United States Environmental Protection Agency

Site Visit Report for Patriot Water Treatment LLC Warren, OH Centralized Waste Treatment Facility

March 03, 2015

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1.0 INTRODUCTION

On October 28, 2014, the U.S. Environmental Protection Agency (EPA) met with Jeff Faloba of Patriot Water Treatment (Patriot) at their centralized waste treatment (CWT) facility located at 2840 Sferra Ave Warren, Ohio 44483.

Site visit participants are listed below. Contact information is included in Appendix A.

U.S. EPA Office of Water, Office of Science and Technology Engineering and Analysis Division

Karen Milam
Jesse Pritts

Eastern Research Group, Inc. (ERG) (EPA Contractor)

Cortney Itle
Kathleen Wu

Abt Associates (EPA Contractor)

Lisa Tarquinio

Patriot Water Treatment

Jeff Faloba

2.0 BACKGROUND AND OBJECTIVES

EPA is studying how CWT facilities manage wastewaters generated during oil and gas extraction. The recent increase in shale oil and shale gas extraction through practices such as hydraulic fracturing has increased the need for options for disposal of flowback and produced waters and other wastewaters that are generated during oil and gas extraction. EPA is evaluating CWT facilities accepting oil and gas extraction wastewaters. As part of this evaluation, EPA is collecting data from a variety of sources, including site visits at CWT facilities. The goals of these site visits include evaluation of treatment technologies (including factors such as their cost and performance), evaluation of types and volumes of wastewater managed and the characteristics of these wastewaters, evaluation of residuals management practices, and understanding economic and financial factors affecting the industry.

EPA conducted a site visit at Patriot's Warren, Ohio facility to collect background information on the oil and gas extraction wastewater treatment industry and observe wastewater treatment operations. Before the visit, EPA reviewed information about CWT facilities that accept oil and gas extraction wastewater. During this review, the EPA identified Patriot as receiving oil and gas extraction wastewater for treatment and indirectly discharging treated wastewater.

Jeff Faloba, Operations Manager led the discussion of Patriot's wastewater treatment operations and the site tour. The remainder of this report summarizes information discussed during the October 28, 2014 site visit.

3.0 COMPANY AND FACILITY BACKGROUND

Patriot's Warren, Ohio facility began operations as a CWT facility in January 2011. The original property was retrofit with new construction and equipment starting in August 2010. The owners/investors began requesting a permit in 2009 and received a permit from OHEPA in 2011. Mr. Faloba estimated the cost to buy and retrofit the plant was about $3.5 million. The facility accepts oil and gas extraction wastewater (the facility's permit indicates that wastewater discharged to the POTW shall have less than 50,000 mg/L TDS) and other industrial wastewater. According to Mr. Faloba, the Patriot CWT facility complements the injection well industry because it accepts oil and gas extraction wastewater that cannot be disposed of in injection wells in Ohio due to its relatively low TDS and solids content.

Treated wastewater from Patriot is discharged to the publicly owned Warren Ohio Wastewater Treatment Plant for further treatment before discharge to the Mahoning River. Solid wastes from Patriot are disposed of in landfills. Patriot primarily receives wastewater from Ohio, Pennsylvania, and West Virginia in about a 250 mile radius (2.5 hours of driving time).

Patriot began operations without an 'anchor client' and is not permanently contracted with any clients. Instead, the company was completely funded by three owners/investors with past experience in the oil and gas business at the start of operations. Current clients range from big oil companies, such as Shell, to small independent producers and industrial wastewater generators. Patriot Water has a service agreement with each customer that are uniquely tailored to the customer. The facility employs 12 full-time employees and 8 part-time employees for corporate and sales.

The Warren, Ohio location is currently the only Patriot CWT facility. Mr. Faloba indicated that the owners of the company have discussed expanding into southern Ohio.

4.0 WASTEWATER SERVICES

The Patriot wastewater treatment system processes oil and gas extraction wastewater, industrial wastewater, and oil and gas drilling muds. Patriot generally accepts low TDS wastewater, including fracking wastewater, initial drilling flowback wastewater, and containment wastewater containing less than 100,000 ppm of TDS (the usual minimum TDS concentration for injection well disposal in Ohio is 140,000 ppm). Mr. Faloba stated that they can accept wastewater with higher TDS if they can mix it with low TDS wastewater prior to treatment, but generally Patriot does not accept produced water because of its relatively high TDS. Patriot has about 700,000 gallons of storage and mixing capacity and has an operating capacity of 100,000 gallons during an 8-hour daily run of the treatment system. They do not have any capacity to store treated water, so they only operate the treatment system to the discharge volume limits of their permits. Patriot's POTW permit limits their discharges to 100,000 gallon per day for oil and gas extraction wastewater ("Brine Water") and 50,000 ppm TDS (41,700 pounds per day).

Patriot's permit limitations also incorporate categorical effluent limitations from 40 CFR Part 437, Subpart C (CWT Point Source Category, Organics Treatment and Recovery), including daily maximum and monthly average discharge concentrations for copper, zinc, and organics parameters. In addition, Patriot's permit incorporates ordinance effluent limitations for additional pollutants including heavy metals, cyanide, ammonia, pH, COD, TDS, and TSS. Effluent concentrations exceeding discharge limitations for COD, TDS, and TSS (600 mg/L, 1,500 mg/L, and 250 mg/L, respectively) are subject to additional surcharge.

In addition to oil and gas wastewater, Patriot accepts industrial wastewater (primarily from zirconium manufacturing), in volumes ranging from zero gallons to 100,000 gallons per day. Mr. Faloba commented that the company had no intentions of accepting industrial wastewater at the start of operations, but entered this market as a by-product of their location and pricing. They are selective about the industrial wastewater that they accept to ensure it does not negatively affect the treatment system. Generally they do not accept any oily industrial wastewater or any industrial wastewater that contains hydrocarbons. Mr. Faloba stated that Patriot is limited to treating industrial wastewater of up to 187,000 gallons per day. Patriot also accepts oil and gas drilling muds. Solids generated by the wastewater treatment system and the mud separation process are disposed of in one of three landfills, so long as they have a radium-226 and radium-228 readings of less than 7 picocuries per gram. These landfills include Republic's Poland Landfill in Ohio, Short Creek Landfill in West Virginia, and Waste Management Landfill in Louisville, Ohio.

5.0 WASTEWATER TREATMENT INFORMATION

As mentioned in Section 4, Patriot treats oil and gas extraction wastewater, industrial wastewater, and oil and gas drilling muds. These treatment systems are described below.

5.1 Oil and Gas Extraction Wastewater Treatment

The oil and gas extraction wastewater treatment system is designed for solids, metals, and organics removal. The system processes 100,000 gallons in an 8-hour working day, but the facility receives wastewater 24-hours a day. Typical daily treatment volumes vary. Patriot requires that all clients sign a service agreement before they will accept any wastewater. The following is a description of each step in the Patriot treatment process. Photos can be found in Appendix D.

