

Pittsburgh Water and Sewer Authority

Environmental Compliance Audit

Aspinwall Water Treatment Plant

January 13th, 2022

The logo for PGH2O features the letters 'P', 'G', and 'H' in a bold, green, sans-serif font. The letter '2' is white and is contained within a blue water droplet shape. The letter 'O' is a solid blue circle, matching the color of the droplet.

Environmental Compliance Audit

Aspinwall Water Treatment Plant

January 13th, 2022

Prepared By:

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Our Ref:

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Prepared For:

PWSA
1200 Penn Ave.
Pittsburgh, PA 15222

Site Address:

PWSA
900 Freeport Road
Pittsburgh, PA 15238

Acronyms and Abbreviations

ACM	asbestos containing materials
ALCOSAN	Allegheny County Sanitary Authority
AST	Aboveground Storage Tank
Btu	British thermal unit
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CIU	categorical industrial user
CRTs	Cathode Ray Tubes
DMR	Discharge Monitoring Report
DOT	Department of Transportation
EHS	extremely hazardous substance
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know-Act
ERP	Emergency Response Plan
ESL	Environmental Services Laboratory
HAPs	Hazardous Air Pollutants
hp	horse-power
ICP	Integrated Contingency Plan
kW	kilowatt
LCSS	large-capacity septic systems
LEPC	local emergency planning committee
LIMS	laboratory information management system
LQG	Large Quantity Generator
MACT	Maximum Achievable Control Technology
MMbtu/hr	million British thermal units per hour
NA	Not Applicable
NESHAPS	National Emissions Standards for Hazardous Air Pollutants
NOV	Noticed of Violation
NPDES	National Pollution Discharge Elimination System
NRC	National Response Center
NSPS	New Source Performance Standards

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NTU	Nephelometric Turbidity unit
PA DEP	Pennsylvania Department of Environmental Protection
PCBS	Polychlorinated Biphenyl
PE	professional engineer
POTW	Publicly Owned Treatment Works
PPC	Pollution, Prevention and Contingency
PRP	potentially responsible party
PTE	potential to emit
PWSA	Pittsburgh Water & Sewer Authority
RCRA	Resource Conservation Recovery Act
RMP	Risk Management Plan
RQ	reportable quantity
RWCs	Residual Waste Codes
SARA	Superfund Amendments and Reauthorization Act
SCADA	supervisory control and data acquisition
SDS	safety data sheet
SERC	state emergency response commission
SIC	Standard Industrial Classification
SIU	Significant Industrial User
SOP	standard operating procedure
SPCC	Spill Prevention, Control and Countermeasures
SQG	Small Quantity Generator
SWPPP	Stormwater Pollution Prevention Plan
TPQ	threshold planning quantity
TSDFs	Treatment, Storage and Disposal Facilities
UIC	Underground Injection Control
US EPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOC	volatile organic compounds
VSQG	Very Small Quantity Generator

Executive Summary

On October 12th-14th 2021, Arcadis U.S., Inc. conducted an environmental compliance audit at the Pittsburgh Water & Sewer Authority (PWSA), Aspinwall Water Treatment Plant located at 900 Freeport Road, Pittsburgh, PA 15238 (site). The intent of the audit was to assess the environmental compliance of the site in accordance with the requirements outlined by the United States Probation Office, United States Attorney's Office, and the Environmental Protection Agency (EPA) and general environmental compliance requirements.

The audit team consisted of Subject Matter Experts (SMEs) in Environmental Compliance Auditing, Water Quality and Supply and Air Quality.

The objectives of the environmental compliance audit were as follows:

- ✓ Review current environmental practices and identify gaps for PWSA to address.
- ✓ Raise awareness of environmental regulatory responsibilities and challenges.
- ✓ Evaluate the facility against environmental regulatory requirements.
- ✓ Ensure that systems are in place to maintain the environmental programs going forward.
- ✓ Guide PWSA to develop a correctives action plan based on findings.

The compliance audit consisted of three discrete tasks:

Task 1: Audit Design Phase (Pre-Audit)

This task consisted of an inventory of site compliance issues, selection and assembly of applicable regulations and checklists applicable to federal, state, and local requirements associated with the following program areas: waste quality and supply; chemical, oil and hazardous materials; stormwater and wastewater discharges; air; waste; other miscellaneous compliance obligations; and a review and coordination of the audit design with PWSA.

Task 2: Audit Phase (Field Audit)

This task consisted of the on-site portion of the environmental compliance audit and included an opening meeting, on-site review of documents, permits, procedures, orders, and operation activities for compliance with regulatory requirements, and site tours. Interviews were also conducted with operational and management personnel.

Task 3: Post Audit Phase

This task consisted of additional document review, closing meeting presentation and a compliance audit findings report. Findings are categorized by area and identified points of noncompliance with permits, order and regulatory requirements.

Overall, the site was adhering the environmental regulatory requirements with a few non-compliance and potential non-compliance areas, which PWSA should address to improve operations. This report provides a summary of findings and recommendations based on information observed and provided to Arcadis during the audit.

Environmental Compliance Audit Report

General Site Information

Topic	Observations
Address (General Location)	900 Freeport Road, Pittsburgh, PA 15238
Legal Description	Pittsburgh Water & Sewer Authority, Aspinwall Water Treatment Plant
Description of Operations (Since year operations commenced)	Water treatment for customer drinking water usage.
Number of employees and hours of operation	3 shifts; ~64 employees
Surrounding Properties	The Waterworks shopping complex; Allegheny River; Lighthouse Pointe Village at Chapel Harbor (residential area)
Number of Buildings on the Site	8
Building Construction Date	1910
Building Expansion(s) Date	1965, 1984
Number of Floors (include all levels, whether above or below ground)	Most buildings have 2 floors
In-ground pits, sumps and / or trenches	Yes
Remaining Portions of Property	NA
Services provided to the Site	Sewer Service: Fox Chapel and ALCOSAN Electricity: Duquesne Light Natural Gas: People's Gas
Watercourses, Ditches or Storm Water Management Ponds	Small rain garden in front of the Operation Center that attenuates stormwater from the roadways on-site. Allegheny River borders the entire southern edge of the property.
Number and fuel type of Emergency Back-up Power Generators (list the make, model number, year, HP, etc.)	See inspection report

Summary of Existing Permits/Registrations

Topic Area	Permit Number/Registration	Effective Date	Expiration Date
Storage Tanks (ASTs/USTs)	Registration on-file at PWSA.	Varies	Varies
Stormwater Permit	PA0218961	April 1, 2017	March 31, 2022
Wastewater Permit (Industrial Discharge)	P2-0008	October 1, 2020	September 30, 2025
Air Emissions	WTP: 0117-OP21	March 23, 2021	March 22, 2026
Hazardous Waste Generator Status	PAR000561282 – VSQG	10/9/2019	NA
Drinking Water	Multiple	Varies	NA

Environmental Compliance Review

Compliance Topic	Compliance Status	Discussion
Drinking Water		
Drinking Water	<input type="checkbox"/> Not Applicable <input type="checkbox"/> In Compliance <input checked="" type="checkbox"/> Potential Non-compliance <input type="checkbox"/> Non-compliance	<p>The drinking water compliance audit focused on the requirements set forth in the Pennsylvania Code, Title 25 Chapter 109 (safe drinking water regulations).</p> <p>No major compliance issues were discovered. However, it was determined that the compliance calculation for log inactivation of <i>Giardia</i> does not always account for the peak hourly flow for a given day (as required under 25 Pa. Code Chapter 109). It is recommended that the protocol for calculating log inactivation of <i>Giardia</i> be modified so that it consistently occurs at the time of peak hourly flow.</p> <p>Also, historical records for certain regulated water quality parameters are either incomplete or could not easily be reviewed during the onsite inspection. An archiving effort is underway that involves organizing and scanning older paper reports. Laboratories are being asked to provide duplicate reports to complete the necessary onsite databases for regulated water quality parameters. 25 Pa. Code Chapter 109 indicates that laboratory reports (for regulated parameters) must be maintained onsite.</p> <p>A full summary of the drinking water compliance audit can be found in Appendix A.</p>

