-Data Report WDR-US-2011, site 422925088255402, accessed at http://wdr.water.usgs.gov/wy2011/pdfs/422925088255402.2011.pdf

422925088255402 Local number 3-HEB-D—Continued

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009
DAILY MAXIMUM VALUES
[- (minus sign), value is water level above land surface]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	---	---	---	---	---	---	---	-15.80	-15.75	-16.31	-15.10	-14.38
2	---	---	---	---	---	---	---	-15.84	-15.72	-16.24	-15.06	-14.35
3	---	---	---	---	---	---	---	-15.85	-15.67	-16.18	-15.00	-14.31
4	---	---	---	---	---	---	---	-15.87	-15.65	-16.14	-14.98	-14.28
5	---	---	---	---	---	---	---	-15.87	-15.63	-16.08	-14.94	-14.26
6	---	---	---	---	---	---	---	-15.89	-15.60	-16.04	-14.89	-14.23
7	---	---	---	---	---	---	---	-15.90	-15.57	-15.98	-14.87	-14.18
8	---	---	---	---	---	---	---	-15.90	-15.59	-15.97	-14.86	-14.15
9	---	---	---	---	---	---	---	-15.87	-15.81	-15.92	-14.84	-14.13
10	---	---	---	---	---	---	---	-15.87	-15.84	-15.88	-14.81	-14.11
11	---	---	---	---	---	---	---	-15.86	-15.83	-15.86	-14.80	-14.07
12	---	---	---	---	---	---	---	-15.86	-15.82	-15.80	-14.76	-14.04
13	---	---	---	---	---	---	---	-15.87	-15.82	-15.76	-14.72	-14.02
14	---	---	---	---	---	---	---	-15.96	-15.81	-15.71	-14.68	-13.99
15	---	---	---	---	---	---	---	-16.00	-15.79	-15.70	-14.64	-13.97
16	---	---	---	---	---	---	-15.25	-15.99	-15.79	-15.66	-14.61	-13.95
17	---	---	---	---	---	---	-15.24	-15.95	-15.76	-15.62	-14.59	-13.91
18	---	---	---	---	---	---	-15.28	-15.96	-15.74	-15.60	-14.56	-13.89
19	---	---	---	---	---	---	-15.28	-15.94	-15.78	-15.54	-14.55	-13.85
20	---	---	---	---	---	---	-15.34	-15.92	-16.26	-15.50	-14.53	-13.84
21	---	---	---	---	---	---	-15.33	-15.88	-16.41	-15.46	-14.49	-13.83
22	---	---	---	---	---	---	-15.26	-15.87	-16.48	-15.44	-14.48	-13.83
23	---	---	---	---	---	---	-15.26	-15.85	-16.52	-15.43	-14.46	-13.83
24	---	---	---	---	---	---	-15.27	-15.81	-16.54	-15.42	-14.40	-13.81
25	---	---	---	---	---	---	-15.22	-15.80	-16.52	-15.37	-14.37	-13.79
26	---	---	---	---	---	---	-15.28	-15.81	-16.51	-15.30	-14.38	-13.78
27	---	---	---	---	---	---	-15.60	-15.84	-16.48	-15.26	-14.41	-13.76
28	---	---	---	---	---	---	-15.67	-15.87	-16.45	-15.22	-14.58	-13.71
29	---	---	---	---	---	---	-15.71	-15.84	-16.40	-15.18	-14.54	-13.68
30	---	---	---	---	---	---	-15.75	-15.80	-16.35	-15.15	-14.49	-13.67
31	---	---	---	---	---	---	---	-15.77	---	-15.13	-14.43	---
Mean	---	---	---	---	---	---	---	-15.87	-16.00	-15.67	-14.67	-13.99
Max	---	---	---	---	---	---	---	-15.77	-15.57	-15.13	-14.37	-13.67
Min	---	---	---	---	---	---	---	-16.00	-16.54	-16.31	-15.10	-14.38

