December 17, 2019

Mr. Robert LaColla
Supervisor – Town of Fishkill
807 Route 52
Fishkill, NY 12524

RE: Quarterly Groundwater Sample Collection
November 2019
Snook Road Well Field
(T) Fishkill, New York

Dear Mr. LaColla:

The following is a summary of the results from the November 2019 quarterly groundwater sample collection event completed by WSP USA, Inc., and related company Hydrogeologic Architecture, Land Surveying, Landscape Architecture Services, P.C. (WSP), at the Snook Road Well Field located on Snook Road in the Town of Fishkill, New York (figure 1). A quarterly groundwater sampling program was previously conducted at the well field from June 2009 through July 2010. The sampling program was resumed in May 2012 and continues through the present.

Groundwater samples were collected from four monitoring well clusters and the two production wells at the well field during the sampling event on November 6, 2019. The well locations are shown on figures 2, 3 and 4 and copies of the monitoring well diagrams are included in Appendix I.

Groundwater Sample Collection

Groundwater samples were collected from monitoring wells MW-1A, MW-1B, MW-2A, MW-2B, MW-3A, MW-3B, MW-4A and MW-4B on November 6, 2019. The monitoring well designations A and B signify shallow (crossing the water table) and deep (80 feet) screen settings, respectively.

Depth-to-water measurements collected from the monitoring wells on November 6 are shown on table 1 along with their associated groundwater elevations. Groundwater contour maps showing the direction of groundwater flow are included on figures 2 and 3 for the shallow and deep wells, respectively. During this groundwater sampling event, the direction of groundwater flow was generally east to west in the shallow and deep aquifers at the well field.

Three standing well volumes were evacuated from each monitoring well prior to the collection of the groundwater samples. Samples from the monitoring wells and Production Wells T-1 and T-2 collected on November 6 were analyzed for sodium and chloride. In addition, samples collected from MW-1A and MW-1B were analyzed for volatile organic compounds (VOCs). The samples were packed on ice after collection and sent to York Analytical Laboratory (York) located in Stratford, Connecticut for analysis. A copy of the York laboratory report for this sampling event is included in Appendix II.

WSP USA, Inc.
4 Research Drive, Suite 204
Shelton, CT 06484

Tel.: +1 (203) 929-8555
wsp.com

Water-Quality Results

Table 2 contains a summary of the sodium and chloride sample results for the monitoring wells from all quarterly sampling events conducted by WSP at the well field to date. The sample results from November 6 are also shown on figure 4. Graphs depicting the change in sodium and chloride concentrations in the monitoring wells over time are included in Appendix III.

The sodium concentrations in the shallow monitoring wells sampled on November 6 ranged from 86.7 mg/L (milligrams per liter) to 175 mg/L and the sodium concentrations in the deep wells ranged from 107 mg/L to 130 mg/L. Chloride concentrations in the shallow monitoring wells ranged from 98.3 mg/L to 369 mg/L and the chloride concentrations in the deep wells ranged from 176 mg/L to 274 mg/L. During the November 6 sampling event, the chloride concentration in deep monitoring well MW-3B and shallow monitoring well MW-3A exceeded the New York State Department of Health (NYSDOH) maximum contaminant level (MCL) for chloride of 250 mg/L. All other reported chloride concentrations in the shallow and deep monitoring wells during this sampling event were below the NYSDOH MCL for chloride.

Production Well T-1 has been sampled for sodium and chloride twice per month since January 2009 by the Town's water operators, CAMO Pollution Control. Bimonthly sodium and chloride sample collection from Production Well T-2 was started in January 2014. Graphs of the sodium and chloride concentrations reported in T-1 compared to monthly precipitation and pumping withdrawals are included in Appendix IV. A graph of the sodium and chloride concentrations reported in T-2 compared to monthly precipitation is included in Appendix V.

Table 3 shows the sodium and chloride water-quality results from the Production Wells T-1 and T-2 (aka P-1). The sodium concentrations in Production Well T-1 and T-2 on November 6 in the samples collected by WSP were 117 mg/L and 99.5 mg/L, respectively. The NYSDOH does not currently have an established MCL for sodium. However, the sodium concentrations in the production wells are below the NYSDOH recommended limit of 270 mg/L, but are above the NYSDOH reporting limit for people on severely sodium restricted diets of 20 mg/L. The chloride concentrations in Production Wells T-1 and T-2 on November 6 in the samples collected were 207 mg/L and 166 mg/L, respectively. The concentrations in T-1 and T-2 were below the NYSDOH MCL for chloride of 250 mg/L during this sampling event.

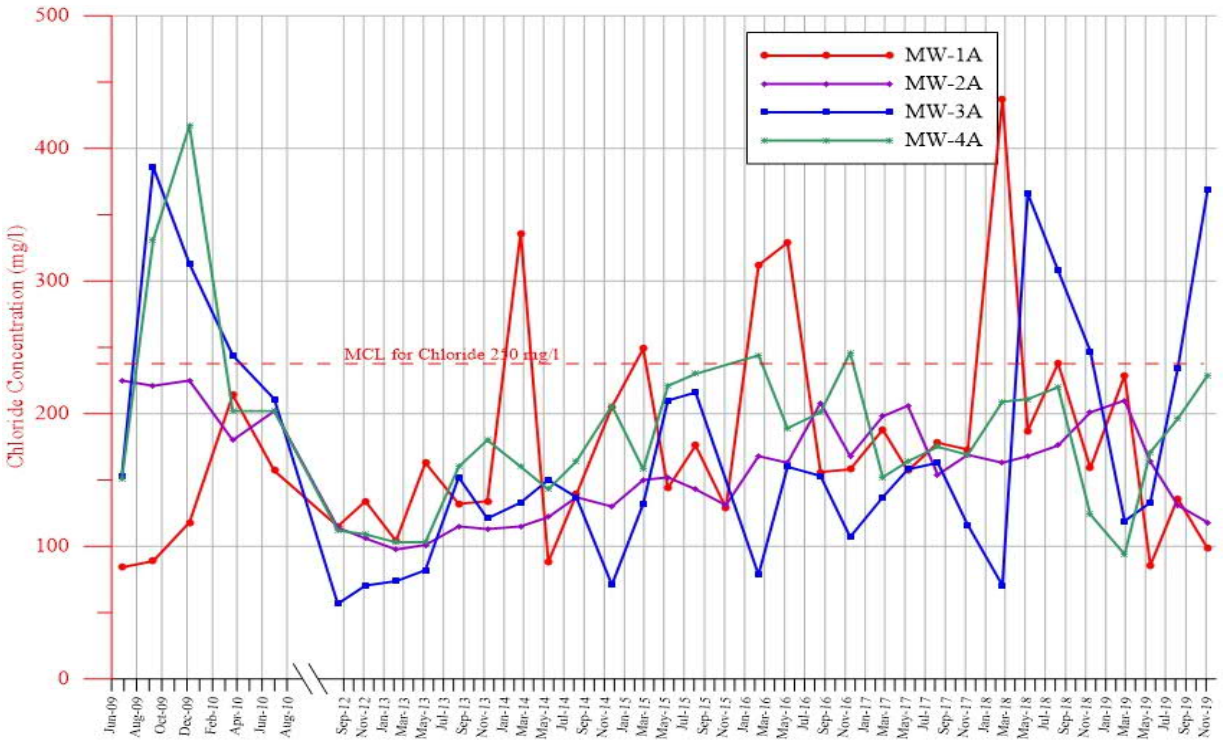
Groundwater samples were also collected from MW-1A and MW1-B for analysis for VOCs during the November 2019 sampling event. The results of the VOC analyses are provided on table 4. No VOCs were detected in MW-1A or MW-1B during this sampling event.

Discussion

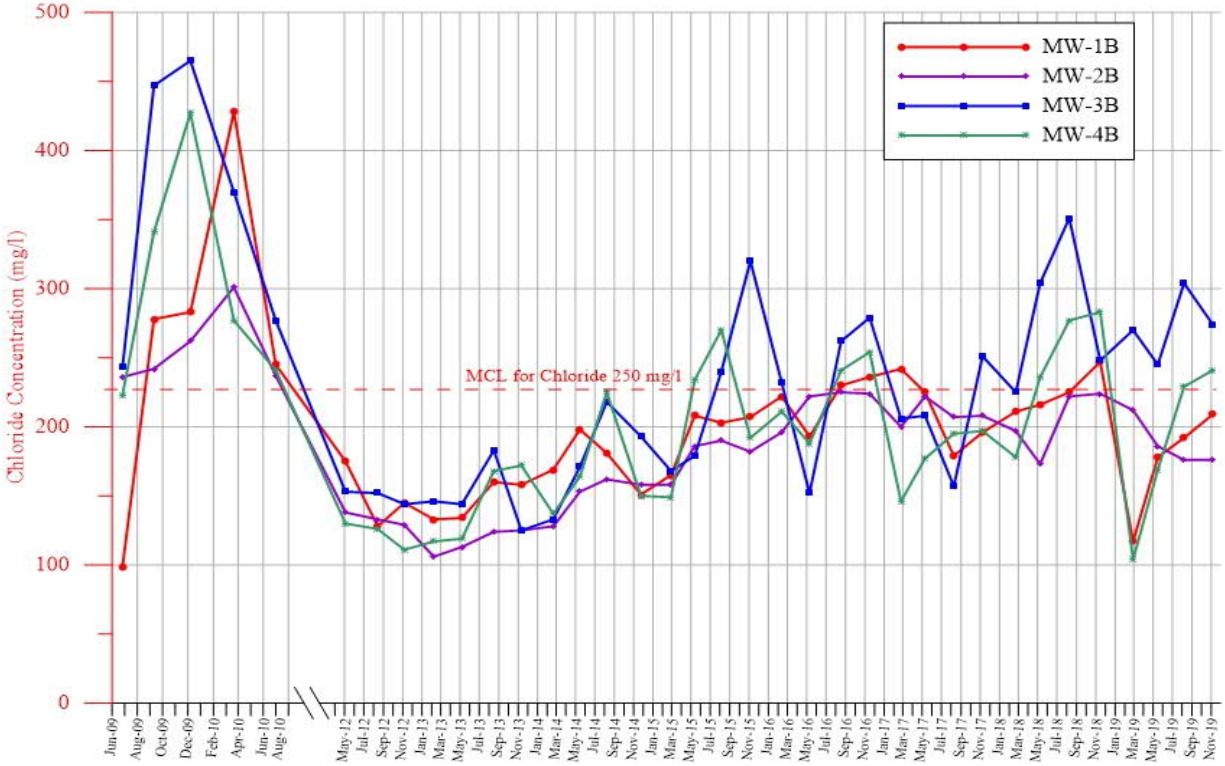
A significant decrease in the chloride concentrations at the Snook Road well field occurred in 2011 as a result of abnormally high precipitation and a very mild 2011/2012 winter season. Because of the decrease in the chloride concentration in the production well, T-1 was placed on as the primary source of water for the Merritt Park Water District in April 2012, with the Village of Fishkill water as the back-up supply. The quarterly groundwater sampling program was also resumed at the well field in May 2012 to monitor sodium and chloride concentrations in the groundwater.

Overall, the quarterly groundwater sampling program has shown an increase in the chloride concentrations in both the shallow and deep monitoring wells at the well field beginning in 2013. However, some variability in the trends have occurred in the monitoring wells in 2019. The graphs below show an overlay of all chloride concentrations from the shallow and deep monitoring wells.

Summary of Chloride Concentrations from Shallow Screened Monitor Wells



Summary of Chloride Concentrations from Deep Screened Monitor Wells

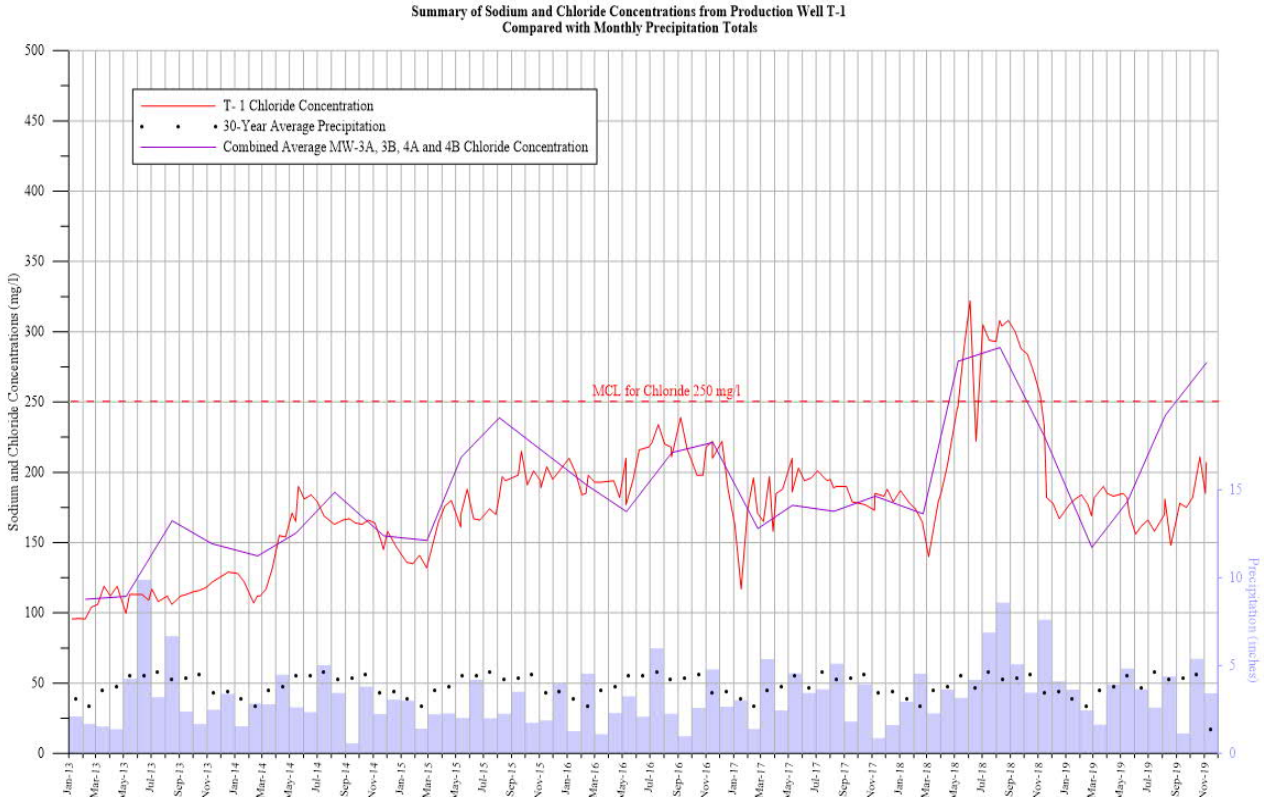


The chloride concentrations in shallow monitoring wells MW-1A and 2A showed a decrease in 2019, while monitoring wells MW-3A and 4A showed an initial decrease followed by an increase in their chloride concentrations later in the year. The chloride concentrations in deeper monitoring wells MW-1B and 4B also showed an initial decrease followed by an increase, while well MW-2B has an overall decrease in chloride in 2019 and MW-3B had an overall increasing trend.

The changes in chloride concentrations in groundwater (increases and decreases) are dependent on the lag time between the application of road salt, its infiltration into groundwater, and its travel time through the aquifer. For example, a rise in the chloride concentration in MW-1A occurs in February of most years. These rises in concentration in this shallow-screened monitoring well occur near the time of the actual road salt application because the water table in this well is shallow (therefore quickly recharged by surface-water runoff infiltration) and the well is close to the roadway. For the deep screened monitoring wells and production wells, the peak chloride concentrations typically occur later in the year because of the travel time of the chloride through the overburden formation to the deeper aquifer.

The water-quality data starting in 2014 for the monitoring wells and production wells indicate that seasonal loading of chloride is reoccurring at the well field. Based on the concentration data from the last several years, compounding of chloride from seasonal loading is continuing and the chloride concentrations in the monitoring wells showed an overall rise. There have been some recent decreases noted in some of the monitoring wells in early 2019; however, the November 2019 sampling data indicates that these decreases were likely temporary.

The monitoring well clusters MW-3A/B and MW-4A/4B are upgradient of the production wells and are representative of the groundwater entering the well field. Monitoring wells MW-3A/B are indicative of recharge from runoff from I-84 and MW-4A/B of recharge from a mix of Snook Road and I-84. The graph below is an overlay of the chloride concentration in production well T-1 and the combined average chloride values from monitoring wells MW-3A, 3B, 4A and 4B starting in 2013. The similarity of the patterns strongly indicates that the source of the chlorides is from the incoming groundwater from the upgradient watershed.



Similar to the monitoring wells, Production Wells T-1 and T-2 have shown an overall increasing chloride trend since 2013. As seen on the above graph, a steep increase in chloride concentration was observed in Production Well T-1 starting in late March 2018. The concentration reached 322 mg/L on June 18, and stayed in the range of 300 mg/L through early September. In late September 2018, the chloride in T-1 began a steady decline. This decline coincides with the typical annual decrease in chloride concentration that occurs in the production well at the end of summer; however, the decrease in concentration was greater in magnitude than what had been observed over the previous several years. The sharp decline is likely the result of above-average precipitation received in the late summer and fall of 2018.

The chloride concentration in T-2 also showed a similar rise starting in early March 2018, from 145 mg/L to a range of 220 mg/L to 230 mg/L. A decline in chloride concentration in well T-2 also occurred, although the decrease in this well started in early November 2018. It cannot be determined with certainty from the available data why the peak concentrations in T-2 are lower than in T-1. However, it is hypothesized that the upgradient well T-1 acts as somewhat of a hydraulic block in front of T-2.

Based on past data, the annual peak in chloride concentrations in the deep aquifer at the well field where the production wells are screened typically occurs in late summer/early fall, which is what occurred in 2018 also. As expected, the concentrations in the production wells began to decline; however, the decrease in concentrations was greater than anticipated likely because of the above-average precipitation received starting in late July 2018 (table 5). Precipitation conditions returned to at and/or below normal in July 2019, and as seen in the monitoring well data overlay on the graph above, and the chloride concentrations in the upgradient monitoring wells are again increasing. A lower magnitude increase in the production wells has also started, although concentrations are lower than what is presently reported in the upgradient monitoring wells. Based on the chloride concentrations in the upgradient monitoring wells, the chloride concentrations in T-1 and T-2 will likely continue to rise. WSP recommends that the Town continue to consider an increase in blending with the Village of Fishkill water to manage for future increases in chloride concentrations in the production wells.

Conclusions

The combination of abnormally high precipitation in 2011 and a very mild 2011/2012 winter season requiring limited road salt application contributed to a notable decrease in chloride concentrations at the Snook Road well field at that time. Because of the decrease in the chloride concentration in the production well, T-1 was placed on as the primary source of water for the Merritt Park Water District in April 2012, with the Village of Fishkill water as the back-up supply.

Groundwater samples were collected from MW-1A and MW1-B for analysis for VOCs during the November 2019 sampling event. No VOCs were detected in MW-1A or MW-1B during this sampling event, and since sampling began in 2009 no significant detection of VOCs have occurred in monitoring wells MW-1A or MW-1B.

The water-quality data starting in 2013 for the monitoring wells and production wells indicate that seasonal loading of chloride is reoccurring at the well field. The chloride concentrations in the monitoring wells have shown an overall rise. There were some recent decreases noted in some of the monitoring wells in early 2019; however, the November 2019 sampling data indicates that these decreases were likely temporary.

Production wells T-1 and T-2 showed a notable decrease in chloride concentration, starting in August 2018 and November 2018, respectively. The decrease in concentrations is attributed to the above-average precipitation received starting in late July 2018. The lower concentrations continued into 2019. However, precipitation conditions have returned to at and/or below normal and recent data from the production wells has begun to show a rise in chloride concentrations again. The high chloride concentrations in the upgradient monitoring wells also indicate that chloride concentrations in the production wells will likely continue to rise.

Despite the recent decrease in chloride concentration in the production wells in 2018 and early 2019, seasonal loading of chloride remains a concern at the well field. WSP recommends that the Town continue to consider an increase in blending with the Village of Fishkill water to manage chloride concentrations in the future.

Should you have any questions, please contact Stacy directly at (475) 882-1723.

Kind regards,

WSP USA, INC.