Compliance Topic	Compliance Status	Discussion
Stormwater		
<p>Stormwater Discharge Permit for Industrial Stormwater Discharge</p> <p>Stormwater permits are required for certain facilities, based on the SIC code the facility operates under. Check the state’s general permit for a list of covered SIC codes and categories.</p> <p>Facilities which operate under a covered SIC code, but maintain a condition of no exposure, may be eligible for a No Exposure Certification (which requires submittal of a form).</p> <p>Facilities may also be covered under an individual NPDES permit, rather than the general permit.</p>	<p><input type="checkbox"/> Not Applicable</p> <p><input checked="" type="checkbox"/> In Compliance</p> <p><input type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>According to the Chief Environmental Compliance & Ethics Officer, the SIC code for the Site is 4941, Water Supply. Based on this SIC code and the stormwater discharges generated, the Site is subject to NPDES permitting requirements for stormwater discharges associated with industrial activity. The Site is permitted under Minor Source Industrial Waste Permit. The Site submitted a permit renewal application on October 2, 2021. An extension was provided to December 31, 2021, for additional testing.</p>
<p>Stormwater Discharge Permit for Construction Stormwater Discharge</p> <p>Construction stormwater discharge permits are required for Sites undergoing construction in a 1-acre or larger area, subject to construction stormwater permitting requirements. Certain construction sites between 1 and 5 acres may be eligible for a Small Construction Activity Waiver</p>	<p><input checked="" type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> In Compliance</p> <p><input type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>The Site is not undergoing construction; therefore, construction stormwater regulations do not apply. If major construction is planned the Site will make the appropriate notifications.</p> <p>Regarding pollution prevention, there was a lack of documentation related to construction activities which may impact stormwater pollution.</p>
<p>Stormwater Pollution Prevention Plan (SWPPP)</p> <p>SWPPP requirements are dictated by the stormwater permit. Most stormwater permits include requirements for the covered facility to prepare and implement a SWPPP.</p> <p>Facilities with a No Exposure Exclusion are not required to have a SWPPP.</p>	<p><input type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> In Compliance</p> <p><input checked="" type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>The Site has an integrated Contingency Plan (ICP). The final ICP was dated March 2016; a draft ICP was dated September 2021.</p> <p>The ICP needs to be reviewed for accuracy of the required information, including a stormwater pollution prevention team, Site description, summary of potential pollutant sources, description of control measures, documentation to support eligibility considerations under other federal laws, and signatures.</p>

Compliance Topic	Compliance Status	Discussion
Inspections and Violations	<input type="checkbox"/> Not Applicable <input type="checkbox"/> In Compliance <input type="checkbox"/> Potential Non-compliance <input checked="" type="checkbox"/> Non-compliance	<p>The Site has been subject to various inspections by the Pennsylvania Department of Environmental Protection (PA DEP). The last inspection was completed on December 15, 2020. A Notice of Violation (NOV) was issued on January 6, 2021, which pertain to limit exceedances, failure to monitor, failure to submit complete and accurate DMRs, an unauthorized discharge, failure to submit an Annual Stormwater Report and Failure to update the PPC (ICP).</p> <p>On February 4, 2021, the Site submitted a Corrective Action and Compliance Plan to the PA DEP. They are continuing to resolve the violations noted in the January 6, 2021, inspection report.</p>
NPDES Permit	<input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> In Compliance <input type="checkbox"/> Potential Non-compliance <input type="checkbox"/> Non-compliance	<p>The NPDES compliance audit focused on the requirements set forth in the Pennsylvania Code, Title 25 Chapter 252 (environmental laboratory accreditation) and in the NPDES permit for the Aspinwall Water Treatment Plant.</p> <p>No compliance issues were discovered. However, lab reports from before March 2021 are not currently stored onsite. It is recommended that these reports be stored on the PWSA intranet server, since onsite storage (although not required) is more reliable than a data portal maintained by a third-party. A full summary of the NPDES compliance audit can be found in Appendix B.</p>

Compliance Topic	Compliance Status	Discussion
Wastewater		
<p>Class V Underground Injection Control (UIC) Wells</p> <p>Septic systems which receive solely sanitary waste from non-residential establishments with capacity to serve 20 or more people per day are considered large-capacity septic systems (LCSSs) and are subject to regulation as Class V underground injection wells. Operators of Class V underground injection wells are required to notify the USEPA [or state agency] prior to construction of the well and may also be required to obtain a permit for the well.</p> <p>Septic systems which receive industrial or commercial wastewater are subject to regulation as Class V underground injection wells. Operators of Class V underground injection wells are required to notify the USEPA [or state agency] prior to construction of the well and may also be required to obtain a permit for the well</p>	<p><input checked="" type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> In Compliance</p> <p><input type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>No Class V injection wells are located at the Site.</p>
<p>Wastewater Discharge Permit</p>	<p><input type="checkbox"/> Not Applicable</p> <p><input checked="" type="checkbox"/> In Compliance</p> <p><input type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>The Site has obtained an industrial wastewater discharge permit P2-008 with the Allegheny County Sanitary Authority (ALCOSAN). The permit was issued on October 1, 2020 and will expire on September 30, 2025. The descriptions of the wastewater treatment equipment and operations in the permit appeared generally consistent with Site observations. According to permit, the Site is a significant industrial user (SIU). Based on the Site operations and process wastewater discharged to the POTW, the Site is not subject to categorical pre-treatment standards and is not considered to be a categorical industrial user (CIU).</p> <p>The Site is required to sample and submit Self-Monitoring Compliance Reports at monthly and quarterly intervals. It appears that this has been done.</p>

Compliance Topic	Compliance Status	Discussion
<p>Inspections and Violations</p>	<p><input checked="" type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> In Compliance</p> <p><input type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>The Site has not been subject to regulatory inspections by ALCOSAN regarding its wastewater permitting compliance. No NOVs associated with wastewater discharge or permitting were identified.</p>

Storage Tanks - ASTs		
<p>Registration and Permitting</p> <p>Permitting requirements are generally driven by the state or local regulatory authority, and often depend on size and/or contents.</p>	<p><input type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> In Compliance</p> <p><input type="checkbox"/> Potential Non-compliance</p> <p><input checked="" type="checkbox"/> Non-compliance</p>	<p>ASTs are present and are registered.</p> <p>There is a lack of documentation verifying that containment is sufficient for the tank contents. This includes oil tanks and chemical tanks.</p> <p>Although tank inspections are being conducted via SpryPoint, there is a lack of notifications and follow-up with the compliance group when tank inspections occur. There is also a lack of notification and follow-up when tank inspection issues are identified and resolved. SpryPoint is being used but is not efficient for tank inspection notifications and follow-up. The software does not allow the user to print the findings of each inspection or add individuals to receive notifications.</p> <p>The labels on the Soda Ash and Lime Slurry tanks were damaged and needed replaced.</p>

Compliance Topic	Compliance Status	Discussion
Storage Tanks - USTs		
<p>Registration</p> <p>The owner or operator is required to notify the implementing agency within 30 days of installation of a UST.</p>	<p><input type="checkbox"/> Not Applicable</p> <p><input checked="" type="checkbox"/> In Compliance</p> <p><input type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>The gasoline USTs present on-site is out of service. A lock has been placed on the valve so that access is prohibited.</p>
Hazardous Materials - EPCRA		
<p>Section 302 (Emergency Planning Notification)</p> <p>Facilities where extremely hazardous substances (EHSs) are present in excess of the threshold planning quantity (TPQ) for the substance must notify the state emergency response commission (SERC) and local emergency planning committee (LEPC).</p>	<p><input type="checkbox"/> Not Applicable</p> <p><input checked="" type="checkbox"/> In Compliance</p> <p><input type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>A notification was provided to the SERC and LEPC on February 26, 2021, that the following EHSs are stored on site:</p> <ul style="list-style-type: none"> • Hydrofluosilic Acid 25% <p>No obvious deficiencies were identified.</p>
<p>Section 304 (Emergency Release Notification)</p> <p>In the event of an accidental release of EHSs or hazardous substances in excess of the reportable quantity (RQ) for the substance, the facility must report the release to the SERC, LEPC, and National Response Center (NRC), and the information must be available to the public.</p>	<p><input checked="" type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> In Compliance</p> <p><input type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>There was no evidence of releases of EHSs or hazardous substances in excess of the applicable RQs.</p>

