CAMDEN-WYOMING SEWER AND WATER AUTHORITY
WATER ALLOCATION PERMIT APPLICATION
FILED IN ACCORDANCE WITH THE REQUIREMENTS
OF 7 DEL. C. SUBSECTION 6003 (a)

Prepared for:

Camden Wyoming Sewer and Water Authority
(CWS&WA)
16 S. West Street
P. O. Box 405
Camden, Delaware 19934

and

Respectfully submitted to:

Ms. Patty Murray
Water Allocation Program Manager

State of Delaware
Department of Natural Resources and
Environmental Control (DNREC)
Allocations – Water Supply Section
Division of Water Resources
89 Kings Highway
Dover, Delaware 19901

Submitted by:

Soheil Gharebaghi, P.E.
CWS&WA Engineer
500 Quail Run
Wyoming, Delaware 19934
Tel.: (302) 698-9477
Mobile No.: (302) 373-3936
Email address: gharebaghi@comcast.net

December 21, 2023

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Attachments

CAMDEN-WYOMING SEWER & WATER AUTHORITY
P.O. BOX 405, CAMDEN-WYOMING, DELAWARE 19934
TEL (302) 697-6372 FAX (302) 697-2735
on the web at: https://cwswa.com/ Email Address: info@cwswa.com

December 21, 2023

Ms. Patty Murray, Program Manager
Water Allocations Program
DNREC, Division of Water Resources
89 Kings Highway
Dover, Delaware 19901

Subject: ***Camden-Wyoming Sewer & Water Authority (CWS&WA) Water Allocation***

Dear Ms. Murray: Patty

Kindly find enclosed a completed Application; Camden-Wyoming Sewer and Water Authority Water Allocation Permit Application to include Well No. 6, filed in accordance with the requirements of 7 DEL. C. Subsection 6003(a). As you know, in September 2015, American Water Well Systems installed Well No. 6 for the CWS&WA at 3680 Upper King Road, Camden, DE 19934 (Permit 249930). Please also find enclosed the Site Plans and Specifications for Well No. 6 (Please see Attachment 5). Attachment 5 includes the Approval of the Office of Drinking Water to construct a water treatment plant at the site, as well as Approval to Operate Well #6 and the 1 MG elevated water storage tank.

Regarding Unaccounted-for-Water (UFW) within the CWS&WA service area, please note the following:

(Please see Attachment 11)

Total Billed/Metered (Jan.1 through Nov. 30, 2023)	133,903,753 Gallons
Un-billed/Un-metered correction (0.25% of Billed/Metered)	335,000 Gallons
Used by CWS&WA* (Authorized/Accounted-for)	2,254,500 Gallons
Total Authorized/Accounted-for	136,493,253 Gallons
Total Production	147,160,164 Gallons

UFW = 1 – (Accounted for / Total Production) x 100

UFW = 1 – (136,493,253 / 147,160,164) x 100 = 7.25%

* The estimated magnitude of water "Used by CWS&WA" in 2023, includes, but is not limited, to the following:

1. Fire Hydrant Flushing and Flow Testing associated with the CWS&WA Fire Hydrant Maintenance, Testing, and Marking Program, (a requirement of the State Fire Marshal's Office),
2. Sanitary Sewer main, service laterals, and pump stations' wet well flushing and maintenance,
3. Flushing of newly installed water mains, post super chlorination,
4. Water loss during repair of leaks from service laterals and broken water mains.

As indicated under item No. 19A of the Authority's Application, the CWS&WA operates its own in-house construction crews that continuously monitor the water distribution system for leaks and make immediate repairs to the same, as necessary, so as to minimize water losses due to leaks from broken water mains and service laterals.

Regarding CWS&WA's current water allocation, under Allocation #83-0017R, which permits the withdrawal of 0.9 MG per day, 21 MG per month, and 219 MG per year. Please note that the withdrawals represented a combined withdrawal from both wells, Well #2R and Well #4. In the attached Application Page 8, the requested rates have been divided between the Authority's Wells #4, #2R and #6, and, the total requested rates per year has been increased to 240 MG per year to account for the anticipated growth of the Towns of Camden and Wyoming. The Daily and Monthly requested rates have been increased to 1.1 MG and 23.1 MG, respectively.

Enclosed, please also find two checks, made payable to the **State of Delaware**, one for $375, Permit Fee, and one for $100, for advertisements associated with this Application.

We hope that the enclosed Application for a Water Allocation Permit and its attachments will meet with your approval and satisfy the requirements of the applicable sections of the laws of the State of Delaware.

Again, thank you very much for your time and consideration. It was a pleasure seeing you and I look forward to working with you.

Please do not hesitate to call should you have any questions or if we might provide additional information in support of CWS&WA's Application for Water Allocation.

Very truly yours,
CAMDEN-WYOMING SEWER & WATER AUTHORITY

Soheil Gharebaghi, P.E.
CWS&WA Engineer

Enclosures as noted

cc: The Honorable CWS&WA Board Members
Mr. Harold L. Scott, Sr., CWS&WA Superintendent

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
APPLICATION FOR A WATER ALLOCATION PERMIT

VIOLATIONS ARE SUBJECT TO PENALTY PROVIDED BY 7 DEL. C. CHAPTER 60

MAIL TO:

ALLOCATIONS - WATER SUPPLY BRANCH
DIV. WATER RESOURCES - DNREC
89 KINGS HIGHWAY
DOVER, DE 19901
FOR INFORMATION: (302) 739-4793

OFFICIAL USE ONLY:

DNREC ALLOCATION NO. **83-0017R**
DRBC DOCKET NO. **D- 1997030 CP**

APPLICATION FEE VALIDATION -->
RECEIVED BY _____

PLEASE TYPE OR PRINT AND CAREFULLY FOLLOW THE INSTRUCTIONS!

1. Owner's Name **Camden Wyoming Sewer and Water Authority (CWS&WA)**
   Address **16 S. West Street, P. O. Box 405**
   City **Camden** State **DE** Zip **19934** Telephone # **(302) 697- 6372**

2. Project Name **Well No. 6**
   Address **16 S. West Street**
   City **Camden** State **DE** Zip **19934** Telephone # **(302) 697- 6372**

3. Date of Application **December 21, 2023**

4. Name, address, and telephone # of geologist (or engineer):
   Soheil Gharebaghi, P.E., CWS&WA Engineer
   500 Quail Run, Wyoming, DE 19934
   Tel.: (302) 698-9477 / Mobile: (302) 697-6372
   Email: gharebaghi@comcast.net

5. Attach a map (USGS 7 1/2-minute quadrangle only) with accurately and clearly marked locations of all facilities (wells, streams, and pond intakes). **Applications for irrigation systems must also show the acreage served by each facility. All applications must show, where appropriate, the locations of service areas, water tanks, interconnections, and property/corporate boundaries.**

Please see Attachment #1

6. Purpose (check): __X__ Public _____ Industrial Process _____ Industrial Cooling
   _____ Irrigation _____ Commercial _____ Contaminant Recovery _____ Other_____

7. Facility information: (attach additional sheet(s) as instructed)

A. Facility Local ID	B. Facility Permit No.	C. Maximum Pump Capacity (GPM)	D. Maximum Use (Gallons Per Day)
Well No.: 2R	227936	500	900,000

8. Requested rates (MG): **0.9 MG per** Day **21 MG per** Month **219 MG per** Year
   Sub-Total **X** System Total _____ (Check One)

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
APPLICATION FOR A WATER ALLOCATION PERMIT

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   Address: 16 S. West Street, P. O. Box 405
   City: Camden State DE Zip 19934 Telephone # (302) 697- 6372

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3. Date of Application: December 21, 2023

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Please see Attachment #1

6. Purpose (check): __X__ Public ____ Industrial Process ____ Industrial Cooling
   ____ Irrigation ____ Commercial ____ Contaminant Recovery ____ Other_____

7. Facility information: (attach additional sheet(s) as instructed)

A. Facility Local ID	B. Facility Permit No.	C. Maximum Pump Capacity (GPM)	D. Maximum Use (Gallons Per Day)
Well No.: 4	10078	600	500,000

8. Requested rates (MG): 0.6 MG per Day 12.6 MG per Month 131.4 MG per Year
   Sub-Total X System Total _____ (Check One)

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
APPLICATION FOR A WATER ALLOCATION PERMIT

VIOLATIONS ARE SUBJECT TO PENALTY PROVIDED BY 7 DEL. C. CHAPTER 60

MAIL TO:

ALLOCATIONS - WATER SUPPLY BRANCH
DIV. WATER RESOURCES - DNREC
89 KINGS HIGHWAY
DOVER, DE 19901
FOR INFORMATION: (302) 739-4793

OFFICIAL USE ONLY:

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   Please see Attachment #1

6. Purpose (check): __X__ Public _____ Industrial Process _____ Industrial Cooling
   _____ Irrigation _____ Commercial _____ Contaminant Recovery _____ Other_____

7. Facility information: (attach additional sheet(s) as instructed)

A. Facility Local ID	B. Facility Permit No.	C. Maximum Pump Capacity (GPM)	D. Maximum Use (Gallons Per Day)
Well No.: 6	249930	500	720,000

8. Requested rates (MG): **0.9 MG per** Day **21 MG per** Month **219 MG per** Year
   Sub-Total **X** System Total _____ (Check One)

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
APPLICATION FOR A WATER ALLOCATION PERMIT

VIOLATIONS ARE SUBJECT TO PENALTY PROVIDED BY 7 DEL. C. CHAPTER 60

MAIL TO:

ALLOCATIONS - WATER SUPPLY BRANCH
DIV. WATER RESOURCES - DNREC
89 KINGS HIGHWAY
DOVER, DE 19901
FOR INFORMATION: (302) 739-4793

OFFICIAL USE ONLY:

DNREC ALLOCATION NO. **83-0017R**
DRBC DOCKET NO. D-_____-_____ CP

APPLICATION FEE VALIDATION -->
RECEIVED BY _____

PLEASE TYPE OR PRINT AND CAREFULLY FOLLOW THE INSTRUCTIONS!

1. Owner's Name **Camden Wyoming Sewer and Water Authority (CWS&WA)**
   Address **16 S. West Street, P. O. Box 405**
   City **Camden** State **DE** Zip **19934** Telephone # **(302) 697- 6372**

2. Project Name **Well No. 6**
   Address **16 S. West Street**
   City **Camden** State **DE** Zip **19934** Telephone # **(302) 697- 6372**

3. Date of Application **December 21, 2023**

4. Name, address, and telephone # of geologist (or engineer): **Soheil Gharebaghi, P.E., CWS&WA Engineer**
   500 Quail Run, Wyoming, DE 19934
   Tel.: (302) 698-9477 / (302) 697-6372
   Email: gharebaghi@comcast.net

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Please see Attachment #1

6. Purpose (check): _X_ Public _____ Industrial Process _____ Industrial Cooling
   _____ Irrigation _____ Commercial _____ Contaminant Recovery _____ Other_____

7. Facility information: (attach additional sheet(s) as instructed)

A. Facility Local ID	B. Facility Permit No.	C. Maximum Pump Capacity (GPM)	D. Maximum Use (Gallons Per Day)

8. Requested rates (MG): **1.1 MG per** Day **23.1 MG per** Month **240 MG per** Year
   Sub-Total _____ System Total **X** (Check One)

9. For irrigation projects only: Total tillable acreage: _____ N/A _____ Irrigated acreage: _____ N/A _____

10. What is the estimated consumptive use, as a percentage of the total withdrawal?

    100%

11. Can water be transferred from facilities other than those listed in #8 (above)? __ NO __ If so, give the name and location, the use for the water, and list average daily, monthly, and yearly flows. (Interconnections with other systems should be marked on the map attached for #6).

12. Discuss the feasibility of interconnecting with other systems. (not applicable to irrigation projects).

    Interconnections are physically possible with Tidewater Utilities, Inc. (TUI) water distribution system in the vicinity of the CWS&WA service area along Lochmeath Way and Upper King Road, in the Town of Camden, Kent County, Delaware. Discussions with TUI regarding possible interconnections have not resulted in any agreements. Interconnections could possibly be negotiated with TUI in the future. In this regard, it must be noted that the CWS&WA Resolution No.: 2006-02 and correspondence from TUI addressed to the CWS&WA and State of Delaware Public Service Commission (PSC), dated August 19, 2009 (Please see Attachment #2), provide for compensation to TUI for the abandonment of TUI's Certificate of Public Convenience and Necessity (CPCN) for properties where the property owners request CWS&WA's service and where TUI holds the properties' CPCN, but, TUI does not have the ability to serve the territory's water utility needs.

13. For each well listed in #8 (above), attach copies of Completion Reports and pumping test reports as specified in the Well Permit. If these reports do not exist, attach all available information about the wells or intakes.

    Please see Attachments #3 and #4

14. Attach copies of the latest reports on chemical and bacteriological analyses for the water from each facility. (not applicable to irrigation wells and irrigation surface-intakes).

    Please see Attachment #6

15. Describe all treatment the withdrawn water will receive prior to use.

    The withdrawn water from Well #2R is Chlorinated and Fluoridated. Chlorination is to provide a residual chlorine concentration of 0.3 mg/l, and Fluoridation is to provide a fluoride level of 2.0 mg/l in the treated water.
    The withdrawn waters from Well #4 and Well #6 are only chlorinated for the same reason, which is to maintain a residual chlorine concentration of 0.3 mg/l.

16. Describe the method of treatment for this project's waste water. If the waste water is discharged to surface waters or lands, attach copies of the latest chemical and bacteriological analyses of the effluent, including temperature (DMRs), and where appropriate the disposal project study. Otherwise, name the treatment facility for this waste water.

    The Kent County regional wastewater treatment facility receives the CWS&WA service area's wastewater.

17. Are all facilities listed in #7 (above) individually metered? __ Yes __. Identify those not metered and submit a proposed schedule for meter installation.

18. For public supply projects only: what percent of individual service-connections are metered? __ 100% __ If not 100%, give a schedule of when it will be 100%. What is the present population? __ Approx. 7,559 __ in five years? __ Approx. 13,500 __.

    Present and projected population estimates are based on World Population Review for the Towns of Camden and Wyoming, Delaware, at https://worldpopulationreview.com/us-cities/wyoming-de-population and https://worldpopulationreview.com/us-cities/camden-de-population

19. Conservation Program for projects with total system water withdrawals over of 1.0 mgd. Attach the appropriate program description. (not applicable to irrigation projects).

A. **Public water supply systems**: A Conservation Program which provides for the monitoring, prevention, and repair of leakage throughout the system, provides customer information relating to water conservation and water-saving devices.

B. **Industrial, Commercial and other water supply projects**: A Conservation Program which provides for the investigation of all feasible conservation measures, and provides for the implementation of those feasible as soon as possible. A description of leak-detection monitoring and all feasible process-modifications for minimizing both water usage and loss.

The CWS&WA total system water withdrawals are currently less than 1.0 mgd. However, the CWS&WA provides information regarding water conservation as well as referrals to other online resources aimed at educating consumers regarding the benefits of water conservation (Please see Attachment #7).
The CWS&WA also operates its own in-house construction crews, construction equipment and resources. The Authority's construction crews continuously monitor the water distribution system for leaks and make immediate repairs to the same as necessary. Provisions have also been employed for afterhours emergency response to control and repair water leaks.
The CWS&WA Resolution No.: 2010-01 clarifies the ownership of, and maintenance responsibilities for, water utility service laterals (Please see Attachment #8). Whether owned and maintained by the CWS&WA, or its customers, water leaks from mains, service laterals, or customer side facilities, are stopped and repaired as quickly as practicable.
The CWS&WA also audits customer accounts and tracks water usage not sold through metering. These include, but are not limited to, Fire Department usage, Maintenance usage - such as pressure washing of sewer pump stations - water lost through leaks, Fire Hydrant testing and Flow testing water usages. These efforts have resulted in the reduction of Unaccounted for Water down to 7.5% in 2023, from January 1, 2023 to November 30, 2023 (Please see Attachment 11).

19 Drought Emergency Plan for projects with total system water withdrawal over 1.0 mgd. Attach the following plan description. (not applicable to irrigation projects).

A. Identification of all priority uses for water throughout the system or service are, priority locations, water usage restriction schedules, implementation procedures, and any alternate sources of water.

The CWS&WA total water withdrawals from the Cheswold Aquifer (Well #2R) and the Piney Point Aquifer (Wells #4 & #6) could be said to be minuscule when compared to other neighboring water utility systems serving much larger populations. The CWS&WA continually monitors the static depth of the water table at the three wells in each of the above aquifers, for any trends pointing to appreciable drops in the static water level in the three wells. In particular, in the event of drought or restrictions that might be imposed on the magnitude of water withdrawals from the Piney Point Aquifer (which has been identified as a fragile resource which is to be protected from the adverse effects of over withdrawal), the CWS&WA closely monitors the static depths to water tables at its wells and will report its findings to the Division of Water Resources for evaluation of possible measures to mitigate unfavorable consequences.

The CWS&WA owns and operates three existing wells in separate and historically reliable confined aquifers - Cheswold and Piney Point - including well #6 - so as to back up its source water in the event of unforeseen water withdrawal restrictions that might be necessary, due to drought, or other factors, on either aquifer. Furthermore, the CWS&WA Well #6 represents a third backup well capacity which enables the CWS&WA to meet peak day demands even when one well is out of service.

20 AFFIDAVIT

I, Soheil Gharebaghi, P.E., CWS&WA Engineer, hereby affirm this application and any plans, reports, or documents submitted with this application to be true and correct to the best of my knowledge and belief.

Signature _____

Date 12/21/23

SWORN TO AND SUBSCRIBED before me the 21st day of December, 2023 A.D., 2023.

Alicia M. Sumpter
NOTARY PUBLIC
STATE OF DELAWARE
My Commission Expires 04/17/2024

_____
NOTARY PUBLIC

*Applications for withdrawal for agricultural irrigation are not required to be notarized.

CAMDEN-WYOMING SEWER & WATER AUTHORITY
DNREC WATER WELL ALLOCATION PERMIT DATA
ISSUED: JULY 1, 2011

FACILITY NAME	LOCATION	DNREC ID NO.	ALLOCATION PERMIT NO.	AQUIFER	LATITUDE	LONGITUDE	EFF. DATE	EXP. DATE	MODIFIED DATE
2R	16 S. West St.	227937	83-0017RM1	Cheswold	39°-6'-54.7560"	-75°-32'-45.9276	09/07/1995	09/07/2025	06/30/2011
4	14 N. West St.	227937	83-0017S	Piney Point	39°-6'-47.8260"	-75°-32'-49.7976	07/01/2011	07/01/2041	-

FACILITY NAME	CAPACITY (GPM)	PUMPING RATE (GPD)	MAX. DAILY	MAX. MONTH	MAX. YEAR	WATER LEVEL (FBLS)
2R	500	720,000	900,000	21,000,000	219,000,000	180
4	600	600,000	600,000	12,600,000	131,400,000	345
COMBINED SYSTEM	-	-	**1,100,000**	**23,100,000**	**219,000,000**	-

CAMDEN-WYOMING SEWER & WATER AUTHORITY
DNREC WATER WELL ALLOCATION PERMIT DATA
ISSUED: JULY 1, 2011

New Well #6 Data/Requested Rates (in red ink)
12/21/2023

FACILITY NAME	LOCATION	DNREC ID NO.	ALLOCATION PERMIT NO.	AQUIFER	LATITUDE	LONGITUDE	EFF. DATE	EXP. DATE	MODIFIED DATE
2R	16 S. West St.	227937	83-0017RM1	Cheswold	39°-6'-54.7560"	-75°-32'-45.9276	09/07/1995	09/07/2025	06/30/2011
4	14 N. West St.	10078	83-0017S	Piney Point	39°-6'-47.8260"	-75°-32'-49.7976	07/01/2011	07/01/2041	-
6	3680 Upper King Rd. Camden, DE 19934	249930	.....	Piney Point	39°-05'-58"	-75°-33'-19"	07/08/2015	.....	-

FACILITY NAME	CAPACITY (GPM)	PUMPING RATE (GPD)	MAX. DAILY (GAL)	MAX. MONTH (GAL)	MAX. YEAR (GAL)	WATER LEVEL (FBLS)
2R	500	720,000	900,000	21,000,000	219,000,000	180
4	600	600,000	600,000	12,600,000	131,400,000	345
6	500	720,000	900,000	21,000,000	219,000,000	480
COMBINED SYSTEM	-	-	**1,100,000**	**23,100,000**	**240,000,000**	-

PLEASE SEE ATTACHED ENLARGEMENT OF CWS&WA SERVICE AREA

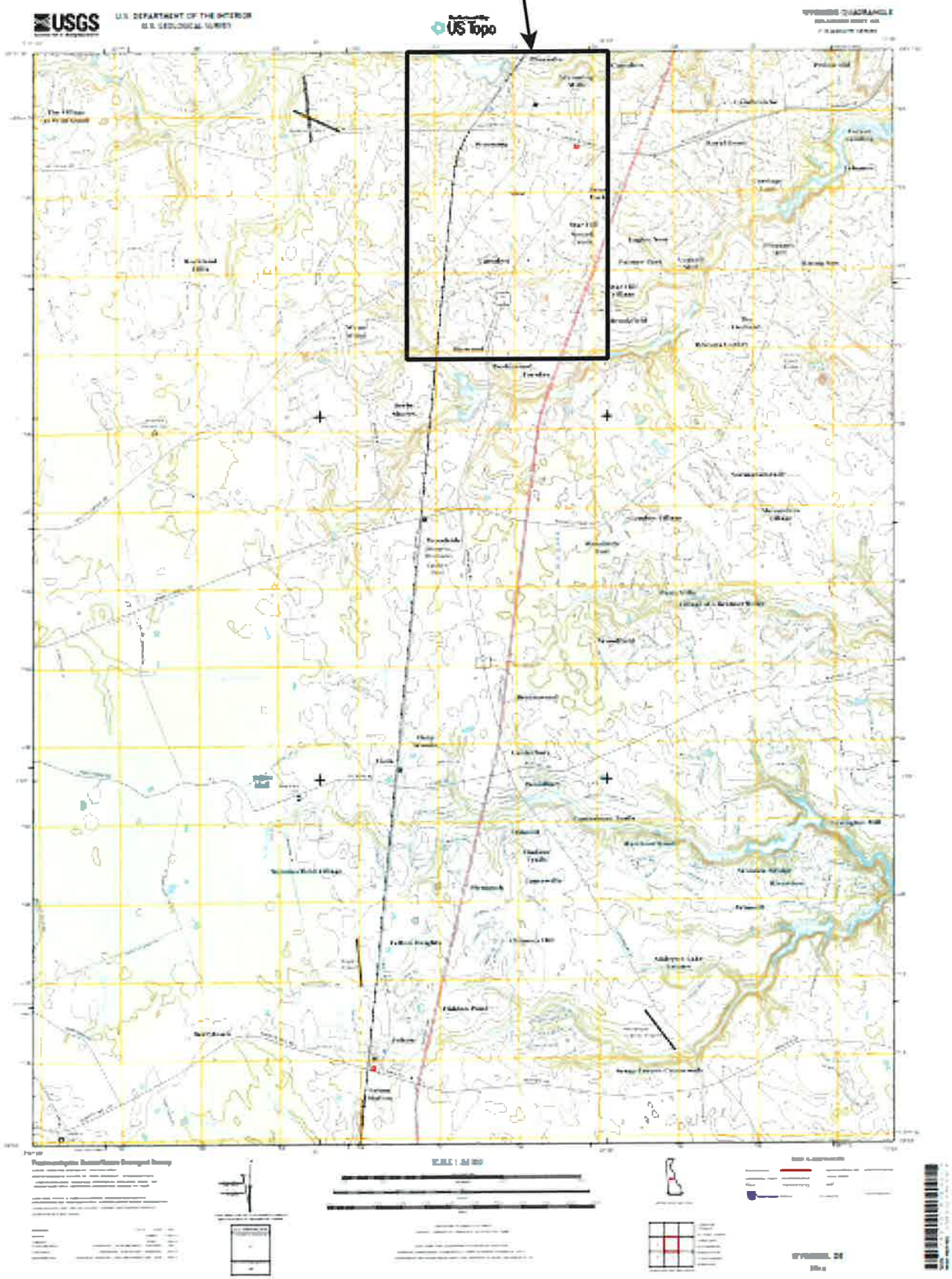
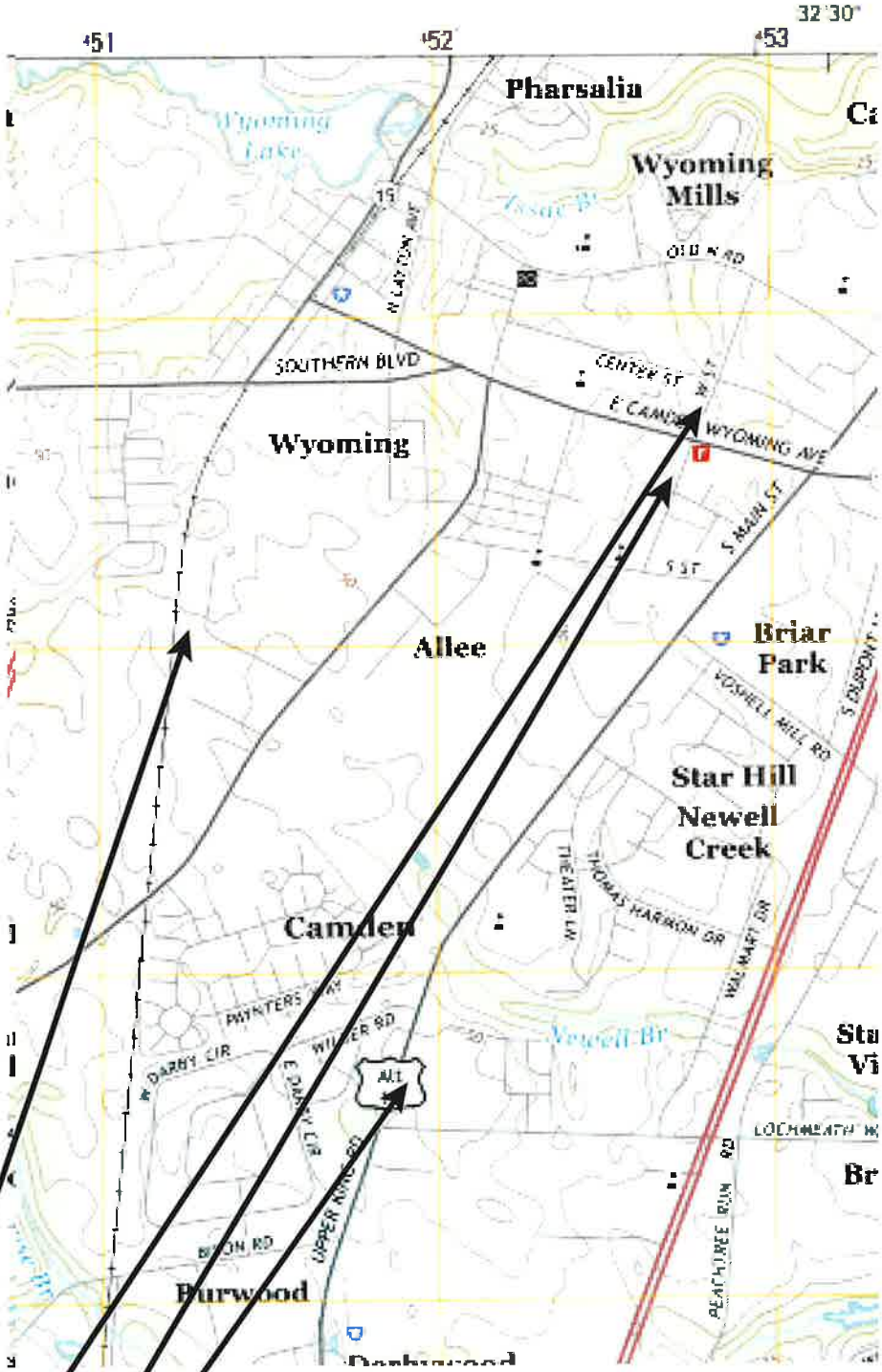


EXHIBIT TO ACCOMPANY CWS&WA APPLICATION FOR WATER ALLOCATION PERMIT
DECEMBER 5, 2023



WELL NO. 6 AND CWS&WA 1.0 MG ELEVATED WATER STORAGE TANK

WELL NO. 2R AND CWS&WA 0.3 MG ELEVATED WATER STORAGE TANK

CWS&WA WELL NO. 4

CWS&WA 1.0 MG ELEVATED WATER STORAGE TANK

NOT TO SCALE
DATE: DECEMBER 5, 2023

* COPY OF A PORTION OF 2014, WYOMING, DEL. USGS 7½ MINUTE SERIES (TOPOGRAPHIC)

CAMDEN-WYOMING SEWER & WATER AUTHORITY (CWS&WA)

P.O. BOX 405, CAMDEN-WYOMING, DE 19934
PHONE (302) 697-6372 FAX (302) 697-2735

EXHIBIT * TO ACCOMPANY APPLICATION FOR A WATER ALLOCATION PERMIT
TO INCLUDE WELL NO. 6

PREPARED BY: SOHEIL GHAREBAGHI, P.E.
CWS&WA ENGINEER
500 QUAIL RUN, WYOMING, DE 19934
TEL.: (302) 698-9477
MOBILE.: (302) 373-3936
EMAIL: gharebaghi@comcast.net

Res. #2006-02

RESOLUTION OF THE CAMDEN-WYOMING SEWER AND WATER AUTHORITY

AND NOW, TO-WIT, on this 13th day of June 2006, the Camden-Wyoming Sewer and Water Authority (hereinafter referred to as "CWS&WA"), a corporation of the State of Delaware, formed by the towns of Camden and Wyoming, pursuant to the provisions of Chapter 14, Title 16 of the Delaware Code, as amended, hereby **RESOLVES**, as follows:

WHEREAS, the CWS&WA water distribution system adjoins the Southern Growth Area of the Town of Camden, including properties along Lochmeath Way and Upper King Road; and

WHEREAS, the Certificate of Public Convenience and Necessity (CPCN) for the area south of Lochmeath Way is currently held by Tidewater Utilities, Inc. (TUI), and TUI does not currently provide water utility services there; and

WHEREAS, the CWS&WA has been approached by certain property owners in the area described above, where existing water wells contain nitrates and other contaminants, and requested the CWS&WA's water utility services; and

WHEREAS, at this time TUI has identified $1,159.62 per Equivalent Dwelling Units (EDU's) as a one time charge by TUI to abandon TUI's CPCN interests in favor of the CWS&WA for EDU's for which $1,159.62 has been paid;

For the reasons indicated above the CWS&WA will, in the interest of community assistance, upon receipt of applications filed by property owners who could be served by CWS&WA but whose properties's CPCN's are currently held by TUI, requesting CWS&WA water utility services, facilitate the transfer of CPCN rights from TUI to CWS&WA by collecting the currently $1,159.62 per EDU (subject to change by TUI) from the subject property owners and passing the same through to TUI for the abandonment of TUI's CPCN interests and transfer of the same to the CWS&WA to enable the CWS&WA to provide water utility services to the subject properties.

IT IS HEREBY CERTIFIED that the above resolution was adopted by the CWS&WA, at its Regular Public Meeting, this 13th day of, June 2006.

CWS&WA Chairperson

TIDEWATER
UTILITIES, INC.

"Southern Delaware's Premier Water Company Since 1964"

August 19, 2009

Mr. Harold Scott
Camden Wyoming Sewer & Water Authority
PO Box 405
Camden Wyoming, DE 19934

RE: Sale of CPCNs along Lochmeath Way

Dear Mr. Scott:

Please consider this letter a follow-up to my November 1, 2005 letter regarding the above referenced matter.

My November 1, 2005 letter indicated that Tidewater Utilities, Inc. (TUI) was willing to abandon certain CPCNs for the single residential properties along Lochmeath Way for $1,159.62 per EDU if the Camden Wyoming Sewer and Water Authority (CWSWA) was interested in serving them from your 12" water main along Lochmeath Way. TUI remains committed to work with the CWSWA on this issue, and will honor CWSWA's request that TUI abandon the CPCN for Lankford Bay Associates, Parcel # NM-00-103.07-01-10.13-000 at the charge referenced in my November 1, 2005 letter.

However, it should be noted for future requests that the CPCN purchase amount, as mentioned in the CWSWA resolution dated June 13, 2006 (copy attached), is subject to change from time to time and is currently $1,525.00. In the future, should the CWSWA request that TUI abandon additional parcels, we will need to discuss the request and the then current CPCN purchase charge at the time the request is made.

I look forward to hearing from you. Please contact me at 302-734-7500, ext. 1062 to arrange a meeting.

Sincerely,

Gerard L. Esposito

cc: Richard M. Risoldi, Vice President of Subsidiary Operation
Bruce E. Patrick, Vice President of Engineering
Kirsten E. Higgins, Manager of Planning and Development

1100 South Little Creek Road • Dover, DE 19901 • 302-734-7500 • 1-800-523-7224 • fax 302-734-9297

TIDEWATER
UTILITIES, INC.

"Southern Delaware's Premier Water Company Since 1964"

August 19, 2009

Public Service Commission
861 Silver Lake Boulevard
Cannon Building, Suite 100
Dover, DE 19904

RE: CPCN Abandonment for Lands of Lankford Bay Associates – Parcel # NM-00-103.07-01-10.13-000

Dear Commissioners:

This letter is to serve as official notice that Tidewater Utilities, Inc. (TUI) intends to abandon its Certificate of Public Convenience and Necessity (CPCN), with all rights and obligations under current law, for the current tax parcel or the former tax parcel number NM-00-103.07-01-10.13-000, also known as the Lands of Lankford Bay Associates. This abandonment is contingent upon the Public Service Commission's approval of a CPCN application submitted by the Camden Wyoming Sewer and Water Authority for the above parcel. If the Camden Wyoming Sewer and Water Authority does not submit an application for the above referenced parcel or the Public Service Commission does not approve such application, TUI wishes to retain the CPCN for the above referenced parcel.

If you should require any additional information, please feel free to contact me at 302-734-7500, ext. 1023.

Sincerely,

Bruce E. Patrick

Bruce E. Patrick, P.E.
Vice President of Engineering

cc: Kevin Neilson, Public Service Commission
Gerard L. Esposito, President
Kirsten Higgins, Director of Planning and Development
Ed Ide, P.E.

A.C. Schultes of Delaware, Inc.
P.O. Box 188 * 16289 Sussex Highway
Bridgeville, DE 19933
24 Hour Service
(302) 337-8254
Fax (302) 337-8234

CAMDEN-WYOMING SEWER & WATER AUTHORITY
2016 MAINTENANCE INSPECTION
NORTH WELL #1

ACSD JOB #7147

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A.C. SCHULTES OF DELAWARE, INC.

