AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Avocet Subdivision, Wake County
WSF ID No.: Well #1, P01
Water System No: NC4092107

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Avocet Well #1, P01. The Avocet water system is comprised of four active wells and three points of entry (POE). The current number of customers served is 135 and the system is approved to serve 155 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #1, P01.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results Fe (mg/L)	Mn (mg/L)
Avocet, Well #1, P01 (Samples collected on 4/26/16)	32	5.5	1.60	0.112

System Flushing

The system was flushed in July 2013 and July 2016. Prospectively, Aqua plans to flush the Avocet water system on an annual basis. Aqua began feeding SeaQuest in September 2015.

Discolored Water Complaints

Aqua has received three customer complaints from the Avocet water system over the last 12 months.

Corrective Action

Analysis of the sampling of the iron and manganese of Well #1 shows the levels to be elevated. Since Aqua began feeding SeaQuest in September 2015. The distribution system was flushed in July 2016 and will continue to be flush annually. Aqua plans to collect special samples for turbidity beginning in September 2016. Samples will be collected from the raw water and from the point of entry on a quarterly basis. Based on those results, Aqua will pursue the installation of a cartridge filter, if necessary. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intension of improving clarity and reducing and/or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Bayleaf Master System, Wake County
WSF ID Nos. P12, P16, P19, P28, P39, P63, P75, P76, P92, P3B, P4B, P7B
Water System No: NC0392373

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Bayleaf Master System P12, P16, P19, P28, P39, P63, P75, P76, P92, P3B, P4B, P7B. The Bayleaf Master water system is comprised of 122 active wells and 117 points of entry (POE). The current number of customers served is 6,112 and the system is approved to serve 6,356 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at WSF ID Nos. P12, P16, P19, P28, P39, P63, P75, P76, P92, P3B, P4B, P7B.

TABLE 1. P12 - Martindale Well #2 Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results Fe (mg/L)	Mn (mg/L)
Martindale Well #2 P12 (Samples collected on 3/14/2013)	37	0	.1	1.53

Bayleaf Master System,
WSF ID Nos. P12, P16, P19, P28, P39, P63, P75, P76, P92, P3B, P4B, P7B
August 10, 2016

TABLE 2. P16 – Swan's Mill Well #1 Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results Fe (mg/L)	Mn (mg/L)
Swans Mill Well #1 P16 (Samples collected on 3/24/2015)	80	0	7.8	0.02

The Fe and Mn results posted in the table above were part of the IOC sample collected on March 24, 2015. The master system is flushed on an annual basis and was most recently flushed between January 6, 2016 and April 1, 2016. Aqua has received no customer complaints from Swan's Mill water system in the last 12 months.

Aqua began feeding SeaQuest in September 2015.

Corrective Action:
Aqua plans to collect an IOC sample in September 2016. Based on those results, Aqua will take the necessary steps to install proper treatment, if necessary.

TABLE 3. P19 – Martindale Well #3 Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results Fe (mg/L)	Mn (mg/L)
Martindale Well #3 P19 (Samples collected on 1/7/2016)	60	0	1.17	.80

The Fe and Mn results posted in the table above were part of the IOC sample collected on January 7, 2016. The master system is flushed on an annual basis and was most recently flushed between January 6, 2016 and April 1, 2016. Aqua has received no customer complaints from Martindale water system in the last 12 months.

Corrective Action:
This well has not run since February 2016. Due to a loss of production, Aqua plans to clean the well in an effort to regain well production. At that time, Aqua will collect raw water and point of entry turbidity and then plan a course of action based upon those results.

Bayleaf Master System,
WSF ID Nos. P12, P16, P19, P28, P39, P63, P75, P76, P92, P3B, P4B, P7B
August 10, 2016

TABLE 4: P28 – Shannon Woods Well #1 Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results Fe (mg/L)	Mn (mg/L)
Shannon Woods Well #1 P28 (Samples collected on 1/30/2015)	77	0	8.0	0.0

The Fe and Mn results posted in the table above were part of the IOC sample collected on January 30, 2015. The master system is flushed on an annual basis and was most recently flushed between January 6, 2016 and April 1, 2016. Aqua has received no customer complaints from Shannon Woods water system in the last 12 months.

Aqua began feeding SeaQuest in September 2015.

Corrective Action:
This well is offline due to a loss of production and poor water quality. Aqua plans to clean the well in an effort to regain well production. At that time, Aqua will collect raw water and point of entry turbidity samples and then plan a course of action based upon results.

TABLE 5: P39 – Sheffield Manor Well #2 Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results Fe (mg/L)	Mn (mg/L)
Sheffield Manor Well #2 P39 (Samples collected on 1/29/15)	25	0	1.0	0

The Fe and Mn results posted in the table above were part of the IOC sample collected on January 29, 2015. The master system is flushed on an annual basis and was most recently flushed between January 6, 2016 and April 1, 2016. Aqua has received two customer complaints from Sheffield Manor water system in the last 12 months.

Corrective Action
This well has been offline since 2013 due to a loss of production and poor water quality. Aqua plans to clean the well in an effort to regain well production. At that time, Aqua will collect raw water and point of entry turbidity samples and then plan a course of action based upon results.

Bayleaf Master System,
WSF ID Nos. P12, P16, P19, P28, P39, P63, P75, P76, P92, P3B, P4B, P7B
August 10, 2016

TABLE 6: P63 – The Barony Well #5 Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
			Fe (mg/L)	Mn (mg/L)
The Barony Well #5 P63 (Samples collected on 1/6/14)	77	11.02	1.0	.47

The Fe and Mn results posted in the table above were part of the IOC sample collected on January 06, 2014. The master system is flushed on an annual basis and was most recently flushed between January 6, 2016 and April 1, 2016. Aqua has received no customer complaints from The Barony water system in the last 12 months.

Aqua began feeding SeaQuest in September 2015.

Corrective Action:
Aqua plans to collect special samples for turbidity beginning in September 2016. Samples will be collected from the raw water and from the point of entry on a quarterly basis. Based on those results, Aqua will pursue the installation of a cartridge filter, if necessary. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

TABLE 7: P75 – Enclave at Barton Creek Bluffs Well #18 Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
			Fe (mg/L)	Mn (mg/L)
Enclave at Barton Creek Bluffs Well #18 P75 (Samples collected on 10/9/2013)	75	8.10	1.0	.29

The Fe and Mn results posted in the table above were part of the IOC sample collected on October 9, 2013. The master system is flushed on an annual basis and was most recently flushed between January 6, 2016 and April 1, 2016 of this year. Aqua has received eight customer complaints from the Enclave at Barton Creek Bluffs water system in the last 12 months.

