

APPENDIX A

BRACKENRIDGE

- A. SIMPLE MAP OF SYSTEM SHOWING
THE LOCATION OF EACH WELL,
WITH WELLS IDENTIFIED**

FILED CONFIDENTIALLY

APPENDIX A

BRACKENRIDGE

**B. DEH/PWSS APPROVAL LETTER
FOR EACH WELL**



Division of Environmental Health
Terry L. Pierce, Director

Public Water Supply Section
Jessica G. Miles, Section Chief

State of North Carolina
Michael F. Easley, Governor

Department of Environment and
Natural Resources
William G. Ross, Secretary

March 21, 2006

Mr. Michael J. Myers, Manager
Heater Utilities, Inc.
Post Office Box 4889
Cary, North Carolina 27519

Re: Engineering Plans and Specifications Approval
Water Supply System
Brackenridge Estates Subdivision
Wake County
ID #40-92-080

This is not an Authorization to Construct

Dear Mr. Myers:

Enclosed please find one copy of the "Application for Approval..." together with one copy of the referenced engineering plans and specifications bearing the Division of Environmental Health stamp of approval for the referenced project. These engineering plans and specifications are approved under Division of Environmental Health serial number 06-00232, dated March 16, 2006.

Engineering plans and specifications prepared by Alan R. Keith, P.E., call for the construction of a new well with a 58 gpm Grundfos Model No. 40GS50, 5 horsepower motor submersible pump, a well house, well head pipings, chlorination system, caustic soda chemical feed system, polyphosphate chemical feed system, a 5,400 gallon ASME coded hydropneumatic tank with automatic air-water volume control and air compressor, approximately 1,675 feet of 6-inch and 680 feet of 4-inch water mains, valves and other related appurtenances along Jonaway Circle, Bracken Ridge Lane and Blakenbran Trail to serve Brackenridge Estates Subdivision with 21 lots located off Brackenridge Lane.

We are not formally approving the use of the sequestration agent and its injection apparatus; however, we are allowing it to be tried in lieu of the installation of iron and manganese removal equipment. Should the use of the sequestration agent and the injection apparatus not provide trouble-free, satisfactory water to the customers, it is the responsibility of the owner to submit to us for approval plans and specifications covering the necessary iron and manganese removal equipment. After having gained approval, the equipment must be installed and operated without undue delays.

Hydropneumatic tanks with a capacity greater than 120 gallons must be constructed and stamped in accordance with the American Society of Mechanical Engineers (ASME) Pressure Vessel Code stamped with the ASME "U" symbol stamp, and registered with the National Board of Boiler and Pressure Vessel Inspectors. These tanks must be inspected by the Department of Labor, Boiler Safety Bureau after installation but prior to operation. Please call (919) 807-2760 to schedule an inspection.

1634 Mail Service Center, Raleigh, North Carolina 27699-1634
Telephone 919-733-2321 & Fax 919-716-4374 & Lab Form Fax 919-716-6637
<http://ncdrinkingwater.state.nc.us/>

An Equal Opportunity / Affirmative Action Employer

One
North Carolina
Naturally

Michael J. Myers
March 21, 2006
Page 2

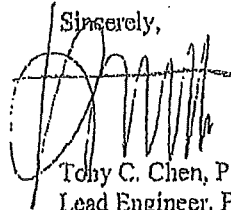
Please note that an "Authorization to Construct" requires both this approval of Engineering Plans and Specifications and submittal of a complete Water System Management Plan. No construction shall be undertaken, and no contract for construction, alteration, or installation shall be entered into until the Department issues an Authorization to Construct letter in accordance with 15A NCAC 18C.0305(a).

These plans and specifications cited in the foregoing application are approved insofar as the protection of public health is concerned as provided in the rules, standards and criteria adopted under the authority of Chapter 130A-317 of the General Statutes. This approval does not constitute a warranty of the design, construction or future operation of the water system.

One copy of each enclosed document is being forwarded to our Raleigh Regional Office. The third copy is being retained in our permanent files.

If we can be of further service, please call on us at (919) 733-2460.

Sincerely,



Tony C. Chen, P.E.
Lead Engineer, Plan Review
Technical Services Branch

TCC:H50:sep

Enclosures: Approval Documents

cc: Michael L. Douglas, P.E., Regional Engineer
Wake County Health Department
Diehl & Phillips, P.A.
Utilities Commission -- Water Division
Boiler Safety Bureau

APPENDIX A

BRACKENRIDGE

**C. ORIGINAL INORGANIC ANALYSIS FOR EACH WELL
SUBMITTED TO DEH FOR WELL APPROVAL**

S. 2005 10:25AM ENVIRONMENT 1

Environment 1, Incorporated

OFFICIAL COPY

P.O. BOX 7085, 114 OAKMONT DRIVE, GREENVILLE, N.C. 27835-7086 PHONE (252) 756-6208 FAX (252) 756-0833

NEW WELL INORGANIC CHEMICAL ANALYSIS

WATER SYSTEM ID#: 00-00-000

COUNTY: WAKE

Name of Water System: BRACKENRIDGE (AQUA NC-CARY)

Sample Type: () Entry Point (X) Special/Non-compliance

Location Where Collected: TEST WELL #1

Location Code: TW1

Collected By: BERNIE PIERCE

Mail Results to (water system representative)

Collection Date	Collection Time
09/15/05	08:30 AM

BRACKENRIDGE (AQUA NC-CARY)
MR. REID CAMPBELL
P.O. DRAWER 4889
CARY, NC 27519

Phone #: (919) 467-8712

Fax #:

LABORATORY ID#: 37715

() SAMPLE UNSATISFACTORY

() RESAMPLE REQUESTED

CONTAM CODE	CONTAMINANT	METHOD CODE	REQUIRED REPORTING LIMIT (R.R.L.)	NOT DETECTED ABOVE R.R.L. (X)	QUANTIFIED RESULTS	ALLOWABLE LIMIT
0100	Turbidity	001	0.05 ntu	X	ntu	N/A
1005	Arsenic	170	0.005 mg/l	X	mg/l	0.010 mg/l
1010	Barium	170	0.4 mg/l	X	mg/l	2.000 mg/l
1015	Cadmium	170	0.001 mg/l	X	mg/l	0.005 mg/l
1016	Calcium	169	1.0 mg/l		6.420 mg/l	N/A
1017	Chloride	127	5.0 mg/l		2 mg/l	250.0 mg/l
1020	Chromium	170	0.020 mg/l	X	mg/l	0.100 mg/l
1022	Copper	170	0.050 mg/l	X	mg/l	1.300 mg/l
1024	Cyanide	148	0.040 mg/l	X	mg/l	0.200 mg/l
1025	Fluoride	107	0.100 mg/l		0.22 mg/l	4.000 mg/l
1028	Iron	101	0.060 mg/l		0.635 mg/l	0.300 mg/l
1030	Lead	170	0.003 mg/l	X	mg/l	0.015 mg/l
1031	Magnesium	169	1.0 mg/l		3.940 mg/l	N/A
1032	Manganese	170	0.010 mg/l		0.112 mg/l	0.050 mg/l
1035	Mercury	170	0.0004 mg/l	X	mg/l	0.002 mg/l

NOTE: Concentrations for Lead and Copper are action levels, not MCLs.

Continued on Page 2....

