



Pittsburgh Water and Sewer Authority

Environmental Compliance Audit

Aspinwall Water Treatment Plant

900 Freeport Road

Pittsburgh, Pennsylvania

January 2, 2024

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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	horsepower
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

Environmental Compliance Audit - Aspinwall Water Treatment Plant

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	Rick 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 23rd – 26th 2023, 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 drinking water audit was conducted on November 8, 2023. 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, including Air Quality, and Water Quality and Supply.

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 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 finding 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, 2023, Renewal application was submitted December 31st, 2022. Updated permit is pending.
Wastewater Permit (Industrial Discharge)	P2-0008	October 1, 2020	September 30, 2025, Permit modification submitted December 30, 2022. Updated permit is pending.
	R-0183 (FRP Storage Tanks)	October 7, 2022	December 4, 2023
Air Emissions	WTP: 0117-OP21	March 23, 2021	March 22, 2026
Hazardous Waste Generator Status	PAR000561282 – SQG	December 7, 2021	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 type="checkbox"/> Potential Non-compliance <input checked="" 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, a spot check of online turbidimeter calibration records revealed a clerical error relating to the South CFE turbidimeters. Online turbidimeter calibration data are regularly reviewed by the Laboratory Manager. Notably, the calibration records currently include all calibration data, for both compliance and process monitoring instruments. It is recommended that the calibration data for compliance instruments be recorded separately, so that QA/QC reviewers can more easily focus on (and identify errors in) the calibration data required for compliance.</p> <p>It was also discovered that there is currently no approved SOP for the handheld meter used to measure orthophosphate levels in the finished water (a requirement for Lead and Copper Rule compliance). An SOP had been developed for measuring orthophosphate on a benchtop meter in the laboratory, but the benchtop meter is not normally used for compliance measurements. In-house compliance measurements that are accredited-by-rule (such as orthophosphate) must be performed by a certified operator or someone following an SOP approved by a certified operator (as per 25 Pa. Code Chapter 109.304(c)).</p> <p>Finally, historical records for the following regulated water quality parameters are incomplete: VOCs, SOCs, IOCs, and radionuclides. The external laboratory that performed many of the analyses for which the records are missing was asked to provide the necessary reports. However, the laboratory indicated that the reports are not available. Historical records for all other regulated parameters are complete. 25 Pa. Code Chapter 109 indicates that laboratory reports for regulated water quality parameters must be maintained onsite.</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 PA0218961.</p> <p>The Site submitted a permit renewal application on December 31, 2021, and is awaiting their final permit.</p>
<p>NPDES 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 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.</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 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 not undergoing construction; therefore, construction stormwater regulations do not apply. Major construction is planned for 2024 and therefore the Site will need to make the appropriate notifications.</p> <p>Regarding pollution prevention, there was several procedures in place which would prevent 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 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 an Integrated Contingency Plan (ICP) which was amended on February 22, 2023.</p> <p>It should be reviewed annually 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.</p> <p>The ICP will be reviewed again in March 2024.</p>

Compliance Topic	Compliance Status	Discussion
<p>Inspections and Violations</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>Since August 2022 PWSA has not received any other Notice of Violations.</p>

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>
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Compliance Topic	Compliance Status	Discussion
<p>Wastewater Discharge Permit</p>	<p> <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> In Compliance <input type="checkbox"/> Potential Non-compliance <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> <p>A permit modification submitted December 30, 2022. The Site is still waiting for their updated permit.</p> <p>They also have industrial wastewater discharge permit R-0183 associated with the FRP Storage Tanks. This permit was issued on October 7, 2022, and expired October 5, 2023. The Site received a permit extension which is posted in all applicable places. Everything also appears to be in order with this permit.</p>
<p>Inspections and Violations</p>	<p> <input checked="" type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> In Compliance <input type="checkbox"/> Potential Non-compliance <input type="checkbox"/> Non-compliance </p>	<p>The Site has not been subject to regulatory inspections by ALCOSAN regarding its wastewater permitting compliance. No NOV's associated with wastewater discharge or permitting were identified.</p> <p>The tag on Backflow Preventors P-16, P-17, P-18, P-19 and P-20 were confusing and showed an inspection date of 2021 and a smudged 2nd date. The Environmental Compliance Team later confirmed that the last inspection for these backflow preventors was 11/14/22.</p> <p>As a BMP, Remove the year 2021, which is found on the top of the inspection tag and update the tag to clearly show the proper inspection dates. Review all backflow preventor tags to ensure they clearly communicate the most recent inspection date.</p>

