

3 June 2013



Wheeling City Council members,

First, let me extend my thanks to Councilwoman Gloria Delbrugge for hosting the public information meeting Tuesday, May 22, 2013 in Council Chambers, and to Mr. John Jack from Green Hunter for his presentation and responses to citizen comments and concerns.

I am a professional biologist with 30 years of experience and a tenured Professor of Biology at Wheeling Jesuit University. Like all of us, I have struggled to keep up with the rapid pace of natural gas development following the evolution of horizontal drilling and slickwater hydrologic fracturing. These are new technologies for which little information is known and my goal is to protect the quality of water, air, and public health. My students and I are engaged in community-based participatory research, that is, we work with community organizations to help solve local problems.

In my opinion, the City of Wheeling is "on its own" to make a decision whether to site the GreenHunter facility as proposed. There is no regulatory authority at the state or federal level for sighting or permitting the handling and disposal of waste at the proposed facility. In fact, due to exemptions, there is no regulatory authority for enforcing the Clean Air Act, the Clean Water Act, the National Environmental Policy Act, or the Resource Conservation and Recovery Act with regard to the handling and disposal of waste at the facility. The city of Wheeling is on its own and is in the uncomfortable position of making decisions about the future of community health and environmental well-being based purely on existing city ordinances.

The purpose of this letter and attached information is to provide an alternative view of some of the information presented at the community meeting and currently in print. Accompanying documentation presents new information regarding the constituents of frackwater waste that, up until now, has not been accessible in the public domain. I have provided each Wheeling City Council member with this information in print copy and also as an email .pdf file, and I strongly encourage this information to be shared with others to obtain their opinions.

I discourage any variance from existing city ordinance in permitting the proposed GreenHunter application for the following six reasons:

- I.** Truck traffic in Wheeling will increase, not decrease
- II.** Brinewater trucks present unknown hazards to Wheeling residents and first responders
- III.** Wheeling's previous experience with shale waste resulted in community liability
- IV.** Laboratory testing indicates brinewater is a threat to residents and first responders
- V.** Laboratory testing indicates brinewater is a threat to the Wheeling water supply
- VI.** Bromides are already causing problems with Wheeling's water supply

Sincerely,

Dr. Ben M. Stout III
Professor of Biology

Six Reasons not to Permit the Proposed GreenHunter Facility in Warwood

I. Truck traffic in Wheeling will increase, not decrease

Trucks currently leaving Beech Bottom and traveling through Wheeling via Route 2 are currently carrying Ohio River water to well pads and returning to Beech Bottom empty. Return of these trucks to the GreenHunter site loaded with flowback or produced water from Marcellus Shale well pads will not decrease the amount of truck traffic in the city of Wheeling. Additional truck traffic currently using I-70 to access deepwater injection disposal sites in Ohio are likely to utilize the GreenHunter facility in Warwood. The additional trucks will increase, not decrease, the amount of truck traffic in Wheeling.

As it currently stands, GreenHunter does not have a permit to transport concentrated waste from their recycling plant by barge. This material will have to be transported to deepwater injection sites in Ohio, resulting in another significant increase in truck traffic in Wheeling. Furthermore, the unknown contents of concentrated waste transported through Wheeling to deepwater injection sites in Ohio is the greatest concern.

II. Brinewater trucks present unknown hazards to Wheeling residents and first responders

Very little is known about the transport and handling of “flowback” and “produced” water from drilling sites. The lack of available information is largely due to oil and gas industry exemptions from the Resource Conservation and Recovery Act (RCRA). GreenHunter spokespersons are correct in saying that any materials delivered to a well site are required to include hazardous waste placards clearly identifying the contents of the trucks and Material Safety Data Sheets informing workers of potential exposures to those materials.

However, despite having these requirements for transportation to the drilling site, the so called “Halliburton Exemption” provides that any materials that flow back to the surface or are produced from a well are exempt from RCRA (see the US EPA determination excerpt from the Federal Register, Attachment 1). The exemption extends to any open pit, storage tank, truck transport, and handling from flowback retrieval (*i.e.* once material from a well flows up to the surface) to the final disposal (*i.e.* deep well injection) regardless of how many times the materials exchange hands. Therefore, GreenHunter’s proposed handling by truck, storage, barge, and deep well injection are totally unregulated by RCRA. Due to this exemption Wheeling cannot depend on state or federal oversight of waste handling activities.

Trucks transporting brinewater through city streets and into residential neighborhoods are not required to post placards identifying their contents. No state or federal regulatory agency is required to test or report the contents of flowback or produced water from well sites to underground injection sites (Code of Federal Regulations accessed May 30, 2013: <http://cfr.regstoday.com/40cfr144.aspx>). As stated by US EPA in an October 2002 (<http://www.epa.gov/epawaste/nonhaz/industrial/special/oil/oil-gas.pdf>) guidance document entitled *Exemption of Oil and Gas and Production Wastes from Federal Hazardous Waste Regulations* (EPA530-K-01-004) on page 5:

“Although they are relieved from regulation as hazardous wastes, the exemption does not mean these wastes could not present a hazard to human health and the environment if improperly managed.”

III. Wheeling's previous experience with shale waste resulted in community liability

In a consent order dated May 9, 2011, the city of Wheeling was fined by West Virginia Department of Environmental Protection (WV DEP) for failing to enforce its Industrial User Permit Program (<http://www.dep.wv.gov/pio/Documents/City%20of%20Wheeling.pdf>). As reported by Wheeling Newspapers, shale wastewater from industrial user Liquid Assets Disposal on the Peninsula in Wheeling was taken in by the Wheeling Sewage Treatment Plant. The shale waste killed the microorganisms in the Wheeling Sewage Treatment Plant and "Water Pollution Control employees had complained about strong and offensive odors causing breathing difficulty and light-headedness" (<http://www.news-register.net/page/content.detail/id/560640/Wheeling-Fined-For-Taking-Frack-Water.html?nav=515>). The WV DEP sampled brinewater trucks entering Liquid Assets Disposal and determined the effluent limits for chlorides exceeded permitted limits.

