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July 17, 2019

Ms. Marlene M. Baust, P.E.
Environmental Engineer
Groundwater Discharges Section – DNREC
89 Kings Hwy
Dover, DE 19901

Re: ANSRWRF Operation Permit Application

Dear Ms. Baust,

The attached binder for the Application for Operation Permit for ANSRWRF is a copy of the binder originally submitted on February 13, 2019, with the following updates:

1. The Summary of Changes in Appendix A has been updated.
2. A signed Engineer Inspection Report Form has been added to Appendix B.

Sincerely,

A handwritten signature in blue ink, appearing to read "D. Konstanski", with a long horizontal flourish extending to the right.

Daniel Konstanski, P.E.
Principle Engineer
Artesian Wastewater Management, Inc.

Application for Operation Permit

Artesian Northern Sussex Regional Water Recharge Facility (ANSRWRF)

February 13, 2019

PREPARED FOR:

ARTESIAN WASTEWATER MANAGEMENT, INC.
664 Churchmans Road
Newark, DE 19702

PREPARED BY:

ARTESIAN RESOURCES CORPORATION
664 Churchmans Road
Newark, DE 19702



Daniel Konstanski, P.E.
Senior Engineer
Artesian Resources Corporation

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1 - Overview

ANSRWRF is envisioned to serve as a regional facility meeting current and future wastewater needs within the Artesian Wastewater Management, Inc. (AWMI) service territories in Sussex County. The facility will be owned and operated by Artesian.

This facility has been constructed under the DNREC Construction Permit #359288-01, which was issued with an amended date of November 3, 2017. The applicable documents for the application for an Operation Permit are included as described below.

Phase 1 of the project is to construct a storage lagoon and disposal spray fields, and to accept treated wastewater effluent from Allen Harim Foods, LLC (Allen Harim). The design average daily flow is 1.5 MGD with a peak flow of 2.0 MGD. Phase 1 disposal fields include Fields D, E, F, and G.

The proposed facility will utilize reclaimed wastewater for irrigation of privately owned agricultural land, under a lease held in perpetuity by Artesian as the wastewater utility provider. The proposed irrigation sites, including current and future phases, total approximately 1,714 acres of land which includes both wooded and agricultural area. These sites have been permanently placed in an Agricultural Preservation Easement by the Delaware Agricultural Lands Preservation Foundation.

The effluent will receive a high level of treatment to meet the "Unlimited Public Access" requirement. For Phase 1, the treatment for Unlimited Public Access will be provided by Allen Harim. Nitrogen polishing will be accomplished through crop uptake to meet the requirements of PSN2.

2 - Required Permit Application Documents

2.1 DNREC Application Form

§6.5.3.1.1

See Appendix A.

2.2 Applicable Department Fees

§6.5.3.1.2

See attached checks.

2.3 Design Engineer Inspection Report

§6.5.3.1.3

See Appendix B.

2.4 Applicable State/ County Inspection Reports

§6.5.3.1.4

A letter requesting an inspection by DNREC of the ANSRWRF facility has been submitted along with this application. The inspection report will be added to Appendix B as an addendum.

2.5 Contractor's Certificate of Completion

§6.5.3.1.5

See Appendix C.

2.6 Treatment Plant: Manufacturer Certificate of Completion

§6.5.3.1.6

Not applicable. Phase 1 of the project does not include onsite treatment. Treatment will be performed by Allen Harim under a separate operating permit.

2.7 Operator and Utility Agreements

§6.5.3.1.7-8

Not applicable. AWMI is a Responsible Management Entity (RME) as defined in Delaware Administrative Code 7204: Regulations for Licensing Operators of Wastewater Facilities. As such, the management and staffing is shared between multiple Wastewater Treatment Facilities as described in a Quarterly Report submitted by AWMI to DNREC.

2.8 Utility Agreement

§6.5.3.1.8

Not applicable. The facility will be owned and operated by AWMI.

2.9 As-Built Drawings

§6.5.3.1.9

Included with the Operation and Maintenance Manual. See attached binder and plan set.

2.10 Collection System Permit

§6.5.3.1.10

See Appendix B. While Phase 1 does not have a conventional raw wastewater collection system, documentation for the Allen Harim Metering and Monitoring building and the force main from Allen Harim to ANSRWRF is included. The collection and treatment of raw wastewater will be performed onsite at Allen Harim under a separate Operations Permit.

2.11 Collection System Inspection Reports

§6.5.3.1.11

See Appendix B.

2.12 Collection System Testing Procedures

§6.5.3.1.12

Force mains are tested to AWWA Standard C600-17, Section 5.2.

2.13 Operation and Maintenance Plan

§6.5.3.1.13

See attached binder and plan set.

2.14 Summary and Analysis of Groundwater Monitoring Results

§6.5.3.1.14-15

See Appendix D.

2.15 Bio-Solids Management Plan

§6.5.3.1.16

Not applicable. Phase 1 does not include on-site treatment, so there are no bio-solids generated for disposal. Bio-solids management will be performed by Allen Harim under a separate operating permit.

2.16 Legal Documentation

§6.5.3.1.17

Not applicable. AWMI is a public utility certified by the PSC in full compliance with Del. Admin. C., Title 26, 6001 and 6002. As such, the legal documents for operation are on file with the PSC, and AWMI is exempt from the requirements **§6.4.1** under the provisions of **§6.4.2**.

Appendix A - DNREC Application Form



APPLICATION FOR A PERMIT TO SPRAY IRRIGATE WASTEWATER

Groundwater Discharges Section, Division of Water Resources
Delaware Department of Natural Resources and Environmental
Control 89 Kings Highway, Dover DE 19901
302-739-9948

Please complete all items in print or type.

1. Required Documentation (For new applicants only):

Please attach the following: Local Zoning Approval, a draft Trust Indenture (if applicable), and a copy of the Material Safety Data Sheets applicable to the facility.

2. Tax Map Number: 235-6.00-28.09

3. Permit Number (For renewals only): N/A

4. Facility Owner/Permittee Information:

Name of Facility:

Artesian Northern Sussex Regional Water Recharge Facility

Name of Facility Owner/Permittee:
**Artesian Wastewater
Management, Inc.
Contact: Rodney Wyatt**

Telephone Number:
(302) 453-7319

Fax Number:
(302) 645-8233

Facility Owner or designee's Email Address :
rwyatt@artesianwater.com

Facility Owner's Business Mailing Address (street, city, state and zip code):
644 Churchmans Rd. Newark DE 19702

Location of Facility (street, city, state and zip code):
12941 Isaacs Rd. Milton DE 19968

5. Facility Operator Information:

Facilities with more than two operators, please attach a separate listing of operator information including a chain of command.

Name of Operator in Direct Responsible Charge:
Mark Kondelis

Telephone Number:
(302) 420-0372

Fax Number:
(302) 645-8233

Operator in Direct Responsible Charge's Business Mailing Address (street, city, state and zip code):
644 Churchmans Rd. Newark DE 19702

License Number:
280



APPLICATION FOR A PERMIT TO SPRAY IRRIGATE WASTEWATER

Name of Back Up Operator(s): **Douglas McClure**

Telephone Number: **(302) 353-0240**

Fax Number: **(302) 645-8233**

Back Up Operator's Business Mailing Address (street, city, state and zip code): **644 Churchmans Rd. Newark DE 19702**

License Number(s): **637**

6. Permit Changes (For renewal applicants only):

Are there any requested changes to the existing permit?

Yes **N/A** No If yes, please attach a detailed explanation of requested changes.

7. Activities:

Will the activities at the site vary from those detailed in the approved Design Development Report?

Yes No If yes, please attach a detailed explanation of any changes made.

8. Public Notification

Pursuant to 7 Del. C., Chapter 60, §6004, an advertisement shall be placed in a newspaper of general circulation in the county(ies) in which the activity is proposed and in a daily newspaper of general circulation through the State, notifying the public that the application has been received by the Department and offering a brief description of the nature of the proposed activity. In accordance with 7 Del. C., Chapter 60, §6004, the cost of such advertisement shall be borne by the applicant. This application will not be considered complete and cannot be processed unless accompanied by an advertising fee in the amount of Two Hundred Ten Dollars (\$210.00), payable to the State of Delaware.

9. Certification:

I certify that I am familiar with the information contained in the application and that to the best of my knowledge and belief such information is true, complete, and accurate.

Printed Name of Applicant or Responsible Official:

Rodney Hyatt

Title of Applicant or Responsible Official:

Dir. of WASTEWATER

Signature of Applicant or Responsible Official:

Date:

March 17, 2019

Any person who knowingly makes any false statements, representation or certification on this application may be punished by a fine of not more that \$5,000 or by imprisonment for not more than six months, or both. (Delaware Environmental Protection Act, 7 Del. C., Chapter 60, Section 6013, Criminal Penalties.)

ANSRWRF Operation Permit Application

Summary of Changes

Updated 7/17/2019

The following items have changed from the Design Development Report:

1. Adjustments were made to the layout of the solid sets in the woods for Field G, and the center pivots in the woods have been replaced with additional solid sets. New layouts are shown in the As-Built drawings. Updated wetted areas are shown in Table 1 and Table 2 below.
2. Provisions for supplemental chlorine are a non-essential tool included in the design for operational flexibility. Originally, a single 550 gallon tank was proposed. However, as this is an optional tool, and as temporary chlorine tanks can be brought in as-needed, AWWMI is intending to wait until after permitting, startup, and initial operations to determine the optimal sizing of the permanent tanks and chemical feed pumps. In the event that chlorination would be required prior to the installation of the final tanks, temporary tanks and pumps can be brought on site as needed. The recirculation piping as well as a chemical injection port are currently installed.
3. The seven aerators in the ANSRWRF lagoon were reduced to two installed, with pads and pedestals for an additional two in the future if needed. This is due to conversations with the aerator manufacturer that only two aerators were needed to provide the desired wave action for nuisance control of birds and mosquitos.
4. The proposed monitoring has been modified in the following ways:
 - a. The locations have been re-named so that 'Influent' refers to the sampling at the Allen Harim metering and monitoring building, and 'Effluent' refers to post-storage sampling.
 - b. Monthly post-storage sampling of Fecal Coliform and Total Nitrogen, as well as annual sampling for Cadmium, Nickel, Lead, Zinc, and Copper has been proposed for the ANSRWRF storage lagoon.
 - c. A triggered lagoon testing procedure has been proposed for the ANSRWRF storage lagoon for additional sampling on an as-needed basis.
 - d. Final locations of groundwater sample locations are shown in the Sample Locations and Buffer Zones exhibit.
 - e. The locations and naming of the surface water sample points has been modified, and two additional locations were added. These are shown on the Sample Locations and Buffer Zones exhibit.
5. Other minor adjustments have been made as noted on As-Built drawings. These include, but are not limited to, the following:
 - a. Two vaults were eliminated, and the associated equipment is now above ground.
 - b. The single electrical building was split into two smaller buildings for electrical and controls.
 - c. Overhead electrical was extended.
 - d. The lagoon effluent pump model was changed.

Table 1: Updated Disposal Field Summary

Field	Tax Map ID	Gross Area (acres)	Crop Spray Area (acres)	Woods Spray Area (acres)	Total Spray Area (acres)
A ¹	230-22.00-1.00	182.9	116.3	34.1	150.4
B ¹	230-21.00-13.00 230-21.00-35.00 230-21.00-35.01	412.8	214.1	86.3	300.4
C ¹	235-7.00-27.00	157.5	37.0	38.2	75.2
D ^{2,3}	235-6.00-11.00 235-6.00-11.01 235-6.00-11.02 235-7.00-1.00 235-7.00-164.00	125.1	58.0	32.7	90.7
E ^{2,4}	235-6.00-21.00	119.0	90.5	0	90.5
F	235-7.00-7.00	126.5	110.5	0	110.5
G	235-13.00-6.05 235-13.00-6.06	590.5	276.1	200.5	476.5
Total		1,714.27	902.5	391.8	1294.19

- 1) Spray areas based on preliminary design for Design Development Report dated June 19, 2009. These will be designed and permitted during a future phase.
- 2) Fields D and E have not yet been constructed.
- 3) One parcel from Field D (2-35-6-11.01) is not included in the current Conditional Use Ordinance 1923, adopted July 31, 2017. Spray will not commence on this parcel until it has been added to an approved Conditional Use.
- 4) There is a wooded region in Field E of approximately 10 acres which is not included in the existing design, but may be utilized in future phases.

Table 2: Updated Phase 1 Wetted Areas

Zone	Type	Target	Wetted Area (Acres)	Volume of 1.65 Inches (MG)¹	Status
D-100	Solid Sets	Woods	32.69	1.46	Future
D-1	Center Pivot	Crop	45.29	2.03	Installed
D-2	Center Pivot	Crop	3.25	0.15	Future
D-3	Center Pivot	Crop	5.48	0.25	Future
D-4	Center Pivot	Crop	4.01	0.18	Future
E-1	Center Pivot	Crop	83.16	3.73	Installed
E-2	Center Pivot	Crop	1.72	0.08	Future
E-3	Center Pivot	Crop	5.60	0.25	Future
F-1	Center Pivot	Crop	30.1	1.35	Installed
F-2	Center Pivot	Crop	80.36	3.60	Installed
G-1	Center Pivot	Crop	140.04	6.27	Installed
G-2	Center Pivot	Crop	43.43	1.95	Installed
G-3	Center Pivot	Crop	58.39	2.62	Installed
G-4	Center Pivot	Crop	20.78	0.93	Installed
G-8	Center Pivot	Crop	13.42	0.60	Installed
G-100	Solid Sets	Woods	10.8	0.48	Installed
G-101	Solid Sets	Woods	10.8	0.48	Installed
G-102	Solid Sets	Woods	10.8	0.48	Installed
G-103	Solid Sets	Woods	10.8	0.48	Installed
G-104	Solid Sets	Woods	7.00	0.31	Installed
G-105	Solid Sets	Woods	6.74	0.30	Installed
G-106	Solid Sets	Woods	11.58	0.52	Installed
G-107	Solid Sets	Woods	9.41	0.42	Installed
G-108	Solid Sets	Woods	13.74	0.62	Installed
G-109	Solid Sets	Woods	11.20	0.50	Installed
G-110	Solid Sets	Woods	11.20	0.50	Installed
G-111	Solid Sets	Woods	11.20	0.50	Installed
G-112	Solid Sets	Woods	11.58	0.52	Installed
G-113	Solid Sets	Woods	11.20	0.50	Installed
G-114	Solid Sets	Woods	11.20	0.50	Installed
G-115	Solid Sets	Woods	11.20	0.50	Installed
G-116	Solid Sets	Woods	10.94	0.49	Installed
G-117	Solid Sets	Woods	9.67	0.43	Installed
G-118	Solid Sets	Woods	9.41	0.42	Installed

1) Reference value only. Maximum allowable spray volumes are dependent on permit requirements including, but not limited to, currently active wetted area and the monthly Nitrogen Balance.

Appendix B - Inspection Reports

B.1 ANSRWRF Design Engineer Inspection Report

B.2 Collection System Permits and Inspection Report

B.3 ANSRWRF DNREC Inspection Report

(To be added as addendum.)



ENGINEER INSPECTION REPORT FORM

FOR LARGE ON-SITE WASTEWATER TREATMENT AND DISPOSAL SYSTEMS

Groundwater Discharges Section, Division of Water
Delaware Department of Natural Resources and Environmental Control
89 Kings Highway, Dover DE 19901
302-739-9948

1. Facility/Permit Information:

Name of Facility: ANSRWRF/SRRF	Permit Number : 359288-01	Permittee: Artesian (AWMI)
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Brief Description of System:

Spray irrigation storage and disposal

2. Inspection Information:

Engineer: Daniel Konstanski	Class C License Number: 18462	Phone Number: 302-803-1226
Contractor: Stanley Sigfried	Class E.4 License Number: 2334	Phone Number: 302-453-2387
Operator: Mark Kondelis	Operator License Number & Level: 280 Level IV	Phone Number: 302-420-0372

Date/Time of System Inspection: June 26th, 2019 10:00 a.m.

Comments:

3. Contractor Certification:

The undersigned Contractor hereby attests that the system has been constructed in accordance with the approved Design Engineer Report, Plans and Specifications, and, in accordance with the DNREC Permit using acceptable construction techniques and installation practices.

Printed Name of Contractor: Stanley Sigfried	Company: Artesian (AWMI)
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Signature of Contractor: 	Date: 7/1/2019
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4. Engineer Certification:

The undersigned Engineer has examined all visible system components and attests that the system has been constructed in accordance with the Design Engineer Report, Plans and Specifications, and, in accordance with the DNREC Permit. The undersigned Engineer certifies that all observed deviations from the Design Engineer Report, Plans and Specifications, and, in accordance with the DNREC Permit are either attached in summary and/or noted in red on the As-Built Drawings.