422925088255402 Local number 3-HEB-D—Continued



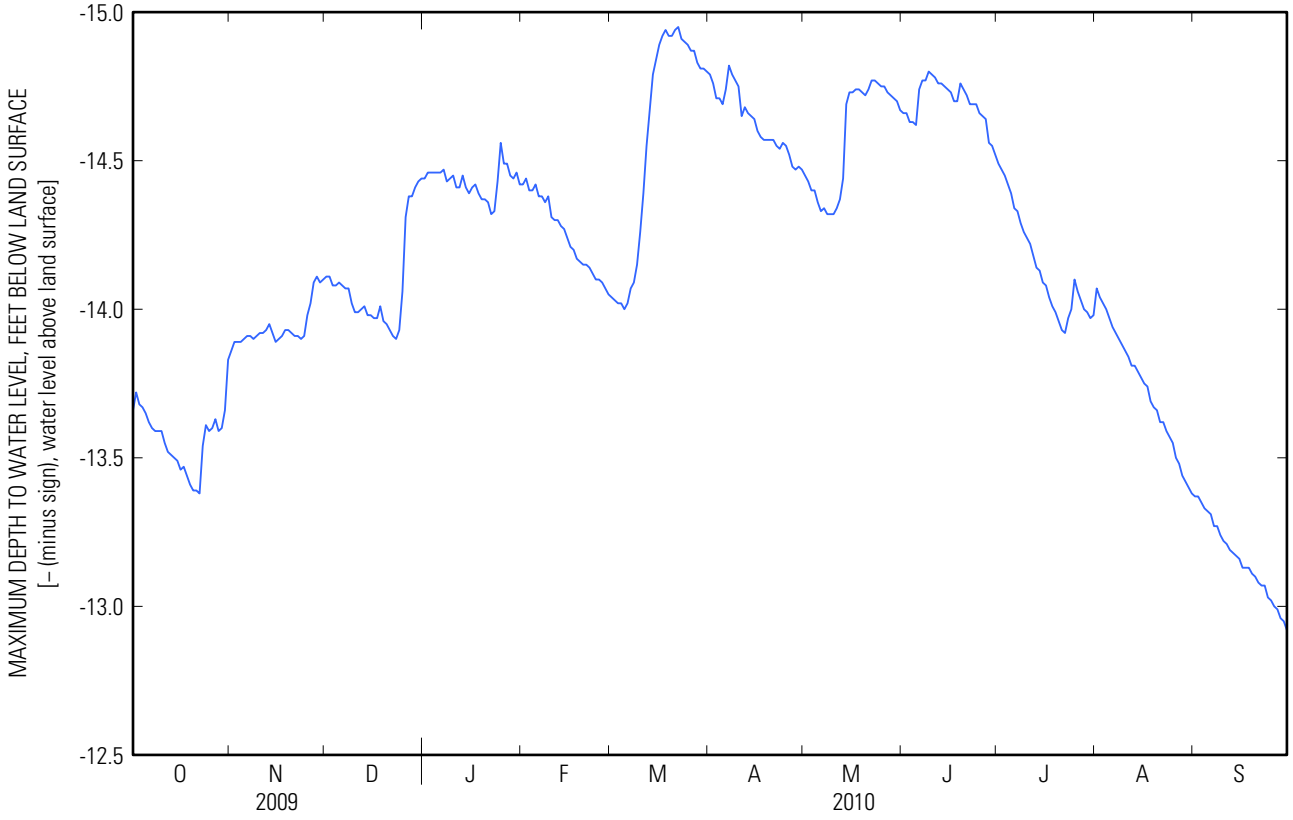
422925088255402 Local number 3-HEB-D—Continued

