Water-Data Report 2013

01651770 HICKEY RUN AT NATIONAL ARBORETUM AT WASHINGTON, DC

Potomac Basin
Middle Potomac-Anacostia-Occoquan Subbasin

LOCATION.--Lat 38°55'00.5", long 76°58'09.2" referenced to North American Datum of 1983, Washington, DC, Hydrologic Unit 02070010, on left bank, 75 ft downstream from New York Avenue, and approximately 1000 ft west of entrance to National Arboretum.

DRAINAGE AREA.--0.99 mi^2, from automated delineation using 30-meter National Elevation Dataset, digital elevation model data, dated 2006.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 2012 to September 2013.

GAGE.--Water stage recorder and crest-stage gage. Datum of gage is 17.16 ft above North American Vertical Datum of 1988.

REMARKS.—No estimated daily discharges. Records poor. U.S. Geological Survey gage-height telemeter at station. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,840 ft^3/s, Aug. 13, gage height, 9.40 ft; minimum discharge, 0.04 ft^3/s, Feb. 25.

01651770 HICKEY RUN AT NATIONAL ARBORETUM AT WASHINGTON, DC—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.21	0.79	0.24	0.38	0.88	0.47	0.34	0.25	0.21	4.4	2.9	0.19
2	4.2	0.59	0.23	0.32	0.64	0.42	0.29	0.25	3.8	1.0	0.38	0.40
3	0.33	0.46	0.23	0.30	0.59	0.38	0.32	0.26	2.2	2.7	0.75	0.21
4	0.21	0.41	0.25	0.37	0.53	0.39	0.62	0.36	0.21	0.55	0.37	0.23
5	0.19	0.39	0.25	0.26	0.51	0.40	1.6	0.21	0.18	0.53	0.33	0.23
6	0.19	0.37	0.23	0.27	0.48	16	0.29	0.21	2.0	0.40	0.69	0.21
7	0.43	0.39	0.26	0.26	0.47	1.5	0.31	4.5	21	0.41	0.40	0.22
8	0.23	0.46	0.21	0.24	1.5	0.80	0.30	0.47	0.95	0.81	0.33	0.23
9	0.61	0.38	1.6	0.24	0.50	0.64	0.29	0.36	0.37	0.39	0.40	0.23
10	0.20	0.30	0.30	0.23	0.47	0.56	0.29	1.6	97	0.37	0.30	0.23
11	0.18	0.30	0.61	0.35	2.7	0.52	0.29	1.7	34	0.42	0.30	0.25
12	0.19	0.32	0.25	0.24	0.59	36	4.3	0.38	1.00	5.5	0.30	2.6
13	0.19	4.5	0.22	0.23	1.9	0.91	0.30	0.25	2.1	0.91	43	0.25
14	0.18	0.41	0.21	0.50	0.94	0.58	0.24	0.23	0.73	0.57	3.7	0.19
15	0.29	0.35	0.20	7.6	0.85	0.46	0.25	0.23	0.48	0.45	0.24	0.19
16	0.21	0.35	0.80	6.8	1.1	0.41	0.23	0.21	0.47	0.36	0.22	0.20
17	0.20	0.29	0.35	0.97	0.58	0.36	0.27	0.21	0.43	0.40	0.21	0.23
18	0.23	0.29	0.46	0.51	1.00	2.2	0.60	0.82	1.3	0.70	0.57	0.20
19	2.6	0.32	0.24	0.43	0.95	0.52	4.8	0.22	0.45	0.45	0.24	0.19
20	0.30	0.32	4.6	0.39	0.60	0.35	0.65	0.24	0.38	0.41	0.21	0.19
21	0.22	0.27	6.5	0.34	0.60	0.32	0.41	0.20	0.32	0.34	0.22	8.5
22	0.25	0.28	0.42	0.32	0.44	0.29	0.31	0.20	0.32	1.4	0.24	0.71
23	0.25	0.27	0.28	0.29	0.95	0.28	0.29	2.1	2.6	0.88	0.24	0.35
24	0.20	0.31	0.91	0.30	0.40	0.30	0.32	0.75	0.40	0.41	0.19	0.24
25	0.21	0.27	0.33	0.28	0.34	4.4	0.27	0.22	0.36	0.39	0.18	0.23
26	0.20	0.25	35	0.29	5.8	0.61	0.32	0.20	0.97	0.38	0.19	0.21
27	0.19	0.44	3.1	0.31	2.0	0.40	0.26	0.20	1.5	0.79	0.21	0.32
28	0.51	0.25	0.75	1.3	0.63	0.35	0.28	0.27	5.6	0.72	0.31	0.20
29	76	0.37	1.9	0.34	---	0.32	1.4	0.22	1.0	0.47	0.23	0.21
30	20	0.25	0.54	8.0	---	0.29	0.55	0.20	1.2	0.32	0.20	0.25
31	1.5	---	0.42	8.6	---	0.34	---	0.20	---	0.33	0.20	---
Total	110.90	14.95	61.89	41.26	28.94	71.77	20.99	17.72	183.53	28.16	58.25	18.09
Mean	3.58	0.50	2.00	1.33	1.03	2.32	0.70	0.57	6.12	0.91	1.88	0.60
Max	76	4.5	35	8.6	5.8	36	4.8	4.5	97	5.5	43	8.5
Min	0.18	0.25	0.20	0.23	0.34	0.28	0.23	0.20	0.18	0.32	0.18	0.19
Cfsm	3.61	0.50	2.02	1.34	1.04	2.34	0.71	0.58	6.18	0.92	1.90	0.61
In.	4.17	0.56	2.33	1.55	1.09	2.70	0.79	0.67	6.90	1.06	2.19	0.68

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEAR 2013, BY WATER YEAR (WY)

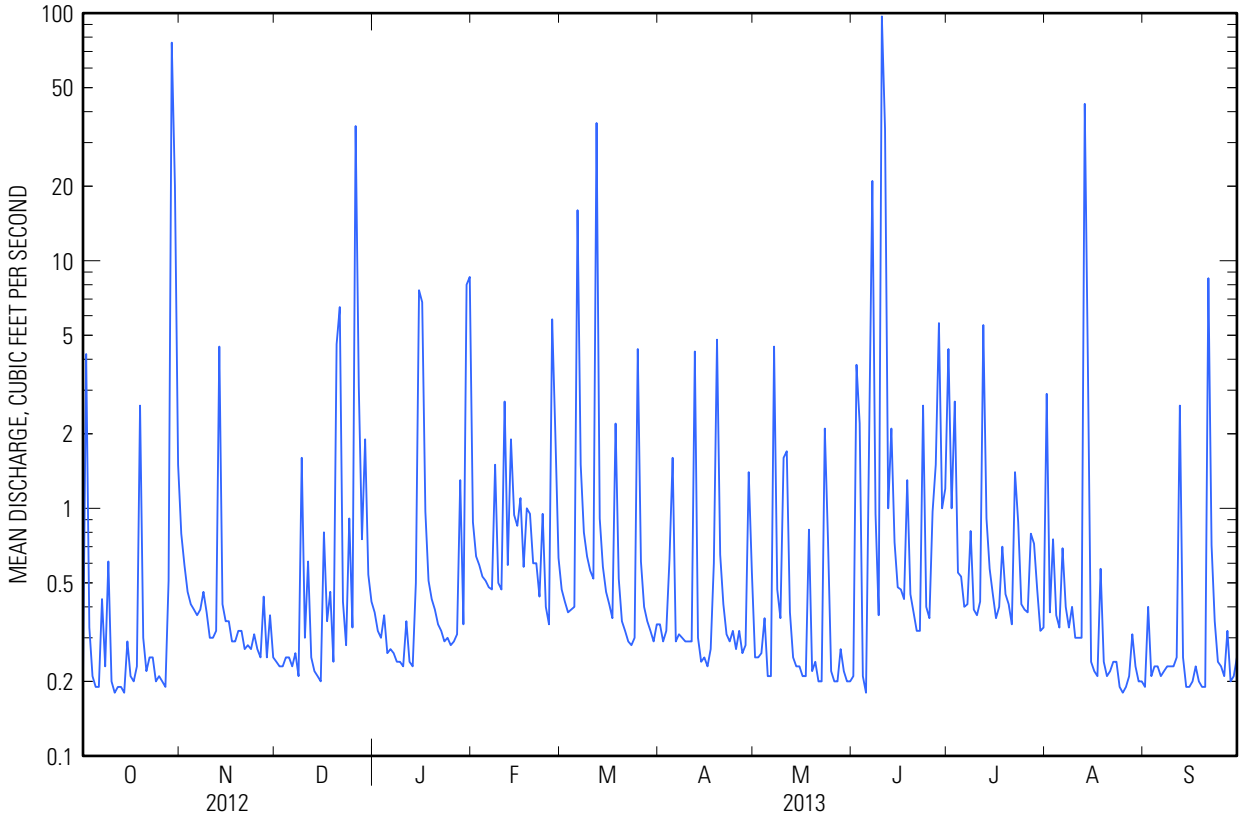
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	3.58	0.50	2.00	1.33	1.03	2.32	0.70	0.57	6.12	0.91	1.88	0.60
Max	3.58	0.50	2.00	1.33	1.03	2.32	0.70	0.57	6.12	0.91	1.88	0.60
(WY)	(2013)	(2013)	(2013)	(2013)	(2013)	(2013)	(2013)	(2013)	(2013)	(2013)	(2013)	(2013)
Min	3.58	0.50	2.00	1.33	1.03	2.32	0.70	0.57	6.12	0.91	1.88	0.60
(WY)	(2013)	(2013)	(2013)	(2013)	(2013)	(2013)	(2013)	(2013)	(2013)	(2013)	(2013)	(2013)