Compliance Topic	Compliance Status	Discussion
<p>EPCRA Sections 311 and 312 (Hazardous Chemical Storage Reporting, a/k/a “Tier II Reporting”)</p> <p>Facilities that manufacture, process, or store hazardous chemicals above specific thresholds must make the SDSs and inventory information of the hazardous chemicals available to the SERC, LEPC, local fire departments, and the public. EPCRA Section 311 requires an initial, one-time submittal of the SDS (or a chemical inventory identifying the chemical hazard) for chemicals above the thresholds. EPCRA Section 312 requires submittal of annual inventory reports for the same chemicals.</p>	<p><input type="checkbox"/> Not Applicable</p> <p><input checked="" type="checkbox"/> In Compliance</p> <p><input type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>Annual Tier II reports submitted identify the following chemicals at the Site in recent years: 2-Propen-1-Aminum, N, N-Dimethyl-N-2-Propenyl-, Chloride, Homopolymer (Liquidcationic Polymer); Ferric Chloride 40%; Gasoline; Green Clean Pro; Hydrofluosilicia Acid 25%; Lime Slurry Plus; Phosphoric Acid 45-85%; Potassium Permanganate; Sodium bisulfite; Sodium Carbonate Anhydrous; Sodium Hydroxide 50% (Caustic); Sodium Hypochlorite 12.5%.</p> <p>No obvious deficiencies were identified related to EPCRA Section 312 reporting requirements.</p>

Spill Prevention, Control, and Countermeasures (SPCC)		
<p>SPCC Plan</p> <p>Facilities are required to develop and implement an SPCC Plan if there is a potential for impact to surface water or groundwater at facilities that store oil underground in quantities exceeding 42,000 gallons (unless the material is contained in a tank regulated under 40 CFR 280 or 281), or at facilities that have greater than 1,320 gallons of aboveground oil storage in the aggregate (excluding containers with less than a 55-gallon capacity.)</p>	<p><input type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> In Compliance</p> <p><input type="checkbox"/> Potential Non-compliance</p> <p><input checked="" type="checkbox"/> Non-compliance</p>	<p>The aggregate aboveground storage capacity of oils is approximately 2,200 gallons. Based on the amount of oil observed to be stored aboveground, the facility is subject to SPCC requirements. An SPCC Plan, dated March 3, 2021, was prepared but was found to be inadequate to meet the needs of the facility. For examples, the plan needs to include all oil containing materials, including the lubricants in the storeroom and 2-240 gallon and 1–100-gallon oil tanks in the Ross Pump Station. It also does not contain a physical layout of the site, a facility diagram or location specific response procedures.</p>

Compliance Topic	Compliance Status	Discussion
<p>SPCC Plan Certification</p> <p>SPCC Plans are required to be certified by a Professional Engineer (PE), unless the facility qualifies as a Tier I or Tier II Qualified Facility based on the oil storage capacity and history of oil spills. SPCC Plans for Tier I or Tier II Qualified Facilities can be “self-certified” and do not require a PE certification.</p>	<p><input type="checkbox"/> Not Applicable</p> <p><input checked="" type="checkbox"/> In Compliance</p> <p><input type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>The Site meets the definition of a Tier II Qualified Facility. Therefore, the SPCC Plan is self-certified based on the Tier II Qualified Facility Requirements.</p>
<p>SPCC Plan Implementation</p> <p>Use this section for deficiencies associated with SPCC Plans that have not been fully implemented (i.e., the company is not performing inspections, following procedures, or training employees as outlined in the SPCC Plan) or is not accurate based on-Site observations (i.e., additional oil storage is present that is not described in the plan).</p>	<p><input type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> In Compliance</p> <p><input checked="" type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>The SPCC Plan does not appear to have been fully implemented at the Site, based on a lack of housekeeping and labelling, and interviews with personnel.</p> <p>Although an SPCC Plan has been prepared for the Site, it does not appear to accurately reflect the oil storage at the facility. Specifically, the 2,000-gallon diesel AST and the 150-gallon transformer oil reservoir were not included in the SPCC Plan.</p> <p>Furthermore, the SPCC Plan does not contain a physical layout, facility diagram or location specific emergency response procedures.</p> <p>The site has both ICP and SPCC Plans. Per Pennsylvania regulations, you are permitted to maintain an ICP which contains items normally found in an SPCC Plan. The final ICP was dated March 2016; a draft ICP was dated September 2021.</p> <p>There was a lack of documentation pertaining to the monthly inspections of oil containing tanks and containers as indicated in the SPCC Plan.</p>
<p>Secondary Containment</p> <p>Use this section for deficiencies associated with secondary containment that is required but is missing, damaged, or inadequate. Secondary containment requirements are typically driven by the SPCC Plan.</p>	<p><input type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> In Compliance</p> <p><input checked="" type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>Secondary containment was observed around most liquid chemical storage tanks. Secondary containment was lacking around oil storage tanks.</p> <p>There is a lack of documentation verifying that containment is sufficient for the tank contents. This includes oil tanks and chemical tanks.</p>

Compliance Topic	Compliance Status	Discussion
Air		
<p>Air Permitting</p> <p>Operating permits are typically issued by state and local permitting agencies under USEPA approved programs.</p>	<p><input type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> In Compliance</p> <p><input checked="" type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>The Site operates under an Operating Permit #0117-OP21 issued by the Allegheny Health Department effective March 23, 2021 and expiring March 22, 2026. The permitted emission sources include two (2) 25.1 MMbtu/hr natural gas fired boilers and a 250-kW natural gas fired emergency generator. In addition to the permitted emissions sources, the permit lists the following sources as being sources of minor significance: 70 hp propane fired emergency generator engine, twenty-one (21) tanks of various sizes, two (2) parts cleaners, two (2) 150,000 Btu/hr natural gas fired heaters, and nine (9) loading bins with shakers for mix and transfer of dry materials.</p> <p>There are discrepancies in the emission factors and maximum annual fuel usage used for the basis of potential to emit (PTE) of the natural gas fired generator engine, which may mean the generator engine's permitted potential to emit is not correct. The maximum capacity noted in the permit (0.885 MMbtu/hr) could not be verified. Two cycle lean burn emission factors from US EPA's AP-42 were referenced in the current permit as being utilized to calculate the PTE, but the most recent permit application filed used 4 cycle lean burn factors. In addition, the maximum hourly fuel usage referenced in the air permit application could not be verified, as the source referenced a website are no longer active.</p>
<p>Inspections and Violations</p>	<p><input checked="" type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> In Compliance</p> <p><input type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>The Site has not had any air regulatory inspections by the Allegheny County Health Department or PADEP regarding its air permitting compliance within the past 2 years, per Site personnel.</p>

Compliance Topic	Compliance Status	Discussion
<p>New Source Performance Standards (NSPS)</p> <p>NSPS are emission standards set by the USEPA in 40 CFR 60 for new and modified stationary pollution sources that significantly endanger public health or welfare. NSPS apply to a variety of industrial facilities, operations, and types of equipment.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Not Applicable <input type="checkbox"/> In Compliance <input checked="" type="checkbox"/> Potential Non-compliance <input type="checkbox"/> Non-compliance 	<p>The propane fired emergency generator engine, which was installed in 2014 is subject to NSPS, 40 CFR 60 Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines based on its date of manufacture. The air permit does not specifically list the federal requirements for the source but does state that sources subject to New Source Performance Standards must comply with the applicable requirements.</p> <p>As a certified engine, the owner/operator is required to operate and maintain the certified stationary SI IC engine and control device according to the manufacturer's emissions-related written instructions and keep records of conducted maintenance. The site utilizes a third-party contractor to complete the required maintenance on the certified generator engine; however, the site did not have information readily available on file that documented that manufacturer's emissions-related written instructions had been completed by the third-party contractor and when the activities were completed.</p> <p>In addition, the Site operates several portable emergency generator engines throughout the facility as the need arises. 40 CFR 60 Subpart JJJJ and 40 CFR 60 Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines do not apply to nonroad engines, which are portable or transportable (has wheels, skids, carrying handles, dolly, trailer or platform) provided that the portable nonroad engine does not stay in one location for more than 12 months. The site does not document how long each portable emergency engine operates at the location where it is utilized to demonstrate that it does not stay in one location for more than 12 months.</p>