The WV DEP also sampled for other chemical constituents in the brinewater. By working with community partners in Washington County, PA, my laboratory was able to obtain the WV DEP brinewater data that was requested via the Freedom of Information Act (FOIA). We compiled the results of 13 samples of liquids and 1 sample of solids in an Excel spreadsheet (Attachment 2) and verified some of the more remarkable results verbally with WV DEP personnel. As far as we know, these are the only shale waste chemical constituent data collected by a regulatory agency that are now in the public domain. If it was not for the WV DEP authority to regulate Industrial User Permits, and for the actions of citizens in their FOIA request, there would be no such information available for the public eye.

IV. Laboratory testing indicates brinewater is a threat to residents and first responders

One of the 13 samples of liquids from brinewater trucks entering Liquid Assets Disposal on the Peninsula in Wheeling was a 5,000 gallon tank truck carrying pH 1.5 liquids from a frac pit at Range Resources well #37-121-23194 in Washington County, PA (Attachment 2). Liquids with a pH 1.5 are corrosive strong acids that if spilled form a corrosive acid mist capable of causing irreversible damage to eyes, respiratory systems, and skin. The US EPA ranks hydrochloric acid as one of the most hazardous compounds to human and ecosystem health. Because of exceptions to RCRA, brinewater trucks are not required to post placards identifying their contents.

The response of GreenHunter when asked about loads like this was that "it wasn't brinewater." The data collected by WV DEP indicates that it was brinewater. Note the high total dissolved solids (16,600 mg/L) and other dissolved constituents, particularly barium, strontium, and bromide, which are fairly specific indicators of 350 million year old brinewater. When asked how they would respond to such a load, GreenHunter representatives said, "we have a pH meter" and "that truck was illegal." It takes days for a water sample to be collected, transported to an analytical laboratory, analyzed, and a report to be generated. There is no way that even the most responsible company can know what the contents of brinewater really are as they are transported, exchange hands, and delivered to their disposal destination.

In my professional opinion, GreenHunter's response plan to such a load entering their facility isn't the greatest concern – what matters is that GreenHunter not be allowed to create a destination for hazardous materials in a residential neighborhood or along busy city streets. In case of an accident, the truck driver, citizens, and first responders will have no idea what the truck really contains. No testing of these materials is required, and no regulatory agency has the authority to monitor any such materials being transported from the wellhead to the eventual disposal by underground injection.

V. Laboratory testing indicates brinewater is a threat to the Wheeling water supply

The proposed GreenHunter facility is approximately one mile upstream from the Ohio River intake at Wheeling's Water Treatment Plant and is located in the groundwater recharge zone for Wheeling's water intake wells. We compared the brinewater data collected by WV DEP to primary and secondary drinking water quality standards. In Attachment 2, any samples that exceeded primary drinking water quality standards were flagged in red. Primary water quality standards are enforceable drinking water limits for chemicals with well known human health consequences. Primary standards are enforceable in that the US EPA can step in and order a water treatment plant to shut down or change their treatment strategy if a primary standard is exceeded repeatedly in the drinking water supply. Additionally, my laboratory flagged secondary standards in yellow. Secondary Standards are those chemical constituents that are known to cause color, odor, and taste issues in municipal water supplies.

In terms of heavy metals in the brinewater samples tested by WV DEP, 7 of the 13 samples exceeded the primary drinking water quality standard for barium, which causes a wide range of adverse health effects even in small concentrations. One sample from a frac pit in Westmoreland County, PA contained 834 mg/L of barium, or 417 times the primary drinking standard. Two samples from frac pits in Washington and Greene Counties, PA, exceeded the primary drinking water standard for arsenic. In addition, one sample from a compressor station in Monongalia County, WV exceeded the primary standard for selenium.

In terms of organic compounds, 4 of the 13 samples exceeded the primary standard for benzene, a known carcinogen. The sample from the previously mentioned compressor station possessed a benzene level of 1320ug/L, exceeding the benzene primary drinking water standard, 5ug/L, by a factor of 262. Additionally, one sample from the Paxton #7 well in Washington County, PA exceeded the benzene standard by a factor of 15.8.

In terms of radiation, 9 of the 13 samples exceeded the drinking water standard for radium. Furthermore, 7 of the 13 samples exceeded the drinking water standard for gross alpha particles, which are a strong indicator of radioactivity. Most notably, one sample from a frac pit at the Phillips #20 site in Westmoreland County, PA yielded a gross alpha reading of 4846 +/- 994 picocuries per liter (pCi/L), though the drinking water standard is 15 pCi/L. In fact, the same sample had combined radium readings well over 1,000 pCi/L, a multiple in excess of 200 times the (5 pCi/L) standard. It should be noted that none of the samples triggered a response from radiation meters.

In summary, all but 1 of the 13 liquid samples assessed by the WV DEP exceeded at least one primary drinking water standard. Of the 13 samples 38 primary drinking water standard were exceeded. Some of the samples of brinewater were so far in excess of drinking water standards that it seems likely that a spill in the Ohio River would negatively impact the Wheeling water intake approximately one mile downstream of the proposed facility. Likewise, a spill on the ground would be likely to eventually end up in the Wheeling water intake wells that are in the alluvium of the Ohio River floodplain.

VI. Bromides are already causing problems with Wheeling's water supply

Although Bromide is not an EPA regulated chemical, the concentrations of bromide in 350 million year old brinewater may pose the greatest threat to the Wheeling water supply. Bromides interfere with pre-chlorination during the water treatment process resulting in the formation of trihalomethanes in drinking water supplies. Trihalomethanes are a class of organic molecules called polycyclic aromatic hydrocarbons and are known cancer-causing agents. Last week, Triadelphia, which receives its water from the Wheeling Water Treatment Plant, informed residents of excess trihalomethanes in their water supply (Attachment 3). The bromide issue has plagued the entire upper Ohio Valley region since the onset of horizontal drilling and slickwater hydrologic fracturing as detailed by Don Hopey in the Pittsburgh Post Gazette March 13, 2011 (<http://www.post-gazette.com/stories/news/environment/bromide-a-concern-in-drilling-wastewater-212188/>).

Bromides are a significant enough concern that the Three Rivers Quest project monitors bromide as one of ten chemical constituents at 54 various sites in the Upper Ohio Valley mainstream and tributaries. My laboratory is a partner of the Three Rivers Quest project and monitors 13 sites including the Ohio River at Pike Island. In late April, we obtained a bromide reading of 0.12mg/L at Pike Island, which exceeds the target level (<0.05mg/L) for bromide in water intakes. Bromide in brinewater samples collected by WV DEP ranged from a minimum of 1.29mg/L to a maximum of 525mg/L with an average of 184.7mg/L in the 13 samples. The best solution to the trihalomethane problem is to reduce bromide in the water intake supply, namely, the Ohio River.