MAINTENANCE INSPECTION DATA SHEET

CUSTOMER: CAMDEN-WYOMING SEWER & WATER AUTHORITY JOB #: 7147

WELL #: NORTH WELL #1 WELL LOCATION: WEST STREET, CAMDEN-WYOMING, DE

YEAR DRILLED: 1970 WELL DIAMETER: 12" X 6" WELL DEPTH: 460'

ORIGINAL STATIC LEVEL: 102' ORIGINAL SPECIFIC CAPACITY: UNK

DATE LAST TESTED: UNK FLOW MEASURED BY: UNK

PREVIOUS STATIC LEVEL: UNK PREVIOUS SPECIFIC CAPACITY: UNK

PUMP

MANUFACTURER: FLOWSERVE TYPE: VTP

MODEL #: 10EMM-4 DESIGN CAPACITY: 600 TDH: 375'

MOTOR

MANUFACTURER: WESTINGHOUSE TYPE: VHS

MODEL #: AMRCYC SERIAL #: VH0574

HP: 75 VOLTAGE: 230 PHASE: 3

RPM: 1765 CYCLE: 60 MEG VALUE: INFINITY

WINDING RESISTANCE: 1.79 VOLTAGE DROP (IF ANY): 2-4 VOLTS

VIBRATION READINGS: TOP: SEE ATTACHED BOTTOM:

MOTOR LEADS CONDITION: GOOD: ✓ FAIR: POOR:

LUBRICATION LEVELS: GOOD: ✓ FAIR: POOR:

ELECTRICAL

STARTER MANUFACTURER: SQUARE-D STARTER TYPE: SOFT START SIZE:

HEATER # AND SIZE: N/A BREAKER SIZE: MAG-GARD 250 AMP

WIRE SIZE/TYPE: #1 THHN / CONDUIT SIZE/LENGTH: 3" HARD TO 2-1/2" SOFT

VENTILATION OF PUMP HOUSE: FAN: ✓ VENTS: ✓ WINDOW:

A.C. SCHULTES OF DELAWARE, INC.

MAINTENANCE AND INSPECTION DATA SHEET

WELL HEAD

DISCHARGE TYPE: PITLESS: _____ WELL SEAL: _____ D. HEAD ✓

DISCHARGE MANUFACTURER/MODEL #: BYRON JACKSON

DISCHARGE PIPING: SIZE: 6" TO 4" CONDITION: GOOD

WATER SLINGER: SIZE: 1-1/2" CONDITION: GOOD

STUFFING BOX STUDS & NUTS: SIZE: 3/8" STUDS CONDITION: GOOD

SOLENOID: SIZE: N/A CONDITION: _____

TEST GAUGES NEEDED: YES: ✓ (300 PSI) NO: _____

NORMAL OPERATING AT DISCHARGE: 40-50 PSI

PUMP FOUNDATION: GOOD: ✓ FAIR: _____ POOR: _____

SAMPLE TAP LOCATION: ON 6" DISCHARGE / 1/2" BRASS CONDITION: GOOD

AIR RELIEF PIPING: OUTSIDE: ✓ ON FLOOR: _____ INTO DRAIN: _____

SCREEN ON AIR RELIEF: YES: ✓ NO: _____

M-SCOPE LOCATION: AT DISCHARGE HEAD SIZE: 1" POLY

FLOWMETER MFG./SIZE: NEPTUNE ACCURATE: ✓ INACCURATE: _____

COMMENTS: _____

INSPECTED BY: MASTEN/QUILLEN **DATE:** 9/1/2016

A.C. SCHULTES OF DELAWARE, INC.

WELL TEST

CUSTOMER: CAMDEN-WYOMING SEWER & WATER AUTHORITY
JOB #: 7147
DATE: 9/1/2016
WELL NO: NORTH #1
WELL DIA: 12" X 6"
WELL DEPTH: 460'
PERMIT TAG #: UNK
W/L DATUM: M-SCOPE

TYPE OF TEST: (Check One)
STANDARD FLOW TEST: ✓
PRE-REDEVELOPMENT:
POST-REDEVELOPMENT:

STATIC WATER LEVEL 20 MINUTES BEFORE START OF TEST: 176
STATIC WATER LEVEL 10 MINUTES BEFORE START OF TEST: 176

	TIME	GPM	PUMPING LEVEL (FEET)	DRAWDOWN (FEET)	SPECIFIC CAPACITY	
START	10:30					
1 MIN.	10:31	413	223.49	47.49	8.70	
2 MIN.	10:32	413	225.00	49.00	8.43	
3 MIN.	10:33	413	225.10	49.10	8.41	
4 MIN.	10:34	413	225.12	49.12	8.41	
5 MIN.	10:35	413	225.19	49.19	8.40	
6 MIN.	10:36	413	225.20	49.20	8.39	
7 MIN.	10:37	413	225.19	49.19	8.40	
8 MIN.	10:38	413	225.22	49.22	8.39	
9 MIN.	10:39	413	225.19	49.19	8.40	
10 MIN.	10:40	413	225.19	49.19	8.40	
12 MIN.	10:42	413	225.20	49.20	8.39	
14 MIN.	10:44	413	225.19	49.19	8.40	
16 MIN.	10:46	413	225.20	49.20	8.39	
18 MIN.	10:48	413	225.19	49.19	8.40	
20 MIN.	10:50	413	225.19	49.19	8.40	
22 MIN.	10:52	413	225.20	49.20	8.39	
24 MIN.	10:54	413	225.20	49.20	8.39	
26 MIN.	10:56	413	225.20	49.20	8.39	
28 MIN.	10:58	413	225.20	49.20	8.39	
30 MIN.	11:00	413	225.19	49.19	8.40	
35 MIN.	11:05	413	225.20	49.20	8.39	
40 MIN.	11:10	413	225.20	49.20	8.39	
45 MIN.	11:15	413	225.19	49.19	8.40	
50 MIN.	11:20	413	225.20	49.20	8.39	
55 MIN.	11:25	413	225.20	49.20	8.39	
60 MIN.	11:30	413	225.20	49.20	8.39	

A.C. SCHULTES OF DELAWARE, INC
SUBMERSIBLE / VTP TEST REPORT

CUSTOMER: CAMDEN-WYOMING SEWER & WATER AUTHORITY JOB NO: 7147

WELL NO: NORTH #1 WELL LOCATION WEST STREET, CAMDEN-WYOMING, DE

WELL DIA: 12" X 6" WELL DEPTH: 460' SCREEN DIAM: 6" LENGTH: 118'

CURRENT STATIC LEVEL: 176' WATER LEVEL DATUM: M-SCOPE

ORIFICE SIZE 6" X 5"

PUMP MFG: FLOWSERVE MODEL # /SERIAL #: 10EMM-4

PUMP DESIGN CAPACITY 600 TDH 375'

PUMP DIAMETER: 10" COLUMN DIA / TYPE: 6" / STRAIGHT SETTING DEPTH: 230'

MOTOR MFG: WESTINGHOUSE HP: 75 VOLTAGE: 230 PHASE: 3

TIME	TEST CAPACITY	DISCHARGE PRESSURE	PUMPING LEVEL (FEET)	DRAWDOWN (FEET)	SPECIFIC CAPACITY	VOLTAGE	AMPS
9:30	0	140	176.00'	-	-	244/242/244	-
9:45	363	100	216.50'	40.50'	8.96	240/240/240	151/150/150
10:00	413	90	225.19'	49.19'	8.40	240/239/240	153/152/155
*10:15	474	80	*230.00'	54.00'	8.77	240/238/240	162/163/162

REMARKS: 1) *BOTTOM OF POLY LINE FOR TRANSDUCER - TRANSDUCER & WATER LEVEL PROBE ARE CORRECT IN DEPTHS

2) COULD NOT RUN SYSTEM BELOW 80 PSI OR PUMP WOULD BREAK SUCTION. VALVED BACK TO 95 PSI, 420 GPM @ 223' INTO THE SYSTEM. 8' SUBMERGENCE OVER THE PUMP AND HOLDING

3) STATIC LEVEL HAS DROPPED SIGNIFICANTLY & WELL NEEDS TO BE REDEVELOPED

4) PUMP IS OPERATING BELOW THE DESIGN CURVE AT LOWER CAPACITIES. COULD NOT RUN AT DESIGN FLOW DUE TO WELL CAPACITY - NEED TO PULL & INSPECT

5) MOTOR IS VIBRATING ABOVE THE MANUFACTURE'S RECOMMENDED LEVELS ON THE TOP BEARING - NEED TO PULL & INSPECT

TEST EQUIP. NEEDED:

ORIFICE SIZE: 6" X 5"

HOSE SIZE: 6" LENGTH: 50'

VALVE SIZE: N/A TYPE: N/A

SPOOL SIZE: N/A LENGTH: N/A

DATE INSPECTED: 9/1/2016 INSPECTED BY: MASTEN/QUILLEN

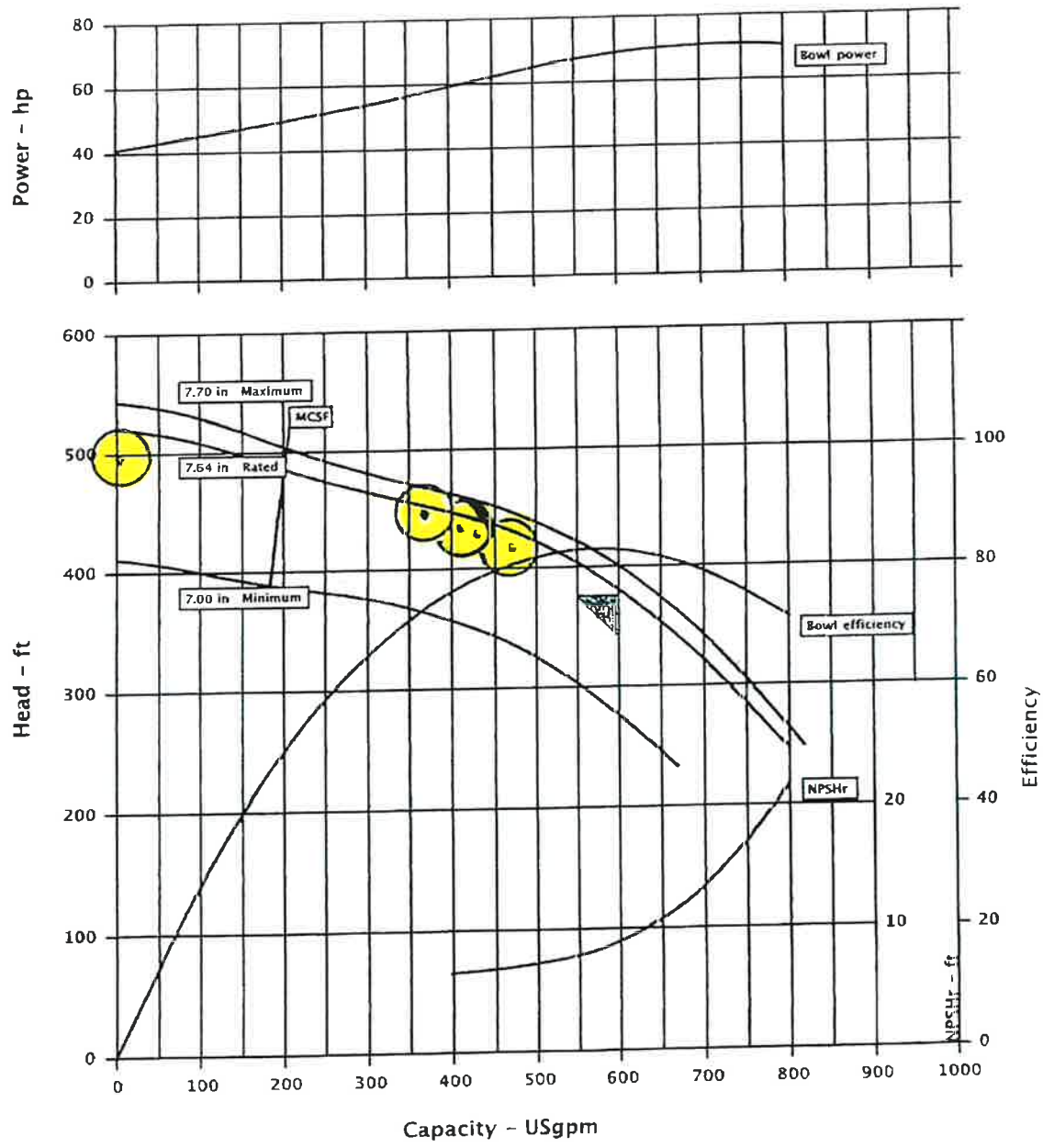
CAMDEN-WYOMING
SEWER & WATER AUTHORITY
WELL #1

FLOWSERVE

		Pump size & type	10EMM
		Based on curve no	EC-2369
		Number of stages	9
Customer	A.C Schultes, Inc	Capacity	600.0 USgpm
Item number		Head	375.00 ft
Service		Specific gravity	1.000
Flowserve reference	Default 0.1	Pump speed	1770 rpm
Date	March 4, 2015	Test tolerance	Hydraulic Institute Level A

CURVES ARE APPROXIMATE. PUMP IS GUARANTEED FOR ONE SET OF CONDITIONS: CAPACITY, HEAD, AND EFFICIENCY

Bowl performance shown below is corrected for materials, viscosity and construction.

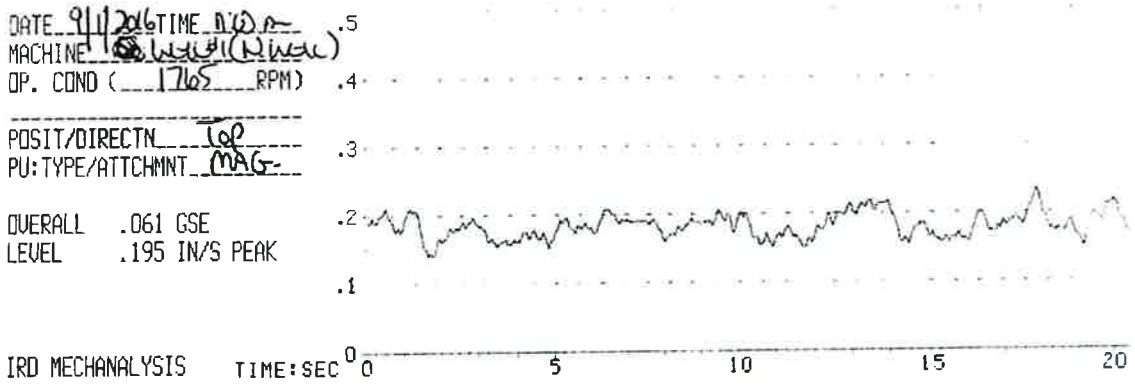


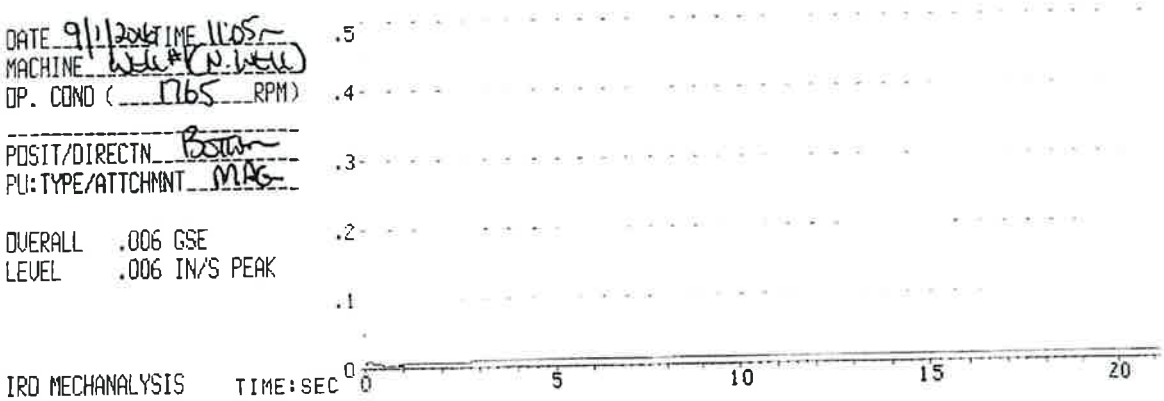
Bowl head of 382.28 ft corresponds with 375.0 ft head at discharge flange adjusted for elevation and friction losses.

FlowSelex v2.2

A.C. Schultes of Delaware, Inc
P.O. Box 488 • 30280 Sussex Hwy
Bridgeville, DE 199
24 Hour Servi
(302) 337-82
Fax (302) 337-82

CAMDEN-WYOMING SEWER & WATER AUTHORITY
NORTH WELL #1
VHS MOTOR VIBRATION ANALYSIS





Name	CAMDEN-WYOMING SEWER & WATER AUTHORITY	Address:	16 S. WEST ST., CAMDEN, DE			Date:	2/26/2010
Well No:	NORTH #1	Dia:	12" X 6"	Foot Valve:		Head Shaft Lgth	36" Dia: 1-1/2"
Depth	460'	Static:	162'	Suct. Dia:	8" Lght: 10'	Keyway	3/8"
Scr Lgth	117'	Slot:	.040	Inlet-Case Size:	8" S-F S	1st Shaft:	5'
GPM:	PL:	S.Cap		Bowls Dia:	10" No: 8	2nd Shaft:	10'
Pump Make:	FLOWSERVE			Outlet Case Size:	6" S-F S	Shaft Dia:	1-1/2"
Serial No:	EC-2369			Column Dia:	6" No: 23	No. 10' Shafts:	22
Type & Size:	VTP / 10"			Column Thd:	STRAIGHT	Pump Shaft Dia:	1-7/16"
Curve No:	10EMM-4			Short Column Lgth:	5'	Pump Shaft Lgth:	
Cap.	600 GPM	T.H.	375'	Base Type	BYRON JACKSON	Adapters:	
Motor/RA Gear Make:	WESTINGHOUSE			Spiders #:	6" BRONZE Spacing: 10' & 5'	Bushings:	STUFFING BOX
Serial No:	FU7095702067			Oil Tube Dia	No:	R.L. Drive:	
Frame No:	365TP1P22			Oil Tube Dia:	No:	Remarks:	
HP	75	R.P.M.	1765	Oil Tube at Top:			WELL DRILLED BY SHANNAHAN IN
Volts:	230 Phase: 3	Cycle	60	Oil Tube Short:	N/A		1970 ORIGINAL SL = 102'
Motor Bearing No				Outlet Case to Oil Tube Dist.			
Upper:	7222BF			Oil Tube to Shaft Dist:			NOTE: *INTERMEDIATE SHAFT COMES
Lower:	6313C-3			Sketch of Discharge Piping:			UP THROUGH DISCHARGE HEAD -
Lgth. of Detector Tube:	230'						61-1/2" X 1-1/2" X 1-1/16"
CD Dimensions of Motor/RA Gear:	31"						
Rabbit Fit of Motor:	13"						
Motor Leads Play	7"					E Dimensions of Head:	10"
						D Dimensions of Head:	12"
Bldg. Height:	10'	Overhang to Well:	15'			Installed By	SHANNAHAN - 1970
ACS Job#:	5537						

DATE	JOB #	WORK PERFORMED
1/20/2010	5537	PULLED VTP TO INSPECT & TV'D WELL MASTEN
2/26/2010	5537	INSTALLED REWORED VTP ON EXISTING 6" COLUMN W/NEW COUPLINGS - REIN-STALLED CUSTOMER'S 75 HP VHS MOTOR; WIRED & PUMPED OFF; CHLORINATED WELL; CUSTOMER WILL PUMP OFF MASTEN
12/13/2010	5741	INSTALLED NEW WESTINGHOUSE 75 HP MOTOR - RAN SYSTEM MASTEN
2/24/2015	6801	PULLED VTP TO HAVE INSPECTED MASTEN
3/26/2015	6801	INSTALLED NEW PUMP ON EXISTING LINESHAFTS, COUPLINGS, AND COLUMN PIPE; CHLORINATED WHILE INSTALLING; SET MOTOR - KEYED UP AND WIRED UP; RAN OVERBOARD UNTIL 4" BLOW OFF BROKE; FLUSHED WITH 500 GALLONS OF HEAVILY CHLORINATED WATER; CUSTOMER WILL PUMP OFF MASTEN
9/1/2016	7147	PERFORMED 2016 MAINTENANCE INSPECTION MASTEN

A. C. Schultes of Delaware, Inc.
P.O. Box 188 • 16289 Sussex Highway
Bridgeville, Delaware 19933

24 Hour Service
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Fax: (302) 337-8234

CAMDEN-WYOMING SEWER & WATER AUTHORITY
WELL PROJECT

ACSD JOB #5381

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WELL CONSTRUCTION PERMIT

MAIL TO

WATER SUPPLY SECTION
DIVISION OF WATER RESOURCES
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PHONE 302-739-3665
FAX: 302-739-7764

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

http://www.dnrec.state.de.us/

APPLICATION MUST BE SUBMITTED AND PERMIT RECEIVED BEFORE DRILLING IS STARTED.

- OFFICIAL USE ONLY -

PAGE ____ OF ____ PAGES

APPLICATION FOR A PERMIT TO CONSTRUCT MONITOR, OBSERVATION, RECOVERY WELL(S) or SOIL BORING(S)

ILLEGIBLE OR INCOMPLETE FORMS WILL BE RETURNED

PLEASE PRINT OR TYPE - USE BLUE OR BLACK INK ONLY

Property Owner: CAMDEN-WYOMING SEWER & WATER AUTH

Address: 16 S. WEST ST. PO BOX 405

City CAMDEN State: DE Zip: 19934

Telephone Number: 302-697-6372

Licensed Preparer/WC: ACSD Lic #: 14

Consulting Firm/Supervising Geologist (if applicable): N/A

Telephone Number: N/A

Proposed Construction Date: 4/27/09

DNREC / Other Program:

- ☐ Hazardous Waste
- ☐ Solid Waste
- ☐ Land Treatment (Non-Hazardous)
- ☐ Other (Specify): N/A
- ☐ CERCLA
- ☐ UST
- ☐ On-Site Septic
- ☐ Wetlands

Site Name/State Permit # (if applicable): N/A

Name of DNREC Contact Person (if any): N/A

Is this a Replacement Well? ☐ YES ☒ NO

Replacement Reason:

PROPOSED WELL CONSTRUCTION

Proposed Drilling Method: MUD ROTARY

Approximate Total Depth: 240'

Approximate Depth to Water Table: 10'

Type of Well(s):
☐ Monitor ☐ Observation ☒ Soil-Boring OR
☐ Recovery - Maximum Capacity: ____ GPM

	Inner Casing	Outer Casing
Casing Top:	-	
Casing Bottom:	-	
Casing Diameter:	-	
Casing Material:	-	

Proposed Screen Setting: Top: - TO Bottom: -

Proposed Screen Length: - Material: -

Type of Grout: CLAY

Grouted From - Top: 0 TO Bottom: 180'

Bentonite/Clay Plug: - Top: - TO Bottom: -

Gravel Pack Interval - Top: 180' TO Bottom: 240'

Type of Casing Coupling (threaded, flared, etc.):

Screened In (Aquifer/Formation): -

LOCATION MAP - ROAD MAP

County: ☐ New Castle ☒ Kent ☐ Sussex

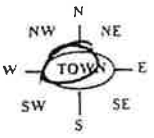
Nearest Town: CAMDEN

Address of Project Site:

16 S. WEST STREET

Tax Map/Parcel #: 7-02-09411-01-0401

DIRECTION OF WELL FROM TOWN
(CIRCLE DIRECTION)



ATTACH ONE COPY OF AN (8.5" x 11 site map (scale at least 1" = 200') with proposed well/boring locations with unit field or area to be monitored clearly indicated. INCLUDE A NORTH ARROW, local landmarks, buildings, existing wells, proposed local ID numbers, and a location map showing a minimum of two county or state roads. Include property size and distance from well(s) to property lines.

Purpose of proposed project and monitored analytes (i.e. Hydrocarbons, priority pollutants, RCRA Appendix IX, etc.):

Expected Frequency of Sampling/Reading:

PLEASE NOTE: Up to 10 wells may be applied for on a single form if located on the same tax map parcel and construction details are identical.

LIST LOCAL ID #S BELOW FOR EACH WELL

LOCAL ID #.	PERMIT #
1. SB 2R	22 1136
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

PERMIT #(s):

Will the operation of this well by itself or in combination with any other well(s), owned or operated by the Permit Holder, withdraw greater than 50,000 gallons in any 24 hr. period? ☒ NO ☐ YES

COMMENTS: SOIL BORING BEING DRILLED FOR DITCH SAMPLES TO DESIGN EMERGENCY REPLACEMENT WELL

I HEREBY AFFIRM THE INFORMATION I HAVE SUBMITTED IS ACCURATE AND CORRECT.

Signature - Licensed Preparer /Water Well Contractor (WC) 4/23/09 Date

Signature - Property Owner 4/23/09 Date

Please release the contractor's copy of the permit and the well tag to the water well contractor noted on this application: ☒ YES ☐ NO

- FOR OFFICIAL USE ONLY - DO NOT WRITE BELOW THIS LINE -

Received By: ____ Modified Grid: ____ DRBC: ☐ YES ☐ NO X-Coord: ____

Amount: ____ Drainage Basin: ____ H_2O Utility: ____ Y-Coord: ____

Date: ____ Quad: ____ Flood Zone/Coastal: ____ DOT #: ____

White - Water Supply • Canary - Work • Pink - Owner • Goldenrod - Contractor

Doc No 40-08/95/01/01

DELAWARE
DIVISION OF WATER RESOURCES
Working for YOU to Provide "Clean Water for Today and Tomorrow"

****CONFINED****
PERMIT
227936

Auth # 275347

Tax Map Number: NM-02-094.11-01-04.01.000

DRILLER COPY

Pursuant to provisions of Title 7, Delaware Code, Chapter 60, permission is hereby granted to:

Camden Wyoming Sewer & Water Authority
16 South West Street PO Box 405, Camden Wyoming, DE 19934 US

to construct, sample and abandon 1 Soil Evaluation in a total of 1 boring(s)

This permit is only valid for construction upon obtaining an Authorization Number from Delaware DNREC.

Construction must be completed on or before 4/24/2010, one year from permit issuance date.

A permit extension can be obtained on or before the date above by contacting Delaware DNREC.

Construction must be done by a person duly licensed by the Delaware DNREC for such activity.

All current regulations governing well construction shall be followed.

All attached permit conditions shall be complied with.

The applicant is responsible for obtaining all additionally required permits and approvals.

Should the well identifcation tag become detached and irrecoverable from the well(s), the property owner is responsible to contact the Water Supply section of DNREC at 302-739-9944 for a replacement.

4/24/2009

AUTHORIZED SIGNATURE DATE

Authorization Number:

To obtain authorization please call toll free: 1-866-276-2353

DELAWARE
DIVISION OF WATER RESOURCES
Working for YOU to Provide
"Clean Water for Today and Tomorrow"

****CONFINED****
PERMIT
227936

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Well Driller Responsible Conditions

§18 The driller is responsible for decontaminating drilling equipment to prevent cross-contamination.

§62 The Water Supply Section shall be notified at least 24 hours prior to the construction of this well at (302) 739-9944.

§63 A well completion report shall be submitted to the Water Supply Section within 30 days of completion of well construction.

§87 The well driller or well driver is required to have at the drilling site an approved authorization number that must accompany the approved well permit.

§104 The well driller or well driver is required to have at the drilling site a copy of the signed well permit or, in the case of verbal permits, the permit number.

Owner/Well Driller Combined Responsibility Conditions

§1 The approval of this permit does not relieve the responsible party from the requirement for obtaining all permits that are required by federal, state, county, and local governments. The responsible party shall comply with any and all federal, state, county, and local statutes, ordinances, orders, regulations, rules.

§2 The issuance of this permit does not guarantee the performance of the permitted well to the standards required by the project. The Department has no knowledge of subsurface conditions or of the constructability of the proposed well.

§3 This permit is valid only for the specific operations and processes applied for and indicated on the application form and attached drawings. Any unauthorized deviations from the approved project or violations of permit conditions may constitute grounds for revocation. Upon revocation, the well will be ordered abandoned.

§15 The annular space of this well shall be pressure grouted from the bottom of the bore hole to ground surface with a slurry of neat cement, bentonite cement or bentonite and water, in accordance with the Regulations Governing the Construction and Use of Wells.

§38 The well(s) shall be properly abandoned upon completion of the project.

WELL COMPLETION REPORT

MAIL TO:

WATER SUPPLY SECTION
DIVISION OF WATER RESOURCES
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PHONE: 302-739-9944
FAX: 302-739-7764

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

http://www.dnrec.state.de.us/

WELL COMPLETION REPORT MUST BE RETURNED WITHIN 30 DAYS OF CONSTRUCTION. A WELL FORMATION LOG MUST BE INCLUDED WITH THIS REPORT.

WELL COMPLETION REPORT

-Authorization Number-

275347

ILLEGIBLE OR INCOMPLETE FORMS WILL BE RETURNED

PLEASE PRINT OR TYPE - USE BLUE OR BLACK INK ONLY

Permit #: 227936 Local ID: 2R-Pilot hole

Tax Map/Parcel #: NM-02-094.11-01-04.01.000

Property Owner: Camden Wyoming Sewer & Water

Water Well Contractor: ACSD WC Lic #: 14

Well Driller in Charge during Construction: L. Hersey

WELL CONSTRUCTION METHOD

o Augered	o Bored	o Cable Tool
o Driven	o Jetted	o Air Rotary
X Mud Rotary	o Reverse	o Washed
o Other (Specify):		

Total Depth of Excavation: 250'

Construction Date: 4/28/09

CASING INSTALLATION:

INNER CASING

CASING TOP: Pilot hole

CASING BOTTOM:

CASING DIAMETER:

CASING MATERIAL:

OUTER CASING

	(1)	(2)	(3)
CASING TOP:			
CASING BOTTOM:			
CASING DIAMETER:			
CASING MATERIAL:			

SCREEN INSTALLATION

SCREEN TOP: Pilot hole

SCREEN BOTTOM:

SCREEN DIAMETER:

SCREEN MATERIAL:

SCREEN SLOT SIZE _____/THOUSANDS

GRAVEL PACK SIZE

Gravel Pack From: 160 ft. To: 250 ft.

Grout Type: _____ o Cement _____ X Bentonite Clay

o Other: _____ From: 0 ft. To: 160 ft.

Type of Non-Grout backfill of Well Annulus: _____

From: _____ To: _____

Static Water Level: N/A ft. o Below OR o Above Ground Surface

On (date): _____

Pumping Water Level: _____ ft. On (date): _____

After: _____ hrs. Pumping at: _____ GPM

Was a Geophysical Log Taken? o YES o NO

WELL HEAD COMPLETION:

Type: o Pitless Adapter o Standard "T"

o Well Pit o Pad Mount

o Other - Specify: _____

Well Head Completed: _____ inches o Above (OR) o Below Ground Surface

Was the Well Tag attached in accordance with current regulations?

o YES o NO If "NO", Please Explain: _____

Site Plan – Include lot size and dimensions, distances from well to house, property lines, nearest road, and all nearby septic systems (include suitable plot plan if available). **(If different from original application)**

See Point

I HEREBY AFFIRM THE INFORMATION I HAVE SUBMITTED IS ACCURATE AND CORRECT.