Compliance Topic	Compliance Status	Discussion
<p>National Emissions Standards for Hazardous Air Pollutants (NESHAPs)</p> <p>The original NESHAPs (40 CFR 61) are risk-based standards that cover nine hazardous air pollutants (HAPs). The 1990 Clean Air Act Amendments included additional NESHAPs, known as MACT standards, for a number of other HAPs and industrial sources.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Not Applicable <input type="checkbox"/> In Compliance <input checked="" type="checkbox"/> Potential Non-compliance <input type="checkbox"/> Non-compliance 	<p>Based on the date of manufacture (prior to June 12, 2006) and that the facility is a minor source of hazardous air pollutants (HAPs), 40 CFR 63 Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines applies to the natural gas fired emergency generator engine. Therefore, the engine is subject to maintenance practices requirements in the rule. While the site does perform and document the maintenance activities, it is unclear if the maintenance activities are conducted according to the schedule specified in the regulation.</p> <p>It is recommended that records are reviewed to tag when oil changes occur; spark plugs are inspected and replaced; and hoses/belts are inspected and replaced to verify maintenance activities are conducted according to the schedule specified in the regulations. In addition, the Site operates several portable emergency generator engines throughout the facility as the need arises. 40 CFR 63 Subpart ZZZZ does not apply to nonroad engines, which are portable or transportable (has wheels, skids, carrying handles, dolly, trailer or platform) provided that the portable nonroad engine does not stay in one location for more than 12 months. The site does not document how long each portable emergency engine operates at each location where it is utilized to demonstrate that the portable generator engines does not stay in one location for more than 12 months.</p>
<p>Risk Management Plan (RMP)</p> <p>Accidental Release Prevention regulations, promulgated in 40 CFR 68 in accordance with Section 112(r) of the Clean Air Act, require facilities to develop a risk management program and submit a Risk Management Plan (RMP) to USEPA if they store more than a threshold quantity of a regulated substance in any single "process".</p>	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> In Compliance <input type="checkbox"/> Potential Non-compliance <input type="checkbox"/> Non-compliance 	<p>No regulated substances (as defined in the RMP rule) appear to be stored in amounts above the applicable threshold quantities at the Site.</p>

Compliance Topic	Compliance Status	Discussion
Hazardous Waste		
<p>USEPA ID Number</p> <p>Required for <u>LQGs</u> and <u>SQGs</u>: The facility is required to acquire a unique USEPA identification number.</p> <p>Not required for <u>VSQGs</u>.</p>	<p><input type="checkbox"/> Not Applicable</p> <p><input checked="" type="checkbox"/> In Compliance</p> <p><input type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>The Site is registered as a VSQG and has been assigned the USEPA ID Number PAR000561282.</p>
<p>On-site Accumulation Quantity</p> <p>No requirement for <u>LQGs</u>.</p> <p>Required for <u>SQGs</u>: Between 220 and 2,200 pounds of hazardous waste may accumulate on site.</p> <p>Required for <u>VSQGs</u>: Up to 100 kilograms (approximately 220 pounds) of hazardous waste, up to 1 kilogram (approximately 2.2 pounds) of acute hazardous waste, and up to 100 kilograms (approximately 220 pounds) of acute spill residue or soil may accumulate onsite.</p>	<p><input type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> In Compliance</p> <p><input checked="" type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>There is a lack of documentation regarding monthly waste generator status (hazardous and universal). As of 10/9/2021, the site identified as a Very Small Quantity Generator (VSQG), but evidence observed during the audit indicates that they may in fact be an SQG or LQG.</p> <p>The site will need to track and make a business decision regarding their final generator status.</p>
<p>Accumulation Time Limit</p> <p>Required for <u>LQGs</u>: Hazardous waste may accumulate on site for up to 90 days.</p> <p>Required for <u>SQGs</u>: Hazardous waste may accumulate on site for up to 180 days, or up to 270 days for wastes that are transported greater than 200 miles.</p> <p>Not required for <u>VSQGs</u>.</p>	<p><input type="checkbox"/> Not Applicable</p> <p><input checked="" type="checkbox"/> In Compliance</p> <p><input type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>Arcadis did not observe hazardous waste tanks or containers with accumulation dates more than 180 days old.</p>

Compliance Topic	Compliance Status	Discussion
<p>Personnel Training</p> <p>Required for <u>LQGs</u>: The generator must ensure that personnel complete classroom or on-the-job training such that they are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems.</p> <p>Required for <u>SQGs</u>: The generator must ensure that all employees are familiar with proper waste handling and emergency procedures, relevant to their responsibilities during normal facility operations and emergencies.</p> <p>Not required for <u>VSQGs</u>.</p>	<p><input type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> In Compliance</p> <p><input checked="" type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>A third-party vendor completes annual RCRA training for site personal, however it does not appear that employees fully understand RCRA regulations or the waste management procedures at the site.</p> <p>There is a lack of documentation pertaining to how waste (i.e., hazardous, non-hazardous, residual, medical) is managed on-site including how it is containerized, stored, labelled, manifested and disposed.</p> <p>There is confusion regarding proper container labelling; waste phosphoric acid in the North Garage (labelled hazardous, needs testing) and ferric chloride in the bulk chemical unloading area (labelled residual waste, should be hazardous waste).</p>
<p>Contingency Plan</p> <p>Required for <u>LQGs</u>: The generator must develop and implement a Contingency Plan and submit it to the local police department, fire department, hospitals, and state and local emergency response teams that may be called upon to provide emergency services.</p> <p>Required for <u>SQGs</u>: A basic contingency plan is required.</p> <p>No requirement for <u>SQGs</u> or <u>VSQGs</u>.</p>	<p><input checked="" type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> In Compliance</p> <p><input type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>The site has an Integrated Contingency Plan (ICP). The final ICP was dated March 2016; a draft ICP was dated September 2021.</p> <p>As a VSQG they are not required to maintain a Contingency Plan, however if their generator status changes to LQG then a plan will be required.</p>
<p>Manifest</p> <p>Required for <u>LQGs</u> and <u>SQGs</u>: The generator must track hazardous waste shipments using the multiple-copy manifest required by the US Department of Transportation (DOT) and USEPA.</p> <p>No requirement for <u>VSQGs</u>.</p>	<p><input type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> In Compliance</p> <p><input checked="" type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>The Site tracks hazardous waste shipments using manifests as required. However, employees signing hazardous waste manifests do not fully understand what they are signing.</p>

Compliance Topic	Compliance Status	Discussion
<p>Pre-Transport Requirements</p> <p>Required for <u>LQGs</u> and <u>SQGs</u>: The generator must package and label hazardous waste for shipment off site to a RCRA facility for treatment, storage, or disposal.</p> <p>Not required for <u>VSQGs</u>.</p>	<p><input type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> In Compliance</p> <p><input type="checkbox"/> Potential Non-compliance</p> <p><input checked="" type="checkbox"/> Non-compliance</p>	<p>There is confusion regarding proper container labelling; waste phosphoric acid in the North Garage (labelled hazardous, needs testing) and ferric chloride in the bulk chemical unloading area (labelled residual waste, should be hazardous waste).</p>
<p>Biennial Report</p> <p>Required for <u>LQGs</u>: The generator must submit biennial reports.</p> <p>Not required for <u>SQGs</u> or <u>VSQGs</u>.</p>	<p><input checked="" type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> In Compliance</p> <p><input type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>The Site is a VSQG; therefore, Biennial Reports are not required.</p>
<p>Exception Reporting</p> <p>Required for <u>LQGs</u>: The generator must report if any required copies of signed manifests are not received within 35 days.</p> <p>Required for <u>SQGs</u>: The generator must report if any required copies of signed manifests are not received within 60 days.</p> <p>Not required for <u>VSQGs</u>.</p>	<p><input type="checkbox"/> Not Applicable</p> <p><input checked="" type="checkbox"/> In Compliance</p> <p><input type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>According to the Administrative Assistance, all signed manifests have been received from the designated facility/facilities within 60 days.</p>