01651770 HICKEY RUN AT NATIONAL ARBORETUM AT WASHINGTON, DC—Continued

SUMMARY STATISTICS

	Water Year 2013		Water Year 2013	
Annual total	656.45			
Annual mean	1.80		1.80	
Highest annual mean			1.80	2013
Lowest annual mean			1.80	2013
Highest daily mean	97	Jun 10	97	Jun 10, 2013
Lowest daily mean	0.18	Oct 11 [a]	0.18	Oct 11, 2012 [a]
Annual seven-day minimum	0.20	Sep 14	0.20	Sep 14, 2013
Maximum peak flow	[b] 1,840	Aug 13	[b] 1,840	Aug 13, 2013
Maximum peak stage	9.40	Aug 13	9.40	Aug 13, 2013
Instantaneous low flow	0.04	Feb 25	0.04	Feb 25, 2013
Annual runoff (cfsm)	1.82		1.82	
Annual runoff (inches)	24.67		24.68	
10 percent exceeds	2.2		2.2	
50 percent exceeds	0.35		0.35	
90 percent exceeds	0.21		0.21	

[a] Oct. 11, 14, 2011; June 5, Aug. 25, 2012.
[b] From rating curve extended above 25 ft³/s on basis on contracted-opening measurement at gage height of 6.77 ft.



01651770 HICKEY RUN AT NATIONAL ARBORETUM AT WASHINGTON, DC—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 2012 to September 2013.

PERIOD OF DAILY RECORD--.
SPECIFIC CONDUCTANCE: January 2013 to September 2013.
WATER TEMPERATURE: January 2013 to September 2013.
TURBIDITY: January 2013 to September 2013.

INSTRUMENTATION.--Water-quality monitor January 2013 to September 2013.

REMARKS.--All nutrient and trace-metal parameters are analyzed by the USGS National Water Quality Laboratory (NWQL) in Denver, Colorado. Bacteria parameters 50569 and 50468 are analyzed at the USGS MD-DE-DC Water Science Center (WSC) in Baltimore, Maryland. All suspended-sediment data (parameters 80154 and 70331) are analyzed at the USGS Sediment Laboratory in Louisville, Kentucky for period of record.

Turbidity values greater than 1,000 formazin nepthelometric units (FNU) exceed the instrument calibration range. Values are included in the record but are presumed to have lower precision.

Low-level concentrations of ammonia filtered, milligrams/liter (mg/L) as N (00608) may be affected by background contamination on the order of + or - 0.05 mg/L. These data are coded with a "V", and values are uncorrected.

Missing record due to periodic instrument malfunction.

Sample type "Other QA" indicates multiple measurements made across the stream for field parameters and on occasion suspended sediment to establish cross-sectional heterogeneity.

EWI Equal-width increment sampling method.

EWT Equal-width multi verticals sampling method.

COOPERATION.--Funding for this station is provided by the United States Environmental Protection Agency Chesapeake Bay Program Office (USEPA/CBPO) in collaboration with the Washington, DC District Department of the Environment, and the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 7,960 microsiemens per centimeter, February 8, 2013; minimum, 66 microsiemens per centimeter, June 10, 2013.
WATER TEMPERATURE: Maximum, 28.3°C, July 18, 2013; minimum, 3.1°C, on March 6, 2013.
TURBIDITY: Maximum, 1,090 formazin nephelometric units (FNU), March 13, 2013; minimum, 0.0 formazin nephelometric units (FNU), April 26, 28th, 2013.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 7,960 microsiemens/cm, Feb. 8; minimum, 66 microsiemens/cm, June 10.
WATER TEMPERATURE: Maximum, 28.3°C, July 18; minimum, 3.1°C, Mar. 6.
TURBIDITY: Maximum, 1,090 FNU, Mar. 13; minimum, 0.0 FNU, Apr. 26, 28.

01651770 HICKEY RUN AT NATIONAL ARBORETUM AT WASHINGTON, DC—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		October			November			December			January	
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30	---	---	---	---	---	---	---	---	---	5,570	889	1,690
31	---	---	---	---	---	---	---	---	---	1,380	725	1,210
Month	---	---	---	---	---	---	---	---	---	---	---	---

01651770 HICKEY RUN AT NATIONAL ARBORETUM AT WASHINGTON, DC—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

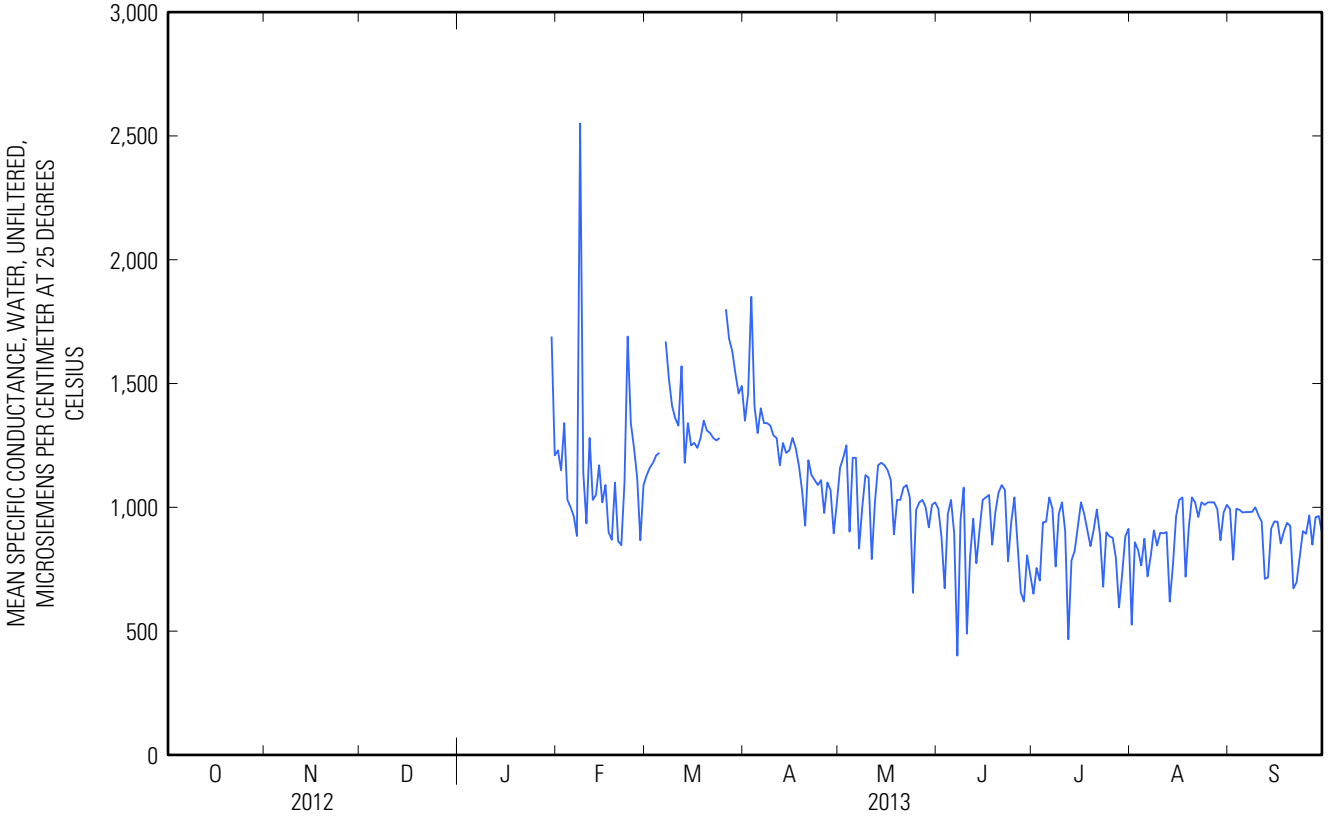
Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		February			March			April			May	
1	1,340	1,130	1,230	1,150	1,110	1,130	1,490	912	1,350	1,180	1,130	1,160
2	2,070	1,020	1,150	1,170	1,140	1,160	1,930	1,100	1,460	1,240	1,150	1,200
3	2,010	1,090	1,340	1,200	1,170	1,180	2,530	1,310	1,850	1,390	801	1,250
4	1,090	994	1,030	1,220	1,200	1,210	2,710	1,280	1,410	1,190	628	902
5	1,060	968	1,000	1,250	1,190	1,220	1,610	845	1,300	1,210	1,190	1,200
6	1,200	902	964	---	---	---	1,470	1,370	1,400	1,220	1,160	1,200
7	916	858	884	1,920	1,570	1,670	1,380	1,000	1,340	1,180	192	834
8	7,960	877	2,550	1,580	1,450	1,520	1,660	882	1,340	1,140	833	1,000
9	1,380	997	1,140	1,450	1,370	1,410	1,570	1,270	1,330	1,300	991	1,130
10	997	896	935	1,380	1,330	1,360	1,360	1,230	1,290	1,270	237	1,120
11	2,610	890	1,280	1,340	1,310	1,330	1,330	1,250	1,280	1,030	291	791
12	1,190	919	1,030	7,880	607	1,570	2,150	433	1,170	1,130	775	1,020
13	1,700	920	1,050	1,640	824	1,180	1,500	1,220	1,260	1,200	1,130	1,170
14	1,500	986	1,170	1,700	1,240	1,340	1,290	1,090	1,220	1,190	1,180	1,180
15	1,570	910	1,020	1,300	1,150	1,250	1,290	1,070	1,230	1,190	1,140	1,170
16	1,330	945	1,090	1,270	1,250	1,260	1,300	1,260	1,280	1,180	1,110	1,150
17	945	861	899	1,250	1,230	1,240	1,300	885	1,240	1,160	1,040	1,110
18	918	821	869	3,050	976	1,280	1,840	771	1,170	1,130	346	891
19	2,270	816	1,100	1,460	1,290	1,350	1,330	190	1,070	1,080	947	1,030
20	937	813	864	1,340	1,290	1,310	1,110	499	926	1,120	804	1,030
21	1,060	780	847	1,360	1,260	1,300	1,310	739	1,190	1,120	959	1,080
22	1,650	770	1,100	1,310	1,270	1,280	1,210	739	1,130	1,120	1,060	1,090
23	2,000	1,480	1,690	1,280	1,250	1,270	1,190	932	1,110	1,120	152	1,040
24	1,480	1,250	1,340	1,560	1,240	1,280	1,230	807	1,090	853	391	655
25	1,260	1,220	1,240	---	---	---	1,210	769	1,110	1,020	853	990
26	1,380	569	1,120	2,070	1,600	1,800	1,120	813	977	1,040	988	1,020
27	1,040	574	867	1,940	1,490	1,680	1,180	1,030	1,100	1,040	1,010	1,030
28	1,120	1,040	1,090	1,820	1,530	1,630	1,140	915	1,070	1,060	854	1,000
29	---	---	---	1,650	1,450	1,540	1,060	513	895	986	858	919
30	---	---	---	1,580	1,410	1,460	1,130	853	1,020	1,040	946	1,010
31	---	---	---	1,720	1,120	1,490	---	---	---	1,030	1,000	1,020
Month	7,960	569	1,140	---	---	---	2,710	190	1,220	1,390	152	1,040