Larry Hersey

Signature - **Well Driller in Charge of Well Construction**

5324 5/13/09

License # Date

White - DNREC • Canary - Contractor • Pink - Owner

MAIL TO:

WATER SUPPLY SECTION
DIVISION OF WATER RESOURCES
89 KINGS HIGHWAY
DOVER, DELAWARE 19901
PHONE: 302-739-9944
FAX:302-739-7764

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL

WELL COMPLETION REPORT MUST BE RETURNED WITHIN 30 DAYS OF CONSTRUCTION DATE

FORMATION LOG

PLEASE PRINT OR TYPE – ILLEGIBLE OR INCOMPLETE FORMS WILL BE RETURNED

PERMIT #: 227936	LOCAL ID#: 2R Pilothole
PROPERTY OWNER: Camden Wyoming Sewer & Water	
WELL CONTRACTOR: ACSD	WC LIC #:

DESCRIPTION	TOP OF STRATA	BOTTOM OF STRATA
Topsoil	0	1
Fine Orange Sand w/ Some Clay	1	8
Med. Coarse Orange Sand	8	21
Med. Coarse Tannish Orange Sand w/ Gravel	21	52
Orange Clay	52	56
Gray Clay	56	69
Med Gray Sand	69	92
Brown Clay	92	128
Gray Clay w/ Shell & Fine Sand	128	143
Gray Clay	143	178
Med. Coarse Gray Sand	178	201
Med Coarse Gray Sand w/ Shell	201	208
Med. Gray Sand	208	219
Med. Coarse Gray Sand	219	232
Brown Clay w/ Shell	232	236
Brown Clay	236	242
Brown & Gray Clay	242	250

COMMENTS:

I HEREBY AFFIRM THE INFORMATION I HAVE SUBMITTED IS ACCURATE AND CORRECT

Tony Hensey — Signature of Well Driller in Charge of Construction

5324 — WD License #

5/13/09 — Date

White - DNREC • Canary - CONTRACTOR • Pink - Owner

Doc No. 40-08-82-12-11

DRILLER'S LOG

A.C. SCHULTES OF DELAWARE, INC.
P.O. BOX 188 - BRIDGEVILLE, DE 19933

PHONE: 302-337-8254
FAX: 302-337-8234

DRILLER'S LOG

CUSTOMER:	CAMDEN-WYOMING SEWER & WATER AUTHORITY	**JOB #:**	5381
ADDRESS:	P. O. BOX 405; CAMDEN-WYOMING, DE 19934	**DATE:**	4/28/2009
LOCATION:	WATER & SEWER AUTHORITY, WEST ST., CAMDEN-WYOMING, DE		

GROUND	2'	FT FROM GROUND SURFACE 0 TO	WELL LOG
	CASING	0-1'	TOPSOIL
		1-8'	FINE ORANGE SAND W/SOME CLAY
		8-21'	MED-COARSE ORANGE SAND
		21-52'	MED-COARSE TANNISH ORANGE SAND W/GRAVEL
T		52-56'	ORANGE CLAY
O		56-69'	GRAY CLAY
T		69-92'	MED GRAY SAND
A		92-128'	BROWN CLAY
L		128-143'	GRAY CLAY W/SHELL FINE SAND
		143-178'	GRAY CLAY
D		178-201'	MED-COARSE GRAY SAND
E		201-208'	MED-COARSE GRAY SAND W/SHELL
P		208-219'	MED GRAY SAND
T		219-232'	MED-COARSE GRAY SAND
H		232-236'	GREEN CLAY W/SHELL
	SCREEN	236-242'	BROWN CLAY
		242-250'	BROWN & GRAY CLAY

WELL NO:	#2R - PILOT HOLE	**PUMPED WITH:**		**SLOT SIZE:**	
WELL DIAMETER:	6-3/4"	**CASING DIAMETER:**		**SCREEN DIAMETER:**	
WELL DEPTH:		**CASING TYPE:**		**SCREEN TYPE:**	
STATIC LEVEL:		**CASING DEPTH:**		**SCREEN LENGTH:**	
PUMPING LEVEL:		**GROUT TYPE:**	CLAY	**GRAVEL SIZE:**	#1
TEST CAPACITY:		**GROUT DEPTH:**	0-160'	**GRAVEL DEPTH:**	160-250'
SPEC. CAPACITY:		**GROUT AMOUNT:**	8 BAGS	**GRAVEL AMOUNT:**	40 BAGS
HRS PUMPED:		**DRILLING RIG:**			

PERMIT #: 227936 **FOREMAN** L. HORSEY **HELPER:** D. KOSTECK

AUTHORIZATION #: 2755347

ELECTRIC
LOG

Earth Data Incorporated
131 Comet Drive, Centreville, MD 21617
Phone: (410) 758-8160 / Facsimile (410) 758-8168
www.earthdatainc.com

WELL I.D.
Production Well
2R

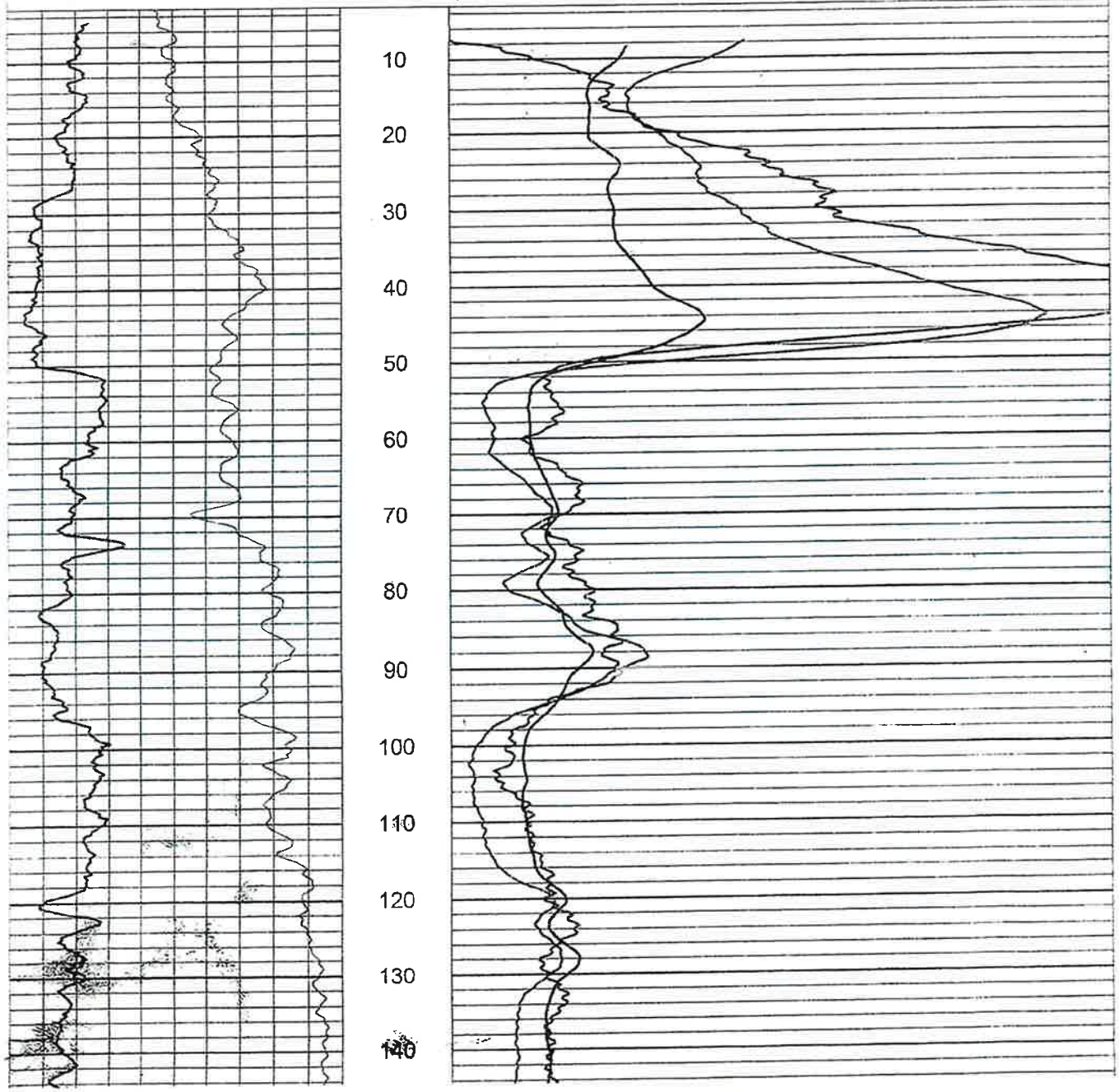
Logging Date: 4/28/09
Logging Speed: 27'/min x Up x Down
BOC: **TD:** 249'

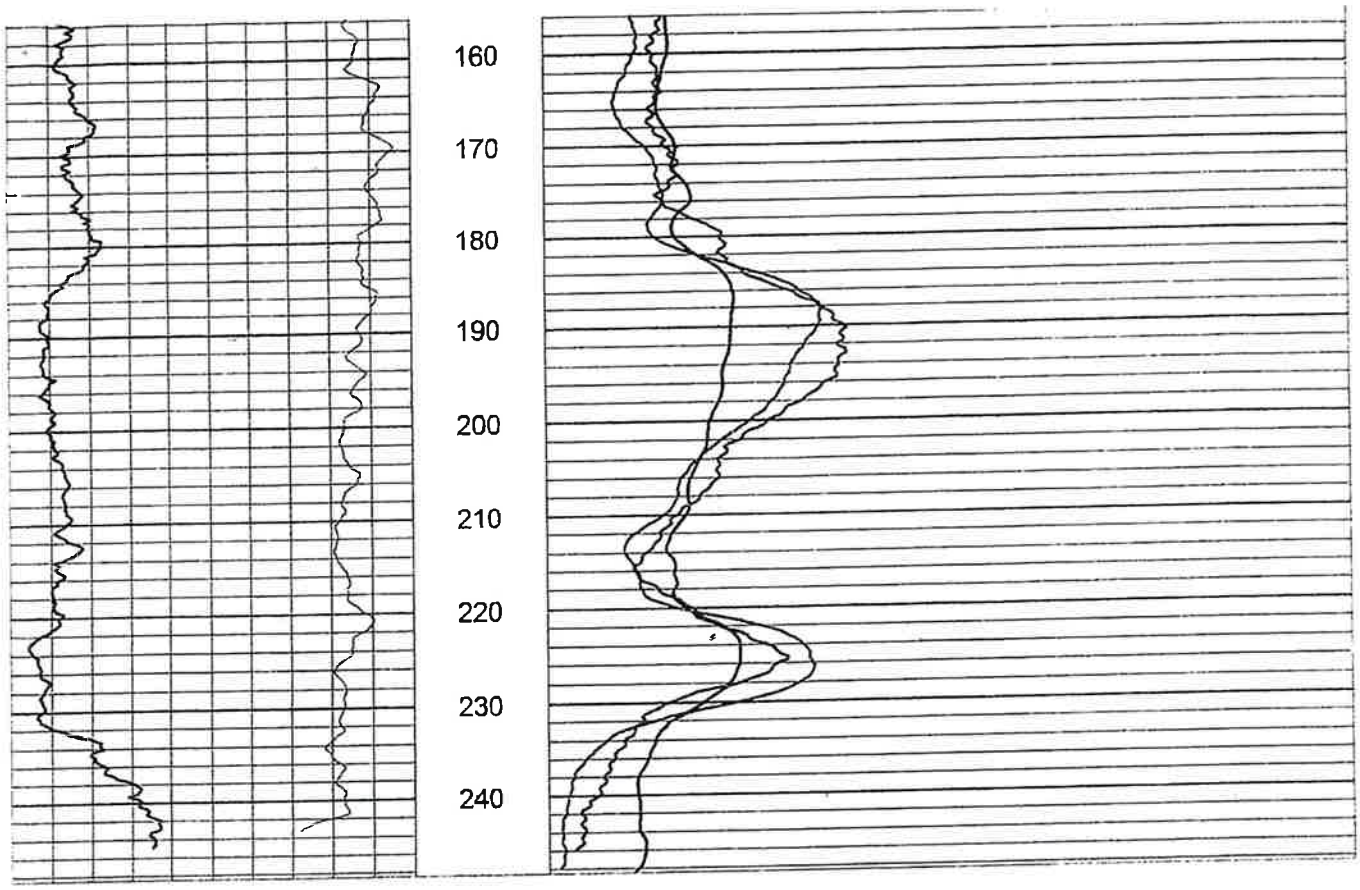
Project:	Camden-Wyoming Sewer & Water Authority	**Bit Size:**	6 3/4"	**EDI Job No.:**	4058
Client:	A.C. Schultes of DE	**Fluid Type:**	Water Based Mud	**Technician:**	M. Wojtko
Location:	Wyoming, DE	**GPS:**		**Casing Material:**	**Witness:** Larry Wooster

GR
0 cps 200
SP
0 mV 400

Depth
1in:20ft

SPR
0 Ohm-m 500
R16
0 Ohm-m 500
R64
0 Ohm-m 500




160
170
180
190
200
210
220
230
240

WELL ABANDONMENT REPORT

MAIL TO:

WATER SUPPLY SECTION
DIVISION OF WATER RESOURCES
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PHONE: 302-739-9944
FAX: 302-739-7764

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

WELL or SOIL BORING ABANDONMENT REPORT

http://www.dnrec.state.de.us/

WELL ABANDONMENT REPORT MUST BE RETURNED WITHIN 30 DAYS OF ABANDONMENT.

- OFFICIAL USE ONLY -

PAGE _____ OF _____ PAGES

PERMIT #: _____

ILLEGIBLE OR INCOMPLETE FORMS WILL BE RETURNED

PLEASE TYPE OR PRINT - USE BLUE OR BLACK INK ONLY

Permit # of Abandoned Well: 227936

Replacement Well Permit #: N/A

Local ID: PILOT 2R Tax Map/Parcel #: _____

Property Owner: _____

Well Contractor: A.C. SCHULTES OF DE Lic. #: 14

Well Driller in Charge: LARRY HORSEY Lic #: 5324

Construction Date of Abandoned Well/Soil Boring: 4/28/09

Abandonment Date: 4/28/09

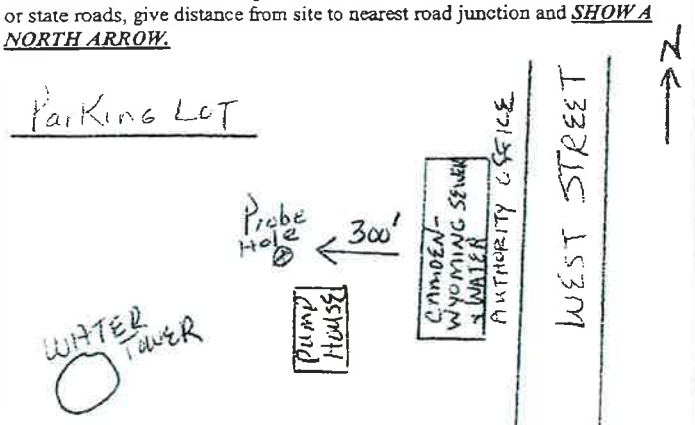
WELL CONSTRUCTION METHOD (if known):

☐ Augered	☐ Bored	☐ Cable Tool
☐ Driven	☐ Jetted	☐ Air Rotary
☒ Mud Rotary	☐ Reverse	☐ Washed

☐ Other (Specify): _____

PROVIDE A LOCATION SKETCH OF ABANDONED WELL(S)

Draw a sketch below showing location of well in relation to at least two county or state roads, give distance from site to nearest road junction and ***SHOW A NORTH ARROW.***



WELL ABANDONMENT:

Casing Material: N/A

Casing Diameter (inches): N/A

Well Depth: 250'

Was any Casing Removed? ☒ NO ☐ YES

If YES, Amount of Casing Removed (feet): _____

Was Casing Ripped or Perforated? ☐ NO ☐ YES

Type of Sealing Material Used: BENTONITE CLAY

Sealed From: 160' ft. To: 0 ft.

NOTE: If this form is submitted in place of a completion report for wells or soil borings installed and abandoned on the same date, a formation log must be attached. Formation logs must be submitted on forms provided by DNREC.

The abandonment of this well(s) or soil boring(s) is in compliance with all permit conditions and with all applicable well construction regulations.

☐ YES ☐ NO

COMMENTS: _____

I HEREBY AFFIRM THE INFORMATION I HAVE SUBMITTED IS ACCURATE AND CORRECT.

Larry Horsey

Signature - Licensed Driller in Charge of Abandonment

5324 5/7/09

Well Driller License # Date

- FOR OFFICIAL USE ONLY - DO NOT WRITE BELOW THIS LINE -

Received By: _____	Modified Grid: _____	DRBC: ☐ YES ☐ NO	X-Coord: _____
Amount: _____	Drainage Basin: _____	H_2O Utility: _____	Y-Coord: _____
Date: _____	Quad: _____	Flood Zone/Coastal: _____	DOT #: _____

White - DNREC • Canary - Contractor • Pink - Owner

Doc No. 40-08/87/02/03

WELL CONSTRUCTION PERMIT

MAIL TO:

WATER SUPPLY SECTION
DIVISION OF WATER RESOURCES
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PHONE: 302-739-9944
FAX:302-739-7764

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

http://www.dnrec.state.de.us/

APPLICATION MUST BE SUBMITTED AND PERMIT RECEIVED BEFORE DRILLING IS STARTED.

APPLICATION FOR A PERMIT TO CONSTRUCT A WELL

Auth # 5701155

- OFFICIAL USE ONLY -

PAGE # _____ OF _____ PAGES

PERMIT NO: 227937

ILLEGIBLE OR INCOMPLETE FORMS WILL BE RETURNED

PLEASE TYPE OR PRINT - USE BLUE OR BLACK INK ONLY

Property Owner: CAMDEN-WYOMING SEWER & WATER AUTH

Address: 16 S. WEST ST/P.O. BOX 405

City: CAMDEN State: DE Zip: 19934

Telephone Number: 302-697-6372

Licensed Preparer/WC: ACSD

Lic. #: 14 Date of Application: 4/23/09

Estimated Construction Date: 6/18/09

PURPOSE: ☐ Test ☒ Permanent ☐ Temporary for Well Construction

USE: ☐ Domestic ☐ Irrigation
☐ Industrial ☐ Agricultural _____
☒ Public ☐ Heat Pump Supply
☐ Miscellaneous Public ☐ Heat Pump Recharge
☐ Other (Specify): _____ ☐ Closed Loop Heat Pump

Is this a replacement well? ☐ NO ☒ YES (Reason): COLLAPSED WELL

Is public water available? ☐ NO ☒ YES (Utility): _____

On public sewage? ☒ YES **OR** Septic system permit #: _____

PROPOSED WELL CONSTRUCTION:

	Inner Casing	Outter Casing
Approximate total depth:	240 ft	ft
Casing top (above grade):	24 in	in
Casing bottom (below grade):	~~200~~ 219 ft.	ft.
Casing diameter:	10"	
Casing material:	STEEL	

Proposed screen setting: ~~200~~ 219 ft. (top) TO: 240 ft. (bottom) Material: S. STEEL

Type of Grout: CEMENT From: 0 (top) To: 180 (bottom)

Gravel pack: ☐ NO ☒ YES From: 180 (top) To: 240 (bottom)

Maximum capacity: 400 (GPM) Max. Daily Withdrawal: 400,000 (GPD)

Will the operation of this well by itself or in combination with any other well(s), owned or operated by the permittee, withdraw greater than 50,000 gallons in any 24 hr. period? ☐ NO ☒ YES

I HEREBY AFFIRM THE INFORMATION I HAVE SUBMITTED IS ACCURATE AND CORRECT.

Signature - Licensed Preparer/Water Well Contractor — Date: 4/23/09

Signature - Property Owner — Date: 4/23/09

Please release the contractor's copy of the permit and the well tag to the water well contractor noted on this application:

☒ YES ☐ NO

LOCATION MAP - ROAD MAP

County: ☐ New Castle ☒ Kent ☐ Sussex

Subdivision: _____

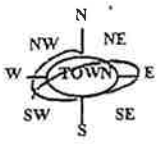
Lot #: _____ ADC Map Grid: 17 C-13

Tax Map/Parcel #: 7-02-09411-01-0401

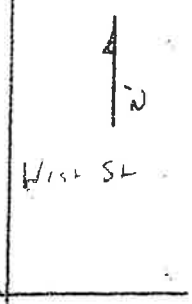
Name of Nearest Town: CAMDEN

Distance to Nearest Town: 0

DIRECTION OF WELL FROM TOWN (CIRCLE DIRECTION)



Draw a sketch below showing location of well in relation to at least two county or state roads, give distance from well site to nearest road junction and ***SHOW A NORTH ARROW.***



Site Plan - Include lot size and dimensions, distances from well to house, property lines, nearest road, and all nearby septic systems (include suitable plot plan if available).

SEE ATTACHED

PERMIT#:

- FOR OFFICIAL USE ONLY – DO NOT WRITE BELOW THIS LINE -

Received By: _____ Modified Grid: _____ DRBC: ☐ YES ☐ NO X - Coord: _____

Amount: _____ Drainage Basin: _____ H_2O Utility: _____ Y- Coord: _____

Date: _____ Quad: _____ Flood Zone/Coastal: _____ DOT #: _____

White - Water Supply • Canary - Work • Pink - Owner

Doc No. 40-08/85/05/01-EC 2

DELAWARE
DIVISION OF WATER RESOURCES
Working for YOU to Provide "Clean Water for Today and Tomorrow"

CONFINED
PERMIT
227937

Tax Map Number: NM-02-094.11-01-04.01.000

DRILLER COPY

Pursuant to provisions of Title 7, Delaware Code, Chapter 60, permission is hereby granted to:

Camden Wyoming Sewer & Water Authority
16 South West Street PO Box 405, Camden Wyoming, DE 19934 US

to construct, operate and maintain 1 Standard Public Well in a total of 1 boring

This permit is only valid for construction upon obtaining an Authorization Number from Delaware DNREC.

Construction must be completed on or before 5/18/2010, one year from permit issuance date.

A permit extension can be obtained on or before the date above by contacting Delaware DNREC.

Construction must be done by a person duly licensed by the Delaware DNREC for such activity.

All current regulations governing well construction shall be followed.

All attached permit conditions shall be complied with.

The applicant is responsible for obtaining all additionally required permits and approvals.

Should the well identifcation tag become detached and irrecoverable from the well(s), the property owner is responsible to contact the Water Supply section of DNREC at 302-739-9944 for a replacement.

William W. Cooke

5/18/2009

AUTHORIZED SIGNATURE DATE

Authorization Number:

To obtain authorization please call toll free: 1-866-276-2353

DELAWARE
DIVISION OF WATER RESOURCES
Working for YOU to Provide "Clean Water for Today and Tomorrow"

****CONFINED****
PERMIT
227937

Owner/Well Driller Combined Responsibility Conditions

§7 The well may not be put into use until the existing well (Permit Number 10077) has been abandoned, the abandonment report filed with the Well Permits Branch, and the Water Allocation permit appropriately revised to reflect these changes. The property owner is responsible for meeting this permit condition.

§8 The owner is responsible for having this well permanently equipped with a meter capable of acquiring instantaneous and totalized flow .

§10 A raw water spigot shall be provided at the well head.

§12 The well casing shall be finished and maintained at least 12 inches above grade.

§13 This well shall be constructed to include a minimum 1/2 inch I.D. port with a removable plug and drop tube .

§14 Upon completion, the well and appurtenances shall be disinfected in conformance with the Regulations Governing the Construction and Use of Wells.

§15 The annular space of this well shall be pressure grouted a minimum of 10 feet into the confining layer with a slurry of neat cement, bentonite cement or bentonite and water, in accordance with the Regulations Governing the Construction and Use of Wells.

§22 The existing well(s) shall be abandoned by a licensed well driller or reclassified to another use in accordance with the Regulations Governing the Construction and Use of Wells.

§23 The well shall not be constructed within 150 feet of a wastewater drainfield nor within 150 feet of all other wastewater system components.

§52 If identifiable contamination is detected during construction, and the contamination was not anticipated or evaluated during the permit application and approval process, the well driller shall cease work and notify the Water Supply Section immediately by calling (302) 739-9944.

§54 Representatives of DNREC, the Delaware Geological Survey or the U.S. Geological Survey may inspect the well and/or conduct tests such as but not limited to geophysical logging and sampling, at any reasonable time after serving advance notice.

DELAWARE
DIVISION OF WATER RESOURCES
Working for YOU to Provide "Clean Water for Today and Tomorrow"

****CONFINED****
PERMIT
227937

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Owner/Well Driller Combined Responsibility Conditions

§106 The well shall be constructed with the screen set below a confining layer and shall be pressure grouted through or at least 10 feet into the confining layer directly above the source aquifer. The grout shall extend to the ground surface

WELL COMPLETION REPORT

MAIL TO:

WATER SUPPLY SECTION
DIVISION OF WATER RESOURCES
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PHONE: 302-739-9944
FAX: 302-739-7764

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

http://www.dnrec.state.de.us/

WELL COMPLETION REPORT MUST BE RETURNED WITHIN 30 DAYS OF CONSTRUCTION. A WELL FORMATION LOG MUST BE INCLUDED WITH THIS REPORT.

WELL COMPLETION REPORT

-Authorization Number-

5701155

ILLEGIBLE OR INCOMPLETE FORMS WILL BE RETURNED

PLEASE PRINT OR TYPE - USE BLUE OR BLACK INK ONLY

Permit #: 227937 Local ID: 2R

Tax Map/Parcel #: 7-02-094.11-01-0401

Property Owner: Camden-Wyoming Sewer (2 of 2)

Water Well Contractor: ACSD WC Lic #: 14

Well Driller in Charge during Construction: S. Willey

WELL CONSTRUCTION METHOD

o Augered	o Bored	o Cable Tool
o Driven	o Jetted	o Air Rotary
o Mud Rotary	x Reverse	o Washed
o Other (Specify):		

Total Depth of Excavation: 232

Construction Date: 5/20/09

CASING INSTALLATION:

	INNER CASING	OUTER CASING (1)	(2)	(3)
CASING TOP:	+2			
CASING BOTTOM:	183'			
CASING DIAMETER:	12"			
CASING MATERIAL:	Steel			

SCREEN INSTALLATION

SCREEN TOP: 183'

SCREEN BOTTOM: 228'

SCREEN DIAMETER: 10"

SCREEN MATERIAL: Steel

SCREEN SLOT SIZE .040 /THOUSANDS

GRAVEL PACK SIZE #2

Gravel Pack From: 163 ft. To: 232 ft.

Grout Type: x Cement o Bentonite Clay

o Other: From: 0 ft. To: 163 ft.

Type of Non-Grout backfill of Well Annulus:

From: To:

Static Water Level: 55 ft. x Below OR o Above Ground Surface

On (date):

Pumping Water Level: 132 ft. On (date):

After: hrs. Pumping at: 506 GPM

Was a Geophysical Log Taken? o YES o NO

WELL HEAD COMPLETION:

Type: o Pitless Adapter o Standard "T"

o Well Pit o Pad Mount

x Other - Specify: 12" casing

Well Head Completed: 24 inches x Above (OR) o Below Ground Surface

Was the Well Tag attached in accordance with current regulations?

x YES o NO If "NO", Please Explain:

Site Plan – Include lot size and dimensions, distances from well to house, property lines, nearest road, and all nearby septic systems (include suitable plot plan if available). **(If different from original application)**

See Permit

I HEREBY AFFIRM THE INFORMATION I HAVE SUBMITTED IS ACCURATE AND CORRECT.

Signature - Well Driller in Charge of Well Construction

991 License #

5/21/09 Date

White - DNREC • Canary - Contractor • Pink - Owner

Doc No. 40-08/78/01/03 - EC 7

MAIL TO:

WATER SUPPLY SECTION
DIVISION OF WATER RESOURCES
89 KINGS HIGHWAY
DOVER, DELAWARE 19901
PHONE: 302-739-9944
FAX:302-739-7764

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL

WELL COMPLETION REPORT MUST BE RETURNED WITHIN 30 DAYS OF CONSTRUCTION DATE

FORMATION LOG

PAGE 2 OF 2 PAGES

PLEASE PRINT OR TYPE – ILLEGIBLE OR INCOMPLETE FORMS WILL BE RETURNED

PERMIT #: 227937 | LOCAL ID#: 2R

PROPERTY OWNER: Camden - Wyoming Sewer & Water

WELL CONTRACTOR: ACSD | WC LIC #: 14

DESCRIPTION	TOP OF STRATA	BOTTOM OF STRATA
Topsoil	0	1
Fine Orange Sand w/ Some Clay	1	8
Med. Coarse Orange Sand	8	21
Med. Coarse Tann. Orange Sand w/ Gravel	21	52
Orange Clay & Some Sand	52	56
Gray Clay	56	69
Med Gray Sand w/ Some Clay	69	92
Brown Clay	92	128
Gray Clay w/ Shell w/ Fine Sand	128	143
Gray Clay	143	178
Med. Coarse Gray Sand	178	201
Med - Coarse Gray Sand w/ Shell	201	208
Med Gray Sand	208	219
Med - Coarse Gray Sand w/ Shell	219	230
Green Clay w/ Some Shell	230	232

COMMENTS:

I HEREBY AFFIRM THE INFORMATION I HAVE SUBMITTED IS ACCURATE AND CORRECT

Signature of Well Driller in Charge of Construction — WD License # — Date 5/21/09

White - DNREC • Canary - CONTRACTOR • Pink - Owner

Doc No. 40-08-82-12-11

DRILLER'S LOG

A.C. SCHULTES OF DELAWARE, INC.

P.O. BOX 188 - BRIDGEVILLE, DE 19933

PHONE: 302-337-8254
FAX: 302-337-8234

DRILLER'S LOG

CUSTOMER:	CAMDEN-WYOMING SEWER & WATER AUTHORITY	JOB #:	5381
ADDRESS:	P. O. BOX 405; CAMDEN-WYOMING, DE 19934	DATE:	5/20/2009
LOCATION:	WATER & SEWER AUTHORITY, WEST ST., CAMDEN-WYOMING, DE		

GROUND	FT FROM GROUND 2'	SURFACE 0 TO	WELL LOG
	CASING	0-1'	TOPSOIL
		1-8'	FINE ORANGE SAND W/SOME CLAY
228'	183'	8-21'	MED-COARSE ORANGE SAND
		21-52'	MED-COARSE TANNISH ORANGE SAND W/GRAVEL
T		52-56'	ORANGE CLAY & SOME SAND
O		56-69'	GRAY CLAY
T		69-92'	MED GRAY SAND W/SOME CLAY
A		92-128'	BROWN CLAY
L		128-143'	GRAY CLAY W/SHELL W/FIRE SAND
		143-178'	GRAY CLAY
D		178-201'	MED-COARSE GRAY SAND
E		201-208'	MED-COARSE GRAY SAND W/SHELL
P		208-219'	MED GRAY SAND
T		219-230'	MED-COARSE GRAY SAND W/SHELL
H		230-232'	GREEN CLAY W/SOME SHELL
	SCREEN		
	45'		

WELL NO:	2R	PUMPED WITH:	SUB TEST PUMP	SLOT SIZE:	.040
WELL DIAMETER:	12" X 10"	CASING DIAMETER:	12"	SCREEN DIAMETER:	10"
WELL DEPTH:	228'	CASING TYPE:	BLK STEEL	SCREEN TYPE:	S. STEEL
STATIC LEVEL:	55.37'	CASING DEPTH:	0' - 183'	SCREEN LENGTH:	45'
PUMPING LEVEL:	131.78'	GROUT TYPE:	CEMENT	GRAVEL SIZE:	#2
TEST CAPACITY:	506	GROUT DEPTH:	0' - 163'	GRAVEL DEPTH:	230' - 163'
SPEC. CAPACITY:	6.62	GROUT AMOUNT:	7 YARDS	GRAVEL AMOUNT:	2 SAKS
HRS PUMPED:	24	DRILLING RIG:	JED-A		

PERMIT #: 227937 FOREMAN S. WILLEY HELPER: HORSEY/KOSTECK/ MARTINEZ

AUTHORIZATION #: 5701155

WELL TEST REPORT

A.C. SCHULTES OF DELAWARE, INC.
PUMPING TEST REPORT

CUSTOMER: CAMDEN-WYOMING SEWER & WATER AUTHORITY
JOB #: 5381
DATE: 5/27/2009
WELL NO: PW#2R
WELL DIA: 12" X 10"
WELL DEPTH: 228'
PERMIT TAG #: 227937
STATIC: 55.37'
W/L DATUM: TOC

DISTANCE PUMPED TO WELL: 0 FEET
STATIC LEVEL AT START: 55.37 FEET
PUMPING RATE: 506 GPM
SPECIFIC CAPACITY: 6.62 GPM/FT DD

TEST TIME	CAPACITY (GPM)	PUMPING LEVEL (FEET)	DRAWDOWN (FEET)
0.00	506	55.37	0.00
0.02	506	55.36	-0.02
0.33	506	57.91	2.54
0.35	506	57.99	2.62
0.36	506	59.95	4.58
0.38	506	61.77	6.40
0.40	506	63.54	8.17
0.42	506	65.15	9.78
0.45	506	66.97	11.60
0.47	506	68.62	13.25
0.49	506	70.31	14.94
0.52	506	71.89	16.52
0.55	506	73.49	18.12
0.58	506	75.08	19.71
0.61	506	76.63	21.26
0.64	506	77.72	22.35
0.68	506	80.06	24.69
0.72	506	81.74	26.37
0.75	506	83.31	27.94
0.80	506	84.92	29.55
0.84	506	86.33	30.96
0.89	506	87.88	32.51
0.94	506	89.42	34.05
0.99	506	90.95	35.58
1.05	506	92.34	36.97
1.11	506	93.62	38.25
1.17	506	94.79	39.42
1.23	506	96.09	40.72
1.30	506	97.31	41.94
1.38	506	98.37	43.00
1.46	506	99.40	44.03

1.54	506	100.37	45.00
1.63	506	101.28	45.91
1.72	506	102.14	46.77
1.82	506	102.88	47.51
1.93	506	103.67	48.30
2.04	506	104.39	49.02
2.16	506	105.04	49.67
2.28	506	105.59	50.22
2.42	506	106.04	50.67
2.56	506	106.47	51.10
2.71	506	107.19	51.82
2.86	506	107.47	52.10
3.03	506	107.79	52.42
3.21	506	108.26	52.89
3.39	506	108.46	53.09
3.59	506	108.85	53.48
3.80	506	109.32	53.95
4.03	506	109.43	54.06
4.26	506	109.84	54.47
4.51	506	110.07	54.70
4.78	506	110.23	54.86
5.06	506	110.44	55.07
5.35	506	110.72	55.35
5.67	506	110.96	55.59
6.00	506	111.19	55.82
6.35	506	111.32	55.95
6.73	506	111.55	56.18
7.12	506	111.91	56.54
7.54	506	112.07	56.70
7.99	506	112.02	56.65
8.46	506	112.41	57.04
8.96	506	112.49	57.12
9.48	506	112.79	57.42
10.04	506	113.00	57.63
10.64	506	113.14	57.77
11.26	506	113.31	57.94
11.93	506	113.59	58.22
12.63	506	113.78	58.41
13.38	506	113.81	58.44
14.17	506	113.98	58.61
15.01	506	114.12	58.75
15.89	506	114.35	58.98
16.83	506	114.44	59.07
17.83	506	114.60	59.23
18.88	506	114.80	59.43
19.99	506	115.00	59.63
21.18	506	115.05	59.68
22.43	506	115.23	59.86
23.76	506	115.54	60.17
25.16	506	115.68	60.31
26.65	506	115.90	60.53
28.23	506	116.01	60.64

29.90	506	116.13	60.76
31.66	506	116.36	60.99
33.54	506	116.40	61.03
35.52	506	116.66	61.29
37.62	506	116.81	61.44
39.85	506	117.01	61.64
42.21	506	117.08	61.71
44.71	506	117.36	61.99
47.36	506	117.53	62.16
50.16	506	117.73	62.36
53.13	506	117.93	62.56
56.27	506	118.09	62.72
59.61	506	118.28	62.91
63.14	506	118.51	63.14
66.87	506	118.68	63.31
70.83	506	118.84	63.47
75.03	506	119.10	63.73
79.47	506	119.26	63.89
84.18	506	119.46	64.09
89.17	506	119.64	64.27
94.45	506	119.85	64.48
100.04	506	120.02	64.65
105.97	506	120.28	64.91
112.24	506	120.43	65.06
118.89	506	120.76	65.39
125.93	506	120.95	65.58
133.39	506	121.15	65.78
141.29	506	121.27	65.90
149.66	506	121.66	66.29
158.53	506	121.79	66.42
167.92	506	122.00	66.63
177.87	506	122.32	66.95
187.87	506	122.52	67.15
197.87	506	122.80	67.43
207.87	506	123.03	67.66
217.87	506	123.26	67.89
227.87	506	123.37	68.00
237.87	506	123.60	68.23
247.87	506	123.79	68.42
257.87	506	123.91	68.54
267.87	506	123.98	68.61
277.87	506	124.22	68.85
287.87	506	124.35	68.98
297.87	506	124.47	69.10
307.87	506	124.56	69.19
317.87	506	124.79	69.42
327.87	506	124.80	69.43
337.87	506	125.00	69.63
347.87	506	125.07	69.70
357.87	506	125.13	69.76
367.87	506	125.20	69.83
377.87	506	125.46	70.09

387.87	506	125.46	70.09
397.87	506	125.61	70.24
407.87	506	125.70	70.33
417.87	506	125.80	70.43
427.87	506	125.81	70.44
437.87	506	126.00	70.63
447.87	506	126.19	70.82
457.87	506	126.07	70.70
467.87	506	126.27	70.90
477.87	506	126.24	70.87
487.87	506	126.40	71.03
497.87	506	126.52	71.15
507.87	506	126.62	71.25
517.87	506	126.60	71.23
527.87	506	126.73	71.36
537.87	506	126.79	71.42
547.87	506	126.96	71.59
557.87	506	126.99	71.62
567.87	506	127.05	71.68
577.87	506	127.18	71.81
587.87	506	127.24	71.87
597.87	506	127.28	71.91
607.87	506	127.43	72.06
617.87	506	127.53	72.16
627.87	506	127.51	72.14
637.87	506	127.60	72.23
647.87	506	127.67	72.30
657.87	506	127.80	72.43
667.87	506	127.82	72.45
677.87	506	127.90	72.53
687.87	506	128.02	72.65
697.87	506	128.09	72.72
707.87	506	128.16	72.79
717.87	506	128.15	72.78
727.87	506	128.26	72.89
737.87	506	128.45	73.08
747.87	506	128.47	73.10
757.87	506	128.57	73.20
767.87	506	128.62	73.25
777.87	506	128.68	73.31
787.87	506	128.68	73.31
797.87	506	128.83	73.46
807.87	506	128.83	73.46
817.87	506	128.88	73.51
827.87	506	128.94	73.57
837.87	506	129.00	73.63
847.87	506	129.06	73.69
857.87	506	129.14	73.77
867.87	506	129.16	73.79
877.87	506	129.20	73.83
887.87	506	129.33	73.96
897.87	506	129.35	73.98