Compliance Topic	Compliance Status	Discussion
<p>Recordkeeping</p> <p>Required for <u>LQGs</u>: The generator must maintain records of manifests, biennial reports, exception reports, and waste analysis.</p> <p>Required for <u>SQGs</u>: The generator must maintain records of manifests and waste analysis.</p> <p>Not required for <u>VSQGs</u>.</p>	<p><input type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> In Compliance</p> <p><input checked="" type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>The Site maintains copies of signed manifests for at least three years.</p> <p>However, documentation pertaining to waste characterization (analytical, generator knowledge, etc.) could not be located. It was suggested, but unclear if a third-party waste vendor maintains this documentation on behalf of the Site. Waste determinations should be maintained on-site for at least three years from the date that the waste was last sent for on-site or off-site treatment, storage, or disposal.</p> <p>There is a lack of documentation pertaining to how waste is managed on-site, including how it is characterized. Example waste streams that need documentation for characterized prior to disposal include Hydrostatic wastewater (wastewater); waste related to construction activities (phosphoric acid/water mixture in North Garage); ferric chloride; lab waste and aerosol cans.</p>
<p>Facility Type</p> <p>Required for <u>LQGs</u> and <u>SQGs</u>: The generator must send off-site shipments to RCRA-permitted or interim status facilities.</p> <p>Required for <u>VSQGs</u>: The generator may send off-site shipments to RCRA-permitted or interim status facilities or other facilities that are authorized to manage it.</p>	<p><input type="checkbox"/> Not Applicable</p> <p><input checked="" type="checkbox"/> In Compliance</p> <p><input type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>The Site sends hazardous waste to RCRA-permitted facilities that have been vetted by their third-party waste vendor.</p>
<p>TSDFs</p>	<p><input checked="" type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> In Compliance</p> <p><input type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>The Site is not a TSDF; therefore, TSDF requirements do not apply to the Site.</p>

Compliance Topic	Compliance Status	Discussion
<p>Inspections and Violations</p>	<input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> In Compliance <input type="checkbox"/> Potential Non-compliance <input type="checkbox"/> Non-compliance	<p>The Site has not been subject to regulatory inspections by the PA DEP regarding RCRA compliance. No NOV's associated with waste compliance or RCRA were identified.</p>
Other Regulated Waste		
<p>Academic Laboratory Waste</p> <p>Containers of unwanted materials must be labelled with the words "unwanted materials" or another equally effective, consistently used term; chemical name; information sufficient to make a hazardous waste determination; and accumulation start date. In addition, trained professionals, rather than students, must make hazardous waste determinations. The trained professional can make the hazardous waste determination in the laboratory, at an on-site central accumulation area, or at an on-site TSDF. The facility must also develop and implement a Laboratory Management Plan.</p>	<input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> In Compliance <input type="checkbox"/> Potential Non-compliance <input type="checkbox"/> Non-compliance	<p>The Site does not generate academic laboratory waste.</p>
<p>Cathode Ray Tubes (CRTs)</p> <p>CRT glass contains lead; therefore, CRTs intended for disposal are considered hazardous waste under RCRA. However, if certain conditions are met, used CRTs and CRT glass, which is recycled or exported for recycling, is not considered solid or hazardous waste.</p>	<input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> In Compliance <input type="checkbox"/> Potential Non-compliance <input type="checkbox"/> Non-compliance	<p>Arcadis did observe CRTs on the top floor of the Ross Pump Station, Maintenance Area. It is unclear if these items are ready for disposal. When ready for disposal, the Site will utilize a third-party vendor for support.</p>
<p>Municipal Waste</p> <p>Containers used to store residual waste must be watertight, leak-proof, insect-proof and rodent-proof.</p> <p>Containers used to store municipal waste must be equipped with a tight-fitting lid or otherwise sealed, watertight, leak-proof, insect proof and rodent proof.</p>	<input type="checkbox"/> Not Applicable <input type="checkbox"/> In Compliance <input type="checkbox"/> Potential Non-compliance <input checked="" type="checkbox"/> Non-compliance	<p>The municipal waste dumpster has a tarp which covers the top. Environmental compliance personal indicated that a hard top was not available from the vendor due to supply and demand.</p>

Compliance Topic	Compliance Status	Discussion
<p>Polychlorinated Biphenyl (PCB) Waste</p> <p>PCB wastes are regulated under 40 CFR Part 761, which imposes requirements for generators, commercial storage facilities, transporters, and disposers of PCB wastes.</p>	<input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> In Compliance <input type="checkbox"/> Potential Non-compliance <input type="checkbox"/> Non-compliance	<p>The Site does not generate PCB wastes.</p> <p>The primary transformers/sub-stations on-site are owned by Duquesne Light. The Site reports no liquid filled transformers.</p>
<p>Residual Waste Biennial Report</p> <p>Residual waste generators must submit biennial residual waste reports to the PA DEP with analysis, determinations and a record of laboratory quality control procedures.</p>	<input type="checkbox"/> Not Applicable <input type="checkbox"/> In Compliance <input checked="" type="checkbox"/> Potential Non-compliance <input type="checkbox"/> Non-compliance	<p>After reviewing the 2020 Residual Waste Biennial Report, it was unclear which waste streams are included in the Residual Waste Codes (RWCs) 499 Generic Waste and 399 Other Chemical Waste and if a more specific codes apply.</p>
<p>Residual Waste 25 R Reports</p> <p>Residual waste generators must prepare source reduction strategies for each waste stream</p>	<input type="checkbox"/> Not Applicable <input type="checkbox"/> In Compliance <input type="checkbox"/> Potential Non-compliance <input checked="" type="checkbox"/> Non-compliance	<p>Other waste streams which may have been misclassified included: 301 Acidic Waste; 419 Empty Containers; and 509: Waste Oil.</p> <p>After reviewing the 2020 Residual Waste Biennial Report, it was determined that 25R Forms for Source Reduction Strategy have not been completed.</p>
<p>Waste Oil</p> <p>Used oil management standards are established in 40 CFR Part 279 and apply to all businesses that handle used oil. The used oil management standards include requirements pertaining to used oil storage, oil spills and leaks, recordkeeping, and mixing used oil with hazardous waste.</p>	<input type="checkbox"/> Not Applicable <input type="checkbox"/> In Compliance <input checked="" type="checkbox"/> Potential Non-compliance <input type="checkbox"/> Non-compliance	<p>Most waste oil containers were observed to be covered and labelled. The Site does not mix other wastes with used oil.</p> <p>Areas of concern for waste oil management include the Ross Pump Station top floor and the main building maintenance shop. Both areas had several drums that were in bad condition (rusty) and unlabelled. Waste oil was also being stored in unauthorized containers (coffee creamer and protein containers) in the main building maintenance shop.</p>

Compliance Topic	Compliance Status	Discussion
Off-site Liability		
<p>Under CERCLA and SARA, hazardous waste sites, accidents, spills, and other emergency releases of pollutants and contaminants are cleaned up by the USEPA or through orders and consent decrees from the USEPA. USEPA has the authority to seek out and identify potentially responsible parties (PRPs) to recover costs for clean-up, or to compel the PRPs to clean up Superfund sites. CERCLA imposes liability on current owners and operators of a facility, former owners and operators of a facility, parties who arranged for treatment or disposal of hazardous substances, and transporters of hazardous substances.</p>	<p><input checked="" type="checkbox"/> Not Applicable</p> <p><input type="checkbox"/> In Compliance</p> <p><input type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>No evidence was identified which names the Site as a PRP in conjunction with wastes sent from the Site to off-site disposal facilities. In addition, the Chief Environmental Compliance & Ethics Officer was not aware of off-site disposal liabilities associated with wastes generated at the Site.</p>
Hazardous Building Materials		
Lead-Based Paint	<p><input type="checkbox"/> Not Applicable</p> <p><input checked="" type="checkbox"/> In Compliance</p> <p><input type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>The Site had a hazardous material survey conducted by a third-party vendor on July 7 and 26, 2021.</p> <p>Ten paint samples were taken from the lime slurry system area on three floors of the Chemical Building. Lead and hexavalent chromium were identified in all ten paint samples. Heavy metals were found in most samples.</p> <p>Due to the age of the other buildings, the Site suspects that they also contain lead-based paint.</p> <p>It is recommended that the Site identify and document buildings/areas that contain lead-based paint. Special consideration (waste management, employee exposure, etc.) must be considered during construction pre-planning activities.</p>

Compliance Topic	Compliance Status	Discussion
Asbestos and ACM	<input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> In Compliance <input type="checkbox"/> Potential Non-compliance <input type="checkbox"/> Non-compliance	<p>The Site had a hazardous material survey conducted by a third-party vendor on July 7 and 26, 2021.</p> <p>The asbestos contractor collected 32 bulk samples of five different suspect materials. Six of the 32 samples had multiple layers which were analysed separately, resulting in a total of 38 samples. There are no known ACM at the lime slurry system inside the Chemical Building.</p> <p>Due to the age of the other buildings, Site personnel suspect that they contain asbestos and ACM.</p> <p>It is recommended that the Site identify and document buildings/areas that contain asbestos and ACM. Special consideration (waste management, employee exposure, etc.) must be considered during construction pre-planning activities.</p>

Appendix A

Drinking Water Compliance Audit

APPENDIX A

Drinking Water Compliance Audit

The drinking water compliance audit focused on the requirements set forth in Pa. Code 25 Chapter 109 (safe drinking water regulations). In particular, the audit evaluated in-plant activities and conditions related to:

- Measuring and recording (storing) the results for regulated water quality parameters and treatment requirements
- Developing and maintaining required documents
- Implementing required operational protocols

The information needed for the audit was gathered through an onsite inspection, during which an auditor (from Arcadis) examined equipment, reviewed documents, and interviewed PWSA personnel. The results of the audit, relative to the above-listed topics, are provided below.