06. 2005 10:26AM ENVIRONMENT 1

Environment 1, Incorporated

P.O. BOX 7085, 114 OAKMONT DRIVE, GREENVILLE, N.C. 27835-7085
 PHONE (252) 756-8208 FAX (252) 756-0888

NEW WELL INORGANIC CHEMICAL ANALYSIS
 (continued)

WATER SYSTEM ID#: 00-00-000

Location Code: TW1

<u>Collection Date</u>	<u>Collection Time</u>
09/15/05	08:30 AM

LABORATORY ID#: 37715

CONTAM CODE	CONTAMINANT	METHOD CODE	REQUIRED REPORTING LIMIT (R.R.L.)	NOT DETECTED ABOVE R.R.L. (X)	QUANTIFIED RESULTS	ALLOWABLE LIMITS
1036	Nickel	170	0.100 mg/l	X	mg/l	N/A
1040	Nitrate	163	1.00 mg/l	X	mg/l	10.00 mg/l
1041	Nitrite	163	0.10 mg/l	X	mg/l	1.00 mg/l
1045	Selenium	170	0.010 mg/l	X	mg/l	0.050 mg/l
1050	Silver	169	0.05 mg/l	X	mg/l	0.100 mg/l
1052	Sodium	101	1.0 mg/l		8.700 mg/l	N/A
1055	Sulfate	137	5.0 mg/l	X	mg/l	250.0 mg/l
1068	Acidity	157	1.0 mg/l		1.3 mg/l	N/A
1074	Antimony	170	0.003 mg/l	X	mg/l	0.006 mg/l
1075	Beryllium	170	0.002 mg/l	X	mg/l	0.004 mg/l
1085	Thallium	170	0.001 mg/l	X	mg/l	0.002 mg/l
1095	Zinc		1.0 mg/l	X	mg/l	5.0 mg/l
1905	Color	129	N/A	X	units	15 units
1915	Total Hardness	141	1.0 mg/l		37 mg/l	N/A
1925	PH	135	N/A		6.7 mg/l	6.5-8.5 units
1927	Alkalinity	142	1.0 mg/l		52 mg/l	N/A
1930	Total Dissolved Solids	139	10.0 mg/l		100 mg/l	500.0 mg/l

	DATE:	TIME:
ANALYSES BEGUN:	09/15/05	4:30 PM
ANALYSES COMPLETED:	09/26/05	5:00 PM

Laboratory Log #: 8207-091505-TW1

Certified By: JBM

COMMENTS:

8207

APPENDIX A

BRACKENRIDGE

**D. ALL INORGANIC ANALYSES FROM EACH WELL AT THE
WELLHEAD FOR THE LAST SIX YEARS**

Environmental Conservation Laboratories, Inc.
 102-A Woodwinds Industrial Court
 Cary, NC 27511
 Ph: (919) 467-3090 Fax: (919) 467-3515



www.encolabs.com

OFFICIAL COPY

INORGANIC CHEMICAL ANALYSIS

WATER SYSTEM ID #: 40-92-080 County: Wake

Name of Water System: BRACKENRIDGE ESTATES

Sample Type: Entry Point Special/Non-compliance

Location Where Collected: Well: 1(IOC) - BRACKENRIDGE ESTATES(478) -

Facility ID No: TP1

Location Code: E01

Collected By: Jeffery Taber

Collection Date	Collection Time
10/12/20	10:00 am

Mail Results to:

Aqua NC - Cary (AQ002)

Attn: Lynn Primm

202 MacKenan Court

Cary, NC 27511

Phone #: 919-653-5777

Fax #: 0 -

LABORATORY ID #: 37724

SAMPLE UNSATISFACTORY

RESAMPLE REQUIRED

CONTAM CODE	CONTAMINANT	METHOD CODE	REQUIRED REPORTING LIMIT (R.R.L.)	NOT DETECTED (i.e < R.R.L.) (X)	QUANTIFIED RESULTS*	ALLOWABLE LIMIT
1005	Arsenic	200.8	0.005 mg/L	X	mg/L	0.01 mg/L
1010	Barium	200.8	0.4 mg/L	X	mg/L	2 mg/L
1015	Cadmium	200.8	0.001 mg/L	X	mg/L	0.005 mg/L
1020	Chromium	200.8	0.02 mg/L	X	mg/L	0.1 mg/L
1024	Cyanide (total)	335.4	0.05 mg/L	X	mg/L	0.2 mg/L
1025	Fluoride	300.0	0.1 mg/L		0.17 mg/L	4 mg/L
1028	Iron	200.7	0.06 mg/L		1.08 mg/L	0.3 mg/L
1032	Manganese	200.8	0.01 mg/L		0.211 mg/L	0.05 mg/L
1035	Mercury	245.1	0.0004 mg/L	X	mg/L	0.002 mg/L
1036	Nickel	200.8	0.1 mg/L	X	mg/L	N/A
1045	Selenium	200.8	0.01 mg/L	X	mg/L	0.05 mg/L
1052	Sodium	200.7	1 mg/L		14.5 mg/L	N/A
1055	Sulfate as SO4	300.0	5 mg/L		6.4 mg/L	250 mg/L
1074	Antimony	200.8	0.003 mg/L	X	mg/L	0.006 mg/L
1075	Beryllium	200.8	0.002 mg/L	X	mg/L	0.004 mg/L
1085	Thallium	200.8	0.001 mg/L	X	mg/L	0.002 mg/L
1925	pH	4500H-B	N/A	N/A	7.2 units	6.5-8.5 units

*Note: Except for Iron and Manganese, if result exceeds allowable limit, the laboratory must fax analytical results to the State within 48 hours.

	DATE:	TIME:
ANALYSES BEGUN:	10/13/2020	9:55 am
ANALYSES COMPLETED:	10/27/2020	4:21 am

Laboratory Log #: CD13605-01

Certified By: Bill Scott Bill Scott

COMMENTS:

Environmental Conservation Laboratories, Inc.
 102-A Woodwinds Industrial Court
 Cary, NC 27511
 Ph: (919) 467-3090 Fax: (919) 467-3515



INORGANIC CHEMICAL ANALYSIS

WATER SYSTEM ID #: 40-92-080 County: Wake
 Name of Water System: BRACKENRIDGE ESTATES
 Sample Type: Entry Point Special/Non-compliance
 Location Where Collected: Well: I(IOC) - BRACKENRIDGE ESTATES(478) -
 Facility ID No: TP1
 Location Code: B01
 Collected By: Jeff Taber
 Mail Results to:
 Aqua NC - Cary (AQ002)
 Attn: Mark English
 202 MacKenna Court
 Cary, NC 27511

Collection Date	Collection Time
10/09/17	01:00 pm

Phone #: (919) 653-5779
 Fax #: (-)

LABORATORY ID #: 37724

SAMPLE UNSATISFACTORY

RESAMPLE REQUIRED

CONTAM CODE	CONTAMINANT	METHOD CODE	REQUIRED REPORTING LIMIT (R.R.L.)	NOT DETECTED (i.e < R.R.L.) (X)	QUANTIFIED RESULTS*	ALLOWABLE LIMIT
1005	Arsenic	200.8	0.005 mg/L	X	mg/L	0.01 mg/L
1010	Barium	200.8	0.4 mg/L	X	mg/L	2 mg/L
1015	Cadmium	200.8	0.001 mg/L	X	mg/L	0.005 mg/L
1020	Chromium	200.8	0.02 mg/L	X	mg/L	0.1 mg/L
1024	Cyanide (total)	335.4	0.05 mg/L	X	mg/L	0.2 mg/L
1025	Fluoride	300.0	0.1 mg/L		0.15 mg/L	4 mg/L
1028	Iron	200.7	0.06 mg/L		0.632 mg/L	0.3 mg/L
1032	Manganese	200.8	0.01 mg/L		0.176 mg/L	0.05 mg/L
1035	Mercury	245.1	0.0004 mg/L	X	mg/L	0.002 mg/L
1036	Nickel	200.8	0.1 mg/L	X	mg/L	N/A
1045	Selenium	200.8	0.01 mg/L	X	mg/L	0.05 mg/L
1052	Sodium	200.7	1 mg/L		16.9 mg/L	N/A
1055	Sulfate as SO4	300.0	5 mg/L		5.2 mg/L	250 mg/L
1074	Antimony	200.8	0.003 mg/L	X	mg/L	0.006 mg/L
1075	Beryllium	200.8	0.002 mg/L	X	mg/L	0.004 mg/L
1085	Thallium	200.8	0.001 mg/L	X	mg/L	0.002 mg/L
1925	pH	4500H-B	N/A	N/A	7.7 units	6.5-8.5 units

*Note: Except for Iron and Manganese, if result exceeds allowable limit, the laboratory must fax analytical results to the State within 48 hours.