Aqua began feeding SeaQuest in October 2015.

Bayleaf Master System,
WSF ID Nos. P12, P16, P19, P28, P39, P63, P75, P76, P92, P3B, P4B, P7B
August 10, 2016

Corrective Action
Aqua plans to collect special samples for turbidity beginning in September 2016. Samples will be collected from the raw water and from the point of entry on a quarterly basis. Based on those results,

Aqua will pursue the installation of a cartridge filter, if necessary. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest. Aqua also plans to collect an IOC sample from this well in October 2016.

TABLE 8: P76 – Hawthorne Wells #1 and #2 Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results Fe (mg/L)	Mn (mg/L)
Hawthorne Well#1 and Well #2 P76 (Samples collected on 5/19/16)	73	10.7	1.01	.53

The Fe and Mn results posted in the table above were part of the IOC sample collected on May 19, 2016. The master system is flushed on an annual basis and was most recently flushed between January 6, 2016 and April 1, 2016. Aqua has received no customer complaints from the Hawthorne water system in the last 12 months.

Currently Well #2 is offline and there are no plans to bring this well back on line. Well #1 will continue to be used.

Aqua began feeding SeaQuest in February 2016.

Corrective Action:
Aqua plans to collect special samples for turbidity beginning in September 2016. Samples will be collected from the raw water and from the point of entry on a quarterly basis. Based on those results, Aqua will pursue the installation of a cartridge filter, if necessary. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

Bayleaf Master System,
WSF ID Nos. P12, P16, P19, P28, P39, P63, P75, P76, P92, P3B, P4B, P7B
August 10, 2016

TABLE 9: P92 – Woodvalley Well #9 Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
			Fe (mg/L)	Mn (mg/L)
Woodvalley #9 P92 (Samples collected on 10/7/15)	38	8.39	.8	.5

The Fe and Mn results posted in the table above were part of the IOC sample collected on October 7, 2015. The master system is flushed on an annual basis and was most recently flushed between January 6, 2016 and April 1, 2016. Aqua has received two customer complaints from the Woodvalley water system in the last 12 months.

Aqua began feeding SeaQuest in February 2016.

Corrective Action
Aqua plans to collect special samples for turbidity beginning in September 2016. Samples will be collected from the raw water and from the point of entry on a quarterly basis. Based on those results, Aqua will pursue the installation of a cartridge filter, if necessary. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

TABLE 10: P3B – Carlyle Manor Well #4 Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
			Fe (mg/L)	Mn (mg/L)
Carlyle Manor Well #4 P3B (Samples collected on 10/7/15)	73	8.5	2.0	.67

The Fe and Mn results posted in the table above were part of the IOC sample collected on October 7, 2015. The master system is flushed on an annual basis and was most recently flushed between January 6, 2016 and April 1, 2016. Aqua has received four customer complaints from the Carlyle Manor water system in the last 12 months.

Aqua began feeding SeaQuest in September 2015.

Corrective Action
Aqua plans to collect special samples for turbidity beginning in September 2016. Samples will be collected from the raw water and from the point of entry on a quarterly basis. Based on those results,

Bayleaf Master System,
WSF ID Nos. P12, P16, P19, P28, P39, P63, P75, P76, P92, P3B, P4B, P7B
August 10, 2016

Aqua will pursue the installation of a cartridge filter, if necessary. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

TABLE 11. P4B – Seville Well #1 Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results Fe (mg/L)	Mn (mg/L)
Seville Well #1 P4B (Samples collected on 1/9/16)	44	7.25	1.0	.50

The Fe and Mn results posted in the table above were part of the IOC sample collected on January 9, 2016. The master system is flushed on an annual basis and was most recently flushed between January 6, 2016 and April 1, 2016. Aqua received no customer complaints from the Seville water system in the last 12 months.

Aqua began feeding SeaQuest in August 2015.

Corrective Action:
Aqua plans to collect special samples for turbidity beginning in September 2016. Samples will be collected from the raw water and from the point of entry on a quarterly basis. Based on those results, Aqua will pursue the installation of a cartridge filter, if necessary. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

TABLE 1: George's Grant Well #1 Run Time and IOC Analysis P7B

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results Fe (mg/L)	Mn (mg/L)
George's Grant Well #1 P7B (Samples collected on 4/23/15)	66	6.16	1.3	.63

The Fe and Mn results posted in the table above were part of the IOC sample collected on April 23, 2015. The master system is flushed on an annual basis and was most recently flushed between January 6, 2016 and April 1, 2016. Aqua has received Aqua received no customer complaints from the George's Grant water system in the last 12 months.

Aqua began feeding SeaQuest in October 2015.

Bayleaf Master System,
WSF ID Nos. P12, P16, P19, P28, P39, P63, P75, P76, P92, P3B, P4B, P7B
August 10, 2016

Corrective Action

Aqua plans to collect special samples for turbidity beginning in September 2016. Samples will be collected from the raw water and from the point of entry on a quarterly basis. Based on those results, Aqua will pursue the installation of a cartridge filter, if necessary. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intension of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Belle Ridge Subdivision, Wake County
WSF ID No.: Well #2, P02
Water System No: NC0392358

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Belle Ridge Well #2, P02. The Belle Ridge water system is comprised of two active wells and two points of entry (POE). The current number of customers served is 55 and the system is approved to serve 55 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #2, P01.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Fe (mg/L)	Mn (mg/L)
Belle Ridge, Well #2, P02 (sample collected on 10/23/13)	30	1.5	1.0	0.22

System Flushing

The Belle Ridge water system was last flushed in July 2016 and will be flushed on an annual basis.

Discolored Water Complaints

Aqua has received no customer complaints from the Belle Ridge water system for the last 12 months.

Corrective Actions

The analysis of the iron and manganese levels reveals the well has high levels of iron and manganese at Well #2. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in August 2015. Aqua has limited the use of this well and relies more on Well #1 for meeting system demand. Aqua is committed to flushing this system on an annual basis and will collect special samples for turbidity beginning in September 2016. Samples will be collected from the raw water and from the point of entry on a quarterly basis. Based on those results, Aqua will pursue the installation of a cartridge filter, if necessary. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intension of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Branston Subdivision, Wake County
WSF ID No.: Well #2, TP1
Water System No: NC4092076

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Branston Well #2, TP1. The Branston water system is comprised of one active well and one point of entry (POE). The current number of customers served is 43 and the system is approved to serve 44 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #2, TP1.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results Fe (mg/L)	Mn (mg/L)
Branston, Well #2, TP1 (Samples collected on 1/5/16)	49	6.5	.70	0.30

System Flushing
The Branston Subdivision is flushed on an annual basis; listed below are dates for the past three years:

- September 2013
- August 2014
- November 2015

Discolored Water Complaints
Aqua has received one customer complaint from the Branston water system over the last 12 months.