Data Collection and Storage

The following elements of the drinking water-related data collection and storage efforts at the Aspinwall Water Treatment Plant were assessed during the onsite inspection:

- Sampling locations
- Online and benchtop instruments used for conducting compliance measurements
- Calibration and training records
- Electronic databases and paper files containing compliance results

The assessments were aimed at determining whether the data collection and record-keeping requirements outlined in Pa. Code 25 Chapter 109 are being met. The information gathered during the onsite inspection is summarized in Table A-1. The key findings and associated recommendations are as follows:

- No major compliance issues were discovered.
- Although the clearwell level sensor does not require routine calibrations, verifying the sensor output on a regular interval (e.g., yearly) is recommended, given that the clearwell level affects Giardia inactivation. The level sensor includes a “calibration offset” function that allows the reading to be adjusted if the reported value is consistently high/low.
- At present, the compliance calculation for log inactivation of Giardia is performed at a fixed 4-hour interval, and each day the lowest value among the 6 daily values is reported. 25 Pa. Code Chapter 109.301(1)(v) indicates that log inactivation of Giardia must be calculated at least once per day, at the time of peak hourly flow. Calculating log inactivation at 4-hour intervals will not always include the peak hourly flow for a given day. It is recommended that the protocol for calculating log inactivation of Giardia be modified so that it consistently occurs at the time of peak hourly flow. The hourly log inactivation value being calculated by the SCADA system (for use by the operators) could potentially serve as the compliance calculation.
- Historical records for certain regulated water quality parameters are either incomplete or could not easily be reviewed during the onsite inspection. In some cases (e.g., coliforms), older data are not stored onsite; rather, these records are retained by CWM Environmental (the contract laboratory that was performing many of required water quality analyses at the Aspinwall plant prior to March 2021). For other parameters, paper reports are stored in several locations within the Aspinwall plant (file cabinets, binders) and are not easy to retrieve or review. An archiving

effort is currently underway that involves organizing and scanning older paper reports. Laboratories are being asked to provide duplicate reports to complete the necessary onsite databases for regulated water quality parameters. 25 Pa. Code Chapter 109.701(d) indicates that laboratory reports (for regulated parameters) must be maintained onsite.

- Electronic data are currently being stored in multiple locations: SCADA historian, LIMS, shared intranet folders, etc. which can make it difficult to locate/retrieve historical compliance data. It is recommended that a “roadmap” be developed that identifies the locations of all water quality compliance data and that is readily accessible to PWSA personnel. It is also recommended that files (e.g., lab reports) be labelled such that the file contents are easily identified.

Documentation and Facilities Operation

The compliance status of the following documentation and facilities operation requirements was reviewed.

- Developing/maintaining an operations and maintenance plan
- Having a licensed operator in responsible charge of the treatment plant
- Conducting an annual system evaluation and documenting the results
- Maintaining an up-to-date system map
- Developing/maintaining an emergency response plan
- Developing/maintaining a comprehensive monitoring plan
- Filtering-to-waste until effluent turbidity is less than 0.30 NTU
- Implementing a filter bed evaluation program
- Conducting quarterly alarm tests

The information gathered during this review is summarized in Tables A-2 and A-3. The key findings and associated recommendations are as follows:

- No major compliance issues were discovered
- The emergency response plan includes sensitive (security-related) information and is therefore not readily available to most PWSA personnel. It is recommended that a redacted version be provided to operators and maintenance staff that does not contain sensitive material but does include certain “need to know” information (communication procedures and contact info., corrective actions for certain emergency situations, etc.).
- The yearly system evaluation currently consists of inspections performed as part of routine maintenance activities and an annual bond report prepared by an engineering firm. Since these activities do not typically cover all critical elements of the water system, it is recommended that an annual sanitary survey be performed (by PWSA personnel).

Table A-1. Drinking Water Compliance Audit – Regulated Water Quality Parameters and Treatment Requirements

Parameter	Sampling Location(s) Frequency	Measurement Performed by	Instrument (make/model)	Calibration Frequency Calibration Performed by	Method for Achieving Analytical Compliance*	Data Format and Storage Protocols	Full Compliance?
Combined Filter Effluent Turbidity	Combined filter effluent pipe for odd filters; combined filter effluent pipe for even filters (results are averaged) Continuous	Online instrument	HACH TU5400 and HACH 1720E (1720E serves as backup if TU5400 result is invalid)	Every 60 days Calibrations performed by PWSA laboratory staff Are calibration records up to date? YES	Turbidimeters are calibrated with an EPA-approved primary standard (formazin) at least every 90 days	Electronic results stored in SCADA historian; calibration data stored in lab binder At least 5 years of data? YES	YES
Individual Filter Effluent Turbidity	Effluent pipe for each filter Continuous	Online instrument	HACH TU5400 and HACH 1720E (each filter is equipped with one or the other)	Every 60 days Calibrations performed by PWSA laboratory staff Are calibration records up to date? YES	Turbidimeters are calibrated with an EPA-approved primary standard (formazin) at least every 90 days	Electronic results stored in SCADA historian; calibration data stored in lab binder At least 5 years of data? YES	YES
Entry Point Chlorine Residual	Clearwell outlet (entry point) Continuous	Online instrument	HACH CL17	EPA Method 334 compliance: - Initial demonstration of capability? YES - Routine grab sample comparisons (at least every 7 days) with a Method 334 compliant handheld or benchtop analyzer? YES (daily checks) Are calibration records up to date? YES	Chlorine analyzer is compliant with EPA Method 334	Electronic results stored in SCADA historian; calibration data stored in LIMS At least 3 years of data? YES	YES

Parameter	Sampling Location(s) Frequency	Measurement Performed by	Instrument (make/model)	Calibration Frequency Calibration Performed by	Method for Achieving Analytical Compliance*	Data Format and Storage Protocols	Full Compliance?
Giardia Inactivation – Chlorine Residual	Same as for entry point chlorine residual (chlorine residual data for calculating Giardia inactivation are generated by the entry point chlorine analyzer)						
Giardia Inactivation – Flow	Effluent pipe for each filter (results are summed)	Online instrument	Primary Flow Signal HVT-CI (cast iron venturi) + ABB 266DSH (differential pressure transmitter)	Annually Calibrations performed by an outside vendor (Primary Flow Signal) Are calibration records up to date? YES	N/A	Electronic results stored in SCADA historian; calibration records stored on shared intranet drive At least 3 years of data? YES	YES
Giardia Inactivation – pH	Clearwell outlet Continuous	Online instrument	HACH DPD2P1	Every 60 days Calibrations performed by PWSA laboratory staff Are calibration records up to date? YES	N/A	Electronic results stored in SCADA historian; calibration data stored in lab binder At least 3 years of data? YES	YES
Giardia Inactivation – Temperature	Same as for Giardia inactivation pH (the instrument that measures pH also measures temperature), except that the temperature sensor is calibrated annually						
Giardia Inactivation – Clearwell Volume (volume calculated based on water level)	Clearwell inlet Continuous	Online instrument	Siemens SITRANS Probe LU (ultrasonic level transmitter)	Not calibrated	N/A	Electronic results stored in SCADA historian	YES (user manual for level transmitter indicates that routine calibration is not required)