1. **Receiving—** Before trucks are offloaded, operators perform a flash test (150°C) from a sample taken from the top hatch for flammability. Another sample is taken from the bottom of the tank to measure TDS. A radiation scan and pH measurement are also taken and documented in the Non-Hazardous Receiving Report (see Appendix C). The tests are performed in an indoor laboratory in Patriot's office space (see Photographs 1 and 2 in Appendix D). If laboratory tests meet all acceptance criteria, the truck is allowed to off load, and the manifest is passed on to Patriot. A Patriot receiving report is issued to the trucker. Once these steps are completed, the truck is allowed to off load in one of three offloading bays on the dump pad (see Photographs 4 and 5 in Appendix D). Each off-loading bay has a coarse wire screen to remove large debris before wastewater enters the treatment system. Any wastewater with less than 10% solids is sent through the wastewater treatment system. If a truck load contains greater than 10% solids, then the truck is instead offloaded at the mud operations pad where the solids are centrifuged and solidified. Mr. Faloba stated that on average it takes about 25 minutes for a truck to enter the facility, offload, and leave. Stormwater from the receiving pads is collected for treatment as well.

2. **Settling and Storage Tank—** When a truck offloads at the dump pad, the wastewater enters a 52,000-gallon dump tank (see Photograph 6 in Appendix D). There is a sample port located at the bottom of the storage tank. This tank allows debris and sediment to settle from the wastewater before it is pumped to the 622,000-gallon storage tank (see Photographs 7, 8, 9 in Appendix D). Mr. Faloba stated that they target less than 10% total solids in the wastewater before it is pumped to the large storage tank where it is aerated and mixed with stored wastewater. The mixing pump and associated piping recirculates wastewater at a rate of 300 gallons per minute (see Photograph 10 in Appendix D). The water is then ready to enter the treatment system. Solids that accumulate in the dump tank are periodically removed using an excavator for solidification and disposal.

3. **Equalization Tanks—** Next the wastewater enters one of six 7,000-gallon equalization tanks designated for oil and gas extraction wastewater (see Photograph 11 in Appendix D). Each equalization tank has a diaphragm pump at the bottom for pumping off settled solids to the filter press.

4. **Clarifier -** Wastewater is pumped from the equalization tanks to an inclined plate clarifier via overhead pipes (see Photograph 12 in Appendix D). The clarifier has three sections. Alum coagulant is added to the first section, while caustic and anionic polymers are added to the second section. These first two sections contain mixers to promote coagulation and flocculation. The third section is where settling occurs. The coagulant destabilizes colloidal and fine suspended solids while the flocculant aggregates the suspended solids to form a floc that settles by gravity. Sodium hydroxide is added to the second section to adjust wastewater pH to within the range of 6 to 9 for discharge. Caustic is also used to adjust pH, but only during certain seasons as it freezes as 55°C. Drums of chemicals are shown in Photograph 13 in Appendix D. The clarifier is shown in Photographs 14 and 15 in Appendix D. Mr. Faloba indicated that the facility is considering adding an aeration system to the first part of the clarifier to control septic odors as well as to enhance metals precipitation.

5. **Discharge to POTW—** Treated wastewater is metered for flow rate and conductivity levels, which is converted to TDS (see Photographs 16 and 17 in Appendix D) and discharged into the sanitary sewer (see Photographs 18 and 19 in Appendix D). At the time of the site visit the system was discharging at 204 gallons/minute and had a TDS reading of 15,500 ppm.

6. **Plate and Frame Filter Press—** Sludge from the clarifier is sent to a plate and frame filter press that extracts more water (see Photograph 20 in Appendix D). The filtrate is recirculated back into the treatment system while the solids are sent to landfill. Mr. Faloba estimates that about 400 tons of solids on average are sent to landfills each month with a greater than 50% solids content.

5.2 Industrial Wastewater Treatment

The facility has separate parallel treatment process to treat industrial wastewater prior to the clarifier, which is used for industrial as well as oil and gas wastewater treatment. Sludge from the clarifier in this process is sent to the same filter press. The following is a description of the steps in the Patriot industrial wastewater treatment process, and photos can be found in Appendix D.

1. **Receiving—** The receiving process for industrial wastewater is similar to that for oil and gas wastewater. Before trucks are offloaded, operators perform a flash test (150°C) from a sample taken from the top hatch for flammability. Another sample is taken from the bottom of the tank to measure the amount TDS. A radiation scan and pH measurement are taken and documented in the Non-Hazardous Receiving Report (see Appendix C). If laboratory tests meet all acceptance criteria, the manifest is passed on to Patriot and the truck is allowed to off load in the industrial wastewater off-loading area. Wastewater is pumped into one of two 10,000-gallon portable fixed-axle steel water storage tank where it is then pumped to the equalization tanks via a drain (see Photograph 21 and 22 in Appendix D).

2. **Equalization Tanks—** Wastewater enters one of two 7,000-gallon equalization tanks designated for industrial wastewater (see Photograph 11 in Appendix D).

3. **Clarifier -** Alum coagulant and anionic polymers are added for solids removal and sodium hydroxide is added to adjust the pH.

4. **Discharge to POTW—** The treated wastewater is metered for flow rate and TDS levels before discharged into the sanitary sewer.

5. **Plate and Frame Filter Press—** The residuals are sent to a filter press that extracts more water with all other process residuals. Water is recirculated back into the treatment system while the solids are sent to landfill.

5.3 Oil and Gas Drilling Mud Treatment

Oil and gas drilling muds are also accepted for treatment by Patriot. Below is a description of the process Patriot uses to treat drilling muds; photographs are provided in Appendix D.

1. **Receiving—** Before off-loading, oil and gas drilling muds must be tested for pH, TDS, flash tested, and scanned for radiation prior to acceptance. A manifest is obtained from the trucker, and a Patriot receiving report is issued. The off loading area for drilling muds includes two stations that each include a shaker and centrifuge (see Photographs 23, 24, and 25 in Appendix D).

2. **Shaker—** The mud is loaded into a "shaker" box where large solids are removed and fall into a roll-off box.

3. **Centrifuge—** Finer solids are then removed via a centrifuge**.** Polymers are added to enhance solids separation as the liquid mud is pumped from the shaker mixing boxes to the centrifuges. Separated liquid (see Photograph 26 in Appendix D) is routed to the industrial wastewater treatment system (see Step 2 of Section 5.2). Solids from the centrifuge (see Photograph 27 in Appendix D) are collected and sent to landfill. Solids are stored onsite until landfill disposal (see Photographs 28 and 29). Mr. Faloba stated that occasionally the facility will receive drilling muds that cannot be separated via centrifuge. In these situations, the drilling muds are mixed with polymers, the water is decanted, and sawdust (see Photograph 30 in Appendix D) is added to the remaining mud for solidification. The solidified material is taken to landfill.

4. **Radiation Testing—** All materials sent to a landfill from Patriot are tested for Radium 226 and 228 by Shale Testing Solutions (STS), an on-site certified lab. Results for Radium 226 and 228 cannot exceed 7 picocuries per gram and be accepted at an Ohio landfill.