Stacy Stieber, CPG, PG(NY)
Lead Hydrogeologist

Reviewed by:

Thomas P. Cusack, CPG, PG(NY)
Senior Supervising Hydrogeologist

SS:cmm
Enclosures
cc: J. Upright - Dutchess Co. DOH
M. Tremper - Camo Pollution
H:\Town of Fishkill\2019\November\Summary Rpt.docx

TABLES

TABLE 1

SNOOOK ROAD WELL FIELD
(T) FISHKILL, NEW YORK

Summary of Depth-to-Water Measurements Collected

Well ID	Top of Casing Elevation	Sample Date	DTW (ft btoc)	Water Level Elevation
MW-1A	234.06	6/26/09	22.90	211.19
		9/10/09	26.40	207.69
		12/7/09	25.24	208.85
		3/22/10	17.83	216.26
		7/1/10	26.21	207.91
		5/4/12	25.53	208.56
		8/14/12	26.14	207.92
		11/6/12	24.74	209.32
		2/7/13	23.85	210.21
		5/7/13	24.88	209.18
		8/16/13	24.70	209.36
		11/11/13	28.28	205.78
		2/20/14	24.96	209.10
		5/15/14	22.02	212.04
		8/8/14	24.47	208.59
		11/24/14	27.38	206.68
		2/27/15	24.88	209.18
		5/13/15	23.84	210.22
		8/5/15	28.07	205.99
		11/5/15	30.30	203.76
		2/12/16	25.96	208.10
		5/10/16	24.24	209.82
		8/18/16	25.41	208.41
		11/16/16	28.25	205.81
		2/23/17	22.56	211.50
		5/10/17	22.35	211.71
		8/9/17	26.62	207.44
		11/8/17	29.14	204.92
		2/21/18	24.29	209.77
		5/9/18	22.27	211.79
		8/9/18	24.32	209.74
		11/15/18	20.47	213.59
		2/27/19	22.16	211.90
		5/16/19	22.58	211.48
		8/7/19	26.20	207.86
		11/6/19	28.21	205.85
MW-1B	233.84	6/26/09	22.65	211.19
		9/10/09	26.35	207.49
		12/7/09	24.91	208.93
		3/22/10	17.46	216.38
		7/1/10	26.17	207.67
		5/4/12	25.47	208.37
		8/14/12	25.88	207.96
		11/6/12	24.52	209.32
		2/7/13	23.61	210.23
		5/7/13	24.61	209.23
		8/16/13	24.44	209.40
		11/11/13	28.07	205.77
		2/20/14	24.73	209.11
		5/15/14	21.77	212.07
		8/8/14	25.26	208.58
		11/24/14	27.15	206.69

TABLE 1

SNOOOK ROAD WELL FIELD
(T) FISHKILL, NEW YORK

Summary of Depth-to-Water Measurements Collected

Well ID	Top of Casing Elevation	Sample Date	DTW (ft btoc)	Water Level Elevation
MW-1B (continued)	233.84	2/27/15	24.62	209.22
		5/13/15	23.58	210.26
		8/5/15	27.84	206.00
		11/5/15	30.31	203.53
		2/12/16	25.71	208.13
		5/10/16	24.00	209.84
		8/18/16	25.12	208.23
		11/16/16	27.99	205.85
		2/23/17	22.29	211.55
		5/10/17	22.10	211.74
		8/9/17	26.37	207.47
		11/8/17	28.90	204.94
		2/21/18	24.02	209.82
		5/9/18	22.00	211.84
		8/9/18	24.00	209.84
		11/15/18	20.19	213.65
		2/27/19	21.90	211.94
		5/16/19	22.25	211.59
		8/7/19	25.96	207.88
		11/6/19	28.00	205.84
MW-2A	235.82	6/26/09	24.65	211.17
		9/10/09	24.76	211.06
		12/7/09	27.05	208.77
		3/22/10	19.57	216.25
		7/1/10	28.17	207.65
		5/4/12	27.42	208.40
		8/14/12	27.92	207.90
		11/6/12	26.60	209.22
		2/7/13	25.64	210.18
		5/7/13	26.66	209.16
		8/16/13	26.45	209.37
		11/11/13	30.00	205.82
		2/20/14	26.75	209.07
		5/15/14	23.77	212.05
		8/8/14	27.25	208.57
		11/24/14	29.23	206.59
		2/27/15	26.71	209.11
		5/13/15	25.61	210.21
		8/5/15	29.82	206.00
		11/5/15	31.80	204.02
		2/12/16	27.80	208.02
		5/10/16	26.05	209.77
		8/18/16	27.20	208.14
		11/16/16	29.98	205.84
		2/23/17	24.37	211.45
		5/10/17	24.20	211.62
		8/9/17	28.39	207.43
		11/8/17	30.90	204.92
		2/21/18	26.10	209.72
		5/9/18	24.05	211.77
		8/9/18	26.09	209.73
		11/15/18	22.22	213.60

TABLE 1

SNOOOK ROAD WELL FIELD
(T) FISHKILL, NEW YORK

Summary of Depth-to-Water Measurements Collected

Well ID	Top of Casing Elevation	Sample Date	DTW (ft btoc)	Water Level Elevation
MW-2A (continued)	235.82	2/27/19	23.96	211.86
		5/16/19	24.39	211.43
		8/7/19	27.98	207.84
		11/6/19	30.00	205.82
MW-2B	235.86	6/26/09	24.60	211.27
		9/10/09	24.55	211.32
		12/7/09	26.99	208.88
		3/22/10	19.44	216.43
		7/1/10	28.13	207.75
		5/4/12	27.42	208.45
		8/14/12	27.88	207.98
		11/6/12	26.54	209.32
		2/7/13	25.54	210.32
		5/7/13	26.67	209.19
		8/16/13	26.46	209.40
		11/11/13	30.16	205.70
		2/20/14	26.72	209.14
		5/15/14	23.67	212.19
		8/8/14	27.25	208.61
		11/24/14	29.18	206.68
		2/27/15	26.70	209.16
		5/13/15	25.58	210.28
		8/5/15	29.92	205.94
		11/5/15	31.80	204.06
		2/12/16	27.78	208.08
		5/10/16	26.00	209.86
		8/18/16	27.15	208.26
		11/16/16	30.03	205.83
		2/23/17	24.24	211.62
		5/10/17	24.15	211.71
		8/9/17	28.44	207.42
		11/8/17	30.93	204.93
		2/21/18	25.99	209.87
		5/9/18	23.96	211.90
		8/9/18	26.00	209.86
		11/15/18	22.03	213.83
		2/27/19	23.83	212.03
		5/16/19	24.29	211.57
		8/7/19	27.98	207.88
		11/6/19	30.03	205.83
MW-3A	239.23	6/26/09	27.35	211.98
		9/10/09	29.55	209.73
		12/7/09	30.02	209.26
		3/22/10	21.57	217.71
		7/1/10	31.33	207.94
		5/4/12	30.71	208.57
		8/14/12	31.00	208.23
		11/6/12	29.58	209.65
		2/7/13	28.46	210.77
		5/7/13	29.88	209.35
		8/16/13	29.70	209.53
		11/11/13	33.38	205.85

TABLE 1

SNOOOK ROAD WELL FIELD
(T) FISHKILL, NEW YORK

Summary of Depth-to-Water Measurements Collected

Well ID	Top of Casing Elevation	Sample Date	DTW (ft btoc)	Water Level Elevation
MW-3A (continued)	239.23	2/20/14	29.39	209.84
		5/15/14	26.46	212.77
		8/8/14	30.10	209.13
		11/24/14	32.41	206.82
		2/27/15	26.35	212.88
		5/13/15	28.66	210.57
		8/5/15	33.23	206.00
		11/5/15	34.56	204.67
		2/12/16	30.91	208.32
		5/10/16	28.89	210.34
		8/18/16	30.23	208.58
		11/16/16	33.36	205.87
		2/23/17	26.80	212.43
		5/10/17	26.80	212.43
		8/9/17	31.66	207.57
		11/8/17	34.28	204.95
		2/21/18	28.69	210.54
		5/9/18	26.78	212.45
		8/9/18	28.94	210.29
		11/15/18	24.20	215.03
		2/27/19	26.57	212.66
		5/16/19	27.10	212.13
		8/7/19	31.23	208.00
		11/6/19	33.12	206.11
MW-3B	239.42	6/26/09	27.35	212.09
		9/10/09	29.87	209.57
		12/7/09	30.06	209.38
		3/22/10	21.69	217.75
		7/1/10	31.40	208.06
		5/4/12	30.66	208.78
		8/14/12	31.02	208.40
		11/6/12	29.45	209.97
		2/7/13	28.48	210.94
		5/7/13	29.93	209.49
		8/16/13	29.70	209.72
		11/11/13	33.54	205.88
		2/20/14	26.43	209.42
		5/15/14	26.46	212.96
		8/8/14	30.51	208.91
		11/24/14	32.52	206.90
		2/27/15	25.98	213.44
		5/13/15	28.62	210.80
		8/5/15	33.35	206.07
		11/5/15	35.17	204.25
		2/12/16	30.92	208.50
		5/10/16	28.68	210.74
		8/18/16	30.13	208.96
		11/16/16	33.20	206.22
		2/23/17	26.53	212.89
		5/10/17	26.75	212.67
		8/9/17	31.77	207.65
		11/8/17	34.35	205.07

TABLE 1

SNOOOK ROAD WELL FIELD
(T) FISHKILL, NEW YORK

Summary of Depth-to-Water Measurements Collected

Well ID	Top of Casing Elevation	Sample Date	DTW (ft btoc)	Water Level Elevation
MW-3B (continued)	239.42	2/21/18	28.16	211.26
		5/9/18	26.72	212.70
		8/9/18	28.90	210.52
		11/15/18	23.99	215.43
		2/27/19	26.53	212.89
		5/16/19	27.02	212.40
		8/7/19	31.25	208.17
		11/6/19	33.10	206.32
MW-4A	235.85	6/26/09	23.90	212.01
		9/10/09	26.20	209.71
		12/7/09	26.55	209.36
		3/22/10	18.40	217.51
		7/1/10	27.62	208.35
		5/4/12	27.19	208.72
		8/14/12	27.55	208.30
		11/6/12	25.99	209.86
		2/7/13	25.03	210.82
		5/7/13	26.39	209.46
		8/16/13	26.20	209.65
		11/11/13	29.94	205.91
		2/20/14	26.11	209.72
		5/15/14	23.07	212.78
		8/8/14	26.94	208.91
		11/24/14	29.00	206.85
		2/27/15	29.90	205.95
		5/13/15	25.17	210.68
		8/5/15	29.75	206.10
		11/5/15	30.82	205.03
		2/12/16	27.43	208.42
		5/10/16	25.27	210.58
		8/18/16	26.67	209.06
		11/16/16	29.76	206.09
		2/23/17	23.25	212.60
		5/10/17	23.25	212.60
		8/9/17	28.19	207.66
		11/8/17	30.78	205.07
		2/21/18	24.96	210.89
		5/9/18	23.30	212.55
		8/9/18	25.45	210.40
		11/15/18	20.76	215.09
		2/27/19	23.12	212.73
		5/16/19	23.65	212.20
		8/7/19	27.77	208.08
		11/6/19	29.60	206.25
MW-4B	235.83	6/26/09	23.45	212.37
		9/10/09	25.96	209.95
		12/7/09	26.21	209.70
		3/22/10	17.60	218.22
		7/1/10	24.43	208.47
		5/4/12	27.18	208.73
		8/14/12	27.19	208.64
		11/6/12	25.56	210.27

TABLE 1

SNOOOK ROAD WELL FIELD
(T) FISHKILL, NEW YORK

Summary of Depth-to-Water Measurements Collected

Well ID	Top of Casing Elevation	Sample Date	DTW (ft btoc)	Water Level Elevation
MW-4B (continued)	235.83	2/7/13	24.58	211.25
		5/7/13	26.04	209.79
		8/16/13	25.89	209.94
		11/11/13	NM	NM
		2/20/14	26.11	209.72
		5/15/14	22.52	213.31
		8/8/14	26.67	209.16
		11/24/14	28.72	207.11
		2/27/15	29.83	206.00
		5/13/15	24.75	211.08
		8/5/15	29.47	206.07
		11/5/15	31.36	204.47
		2/12/16	27.07	208.76
		5/10/16	24.68	211.15
		8/18/16	26.19	209.48
		11/16/16	29.33	206.50
		2/23/17	22.48	213.35
		5/10/17	22.65	213.18
		8/9/17	27.91	207.92
		11/8/17	30.53	205.30
		2/21/18	24.14	211.69
		5/9/18	22.75	213.08
		8/9/18	25.02	210.81
		11/15/18	19.93	215.90
		2/27/19	22.52	213.31
		5/16/19	22.15	213.68
		8/7/19	27.49	208.34
		11/6/19	29.21	206.62

DTW depth to water
ft btoc feet below top of PVC casing
NM not measured

TABLE 2

SNOOOK ROAD WELL FIELD
(T) FISHKILL, NEW YORK

Summary of Sodium and Chloride Water-Quality Results from Monitoring Wells

Well ID	Sample Date	Sodium (mg/l)	Chloride (mg/l)
MW-1A	6/26/09	62.3	84.1
	9/10/09	59.4	88.8
	12/7/09	78.4	118
	3/22/10	85.8	214
	7/1/10	80.1	157
	5/4/12	120	130
	8/14/12	105	115
	11/6/12	122	134
	2/7/13	103	104
	5/7/13	123	163
	8/16/13	101	132
	11/11/13	110	134
	2/20/14	127	**336**
	5/15/14	71.1	88.1
	8/8/14	108	139
	11/24/14	134	205
	2/27/15	145	249
	5/13/15	95.2	144
	8/5/15	111	176
	11/5/15	108	129
	2/12/16	204	**312**
	5/10/16	170	**329**
	8/18/16	128	156
	11/16/16	114	158
	2/23/17	80.1	188
	5/10/17	75.6	157
	8/9/17	125	178
	11/8/17	122	173
	2/21/18	229	**437**
	5/9/18	109	187
	8/9/18	58	238
	11/15/18	90.5	159
	2/27/19	132	229
	5/16/19	85.4	85.6
	8/7/19	110	136
	11/6/19	112	98.3
MW-1B	6/26/09	58.0	98.4
	9/10/09	126	**278**
	12/7/09	129	**283**
	3/22/10	202	**428**
	7/1/10	158	245
	5/4/12	127	175
	8/14/12	99.5	128
	11/6/12	107	145
	2/7/13	103	133
	5/7/13	103	134
	8/16/13	107	160
	11/11/13	100	158
	2/20/14	105	169
	5/15/14	116	198
	8/8/14	110	181
	11/24/14	96.5	151
	2/27/15	101	165

TABLE 2
(continued)

SNOOOK ROAD WELL FIELD
(T) FISHKILL, NEW YORK

Summary of Sodium and Chloride Water-Quality Results

Well ID	Sample Date	Sodium (mg/l)	Chloride (mg/l)
MW-1B (continued)	5/13/15	107	208
	8/5/15	109	203
	11/5/15	110	207
	2/12/16	128	222
	5/10/16	113	193
	8/18/16	111	230
	11/16/16	108	236
	2/23/17	90.0	242
	5/10/17	120	225
	8/9/17	112	179
	11/8/17	118	196
	2/21/18	111	211
	5/9/18	138	216
	8/9/18	135	225
	11/15/18	129	247
	2/27/19	89.3	117
	5/16/19	121	178
	8/7/19	116	192
	11/6/19	115	209
MW-2A	6/26/09	112	225
	9/10/09	104	221
	12/7/09	115	225
	322/10	102	180
	7/1/10	130	202
	5/4/12	99.2	114
	8/14/12	87.7	114
	11/6/12	92.2	106
	2/7/13	92.6	97.6
	5/7/13	96.9	101
	8/16/13	97.1	115
	11/11/13	98.1	113
	2/20/14	92.1	115
	5/15/14	90.4	122
	8/8/14	95.8	137
	11/24/14	95.5	130
	2/27/15	100	150
	5/13/15	92.3	152
	8/5/15	99.4	143
	11/5/15	103	131
	2/12/16	118	168
	5/10/16	106	163
	8/18/16	85.3	208
	11/16/16	88.5	168
	2/23/17	78.1	198
	5/10/17	94.5	206
	8/9/17	91.4	154
	11/8/17	106	169
	2/21/18	94.1	163
	5/9/18	106	168
	8/9/18	108	176
	11/15/18	113	201

TABLE 2
(continued)

SNOOOK ROAD WELL FIELD
(T) FISHKILL, NEW YORK

Summary of Sodium and Chloride Water-Quality Results

Well ID	Sample Date	Sodium (mg/l)	Chloride (mg/l)
MW-2A (continued)	2/27/19	115	210
	5/16/19	108	164
	8/7/19	94.1	131
	11/6/19	86.7	118
MW-2B	6/26/09	114	236
	9/10/09	112	242
	12/7/09	121	**262**
	3/22/10	136	**301**
	7/1/10	149	237
	5/4/12	112	138
	8/14/12	104	133
	11/6/12	107	129
	2/7/13	97.1	106
	5/7/13	93.6	113
	8/16/13	96.7	124
	11/11/13	99.4	125
	2/20/14	93.6	128
	5/15/14	97.2	153
	8/8/14	103	162
	11/24/14	102	158
	2/27/15	99.1	158
	5/13/15	98.4	186
	8/5/15	102	190
	11/5/15	104	182
	2/12/16	116	196
	5/10/16	110	222
	8/18/16	86.5	225
	11/16/16	102	224
	2/23/17	79.9	200
	5/10/17	98.3	222
	8/9/17	108	207
	11/8/17	113	208
	2/21/18	107	197
	5/9/18	107	173
	8/9/18	120	222
	11/15/18	129	224
	2/27/19	124	212
	5/16/19	120	186
	8/7/19	111	176
	11/6/19	107	176
MW-3A	6/26/09	102	153
	9/10/09	97.9	**386**
	12/7/09	122	**313**
	3/22/10	102	244
	7/1/10	127	211
	5/4/12	85.0	49.1
	8/14/12	69.3	56.6
	11/6/12	67.3	70.4
	2/7/13	56.0	73.7
	5/7/13	56.7	82.0
	8/16/13	67.7	152

TABLE 2
(continued)

SNOOOK ROAD WELL FIELD
(T) FISHKILL, NEW YORK

Summary of Sodium and Chloride Water-Quality Results

Well ID	Sample Date	Sodium (mg/l)	Chloride (mg/l)
MW-3A (continued)	11/11/13	76.6	121
	2/20/14	105	133
	5/15/14	69.8	150
	8/8/14	74.1	137
	11/24/14	71.4	70.9
	2/27/15	76.3	132
	5/13/15	76.5	210
	8/5/15	87.3	216
	11/5/15	NS	NS
	2/12/16	78.1	78.5
	5/10/16	74.7	160
	8/18/16	83.5	153
	11/16/16	68.9	107
	2/23/17	56.7	137
	5/10/17	77.2	158
	8/9/17	91.4	163
	11/8/17	95.7	116
	2/21/18	70.5	70.6
	5/9/18	137	**366**
	8/9/18	144	**308**
	11/15/18	143	247
	2/27/19	103	119
	5/16/19	102	133
	8/7/19	126	234
	11/6/19	175	**369**
MW-3B	6/26/09	125	243
	9/10/09	174	**447**
	12/7/09	195	**465**
	3/22/10	172	**370**
	7/1/10	192	**277**
	5/4/12	137	153
	8/14/12	126	152
	11/6/12	119	144
	2/7/13	118	146
	5/7/13	110	144
	8/16/13	112	183
	11/11/13	81.0	125
	2/20/14	101	133
	5/15/14	95.8	171
	8/8/14	106	218
	11/24/14	113	193
	2/27/15	103	168
	5/13/15	95.0	179
	8/5/15	121	240
	11/5/15	168	**320**
	2/12/16	131	232
	5/10/16	87.2	152
	8/18/16	118	**262**
	11/16/16	122	**279**
	2/23/17	89.2	206
	5/10/17	97.7	208

TABLE 2
(continued)

SNOOOK ROAD WELL FIELD
(T) FISHKILL, NEW YORK

Summary of Sodium and Chloride Water-Quality Results

Well ID	Sample Date	Sodium (mg/l)	Chloride (mg/l)
MW-3B (continued)	8/9/17	84.3	157
	11/8/17	141	**251**
	2/21/18	130	225
	5/9/18	139	**304**
	8/9/18	162	**351**
	11/15/18	141	248
	2/27/19	159	**270**
	5/16/19	161	245
	8/7/19	164	**304**
	11/6/19	108	**274**
MW-4A	6/26/09	111	151
	9/10/09	118	**331**
	12/7/09	159	**417**
	3/22/10	122	202
	7/1/10	119	202
	5/4/12	109	111
	8/14/12	105	112
	11/6/12	110	109
	2/7/13	98.5	103
	5/7/13	96.9	103
	8/16/13	110	160
	11/11/13	118	180
	2/20/14	114	160
	5/15/14	80.0	143
	8/8/14	86.1	164
	11/24/14	101	206
	2/27/15	98.0	158
	5/13/15	90.7	221
	8/5/15	98.8	230
	11/5/15	NS	NS
	2/12/16	127	244
	5/10/16	98.4	189
	8/18/16	95.5	201
	11/16/16	93.8	246
	2/23/17	72.4	152
	5/10/17	75.8	164
	8/9/17	96.8	175
	11/8/17	106	169
	2/21/18	113	209
	5/9/18	111	211
	8/9/18	126	220
	11/15/18	125	124
	2/27/19	77.4	93.9
	5/16/19	97.9	171
	8/7/19	103	196
	11/6/19	109	229
MW-4B	6/26/09	111	**223**
	9/10/09	151	**341**
	12/7/09	168	**427**
	3/22/10	151	**277**
	7/1/10	161	241
	5/4/12	107	130

TABLE 2
(continued)

SNOOOK ROAD WELL FIELD
(T) FISHKILL, NEW YORK

Summary of Sodium and Chloride Water-Quality Results

Well ID	Sample Date	Sodium (mg/l)	Chloride (mg/l)
MW-4B (continued)	8/14/12	103	126
	11/6/12	105	111
	2/7/13	114	117
	5/7/13	122	119
	8/16/13	129	168
	11/11/13	126	172
	2/20/14	108	137
	5/15/14	101	164
	8/8/14	103	225
	11/24/14	102	150
	2/27/15	96.5	149
	5/13/15	111	234
	8/5/15	112	**270**
	11/5/15	108	192
	2/12/16	125	211
	5/10/16	112	188
	8/18/16	123	241
	11/16/16	99.1	254
	2/23/17	78.5	146
	5/10/17	87.6	177
	8/9/17	93.5	195
	11/8/17	114	197
	2/21/18	111	178
	5/9/18	116	236
	8/9/18	133	**277**
	11/15/18	167	**283**
	2/27/19	99.1	104
	5/16/19	123	169
	8/7/19	135	229
	11/6/19	130	241
NYSDOH Drinking Water Standard		270*	250

Note: Bold denotes drinking water standard exceedance.
* Recommended limit for sodium. NYSDOH does not currently have a drinking water standard.
mg/l milligrams per liter
NYSDOH New York State Department of Health
NS Not sampled

TABLE 3

SNOOOK ROAD WELL FIELD
(T) FISHKILL, NEW YORK

Summary of Sodium and Chloride Water-Quality Results from Production Wells T-1 and T-2

Sample Date	T-1 Sodium (mg/l)	T-1 Chloride (mg/l)	T-2 Sodium (mg/l)	T-2 Chloride (mg/l)
12/14/2006	--	--	110	190
1/9/2009	125	233	--	--
1/19/2009	130	250	--	--
1/21/2009	121	236	--	--
2/4/2009	128	236	--	--
3/24/2009	143	**296**	--	--
4/1/2009	135	**308**	--	--
4/23/2009	139	**293**	--	--
4/29/2009	158	**318**	--	--
5/13/2009	163	**293**	--	--
6/3/2009	162	**327**	--	--
6/26/2009	167	**390**	--	--
6/30/2009	164	**316**	--	--
7/24/2009	161	**294**	--	--
7/30/2009	160	**312**	--	--
8/12/2009	165	**330**	--	--
9/2/2009	145	**303**	--	--
9/10/2009	141	**295**	--	--
9/16/2009	149	**257**	--	--
9/30/2009	152	**266**	--	--
10/14/2009	310	**292**	--	--
10/28/2009	152	**323**	--	--
11/11/2009	138	**267**	--	--
11/24/2009	147	250	--	--
12/7/2009	145	**292**	--	--
12/29/2009	154	**265**	--	--
1/6/2010	151	**269**	--	--
1/20/2010	157	**255**	--	--
2/3/2010	102	**257**	--	--
2/17/2010	148	**264**	--	--
3/3/2010	144	**262**	--	--
3/17/2010	157	**288**	--	--
3/22/2010	162	**318**	--	--
4/7/2010	151	**285**	--	--
4/21/2010	144	**301**	--	--
5/19/2010	150	**346**	--	--
6/8/2010	150	**343**	--	--
6/23/2010	148	**346**	--	--
7/1/2010	154	**246**	--	--
7/7/2010	145	**352**	--	--
7/28/2010	142	**345**	--	--
8/11/2010	127	**342**	--	--
8/17/2010	76.1	163	--	--