Printed Name of Engineer: Daniel Konstanski	Company: Artesian (AWMI)
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Signature of Engineer: 	Date: 7/1/2019
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**Artesian Wastewater
Management Inc.**

Memo

To: DNREC
From: Daniel Konstanski, P.E.
Date: 2/11/2019
Re: ANSRWRF Design Engineer's Inspection Report

Construction at the ANSRWRF Lagoon has proceeded since the beginning of 2018 under my direction and oversight. The purpose of this memo is to provide a report of the inspections completed during construction and the current status of construction.

I retained the services of AECOM as my Resident Project Representative (RPR) and inspector since the early days of this project. They have conducted regular and often daily inspections of the work and provided me a written report detailing construction progress and the results of their inspections after each day they were onsite for my review. I have also personally conducted numerous inspections and check-ins myself over the duration of the project as have Artesian staff under my supervision. Copies of these inspection reports can be made available to DNREC upon request but are not included in this submittal due to the sheer volume. Based on these inspection reports I can certify that the construction has been consistent with the intent of the plans as approved in Artesian Wastewater Management Inc.'s approved Construction Permit and that the system will function as intended. Deviations from the approved plans have been minor and will not impact the ability of the system to function as approved by DNREC. Changes to the system have been noted on the Record Drawings.



STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES &
ENVIRONMENTAL CONTROL
DIVISION OF WATER
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

Surface Water Discharges Section
Construction Permits Branch

Telephone: (302) 739-9946
Facsimile: (302) 739-8369

September 20, 2017

Mr. David Spacht
Artesian Wastewater Management, Inc.
664 Churchmans Road
Newark, DE 19702

Ref: Artesian Hawthorne to Huff Road Force Main Extension
State Wastewater Construction Permit No. WPCC 3075/17

Dear Mr. Spacht:

Please find enclosed a copy of the construction permit that was issued for the referenced project.

We expect the permitted construction to be completed within the permit term. If the construction cannot be completed by the permit expiration date, a one-time, no-cost two-year permit extension is available, as long as the request is received in writing prior to the expiration date and as long as the scope of the project has not changed significantly, as determined by the Department.

Per Part II.A.2.a of the enclosed permit, notify the Department of any changes to the construction authorized therein. Per Part II.B.1, submit a set of "as-built" plans of the constructed wastewater facilities within ninety (90) days of construction completion. The as-built plans must be signed and sealed by a Professional Engineer licensed in Delaware.

If you have any questions, please contact me at (302) 739-9351 or via email at Keith.Kooker@state.de.us.

Sincerely,

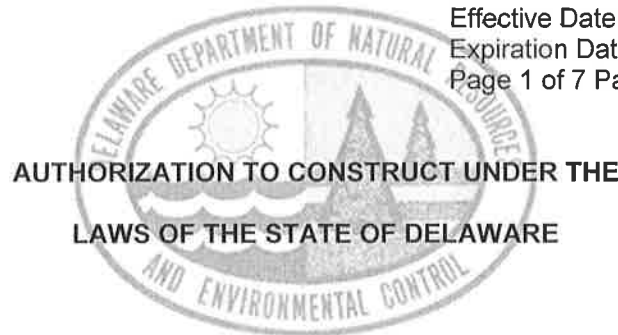
A handwritten signature in cursive script that reads "Keith Kooker".

Keith Kooker, P.E.
Environmental Finance

Enclosure

Email: 1. Daniel Konstanski, Artesian Water Co. (DKonstanski@artesianwater.com)
2. Adam Gould, Artesian Water Co. (AGould@artesianwater.com)
3. Michael Brady, Sussex County (MBrady@sussexcountype.gov)

Delaware's good nature depends on you!



**AUTHORIZATION TO CONSTRUCT UNDER THE
LAWS OF THE STATE OF DELAWARE**

PART I

1. **In compliance with the provisions of 7 Del. C., §6003,**

**Artesian Wastewater Management, Inc.
664 Churchmans Road
Newark, DE 19702**

is authorized to construct facilities consisting of the following:

Approximately fourteen thousand three hundred and forty-six linear feet (14,346 LF) of parallel eight (8) and sixteen (16) inch diameter sewer force main, nine (9) air release manholes and related appurtenances in Harbeson, Delaware. The proposed force mains are to be installed along Gravel Hill Road between the Huff Road and Lewes-Georgetown Highway (Rt. 9) intersections, and along the Lewes-Georgetown Highway (Rt. 9) from the Gravel Hill Road intersection east about two thousand five hundred (2,500) linear feet


The subject project shall be constructed in accordance with plans and specifications as described below and limitations, requirements and other conditions set forth in Parts I, II and III hereof.

2. The plans, specifications, other documents submitted with the construction permit application and the governing standards consist of the following, which are incorporated by reference and made part of this authorization:

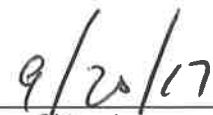
Thirteen (13) drawings** prepared by Artesian Wastewater Management, Inc, titled "Construction Plans Forcemain Extension Hawthorne to Huff Road" dated 4-24-17 and the most current version of the Artesian Wastewater Management, Inc. standards and specifications.

** Drawings include:

Sheet C1 – Cover Sheet latest revision 8-11-17
Sheet FM1 – Plan and Profile latest revision 7-10-17
Sheet FM2 – Plan and Profile latest revision 7-19-17



Greg Pope, Engineer VI
By Agreement with Surface Water Discharges Section
Division of Water
State of Delaware Department of Natural Resources
and Environmental Control



Date Signed

Sheet FM2A – Plan and Profile latest revision 6-19-17
Sheets FM3 through FM10 – Plan and Profile latest revision 8-11-17
Sheet FM11 – Force Main Notes and Details latest revision 8-11-17
Sheet FM12 – Force Main Notes and Details latest revision 6-6-17

3. The liquid waste will be discharged through the existing wastewater collection and transmission system to the Artesian Northern Sussex Regional Water Reclamation Facility, otherwise known as ANSRWRF, which will discharge treated wastewater through land application via spray irrigation in accordance with DNREC Groundwater Discharges Permit No. DEN 359288-01.

A. Effluent Limitations on Pollutants Attributable to Industrial Users

The use of the constructed facility is conditioned on meeting all applicable pretreatment standards under 40 CFR, Part 403, or toxic pollutant discharge limitations under Section 307(a) of the Clean Water Act of 1977, PL 95-217.

B. Flow and Usage Limitations

This permit authorizes a daily average discharge of N/A gallons*. The flow in the system shall be measured at least every N/A.

* This permit authorizes only the construction of the wastewater collection and conveyance facilities referenced herein. The authorized construction does not include the ability to use the collection and conveyance system until such time that an approved and permitted wastewater treatment facility exists.

C. Monitoring and Reporting (When Required)

1. Representative sampling of the volume and nature of the monitored discharge shall be conducted at the request of the Division of Water.

2. Reporting

Monitoring results shall be reported to the:
Delaware Department of Natural Resources and Environmental Control
Division of Water, Surface Water Discharges Section
89 Kings Highway
Dover, DE 19901
302-739-9946

3. Definitions

- a. "Daily average flow" means the total flow during a calendar month divided by the number of days in the month that the facility was operating.
- b. "Daily maximum flow" means the highest total flow during any calendar day.
- c. "Daily Peak Flow" means the flow which can be safely transported within the sewage system without causing an overflow or a backup into the building(s) or residence(s).
- d. "Bypass" means the intentional diversion of wastes from any portion of a

treatment facility.

- e. "Measured flow" means any method of liquid volume measurement, the accuracy of which has been previously demonstrated in engineering practice, or for which a relationship to absolute volume has been obtained.
- f. "Estimate" means a value to be based on a technical evaluation of the sources contributing to the discharge including, but not limited to, pump capabilities, water meters and batch discharge volumes.

4. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

- a. The date, exact place and time of sampling or measurement;
- b. The person(s) who performed the sampling and/or measurement;
- c. The date(s) and time(s) analysis was performed;
- d. The individual(s) who performed each analysis;
- e. The analytical technique(s) or method(s) used;
- f. The results of each analysis; and
- g. Appropriate quality assurance information.

5. Records Retention

All records and information resulting from the monitoring activities required by this permit, including all records of analyses performed, all records of instrument calibration and maintenance and all charts from continuous monitoring instruments, shall be retained for three (3) years. This period of retention shall be extended automatically during the course of any unresolved litigation regarding the regulated activity or regarding control standards applicable to the permittee, or as requested by the Department.

6. Test Procedures

Test procedures for the analysis of pollutants shall conform to the applicable test procedures identified in 40 CFR, Part 136, unless otherwise specified in this permit.

END OF PART I

PART II

A. Management Requirements

1. Duty to Comply

The permittee must comply with the terms and conditions of this permit. Failure to do so constitutes a violation of this permit, which is grounds for enforcement and the imposition of penalties as provided in 7 Del.C., Chapter 60, grounds for permit termination or loss of authorization to discharge or operate pursuant to this permit, grounds for permit revocation and reissuance or permit modification, or denial of a permit renewal application.

2. Notification

a. Changes in Authorized Activities

The permittee shall notify the Department of any proposed change in the activity authorized herein, of any proposed substantive change in the operation of the facility or facilities authorized herein, or of any anticipated facility expansions, production increases, or process modifications. Notification is required only when such alteration, addition or change may justify the inclusion of conditions that are absent or different from those specified in this permit. This includes, for example, the construction of additional wastewater collection, transmission or treatment facilities and changes which will result in new, different, or increased discharges of pollutants. Following such notice, the Department may require the submission of a new permit application and this permit may be reopened and modified to address the proposed changes.

b. Noncompliance

If, for any reason, the permittee does not comply with or will be unable to comply with any limitation specified in this permit, the permittee shall provide the Department with the following information, in writing, within five (5) days of becoming aware of such condition:

A description of the discharge and cause of noncompliance; and

The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

3. Facilities Operation

The permittee shall, at all times, maintain in good working order and operate as efficiently as possible all collection and treatment facilities and systems (and related appurtenances) installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes, but is not limited to, effective management, adequate operator staffing and training and adequate laboratory process controls, including appropriate quality assurance procedures.

4. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to waters of the State resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and extent of the noncomplying discharge.

5. Bypassing

Any bypass or intentional diversion of waste streams from the facilities authorized by this permit, or any portion thereof, is prohibited, except (i) where unavoidable to prevent loss of human life, personal injury or severe property damage, or (ii) where excessive storm drainage or run-off would damage any facilities necessary for compliance with the effluent limitations and prohibitions of this permit. The permittee shall promptly notify the Department, in writing, of each such diversion or bypass.

6. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewater shall be disposed of in a manner such as to prevent any pollutant from such materials from entering the surface water or groundwater.

B. Responsibilities

1. Within 90 days following the completion of construction, the permittee shall submit to the Department an "as-built" set of plans of the facility or facilities constructed, bearing the seal and signature of a licensed Professional Engineer registered in the State of Delaware.

2. Right of Entry

The permittee shall allow the Secretary of the Department of Natural Resources and Environmental Control, or his authorized representative(s), upon the presentation of credentials:

- a. To enter upon the permittee's premises for inspection of any records, flow measurements, construction or other activity authorized by this permit or any condition required under the terms of this permit; and
- b. At reasonable times, to have access to and to copy any records required to be kept under the terms and conditions of this permit; to inspect any monitoring equipment or monitoring method required in this permit; and
- c. To sample any discharge.

3. Transferability

This permit is transferable with the Department's consent, provided that an intention to transfer accompanied by a copy of the permit is provided to the Department, signed by both the transferor and the transferee at least ten (10) days prior to the actual transfer.

4. Availability of Reports

All reports submitted with the application and those reports required under the terms of this permit shall be available for public inspection at the offices of the Department of Natural Resources and Environmental Control. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in 7 Del. C., §6013. Any person who causes or contributes to the discharge of a pollutant into State waters either in excess of any conditions specified in this permit or in absence of a specific permit condition shall report such an incident to the Department required under 7 Del. C. §6028.

5. Permit Modification

This permit may be modified, suspended or revoked in whole or in part during its term for cause including, but not limited to, the following:

- a. Violation of any term or condition of this permit;
- b. Obtaining this permit by misrepresentation or failure to fully disclose all relevant facts;
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized activity; or
- d. Information that the permitted activity poses a threat to human health or welfare, or to the environment.

6. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under 7 Del. C., Chapter 60.

7. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation.

8. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

9. Severability

The provisions of this permit are severable. If any provision of this permit is held invalid, or if the application of any provision of this permit to any circumstances is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

END OF PART II

PART III

A. Special Conditions

1. This permit authorizes only the construction of the wastewater facilities and related work referenced herein.
2. If well pointing is required during construction, the wells must be installed by a licensed well driller, and a permit to construct such wells must first be obtained from the Well Permits Branch of the Water Supply Section.
3. All construction shall be in agreement with plans and specifications submitted under this project and approved by the Department of Natural Resources and Environmental Control.
4. All construction shall be in accordance with Ten States Standards and other applicable local utility construction specifications and standards.
5. Connections or additions to the proposed system, other than those proposed on the plans, will not be allowed without prior approval from the Department.

END OF PART III



STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES &
ENVIRONMENTAL CONTROL
DIVISION OF WATER
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

Surface Water Discharges Section
Construction Permits Branch

Telephone: (302) 739-9946
Facsimile: (302) 739-8369

March 6, 2017

Mr. John Thaefer
Artesian Wastewater Management, Inc.
664 Churchmans Road
Newark, DE 19702

Ref: Artesian Hawthorne to Rt. 5 Force Main Extension
State Wastewater Construction Permit No. WPCC 3002/17

Dear Mr. Thaefer:

Please find enclosed a copy of the construction permit that was issued for the referenced project.

We expect the permitted construction to be completed within the permit term. If the construction cannot be completed by the permit expiration date, a one-time, no-cost two-year permit extension is available, as long as the request is received in writing prior to the expiration date and as long as the scope of the project has not changed significantly, as determined by the Department.

Per Part II.A.2.a of the enclosed permit, notify the Department of any changes to the construction authorized therein. Per Part II.B.1, submit a set of "as-built" plans of the constructed wastewater facilities within ninety (90) days of construction completion. The as-built plans must be signed and sealed by a Professional Engineer licensed in Delaware.

If you have any questions, please contact me at (302) 739-9351 or via email at Keith.Kooker@state.de.us.

Sincerely,

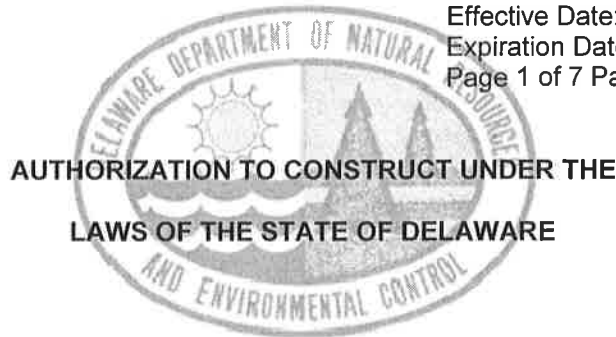
A handwritten signature in cursive script that reads "Keith Kooker".

Keith Kooker, P.E.
Environmental Finance

Enclosure

- Email: 1. Daniel Konstanski, Artesian Water Co. (DKonstanski@artesianwater.com)
2. Adam Gould, Artesian Water Co. (AGould@artesianwater.com)
3. Katherine Walla, Artesian Water Co. (KWalla@artesianwater.com)
4. Jordan Dickerson, Sussex County (Jordan.Dickerson@sussexcountyde.gov)

Delaware's good nature depends on you!



PART I

1. **In compliance with the provisions of 7 Del. C., §6003,**

**Artesian Wastewater Management, Inc.
664 Churchmans Road
Newark, DE 19702**

and

**Sussex County Council
P.O. Box 589
Georgetown, Delaware 19947**

are authorized jointly and individually to construct facilities consisting of the following:

Approximately nine thousand three hundred and fifty linear feet (9,350 LF) of eight (8) inch diameter force main, eight thousand two hundred and thirty linear feet (8,230 LF) of sixteen (16) inch diameter force main and eight hundred forty-five linear feet (845 LF) of fourteen (14) inch diameter force main located from the Rt. 5 and 9 intersection up to 7,400 LF west, 1,100 LF north and 2,100 LF east of this intersection in Harbeson, Delaware.

The subject project shall be constructed in accordance with plans and specifications as described below and limitations, requirements and other conditions set forth in Parts I, II and III hereof.

2. The plans and specifications consist of the following:

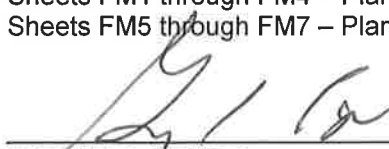
Eleven (11) drawings** prepared by Artesian Wastewater Management, Inc, titled "Construction Plans Forcemain Extension Hawthorne to Route 5" and the Sussex County Construction Standards and Specifications for Ordinance 38 Projects.