Corrective Actions
Analysis reveals the well has elevated concentrations of iron and manganese at Well #2. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in July 2013. Since Aqua began feeding SeaQuest, the distribution system has been flushed annually and will continue to flush the distribution system at this reoccurring frequency. The next scheduled flushing is for October 2016. Aqua plans to collect special samples for turbidity beginning September 2016. Samples will be collected from the raw water and from the point of entry on a quarterly basis. Based on those results, Aqua will pursue the installation of a cartridge filter, if necessary. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intension of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Briarwood/Kildaire Subdivision, Wake County
WSF ID No.: Well #1, P04
Water System No: NC0392383

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Briarwood/Kildaire Well #1, P04. The Briarwood/Kildaire water system is comprised of five active wells and five points of entry (POE). The current number of customers served is 156 and the system is approved to serve 168 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #1, P04.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results Fe (mg/L)	Mn (mg/L)
Briarwood/Kildaire, Well #1, P04 (Samples collected on 1/6/16)	30	5.8	0.95	0.17

System Flushing

The Briarwood/Kildaire water system is flushed on an annual basis and was most recently flushed in July 2016.

Discolored Water Complaints

Aqua has received six customer complaints from the Briarwood/Kildaire water system over the last 12 months.

Corrective Actions

Analysis of the iron and manganese levels reveals the well has some iron and an elevated concentration of manganese at Well #1. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in June 2015. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. Aqua plans to collect special samples for turbidity beginning in October 2016. Samples will be collected from the raw water and from the point of entry on a monthly basis. Based on those results, Aqua will pursue the installation of a cartridge filter, if necessary. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intension of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Cotesworth Down Subdivision, Wake County
WSF ID No.: Well # 2, P05
Water System No: NC4392125

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Cotesworth Down Well #2, P05. The Cotesworth Down water system is comprised of four active wells and four points of entry (POE). The current number of customers served is 192 and the system is approved to serve 192 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #2, P05.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Fe (mg/L)	Mn (mg/L)
Cotesworth Down, Well #2, P05 (Samples collected on 2/14/14)	100	5.0	0.80	0.213

System Flushing

The Cotesworth Downs Master System is flushed on an annual basis with the most recent flushing being April 2016.

Discolored Water Complaints
Aqua received five customer complaints from the Cotesworth water system over the last 12 months

Corrective Actions
In an effort to ensure the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in September 2014. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. In August 2015, Aqua installed a cartridge filter at this entry point in an effort to remove the insoluble portion of the iron coming from the well. Aqua plans to collect special samples for turbidity beginning in September 2016 and these will be collected each quarter. Aqua plans to use a turbidity performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest. In addition, Aqua will collect a new IOC sample during the fourth quarter of 2016.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intension of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Crescent Ridge Subdivision, Wake County
WSF ID No.: Well #5, P02
Water System No: NC4092011

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Crescent Ridge Well #5, P02. The Crescent Ridge water system is comprised of two active wells and two points of entry (POE). The current number of customers served is 95 and the system is approved to serve 95 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #5, P02.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Fe (mg/L)	Mn (mg/L)
Crescent Ridge, Well #5, P02 (Samples collected on 4/23/15)	43	3.68	.7	.3

System Flushing

The Crescent Ridge water system is flushed on an annual basis with the most recent flushing being March 2016. The hydropneumatic tank was cleaned in April 2014.

Discolored Water Complaints

Aqua received three customer complaints from the Crescent Ridge water system in the last 12 months.

Corrective Actions

Analysis of the iron and manganese levels reveals the well has some elevated concentration of iron and manganese at Well #5. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in September 2013. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. A cartridge filter was added in October 2013. By Order dated May 21, 2015, from the North Carolina Utilities Commission, Aqua received approval for and is currently installing a permanent filtration system for combined treatment of both Wells #5 and #6. Completion for the filter installation is expected by the end of September 2016.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Duncan Ridge Subdivision, Wake County
WSF ID No.: Well #5, P05
Water System No: NC4092063

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Duncan Ridge Well #5, P05. The Duncan Ridge water system is comprised of three active wells and two points of entry (POE). The current number of customers served is 87 and the system is approved to serve 90 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #5, P05.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Fe (mg/L)	Mn (mg/L)
Duncan Ridge, Well #5, P05 (Samples collected on 4/29/15)	33	2.8	1.08	0.3

System Flushing

The Duncan Ridge water system is flushed on an annual basis. Below are the dates for the last three years:

- September 2014
- July 2015
- July 2016

Discolored Water Complaints
Aqua received six customer complaints from the Duncan Ridge water system over the last 12 months.

Corrective Actions
Analysis of the iron and manganese levels reveals the well has elevated concentration levels of iron and manganese at Well #5. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in August 2014. Since then, Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. Aqua has limited the run times for this well because Wells #1 and #4 are typically running twice the amount of time of Well #5. Aqua plans to collect special samples for turbidity beginning in September 2016. Samples will be collected from the raw water and from the point of entry on a quarterly basis. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest. In addition, Aqua plans to install an automatic blow-off at the wellhead, which will be equipped with a solenoid valve and actuator to discharge water at the beginning of each pump cycle.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intension of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Eagle Creek Subdivision, Wake County
WSF ID No.: Well #3, P03
Water System No: NC4392128

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Eagle Creek Well #3, P03. The Eagle Creek water system is comprised of three active wells and three points of entry (POE). The current number of customers served is 89 and the system is approved to serve 89 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #3, P03.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Fe (mg/L)	Mn (mg/L)
Eagle Creek, Well #3, P03 (Samples collected on 2/19/14)	29	9.7	0.9	0.13

System Flushing

Aqua flushes the Eagle Creek Subdivision on an annual basis. Below are the dates for the last three years:

- May 2014
- May 2015
- May 2016

Discolored Water Complaints
Aqua has received six customer complaints from the Eagle Creek water system over the last 12 months.