907.87	506	129.40	74.03
917.87	506	129.43	74.06
927.87	506	129.48	74.11
937.87	506	129.52	74.15
947.87	506	129.65	74.28
957.87	506	129.69	74.32
967.87	506	129.76	74.39
977.87	506	129.79	74.42
987.87	506	129.82	74.45
997.87	506	129.91	74.54
1007.87	506	129.91	74.54
1017.87	506	129.86	74.49
1027.87	506	130.01	74.64
1037.87	506	130.07	74.70
1047.87	506	130.11	74.74
1057.87	506	130.10	74.73
1067.87	506	130.27	74.90
1077.87	506	130.30	74.93
1087.87	506	130.28	74.91
1097.87	506	130.34	74.97
1107.87	506	130.43	75.06
1117.87	506	130.50	75.13
1127.87	506	130.56	75.19
1137.87	506	130.51	75.14
1147.87	506	130.63	75.26
1157.87	506	130.64	75.27
1167.87	506	130.66	75.29
1177.87	506	130.72	75.35
1187.87	506	130.74	75.37
1197.87	506	130.86	75.49
1207.87	506	130.90	75.53
1217.87	506	130.87	75.50
1227.87	506	130.87	75.50
1237.87	506	130.98	75.61
1247.87	506	131.03	75.66
1257.87	506	131.05	75.68
1267.87	506	131.13	75.76
1277.87	506	131.12	75.75
1287.87	506	131.19	75.82
1297.87	506	131.28	75.91
1307.87	506	131.26	75.89
1317.87	506	131.25	75.88
1327.87	506	131.35	75.98
1337.87	506	131.35	75.98
1347.87	506	131.34	75.97
1357.87	506	131.41	76.04
1367.87	506	131.49	76.12
1377.87	506	131.54	76.17

1387.87	506	131.49	76.12
1397.87	506	131.49	76.12
1407.87	506	131.55	76.18
1417.87	506	131.52	76.15
1427.87	506	131.71	76.34
1437.87	506	131.78	76.41

RECOVERY
TEST REPORT

A.C. SCHULTES OF DELAWARE, INC.
RECOVERY TEST REPORT

CUSTOMER: CAMDEN-WYOMING SEWER & WATER AUTHORITY
JOB #: 5381
DATE: 5/27/2009
WELL NO: PW#2R
WELL DIA: 12" X 10"
WELL DEPTH: 228'
PERMIT TAG #: 227937
STATIC: 55.37'
W/L DATUM: TOC

DISTANCE PUMPED TO WELL: 0 FEET
STATIC LEVEL AT START: 55.37 FEET
FINAL PUMP TEST LEVEL: 131.78 GPM

TEST TIME (GPM)	PUMPING LEVEL	RECOVERY (FEET)	RESIDUAL DRAWDOWN (FEET)
0.00	131.75	0.03	76.38
0.02	131.74	0.04	76.37
0.03	131.68	0.10	76.31
0.05	131.68	0.10	76.31
0.07	131.83	-0.05	76.46
0.08	131.71	0.07	76.34
0.10	131.65	0.13	76.28
0.11	131.68	0.10	76.31
0.13	131.74	0.04	76.37
0.15	131.78	0.00	76.41
0.16	131.73	0.06	76.36
0.18	131.77	0.01	76.40
0.20	131.68	0.10	76.31
0.21	131.67	0.11	76.30
0.23	131.73	0.06	76.36
0.25	131.77	0.01	76.40
0.26	131.78	0.00	76.41
0.28	131.73	0.06	76.36
0.29	131.84	-0.06	76.47
0.31	131.74	0.04	76.37
0.33	131.74	0.04	76.37
0.34	131.68	0.10	76.31
0.36	131.70	0.08	76.33
0.38	131.77	0.01	76.40
0.40	131.78	0.00	76.41
0.42	131.77	0.01	76.40
0.44	131.77	0.01	76.40
0.47	129.97	1.82	74.60
0.49	127.41	4.37	72.04

0.52	124.17	7.61	68.80
0.55	121.11	10.67	65.74
0.58	118.08	13.70	62.71
0.61	116.43	15.35	61.06
0.64	112.13	19.65	56.76
0.67	109.29	22.49	53.92
0.71	106.78	25.00	51.41
0.75	104.45	27.33	49.08
0.79	102.39	29.39	47.02
0.84	100.70	31.08	45.33
0.88	99.23	32.55	43.86
0.93	97.96	33.83	42.59
0.99	96.69	35.10	41.32
1.04	95.41	36.37	40.04
1.10	94.19	37.59	38.82
1.16	92.97	38.81	37.60
1.23	91.83	39.95	36.46
1.30	90.74	41.04	35.37
1.38	89.67	42.11	34.30
1.46	88.69	43.10	33.32
1.54	87.72	44.06	32.35
1.63	86.84	44.94	31.47
1.72	85.93	45.85	30.56
1.82	85.06	46.72	29.69
1.93	84.28	47.50	28.91
2.04	83.65	48.14	28.28
2.16	83.05	48.73	27.68
2.28	82.48	49.31	27.11
2.41	81.97	49.81	26.60
2.55	81.46	50.32	26.09
2.70	81.02	50.76	25.65
2.86	80.60	51.18	25.23
3.03	80.18	51.60	24.81
3.20	79.79	51.99	24.42
3.39	79.44	52.34	24.07
3.59	79.11	52.67	23.74
3.80	78.78	53.00	23.41
4.02	78.45	53.34	23.08
4.26	78.16	53.62	22.79
4.51	77.87	53.91	22.50
4.77	77.59	54.19	22.22
5.05	77.33	54.45	21.96
5.35	77.09	54.69	21.72
5.66	76.84	54.94	21.47
6.00	76.60	55.18	21.23
6.35	76.38	55.40	21.01
6.72	76.13	55.65	20.76
7.12	75.92	55.86	20.55
7.54	75.70	56.08	20.33
7.98	75.50	56.28	20.13
8.45	75.30	56.48	19.93

8.95	75.09	56.69	19.72
9.48	74.89	56.89	19.52
10.04	74.69	57.09	19.32
10.63	74.50	57.28	19.13
11.26	74.27	57.51	18.90
11.92	74.05	57.73	18.68
12.63	73.85	57.93	18.48
13.37	73.62	58.16	18.25
14.16	73.35	58.43	17.98
15.00	73.09	58.70	17.72
15.89	72.88	58.90	17.51
16.83	72.74	59.04	17.37
17.82	72.84	58.94	17.47
18.88	72.71	59.07	17.34
19.99	72.57	59.22	17.20
21.17	72.39	59.39	17.02
22.43	72.23	59.55	16.86
23.75	72.06	59.72	16.69
25.16	71.90	59.88	16.53
26.65	71.73	60.05	16.36
28.22	71.55	60.23	16.18
29.89	71.38	60.40	16.01
31.66	71.22	60.56	15.85
33.53	71.03	60.75	15.66
35.52	70.86	60.92	15.49
37.62	70.69	61.09	15.32
39.85	70.51	61.27	15.14
42.21	70.34	61.44	14.97
44.71	70.17	61.61	14.80
47.35	69.99	61.79	14.62
50.16	69.85	61.93	14.48
53.13	69.63	62.15	14.26
56.27	69.46	62.32	14.09
59.60	69.27	62.51	13.90
63.13	69.10	62.68	13.73
66.87	68.91	62.87	13.54
70.83	68.74	63.04	13.37
75.03	68.55	63.23	13.18
79.47	68.36	63.42	12.99
84.18	68.19	63.59	12.82
89.16	68.00	63.78	12.63
94.44	67.83	63.95	12.46
100.04	67.64	64.14	12.27
105.96	67.44	64.34	12.07
112.24	67.26	64.52	11.89
118.89	67.08	64.71	11.71
125.93	66.90	64.88	11.53
133.39	66.70	65.08	11.33
141.29	66.51	65.27	11.14
149.66	66.34	65.44	10.97
158.53	66.15	65.63	10.78

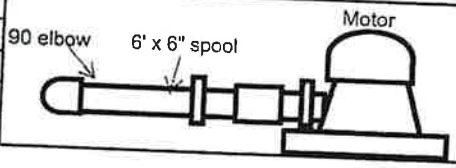
167.92	65.96	65.82	10.59
177.86	65.78	66.01	10.41
187.86	65.60	66.18	10.23
197.86	65.43	66.35	10.06
207.86	65.27	66.51	9.90
217.86	65.13	66.66	9.76
227.86	64.98	66.80	9.61
237.86	64.86	66.92	9.49
247.86	64.71	67.08	9.34
257.86	64.59	67.19	9.22
267.86	64.46	67.32	9.09
277.86	64.34	67.44	8.97
287.86	64.23	67.55	8.86
297.86	64.13	67.65	8.76
307.86	64.03	67.75	8.66
317.86	63.93	67.86	8.56
327.86	63.81	67.97	8.44
337.86	63.72	68.06	8.35
347.86	63.62	68.16	8.25
357.86	63.54	68.25	8.17
367.86	63.45	68.33	8.08
377.86	63.36	68.42	7.99
387.86	63.28	68.51	7.91
397.86	63.19	68.59	7.82
407.86	63.12	68.66	7.75
417.86	63.04	68.74	7.67
427.86	62.96	68.82	7.59
437.86	62.90	68.88	7.53
447.86	62.81	68.97	7.44
457.86	62.76	69.03	7.39
467.86	62.67	69.11	7.30
477.86	62.61	69.17	7.24
487.86	62.54	69.24	7.17
497.86	62.50	69.29	7.13
507.86	62.42	69.36	7.05
517.86	62.37	69.42	7.00
527.86	62.31	69.47	6.94
537.86	62.25	69.53	6.88
547.86	62.19	69.59	6.82
557.86	62.13	69.65	6.76
567.86	62.08	69.70	6.71
577.86	62.02	69.76	6.65
587.86	61.97	69.81	6.60
597.86	61.95	69.84	6.58
607.86	61.92	69.86	6.55
617.86	61.87	69.91	6.50
627.86	61.83	69.95	6.46
637.86	61.80	69.98	6.43
647.86	61.76	70.02	6.39
657.86	61.71	70.07	6.34
667.86	61.67	70.11	6.30

677.86	61.61	70.17	6.24
687.86	61.57	70.21	6.20
697.86	61.53	70.25	6.16
707.86	61.48	70.30	6.11
717.86	61.44	70.34	6.07
727.86	61.40	70.38	6.03
737.86	61.35	70.43	5.98
747.86	61.32	70.46	5.95
757.86	61.28	70.50	5.91
767.86	61.24	70.54	5.87
777.86	61.21	70.57	5.84
787.86	61.15	70.63	5.78
797.86	61.11	70.67	5.74
807.86	61.06	70.72	5.69
817.86	61.04	70.75	5.67
827.86	61.01	70.77	5.64
837.86	60.96	70.82	5.59
847.86	60.92	70.86	5.55
857.86	60.89	70.89	5.52
867.86	60.86	70.92	5.49
877.86	60.83	70.95	5.46
887.86	60.78	71.01	5.41
897.86	60.75	71.03	5.38
907.86	60.72	71.06	5.35
917.86	60.67	71.11	5.30
927.86	60.65	71.14	5.28
937.86	60.62	71.16	5.25
947.86	60.59	71.19	5.22
957.86	60.56	71.22	5.19
967.86	60.53	71.25	5.16
977.86	60.50	71.28	5.13
987.86	60.44	71.34	5.07
997.86	60.41	71.37	5.04
1007.86	60.39	71.40	5.02
1017.86	60.36	71.42	4.99
1027.86	60.33	71.45	4.96
1037.86	60.30	71.48	4.93
1047.86	60.28	71.50	4.91
1057.86	60.26	71.53	4.89
1067.86	60.21	71.57	4.84
1077.86	60.18	71.60	4.81
1087.86	60.15	71.63	4.78
1097.86	60.13	71.66	4.76
1107.86	60.10	71.68	4.73
1117.86	60.07	71.71	4.70
1127.86	60.04	71.74	4.67
1137.86	60.02	71.76	4.65
1147.86	60.00	71.79	4.63
1157.86	59.97	71.81	4.60
1167.86	59.94	71.84	4.57
1177.86	59.92	71.86	4.55

1187.86	59.89	71.89	4.52
1197.86	59.85	71.93	4.48
1207.86	59.84	71.94	4.47
1217.86	59.82	71.96	4.45
1227.86	59.78	72.00	4.41
1237.86	59.76	72.02	4.39
1247.86	59.73	72.05	4.36
1257.86	59.72	72.06	4.35
1267.86	59.69	72.09	4.32
1277.86	59.66	72.12	4.29
1287.86	59.65	72.13	4.28
1297.86	59.63	72.15	4.26
1307.86	59.60	72.18	4.23
1317.86	59.59	72.19	4.22
1327.86	59.55	72.23	4.18
1337.86	59.53	72.25	4.16
1347.86	59.50	72.28	4.13
1357.86	59.49	72.29	4.12

SYSTEM DATA CARD

Name: CAMDEN-WYOMING SEWER & WATER AUTHORITY Address: P. O. BOX 405; CAMDEN, DE 19934 Date: 6/12/2009

Well No: 2R Dia: 12" X 10"	Foot Valve: N/A	Head Shaft Lgth. 91" Dia: 11/4"
Depth: 228' Static: 51'	Suct. Dia: N/A Lght:	Keyway: 3/8"
Scr. Lgth: 45' Slot: .040	Inlet Case Size: 6" S-F STRAIGHT	1st Shaft: 5'
GPM: 506 PL: 131.78' S.Cap: 6.62	Bowls Dia: 10" No: 6	2nd Shaft: 10'
Pump Make: FLOWSERVE	Outlet Case Size: 6" S-F STRAIGHT	Shaft Dia: 1-1/4"
Serial No: K5840	Column Dia: 6" No: 16	No. 10' Shafts: 16 (1) 5'
Type & Size: VTP / 10"	Column Thd: STRAIGHT (10') (1-5')	Pump Shaft Dia: 1/1/2" X 1-1/4"
Curve No: 10M41-6	Short Column Lgth: 5'	Pump Shaft Lgth:
Cap: 500 GPM T.H. 260'	Base Type: 1606	Adapters: N/A
Motor/RA Gear Make: U. S. MOTOR	Spiders #: 6 Spacing: 5' - 10'	Bushings: STUFFING BOX
Serial No: 2215804	Oil Tube Dia: N/A No: N/A	R.L. Drive: N/A
Frame No: 404-1	Oil Tube Dia: N/A No: N/A	Remarks: N/A - MOTOR IS NON-RATCHETING
HP: 40 R.P.M. 1800	Oil Tube at Top: N/A	
Volts: 230 Phase: 3 Cycle: 60	Oil Tube Short: N/A N/A	
Motor Bearing No: N/A	Outlet Case to Oil Tube Dist.: N/A	
Upper: N/A	Oil Tube to Shaft Dist: N/A	
Lower: N/A	Sketch of Discharge Piping:	
Lgth. of Detector Tube: 170'		
CD Dimensions of Motor/RA Gear: 28-1/2"		
Rabbit Fit of Motor: 10-1/2"		
Motor Leads Play: 7"		
		E Dimensions of Head: 8"
Bldg. Height: 8' Overhang to Well: 15'		D Dimensions of Head: 13"
ACS Job#: 5381		Installed By: MASTEN/MOLOCK/KOSTECK

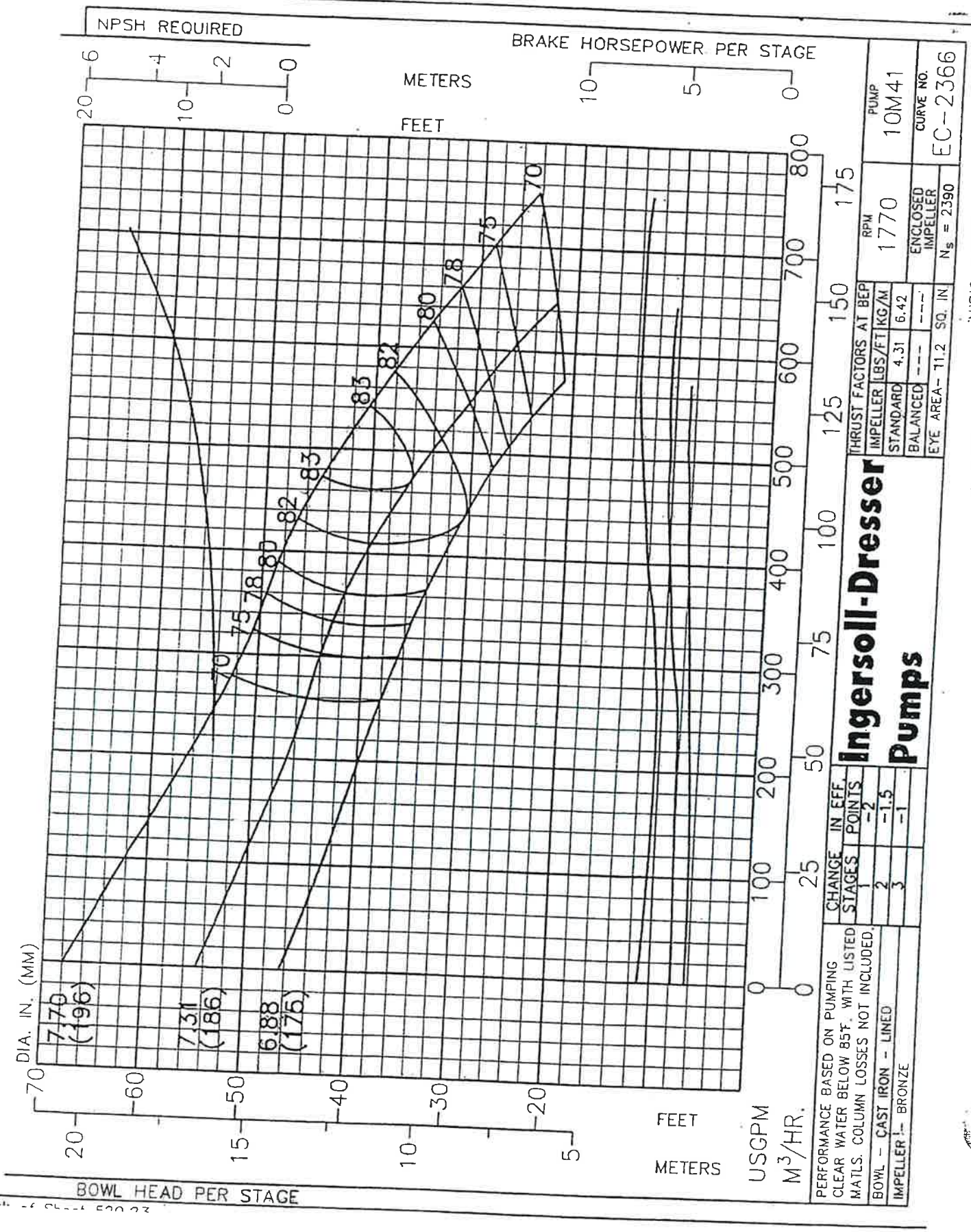
DATE	JOB #:	WORK PERFORMED
6/12/2009	5381	INSTALLED NEW PUMP & COLUMN; BOLTED DOWN; CHLORINATED HEAVILY; INSTALLED MOTOR; ELECTRICIAN WIRED UP; BROUGHT CHLORINATION UP THROUGH BLOW OFF.

MASTEN

PUMP DESIGN CURVE

Ingersoll-Dresser Pumps

CAMDEN-WYOMING
SEWER & WATER AUTHORITY
WELL #2R



WELL ABANDONMENT REPORT

MAIL TO:

WATER SUPPLY SECTION
DIVISION OF WATER RESOURCES
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PHONE: 302-739-9944
FAX: 302-739-7764

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL

http://www.dnrec.state.de.us/

WELL or SOIL BORING ABANDONMENT REPORT

WELL ABANDONMENT REPORT MUST BE RETURNED WITHIN 30 DAYS OF ABANDONMENT.

- OFFICIAL USE ONLY -

PAGE _____ OF _____ PAGES

PERMIT #: _____

ILLEGIBLE OR INCOMPLETE FORMS WILL BE RETURNED

PLEASE TYPE OR PRINT - USE BLUE OR BLACK INK ONLY

Permit # of Abandoned Well: _____

Replacement Well Permit #: 227937

Local ID: #2 Tax Map/Parcel #: NM-02-094.11-01-04.00 Lw008

Property Owner: CAMDEN-WYOMING SEWER & WATER

Well Contractor: ACSD Lic. #: 14

Well Driller in Charge: S. WILLEY Lic #: 991

Construction Date of Abandoned Well/Soil Boring: UNK

Abandonment Date: 5/21/09

WELL CONSTRUCTION METHOD (if known):

- ☐ Augered
- ☐ Driven
- ☒ Mud Rotary
- ☐ Bored
- ☐ Jetted
- ☐ Reverse
- ☐ Cable Tool
- ☐ Air Rotary
- ☐ Washed
- ☐ Other (Specify): _____

WELL ABANDONMENT:

Casing Material: BLACK STEEL

Casing Diameter (inches): 10"

Well Depth: EST

Was any Casing Removed? ☒ NO ☐ YES

If YES, Amount of Casing Removed (feet): _____

Was Casing Ripped or Perforated? ☒ NO ☐ YES

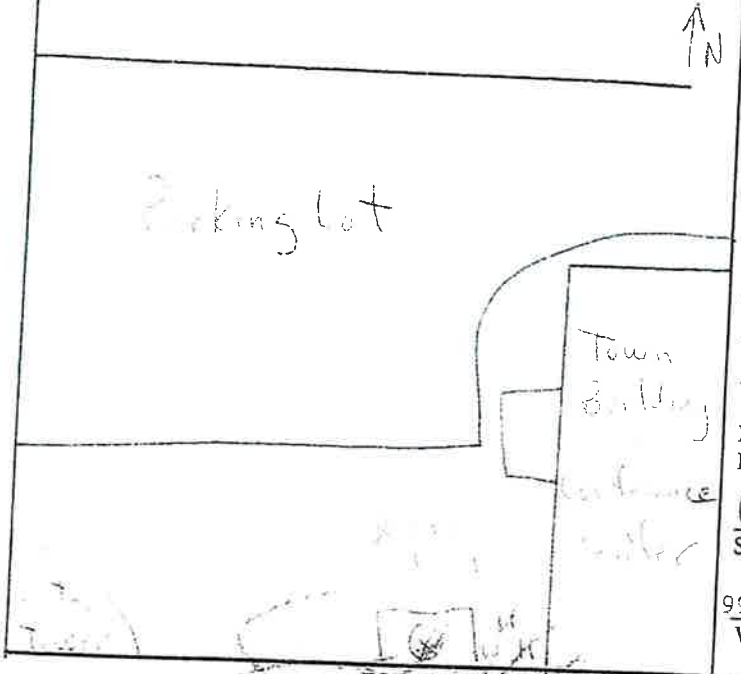
Type of Sealing Material Used: GRAVEL & CEMENT

Sealed From: 0 ft. To: 121 ft.

NOTE: If this form is submitted in place of a completion report for wells or soil borings installed and abandoned on the same date, a formation log must be attached. Formation logs must be submitted on forms provided by DNREC.

PROVIDE A LOCATION SKETCH OF ABANDONED WELL(S)

Draw a sketch below showing location of well in relation to at least two county or state roads, give distance from site to nearest road junction and ***SHOW A NORTH ARROW.***



The abandonment of this well(s) or soil boring(s) is in compliance with all permit conditions and with all applicable well construction regulations.

☒ YES ☐ NO

COMMENTS: PUMP & WELL WERE ABANDONED TOGETHER DUE TO PUMP BEING STUCK IN WELL. AND UNABLE TO REMOVED - COULD ONLY SOUND WELL WELL TO 121' - INSIDE OF PUMP COLUMN 124' 6"

I HEREBY AFFIRM THE INFORMATION I HAVE SUBMITTED IS ACCURATE AND CORRECT.

Signature - Licensed Driller in Charge of Abandonment

991 5/21/09

Well Driller License # Date

- FOR OFFICIAL USE ONLY - DO NOT WRITE BELOW THIS LINE -

Received By: _____ Modified Grid: _____ DRBC: ☐ YES ☐ NO X-Coord: _____

Amount: _____ Drainage Basin: _____ H_2O Utility: _____ Y-Coord: _____

Date: _____ Quad: _____ Flood Zone/Coastal: _____ DOT #: _____

White - DNREC • Canary - Contractor • Pink - Owner

Doc No. 40-08/87/02/03

MAIL TO:

WATER SUPPLY BRANCH
DIVISION OF WATER RESOURCES
P.O. BOX 1401
DOVER, DELAWARE 19903

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

APPLICATION FOR A PERMIT TO DRILL A WELL

APPLICATION MUST BE SUBMITTED AND PERMIT RECEIVED BEFORE DRILLING IS STARTED. IF APPROVED, THIS APPLICATION CONSTITUTES A WELL PERMIT.

A COMPLETION REPORT MUST BE FILED WITH THE WATER SUPPLY BRANCH WITHIN THIRTY (30) DAYS AFTER COMPLETION OF THIS WELL. FAILURE TO DO SO MAY RESULT IN LICENSE SUSPENSION.

PLEASE PRINT OR TYPE

GENERAL INFORMATION

Owner: Camden-Wyoming Sewer/Water Auth.
Address: Draves B
City: Camden State: DE Zip: 19934
Telephone Number: (302) 697-6372
Well Contractor: _____ Lic. No. _____
Pump Installer: _____ Lic. No. _____
Date of Application: _____
Estimated Construction Date: 5-7-09
Purpose: ☐ Test ☒ Permanent

Use:
- ☐ Domestic
- ☐ Commercial
- ☐ Irrigation
- ☐ Observation
- ☐ Heat Pump Recharge
- ☐ Agricultural
- ☐ Industrial
- ☒ Public
- ☐ Dewatering
- ☐ Heat Pump Supply
- ☐ Other _____ (Specify)

Is public water service available? ☐ Yes ☐ No
Is this a replacement well? ☐ Yes ☒ No
Replacement reason: _____
Abandonment date for old well: _____
Type of abandonment: _____
Septic system permit no.: _____

DRILLING METHOD

- ☐ Augered
- ☐ Driven
- ☒ Mud Rotary
- ☐ Other (Specify) _____
- ☐ Bored
- ☐ Jetted
- ☐ Reverse
- ☐ Cable Tool
- ☐ Air Rotary
- ☐ Washed

PROPOSED WELL CONSTRUCTION

Approximate total depth: ~~500'~~ 525'

	Inner casing	Outer casing
Casing top (above grade)		
Casing bottom (below grade)	6"	12"
Casing diameter		
Casing material	Steel	Steel

Tentative screen setting: 343' (Top) to 460'
Tentative screen length: _____ Material: _____
Type of Grout: _____ From: _____ (Top) to: _____
Gravel pack: ☒ Yes ☐ No
Gravel pack interval from: 300 to 460
Desired capacity: 600 GPM.
Maximum daily use: 500,000 GPD.

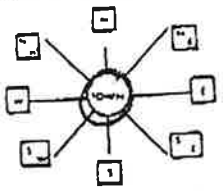
I HEREBY AFFIRM THE INFORMATION I HAVE SUBMITTED IS ACCURATE AND CORRECT.

Applicant ☐
Representative ☐

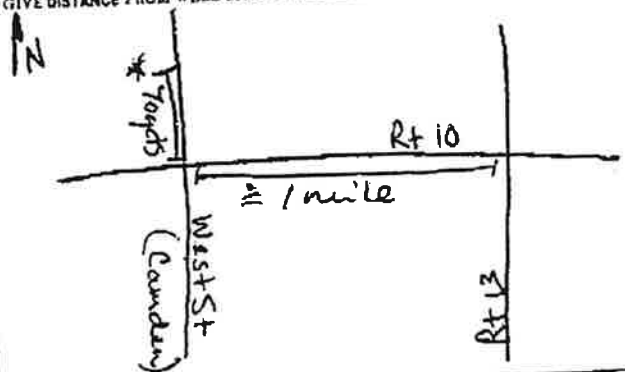
LOCATION MAP - ROAD MAP

Project County: Kent
Subdivision: _____
Lot no.: _____
Name of nearest town: Camden
Distance to nearest town: _____

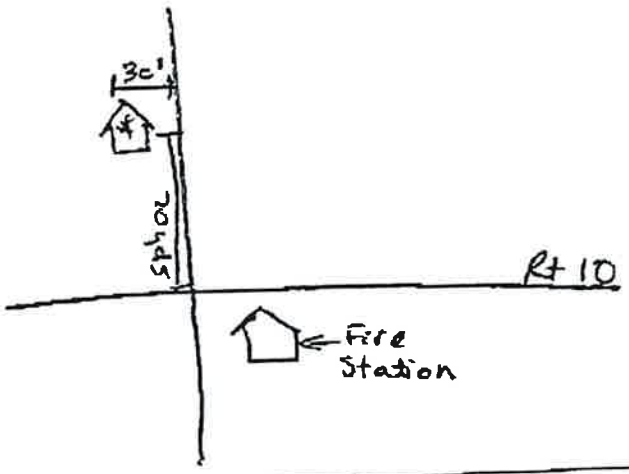
DIRECTION OF WELL FROM TOWN (CIRCLE BOX)



DRAW A SKETCH BELOW SHOWING LOCATION OF WELL IN RELATION TO ROADS AND GIVE DISTANCE FROM WELL SITE TO NEAREST ROAD JUNCTION.



SITE PLAN - INCLUDE DISTANCES FROM WELL TO HOUSE, PROPERTY LINES, NEAREST ROAD AND ALL NEARBY SEPTIC SYSTEMS (INCLUDE SUITABLE PLOT PLAN IF AVAILABLE).



PERMIT NO. 10078

FOR OFFICIAL USE ONLY

Modified Grid: 108-208
Drainage Basin: 205
Aquifer: PD
Formation: _____
Local ID: 4
Tax ID: _____

FOR OFFICIAL USE ONLY - DO NOT WRITE BELOW THIS LINE

Application Fee Received:
Date: _____ Amount: _____
Received By: _____
Receipt No.: _____

PURSUANT TO PROVISIONS OF 7 DELAWARE CODE, CHAPTER 60, PERMISSION IS HEREBY GRANTED TO CONSTRUCT AND USE A WELL AS DESCRIBED ABOVE AND SUBJECT TO THOSE CONDITIONS ATTACHED. ALL CURRENT REGULATIONS GOVERNING WELL CONSTRUCTION AND WATER RESOURCE USE MUST BE FOLLOWED.

Signed: _____

Permit Expires: _____ Report Filed: _____ Permit No. 10078

WHITE - WATER SUPPLY • CANARY - WORK • PINK - OWNER • GOLDENROD - WELL CONTRACTOR

STATE OF DELAWARE

WATER AND AIR RESOURCES COMMISSION

DOVER, DELAWARE 19901

September 15, 1969

Permit Number: WR-6 - 463/1969

Wyoming-Camden Water Commission
P. O. Box 156
Camden-Wyoming, Delaware 19934

Attention: Mr. Fred A. Phillips, Chairman

Gentlemen:

Pursuant to the provisions of Section 6104, Chapter 442, Volume 55, Laws of Delaware, permission is hereby granted for the construction, operation and maintenance of one (1) public water well at West Street, Camden, Kent County, Delaware, in accordance with the application submitted by Mr. Fred A. Phillips, Chairman, Wyoming-Camden Water Commission on June 9, 1969. This permit was approved by the Water and Air Resources Commission resolution on July 14, 1969. Approval Number 1969-W 11 was issued by the Delaware State Board of Health on September 9, 1969.

This permission is granted subject to the following conditions:

1. This approval is issued for one (1) public water well, 12 inches in diameter and approximately 460 feet in depth, a 750 gallons per minute pump and an allocation of 1,080,000 gallons per day. Changes in the proposed project shall be brought to the attention of the Commission before construction and/or installation take place.

2. A flow recorder shall be installed on the well and representatives of the Commission may inspect the records at any time.

3. The allocated water is to be used for public purposes at the location specified on the application. Any changes in the approved use shall be brought to the attention of the Commission.

4. The general and specific well locations are shown on the attached map and plot plan. If these locations are in error or are to be changed, the Commission is to be notified before construction begins.

5. This permit does not cover the structural stability of the project units nor guarantee any specific quantity or quality of groundwater.

6. Representatives of the Commission may inspect such work at any time and may conduct any tests, including electric logs, and collect any samples that are deemed necessary.

7. The system shall be constructed so as to exclude the entrance of surface water and shallow groundwater and shall be disinfected in accordance with the regulations of the Delaware State Board of Health.

8. A well completion report for each well constructed is to be filed with the Commission within fifteen (15) days following completion.

9. This permit is void if construction has not been started by one (1) year from the date of issuance and shall be revoked upon violation of any of these conditions.

Sincerely,

John C. Bryson
Executive Director

JCB:JMK:clm:sp

Enclosures

cc: Delaware River Basin Commission

WRD-1
11/68

STATE OF DELAWARE
WATER AND AIR RESOURCES COMMISSION
Water Resources Division
Dover, Delaware 19901

RECEIVED
JUN 12 1969
STATE OF DELAWARE
WATER RESOURCES DIVISION

APPLICATION TO CONSTRUCT A WATER WELL AND/OR OBTAIN A GROUNDWATER ALLOCATION

1. Name and present mailing address of the owner of the property on which the well is or will be located
WYOMING - CAMDEN WATER COMMISSION
P.O. Box 156 CAMDEN - WYOMING, DELAWARE

2. Name of person to be using the well and mailing address at the location of the well
RESIDENTS - CAMDEN - WYOMING

3. Number of wells to be constructed and/or used, approximate depth and diameter of each, and proposed use (e.g. Domestic, Industrial, Agricultural, etc.)
ONE - 460' deep - 12" diameter, to be used for PUBLIC use.

4. Type of construction: Cable Tool ____ Jetted ____ Bored ____
Rotary, Hydraulic Driven ____ Dug ____

5. Type of casing: OUTER CASING 12 INCHES OD, STEEL, WALL THICKNESS AT LEAST 0.375 INCHES AND WEIGH AT LEAST 49.56 lbs.

6. Type of screen: STAINLESS STEEL 6 INCH diameter well screen, #40 slot. (JOHNSON OR EQUIVALENT)

7. Is well to be gravel packed? YES Cement grouted, per Reg.

8. Average daily use: 250,000 gallons per day

Proposed pump capacity: 500 MINIMUM 750 MAXIMUM gallons per minute

9. Proposed well head completion: ____ in. above grade ____ Pitless Adapter

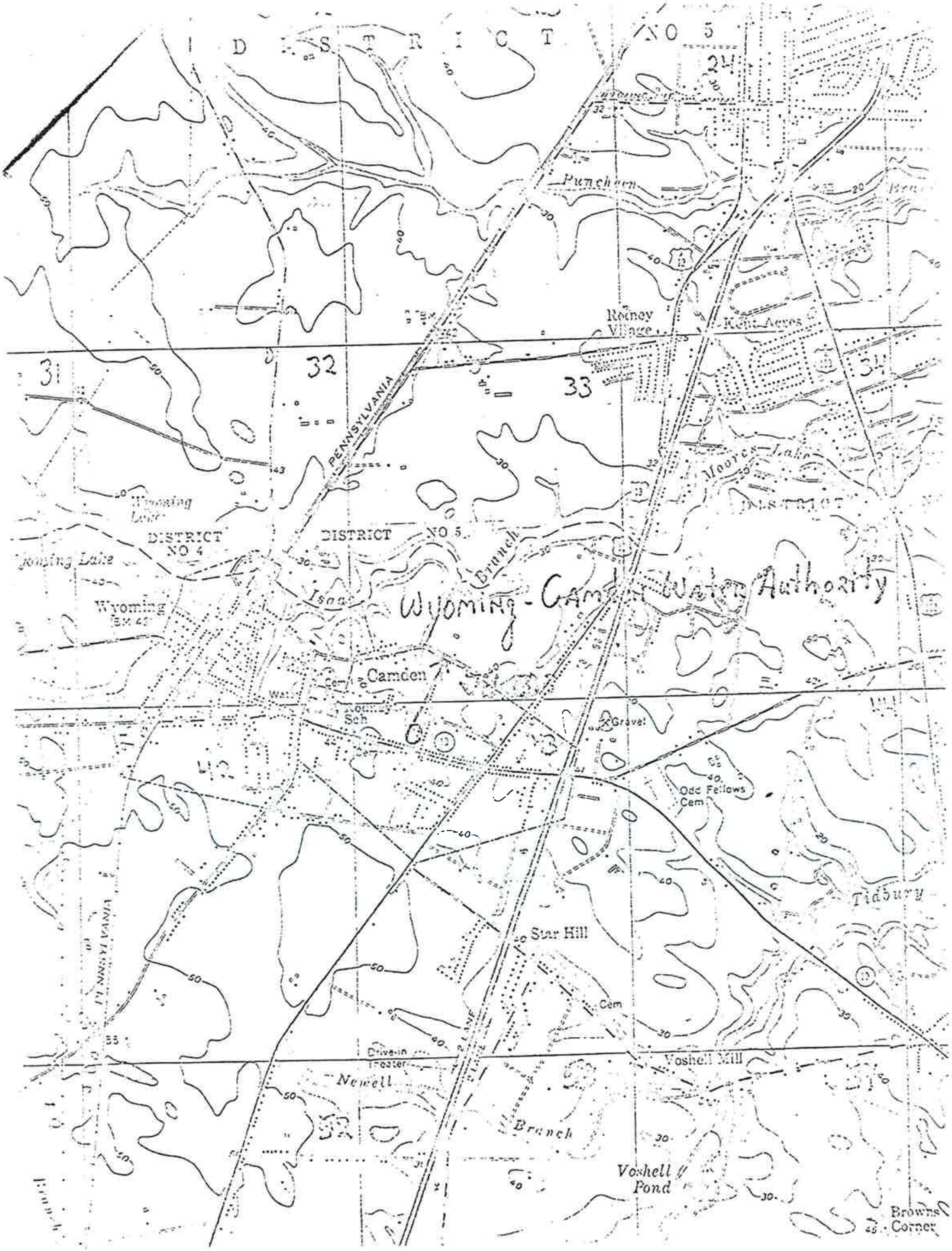
10. Are multiple screens to be used? X Yes ✓ No 117 foot screen.