6.0 BUSINESS MODEL AND COSTS

Mr. Faloba estimated the value of the initial investment for the land and facilities at Patriot's Warren, Ohio location to be about $3.5 million. As stated previously, the partners made the investment with no need for external financing. Patriot has continued to make capital improvements since its initial start-up. When asked about the expected life of the business, Mr. Faloba answered that the business was developed to last at least 30 years. Mr. Faloba mentioned that the company also made an additional investment of roughly $750,000 for an AltelaRain treatment unit. This technology was purchased during the period in which the company was having permit issues with state agencies and has never been installed because it is energy intensive and therefore expensive to operate. The company may also invest in aeration for the large storage tank used in the oil and gas wastewater treatment process and will continue to invest to improve its process.

In addition to describing fixed investments, during the site visit Mr. Faloba mentioned two of the major costs for operations in addition to labor. He indicated that the company pays the POTW for discharging into the public sewer system and also that the company must pay transportation and disposal costs for landfilling. He also estimated an average of 20 trucks going to the landfill per month, though the company has sent 100 in a single month. According to Mr. Faloba, the cost per unit for wastewater treatment has decreased since the start of Patriot's operations due to process improvements

Patriot charges from $0.07 to $0.15 per gallon to treat and discharge industrial wastewater and $0.08 to $0.50 per gallon to treat and discharge of oil and gas extraction wastewater. The pricing for oil and gas wastewater includes a surcharge depending upon the concentration of solids in the untreated wastewater. Patriot previously used a surcharge for TDS as well, but Mr. Faloba said that it was too burdensome to obtain customer agreement, so the company dropped this practice. Mr. Faloba indicated that the price for industrial wastewater is generally lower because industrial customers cannot pay the same price as oil and gas customers. For oil and gas customers, he also indicated that the price is agreed to with the customer in advance, and that Patriot honors the price. According to Mr. Faloba, the cost per unit for wastewater treatment has decreased since the start of Patriot's operations.The Patriot plant's customers include both large oil and gas producers and small independent producers, though Mr. Faloba mentioned that some producers, such as Chesapeake and XTO, try to avoid sending any wastewater to a disposal facility in an effort to reuse "100 percent." He also stated that in the beginning of the plants operation, most customers were located in Pennsylvania and West Virginia, because the company was "ahead of the industry in Ohio." However, he did also mention that the company still receives wastewater from Pennsylvania, but that now it is coming from the western portion of that state. Patriot continues to receive wastewater from West Virginia as well.

Mr. Faloba stated during the site visit that for oil and gas wastewater, Patriot usually hits its discharge limit of 100,000 gallons per day. He also stated that Patriot might receive one week of notice or no notice from customers, and that in the past in a few instances, the company has had to turn away trucks because it was at capacity. For industrial wastewater, the company processes up to 185,000 gallons per day, but the volume of receipts varies more than the oil and gas wastewater.

Mr. Faloba mentioned numerous times that Patriot is a niche facility. The facility treats water that the injection wells cannot take. In this discussion, he described Patriot as a complement to underground injection facilities. Later, he mentioned that these disposal facilities have tried to compete with Patriot, but that it "messed up the wells" and were linked to seismic activity. However, Mr. Faloba did say that while pricing for solids treatment has not changed, for water treatment Patriot has had to meet pricing of the underground injection control facilities in many instances.

In discussing the potential for opening a second facility in Harrison County, Mr. Faloba indicated that the facility would deal with removing dirt from the 'dirtiest water' and that the water would then be sent to an underground injection facility, or Patriot, or perhaps the facility would have a reuse operation added to it.

At this time Patriot does not own its own trucking operation, but Mr. Faloba indicated that some competitors have added trucking and it has helping them. He mentioned that it is something that the company may need to add eventually, but at the moment trucking costs are high, providing an estimate of $110 per hour. Mr. Faloba indicated that the total time for Patriot to process a truck is roughly 20 to 25 minutes, and that this gives the company a competitive edge in keeping transportation costs down.

APPENDIX A
LIST OF PARTICIPANTS ON THE PATRIOT WATER TREATMENT SITE VISIT

Table A-1. List of Attendees

First Name	Organization	Phone Number	Email
Jeff Faloba	Patriot Water Treatment	(330) 853-2393	jefffaloba@yahoo.com
Cortney Itle	ERG	(703) 424-8360	Cortney.Itle@erg.com
Karen Milam	U.S. EPA	(202) 564-9752	Milam.Karen@epa.gov
Jesse Pritts	U.S. EPA	(202) 566-1038	Pritts.Jesse@epa.gov
Lisa Tarquinio	Abt Associates	(518) 339-3355	Lisa_Tarquinio@abtassoc.com
Kathleen Wu	ERG	(703) 633-1625	Kathleen.Wu@erg.com

APPENDIX B
PATRIOT WATER PERMITS

State of Ohio Environmental Protection Agency

STREET ADDRESS:
Lazarus Government Center
50 W. Town St., Suite 700
Columbus, Ohio 43215

TELE: (614) 644-3020 FAX: (614) 644-3184
www.epa.state.oh.us

MAILING ADDRESS:
P.O. Box 1049
Columbus, OH 43216-1049

August 10, 2010

Re: Warren
Trumbull County
Application No. 748163
Application for Brine Wastewater Pretreatment System for Patriot Water Treatment LLC at 2840 Sferra Avenue NW
Plans Received on January 11, 2010
Revised Plans Received July 30, 2010
From: Wastewater Management, Inc.
CERTIFIED MAIL

Patriot Water Treatment, LLC
Attn: Andrew Blocksom, President
7716 Depot Road, Unit #1
Lisbon, OH 44432

Ladies and Gentlemen:

Enclosed is the Ohio EPA Permit to Install which will allow you to install the described source in the manner indicated in the permit. Because this permit contains several conditions and restrictions, I urge you to read it carefully.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of $70.00, made payable to "Ohio Treasurer Kevin Boyce," which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address: Environmental Review Appeals Commission, 309 South Fourth Street, Room 222, Columbus, Ohio 43215

You should note that a general condition of your permit states that issuance of the permit does not relieve you of the duty of complying with all applicable federal, state, and local laws, ordinances, and regulations.

If you have any questions, please contact the Ohio EPA district office to which you submitted your application.

Sincerely,

Patti L. Smith

Patti L. Smith, Supervisor
Permit Processing Unit
Division of Surface Water

PLS/sg
Enclosure
cc: Northeast District Office
Wastewater Management, Inc.
City of Warren WWTP

Ted Strickland, Governor
Lee Fisher, Lieutenant Governor
Chris Korleski, Director

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Ohio EPA is an Equal Opportunity Employer

Ohio Environmental Protection Agency

Permit to Install

Application No: 748163

Applicant Name:	Patriot Water Treatment, LLC
Address:	7716 Depot Road, Unit #1
City:	Lisbon
State Zip:	OH 44432

Person to Contact:	Andrew Blocksom, President
Telephone:	330-853-9321

Description of Proposed Source: Brine Wastewater Pretreatment System for Patriot Water Treatment LLC at 2840 Sferra Avenue NW, Warren, Trumbull County

Issuance Date: August 10, 2010
Effective Date: August 10, 2010

The above named entity is hereby granted a permit to install for the above described source pursuant to Chapter 3745-42 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described source of environmental pollutants will operate in compliance with applicable state and federal laws and regulations. Issuance of this permit does not constitute expressed or implied assurance that, if constructed or modified in accordance with those plans and specifications, the above described source of pollutants will be granted the necessary operating permits. This permit is granted subject to the following conditions attached hereto.