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010
DAILY MAXIMUM VALUES
[- (minus sign), value is water level above land surface]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	-13.66	-13.86	-14.11	-14.44	-14.42	-14.04	-14.79	-14.45	-14.66	-14.49	-14.07	-13.37
2	-13.72	-13.89	-14.11	-14.46	-14.44	-14.03	-14.76	-14.43	-14.66	-14.47	-14.04	-13.37
3	-13.68	-13.89	-14.08	-14.46	-14.40	-14.02	-14.71	-14.40	-14.63	-14.45	-14.02	-13.35
4	-13.67	-13.89	-14.08	-14.46	-14.40	-14.02	-14.71	-14.40	-14.63	-14.42	-14.00	-13.33
5	-13.65	-13.90	-14.09	-14.46	-14.42	-14.00	-14.69	-14.36	-14.62	-14.39	-13.97	-13.32
6	-13.62	-13.91	-14.08	-14.46	-14.38	-14.02	-14.74	-14.33	-14.74	-14.34	-13.94	-13.31
7	-13.60	-13.91	-14.07	-14.47	-14.38	-14.07	-14.82	-14.34	-14.77	-14.33	-13.92	-13.27
8	-13.59	-13.90	-14.07	-14.43	-14.36	-14.09	-14.79	-14.32	-14.77	-14.29	-13.90	-13.27
9	-13.59	-13.91	-14.02	-14.44	-14.38	-14.15	-14.77	-14.32	-14.80	-14.26	-13.88	-13.24
10	-13.59	-13.92	-13.99	-14.45	-14.31	-14.26	-14.75	-14.32	-14.79	-14.24	-13.86	-13.22
11	-13.55	-13.92	-13.99	-14.41	-14.30	-14.39	-14.65	-14.34	-14.78	-14.22	-13.84	-13.21
12	-13.52	-13.93	-14.00	-14.41	-14.30	-14.55	-14.68	-14.37	-14.76	-14.18	-13.81	-13.19
13	-13.51	-13.95	-14.01	-14.45	-14.28	-14.67	-14.66	-14.44	-14.76	-14.14	-13.81	-13.18
14	-13.50	-13.92	-13.98	-14.41	-14.27	-14.79	-14.65	-14.69	-14.75	-14.13	-13.79	-13.17
15	-13.49	-13.89	-13.98	-14.39	-14.24	-14.84	-14.64	-14.73	-14.74	-14.09	-13.77	-13.16
16	-13.46	-13.90	-13.97	-14.41	-14.21	-14.89	-14.60	-14.73	-14.73	-14.08	-13.75	-13.13
17	-13.47	-13.91	-13.97	-14.42	-14.20	-14.92	-14.58	-14.74	-14.70	-14.04	-13.74	-13.13
18	-13.44	-13.93	-14.01	-14.39	-14.17	-14.94	-14.57	-14.74	-14.70	-14.01	-13.69	-13.13
19	-13.41	-13.93	-13.96	-14.37	-14.16	-14.92	-14.57	-14.73	-14.76	-13.99	-13.67	-13.11
20	-13.39	-13.92	-13.95	-14.37	-14.15	-14.92	-14.57	-14.72	-14.74	-13.96	-13.66	-13.10
21	-13.39	-13.91	-13.93	-14.36	-14.15	-14.94	-14.57	-14.74	-14.72	-13.93	-13.62	-13.08
22	-13.38	-13.91	-13.91	-14.32	-14.14	-14.95	-14.55	-14.77	-14.69	-13.92	-13.62	-13.07
23	-13.54	-13.90	-13.90	-14.33	-14.12	-14.91	-14.54	-14.77	-14.69	-13.97	-13.59	-13.07
24	-13.61	-13.91	-13.93	-14.43	-14.10	-14.90	-14.56	-14.76	-14.69	-14.00	-13.57	-13.03
25	-13.59	-13.98	-14.06	-14.56	-14.10	-14.89	-14.55	-14.75	-14.66	-14.10	-13.55	-13.02
26	-13.60	-14.02	-14.31	-14.49	-14.09	-14.87	-14.52	-14.75	-14.65	-14.06	-13.50	-13.00
27	-13.63	-14.09	-14.38	-14.49	-14.07	-14.87	-14.48	-14.73	-14.64	-14.03	-13.48	-12.99
28	-13.59	-14.11	-14.38	-14.45	-14.05	-14.83	-14.47	-14.72	-14.56	-14.00	-13.44	-12.96
29	-13.60	-14.09	-14.41	-14.44	---	-14.81	-14.48	-14.71	-14.55	-13.99	-13.42	-12.95
30	-13.66	-14.10	-14.43	-14.46	---	-14.81	-14.47	-14.70	-14.52	-13.97	-13.40	-12.92
31	-13.83	---	-14.44	-14.42	---	-14.80	---	-14.67	---	-13.98	-13.38	---
Mean	-13.57	-13.94	-14.08	-14.43	-14.25	-14.58	-14.63	-14.58	-14.70	-14.14	-13.73	-13.15
Max	-13.38	-13.86	-13.90	-14.32	-14.05	-14.00	-14.47	-14.32	-14.52	-13.92	-13.38	-12.92
Min	-13.83	-14.11	-14.44	-14.56	-14.44	-14.95	-14.82	-14.77	-14.80	-14.49	-14.07	-13.37