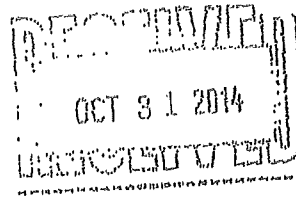
	DATE:	TIME:
ANALYSES BEGUN:	10/16/2017	8:53 am
ANALYSES COMPLETED:	10/23/2017	4:20 pm

Laboratory Log #: CA13200-01

Certified By: Bill Scott Bill Scott

COMMENTS:

Environmental Conservation Laboratories, Inc.
 102-A Woodwinds Industrial Court
 Cary, NC 27511
 Ph: (919) 467-3090 Fax: (919) 467-3515



INORGANIC CHEMICAL ANALYSIS

WATER SYSTEM ID #: 40-92-080 County: Wake
 Name of Water System: BRACKENRIDGE ESTATES
 Sample Type: Entry Point Special/Non-compliance
 Location Where Collected: Well: 1(IOC) - BRACKENRIDGE ESTATES(478) -
 Facility ID No: TP1
 Location Code: E01
 Collected By: BRIAN M. PREGMON

Collection Date	Collection Time
10/09/14	12:30 pm

Mail Results to:
 Aqua NC - Cary (AQ002)
 Attn: Mark English
 202 MacKenna Court
 Cary, NC 27511

Phone #: (919) 653-5779
 Fax #: 0 -

LABORATORY ID #: 37724

SAMPLE UNSATISFACTORY RESAMPLE REQUIRED

CONTAM CODE	CONTAMINANT	METHOD CODE	REQUIRED REPORTING LIMIT (R.R.L.)	NOT DETECTED (Is < R.R.L.) (X)	QUANTIFIED RESULTS*	ALLOWABLE LIMIT
1005	Arsenic	200.8	0.005 mg/L	X	mg/L	0.01 mg/L
1010	Barium	200.8	0.4 mg/L	X	mg/L	2 mg/L
1015	Cadmium	200.8	0.001 mg/L	X	mg/L	0.005 mg/L
1020	Chromium	200.8	0.02 mg/L	X	mg/L	0.1 mg/L
1024	Cyanide (total)	335.4	0.05 mg/L	X	mg/L	0.2 mg/L
1025	Fluoride	300.0	0.1 mg/L		0.22 mg/L	4 mg/L
1028	Iron	200.7	0.06 mg/L		0.717 mg/L	0.3 mg/L
1032	Manganese	200.8	0.01 mg/L		0.178 mg/L	0.05 mg/L
1035	Mercury	245.1	0.0004 mg/L	X	mg/L	0.002 mg/L
1036	Nickel	200.8	0.1 mg/L	X	mg/L	N/A
1045	Selenium	200.8	0.01 mg/L	X	mg/L	0.05 mg/L
1052	Sodium	200.7	1 mg/L		13 mg/L	N/A
1055	Sulfate as SO4	300.0	5 mg/L		6.1 mg/L	250 mg/L
1074	Antimony	200.8	0.003 mg/L	X	mg/L	0.006 mg/L
1075	Beryllium	200.8	0.002 mg/L	X	mg/L	0.004 mg/L
1085	Thallium	200.8	0.001 mg/L	X	mg/L	0.002 mg/L
1925	pH	4500H-B	N/A	N/A	7.2 units	6.5-8.5 units

*Note: Except for Iron and Manganese, if result exceeds allowable limit, the laboratory must fax analytical results to the State within 48 hours.

	DATE:	TIME:
ANALYSES BEGUN:	10/10/2014	4:03 pm
ANALYSES COMPLETED:	10/20/2014	5:07 pm

Laboratory Log #: C412001-01

Certified By: [Signature] Link Throver

COMMENTS:

APPENDIX A

BRACKENRIDGE

**E. COPIES OF ALL IRON AND/OR MANGANESE
ANALYSES FOR SOLUBLE AND
INSOLUBLE THE PAST THREE YEARS –
BASELINE (WITHOUT TREATMENT),
WELL HEAD (AFTER TREATMENT),
AND DISTRIBUTION SYSTEM (AFTER TREATMENT)**