Compliance Topic	Compliance Status	Discussion
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>	<input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> In Compliance <input type="checkbox"/> Potential Non-compliance <input type="checkbox"/> Non-compliance	<p>ASTs are present and are registered.</p> <p>Registration certificates were placed near the tanks.</p>
<p>Tank Management</p> <p>The storage tank facility owner and operator shall immediately initiate the actions necessary to correct deficiencies noted during the 72-hour visual and monthly maintenance inspections.</p>	<input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> In Compliance <input type="checkbox"/> Potential Non-compliance <input type="checkbox"/> Non-compliance	<p>Tank inspections are being conducted and corrective action notifications being made to facility management, there is also notable improvement in the notification and corrective action process.</p>
<p>Training</p> <p>Employees shall be trained to conduct tank inspections and inventories.</p>	<input type="checkbox"/> Not Applicable <input type="checkbox"/> In Compliance <input checked="" type="checkbox"/> Potential Non-compliance <input type="checkbox"/> Non-compliance	<p>There is no current record keeping system for tank inspections and inventory training.</p>
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>	<input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> In Compliance <input type="checkbox"/> Potential Non-compliance <input type="checkbox"/> Non-compliance	<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> <p>PWSA intends to remove or close the tank in place in the coming year.</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>	<input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> In Compliance <input type="checkbox"/> Potential Non-compliance <input type="checkbox"/> Non-compliance	<p>A notification was provided to the SERC and LEPC on February 27, 2023, that the following EHSs are stored on site:</p> <ul style="list-style-type: none"> • Ferric Chloride • Fluorosilic Acid <p>No obvious deficiencies were identified.</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); Calcium Hypochlorite Granular; Cobaltous Sulfate; Cyclohexylamine; Ferric Chloride; Fluorosilic Acid; Gasoline; Lime Slurry Plus; Phosphoric Acid 75%; Potassium Permanganate; Powdered activated carbon, steam activated; Propane; Sodium bisulfite; Sodium carbonate peroxyhydrate; Sodium carbonate anhydrous; Sodium hexameta phosphate; Sodium Hydroxide 10-30%; Sodium Hypochlorite 12.5%; Sodium Permanganate; Sodium sulfite; and Stelcor 338.</p> <p>No obvious deficiencies were identified related to EPCRA Section 312 reporting requirements.</p>

Chemical Management

<p>Spill Procedures</p> <p>In areas where chemicals are being stored, employers must ensure that information pertaining to chemical hazards are adequately transmitted to employees.</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>Ensure employees are properly trained to notify Environmental Compliance when they utilize materials in a spill kit so the kit can be inspected, and a new tamper strip applied. Remind employees in the chemical feed building to replace spill cleanup materials so that adequate material is available when needed.</p> <p>In the sodium hypochlorite building, limit the number of 5-gallon jerricans required for transferring material and clean and dispose of those which are not necessary. Ensure containers needed to transfer material are properly labelled with the name of the chemical and hazard.</p>
<p>Container Management</p> <p>As a BMP, facility owner and operator shall visually inspect containers and immediately initiate the actions necessary to correct deficiencies.</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>In the sodium hypochlorite building, limit the number of 5-gallon jerricans required for transferring material and clean and dispose of those which are not necessary. Ensure containers needed to transfer material are properly labelled with the name of the chemical and hazard.</p>