Ohio Environmental Protection Agency

Chris Korleski

Chris Korleski
Director
P.O. Box 1049
50 West Town Street, Suite 700
Columbus, OH 43216-1049

This permit shall expire if construction has not been initiated by the applicant within eighteen months of the effective date of this permit. By accepting this permit, the applicant acknowledges that this eighteen month period shall not be considered or construed as extending or having any effect whatsoever on any compliance schedule or deadline set forth in any administrative or court order issued to or binding upon the permit applicant, and the applicant shall abide by such compliance schedules or deadlines to avoid the initiation of additional legal action by the Ohio EPA.

The director of the Ohio Environmental Protection Agency, or his authorized representatives, may enter upon the premises of the above named applicant during construction and operation at any reasonable time for the purpose of making inspections, conducting tests, examining records, or reports pertaining to the construction, modification, or installation of the above described source of environmental pollutants.

Issuance of this permit does not relieve you of the duty of complying with all applicable federal, state, and local laws, ordinances, and regulations.

Any well, well point, pit, or other device installed for the purpose of lowering the ground water level to facilitate construction of this project shall be properly abandoned in accordance with the provisions of this plan or as directed by the director or his representative.

Any person installing any well, well point, pit or other device used for the purpose of removing ground water from an aquifer shall complete and file a Well Log and Drilling Report form with the Ohio Department of Natural Resources, Division of Water, within 30 days of the well completion in accordance with the Ohio Revised code Section 1521.01 and 1521.05. In addition, any such facility that has a capacity to withdraw waters of the state in an amount greater than 100,000 gallons per day from all sources shall be registered by the owner with the chief of the Division of Water, Ohio Department of Natural Resources, within three months after the facility is completed in accordance with Section 1521.16 of the Ohio Revised Code. For copies of the necessary well log, drilling report, or registration forms, please contact:

Ohio Department of Natural Resources
2045 Morse Road Bldg. E
Columbus, OH 43229-6693
(614) 265-6717

The proposed wastewater disposal system shall be constructed in strict accordance with the plans and application approved by the director of the Ohio Environmental Protection Agency. There shall be no deviation from these plans without the prior express, written approval of the agency. Any deviations from these plans or the above conditions may lead to such sanctions and penalties as provided for under Ohio law. Approval of these plans and issuance of this permit does not constitute an assurance by the Ohio Environmental Protection Agency that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources are inadequate or cannot meet applicable standards.

Patriot Water Treatment LLC shall be responsible for proper operation and maintenance of the wastewater disposal system.

This permit to install applies only to the wastewater disposal system listed above. The installation of drinking water supplies, air contaminant sources, or solid waste disposal facilities will require the submittal of a separate application to the director.

This permit applies to a wastewater disposal system designed to serve an average hydraulic flow of no more than 200 gallons per minute.

Roof drains, foundation drains, and other clean water connections to the disposal system are prohibited.

No liquids, sludges, or toxic or hazardous substances other than those set forth in the approved permit shall be accepted for disposal without the prior written approval of the Ohio Environmental Protection Agency.

All residuals from pretreatment facilities, whether defined hazardous or nonhazardous, shall be stored, transported, treated, and disposed in a manner that will comply with all applicable local, state, and federal regulations, including regulations governing materials containing technologically enhanced normally occurring radioactive materials.

Plans for any modifications of pretreatment facilities required for the attainment of U.S. EPA regulations and/or local limitations set by the City of Warren must be submitted to the City of Warren and the appropriate district office of the Ohio Environmental Protection Agency for approval prior to the installation of such facilities.

No more than 100,000 gallons per day (gpd) may be discharged into the City of Warren sewer system unless prior approval is obtained from the Ohio Environmental Protection Agency and the City of Warren.

The City of Warren Publicly Owned Treatment Works (POTW) officials shall be notified of any spills and unusual discharges to the sewer system immediately after discovery of such an occurrence.

All wastewater discharges that will adversely affect the operation, maintenance, or treatment capabilities of the Warren sewer and/or wastewater treatment systems are prohibited.

Daily records of operation shall be maintained and be available for review and inspection to the City of Warren and the Ohio Environmental Protection Agency upon request.

Patriot Water Treatment LLC shall provide a suitable location to collect representative samples of process wastewater which is discharged into the sanitary sewer.

Patriot Water Treatment LLC shall comply with all applicable U.S. EPA categorical pretreatment standards and local pretreatment regulations as they are adopted from time to time.

The permit to install is not an authorization to discharge pollutants to waters of the state. Pursuant to Chapter 6111 of the Ohio Revised Code, the applicant shall apply for a permit to discharge (NPDES) 180 days prior to any discharge of pollutants to waters of the state.

Special Conditions:

1. There shall be no discharge of gas well wastewater until the City of Warren National Pollutant Discharge Elimination System (NPDES) permit modification process has been completed, and the modified permit issued.

2. The gas well wastewater shall not have a total dissolved solids concentration greater than 50,000 mg/l.

2323 Main Avenue
Warren, Ohio 44484

April 20, 2011

Andrew Blocksom
Patriot Energy Partners, LLC
7716 Depot Rd.
Lisbon, Ohio 44432

Re: Administrative Orders Concerning Pretreatment Regulations, Monitoring, Allowable Discharge, Pollutants and Limits

Effective Date: Amended 4/19/11 to include Categorical Organic Pollutants

Expiration Date: Effective Date of newly approved Local Limits

Dear Mr. Blocksom:

In accordance with the City of Warren's Pretreatment program as set forth in Ordinance No. 10235/91, Chapter 924, which sets forth uniform requirements for discharge into the City sewer collection and treatment systems, thereby enabling the City to enforce compliance, for the protection of the public health and welfare, this letter will serve as an administrative order notifying your firm of the City's intent to apply and enforce the Pretreatment regulations and applicable laws relating to the City of Warren's Ordinance No. 10235/91 as amended and all applicable state and federal laws.

This order notifies you that you may discharge pollutants as listed in this order, and within the limits as stated. However, no person shall discharge into a public sewer, wastes which are not listed unless issued orders by the Director allowing the discharge of such pollutants. In the absence of such specific orders, no person shall discharge any toxic pollutants except as such pollutants may occur and only in the concentrations such pollutants may occur in the water supply to their premises.

Compatible pollutants may be discharged to the maximum daily concentration established in the Sewer Use Ordinance; however, to exceed these limits, permission must be obtained from the Director, and the appropriate surcharge will be assessed.

The above-listed statements emphasize that it is imperative that prior notification and approval of the City be obtained before introduction of wastewater constituents or any substantial change in the volume or character of the wastewater constituents are introduced into the wastewater treatment system.

This order and the authorization to discharge shall expire at midnight on the expiration date shown above. In order to receive authorization to discharge beyond the above date of expiration, the discharger shall submit such information and forms as are required by the City of Warren ninety days prior to the above date of expiration.