01651770 HICKEY RUN AT NATIONAL ARBORETUM AT WASHINGTON, DC—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		June			July			August			September	
1	1,030	954	994	890	90	651	929	100	526	1,020	927	993
2	1,040	125	879	904	377	755	906	785	859	1,030	563	788
3	905	228	673	898	126	704	922	279	828	1,010	959	994
4	1,000	905	973	1,010	828	939	882	422	765	1,010	940	990
5	1,040	1,000	1,030	1,030	700	942	918	723	873	1,010	950	979
6	1,050	114	895	1,060	984	1,040	928	320	721	995	965	981
7	779	99	401	1,080	646	995	875	602	803	994	957	981
8	1,040	779	949	968	314	761	1,010	875	907	990	960	982
9	1,120	1,040	1,080	1,030	892	973	916	644	846	1,060	981	1,000
10	1,100	66	490	1,070	898	1,020	916	869	897	981	931	967
11	946	495	797	1,020	876	906	910	867	895	1,010	848	942
12	1,010	808	954	881	114	467	926	850	900	966	133	711
13	1,030	165	774	898	455	785	926	74	619	877	485	717
14	1,010	759	908	874	674	824	920	452	766	951	864	915
15	1,050	994	1,030	1,030	871	921	989	920	964	953	919	943
16	1,060	967	1,040	1,070	924	1,020	1,110	989	1,030	980	908	942
17	1,110	964	1,050	1,040	839	974	1,050	1,030	1,040	944	727	854
18	1,070	262	849	1,040	423	908	1,040	451	720	933	869	902
19	1,060	847	981	939	694	843	1,010	817	917	949	909	937
20	1,100	985	1,060	1,010	714	909	1,050	1,010	1,040	938	898	925
21	1,110	1,050	1,090	1,020	934	991	1,050	968	1,020	954	67	673
22	1,080	998	1,070	1,030	194	887	1,100	862	961	882	332	697
23	1,080	96	782	883	184	679	1,070	925	1,020	911	520	800
24	1,040	832	940	925	855	899	1,030	964	1,010	943	828	904
25	1,150	732	1,040	941	798	883	1,050	967	1,020	971	780	893
26	1,040	228	849	937	750	877	1,040	969	1,020	996	924	967
27	885	197	657	942	312	796	1,060	975	1,020	986	559	849
28	919	76	620	843	340	596	1,040	706	993	972	916	960
29	935	588	806	830	577	733	978	720	867	975	948	965
30	974	306	727	912	807	884	1,000	924	979	978	720	900
31	---	---	---	928	900	913	1,020	936	1,010	---	---	---
Month	1,150	66	880	1,080	90	854	1,110	74	898	1,060	67	902

01651770 HICKEY RUN AT NATIONAL ARBORETUM AT WASHINGTON, DC—Continued



01651770 HICKEY RUN AT NATIONAL ARBORETUM AT WASHINGTON, DC—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		October			November			December			January	
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11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	14.0	10.3	11.1
31	---	---	---	---	---	---	---	---	---	14.5	9.6	11.1
Month	---	---	---	---	---	---	---	---	---	---	---	---