Corrective Actions
Analysis reveals the well has elevated concentration levels of iron and manganese at Well #3. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in September 2015. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. Due to annual flushing and the switch to SeaQuest, the number of customer complaints has decreased over the last 18 months. Aqua plans to collect special samples for turbidity beginning in September 2016. Samples will be collected from the raw water and from the point of entry on a quarterly basis. Based on those results, Aqua will pursue the installation of a cartridge filter, if necessary. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intension of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Forrest Glen Subdivision, Wake County
WSF ID No.: Well #1, P01
Water System No: NC4392142

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Forrest Glen Well #1, P01. The Forrest Glen water system is comprised of two active wells and two points of entry (POE). The current number of customers served is 108 and the system is approved to serve 109 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #1, P01.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Fe (mg/L)	Most Recent Inorganic Sampling Mn (mg/L)
Forrest Glen Master, Well #1, P01 (Samples collected on 4/13/15)	34	0.9	1.39	0.155

System Flushing
At a minimum, Aqua flushes the Forrest Glen water system on an annual basis and has flushed the system five times over the last three years. The water system was most recently flushed in December 2015 and the hydropneumatic tank was cleaned in February 2015.

Discolored Water Complaints
Aqua received nineteen customer complaints from the Forrest Glen Master System over the last twelve months.

Corrective Actions
Analysis reveals the well has elevated concentration levels of iron and manganese at Well #1. In an effort to ensure that the drinking water is not discolored due to the presence of these minerals, Aqua started feeding SeaQuest in June 2014. Harmsco particulate filters were installed at both wells in February 2015. The amount of minerals collected on these filters caused each filter to collapse within one week of installation; therefore, we are unable to use the particulate filters. Aqua prepared a request to the Public Staff of the North Carolina Utilities Commission for a permanent filtration system at Well #2, which has the larger capacity of the two wells. The Public Staff has requested additional information regarding the request for the filtration system; this information was provided by Aqua on July 18, 2016. Currently, Aqua is keeping the run times at Well #1 to a minimum. Aqua intends to use Well #1 as a backup well if the request for a permanent filtration system is approved for Well #2. Aqua will flush the system on an annual basis and will continue to optimize the sequestration at each well and monitor for customer complaints.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intension of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Galloway Subdivision, Wake County
WSF ID No.: Well #2, P02
Water System No: NC4092027

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Galloway Well #2, P02. The Galloway water system is comprised of two active wells and two points of entry (POE). The current number of customers served is 91 and the system is approved to serve 91 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #2, P02.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Fe (mg/L)	Mn (mg/L)
Galloway, Well #2, P02 (Samples collected on 4/23/15)	31	.25	1.7	.27

System Flushing

The Galloway water system is flushed on an annual basis with the most recent flushing being in December 2015. The hydropneumatic tank was cleaned in February 2016.

Discolored Water Complaints

Aqua received 30 customer complaints from the Galloway water system in the last 12 months.

Corrective Actions

Analysis of the iron and manganese levels reveals the well has elevated concentration of iron and manganese at Well #2. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in September 2015. Aqua will continue to flush the distribution system annually. Aqua plans to begin design of a permanent filtration system in the fourth quarter 2016 at Well #2, and is budgeted for installation in 2017. Until the installation of the filtration system, Well #2 will only run when very low pressure is experienced in the Galloway water system.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Glendale Master System, Wake County
WSF ID No.: Well #1 (Glendale) P01 and Well #1 (Chari Heights) P02
Water System No: NC0392293

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Glendale Master System Well #1 (Glendale) P01 and Well #1 (Chari Heights) P02. The Glendale Master System is comprised of six active wells and six points of entry (POE). The current number of customers served is 250 and the system is approved to serve 253 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #1 (Glendale) P01 and Well #1 (Chari Heights) P02.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Fe (mg/L)	Mn (mg/L)
Glendale Master System, Well #1, P01 (Samples collected on 10/2014)	45	0	1.3	0.175
Chari Heights, Well #1, P02 (Samples collected on 10/2014)	40	3.5	1.99	0.024

System Flushing
The Glendale Master System is flushed on an annual basis with the most recent flushing being March 2016.

Discolored Water Complaints
Aqua has received no customer complaints from Glendale Master System in the last 12 months.

Corrective Actions
Analysis of the iron and manganese levels reveals the well has some manganese and an elevated concentration of iron at both wells. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in September 2015. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency.

Aqua will limit the use of Glendale Well #1 and Chari Heights Well #1 with plans to install a particulate cartridge filter by March 2017. At these wells, samples will be collected from the raw water and from the point of entry on a quarterly basis. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intension of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Hampton Park Subdivision, Wake County
WSF ID No.: Well #6, TP2
Water System No: NC4092084

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Hampton Park Well #6, TP2. The Hampton Park water system is comprised of two active wells and two points of entry (POE). The current number of customers served is 101 and the system is approved to serve 101 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #6, TP2.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results 1/12/15 Fe (mg/L)	Mn (mg/L)
Hampton Park, Well #6, TP2 (Samples collected on 1/12/15)	88	1.3	0.9	0.23

System Flushing

The Hampton Park water system is flushed on an annual basis with the most recent flushing being in November 2015.

Discolored Water Complaints

Aqua received six customer complaints from the Hampton Park water system in the last 12 months.

Corrective Actions

Analysis of the iron and manganese levels reveals the well has some iron and an elevated concentration of manganese at Well #6. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in October 2014. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. The next scheduled flushing for Hampton Park is November 2016. Aqua is seeking approval for the installation of a permanent filtration system at Hampton Park Well #6. It is anticipated that engineering plans and specifications for this filtration system will be submitted in 2017 with plans to install the filtration system in 2018.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
High Grove Subdivision, Wake County
WSF ID No.: Well #1, P01
Water System No: NC4092096

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at High Grove Well #1, P01. The High Grove water system is comprised of three active wells and three points of entry (POE). The current number of customers served is 142 and the system is approved to serve 155 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #1, P01.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
			Fe (mg/L)	Mn (mg/L)
High Grove, Well #1, P01 (Samples collected on 5/4/2016)	48	3.2	0.369	0.177

System Flushing

The High Grove water system is flushed on an annual basis. The water system was flushed in September 2015 and June 2016.

Discolored Water Complaints
Aqua received 12 customer complaints from the High Grove water system over the past 12 months.

Corrective Actions
Aqua believes this Notice of Deficiency was sent in error as the combined sampling results as of May 4, 2016 are 0.546 (Fe=0.369 and Mn=0.177).

Analysis reveals the well has elevated concentration of iron and manganese at Well #1. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in September 2015. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. Aqua plans to collect special samples for turbidity. Samples will be collected from the raw water and from the point of entry on a quarterly basis. Based on those results, Aqua will pursue the installation of a cartridge filter, if necessary. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intension of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
High Meadows Subdivision, Wake County
WSF ID No.: Well #2, TM1
Water System No: NC0392334

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at High Meadows Well #2, TM1. The High Meadows water system is comprised of two active wells and one point of entry (POE). The current number of customers served is 133 and the system is approved to serve 149 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #2, TM1.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Fe (mg/L)	Mn (mg/L)
High Meadows, Well #2, TM1 (Samples collected on 4/23/15)	64	4.7	.95	.13

System Flushing

The High Meadows water system is flushed on an annual basis with the most recent flushing being in April 2016.