Compliance Topic	Compliance Status	Discussion
<p>Propane Tanks</p> <p>Propane tanks shall be located outside a building, with the exceptions found at 29 CFR 1910.110(B)(6)(i)(a-f).</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>In the Aspinwall Pump Station external garage, there are propane tanks being stored in an improper manner. Two empty tanks that did not fit in the storage cages were strapped to the storage cages with a bungee cord.</p> <p>It was communicated by the Environmental Compliance Team that the propane tanks may no longer be needed.</p>
<p>Obsolete Chemicals</p> <p>As a BMP, facilities should develop a procedure where the Environmental Compliance Team is notified of obsolete materials and that they are properly disposed.</p> <p>Conducting periodic chemical sweeps to gather materials which may be obsolete or no longer needed is also important, especially in maintenance shops and areas where employee do not routinely enter.</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 planned an episodic event that would take place in November of 2023. In this event a large number of obsolete chemicals will be disposed of. The permit for this event was reviewed and appears to be in order.</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 checked="" type="checkbox"/> In Compliance</p> <p><input type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>The aggregate aboveground storage capacity of oils is approximately 2,200 gallons. An SPCC Plan, dated February 22, 2023, was prepared, implemented, and found to be adequate to meet the needs of the facility.</p> <p>It will be reviewed annually to ensure necessary updates are made.</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>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 checked="" 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>Secondary containment was observed around oil storage tanks. It appears to be adequate for the volumes stored.</p>
<p>Labeling</p> <p>Oil drums should have the appropriate labels to convey the contents and specific hazards.</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>In the Ross Pump Station 3rd floor mezzanine, there was a kerosene tank that did not have hazard labeled on the tank. The Environmental Compliance Team indicated that the drum was empty (it sounded hollow).</p> <p>Remove drums that are no longer in use. Those that are in use should have the appropriate hazard communication label.</p>
Air Quality		
<p>RICE Maintenance Documentation</p> <p>If you own or operate an existing stationary Reciprocating Internal Combustion Engines (RICE) located at an area source of Hazardous Air Pollutant (HAP) emissions, you must comply with the requirements in Table 2d of 40 CFR 63 Subpart ZZZZ and the operating limitations in Table 2b that apply to you.</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 facility is in compliance with maintenance documentation for the natural gas fired emergency engine that demonstrates that the engine is being maintained according to the maintenance practice requirements in 40 CFR 63 Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines since it was manufactured before June 12, 2006.</p> <p>PWSA has a contract with the engine manufacturer to perform semi-annual maintenance.</p>

Compliance Topic	Compliance Status	Discussion
<p>Portable Generator Engines</p> <p>If you own or operate portable generator engines, you must demonstrate that they do not operate at one location for more than 12 months and therefore do not trigger applicability of the federal engine rules.</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 operates several portable generator engines throughout the facility as the need arises. The facility has established a documentation template to be used to demonstrate that the portable engines do not operate at one location for more than 12 months and therefore do not trigger applicability of the federal engine rules, the documentation procedures have been implemented.</p>
<p>Air Permit 0117-OP21</p> <p>A permittee must ensure that all ensures that all compliance documents filed with the Agency reflect the current permit's issuance date and information.</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>Permit Condition 12 of Air Quality Permit 0117-OP21 requires that the annual compliance certification submitted to the Allegheny County Health Department list each condition of the permit and compliance status associated with the given requirement. However, the form that the Allegheny County Health Department provides to meet this condition only indicates for the facility to list any conditions that were not in compliance and allows global certification of compliance for requirements in compliance.</p> <p>First Half of Year Semi-Annual Emergency Generator Air Permit Reports submitted to the Allegheny County Health Department do not include 12-month rolling total of operating hours as required by Air Quality Permit 0117-OP21.</p>
<p>Risk Management Plan</p> <p>An owner or operator of a stationary source that uses or stores more than a threshold quantity (TPQ) of a regulated substance, as determined under 40 CFR 68.115, shall comply with the requirements to develop a Risk Management Plan (RMP) no later than the date on which a regulated substance is first present above a threshold quantity in a process.</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>There was an evaluation for the 2022 operating year the needs for an RMP program based on the 2021 operating year Tier II reported inventory of 19,480.95 lbs. of hydrogen chloride (anhydrous) (CAS # 7647-01-0). The Facility has established an RMP.</p>