Within thirty days after full evaluation and acceptance of the data furnished, the Director shall reissue or modify this order.

All discharges authorized herein shall be consistent with the terms and conditions of Ordinance No. 11039/97. The discharge of any pollutant identified in this Order more frequently than, or at a level in excess of, that authorized by this Order shall constitute a violation of the terms and conditions of this Order. Such violations may result in the imposition of civil and/or criminal penalties as provided in Section 924.99 of amended Ordinance No. 11047/97.

This Order cannot be transferred or assigned nor shall a new owner or successor be authorized to discharge from this facility, until the following requirements are met:

A. The discharger shall notify the City of Warren Pretreatment unit at-least sixty days in advance of the proposed transfer date;

B. The notice shall include a written agreement containing a specific date for transfer of discharger responsibility and coverage between the current and new discharge (including acknowledgment that the existing discharger is liable for violations up to that date, and that the new discharger is liable for violations from that date on);

C. The Director does not exercise his right to notify the current discharger and the new discharger of his or her intent to modify or revoke the Order and to require that a new application be filed;

D. The new owner or successor receives written confirmation and approval of the transfer from the Director.

The owner shall be responsible for the proper operation of the permitted waste disposal system and shall properly maintain all units for continuous operation.

All residuals from Pretreatment facilities, whether defined hazardous or non hazardous, shall be stored, transported, treated and disposed in a manner that will comply with all applicable local, state and federal regulations.

All wastewater discharges that will adversely affect the operation, maintenance, or treatment capabilities of the Warren sewer and/or wastewater treatment systems are prohibited.

Daily records of operation shall be maintained and be available to the City of Warren upon request.

Section 1.Wastewater Discharge Limitations and Monitoring Requirements.

Patriot Energy Partners, LLC shall comply with the effluent limitations, monitoring requirements, and reporting requirements as follows:

Categorical *Part 437 Subpart C Sample point at end of process, at pretreatment facility*

POLLUTANT	CATEGORICAL DAILY MAX	CATEGORICAL MONTHLY AVG.	ORDINANCE DAILY MAX	SAMPLE FREQUENCY	SAMPLE TYPE	REPORTING UNITS
Cadmium				Once/Month	COMP	Ug/l
+Chromium (total)			1500	Once/Month	COMP	Ug/l
Chromium (hex)			1400	Once/ Monthly	GRAB	Ug/l
Copper	865	757	830	Once/Month	COMP	Ug/l
Lead				Once/Month	COMP	Ug/l
+Nickel			1800	Once/Month	COMP	Ug/l
Zinc	497	420	1210	Once/Month	COMP	Ug/l
Mercury			3.5	Once/Month	COMP	Ug/l
Silver				Once/Month	COMP	Ug/l
*COD			600	Once/Month	COMP	Mg/l
PH			6 to 9	Once/Month	GRAB	S.U.
Cyanide (total)				Once/Month	GRAB	Mg/l
Cyanide (free)			335	Once/Month	GRAB	Ug/l
Ammonia			35	Once/Month	COMP	Mg/l
TDS*			1500	Daily	GRAB	Mg/l
TSS*			250	Daily	GRAB	Mg/l
Flow				Daily	CONTINUOUS	GPD
Arsenic			200	Once/Month	COMP	Ug/l
Antimony			329	Once/Month	COMP	Ug/l
Molybdenum			699	Once/Month	COMP	Ug/l
Selenium			1470	Once/Month	COMP	Ug/l

Categorical Organic Parameters***		
Pollutant	**Categorical Daily Max**	**Categorical Monthly Ave.**
Acetone	30.2	7.97
Acetophenone	0.114	0.0562
2–Butanone	4.81	1.85
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
Phenol	3.65	1.08
Pyridine	0.37	0.182
2,4,6–Trichlorophenol	0.155	0.106

** Concentrations exceeding limitation are surchargeable listed in Section 2 of this Administrative Order.*

*** The volatile fraction shall be collected as a grab sample.*

**** These are pollutant limits listed in the City of Warren Codified Ordinance. These pollutants will be sampled twice annually by the Industrial Pretreatment Department of the City of Warren Water Pollution Control.*

+ Ordinance Limits will be enforced over Categorical Limits..

Notes:

(1) All samples to be taken by automatic sampler set for sampling frequency of at least once per hour, with the exception of parameters designated to be taken as a grab sample.

(2) Sampling of wastewater shall be representative of operations occurring during the reporting period and shall be taken when all contributing sources are operating.

(3) All sampling and analysis of wastewater discharges shall be made in accordance with approved methods specified in 40 CFR 136.

Section 2. SPECIAL REQUIREMENTS

A. Compatible polluting; Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total Suspended Solids (TSS), Total Dissolved Solids (TDS), and Ammonia Nitrogen (NH3) may be discharged to the maximum daily concentration established in the Sewer Use Ordinance, and Sections 1 and 2 of this Order.
However, to exceed these limits, the appropriate surcharge will be assessed.
If there is a surcharge violation, the surcharge will remain in effect until such a time that it is proven there is no longer a surcharge violation.

The surcharge will be computed in accordance with the following formula for each constituent found to be of excess concentration:

S = [.22 (BW-200) +. 11 (CW- 600) + .12 (SW-250) +.12 (DW-1500) + 1.22 (NH3-35)] .0062 (Z) (D)

Where:

S = Surcharge for a wastewater constituent of excessive strength
.0062 = Factor used in converting Mg/L to pounds
Z = Number of 100 units
SW = User's SS concentration (Mg/L)
250 = Normal SS concentration (Mg/L)
DW= User's DS concentration (Mg/l)
1500= Normal DS concentration (Mg/l)
BW = User's BOD concentration (Mg/L)
200 = Normal BOD concentration (Mg/L)
CW = User's COD concentration (Mg/l)
600 = Normal COD concentration (Mg/l)
NH3 = User's NH3 concentration (Mg/L)
35 = Normal NH3 concentration (Mg/L)
D = Days in violation

Section 3. ***GENERAL DISCHARGE PROHIBITIONS***

No person shall discharge, or cause to be discharged, any of the following described water or wastes to any public sewer:

A. Pollutants that create a fire or explosion hazard in the POTW including, but not limited to, wastestreams with a closed cup flash point of less than 140 degrees Fahrenheit or 60 degrees Centigrade using the test method specified in 40 CFR 261.21.

B. No person shall discharge, or cause to be discharged, any of the following described water or wastes to any public sewer: Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems.

C. Any solids, greases, slurries, or viscous material of such character or in such quantity that may cause an obstruction to the flow in the sewer or otherwise interfere with the proper functioning of the sewage disposal works.

D. Any toxic substances, chemical elements or compounds in quantities sufficient to impair the operation or efficiency of the sewage treatment plant or that will pass through the sewage treatment plant and cause the effluent thereof to exceed NPDES permit limits, or otherwise interfere with the effective and final disposal of sludge removed or separated by the sewage treatment plant. This includes but is not

necessarily limited to the substances and respective limitations listed in Section 924.04.