01651770 HICKEY RUN AT NATIONAL ARBORETUM AT WASHINGTON, DC—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

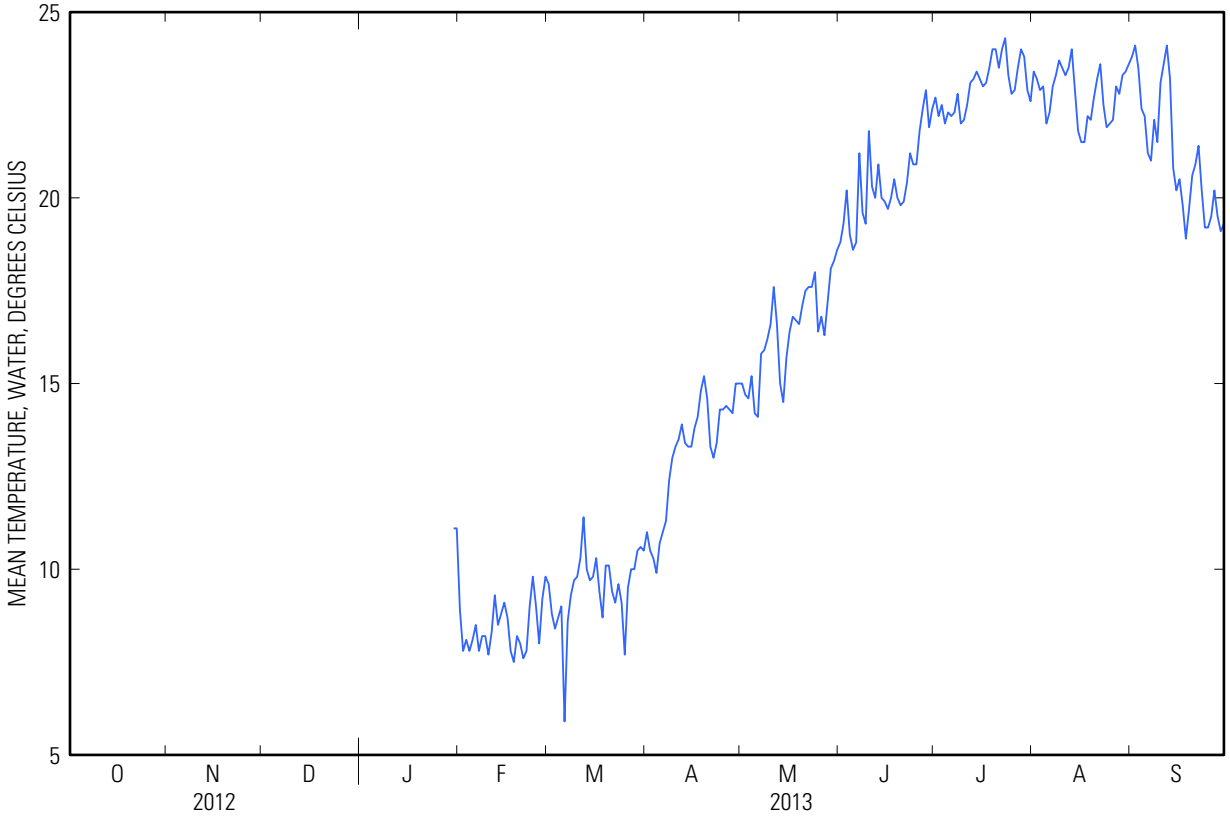
Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		February			March			April			May	
1	9.6	7.9	8.9	10.1	9.2	9.6	13.3	10.0	11.0	17.1	13.6	15.0
2	8.1	7.3	7.8	9.4	8.2	8.8	12.8	9.2	10.5	16.9	13.2	14.7
3	8.5	7.6	8.1	9.3	7.9	8.4	13.0	8.7	10.3	16.8	13.3	14.6
4	8.3	7.4	7.8	10.6	7.5	8.7	11.8	8.3	9.9	17.2	13.7	15.2
5	8.6	7.8	8.1	12.0	8.0	9.0	12.4	8.9	10.7	16.5	13.1	14.2
6	9.8	7.8	8.5	8.9	3.1	5.9	13.3	9.8	11.0	14.8	13.4	14.1
7	8.2	7.3	7.8	9.6	7.3	8.6	13.5	9.7	11.3	17.5	14.5	15.8
8	8.9	7.2	8.2	10.6	8.8	9.3	14.8	11.2	12.4	17.0	15.4	15.9
9	9.3	7.3	8.2	11.2	8.8	9.7	15.3	11.9	13.0	18.7	15.1	16.2
10	8.7	6.7	7.7	11.7	8.5	9.8	15.5	12.1	13.3	20.4	15.2	16.6
11	9.3	6.4	8.3	11.1	9.6	10.3	15.7	12.5	13.5	20.0	16.6	17.6
12	10.4	8.8	9.3	13.5	10.4	11.4	15.6	12.5	13.9	18.0	15.0	16.6
13	9.7	7.3	8.5	10.7	9.5	10	15.2	12.5	13.4	16.6	13.9	15.0
14	10.0	7.3	8.8	10.9	9.0	9.7	15.2	12.0	13.3	16.9	12.9	14.5
15	10.6	8.1	9.1	11.2	8.8	9.8	14.1	12.9	13.3	17.8	14.5	15.7
16	9.1	8.2	8.7	11.3	9.7	10.3	15.6	13.0	13.8	18.0	15.5	16.4
17	8.7	6.9	7.8	9.7	9.1	9.4	15.5	13.3	14.1	19.0	15.6	16.8
18	9.1	6.5	7.5	9.5	7.7	8.7	16.0	14.0	14.8	19.2	15.9	16.7
19	9.1	7.5	8.2	11.9	8.9	10.1	20.4	13.9	15.2	17.9	16.2	16.6
20	8.8	7.0	8.0	12.3	8.9	10.1	15.3	13.4	14.6	18.8	16.2	17.1
21	9.5	6.4	7.6	10.8	8.2	9.4	14.7	12.4	13.3	19.5	16.6	17.5
22	8.4	7.2	7.8	11.1	7.9	9.1	14.3	12.2	13.0	19.7	16.5	17.6
23	9.5	8.2	9.0	11.7	8.0	9.6	14.8	12.7	13.4	20.9	16.7	17.6
24	11.4	8.6	9.8	9.6	8.5	9.1	16.5	12.8	14.3	19.8	15.8	18.0
25	11.8	7.8	9.0	9.3	5.6	7.7	16.1	13.2	14.3	18.7	14.8	16.4
26	9.4	7.0	8.0	10.6	8.7	9.5	16.0	12.9	14.4	19.2	15.1	16.8
27	10.0	7.4	9.2	11.2	9.0	10	16.4	12.7	14.3	17.7	14.8	16.3
28	10.4	9.5	9.8	10.6	9.4	10.0	15.4	13.2	14.2	19.0	16.1	17.2
29	---	---	---	12.3	9.8	10.5	15.8	14.3	15.0	20.4	17.1	18.1
30	---	---	---	12.7	9.4	10.6	15.7	14.5	15.0	20.8	17.2	18.3
31	---	---	---	11.0	9.8	10.5	---	---	---	21.2	17.1	18.6
Month	11.8	6.4	8.4	13.5	3.1	9.5	20.4	8.3	13.2	21.2	12.9	16.4

01651770 HICKEY RUN AT NATIONAL ARBORETUM AT WASHINGTON, DC—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		June			July			August			September	
1	21.3	17.3	18.8	25.4	21.5	22.7	24.8	22.3	23.4	26.7	22.3	23.8
2	23.6	17.7	19.3	24.6	21.6	22.2	25.0	22.2	23.2	26.4	22.8	24.1
3	21.6	18.7	20.2	24.4	21.4	22.5	23.8	22.3	22.9	25.6	22.1	23.5
4	20.8	17.7	19.0	23.6	21.3	22.0	25.0	21.5	23.0	25.2	20.8	22.4
5	21.0	17.1	18.6	24.5	21.2	22.3	23.7	20.8	22.0	24.4	20.7	22.2
6	21.6	17.6	18.8	24.1	21.3	22.2	23.4	21.5	22.3	23.5	19.6	21.2
7	22.5	20.0	21.2	24.2	21.2	22.3	24.4	22.2	23.0	23.7	19.1	21.0
8	20.6	19.0	19.6	26.0	21.6	22.8	25.0	22.6	23.3	24.4	20.9	22.1
9	20.6	18.8	19.3	22.9	21.6	22.0	25.1	22.8	23.7	22.6	20.2	21.5
10	24.9	18.9	21.8	23.6	21.5	22.1	25.2	22.6	23.5	25.2	21.8	23.1
11	21.2	19.7	20.3	24.2	21.7	22.5	24.7	22.6	23.3	25.8	22.5	23.6
12	21.4	19.5	20.0	24.5	22.2	23.1	25.6	22.4	23.5	26.5	22.7	24.1
13	25.7	19.4	20.9	25.1	22.5	23.2	25.4	22.9	24.0	25.2	21.2	23.2
14	21.3	19.2	20.0	24.7	22.6	23.4	24.2	21.6	22.9	23.4	19.4	20.8
15	21.6	18.8	19.9	25.1	22.3	23.2	24.1	20.5	21.8	23.2	18.2	20.2
16	21.5	19.0	19.7	24.6	22.1	23.0	23.8	20.0	21.5	22.4	19.8	20.5
17	21.4	19.3	20.0	25.2	22.0	23.1	23.6	20.0	21.5	22.7	18.0	19.8
18	24.0	19.3	20.5	28.3	22.3	23.5	23.2	21.3	22.2	21.8	16.9	18.9
19	21.3	19.2	20.0	25.2	22.9	24.0	23.2	21.1	22.1	22.8	17.6	19.7
20	21.6	18.9	19.8	25.3	23.0	24.0	24.9	21.4	22.7	23.8	18.7	20.6
21	22.3	18.3	19.9	25.6	22.8	23.5	25.5	21.9	23.2	23.0	19.6	20.9
22	22.8	19.0	20.4	26.5	22.6	24.0	25.9	22.6	23.6	22.7	19.9	21.4
23	24.3	19.5	21.2	26.5	23.0	24.3	23.1	21.1	22.5	22.8	18.8	20.2
24	23.2	20.1	20.9	24.9	22.4	23.3	25.1	20.3	21.9	22.0	17.4	19.2
25	22.8	19.9	20.9	25.1	21.2	22.8	25.0	20.4	22.0	21.6	17.5	19.2
26	26.3	20.5	21.8	25.1	21.6	22.9	25.0	20.3	22.1	22.1	18.3	19.5
27	26.1	21.0	22.4	25.3	22.1	23.5	25.2	21.8	23.0	23.2	18.4	20.2
28	27.0	21.6	22.9	26.2	22.9	24.0	23.7	22.4	22.8	20.7	18.6	19.5
29	23.0	21.1	21.9	26.5	22.1	23.8	25.2	22.4	23.3	21.5	17.8	19.1
30	25.5	21.0	22.4	24.5	21.6	22.9	25.8	22.1	23.4	21.5	17.6	19.3
31	---	---	---	23.5	21.7	22.6	26.4	22.3	23.6	---	---	---
Month	27.0	17.1	20.4	28.3	21.2	23.0	26.4	20.0	22.8	26.7	16.9	21.2

01651770 HICKEY RUN AT NATIONAL ARBORETUM AT WASHINGTON, DC—Continued



01651770 HICKEY RUN AT NATIONAL ARBORETUM AT WASHINGTON, DC—Continued

TURBIDITY, WATER, UNFILT, NEAR IR LED LIGHT, 780-900 NM, DETECT ANG. 90 DEG, FORMAZIN NEPHELOMETRIC UNITS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	550	6.5	36
31	---	---	---	---	---	---	---	---	---	100	40	53
Month	---	---	---	---	---	---	---	---	---	---	---	---