** Sheets C-1, FM-1 through FM-10:

Sheet C1 – Cover Sheet dated 1-11-17, latest rev. 2-28-17

Sheets FM1 through FM4 – Plan and Profile dated 1-12-17, latest rev. 2-10-17

Sheets FM5 through FM7 – Plan and Profile dated 1-12-17, latest rev. 2-28-17



Greg Pope, Engineer VI
By Agreement with Surface Water Discharges Section
Division of Water
State of Delaware Department of Natural Resources
and Environmental Control

3/6/17

Date Signed

Sheet FM8 – Plan and Profile dated 1-12-17, latest rev. 2-22-17
Sheet FM9 – Force Main Notes and Details dated 1-11-17
Sheet FM10 – Force Main Notes and Details dated 1-12-17, latest rev. 2-10-17

3. The ultimate liquid waste treatment facility that the subject construction will discharge to hasn't been determined by Artesian at the time of permit issuance. The nearest existing wastewater treatment facility to this project is the Artesian Beaver Creek Wastewater Facility, which discharges treated wastewater in accordance with state on-site wastewater permit 202902-OP. The purpose of the subject construction is to construct force main infrastructure to be utilized in the future before DelDOT makes improvements within a highway safety improvement project area.

A. Effluent Limitations on Pollutants Attributable to Industrial Users

The use of the constructed facility is conditioned on meeting all applicable pretreatment standards under 40 CFR, Part 403, or toxic pollutant discharge limitations under Section 307(a) of the Clean Water Act of 1977, PL 95-217.

B. Flow and Usage Limitations

This permit authorizes a daily average discharge of N/A gallons*. The flow in the system shall be measured at least every N/A.

* This permit authorizes only the construction of the wastewater collection and conveyance facilities referenced herein.

C. Monitoring and Reporting (When Required)

1. Representative sampling of the volume and nature of the monitored discharge shall be conducted at the request of the Division of Water.

2. Reporting

Monitoring results shall be reported to the:
Delaware Department of Natural Resources and Environmental Control
Division of Water, Surface Water Discharges Section
89 Kings Highway
Dover, DE 19901
302-739-9946

3. Definitions

- a. "Daily average flow" means the total flow during a calendar month divided by the number of days in the month that the facility was operating.
- b. "Daily maximum flow" means the highest total flow during any calendar day.
- c. "Daily Peak Flow" means the flow which can be safely transported within the sewage system without causing an overflow or a backup into the building(s) or residence(s).
- d. "Bypass" means the intentional diversion of wastes from any portion of a

treatment facility.

- e. "Measured flow" means any method of liquid volume measurement, the accuracy of which has been previously demonstrated in engineering practice, or for which a relationship to absolute volume has been obtained.
- f. "Estimate" means a value to be based on a technical evaluation of the sources contributing to the discharge including, but not limited to, pump capabilities, water meters and batch discharge volumes.

4. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

- a. The date, exact place and time of sampling or measurement;
- b. The person(s) who performed the sampling and/or measurement;
- c. The date(s) and time(s) analysis was performed;
- d. The individual(s) who performed each analysis;
- e. The analytical technique(s) or method(s) used;
- f. The results of each analysis; and
- g. Appropriate quality assurance information.

5. Records Retention

All records and information resulting from the monitoring activities required by this permit, including all records of analyses performed, all records of instrument calibration and maintenance and all charts from continuous monitoring instruments, shall be retained for three (3) years. This period of retention shall be extended automatically during the course of any unresolved litigation regarding the regulated activity or regarding control standards applicable to the permittee, or as requested by the Department.

6. Test Procedures

Test procedures for the analysis of pollutants shall conform to the applicable test procedures identified in 40 CFR, Part 136, unless otherwise specified in this permit.

END OF PART I

PART II

A. Management Requirements

1. Duty to Comply

The permittee must comply with the terms and conditions of this permit. Failure to do so constitutes a violation of this permit, which is grounds for enforcement and the imposition of penalties as provided in 7 Del.C., Chapter 60, grounds for permit termination or loss of authorization to discharge or operate pursuant to this permit, grounds for permit revocation and reissuance or permit modification, or denial of a permit renewal application.

2. Notification

a. Changes in Authorized Activities

The permittee shall notify the Department of any proposed change in the activity authorized herein, of any proposed substantive change in the operation of the facility or facilities authorized herein, or of any anticipated facility expansions, production increases, or process modifications. Notification is required only when such alteration, addition or change may justify the inclusion of conditions that are absent or different from those specified in this permit. This includes, for example, the construction of additional wastewater collection, transmission or treatment facilities and changes which will result in new, different, or increased discharges of pollutants. Following such notice, the Department may require the submission of a new permit application and this permit may be reopened and modified to address the proposed changes.

b. Noncompliance

If, for any reason, the permittee does not comply with or will be unable to comply with any limitation specified in this permit, the permittee shall provide the Department with the following information, in writing, within five (5) days of becoming aware of such condition:

A description of the discharge and cause of noncompliance; and

The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

3. Facilities Operation

The permittee shall, at all times, maintain in good working order and operate as efficiently as possible all collection and treatment facilities and systems (and related appurtenances) installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes, but is not limited to, effective management, adequate operator staffing and training and adequate laboratory process controls, including appropriate quality assurance procedures.

4. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to waters of the State resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and extent of the noncomplying discharge.

5. Bypassing

Any bypass or intentional diversion of waste streams from the facilities authorized by this permit, or any portion thereof, is prohibited, except (i) where unavoidable to prevent loss of human life, personal injury or severe property damage, or (ii) where excessive storm drainage or run-off would damage any facilities necessary for compliance with the effluent limitations and prohibitions of this permit. The permittee shall promptly notify the Department, in writing, of each such diversion or bypass.

6. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewater shall be disposed of in a manner such as to prevent any pollutant from such materials from entering the surface water or groundwater.

B. Responsibilities

1. Within 90 days following the completion of construction, the permittee shall submit to the Department an "as-built" set of plans of the facility or facilities constructed, bearing the seal and signature of a licensed Professional Engineer registered in the State of Delaware.

2. Right of Entry

The permittee shall allow the Secretary of the Department of Natural Resources and Environmental Control, or his authorized representative(s), upon the presentation of credentials:

- a. To enter upon the permittee's premises for inspection of any records, flow measurements, construction or other activity authorized by this permit or any condition required under the terms of this permit; and
- b. At reasonable times, to have access to and to copy any records required to be kept under the terms and conditions of this permit; to inspect any monitoring equipment or monitoring method required in this permit; and
- c. To sample any discharge.

3. Transferability

This permit is transferable with the Department's consent, provided that an intention to transfer accompanied by a copy of the permit is provided to the Department, signed by both the transferor and the transferee at least ten (10) days prior to the actual transfer.

4. Availability of Reports

All reports submitted with the application and those reports required under the terms of this permit shall be available for public inspection at the offices of the Department of Natural Resources and Environmental Control. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in 7 Del. C., §6013. Any person who causes or contributes to the discharge of a pollutant into State waters either in excess of any conditions specified in this permit or in absence of a specific permit condition shall report such an incident to the Department required under 7 Del. C. §6028.

5. Permit Modification

This permit may be modified, suspended or revoked in whole or in part during its term for cause including, but not limited to, the following:

- a. Violation of any term or condition of this permit;
- b. Obtaining this permit by misrepresentation or failure to fully disclose all relevant facts;
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized activity; or
- d. Information that the permitted activity poses a threat to human health or welfare, or to the environment.

6. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under 7 Del. C., Chapter 60.

7. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation.

8. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

9. Severability

The provisions of this permit are severable. If any provision of this permit is held invalid, or if the application of any provision of this permit to any circumstances is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

END OF PART II

PART III

A. Special Conditions

1. This permit authorizes only the construction of the wastewater facilities and related work referenced herein.
2. If wellpointing is required during construction, the wells must be installed by a licensed well driller, and a permit to construct such wells must first be obtained from the Well Permits Branch of the Water Supply Section.
3. All construction shall be in agreement with plans and specifications submitted under this project and approved by the Department of Natural Resources and Environmental Control.
4. All construction shall be in accordance with Ten States Standards and other applicable local utility construction specifications and standards.
5. Connections or additions to the proposed system, other than those proposed on the plans, will not be allowed without prior approval from the Department.

END OF PART III



STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES &
ENVIRONMENTAL CONTROL
DIVISION OF WATER
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

Surface Water Discharges Section
Construction Permits Branch

Telephone: (302) 739-9946
Facsimile: (302) 739-8369

January 17, 2017

Mr. John Thaeber
Artesian Wastewater Management, Inc.
664 Churchmans Road
Newark, DE 19702

RE: Route 5 Harbeson Force Main Extension
State Wastewater Construction Permit No.: WPCC 3072-16

Dear Mr. Thaeber:

Please find enclosed a copy of the construction permit issued for the referenced project. We ask that you notify us a minimum of two (2) weeks before the authorized construction begins

We expect the construction to be completed prior to the permit expiration date. If construction cannot be completed within that time frame, you may request a one-time, 2-year, no cost permit extension, as long as we receive the request before the expiration date and as long as there are no significant changes to the plans or scope, as determined by the Department.

Per Part II.A.2.a of the enclosed permit, notify the Department of any changes to the activities authorized therein. Per Part II.B.1 of the enclosed permit, you are to submit a set of "as-built" plans of the constructed wastewater facilities within ninety (90) days of construction completion. The as-built plans must be signed and sealed by a Professional Engineer licensed in Delaware.

If you have any questions, please contact me at (302) 739-9941 or via email at greg.pope@state.de.us

Sincerely,

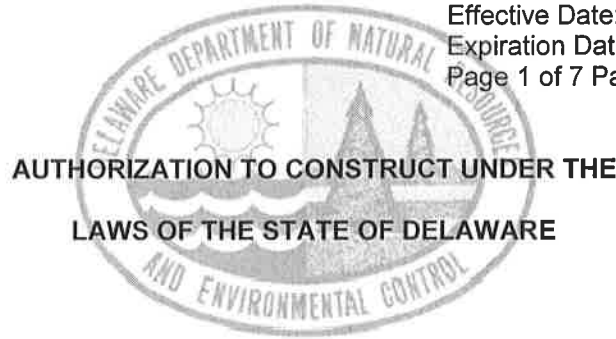
A handwritten signature in black ink, appearing to read "Greg Pope".

Greg Pope, P.E.

Enclosure

Email: Mr. Daniel Konstanski, P. E. (dkonstanski@artesianwater.com) – Artesian Water Management, Inc ; Ms. Katherine Walla (KWalla@artesianwater.com) – Artesian Water Management, Inc ; Mr. Michael Brady (mbrady@sussexcountyde.gov) - Sussex County Dept. of Public Works

Delaware's good nature depends on you!



PART I

1. **In compliance with the provisions of 7 Del. C., §6003,**

**Sussex County Council
P.O. Box 589
Georgetown, DE 19947**

and

**Artesian Wastewater Management, Inc.
664 Churchmans Road
Newark, DE 19702**

are authorized jointly and individually to construct facilities consisting of the following:

Installation of Fifteen hundred ninety-eight linear feet (1598') of 6" PVC force main and Fifteen hundred ninety-eight linear feet (1598') of 14" PVC force main at the Route 5 in Harbeson, Sussex County connecting to the Artesian Beaver Creek Wastewater Facility.


in accordance with plans and specifications as described below and limitations, requirements and other conditions set forth in Parts I, II and III hereof.

2. The revised plans and specifications consist of the following:

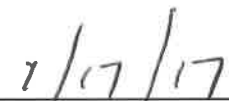
Six (6) drawings** prepared by Artesian Wastewater Management, Inc, titled "CONSTRUCTION PLANS FORCEMAIN EXTENSION ROUTE 5 HARBESON", dated 10-31-16 revised through 1-3-17.

** The sheets include:

Sheet C-1 "Cover Sheet"; Sheet FM-1 through FM-3 "Forcemain Plans"; and Sheet FM-4 through FM-5 "Force Main Notes & Details".



Greg Pope, Engineer VI
By Agreement with Surface Water Discharges Section
Division of Water
State of Delaware Department of Natural Resources
and Environmental Control



Date Signed

3. The liquid waste will be discharged through the existing wastewater collection and transmission facilities to Artesian Beaver Creek Wastewater Facility, which discharges treated wastewater in accordance with State permit.

A. Effluent Limitations on Pollutants Attributable to Industrial Users

The use of the constructed facility is conditioned on meeting all applicable pretreatment standards under 40 CFR, Part 403, or toxic pollutant discharge limitations under Section 307(a) of the Clean Water Act of 1977, PL 95-217.

B. Flow and Usage Limitations

This permit authorizes a daily average discharge of N/A gallons*. The flow in the system shall be measured at least every N/A.

* This permit authorizes only the construction of the wastewater collection and conveyance facilities referenced herein.

C. Monitoring and Reporting (When Required)

1. Representative sampling of the volume and nature of the monitored discharge shall be conducted at the request of the Division of Water.

2. Reporting

Monitoring results shall be reported to the:
Delaware Department of Natural Resources and Environmental Control
Division of Water, Surface Water Discharges Section
89 Kings Highway
Dover, DE 19901
302-739-9946

3. Definitions

- a. "Daily average flow" means the total flow during a calendar month divided by the number of days in the month that the facility was operating.
- b. "Daily maximum flow" means the highest total flow during any calendar day.
- c. "Daily Peak Flow" means the flow which can be safely transported within the sewage system without causing an overflow or a backup into the building(s) or residence(s).
- d. "Bypass" means the intentional diversion of wastes from any portion of a treatment facility.
- e. "Measured flow" means any method of liquid volume measurement, the accuracy of which has been previously demonstrated in engineering practice, or for which a relationship to absolute volume has been obtained.

- f. "Estimate" means a value to be based on a technical evaluation of the sources contributing to the discharge including, but not limited to, pump capabilities, water meters and batch discharge volumes.

4. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

- a. The date, exact place and time of sampling or measurement;
- b. The person(s) who performed the sampling and/or measurement;
- c. The date(s) and time(s) analysis was performed;
- d. The individual(s) who performed each analysis;
- e. The analytical technique(s) or method(s) used;
- f. The results of each analysis; and
- g. Appropriate quality assurance information.

5. Records Retention

All records and information resulting from the monitoring activities required by this permit, including all records of analyses performed, all records of instrument calibration and maintenance and all charts from continuous monitoring instruments, shall be retained for three (3) years. This period of retention shall be extended automatically during the course of any unresolved litigation regarding the regulated activity or regarding control standards applicable to the permittee, or as requested by the Department.

6. Test Procedures

Test procedures for the analysis of pollutants shall conform to the applicable test procedures identified in 40 CFR, Part 136, unless otherwise specified in this permit.

END OF PART I

PART II**A. Management Requirements****1. Duty to Comply**

The permittee must comply with the terms and conditions of this permit. Failure to do so constitutes a violation of this permit, which is grounds for enforcement and the imposition of penalties as provided in 7 Del.C., Chapter 60, grounds for permit termination or loss of authorization to discharge or operate pursuant to this permit, grounds for permit revocation and reissuance or permit modification, or denial of a permit renewal application.

2. Notification**a. Changes in Authorized Activities**

The permittee shall notify the Department of any proposed change in the activity authorized herein, of any proposed substantive change in the operation of the facility or facilities authorized herein, or of any anticipated facility expansions, production increases, or process modifications. Notification is required only when such alteration, addition or change may justify the inclusion of conditions that are absent or different from those specified in this permit. This includes, for example, the construction of additional wastewater collection, transmission or treatment facilities and changes which will result in new, different, or increased discharges of pollutants. Following such notice, the Department may require the submission of a new permit application and this permit may be reopened and modified to address the proposed changes.

b. Noncompliance

If, for any reason, the permittee does not comply with or will be unable to comply with any limitation specified in this permit, the permittee shall provide the Department with the following information, in writing, within five (5) days of becoming aware of such condition:

A description of the discharge and cause of noncompliance; and

The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

3. Facilities Operation

The permittee shall, at all times, maintain in good working order and operate as efficiently as possible all collection and treatment facilities and systems (and related appurtenances) installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes, but is not limited to, effective management, adequate operator staffing and training and adequate laboratory process controls, including appropriate quality assurance procedures.

4. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to waters of the State resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and extent of the noncomplying discharge.

5. Bypassing

Any bypass or intentional diversion of waste streams from the facilities authorized by this permit, or any portion thereof, is prohibited, except (i) where unavoidable to prevent loss of human life, personal injury or severe property damage, or (ii) where excessive storm drainage or run-off would damage any facilities necessary for compliance with the effluent limitations and prohibitions of this permit. The permittee shall promptly notify the Department, in writing, of each such diversion or bypass.

6. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewater shall be disposed of in a manner such as to prevent any pollutant from such materials from entering the surface water or groundwater.

B. Responsibilities

1. Within 90 days following the completion of construction, the permittee shall submit to the Department an "as-built" set of plans of the facility or facilities constructed, bearing the seal and signature of a licensed Professional Engineer registered in the State of Delaware.

2. Right of Entry

The permittee shall allow the Secretary of the Department of Natural Resources and Environmental Control, or his authorized representative(s), upon the presentation of credentials:

- a. To enter upon the permittee's premises for inspection of any records, flow measurements, construction or other activity authorized by this permit or any condition required under the terms of this permit; and
- b. At reasonable times, to have access to and to copy any records required to be kept under the terms and conditions of this permit; to inspect any monitoring equipment or monitoring method required in this permit; and
- c. To sample any discharge.

3. Transferability

This permit is transferable with the Department's consent, provided that an intention to transfer accompanied by a copy of the permit is provided to the Department, signed by both the transferor and the transferee at least ten (10) days prior to the actual transfer.

4. Availability of Reports

All reports submitted with the application and those reports required under the terms of this permit shall be available for public inspection at the offices of the Department of Natural Resources and Environmental Control. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in 7 Del. C., §6013. Any person who causes or contributes to the discharge of a pollutant into State waters either in excess of any conditions specified in this permit or in absence of a specific permit condition shall report such an incident to the Department required under 7 Del. C. §6028.

5. Permit Modification

This permit may be modified, suspended or revoked in whole or in part during its term for cause including, but not limited to, the following:

- a. Violation of any term or condition of this permit;
- b. Obtaining this permit by misrepresentation or failure to fully disclose all relevant facts;
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized activity; or
- d. Information that the permitted activity poses a threat to human health or welfare, or to the environment.

6. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under 7 Del. C., Chapter 60.

7. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation.

8. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

9. Severability

The provisions of this permit are severable. If any provision of this permit is held invalid, or if the application of any provision of this permit to any circumstances is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

END OF PART II

PART III

A. Special Conditions

1. This permit authorizes only the construction of the wastewater facilities and related work referenced herein.
2. If wellpointing is required during construction, the wells must be installed by a licensed well driller, and a permit to construct such wells must first be obtained from the Well Permits Branch of the Water Supply Section.
3. All construction shall be in agreement with plans and specifications submitted under this project and approved by the Department of Natural Resources and Environmental Control.
4. All construction shall be in accordance with Ten States Standards and other applicable local utility construction specifications and standards.
5. Connections or additions to the proposed system, other than those proposed on the plans, will not be allowed without prior approval from the Department.

END OF PART III



STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES &
ENVIRONMENTAL CONTROL
DIVISION OF WATER
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

Surface Water Discharges Section
Construction Permits Branch

Telephone: (302) 739-9946
Facsimile: (302) 739-8369

September 20, 2017

Mr. David Spacht
Artesian Wastewater Management Inc.
664 Churchmans Road
Newark, DE 19702

RE: Huff Road to ANSRWRF Force Main Extension
State Wastewater Construction Permit No: WPCC 3040/17

Dear Mr. Spacht:

Please find enclosed a copy of the construction permit that was issued for the referenced project.

We expect the construction to be completed before the permit expiration date. If the construction of the approved system cannot be completed within the three (3) year permit term, you can apply for a one-time, no-cost, two-year permit extension, as long as we receive the request before the permit expires and as long as there have been no substantial changes to the project, as determined by the Department.

Per Part II.A.2.a, notify us of any changes to the approved plans or system. Also, per Part II.B.1, submit a set of "as-built" plans of the constructed wastewater facilities within ninety (90) days of construction completion. The as-built plans must be signed and sealed by a Professional Engineer licensed in Delaware.

If you have any questions, please do not hesitate to contact me at (302) 739-9941.

Sincerely,

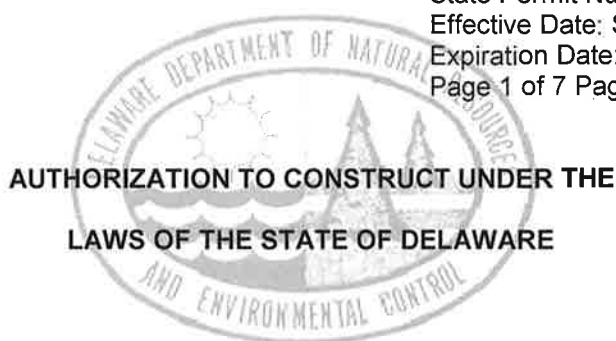
A handwritten signature in blue ink, appearing to read "Dr. Mwale".

Dr. Davison Mwale (PhD)
Environmental Finance

Enclosures

E-mail: Mr. Daniel Konstanski, P.E. – Artesian Wastewater Management Inc.

Delaware's good nature depends on you!



PART I

1. **In compliance with the provisions of 7 Del. C., §6003,**

**Artesian Wastewater Management, Inc.
664 Churchmans Road
Newark, DE 19702**

is authorized to construct facilities consisting of the following:

Approximately, twenty thousand, eight hundred and fifty three linear feet of sixteen inch (20,853 LF of 16") PVC forcemain. The forcemain will be located from the intersection of Huff Road (County Road 252) and Gravel Hill Road (County Road 248), run northwards along Gravel Hill Road (County Road 248) and Isaacs Road (County Road 230) and terminate at the Artesian Northern Sussex Regional Water Reclamation Facility (ANSRWRF), north of Ingram Stream Branch, Georgetown and Broadkill Hundred, Sussex County, Delaware.

in accordance with plans and specifications as described below and limitations, requirements and other conditions set forth in Parts I, II and III hereof.

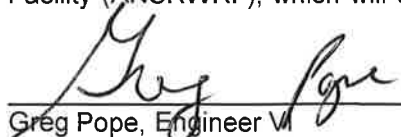
2. The revised plans and specifications consist of the following:

Twenty (20) drawings** prepared by Artesian Wastewater Management, Inc. titled "Construction Plans, Forcemain Extension, Huff Road to ANSRWRF, situated in Sussex County, State of Delaware", dated 03/29/17, revised through 08/11/2017 and the current Artesian Wastewater Management, Inc. standards and specifications, latest edition.

** Sheet Nos. C-1, FM-1, FM-1A, FM-2 through FM-8, FM-8A, FM-9, FM-9A, FM-10 through FM-16

Sheet No C-1, titled "Cover Sheet- Forcemain Extension Plans", Sheet Nos FM-1 through FM-14, titled "Force Main Plan & Profile", Sheet Nos FM-1 through FM-16, titled "Force Main Notes & Details Plan".

3. The liquid waste will be discharged through the existing wastewater collection and transmission facilities with wastewater directed to Artesian Northern Sussex Regional Water Reclamation Facility (ANSRWRF), which will discharge treated wastewater through land application via spray



Greg Pope, Engineer V
By Agreement with Surface Water Discharges Section
Division of Water
State of Delaware Department of Natural Resources
and Environmental Control


Date Signed

irrigation in accordance with GWDS State Permit No. DEN 359288-01.

A. Effluent Limitations on Pollutants Attributable to Industrial Users

The use of the constructed facility is conditioned on meeting all applicable pretreatment standards under 40 CFR, Part 403, or toxic pollutant discharge limitations under Section 307(a) of the Clean Water Act of 1977, PL 95-217.

B. Flow and Usage Limitations

This permit authorizes a daily average discharge of N/A gallons*. The flow in the system shall be measured at least every N/A. The authorized construction does not include the ability to use the collection and conveyance facilities until such time that an approved and permitted wastewater treatment facility exists

* This permit authorizes only the construction of the facilities referenced herein. The authorized construction does not include the ability to use the collection and conveyance facilities until such time that an approved and permitted wastewater treatment facility exists.

C. Monitoring and Reporting (When Required)

1. Representative sampling of the volume and nature of the monitored discharge shall be conducted at the request of the Division of Water.

2. Reporting

Monitoring results shall be reported to the:
Delaware Department of Natural Resources and Environmental Control
Division of Water, Surface Water Discharges Section
89 Kings Highway
Dover, DE 19901
302-739-9946

3. Definitions

- a. "Daily average flow" means the total flow during a calendar month divided by the number of days in the month that the facility was operating.
- b. "Daily maximum flow" means the highest total flow during any calendar day.
- c. "Daily Peak Flow" means the flow which can be safely transported within the sewage system without causing an overflow or a backup into the building(s) or residence(s).
- d. "Bypass" means the intentional diversion of wastes from any portion of a treatment facility.
- e. "Measured flow" means any method of liquid volume measurement, the accuracy of which has been previously demonstrated in engineering practice, or for which a relationship to absolute volume has been

obtained.

- f. "Estimate" means a value to be based on a technical evaluation of the sources contributing to the discharge including, but not limited to, pump capabilities, water meters and batch discharge volumes.

4. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

- a. The date, exact place and time of sampling or measurement;
- b. The person(s) who performed the sampling and/or measurement;
- c. The date(s) and time(s) analysis was performed;
- d. The individual(s) who performed each analysis;
- e. The analytical technique(s) or method(s) used;
- f. The results of each analysis; and
- g. Appropriate quality assurance information.

5. Records Retention

All records and information resulting from the monitoring activities required by this permit, including all records of analyses performed, all records of instrument calibration and maintenance and all charts from continuous monitoring instruments, shall be retained for three (3) years. This period of retention shall be extended automatically during the course of any unresolved litigation regarding the regulated activity or regarding control standards applicable to the permittee, or as requested by the Department.

6. Test Procedures

Test procedures for the analysis of pollutants shall conform to the applicable test procedures identified in 40 CFR, Part 136, unless otherwise specified in this permit.

END OF PART I

PART II

A. Management Requirements

1. Duty to Comply

The permittee must comply with the terms and conditions of this permit. Failure to do so constitutes a violation of this permit, which is grounds for enforcement and the imposition of penalties as provided in 7 Del.C., Chapter 60, grounds for permit termination or loss of authorization to discharge or operate pursuant to this permit, grounds for permit revocation and reissuance or permit modification, or denial of a permit renewal application.

2. Notification

a. Changes in Authorized Activities

The permittee shall notify the Department of any proposed change in the activity authorized herein, of any proposed substantive change in the operation of the facility or facilities authorized herein, or of any anticipated facility expansions, production increases, or process modifications. Notification is required only when such alteration, addition or change may justify the inclusion of conditions that are absent or different from those specified in this permit. This includes, for example, the construction of additional wastewater collection, transmission or treatment facilities and changes which will result in new, different, or increased discharges of pollutants. Following such notice, the Department may require the submission of a new permit application and this permit may be reopened and modified to address the proposed changes.

b. Noncompliance

If, for any reason, the permittee does not comply with or will be unable to comply with any limitation specified in this permit, the permittee shall provide the Department with the following information, in writing, within five (5) days of becoming aware of such condition:

A description of the discharge and cause of noncompliance; and

The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

3. Facilities Operation

The permittee shall, at all times, maintain in good working order and operate as efficiently as possible all collection and treatment facilities and systems (and related appurtenances) installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes, but is not limited to, effective management, adequate operator staffing and training and adequate laboratory process controls, including appropriate quality assurance procedures.

4. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to waters of the State resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and extent of the noncomplying discharge.

5. Bypassing

Any bypass or intentional diversion of waste streams from the facilities authorized by this permit, or any portion thereof, is prohibited, except (i) where unavoidable to prevent loss of human life, personal injury or severe property damage, or (ii) where excessive storm drainage or run-off would damage any facilities necessary for compliance with the effluent limitations and prohibitions of this permit. The permittee shall promptly notify the Department, in writing, of each such diversion or bypass.

6. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewater shall be disposed of in a manner such as to prevent any pollutant from such materials from entering the surface water or groundwater.

B. Responsibilities

1. Within 90 days following the completion of construction, the permittee shall submit to the Department an "as-built" set of plans of the facility or facilities constructed, bearing the seal and signature of a licensed Professional Engineer registered in the State of Delaware.

2. Right of Entry

The permittee shall allow the Secretary of the Department of Natural Resources and Environmental Control, or his authorized representative(s), upon the presentation of credentials:

- a. To enter upon the permittee's premises for inspection of any records, flow measurements, construction or other activity authorized by this permit or any condition required under the terms of this permit; and
- b. At reasonable times, to have access to and to copy any records required to be kept under the terms and conditions of this permit; to inspect any monitoring equipment or monitoring method required in this permit; and
- c. To sample any discharge.

3. Transferability

This permit is transferable with the Department's consent, provided that an intention to transfer accompanied by a copy of the permit is provided to the Department, signed by both the transferor and the transferee at least ten (10) days prior to the actual transfer.

4. Availability of Reports

All reports submitted with the application and those reports required under the terms of this permit shall be available for public inspection at the offices of the Department of Natural Resources and Environmental Control. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in 7 Del. C., §6013. Any person who causes or contributes to the discharge of a pollutant into State waters either in excess of any conditions specified in this permit or in absence of a specific permit condition shall report such an incident to the Department required under 7 Del. C. §6028.

5. Permit Modification

This permit may be modified, suspended or revoked in whole or in part during its term for cause including, but not limited to, the following:

- a. Violation of any term or condition of this permit;
- b. Obtaining this permit by misrepresentation or failure to fully disclose all relevant facts;
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized activity; or
- d. Information that the permitted activity poses a threat to human health or welfare, or to the environment.

6. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under 7 Del. C., Chapter 60.

7. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation.

8. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

9. Severability

The provisions of this permit are severable. If any provision of this permit is held invalid, or if the application of any provision of this permit to any circumstances is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

END OF PART II

PART III

A. Special Conditions

1. This permit authorizes only the construction of the wastewater facilities and related work referenced herein.
2. If wellpointing is required during construction, the wells must be installed by a licensed well driller, and a permit to construct such wells must first be obtained from the Well Permits Branch of the Water Supply Section.
3. All construction shall be in agreement with plans and specifications submitted under this project and approved by the Department of Natural Resources and Environmental Control.
4. All construction shall be in accordance with Ten States Standards and other applicable local utility construction specifications and standards.
5. Connections or additions to the proposed system, other than those proposed on the plans, will not be allowed without prior approval from the Department.

END OF PART III

AUDI Daily Collection System Inspection Report

Job: Alkens

Date: 3/20/17

Contractor: Teal

Inspector: JCF

Comments: Just added 1-14" Wye, 1-14" 45°
2-14" Gate valves, 2-14" Tapped Cap, 2-B/O (14")
1-6" Wye, 1-6" 45°, 2-6" Gate valves
2-6" Tapped caps w/ B.O. (2)

18' - 14" C900 Kickers
23' - 6" C900 SS. All Thread (Pics)

Supervisor: [Signature]
Date: 3/20/17

AUDI Daily Collection System Inspection Report

Job: Alpens

Date: 2/21/17

Contractor: TEAL

Inspector: JCL

Comments: Installed 160 of 6" x 14"
PVC

Supervisor: John C. [Signature]

Date: 2/22/17

AUDI Daily Collection System Inspection Report

Job:

Alleys

Date:

2/22/17

Contractor:

TEAL

Inspector:

JCL

Comments:

Installed 120' of 6" x 14" PVC
20' of steel casing for
6" x 14" under first Fr. Crossing
at approx. 5+30 (Pics)

Supervisor:

John C. Ley

Date:

2/22/17

AUDI Daily Collection System Inspection Report

Job: AH-BC

Date: 3/27/16

Contractor: TEA

Inspector: JCL

Comments: 1st Night

Saw Cut
Worked w/ Surveyors for Mark out

Supervisor: JCL

Date: 3/27/16

AUDI Daily Collection System Inspection Report

Job: AH-BC

Date: 3/23/17

Contractor: TCAL

2nd Night

Inspector: JCL

Comments: Just installed 60'-6" PVC, 60' 14" PVC
No crush/run to continue

Supervisor: J.H. Ke

Date: 3/23/17

AUDI Daily Collection System Inspection Report

Job:

AH-BC

Date:

3/29/17

Contractor:

TEA

3rd Night

Inspector:

JCH

Comments:

Installed 100' of 6" x 14" PVC

3.09' Separation b/w Prop 15"
RCP Invert to Crown of 14" PVC.
6" x 14" Inverts the same. 1+37

Supervisor:

Joh. P. Ky

Date:

3/29/17

AUDI Daily Collection System Inspection Report

Job: AH-BC

Date: 4/4/17

Contractor: TEAL

Inspector: JCL

Comments: Installed 60'-6" PVC & 60'-14" PVC
on Rt 5 ~~of~~ of Rt 9.
South

Supervisor: Joh L. [Signature]
Date: 4/4/17

AUDI Daily Collection System Inspection Report

Job: AH-BC

Date: 4/5/17

Contractor: TEAL

Inspector: JCL

Comments: Installed 110' of 8" PVC
on Rt 9 from TRAILS

Supervisor: [Signature]

Date: 4/5/17

AUDI Daily Collection System Inspection Report

Job:

A#-BC

Date:

4/11/17

Contractor

TEH

Inspector:

JLZ

Comments:

^{start}
76+50 100' - 8" 1 Wye/valve
for Future Royal Farms.