E. *Any liquids having a pH lower than 6.0 or higher than 9.0, or having any corrosive property capable of causing damage or hazard to structures, equipment or personnel of the sewage disposal works.*

F. *Any wastewater having a temperature, which will inhibit biological activity at the sewage treatment plant resulting in interference; but in no case, wastewater with a temperature at the introduction into the treatment plant which exceeds 40 C (104 F).*

G. *Any slug release, which will mean any pollutant, including oxygen-demanding pollutants (BOD, etc.) released in such volume or strength as to cause interference to the sewage treatment plant.*

H. *Any wastewater containing any radioactive wastes or isotopes of such half-life or concentration, which exceeds limits, established by the City in compliance with applicable State or Federal regulations.*

I. *Any substance with objectionable color not removed in the treatment process, such as, but not limited to, dye wastes and vegetable tanning solutions.*

J. *Discharges of petroleum oil, non-biodegradable cutting oil or products of mineral oil origin are prohibited in amounts that can pass through or cause interference.*

K. *Any trucked or hauled wastes discharged into the City of Warren sewer system or treatment plant are prohibited without prior permission from the Director of the Water Pollution Control Center to a designated discharge area.*

Section 4. ***REPORTING***

Periodic Compliance Reports

Monitoring and analysis of the parameters indicated for self-monitoring in Section 1.shall be performed, and results submitted to the Industrial Pretreatment Coordinator no later than the 25th of each month. Results of any monitoring performed more often than the required frequency shall be included in the periodic reports.

Results of sampling above the minimum required shall also be reported if analyses were conducted according to methodology in Section 924.16 of the City of Warren Ordinance 10235/91 as amended. Where the results of self-monitoring indicate a violation of Pretreatment standards, the Industrial User shall notify the Director within 24 hours of becoming aware of the violation. The User shall also resample for the pollutant(s) in violation and report the results of re-sampling within 30 days of becoming aware of the initial violation.

These reports shall include the certification statement and shall be signed by an authorized representative of the discharger as defined in Section 15 of this Order, Signatory Requirements.

Section 5. ***ADDITIONAL REPORTING REQUIREMENTS***

A. *The industrial user shall notify the Water Pollution Control Center at 841-2591 immediately upon first awareness of any accidental, or slug discharge, which could cause problems to the POTW or violate any prohibited discharge standard. Formal written notification discussing circumstances and remedial measures shall be submitted to the Director of the Water Pollution Control Center within five (5) days of the occurrence.*

B. *The industrial user shall submit in writing to the Director of the Water Pollution Control Center, a request for approval and determination of acceptability for any new wastewater sources, or new or increased pollutants to be discharged, or any substantial change in volume or characteristics of wastewater currently discharged from the user's operation. Approval of the requested changes must be obtained prior to the introduction of the wastewater or pollutants into the sewerage system.*

C. *The industrial user shall promptly notify the Director of the Water Pollution Control Center of any new, or change in discharge, of listed or characteristic RCRA hazardous waste for which notification is required under 40 CFR 403.12. This notification does not apply to pollutants being reported by the user under compliance monitoring of categorical Pretreatment standards.*

D. *The industrial user is limited on the daily discharge of 100,000 Gallons of Brine water with Total Dissolved Solids (TDS) at a maximum strength of 50,000 Mg/l or 41,700 lbs. of TDS applied daily Per direction of Northeast District Office Ohio EPA.*

E. *Discharge flow meter shall be calibrated on a quarterly basis, TDS meter shall be calibrated on a monthly basis.*

Section 6. ***RECORDS RETENTION***

The Discharger shall retain all of the following records for a minimum of three years, including:

A. *All sampling and analytical records (including internal sampling data not reported);*

B. *All original recordings for any continuous monitoring instrumentation;*
C. *All instrumentation, calibration and maintenance records; and*
D. *All plant operation and maintenance records;*
E. *All reports required by this Order.*

Section 7. ***CONFIDENTIAL INFORMATION***

Except for data determined to be confidential under 924.17 of the City Ordinance, all reports and information obtained pursuant to this Order shall be available for public inspection.

Section 8. ***SAMPLING and ANALYTICAL PROCEDURES***

All sampling and analysis of wastewater and pollutants required by this Order, shall be performed in accordance with the approved procedures and methods established and contained in 40 CFR Part 136 and amendments thereto.

All additional testing requirements and or fees imposed on the City of Warren WWTP as a result of Brine discharge shall be borne by the Industrial User.

Section 9. ***REPRESENTATIVE SAMPLING***

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitoring discharge. All samples shall be taken at the monitoring points specified in this Administrative Order and shall not be changed without approval of the POTW.

Section 10. ***DILUTION PROHIBITED***

Except where expressly authorized by an applicable Pretreatment standard, no Industrial User shall increase the use of potable or process water, or in any way attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with discharge limitations.

Section 11. ***RECORDING of RESULTS***

For each measurement taken pursuant to the requirements of this Order, the user shall maintain a record of the following information.

(a) The place, date, and time of sampling.

(b) The dates the analyses were performed.

(c) *The person (s) who performed the analyses.*

(d) *The results of all required analyses.*

(e) *Sampling method, grab or composite.*

(f) *EPA approved analytical method used.*

Section 12 ***FALSIFYING INFORMATION or TAMPERING with MONITORING EQUIPMENT***

Knowingly making any false statement on any report or other document required by this Order or knowingly rendering any monitoring device or method inaccurate may result in punishment under the criminal provisions of the Ordinance 924.99 c, as well as being subject to civil penalties an relief.

Section 13 ***OPERATOR UPSETS***

A. *Any upset experienced by the industrial user of its treatment processes that places it in a temporary state of non-compliance with wastewater discharge limitation contained in this Order of other limitations specified in the City's Ordinance shall be reported to the Water Pollution Control Center within twenty-four (24) hours of the first awareness of the commencement of the upset. A detailed report to the Director of the Water Pollution Control Center shall be filed within five (5) days of the event. The report shall specify:*

(1) *Description of the upset, the cause thereof, and the upset impact on a discharge compliance status;*

(2) *Duration of the non-compliance, including exact dates and times of non-compliance and if the non-compliance continues, the time by which compliance is reasonably expected to occur;*

(3) *All steps taken, or to be taken to reduce, eliminate, and prevent recurrence of such an upset or other conditions of non-compliance.*

B. *A documented and verified operating upset shall be an affirmative defense to an enforcement action brought against an industrial user for violations attributable to the upset event if the user can demonstrate that:*

(1) *An upset occurred and the user can identify the cause (s) of the upset;*

(2) *The facility was at the time being operated in a prudent and workmanlike manner and in compliance with applicable operation and maintenance procedures;*

(3) *The user had submitted to the POTW, the information required in paragraph A. above.*

C. *In any enforcement preceding the industrial user seeking to establish the occurrence of an upset shall have the burden of proof.*

Section 14 ***BYPASS of TREATMENT FACILITIES***

A. *Bypassing of treatment facilities for essential maintenance to assure efficient operation may be made provided that no violation of discharge limitations or requirements will result.*

B. *Bypassing is prohibited and enforcement action may be taken against an industrial user for a bypass unless:*

1. *Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage.*

2. *There were no feasible alternatives to the bypass, such as use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime.*