NOT AVAILABLE

APPENDIX A

BRACKENRIDGE

**F. COPIES OF THE PUMP STATUS REPORTS FOR EACH
WELL FOR THE LAST TWO YEARS**

Brackenridge Estates
Pump Status Report Well #1

OFFICIAL COPY

Sample Date	noofdays	Meter Reading	gallons Pumped	GPD	Time Meter Reading	Total Hours Oper	Avg HPD	Impulse Meter Reading	Imp Meter Count	Avg Pump Cycle Per Day	Avg Pump Hrs Day	Avg Dur Min	Avg. GPM
1/6/2020 12:00:00 AM	7.00	9,323,937.00	43,186.00	6,169.43				3,553.00	0.00	0.00	0.00	0.00	0.00
1/13/2020 12:00:00 AM	7.00	9,364,085.00	40,148.00	5,735.43				3,553.00	0.00	0.00	0.00	0.00	0.00
1/20/2020 12:00:00 AM	7.00	9,395,981.00	31,896.00	4,556.57				3,553.00	0.00	0.00	0.00	0.00	0.00
1/27/2020 12:00:00 AM	7.00	9,426,839.00	30,858.00	4,408.29				3,553.00	0.00	0.00	0.00	0.00	0.00
2/3/2020 12:00:00 AM	7.00	9,456,078.00	29,239.00	4,177.00								0.00	0.00
2/10/2020 12:00:00 AM	7.00	9,488,340.00	32,262.00	4,608.86								0.00	0.00
2/17/2020 12:00:00 AM	7.00	9,515,406.00	27,066.00	3,866.57				3,553.00	0.00	0.00	0.00	0.00	0.00
2/24/2020 12:00:00 AM	7.00	9,544,069.00	28,663.00	4,094.71				3,553.00	0.00	0.00	0.00	0.00	0.00
3/2/2020 12:00:00 AM	7.00	9,592,814.00	48,745.00	6,963.57				3,553.00	0.00	0.00	0.00	0.00	0.00
3/9/2020 12:00:00 AM	7.00	9,641,594.00	48,780.00	6,968.57				3,553.00	0.00	0.00	0.00	0.00	0.00
3/17/2020 12:00:00 AM	8.00	9,675,896.00	34,302.00	4,287.75								0.00	0.00
3/23/2020 12:00:00 AM	6.00	9,715,701.00	39,805.00	6,634.17				3,553.00	0.00	0.00	0.00	0.00	0.00
3/30/2020 12:00:00 AM	7.00	9,771,407.00	55,706.00	7,958.00				3,553.00	0.00	0.00	0.00	0.00	0.00
4/6/2020 12:00:00 AM	7.00	9,838,651.00	67,244.00	9,606.29								0.00	0.00
4/13/2020 12:00:00 AM	7.00	9,913,486.00	74,835.00	10,690.71				3,553.00	0.00	0.00	0.00	0.00	0.00
4/20/2020 12:00:00 AM	7.00	9,979,372.00	65,886.00	9,412.29				3,553.00	0.00	0.00	0.00	0.00	0.00
4/27/2020 12:00:00 AM	7.00	10,042,418.00	63,046.00	9,006.57								0.00	0.00
5/4/2020 12:00:00 AM	7.00	10,108,288.00	65,870.00	9,410.00								0.00	0.00
5/11/2020 12:00:00 AM	7.00	10,193,077.00	84,789.00	12,112.71								0.00	0.00
5/18/2020 12:00:00 AM	7.00	10,326,454.00	133,377.00	19,053.86				1.20	-3,551.80	-126.85		0.00	0.00
5/26/2020 12:00:00 AM	8.00	10,404,237.00	77,783.00	9,722.88								0.00	0.00
6/1/2020 12:00:00 AM	6.00	10,464,407.00	60,170.00	10,028.33								0.00	0.00
6/8/2020 12:00:00 AM	7.00	10,609,734.00	145,327.00	20,761.00								0.00	0.00
6/15/2020 12:00:00 AM	7.00	10,721,807.00	112,073.00	16,010.43								0.00	0.00
6/22/2020 12:00:00 AM	7.00	10,781,637.00	59,830.00	8,547.14								0.00	0.00
6/29/2020 12:00:00 AM	7.00	10,918,764.00	137,127.00	19,589.57				2,553.00	2,551.80	60.76			0.00
7/6/2020 12:00:00 AM	7.00	11,051,362.00	132,598.00	18,942.57								0.00	0.00
7/13/2020 12:00:00 AM	7.00	11,188,250.00	136,888.00	19,555.43								0.00	0.00
7/20/2020 12:00:00 AM	7.00	11,327,078.00	138,828.00	19,832.57								0.00	0.00
7/27/2020 12:00:00 AM	7.00	11,463,398.00	136,320.00	19,474.29								0.00	0.00
8/4/2020 12:00:00 AM	8.00	11,562,325.00	98,927.00	12,365.88								0.00	0.00
8/10/2020 12:00:00 AM	6.00	11,644,499.00	82,174.00	13,695.67								0.00	0.00
8/18/2020 12:00:00 AM	8.00	11,761,083.00	116,584.00	14,573.00								0.00	0.00
8/24/2020 12:00:00 AM	6.00	11,828,885.00	67,802.00	11,300.33				3,553.00	1,000.00	17.86			0.00
8/31/2020 12:00:00 AM	7.00	11,946,407.00	117,522.00	16,788.86								0.00	0.00
9/8/2020 12:00:00 AM	8.00	12,026,142.00	79,735.00	9,966.88				3,553.00	0.00	0.00		0.00	0.00
9/14/2020 12:00:00 AM	6.00	12,066,071.00	39,929.00	6,654.83				3,553.00	0.00	0.00		0.00	0.00
9/21/2020 12:00:00 AM	7.00	12,131,864.00	65,793.00	9,399.00								0.00	0.00
9/28/2020 12:00:00 AM	7.00	12,183,399.00	51,535.00	7,362.14				0.00	-3,553.00	-253.79		0.00	0.00
10/5/2020 12:00:00 AM	7.00	12,245,472.00	62,073.00	8,867.57				46.00	46.00	6.57			0.00
10/12/2020 12:00:00 AM	7.00	12,324,603.00	79,131.00	11,304.43				159.00	113.00	16.14			0.00
10/19/2020 12:00:00 AM	7.00	12,381,934.00	57,331.00	8,190.14				257.00	98.00	14.00			0.00
10/26/2020 12:00:00 AM	7.00	12,453,369.00	71,435.00	10,205.00				370.00	113.00	16.14			0.00
11/2/2020 12:00:00 AM	7.00	12,501,416.00	48,047.00	6,863.86				458.00	88.00	12.57			0.00
11/9/2020 12:00:00 AM	7.00	12,559,614.00	58,198.00	8,314.00				563.00	105.00	15.00			0.00
11/16/2020 12:00:00 AM	7.00	12,608,310.00	48,696.00	6,956.57				635.00	72.00	10.29			0.00
11/23/2020 12:00:00 AM	7.00	12,655,190.00	46,880.00	6,697.14				703.00	68.00	9.71			0.00
11/30/2020 12:00:00 AM	7.00	12,702,612.00	47,422.00	6,774.57				768.00	65.00	9.29			0.00
12/7/2020 12:00:00 AM	7.00	12,772,743.00	70,131.00	10,018.71				854.00	86.00	12.29			0.00
12/14/2020 12:00:00 AM	7.00	12,808,095.00	35,352.00	5,050.29				901.00	47.00	6.71			0.00
12/21/2020 12:00:00 AM	7.00	12,844,753.00	36,658.00	5,236.86				954.00	53.00	7.57			0.00
12/28/2020 12:00:00 AM	7.00	12,882,305.00	37,552.00	5,364.57				1,005.00	51.00	7.29			0.00
1/4/2021 12:00:00 AM	7.00	12,918,103.00	35,798.00	5,114.00				1,056.00	51.00	7.29			0.00
1/11/2021 12:00:00 AM	7.00	12,953,683.00	35,580.00	5,082.86				1,105.00	49.00	7.00			0.00
1/18/2021 12:00:00 AM	7.00	12,986,512.00	32,829.00	4,689.86				12,598.00	11,493.00	1,641.86			0.00
1/25/2021 12:00:00 AM	7.00	13,028,269.00	41,757.00	5,965.29				1,211.00	-11,387.00	-1,626.71	0.00	0.00	0.00
2/1/2021 12:00:00 AM	7.00	13,067,760.00	39,491.00	5,641.57				1,270.00	59.00	8.43			0.00
2/8/2021 12:00:00 AM	7.00	13,109,423.00	41,663.00	5,951.86				1,324.00	54.00	7.71			0.00
2/15/2021 12:00:00 AM	7.00	13,138,835.00	29,412.00	4,201.71				1,374.00	50.00	7.14			0.00
2/22/2021 12:00:00 AM	7.00	13,166,998.00	28,163.00	4,023.29				1,425.00	51.00	7.29			0.00
3/1/2021 12:00:00 AM	7.00	13,195,303.00	28,305.00	4,043.57	17,272.00							0.00	0.00
3/8/2021 12:00:00 AM	7.00	13,223,348.00	28,045.00	4,006.43	17,287.00	15.00	2.14					0.00	0.00
3/15/2021 12:00:00 AM	7.00	13,259,313.00	35,965.00	5,137.86	17,307.00	20.00	2.86					0.00	0.00
3/22/2021 12:00:00 AM	7.00	13,294,373.00	35,060.00	5,008.57	17,326.00	19.00	2.71					0.00	0.00
3/29/2021 12:00:00 AM	7.00	13,326,899.00	32,526.00	4,646.57	17,344.00	18.00	2.57					0.00	0.00
4/5/2021 12:00:00 AM	7.00	13,359,866.00	32,967.00	4,709.57	17,361.00	17.00	2.43					0.00	0.00
4/12/2021 12:00:00 AM	7.00	13,410,878.00	51,012.00	7,287.43	17,388.00	27.00	3.86					0.00	0.00
4/19/2021 12:00:00 AM	7.00	13,477,445.00	66,567.00	9,509.57	17,422.00	34.00	4.86					0.00	0.00
4/26/2021 12:00:00 AM	7.00	13,563,978.00	86,533.00	12,361.86	17,465.00	43.00	6.14					0.00	0.00
5/3/2021 12:00:00 AM	7.00	13,687,553.00	123,575.00	17,653.57	17,527.00	62.00	8.86					0.00	0.00
5/10/2021 12:00:00 AM	7.00	13,776,983.00	89,430.00	12,775.71	1,572.00	-15,955.00	-2,279.29					0.00	0.00
5/17/2021 12:00:00 AM	7.00	13,871,858.00	94,875.00	13,553.57	17,617.00	16,045.00	2,292.14					0.00	0.00
5/24/2021 12:00:00 AM	7.00	14,011,084.00	139,226.00	19,889.43	17,682.00	65.00	9.29					0.00	0.00
6/1/2021 12:00:00 AM	8.00	14,173,561.00	162,477.00	20,309.63	17,756.00	74.00	9.25					0.00	0.00
6/7/2021 12:00:00 AM	6.00	14,239,784.00	66,223.00	11,037.17	17,789.00	33.00	5.50					0.00	0.00
6/14/2021 12:00:00 AM	7.00	14,317,275.00	77,491.00	11,070.14	17,827.00	38.00	5.43					0.00	0.00
6/21/2021 12:00:00 AM	7.00	14,436,377.00	119,102.00	17,014.57	17,883.00	56.00	8.00					0.00	0.00