79+50 - 140' 8" 1 Wye + 45°
at 79+25

3/2 Under Future 18" Storm

Supervisor:

[Signature]

Date:

4/11/17

AUDI Daily Collection System Inspection Report

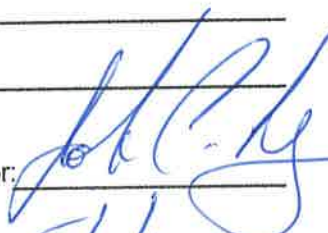
Job: AH-BC

Date: 5/1/17

Contractor: TEAL

Inspector: JCL

Comments: SAW COT RAIN

Supervisor: 

Date: 5/1/17

AUDI Daily Collection System Inspection Report

Job: AH-BC

Date: 5/2/17

Contractor: TRAI

Inspector: JCL

Comments: 25'-6" 14" PVC

1- 14" x 14" x 14" Wye

1- 14" Valve

36'-6" 6" PVC

1- 6" Valve

1- 6" 45°

Supervisor: _____

Date: _____

AUDI Daily Collection System Inspection Report

Job: AH-BC

Date: 5/3/17

Contractor: TEA

Inspector: [Signature]

Comments: 15'-14" out of Wye North
14'-6" 6" from 4/5" to 8x8x6 Wye
10'-8" DIP casing
Kicker on 6" 4/5"

Supervisor: [Signature]
Date: 5/3/17

AUDI Daily Collection System Inspection Report

Job:

AH BC

Date:

5/4/17

Contractor:

TEAL

Inspector:

JCL

Comments:

No Police. Expecting
Rain. Saw cut

Supervisor:

[Signature]

Date:

5/8/17

AUDI Daily Collection System Inspection Report

Job:

AH-BC

Date:

5/8/17

Contractor:

TEAL

Inspector:

JCL

Comments:

Tied into 8x8x6 Wye w/
2-8" 45° to RAISE elevation to
tie into 8" MAIN from Taxils
Installed 57' 8" C900 2-8" 45°
All Thred from wye thru 45° bends
1-8" Sleeve.

Supervisor:

John P. Kelly

Date:

5/8/17

AUDI Daily Collection System Inspection Report

Job: AH-BC

Date: 5/9/17

Contractor: Teal

Inspector: JCL

Comments: Installed 30'-8" RC, 12'-14" PVC
1- 14" JMS Sleeve
1- 14" Valve
1- 16x16x14 Wye
Kicker for 8x8x6 Wye.

Supervisor: [Signature]
Date: 5/10/17

AUDI Daily Collection System Inspection Report

Job: AH-BC

Date: 5/10/17

Contractor: ICAI

Inspector: JCL

Comments: Installed 60'-8" PVC, 60'-
14" PVC

Supervisor: [Signature]
Date: 3/11/17

AUDI Daily Collection System Inspection Report

Job: AH-BC

Date: 3/11/17

Contractor: Teal

Inspector: JCL

Comments: Installed 33'-16" PVC
20'-14" PVC
2-16" FMS 45°
Kickers on 45°'s & 16x16x14 wye

Supervisor: Joh P. [Signature]

Date: 3/12/17

AUDI Daily Collection System Inspection Report

Job: AH-BC

Date: 3/15/17

Contractor: Teal

Inspector: JCZ

Comments: Installed 40'-14" + 40'-16" PVC
North on Rt 5 toward drill

Supervisor: [Signature]
Date: 3/16/17

AUDI Daily Collection System Inspection Report

5/16/17, 5/17/17

Job: Hawthorne/RT 5

Date: ~~5/17~~ ~~5/18/17~~

Contractor: TEAL

Inspector: JCL

Comments: Installed 40' - 16" PVC
1- 16x10/ARV, 1-16" Valve
1- 14x12 Reducer
1- 12" Valve
1- 12x10"/ARV
40' 12" PVC

Supervisor: JCL by
Date: 5/24/17

Sched. Start Date	Work Order	Description	Equipment	Equipment Description	CAPITAL PROJECT	ASSET CITY	Status	Created By
1/17/2019	711040	1/17- found leak, fixed leak at 45 with new16" restraint and sleeve	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
1/16/2019	710981	1/16- filled main found water coming up on other side of road will dig to	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
8/14/2018	702875	8/13- inspection report turned in	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
7/31/2018	702084	7/30-worked on inspection report	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
6/29/2018	700456	worked on inspection report	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
6/28/2018	700432	worked on inspection report	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
6/27/2018	700366	contractor working on restorations	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
6/26/2018	700331	cleaned up job site	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
6/25/2018	700265	48' of 16" diamond loc c900 and 16" sleeve	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
6/25/2018	700141	6/22-cleaning up job site and restoration	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
6/21/2018	699865	cleaning up job site and restoration	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
6/20/2018	699792	120' of 16" c900 and 16" sleeve	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
6/19/2018	699667	140' of 16" c900	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
6/18/2018	699622	80' of 16" c900 and a 22 1/2" bend	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
6/15/2018	699545	40' of 16" c900 and Restoration work	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	B_CHRIST
6/14/2018	699165	80' of 16" c900	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
6/13/2018	699123	60' of 16" c900	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
6/12/2018	699089	Installed 100' 16" C900 and a ARV	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	SH_BAKER
6/11/2018	698990	no work rain	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
6/8/2018	698887	60' of 16" c900	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
6/7/2018	698840	140' of 16" c900	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
6/6/2018	698800	103' of 16" c900 and 16" gate valve	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
6/6/2018	698784	6/5/18-17' of 16" c900 and 2) 45° bends	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
6/4/2018	698597	installed crispin ARV at Isaics field	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
6/1/2018	698541	No install found end of drill moved equipment	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
6/1/2018	698538	Test 16" Force main / Passed 150psi 2 hours	222492	Hathorne to STA:42+00	3002572	Milton	Completed	K_CAMPBE
5/31/2018	690702	no work	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
5/31/2018	690675	5/30 repaired leak on 16" force main leaking at bottom of ARV	222492	Hathorne to STA:42+00	3002572	Milton	Completed	K_CAMPBE
5/31/2018	690673	5/28-5/30 no work	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
5/24/2018	690412	installed 1 crispin arv valves	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
5/24/2018	690410	tested 8" fm passed 16" fm has leak	222492	Hathorne to STA:42+00	3002572	Milton	Completed	K_CAMPBE
5/23/2018	690314	filling main for testing	222492	Hathorne to STA:42+00	3002572	Milton	Completed	K_CAMPBE
5/23/2018	690312	100' of 16" c900 and 1 16" gate valve	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
5/22/2018	690190	meet onsite to discuss install of storm drain for fiels entrance	222492	Hathorne to STA:42+00	3002572	Milton	Completed	K_CAMPBE
5/22/2018	690188	no install cut down trees in the easment	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
5/21/2018	690152	20' of 16" c900	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
5/21/2018	690150	paving and filling main stormdrain under rt 30 caused road to wash out state awa	222492	Hathorne to STA:42+00	3002572	Milton	Completed	K_CAMPBE
5/18/2018	690064	no work rain	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
5/18/2018	690061	no work rain	222492	Hathorne to STA:42+00	3002572	Milton	Completed	K_CAMPBE
5/17/2018	687906	no work rain	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
5/17/2018	687890	worked on inspection report No Work rain	222492	Hathorne to STA:42+00	3002572	Milton	Completed	K_CAMPBE
5/16/2018	687821	no work rain	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
5/16/2018	687817	no work rain	222492	Hathorne to STA:42+00	3002572	Milton	Completed	K_CAMPBE
5/15/2018	687791	8' of 16" c900 2) 16" 45° bends	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
5/15/2018	687788	paving and filling mainfor testing	222492	Hathorne to STA:42+00	3002572	Milton	Completed	K_CAMPBE
5/14/2018	687740	restoration	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
5/14/2018	687739	Drawings Turned in GPS turned in/ Paving and filling main	222492	Hathorne to STA:42+00	3002572	Milton	Completed	K_CAMPBE
5/11/2018	687685	filling main for testing finished drawings	222492	Hathorne to STA:42+00	3002572	Milton	Completed	K_CAMPBE
5/11/2018	687684	no work	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
5/10/2018	687627	started filling pipe for testing/ restoration Turned in Drawing to K.Garrison	222492	Hathorne to STA:42+00	3002572	Milton	Completed	K_CAMPBE
5/10/2018	687626	lowered valve bot tops in Isacs field	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
5/9/2018	687577	16X10 tee 16" sleeve 5' 16" c900 for offset ARV	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
5/8/2018	687519	2" crispin ARV / 16X10 tee for offset /ARV 16" sleeve	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
5/8/2018	687516	2) 16" blow offs w/ saddles	222492	Hathorne to STA:42+00	3002572	Milton	Completed	K_CAMPBE
5/7/2018	687466	installed 16X10 tee for offset ARV and a 16" sleeve	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
5/7/2018	687463	Insallation complete working on restoration	222492	Hathorne to STA:42+00	3002572	Milton	Completed	K_CAMPBE
5/4/2018	686543	installed crispin arv on existing tee	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
5/4/2018	686449	Installed 93' 16" PVC, 91' 8" PVC and 16" & 8" sleeves	222492	Hathorne to STA:42+00	3002572	Milton	Completed	SH_BAKER
5/3/2018	686397	worked on restoration	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
5/3/2018	686396	20' of 16" 20' of 8" c900 2) 16" 45° bends 1)8" 45° 1)8"22.5"	222492	Hathorne to STA:42+00	3002572	Milton	Completed	K_CAMPBE
5/2/2018	686342	no work	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
5/2/2018	686340	120'of 16" c900 120' of 8" c900 8" gate valve and ARV 16" gate valve and ARV	222492	Hathorne to STA:42+00	3002572	Milton	Completed	K_CAMPBE
5/1/2018	686277	Installed 80' 16" and 80' 8" PVC.	222492	Hathorne to STA:42+00	3002572	Milton	Completed	SH_BAKER
5/1/2018	686253	Installed 182' 16" PVC and 16" sleeve	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	SH_BAKER
4/30/2018	686217	300' of 16" c900 and 300' of 8" c900	222492	Hathorne to STA:42+00	3002572	Milton	Completed	K_CAMPBE
4/30/2018	686204	120' of 16" c900	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
4/27/2018	686089	40' of 16" c900 moved pipe line 2' over towards easment	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
4/27/2018	686081	No work Rain	222492	Hathorne to STA:42+00	3002572	Milton	Completed	K_CAMPBE
4/27/2018	686071	restoration (Thursday)	222498	STA: 42+00 to ANSWRF	3002572	Milton	Completed	K_CAMPBE
4/26/2018	686042	140' of 16" c900 / 140' of 8" c900	222492	Hathorne to STA:42+00	3002572	Milton	Completed	K_CAMPBE

Appendix C - Contractors Certificate of Completion

C.1 Lagoon Completion Letter

C.2 Piping Completion Letter

C.3 Field G Completion Letter



August 23, 2018

Artesian Wastewater Resources
664 Churchmans Road
Newark, DE 19702

Attn: Daniel Konstanski, P.E.

Re: Completion of berm and liner

Daniel,

The liner construction is complete and the 3rd party inspection report is attached for your records. The berm construction is substantially complete and is being seeded with permanent seed this and next week.

If you have any questions or need additional information please let me know.

Respectfully,

Richard Scrivener
Project Manager

Direct Phone: 302-669-6040
Direct Fax: 302-655-2821
rscrivener@corrado.com



**BUNNELL
LAMMONS
ENGINEERING**

August 21, 2018

Mr. Scott Ashby
Chesapeake Containment Systems, Inc.
2690D Salisbury Highway
Statesville, NC 28677

Subject: **Report of Electrical Leak Location (ELL)
Arc Testing Method (ASTM D7953)
Contract A – Storage Lagoon
Artesian Northern Sussex Regional Water Recharge Facility (ANSRWRF)
Sussex County, Delaware
BLE Project Number J18-12620-01**

Dear Mr. Ashby:

Bunnell-Lammons Engineering, Inc. (BLE) is pleased to submit this report for the exposed liner Electrical Leak Location (ELL) services associated with the Contract A - Storage Lagoon at ANSRWRF. This report documents the method and results for the ELL conducted by BLE on the exposed liner in the Contract A - Storage Lagoon at ANSRWRF.

PROJECT INFORMATION

BLE performed the ELL services on the exposed liner for the ANSRWRF Contract A - Storage Lagoon project. The ELL services were performed on the entire Contract A - Storage Lagoon exposed liner surface covering an approximate area of 20.1 acres using the Arc Testing Method (ASTM D7953).

FIELD ELL / RESULTS

Mr. Andrew Colby representing BLE was onsite on from August 8, 2018 to August 12, 2018 and performed the ELL services for the exposed liner in the Contract A - Storage Lagoon at ANSRWRF (Figure 1).

Arc Testing Method (ASTM D 7953)

On August 8, 2018 Mr. Colby began performing the exposed liner testing in the Contract A - Storage Lagoon at Eagle Point using the Arc Testing Method (ASTM D 7953). During the ELL, weather conditions consisted of lows in the 70's to highs in the 90's with a mix of sun and rain. The ELL was



6004 Ponders Court, Greenville, SC 29615 ☎ 864.288.1265 📠 864.288.4430 ✉ info@blecorp.com

BLECORP.COM



accomplished by applying a high DC voltage to a test wand above the exposed liner and grounding the test equipment to the underlying subgrade soil. Prior to the ELL testing in the Contract A - Storage Lagoon at ANSRWRF, a leak detection sensitivity (calibration) test was performed on a separate portion of liner extending beyond the limits of the Contract A - Storage Lagoon at ANSRWRF. During the leak detection sensitivity test, the test area was swept with the test wand and a visible arc formed between the wand and the exposed liner as well as an audio signal from the test equipment (AP-W High Voltage Holiday Detector) confirming proper functioning of the equipment. The Holiday meter was then used in the Contract A - Storage Lagoon at ANSRWRF using methods and conditions consistent with the leak detection sensitivity test. The leak detection sensitivity testing was performed during each day of ELL.

The ELL technologist began the ELL survey in the floor area, then moved to the slopes. The ELL testing was performed over the entire lagoon area making 3-foot wide passes. Each subsequent pass overlapped the previous pass by 3-inches resulting in all of the exposed liner in the 20.1-acre Contract A - Storage Lagoon being examined for leaks using the Arc Testing Method. ELL was completed on August 12, 2018.

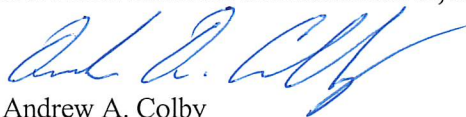
A total of 18 holes were detected in the Contract A - Storage Lagoon at ANSRWRF using the Arc Testing Method. In addition, visual inspection of the liner surface was performed during the ELL and 8 areas of excessive incursion were identified, as well as 5 repair patches that were leistered, but not extrusion welded. Each repair area was marked with high visibility yellow paint. AECOM and Chesapeake Containment Systems observed the repair areas. The incursion and leistered patches were repaired by extrusion welding. The holes were patched and extrusion welded. Vacuum box testing was performed (typical) and observed to confirm all identified areas from the ELL were repaired and passing. See Figure 2 for repair locations.

CLOSING



Please call us if you have questions concerning the attached report.


Sincerely,

BUNNELL-LAMMONS ENGINEERING, INC.


Andrew A. Colby
Engineering Associate

- Attachments: Photographs
- Figure 1: Lagoon A – Site Plan
- Figure 2: ELL – Field Sketch



Jeffrey C. Helvey, P.E.
Senior Engineer
Licensed, SC #25468

8-21-18
DELAWARE
TEMP
PERMIT NO.
TCP 051




Photograph 1: Contract A - Storage Lagoon at ANSRWRf



Photograph 2: Arc Testing Method in progress, performing ELL in Contract A - Storage Lagoon.



Photograph 3: Rip in the liner of the Contract A - Storage Lagoon.



Photograph 4: Hole in the liner of the Contract A - Storage Lagoon.



Photograph 5: Slice in the liner of the Contract A - Storage Lagoon.



Photograph 6: Puncture in the liner of the Contract A - Storage Lagoon.



Photograph 7: Incursion in the liner of the Contract A - Storage Lagoon.



Photograph 8: Leistered patch needing extrusion welding in Contract A - Storage Lagoon.