Discolored Water Complaints

Aqua received two customer complaints from the High Meadows water system in the past 12 months.

Corrective Actions

Analysis reveals the well has elevated concentration of iron and manganese at Well #2. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in October 2013. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. The hydropneumatic tank is currently scheduled to be cleaned during the fourth quarter of 2016. A cartridge filter was installed in September 2014. Aqua plans to collect special samples for turbidity beginning in September 2016. Samples will be collected from the raw water and from the point of entry on a quarterly basis. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intension of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Holland Master System (Greenfield Manor) Subdivision, Wake County
WSF ID No.: Well #2, P02
Water System No: NC4392150

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Holland Master System (Greenfield Manor) Well #2, P02. The Holland Master System (Greenfield Manor) water system is comprised of three active wells and three points of entry (POE). The current number of customers served is 129 and the system is approved to serve 129 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #2, P02.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Fe (mg/L)	Mn (mg/L)
Holland Master System (Greenfield Manor) Well #2, P02 (Samples collected on 1/24/14)	27	1.4 Zero run time since 11/2015	1.0	0.12

System Flushing
The Greenfield Manor water system is flushed on an annual basis with the most recent flushing being in August 2015. The hydropneumatic tank was cleaned in January 2015.

Discolored Water Complaints
Aqua received nine customer complaints from the Holland Master System in the last 12 months.

Corrective Actions
Analysis of the iron and manganese levels reveals the well has elevated concentration levels of iron and manganese at Well #2. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in February 2014. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. The next scheduled flushing is August 15, 2016. Particulate filtration was installed at Greenfield Manor Well #2 and has shown to be ineffective. Lake Rand Well #1 is equipped with a greensand filter and Aqua has minimized the run times at Greenfield Manor and Holland Ridge since the filter was put online at Lake Rand Well #1. Because system demand is adequately met consistently with the two other wells in the system, Aqua does not recommend any additional treatment at Well #2 at this time. We will manage the run times at Well #2 to a minimum and continue to exercise the well regularly so in the event a back-up well is needed, the well will be ready for use if it needs to be placed into service.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Kennebec Farms Subdivision, Wake County
WSF ID No.: Well #2, P01
Water System No: NC4092064

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Kennebec Farms Well #2, P01. The Kennebec Farms water system is comprised of three active wells and three points of entry (POE). The current number of customers served is 164 and the system is approved to serve 173 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #2, P01.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Fe (mg/L)	Most Recent Inorganic Sampling Mn (mg/L)
Kennebec Farms, Well #2, P01 (Samples collected on 4/6/15)	20	1.6	1.16	0.2

System Flushing

The Kennebec Farms water system is flushed on an annual basis with the most recent flushing being in October 2015. The hydropneumatic tank was cleaned in October 2015.

Discolored Water Complaints
Aqua received one customer complaint from the Kennebec Farms water system in the past 12 months.

Corrective Actions
Analysis of the iron and manganese levels reveals the well has elevated concentrations of iron and manganese at Well #2. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in August 2013. Aqua has flushed the distribution system numerous times over the past three years and will continue to flush the distribution system on an annual basis and continue to optimize the sequestration at each well.

The Kennebec Master water system contains two other wells - Stamey's Walk Well #1 and Westmore Well #1, and both have greensand filtration. In addition, a Harmsco particulate filter was installed at Kennebec Well #2 in September 2015. Because system demand is adequately met consistently with the two other wells in the system, Aqua does not recommend any additional treatment at Well #2. Aqua will manage the run times at Kennebec Well #2 to a minimum and continue to exercise the well regularly in the event a back-up well is needed, the well will be ready for use if it needs to be placed into service.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Middle Creek Acres Subdivision, Wake County
WSF ID No.: Well #1, P01
Water System No: NC0392370

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Middle Creek Acres Well #1, P01. The Middle Creek Acres water system is comprised of one active well and one point of entry (POE). The current number of customers served is 12 and the system is approved to serve 23 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #1, P01.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Fe (mg/L)	Mn (mg/L)
Middle Creek Acres, Well #1, P01 (Samples collected on 11/12/14)	Not specified, currently 15 gpm.	1.6	1.13	ND

System Flushing

The Middle Creek Acres water system is flushed on an annual basis with the most recent flushing being in December 2015.

Discolored Water Complaints

Aqua received no customer complaints from the Middle Creek Acres water system in the past 12 months.

Corrective Actions

Analysis of the iron and manganese levels reveals the well has elevated levels of iron concentration and no manganese at Well #1. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in September 2015. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. Aqua plans to collect special samples for turbidity beginning in September 2016. Samples for turbidity will be collected from the wellhead and from the point of entry on a quarterly basis. Based on those results, Aqua will pursue the installation of a cartridge filter, if necessary. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intension of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Middle Creek Master, Wake County
WSF ID No.: Well #1, P01
Water System No: NC0392355

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Middle Creek Master Well #1, P01. The Middle Creek Master water system is comprised of five active wells and four points of entry (POE). The current number of customers served is 269 and the system is approved to serve 299 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #1, P01.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results Fe (mg/L)	Mn (mg/L)
Middle Creek Master, Well #1, P01	NA	0	NA	NA

Well #1 was placed on the "other" status and therefore this well is not active.

Aqua requests that PWSS rescinds this Notice of Deficiency since the well is not in a permanent or active status.

If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Northgate Subdivision, Wake County
WSF ID No.: Well #1, P01
Water System No: NC0392217

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Northgate Well #1, P01. The Northgate water system is comprised of one active well and one point of entry (POE). The current number of customers served is 30 and the system is approved to serve 39 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #1, P01.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Fe (mg/L)	Mn (mg/L)
Northgate, Well #1, P01 (Samples collected on 5/24/2016)	Not Specified	1.1	1.43	0.393

System Flushing

The Northgate water system is flushed on an annual basis. Below are dates the water system was flushed in the last three years:

- August 2014
- September 2015
- September 2016

Discolored Water Complaints

Aqua received seven customer complaints from the Northgate water system over the last 12 months.