01651770 HICKEY RUN AT NATIONAL ARBORETUM AT WASHINGTON, DC—Continued

TURBIDITY, WATER, UNFILT, NEAR IR LED LIGHT, 780-900 NM, DETECT ANG. 90 DEG, FORMAZIN NEPHELOMETRIC UNITS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

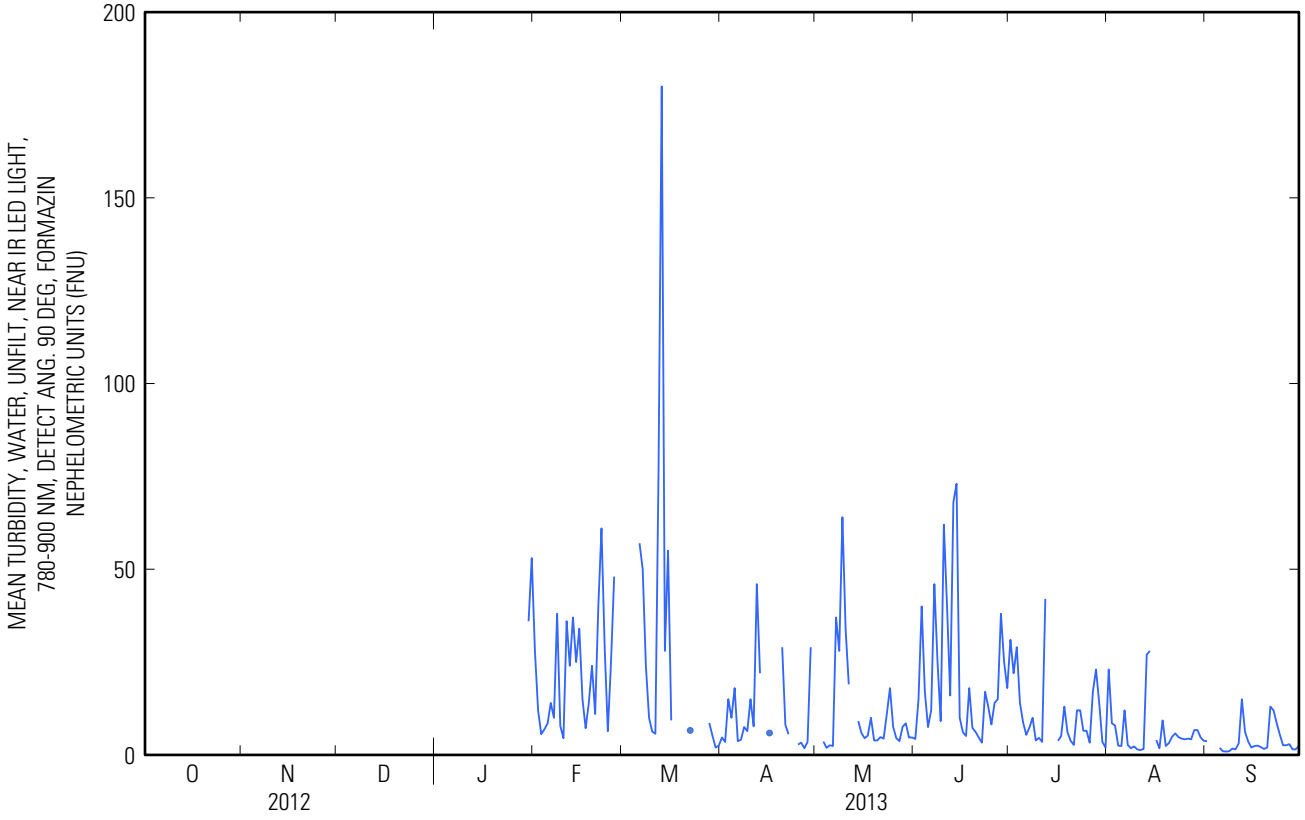
Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		February			March			April			May	
1	47	21	28	---	---	---	57	1.1	4.7	---	---	---
2	24	7.7	12	---	---	---	18	0.7	3.5	---	---	---
3	11	3.9	5.6	---	---	---	160	0.5	15	12	2.1	3.6
4	13	3.1	6.9	---	---	---	120	0.9	10	17	0.3	1.9
5	23	3.1	8.5	---	---	---	78	3.8	18	16	1.0	2.6
6	45	4.8	14	150	4.6	57	19	1.9	3.7	13	1.1	2.4
7	21	3.4	10	85	31	50	70	1.0	4.1	190	0.1	37
8	120	5.6	38	35	15	24	70	2.4	7.5	58	10	28
9	13	4.2	7.8	16	6.7	10	28	3.4	6.4	540	3.6	64
10	7.7	2.7	4.5	13	5.0	6.3	170	2.2	15	540	5.7	34
11	68	3.7	36	9.8	4.6	5.7	120	2.5	7.7	90	8.1	19
12	34	15	24	730	3.9	77	550	2.5	46	---	---	---
13	120	8.7	37	1,090	37	180	38	10	22	---	---	---
14	44	11	25	59	15	28	---	---	---	19	6.2	9.1
15	400	9.6	34	470	8.8	55	---	---	---	44	4.2	5.9
16	50	7.9	15	19	7.1	9.3	22	2.0	5.9	13	3.6	4.5
17	11	4.2	7.2	---	---	---	---	---	---	15	3.6	5.2
18	180	2.1	14	---	---	---	---	---	---	120	3.6	10
19	160	4.3	24	---	---	---	---	---	---	12	2.7	3.9
20	27	3.2	11	---	---	---	48	10	29	27	2.8	3.9
21	310	3.4	40	---	---	---	12	5.6	8.1	23	3.3	4.8
22	270	7.9	61	14	3.0	6.6	11	2.9	5.6	12	3.8	4.4
23	85	12	29	---	---	---	---	---	---	250	3.8	11
24	21	5.1	6.4	---	---	---	---	---	---	59	8.0	18
25	260	3.8	25	---	---	---	9.5	0.9	2.8	13	5.0	7.6
26	190	8.0	48	---	---	---	21	0.0	3.3	11	3.5	4.5
27	---	---	---	---	---	---	17	0.2	1.8	10	3.3	3.7
28	---	---	---	28	5.0	8.6	36	0.0	3.5	31	3.1	7.6
29	---	---	---	59	2.5	5.2	120	2.1	29	21	4.2	8.5
30	---	---	---	19	1.1	2.0	---	---	---	15	3.7	4.7
31	---	---	---	53	0.8	2.5	---	---	---	22	3.4	4.7
Month	---	---	---	---	---	---	---	---	---	---	---	---

01651770 HICKEY RUN AT NATIONAL ARBORETUM AT WASHINGTON, DC—Continued

TURBIDITY, WATER, UNFILT, NEAR IR LED LIGHT, 780-900 NM, DETECT ANG. 90 DEG, FORMAZIN NEPHELOMETRIC UNITS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		June			July			August			September	
1	12	3.2	4.3	130	5.2	31	410	3.0	23	52	2.4	3.7
2	280	3.2	15	60	12	22	19	5.5	8.5	---	---	---
3	63	25	40	170	8.6	29	320	2.3	7.9	---	---	---
4	26	9.5	17	29	7.3	14	11	1.5	2.5	---	---	---
5	11	4.5	7.5	18	5.2	8.7	10	1.3	2.4	8.8	0.5	1.9
6	170	3.3	12	8.0	4.1	5.4	120	1.3	12	7.1	0.5	1.0
7	190	21	46	55	2.4	7.4	16	1.0	2.7	8.8	0.3	0.9
8	53	12	25	130	2.8	10	14	1.1	1.8	4.4	0.5	1.0
9	53	7.0	9.1	8.5	2.6	3.9	12	0.9	2.3	3.3	0.9	1.7
10	880	5.7	62	12	2.3	4.6	6.6	0.9	1.5	3.5	0.7	1.5
11	58	21	40	9.0	2.4	3.5	4.5	0.7	1.3	16	1.0	3.1
12	23	10	16	96	2.4	42	14	0.7	1.6	360	0.9	15
13	650	6.7	68	---	---	---	430	0.9	27	9.0	2.8	6.2
14	700	16	73	---	---	---	43	19	28	6.5	2.2	3.6
15	18	6.4	10	---	---	---	---	---	---	4.1	1.4	2.0
16	10	5.0	6.1	6.8	2.6	3.8	6.3	2.9	4.0	5.6	1.6	2.4
17	9.1	4.2	5.1	11	2.3	5.1	3.7	1.1	1.8	4.6	1.5	2.5
18	340	3.8	18	260	1.9	13	26	1.4	9.3	4.1	1.3	2.1
19	10	4.2	7.3	14	3.0	6.1	6.7	1.4	2.4	15	1.0	1.6
20	10	3.1	6.2	10	1.7	3.8	8.7	1.3	3.2	4.1	1.2	2.0
21	18	2.9	4.7	6.1	1.9	2.7	7.3	3.9	4.9	170	0.9	13
22	17	2.6	3.3	530	2.0	12	8.7	4.5	5.8	20	6.1	12
23	280	2.6	17	70	6.2	12	6.7	3.7	4.8	13	5.9	8.5
24	17	9.9	13	9.5	5.0	6.5	22	3.2	4.4	8.6	3.7	5.4
25	34	4.9	8.2	71	0.1	6.5	20	3.0	4.2	4.0	1.9	2.6
26	210	4.5	14	9.1	0.4	3.3	14	3.5	4.4	4.7	1.6	2.6
27	150	3.9	15	210	1.7	17	22	3.4	4.2	14	1.4	2.9
28	270	4.5	38	96	4.0	23	32	3.6	6.7	3.7	1.2	1.5
29	63	13	25	53	2.9	14	21	3.5	6.7	2.6	1.2	1.5
30	120	8.1	18	12	1.7	3.5	8.2	3.2	4.7	6.7	1.4	2.4
31	---	---	---	8.7	1.3	2.0	32	2.6	3.8	---	---	---
Month	880	2.6	21	---	---	---	---	---	---	---	---	---