FIGURE 1

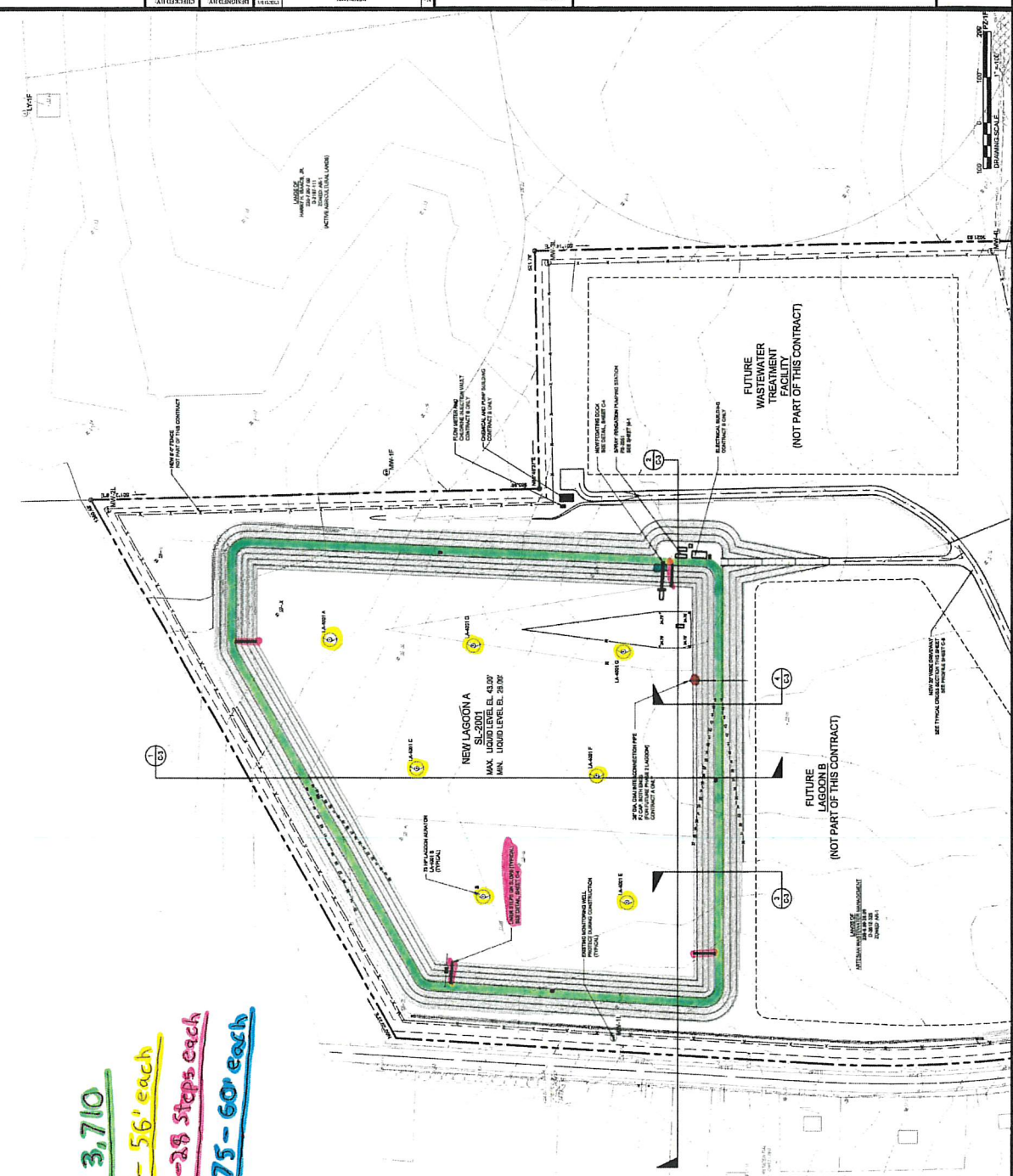
DUFFIELD ASSOCIATES
 5400 LIMESTONE ROAD
 WILMINGTON, DE 19808-1232
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 OFFICES IN DELAWARE, MARYLAND,
 PENNSYLVANIA AND NEW JERSEY
 WEB: WWW.DUFFIELDGROUP.COM
 E-MAIL: DUFFIELD@DUFFIELDGROUP.COM

STATE OF DELAWARE
 PROFESSIONAL ENGINEER
 No. 11217
 Steven H. Jankowski P.E.
 TITLE: PROJECT ENGINEER
 DATE: 12-11-17
 PROJECT: ARTESIAN NORTHERN SUSSEX REGIONAL WATER RECHARGE FACILITY (ANSRWF)

DATE	12-11-17
PROJECT	ARTESIAN NORTHERN SUSSEX REGIONAL WATER RECHARGE FACILITY (ANSRWF)
CLIENT	ARTESIAN NORTHERN SUSSEX REGIONAL WATER RECHARGE FACILITY (ANSRWF)
LOCATION	ARTESIAN NORTHERN SUSSEX REGIONAL WATER RECHARGE FACILITY (ANSRWF)
SCALE	AS SHOWN
SHEET NO.	11278 BA
TOTAL SHEETS	C-1

ARTESIAN NORTHERN SUSSEX REGIONAL WATER RECHARGE FACILITY (ANSRWF)
 SUSSEX COUNTY - DELAWARE

DATE: 21 APRIL 2017
 SCALE: AS SHOWN
 PROJECT NO. 11278 BA
 SHEET: C-1

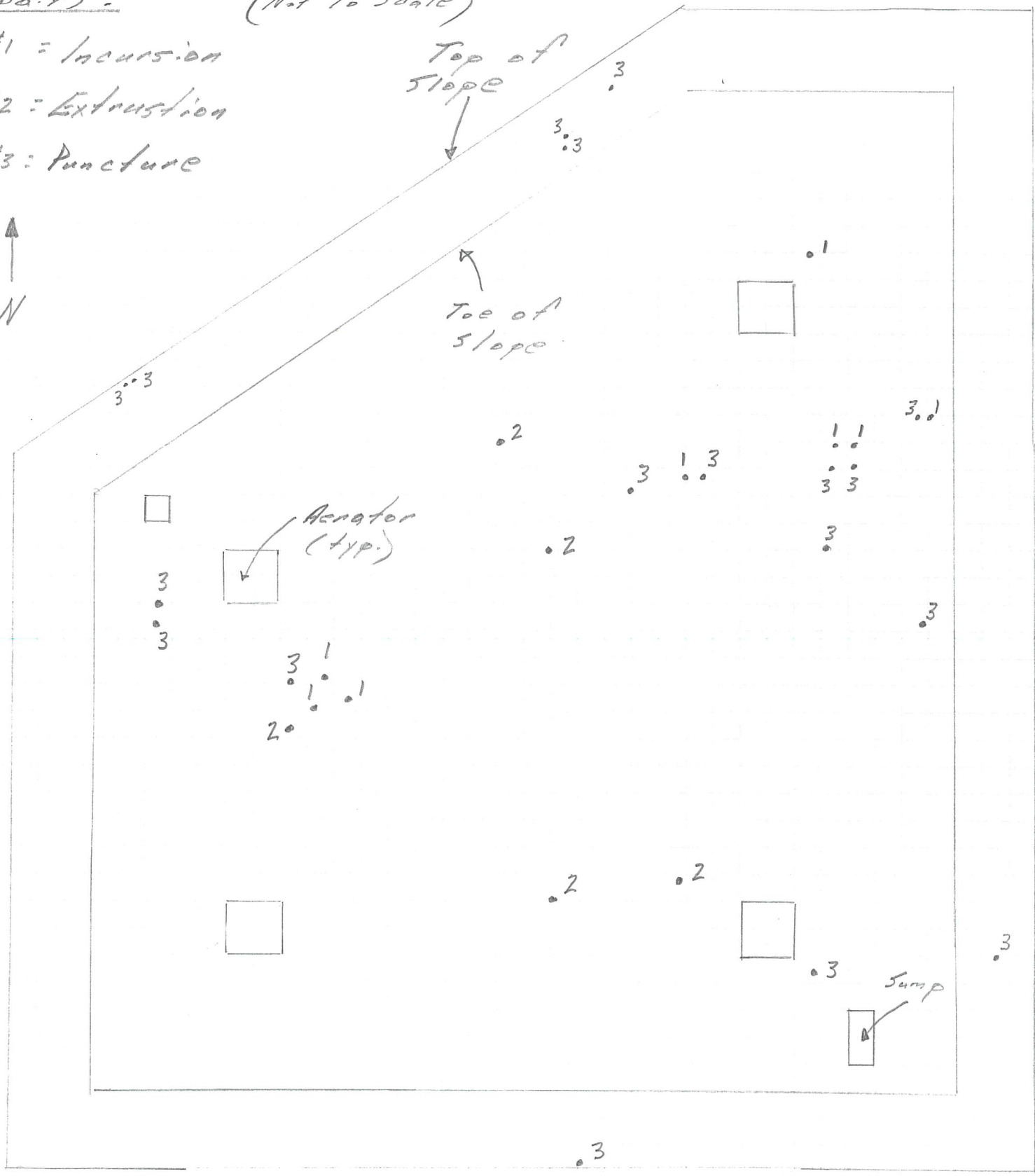


- Anchor Trench 3,710
- Attachment 7 - 56' each
- Access Steps 4 - 28 Steps each
- Ballast Tubes 75 - 60' each
- Gas Vents - 75
- Boots - 2 (4x)
- Boat - 1 (36")

FIGURE 2

Repairs: (Not To Scale)

- #1 = Incursion
- #2 = Extrusion
- #3 = Puncture





February 1, 2019

Artesian Wastewater Resources
664 Churchmans Road
Newark, DE 19702

Attn: Daniel Konstanski, P.E.

Re: Completion of 16" above ground piping

Daniel,

The 16" above ground piping is complete. This is the line connecting the three pump discharges into the 24" below ground line.

If you have any questions or need additional information please let me know.

Respectfully,

Richard Scrivener
Project Manager

Direct Phone: 302-669-6040
Direct Fax: 302-655-2821
rscrivener@corrado.com

Daniel Konstanski

From: bobby@wallsirrigation.com
Sent: Wednesday, January 30, 2019 3:14 PM
To: Daniel Konstanski
Subject: ANSWRF Field G

Daniel,

This email is to confirm that in field "G" all Underground piping has been installed and connected to the pivot irrigation systems and the solid set irrigation in the forest. All valves, gun stands fittings that were specified have been installed and rigged.

Thank you for your business,

Robert B. Walls
President
Walls Irrigation, Inc.
(302) 422-2262 (o)
(302) 422-2209 (f)
(302) 249-5552 (m)
bobby@wallsirrigation.com



Appendix D - Summary and Analysis of Groundwater Monitoring Results

ANSRWRF Background Groundwater Monitoring Analysis Summary

As required by **§6.6.3.16** and **§6.5.3.1.15**, background water quality sampling was performed to determine the pre-existing water quality conditions prior to initiating treated effluent disposal. This sampling provides a baseline to evaluate the impact of the ANSRWRF disposal.

For each monitoring well, three samples of the parameters listed in **§6.8.1.8** were analyzed. Additional parameters were also tested for. The results of these tests are shown in the following tables. Values preceded by “<” indicate that no concentration was detected, and the associated value is the minimum detection limit for the test used.

For each well, the parameters were compared to the EPA standards for drinking water (see for reference **§6.5.4.3.2.1.9**). These standards represent the quality which a drinking water utility is expected to provide, and provides a useful benchmark for homeowners with private wells to evaluate their supply. The EPA Primary and Secondary Drinking Water Standards can be found here:

<https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations>

<https://www.epa.gov/dwstandardsregulations/secondary-drinking-water-standards-guidance-nuisance-chemicals>

In general, for each individual monitoring well, the three background samples showed fairly consistent results, and there was not a large difference between the average and maximum values. For the sampled parameters that have associated primary or secondary samples, the attached summary table shows the maximum result for the three background samples. Values that are higher than the associated standard have been highlighted.

These results show elevated levels of iron and manganese, which is typical for groundwater throughout Delaware due the particular makeup of the aquifer rock formations. The results also show elevated levels of nitrate, particularly in monitoring wells that are downgradient of active farm fields. This is likely typical of groundwater in the vicinity of farming operations where supplemental nitrogen is added as fertilizer.

Because the ANSRWRF effluent is required to meet the drinking water standard for nitrate of 10 mg/L in the percolate, and because the nitrate added through the effluent will be offset by a reduction in applied fertilizer, the flow entering the groundwater at the ANSRWRF fields will be of higher quality with respect to nitrates than the existing groundwater. Thus, the proposed spray operation will not cause nor exacerbate groundwater exceedance of drinking water standards.