Corrective Actions

Analysis reveals the well has elevated concentration levels of iron and manganese at Well #1. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in September 2015. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. Aqua plans to collect special samples for total/soluble Fe and Mn and for turbidity in September 2016. Aqua will use the results of these samples to properly size a cartridge filter, which Aqua intends to be installed and online by March 2017.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Northwood Subdivision, Durham County
WSF ID No.: Well #2, P02
Water System No: NC0368179

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Northwood Well #2, P02. The Northwood water system is comprised of two active wells and two points of entry (POE). The current number of customers served is 81 and the system is approved to serve 82 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #2, P02.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results Fe (mg/L)	Mn (mg/L)
Northwood, Well #2, P02 (Samples collected on 4/08/2014)	41	0	2.26	0.281

System Flushing
The Northwood water system was most recently flushed in May 2016 and will be flushed on an annual basis.

Discolored Water Complaints
Aqua has received one customer complaint from the Northwood water system over the last 12 months.

Corrective Actions
Analysis reveals the well has elevated concentrations of iron and manganese at Well #2. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in August 2015. Since August 2015, Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. We will manage the run times at this well to a minimum and continue to exercise the well regularly in the event a back-up well is needed, the well will be ready for use if it needs to be placed into service. Aqua plans to collect special samples for turbidity and total/soluble Fe and Mn samples beginning in September 2016. The results will be used to properly size a cartridge filter, which is anticipated to be installed by March 2017. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intension of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Olde South Trace Subdivision, Wake County
WSF ID No.: Well #1, P01
Water System No: NC4392131

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Olde South Trace Well #1, P01. The Olde South Trace water system is comprised of one active well and one point of entry (POE). The current number of customers served is 30 and the system is approved to serve 32 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #1, P01.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Fe (mg/L)	Mn (mg/L)
Olde South Trace, Well #1, P01 (Samples collected on 7/16/16)	34	1.9	1.33	0.3

System Flushing

The Olde South Trace water system is flushed on an annual basis. Below are the dates the water system was flushed in the last three years:

- August 2014
- October 2014
- December 2015

Discolored Water Complaints
Aqua has received no customer complaints from the Olde South Trace water system in the last 12 months.

Corrective Actions
Analysis reveals the well has elevated concentrations of iron and manganese at Well #1. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in July 2014. Aqua has committed to flushing the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. Aqua plans to collect special samples for turbidity beginning in September 2016. Samples will be collected from the raw water and from the point of entry on a quarterly basis. Based on those results, Aqua will pursue the installation of a cartridge filter, if necessary. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intension of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Red Mountain Subdivision, Durham County
WSF ID No.: Well #3, P03
Water System No: NC0332136

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Red Mountain Well #3, P03. The Red Mountain water system is comprised of 3 active well and 3 points of entry (POE). The current number of customers served is 64 and the system is approved to serve 117 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #3, P03.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Fe (mg/L)	Mn (mg/L)
Red Mountain, Well #3, P03 (Samples collected on 4/2014)	80	2.11	1.6	2.0

System Flushing

The Red Mountain water system was most recently flushed in July 2016 and will be flushed on a bi-annual basis.

Discolored Water Complaints

Aqua has not received any customer complaints from the Red Mountain water system in the last 12 months.

Corrective Actions

Analysis of the iron and manganese levels reveals the well has some iron and an elevated concentration of manganese at Well #3. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua switched from OP37 to feeding SeaQuest in October 2015. A field test of raw and point of entry for Fe and Mn was performed on March 10, 2016 at Well #3. The raw water results showed Fe at 0.044 mg/L and Mn at 0.0033 mg/L. The point of entry results showed Fe at 0.019 mg/L and Mn at 0.0017 mg/L. Due to the recent field tests, Aqua will collect an IOC sample in September 2016 and at that time determine the next course of action.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
River Oaks Subdivision, Wake County
WSF ID No.: Well #3, P02
Water System No: NC0392096

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at River Oaks Well #3, P02. The River Oaks water system is comprised of two active wells and two points of entry (POE). The current number of customers served is 47 and the system is approved to serve 47 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #3, P02.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results 5/31/16 Fe (mg/L)	Mn (mg/L)
River Oaks, Well #3, P02 (Samples collected (Collected 05/31/2016)	50	0	1.0	.077

System Flushing

The River Oaks water system is flushed on an annual basis with the most recent flushing being June 28 through June 30, 2016.

Discolored Water Complaints
Aqua received one customer complaint from the River Oaks water system over the last 12 months.

Corrective Actions
Analysis of the iron and manganese levels reveals the well has elevated concentrations of iron and manganese at Well #2. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in September 2015. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. Well #3 will operate in the lag mode and will only be used during heavy peak demand. Aqua plans to collect special samples for turbidity beginning in September 2016. Samples will be collected from the raw water and from the point of entry on a quarterly basis. Based on those results, Aqua will pursue the installation of a cartridge filter, if necessary. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intension of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Saddleridge Subdivision, Wake County
WSF ID No.: Well #20, P20
Water System No: NC4392103

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Saddleridge Well #20, P20. The Saddleridge water system is comprised of six active wells and five points of entry (POE). The current number of customers served is 169 and the system is approved to serve 194 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #20, P20.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Fe (mg/L)	Mn (mg/L)
Saddleridge, Well #20, P20 (Samples collected on 4/14/15)	5	8.14	4.5	.032

System Flushing

The Saddleridge water system is flushed on an annual basis with the most recent flushing being June 20 through June 24, 2016.

Discolored Water Complaints

Aqua received two customer complaints from the Saddleridge water system in the past 12 months.

Corrective Actions

Analysis reveals the well has an elevated concentration of iron at Well #20. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in February 2016. The pressure settings at Well #20 will be changed to allow the well to operate in lag mode. Aqua will continue to flush the distribution system annually. Aqua plans to collect special samples for turbidity beginning in September 2016. Samples will be collected from the raw water and from the point of entry on a quarterly basis. Based on those results, Aqua will pursue the installation of a cartridge filter, if necessary. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intension of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Shadow Lakes Subdivision, Johnston County
WSF ID No.: Well #1, P01
Water System No: NC0351167

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Shadow Lakes Well #1, P01. The Shadow Lakes water system is comprised of one active well and one point of entry (POE). The current number of customers served is 41 and the system is approved to serve 49 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #1, P01.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Fe (mg/L)	Most Recent Inorganic Sampling Mn (mg/L)
Shadow Lakes Well #1, P01 (Samples collected on 10/7/2014)	68	4.0	1.06	0.267

System Flushing

The Shadow Lakes water system is flushed on an annual basis. Below are dates the water system has been flushed in the last three years:

- October 2013
- June 2015
- June 2016

Discolored Water Complaints
Aqua has received no customer complaints from the Shadow Lakes water system in the last 12 months.