	Water Year 2010
Mean	-14.15
High	-14.95
Low	-12.92

422925088255402 Local number 3-HEB-D—Continued



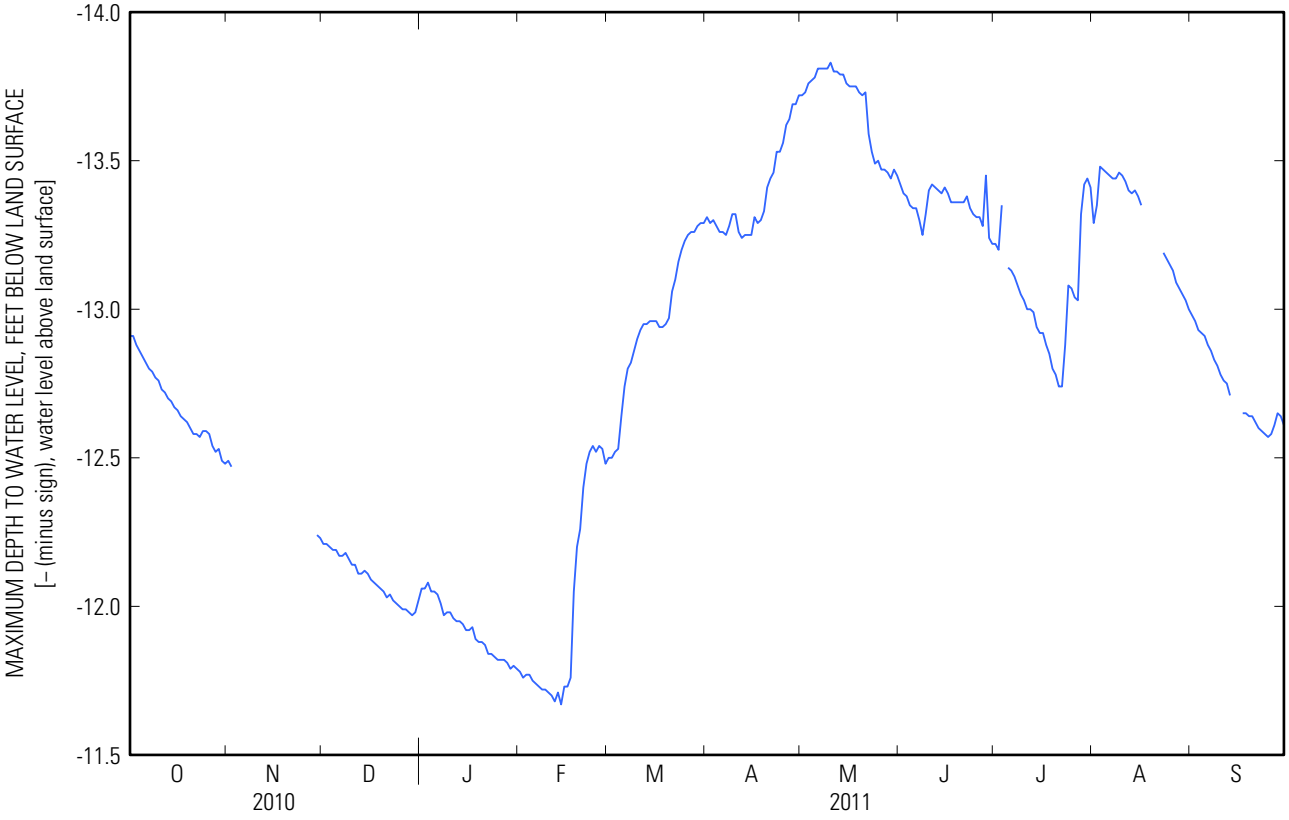
422925088255402 Local number 3-HEB-D—Continued