List of Attachments

Attachment 1. FEDERAL REGISTER VOL. 58, No. 53 pages 15284 – 15286 Rules and Regulations ENVIRONMENTAL PROTECTION AGENCY (EPA) Clarification, 1993. Clarification of the Regulatory Determination for Wastes From the Exploration, Development and Production of Crude Oil, Natural Gas and Geothermal Energy.

Attachment 2. Results of West Virginia Department of Environmental Protection testing of brinewater trucks entering the Liquid Assets Disposal facility on the Peninsula in Wheeling, April 21 & 22, 2009.

Attachment 3. Newspaper advertisement May 31, 2013 giving public notice of trihalomethane exceeding the drinking water standard in Triadelphia (Wheeling) water supply.

Federal Register Volume 58, number 53, pages 15284 - 15286.

FEDERAL REGISTER

VOL. 58, No. 53

Rules and Regulations

ENVIRONMENTAL PROTECTION AGENCY (EPA)

40 CFR Part 261

[FRL-4606-6]

Clarification of the Regulatory Determination for Wastes From
the Exploration, Development and Production of Crude Oil, Natural
Gas

and Geothermal Energy

58 FR 15284

DATE: Monday, March 22, 1993

ACTION: Clarification.

SUMMARY: This document provides additional clarification of the Resource Conservation and Recovery Act (RCRA) Regulatory Determination for Oil and Gas and Geothermal Exploration, Development and Production Wastes dated June 29, 1988 (53 FR 25446; July 6, 1988). This document clarifies the regulatory status of wastes generated by the crude oil reclamation industry, service companies, gas plants and feeder pipelines, and crude oil pipelines. Since this document only further clarifies the status of these wastes under the RCRA Subtitle C hazardous waste exemption discussed in EPA's 1988 Regulatory Determination, and does not alter the scope of the current exemption in any way, comments are not being solicited by the Agency on this notice.

FOR FURTHER INFORMATION CONTACT: For general information on the scope of the RCRA Subtitle C exemption for wastes from the exploration, development and production of crude oil, natural gas and geothermal energy, contact the RCRA/Superfund hotline at (800) 424-9346 (toll free) or (703) 412-9810. For technical information, contact Mike Fitzpatrick, U.S. Environmental Protection Agency OS-323W, 401 M Street, SW., Washington, DC 20460; phone (703) 308-8411.

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I. Introduction

In the Solid Waste Disposal Act Amendments of 1980 (Pub. L. 94-580), Congress amended the Resource Conservation and Recovery Act (RCRA) to add sections 3001 (b)(2)(A), and 8002(m). Section 3001(b)(2)(A) exempted drilling fluids, produced waters, and other wastes associated with exploration, development, and production of crude oil, natural gas and geothermal energy from regulation as hazardous wastes. Section 8002(m) required the Administrator to complete a Report to Congress on these wastes and provide an opportunity for public comment. The Administrator was also required by section 3001 (b)(2)(A) to make a determination no later than six months after completing the Report to Congress as to whether hazardous waste regulations under RCRA Subtitle C were warranted for these wastes.

EPA's Report to Congress was transmitted to Congress on December 28, 1987. In the process of preparing the Report to Congress, the Agency found it necessary to define the scope of the exemption for the purpose of determining which wastes were considered "wastes from the exploration, development or production of crude oil, natural gas or geothermal energy." Based upon statutory language and legislative history, the Report to Congress identified several criteria used in making such a determination. In particular, for a waste to be exempt from regulation as hazardous waste under RCRA Subtitle C, it must be associated with operations to locate or remove oil or gas from the ground or to remove impurities from such substances and it must be intrinsic to and uniquely associated with oil and gas exploration, development or production operations (commonly referred to simply as exploration and production or E&P); the waste must not be generated by transportation or manufacturing operations.

Transportation of oil and gas can be for short or long distances. For crude oil, "transportation" is defined in the Report to Congress and the subsequent Regulatory Determination as beginning after transfer of legal custody of the oil from the producer to a carrier (i.e., pipeline or trucking concern) for transport to a refinery or, in the absence of custody transfer, after the initial separation of the oil and water at the primary field site. For natural gas, "transportation" is defined as

beginning after dehydration and purification at a gas plant, but prior to transport to market. To accurately determine the scope of the exemption, the reader is referred to the December 28, 1987, Report to Congress, Management of Wastes from the Exploration, Development, and Production of Crude Oil, Natural Gas, and Geothermal Energy (NTIS # PB88-146212) for the specific application of the criteria.

The Agency's Regulatory Determination was published in the Federal Register on July 6, 1988 (53 FR [Page 15285] 25446). The Regulatory Determination included a list of example wastes that generally are exempt and a list of example wastes that generally are not exempt. Neither of these lists was intended to be a complete itemization of all possible exempt or non-exempt wastes. Also, because definitions of the terms used in these lists vary, the criteria identified in the Report to Congress remain the authoritative source for determining the scope of the exemption. The reader is referred to the July 6, 1988, notice for detailed background on all aspects of the Regulatory Determination. Since 1987, the terms uniquely associated and intrinsic have been used as interchangeable synonyms in various documents in reference to oil and gas wastes qualifying for the exemption from Subtitle C regulation. (For simplicity's sake, when referring to exempt wastes, this notice combines the use of these two terms into the single term uniquely associated.) A simple rule of thumb for determining the scope of the exemption is whether the waste in question has come from down-hole (i.e., brought to the surface during oil and gas E&P operations) or has otherwise been generated by contact with the oil and gas production stream during the removal of produced water or other contaminants from the product (e.g., waste demulsifiers, spent iron sponge). If the answer to either question is yes, the waste is most likely considered exempt.

Since the Agency's Regulatory Determination, numerous requests have been received for determination, on a site-specific basis, of the regulatory status of wastes not itemized in the Regulatory Determination's list of examples. Many of these requests have dealt with broad categories of similar wastes (e.g., crude oil reclaimer wastes, service company wastes, pipeline wastes). Today's notice responds to the many requests for clarification of the scope of the exemption.