Brackenridge Estates
Pump Status Report Well #1

OFFICIAL COPY

Sample Date	noofdays	Meter Reading	gallons Pumped	GPD	Time Meter Reading	Total Hours Oper	Avg HPD	Impulse Meter Reading	Imp Meter Count	Avg Pump Cycle Per Day	Avg Pump Hrs Day	Avg Dur Min	Avg. GPM	
6/28/2021 12:00:00 AM	7.00	14,552,360.00	115,983.00	16,569.00	17,926.00	43.00	6.14					0.00	0.00	44.98
7/6/2021 12:00:00 AM	8.00	14,637,728.00	85,368.00	10,671.00	17,981.00	55.00	6.88					0.00	0.00	25.85
7/12/2021 12:00:00 AM	6.00	14,719,775.00	82,047.00	13,674.50	18,022.90	41.90	6.98					0.00	0.00	32.65
7/19/2021 12:00:00 AM	7.00	14,805,042.00	85,267.00	12,181.00	18,063.00	40.10	5.73					0.00	0.00	35.43
7/26/2021 12:00:00 AM	7.00	14,917,251.00	112,209.00	16,029.86	18,115.00	52.00	7.43					0.00	0.00	35.96
8/2/2021 12:00:00 AM	7.00	15,006,953.00	89,702.00	12,814.57	18,158.00	43.00	6.14					0.00	0.00	34.78
8/9/2021 12:00:00 AM	7.00	15,096,375.00	89,422.00	12,774.57	18,200.00	42.00	6.00					0.00	0.00	35.48
8/16/2021 12:00:00 AM	7.00	15,204,667.00	108,292.00	15,470.29	18,250.00	50.00	7.14					0.00	0.00	36.11
8/23/2021 12:00:00 AM	7.00	15,280,646.00	75,979.00	10,854.14	18,286.00	36.00	5.14					0.00	0.00	35.20
8/30/2021 12:00:00 AM	7.00	15,387,943.00	107,297.00	15,328.14	18,336.00	50.00	7.14					0.00	0.00	35.78
9/7/2021 12:00:00 AM	8.00	15,533,411.00	145,468.00	18,183.50	18,403.00	67.00	8.38					0.00	0.00	36.16
9/13/2021 12:00:00 AM	6.00	15,604,618.00	71,207.00	11,867.83	18,439.00	36.00	6.00					0.00	0.00	32.97
9/20/2021 12:00:00 AM	7.00	15,695,530.00	90,912.00	12,987.43	18,486.00	47.00	6.71					0.00	0.00	32.26
9/27/2021 12:00:00 AM	7.00	15,764,013.00	68,483.00	9,783.29	18,522.00	36.00	5.14					0.00	0.00	31.72
10/4/2021 12:00:00 AM	7.00	15,875,379.00	111,366.00	15,909.43	18,577.00	55.00	7.86					0.00	0.00	33.74
10/11/2021 12:00:00 AM	7.00	15,946,460.00	71,081.00	10,154.43	186,150.00	167,573.00	23,939.00					0.00	0.00	0.01
10/18/2021 12:00:00 AM	7.00	16,015,800.00	69,340.00	9,905.71	18,650.00	-167,500.00	-23,928.57					0.00	0.00	0.00
10/26/2021 12:00:00 AM	8.00	16,104,273.00	88,473.00	11,059.13	18,696.40	46.40	5.80					0.00	0.00	31.78
11/1/2021 12:00:00 AM	6.00	16,139,917.00	35,644.00	5,940.67	18,715.00	18.60	3.10					0.00	0.00	31.94
11/8/2021 12:00:00 AM	7.00	16,187,963.00	48,046.00	6,863.71	18,741.00	26.00	3.71					0.00	0.00	30.83
11/15/2021 12:00:00 AM	7.00	16,235,602.00	47,639.00	6,805.57	18,768.00	27.00	3.86					0.00	0.00	29.39
11/22/2021 12:00:00 AM	7.00	16,285,525.00	49,923.00	7,131.86	18,795.00	27.00	3.86					0.00	0.00	30.79
11/29/2021 12:00:00 AM	7.00	16,323,340.00	37,815.00	5,402.14	18,815.00	20.00	2.86					0.00	0.00	31.48
12/6/2021 12:00:00 AM	7.00	16,357,830.00	34,490.00	4,927.14								0.00	0.00	0.00
12/13/2021 12:00:00 AM	7.00	16,394,866.00	37,036.00	5,290.86	18,853.00	38.00	2.71					0.00	0.00	32.54
12/20/2021 12:00:00 AM	7.00	16,433,716.00	38,850.00	5,550.00	18,873.00	20.00	2.86					0.00	0.00	32.34
12/27/2021 12:00:00 AM	7.00	16,474,853.00	41,137.00	5,876.71	18,895.00	22.00	3.14					0.00	0.00	31.19
1/3/2022 12:00:00 AM	7.00	16,513,943.00	39,090.00	5,584.29								0.00	0.00	0.00
1/10/2022 12:00:00 AM	7.00	16,549,393.00	35,450.00	5,064.29								0.00	0.00	0.00
1/18/2022 12:00:00 AM	8.00	16,593,989.00	44,596.00	5,574.50								0.00	0.00	0.00
1/24/2022 12:00:00 AM	6.00	16,646,027.00	52,038.00	8,673.00								0.00	0.00	0.00
1/31/2022 12:00:00 AM	7.00	16,683,058.00	37,031.00	5,290.14								0.00	0.00	0.00
2/7/2022 12:00:00 AM	7.00	16,719,392.00	36,334.00	5,190.57								0.00	0.00	0.00
2/14/2022 12:00:00 AM	7.00	16,752,089.00	32,697.00	4,671.00								0.00	0.00	0.00
2/21/2022 12:00:00 AM	7.00	16,786,933.00	34,844.00	4,977.71								0.00	0.00	0.00
2/28/2022 12:00:00 AM	7.00	16,816,340.00	29,407.00	4,201.00								0.00	0.00	0.00
3/7/2022 12:00:00 AM	7.00	16,852,510.00	36,170.00	5,167.14								0.00	0.00	0.00
3/14/2022 12:00:00 AM	7.00	16,888,203.00	35,693.00	5,099.00								0.00	0.00	0.00
3/21/2022 12:00:00 AM	7.00	16,923,270.00	35,067.00	5,009.57								0.00	0.00	0.00
3/29/2022 12:00:00 AM	8.00	16,970,944.00	47,674.00	5,959.25								0.00	0.00	0.00
4/4/2022 12:00:00 AM	6.00	17,006,086.00	35,142.00	5,857.00								0.00	0.00	0.00
4/11/2022 12:00:00 AM	7.00	17,050,316.00	44,230.00	6,318.57								0.00	0.00	0.00
4/18/2022 12:00:00 AM	7.00	17,118,512.00	68,196.00	9,742.29								0.00	0.00	0.00
4/25/2022 12:00:00 AM	7.00	17,206,884.00	88,372.00	12,624.57								0.00	0.00	0.00
5/2/2022 12:00:00 AM	7.00	17,309,227.00	102,343.00	14,620.43								0.00	0.00	0.00
5/9/2022 12:00:00 AM	7.00	17,389,894.00	80,667.00	11,523.86								0.00	0.00	0.00
5/16/2022 12:00:00 AM	7.00	17,469,966.00	80,072.00	11,438.86								0.00	0.00	0.00
5/23/2022 12:00:00 AM	7.00	17,547,440.00	77,474.00	11,067.71	19,427.00	532.00	3.62					0.00	0.00	50.96
5/31/2022 12:00:00 AM	8.00	17,647,892.00	100,452.00	12,556.50	19,458.00	31.00	3.88					0.00	0.00	53.94
6/6/2022 12:00:00 AM	6.00	17,758,375.00	110,483.00	18,413.83	19,503.70	45.70	7.62	1,666.00				0.00	0.00	40.28
6/13/2022 12:00:00 AM	7.00	17,866,370.00	107,995.00	15,427.86	19,552.00	48.30	6.90					0.00	0.00	37.27
6/20/2022 12:00:00 AM	7.00	17,980,523.00	114,153.00	16,307.57	19,619.00	67.00	9.57					0.00	0.00	28.40
6/27/2022 12:00:00 AM	7.00	18,137,726.00	157,203.00	22,457.57	19,705.00	86.00	12.29					0.00	0.00	30.46