3. *The industrial user submitted notices as required in paragraph.*

C. *When bypass of wastewater from the industrial user's pretreatment facility is necessary which will cause violation of pretreatment standards or requirements, the following notifications shall be made to the control authority:*

1. *When need for a bypass is known in advance, prior notice shall be made at least ten (10) days before the date of the bypass, if possible.*

2. *When the bypass is unanticipated, oral notice is to be submitted to the Water Pollution Control Center within 24 hours of first awareness of the bypass. A written report shall be submitted to the Superintendent within five (5) days of the time the user became aware of the bypass, describing the bypass and its cause, duration (dates and times), and if the bypass has not been corrected, the estimated time it is expected to continue. Steps taken or planned to prevent recurrence shall be included.*

D. *Approval by the POTW of an anticipated bypass will be made only if the three (3) Conditions listed in paragraph B. are met, and there is a reasonable degree of certainty that the adverse affects that would result from the bypass would not cause a NPDES permit violation at the POTW.*

Section 15 ***SIGNATORY REQUIREMENTS***

All reports required under this Order shall include the following certification statement:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. Additionally, all reports shall be signed by:

A. A president, secretary, treasurer, or vice president of a corporation, or;

B. *A general partner or proprietor if the Industrial User is a partnership or sole proprietorship respectively, or;*

C. *A duly authorized representative of the above if the authorization is previously made in writing to the Director.*

Thomas A Angelo, Director

Water Pollution Control Center

Ohio | Environmental Protection Agency

John R. Kasich, **Governor**
Mary Taylor, **Lt. Governor**
Scott J. Nally, **Director**

March 19, 2012

Re: Warren
Trumbull County
Application No. 816662
Application for As-built Wastewater Pretreatment System Modifications for Patriot Water Treatment, LLC - removal & replacement of six frac tanks with two holding tanks at PWT Brine Water Treatment Facility at 2840 Sferra Ave
Plans Received on July 19, 2011
Revised Plans Received October 25, 2011
From: Howland Company, LLC
CERTIFIED MAIL

Patriot Water Treatment, LLC
Attn: Andrew Blocksom, President
7716 Depot Road Unit #1
Lisbon, OH 44432

Ladies and Gentlemen:

Enclosed is the Ohio EPA Permit to Install which will allow you to install the described source in the manner indicated in the permit. Because this permit contains several conditions and restrictions, I urge you to read it carefully.

You should note that a general condition of your permit states that issuance of the permit does not relieve you of the duty of complying with all applicable federal, state, and local laws, ordinances, and regulations.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of $70.00, made payable to "Ohio Treasurer Josh Mandel", which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address: Environmental Review Appeals Commission, 77 South High Street, 17th Floor, Columbus, OH 43215.

If you have any questions, please contact the Ohio EPA district office to which you submitted your application.

Sincerely,

Chris Bowman

Chris Bowman, Manager
Permit Processing Unit
Division of Surface Water

CB/sg
Enclosure
cc: Northeast District Office
Howland Company, LLC
City of Warren WWTP

50 West Town Street, Suite 700
P.O. Box 1049
Columbus, OH 43216-1049

614 | 644 3020
614 | 644 3184 (fax)
www.epa.ohio.gov

Ohio Environmental Protection Agency

Permit to Install

Application No: 816662

Applicant Name:	Patriot Water Treatment, LLC
Address:	7716 Depot Road Unit #1
City:	Lisbon
State Zip:	OH 44432
Person to Contact:	Andrew Blocksom, President
Telephone:	330-853-9321

Description of Proposed Source: As-built Wastewater Pretreatment System Modifications for Patriot Water Treatment, LLC - removal and replacement of six frac tanks with two holding tanks at PWT Brine Water Treatment Facility at 2840 Sferra Avenue, Warren, Trumbull County

Issuance Date: March 19, 2012
Effective Date: March 19, 2012

The above named entity is hereby granted a permit to install for the above described source pursuant to Chapter 3745-42 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described source of environmental pollutants will operate in compliance with applicable state and federal laws and regulations. Issuance of this permit does not constitute expressed or implied assurance that, if constructed or modified in accordance with those plans and specifications, the above described source of pollutants will be granted the necessary operating permits. This permit is granted subject to the following conditions attached hereto.

Ohio Environmental Protection Agency

Scott J. Nally
Director
P.O. Box 1049
50 West Town Street, Suite 700
Columbus, OH 43216-1049

This permit shall expire if construction has not been initiated by the applicant within eighteen months of the effective date of this permit. By accepting this permit, the applicant acknowledges that this eighteen month period shall not be considered or construed as extending or having any effect whatsoever on any compliance schedule or deadline set forth in any administrative or court order issued to or binding upon the permit applicant, and the applicant shall abide by such compliance schedules or deadlines to avoid the initiation of additional legal action by the Ohio EPA.

The director of the Ohio Environmental Protection Agency, or his authorized representatives, may enter upon the premises of the above named applicant during construction and operation at any reasonable time for the purpose of making inspections, conducting tests, examining records, or reports pertaining to the construction, modification, or installation of the above described source of environmental pollutants.

Issuance of this permit does not relieve you of the duty of complying with all applicable federal, state, and local laws, ordinances, and regulations.

Any well, well point, pit, or other device installed for the purpose of lowering the ground water level to facilitate construction of this project shall be properly abandoned in accordance with the provisions of this plan or as directed by the director or his representative.

Any person installing any well, well point, pit or other device used for the purpose of removing ground water from an aquifer shall complete and file a Well Log and Drilling Report form with the Ohio Department of Natural Resources, Division of Water, within 30 days of the well completion in accordance with the Ohio Revised code Section 1521.01 and 1521.05. In addition, any such facility that has a capacity to withdraw waters of the state in an amount greater than 100,000 gallons per day from all sources shall be registered by the owner with the chief of the Division of Water, Ohio Department of Natural Resources, within three months after the facility is completed in accordance with Section 1521.16 of the Ohio Revised Code. For copies of the necessary well log, drilling report, or registration forms, please contact:

Ohio Department of Natural Resources
2045 Morse Road Bldg. E
Columbus, OH 43229-6693
(614) 265-6717

Patriot Water Treatment LLC shall be responsible for proper operation and maintenance of the wastewater disposal system.

If the construction of the wastewater disposal system has already begun or has been completed before the date the director of the Ohio Environmental Protection Agency approves the plans and issues a permit, the approval does not constitute expressed or implied assurance that the proposed wastewater disposal system has been constructed in accordance with the approved plans. The action of beginning and/or completing construction before obtaining the director's approval is a violation of the Ohio Administrative Code, Rule 3745-42-02. Furthermore, issuance of the permit to install does not constitute an assurance that the proposed wastewater disposal system will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the wastewater disposal system as constructed and/or completed. Moreover, issuance of the permit to install is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction before the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed wastewater disposal system proves to be inadequate or cannot meet applicable standards.

This permit to install applies only to the wastewater disposal system listed above. The installation of drinking water supplies, air contaminant sources, or solid waste disposal facilities will require the submittal of a separate application to the director.

This permit applies to a wastewater disposal system designed to serve an average hydraulic flow of no more than 200 gallons/minute.