Corrective Actions
Analysis of the iron and manganese levels reveals the well has elevated concentration of iron and manganese at Well #1. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in August 2015. By Order dated March 1, 2016, from the North Carolina Utilities Commission, Aqua received approval for the installation of the filtration system at Well #1, this is scheduled to be completed in December 2017. Aqua will continue to flush the Shadow Lakes water system on a regular basis until the installation of the filtration system, optimize the sequestration treatment at the well and monitor the system for customer complaints.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intension of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Southwood-Surry Ridge Subdivision, Wake County
WSF ID No.: Well #1 (Southwood) P01 and Well #3 (Cary Oaks) P03
Water System No: NC0392338

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Southwood-Surry Ridge Well #1 (Southwood) P01 and Well #3 (Cary Oaks) P03. The Southwood-Surry Ridge water system is comprised of two active wells and two points of entry (POE). The current number of customers served is 121 and the system is approved to serve 154 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #1 (Southwood) P01 and Well #3 (Cary Oaks) P03.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Fe (mg/L)	Mn (mg/L)
Southwood-Surry Ridge Well #1 (Southwood) P01 (Samples collected in April 2014)	27	16.2	1.1	0.6
Southwood-Surry Ridge Well #3 (Cary Oaks) P03 (Samples collected in April 2014)	40	2.5	1.39	0.1

System Flushing

The Southwood-Surry Ridge water system will be flushed on an annual basis going forward. The water system was flushed October 2013 and most recently in June 2016.

Discolored Water Complaints

Aqua received three customer complaints from the Southwood-Surry Ridge water system in the last 12 months.

Corrective Actions

Analysis of the iron and manganese levels reveals the well has elevated concentration of iron and manganese at Well #1 (Southwood) and Well #3 (Cary Oaks). In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in August 2013. Currently, Southwood Well #1 has a cartridge filter. Aqua plans to collect special samples for turbidity beginning in September 2016. Samples will be collected from the raw water and from the point of entry on a quarterly basis only at Southwood Well #1. Aqua plans to use a performance indicator of 1.0 Nephelometric Turbidity Unit (NTU) or less as a measure to the effectiveness of the SeaQuest.

Aqua is seeking approval to install a permanent filtration system at Southwood-Surry Ridge. Once this is completed Well #1 (Southwood) P01 and Well #3 (Cary Oaks) P03 will be placed in a backup mode of operation. In the event a back-up well is needed, both wells will be ready for use if there is a need for these to be placed in service.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intension of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Stagecoach Subdivision, Wake County
WSF ID No.: Well #3, P03
Water System No: NC0392087

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Stagecoach Well #3- P03. The Stagecoach water system is comprised of four active wells and three points of entry (POE). The current number of customers served is 157 and the system is approved to serve 220 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #3- P03.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results	
			Fe (mg/L)	Mn (mg/L)
Stagecoach Well #3 P03 (Samples collected on 1/20/15)	85	0	1.13	0.0861
Stagecoach Well #3 P03, (Samples collected on 3/23/16)	85	0	0.774	0.09

System Flushing
The Stagecoach water system is flushed on a bi-annual basis. The water system was flushed on September 2014 and most recently in July 2016.

Discolored Water Complaints
Aqua has received two customer complaints from the Stagecoach water system in the last 12 months.

Corrective Actions
Analysis of the iron and manganese levels reveals the well has elevated concentrations of iron and manganese at Well #3. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in October 2015. Stagecoach Well #3 does not run on a regular basis because of system demand and is currently operating in back-up mode. Aqua will continue to exercise the well regularly in the event a back-up well is needed the well will be ready for use if it needs to be placed into service. Field samples collected on March 17, 2016, after the well was adequately flushed showed Fe at 0.63 mg/L and Mn at 0.093 mg/L. On March 23, 2016, Aqua collected a compliance IOC sample and the results are shown in the table above. Because system demand is adequately met with the three other wells in the Stagecoach water system, Aqua does not recommend any additional treatment at this well.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intension of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Trapper's Creek Subdivision, Durham County
WSF ID No.: Well #2, P02
Water System No: NC0332132

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Trapper's Creek Well #2, P02. The Trapper's Creek water system is comprised of two active wells and two points of entry (POE). The current number of customers served is 63 and the system is approved to serve 84 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #2, P02.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Fe (mg/L)	Most Recent Inorganic Sampling Mn (mg/L)
Trappers Creek, Well #2, P03 (Samples collected on 4/15/14)	75	2.4	0.8	0.29

System Flushing

The Trappers Creek water system is flushed on an annual basis with the most recent flushing being in May 2016.

Discolored Water Complaints

Aqua received three customer complaints from Trapper's Creek water system in the past six months.

Corrective Actions

Analysis of the iron and manganese levels reveals the well has elevated concentration of iron and manganese at Well #2. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in February 2016. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency, continue to optimize the sequestration at each well and monitoring for customer complaints. Aqua plans to collect special samples for turbidity and total/soluble Fe and Mn. Samples will be collected from the raw water and from the point of entry in September 2016. Aqua will use the results of the samples to properly install a cartridge filter which will be placed into service by the end of March 2017. Aqua will seek approval for a filtration system and if approved, the filtration system should be online by the fourth quarter of 2018.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Tyndrum Subdivision, Durham County
WSF ID No.: Well #1, P01
Water System No: NC0332138

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Tyndrum Well #1, P02. The Tyndrum water system is comprised of two active wells and two points of entry (POE). The current number of customers served is 37 and the system is approved to serve 49 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #1, P01.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results 4/10/14 Fe (mg/L)	Mn (mg/L)
Tyndrum, Well #1, P01 (Samples collected on 4/10/14)	17	1.4	1.3	0.4

System Flushing

The Tyndrum water system is flushed on an annual basis and was most recently flushed in May 2016.

Discolored Water Complaints

Aqua has received no customer complaints from the Tyndrum water system in the last 12 months.

Corrective Action

Analysis reveals the well has elevated concentrations of iron and manganese at Well #2. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in February 2016. Since Aqua began feeding SeaQuest, the distribution system has been flushed annually and will continue to flush the distribution system at this reoccurring frequency.