11. Name of Well Driller SHANNAHAN ARTESIAN WELL CO., INC.

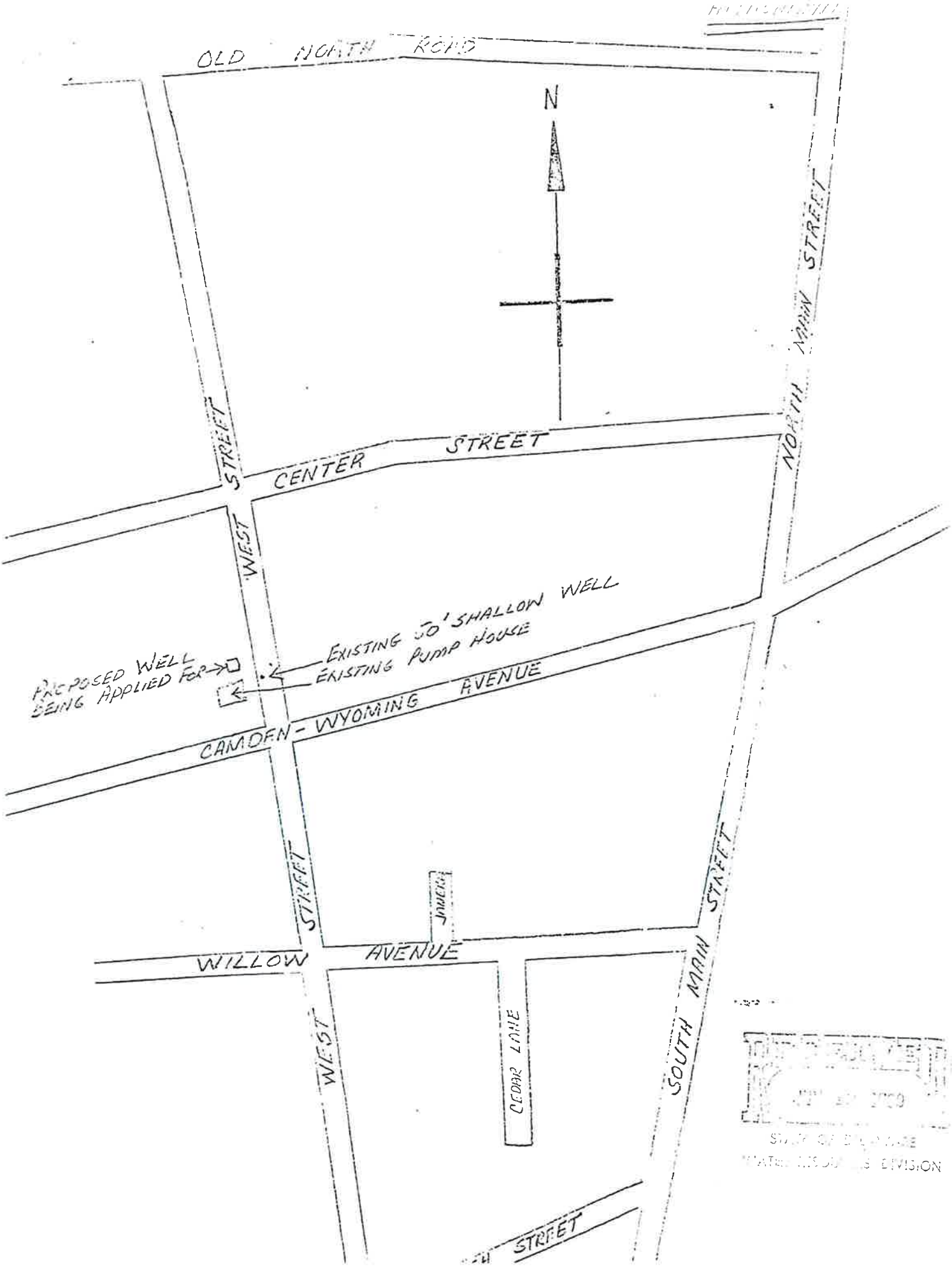
12. Name of Pump Installer SHANNAHAN ARTESIAN WELL CO., INC.

13. Submit a neat scaled drawing showing the lot on which the well(s) being applied for will be located. Include on the drawing the exact locations on the lot of any well, septic tank, tile field, cesspool or sewer. The locations of each of these on adjacent lots must also be given if the lot is less than 1/4 acre. Show on the drawing the name of the street or road on which the lot is located. (ATTACHED)

(over)



DISTRICT NO 5
24
Puncheon
Rodney Village
Kent Acres
31
32
33
34
PENNSYLVANIA
Moores Lake
DISTRICT NO 4
DISTRICT NO 5
Branch
Wyoming
Wyoming-Camden Water Authority
Camden
Cem
Rodney Sch
Gravel
Odd Fellows Cem
42
Tidbury
Star Hill
Cem
Drive-in Theater
Voshell Mill
Newell
Branch
Voshell Pond
Browns Corner


OLD NORTH ROAD
N
NORTH MAIN STREET
CENTER STREET
WEST STREET
EXISTING 30' SHALLOW WELL
EXISTING PUMP HOUSE
PROPOSED WELL BEING APPLIED FOR
CAMDEN - WYOMING AVENUE
WILLOW AVENUE
WEST STREET
CEDAR LANE
SOUTH MAIN STREET

DELAWARE HEALTH AND SOCIAL SERVICES
Division of Public Health

Office of Engineering
Phone: (302) 741-8640
Fax: (302) 741-8641

December 19, 2016

REVISED APPROVAL

Soheil Gharebaghi, P.E.
Camden Wyoming SWA
P.O. Box 405
Camden, DE 19934

Camden Wyoming Sewer and Water Authority
PWS #DE0000563
Approval #15W18 REV 1

Re: Upper King Road Water Treatment Plant

Dear Mr. Gharebaghi:

The Division of Public Health Office of Engineering has reviewed the revised plans and specifications for the New Water Treatment Plant at 3680 Upper King Road submitted by Camden Wyoming Sewer and Water Authority. The plans consist of:

1. Transmittal letter dated December 19, 2016.
2. DE NORA EST Type DSH 400 Dry Emergency Gas Chlorine Scrubber System Specifications.
3. Dayton Motorized Damper Specifications.

These revisions have been accepted and will accompany the previous plans, Approval to Construct # 15W18. The Approval to Construct number, 15W18, and conditions dated February 24, 2015 will remain the same. The approval is void if construction has not been started by December 19, 2017. Thank you for bringing the changes to our attention.

One set of as-built drawings, including profile markups, must be submitted with satisfactory bacteriological results before an Approval to Operate will be issued.

Please do not hesitate to contact me at (302) 741-8646 with questions or concerns.

Sincerely,

William J. Milliken, Jr.
Engineer III
Office of Engineering

APPROVAL TO OPERATE

Under Section 2.12.1 of the *State of Delaware Regulations Governing Public Drinking Water Systems*, you are hereby granted approval to operate the following:

Approval to Operate: 15W18A-1

Water System Name: Camden Wyoming Sewer and Water Authority

Owner: Camden Wyoming Sewer and Water Authority

County: Kent PWS ID# DE0000563

Approval to Construct Permit # 15W18

Construction Description: Upper King Road Water Treatment Facility and Well#6

DNREC Permit #249930

____ Water Main

X New Water Plant for Existing System

X New/Renovated Well

____ Alteration to Treatment Existing System

Approved by:

Sharon Scheers, EHS II
Environmental Health Specialist II

10/4/17
Date

William Tweedy
Reviewing Engineer

October 4, 2017
Date

DELAWARE HEALTH AND SOCIAL SERVICES

DIVISION OF PUBLIC HEALTH

Office of Drinking Water
43 South DuPont Highway
Dover, DE 19901
Phone: (302) 741-8630
Fax: (302) 741-8631

CWS&WA

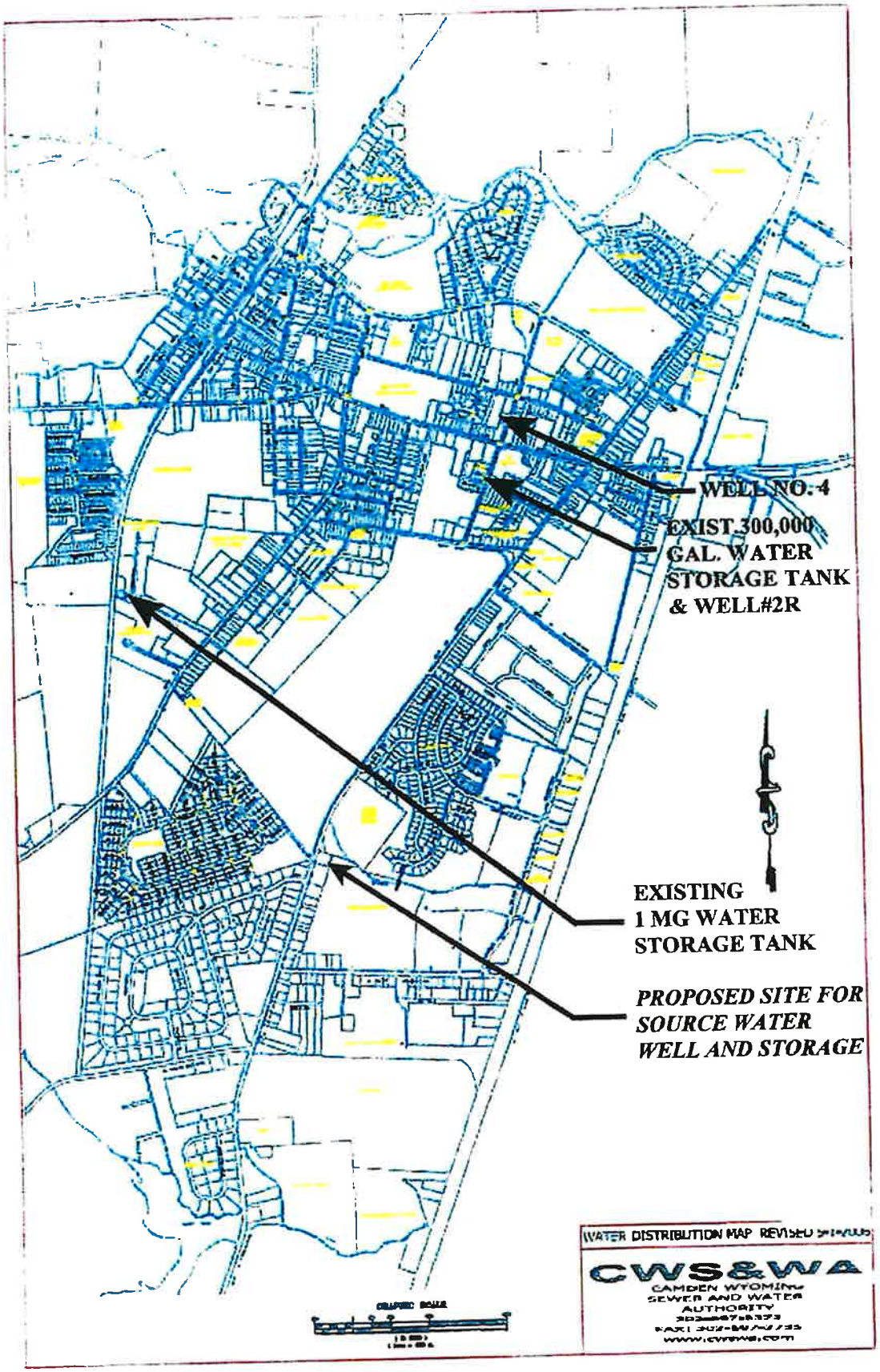
CAMDEN WYOMING SEWER AND WATER AUTHORITY
P.O. BOX 405 CAMDEN, DE 19934
302-697-6372

SOURCE WATER & WATER STORAGE CAPACITY DEVELOPMENT AT 3680 UPPER KING ROAD AND ADJACENT VACANT LOT TOWN OF CAMDEN, DELAWARE FEBRUARY 16, 2015

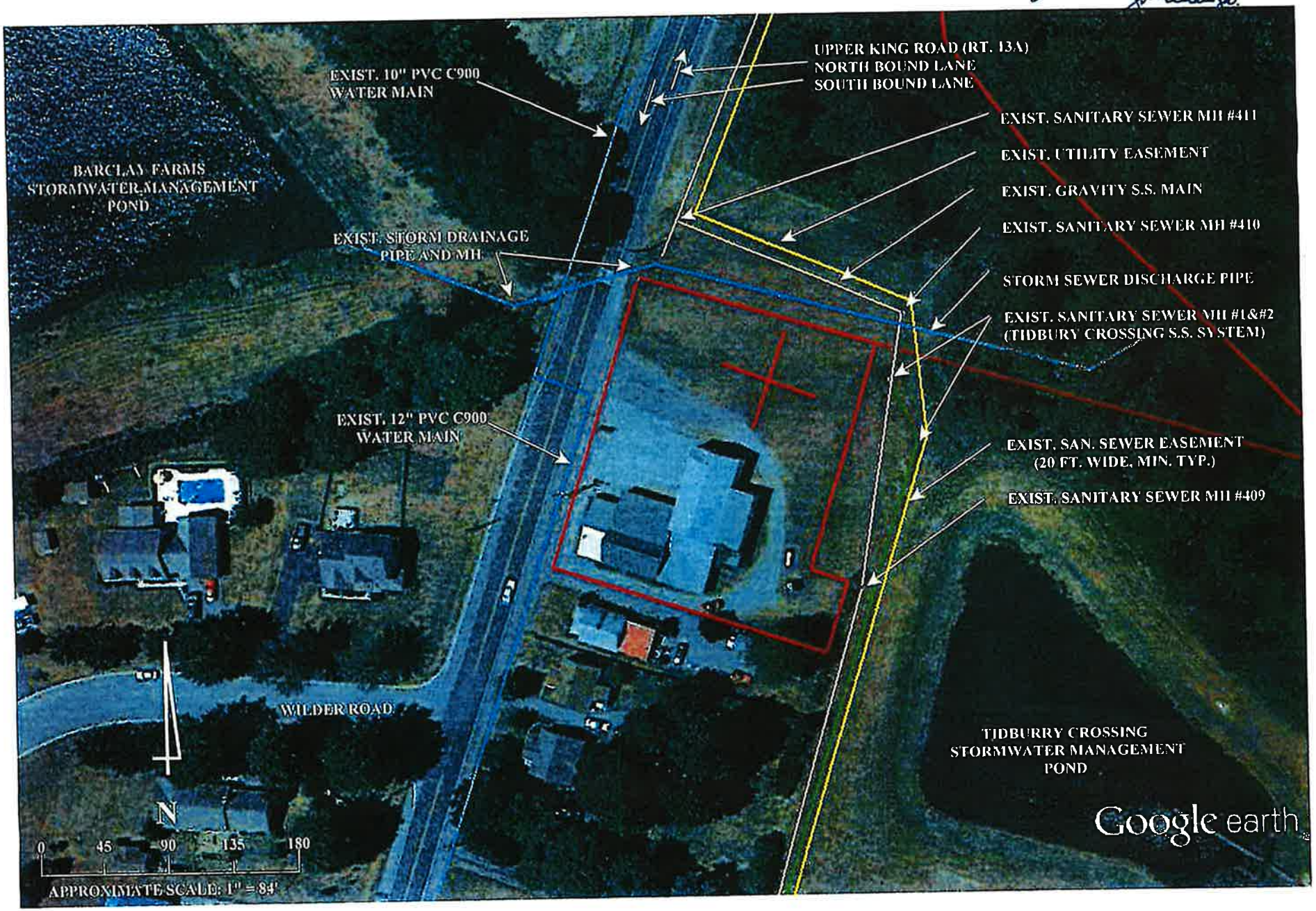
REVIEWED BY:
William J. Mielbert Jr
February 24, 2015
Office of Engineering
Approval to Construct
15W18

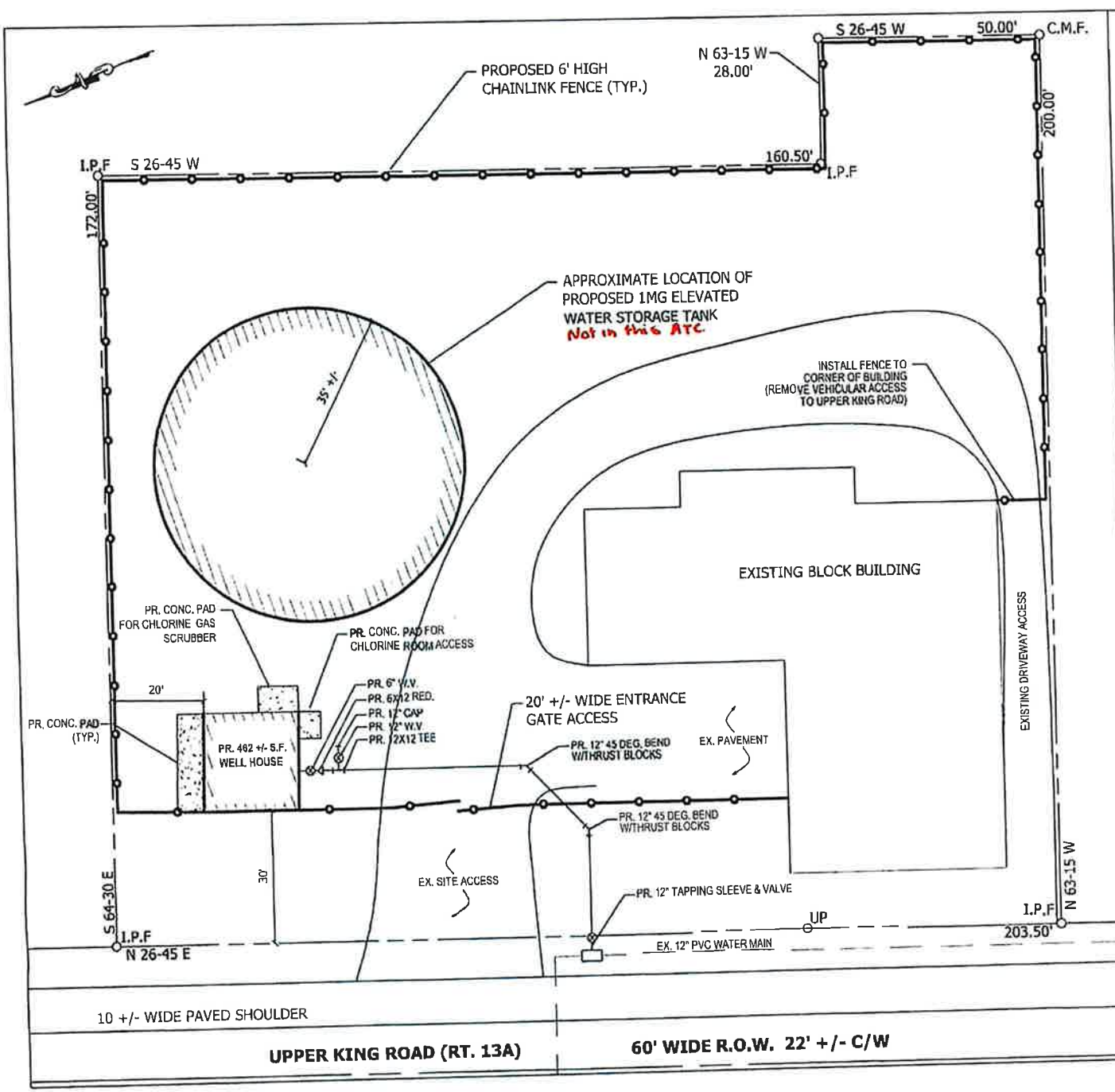
INDEX OF SHEETS

REVIEWED BY:
William J. Middleton
January 29, 2015
Office of Engineering



REVIEWED BY:


EXIST. 10" PVC C900
WATER MAIN
UPPER KING ROAD (RT. 13A)
NORTH BOUND LANE
SOUTH BOUND LANE
EXIST. SANITARY SEWER MH #411
EXIST. UTILITY EASEMENT
EXIST. GRAVITY S.S. MAIN
EXIST. SANITARY SEWER MH #410
BARCLAY FARMS
STORMWATER MANAGEMENT
POND
EXIST. STORM DRAINAGE
PIPE AND MH
STORM SEWER DISCHARGE PIPE
EXIST. SANITARY SEWER MH #1&#2
(TIDBURY CROSSING S.S. SYSTEM)
EXIST. 12" PVC C900
WATER MAIN
EXIST. SAN. SEWER EASEMENT
(20 FT. WIDE, MIN. TYP.)
EXIST. SANITARY SEWER MH #409
WILDER ROAD
TIDBURRY CROSSING
STORMWATER MANAGEMENT
POND
N
0
45
90
135
180
APPROXIMATE SCALE: 1" = 84'
Google earth



PROPERTY OF:
CWS&WA AT 3680 UPPER KING ROAD
AND ADJACENT VACANT LOT
TOWN OF CAMDEN, DE

TAX PARCEL NOS:
NM 00-103.06-01-53.00
NM 00-103.00-01-18.00

TOTAL LAND AREA:
47,480 S.F. +/- (1.09 AC +/-)
PER KENT COUNTY ASSESMENT

EXISTING IMPROVEMENTS:
NM 00-103.06-01-53.00

5,748 S.F. +/-	LIGHT MANUF.
1,800 S.F. +/-	RETAIL STORE
7,548 S.F. +/-	CONC. SHELL BLDG.

PROPOSED IMPROVEMENTS:
NM 00-103.00-01-18.00

462 S.F. +/- WELL HOUSE
1MG ELEVATED WATER STORAGE
(APPROXIMATELY 70' +/- DIA.)

THIS PLAN IS NOT THE RESULT OF A FIELD SURVEY. METES AND BOUNDS ARE SHOWN PER DEED OF PROPERTY. IRON PIPE PROPERTY MARKERS SHOWN WERE FOUND AND REPRESENT ACTUAL BOUNDS OF THE SITE.

REVIEWED BY:
William J. McGlynn
Approval to construct #15W18
Office of Engineering
2/24/2015

CWS&WA
CAMDEN WYOMING SEWER AND WATER AUTHORITY
P.O. BOX 405 CAMDEN, DE 19934
302-697-6372

SOURCE WATER & WATER STORAGE
CAPACITY DEVELOPMENT AT
3680 UPPER KING ROAD AND ADJACENT
VACANT LOT

SITE PLAN

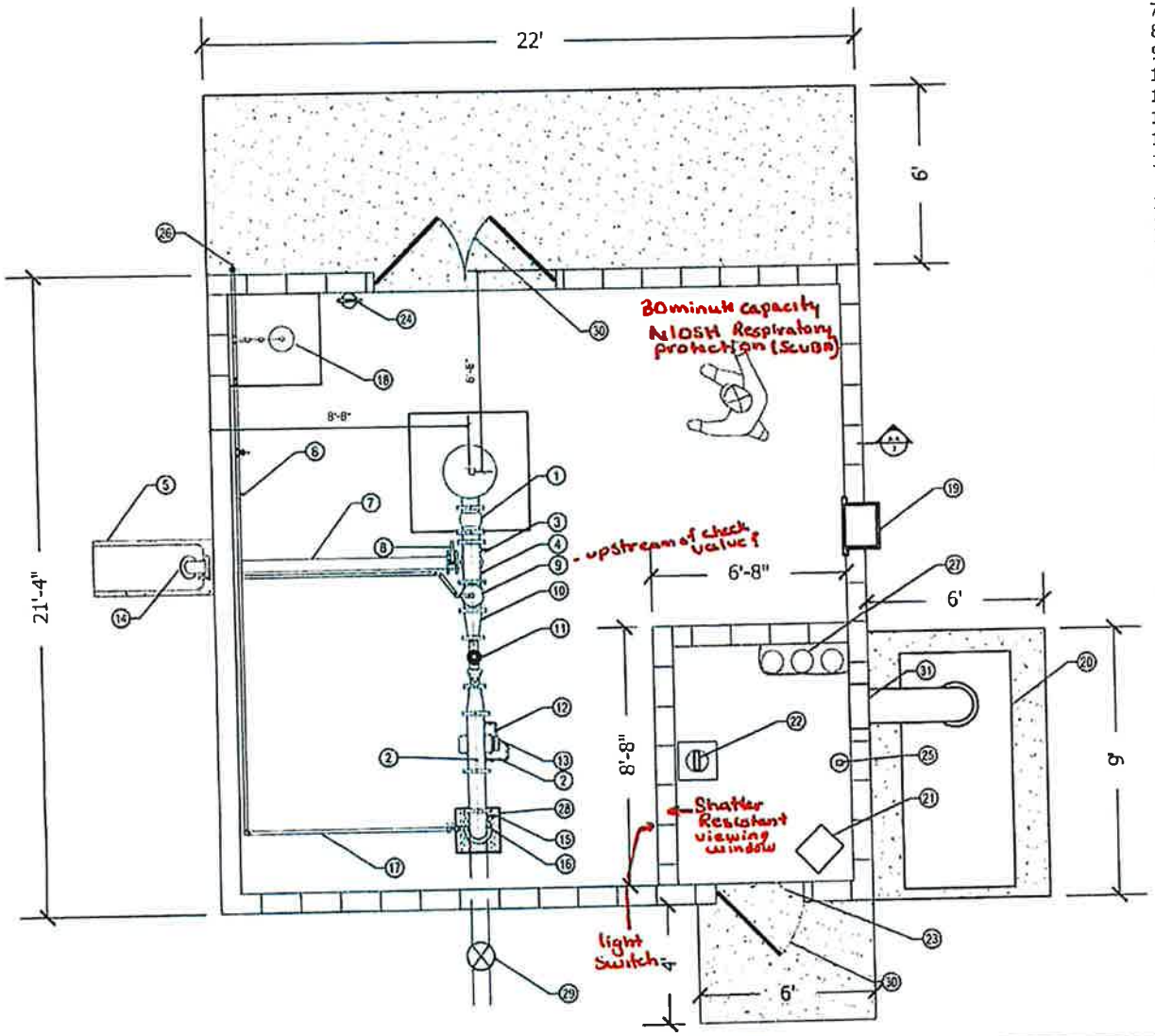
DATE: 2-16-15 **APPROX. SCALE: 1"=30'**

SHEET: 1 OF 5

GENERAL NOTES

- ALL DUCTILE IRON PIPE TO RECEIVE 1 COAT OF EPOXY BASE PAINT.
- ALL DIMENSIONS SHOWN ARE APPROXIMATE AND MAY BE FIELD ADJUSTED TO SUIT FIELD CONDITIONS

REVIEWED BY
William J. Mottu
February 24, 2015
Office of Engineering



PLAN NOTES

1. 6" CHECK VALVE (NIBCO F-960 250 LB)
2. PRESSURE GAUGES PER REGAL CHLORINATOR APPLICATION / INSTALLATION DATA SHEET
3. RAW WATER SAMPLE TAP W/DRAIN
4. 6X4 D.I. TEE
5. CONCRETE SPLASH BLOCK (TYP.)
6. PRESSURE TRANSDUCER TO BE TAKEN OFF EYE WASH LINE (SYSTEM PRESSURE)
7. 4" BLOW OFF
8. 4" BUTTERFLY VALVE
9. AIR RELEASE VALVE
10. 6X4 D.I. FLANGED COCENTRIC REDUCER
11. 4" WATER METER
12. REGAL GAS CHLORINATION EJECTOR
13. BOOSTER PUMP
14. INSTALL SCREEN IN BLOW OFF DISCHARGE PIPE
15. TREATED WATER SAMPLE TAP
16. 6" D.I. 90 DEG. ELBOW
17. EYE WASH LINE
18. EYE WASH STATION
19. FRIEDRICH THRUWALL 230V AIR COND. UNIT LOCATED 4'-6" ABOVE TOP OF SLAB. R.O.=17-1/4" H X 27-1/4" W
20. PURAFIL MODEL FOC5 150LB CHLORINE GAS SCRUBBER
21. Q-MARK MODEL #MUH7.5 UNIT HEATER
22. CHLORINE CYCLINDER WITH SAFETY CHAIN ON SCALE
23. INTAKE LOUVER INSTALLED ABOVE DOOR FOR CHLORINE ROOM
24. 10# ABC FIRE EXTINGUISHER WITH TAG
25. REGAL SERIES 3000 CHLORINE GAS DETECTOR WITH RELAY MODULE
26. FROST FREE HOSE BIB
27. CHLORINE GAS CYLINDERS WITH SAFETY CHAIN
28. PEA GRAVEL FILL TO SERVE AS DRAIN
29. PR. 6" WATER VALVE. SEE SITE PLAN FOR DETAILS.
30. DOORS TO BE EQUIPPED WITH PANIC HARDWARE
31. PURAFIL GAS SCRUBBER EXHAUST; 6" +/- ABOVE CHLORINE ROOM FLOOR

CWS&WA
CAMDEN WYOMING SEWER AND WATER AUTHORITY
P.O. BOX 405 CAMDEN, DE 19934
302-697-6372

SOURCE WATER & WATER STORAGE CAPACITY DEVELOPMENT AT 3680 UPPER KING ROAD AND ADJACENT VACANT LOT

WELL HOUSE BUILDING & PIPING PLAN

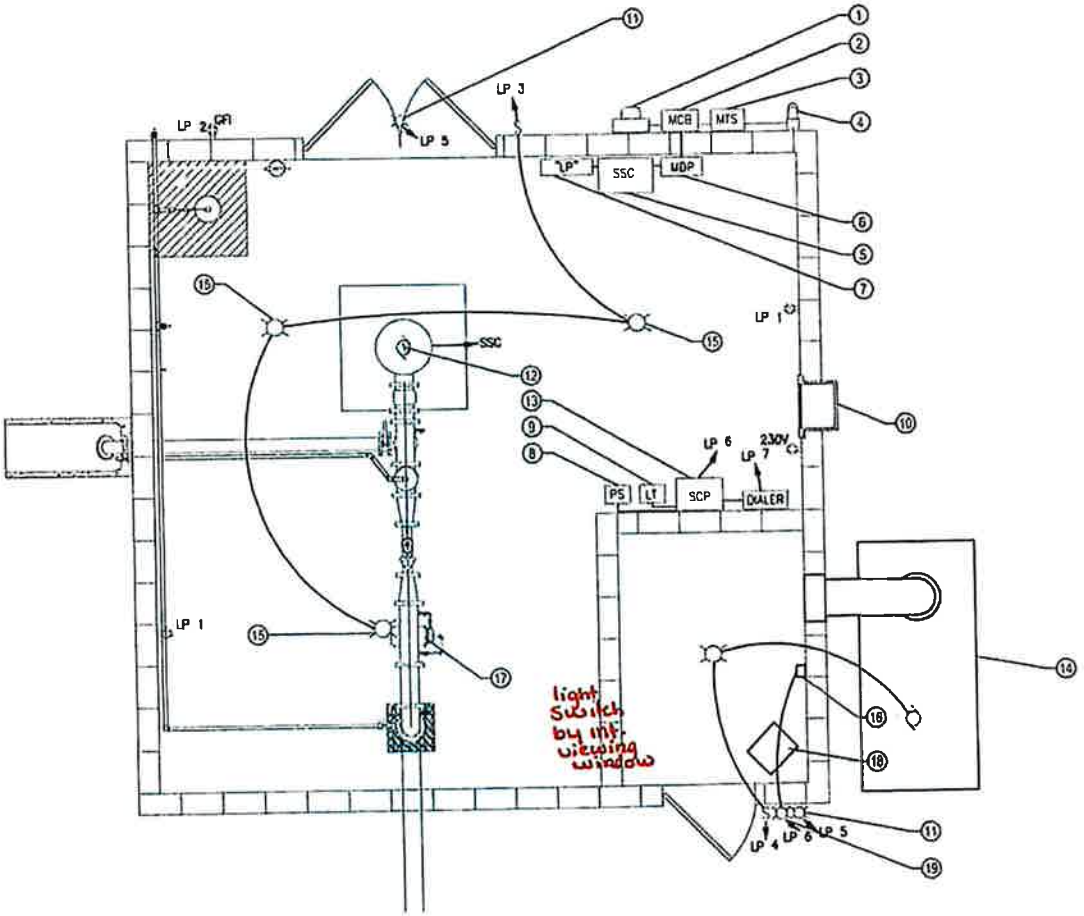
DATE: 2-16-15 SCALE: NTS

SHEET: 2 OF 5

GENERAL NOTES

ALL ELECTRICAL CIRCUITS, EQUIPMENT, AND PANEL LOCATIONS TO BE VERIFIED AND INSTALLED BY A LICENSED ELECTRICIAN

REVIEWED BY
William F. Mullen
February 24, 2015
Office of Engineering



EQUIPMENT SCHEDULE

1. 400 AMP METER PER DELMARVA POWER REQUIREMENTS.
2. 400AMP MAIN CIRCUIT BREAKER IN LOCKED WEATHERPROOF ENCLOSURE
3. 400AMP MANUAL TRANSFER SWITCH IN LOCKED WEATHERPROFF ENCLOSURE
4. GENERATOR RECEPTACLE, 200AMP, 240V, 3PH CROUSE HINDS AREA20416 RECEPTACLE TO MATCH EXISTING CWSWA GENERATOR ROTATION
5. SOFT START CONTROLLER; 100HP MOTOR, 240V 3PH (MOTOR SIZE TO BE DETERMINED AFTER WELL INSTALLATION AND DEVELOPMENT)
6. MAIN DISTIBUTION PANEL (MDP) WITH TVSS & SUITABLE AS SERVICE ENTRANCE EQUIPMENT
7. 100AMP, 1PH LOAD PANEL FOR LIGHTING, RECEPTACLES, CONTROLS, & EXPANSION
8. MJK 704 PUMP CONTROLLER
9. TRANSCOIL LEVEL TRANSDUCER (LT)
10. FRIEDRICH THRUWALL 230V AIR COND.
11. RAB WPLED104 WALL PACK EXTERIOR LIGHT
12. 100HP MOTOR FOR TURBINE PUMP (MOTOR SIZE TO BE DETERMINED AFTER WELL INSTALLATION AND DEVELOPMENT)
13. SYSTEM CONTROL PANEL (SCP) 120V; PROVIDED BY OTHERS
14. PURAFIL MODEL FOC5 150LB CHLORINE GAS SCRUBBER; 5HP, 3PH, 240V
15. RAB GLED 78W COOL INTERIOR LIGHT
16. REGAL SERIES 3000 CHLORINE GAS DETECTOR WITH RELAY MODULE
17. BOOSTER PUMP
18. Q-MARK MODEL # MUH7.5 UNIT HEATER
19. FLASHING RED WARNING LIGHT FOR CHLORINE GAS DETECTION