Parameter	Sampling Location(s) Frequency	Measurement Performed by	Instrument (make/model)	Calibration Frequency Calibration Performed by	Method for Achieving Analytical Compliance*	Data Format and Storage Protocols	Full Compliance?
Coliforms	Distribution system Multiple samples collected monthly	Outside laboratory (Microbac)	N/A	N/A	N/A	Microbac reports stored on shared intranet drive At least 5 years of data? NO (records from before March 2021 are not currently stored onsite; these records are retained by CWM Environmental)	NO (25 Pa. Code Chapter 109.701(d) indicates that laboratory reports must be maintained onsite)
Volatile Organic Chemicals	Clearwell outlet (entry point) Annual Samples collected by: Prior to March 2021, samples were collected by CWM Environmental; samples will now be collected by PWSA laboratory staff Have sample collectors been trained? NO (PWSA laboratory staff will begin collecting VOC samples in 2022 and will be trained beforehand)	Outside laboratory (Environmental Service Laboratories)	N/A	N/A	N/A	ESL reports stored on shared intranet drive At least 12 years of data? Possibly NO (some records from before March 2021 may not currently be stored onsite; these records are retained by various outside laboratories)	Possibly NO (25 Pa. Code Chapter 109.701(d) indicates that laboratory reports must be maintained onsite)

Parameter	Sampling Location(s) Frequency	Measurement Performed by	Instrument (make/model)	Calibration Frequency Calibration Performed by	Method for Achieving Analytical Compliance*	Data Format and Storage Protocols	Full Compliance?
Synthetic Organic Chemicals	Clearwell outlet (entry point) Every 3 years	Outside laboratory (Environmental Service Laboratories)	N/A	N/A	N/A	ESL reports stored on shared intranet drive At least 12 years of data? Possibly NO (some records from before March 2021 may not currently be stored onsite; these records are retained by various outside laboratories)	Possibly NO (25 Pa. Code Chapter 109.701(d) indicates that laboratory reports must be maintained onsite)
Inorganic Chemicals	Clearwell outlet (entry point) Annual	Outside laboratory (Environmental Service Laboratories)	N/A	N/A	N/A	ESL reports stored on shared intranet drive At least 12 years of data? Possibly NO (some records from before March 2021 may not currently be stored onsite; these records are retained by various outside laboratories)	Possibly NO (25 Pa. Code Chapter 109.701(d) indicates that laboratory reports must be maintained onsite)

Parameter	Sampling Location(s) Frequency	Measurement Performed by	Instrument (make/model)	Calibration Frequency Calibration Performed by	Method for Achieving Analytical Compliance*	Data Format and Storage Protocols	Full Compliance?
Fluoride (operational monitoring)	Clearwell outlet (entry point) Daily	PWSA laboratory staff	Thermo Scientific Orion Dual Star (ion specific electrode)	Daily Calibrations performed by PWSA laboratory staff Are calibration records up to date? YES	PWSA laboratory staff that conduct fluoride measurements have been trained on an SOP prepared by a certified laboratory (CWM Environmental)	Electronic results stored in LIMS; calibration data stored in LIMS At least 3 years of data? NO (records from before March 2021 are not currently stored onsite; these records are retained by CWM Environmental)	NO (25 Pa. Code Chapter 109.701(d) indicates that laboratory reports must be maintained onsite)
Disinfection Byproduct Precursors – Source TOC	East Intake (raw water) sample tap Monthly	Outside laboratory (Environmental Service Laboratories)	N/A	N/A	N/A	ESL reports stored on shared intranet drive At least 3 years of data? NO (records from before March 2021 are not currently stored onsite; these records are retained by CWM Environmental)	NO (25 Pa. Code Chapter 109.701(d) indicates that laboratory reports must be maintained onsite)

Parameter	Sampling Location(s) Frequency	Measurement Performed by	Instrument (make/model)	Calibration Frequency Calibration Performed by	Method for Achieving Analytical Compliance*	Data Format and Storage Protocols	Full Compliance?
Disinfection Byproduct Precursors – Post-Sedimentation TOC	Clearwell outlet (entry point) Monthly	Outside laboratory (Environmental Service Laboratories)	N/A	N/A	N/A	ESL reports stored on shared intranet drive At least 3 years of data? NO (records from before March 2021 are not currently stored onsite; these records are retained by CWM Environmental)	NO (25 Pa. Code Chapter 109.701(d) indicates that laboratory reports must be maintained onsite)
Disinfection Byproduct Precursors – Alkalinity	East Intake (raw water) sample tap Monthly	Outside laboratory (Environmental Service Laboratories)	N/A	N/A	N/A	ESL reports stored on shared intranet drive At least 3 years of data? NO (records from before March 2021 are not currently stored onsite; these records are retained by CWM Environmental)	NO (25 Pa. Code Chapter 109.701(d) indicates that laboratory reports must be maintained onsite)

Parameter	Sampling Location(s) Frequency	Measurement Performed by	Instrument (make/model)	Calibration Frequency Calibration Performed by	Method for Achieving Analytical Compliance*	Data Format and Storage Protocols	Full Compliance?
Radionuclides	Clearwell outlet (entry point) Every 9 years (next sampling event will occur in 2023)	Outside laboratory (to be determined)	N/A	N/A	N/A	Laboratory reports will be stored on shared intranet drive At least 12 years of data? NO (radionuclide results from 2014 (most recent radionuclide sampling event) are not currently stored onsite; these records are retained by the outside laboratory that conducted the analysis)	NO (25 Pa. Code Chapter 109.701(d) indicates that laboratory reports must be maintained onsite)
Lead And Copper Water Quality Parameters – pH	Clearwell outlet (entry point) Monthly	PWSA laboratory staff	Thermo Scientific Orion Star A Series (pH meter)	Daily Calibrations performed by PWSA laboratory staff Are calibration records up to date? YES	PWSA laboratory staff that conduct pH measurements have been trained on an SOP prepared by PWSA and reviewed by PADEP	Written results being scanned into DocuWare (document management software) At least 3 years of data? YES	YES

Parameter	Sampling Location(s) Frequency	Measurement Performed by	Instrument (make/model)	Calibration Frequency Calibration Performed by	Method for Achieving Analytical Compliance*	Data Format and Storage Protocols	Full Compliance?
Lead And Copper Water Quality Parameters – Alkalinity Chloride Conductivity Iron Manganese Total Dissolved Solids	Clearwell outlet (entry point) Monthly	Outside laboratory (Environmental Service Laboratories)	N/A	N/A	N/A	ESL reports stored on shared intranet drive At least 3 years of data? NO (records from before March 2021 are not currently stored onsite; these records are retained by CWM Environmental)	NO (25 Pa. Code Chapter 109.701(d) indicates that laboratory reports must be maintained onsite)

* For the parameters listed in Pa. Code 25 Chapter 109.304(c), manual measurements can be performed by: 1) an accredited lab, 2) a certified operator, 3) by someone using an SOP approved by a certified operator (who has direct responsibility for the operation of the plant). All other parameters must be measured by a lab that is accredited for those parameters. Online turbidimeters must be calibrated with an EPA-approved primary standard at least every 90 days. Online chlorine analyzers must be compliant with EPA Method 334.

Table A-2. Drinking Water Compliance Audit – Documentation Requirements

Document(s)	O&M Plan: Date of Last Update License(s): Expiration Date(s) System Evaluation: Date of Last Evaluation System Map: Date of Last Review/Update ERP: Date of Last Review/Update Monitoring Plan: Date of Last Review/Update	Location	Full Compliance?
Operation and Maintenance Plan	Date of last update: October 8, 2021 (plan was updated within the year prior to the onsite inspection)	Electronic version stored on shared intranet drive; SOP binders are kept in operating control rooms	YES
Operator License(s)	License for Jeff Turko (operator in responsible charge) expires on December 31, 2021 (license was valid at the time of the onsite inspection)	Licenses are displayed in the lobby outside the main operating control room	YES
System Evaluation Results	No formal system evaluation; inspections occur as part of yearly maintenance activities and an annual bond report that is prepared by an engineering firm	Maintenance logs and bond reports are stored on a shared intranet drive	NO (yearly maintenance- and bond-related inspections do not typically cover all critical elements of the water system; an annual internal sanitary survey would allow for a comprehensive system evaluation)
System Map	PWSA has developed a full system map in GIS that is frequently updated	GIS server	YES
Emergency Response Plan	Date of last update: September 15, 2021 (plan was updated within the year prior to the onsite inspection) Date of last update recorded on the plan? YES	Electronic version stored on shared intranet drive; access is currently limited due to the sensitive (security-related) information contained in the ERP	NO (Pa. Code 25 Chapter 109.702(c)(1) indicates that the ERP must be readily accessible to water system personnel; a redacted version could be made available that does not contain sensitive material, but does include certain "need to know" information (communication plan, important corrective actions, etc.)
Comprehensive Monitoring Plan	Date of last update/review: October 8, 2021 (plan was updated within the year prior to the onsite inspection) Date of last update recorded on the plan? NO	Electronic version stored on shared intranet drive	NO (Pa. Code 25 Chapter 109.718(c) indicates that the date of last update must be recorded on the plan)