TABLE 3

SNOOOK ROAD WELL FIELD
(T) FISHKILL, NEW YORK

Summary of Sodium and Chloride Water-Quality Results from Production Wells T-1 and T-2

Sample Date	T-1 Sodium (mg/l)	T-1 Chloride (mg/l)	T-2 Sodium (mg/l)	T-2 Chloride (mg/l)
9/1/2010	143	**312**	--	--
9/15/2010	143	**328**	--	--
9/28/2010	153	**330**	--	--
10/13/2010	148	**318**	--	--
10/27/2010	143	**290**	--	--
11/10/2010	136	**274**	--	--
11/23/2010	133	237	--	--
12/8/2010	140	234	--	--
12/20/2010	143	248	--	--
1/5/2011	133	236	--	--
1/19/2011	140	**258**	--	--
2/9/2011	146	**255**	--	--
3/2/2011	145	**269**	--	--
3/16/2011	139	231	--	--
3/30/2011	141	232	--	--
4/13/2011	131	207	--	--
4/29/2011	137	262	--	--
5/13/2011	135	**266**	--	--
5/25/2011	126	**263**	--	--
6/21/2011	136	**254**	--	--
7/6/2011	137	246	--	--
7/27/2011	135	245	--	--
8/10/2011	125	240	--	--
8/31/2011	131	197	--	--
9/28/2011	108	147	--	--
10/11/2011	114	168	--	--
10/26/2011	114	172	--	--
11/9/2011	105	164	--	--
11/30/2011	116	164	--	--
12/7/2011	123	174	--	--
12/19/2011	121	168	--	--
1/11/2012	125	166	--	--
2/8/2012	116	160	--	--
2/22/2012	112	150	--	--
3/7/2012	117	140	--	--
3/21/2012	119	142	--	--
4/11/2012	112	120	--	--
4/25/2012	101	113	--	--
5/4/2012	106	99.0	--	--
5/9/2012	104	110	--	--
5/23/2012	108	109	--	--
6/6/2012	102	109	--	--
6/20/2012	101	119	--	--

TABLE 3

SNOOOK ROAD WELL FIELD
(T) FISHKILL, NEW YORK

Summary of Sodium and Chloride Water-Quality Results from Production Wells T-1 and T-2

Sample Date	T-1 Sodium (mg/l)	T-1 Chloride (mg/l)	T-2 Sodium (mg/l)	T-2 Chloride (mg/l)
7/11/2012	110	104	--	--
7/25/2012	105	113	--	--
8/8/2012	60.0	102	--	--
8/14/2012	95.7	97.5	--	--
8/22/2012	103	106	--	--
9/5/2012	97.9	107	--	--
9/19/2012	98.6	106	--	--
10/10/2012	98.4	105	--	--
10/24/2012	103	106	--	--
11/6/2012	43.6	70.1	100	116
11/6/2012	93.8	93.0	--	--
12/5/2012	92.4	94.0	--	--
12/19/2012	104	94.0	--	--
1/9/2013	102	95.7	--	--
1/23/2013	102	96.0	--	--
2/7/2013	95.6	95.7	--	--
2/20/2013	111	104	--	--
3/6/2013	117	106	--	--
3/20/2013	116	119	--	--
4/3/2013	112	112	--	--
4/18/2013	104	119	--	--
5/7/2013	91.1	99.7	--	--
5/15/2013	98.4	113	--	--
5/29/2013	103	113	--	--
6/12/2013	97.1	113	--	--
6/26/2013	105	109	--	--
7/3/2013	104	117	--	--
7/17/2013	99.9	108	--	--
8/6/2013	95.7	112	--	--
8/16/2013	89.4	106	--	--
9/4/2013	90.6	112	--	--
9/16/2013	97.3	113	--	--
10/2/2013	91.9	115	--	--
10/16/2013	97	116	--	--
10/30/2013	107	118	--	--
11/13/2013	97.3	122	--	--
12/18/2013	98.4	129	118	138
1/8/2014	94.1	128	108	151
1/22/2014	105	122	117	152
2/12/2014	92.0	107	109	154
2/20/2014	86.9	112	--	--
2/26/2014	95.6	112	115	160
3/11/2014	99.2	117	119	160

TABLE 3

SNOOOK ROAD WELL FIELD
(T) FISHKILL, NEW YORK

Summary of Sodium and Chloride Water-Quality Results from Production Wells T-1 and T-2

Sample Date	T-1 Sodium (mg/l)	T-1 Chloride (mg/l)	T-2 Sodium (mg/l)	T-2 Chloride (mg/l)
3/25/2014	100	132	118	164
4/9/2014	107	155	116	153
4/23/2014	103	154	113	147
5/7/2014	101	171	114	146
5/15/2014	90.8	165	98.9	133
5/21/2014	96.4	190	106	149
6/3/2014	96.0	181	116	157
6/18/2014	101	184	119	164
7/2/2014	97.0	179	116	172
7/16/2014	95.5	169	118	166
8/8/2014	88.0	163	104	162
8/27/2014	91.6	166	113	169
9/10/12014	100	167	120	171
9/23/2014	100	164	120	169
10/8/2014	100	163	120	168
10/22/2014	110	166	130	169
11/5/2014	100	164	120	163
11/19/2014	90.5	151	72.6	156
11/24/2014	89.4	145	103	153
12/3/2014	66.0	158	104	169
12/22/2014	87.0	147	69.6	178
1/14/2015	110	136	120	196
1/28/2015	95.0	135	120	198
2/11/2015	100	141	130	204
2/27/2015	85.2	132	106	192
3/11/2015	102	147	123	207
3/25/2015	110	165	120	200
4/8/2015	110	176	120	186
4/22/2015	96.0	180	105	175
5/13/2015 (LBG sample)	86.0	161	98.4	174
5/13/2015 (CAMO sample)	110	170	120	183
5/27/2015	140	188	120	187
6/10/2015	97	167	110	185
6/24/2015	100	166	120	181
7/15/2015	122	174	103	167
7/29/2015	117	170	140	178
8/5/2015	95.3	182	107	183
8/12/2015	97.9	197	123	198
8/19/2015	109	194	113	181
9/16/2015	117	198	124	180
9/23/2015	136	215	144	208
10/6/2015	94	191	131	187
10/20/2015	111	201	133	189

TABLE 3

SNOOOK ROAD WELL FIELD
(T) FISHKILL, NEW YORK

Summary of Sodium and Chloride Water-Quality Results from Production Wells T-1 and T-2

Sample Date	T-1 Sodium (mg/l)	T-1 Chloride (mg/l)	T-2 Sodium (mg/l)	T-2 Chloride (mg/l)
11/4/2015	105	194	101	194
11/5/2015	99.5	189	107	187
11/18/2015	131	204	150	194
12/1/2015	95.1	195	128	191
1/6/2016	105	210	124	210
1/20/2016	130	200	121	216
2/3/2016	63.8	184	119	216
2/12/16	107	185	110	222
2/17/2016	83.7	198	121	241
3/2/2016	171	193	194	249
3/16/2016	106	193	145	228
4/13/2016	101	194	138	235
4/26/2016	96.8	182	101	227
5/10/2016 (CAMO sample)	120	210	114	242
5/10/2016 (LBG sample)	99.3	177	115	231
5/25/2016	139	194	122	216
6/8/2016	127	216	128	240
6/29/2016	124	218	135	231
7/6/2016	152	221	165	214
7/20/2016	132	234	119	242
8/3/2016	136	220	102	228
8/17/2016	102	218	137	223
8/18/16	85.7	211	87.7	201
9/7/2016	74.6	239	88.2	237
9/21/2016	113	217	80.1	224
10/13/2016	94.6	198	108	214
10/26/2016	115	198	126	215
11/2/2016	92.0	218	119	243
11/16/2016 (CAMO sample)	98.3	222	102	247
11/16/2016 (LBG sample)	93.7	210	103	223
12/7/2016	112	222	115	237
12/20/2016	122	188	141	216
1/4/2017	99.7	163	145	198
1/18/2017	107	117	126	166
2/1/2017	104	173	115	201
2/14/2017	126	196	131	237
2/23/2017	66.3	171	83.7	205
3/8/2017	125	165	129	159
3/21/2017	110	197	109	**321**
3/29/2017	103	158	110	185
4/5/2017	104	185	104	186
4/19/2017	105	188	109	199
5/10/2017 (CAMO sample)	85.5	210	87.4	187

TABLE 3

SNOOOK ROAD WELL FIELD
(T) FISHKILL, NEW YORK

Summary of Sodium and Chloride Water-Quality Results from Production Wells T-1 and T-2

Sample Date	T-1 Sodium (mg/l)	T-1 Chloride (mg/l)	T-2 Sodium (mg/l)	T-2 Chloride (mg/l)
5/10/2017 (LBG sample)	93.7	186	93.4	177
5/24/2017	104	203	102	173
6/6/2017	98.3	194	93.4	165
6/21/2017	92.2	196	86	165
7/5/2017	103	201	98.2	162
7/26/2017	102	194	95.4	172
8/2/2017	105	195	97.4	164
8/9/2017	103	189	91.7	168
8/16/2017	93.6	190	90.9	170
9/6/2017	103	190	103	167
9/19/2017	95.4	179	99.5	179
10/4/2017	104	178	101	171
10/17/2017	93.3	177	94.1	162
11/7/2017	105	173	103	165
11/8/2017	103	185	102	171
11/28/2017	98.3	183	97.8	169
12/5/2017	97.6	188	93.5	179
12/18/2017	95.9	179	91.3	164
1/3/2018	101	187	98.4	164
1/23/2018	105	178	96.1	169
2/5/2018	110	174	107	163
2/21/2018 (CAMO sample)	102	164	98.4	168
2/21/2018 (LBGHES sample)	99.3	163	99.4	167
3/6/2018	106	140	107	145
3/27/2018	108	179	101	170
4/3/2018	115	186	109	171
4/16/2018	111	205	107	181
5/8/2018	117	246	106	196
5/9/2018	120	246	109	194
5/23/2018	129	**289**	110	220
6/5/2018	125	**322**	107	212
6/18/2018	130	**222**	111	176
7/3/2018	144	**305**	126	224
7/17/2018	142	**294**	125	225
8/1/2018	144	**293**	126	225
8/9/2018	137	**308**	112	220
8/14/2018	164	**304**	136	231
8/28/2018	135	**308**	115	238
9/12/2018	143	**300**	123	231
9/25/2018	140	**288**	121	233
10/9/2018	161	**284**	139	233
10/24/2018	183	**270**	158	230
11/6/2018	171	**255**	145	224

TABLE 3

SNOOOK ROAD WELL FIELD
(T) FISHKILL, NEW YORK

Summary of Sodium and Chloride Water-Quality Results from Production Wells T-1 and T-2

Sample Date	T-1 Sodium (mg/l)	T-1 Chloride (mg/l)	T-2 Sodium (mg/l)	T-2 Chloride (mg/l)
11/15/2018	146	233	124	206
11/20/2018	126	182	113	182
12/4/2018	132	178	129	219
12/18/2018	114	167	120	223
1/9/2019	126	177	127	200
1/22/2019	121	181	114	177
2/5/2019	130	184	118	158
2/19/2019	129	177	108	139
2/27/2019	128	169	104	144
3/5/2019	134	182	109	145
3/25/2019	129	190	104	145
4/2/2019	132	185	108	141
4/16/2019	129	183	103	147
5/7/2019	130	185	106	145
5/16/2019	131	182	106	140
5/21/2019	120	170	120	132
6/4/2019	137	156	110	128
6/17/2019	123	162	102	132
7/1/2019	101	166	113	130
7/15/2019	118	158	102	131
8/6/2019	115	170	101	145
8/7/2019	121	181	104	136
8/20/2019	117	148	101	136
9/9/2019	114	178	NS	NS
9/23/2019	113	175	NS	NS
10/7/2019	110	182	NS	NS
10/23/2019	114	211	97.3	158
11/4/2019	115	185	100	148
11/6/2019	117	207	99.5	166
NYSDOH Drinking Water Standard	270*	250	270*	250

Note: Bold denotes drinking water standard exceedance.
* Recommended limit for sodium. NYSDOH does not currently have a drinking water standard.
mg/l milligrams per liter
NYSDOH New York State Department of Health

TABLE 4

SNOOOK ROAD WELL FIELD
(T) FISHKILL, NEW YORK

Summary of Volatile Organic Compound Water-Quality Results from MW-1A and MW-1B

Well ID	Sample Date	Bromo-Dichloro-methane (ug/l)	Bromoform (ug/l)	Chloroform (ug/l)	Dibromo-chloromethane (ug/l)	Acetone (ug/l)	Toluene (ug/l)	Methylene Chloride (ug/l)	Naphthalene (ug/l)	1,2,3-Trichloro-benzene (ug/l)
MW-1A	6/26/09	ND<0.5	ND<0.5	0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	9/10/09	ND<0.5	ND<0.5	0.9	ND<0.5	2.2[1]	ND<0.5	ND<2.0	ND<0.5	ND<0.5
	12/7/09	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	3/22/10	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	MD<0.5	ND<0.5
	7/1/10	ND<0.5	ND<0.5	0.4J	ND<0.5	NR	ND<0.5	0.9B	ND<0.5	ND<0.5
	5/4/12	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	0.9JB	0.4JB	0.2J
	8/14/12	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	0.3JB	ND<2.0
	11/6/12	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<2.0	ND<2.0	ND<2.0
	2/7/13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<2.0	ND<2.0	ND<2.0
	5/7/13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	0.1	ND<2.0	ND<2.0	ND<2.0
	5/30/13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<2.0	ND<2.0	ND<2.0
	8/16/13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<2.0	ND<2.0	ND<2.0
	11/11/13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<2.0	ND<2.0	ND<2.0
	2/20/14	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<2.0	ND<0.5
	5/15/14	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<2.0	ND<0.5
	8/8/14	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.4B	ND<2.0	ND<0.5
	11/24/14	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	2/27/15	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	5/13/15	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	0.4B	ND<0.5
	8/5/15	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	11/5/15	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	2/12/16	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	5/10/16	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	8/18/16	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	11/16/16	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	2/23/17	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	5/10/17	ND<0.5	ND<0.5	0.2	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
	8/9/17	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
	11/8/17	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
	2/21/18	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
	5/9/18	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
	8/9/18	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
	11/15/18	ND<0.5	ND<0.5	0.2	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
	2/27/19	ND<0.5	ND<0.5	0.9	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
	5/16/19	ND<0.5	ND<0.5	0.8	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
	8/7/19	ND<0.5	ND<0.5	0.2	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
	11/6/19	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0

TABLE 4

SNOOOK ROAD WELL FIELD
(T) FISHKILL, NEW YORK

Summary of Volatile Organic Compound Water-Quality Results from MW-1A and MW-1B

Well ID	Sample Date	Bromo-Dichloro-methane (ug/l)	Bromoform (ug/l)	Chloroform (ug/l)	Dibromo-chloromethane (ug/l)	Acetone (ug/l)	Toluene (ug/l)	Methylene Chloride (ug/l)	Naphthalene (ug/l)	1,2,3-Trichloro-benzene (ug/l)
MW-1B	6/26/09	ND<0.5	0.6	ND<0.5	0.6	NR	0.7	ND<0.5	ND<0.5	ND<0.5
	9/10/09	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5
	12/7/09	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	3/22/10	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	7/1/10	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	0.8B	ND<0.5	ND<0.5
	5/4/12	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	0.9JB	0.2JB	ND<2.0
	8/14/12	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	0.6J	0.2JB	ND<2.0
	11/6/12	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<2.0	ND<2.0	ND<2.0
	2/7/13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<2.0	ND<2.0	ND<2.0
	5/7/13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<2.0	ND<2.0	ND<2.0
	5/30/13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<2.0	0.1B	ND<2.0
	8/16/13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<2.0	0.2B	ND<2.0
	11/11/13	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<2.0	ND<2.0	ND<2.0
	2/20/14	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<2.0	ND<0.5
	5/15/14	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<2.0	ND<0.5
	8/8/14	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.3B	ND<2.0	ND<0.5
	11/24/14	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	2/27/15	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	5/13/15	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	8/5/15	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	11/5/15	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	2/12/16	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	5/10/16	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	8/18/16	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	11/16/16	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	2/23/17	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<0.5
	5/10/17	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
	8/9/17	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
	11/8/17	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
	2/21/18	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
	5/9/18	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
	8/9/18	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
	11/15/18	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
	2/27/19	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
	5/16/19	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
	8/7/19	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
	11/6/19	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NR	ND<0.5	ND<0.5	ND<2.0	ND<2.0
NYSDOH Drinking Water Standard		5	5	5	5	5	5	5	5	5

TABLE 4

SNOOOK ROAD WELL FIELD
(T) FISHKILL, NEW YORK

Summary of Volatile Organic Compound Water-Quality Results from MW-1A and MW-1B

ug/l	micrograms per liter
1/	Compound detected in method blank.
NR	not reported
J	Detected below the Reporting Limit but greater than or equal to the Method Detection Limit (MDL); therefore, the result is an estimated concentration.
B	Analyte is found in the associated batch blank.
NYSDOH	New York State Department of Health

TABLE 5

SNOOOK ROAD WELL FIELD
(T) FISHKILL, NEW YORK

Summary of Monthly Precipitation Observed at Poughkeepsie AP Weather Station

Year	Month	Precipitation in Inches	30-Year Mean Precipitation in Inches (1981-2010)
2009	January	2.09	3.08
	February	0.81	2.66
	March	1.86	3.57
	April	1.92	3.78
	May	6.33	4.41
	June	9.26	4.43
	July	6.39	4.65
	August	4.95	4.20
	September	1.70	4.28
	October	4.04	4.47
	November	1.46	3.47
	December	3.75	3.53
2009 Annual Precipitation		**44.61**	**46.53**
2010	January	2.04	3.08
	February	3.77	2.66
	March	4.55	3.57
	April	1.74	3.78
	May	1.77	4.41
	June	1.91	4.43
	July	1.40	4.65
	August	7.02	4.20
	September	3.64	4.28
	October	3.07	4.47
	November	2.41	3.47
	December	2.53	3.53
2010 Annual Precipitation		**35.87**	**46.53**
2011	January	1.78	3.08
	February	3.65	2.66
	March	5.17	3.57
	April	4.64	3.78
	May	5.16	4.41
	June	4.62	4.43
	July	2.25	4.65
	August	13.22	4.20
	September	10.10	4.28
	October	4.10	4.47
	November	2.94	3.47
	December	4.39	3.53
2011 Annual Precipitation		**62.04**	**46.53**
2012	January	2.15	3.08
	February	1.47	2.66

TABLE 5

SNOOOK ROAD WELL FIELD
(T) FISHKILL, NEW YORK

Summary of Monthly Precipitation Observed at Poughkeepsie AP Weather Station

Year	Month	Precipitation in Inches	30-Year Mean Precipitation in Inches (1981-2010)
2012 (continued)	March	1.19	3.57
	April	2.06	3.78
	May	4.61	4.41
	June	3.07	4.43
	July	4.08	4.65
	August	3.59	4.20
	September	5.60	4.28
	October	3.79	4.47
	November	0.69	3.47
	December	4.22	3.53
2012 Annual Precipitation		**36.52**	**46.53**
2013	January	2.05	3.08
	February	1.61	2.66
	March	1.48	3.57
	April	1.32	3.78
	May	4.19	4.41
	June	9.82	4.43
	July	3.14	4.65
	August	6.61	4.20
	September	2.32	4.28
	October	1.61	4.47
	November	2.43	3.47
	December	3.33	3.53
2013 Annual Precipitation		**39.91**	**46.53**
2014	January	1.50	3.08
	February	2.78	2.66
	March	2.75	3.57
	April	4.43	3.78
	May	2.57	4.41
	June	2.29	4.43
	July	4.97	4.65
	August	3.38	4.20
	September	0.52	4.28
	October	3.76	4.47
	November	2.19	3.47
	December	3.00	3.53
2014 Annual Precipitation		**34.14**	**46.53**
2015	January	2.94	3.08
	February	1.36	2.66
	March	2.17	3.57
	April	2.23	3.78

TABLE 5

SNOOOK ROAD WELL FIELD
(T) FISHKILL, NEW YORK

Summary of Monthly Precipitation Observed at Poughkeepsie AP Weather Station

Year	Month	Precipitation in Inches	30-Year Mean Precipitation in Inches (1981-2010)
2015 (continued)	May	1.97	4.41
	June	4.13	4.43
	July	1.95	4.65
	August	2.21	4.20
	September	3.46	4.28
	October	1.68	4.47
	November	1.82	3.47
	December	3.90	3.53
2015 Annual Precipitation		**29.82**	**46.53**
2016	January	1.21	3.08
	February	4.48	2.66
	March	1.04	3.57
	April	2.24	3.78
	May	3.20	4.41
	June	2.03	3.73
	July	5.93	4.65
	August	2.20	4.20
	September	0.93	4.28
	October	2.54	4.47
	November	4.73	3.47
	December	2.61	3.53
2016 Annual Precipitation		**33.14**	**46.53**
2017	January	2.97	3.08
	February	1.34	2.66
	March	5.32	3.57
	April	2.39	3.78
	May	4.50	4.41
	June	3.38	3.73
	July	3.60	4.65
	August	5.06	4.20
	September	1.75	4.28
	October	3.87	4.47
	November	0.82	3.47
	December	1.56	3.53
2017 Annual Precipitation		**36.55**	**46.53**
2018	January	2.88	3.08
	February	4.48	2.66
	March	2.23	3.57
	April	3.57	3.78
	May	3.11	4.41
	June	4.14	3.73