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
DAILY MAXIMUM VALUES

[- (minus sign), value is water level above land surface]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	-12.91	-12.49	-12.21	-12.06	-11.78	-12.50	-13.31	-13.72	-13.42	-13.22	-13.29	-12.98
2	-12.91	-12.47	-12.21	-12.06	-11.76	-12.50	-13.29	-13.73	-13.39	-13.20	-13.35	-12.96
3	-12.88	---	-12.20	-12.08	-11.77	-12.52	-13.30	-13.76	-13.38	-13.35	-13.48	-12.93
4	-12.86	---	-12.19	-12.05	-11.77	-12.53	-13.28	-13.77	-13.35	---	-13.47	-12.92
5	-12.84	---	-12.19	-12.05	-11.75	-12.64	-13.26	-13.78	-13.34	-13.14	-13.46	-12.91
6	-12.82	---	-12.17	-12.04	-11.74	-12.74	-13.26	-13.81	-13.34	-13.13	-13.45	-12.88
7	-12.80	---	-12.17	-12.01	-11.73	-12.80	-13.25	-13.81	-13.30	-13.11	-13.44	-12.86
8	-12.79	---	-12.18	-11.97	-11.72	-12.82	-13.28	-13.81	-13.25	-13.08	-13.44	-12.83
9	-12.77	---	-12.16	-11.98	-11.72	-12.86	-13.32	-13.81	-13.32	-13.05	-13.46	-12.81
10	-12.76	---	-12.14	-11.98	-11.71	-12.90	-13.32	-13.83	-13.40	-13.03	-13.45	-12.78
11	-12.73	---	-12.14	-11.96	-11.70	-12.93	-13.26	-13.80	-13.42	-13.00	-13.43	-12.76
12	-12.72	---	-12.11	-11.95	-11.68	-12.95	-13.24	-13.80	-13.41	-13.00	-13.40	-12.75
13	-12.70	---	-12.11	-11.95	-11.71	-12.95	-13.25	-13.79	-13.40	-12.99	-13.39	-12.71
14	-12.69	---	-12.12	-11.94	-11.67	-12.96	-13.25	-13.79	-13.39	-12.94	-13.40	---
15	-12.67	---	-12.11	-11.92	-11.73	-12.96	-13.25	-13.76	-13.41	-12.92	-13.38	---
16	-12.66	---	-12.09	-11.92	-11.73	-12.96	-13.31	-13.75	-13.39	-12.92	-13.35	---
17	-12.64	---	-12.08	-11.93	-11.76	-12.94	-13.29	-13.75	-13.36	-12.88	---	-12.65
18	-12.63	---	-12.07	-11.89	-12.05	-12.94	-13.30	-13.75	-13.36	-12.85	---	-12.65
19	-12.62	---	-12.06	-11.88	-12.20	-12.95	-13.33	-13.73	-13.36	-12.80	---	-12.64
20	-12.60	---	-12.05	-11.88	-12.26	-12.97	-13.41	-13.72	-13.36	-12.78	---	-12.64
21	-12.58	---	-12.03	-11.87	-12.40	-13.06	-13.44	-13.73	-13.36	-12.74	---	-12.62
22	-12.58	---	-12.04	-11.84	-12.48	-13.10	-13.46	-13.59	-13.38	-12.74	---	-12.60
23	-12.57	---	-12.02	-11.84	-12.52	-13.16	-13.53	-13.53	-13.34	-12.88	-13.19	-12.59
24	-12.59	---	-12.01	-11.83	-12.54	-13.20	-13.53	-13.49	-13.32	-13.08	-13.17	-12.58
25	-12.59	---	-12.00	-11.82	-12.52	-13.23	-13.56	-13.50	-13.31	-13.07	-13.15	-12.57
26	-12.58	---	-11.99	-11.82	-12.54	-13.25	-13.62	-13.47	-13.31	-13.04	-13.13	-12.58
27	-12.54	---	-11.99	-11.82	-12.53	-13.26	-13.64	-13.47	-13.28	-13.03	-13.09	-12.61
28	-12.52	---	-11.98	-11.81	-12.48	-13.26	-13.69	-13.46	-13.45	-13.32	-13.07	-12.65
29	-12.53	-12.24	-11.97	-11.79	---	-13.28	-13.69	-13.44	-13.24	-13.42	-13.05	-12.64
30	-12.49	-12.23	-11.98	-11.80	---	-13.29	-13.72	-13.47	-13.22	-13.44	-13.03	-12.61
31	-12.48	---	-12.02	-11.79	---	-13.29	---	-13.45	---	-13.41	-13.00	---
Mean	-12.68	---	-12.09	-11.92	-12.00	-12.96	-13.39	-13.68	-13.35	---	---	---
Max	-12.48	---	-11.97	-11.79	-11.67	-12.50	-13.24	-13.44	-13.22	---	---	---
Min	-12.91	---	-12.21	-12.08	-12.54	-13.29	-13.72	-13.83	-13.45	---	---	---