Aqua plans to collect special samples for turbidity beginning in September 2016. Samples will be collected from the raw water and from the point of entry. Aqua will use the analysis to properly install a cartridge filter which should be installed by the end of March 2017.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intension of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Upchurch Place Subdivision, Wake County
WSF ID No.: Wells #1 and Well #4, P01
Water System No: NC4092038

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Upchurch Place Wells #1 and Well #4, P01. The Upchurch Place water system is comprised of two active wells and one point of entry (POE). The current number of customers served is 52 and the system is approved to serve 64 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Wells #1 and Well #4, P01.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results 3/13/2013 Fe (mg/L)	Mn (mg/L)
Upchurch Place, Well #1 and Well #4, P01 (Samples collected on 3/13/2013)	#1 – 62 #4 – 27	#1 – 1.7 #4 – 0	1.0	0.177

Special Sampling

- Well #1 9-16-15 total iron 0.635 mg/L, total manganese 0.150 mg/L

- Well #4 9-16-15 total iron 0.891 mg/L, total manganese 0.176 mg/L
- Well #1 10-26-15 total iron 0.263 mg/L, total manganese 0.128 mg/L
- Well #1 6-29-16 total iron 0.325 mg/L, total manganese 0.134 mg/L

System Flushing

The Upchurch water system is flushed on an annual basis, at a minimum and will be flushed August 10 and 11, 2016. Below are dates the water system was flushed in the last three years. The hydropneumatic tank was cleaned in November 2015.

- July 2013
- July 2014
- December 2014
- August 2015
- November 2015

Discolored Water Complaints

Aqua received eleven customer complaints from the Upchurch water system over the last 12 months.

Corrective Actions

Analysis reveals the well has an elevated concentration of iron and manganese at Well #1 and Well #4. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in March 2014. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. Well #1 is supplying all the water to the system at this time, and Aqua only runs Well #4 when compliance sampling is needed. Aqua is seeking approval to install a permanent filtration system at the combined entry points in the Upchurch Place water system. Aqua will continue to flush the system on an annual basis and optimize the current treatment.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Wakefield Plantation Subdivision, Wake County
WSF ID No.: Well #6, P06
Water System No: NC0392155

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Wakefield Well #6, P06. The Wakefield water system is comprised of four active wells and four points of entry (POE). The current number of customers served is 160 and the system is approved to serve 174 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #6, P06.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Fe (mg/L)	Mn (mg/L)
Wakefield Plantation, Well #6, P06 (Samples collected on 4/23/16)	88	6.8	1.53	.23

System Flushing

The Wakefield Plantation water system is flushed on an annual basis and was most recently flushed in April 2016. The hydropneumatic tanks were cleaned in March 2013.

Discolored Water Complaints

Aqua received three customer complaints from the Wakefield Plantation water system in the past 12 months.

Corrective Actions

Analysis reveals the well has elevated iron and manganese concentration levels at Well #6. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in October 2014. Since then Aqua has flushed the distribution system annually and will continue to flush the distribution system at this reoccurring frequency. By Order dated March 1, 2016, from the North Carolina Utilities Commission Aqua received approval for the installation of a filtration system at Well #6 and Well #8. Aqua estimates the filters will be installed by the fourth quarter 2017.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA SM

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
West Oaks Subdivision, Wake County
WSF ID No.: Well #1, P01
Water System No: NC0392357

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at West Oaks Well #1, P01. The West Oaks water system is comprised of four active wells and three points of entry (POE). The current number of customers served is 237 and the system is approved to serve 246 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #1, P01.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results 8/13/15 Fe (mg/L)	Mn (mg/L)
West Oaks, Well #1, P01 (Samples collected on 8/13/15)	60	6.4	0.85	0.44

System Flushing

The West Oaks water system has been flushed on a semi-annual basis, but Aqua will adjust the flushing frequency to annually once filters are installed, which are scheduled to be completed in September 2016.

The West Oaks water system was flushed in October 2015 and most recently in March 2016. The hydropneumatic tank was cleaned in the second quarter 2015.

Discolored Water Complaints

Aqua received 26 customer complaints from the West Oaks water system from January through June 2016.

Corrective Actions

Analysis of the iron and manganese levels reveals the well has some iron and an elevated concentration of manganese at Well #1. In an effort to ensure that the drinking water was not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in September 2015. By Order dated May 21, 2015, from the North Carolina Utilities Commission Aqua received approval for the installation of a filtration system at West Oaks Well #1 and Springfield North Well #1 and #2. These filters are scheduled to be in operation by September 2016.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

MAT/rl

AQUA

August 10, 2016

Mr. W. Allen Hardy
Engineering Supervisor
Public Water Supply Section
Raleigh Regional Office, NCDEQ
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: Notice of Deficiency
Iron and Manganese Concentration
Willow Hill Subdivision, Durham County
WSF ID No.: Well #3, P03
Water System No: NC0332119

Dear Mr. Hardy:

Aqua North Carolina, Inc. (Aqua) received the above-referenced letter dated July 12, 2016, regarding elevated concentrations of Iron (Fe) and Manganese (Mn) at Willow Hill Well #3, P03. The Willow Hill water system is comprised of three active wells and three points of entry (POE). The current number of customers served is 131 and the system is approved to serve 147 connections. The table below outlines the run time and the latest iron and manganese concentrations collected as part of the ongoing Inorganic Chemical Analyses (IOC) samples collected at Well #3, P03.

TABLE 1: Run Time and IOC Analysis

Well Name and No.	Capacity (gpm) Approved	12-Month Avg. Pump Runtime (hrs/day)	Most Recent Inorganic Sampling Results Fe (mg/L)	Mn (mg/L)
Willow Hill, Well #3, P03 (Samples collected on 10/16/14)	35	0	0.7	0.4

System Flushing
The Willow Hill water system is flushed on a bi-annual basis and was most recently flushed in November 2015.

Discolored Water Complaints
Aqua received no customer complaints from the Willow Hill water system over the last 12 months.

Corrective Actions
The analysis reveals the well has elevated concentrations of iron and manganese at Well #3. This well does not run on a regular basis because of system demand and operates in a back-up mode. In the event a back-up well is needed, the well will be ready for use if it needs to be placed into service. In an effort to ensure that the drinking water is not discolored due to the presence of the minerals, Aqua started feeding SeaQuest in February 2016. Since then Aqua has flushed the distribution system biannually and will continue to flush at this reoccurring frequency. Aqua plans to collect special samples for turbidity and total/soluble Fe and Mn. The results of these samples will be used for the proper installation of a cartridge filter to be installed by the end of the first quarter 2017.

Sequestering with a polyphosphate does not physically remove iron and manganese; hence the reason for the elevated iron and manganese concentrations which are shown in the last IOC result. The intention of sequestering is to hold these two naturally occurring minerals in solution and prevent them from being oxidized by chlorine. Also, there is the intension of improving clarity and reducing and or eliminating customer complaints of the discolored water they may experience.

Aqua is committed to providing water to its customers that meets their expectations at a reasonable cost. If you have any questions or comments, please contact Rob Bonne at (919) 653-6982.

Sincerely,

Moses A. Thompson
Director of Operations

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