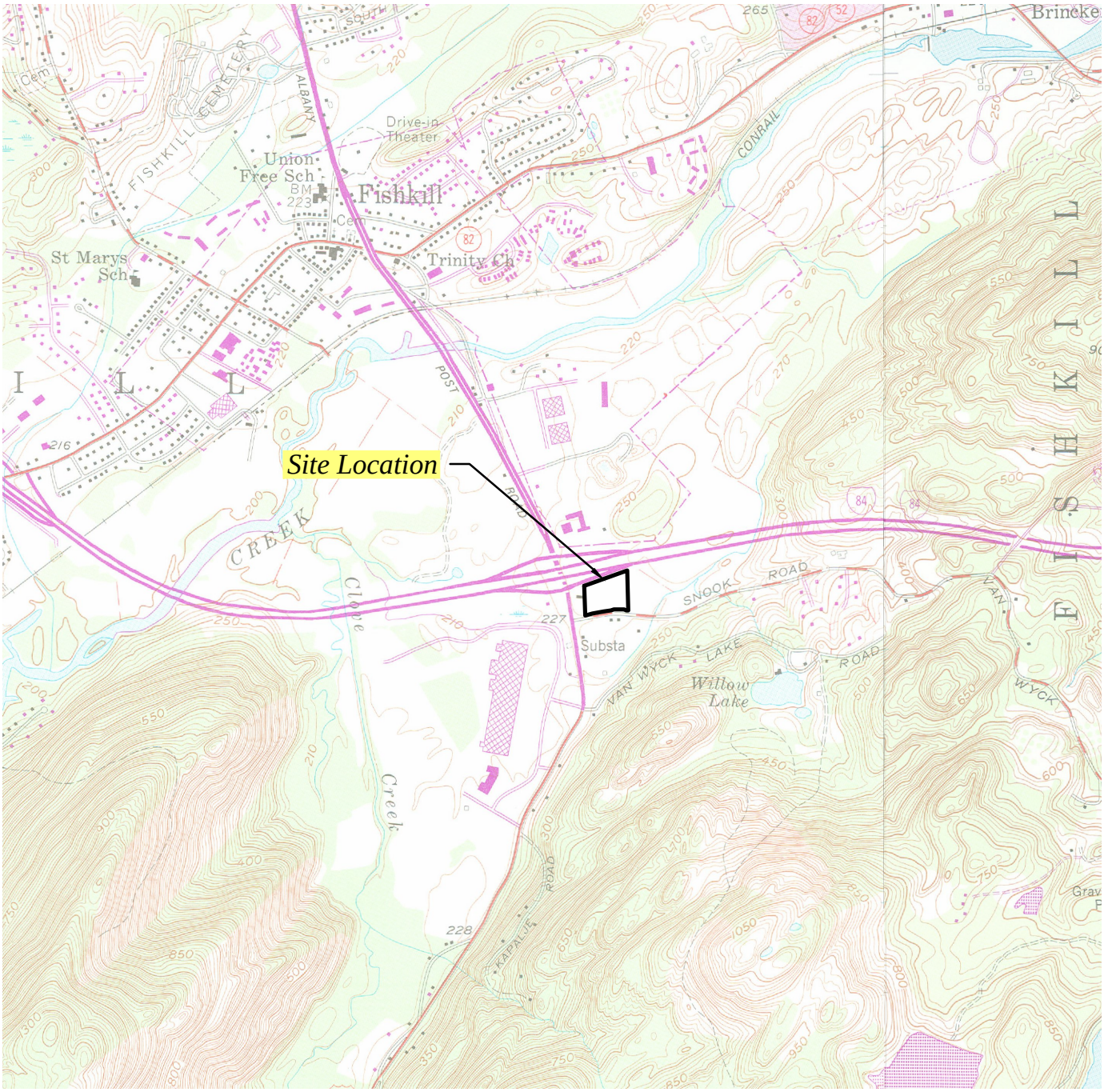
TABLE 5

SNOOOK ROAD WELL FIELD
(T) FISHKILL, NEW YORK

Summary of Monthly Precipitation Observed at Poughkeepsie AP Weather Station

Year	Month	Precipitation in Inches	30-Year Mean Precipitation in Inches (1981-2010)
2018 (continued)	July	6.82	4.65
	August	8.52	4.20
	September	5.02	4.28
	October	3.40	4.47
	November	7.55	3.47
	December	4.05	3.53
2018 Annual Precipitation		**55.77**	**46.53**
2019	January	3.58	3.08
	February	2.39	2.66
	March	1.58	3.57
	April	3.85	3.78
	May	4.77	4.41
	June	3.59	3.73
	July	2.56	4.65
	August	4.33	4.20
	September	1.08	4.28
	October	5.33	4.47
	November	3.37	3.47

FIGURES



SOURCE: USGS TOPOGRAPHIC QUADRANGLES WAPPINGERS FALLS, NEW YORK (REVISED 1981) AND HOPEWELL JUNCTION, NEW YORK (REVISED 1981).

QUADRANGLE LOCATION

0 2000

SCALE IN FEET

SNOOK ROAD WELL FIELD
TOWN OF FISHKILL
DUTCHESS COUNTY, NEW YORK

SITE LOCATION MAP

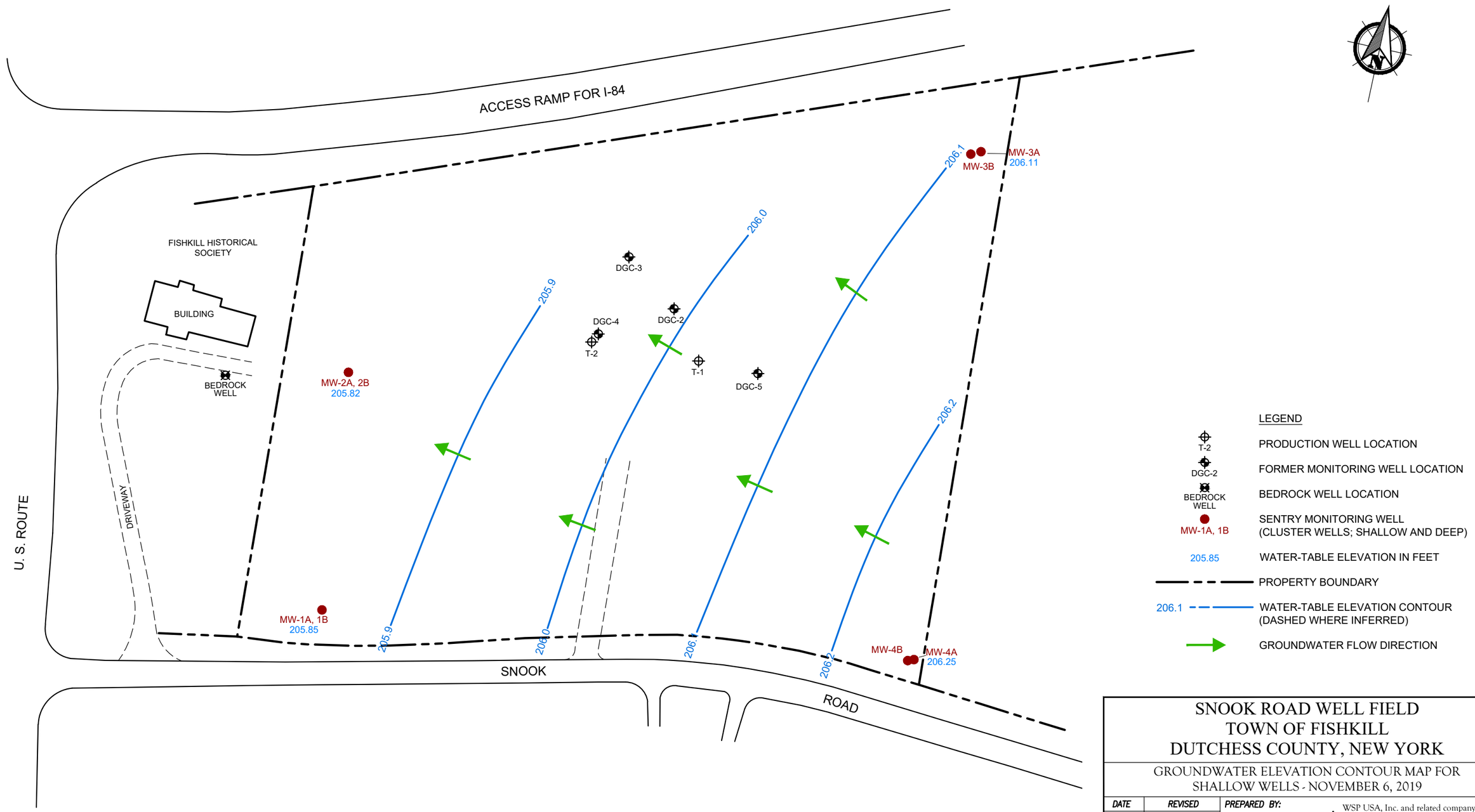
DATE	REVISED

PREPARED BY:

WSP USA, Inc. and related company
Hydrogeologic, Architecture, Land Surveying, Landscape Architecture, P.C. (WSP)
4 Research Drive
Suite 204
Shelton, Connecticut 06484
(203) 929-8555

DRAWN:	RAC	CHECKED:	SS	DATE:	06/26/19	FIGURE:	1

O:\DWG\SNOOK\F1_SLM.dwg, Layout, 6/26/2019 6:57:40 AM, AcroPlotTempPDF15732.pc3



SOURCES:

- HYDROGEOLOGIC INVESTIGATION OF THE SNOOK ROAD SITE, DUNN 1990.
- SNOOK ROAD WATER IMPROVEMENT AREA "AS BUILT WELL PLAN" PREPARED BY ROHDE, SOYKA & ANDREWS CONSULTING ENGINEERS PC, DATED SEPTEMBER 1, 2009 SCALE 1"=60'.

SNOOK ROAD WELL FIELD
TOWN OF FISHKILL
DUTCHESS COUNTY, NEW YORK

GROUNDWATER ELEVATION CONTOUR MAP FOR SHALLOW WELLS - NOVEMBER 6, 2019

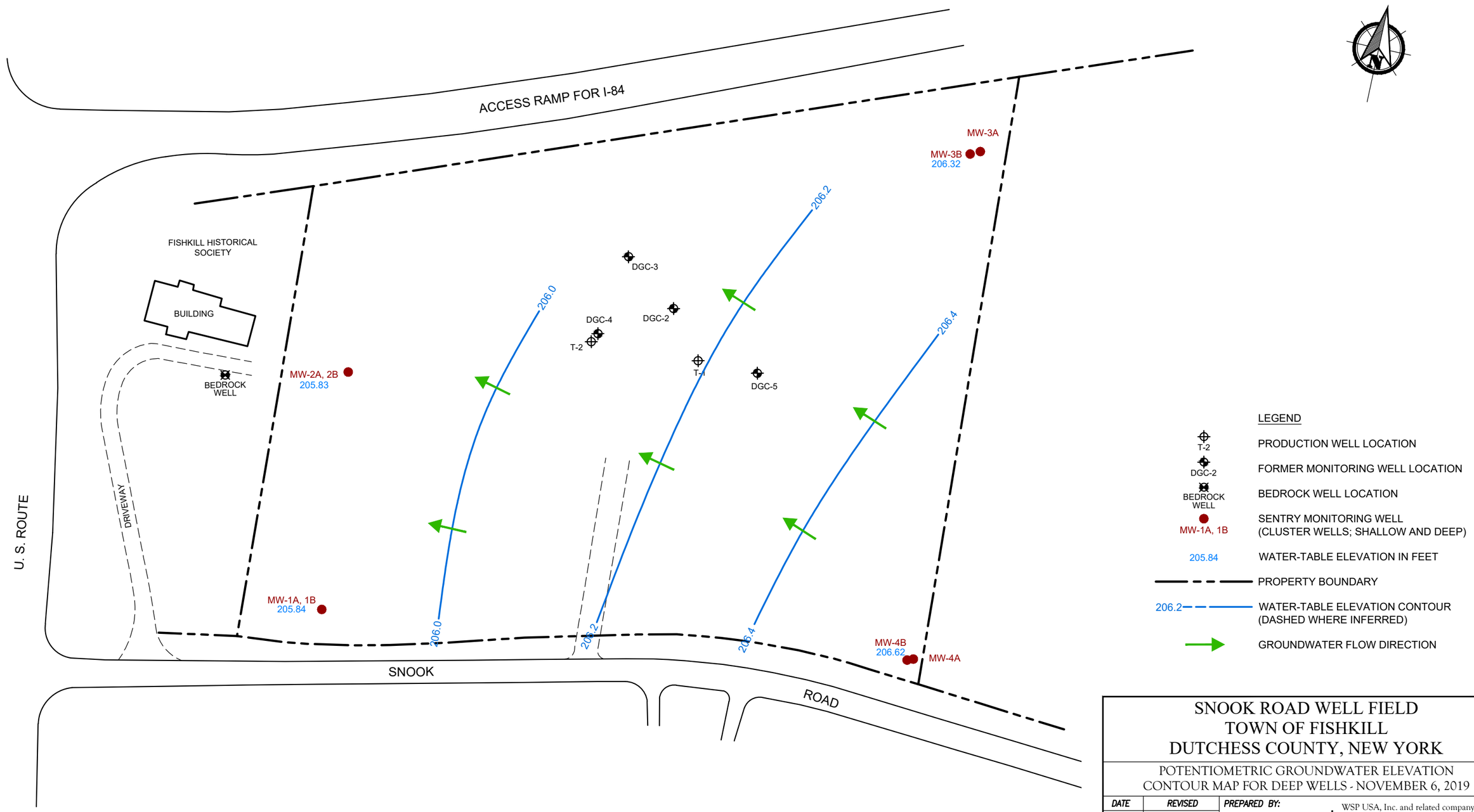
DATE	REVISED

PREPARED BY:

WSP USA, Inc. and related company
Hydrogeologic, Architecture, Land Surveying, Landscape Architecture, P.C. (WSP)
4 Research Drive
Suite 204
Shelton, Connecticut 06484
(203) 929-8555

DRAWN:	RAC	CHECKED:	SS	DATE:	12/02/19	FIGURE:	2

O:\DWG\SNOOK\2019\F2_1911_Shallow.dwg, Layout1, 12/2/2019 1:52:55 PM, DWG To PDF.pc3



SOURCES:

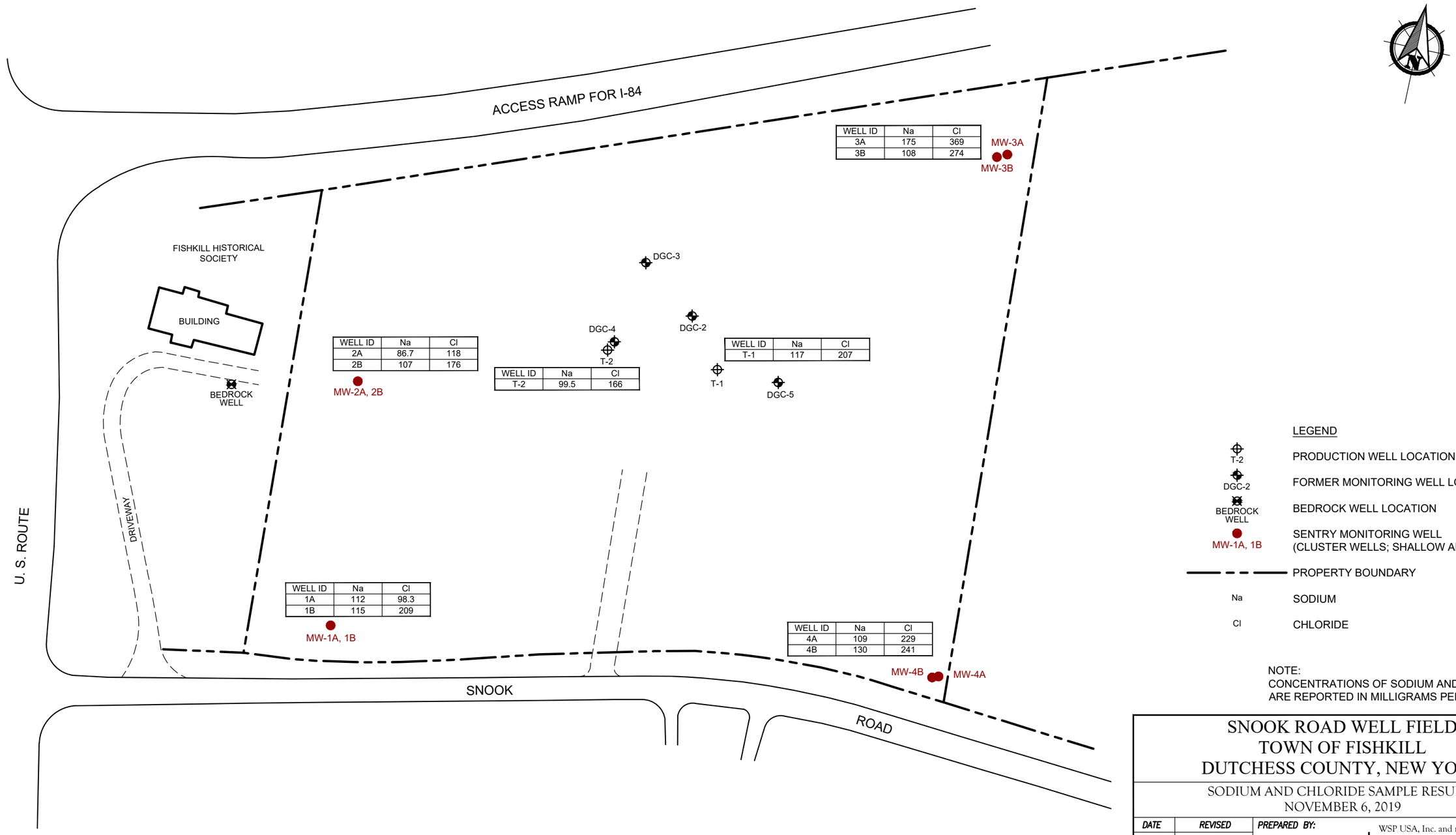
- HYDROGEOLOGIC INVESTIGATION OF THE SNOOK ROAD SITE, DUNN 1990.
- SNOOK ROAD WATER IMPROVEMENT AREA "AS BUILT WELL PLAN" PREPARED BY ROHDE, SOYKA & ANDREWS CONSULTING ENGINEERS PC, DATED SEPTEMBER 1, 2009 SCALE 1"=60'.

SNOOK ROAD WELL FIELD
TOWN OF FISHKILL
DUTCHESS COUNTY, NEW YORK

POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP FOR DEEP WELLS - NOVEMBER 6, 2019

DATE	REVISED	PREPARED BY:			
		WSP USA, Inc. and related company Hydrogeologic, Architecture, Land Surveying, Landscape Architecture, P.C. (WSP) 4 Research Drive Suite 204 Shelton, Connecticut 06484 (203) 929-8555			
DRAWN: RAC		CHECKED: SS	DATE: 12/02/19	FIGURE: 3	

O:\DWG\SNOOK\2019\F3_1911_Deep.dwg, Layout1, 12/2/2019 1:34:27 PM, DWG To PDF.pc3



WELL ID	Na	Cl
3A	175	369
3B	108	274

WELL ID	Na	Cl
2A	86.7	118
2B	107	176

WELL ID	Na	Cl
T-2	99.5	166

WELL ID	Na	Cl
T-1	117	207

WELL ID	Na	Cl
1A	112	98.3
1B	115	209

WELL ID	Na	Cl
4A	109	229
4B	130	241

LEGEND

T-2	PRODUCTION WELL LOCATION
DGC-2	FORMER MONITORING WELL LOCATION
BEDROCK WELL	BEDROCK WELL LOCATION
MW-1A, 1B	SENTRY MONITORING WELL (CLUSTER WELLS; SHALLOW AND DEEP)
	PROPERTY BOUNDARY
Na	SODIUM
Cl	CHLORIDE

NOTE:
CONCENTRATIONS OF SODIUM AND CHLORIDE ARE REPORTED IN MILLIGRAMS PER LITER (mg/L).

SOURCES:
- HYDROGEOLOGIC INVESTIGATION OF THE SNOOK ROAD SITE, DUNN 1990.
- SNOOK ROAD WATER IMPROVEMENT AREA "AS BUILT WELL PLAN" PREPARED BY ROHDE, SOYKA & ANDREWS CONSULTING ENGINEERS PC, DATED SEPTEMBER 1, 2009 SCALE 1"=60'.