APPENDIX A

BRACKENRIDGE

G. ORIGINAL 24-HOUR PUMP TEST FOR EACH WELL

SEP. 12. 2005 9:43AM

N W POOLE WELL CO

NO. 898 P. 2

WELL CONSTRUCTION RECORD

COORDINATE
LAT 35° 38' 50.2" N
LONG 78° 46' 50.1" W

North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section
WELL CONTRACTOR (INDIVIDUAL) NAME (PRINT) James Jones CERTIFICATION # 8833
WELL CONTRACTOR COMPANY NAME N.W. Poole Well Co. PHONE # 919-266-9223
STATE WELL CONSTRUCTION PERMIT# _____ ASSOCIATED WQ PERMIT# _____
(If applicable) (If applicable)

1. WELL USE (Check Applicable Box): Residential Municipal/Public Industrial Agricultural
Monitoring Recovery Hot Pump Water Injection Other Other, List Use Commercial

2. WELL LOCATION:
Nearest Town: Fairway, Wayne County, Wake
Sunset Lake Rd.
(Street Name, Number, Community, Subdivision, Lot No., Zip Code)

Topographic/Land rolling
 Ridge Slope Valley Other
(check appropriate box)
Latitude/longitude of well location

3. OWNER: Wayne Massengill
Address: 1650 Bluebonnet Dr.
(Street or Route No.)
Fairway, Wayne Co. 27584
City/Town State Zip Code
Area code - Phone number: 919-427-2300

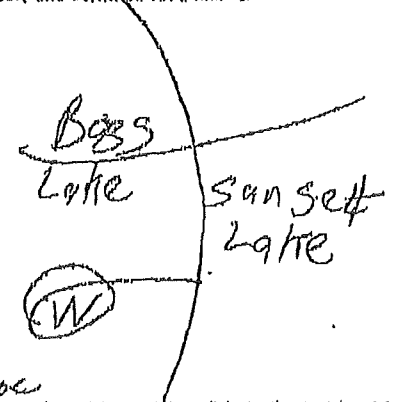
(Degrees/minutes/seconds)
Latitude/longitude source: GPS Topographic map
(check box)

4. DATE DRILLED: 8-31-05
5. TOTAL DEPTH: 250
6. DOES WELL REPLACE EXISTING WELL? YES NO
7. STATIC WATER LEVEL Below Top of Casing: 20 FT.
(Use "+" if Above Top of Casing)
8. TOP OF CASING IS 3 FT. Above Land Surface*

DEPTH	DRILLING LOG
From - To	Formation Description
0 - 24	Top Soil
24 - 46	Clay
46 - 150	Sand
150 - 250	Slate granite

9. YIELD (gpm): 200 METHOD OF TEST: AIR
10. WATER ZONES (depth): 150, 23, 200, 35

LOCATION SKETCH
Show direction and distance in miles from at least two State Roads or County Roads. Include the road numbers and common road names.



11. DISINFECTION: Type Chlor, Amount 16.02
12. CASING: Depth, Diameter or Weight, Material
From 0 To 68 ft. 4 1/2" galv
From _____ To _____ ft. _____ galv
From _____ To _____ ft. _____
13. JOINT: Depth, Material, Method
From 0 To 68 ft. concrete PUMP
From _____ To _____ ft. _____
14. SCREEN: Depth, Diameter, Slot Size, Material
From _____ To _____ ft. _____ in. _____ in. _____
From _____ To _____ ft. _____ in. _____ in. _____
15. SAND/GRAVEL PACK: Depth, Size, Material
From _____ To _____ ft. _____
From _____ To _____ ft. _____

16. REMARKS: Hardened steel drive shoe welded to casing.
I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.
James A. Jones 8-31-05
SIGNATURE OF PERSON CONSTRUCTING THE WELL DATE

OFFICIAL COPY

WELL PUMPING TEST RECORD

CONDUCTED BY: AQUA NORTH CAROLINA

CERTIFIED CONTRACTOR: *[Signature]*

CERTIFICATION # 2657

WELL LOCATION (NEAREST TOWN) FUQUAY VARINA COUNTY: WAKE
 SUBDIVISION: BRACKENRIDGE WELL # 1 USE OF WELL: DOMESTIC ()
 OWNER: HEATER UTILITIES, INC. PUBLIC (X)
 P.O. DRAWER 4889 INDUSTRIAL ()
 GARY, NC 27519 IRRIGATION ()
 OTHER ()
 DRILLING CONTRACTOR: N.W. ROOLE WELL DRILLING
 WELL DEPTH: 605 FT CASING DEPTH: 68 FT CASING DIA: 6.174" CASING TYPE: GALVANIZED
 STATIC LEVEL: 20 FT () ABOVE (X) BELOW TOP OF CASING DATE MEASURED: 09/14/05
 CASING IS 2 FEET ABOVE LAND SURFACE WAS CASING GROUTED?: YES

TEST PUMP: TYPE - SUBMERSIBLE MAKE - GRUNDFOS - 60S75-13 HORSEPOWER - 7.5
 CAPACITY OF PUMP: 67 GPM @ 235' TDH INTAKE DEPTH - 189 FEET
 FLOW MEASURE DEVICE: SENSUS-W160 TURBINE METER
 CHLORINATION: TYPE - HTH AMOUNT - 8%
 PUMP STARTED: DATE - 09/14/05 TIME - 12:00 PM
 PUMP STOPPED: DATE - 09/15/05 TIME - 12:00 PM
 PUMPING WATER LEVEL: 62 FEET AFTER 24 HOURS @ 65 GPM WELL YIELD: 65 GPM