CWS&WA
CAMDEN WYOMING SEWER AND WATER AUTHORITY
P.O. BOX 405 CAMDEN, DE 19934
302-697-6372

SOURCE WATER & WATER STORAGE CAPACITY DEVELOPMENT AT 3680 UPPER KING ROAD AND ADJACENT VACANT LOT

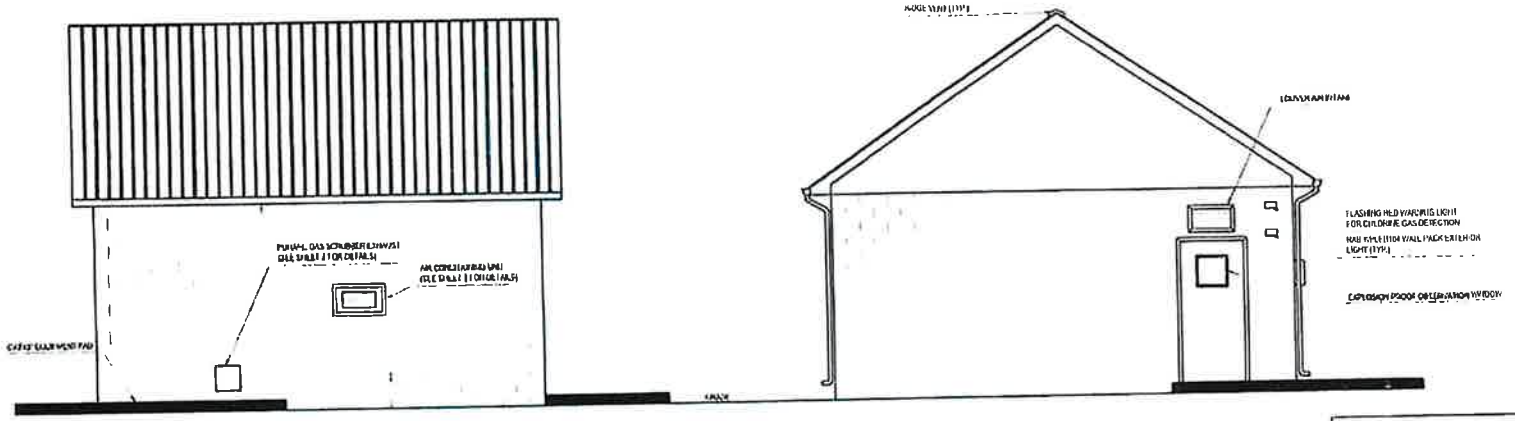
WELL HOUSE ELECTRICAL PLAN

DATE: 2-16-15 SCALE: NTS

SHEET: 3 OF 5

1 FRONT ELEVATION
NTS

1 LEFT SIDE ELEVATION
NTS



1 REAR ELEVATION
NTS

1 RIGHT SIDE ELEVATION
NTS

REVIEWED BY
William J. Mitchell
February 24, 2015
Office of Engineering

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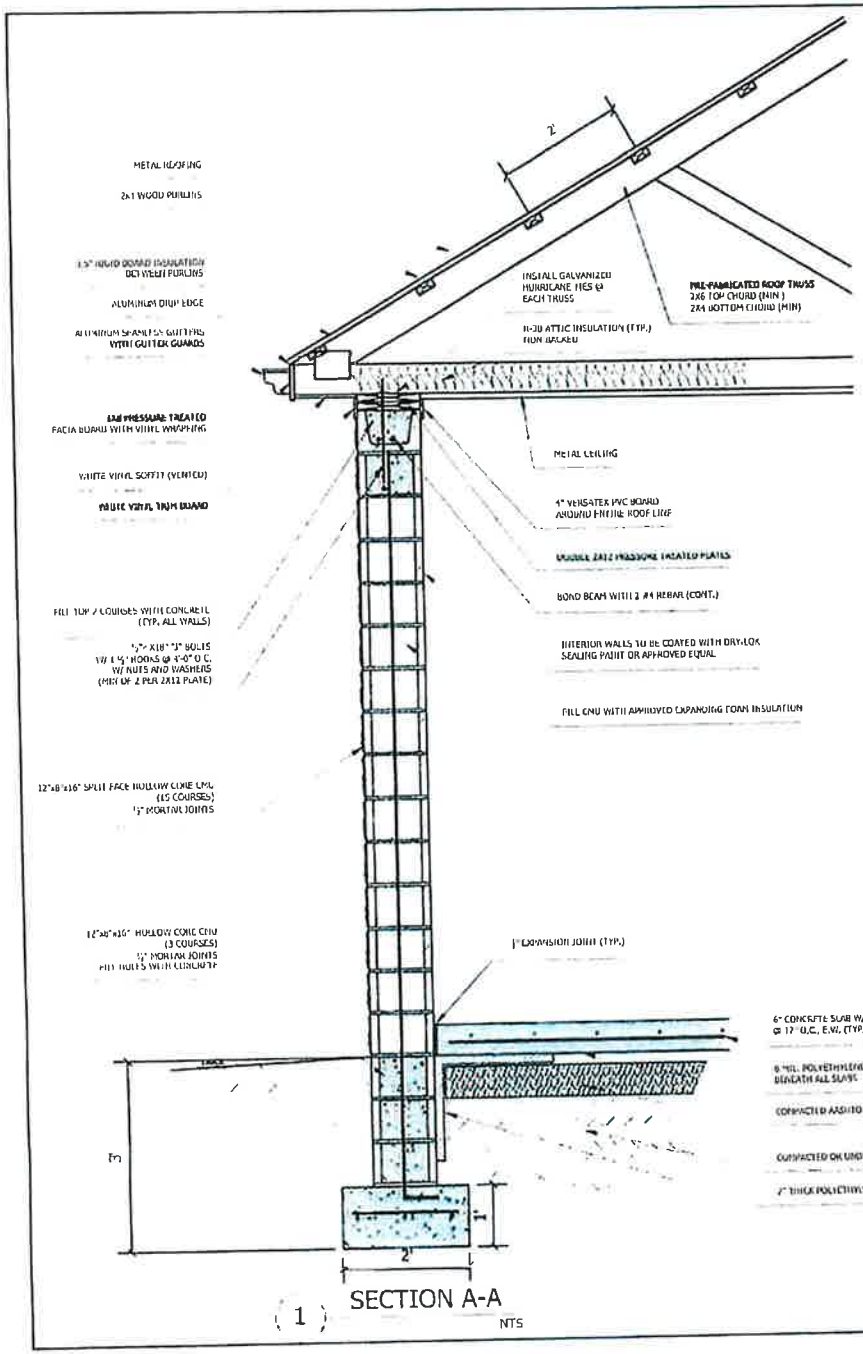
302-697-6372

SOURCE WATER & WATER STORAGE
CAPACITY DEVELOPMENT AT
3680 UPPER KING ROAD AND ADJACENT
VACANT LOT

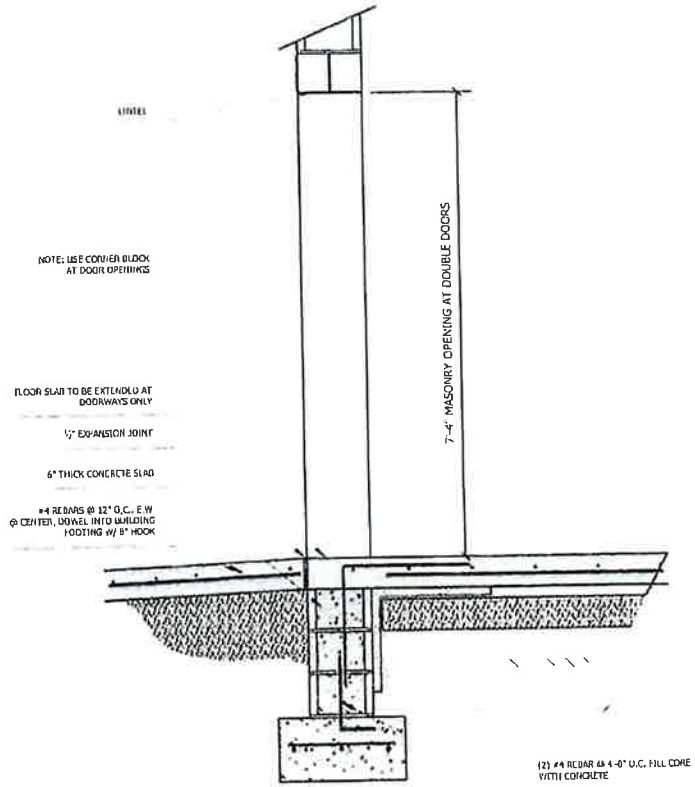
WELL HOUSE ELEVATIONS

DATE: 2-16-15 SCALE: NTS

SHEET: 4 OF 5



1 SECTION A-A
NTS



1 LINTEL DETAIL
NTS

REVIEWED BY:
William Mullen
February 24, 2015
Office of Engineering

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CAMDEN WYOMING SEWER AND WATER AUTHORITY
P.O. BOX 405 CAMDEN, DE 19934
302-697-6377

SOURCE WATER & WATER STORAGE CAPACITY DEVELOPMENT AT
3680 UPPER KING ROAD AND ADJACENT VACANT LOT

WELL HOUSE BUILDING SECTIONS

DATE: 2-16-15 SCALE: NTS

SHEET: 5 OF 5

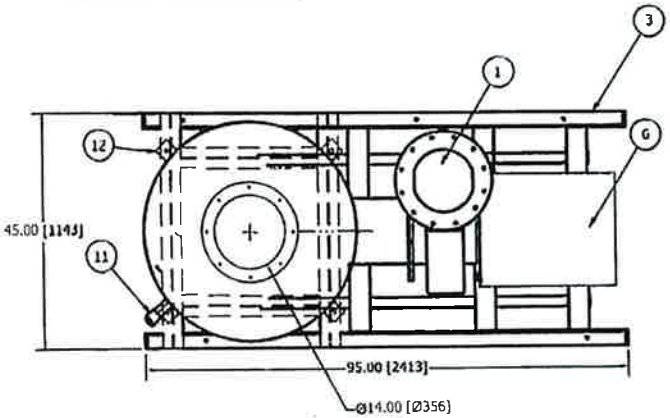
PURAFIL, INC. REP.:

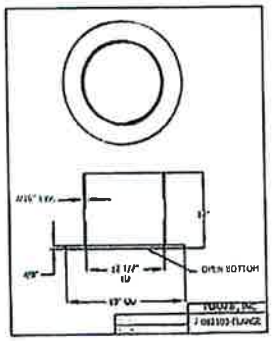
REVIEWED BY:
William Matthews
February 24, 2015
Office of Engineering

NOTES:
1. DIMENSIONS ARE IN INCHES.
   METRIC EQUIVALENTS IN BRACKETS [ ] ARE IN MILLIMETERS.
2. JOINTS ARE SEALED WITH RTV SILICON RUBBER.
3. FLANGE CONNECTIONS ARE SEALED WITH COMPRESSIBLE GASKET.
4. CONTROLS AND GAGE WILL BE SHIPPED LOOSE AND ARE TO BE LOCATED AND MOUNTED BY OTHERS.

Parts List

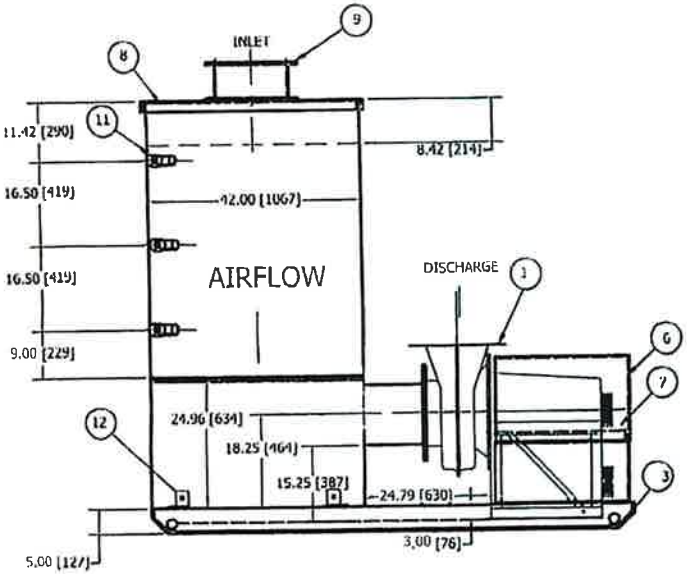
ITEM	QTY	PART
1	1	FRP Blower, M & C Motor
2	1	FRP Vessel 42", 14" in, 12" out
3	1	Skid Base, 5'x9', 0.19 AL
4	1	Control Panel
5	2	Hat Channel, 0.19 AL, 3" x 1" x 66"
6	1	FRP Weather Cover Top
7	1	FRP Weather Cover Bottom
8	1	FRP Drum Lid, 42" dia
9	1	FlexConnector-14.0" dia-Blg Viton
10	1	FRP Exhaust Stack(By Others))
11	3	CPVC Sample Ports
12	4	Hold Down Lugs - Aluminum
13	1	Differential Pressure Gage

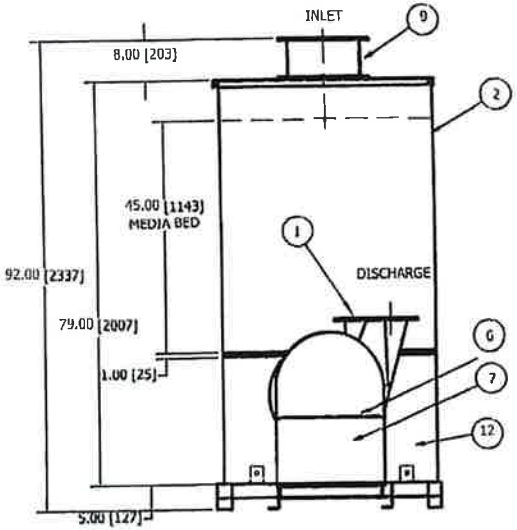




(4) Control Panel (shipped loose)

(13) Pressure Gage (shipped loose)





PURAFIL, INC. RESERVES THE RIGHT TO MODIFY DESIGN FOR IMPROVED PRODUCT PERFORMANCE.
PURAFIL , PURAFIL II , PURASORB , CHLOROSORB , AND SCOOTER SKUNK EMBLEM (REG. US. PAT. & TM OFFICE), PURASTAT 1N, HEBA-LOCK M, CORROSIVE-AIRE 1M, ES 1M, PURACARB TM, PM TM SERIES AND THE DISTINCTIVE SHAPE OF PM 1M MODULES ARE TRADEMARKS OF PURAFIL TM, INC., A U.S.A. CORPORATION.

PURAFIL
First...in clean air

JOB/UNIT IDENTIFICATION:

FOC5

150 LB CHLORINE GAS SCRUBBER

MODEL NUMBER: FOC5

AIRFLOW:	I△P:	T△P:
905 CFM [1538 CMH]		

ELECTRICAL:

VOLTAGE	PHASE	HZ	HP	TYPE
230-460	3	60		MLL & CHEM

ITEM	MATERIAL	FINISH
42" DRUM	FRP	GEL COAT
SKID BASE	ALUMINUM	MILL
EXHAUST FAN	FRP	GEL COAT
INLET BOOT	VITON/CPVC	N/A
OUTLET BOOT	EPDM/PVC	N/A
WEATHER COVER	FRP	GEL COAT

MEDIA

BED DEPTH	MEDIA TYPE	TOTAL MEDIA WEIGHT
45" [1143mm]	CHLOROSORB ULTRA	1620 LB [735 KG]

FILTERS:

QUANTITY	TYPE	SIZE
	N/A	N/A

GAGE UNITS:
- ☐ NONE
- ☐ ROOM PRESSURIZATION AND AIRFLOW
- ☒ STATIC PRESSURE DIFFERENTIAL (PREFILTER & FINAL FILTER)

☐ WEATHERPROOFING

- ☐ FOR APPROVAL
- ☐ FOR CONSTRUCTION
- ☐ FOR QUOTE
- ☒ FOR INFORMATION
- ☐ AS BUILT

DATE: 4/28/2010

APPROX. OPERATING WEIGHT:

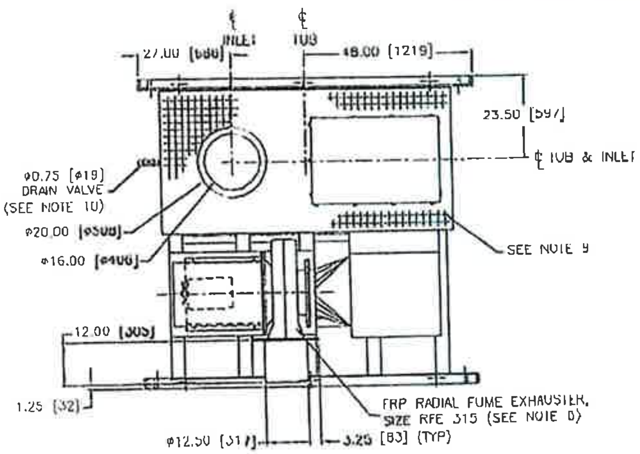
APPR. BY: TF

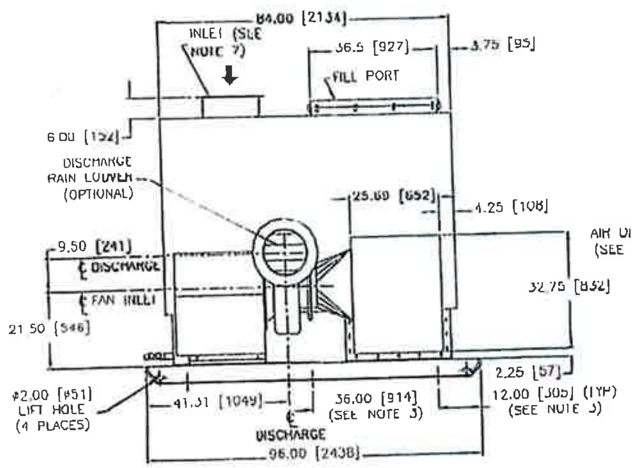
DRAWING NUMBER:

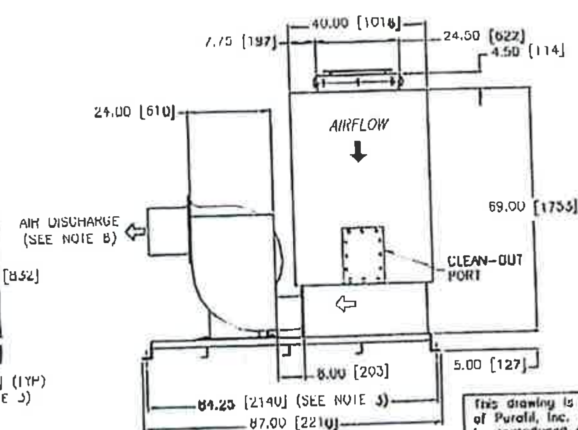
REVISION:

Environmental Systems
A Division of Purafil, Inc.
2654 WEAVER WAY
DORAVILLE, GA 30340 U.S.A
TELEPHONE: (770)662-8545
FAX: (770)263-0520

150 POUND EMERGENCY GAS TUB SCRUBBER FIBERGLASS CONSTRUCTION/CSO MEDIA







NOTES:

1. JOINTS ARE SEALED WITH RTV SILICONE RUBBER.
2. FASTENERS ARE CORROSION RESISTANT.
3. SIX ⌀0.437 [⌀11] MOUNTING HOLES ARE PROVIDED FOR ANCHORING THE UNIT IN THE FIELD.
4. ALL DOORS AND CHUTES ARE LINED WITH 1.00x0.25 [25x6] GASKET.
5. DUCT OPENINGS HAVE 0.25 [6] THICK GASKETING.
6. THE FAN IS EQUIPPED WITH FRP WEATHER COVER/BELT GUARD FOR COMPLETE ENCLOSURE.
7. INLET SIZE ⌀16.0 [⌀406] INSIDE DIA AND ⌀20.0 [⌀508] OUTSIDE DIA. INLET FLANGE REQUIRES FIELD DRILLING TO MATCH MATING DUCTWORK OF CUSTOMER.
8. OUTLET SIZE (FAN) ⌀12.5 [⌀318] INSIDE DIA AND ⌀19.0 [⌀483] OUTSIDE DIA. FAN OUTLET FLANGE REQUIRES FIELD DRILLING TO MATCH MATING DUCTWORK OF CUSTOMER. IF RAIN LOUVER IS INCLUDED, ⌀12.5 [⌀318] OUTSIDE DIA OUTLET IS DESIGNED TO DISCHARGE TO ATMOSPHERE.
9. SCRUBBER TOP HAS A NONSKID SURFACE FINISH.
10. DRAIN VALVE SHIPS LOOSE, TO BE FIELD INSTALLED.

JOB/UNIT IDENTIFICATION:

MATERIAL:

	3003-H14 AL	304 SST	316 SST	FIBERGLASS	CRS
TUB				☐	
OUTLET DUCTING				☐	
SKID	☐	☐	☐		
MEDIA SCREEN	☐	☐			☐

ELECTRICAL:

	VOLT	PH	HZ	HP	TYPE
☐	(STD) 230-460	3	60 [50]	3	MILL & CHEM/FAN COOLED
☐					

CHLORINE FLOW-CFM:

☐ MODEL FIS5 — 900 CFM AT 1.0 IWG EXTERNAL STATIC [1529 M^3/HR AT 249 Pa EXTERNAL STATIC]

PURAFIL AIR PURIFICATION MEDIA:

	BED DEPTH	TYPE	TOTAL MEDIA
☐	1' [305]		
☐	2' [610]		
☐	3' [914]		
☐	4' [1219]	CSO	4140 LB [1878 KG]

RAIN LOUVER (OPTIONAL):

☐ NONE ☐ OUTLET

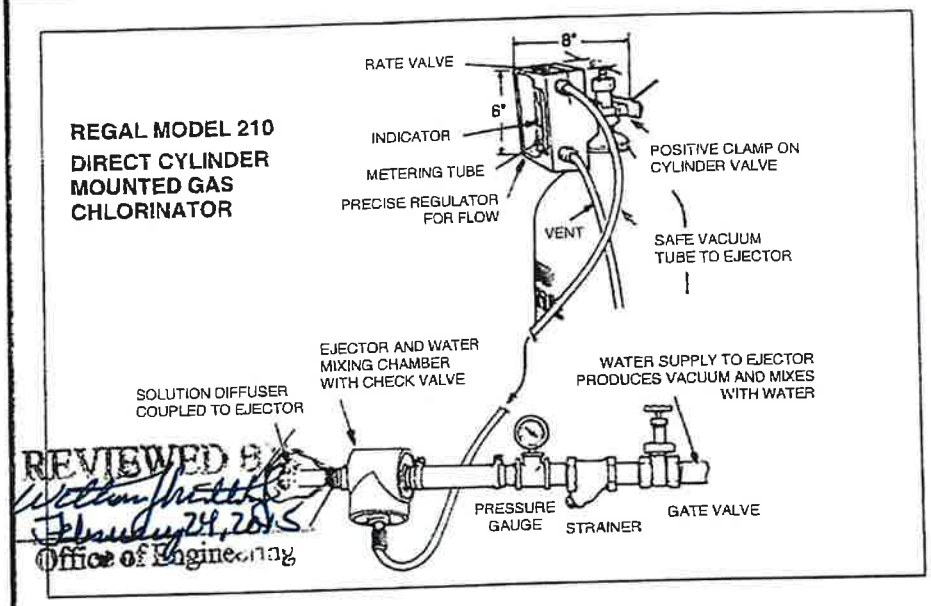
☐ FOR APPROVAL ☐ FOR INFORMATION
☐ AS BUILT ☐ FOR CONSTRUCTION

DATE: 04/18/95	REV. DATE: 08/19/02
OPERATING WEIGHT: 5340 LB [2422 KG]	APPROVED BY: BLG/AAY
DRAWING NUMBER: FIS5	REVISION: C

REVIEWED BY:
William [signature]
February 24 2015
Office of Engineering

REGAL GAS CHLORINATOR

The REGAL Model 210 Chlorinator is a vacuum-operated, solution feed type, designed for mounting directly on a chlorine cylinder valve by means of a positive heavy duty yoke clamp. The chlorine flow rate is manually adjusted and is regulated by a spring opposed diaphragm regulator which also contains the safety shut-off valve. Vacuum is provided by a highly efficient water operated ejector which is close coupled with the chlorine solution diffuser. The ejector assembly contains a back flow check valve.



FEATURES

The REGAL Model 210 incorporates the very best available materials with the latest technology in design and construction, to reduce maintenance, simplify construction and improve operation.

APPLICATION

The Model 210 is designed to handle the vast majority of water treatment requirements.

CAPACITIES

Dual scale metering tubes with maximum capacities of 4, 10, 25, 50 and 100 pounds per 24 hrs. of chlorine gas with corresponding metric scales of 75, 200, 500, 900 and 2000 grams per hr. Minimum feed rate is 1/20th of maximum.

FLOW RATE ADJUSTMENT

Manually adjustable by means of a flow rate control valve located at the top of the flow meter. Flow rate is then regulated by a special spring-opposed diaphragm operated valve. The system is automatic. It will go off and on as the ejector water is turned off and on and will always return to the pre-set flow rate.

EJECTOR REQUIREMENTS

The standard ejector is designed to withstand static back pressures in excess of 200 psig (14.1 kg/cm²). However, due to the potential for "water hammer" in high pressure on-off systems and special booster pump considerations, it is recommended that a factory representative, or Chlorinators Incorporated be consulted regarding installation details on systems over 100 psig (7 kg/cm²).

The amount of water required to operate the ejector depends upon the chlorine feed rate, water back pressure and water supply pressure available. Generally, the higher the chlorine flow and higher back pressure the greater the water flow is needed.

OPERATION

The chlorinator is clamped on the chlorine cylinder valve. The ejector assembly is normally attached to the solution diffuser at the point of injection (it may be wall mounted, but this is not recommended). A vacuum line connects these two units.

Water, under pressure is forced through the ejector nozzle which creates a strong vacuum in the ejector body. This pulls gas into the ejector through a special back-flow check valve and then into the nozzle outlet. The gas mixes with the ejector water and is discharged through the diffuser into the water being treated.

The ejector vacuum is transmitted back to the chlorinator through the vacuum line; then through the rate valve and the flow meter and to the back of the diaphragm. With sufficient vacuum, the diaphragm moves backward, opening the spring loaded inlet regulating valve to allow chlorine to enter from the cylinder.

The chlorine passes through the flow rate indicating meter, flow rate adjusting valve and to the ejector.

SPECIFICATIONS

The chlorinator shall be a REGAL Model 210 manufactured by Chlorinators Incorporated, Stuart, Florida, with a maximum capacity of 100 lbs./24 hrs (2000 gms/hr). It will be a vacuum operated solution feed type and mount directly on the chlorine cylinder valve by means of a positive yoke type clamp having an integral tightening screw with slide-bar handle.

All regulating, metering, flow adjusting and safety functions shall be incorporated in the cylinder mounted unit.

The inlet safety shut-off/vacuum regulating valve shall be of capsulated construction, easily removable as a unit from the outlet side of the yoke for ease of inspection, cleaning or maintenance.

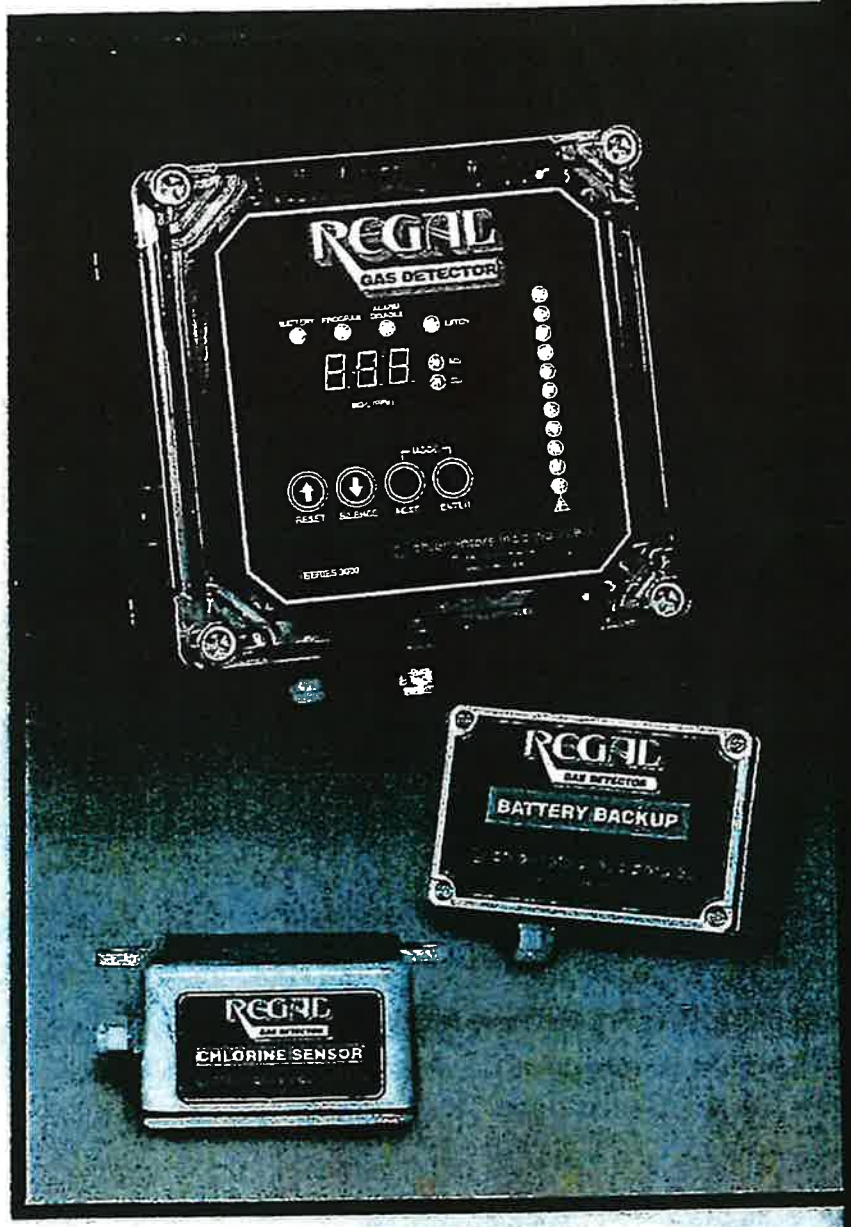
Vacuum shall be created by an ejector assembly connected directly to the chlorine solution diffuser. The assembly shall consist of a single piece venturi-recovery throat to prevent mis-alignment; also, a back flow check valve to prevent water from entering the gas system. The check valve shall be of positive, tight shut-off, unitized design not requiring springs or diaphragms for tight closing.

SERVICE

Most service problems can be handled by the user, with no special tools. If that is not possible, or desirable, the chlorinator and ejector assembly can be shipped to the factory for overhaul and retest to like-new condition for a reasonable single service charge. If the unit cannot be taken out of service, we will send an "exchange" unit.

REGAL® SERIES 3000

GAS DETECTOR



REGAL Chlorine or Sulfur Dioxide Gas Detectors are available in single or dual sensor versions and are designed for use wherever potential leakage would pose a risk to personnel and property.

STANDARD FEATURES

- Properly installed, calibrated and maintained, the REGAL Gas Detector senses the presence of free chlorine and/or sulfur dioxide in the environment – at levels even lower than those mandated by OSHA – throughout the working life of the sensor.
- Accurately begins scanning the active sensors and displaying and transmitting correct data in one minute.
- A 3-digit numeric display and 12 LED color bargraphs show the chlorine and/or sulfur dioxide gas concentration.
- Bargraph LED's representing the highest detected gas level stay lit until manually reset even as the gas concentration decreases.
- Separate LED's indicate which gas (chlorine and/or sulfur dioxide) is currently being presented on the display and bargraph.
- Six relay circuits are included (2 Warning, 2 Danger, 1 Horn/Failure and 1 Latch). All relays except the Horn/Failure relay can be configured for normal or failsafe operation. All external alarms connected to the Horn/Failure relay can be silenced (turned off) using the SILENCE keypad button.
- External alarms connected to the 'latch' relay circuit will not activate until the latch time (adjustable between 0 and 240 seconds) is reached.

CONTINUED ON OTHER SIDE

REVIEWED BY
February 24, 2015
Office of Engineering

REGAL® GAS DETECTOR

REGAL GAS CHLORINATOR

APPLICATION / INSTALLATION DATA SHEET

WELL WATER CHLORINATION USING A BOOSTER PUMP

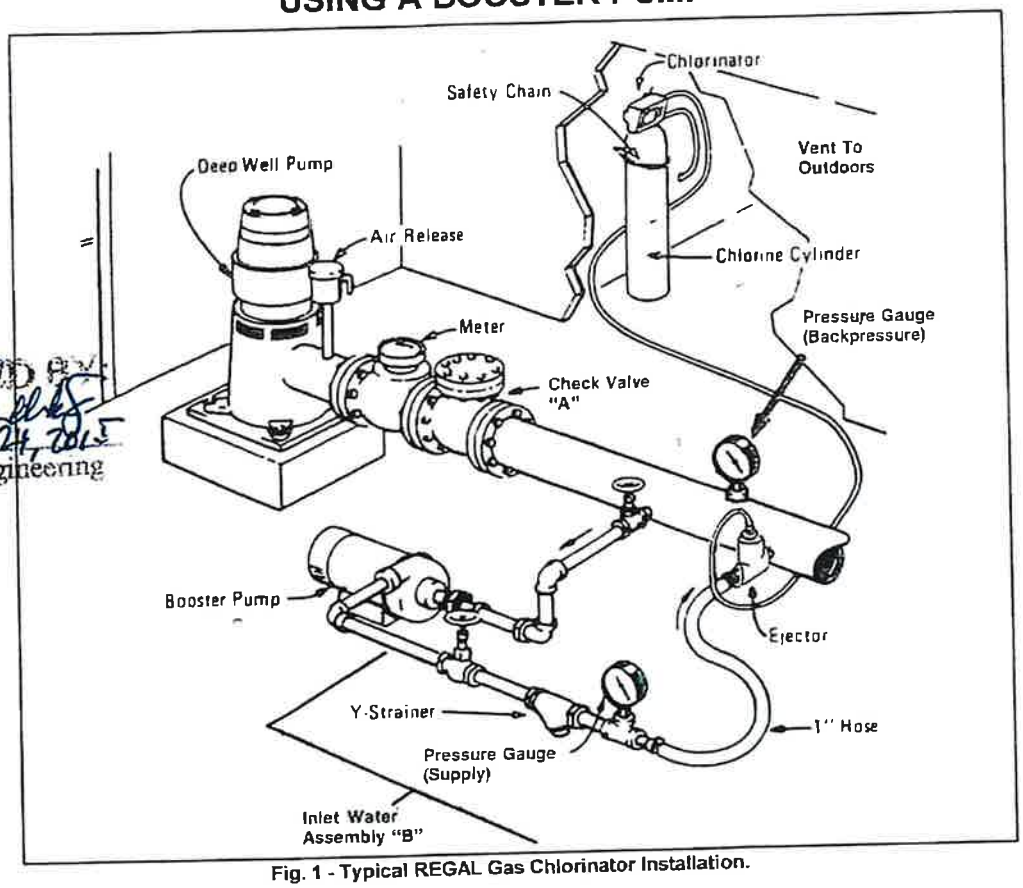


Fig. 1 - Typical REGAL Gas Chlorinator Installation.