01651770 HICKEY RUN AT NATIONAL ARBORETUM AT WASHINGTON, DC—Continued



01651770 HICKEY RUN AT NATIONAL ARBORETUM AT WASHINGTON, DC—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
Part 1 of 8

[FNU, Formazin nephelometric units; LED, light-emitting diode; N, nitrogen; P, phosphorus; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; mm, millimeters; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; --, no data; <, less than]

Date	Sample start time	Medium name	Sample type	Barometric pressure, mm Hg (00025)	Tempera-ture, air, °C (00020)	Discharge, instanta-neous, ft³/s (00061)	Dissolved oxygen, water, unfiltered, mg/L (00300)	pH, water, unfiltered, field, standard units (00400)
10-02-2012	*1240*	*QC sample - Artificial*	*Blank*	--	--	--	--	*7.0*
10-02-2012	1615	Surface water	Regular	--	--	1.5	6.5	7.5
10-02-2012	*1716*	*QC sample - Surface water*	*Other QA*	--	--	--	*7.6*	*7.7*
10-02-2012	*1717*	*QC sample - Surface water*	*Other QA*	--	--	--	*7.3*	*7.6*
10-02-2012	*1718*	*QC sample - Surface water*	*Other QA*	--	--	--	*6.5*	*7.5*
10-02-2012	*1719*	*QC sample - Surface water*	*Other QA*	--	--	--	*5.1*	*7.5*
01-02-2013	1415	Surface water	Regular	--	4.5	.32	--	--
01-02-2013	*1417*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
01-02-2013	*1418*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
01-02-2013	*1419*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
01-16-2013	1100	Surface water	Regular	--	7.0	4.7	--	--
01-16-2013	*1127*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
01-16-2013	*1128*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
01-16-2013	*1129*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
01-31-2013	0615	Surface water	Regular	747	7.5	4.5	9.6	7.7
01-31-2013	*0616*	*QC sample - Surface water*	*Other QA*	--	--	--	*9.6*	*7.7*
01-31-2013	*0617*	*QC sample - Surface water*	*Other QA*	--	--	--	*9.6*	*7.7*
01-31-2013	*0618*	*QC sample - Surface water*	*Other QA*	--	--	--	*9.6*	*7.7*
02-26-2013	1700	Surface water	Regular	755	7.0	5.5	--	--
02-26-2013	*1721*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
02-26-2013	*1722*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
02-26-2013	*1723*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
03-12-2013	0915	Surface water	Regular	755	10.0	1.9	--	--
03-12-2013	*0927*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
03-12-2013	*0928*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
03-12-2013	*0929*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
03-27-2013	1200	Surface water	Regular	763	10.0	.47	--	--
03-27-2013	*1226*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
03-27-2013	*1227*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
03-27-2013	*1228*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
04-24-2013	1245	Surface water	Regular	--	21.0	.27	--	--
04-24-2013	*1311*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
04-24-2013	*1312*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
04-24-2013	*1313*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
04-29-2013	1045	Surface water	Regular	--	15.5	5.8	--	--
04-29-2013	*1107*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
04-29-2013	*1108*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
04-29-2013	*1109*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
04-29-2013	*1111*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
05-07-2013	1430	Surface water	Replicate	--	18.0	4.3	--	--

01651770 HICKEY RUN AT NATIONAL ARBORETUM AT WASHINGTON, DC—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
Part 2 of 8

[FNU, Formazin nephelometric units; LED, light-emitting diode; N, nitrogen; P, phosphorus; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; mm, millimeters; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; --, no data; <, less than]

Date	Sample start time	Specific conductance, water, unfiltered, µS/cm at 25°C (00095)	Temperature, water, °C (00010)	Turbidity, water, unfiltered, monochrome near infrared LED light, 780-900 nm, detection angle 90 +/- 2.5 degrees, FNU (63680)	Sampler type (84164)	Sampling method (82398)	Carbon (inorganic plus organic), suspended sediment, total, mg/L (00694)	Ammonia, water, filtered, mg/L as N (00608)
10-02-2012	*1240*	*0.0*	--	--	--	--	--	*0.014*
10-02-2012	1615	407	21.9	29	US DH-81	Multi Verticals EWT	2.10	.139
10-02-2012	*1716*	*356*	*22.0*	*23*	--	--	--	--
10-02-2012	*1717*	*384*	*21.9*	*26*	--	--	--	--
10-02-2012	*1718*	*407*	*21.9*	*29*	--	--	--	--
10-02-2012	*1719*	*392*	*21.8*	*26*	--	--	--	--
01-02-2013	1415	1,050	10.5	4.5	Grab sample	Multiple verticals	.40	.202
01-02-2013	*1417*	*1,050*	*10.6*	*4.9*	--	--	--	--
01-02-2013	*1418*	*1,050*	*10.5*	*4.2*	--	--	--	--
01-02-2013	*1419*	*1,050*	*10.5*	*4.5*	--	--	--	--
01-16-2013	1100	520	8.7	88	US DH-81	EWI	9.31	.091
01-16-2013	*1127*	*521*	*8.7*	*92*	--	--	--	--
01-16-2013	*1128*	*520*	*8.7*	*88*	--	--	--	--
01-16-2013	*1129*	*519*	*8.7*	*87*	--	--	--	--
01-31-2013	0615	1,180	11.6	44	US DH-81	EWI	2.57	.116
01-31-2013	*0616*	*1,180*	*11.6*	*43*	--	--	--	--
01-31-2013	*0617*	*1,180*	*11.6*	*44*	--	--	--	--
01-31-2013	*0618*	*1,180*	*11.6*	*48*	--	--	--	--
02-26-2013	1700	985	8.3	88	US DH-81	EWI	16.2	.323
02-26-2013	*1721*	*982*	*8.3*	*88*	--	--	--	--
02-26-2013	*1722*	*985*	*8.3*	*76*	--	--	--	--
02-26-2013	*1723*	*985*	*8.3*	*88*	--	--	--	--
03-12-2013	0915	1,920	11.5	54	US DH-81	EWI	8.09	.270
03-12-2013	*0927*	*1,920*	*11.5*	*94*	--	--	--	--
03-12-2013	*0928*	*1,920*	*11.5*	*51*	--	--	--	--
03-12-2013	*0929*	*1,920*	*11.5*	*54*	--	--	--	--
03-27-2013	1200	1,510	11.1	44	US DH-81	Multi Verticals EWT	4.80	.203
03-27-2013	*1226*	*1,510*	*11.1*	*48*	--	--	--	--
03-27-2013	*1227*	*1,510*	*11.1*	*44*	--	--	--	--
03-27-2013	*1228*	*1,520*	*11.2*	*29*	--	--	--	--
04-24-2013	1245	1,120	16.4	9.7	US DH-81	Multi Verticals EWT	.78	.382
04-24-2013	*1311*	*1,120*	*16.4*	*8.3*	--	--	--	--
04-24-2013	*1312*	*1,120*	*16.4*	*9.7*	--	--	--	--
04-24-2013	*1313*	*1,120*	*16.4*	*11*	--	--	--	--
04-29-2013	1045	828	15.6	59	US DH-81	EWI	12.2	.344
04-29-2013	*1107*	*826*	*15.6*	*61*	--	--	--	--
04-29-2013	*1108*	*832*	*15.6*	*58*	--	--	--	--
04-29-2013	*1109*	*827*	*15.6*	*57*	--	--	--	--
04-29-2013	*1111*	*828*	*15.6*	*58*	--	--	--	--
05-07-2013	1430	538	16.8	35	US DH-81	EWI	8.28	.155