II. Clarification of the Scope of the Oil and Gas Exemption

A. Crude Oil Reclamation Industry

The crude oil reclamation industry recovers marketable crude oil and other hydrocarbons from produced water, crude oil tank bottoms and

other oily wastes that are generated by the production of crude oil and natural gas. In general, the marketable crude oil is recovered from the waste materials by simple thermal and/or physical processes (e.g., heat and gravity separation). Occasionally, demulsifiers may be added to produced waters from which crude oil cannot be separated with heat and settling time alone. The typical residual materials left after removal of the crude oil by the reclaimers are also produced water and tank bottom solids. These residuals will often exhibit the same characteristics as the parent waste, although the concentrations of some constituents may vary from those in the parent.

In September 1990, the crude oil reclamation industry requested that the Agency provide an interpretation of the language in the 1988 Regulatory Determination pertaining to RCRA Subtitle C coverage of wastes from crude oil and tank bottom reclaimers. (The list of "non-exempt" wastes in the Regulatory Determination included "liquid and solid wastes generated by crude oil and tank bottom reclaimers.") In particular, they requested that EPA clarify whether any wastes generated by crude oil reclaimers are included within the oil and gas exemption, particularly those originating from the crude oil itself, such as produced water and the other extraneous materials in crude oil, otherwise known as basic sediment and water (BS&W). In April 1991, the Agency responded to the request with a letter that included broad guidance on the status of wastes from the crude oil reclamation industry. (A copy of the letter is included in the docket to this notice.) EPA explained that the inclusion of "liquid and solid wastes" from crude oil reclamation on the list of non-exempt wastes contained in the Regulatory Determination was intended to refer only to those non-E&P wastes generated by reclaimers (e.g., waste solvents from cleaning reclaimers' equipment) and was not intended to refer to wastes remaining from the treatment of exempt wastes originally generated by the exploration, development or production of crude oil or natural gas. EPA's basis for this position is several-fold. First, the Agency has consistently taken the position that wastes derived from the treatment of an exempt waste, including any recovery of product from an exempt waste, generally remain exempt from the requirements of RCRA Subtitle C. Treatment of, or product recovery from, E&P exempt wastes prior to disposal does not negate the exemption. [The same principle applies to exempt mining and mineral processing wastes. See, 54 FR at 36621 (Sept. 1, 1989).] For example, waste residuals (e.g., BS&W) from the on-site or off-site process of recovering crude oil from tank bottoms obtained from crude oil storage facilities at primary field operations (i.e., operations at or near the wellhead) are exempt from RCRA Subtitle C because the crude oil storage tank bottoms at primary field operations are exempt. In effect,

reclaimers are conducting a specialized form of waste treatment in which valuable product is recovered and removed from waste uniquely associated with E&P operations. In addition, in many cases, product recovery or treatment reduces the volume and overall toxicity of the waste and thereby contributes to the Agency's policy and goals for waste minimization and treatment of waste prior to disposal. EPA further notes that the off-site transport of exempt waste from a primary field site for treatment, reclamation, or disposal does not negate the exemption. The change of custody criterion (which is discussed in the Report to Congress) for the purpose of defining transportation refers to the transport of product (crude oil, natural gas) and does not apply to exempt wastes moving off-site for treatment or disposal since these wastes were generated by the exploration, development or production operations and not by the transportation process. Thus, the off-site transport and/or sale of exempt oil-field wastes to crude oil reclaimers for treatment does not terminate the exempt status either of the wastes or the residuals from a reclamation process applied to these wastes. However, there are solid and liquid wastes from reclamation operations that are not exempt from RCRA Subtitle C. These are wastes which the Agency intended to refer to in its example within the 1988 Regulatory Determination. Generally, these reclaimer wastes are derived from non-exempt oilfield wastes or otherwise contain materials that are not uniquely associated with exploration, development or production operations. An example would be waste solvents generated from the solvent cleaning of tank trucks that are used to transport oilfield tank bottoms. Such wastes would not be exempt from Subtitle C because the use of cleaning solvents is not uniquely associated with the production of crude oil. Generally, crude oil reclaimer wastes that are derived from exempt oilfield wastes (e.g., produced water, BS&W) are not subject to the Subtitle C waste management requirements of RCRA. Such wastes, however, remain subject to any applicable state solid waste management requirements. Moreover, this exemption from RCRA Subtitle C requirements may not apply if the crude oil reclaimer wastes are combined with other wastes that are subject to RCRA Subtitle C requirements. **[Page 15286]**

B. Service Companies Oil and gas service companies are those companies hired by the principal operating company to, among other things, supply materials for use at a drilling or production site or provide a service to be performed. Some of the activities of service companies take place on-site while others may take place off-site. Examples of the types of activities that may take place

off-site are product formulation, transport of materials, laboratory analysis, and waste handling and disposal. The 1988 Regulatory Determination stated that "oil and gas service company wastes, such as empty drums, drum rinsate, vacuum truck rinsate, sandblast media, painting wastes, spent solvents, spilled chemicals, and waste acids" are not covered by the oil and gas E&P exemption. The Agency intended this statement to identify those wastes, including unused and discarded product materials, generated by service companies that are not uniquely associated with primary field operations. (Primary field operations occur at or near the wellhead or gas plant and include only those operations necessary to locate and recover oil and gas from the ground and to remove impurities.) Similar to the reference to crude oil reclamation wastes, the Agency did not intend to imply that under no circumstances will a service company ever generate a RCRA Subtitle C-exempt waste. For example, if a service company generates spent acid returns from a well work-over, the waste is exempt since the waste acid in this case came from down-hole and was part of primary field operations.