0 80
SCALE IN FEET

SNOOK ROAD WELL FIELD
TOWN OF FISHKILL
DUTCHESS COUNTY, NEW YORK

SODIUM AND CHLORIDE SAMPLE RESULTS
NOVEMBER 6, 2019

DATE	REVISED

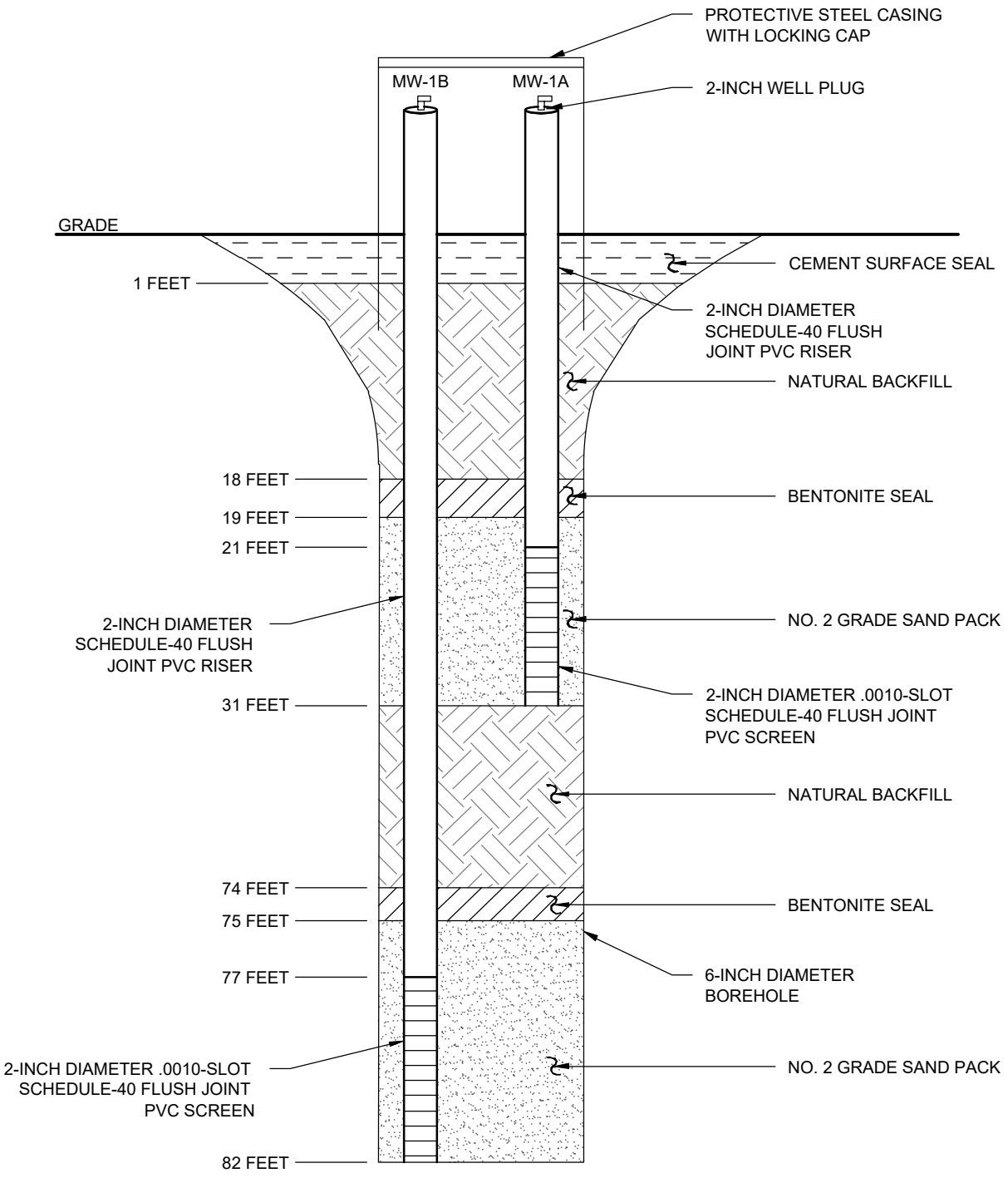
PREPARED BY:

WSP USA, Inc. and related company
Hydrogeologic, Architecture, Land Surveying, Landscape Architecture, P.C. (WSP)
4 Research Drive
Suite 204
Shelton, Connecticut 06484
(203) 929-8555

DRAWN:	RAC	CHECKED:	SS	DATE:	12/02/19	FIGURE:	4

O:\DWG\SNOOK\2019\F4_1911.dwg, Layout1, 12/2/2019 1:16:15 PM, DWG To PDF.pc3

APPENDIX I



NOT TO SCALE

SNOOK ROAD WELL FIELD
TOWN OF FISHKILL
DUTCHESS COUNTY, NEW YORK

WELL CONSTRUCTION DIAGRAM OF MW-1A AND MW-1B

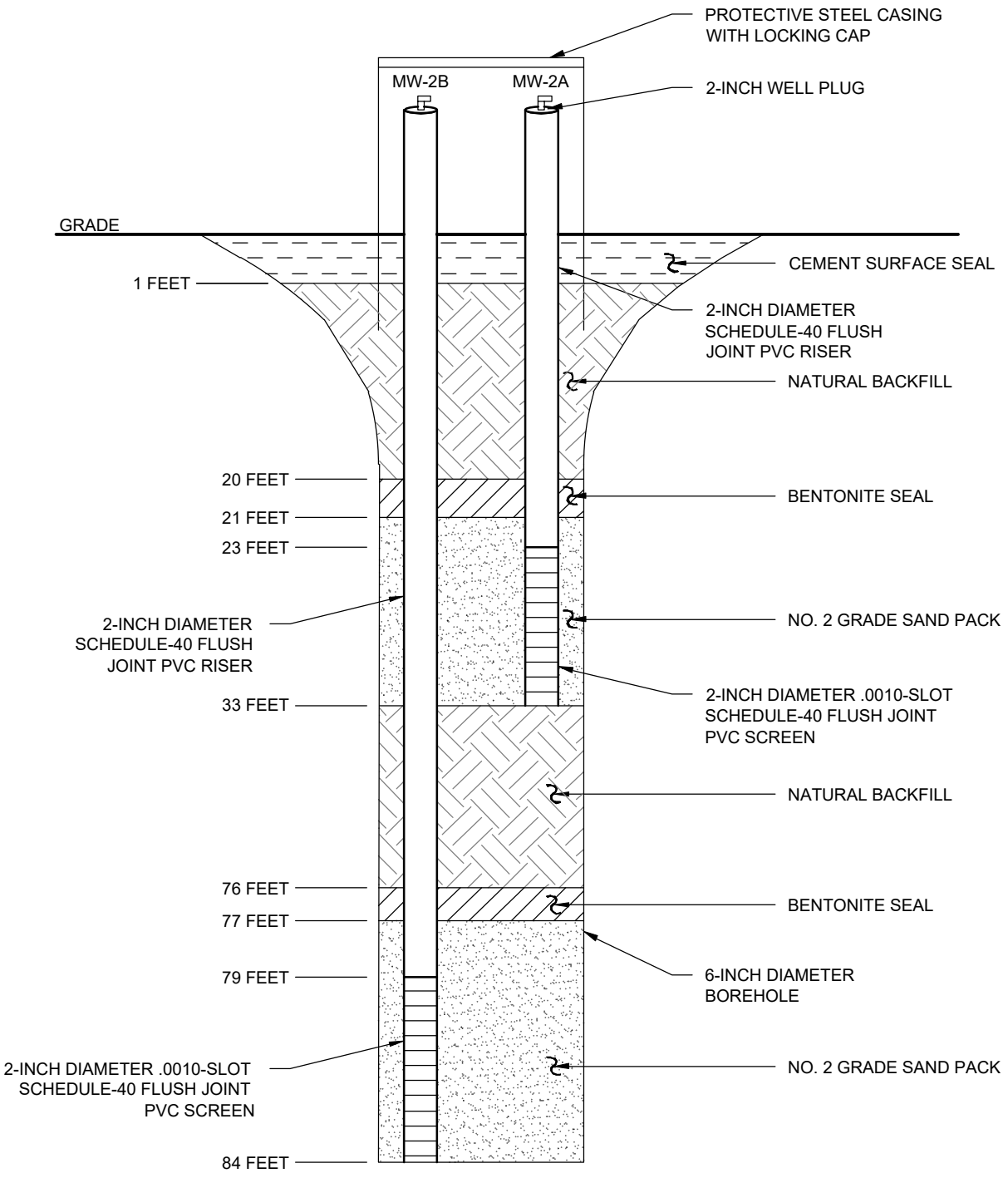
DATE	REVISED

PREPARED BY:

WSP USA, Inc. and related company
Hydrogeologic, Architecture, Land Surveying, Landscape Architecture, P.C. (WSP)
4 Research Drive
Suite 204
Shelton, Connecticut 06484
(203) 929-8555

DRAWN:	RAC	CHECKED:	SS	DATE:	06/25/19	FIGURE:	–

O:\DWG\SNOOK\2019\Well Diagram 1A-1B.dwg, Layout, 6/26/2019 6:34:14 AM, AcroPlotTempDWF11352.pc3



SNOOK ROAD WELL FIELD
TOWN OF FISHKILL
DUTCHESS COUNTY, NEW YORK

WELL CONSTRUCTION DIAGRAM OF MW-2A AND MW-2B

DATE	REVISED

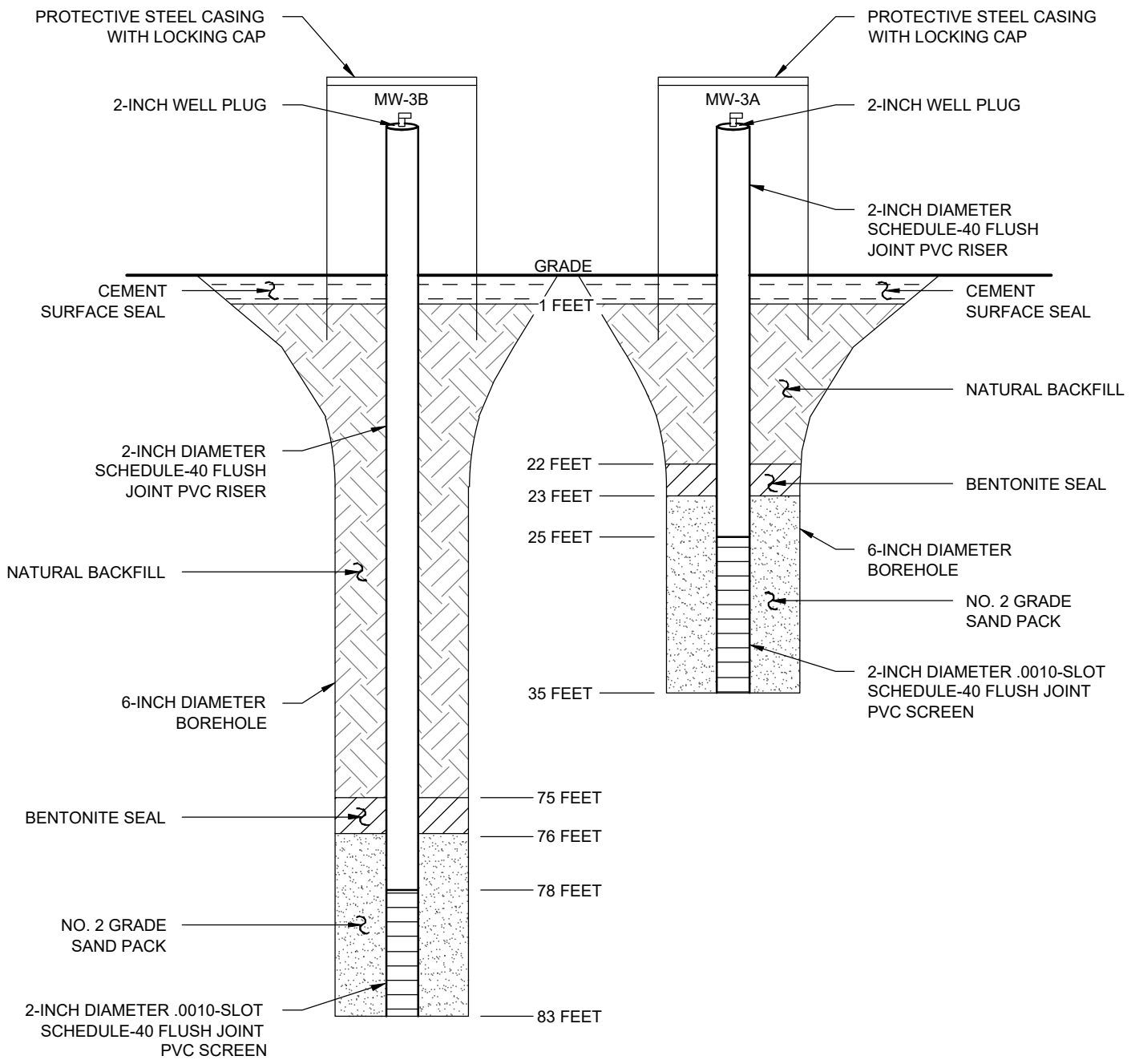
PREPARED BY:

WSP USA, Inc. and related company
Hydrogeologic, Architecture, Land Surveying, Landscape Architecture, P.C. (WSP)
4 Research Drive
Suite 204
Shelton, Connecticut 06484
(203) 929-8555

NOT TO SCALE

DRAWN:	RAC	CHECKED:	SS	DATE:	06/25/19	FIGURE:	–

O:\DWG\SNOOK\2019\Well Diagram 2A-2B.dwg, Layout, 6/26/2019 6:41:01 AM, AcroPlotTempDWF7688.pc3



NOT TO SCALE

SNOOK ROAD WELL FIELD
TOWN OF FISHKILL
DUTCHESS COUNTY, NEW YORK

WELL CONSTRUCTION DIAGRAM OF MW-3A AND MW-3B

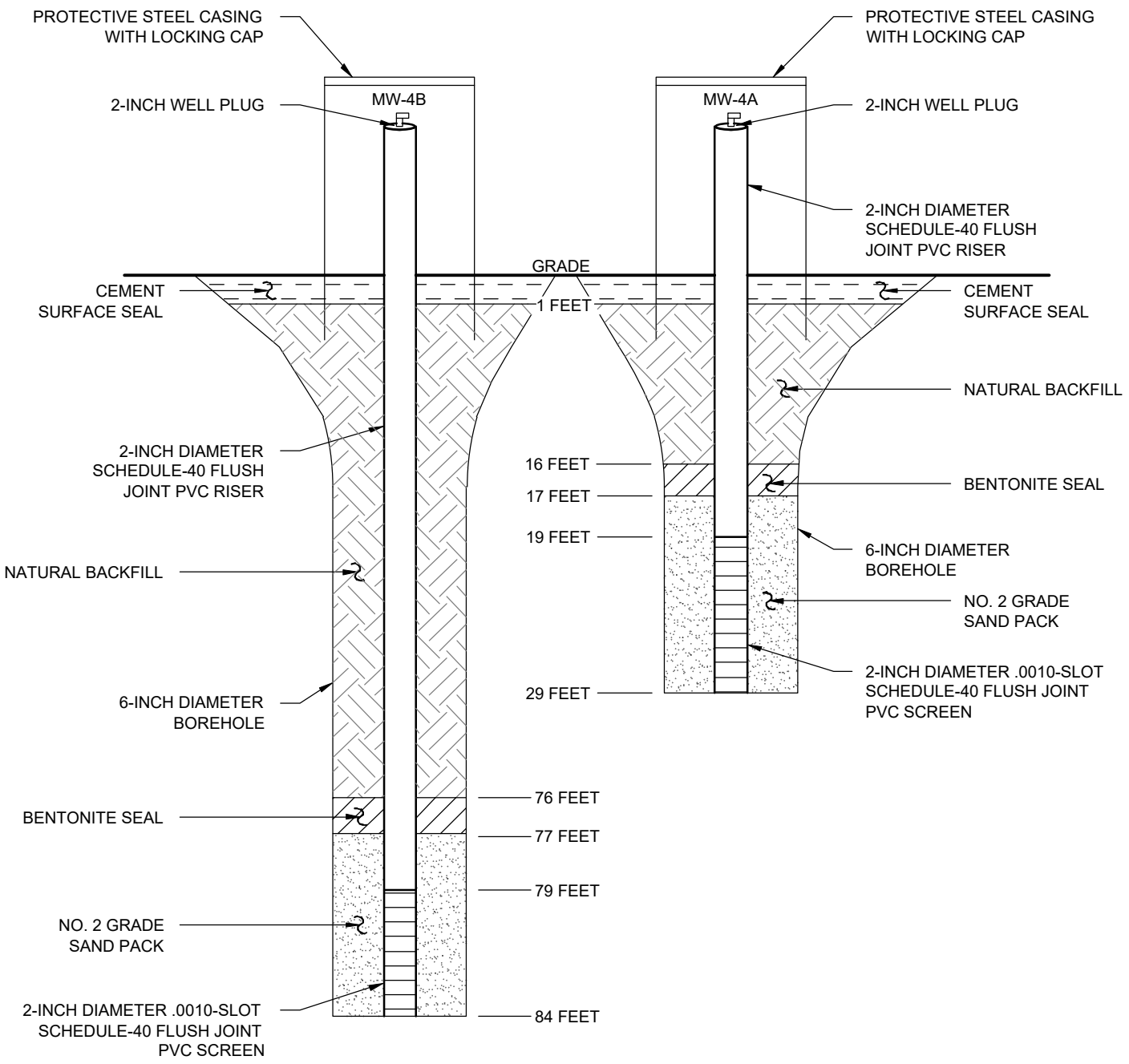
DATE	REVISED

PREPARED BY:

WSP USA, Inc. and related company
Hydrogeologic, Architecture, Land Surveying, Landscape Architecture, P.C. (WSP)
4 Research Drive
Suite 204
Shelton, Connecticut 06484
(203) 929-8555

DRAWN:	RAC	CHECKED:	SS	DATE:	06/25/19	FIGURE:	–

O:\DWG\SNOOK\2019\Well Diagram 3A-3B.dwg, Layout, 6/26/2019 6:34:48 AM, AcroPlotTempDWF11352.pc3



NOT TO SCALE

SNOOK ROAD WELL FIELD
TOWN OF FISHKILL
DUTCHESS COUNTY, NEW YORK

WELL CONSTRUCTION DIAGRAM OF MW-4A AND MW-4B

DATE	REVISED

PREPARED BY:

WSP USA, Inc. and related company
Hydrogeologic, Architecture, Land Surveying, Landscape Architecture, P.C. (WSP)
4 Research Drive
Suite 204
Shelton, Connecticut 06484
(203) 929-8555

DRAWN:	RAC	CHECKED:	SS	DATE:	06/25/19	FIGURE:	–

O:\DWG\SNOOK\2019\Well Diagram 4A-4B.dwg, Layout, 6/26/2019 6:35:06 AM, AcroPlotTempDWF11352.pc3

APPENDIX II

Technical Report

prepared for:

WSP USA, Inc. (Shelton)
4 Research Drive, Suite 204
Shelton CT, 06484
Attention: Karen Destefanis

Report Date: 11/11/2019
Client Project ID: Snook Rd
York Project (SDG) No.: 19K0221

CT Cert. No. PH-0723 New Jersey Cert. No. CT005 and NY037 New York Cert. Nos. 10854 and 12058 PA Cert. No. 68-04440

120 RESEARCH DRIVE STRATFORD, CT 06615 132-02 89th AVENUE RICHMOND HILL, NY 11418
www.YORKLAB.com (203) 325-1371 FAX (203) 357-0166 ClientServices@yorklab.com

Report Date: 11/11/2019
Client Project ID: Snook Rd
York Project (SDG) No.: 19K0221

WSP USA, Inc. (Shelton)
4 Research Drive, Suite 204
Shelton CT, 06484
Attention: Karen Destefanis

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on November 06, 2019 with a temperature of 3.6 C. The project was identified as your project: **Snook Rd**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Sample and Analysis Qualifiers section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the Sample and Data Qualifiers Relating to This Work Order section of this report and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

York Sample ID	Client Sample ID	Matrix	Date Collected	Date Received
19K0221-01	MW-1A	Water	11/06/2019	11/06/2019
19K0221-02	MW-1B	Water	11/06/2019	11/06/2019
19K0221-03	MW-2A	Water	11/06/2019	11/06/2019
19K0221-04	MW-2B	Water	11/06/2019	11/06/2019
19K0221-05	MW-3A	Water	11/06/2019	11/06/2019
19K0221-06	MW-3B	Water	11/06/2019	11/06/2019
19K0221-07	MW-4A	Water	11/06/2019	11/06/2019
19K0221-08	MW-4B	Water	11/06/2019	11/06/2019
19K0221-09	T-1	Drinking Water	11/06/2019	11/06/2019
19K0221-10	T-2	Drinking Water	11/06/2019	11/06/2019

General Notes for York Project (SDG) No.: 19K0221

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058.