422925088255402 Local number 3-HEB-D—Continued



422925088255402 Local number 3-HEB-D—Continued

WATER-QUALITY RECORDS

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Part 1 of 5

[$CaCO_3$, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO_2, silicon dioxide; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than; M, presence verified but not quantified]

Sample date-time	Barometric pressure, mm Hg (00025)	Tempera-ture, air, °C (00020)	Dissolved oxygen, water, unfiltered, mg/L (00300)	pH, water, unfiltered, field, standard units (00400)	Specific conduc-tance, water, unfiltered, µS/cm at 25°C (00095)	Tempera-ture, water, °C (00010)	Turbidity, water, unfiltered, broad band light source (400-680 nm), detectors at multiple angles including 90 +/- 30 degrees, ratiometric correction, NTRU (63676)	Depth of well, feet below land surface datum (72008)	Dissolved solids dried at 180°C, water, filtered, mg/L (70300)
11-03-2010 1300	738	8.5	0.1	7.6	774	10.4	4.3	94.40	456

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Part 2 of 5

[$CaCO_3$, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO_2, silicon dioxide; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than; M, presence verified but not quantified]

Sample date-time	Calcium, water, filtered, mg/L (00915)	Magne-sium, water, filtered, mg/L (00925)	Potassium, water, filtered, mg/L (00935)	Sodium, water, filtered, mg/L (00930)	Alkalinity, water, filtered, fixed endpoint (pH 4.5) titration, laboratory, mg/L as $CaCO_3$ (29801)	Bromide, water, filtered, mg/L (71870)	Chloride, water, filtered, mg/L (00940)	Fluoride, water, filtered, mg/L (00950)	Hydrogen sulfide, water, unfiltered, mg/L (71875)
11-03-2010 1300	90.8	47.8	1.08	10.6	408	0.041	15.2	0.25	M

422925088255402 Local number 3-HEB-D—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
Part 3 of 5
[$CaCO_3$, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO_2, silicon dioxide; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than; M, presence verified but not quantified]

Sample date-time	Silica, water, filtered, mg/L as SiO_2 (00955)	Sulfate, water, filtered, mg/L (00945)	Sulfide, water, unfiltered, field, milligrams per liter (99119)	Ammonia, water, filtered, mg/L as N (00608)	Nitrate plus nitrite, water, filtered, mg/L as N (00631)	Nitrite, water, filtered, mg/L as N (00613)	Orthophos-phate, water, filtered, mg/L as P (00671)	Total nitrogen, water, filtered, analytically determined, mg/L (62854)	Aluminum, water, filtered, µg/L (01106)
11-03-2010 1300	21.1	28.8	0.055	1.17	< .02	0.001	0.034	1.26	2.3

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
Part 4 of 5
[$CaCO_3$, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO_2, silicon dioxide; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than; M, presence verified but not quantified]

Sample date-time	Barium, water, filtered, µg/L (01005)	Beryllium, water, filtered, µg/L (01010)	Cadmium, water, filtered, µg/L (01025)	Chromium, water, filtered, µg/L (01030)	Cobalt, water, filtered, µg/L (01035)	Copper, water, filtered, µg/L (01040)	Iron(II), water, filtered, field, milligrams per liter (99114)	Iron, water, filtered, µg/L (01046)	Lead, water, filtered, µg/L (01049)
11-03-2010 1300	75.3	< .006	< .016	0.54	0.206	< .50	1.87	1,740	< .015

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
Part 5 of 5
[$CaCO_3$, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO_2, silicon dioxide; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than; M, presence verified but not quantified]

Sample date-time	Manga-nese, water, filtered, µg/L (01056)	Molyb-denum, water, filtered, µg/L (01060)	Nickel, water, filtered, µg/L (01065)	Silver, water, filtered, µg/L (01075)	Zinc, water, filtered, µg/L (01090)	Antimony, water, filtered, µg/L (01095)	Arsenic, water, filtered, µg/L (01000)	Selenium, water, filtered, µg/L (01145)	Uranium (natural), water, filtered, µg/L (22703)
11-03-2010 1300	13.6	0.361	0.21	< .005	< 1.4	< .027	14.2	< .03	0.039