EPA is aware that some confusion exists in various segments of the industry with regard to the scope of the exemption from RCRA Subtitle C for solid wastes not uniquely associated with oil and gas exploration and production. One common belief is that any wastes generated by, in support of, or intended for use by the oil and gas E&P industry (including most service company wastes) are exempt. This is not the case; in fact, only wastes generated by activities uniquely associated with the exploration, development or production of crude oil or natural gas at primary field operations (i.e., wastes from down-hole or wastes that have otherwise been generated by contact with the production stream during the removal of produced water or other contaminants from the product) are exempt from regulation under RCRA Subtitle C regardless of whether they are generated on-site by a service company or by the principal operator. In other words, wastes generated by a service company (e.g., unused frac or stimulation fluids and waste products) that do not meet the basic criteria listed in the Report to Congress (i.e., are not uniquely associated with oil and gas E&P operations) are not exempt from Subtitle C under the oil and gas exemption, just as wastes generated by a principal operator that do not meet these criteria are not exempt from coverage by RCRA Subtitle C. The 1988 Regulatory Determination also stated that "vacuum truck and drum rinsate from trucks and drums transporting or containing non-exempt waste" is not included within the exemption (emphasis added). The unstated corollary to this is that vacuum truck and drum rinsate from trucks and drums transporting or containing exempt wastes is exempt, provided that the trucks or drums only contain E&P-related exempt wastes and that the water

or fluid used in the rinsing is not subject to RCRA Subtitle C (i.e., is itself non-hazardous). This is consistent with the general policy principle that certain wastes derived exclusively from RCRA Subtitle C-exempt wastes remain exempt from RCRA Subtitle C.

<i>Liquid Assests Disposal Sampling Project April 21-22, 2009</i>				
Sample #	NW-MCF-042109-1	NW-MCF-042109-2	NW-MCF-042109-3	NW-MCF-042109-4
Hauling Company	Devoman	Devoman	Devoman	Devoman
Date Sampled	4/21/2008	4/21/2009	4/21/2009	4/21/2009
Time Sampled	9:40 AM	10:30 AM	11:15 AM	11:30 AM
Site Name	Whipkey #9	Whipkey #9	Whipkey #9	Davbrook Comp Sta
Well #	37-059-24820	37-059-24820	37-059-24820	
Type of Waste	Frac	Frac	Frac	Other
Waste Source	Pit	Pit	Pit	Tank
Volume in Truck. Gal.	4830	4830	4830	2160
Well Location. Co./St	Greene Co. PA	Greene Co. PA	Greene Co. PA	Monongalia Co. WV
Well Owner/Producer	Atlas	Atlas	Atlas	Dominion
Sample Color	Tan	Clear	Clear	Black
Sample Odor	None	None	None	None
Parameter, units				
Arsenic, mg/l (primary standard=0.010mg/L)	0.29	<0.2	<0.2	<0.2
Barium, mg/l (primary standard =2.000mg/L)	5.59	4.59	2.99	0.14
Boron, mg/l (health advisory 3-5mg/L)	44.4	35.6	38.2	58.6
Iron, mg/l (secondary standard=0.300 mg/L)	30.7	25.2	26.8	4.84
Magnesium, mg/l	488	453	485	5.4
Potassium, mg/l	836	665	710	11.7
Selenium, mg/l (primary standard=0.050mg/L)	0.2	<0.2	<0.2	0.76
Sodium, mg/l (health advisory=20mg/L)	17800	14100	14700	218
Alkalinity, mg/l	130	36.9	37.3	294
Total Diss. Solids mg/l (secndry std=500mg/l)	57800	53400	51500	1560
Flouride, mg/l (secondary standard=2mg/l)	85	87.5	57.5	7.2
Chloride, mg/l (secondary stndrd=200mg/l)	9300	31500	32000	135
Biochemical Oxygen Demand(BOD), mg/l	414	364	524	66400
Chemical Oxygen Demand(COD), mg/l	1420	914	947	290000
Total Suspended Solids(TSS), mg/l	210	170	213	239
Sulfate, mg/l (secondary stndrd=250mg/L)	1350	799	807	129
Calcium, mg/l	4310	3750	4000	201
Bromide, mg/l	77.5	240	280	3.25
TPH-DRO, mg/l (WV DEP action level 1mg/L)	26.1	7.44	6.95	76.6
Benzene, ug/l (primary standard=5ug/L)	<12.9	<12.0	<12.1	1310
Toulene, ug/l (primary standard=1000 ug/L)	<16.7	<16.7	<16.8	271
Ethylbenzene, ug/l	N/A	N/A	N/A	N/A
m.p-Xylene, ug/l	N/A	N/A	N/A	N/A
o-Xylene, ug/l	N/A	N/A	N/A	N/A
Specific Conductance, umhovcm	88300	80400	80100	2390
Gross Alpha, pCi/l (primary stndrd=15pCi/L)	Minus 6.524 ±/106	17.5 ±/93.5	24.0 ±/56.6	Minus 6.356 ±/30.3
Gross Beta, pCi/l	164 ±/140	201 ±/133	361 ±/99.7	21.5 ±/60.7
Strontium, ug/l	732000	709000	689000	7130
Strontium-90, pCi/l	Minus 5.83 ±/3.46	Minus 0.10 ±/3.88	Minus 0.360 ±/4.67	Minus 1.43 ±/1.98
Radium-226, pCi/l (primary standard=5pCi/L)	8.30 ±/2.45	9.0 ±/2.45	1.49 ±/2.92	6.38 ±/3.10
Radium-228, pCi/l (combined with Rad226)	73.5 ±/17.6	6.44 ±/2.73	1.45 ±/1.79	0.487 ±/ 0.483
Total Uranium, ug/l (primary stndrd=30ug/L)	1.09 ±/0.024	0.119 ±/0.004	0.117 ±/0.003	4.28 ±/0.523
Uranium-234, (Sludge Only)				
Uranium-235, (Sludge Only)				
Uranium-238, (Sludge Only)				
pH, Standard units (secndry stndrd 6.5-8.5)	6.63	5.95	5.98	7.93
Temp. °C	14.50	N/D	15.90	12.90
PID Reading, m.u. (detects VOCs)	Neg	0.10	0.10	N/D
FiD Reading, m.u. (detects methane and VOCs)	N/D	3-4	N/D	N/D
Rad Meter Reading	Neg	Neg	Neg	N/D

Exceedences of primary drinking water standards in red, secondary standards in yellow.

Notable items outlined in grey.