Approved By: **Date:** 11/11/2019

Benjamin Gulizia
Laboratory Director

Sample Information

Client Sample ID: **MW-1A** **York Sample ID:** **19K0221-01**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19K0221	Snook Rd	Water	November 6, 2019 12:25 pm	11/06/2019

Volatile Organics, 502.2 + MTBE List **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-43-2	Benzene	ND		ug/L	0.08	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
108-86-1	Bromobenzene	ND		ug/L	0.08	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
74-97-5	Bromochloromethane	ND		ug/L	0.2	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
75-27-4	Bromodichloromethane	ND		ug/L	0.04	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
75-25-2	Bromoform	ND		ug/L	0.05	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
74-83-9	Bromomethane	ND		ug/L	0.1	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
135-98-8	sec-Butylbenzene	ND		ug/L	0.04	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
104-51-8	n-Butylbenzene	ND		ug/L	0.05	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
98-06-6	tert-Butylbenzene	ND		ug/L	0.05	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
56-23-5	Carbon tetrachloride	ND		ug/L	0.1	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
108-90-7	Chlorobenzene	ND		ug/L	0.06	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
75-00-3	Chloroethane	ND		ug/L	0.3	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
67-66-3	Chloroform	ND		ug/L	0.1	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
74-87-3	Chloromethane	ND		ug/L	0.1	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
106-43-4	4-Chlorotoluene	ND		ug/L	0.06	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
95-49-8	2-Chlorotoluene	ND		ug/L	0.05	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
96-12-8	* 1,2-Dibromo-3-chloropropane	ND		ug/L	0.3	2.0	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH		
124-48-1	Dibromochloromethane	ND		ug/L	0.07	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
106-93-4	* 1,2-Dibromoethane	ND		ug/L	0.06	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH		
74-95-3	Dibromomethane	ND		ug/L	0.06	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		

Sample Information

Client Sample ID: **MW-1A** **York Sample ID:** **19K0221-01**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19K0221	Snook Rd	Water	November 6, 2019 12:25 pm	11/06/2019

Volatile Organics, 502.2 + MTBE List **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
106-46-7	1,4-Dichlorobenzene	ND		ug/L	0.06	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
95-50-1	1,2-Dichlorobenzene	ND		ug/L	0.06	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
541-73-1	1,3-Dichlorobenzene	ND		ug/L	0.07	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
75-71-8	Dichlorodifluoromethane	ND		ug/L	0.1	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
75-34-3	1,1-Dichloroethane	ND		ug/L	0.1	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
107-06-2	1,2-Dichloroethane	ND		ug/L	0.09	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
156-60-5	trans-1,2-Dichloroethylene	ND		ug/L	0.1	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
75-35-4	1,1-Dichloroethylene	ND		ug/L	0.08	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
156-59-2	cis-1,2-Dichloroethylene	ND		ug/L	0.09	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
594-20-7	2,2-Dichloropropane	ND		ug/L	0.2	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
142-28-9	1,3-Dichloropropane	ND		ug/L	0.1	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
78-87-5	1,2-Dichloropropane	ND		ug/L	0.06	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/L	0.08	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
563-58-6	1,1-Dichloropropylene	ND		ug/L	0.1	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/L	0.1	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
100-41-4	Ethyl Benzene	ND		ug/L	0.04	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
87-68-3	Hexachlorobutadiene	ND		ug/L	0.1	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
98-82-8	Isopropylbenzene	ND		ug/L	0.1	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
99-87-6	p-Isopropyltoluene	ND		ug/L	0.03	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
75-09-2	Methylene chloride	ND		ug/L	0.3	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
91-20-3	Naphthalene	ND		ug/L	0.1	2.0	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		

Sample Information

Client Sample ID: **MW-1A** **York Sample ID:** **19K0221-01**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19K0221	Snook Rd	Water	November 6, 2019 12:25 pm	11/06/2019

Volatile Organics, 502.2 + MTBE List **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
103-65-1	n-Propylbenzene	ND		ug/L	0.05	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
100-42-5	Styrene	ND		ug/L	0.09	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/L	0.05	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/L	0.07	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
127-18-4	Tetrachloroethylene	ND		ug/L	0.4	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
108-88-3	Toluene	ND		ug/L	0.05	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
87-61-6	1,2,3-Trichlorobenzene	ND		ug/L	0.2	2.0	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
120-82-1	1,2,4-Trichlorobenzene	ND		ug/L	0.05	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
71-55-6	1,1,1-Trichloroethane	ND		ug/L	0.1	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
79-00-5	1,1,2-Trichloroethane	ND		ug/L	0.1	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
79-01-6	Trichloroethylene	ND		ug/L	0.05	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
75-69-4	Trichlorofluoromethane	ND		ug/L	0.07	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
96-18-4	1,2,3-Trichloropropane	ND		ug/L	0.1	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.05	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.03	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
75-01-4	Vinyl Chloride	ND		ug/L	0.08	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
95-47-6	* o-Xylene	ND		ug/L	0.1	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:			
179601-23-1	* p- & m- Xylenes	ND		ug/L	0.09	1.0	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.1	0.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
1330-20-7	Xylenes, Total	ND		ug/L	0.1	1.5	1	EPA 524.2	11/07/2019 07:30	11/08/2019 05:33	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*103 %*	*69-130*

Sample Information

Client Sample ID: **MW-1A** **York Sample ID:** **19K0221-01**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19K0221	Snook Rd	Water	November 6, 2019 12:25 pm	11/06/2019

Volatile Organics, 502.2 + MTBE List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*101 %*			*79-122*						
2037-26-5	*Surrogate: SURR: Toluene-d8*	*99.4 %*			*81-117*						

Sodium by EPA 200.7

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 200.7

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-23-5	**Sodium**	**112**		mg/L	0.556	1	EPA 200.7	11/07/2019 11:01	11/08/2019 13:01	KML
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		

Chloride

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	**Chloride**	**98.3**		mg/L	5.00	10	EPA 300.0	11/06/2019 18:20	11/07/2019 12:57	MAO
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		

Sample Information

Client Sample ID: **MW-1B** **York Sample ID:** **19K0221-02**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19K0221	Snook Rd	Water	November 6, 2019 12:18 pm	11/06/2019

Volatile Organics, 502.2 + MTBE List

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-43-2	Benzene	ND		ug/L	0.08	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
108-86-1	Bromobenzene	ND		ug/L	0.08	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
74-97-5	Bromochloromethane	ND		ug/L	0.2	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
75-27-4	Bromodichloromethane	ND		ug/L	0.04	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
75-25-2	Bromoform	ND		ug/L	0.05	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		

Sample Information

Client Sample ID: MW-1B

York Sample ID: 19K0221-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19K0221	Snook Rd	Water	November 6, 2019 12:18 pm	11/06/2019

Volatile Organics, 502.2 + MTBE List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
74-83-9	Bromomethane	ND		ug/L	0.1	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
135-98-8	sec-Butylbenzene	ND		ug/L	0.04	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
104-51-8	n-Butylbenzene	ND		ug/L	0.05	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
98-06-6	tert-Butylbenzene	ND		ug/L	0.05	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
56-23-5	Carbon tetrachloride	ND		ug/L	0.1	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
108-90-7	Chlorobenzene	ND		ug/L	0.06	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
75-00-3	Chloroethane	ND		ug/L	0.3	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
67-66-3	Chloroform	ND		ug/L	0.1	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
74-87-3	Chloromethane	ND		ug/L	0.1	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
106-43-4	4-Chlorotoluene	ND		ug/L	0.06	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
95-49-8	2-Chlorotoluene	ND		ug/L	0.05	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
96-12-8	* 1,2-Dibromo-3-chloropropane	ND		ug/L	0.3	2.0	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH			
124-48-1	Dibromochloromethane	ND		ug/L	0.07	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
106-93-4	* 1,2-Dibromoethane	ND		ug/L	0.06	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH			
74-95-3	Dibromomethane	ND		ug/L	0.06	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
106-46-7	1,4-Dichlorobenzene	ND		ug/L	0.06	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
95-50-1	1,2-Dichlorobenzene	ND		ug/L	0.06	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
541-73-1	1,3-Dichlorobenzene	ND		ug/L	0.07	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
75-71-8	Dichlorodifluoromethane	ND		ug/L	0.1	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
75-34-3	1,1-Dichloroethane	ND		ug/L	0.1	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
107-06-2	1,2-Dichloroethane	ND		ug/L	0.09	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			

Sample Information

Client Sample ID: MW-1B

York Sample ID: 19K0221-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19K0221	Snook Rd	Water	November 6, 2019 12:18 pm	11/06/2019

Volatile Organics, 502.2 + MTBE List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
156-60-5	trans-1,2-Dichloroethylene	ND		ug/L	0.1	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
75-35-4	1,1-Dichloroethylene	ND		ug/L	0.08	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
156-59-2	cis-1,2-Dichloroethylene	ND		ug/L	0.09	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
594-20-7	2,2-Dichloropropane	ND		ug/L	0.2	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
142-28-9	1,3-Dichloropropane	ND		ug/L	0.1	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
78-87-5	1,2-Dichloropropane	ND		ug/L	0.06	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/L	0.08	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
563-58-6	1,1-Dichloropropylene	ND		ug/L	0.1	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/L	0.1	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
100-41-4	Ethyl Benzene	ND		ug/L	0.04	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
87-68-3	Hexachlorobutadiene	ND		ug/L	0.1	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
98-82-8	Isopropylbenzene	ND		ug/L	0.1	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
99-87-6	p-Isopropyltoluene	ND		ug/L	0.03	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
75-09-2	Methylene chloride	ND		ug/L	0.3	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
91-20-3	Naphthalene	ND		ug/L	0.1	2.0	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
103-65-1	n-Propylbenzene	ND		ug/L	0.05	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
100-42-5	Styrene	ND		ug/L	0.09	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
630-20-6	1,1,1,2-Tetrachloroethane	ND		ug/L	0.05	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/L	0.07	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
127-18-4	Tetrachloroethylene	ND		ug/L	0.4	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		
108-88-3	Toluene	ND		ug/L	0.05	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:	CTDOH,NELAC-NY10854,NJDEP		

Sample Information

Client Sample ID: MW-1B

York Sample ID: 19K0221-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19K0221	Snook Rd	Water	November 6, 2019 12:18 pm	11/06/2019

Volatile Organics, 502.2 + MTBE List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
87-61-6	1,2,3-Trichlorobenzene	ND		ug/L	0.2	2.0	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
120-82-1	1,2,4-Trichlorobenzene	ND		ug/L	0.05	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
71-55-6	1,1,1-Trichloroethane	ND		ug/L	0.1	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
79-00-5	1,1,2-Trichloroethane	ND		ug/L	0.1	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
79-01-6	Trichloroethylene	ND		ug/L	0.05	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
75-69-4	Trichlorofluoromethane	ND		ug/L	0.07	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
96-18-4	1,2,3-Trichloropropane	ND		ug/L	0.1	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.05	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.03	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
75-01-4	Vinyl Chloride	ND		ug/L	0.08	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
95-47-6	* o-Xylene	ND		ug/L	0.1	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:			
179601-23-1	* p- & m- Xylenes	ND		ug/L	0.09	1.0	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications:			
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.1	0.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			
1330-20-7	Xylenes, Total	ND		ug/L	0.1	1.5	1	EPA 524.2	11/08/2019 07:30	11/08/2019 15:30	RDS
								Certifications: CTDOH,NELAC-NY10854,NJDEP			

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*103 %*	*69-130*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*95.2 %*	*79-122*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*99.2 %*	*81-117*

Sodium by EPA 200.7

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 200.7

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-23-5	**Sodium**	**115**		mg/L	0.556	1	EPA 200.7	11/07/2019 11:01	11/08/2019 13:04	KML
							Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP			

Sample Information

Client Sample ID: MW-1B

York Sample ID: 19K0221-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19K0221	Snook Rd	Water	November 6, 2019 12:18 pm	11/06/2019

Chloride

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	**Chloride**	**209**		mg/L	5.00	10	EPA 300.0	11/06/2019 18:20	11/07/2019 15:03	MAO
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		

Sample Information

Client Sample ID: MW-2A

York Sample ID: 19K0221-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19K0221	Snook Rd	Water	November 6, 2019 1:05 pm	11/06/2019

Sodium by EPA 200.7

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 200.7

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-23-5	**Sodium**	**86.7**		mg/L	0.556	1	EPA 200.7	11/07/2019 11:01	11/08/2019 13:07	KML
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		

Chloride

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	**Chloride**	**118**		mg/L	5.00	10	EPA 300.0	11/06/2019 18:20	11/07/2019 15:28	MAO
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		

Sample Information

Client Sample ID: MW-2B

York Sample ID: 19K0221-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19K0221	Snook Rd	Water	November 6, 2019 12:55 pm	11/06/2019

Sodium by EPA 200.7

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 200.7

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-23-5	**Sodium**	**107**		mg/L	0.556	1	EPA 200.7	11/07/2019 11:01	11/08/2019 13:09	KML
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		

Sample Information

Client Sample ID: MW-2B | **York Sample ID:** 19K0221-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19K0221	Snook Rd	Water	November 6, 2019 12:55 pm	11/06/2019

Chloride

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	**Chloride**	**176**		mg/L	5.00	10	EPA 300.0	11/06/2019 18:20	11/07/2019 15:52	MAO
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		

Sample Information

Client Sample ID: MW-3A | **York Sample ID:** 19K0221-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19K0221	Snook Rd	Water	November 6, 2019 11:06 am	11/06/2019

Sodium by EPA 200.7

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 200.7

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-23-5	**Sodium**	**175**		mg/L	0.556	1	EPA 200.7	11/07/2019 11:01	11/08/2019 13:13	KML
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		

Chloride

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	**Chloride**	**369**		mg/L	5.00	10	EPA 300.0	11/06/2019 18:20	11/07/2019 16:17	MAO
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		

Sample Information

Client Sample ID: MW-3B | **York Sample ID:** 19K0221-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19K0221	Snook Rd	Water	November 6, 2019 11:05 am	11/06/2019

Sodium by EPA 200.7

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 200.7

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-23-5	**Sodium**	**108**		mg/L	0.556	1	EPA 200.7	11/07/2019 11:01	11/08/2019 13:16	KML
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		

Sample Information

Client Sample ID: MW-3B | **York Sample ID:** 19K0221-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19K0221	Snook Rd	Water	November 6, 2019 11:05 am	11/06/2019

Chloride

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	**Chloride**	**274**		mg/L	5.00	10	EPA 300.0	11/06/2019 18:20	11/07/2019 16:42	MAO
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		

Sample Information

Client Sample ID: MW-4A | **York Sample ID:** 19K0221-07

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19K0221	Snook Rd	Water	November 6, 2019 11:54 am	11/06/2019

Sodium by EPA 200.7

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 200.7

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-23-5	**Sodium**	**109**		mg/L	0.556	1	EPA 200.7	11/07/2019 11:01	11/08/2019 13:19	KML
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		

Chloride

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	**Chloride**	**229**		mg/L	5.00	10	EPA 300.0	11/06/2019 18:20	11/07/2019 17:07	MAO
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		

Sample Information

Client Sample ID: MW-4B | **York Sample ID:** 19K0221-08

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19K0221	Snook Rd	Water	November 6, 2019 11:47 am	11/06/2019

Sodium by EPA 200.7

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 200.7

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-23-5	**Sodium**	**130**		mg/L	0.556	1	EPA 200.7	11/07/2019 11:01	11/08/2019 13:21	KML
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		

Sample Information

Client Sample ID: MW-4B | **York Sample ID:** 19K0221-08

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19K0221	Snook Rd	Water	November 6, 2019 11:47 am	11/06/2019

Chloride

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	**Chloride**	**241**		mg/L	5.00	10	EPA 300.0	11/06/2019 18:20	11/07/2019 17:32	MAO
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		

Sample Information

Client Sample ID: T-1 | **York Sample ID:** 19K0221-09

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19K0221	Snook Rd	Drinking Water	November 6, 2019 10:00 am	11/06/2019

Sodium by EPA 200.7

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 200.7

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-23-5	**Sodium**	**117**		mg/L	0.556	1	EPA 200.7	11/07/2019 11:01	11/08/2019 13:25	KML
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		

Chloride

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	**Chloride**	**207**		mg/L	5.00	10	EPA 300.0	11/06/2019 18:24	11/07/2019 17:56	MAO
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		

Sample Information

Client Sample ID: T-2 | **York Sample ID:** 19K0221-10

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19K0221	Snook Rd	Drinking Water	November 6, 2019 9:55 am	11/06/2019

Sodium by EPA 200.7

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 200.7

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-23-5	**Sodium**	**99.5**		mg/L	0.556	1	EPA 200.7	11/07/2019 11:01	11/08/2019 13:34	KML
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		

Sample Information

Client Sample ID: **T-2** **York Sample ID:** **19K0221-10**

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
19K0221	Snook Rd	Drinking Water	November 6, 2019 9:55 am	11/06/2019

Chloride

Log-in Notes: **Sample Notes:**

Sample Prepared by Method: EPA 300

CAS No.	Parameter	Result	Flag	Units	Reported to LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
16887-00-6	**Chloride**	**166**		mg/L	5.00	10	EPA 300.0	11/06/2019 18:24	11/07/2019 20:03	MAO
							Certifications:	CTDOH,NELAC-NY10854,NJDEP,PADEP		

Volatile Analysis Sample Containers

Lab ID	Client Sample ID	Volatile Sample Container
19K0221-01	MW-1A	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
19K0221-02	MW-1B	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C

Sample and Data Qualifiers Relating to This Work Order

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

Definitions and Other Explanations

*	Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
ND	NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
LOQ	LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
LOD	LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
MDL	METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
Reported to	This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
Non-Dir.	Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.

York Analytical Laboratories, Inc.
120 Research Drive, Stratford, CT 06615
132-02 89th Ave, Queens, NY 11418
clientservices@yorklab.com
www.yorklab.com

YORK ANALYTICAL LABORATORIES INC

Field Chain-of-Custody Record

NOTE: YORK's Standard Terms & Conditions are listed on the back side of this document.
This document serves as your written authorization for YORK to proceed with the analyses requested below.
Your signature binds you to YORK's Standard Terms & Conditions.

YORK Project No. 19K0221

Page ____ of ____

YOUR Information	Report To:	Invoice To:	YOUR Project Number	Turn-Around Time
Company: WSP USA	Company:	Company:		RUSH - Next Day
Address: 4 Research Dr. #204, Shelton, CT 06515	Address: SAME	Address: SAME		RUSH - Two Day
Phone.: 203-929-8555	Phone.:	Phone.:	YOUR Project Name: Snook Rd	RUSH - Three Day
Contact: Karen Destefanis	Contact:	Contact:		RUSH - Four Day
E-mail: karen.destefanis@wsp.com	E-mail:	E-mail:	YOUR PO#:	Standard (5-7 Day) X

Please print clearly and legibly. All information must be complete. Samples will not be logged in and the turn-around-time clock will not begin until any questions by YORK are resolved.

Jonathan Strickland

Samples Collected by: (print your name above and sign below)

Matrix Codes	Samples From		Report / EDD Type (circle selections)			YORK Reg. Comp.
S - soil / solid	New York	X	Summary Report	CT RCP	Standard Excel EDD	Compared to the following Regulation(s): (please fill in)
GW - groundwater	New Jersey		QA Report	CT RCP DQA/DUE	EQuIS (Standard)	
DW - drinking water	Connecticut		NY ASP A Package	NJDEP Reduced Deliverables	NYSDEC EQuIS	
WW - wastewater	Pennsylvania		NY ASP B Package		NJDEP SRP HazSite	
O - Oil ⋮ Other	Other			NJDKQP	Other:	

Sample Identification	Sample Matrix	Date/Time Sampled	Analysis Requested	Container Description
MW-1A	GW	11/6/19 1225	Na, Cl, 502.2 MTBE	2x250ml, 3x40ml
MW-1B	GW	1218	Na, Cl, 502.2 MTBE	3x40ml
MW-2A	GW	1305	Na, Cl	
MW-2B	GW	1255	Na, Cl	
MW-3A	GW	1106	Na, Cl	
MW-3B	GW	1105	Na, Cl	
MW-4A	GW	1154	Na, Cl	
MW-4B	GW	1147	Na, Cl	
T-1	DW	1000	Na, Cl	
T-2	DW	0955	Na, Cl	

Comments:

Preservation: (check all that apply)
HCl X MeOH ___ HNO3 X H2SO4 ___ NaOH ___ ZnAc ___
Ascorbic Acid ___ Other: Iced

Special Instruction
Field Filtered ____
Lab to Filter ____

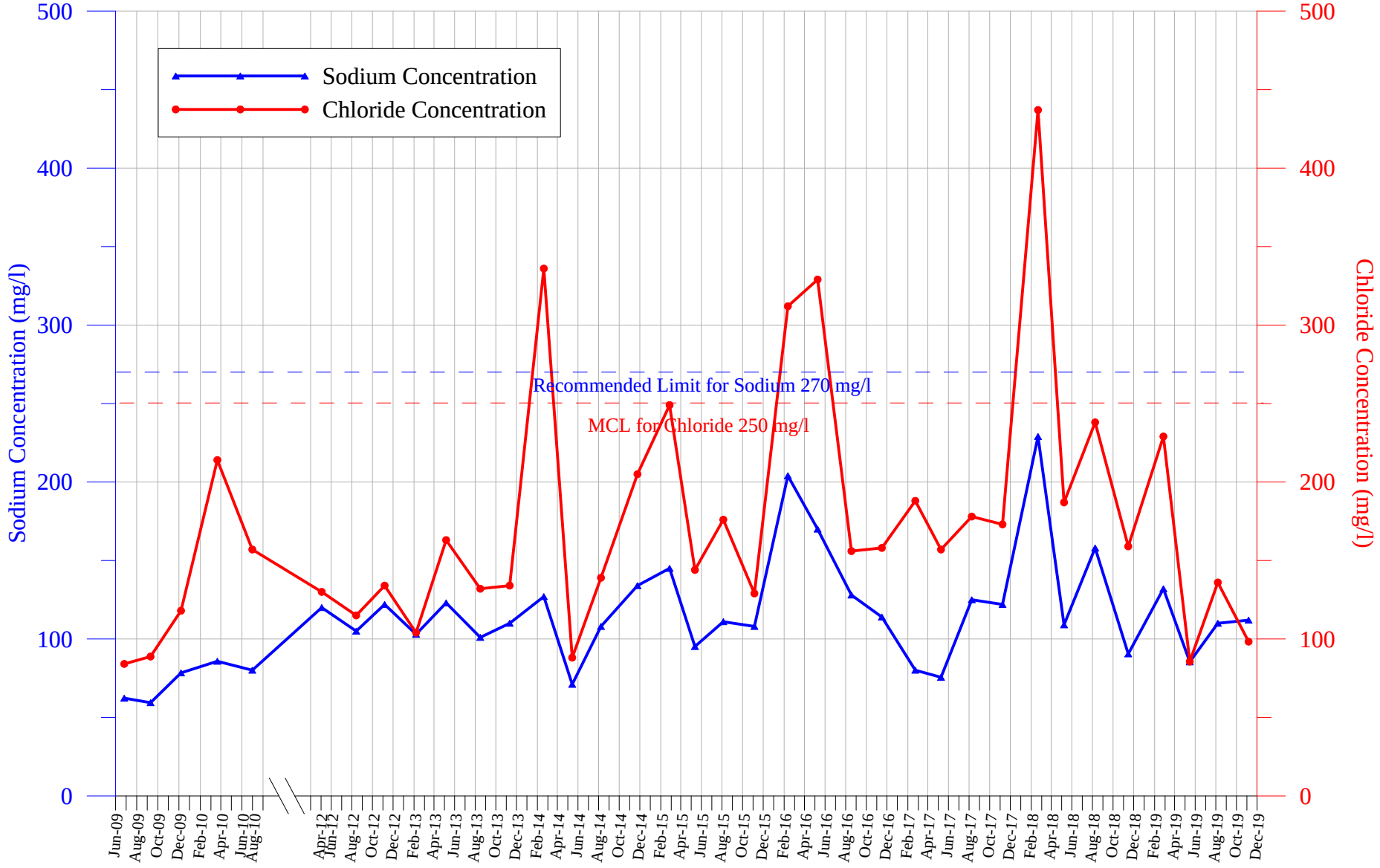
Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time
WSP	11/6/19 1455				
Samples Received by / Company	**Date/Time**	**Samples Relinquished by / Company**	**Date/Time**	**Samples Received by / Company**	**Date/Time**
Samples Relinquished by / Company	**Date/Time**	**Samples Received by / Company**	**Date/Time**	**Samples Received in LAB by**	**Date/Time**
				11-6-19	1455