ANSRWRF Background Groundwater Monitoring Well Results

DNREC Well ID	Local Well ID	Sample Date	Ammonia as N (mg/L)	Nitrate as N (mg/L)	Nitrite as N (mg/L)	Organic Nitrogen as N (mg/L)	Total Kjeldahal (mg/L)	Total Nitrogen (mg/L)	Total Phosphorus (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Selenium (mg/L)
254881	1L	10/18/2017	<0.05	4.67	<0.1	0.17	0.17	4.84	0.06	<0.0010	0.0012	<0.0010	0.0015	0.375	0.0086	0.06	<0.00020	0.0034	0.015
254881	1L	3/19/2018	<0.05	5.59	<0.1	<0.05	<0.05	<5.64	<0.05	0.0012	0.0012	<0.0010	<0.0010	0.218	0.0022	0.046	<0.00020	0.0025	0.0017
254881	1L	5/1/2018	<0.05	5.15	<0.1	0.07	0.07	5.22	<0.05	0.0011	0.0012	<0.0010	0.0017	0.184	0.0039	0.046	<0.00020	0.0019	0.0025
254882	2L	2/1/2018	<0.05	17.5	<0.1	0.41	0.41	17.9	0.58	0.0052	0.0046	0.0012	0.014	1.3	0.036	0.109	<0.00020	0.0071	0.0049
254882	2L	3/26/2018	<0.05	17.1	<0.1	0.25	0.25	17.4	0.36	0.0042	0.0032	0.001	0.011	0.834	0.026	0.11	<0.00020	0.0048	0.0033
254882	2L	5/1/2018	<0.05	15.9	<0.1	0.08	0.08	16	0.09	0.0021	0.0023	<0.0010	0.0044	0.35	0.013	0.72	<0.00020	0.0045	0.0026
254883	3L	2/1/2018	<0.05	7.32	<0.1	0.29	0.29	7.61	0.16	0.002	0.0012	0.0017	0.0055	1.4	0.0098	0.255	<0.00020	0.0056	<0.0010
254883	3L	3/19/2018	<0.05	6.94	<0.1	<0.05	<0.05	<6.99	<0.05	<0.0010	<0.00050	0.0019	0.0013	0.905	0.0012	0.14	<0.00020	0.0029	<0.0010
254883	3L	5/1/2018	<0.05	5.1	<0.1	0.05	0.05	5.15	<0.05	<0.0010	<0.00050	<0.0010	<0.0010	0.156	<0.0010	0.172	<0.00020	0.0025	<0.0010
254884	4L	2/1/2018	<0.05	9.2	<0.1	0.79	0.79	9.99	0.21	0.0015	0.0012	0.0012	0.0081	1.2	0.021	0.018	<0.00020	0.0045	0.0015
254884	4L	3/26/2018	<0.05	8.85	<0.1	0.93	0.93	9.78	0.25	<0.0010	0.00055	<0.0010	0.0099	0.516	0.024	0.022	0.000434	0.003	<0.0010
254884	4L	5/1/2018	<0.05	8.11	<0.1	0.51	0.51	8.62	0.07	<0.0010	<0.00050	<0.0010	0.0054	0.276	0.0083	0.013	<0.00020	0.0026	0.0016
258642	1D	10/18/2017	<0.05	4.32	<0.1	0.17	0.17	4.49	<0.05	<0.0010	<0.00050	<0.0010	<0.0010	0.246	0.0035	0.023	<0.00020	0.0035	0.0015
258642	1D	3/28/2018	<0.05	6.08	<0.1	0.21	0.21	6.29	<0.05	0.001	<0.00050	<0.0010	<0.0010	0.203	<0.0010	0.031	<0.00020	0.004	0.0013
258642	1D	5/31/2018	<0.05	6.11	<0.10	0.23	0.23	6.34	<0.05	0.0015	<0.00050	<0.0010	0.0014	0.108	<0.0010	0.032	<0.00020	0.0018	0.0016
258645	3D	10/17/2017	<0.05	2.12	<0.1	0.06	0.06	2.18	<0.05	<0.0010	<0.00050	0.0013	<0.0010	0.317	0.003	0.025	<0.00020	0.0035	<0.0010
258645	3D	3/28/2018	<0.05	2.46	<0.1	<0.05	<0.05	<2.51	<0.05	<0.0010	<0.00050	<0.0010	<0.0010	0.079	0.0014	0.011	<0.00020	0.0023	<0.0010
258645	3D	5/3/2018	<0.05	2.81	<0.1	0.18	0.18	2.99	<0.05	<0.0010	<0.00050	0.0012	0.014	0.108	0.0016	0.012	<0.00020	0.0035	<0.0010
258643	4D	10/17/2017	<0.05	19.4	<0.1	0.14	0.14	19.5	<0.05	<0.0010	0.0012	<0.0010	<0.0010	0.912	0.0014	0.07	<0.00020	0.0057	<0.0010
258643	4D	3/28/2018	<0.05	19.1	<0.1	<0.05	<0.05	<19.2	<0.05	<0.0010	0.00069	<0.0010	<0.0010	0.238	<0.0010	0.074	<0.00020	0.004	0.0015
258643	4D	5/14/2018	<0.05	19.3	<0.1	0.24	0.24	19.5	<0.05	0.0027	0.0014	<0.0010	<0.0010	0.225	<0.0010	0.073	<0.00020	0.004	0.0012
258637	1E	2/1/2018	<0.05	<0.2	<0.1	0.09	0.09	<0.29	<0.05	<0.0010	<0.00050	<0.0010	<0.0010	0.159	<0.0010	0.016	<0.00020	<0.0010	<0.0010
258637	1E	3/28/2018	<0.05	<0.2	<0.1	<0.05	<0.05	<0.25	<0.05	<0.0010	<0.00050	<0.0010	0.0059	0.0097	<0.0010	0.0071	<0.00020	<0.0010	<0.0010
258637	1E	5/31/2018	<0.05	<0.20	<0.1	0.1	0.1	<0.30	<0.05	<0.0010	<0.00050	<0.0010	<0.0010	0.01	<0.0010	0.0049	<0.00020	<0.0010	<0.0010
258638	2E	10/17/2017	<0.05	18.1	<0.1	0.19	0.19	18.3	<0.05	<0.0010	<0.00050	<0.0010	<0.0010	0.096	<0.0010	0.119	<0.00020	0.0023	<0.0010
258638	2E	3/28/2018	<0.05	20.6	<0.1	0.15	0.15	20.8	<0.05	<0.0010	<0.00050	<0.0010	<0.0010	0.075	0.0013	0.092	<0.00020	0.0011	0.0012
258638	2E	5/31/2018	<0.05	19.5	<0.10	0.28	0.28	19.8	<0.05	0.001	<0.00050	0.001	0.0012	0.041	<0.0010	0.09	<0.00020	<0.0010	0.0013
258639	3E	10/18/2017	<0.05	19.2	<0.1	0.32	0.32	19.5	<0.05	<0.0010	<0.00050	<0.0010	<0.0010	0.269	0.0039	0.099	<0.00020	0.0042	<0.0010
258639	3E	3/26/2018	<0.05	22.6	<0.1	<0.05	<0.05	<22.7	<0.05	<0.0010	<0.00050	<0.0010	<0.0010	0.144	<0.0010	0.062	<0.00020	0.003	<0.0010
258639	3E	5/31/2018	<0.05	24.1	<0.10	0.16	0.16	24.3	<0.05	<0.0010	<0.00050	<0.0010	<0.0010	0.075	<0.0010	0.041	<0.00020	0.0011	<0.0010
258640	4E	10/18/2017	<0.05	14.6	<0.1	0.22	0.22	14.8	6.34	0.003	0.0012	0.0021	0.0089	1.2	0.013	0.124	<0.00020	0.0049	0.0028
258640	4E	3/28/2018	<0.05	12.8	<0.1	0.22	0.22	13	2.41	0.0023	0.00071	<0.0010	0.005	0.757	0.0069	0.157	<0.00020	0.005	0.0026
258640	4E	5/31/2018	<0.05	19.3	<0.10	0.27	0.27	19.6	1.55	0.0022	<0.00050	<0.0010	<0.0010	0.165	<0.0010	0.109	<0.00020	0.0027	0.0032
258641	5E	2/1/2018	<0.05	15.3	<0.1	0.23	0.23	15.5	<0.05	<0.0010	0.00066	<0.0010	<0.0010	0.299	<0.0010	0.071	<0.00020	0.0042	0.0017
258641	5E	3/28/2018	<0.05	14.7	<0.1	0.19	0.19	14.9	<0.05	<0.0010	<0.00050	<0.0010	<0.0010	0.279	<0.0010	0.07	<0.00020	0.0023	<0.0010
258641	5E	5/31/2018	<0.05	14.8	<0.10	0.24	0.24	15	<0.05	<0.0010	<0.00050	<0.0010	<0.0010	0.105	<0.0010	0.075	<0.00020	<0.0010	0.0014
258634	1F	11/16/2017	<0.05	12.4	<0.1	0.09	0.09	12.5	<0.05	<0.0010	<0.00050	<0.0010	<0.0010	0.481	<0.0010	0.042	<0.00020	0.0033	<0.0010
258634	1F	3/19/2018	<0.05	11	<0.1	<0.05	<0.05	<11.1	<0.05	<0.0040	<0.00050	<0.0010	<0.0010	0.162	<0.0010	0.032	<0.00020	0.0018	<0.0010
258634	1F	5/1/2018	<0.05	9.67	<0.1	0.12	0.12	9.79	<0.05	<0.0010	<0.00050	<0.0010	<0.0010	0.15	<0.0010	0.046	<0.00020	0.0026	<0.0010

ANSRWRF Background Groundwater Monitoring Well Results

DNREC Well ID	Local Well ID	Sample Date	Ammonia as N (mg/L)	Nitrate as N (mg/L)	Nitrite as N (mg/L)	Organic Nitrogen as N (mg/L)	Total Kjeldahal (mg/L)	Total Nitrogen (mg/L)	Total Phosphorus (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Selenium (mg/L)
258632	2F	2/1/2018	<0.05	15.3	<0.1	0.28	0.28	15.6	<0.05	<0.0010	0.0013	<0.0010	0.006	0.021	0.0024	0.171	<0.00020	0.0064	0.0013
258632	2F	3/26/2018	<0.05	16	<0.1	<0.05	<0.05	<16.1	<0.05	<0.0010	0.00078	<0.0010	<0.0010	0.121	0.0012	0.165	<0.00020	0.0052	<0.0010
258632	2F	5/14/2018	<0.05	17	<0.1	0.17	0.17	17.2	0.08	<0.0010	<0.00050	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.00020	<0.0010	0.001
258633	3F	2/1/2018	<0.05	17.7	<0.1	0.29	0.29	18	<0.05	0.0013	0.00075	<0.0010	0.0011	0.344	<0.0010	0.032	<0.00020	0.0061	0.0015
258633	3F	3/26/2018	<0.05	22.3	<0.1	0.16	0.16	22.5	<0.05	<0.0010	0.00056	<0.0010	<0.0010	0.224	<0.0010	0.035	<0.00020	0.0044	<0.0010
258633	3F	5/14/2018	<0.05	21.8	<0.1	0.2	0.2	22	<0.05	0.0026	0.0012	0.001	<0.0010	0.222	0.0011	0.039	<0.00020	0.0044	<0.0010
258635	4F	2/1/2018	<0.05	24.3	<0.1	<0.05	<0.05	<24.4	<0.05	<0.0010	<0.00050	<0.0010	<0.0010	0.287	<0.0010	0.0096	<0.00020	0.0059	0.0013
258635	4F	3/26/2018	<0.05	21.8	<0.1	<0.05	<0.05	<21.9	<0.05	<0.0010	<0.00050	<0.0010	<0.0010	0.196	<0.0010	0.0087	<0.00020	0.0049	0.0016
258635	4F	5/14/2018	<0.05	22.1	<0.1	0.1	0.1	22.2	<0.05	0.0025	0.0005	<0.0010	0.0042	0.215	<0.0010	0.0079	<0.00020	0.0049	0.0016
258636	5F	2/1/2018	<0.05	21.9	<0.1	0.2	0.2	22.1	<0.05	0.0011	0.00064	<0.0010	<0.0010	0.324	<0.0010	0.019	<0.00020	0.0052	0.0024
258636	5F	3/26/2018	<0.05	21.2	<0.1	0.19	0.19	21.4	<0.05	<0.0010	<0.00050	<0.0010	<0.0010	0.207	<0.0010	0.014	<0.00020	0.0035	0.0015
258636	5F	5/14/2018	<0.05	20.5	<0.1	0.15	0.15	20.7	<0.05	0.0028	0.00077	<0.0010	0.0045	0.169	<0.0010	0.03	<0.00020	0.0042	0.0032
258620	1G	10/17/2018	<0.05	<0.2	<0.1	<0.05	<0.05	<0.25	<0.05	<0.0010	<0.00050	<0.0010	<0.0010	0.011	<0.0010	0.012	<0.00020	<0.0010	<0.0010
258620	1G	3/15/2018	<0.05	<0.2	<0.1	0.09	0.09	<0.29	<0.05	<0.0010	<0.00050	<0.0010	<0.0010	0.017	<0.0010	0.0077	<0.00020	<0.0010	0.0011
258620	1G	5/1/2018	<0.05	<0.2	<0.1	0.09	0.09	<0.29	<0.05	<0.0010	<0.00050	<0.0010	<0.0010	0.0095	<0.0010	0.0089	<0.00020	<0.0010	<0.0010
258628	2G	10/18/2018	<0.05	16.7	<0.1	0.14	0.14	16.8	0.05	<0.0010	<0.00050	<0.0010	<0.0010	0.415	0.0064	0.025	<0.00020	0.0047	0.0011
258628	2G	3/19/2018	<0.05	18.1	<0.1	<0.05	<0.05	<18.2	<0.05	<0.0010	<0.00050	<0.0010	<0.0010	0.187	<0.0010	0.018	<0.00020	0.0031	0.0016
258628	2G	4/20/2018	<0.05	20.4	<0.1	0.22	0.22	20.06	<0.05	0.0052	0.00096	<0.0010	<0.0010	0.562	0.0017	0.021	<0.00020	0.0053	<0.0010
258630	3G	10/18/2017	<0.05	13.3	<0.1	0.12	0.12	13.4	<0.05	<0.0010	0.00056	<0.0010	<0.0010	0.405	0.0043	0.023	<0.00020	0.0054	0.0012
258630	3G	3/9/2018	<0.05	14.7	<0.10	0.17	0.17	14.9	<0.05	0.0011	0.00061	<0.0010	<0.0010	0.252	<0.0010	0.023	<0.00020	0.0051	0.002
258630	3G	4/20/2018	<0.05	17.5	<0.1	0.29	0.29	17.8	<0.05	0.0081	0.0019	<0.0010	<0.0010	0.23	0.0013	0.022	<0.00020	0.0063	0.0031
258631	4G	10/18/2017	<0.05	7.76	<0.1	0.14	0.14	7.9	0.08	<0.0010	0.00064	<0.0010	<0.0010	0.59	0.0036	0.015	<0.00020	0.0065	0.0014
258631	4G	3/9/2018	<0.05	8.24	<0.10	0.23	0.23	8.47	<0.05	0.0013	0.0006	<0.0010	<0.0010	0.297	0.001	0.013	<0.00020	0.0053	0.0022
258631	4G	4/20/2018	<0.05	9.31	<0.1	0.24	0.24	9.55	<0.05	0.0088	0.0015	<0.0010	<0.0010	0.3	0.0017	0.013	<0.00020	0.0069	0.0022
258625	5G	10/18/2017	<0.05	17.5	<0.1	0.11	0.11	17.6	0.05	<0.0010	<0.00050	<0.0010	0.002	0.471	0.004	0.022	<0.00020	0.0045	0.0011
258625	5G	3/9/2018	<0.05	16.4	<0.10	<0.05	<0.05	<16.5	<0.05	<0.0010	<0.00050	<0.0010	0.0027	0.198	<0.0010	0.013	<0.00020	0.0037	0.0013
258625	5G	4/20/2018	<0.05	18.3	<0.1	0.25	0.25	18.6	<0.05	0.0089	0.0014	<0.0010	0.0012	0.241	0.0016	0.011	<0.00020	0.005	0.002
258626	6G	10/18/2017	<0.05	14.3	<0.1	0.09	0.09	14.4	<0.05	<0.0010	0.0065	0.0014	<0.0010	0.356	0.005	0.045	<0.00020	0.011	0.0034
258626	6G	3/9/2018	<0.05	14.3	<0.10	0.08	0.08	14.4	<0.05	0.0011	0.00062	<0.0010	<0.0010	0.18	0.0011	0.037	<0.00020	0.011	0.0036
258626	6G	5/1/2018	<0.05	16.3	<0.1	0.05	0.05	16.4	<0.05	0.0012	0.00069	0.0011	0.0024	0.21	0.0016	0.049	<0.00020	0.012	0.0043
258627	7G	10/18/2017	<0.05	17.6	<0.1	0.14	0.14	17.7	<0.05	<0.0010	0.0018	<0.0010	0.0014	0.381	0.004	0.09	<0.00020	0.0065	0.0024
258627	7G	3/19/2018	<0.05	19.2	<0.1	<0.05	<0.05	<19.3	<0.05	0.0013	0.00098	<0.0010	<0.0010	0.193	<0.0010	0.067	<0.00020	0.0043	0.0026
258627	7G	4/20/2018	<0.05	19.6	<0.1	0.2	0.2	19.8	<0.05	0.0095	0.0023	<0.0010	<0.0010	0.235	0.0017	0.065	<0.00020	0.0069	0.0023
258629	8G	10/18/2017	<0.05	11.2	<0.1	<0.05	<0.05	<11.3	<0.05	<0.0010	<0.00050	<0.0010	<0.0010	0.196	0.0041	0.094	<0.00020	0.0033	<0.0010
258629	8G	3/19/2018	<0.05	9.45	<0.1	<0.05	<0.05	<9.50	<0.05	<0.0010	<0.00050	<0.0010	<0.0010	0.072	<0.0010	0.057	<0.00020	0.0017	<0.0010
258629	8G	4/20/2018	<0.05	10.4	<0.1	0.15	0.15	10.6	<0.05	0.006	0.00096	<0.0010	<0.0010	0.076	<0.0010	0.079	<0.00020	0.0029	<0.0010
258624	9G	11/15/2017	<0.05	14.2	<0.1	<0.05	<0.05	<14.3	<0.05	<0.0010	0.00058	<0.0010	<0.0010	0.362	<0.0010	0.156	<0.00020	0.0057	0.0016
258624	9G	3/15/2018	<0.05	14.3	<0.1	0.06	0.06	14.4	<0.05	<0.0010	<0.00050	<0.0010	<0.0010	0.302	0.0014	0.149	<0.00020	0.0043	0.0014
258624	9G	4/20/2018	<0.05	16.1	<0.1	0.21	0.21	16.3	<0.05	0.0049	0.0013	<0.0010	<0.0010	0.324	0.0023	0.139	<0.00020	0.005	<0.0010