Sample #	NW-MCF-042109-5	NW-MCF-042109-6	NW-MCF-042109-7	NW-MCF-042109-8
Hauling Company	Deeter Farms	Devoman	Force	Deeter Farms
Date Sampled	4/21/2009	4/21/2009	4/21/2009	4/21/2009
Time Sampled	11:45 AM	12:10 PM	12:30 PM	2:10 PM
Site Name	Cross Creek #6&8	Whipkey #9	0.016	Cross Creek #6&8
Well #	125-2283 & 125-2279	37-059-24820		125-2283 & 125-2279
Type of Waste	Unknown	Frac	Rainwater	Frac
Waste Source	Pit	Pit	Pit	Pit
Volume in Truck. Gal.	5000	4200	4670	5000
Well Location. Co./St	Washington Co. PA	Greene Co. PA	Washington Co. PA	
Well Owner/Producer	Range Resources	Atlas	Range Resources	Range Resources
Sample Color	Clear, yellowish	Clear	Dark Grey	Black
Sample Odor	None	None	None	None
Parameter, units				
Arsenic, mg/l (primary standard=0.010mg/L)	<0.2	<0.2	<0.2	<0.2
Barium, mg/l (primary standard =2.000mg/L)	0.191	4.11	1.34	3.96
Boron, mg/l (health advisory 3-5mg/L)	0.367	37.5	0.67	2.24
Iron, mg/l (secondary standard=0.300 mg/L)	0.311	26.4	85	4.85
Magnesium, mg/l	11.1	476	97.1	87.4
Potassium, mg/l	19.2	704	32.9	1020
Selenium, mg/l (primary standard=0.050mg/L)	<0.2	<0.2	<0.2	<0.2
Sodium, mg/l (health advisory=20.000)	229	15600	200	5430
Alkalinity, mg/l	112	35.7	4810	118
Total Diss. Solids mg/l (secndry std=500mg/l)	759	52200	711	17200
Flouride, mg/l (secondary standard=2mg/l)	0.16	1380	3.19	300
Chloride, mg/l (secondary stndrd=200mg/l)	371	37700	646	10900
Biochemical Oxygen Demand(BOD), mg/l	12	444	66	228
Chemical Oxygen Demand(COD), mg/l	40	781	1330	516
Total Suspended Solids(TSS), mg/l	12	63	23900	94
Sulfate, mg/l (secondary stndrd=250mg/L)	55.1	39800	99	2700
Calcium, mg/l	56.5	3980	1160	1020
Bromide, mg/l	1.29	525	4.4	62.5
TPH-DRO, mg/l (WV DEP action level 1mg/L)	1.93	7.38	4.21	27.6
Benzene, ug/l (primary standard=5ug/L)	0.5	<12.9	5.5	43
Toulene, ug/l (primary standard=1000 ug/L)	12.1	<16.7	26.4	144
Ethylbenzene, ug/l	N/A	N/A	N/A	N/A
m.p-Xylene, ug/l	N/A	N/A	N/A	N/A
o-Xylene, ug/l	N/A	N/A	N/A	N/A
Specific Conductance, umhovcm	1600	80300	1220	32000
Gross Alpha, pCi/l (primary stndrd=15pCi/L)	2.66 ±1.38	Minus 44.017 ±/97.2	34.6 ±/7.63	47.8 ±/35.9
Gross Beta, pCi/l	8.79 ±1.99	348 ±/98.2	41.9 ±/8.03	659 ±/127
Strontium, ug/l	3770	695000	4510	88000
Strontium-90, pCi/l	Minus 0.0770 ±/ 0.458	Minus 0.510 ±/3.27	Minus 0.131 ±/ 0.693	Minus 0.690 ±/2.31
Radium-226, pCi/l (primary standard=5pCi/L)	Minus 0.121 ±/0.535	10.6 ±/6.69	1.10 ±/1.26	31.5 ±/8.56
Radium-228, pCi/l (combined with Rad226)	0.683 ±/0.418	2.51 ±/2.21	0.334 ±/0.451	9.58 ±/2.08
Total Uranium, ug/l (primary stndrd=30ug/L)	0.665 ±/0.013	0.503 ±/0.118	3.05 ±/0.064	1.48 ±/0.037
Uranium-234, (Sludge Only)				
Uranium-235, (Sludge Only)				
Uranium-238, (Sludge Only)				
pH, Standard units (secndry stndrd 6.5-8.5)	8.59	5.97	9.26	7.04
Temp. °C	10.20	18.00	10.80	16.70
PID Reading, m.u. (detects VOCs)	N/D	0.00	0.70	0.00
FiD Reading, m.u. (detects methane and VOCs)	N/D	0.00	0.20	2.00
Rad Meter Reading	N/D	Neg	Neg	Neg

Exceedences of primary drinking water standards in red, secondary standards in yellow.

Notable items outlined in grey.