TIME	WATER LEVEL	PRODUCTION	COMMENTS
12:00 PM	20 FEET	72 GPM	
12:05 PM	37 FEET	72 GPM	
12:10 PM	38 FEET	72 GPM	
12:15 PM	39 FEET	72 GPM	
12:20 PM	39 FEET	72 GPM	
12:25 PM	40 FEET	72 GPM	
12:30 PM	41 FEET	72 GPM	
12:35 PM	41 FEET	72 GPM	
12:40 PM	42 FEET	72 GPM	
12:45 PM	43 FEET	71 GPM	
12:50 PM	44 FEET	71 GPM	
12:55 PM	44 FEET	71 GPM	
01:00 PM	45 FEET	71 GPM	
01:10 PM	45 FEET	71 GPM	
01:20 PM	46 FEET	71 GPM	
01:30 PM	46 FEET	71 GPM	
01:40 PM	47 FEET	71 GPM	
01:50 PM	47 FEET	71 GPM	
02:00 PM	48 FEET	71 GPM	
02:15 PM	48 FEET	71 GPM	
02:30 PM	49 FEET	71 GPM	
02:45 PM	49 FEET	70 GPM	

APPENDIX A

BRACKENRIDGE

- H. COPIES WITHIN THE LAST SIX MONTHS OF ALL AQUA NC EMAILS TO AND FROM PWSS, LETTERS TO AND FROM PWSS, REPORTS TO AND FROM PWSS, AND THE RECOMMENDATIONS OF PWSS REGARDING WATER QUALITY CONCERNS ON AQUA NC'S WATER SYSTEMS

Lambeth, Robyn E

From: Berger, Amanda A
Sent: Tuesday, June 7, 2022 2:37 PM
To: Guyer, Shawn; Krueger, Robert D; Markarian, Dawn
Cc: Stagner, Lorraine M; Taylor, Daniel J; Hadidon, Catherine E
Subject: RE: Brackenridge Estates [NC4092080] FW: [External] Aqua issues in Brackenridge Estates

Good afternoon Shawn,

Below are the results we submitted to the Public Staff in February to support our request to install a MnO2 filter at Brackenridge. We also collected samples 2/28/2022 that had results of 1.5 mg/L Fe and 0.221 mg/L Mn. May 9, 2022 samples were 0.99 mg/L Fe and 0.238 mg/L Mn.

TABLE 1: Iron (Fe) and Manganese (Mn) Analysis

Brackenridge Estates Well #1 Laboratory Analysis						
Date	Iron (Fe), mg/L			Manganese (Mn), mg/L		
	Tot.	Sol.	Insol.	Tot.	Sol.	Insol.
10/9/2014	0.717	-	-	0.178	-	-
10/9/2017	0.632	-	-	0.176	-	-
10/12/2020	1.08	-	-	0.211	-	-
11/04/2021	1.58	0.050	1.530	0.232	0.0784	0.154
11/04/2021 (Raw)	4.390	0.167	4.223	0.230	0.225	0.005

We are evaluating if there are any additional actions we can take operationally while we await the construction of the filter. Per engineering the design is at 60% and we anticipate submitting to NCDEQ for plan review within 60 days.

Dawn will include you in our response to the customer.

Thank you,
Amanda

AQUA.

Amanda Berger
Director, Environmental Compliance
Aqua North Carolina
202 Mackenan Court; Cary, NC 27511
O: 919.653.6965 M:910.773.0406



From: Guyer, Shawn <shawn.guyer@ncdenr.gov>
Sent: Tuesday, June 7, 2022 10:35 AM

To: Berger, Amanda A <AABerger@aquaamerica.com>; Krueger, Robert D <RDKrueger@aquaamerica.com>; Markarian, Dawn <DMarkarian@aquaamerica.com>
Cc: Stagner, Lorraine M <LMStagner@aquaamerica.com>; Taylor, Daniel J <daniel.taylor@ncdenr.gov>; Hadidon, Catherine E <catherine.hadidon@ncdenr.gov>
Subject: Brackenridge Estates [NC4092080] FW: [External] Aqua issues in Brackenridge Estates

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Amanda/Rob,

Please provide an update on Aqua's response to this customer.

The only iron/manganese data point that we have currently is the 10-12-2020 compliance sample with iron: 1.08 mg/L and manganese: 0.211 mg/L. Do you have more current data for this well?

Shawn

Shawn F. Guyer, P.E.
Regional Engineering Supervisor
Raleigh Regional Office
Public Water Supply Section
Division of Water Resources
Department of Environmental Quality

919 791-4299 direct
919 791-4200 main
Shawn.Guyer@ncdenr.gov

Physical: 3800 Barrett Drive,
Raleigh NC 27609

Mailing: 1628 Mail Service Center
Raleigh NC, 27699-1628

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From: [Redacted]
Sent: Monday, June 6, 2022 2:08 PM
To: Guyer, Shawn <shawn.guyer@ncdenr.gov>; Hadidon, Catherine E <catherine.hadidon@ncdenr.gov>
Cc: [Redacted]; ncenvironmental@aquaamerica.com
Subject: [External] Aqua issues in Brackenridge Estates

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Good afternoon,

I was asked by [REDACTED], the HOA president at Brackenridge Estates, to reach out to you concerning our water quality issues with Aqua America. I am the homeowner at [REDACTED], Fuquay Varina NC 27526. I am also the homeowner cited in previous emails to you.

Roughly 3-4 times a year, we have to deal with disgusting water from both our cold and hot faucets in our entire house. Unfortunately today is another one of our lucky days. I have contacted Aqua and am awaiting the technician's visit. I want to add that we have a whole house filtration system, so only imagine how our water must look before being filtered.

Attached our photos/video of our "acceptable" water after running non stop for about 20 minutes. I do not understand how Aqua is able to operate as a business and not be held accountable.

Kind Regards,

[REDACTED]
[REDACTED]

OFFICIAL COPY

Lambeth, Robyn E

From: Berger, Amanda A
Sent: Friday, May 27, 2022 1:41 PM
To: Guyer, Shawn
Cc: Stagner, Lorraine M; Krueger, Robert D; Hadidon, Catherine E; Taylor, Daniel J; Markarian, Dawn
Subject: RE: Brackenridge Estates [NC4092080] RE: [External] concerns over water from Aqua Well

Hi Shawn –

I am a little behind in following up on this email, to which, my apologies.

Dawn was able to speak with ~~Mr. G. [redacted]~~ in detail earlier this month. Below are additional details on the conversation. Per my review of the conversation and speaking with Dawn, ~~Mr. G. [redacted]~~ concerns appear to be related to internal plumbing and limited usage in the bathroom. Aqua did offer to install a jumper to allow him to flush his home at no cost, but to date, I cannot locate any correspondence that he has contacted us to schedule.

- Customer only sees issue in bath and commode tank, not in bathroom or kitchen sink; has a drinking water filter on sink
- Customer stated both bath tubs impacted but also admitted that they are not used often.
- Provided information to customer about filter project and system flushing
 - Pending approval, filter construction to start in mid-September.
 - Informed him that system is on a Bi-Annual flushing schedule, last completed in Mid-January.
 - Relayed that system will be flushed prior to filter start up.
- Offered to install jumper, at his convenience, to allow him to do a thorough flush.
 - Customer stated water was cheap and he didn't need a jumper.
 - Reiterated that it is a service we are more than happy to provide in order to accommodate him in flushing his home, explained how to flush home.
 - I suggested he let us know via email to NCEnvironmental, when he is ready for the jumper.

Please don't hesitate to contact me if you have additional questions or concerns.

Hope you have a great long weekend.

Thank you,
 Amanda

AQUA.