GENERAL

One of the most common methods of obtaining a potable water supply is by drilling a deep well. Water obtained from a well source is known as "ground water", as opposed to "surface water." Sometimes ground water is the only available, reliable supply when lakes or rivers are too far distant. With so much of the available surface water being polluted by contaminants from so many different sources, drilling a well is often the only relatively safe and economical alternative, other than rainwater, that remains open to many people. Because of the natural filtration that well water undergoes below the ground, it is relatively free of organic matter, bacteria and other contaminating materials that would otherwise require more extensive and more costly treatment before it is used to determine exactly what treatment is required. To ensure that well water is safe for consumption, most public wells disinfect the water that they supply and the most preferred method of treatment is chlorination.

The most economical and widely accepted method of disinfecting water is gas chlorination. The chlorine gas is mixed with water and this chlorine solution is injected into the main flow of well water. To avoid having a chlorine solution go through the expensive well pump, which could cause corrosion in the pump, the solution is generally injected into the pressurized water main after the well pump.

On/off operation of a well pump is generally controlled automatically by means of a pressure switch in a hydropneumatic tank or a water level switch in an elevated storage tank. Most well pumps are designed to operate at a constant speed, which means that when they are operating, all other things remaining constant, they are delivering a constant water flow rate. Because of this constant water flow, the on/off operation of vacuum-operated gas chlorination, adjusted to feed the required amount of chlorine gas, can be synchronized with the on/off operation of the well pump. When the pump is "on", the chlorinator will feed the preset amount of chlorine gas. When the well pump turns "off", the chlorinator stops feeding gas. To accomplish this, a booster pump is wired to the secondary contacts of the well pump so both pumps will turn on and off at the same time. The booster pump supplies the water flow and pressure that are required to operate the ejector, which generates the vacuum necessary to operate the chlorinator. Selection of the booster pump size is based upon the pressure and water flow rate required to produce the vacuum necessary to operate the gas chlorinator and the pressure necessary to inject the chlorine solution into the pressurized water main.

A typical direct-cylinder-mounted gas chlorinator/booster pump installation is shown in Fig. 1. For purposes of simplicity, some piping and components that would normally be used with the high head well pump illustrated are not shown. Check local codes and regulations. The primary purpose of the illustration is to show the various components of the gas chlorination system and their relative arrangement.

SYSTEM OPERATION

When water is called for, the well pump is turned on. Simultaneously, the chlorinator booster pump is turned on. This forces water through the vacuum-producing nozzle (venturi) in the ejector assembly, creating a vacuum. The vacuum is transmitted through the tubing connecting the ejector and the chlorinator, and causes the safety inlet valve in the chlorinator to open allowing chlorine gas to be drawn from the cylinder by the vacuum. The gas flows through the vacuum tubing to the ejector where it is mixed with the water flowing through the nozzle and the resultant chlorine solution is injected into the water main. When the well pump is turned off, the booster pump is also turned off, which stops the vacuum-producing action of the ejector and safely shuts down the chlorinator and the chlorine supply.

INSTALLATION

As with some of the piping, Fig. 1 does not show any safety equipment, it is extremely important that all safety requirements and regulations be observed. Placement of the chlorine cylinder(s) must be made in accordance with regulations.

Note that the booster pump/ejector installation is made downstream of the well pump check valve "A". This is necessary to prevent chlorine solution from being injected into an empty or partially filled pipe, which could cause rapid corrosion of the pipe and/or other fittings. It also prevents chlorinated water from flowing back to the well pump. The water inlet assembly "B" is another important part of the installation. It consists of a strainer to minimize the amount of sand or dirt reaching the ejector, a valve to permit servicing of the strainer and/or ejector assembly, and a pressure gauge to indicate the water supply pressure to the ejector and to indicate if there is a pressure buildup due to a blockage in the strainer or ejector. Note the rubber hose connecting the ejector to the inlet assembly. The hose simplifies the removal of the ejector for servicing and also reduces the vibration to which the ejector is subjected. If the water main cannot be isolated at the point where the ejector is to be installed, a PVC ball valve (the preferred method. See Dwg. No. 915-3 for details) or a corporation stop with a solution tube must be used to permit servicing of the strainer and/or ejector.

The distance between the chlorinator and the ejector and the chlorine feed rate determines the size of the vacuum tubing. For longer lengths and higher feed rates, larger diameter tubing must be used. The vent tubing must be installed with the remote end exhausting outdoors to the atmosphere. An insect screen must be placed over the remote end of the vent tubing to prevent blockage of the tubing by insects.

Wiring of the well pump and booster pump for simultaneous operation must be done in accordance with local electrical codes. Particular attention should be paid to the operating voltages and number of phases of the two pumps. A REGAL automatic-switchover gas chlorinator can be used. In this case, this system uses gas cylinders, one of which operates as the supply cylinder until it empties out, at which point the gas chlorinator automatically switches over to the second, reserve cylinder. This system assures a continuous chlorine supply without any special action on the part of the operator other than to change the empty cylinder. See Fig. 2.

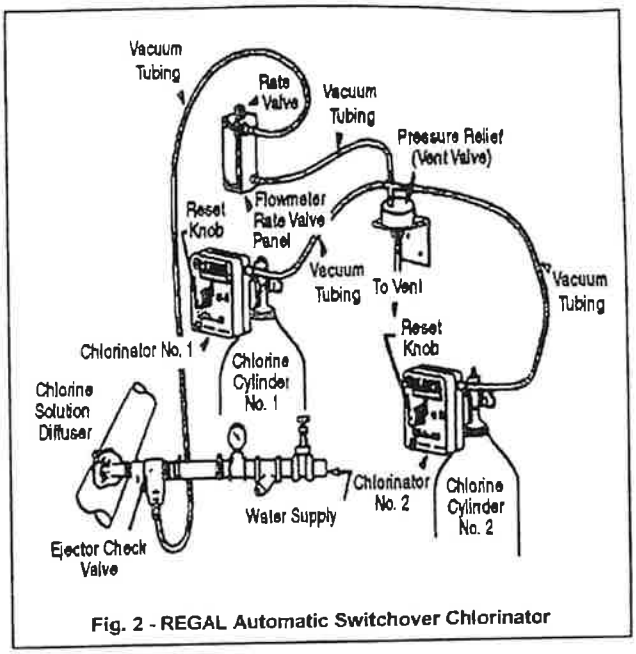


Fig. 2 - REGAL Automatic Switchover Chlorinator

NOTE: This information is provided as a general guide only. For your personal safety, observe *all* regulations and precautions and read *all* equipment instructions carefully and thoroughly. Installations must be made in accordance with applicable codes and regulations.

A REGAL WORK/TIME-SAVER TIP

Including a pressure gauge as part of the inlet water assembly is a very small investment that will quickly pay for itself in both work and time savings. Then over the years of operation, it can go on to save hours that might otherwise be wasted in frustrating, time-consuming troubleshooting.

If a problem arises in the system, this low-cost "tool" quickly tells you, at a glance, whether or not the problem is in the water supply section of the system. Keep a record of the normal operating pressure range along with the other important operating characteristics of the system for future comparison. Should a chlorine-feeding problem arise, any change in the pressure gauge reading, up or down, means that you should concentrate your troubleshooting efforts on the water supply portion of the system. An unchanged pressure reading indicates that you should look elsewhere for the problem.

Experience shows that omitting this inexpensive pressure gauge is a false economy.

Distributed by:

chlorinators incorporated

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Stuart, Florida 34994 U.S.A.
Phone: (772) 288-4854 · FAX: (772) 287-3238
www.regalchlorinators.com · E-mail: regal@regalchlorinators.com

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Delaware Health and Social Services
Division of Public Health Laboratory
30 Sunnyside Road
Smyrna, Delaware 19977
Phone: (302) 223-1520 Fax: (302) 653-2877

LIMS Report #:	**377228**		
Agency:	Office of Drinking Water		
Label ID (Sample #):	S738804 (979587)	**Date Collected:**	05/30/2017 9:15 am
Property Owner/Facility:	CAMDEN-WYOMING SEWER & WATER AUTH	**Collected By:**	LORD MACBETH
PWSID:	DE0000563	**Collector ID:**	DE003
Sample Point:	WT	**Date Received:**	05/31/2017 2:01 pm
Sample Location:	3680 UPPER KING ROAD	**Sampled pH:**	
Sample Type:	SP	**Free Cl:**	0.00
Chlorination:	Chlorinated	**Total Cl:**	0.00
Reason for Testing:		**Date Received:**	05/31/2017 2:01 pm

Specimen Note:

Test	Result	Final Date
Free Cl at time of analysis	<0.1 mg/L	06/01/2017
Colilert - Total Coliforms	Absent	06/01/2017
Colilert - E. coli	Absent	06/01/2017
Start Date and Time	05/31/2017 02:02:00 PM	06/01/2017
Stop Date and Time	06/01/2017 02:42:00 PM	06/01/2017

Water Quality Parameters Sample Report

Water System:	DE0000563	CAMDEN WYOMING SEWER AND WATER AUTHORITY	Sample Collected:	10/31/2016 1.33 PM
Facility Source/Plant :	DS001	DISTRIBUTION SYSTEM	Lab Received:	11/01/2016
Sampling Pt:	SP116	Redacted		
Address:	SAMPLE TAP - NEW TOWER			
Sample Type:	ROUTINE	For Compliance: Yes		
Lab Sample No:	S684456	Laboratory: DE017	DELAWARE PUBLIC HEALTH LABORATORY	
State Sample No:				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
1013	FREE RESIDUAL			11/15/2016	
Detection:	0.47 MG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
1025	FLUORIDE	300.0		11/15/2016	
Detection:	0.27 MG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
1041	NITRITE	300.0		11/15/2016	
Detection:	< 0.1 MG/L				

Water System:	DE0000563	CAMDEN WYOMING SEWER AND WATER AUTHORITY	Sample Collected:	10/31/2016	1.33 PM
Facility Source/Plant :	DS001	DISTRIBUTION SYSTEM	Lab Received:	11/01/2016	
Sampling Pt:	SP116	Redacted			
Address:	SAMPLE TAP - NEW TOWER				
Sample Type:	ROUTINE		For Compliance:	Yes	
Lab Sample No:	S684456		Laboratory:	DE017	DELAWARE PUBLIC HEALTH LABORATORY
State Sample No:					

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
1040	NITRATE	300.0		11/15/2016	
Detection:	< 0.3 MG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
1017	CHLORIDE	300.0		11/15/2016	
Detection:	5.3 MG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
1055	SULFATE	300.0		11/15/2016	
Detection:	3.1 MG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
1052	SODIUM	3111B		11/15/2016	
Detection:	39.8 MG/L				

Water System:	DE0000563	CAMDEN WYOMING SEWER AND WATER AUTHORITY	Sample Collected:	10/31/2016	1.33 PM
Facility Source/Plant :	DS001	DISTRIBUTION SYSTEM	Lab Received:	11/01/2016	
Sampling Pt:	SP116	Redacted			
Address:	SAMPLE TAP - NEW TOWER				
Sample Type:	ROUTINE	For Compliance: Yes			
Lab Sample No:	S684456	Laboratory: DE017	DELAWARE PUBLIC HEALTH LABORATORY		
State Sample No:					

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
1028	IRON			11/15/2016	
Detection:	< 0.1 MG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
1927	ALKALINITY, TOTAL	2320B		11/15/2016	
Detection:	166 MG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
1930	TDS			11/15/2016	
Detection:	230 MG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
0100	TURBIDITY	2130B		11/15/2016	
Detection:	0.020 NTU				

Water System:	DE0000563	CAMDEN WYOMING SEWER AND WATER AUTHORITY	Sample Collected:	10/31/2016	1.33 PM
Facility Source/Plant :	DS001	DISTRIBUTION SYSTEM	Lab Received:	11/01/2016	
Sampling Pt:	SP116	Redacted			
Address:	SAMPLE TAP - NEW TOWER				
Sample Type:	ROUTINE	For Compliance: Yes			
Lab Sample No:	S684456	Laboratory: DE017	DELAWARE PUBLIC HEALTH LABORATORY		
State Sample No:					

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
1038	NITRATE-NITRITE				
Detection:	< 0.3 MG/L				

Water System:	DE0000563	CAMDEN WYOMING SEWER AND WATER AUTHORITY	Sample Collected:	10/31/2016	1.38 PM
Facility Source/Plant :	DS001	DISTRIBUTION SYSTEM	Lab Received:	11/01/2016	
Sampling Pt:	SP116	Redacted			
Address:	NEW TOWER - SAMPLE TAP				
Sample Type:	ROUTINE		For Compliance:	Yes	
Lab Sample No:	S684459		Laboratory:	DE017	DELAWARE PUBLIC HEALTH LABORATORY
State Sample No:					

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2931	1,2-DIBROMO-3-			11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2378	1,2,4-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2246	HEXACHLOROBUTA	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2248	NAPHTHALENE	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

Water System:	DE0000563	CAMDEN WYOMING SEWER AND WATER AUTHORITY	Sample Collected:	10/31/2016	1.38 PM
Facility Source/Plant :	DS001	DISTRIBUTION SYSTEM	Lab Received:	11/01/2016	
Sampling Pt:	SP116	Redacted			
Address:	NEW TOWER - SAMPLE TAP				
Sample Type:	ROUTINE	For Compliance: Yes			
Lab Sample No:	S684459	Laboratory: DE017	DELAWARE PUBLIC HEALTH LABORATORY		
State Sample No:					

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2420	1,2,3-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2950	TTHM				
Detection:	19.6 UG/L				

Drinking Water Branch

Drinking Water Watch

Water Quality Parameters Sample Report

Water System:	DE0000563	CAMDEN WYOMING SEWER AND WATER AUTHORITY	Sample Collected:	10/31/2016 1.38 PM
Facility Source/Plant :	DS001	DISTRIBUTION SYSTEM	Lab Received:	11/01/2016
Sampling Pt:	SP116	Redacted		
Address:	NEW TOWER - SAMPLE TAP			
Sample Type:	ROUTINE	For Compliance: Yes		
Lab Sample No:	S684459	Laboratory: DE017	DELAWARE PUBLIC HEALTH LABORATORY	
State Sample No:				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
1013	FREE RESIDUAL			11/14/2016	
Detection:	0.47 MG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2212	DICHLORODIFLUOR	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2210	CHLOROMETHANE	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

Water System:	DE0000563	CAMDEN WYOMING SEWER AND WATER AUTHORITY	Sample Collected:	10/31/2016	1.38 PM
Facility Source/Plant :	DS001	DISTRIBUTION SYSTEM	Lab Received:	11/01/2016	
Sampling Pt:	SP116	Redacted			
Address:	NEW TOWER - SAMPLE TAP				
Sample Type:	ROUTINE	For Compliance: Yes			
Lab Sample No:	S684459	Laboratory: DE017	DELAWARE PUBLIC HEALTH LABORATORY		
State Sample No:					

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2976	VINYL CHLORIDE	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2214	BROMOMETHANE	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2216	CHLOROETHANE	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2218	TRICHLOROFLUOR	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

Water System:	DE0000563	CAMDEN WYOMING SEWER AND WATER AUTHORITY	Sample Collected:	10/31/2016	1.38 PM
Facility Source/Plant :	DS001	DISTRIBUTION SYSTEM	Lab Received:	11/01/2016	
Sampling Pt:	SP116	Redacted			
Address:	NEW TOWER - SAMPLE TAP				
Sample Type:	ROUTINE	For Compliance: Yes			
Lab Sample No:	S684459	Laboratory: DE017	DELAWARE PUBLIC HEALTH LABORATORY		
State Sample No:					

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2977	1,1-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2964	DICHLOROMETHAN	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2979	TRANS-1,2-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2251	METHYL TERT-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

Water System:	DE0000563	CAMDEN WYOMING SEWER AND WATER AUTHORITY	Sample Collected:	10/31/2016	1.38 PM
Facility Source/Plant :	DS001	DISTRIBUTION SYSTEM	Lab Received:	11/01/2016	
Sampling Pt:	SP116	Redacted			
Address:	NEW TOWER - SAMPLE TAP				
Sample Type:	ROUTINE	For Compliance: Yes			
Lab Sample No:	S684459	Laboratory: DE017	DELAWARE PUBLIC HEALTH LABORATORY		
State Sample No:					

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2978	1,1-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2416	2,2-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2380	CIS-1,2-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2941	CHLOROFORM	524.2		11/14/2016	
Detection:	15.0 UG/L				

Water System:	DE0000563	CAMDEN WYOMING SEWER AND WATER AUTHORITY	Sample Collected:	10/31/2016	1.38 PM
Facility Source/Plant :	DS001	DISTRIBUTION SYSTEM	Lab Received:	11/01/2016	
Sampling Pt:	SP116	Redacted			
Address:	NEW TOWER - SAMPLE TAP				
Sample Type:	ROUTINE	For Compliance: Yes			
Lab Sample No:	S684459	Laboratory: DE017	DELAWARE PUBLIC HEALTH LABORATORY		
State Sample No:					

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2430	BROMOCHLOROME	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2981	1,1,1-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2410	1,1-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2982	CARBON	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

Water System:	DE0000563	CAMDEN WYOMING SEWER AND WATER AUTHORITY	Sample Collected:	10/31/2016	1.38 PM
Facility Source/Plant :	DS001	DISTRIBUTION SYSTEM	Lab Received:	11/01/2016	
Sampling Pt:	SP116	Redacted			
Address:	NEW TOWER - SAMPLE TAP				
Sample Type:	ROUTINE	For Compliance: Yes			
Lab Sample No:	S684459	Laboratory: DE017	DELAWARE PUBLIC HEALTH LABORATORY		
State Sample No:					

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2990	BENZENE	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2980	1,2-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2984	TRICHLOROETHYLE	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2983	1,2-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

Water System:	DE0000563	CAMDEN WYOMING SEWER AND WATER AUTHORITY	Sample Collected:	10/31/2016	1.38 PM
Facility Source/Plant :	DS001	DISTRIBUTION SYSTEM	Lab Received:	11/01/2016	
Sampling Pt:	SP116	Redacted			
Address:	NEW TOWER - SAMPLE TAP				
Sample Type:	ROUTINE	For Compliance: Yes			
Lab Sample No:	S684459	Laboratory: DE017	DELAWARE PUBLIC HEALTH LABORATORY		
State Sample No:					

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2943	BROMODICHLOROM	524.2		11/14/2016	
Detection:	3.67 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2408	DIBROMOMETHANE	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2228	CIS-1,3-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2991	TOLUENE	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

Water System:	DE0000563	CAMDEN WYOMING SEWER AND WATER AUTHORITY	Sample Collected:	10/31/2016	1.38 PM
Facility Source/Plant :	DS001	DISTRIBUTION SYSTEM	Lab Received:	11/01/2016	
Sampling Pt:	SP116	Redacted			
Address:	NEW TOWER - SAMPLE TAP				
Sample Type:	ROUTINE	For Compliance: Yes			
Lab Sample No:	S684459	Laboratory: DE017	DELAWARE PUBLIC HEALTH LABORATORY		
State Sample No:					

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2224	TRANS-1,3-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2985	1,1,2-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2412	1,3-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2987	TETRACHLOROETH	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

Water System:	DE0000563	CAMDEN WYOMING SEWER AND WATER AUTHORITY	Sample Collected:	10/31/2016	1.38 PM
Facility Source/Plant :	DS001	DISTRIBUTION SYSTEM	Lab Received:	11/01/2016	
Sampling Pt:	SP116	Redacted			
Address:	NEW TOWER - SAMPLE TAP				
Sample Type:	ROUTINE	For Compliance: Yes			
Lab Sample No:	S684459	Laboratory: DE017	DELAWARE PUBLIC HEALTH LABORATORY		
State Sample No:					

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2944	DIBROMOCHLOROM	524.2		11/14/2016	
Detection:	0.900 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2946	ETHYLENE			11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2989	CHLOROBENZENE	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2986	1,1,1,2-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

Water System:	DE0000563	CAMDEN WYOMING SEWER AND WATER AUTHORITY	Sample Collected:	10/31/2016	1.38 PM
Facility Source/Plant :	DS001	DISTRIBUTION SYSTEM	Lab Received:	11/01/2016	
Sampling Pt:	SP116	Redacted			
Address:	NEW TOWER - SAMPLE TAP				
Sample Type:	ROUTINE	For Compliance: Yes			
Lab Sample No:	S684459	Laboratory: DE017	DELAWARE PUBLIC HEALTH LABORATORY		
State Sample No:					

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2992	ETHYLBENZENE	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2955	XYLENES, TOTAL	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2996	STYRENE	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2942	BROMOFORM	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

Water System:	DE0000563	CAMDEN WYOMING SEWER AND WATER AUTHORITY	Sample Collected:	10/31/2016	1.38 PM
Facility Source/Plant :	DS001	DISTRIBUTION SYSTEM	Lab Received:	11/01/2016	
Sampling Pt:	SP116	Redacted			
Address:	NEW TOWER - SAMPLE TAP				
Sample Type:	ROUTINE		For Compliance:	Yes	
Lab Sample No:	S684459		Laboratory:	DE017	DELAWARE PUBLIC HEALTH LABORATORY
State Sample No:					

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2994	ISOPROPYLBENZEN	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2988	1,1,2,2-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2414	1,2,3-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2993	BROMOBENZENE	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

Water System:	DE0000563	CAMDEN WYOMING SEWER AND WATER AUTHORITY	Sample Collected:	10/31/2016	1.38 PM
Facility Source/Plant :	DS001	DISTRIBUTION SYSTEM	Lab Received:	11/01/2016	
Sampling Pt:	SP116	Redacted			
Address:	NEW TOWER - SAMPLE TAP				
Sample Type:	ROUTINE	For Compliance: Yes			
Lab Sample No:	S684459	Laboratory: DE017	DELAWARE PUBLIC HEALTH LABORATORY		
State Sample No:					

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2998	N-PROPYLBENZENE	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2965	O-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2424	1,3,5-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2966	P-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

Water System:	DE0000563	CAMDEN WYOMING SEWER AND WATER AUTHORITY	Sample Collected:	10/31/2016	1.38 PM
Facility Source/Plant :	DS001	DISTRIBUTION SYSTEM	Lab Received:	11/01/2016	
Sampling Pt:	SP116	Redacted			
Address:	NEW TOWER - SAMPLE TAP				
Sample Type:	ROUTINE	For Compliance: Yes			
Lab Sample No:	S684459	Laboratory: DE017	DELAWARE PUBLIC HEALTH LABORATORY		
State Sample No:					

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2426	TERT-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2418	1,2,4-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2428	SEC-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2030	P-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

Water System:	DE0000563	CAMDEN WYOMING SEWER AND WATER AUTHORITY	Sample Collected:	10/31/2016	1.38 PM
Facility Source/Plant :	DS001	DISTRIBUTION SYSTEM	Lab Received:	11/01/2016	
Sampling Pt:	SP116	Redacted			
Address:	NEW TOWER - SAMPLE TAP				
Sample Type:	ROUTINE	For Compliance: Yes			
Lab Sample No:	S684459	Laboratory: DE017	DELAWARE PUBLIC HEALTH LABORATORY		
State Sample No:					

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2967	M-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2969	P-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2422	N-BUTYLBENZENE	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESULT	Analyte	Method	Analysis Start and End Dates	State Notified On	PWS Notified On
2968	O-	524.2		11/14/2016	
Detection:	< 0.5 UG/L				

RESOLUTION OF THE CAMDEN-WYOMING SEWER & WATER AUTHORITY
Policy and Procedures regarding
Sanitary Sewer Service Laterals and Water Service Lines
Resolution No. 2010-01

AND NOW, TO-WIT, on this 9th day of February 2010, the Camden-Wyoming Sewer and Water Authority (hereinafter referred to as "CWS&WA"), a corporation of the State of Delaware, created and governed by the provisions of Title 16, Chapter 14, of Delaware Code, as amended, hereby **RESOLVES**, as follows:

WHEREAS, the CWS&WA wishes to clarify its policy regarding the ownership of, and maintenance responsibilities for, sanitary sewer service laterals and water service lines which serve the CWS&WA residential customers sewer and water utility services; and,

WHEREAS, the CWS&WA wishes to better disseminate information about its processes to assist its residential customers in cases of sewer blockages or failure of sewer service laterals, or leaks in, or failure of, water service lines serving individual residential customers,

NOW, therefore, the Board of the CWS&WA hereby resolves as follows:

Section 1 The following words and terms, as used in this Resolution, shall be construed or defined as follows, unless the context clearly indicates otherwise:

(a) Sanitary sewer service lateral, hereinafter referred to as "SSSL," means the pipe or pipes which convey and discharge wastewater generated from a single residential dwelling unit into the CWS&WA sanitary sewer main or pipe within a public street right-of-way or properly recorded utility easement. Normally, SSSL's consist of two segments. The first is usually a 4-inch diameter pipe which begins at residential dwelling units and transitions into the second segment, usually a 6-inch diameter pipe, normally at a sanitary sewer cleanout[1] installed at property lines or limits of public rights-of-way or properly recorded utility easements, before discharging into the CWS&WA Sanitary Sewer System. For clarity, the CWS&WA Construction Details S-3, S-11, and S-12 (and any future amendments thereto) are attached hereto and made a part hereof.

(b) Sanitary Sewer Cleanout refers to and means the vertical pipe structure, usually 6-inch in diameter, installed at or near property lines, streets' rights-of-way or properly recorded utility easements, at the transition of SSSL which begins at a single residential dwelling unit to the SSSL which begins at or near property lines, street rights-of-way or properly recorded utility easements discharging into the CWS&WA Sanitary Sewer System. For clarity, the CWS&WA Sanitary Sewer Construction Detail S-3 (and any future amendments thereto) is attached hereto and made a part hereof.

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1 Some older residential dwelling units' SSSL's do not include a Sanitary Sewer Cleanout.

(c) Water service line, hereinafter referred to as "WSL," means the pipe or pipes that deliver water from a CWS&WA water main or pipe, within a public street right-of-way or properly recorded utility easement, to a single residential dwelling unit. Normally, WSL's consist of two segments. The first is usually a 1-inch diameter pipe which begins at a corporation stop at a CWS&WA water main, described above, and continues to a curb stop or service valve[2], usually at a property or public right-of-way line. Then the second segment continues to a meter in or near a single residential dwelling unit, to deliver drinking water from the CWS&WA Water Distribution System to a residential customer. For clarity, the CWS&WA Construction Detail W-12 (and any future amendments thereto) is attached hereto and made a part hereof.

(d) SSSL Blockage means the blockage of any SSSL anywhere along its entire length resulting from any cause or reason, except where a structural pipe failure causes the SSSL malfunction.

(e) "CWS&WA Sanitary Sewer System" means and refers to the sewerage collection and conveyance system to which stormwater, surface water and groundwater is not intentionally admitted, owned, operated, and maintained by the CWS&WA, and all appurtenances, additions, extensions and improvements thereto.

(f) "CWS&WA Water Distribution System" means and refers to the drinking water storage, treatment, and distribution system, operated, and maintained by the CWS&WA, and all appurtenances, additions, extensions and improvements thereto.

Section 2 Ownership of, and maintenance responsibility for, SSSL's:

(a) The segment of SSSL's, beginning from the CWS&WA Sanitary Sewer System and ending at a single residential sewer cleanout, or a public street right-of-way, or a property line, or a properly recorded utility easements, whichever is closest to the CWS&WA Sanitary Sewer System, is owned and maintained by the CWS&WA.

(b) The segment of SSSL's, beginning from a single residential sewer cleanout, or a public street right-of-way, or a property line, or a properly recorded utility easements, whichever is closest to the CWS&WA Sanitary Sewer System, to the single residential dwelling unit is owned and maintained by the property owner to whom sanitary sewer service is provided.

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2 Some older residential dwelling units' WSL's do not include a curb stop or service valve.

Section 3 Sewer Blockages:

Clearing of sewer blockages, which may occur anywhere along SSSL's, regardless of the existence or nonexistence of a sanitary sewer cleanout, from a single residential dwelling unit to the CWS&WA Sanitary Sewer System, for any reason other than structural failure of the SSSL, is the responsibility of the property owner to whom sanitary sewer service is provided.[3] The CWS&WA will not reimburse any sanitary sewer service customer for the clearing of sewer blockages.

Section 4 Structural Failure of SSSL's and the responsibility for repairing the same:

(a) If a SSSL pipe structurally fails, is crushed, or broken, anywhere along its length outside of private property, or between the CWS&WA Sanitary Sewer System and a sanitary sewer cleanout, if one exists, or a property line, or a street right-of-way, or properly recorded easement, whichever is closest to the CWS&WA Sanitary Sewer System, then the CWS&WA will be responsible for the repairs to the same.

(b) If a SSSL pipe structurally fails, is crushed, or broken, anywhere along its length within private property, or between single residential dwelling unit and a sanitary sewer cleanout, if one exists, or a property line, or a street right-of-way, or properly recorded utility easement, whichever is closest to the CWS&WA Sanitary Sewer System, then the property owner to whom sanitary sewer service is provided will be responsible for the repairs to the same. Any repair to the SSSL within private property, as described herein, must be made by a properly licenced contractor or plumber and all such repair work must be scheduled for construction inspection by the CWS&WA personnel.

Section 5 Ownership of, and maintenance responsibility for, WSL's:

(a) The segment of WSL's, beginning from a corporation stop at the CWS&WA Water Distribution System and ending at a single residential curb stop or service valve, or property line, or street right-of-way, or properly recorded utility easement, whichever is closest to the CWS&WA Water Distribution System is owned and maintained by the CWS&WA.

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3 The logic here is that the cause of any SSSL blockage, including but not limited to, tree root intrusion into the SSSL, unusually large items flushed into the SSSL, etc., are all under the control of the property owner to whom sanitary sewer service is provided.

(b) The segment of the WSL's, beginning from a single residential curb stop , or a public street right-of-way, or a property line, or a properly recorded utility easements, whichever is closest to the CWS&WA Water Distribution System, to the single residential dwelling unit is owned and maintained by the property owner to whom water utility service is provided.

Section 6 Leaks in, and structural failure of, WSL's

(a) If a WSL pipe develops a leak, structurally fails, is crushed, or broken, anywhere along its length outside of private property, or between the CWS&WA Water Distribution System corporation stop, to a single residential curb stop or service valve, if one exists, or a property line, or a street right-of-way, or properly recorded easement, whichever is closest to the CWS&WA Water Distribution System, then the CWS&WA will be responsible for the repairs to the same.

(b) If a WSL pipe develops a leak, structurally fails, is crushed, or broken, anywhere along its length within private property, or between a single residential dwelling unit and a curb stop, if one exists, or a property line, or a street right-of-way, or properly recorded utility easement, whichever is closest to the CWS&WA Water Distribution System, then the property owner to whom water utility service is provided will be responsible for the repairs to the same. Any repair to the WSL within private property, as described herein, must be made by a properly licenced contractor or plumber and all such repair work must be scheduled for construction inspection by the CWS&WA personnel.

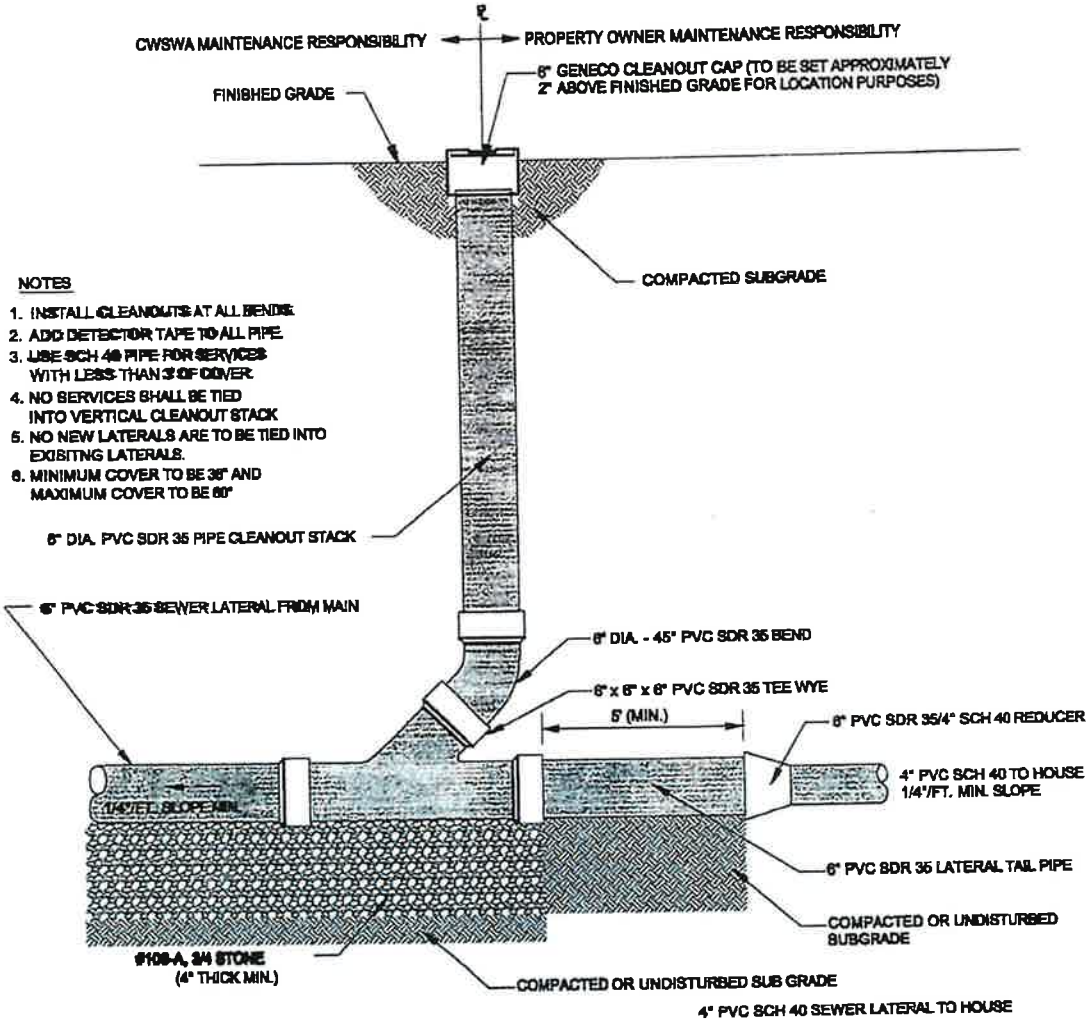
Section 7 The filing of a CWS&WA Application for a permit to renew existing connection to CWS&WA sewer, water, or both, or to make new connection to the CWS&WA sewer, water, or both, systems will be mandatory, except for emergency repairs, the permit application for which work shall be submitted to the CWS&WA as soon as practicable within no more than 48 hours of the emergency.