Sample #	NW-MCF-042109-9	NW-MCF-042109-10	NW-MCF-042209-1	NW-MCF-042209-2
Hauling Company	Deeter Farms	Devoman	Devoman	Devoman
Date Sampled	4/21/2009	4/21/2009	4/22/2009	4/22/2009
Time Sampled	2:55 PM	3:40 PM	10:15 AM	11:00 AM
Site Name	Wyhe HH	Phillips #20	Jordan #16	Jordan #16
Well #	37-121-23194		337-059-25031	337-059-25031
Type of Waste		Frac	Frac	Frac
Waste Source	Pit	Pit	Pit	Pit
Volume in Truck. Gal.	5000	5040	4830	4830
Well Location. Co./St	Washington Co., PA	West Moreland Co., PA	Greene Co., PA	Greene Co., PA
Well Owner/Producer	Range Resources	Atlas	Atlas	Atlas
Sample Color	Black	Tea Orange	Grey Light Black	Grey Light Black
Sample Odor	None	None	None	None
Parameter, units				
Arsenic, mg/l (primary standard=0.010mg/L)	0.21	<0.2	<0.2	<0.2
Barium, mg/l (primary standard =2.000mg/L)	7.86	834	0.02	<0.02
Boron, mg/l (health advisory 3-5mg/L)	0.87	66.7	37.7	34.8
Iron, mg/l (secondary standard=0.300 mg/L)	348	86.5	43.9	39.6
Magnesium, mg/l	24.6	915	522	467
Potassium, mg/l	1840	1710	742	664
Selenium, mg/l (primary standard=0.050mg/L)	<0.2	<0.2	<0.2	<0.2
Sodium, mg/l (health advisory=20.000)	3500	31600	15800	15600
Alkalinity, mg/l	<1	80.1	126	124
Total Diss. Solids mg/l (secndry std=500mg/l)	16600	121000	63600	60600
Flouride, mg/l (secondary standard=2mg/l)	340	2600	600	70
Chloride, mg/l (secondary stndrd=200mg/l)	10900	105000	43000	36000
Biochemical Oxygen Demand(BOD), mg/l	3340	434	474	323
Chemical Oxygen Demand(COD), mg/l	5240	1620	1290	997
Total Suspended Solids(TSS), mg/l	810	409	184	228
Sulfate, mg/l (secondary stndrd=250mg/L)	229	565	15800	893
Calcium, mg/l	346	9380	2160	2060
Bromide, mg/l	45	70	303	325
TPH-DRO, mg/l (WV DEP action level 1mg/L)	94.4	6.41	2.09	9.35
Benzene, ug/l (primary standard=5ug/L)	<12.9	<12.9	<12.9	<12.9
Toulene, ug/l (primary standard=1000 ug/L)	<16.7	<16.7	<16.7	<16.7
Ethylbenzene, ug/l	N/A	N/A	N/A	N/A
m.p-Xylene, ug/l	N/A	N/A	N/A	N/A
o-Xylene, ug/l	N/A	N/A	N/A	N/A
Specific Conductance, umhovcm	42100	152000	88900	85600
Gross Alpha, pCi/l (primary stndrd=15pCi/L)	54.1 ± 24.9	4846 ± 994	Minus 88822 ± 107	76.4 ± 115
Gross Beta, pCi/l	1306 ± 244	2662 ± 529	252 ± 128	354 ± 136
Strontium, ug/l	15800	2820000	935000	891000
Strontium-90, pCi/l	Minus 0.710 ± /1.47	7.44 ± 8.62	Minus 0.04 ± 2.82	Minus 2.88 ± 2.45
Radium-226, pCi/l (primary standard=5pCi/L)	5.09 ±/ 2.83	1136 ± 217	4.31 ± 4.43	0.000 ± 4.48
Radium-228, pCi/l (combined with Rad226)	Minus 0.0169 ± 1.08	347 ±69.7	1.77 ±2.25	0.124 ± 1.82
Total Uranium, ug/l (primary stndrd=30ug/L)	7.81 ± 0.336	1.08 ± 0.027	1.22 ± 0.032	1.37 ± 0.035
Uranium-234, (Sludge Only)				
Uranium-235, (Sludge Only)				
Uranium-238, (Sludge Only)				
pH, Standard units (secndry stndrd 6.5-8.5)	1.5	6.49	6.53	6.44
Temp. °C	13	15.8	13.7	12.8
PID Reading, m.u. (detects VOCs)	18	N/D	N/D	0
FiD Reading, m.u. (detects methane and VOCs)	N/D	N/D	N/D	N/D
Rad Meter Reading	Neg	N/D	N/D	Neg

Exceedences of primary drinking water standards in red, secondary standards in yellow.

Notable items outlined in grey.

Sample #	NW-MCF-042209-3	NW-MCF-042209-4
Hauling Company	Deeter Farms	LAD
Date Sampled	4/22/2009	4/22/2009
Time Sampled	11:25 AM	2:15 PM
Site Name	Paxton #7	
Well #	37-125-22899	
Type of Waste	Frac	Sludge
Waste Source	Pit	
Volume in Truck. Gal.	5000	
Well Location. Co./St	Washington Co., PA	
Well Owner/Producer		
Sample Color	Dark Brown	Black
Sample Odor	None	
Parameter, units		
Arsenic, mg/l (primary standard=0.010mg/L)	<0.2	<3 mg/kg
Barium, mg/l (primary standard =2.000mg/L)	0.05	204 mg/kg
Boron, mg/l (health advisory 3-5mg/L)	17.3	8.09 mg/kg
Iron, mg/l (secondary standard=0.300 mg/L)	96.6	4370 mg/kg
Magnesium, mg/l	417	1110 mg/kg
Potassium, mg/l	1400	254
Selenium, mg/l (primary standard=0.050mg/L)	<0.2	<2 mg/kg
Sodium, mg/l (health advisory=20.000)	12900	2430 mg/kg
Alkalinity, mg/l	418	7130 mg/kg
Total Diss. Solids mg/l (secndry std=500mg/l)	49500	N/A
Flouride, mg/l (secondary standard=2mg/l)	75	28 mg/kg
Chloride, mg/l (secondary stndrd=200mg/l)	30200	975 mg/kg
Biochemical Oxygen Demand(BOD), mg/l	>684.2	N/A
Chemical Oxygen Demand(COD), mg/l	2420	N/A
Total Suspended Solids(TSS), mg/l	506	N/A
Sulfate, mg/l (secondary stndrd=250mg/L)	402	126 mg/kg
Calcium, mg/l	2160	10400 mg/kg
Bromide, mg/l	283	10 mg/kg
TPH-DRO, mg/l (WV DEP action level 1mg/L)	41.5	73600 mg/kg
Benzene, ug/l (primary standard=5ug/L)	79	N/A
Toulene, ug/l (primary standard=1000 ug/L)	226	N/A
Ethylbenzene, ug/l	N/A	N/A
m.p-Xylene, ug/l	N/A	N/A
o-Xylene, ug/l	N/A	N/A
Specific Conductance, umhovcm	75600	80100
Gross Alpha, pCi/l (primary stndrd=15pCi/L)	3.754 ± 731	4.99 ± 2.09
Gross Beta, pCi/l	1.684 ± 328	Minus 1.95 ± 2.72
Strontium, ug/l	640000	N/A
Strontium-90, pCi/l	0.630 ± 2.59	0.0012 ± 0.0994
Radium-226, pCi/l (primary standard=5pCi/L)	44.1 ± 13.3	0.270 ± 0.412
Radium-228, pCi/l (combined with Rad226)	44.7 ± 12.5	0.06 ± 0.161
Total Uranium, ug/l (primary stndrd=30ug/L)	1.57 ± 0.042	N/A
Uranium-234, (Sludge Only)		0.362 ± 0.116
Uranium-235, (Sludge Only)		0.004 ± 0.016
Uranium-238, (Sludge Only)		0.396 ± 0.124
pH, Standard units (secndry stndrd 6.5-8.5)	6.31	
Temp. °C	11	
PID Reading, m.u. (detects VOCs)	N/D	
FiD Reading, m.u. (detects methane and VOCs)	N/D	
Rad Meter Reading	N/D	

Exceedences of primary drinking water standards in red, secondary standards in yellow.

Notable items outlined in grey.