01651770 HICKEY RUN AT NATIONAL ARBORETUM AT WASHINGTON, DC—Continued

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WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
Part 3 of 8

[FNU, Formazin nephelometric units; LED, light-emitting diode; N, nitrogen; P, phosphorus; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; mm, millimeters; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; --, no data; <, less than]

Date	Sample start time	Nitrate plus nitrite, water, filtered, mg/L as N (00631)	Nitrite, water, filtered, mg/L as N (00613)	Orthophosphate, water, filtered, mg/L as P (00671)	Particulate nitrogen, suspended in water, mg/L (49570)	Phosphorus, water, filtered, mg/L as P (00666)	Phosphorus, water, unfiltered, mg/L as P (00665)	Total nitrogen, water, filtered, analytically determined, mg/L (62854)	Total nitrogen, water, unfiltered, mg/L (00600)
10-02-2012	*1240*	*< .01*	*0.001*	*< .004*	--	*< .003*	*< .004*	*< .05*	--
10-02-2012	1615	1.01	.055	.123	.194	.132	.185	1.66	1.9
10-02-2012	*1716*	--	--	--	--	--	--	--	--
10-02-2012	*1717*	--	--	--	--	--	--	--	--
10-02-2012	*1718*	--	--	--	--	--	--	--	--
10-02-2012	*1719*	--	--	--	--	--	--	--	--
01-02-2013	1415	1.67	.069	.126	.045	.125	.188	2.26	2.3
01-02-2013	*1417*	--	--	--	--	--	--	--	--
01-02-2013	*1418*	--	--	--	--	--	--	--	--
01-02-2013	*1419*	--	--	--	--	--	--	--	--
01-16-2013	1100	.92	.040	.047	.405	.074	.216	1.50	1.9
01-16-2013	*1127*	--	--	--	--	--	--	--	--
01-16-2013	*1128*	--	--	--	--	--	--	--	--
01-16-2013	*1129*	--	--	--	--	--	--	--	--
01-31-2013	0615	1.13	.025	.085	.244	.100	.197	1.86	2.1
01-31-2013	*0616*	--	--	--	--	--	--	--	--
01-31-2013	*0617*	--	--	--	--	--	--	--	--
01-31-2013	*0618*	--	--	--	--	--	--	--	--
02-26-2013	1700	.52	.051	.075	.605	.091	.296	1.49	2.1
02-26-2013	*1721*	--	--	--	--	--	--	--	--
02-26-2013	*1722*	--	--	--	--	--	--	--	--
02-26-2013	*1723*	--	--	--	--	--	--	--	--
03-12-2013	0915	.60	.044	.099	.335	.117	.270	1.47	1.8
03-12-2013	*0927*	--	--	--	--	--	--	--	--
03-12-2013	*0928*	--	--	--	--	--	--	--	--
03-12-2013	*0929*	--	--	--	--	--	--	--	--
03-27-2013	1200	1.11	.040	.078	.249	.092	.255	1.76	2.0
03-27-2013	*1226*	--	--	--	--	--	--	--	--
03-27-2013	*1227*	--	--	--	--	--	--	--	--
03-27-2013	*1228*	--	--	--	--	--	--	--	--
04-24-2013	1245	1.05	.058	.147	.081	.159	.261	1.97	2.1
04-24-2013	*1311*	--	--	--	--	--	--	--	--
04-24-2013	*1312*	--	--	--	--	--	--	--	--
04-24-2013	*1313*	--	--	--	--	--	--	--	--
04-29-2013	1045	.63	.063	.127	.666	.138	.381	1.91	2.6
04-29-2013	*1107*	--	--	--	--	--	--	--	--
04-29-2013	*1108*	--	--	--	--	--	--	--	--
04-29-2013	*1109*	--	--	--	--	--	--	--	--
04-29-2013	*1111*	--	--	--	--	--	--	--	--
05-07-2013	1430	.52	.034	.080	.453	.092	.207	1.17	1.6

01651770 HICKEY RUN AT NATIONAL ARBORETUM AT WASHINGTON, DC—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
Part 4 of 8
[FNU, Formazin nephelometric units; LED, light-emitting diode; N, nitrogen; P, phosphorus; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; mm, millimeters; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; --, no data; <, less than]

Date	Sample start time	Suspended sediment, sieve diameter, percent smaller than 0.0625 mm (70331)	Suspended sediment concen-tration, mg/L (80154)	Suspended sediment discharge, tons per day (80155)
10-02-2012	*1240*	--	--	--
10-02-2012	1615	95	17	.07
10-02-2012	*1716*	--	--	--
10-02-2012	*1717*	--	--	--
10-02-2012	*1718*	--	--	--
10-02-2012	*1719*	--	--	--
01-02-2013	1415	--	3	<.01
01-02-2013	*1417*	--	--	--
01-02-2013	*1418*	--	--	--
01-02-2013	*1419*	--	--	--
01-16-2013	1100	--	61	.77
01-16-2013	*1127*	--	--	--
01-16-2013	*1128*	--	--	--
01-16-2013	*1129*	--	--	--
01-31-2013	0615	--	39	.47
01-31-2013	*0616*	--	--	--
01-31-2013	*0617*	--	--	--
01-31-2013	*0618*	--	--	--
02-26-2013	1700	--	91	1.4
02-26-2013	*1721*	--	--	--
02-26-2013	*1722*	--	--	--
02-26-2013	*1723*	--	--	--
03-12-2013	0915	--	60	.32
03-12-2013	*0927*	--	--	--
03-12-2013	*0928*	--	--	--
03-12-2013	*0929*	--	--	--
03-27-2013	1200	--	46	.06
03-27-2013	*1226*	--	--	--
03-27-2013	*1227*	--	--	--
03-27-2013	*1228*	--	--	--
04-24-2013	1245	--	11	.01
04-24-2013	*1311*	--	--	--
04-24-2013	*1312*	--	--	--
04-24-2013	*1313*	--	--	--
04-29-2013	1045	--	56	.88
04-29-2013	*1107*	--	--	--
04-29-2013	*1108*	--	--	--
04-29-2013	*1109*	--	--	--
04-29-2013	*1111*	--	--	--
05-07-2013	1430	94	31	.36

01651770 HICKEY RUN AT NATIONAL ARBORETUM AT WASHINGTON, DC—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
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[FNU, Formazin nephelometric units; LED, light-emitting diode; N, nitrogen; P, phosphorus; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; mm, millimeters; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; --, no data; <, less than]

Date	Sample start time	Medium name	Sample type	Barometric pressure, mm Hg (00025)	Tempera-ture, air, °C (00020)	Discharge, instanta-neous, ft³/s (00061)	Dissolved oxygen, water, unfiltered, mg/L (00300)	pH, water, unfiltered, field, standard units (00400)
05-07-2013	*1435*	*QC sample - Surface water*	*Replicate*	--	--	*2.8*	--	*7.0*
05-07-2013	*1451*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
05-07-2013	*1452*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
05-07-2013	*1453*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
05-07-2013	*1454*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
05-29-2013	1145	Surface water	Regular	--	28.0	.21	--	--
05-29-2013	*1206*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
05-29-2013	*1207*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
05-29-2013	*1208*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
06-07-2013	1015	Surface water	Regular	--	20.0	18	--	--
06-07-2013	*1031*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
06-07-2013	*1032*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
06-07-2013	*1033*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
06-07-2013	*1034*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
06-13-2013	1520	Surface water	Regular	--	28.0	48	--	--
06-28-2013	1015	Surface water	Regular	--	29.0	.56	--	--
06-28-2013	*1036*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
06-28-2013	*1037*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
06-28-2013	*1038*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
07-01-2013	1145	Surface water	Regular	--	28.0	9.8	--	--
07-01-2013	*1157*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
07-01-2013	*1158*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
07-01-2013	*1159*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
07-25-2013	1115	Surface water	Regular	--	26.0	.39	--	--
07-25-2013	*1128*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
07-25-2013	*1129*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
07-25-2013	*1131*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
08-27-2013	1215	Surface water	Regular	--	27.0	.21	--	--
08-27-2013	*1229*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
08-27-2013	*1231*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
08-27-2013	*1232*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
09-27-2013	1145	Surface water	Regular	--	22.0	.97	--	--
09-27-2013	*1206*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
09-27-2013	*1207*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--
09-27-2013	*1208*	*QC sample - Surface water*	*Other QA*	--	--	--	--	--

01651770 HICKEY RUN AT NATIONAL ARBORETUM AT WASHINGTON, DC—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
Part 6 of 8

[FNU, Formazin nephelometric units; LED, light-emitting diode; N, nitrogen; P, phosphorus; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; mm, millimeters; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; --, no data; <, less than]