Table A-3. Drinking Water Compliance Audit – Facilities Operation Requirements

Requirement	Status	Full Compliance?
Filter-to-waste until effluent turbidity is less than 0.30 NTU	Following a backwash, filters run to waste until effluent turbidity is below 0.10 NTU	YES
Filter bed evaluation program	Filter bed evaluation program currently includes: <ul style="list-style-type: none"> - Annual inspection of 4-6 filters by Leopold (Xylem) - Quarterly freeboard and bed expansion measurements by PWSA personnel - Producing and evaluating turbidity and head loss profiles for certain filters (this effort is being expanded) 	YES
Quarterly alarm tests (for individual and combined filter effluent turbidity, entry point chlorine, and water level for Giardia inactivation)	Last quarterly test performed on September 22, 2021 (alarm testing was up to date at the time of the onsite inspection)	YES

Appendix B

NPDES Compliance Audit

APPENDIX B

NPDES Compliance Audit

The NPDES compliance audit focused on the requirements set forth in Pa. Code 25 Chapter 252 (environmental laboratory accreditation) and in the NPDES permit for the Aspinwall Water Treatment Plant. In particular, the audit evaluated in-plant activities and conditions related to measuring and recording (storing) the results for the parameters required by the permit. The information needed for the audit was gathered through an onsite inspection, during which an auditor (from Arcadis) examined equipment, reviewed documents, and interviewed PWSA personnel.

The following elements of the NPDES-related data collection and storage efforts at the Aspinwall Water Treatment Plant were assessed during the onsite inspection:

- Benchtop instruments used for conducting compliance measurements
- Calibration and training records
- Electronic databases containing compliance results

The assessments were aimed at determining whether the data collection and record-keeping requirements outlined in Pa. Code 25 Chapter 252 and the NPDES permit for the Aspinwall plant are being met. The information gathered during the onsite inspection is summarized in Table B-1. The key findings and associated recommendations are as follows:

- No compliance issues were discovered
- At present, lab reports from before March 2021 are not stored onsite. These records are retained by CWM Environmental (the contract laboratory that was performing the required NPDES-related measurements at the Aspinwall plant prior to March 2021). Although the NPDES permit for the Aspinwall plant do not specify that laboratory reports be maintained onsite, it is recommended that lab reports from CWM Environmental (going back three years) be downloaded and stored on the shared intranet server. Onsite storage is more reliable than a data portal maintained by a third party.

Table B-1. NPDES Compliance Audit – Analytical and Recordkeeping Requirements

Parameter	Applicable Outfall(s)	Measurement Performed by	Instrument (make/model)	Calibration Frequency Calibration Performed by	Method for Achieving Analytical Compliance*	Data Format and Storage Protocols	Full Compliance?
Flow	7, 8, 12, 14, 15, 19, 23-25	PWSA laboratory staff or members of the PWSA environmental compliance group	Outfalls are not equipped with flow meters; flow is measured using a stopwatch and a container	N/A	N/A	Electronic results stored on shared intranet drive At least 3 years** of data? NO (records from before March 2021 are not currently stored onsite; these records are retained by CWM Environmental)	YES (NPDES permit does not require that records be maintained onsite)
pH	7, 8, 12-15, 19, 23-25	PWSA laboratory staff or members of the PWSA environmental compliance group	Thermo Scientific Orion Star A Series	Daily Calibrations performed by PWSA laboratory staff Are calibration records up to date? YES	PWSA personnel that conduct pH measurements have been trained on an SOP prepared by PWSA and reviewed by PADEP	Electronic results stored on shared intranet drive At least 3 years** of data? NO (records from before March 2021 are not currently stored onsite; these records are retained by CWM Environmental)	YES (NPDES permit does not require that records be maintained onsite)

Parameter	Applicable Outfall(s)	Measurement Performed by	Instrument (make/model)	Calibration Frequency Calibration Performed by	Method for Achieving Analytical Compliance*	Data Format and Storage Protocols	Full Compliance?
Total Suspended Solids	7, 8, 12-15, 19, 23-25	Outside laboratory (Environmental Service Laboratories)	N/A	N/A	N/A	Electronic results stored on shared intranet drive	YES (NPDES permit does not require that records be maintained onsite)
						At least 3 years** of data? NO (records from before March 2021 are not currently stored onsite; these records are retained by CWM Environmental)	
Aluminum	7, 14, 15, 19	Outside laboratory (Environmental Service Laboratories)	N/A	N/A	N/A	Electronic results stored on shared intranet drive	YES (NPDES permit does not require that records be maintained onsite)
						At least 3 years** of data? NO (records from before March 2021 are not currently stored onsite; these records are retained by CWM Environmental)	

Parameter	Applicable Outfall(s)	Measurement Performed by	Instrument (make/model)	Calibration Frequency Calibration Performed by	Method for Achieving Analytical Compliance*	Data Format and Storage Protocols	Full Compliance?
Iron	7, 8, 12, 14, 15, 19	Outside laboratory (Environmental Service Laboratories)	N/A	N/A	N/A	Electronic results stored on shared intranet drive	YES (NPDES permit does not require that records be maintained onsite)
						At least 3 years** of data? NO (records from before March 2021 are not currently stored onsite; these records are retained by CWM Environmental)	
Manganese	7, 14, 15, 19	Outside laboratory (Environmental Service Laboratories)	N/A	N/A	N/A	Electronic results stored on shared intranet drive	YES (NPDES permit does not require that records be maintained onsite)
						At least 3 years** of data? NO (records from before March 2021 are not currently stored onsite; these records are retained by CWM Environmental)	

Parameter	Applicable Outfall(s)	Measurement Performed by	Instrument (make/model)	Calibration Frequency Calibration Performed by	Method for Achieving Analytical Compliance*	Data Format and Storage Protocols	Full Compliance?
Oil and Grease	8, 12-19, 21, 23-25	Outside laboratory (Environmental Service Laboratories)	N/A	N/A	N/A	Electronic results stored on shared intranet drive	YES (NPDES permit does not require that records be maintained onsite)
						At least 3 years** of data? NO (records from before March 2021 are not currently stored onsite; these records are retained by CWM Environmental)	
Nitrate-Nitrate	8, 14, 16-19, 21, 23-25	Outside laboratory (Environmental Service Laboratories)	N/A	N/A	N/A	Electronic results stored on shared intranet drive	YES (NPDES permit does not require that records be maintained onsite)
						At least 3 years** of data? NO (records from before March 2021 are not currently stored onsite; these records are retained by CWM Environmental)	

Parameter	Applicable Outfall(s)	Measurement Performed by	Instrument (make/model)	Calibration Frequency Calibration Performed by	Method for Achieving Analytical Compliance*	Data Format and Storage Protocols	Full Compliance?
Phenolics	8, 12, 23-25	Outside laboratory (Environmental Service Laboratories)	N/A	N/A	N/A	Electronic results stored on shared intranet drive At least 3 years** of data? NO (records from before March 2021 are not currently stored onsite; these records are retained by CWM Environmental)	YES (NPDES permit does not require that records be maintained onsite)

* An environmental lab that is considered to have accreditation-by-rule can measure flow, pH, and total residual chlorine. All other parameters (required under the NPDES permit) must be measured by a laboratory that is accredited for those parameters.

** For parameters measured in-house (where the laboratory facilities at the Aspinwall plant serve as an accredited environmental lab), Pa. Code 25 Chapter 252 requires that laboratory results be maintained for at least 5 years. For parameters measured by an outside laboratory, the NPDES permit for the Aspinwall plant requires that laboratory results be maintained for at least 3 years. Given that PWSA was not in charge of the laboratory at the Aspinwall plant until March 2021, all results generated prior to March 2021 (even those produced in-house) were technically provided by an outside laboratory and therefore must be maintained for at least 3 years (as per the NPDES permit). Starting in March 2021, results generated in-house (and the associated lab records, as per Pa. Code 25 Chapter 252.706(b)) must be maintained for at least 5 years.

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