Temp. Received at Lab: 3.6 Degrees C

APPENDIX III

SNOOK ROAD WELL FIELD
TOWN OF FISHKILL, NEW YORK

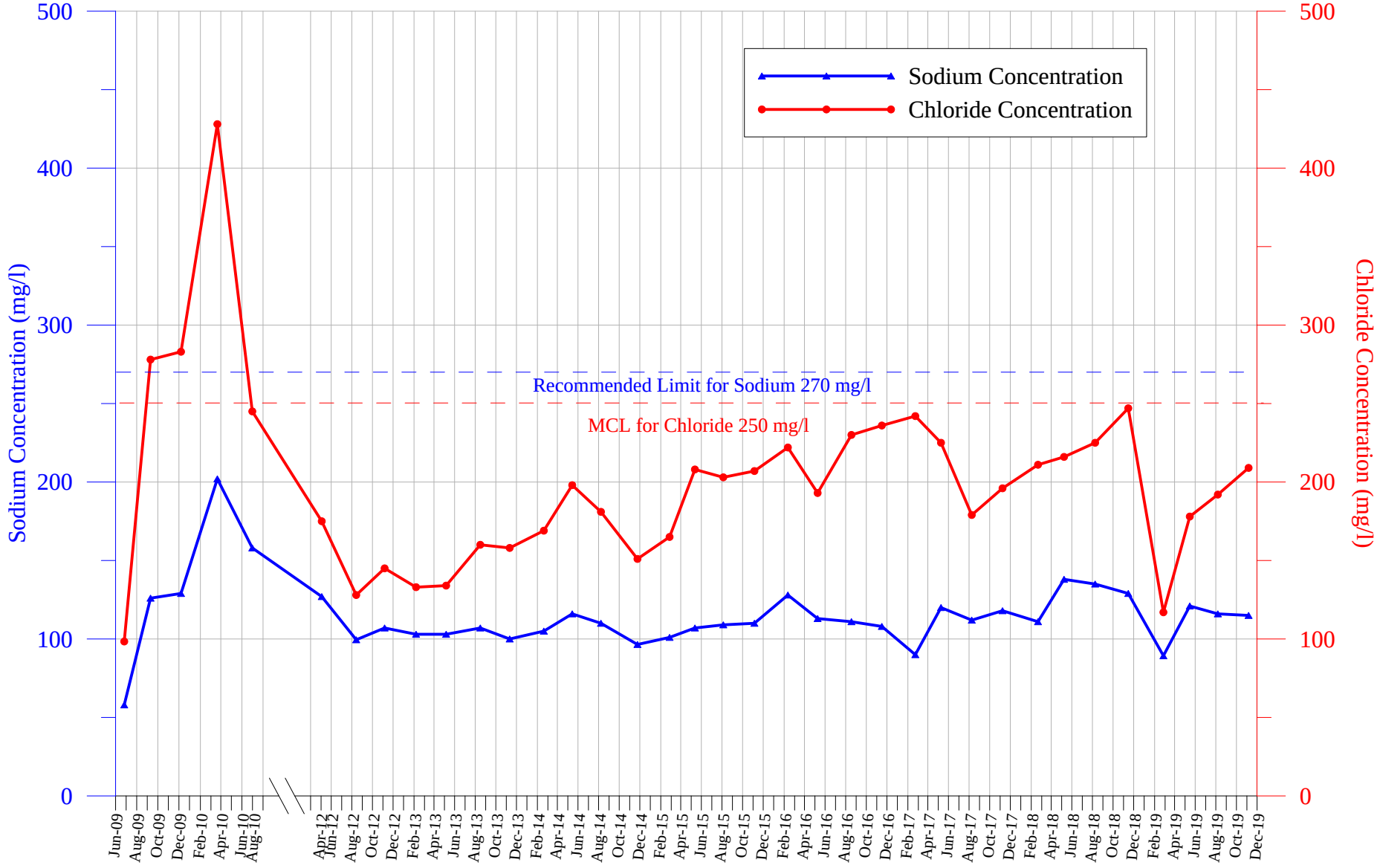
Summary of Sodium and Chloride Concentrations from Monitor Well MW-1A



K:\Jobs\Town of Fishkill\Snook Road Well Field\2019\November 2019\MW-1A full graph_break.grf

SNOOK ROAD WELL FIELD
TOWN OF FISHKILL, NEW YORK

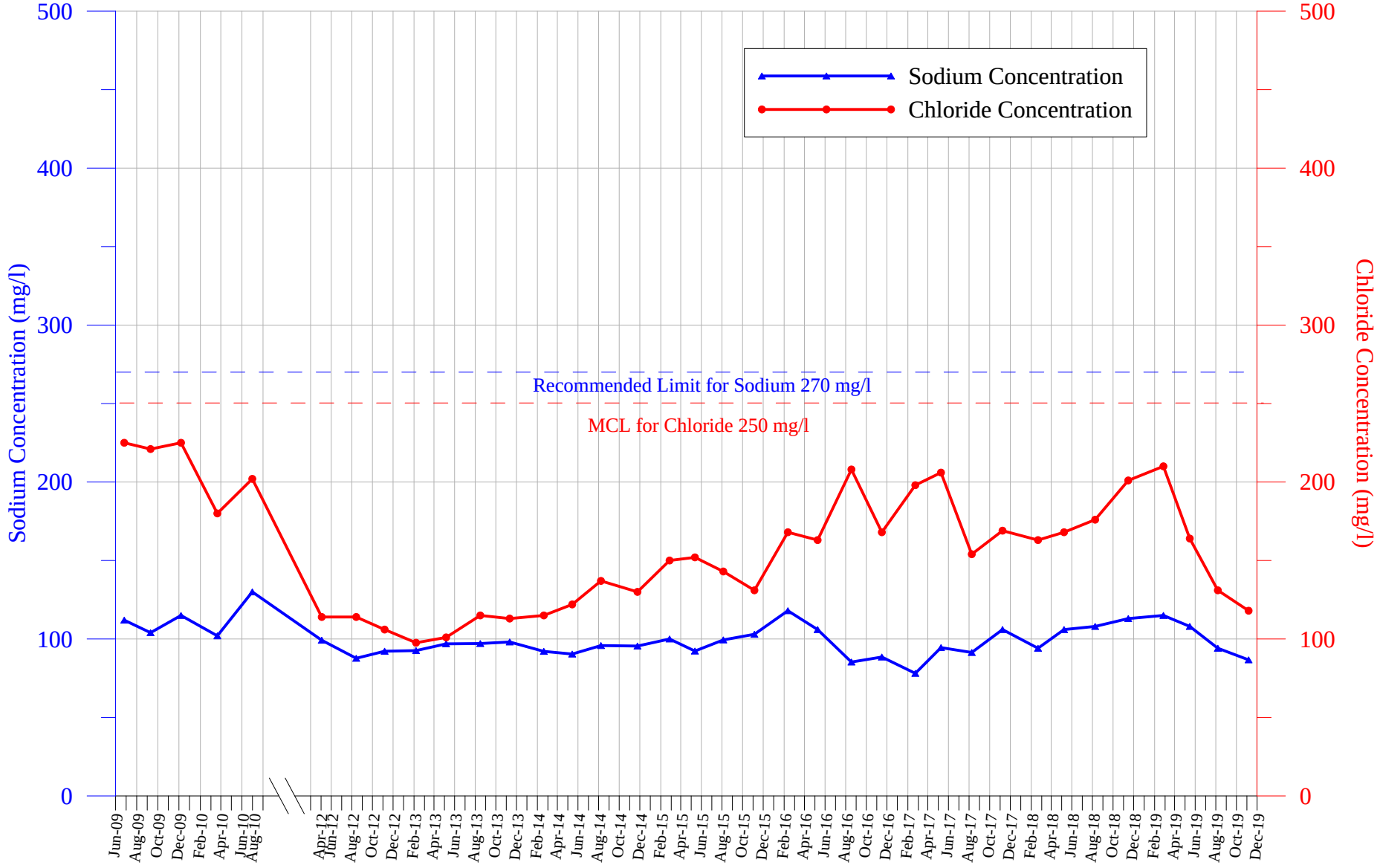
Summary of Sodium and Chloride Concentrations from Monitor Well MW-1B



K:\Jobs\Town of Fishkill\Snook Road Well Field\2019\November 2019\MW-1B full graph_break.grf

SNOOK ROAD WELL FIELD
TOWN OF FISHKILL, NEW YORK

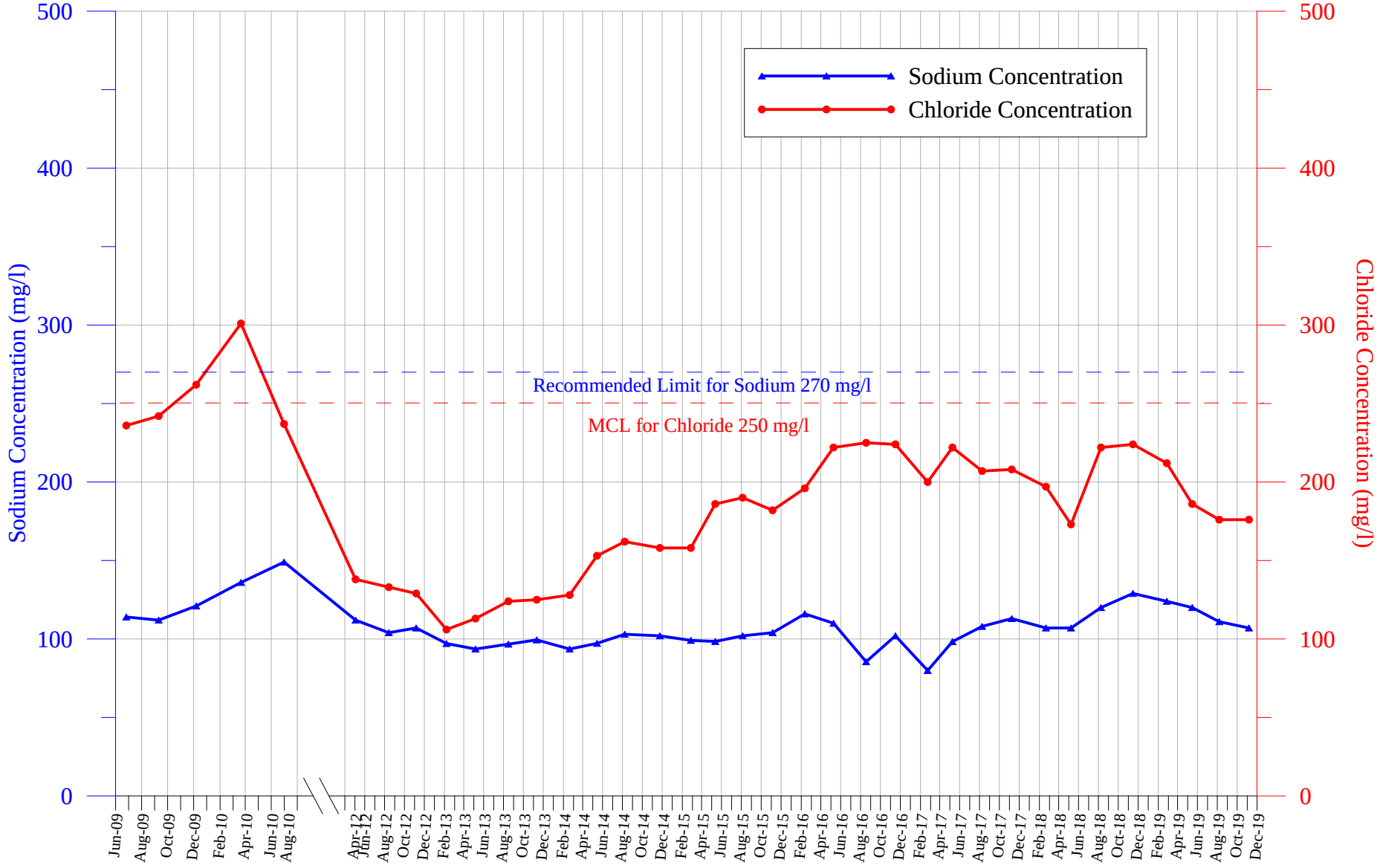
Summary of Sodium and Chloride Concentrations from Monitor Well MW-2A



K:\Jobs\Town of Fishkill\Snook Road Well Field\2019\November 2019\MW-2A full graph_break.grf

SNOOK ROAD WELL FIELD
TOWN OF FISHKILL, NEW YORK

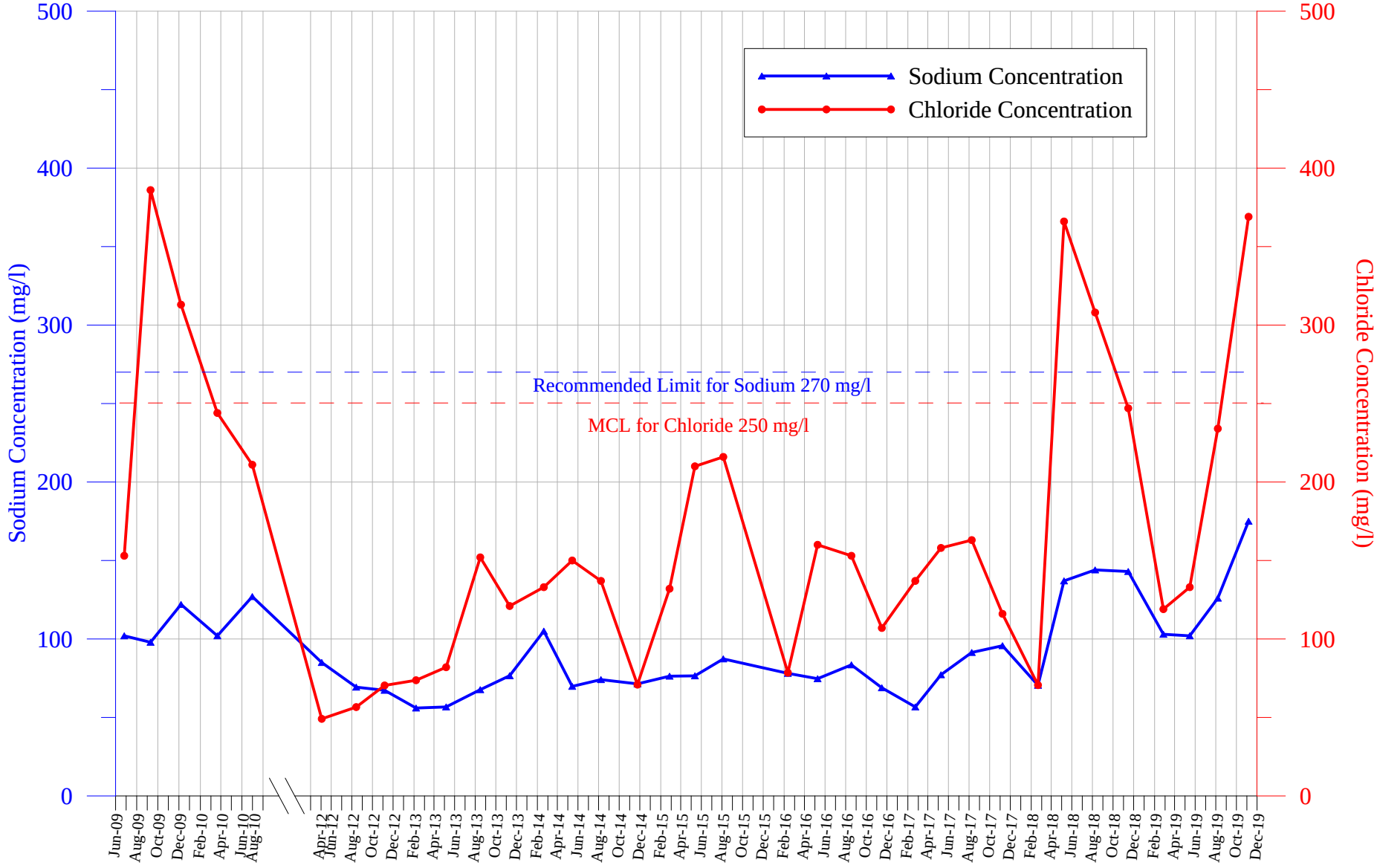
Summary of Sodium and Chloride Concentrations from Monitor Well MW-2B



K:\Jobs\Town of Fishkill\Snook Road Well Field\2019\November 2019\MW-2B full graph_break.grf

SNOOK ROAD WELL FIELD
TOWN OF FISHKILL, NEW YORK

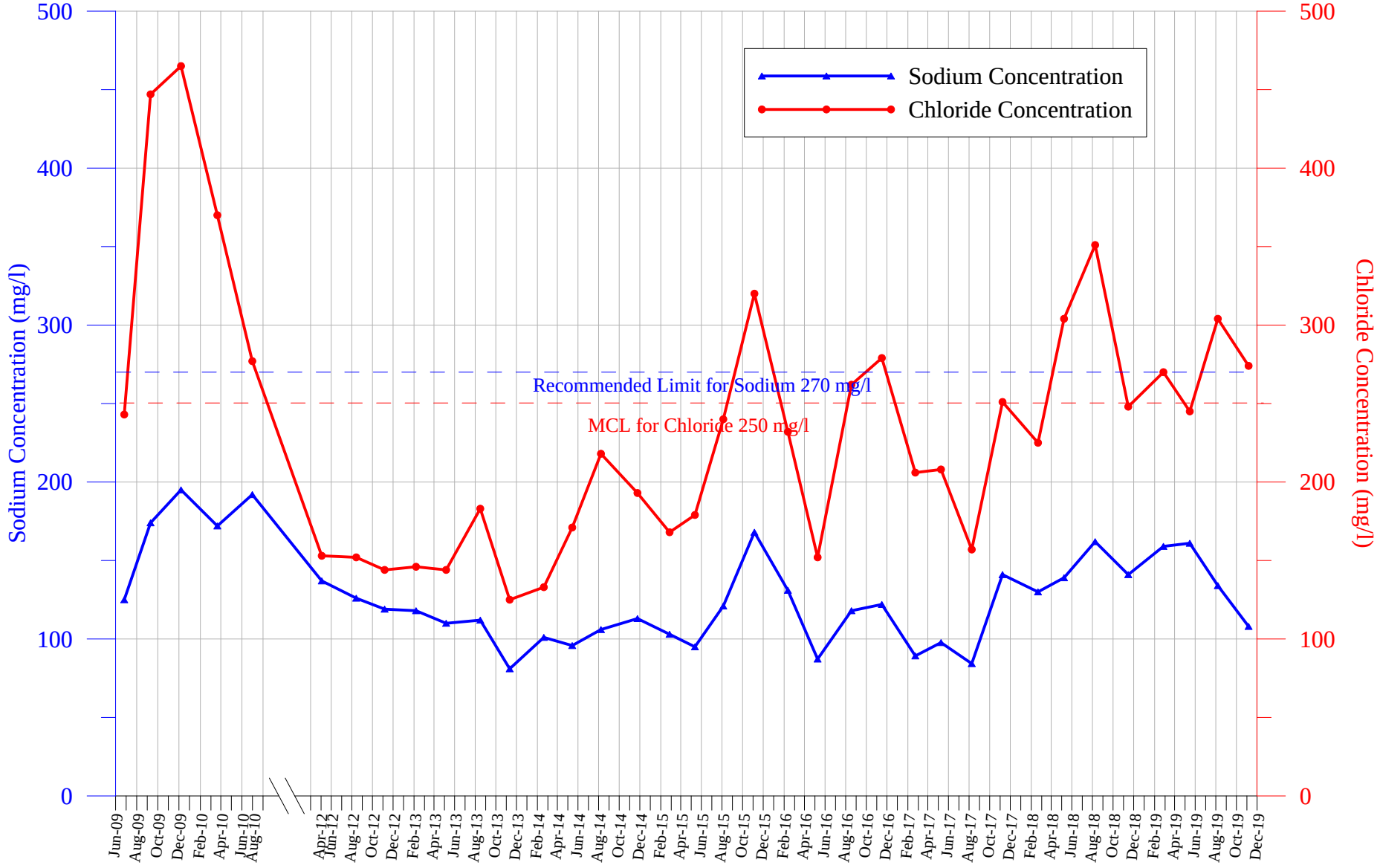
Summary of Sodium and Chloride Concentrations from Monitor Well MW-3A



K:\Jobs\Town of Fishkill\Snook Road Well Field\2019\November 2019\MW-3A full graph_break.grf

SNOOK ROAD WELL FIELD
TOWN OF FISHKILL, NEW YORK

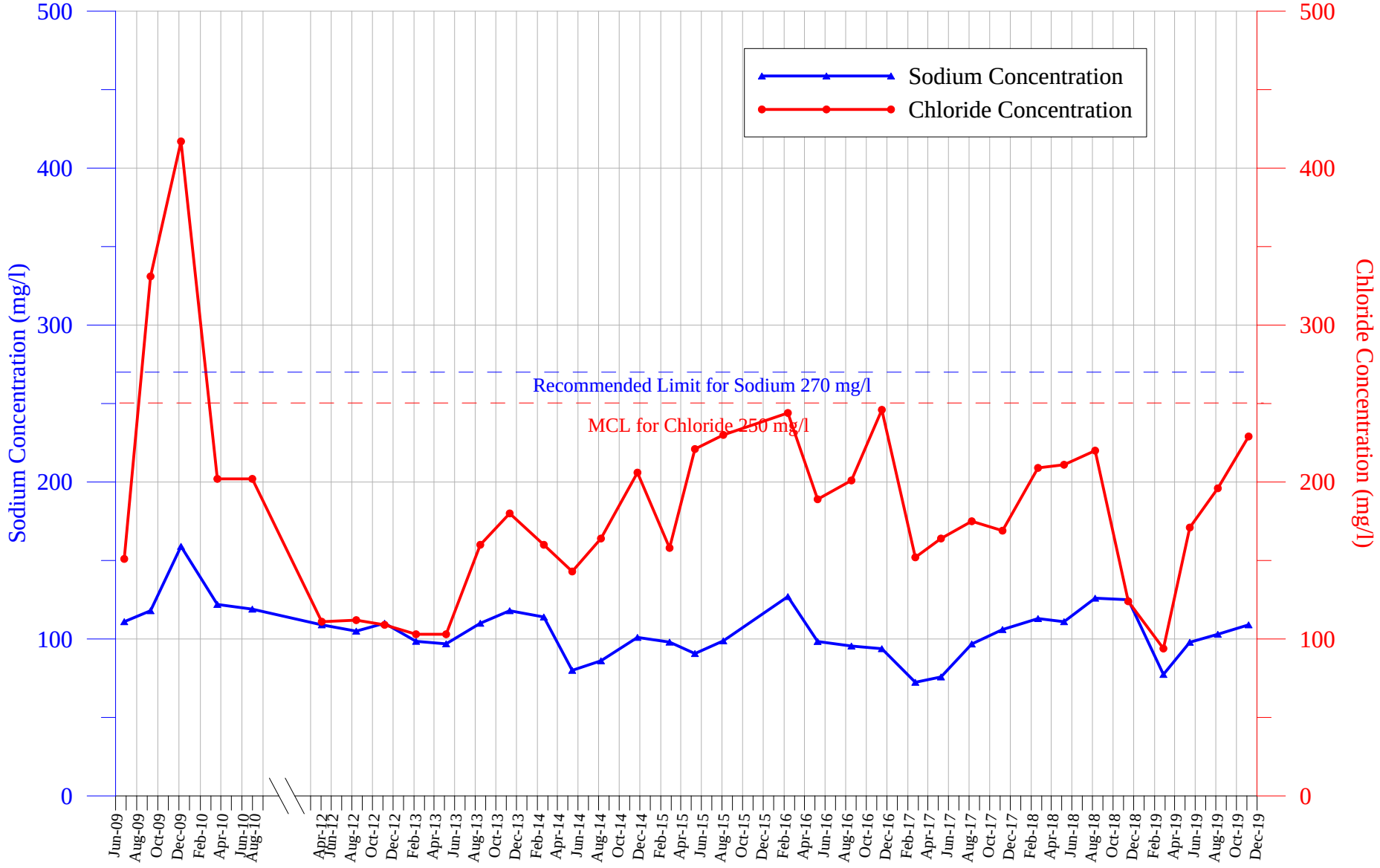
Summary of Sodium and Chloride Concentrations from Monitor Well MW-3B