Amanda Berger
Director, Environmental Compliance
Aqua North Carolina
 202 Mackenan Court; Cary, NC 27511
 O: 919.653.6965 M:910.773.0406



From: Guyer, Shawn <shawn.guyer@ncdenr.gov>
Sent: Tuesday, April 26, 2022 9:43 AM
To: Berger, Amanda A <AABerger@aquaamerica.com>
Cc: Stagner, Lorraine M <LMStagner@aquaamerica.com>; Krueger, Robert D <RDKrueger@aquaamerica.com>; Hadidon, Catherine E <catherine.hadidon@ncdenr.gov>; Taylor, Daniel J <daniel.taylor@ncdenr.gov>; Markarian, Dawn <DMarkarian@aquaamerica.com>
Subject: RE: Brackenridge Estates [NC4092080] RE: [External] concerns over water from Aqua Well

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Thank you for the update, Amanda.

Shawn

From: Berger, Amanda A <AABerger@aquaamerica.com>
Sent: Tuesday, April 26, 2022 7:03 AM
To: Guyer, Shawn <shawn.guyer@ncdenr.gov>
Cc: Stagner, Lorraine M <LMStagner@aquaamerica.com>; Krueger, Robert D <RDKrueger@aquaamerica.com>; Hadidon, Catherine E <catherine.hadidon@ncdenr.gov>; Taylor, Daniel J <daniel.taylor@ncdenr.gov>; Markarian, Dawn <DMarkarian@aquaamerica.com>
Subject: RE: Brackenridge Estates [NC4092080] RE: [External] concerns over water from Aqua Well

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Hi Shawn –

I asked Dawn to provide additional detail regarding the complaint below. This customer moved in May 2014 and previously only contacted Aqua once in 2019 regarding discolored water. He did not call Aqua to report this latest issue, but he did email our customer service team. Unfortunately, that email address is not continuously monitored and was not received until after you notified us.

Lorrie has been attempting to contact the customer since you emailed us to arrange a time that is convenient for him to place a jumper his service line to provide him an opportunity to perform a thorough interior flush without cost. It is not uncommon for discoloration to appear in “garden/jacuzzi” tubs due to limited usage and mineral accumulation in the appurtenances, piping, and hot water tank. Dawn is also going to attempt to contact him today. If he doesn’t answer our calls, we will email him.

We did review the call log since 2019 and this system has had 14 calls all concentrated in one general area of the subdivision. I will discuss further with operations flushing that area more frequently until the filter can be installed. It is currently flushed bi-annually.

Don’t hesitate to contact me if you have any additional questions or would like to discuss further.

Thank you,

Amanda

From: Guyer, Shawn <shawn.guyer@ncdenr.gov>
Sent: Wednesday, April 20, 2022 11:31 AM
To: Berger, Amanda A <AABerger@aquaaamerica.com>
Cc: Stagner, Lorraine M <LMStagner@aquaaamerica.com>; Krueger, Robert D <RDKrueger@aquaaamerica.com>; Hadidon, Catherine E <catherine.hadidon@ncdenr.gov>; Taylor, Daniel J <daniel.taylor@ncdenr.gov>
Subject: FW: Brackenridge Estates [NC4092080] RE: [External] concerns over water from Aqua Well

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Amanda,

Thanks for the call. It was my mistake, the message sent to the [REDACTED], was from Dawn.

Shawn

From: Guyer, Shawn
Sent: Tuesday, April 19, 2022 2:07 PM
To: Stagner, Lorrie <lmstagner@aquaaamerica.com>; Krueger, Robert D. <RDKrueger@aquaaamerica.com>; Berger, Amanda A <AABerger@aquaaamerica.com>
Cc: Hadidon, Catherine E <catherine.hadidon@ncdenr.gov>; Taylor, Daniel J <daniel.taylor@ncdenr.gov>
Subject: Brackenridge Estates [NC4092080] RE: [External] concerns over water from Aqua Well

Lorrie,

We have received several complaints from Brackenridge. Amanda has been in contact with the [REDACTED] very recently.

[REDACTED] (see below) appears to be the very last home on [REDACTED]. The map I have shows a blow off right in front of his home. Some periodic flushing there might resolve this. I attached the video he sent me in his original email.

Please send me an update on your actions to resolve. I'm away of the proposed filter install.

Shawn

Shawn F. Guyer, P.E.
 Regional Engineering Supervisor
 Raleigh Regional Office
 Public Water Supply Section
 Division of Water Resources
 Department of Environmental Quality

919 791-4299 direct
 919 791-4200 main
Shawn.Guyer@ncdenr.gov

Physical: 3800 Barrett Drive,
 Raleigh NC 27609

Mailing: 1628 Mail Service Center
Raleigh NC, 27699-1628

W-218 Sub 526A

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From: [REDACTED]
Sent: Tuesday, April 19, 2022 12:40 PM
To: Guyer, Shawn <shawn.guyer@ncdenr.gov>
Cc: Hadidon, Catherine E <catherine.hadidon@ncdenr.gov>
Subject: RE: Brackenridge Estates [NC4092080] RE: [External] concerns over water from Aqua Well

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Thank you for the quick response. I have answered your questions below in red. If you need anything else please let me know. I do have a call into Aqua again but I have not heard back yet.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

From: Guyer, Shawn <shawn.guyer@ncdenr.gov>
Sent: Tuesday, April 19, 2022 10:01 AM
To: [REDACTED]
Cc: Hadidon, Catherine E <catherine.hadidon@ncdenr.gov>
Subject: Brackenridge Estates [NC4092080] RE: [External] concerns over water from Aqua Well

The discoloration you are seeing is caused by naturally occurring minerals in the ground water, iron and manganese. The North Carolina Public Water Supply Section requires water systems to monitor for these minerals and others. The U.S. EPA does not have health-based regulations for iron and manganese. They have Secondary Standards related to the aesthetic issues they cause (i.e., discoloration, taste, and odor). North Carolina put in place stricter regulations requiring water systems to provide treatment to control mineral concentrations above EPA's action levels. The water system owner, Aqua, currently has treatment to control the minerals installed and in operation.

I have been in contact with the [REDACTED] of the Brackenridge Estates [REDACTED], several times recently about this issues. Aqua indicated that they are in the process of engineering design and obtaining approvals for a treatment system (filters) to remove the minerals from the water, completely. They recently projected beginning construction in September of 2022, pending the necessary approvals.

Are your issues frequent? Intermittent? Periodic? Frequent in the tub as I think it is easier to see. ^{W-218 Sub 526A} The video I sent is periodic and I usually just see the color issue. This time it was actual sediment coming out of the facet which is unusual.

Are the issues primarily occurring when you fill the bathtub? I assume it happens all the time but you cant really see the issue outside the tub.

Do you have a home water treatment system installed? These can impact the effectiveness of the treatment Aqua is providing. No but I am thinking about getting one.

Have you communicated the issue to Aqua directly? If you have not, I can forward your complaint to them. They may be able to take steps to address the issue short term. Your lot is at the very end of the line and flushing at the end of your street may be beneficial. It would be great if you also send this to them. I really just want to ensure this is safe to drink for my family.

Shawn

Shawn F. Guyer, P.E.
Regional Engineering Supervisor
Raleigh Regional Office
Public Water Supply Section
Division of Water Resources
Department of Environmental Quality

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Raleigh NC 27609

Mailing: 1628 Mail Service Center
Raleigh NC, 27699-1628

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From: [REDACTED]
Sent: Monday, April 18, 2022 7:38 AM
To: Guyer, Shawn <shawn.guyer@ncdenr.gov>
Subject: [External] concerns over water from Aqua Well

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Shawn,
I am concerned with the quality of my water and wanted to know if you can help, or point me in the right direction. I have attached a video of what is coming out of my bathroom tub. I live at [REDACTED], Fuquay-Varina, NC

27526. My water is provided by Aqua from a community well. I have been concerned about the wat for several years and it seems to be getting worse. I have 3 children that drink this water every day and as you can see it is not good at times. Any ideas on if someone can come test this to ensure it is safe?

Thank you for your help in this matter.

[Redacted signature block]