Annual Drinking Water Quality Report 2012

Triadelphia Water & Sewer Department, P.O. Box 177, Triadelphia, WV 26059

Valley Grove Water Department, P.O. Box 103, Valley Grove, WV 26060

Town of Triadelphia PWS #WV3303512

Village of Valley Grove PWS #WV3303513

May 28, 2013

Why am I receiving this report?

In compliance with the Safe Drinking Water Act Amendments, the Town of Triadelphia Water & Sewer Department and Village of Valley Grove Water Department, are providing its customers with this annual water quality report. This report explains where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. The information in this report shows the results of our monitoring for the period of January 1st to December 31st, 2012 or earlier if not on a yearly schedule.

If you have any questions concerning this report, you may contact Aaron Foster or Linda Violet-White, 304-547-5000, or 304-547-1550.

If you have any further questions, comments or suggestions, please attend any of Town of Triadelphia's regularly scheduled water board meetings held on the 1st and 3rd Wednesday of every month at 8:00 pm in Council Chambers, Town of Triadelphia Town Hall, 4453 National Road, Triadelphia, WV 26059. For Village of Valley Grove residents, you may attend regularly scheduled meetings held on the 2nd Wednesday of every month at 7:30 pm at City Hall, Valley Grove.

Where does my water come from?

Your water source is purchased from the City of Wheeling, which uses a surface water source known as the Ohio River.

Source Water Assessment

A Source Water Assessment was conducted in 2012 by the West Virginia Bureau for Public Health (WVBPB). The intake that supplies drinking water to the City of Wheeling has a higher susceptibility to contamination, due to the sensitive nature of surface water supplies and the potential contaminant sources identified within the area. This does not mean that this intake will become contaminated; only that conditions are such that the surface water could be impacted by a potential contaminant source. Future contamination may be avoided by implementing protective measures. The source water assessment report, which contains more information, is available for review or a copy will be provided to you at our office during business hours or from the WVBPB 304-558-2981.

Why must water be treated?

All drinking water contains various amounts and kinds of contaminants. Federal and state regulations establish limits, controls, and treatment practices to minimize these contaminants and to reduce any subsequent health effects.

Contaminants in Water

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits of contaminants in bottled water, which must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791). The source of drinking water (both tap and bottled water) includes rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of land or through the ground, it dissolves naturally occurring minerals, and, in some cases radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.

Inorganic contaminants, such as salts and metals, which can be naturally-occurring, or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, farming.

Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can, also come from gas stations, urban storm water runoff, and septic systems.

Radioactive contaminants, which can be naturally occurring or the result of oil and gas production and mining activities.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Water Quality Data Table

Definitions of terms and abbreviations used in the table or report:-

MCLG - Maximum Contaminant Level Goal, or the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

MCL - Maximum Contaminant Level, or the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technique.

MRDLG - Maximum Residual Disinfectant Level Goal, or the level of drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect benefits of use of disinfectants to control microbial contaminants.

MRDL - Maximum Residual Disinfectant Level, or the highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of disinfectant is necessary to control microbial contaminants.

AL - Action Level, or the concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow.

TT - Treatment Technique, or a required process intended to reduce the level of a contaminant in drinking water.

Abbreviations that may be found in the table:

ppm - parts per million or milligrams per liter

ppb - parts per billion or micrograms per liter

NTU - Nephelometric Turbidity Unit, used to measure cloudiness in water

pCi/l - picocuries per liter

mrem/yr - millirem per year

NE - not established

N/A - not applicable

The City of Wheeling, the Town of Triadelphia, and the Village of Valley Grove routinely monitors for contaminants in your drinking water according to federal and state laws. The tables below show the results of our monitoring for contaminants.

The Town of Triadelphia has had no violations issued for 2012 monitoring schedule.

The Village of Valley Grove recently violated drinking water standards. Even though these were not emergencies, as our customers, you have the right to know what happened and what we did to correct these situations. We failed to submit the required number of samples to be analyzed for total coliform in the month of January 2012. The procedure was corrected in February 2012 when test results came back normal.

Table of Test Results - Regulated Contaminants - City of Wheeling

Contaminant	Violation Y/N	Level Detected	Unit of Measure	MCLG	MCL	Likely Source of Contamination
Microbiological Contaminants						
Turbidity	N	0.24 98% of Samples <0.3	NTU	0	TT	Soil runoff
Total organic carbon	N	4.90	ppm	NA	TT	Naturally present in the environment
Inorganic Contaminants						
Barium	N	0.05	ppm	2	2	Discharge from drilling wastes; erosion of natural deposits
Copper*	N	0.370	ppm	1.3	AL=1.3	Corrosion of household plumbing; erosion of natural deposits
Fluoride	N	1.22	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from aluminum and fertilizer plants
Lead*	N	4.3	ppb	0	AL=15	Corrosion of household plumbing; erosion of natural deposits
Nitrate	N	1.32	ppm	10	10	Runoff from fertilizer use; erosion of natural deposits
Volatile Organic Contaminants						
Chlorine	N	Yearly avg. 2.0 Range 1.5-2.4	ppm	4	4	Water additive used to control microbes
Halocetic acids (HAACs)	N	Yearly avg. 21.9 Range 12.6-34.8	ppb	N/A	60	By-product of drinking water disinfection
Total trihalomethanes** (THMs)	Y	Yearly avg. 60.5 Range 32.2-96.3	ppb	N/A	80	By-product of drinking water chlorination
Radioactive Contaminants						
Alpha	N	0.94/-0.9	pCi/l	N/A	15	Erosion of natural deposits
Beta emitters			mrem/yr	N/A	4	Decay of natural and man made deposits
Combined radium (226 & 228)	N	0.1+/- 0.87	pCi/l	0	5	Erosion of natural deposits

* Copper and lead samples were collected from (31) area residences on 8-6-08. Only the 90th percentile is reported.

Technical Information

Total Coliform Bacteria The presence of coliform bacteria indicates that other potentially harmful bacteria may be present. Wheeling Water's 2012 testing indicates 0% presence of coliform bacteria. **Lead:** If present elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Wheeling Water, Town of Triadelphia, and Valley Grove are responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

Results will not be mailed; for residents of the Town of Triadelphia, they may be obtained at Town Hall, 4453 National Road, Triadelphia WV; for residents of the Village of Valley Grove, they may be obtained at City Hall, Valley Grove.

All other water test results for the reporting year 2012 were all non-detects.

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