THEREFORE, IT IS HEREBY RESOLVED that the above ***RESOLUTION OF THE CAMDEN-WYOMING SEWER & WATER AUTHORITY, Policy and Procedures regarding Sanitary Sewer Service Laterals and Water Service Lines, Resolution No. 2010-01***,is hereby adopted, this 9th day of, February 2010.

CWS&WA Chairperson

EFFECTIVE DATE:

This puts existing policy of CWS&WA in form of a formal resolution.



CAMDEN WYOMING
SEWER AND WATER AUTHORITY
P.O. BOX 405 CAMDEN, DE 19934

CONSTRUCTION DETAILS

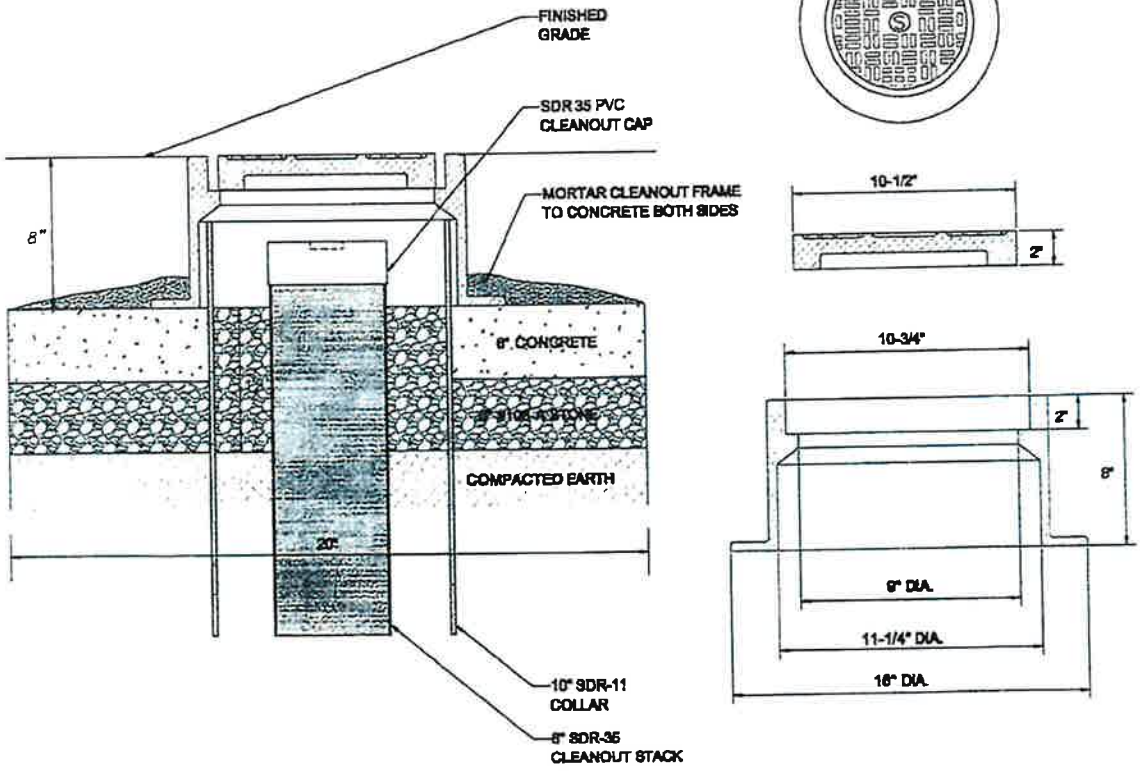
SANITARY CLEANOUT DETAIL

S-3

REV.	DATE	DESCRIPTION	BY	CHK
1	4/108	ADJ. CAP HEIGHT FROM FINISHED GRADE	CBA	BGHB
0	11/007	INITIAL RELEASE	CBA	BGHB

NOTES:

1. OUTER FRAME AND COVER TO BE MACHINED ON THE BEARING SURFACE
2. MATERIAL TO BE GRAY IRON ASTM A-48, CLASS 35-B
3. ALL CASTINGS SHALL BE HEAVY DUTY AND SUITABLE FOR H-20 LOADING
4. ALL CASTINGS SHALL RECEIVE 1 COAT OF ASPHALT PAINT
5. CONCRETE RING TO BE 3600 PSI MINIMUM
6. FRAME AND COVER TO BE EAST JORDAN IRON WORKS MODEL 1585 WITH SOLID COVER OR APPROVED EQUAL
7. COVER TO HAVE "S" CAST INTEGRALLY INTO LID



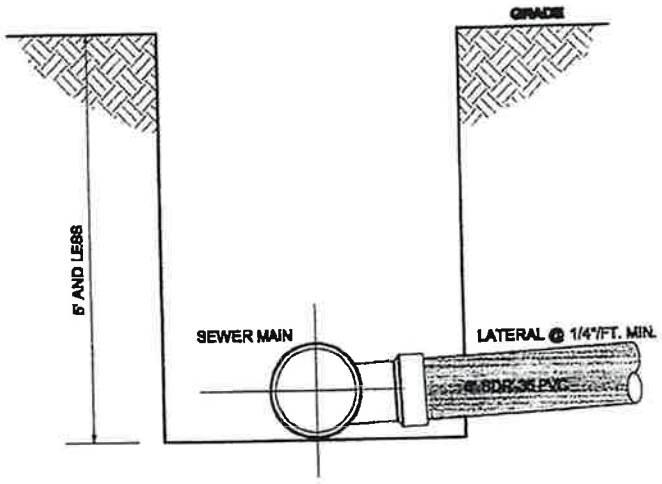
CAMDEN WYOMING
SEWER AND WATER AUTHORITY
P.O. BOX 405 CAMDEN, DE 19934

CONSTRUCTION DETAILS

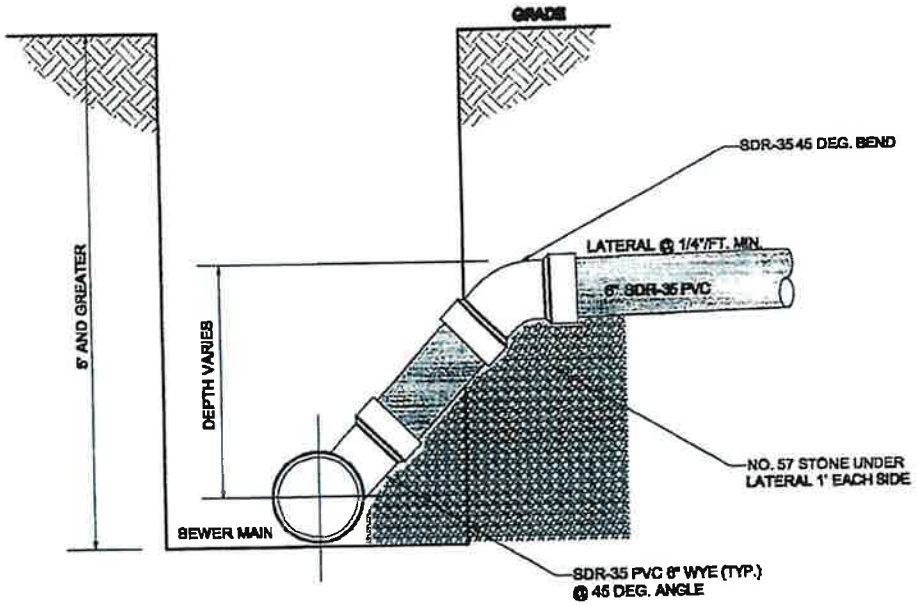
TRAFFIC AREA CLEANOUT COVER DETAIL

S-11

REV.	DATE	DESCRIPTION	BY	CHK
0	11/1/07	INITIAL RELEASE	CSA	BGHB



SHALLOW



DEEP

CAMDEN WYOMING
SEWER AND WATER AUTHORITY
P.O. BOX 405 CAMDEN, DE 19934

CONSTRUCTION DETAILS

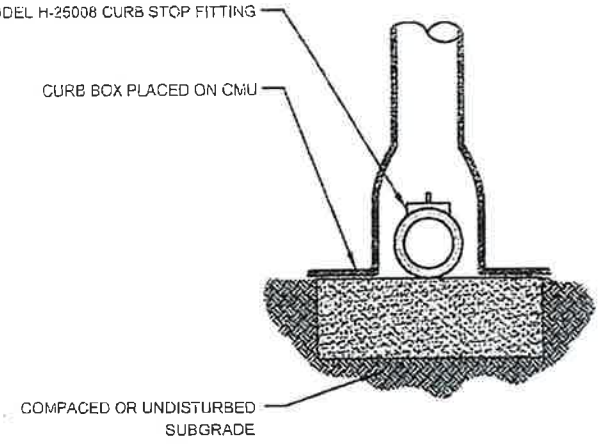
MAIN LATERAL CONNECTION DETAIL

S-12

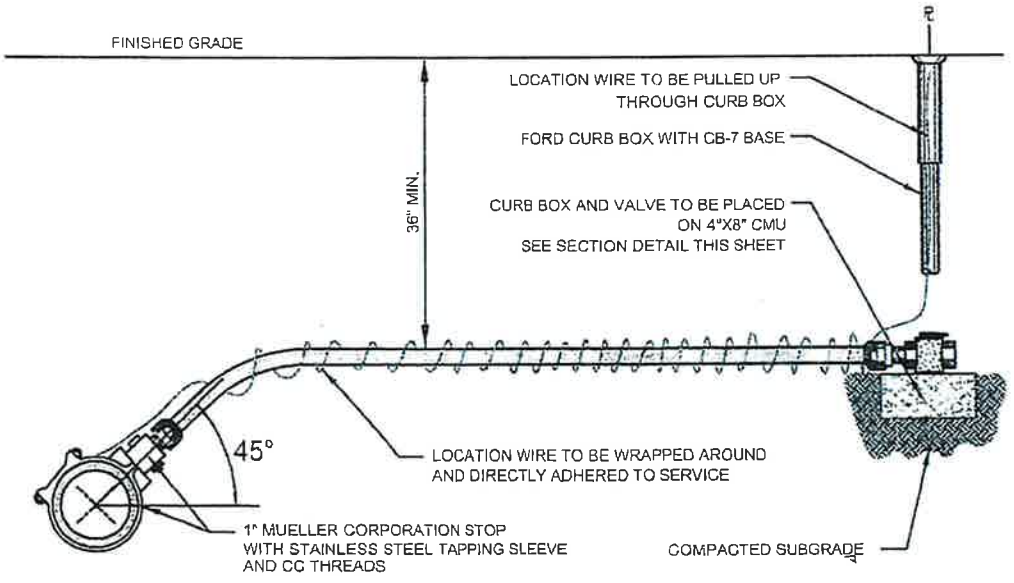
REV.	DATE	DESCRIPTION	BY	CHK
0	11/07	INITIAL RELEASE	CSA	BOMB

NOTES :

1. PIPE MATERIAL TO BE 1" PVC SDR9 CTS.
2. THREADS AT CORPORATION STOP TO BE CC THREADS.
3. LOCATION WIRE TO BE WRAPPED AROUND AND ADHERED DIRECTLY TO SERVICE LINE
4. BURIAL DEPTH TO BE 36".
5. TAPPING SLEEVE TO BE FULL BANDED STAINLESS STEEL TYPE APPROVED BY THE CWS&WA.
6. WHERE CONNECTION TO WATERMAIN TRACER WIRE IS TO BE MADE, CONNECTIONS DESIGNATED FOR DIRECT BURIAL USE ARE TO BE INSTALLED
7. NEW SERVICES WILL NOT BE PERMITTED TO BE TIED INTO ANY EXISTING SERVICE.
8. CURB BOXES FOR RESIDENTIAL USE SHALL BE PLACED ON PROPERTY LINE
9. CURB BOXES SHALL BE SET APPROXIMATELY 2" ABOVE FINISHED GRADE FOR LOCATION PURPOSES.



CURB BOX PLACEMENT SECTION



CAMDEN WYOMING
SEWER AND WATER AUTHORITY
P.O. BOX 405 CAMDEN, DE 19934

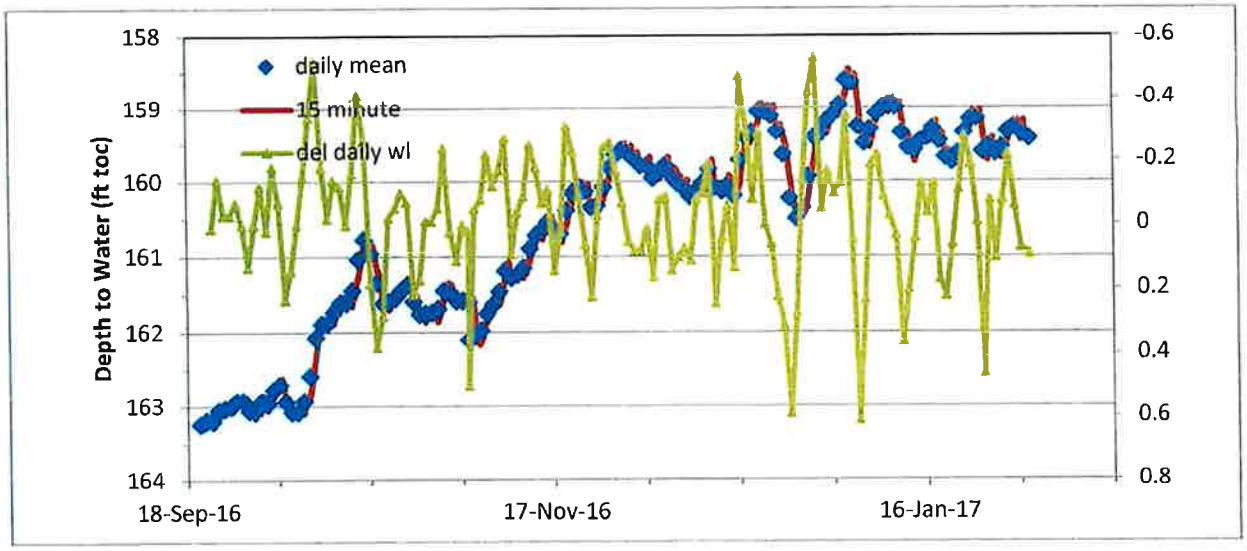
CONSTRUCTION DETAILS

STANDARD WATER SERVICE DETAIL

W-12

REV.	DATE	DESCRIPTION	BY	CHK
2	12/11/08	UPDATED PART NO. FOR CURB STOP	CSA	SGHS
1	4/1/08	CHANGED HEIGHT FOR CURB BOX F.G.	CSA	SGHS
0	1/1/07	INITIAL RELEASE	CSA	SGHS

date	water level	time	del daily wl
3-Oct-15	155.2	100	
20-Sep-16	163.23	916	
21-Sep-16	163.18 DM		
22-Sep-16	163.19 DM		0.01
23-Sep-16	163.05 DM		-0.14
24-Sep-16	163.02 DM		-0.03
25-Sep-16	162.99 DM		-0.03
26-Sep-16	162.92 DM		-0.07
27-Sep-16	162.92 DM		0
28-Sep-16	163.05 DM		0.13
29-Sep-16	163.05 DM		0
30-Sep-16	162.93 DM		-0.12
1-Oct-16	162.95 DM		0.02
2-Oct-16	162.77 DM		-0.18
3-Oct-16	162.7 DM		-0.07
4-Oct-16	162.93 DM		0.23
5-Oct-16	163.07 DM		0.14
6-Oct-16	163.07 DM		0
7-Oct-16	162.92 DM		-0.15
8-Oct-16	162.58 DM		-0.34
9-Oct-16	162.06 DM		-0.52
10-Oct-16	161.88 DM		-0.18
11-Oct-16	161.86 DM		-0.02
12-Oct-16	161.72 DM		-0.14
13-Oct-16	161.6 DM		-0.12
14-Oct-16	161.6 DM		0
15-Oct-16	161.44 DM		-0.16
16-Oct-16	161.03 DM		-0.41
17-Oct-16	160.77 DM		-0.26
18-Oct-16	160.95 DM		0.18
19-Oct-16	161.33 DM		0.38
20-Oct-16	161.61 DM		0.28
21-Oct-16	161.59 DM		-0.02
22-Oct-16	161.54 DM		-0.05
23-Oct-16	161.44 DM		-0.1
24-Oct-16	161.37 DM		-0.07



major downward changes occur on a 1 week period and persist for 2 days
did not expect to see daily drops of 0.2 to 0.5 feet in a non-pumping well

sure looks like a pumping signal!

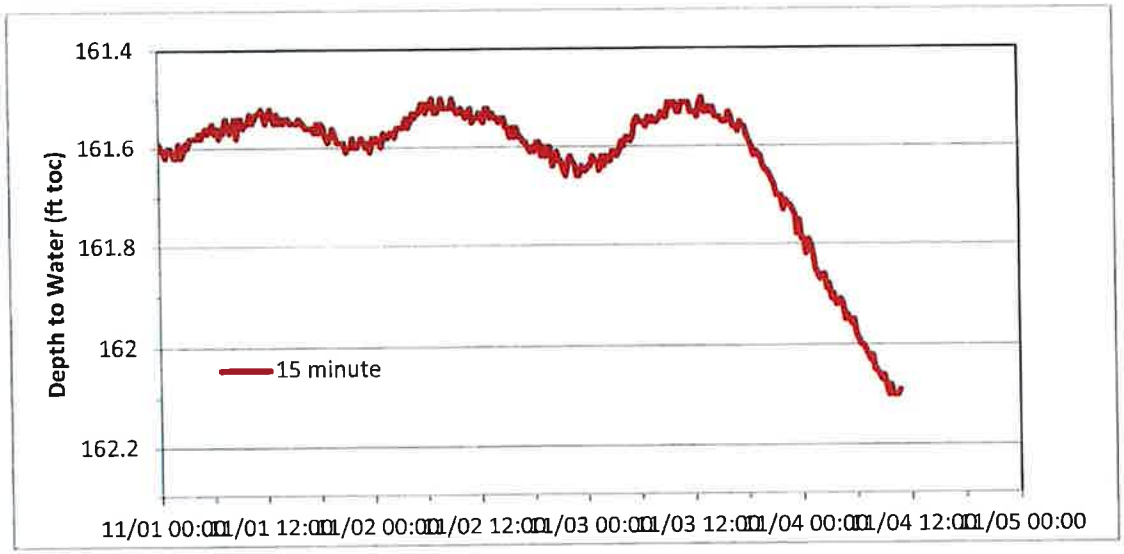
Piney Point Aquifer Static Water Levels
Daily Record Frequency

Recorded at 4-inch Pilot Well next to the then proposed 12-Inch Well #6
September 20, 2016 to February 1, 2017
Recorded by Scott Andres and Peter McGlaughlin
Delaware Geological Survey
University of Delaware

Please Note: **The Data shown above is for the period 09/20/2016 to 10/24/2016, due to the size of the file. Additional Data through 02/1/2017, is available, and could be submitted electronically, should this be necessary.**

15 minute record

EST	water level
9/20/2016 9:45	163.23
9/20/2016 10:00	163.29
9/20/2016 10:15	163.27
9/20/2016 10:30	163.27
9/20/2016 10:45	163.26
9/20/2016 11:00	163.25
9/20/2016 11:15	163.23
9/20/2016 11:30	163.23
9/20/2016 11:45	163.24
9/20/2016 12:00	163.22
9/20/2016 12:15	163.22
9/20/2016 12:30	163.22
9/20/2016 12:45	163.21
9/20/2016 13:00	163.22
9/20/2016 13:15	163.22
9/20/2016 13:30	163.23
9/20/2016 13:45	163.22
9/20/2016 14:00	163.23
9/20/2016 14:15	163.22
9/20/2016 14:30	163.22
9/20/2016 14:45	163.2
9/20/2016 15:00	163.22
9/20/2016 15:15	163.21
9/20/2016 15:30	163.22
9/20/2016 15:45	163.2
9/20/2016 16:00	163.2
9/20/2016 16:15	163.22
9/20/2016 16:30	163.2
9/20/2016 16:45	163.22
9/20/2016 17:00	163.2
9/20/2016 17:15	163.21
9/20/2016 17:30	163.21
9/20/2016 17:45	163.21
9/20/2016 18:00	163.22
9/20/2016 18:15	163.21



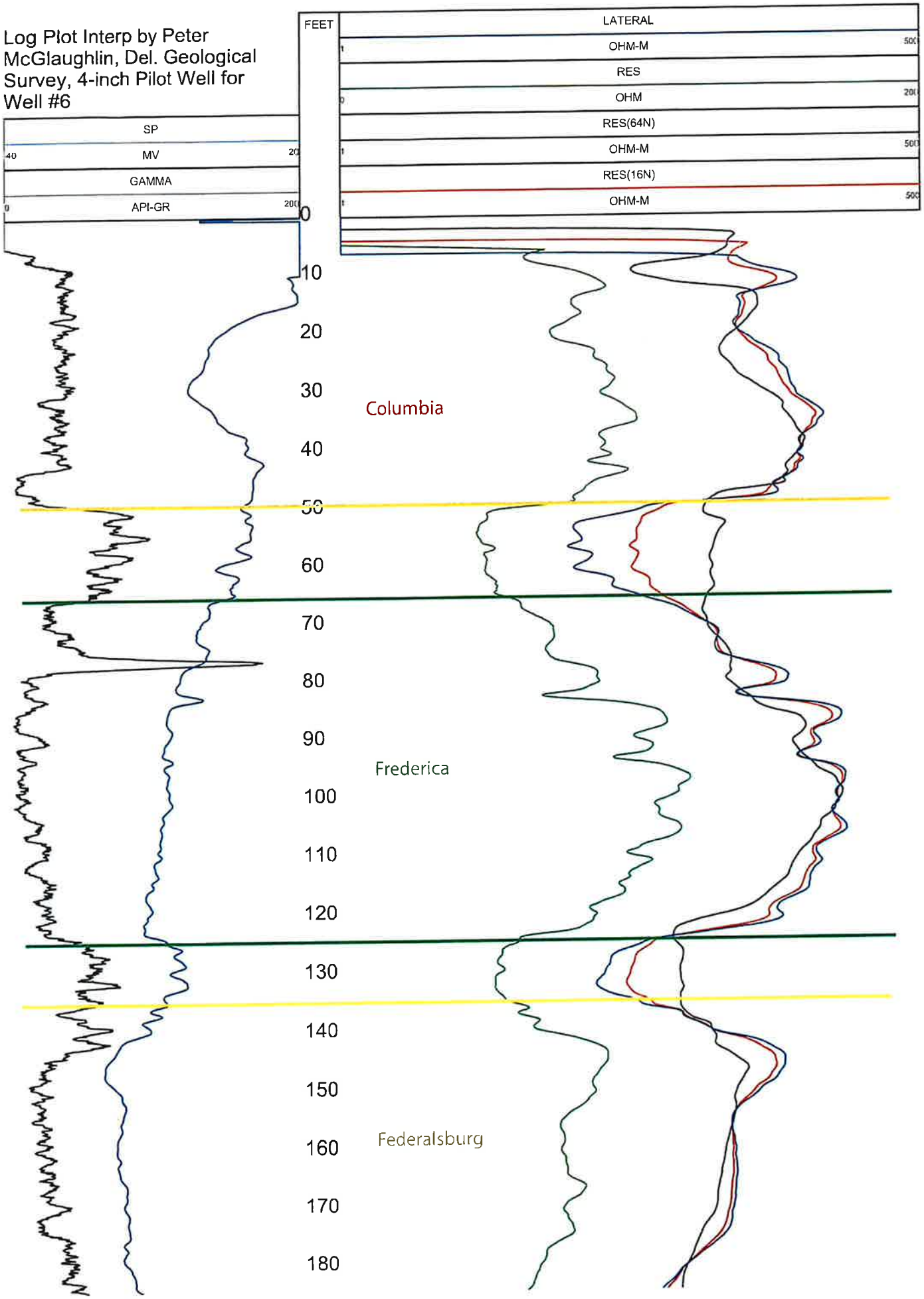
diurnal lunar tide signal

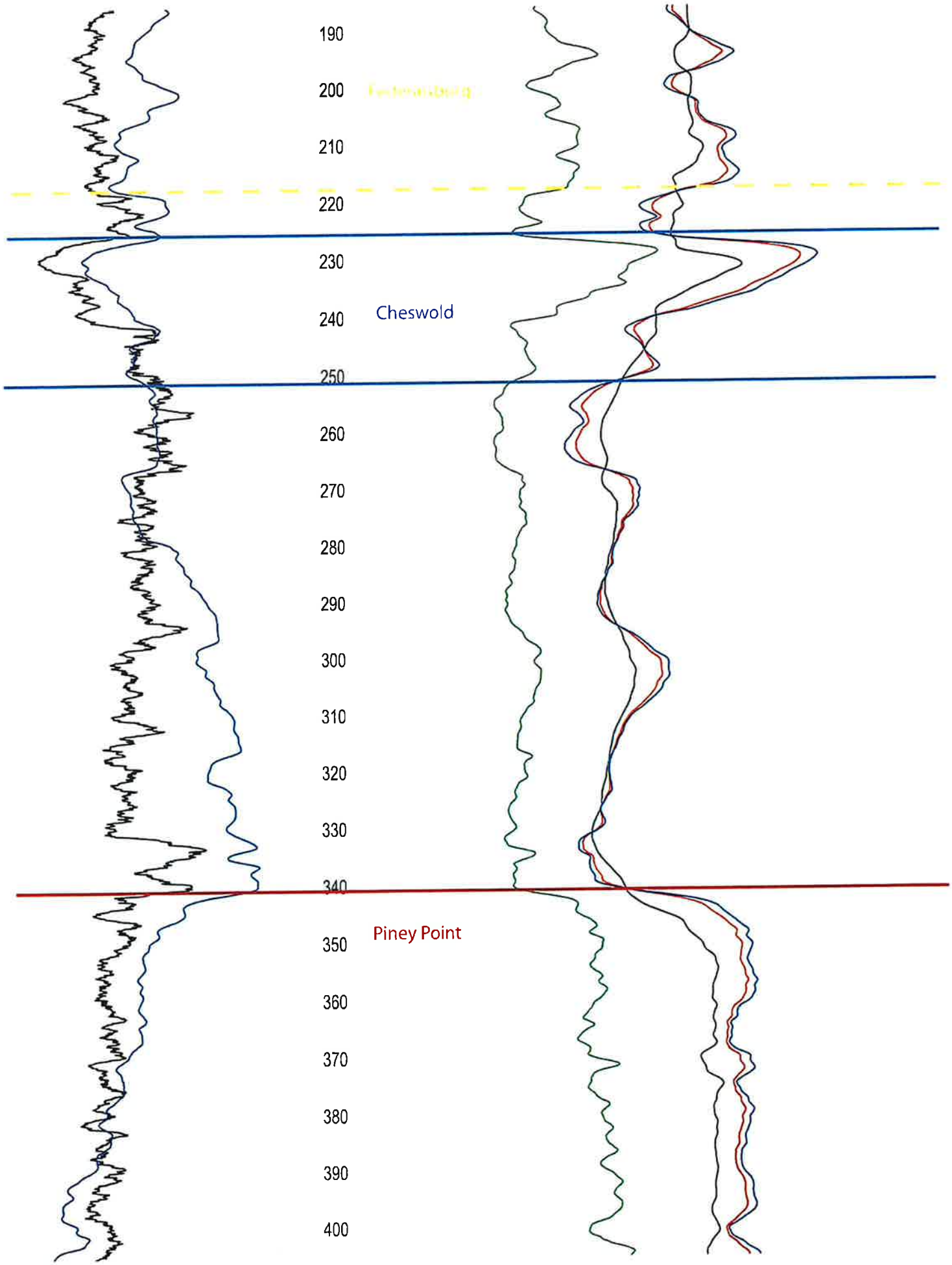
Piney Point Aquifer Static Water Levels
15 minute Record Frequency

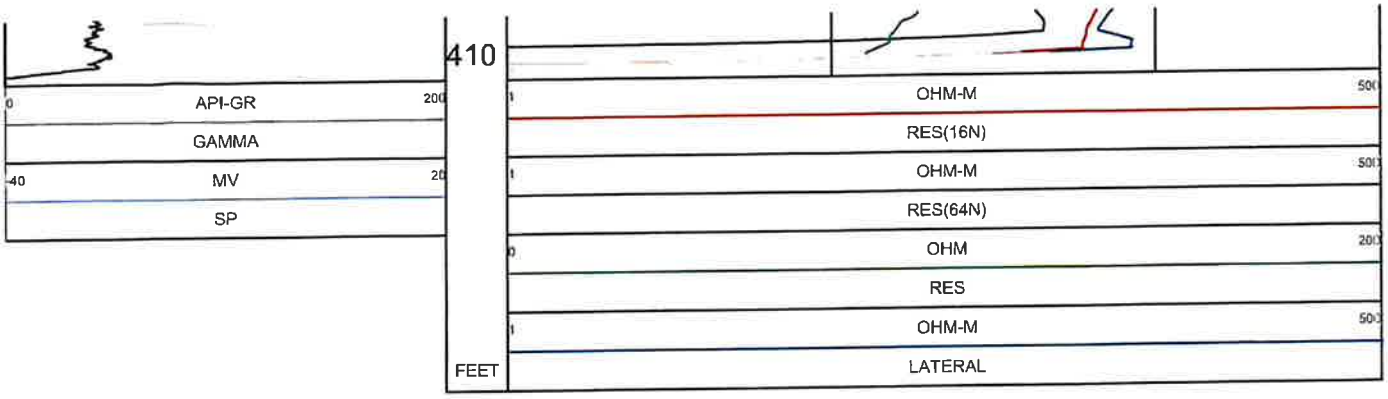
Recorded at 4-inch Pilot Well next to the then proposed 12-Inch Well #6
September 20, 2016, 9:45 to February 1, 2017, 11:45
Recorded by Scott Andres and Peter McGlaughlin
Delaware Geological Survey
University of Delaware

Please Note: **The Data shown above is for the period 09/20/2016; 9:45 to 18:15, due to the size of the file. Additional Data through 02/1/2017, is available, and could be submitted electronically, should this be necessary.**

Log Plot Interp by Peter McGlaughlin, Del. Geological Survey, 4-inch Pilot Well for Well #6




190
200
210
220
230
240
250
260
270
280
290
300
310
320
330
340
350
360
370
380
390
400
Cheswold
Piney Point


410
0
API-GR
200
GAMMA
-40
MV
20
SP
OHM-M
RES(16N)
OHM-M
RES(64N)
OHM
RES
OHM-M
LATERAL
FEET

Printed 12/12/2023

DNREC - YEARLY WATER USAGE REPORTING - *site location: https://wateruse.dnrec.delaware.gov/*

2023	Google: Morning Well Readings	Pulled from Neptune 360 - Metered Wells	Pulled from Neptune 360 - System Consumtion report	360 minus Block 21 (Sewer Only)	Customer Meter minus Tamarac	Unmetered (Total account loss)	Pulled from Excel - End of Year Water Loss	TOTAL Unaccounted Water Loss (6 plus 7 minus 5)	Percentage of loss (Pulled vs Metered & accounted for)	Pulled from Neptune 360 consumption report
A	B	1	2	3	4	5	6	7	8	9
MONTH	**PULLED** (TOTAL MONTHLY FROM WELLS)	**360 Neptune** *(Well Reads)*	**360 Neptune** *Customer Meters*	**Tamarac -** Metered Usage for SEWER only	**True Customer Water Use**	**Sum for 1 minus 4 (Unaccount loss)**	**Accounted for Water Loss** *(leaks, testing etc.)*	**TOTAL Unaccounted Water Loss**	**% diff pulled vs metered & accounted for**	**Unbilled** (Neptune 360) (per gallon will be billed at next 1,000 gallon
JAN	12,314,749	Did not read wells with 360 until May 2023	9,515,000	285,723	9,229,277	3,085,472	232,000	2,853,472	23.2%	1,147,777
FEB	11,164,492		9,691,290	262,437	9,428,853	1,735,639	64,000	1,671,639	15.0%	1,195,852
MAR	12,722,369		12,072,000	362,461	11,709,539	1,012,830	555,000	457,830	3.6%	666,980
APR	11,673,203		11,688,522	267,424	11,421,098	252,105	59,000	193,105	1.7%	837,099
MAY	13,056,922	13,056,922	12,661,205	276,139	12,385,066	671,856	206,000	465,856	3.6%	799,006
JUN	16,480,391	16,574,515	16,208,619	432,501	15,776,118	798,397	51,000	747,397	4.5%	630,118
JUL	13,925,681	13,972,372	13,939,875	308,141	13,631,734	340,638	290,000	50,638	0.4%	1,181,875
AUG	15,106,948	15,106,948	13,202,516	291,000	12,911,516	2,195,432	210,500	1,984,932	13.1%	1,221,516
SEP	14,265,208	14,265,208	14,164,000	317,000	13,847,000	418,208	350,000	68,208	0.5%	1,207,531
OCT	13,263,613	13,322,181	12,535,466	324,378	12,211,088	1,111,093	31,000	1,080,093	8.1%	1,195,466
NOV	13,186,588	13,071,064	11,700,329	347,865	11,352,464	1,718,600	206,000	1,512,600	11.5%	1,204,329
DEC								-	#DIV/0!	
TOTALS	147,160,164	99,369,210	137,378,822	3,475,069	133,903,753	13,340,270	2,254,500	11,085,770	7.5%	11,287,549

	Total from Edmunds Billing Register	Yearly Estimated Loss Reprt: Excel		Edmunds: Billing Register			
	10	11	12	13	14	15	16
MONTH	**EDMUNDS** (TOTAL WATER BILLED)	**ESTIMATED LOSS** (LEAKS/ TESTING/		**READ DATE**	**RES (cycle 1)**	**COM (cycle 2)**	**RES IRRG (cycle 3)**
JAN	11,392,000	232,000		1/26/2023	8,060,000	3,332,000	-
FEB	10,318,000	64,000		2/23/2023	7,243,000	3,075,000	-
MAR	12,051,000	555,000		3/28/2023	8,549,000	3,428,000	74,000
APR	11,389,000	59,000		4/25/2023	7,708,000	3,681,000	-
MAY	12,024,000	206,000		5/24/2023	8,059,000	3,965,000	-
JUN	15,443,000	51,000		6/26/2023	9,951,000	5,492,000	-
JUL	13,251,000	290,000		7/25/2023	8,318,000	4,933,000	-
AUG	13,769,000	210,500		8/24/2023	8,654,000	5,115,000	-
SEP	14,247,000	350,000		9/25/2023	9,030,000	4,530,000	687,000
OCT	12,272,000	31,000		10/26/2023	8,162,000	4,110,000	-
NOV	12,019,000	206,000		11/27/2023	8,379,000	3,640,000	-
DEC	-						-
TOTALS	138,175,000	2,254,500			92,113,000	45,301,000	761,000

PROOF	-
Should be zero	