ANSRWRF Background Groundwater Monitoring Well Results

DNREC Well ID	Local Well ID	Sample Date	Sodium (mg/L)	Zinc (mg/L)	Chloride (mg/L)	Hardness (mg/L)	Sulfate (mg/L)	Dissolved Oxygen (mg/L)	Depth to Water (ft)	pH Field (S.U.)	Specific Conductance (Oumhos/cm)	Temperature (°C)	Total Dissolved Solids (mg/L)	Total Suspended Solids (mg/L)	Fecal Coliform (#/100 mls)	Total Coliform (#/100 mls)
254881	1L	10/18/2017	23.8	0.024	60.5	57	17.2	7.98	15.82	4.87	293	16.8	182	754	<2.0	<2.0
254881	1L	3/19/2018	42.8	0.012	96.9	78	21.9	7.93	16.14	4.99	448	14.9	276	139	<2.0	<2.0
254881	1L	5/1/2018	24.4	0.01	34.9	40	19	8.61	15.17	4.95	210.7	15.3	140	466	<2.0	<2.0
254882	2L	2/1/2018	7.8	0.052	22.5	94	26.1	8.46	18.14	4.82	312	14.2	212	7950	<2.0	<2.0
254882	2L	3/26/2018	7.1	0.036	26.7	103	28.6	9.25	17.55	5.02	314	10.6	248	3440	<2.0	<2.0
254882	2L	5/1/2018	9.1	0.022	25	92	26.9	8.87	17.1	4.76	301	14.7	242	3330	<2.0	<2.0
254883	3L	2/1/2018	5.1	0.042	16.8	70	48.9	8.29	13.71	4.93	245	13.4	162	10010	<2.0	<2.0
254883	3L	3/19/2018	4.7	0.011	17.4	80	47.6	8.89	13.89	4.65	232	11.8	150	513	<2.0	<2.0
254883	3L	5/1/2018	6	0.0058	13.2	60	56	9.56	12.83	4.96	215.6	14.4	166	1830	<2.0	<2.0
254884	4L	2/1/2018	4.3	0.029	11.5	46	29.8	5.61	7.43	5.65	196.3	10.9	130	35550	<2.0	<2.0
254884	4L	3/26/2018	3.1	0.027	9.48	95	25.4	5.94	7.53	5.7	185	9.6	130	6230	<2.0	<2.0
254884	4L	5/1/2018	4.6	0.011	9	50	26.7	5.21	7.17	5.48	168.5	12	128	1310	<2.0	<2.0
258642	1D	10/18/2017	63.2	0.019	136	66	14.1	9.09	16.02	5.08	545	17	304	10.8	<2.0	<2.0
258642	1D	3/28/2018	87.3	0.017	19.1	90	13.3	9.05	15.16	5.09	701	14.6	432	6	<2.0	<2.0
258642	1D	5/31/2018	74	0.014	196	94	14.3	8.28	13.64	5.03	663	15.6	430	4.4	<2.0	<2.0
258645	3D	10/17/2017	8.3	0.03	15.6	21	3.05	4.19	14.68	5.46	95.5	14.5	82	500	<2.0	20
258645	3D	3/28/2018	8	0.02	13.2	30	3.37	4.23	13.67	5.51	86.8	13.5	98	200	<2.0	<2.0
258645	3D	5/3/2018	8.7	0.029	15	18	4.69	3.9	13.82	5.53	85.8	14.8	68	55.6	<2.0	<2.0
258643	4D	10/17/2017	6	0.013	20.8	122	33.3	9.4	10.95	4.24	346	15.6	258	111	<2.0	<2.0
258643	4D	3/28/2018	5.4	0.0081	20.1	117	31.7	9.5	10.35	4.93	324	14.1	228	18	<2.0	<2.0
258643	4D	5/14/2018	6.4	0.0095	21.9	130	32.8	8.73	10.75	4.83	314	14.7	220	18.5	<2.0	<2.0
258637	1E	2/1/2018	4	0.017	5.57	12	8.32	8.26	11.83	5.61	51.2	13.6	56	6	<2.0	<2.0
258637	1E	3/28/2018	3.6	0.0037	5.71	20	8.1	9.14	10.02	6.06	48.9	13.2	54	14.8	<2.0	2
258637	1E	5/31/2018	3.4	<0.0010	5.72	25	7.95	8.48	8.84	5.4	44.6	14	54	23.2	<2.0	<2.0
258638	2E	10/17/2017	9.8	0.025	29.4	96	7.1	4.31	13.69	4.99	291	14.6	210	2.8	<2.0	>160
258638	2E	3/28/2018	8.6	0.011	31.4	97.7	8.85	4.59	12.48	4.88	288	13.4	184	58.1	<2.0	24
258638	2E	5/31/2018	8.7	0.01	32.5	99	12.4	2.74	11.42	4.79	388	14.4	160	15.6	<2.0	6
258639	3E	10/18/2017	5.7	0.016	22.3	108	1.25	5.52	5.62	5.81	273	15.9	198	<10.0	<2.0	6
258639	3E	3/26/2018	4.6	0.014	24.5	107	0.58	5.21	5.25	5.56	291	13.6	244	4	<2.0	<2.0
258639	3E	5/31/2018	3.9	0.01	26.2	124	0.34	5.3	4.61	5.25	269	16	212	8	<2.0	<2.0
258640	4E	10/18/2017	93.5	0.061	107	80	35.9	5.98	16.13	6.57	602	15.6	368	2340	<10.0	10
258640	4E	3/28/2018	75.4	0.058	141	88	26	10.74	15.23	6.07	691	15.2	410	2036	<2.0	<2.0
258640	4E	5/31/2018	54	0.025	117	110	24.9	10.02	13.95	5.92	575	17.7	364	2080	<2.0	<2.0
258641	5E	2/1/2018	7	0.0077	20.9	88	23.3	8.61	13.92	5.04	274	14.7	188	10.1	<2.0	<2.0
258641	5E	3/28/2018	6.4	0.0041	21.1	86.7	24.1	9.28	12.62	5.11	272	13.3	216	102	<2.0	CONFLUENT
258641	5E	5/31/2018	6.1	0.0028	21.8	104	24.7	8.5	11.18	5.01	256	15.5	192	4.8	<2.0	<2.0
258634	1F	11/16/2017	5.6	0.0032	21.7	76	23						110	51.2	<2.0	<2.0
258634	1F	3/19/2018	4.6	0.0027	19.7	91	25.2	9.68	17.36	5.41	228	14	166	6.5	<2.0	<2.0
258634	1F	5/1/2018	6	0.003	18.6	68	28.2	9.69	14.71	5.26	218.5	15.4	196	2	<2.0	<2.0

ANSRWRF Background Groundwater Monitoring Well Results

DNREC Well ID	Local Well ID	Sample Date	Sodium (mg/L)	Zinc (mg/L)	Chloride (mg/L)	Hardness (mg/L)	Sulfate (mg/L)	Dissolved Oxygen (mg/L)	Depth to Water (ft)	pH Field (S.U.)	Specific Conductance (Oumhos/cm)	Temperature (°C)	Total Dissolved Solids (mg/L)	Total Suspended Solids (mg/L)	Fecal Coliform (#/100 mls)	Total Coliform (#/100 mls)
258632	2F	2/1/2018	5.5	0.759	12.2	50	13.1	7.26	17.52	4.37	230	15	142	26.7	<2.0	<2.0
258632	2F	3/26/2018	4.9	0.6	11.9	53.3	13.1	7.47	16.03	4.37	223	13.6	148	15.6	<2.0	<2.0
258632	2F	5/14/2018	0.0014	<0.0010	15.3	51	13.1	6.4	16.02	4.25	220	14.1	162	10.8	<2.0	<2.0
258633	3F	2/1/2018	12.7	0.019	30.6	108	38	7.74	15.09	4.66	379	14.7	254	<3.3	<2.0	<2.0
258633	3F	3/26/2018	13.7	0.0099	35.2	113	39.9	8.63	13.83	4.78	399	11.8	302	2.4	<2.0	<2.0
258633	3F	5/14/2018	14	0.013	35	118	41.5	7.9	13.86	4.64	376	13.3	266	5.6	<2.0	<2.0
258635	4F	2/1/2018	5.8	0.019	23.9	124	20	6.81	6.56	5.49	339	14	252	<3.0	<2.0	<2.0
258635	4F	3/26/2018	5.1	0.0095	25.3	133	20.1	7.51	5.29	5.61	331	12.5	252	7.2	<2.0	<2.0
258635	4F	5/14/2018	6.2	0.014	27.6	126	20.2	7.15	5.03	5.67	315	13.5	252	20.4	<2.0	<2.0
258636	5F	2/1/2018	6.4	0.038	21.4	110	25.1	9.1	13.36	4.98	337	14.7	222	4.7	<2.0	<2.0
258636	5F	3/26/2018	6.1	0.022	25.9	107	25.7	9.81	12.98	5.05	342	13	250	20.8	<2.0	<2.0
258636	5F	5/14/2018	7	0.035	28	112	29.2	3.08	13.42	4.98	9.17	14.7	214	7.2	<2.0	<2.0
258620	1G	10/17/2018	4.3	0.0043	11.5	28	2.92	6.7	10.11	5.14	50.3	14.3	54	9.6	<2.0	>160
258620	1G	3/15/2018	4.7	0.0017	9.88	14	2.66	7.58	7.35	6.51	63.9	13.3	54	6	<2.0	<2.0
258620	1G	5/1/2018	5.2	0.0032	10.5	32	3.03	6.75	7.49	5.16	52.3	14.5	56	2.8	<2.0	<2.0
258628	2G	10/18/2018	10	0.016	30.7	93	28.1	9.48	13.52	4.82	321	15.7	428	506	<2.0	2
258628	2G	3/19/2018	9.2	0.0069	31.5	108	26.8	9.1	11.81	5.22	317	14.7	204	96	<2.0	<2.0
258628	2G	4/20/2018	7.7	0.0096	30.4	120	28.2	9.77	11.77	4.9	327	13.7	260	179	<2.0	<2.0
258630	3G	10/18/2017	9.2	0.013	27.5	113	37.3	6.71	12.02	4.61	311	15.7	200	85	<2.0	<2.0
258630	3G	3/9/2018	10.4	0.012	41.5	126	42.9	9.51	10.86	4.99	375	13.6	276	43.6	<2.0	<2.0
258630	3G	4/20/2018	9.4	0.013	42.2	140	45.2	6.01	10.64	4.92	380	13.7	260	24.2	<2.0	<2.0
258631	4G	10/18/2017	4.5	0.0032	15.1	118	56.5	8.38	13.55	5.4	281	17	182	41.2	<2.0	<2.0
258631	4G	3/9/2018	4.1	0.0023	17.3	113	55	9.69	13.54	5.59	284	13.5	202	49.2	<2.0	<2.0
258631	4G	4/20/2018	4.2	0.0035	18.6	122	54.9	8.35	12.32	5.56	288	13.6	246	24.8	<2.0	<2.0
258625	5G	10/18/2017	8.1	0.0089	22.5	111	27.5	9.23	13.62	5.15	304	15.5	210	201	<2.0	<2.0
258625	5G	3/9/2018	7.7	0.009	23.7	113	28.9	11.24	13.09	5.32	311	12.6	200	78.4	<2.0	<2.0
258625	5G	4/20/2018	7.6	0.011	25.2	113	27	9.35	12.58	5.41	300	13.2	224	32	<2.0	<2.0
258626	6G	10/18/2017	6.3	0.066	25.3	96	19	7.57	14.67	4.97	261	15.9	182	117	<2	54
258626	6G	3/9/2018	6.8	0.068	26	93.3	18.4	11.86	14.46	5.15	264	13.5	182	95.6	<2.0	<2.0
258626	6G	5/1/2018	8.2	0.085	26.4	86	19.5	7.5	13.94	5.1	257	14.3	188	178	<2	<2
258627	7G	10/18/2017	6.9	0.019	28.5	145	44.3	8.77	15.1	3.77	471	15.1	230	24.5	<2	<2.0
258627	7G	3/19/2018	6.9	0.0074	31.2	140	43.6	8.58	14.32	4.8	361	14.1	224	17.6	<2	<2
258627	7G	4/20/2018	6.5	0.009	33.3	154	46	9.5	14.21	4.61	367	13.9	250	38	<2.0	<2.0
258629	8G	10/18/2017	7.5	0.0061	17.5	58	9.58	5.84	16.85	5.27	190.7	15.3	138	4.8	<2.0	2
258629	8G	3/19/2018	6.7	0.0015	15.4	47	9.59	4.3	9.35	5.61	157.2	15.8	110	6	<2	<2
258629	8G	4/20/2018	6.2	0.0033	17.8	74	11	4.96	9.11	5.41	166.7	14.8	138	<2.0	<2.0	<2.0
258624	9G	11/15/2017	8	0.0073	21.4	103	41.8	9.46	12.88	5.44		14.9	194	45.6	<2.0	<2.0
258624	9G	3/15/2018	6.7	0.009	23.6	122	36.1	10.37	12.4	5.09	290	13.4	198	124	<2.0	<2.0
258624	9G	4/20/2018	5.2	0.011	24.4	124	39.5	9.62	12.16	4.99	297	13.4	206	277	<2.0	<2.0

**ANSRWF Background Groundwater Monitoring
Comparison of Maximum Sample Result to EPA Drinking Water Standards**

DNREC Well ID	Local Well ID	Arsenic (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Copper (mg/L)	Lead (mg/L)	Mercury (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Phosphorus (mg/L)	Selenium (mg/L)	Chloride (mg/L)	Iron (mg/L)	Manganese (mg/L)	Sulfate (mg/L)	Total Dissolved Solids at 180°C (mg/L)	Zinc (mg/L)
EPA Drinking Water MCL		0.01	0.005	0.1	1.3	0.015	0.002	10	1	N/A	0.05						
EPA Secondary Standard MCL												250	0.3	0.05	250	500	5
254881	1L	0.0012	0.0012	0.001	0.0017	0.0012	0.0002	5.59	0.1	0.06	0.015	96.9	0.375	0.06	21.9	276	0.024
254882	2L	0.0052	0.0046	0.0012	0.014	0.0046	0.0002	17.5	0.1	0.58	0.0049	26.7	1.3	0.72	28.6	248	0.052
254883	3L	0.002	0.0012	0.0019	0.0055	0.0012	0.0002	7.32	0.1	0.16	0.001	17.4	1.4	0.255	56	166	0.042
254884	4L	0.0015	0.0012	0.0012	0.0099	0.0012	0.000434	9.2	0.1	0.25	0.0016	11.5	1.2	0.022	29.8	130	0.029
258620	1G	0.001	0.0005	0.001	0.001	0.0005	0.0002	0.2	0.1	0.05	0.0011	11.5	0.017	0.012	3.03	56	0.0043
258624	9G	0.0049	0.0013	0.001	0.001	0.0013	0.0002	16.1	0.1	0.05	0.0016	24.4	0.362	0.156	41.8	206	0.011
258625	5G	0.0089	0.0014	0.001	0.0027	0.0014	0.0002	18.3	0.1	0.05	0.002	25.2	0.471	0.022	28.9	224	0.011
258626	6G	0.0012	0.0065	0.0014	0.0024	0.0065	0.0002	16.3	0.1	0.05	0.0043	26.4	0.356	0.049	19.5	188	0.085
258627	7G	0.0095	0.0023	0.001	0.0014	0.0023	0.0002	19.6	0.1	0.05	0.0026	33.3	0.381	0.09	46	250	0.019
258628	2G	0.0052	0.00096	0.001	0.001	0.00096	0.0002	20.4	0.1	0.05	0.0016	31.5	0.562	0.025	28.2	428	0.016
258629	8G	0.006	0.00096	0.001	0.001	0.00096	0.0002	11.2	0.1	0.05	0.001	17.8	0.196	0.094	11	138	0.0061
258630	3G	0.0081	0.0019	0.001	0.001	0.0019	0.0002	17.5	0.1	0.05	0.0031	42.2	0.405	0.023	45.2	276	0.013
258631	4G	0.0088	0.0015	0.001	0.001	0.0015	0.0002	9.31	0.1	0.08	0.0022	18.6	0.59	0.015	56.5	246	0.0035
258632	2F	0.001	0.0013	0.001	0.006	0.0013	0.0002	17	0.1	0.08	0.0013	15.3	0.121	0.171	13.1	162	0.759
258633	3F	0.0026	0.0012	0.001	0.0011	0.0012	0.0002	22.3	0.1	0.05	0.0015	35.2	0.344	0.039	41.5	302	0.019
258634	1F	0.004	0.0005	0.001	0.001	0.0005	0.0002	12.4	0.1	0.05	0.001	21.7	0.481	0.046	28.2	196	0.0032
258635	4F	0.0025	0.0005	0.001	0.0042	0.0005	0.0002	24.3	0.1	0.05	0.0016	27.6	0.287	0.0096	20.2	252	0.019
258636	5F	0.0028	0.00077	0.001	0.0045	0.00077	0.0002	21.9	0.1	0.05	0.0032	28	0.324	0.03	29.2	250	0.038
258637	1E	0.001	0.0005	0.001	0.0059	0.0005	0.0002	0.2	0.1	0.05	0.001	5.72	0.159	0.016	8.32	56	0.017
258638	2E	0.001	0.0005	0.001	0.0012	0.0005	0.0002	20.6	0.1	0.05	0.0013	32.5	0.096	0.119	12.4	210	0.025
258639	3E	0.001	0.0005	0.001	0.001	0.0005	0.0002	24.1	0.1	0.05	0.001	26.2	0.269	0.099	1.25	244	0.016
258640	4E	0.003	0.0012	0.0021	0.0089	0.0012	0.0002	19.3	0.1	6.34	0.0032	141	1.2	0.157	35.9	410	0.061
258641	5E	0.001	0.00066	0.001	0.001	0.00066	0.0002	15.3	0.1	0.05	0.0017	21.8	0.299	0.075	24.7	216	0.0077
258642	1D	0.0015	0.0005	0.001	0.0014	0.0005	0.0002	6.11	0.1	0.05	0.0016	196	0.246	0.032	14.3	432	0.019
258643	4D	0.0027	0.0014	0.001	0.001	0.0014	0.0002	19.4	0.1	0.05	0.0015	21.9	0.912	0.074	33.3	258	0.013
258645	3D	0.001	0.0005	0.0013	0.014	0.0005	0.0002	2.81	0.1	0.05	0.001	15.6	0.317	0.025	4.69	98	0.03