Date	Sample start time	Specific conductance, water, unfiltered, µS/cm at 25°C (00095)	Temperature, water, °C (00010)	Turbidity, water, unfiltered, monochrome near infrared LED light, 780-900 nm, detection angle 90 +/- 2.5 degrees, FNU (63680)	Sampler type (84164)	Sampling method (82398)	Carbon (inorganic plus organic), suspended sediment, total, mg/L (00694)	Ammonia, water, filtered, mg/L as N (00608)
05-07-2013	*1435*	*537*	--	--	*US DH-81*	*EWI*	*6.65*	*0.150*
05-07-2013	*1451*	*537*	*16.8*	*36*	--	--	--	--
05-07-2013	*1452*	*538*	*16.8*	*35*	--	--	--	--
05-07-2013	*1453*	*537*	*16.8*	*36*	--	--	--	--
05-07-2013	*1454*	*539*	*16.8*	*34*	--	--	--	--
05-29-2013	1145	912	19.6	11	US DH-81	Multi Verticals EWT	1.16	.381
05-29-2013	*1206*	*911*	*19.6*	*11*	--	--	--	--
05-29-2013	*1207*	*912*	*19.6*	*11*	--	--	--	--
05-29-2013	*1208*	*912*	*19.7*	*12*	--	--	--	--
06-07-2013	1015	374	21.9	45	US DH-81	EWI	6.26	.075
06-07-2013	*1031*	*375*	*21.8*	*46*	--	--	--	--
06-07-2013	*1032*	*374*	*21.9*	*45*	--	--	--	--
06-07-2013	*1033*	*374*	*21.9*	*45*	--	--	--	--
06-07-2013	*1034*	*374*	*21.9*	*45*	--	--	--	--
06-13-2013	1520	193	25.5	190	US DH-95 Teflon	EWI	12.2	.241
06-28-2013	1015	856	22.4	13	US DH-81	Multi Verticals EWT	.93	.140
06-28-2013	*1036*	*854*	*22.4*	*13*	--	--	--	--
06-28-2013	*1037*	*856*	*22.4*	*13*	--	--	--	--
06-28-2013	*1038*	*858*	*22.5*	*14*	--	--	--	--
07-01-2013	1145	338	24.5	58	US DH-81	EWI	4.65	.058
07-01-2013	*1157*	*338*	*24.5*	*60*	--	--	--	--
07-01-2013	*1158*	*338*	*24.5*	*58*	--	--	--	--
07-01-2013	*1159*	*339*	*24.5*	*58*	--	--	--	--
07-25-2013	1115	922	23.7	10	US DH-81	Multi Verticals EWT	.53	.416
07-25-2013	*1128*	*921*	*23.7*	*8.5*	--	--	--	--
07-25-2013	*1129*	*922*	*23.7*	*10*	--	--	--	--
07-25-2013	*1131*	*923*	*23.8*	*11*	--	--	--	--
08-27-2013	1215	995	24.4	2.7	US DH-81	Multi Verticals EWT	.72	.254
08-27-2013	*1229*	*996*	*24.4*	*6.6*	--	--	--	--
08-27-2013	*1231*	*995*	*24.4*	*2.7*	--	--	--	--
08-27-2013	*1232*	*994*	*24.4*	*2.6*	--	--	--	--
09-27-2013	1145	553	23.1	5.7	US DH-81	EWI	.61	.401
09-27-2013	*1206*	*547*	*23.1*	*5.5*	--	--	--	--
09-27-2013	*1207*	*553*	*23.1*	*5.8*	--	--	--	--
09-27-2013	*1208*	*554*	*23.2*	*5.7*	--	--	--	--

01651770 HICKEY RUN AT NATIONAL ARBORETUM AT WASHINGTON, DC—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
Part 7 of 8

[FNU, Formazin nephelometric units; LED, light-emitting diode; N, nitrogen; P, phosphorus; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; mm, millimeters; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; --, no data; <, less than]

Date	Sample start time	Nitrate plus nitrite, water, filtered, mg/L as N (00631)	Nitrite, water, filtered, mg/L as N (00613)	Orthophosphate, water, filtered, mg/L as P (00671)	Particulate nitrogen, suspended in water, mg/L (49570)	Phosphorus, water, filtered, mg/L as P (00666)	Phosphorus, water, unfiltered, mg/L as P (00665)	Total nitrogen, water, filtered, analytically determined, mg/L (62854)	Total nitrogen, water, unfiltered, mg/L (00600)
05-07-2013	*1435*	*0.52*	*0.036*	*0.079*	*0.371*	*0.094*	*0.197*	*1.01*	*1.4*
05-07-2013	*1451*	--	--	--	--	--	--	--	--
05-07-2013	*1452*	--	--	--	--	--	--	--	--
05-07-2013	*1453*	--	--	--	--	--	--	--	--
05-07-2013	*1454*	--	--	--	--	--	--	--	--
05-29-2013	1145	1.18	.123	.194	.157	.198	.345	2.01	2.2
05-29-2013	*1206*	--	--	--	--	--	--	--	--
05-29-2013	*1207*	--	--	--	--	--	--	--	--
05-29-2013	*1208*	--	--	--	--	--	--	--	--
06-07-2013	1015	.63	.029	.072	.271	.091	.160	1.17	1.4
06-07-2013	*1031*	--	--	--	--	--	--	--	--
06-07-2013	*1032*	--	--	--	--	--	--	--	--
06-07-2013	*1033*	--	--	--	--	--	--	--	--
06-07-2013	*1034*	--	--	--	--	--	--	--	--
06-13-2013	1520	.41	.027	.072	1.00	.084	.559	1.20	2.2
06-28-2013	1015	1.22	.076	.136	< .017	.135	.208	2.04	< 2.1
06-28-2013	*1036*	--	--	--	--	--	--	--	--
06-28-2013	*1037*	--	--	--	--	--	--	--	--
06-28-2013	*1038*	--	--	--	--	--	--	--	--
07-01-2013	1145	.68	.023	.083	.285	.091	.174	1.17	1.5
07-01-2013	*1157*	--	--	--	--	--	--	--	--
07-01-2013	*1158*	--	--	--	--	--	--	--	--
07-01-2013	*1159*	--	--	--	--	--	--	--	--
07-25-2013	1115	1.45	.121	.228	.071	.215	.312	2.20	2.3
07-25-2013	*1128*	--	--	--	--	--	--	--	--
07-25-2013	*1129*	--	--	--	--	--	--	--	--
07-25-2013	*1131*	--	--	--	--	--	--	--	--
08-27-2013	1215	1.72	.251	.202	.083	.216	.302	2.53	2.6
08-27-2013	*1229*	--	--	--	--	--	--	--	--
08-27-2013	*1231*	--	--	--	--	--	--	--	--
08-27-2013	*1232*	--	--	--	--	--	--	--	--
09-27-2013	1145	1.11	.124	.515	.062	.543	.676	1.87	1.9
09-27-2013	*1206*	--	--	--	--	--	--	--	--
09-27-2013	*1207*	--	--	--	--	--	--	--	--
09-27-2013	*1208*	--	--	--	--	--	--	--	--

01651770 HICKEY RUN AT NATIONAL ARBORETUM AT WASHINGTON, DC—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
Part 8 of 8
[FNU, Formazin nephelometric units; LED, light-emitting diode; N, nitrogen; P, phosphorus; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; mm, millimeters; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; --, no data; <, less than]

Date	Sample start time	Suspended sediment, sieve diameter, percent smaller than 0.0625 mm (70331)	Suspended sediment concen-tration, mg/L (80154)	Suspended sediment discharge, tons per day (80155)
05-07-2013	*1435*	*91*	*34*	*0.26*
05-07-2013	*1451*	--	--	--
05-07-2013	*1452*	--	--	--
05-07-2013	*1453*	--	--	--
05-07-2013	*1454*	--	--	--
05-29-2013	1145	--	13	.01
05-29-2013	*1206*	--	--	--
05-29-2013	*1207*	--	--	--
05-29-2013	*1208*	--	--	--
06-07-2013	1015	94	35	1.7
06-07-2013	*1031*	--	--	--
06-07-2013	*1032*	--	--	--
06-07-2013	*1033*	--	--	--
06-07-2013	*1034*	--	--	--
06-13-2013	1520	89	276	36
06-28-2013	1015	--	7	.01
06-28-2013	*1036*	--	--	--
06-28-2013	*1037*	--	--	--
06-28-2013	*1038*	--	--	--
07-01-2013	1145	96	46	1.2
07-01-2013	*1157*	--	--	--
07-01-2013	*1158*	--	--	--
07-01-2013	*1159*	--	--	--
07-25-2013	1115	--	6	.01
07-25-2013	*1128*	--	--	--
07-25-2013	*1129*	--	--	--
07-25-2013	*1131*	--	--	--
08-27-2013	1215	--	5	<.01
08-27-2013	*1229*	--	--	--
08-27-2013	*1231*	--	--	--
08-27-2013	*1232*	--	--	--
09-27-2013	1145	--	4	<.01
09-27-2013	*1206*	--	--	--
09-27-2013	*1207*	--	--	--
09-27-2013	*1208*	--	--	--