K:\Jobs\Town of Fishkill\Snook Road Well Field\2019\November 2019\MW-3B full graph_break.grf

SNOOK ROAD WELL FIELD
TOWN OF FISHKILL, NEW YORK

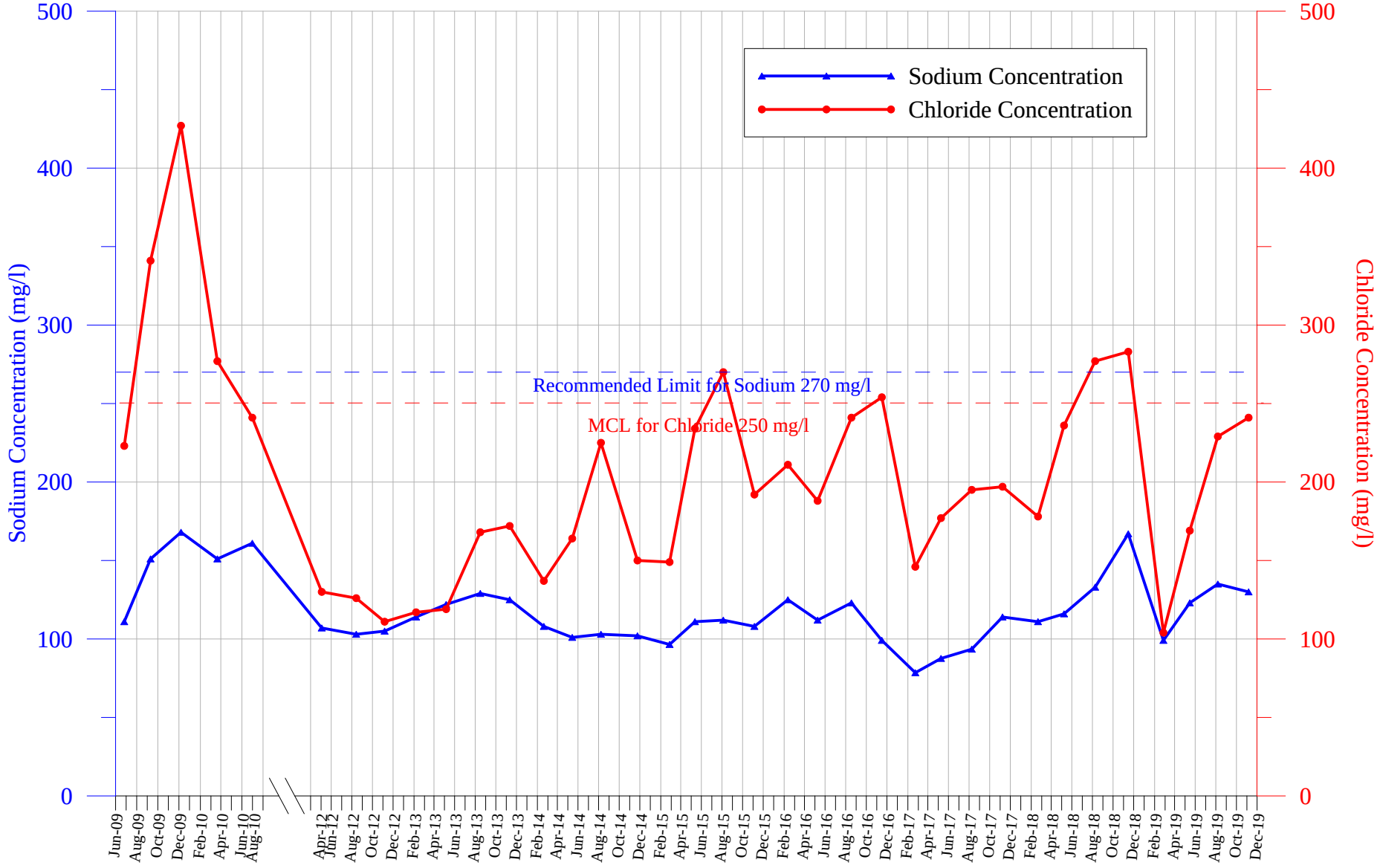
Summary of Sodium and Chloride Concentrations from Monitor Well MW-4A



K:\Jobs\Town of Fishkill\Snook Road Well Field\2019\November 2019\MW-4A full graph_break.grf

SNOOK ROAD WELL FIELD
TOWN OF FISHKILL, NEW YORK

Summary of Sodium and Chloride Concentrations from Monitor Well MW-4B

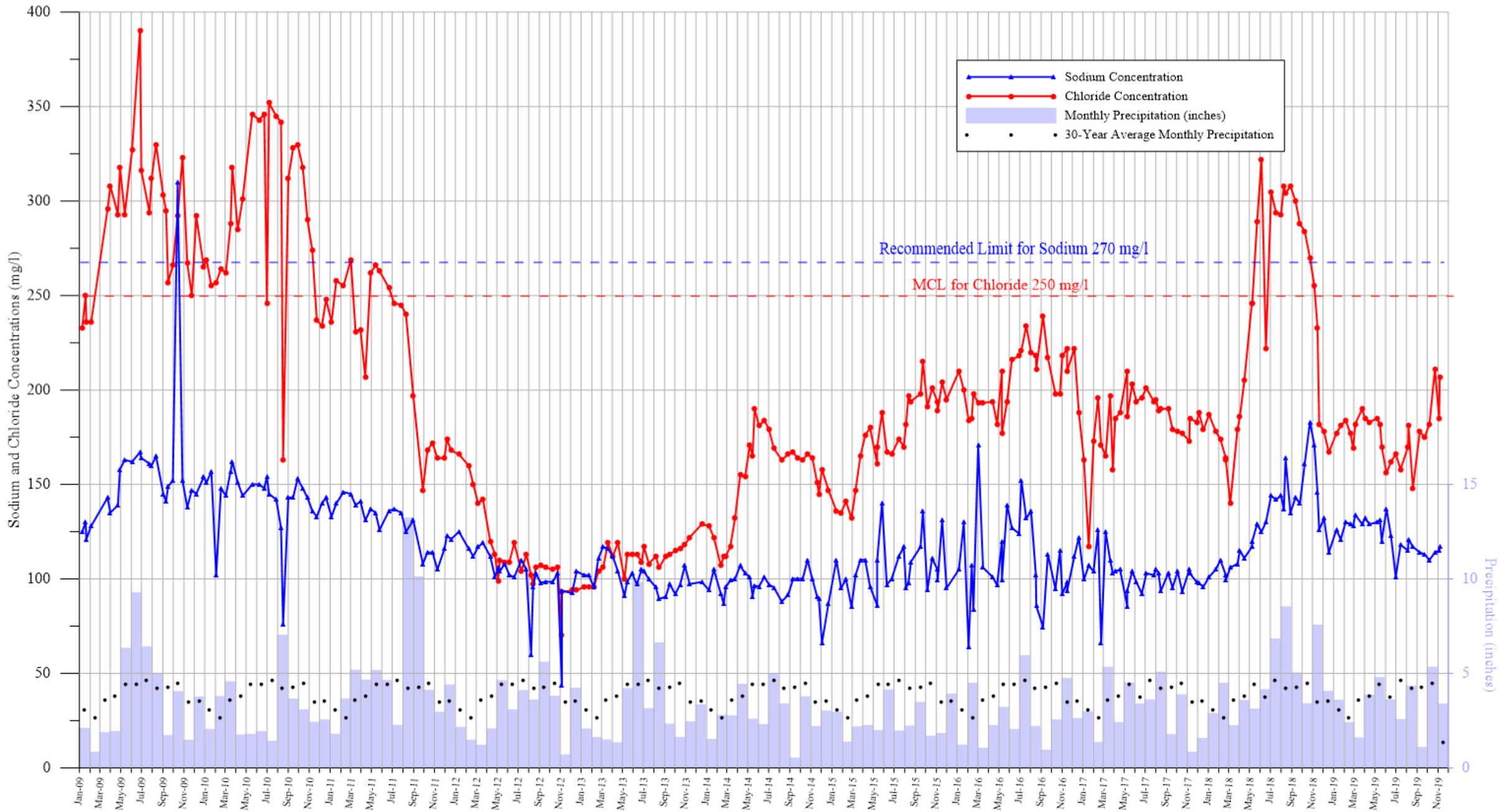


K:\Jobs\Town of Fishkill\Snook Road Well Field\2019\November 2019\MW-4B full graph_break.grf

APPENDIX IV

SNOOK ROAD WELL FIELD
TOWN OF FISHKILL, NEW YORK

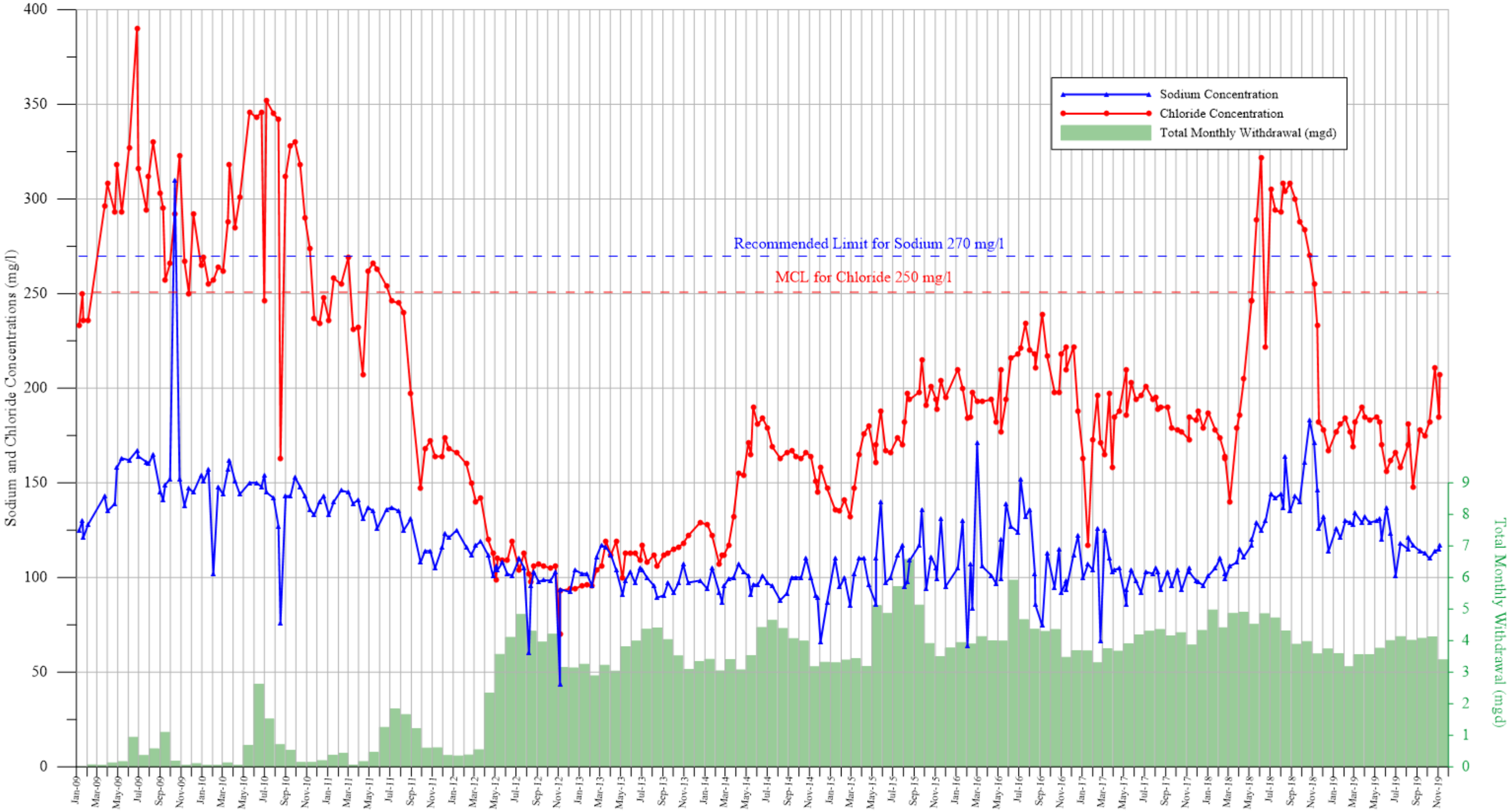
Summary of Sodium and Chloride Concentrations from Production Well T-1
Compared with Monthly Precipitation Totals



K:\Jobs\Town of Fishkill\Snook Road Well Field\2019\November 2019\T-1 conc with precip.grf

SNOOK ROAD WELL FIELD
TOWN OF FISHKILL, NEW YORK

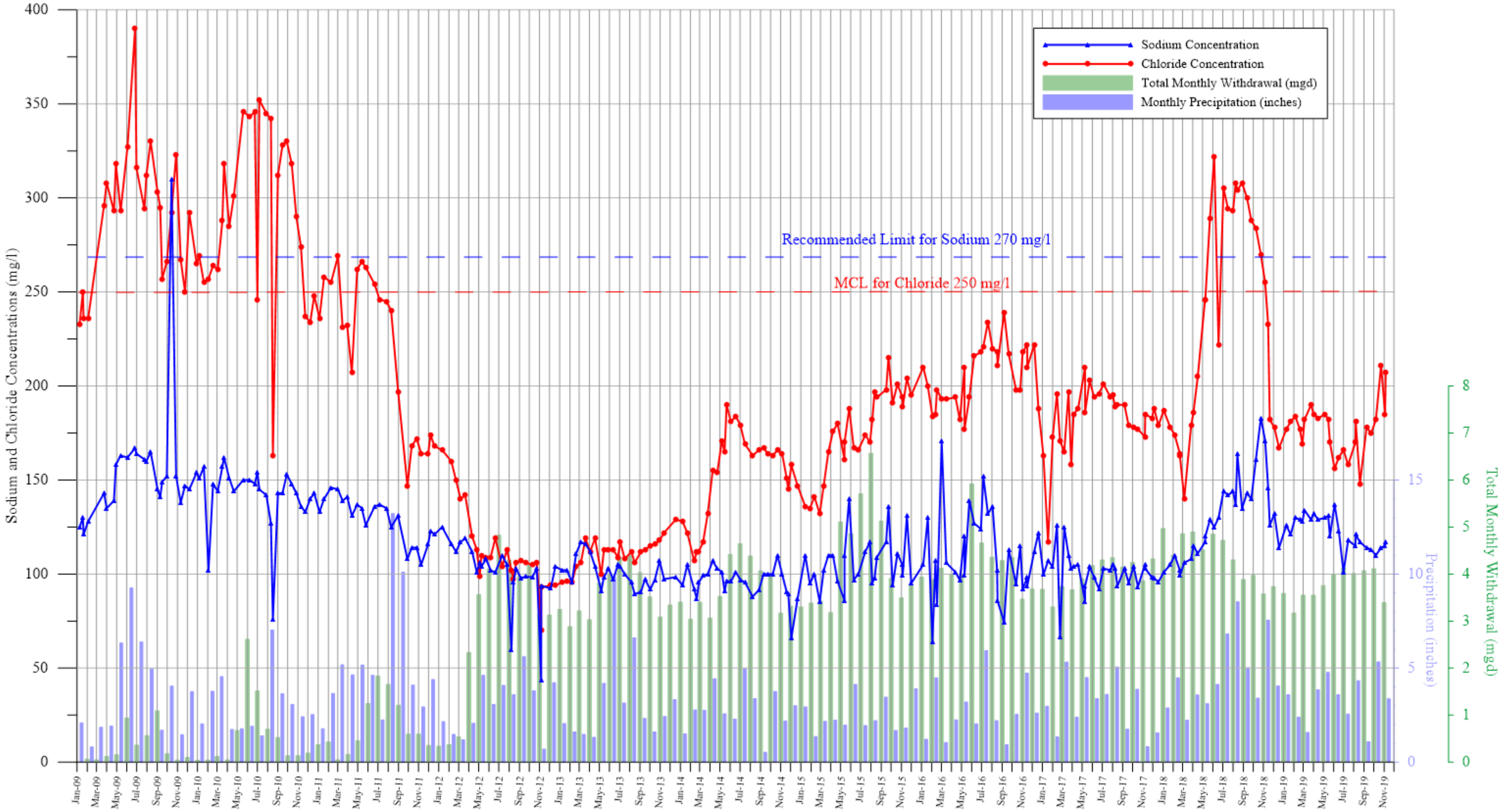
Summary of Sodium and Chloride Concentrations from Production Well T-1 Compared with Monthly Pumping Withdrawal at the Well Field



K:\Jobs\Town of Fishkill\Snook Road Well Field\2019\November 2019\T-1 conc with pumpage.grf

SNOOK ROAD WELL FIELD
TOWN OF FISHKILL, NEW YORK

Summary of Sodium and Chloride Concentrations from Production Well T-1
Compared with Monthly Precipitation and Pumping Withdrawal at the Well Field

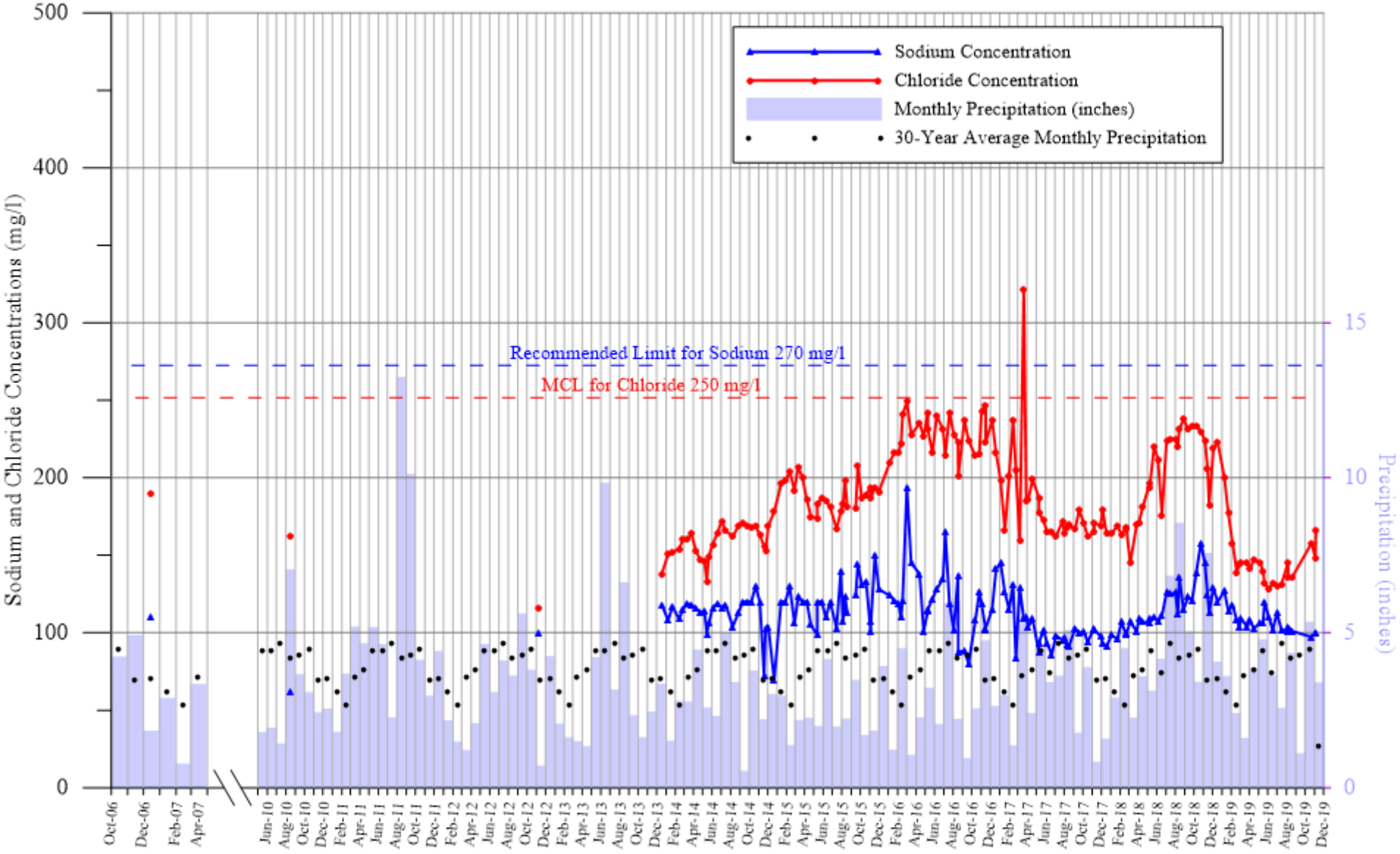


K:\Jobs\Town of Fishkill\Snook Road Well Field\2019\August 2019\T-1 conc with pumpage with precip.grf

APPENDIX V

SNOOK ROAD WELL FIELD
TOWN OF FISHKILL, NEW YORK

Summary of Sodium and Chloride Concentrations from Production Well T-2
Compared with Monthly Precipitation Totals



K:\Jobs\Town of Fishkill\Snook Road Well Field\2019\November 2019\T-2 conc with precip.grf