Roof drains, foundation drains, and other clean water connections to the disposal system are prohibited.

No liquids, sludges, or toxic or hazardous substances other than those set forth in the approved permit shall be accepted for disposal without the prior written approval of the Ohio Environmental Protection Agency.

All residuals from pretreatment facilities, whether defined hazardous or nonhazardous, shall be stored, transported, treated, and disposed in a manner that will comply with all applicable local, state, and federal regulations.

Plans for any modifications of pretreatment facilities required for the attainment of U.S. EPA regulations and/or local limitations set by the City of Warren must be submitted to the City of Warren and the appropriate district office of the Ohio Environmental Protection Agency for approval prior to the installation of such facilities.

The City of Warren Publicly Owned Treatment Works (POTW) officials shall be notified of any spills and unusual discharges to the sewer system immediately after discovery of such an occurrence.

All wastewater discharges that will adversely affect the operation, maintenance, or treatment capabilities of the Warren sewer and/or wastewater treatment systems are prohibited.

Records of operation shall be maintained and be available for review and inspection to the City of Warren and the Ohio Environmental Protection Agency upon request.

Patriot Water Treatment LLC shall provide a suitable location to collect representative samples of process wastewater which is discharged into the sanitary sewer.

Patriot Water Treatment LLC shall comply with all applicable U.S. EPA categorical pretreatment standards and local pretreatment regulations as they are adopted from time to time.

The permit to install is not an authorization to discharge pollutants to waters of the state. Pursuant to Chapter 6111 of the Ohio Revised Code, the applicant shall apply for a permit to discharge (NPDES) 180 days prior to any discharge of pollutants to waters of the state.

APPENDIX C
PATRIOT WATER BLANK NON-HAZARDOUS RECEIVING REPORT

PATRIOT
WATER TREATMENT

Water Management Solutions. Environmental Responsibility.

NON-HAZARDOUS RECEIVING REPORT

Date Time		Plant		Ticket Number	

Origin

Customer		Cust #		Emergency Response	
Hauler		Hauler Number		Truck #	
Location		Well #		AFE/PO #	
Material Type		Quantity in			

Destination

Location	Patriot Water Treatment, 2840 Sferra Ave, Warren OH 44483	EPA ID #	748163

Generator's Certification

I hereby certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of hazardous waste.

Driver Signature	
Printed Name	

Load Followd By	
Time Unloaded	
Lab Technician	

Notes / Memo

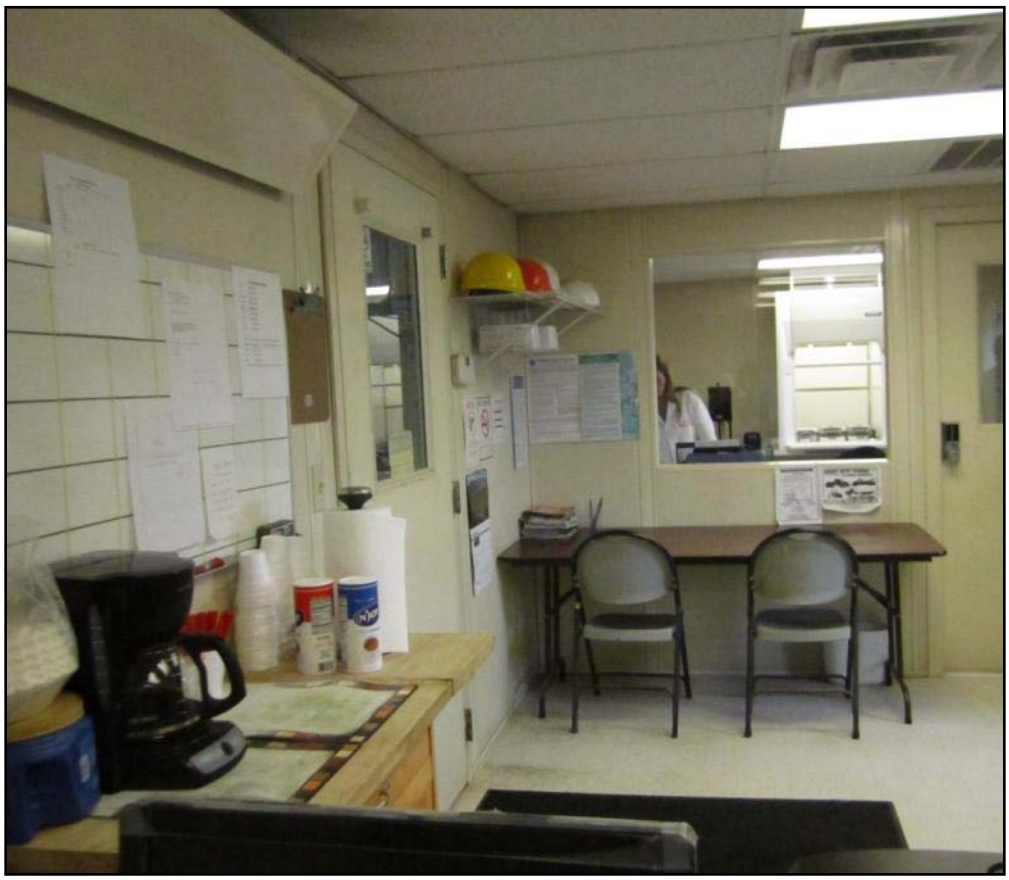
Lab Results

Flash	
Rad	
PH Level	
TDS	

APPENDIX D
SITE VISIT PHOTOGRAPHS

Photograph 1. Front Office and Receiving Area

Photograph 2. Front Office and Receiving Area



Photograph 3. Front Office and Laboratory

Photograph 4. Offloading Bays and Dump Pad

Photograph 5. Offloading Bays and Dump Pad

Photograph 6. 52,000-Gallon Dump Tanks

Photograph 7. 622,000-Gallon Storage Tank

Photograph 8. 622,000-Gallon Storage Tank

Photograph 9. 622,000-Gallon Storage Tank

Photograph 10. Mixing Pump for the Storage Tank

Photograph 11. Six 7,000-Gallon Equalization Tanks

Photograph 12. Overhead Pipes Leading to Clarifier

Photograph 13. Drums Containing Treatment Chemicals

Photograph 14. Clarifier

Photograph 15. Clarifier

Photograph 16. Flow and Conductivity Meter

Photograph 17. Flow and Conductivity Meter

Photograph 18. Sample of Treated Water Entering Sanitary Sewer

Photograph 19. Treated Water Entering Sanitary Sewer

Photograph 20. Plate and Frame Press

Photograph 21. Two 10,000-Gallon Portable Water Storage Tanks

Photograph 22. Drain leading to Equalization Tanks

Photograph 23. Shaker and Centrifuge for Mud

Photograph 24. Shaker and Centrifuge for Mud

Photograph 25. Shaker and Centrifuge for Mud

Photograph 26 Separated Liquid from Centrifuge

Photograph 27. Solids Separated from Centrifuge

Photograph 28. Solids Storage for Landfill Disposal

Photograph 29. Solids Storage for Landfill Disposal

Photograph 30. Sawdust Used for Solidification