Compliance Topic	Compliance Status	Discussion
<p>Inspections and Violations</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>On the first half 2023 semi-annual air permit report that was submitted to the Allegheny County Health Department, the daily emergency generator inspection log has a year switch after the February 1st from 2023 to 2022 for the remaining dates of the semi-annual period.</p> <p>The Service Report for 2023 indicates an incorrect date of February 2022 for service that was performed in February 2023.</p> <p>On the 2022 Annual Air Permit Compliance Certification submitted to the Allegheny County Health Department, the reporting period is listed as January 1, 2021, through December 31, 2021, rather than January 1, 2022, through December 31, 2022.</p>
Hazardous Waste Management		
<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 an SQG 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 checked="" type="checkbox"/> In Compliance</p> <p><input type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>Documentation appeared adequate regarding monthly waste generator status (hazardous and universal). As of 12/11/2023, the site identified as a Small Quantity Generator (SQG), and they track quantities to not exceed their storage limits.</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>Storage</p> <p>The small quantity generator must maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency (40 CFR 262.16(v))</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 cabinet in the Water Lab used to collect spent or obsolete basic chemicals was blocked and hard to access during an emergency. Nothing was currently stored in the cabinet.</p> <p>Ensure that areas used to store hazardous chemicals and waste are kept free of obstructions at all times, but especially when used to stored spent/obsolete chemicals awaiting proper disposal.</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 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 an Integrated Contingency Plan (ICP). The final ICP was amended on February 22, 2023.</p> <p>As an SQG they are required to maintain a basic Contingency Plan, which they are currently doing.</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 checked="" type="checkbox"/> In Compliance</p> <p><input type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>The Site tracks hazardous waste shipments using manifests as required.</p> <p>Employees signing hazardous waste manifests have the appropriate training and understand what they are signing.</p> <p>As a Best Management Practice, changes on manifests should be dated and initialled.</p>
<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. 40 CFR 262.16(b)(6)(i)(B)</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>In the North Garage waste staging area for hazardous waste, not all drums had the hazard of the contents clearly identified.</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 an SQG; therefore, Biennial Reports are not required.</p>

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Compliance Topic	Compliance Status	Discussion
<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 Environmental Compliance Program Manager, all signed manifests have been received from the designated facility/facilities within 60 days.</p>
<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 checked="" type="checkbox"/> In Compliance</p> <p><input 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>They have also continued keeping documentation pertaining to waste characterization (analytical, generator knowledge, etc.).</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>
<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 the PA DEP regarding RCRA compliance. No NOVs associated with waste compliance or RCRA were identified.</p>

Compliance Topic	Compliance Status	Discussion
Universal Waste Management		
<p>Container Labelling</p> <p>A small quantity handler of universal waste must label or mark the universal waste to identify the type of universal waste as specified in (a) to (f) of 25 Pa Code 266b.1.</p>	<input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> In Compliance <input type="checkbox"/> Potential Non-compliance <input type="checkbox"/> Non-compliance	<p>Universal waste was properly labelled.</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 in the Chemical Feed building, including a TV and air conditioner (non-CRT). The Environmental Compliance Team confirmed these items are obsolete and will be disposed of via a third-party.</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 checked="" type="checkbox"/> In Compliance <input checked="" type="checkbox"/> Potential Non-compliance <input type="checkbox"/> Non-compliance	<p>The municipal waste dumpster is enclosed with a hard top to prevent precipitation from entering. It appeared to also be leak-proof, insect-proof and rodent-proof.</p> <p>In the Hypochlorite building there were absorbent pads and gloves in the regular plant trash can. It was unclear whether the pads were used to clean up chemicals or other items.</p>
<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>

Compliance Topic	Compliance Status	Discussion
<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>	<p><input type="checkbox"/> Not Applicable</p> <p><input checked="" type="checkbox"/> In Compliance</p> <p><input checked="" type="checkbox"/> Potential Non-compliance</p> <p><input type="checkbox"/> Non-compliance</p>	<p>Most waste oil containers were observed to be covered and labelled. The Site does not mix other wastes with used oil.</p> <p>Waste oil storage areas include the Ross Pump Station top floor and the main building maintenance shop. Both areas had several drums, but they appear to be in good condition. The waste oil drum stored in the maintenance shop were difficult to access with several containers in front of it.</p>
<p>Waste Management Plan</p> <p>The site should document how they will manage waste at the facility including roles and responsibilities, waste determination procedure, type of waste manages at the site, containerization, labelling, storage and training.</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 current Waste Management Plan does not include management information for items which are being treated as Beneficial Reuse documenting the process of exemption from the "waste" category and steps taken to meet that exemption.</p> <p>As a BMP, add beneficial reuse waste information to the Waste Management Plan (SOP_EC_GEN-04-01).</p>
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>

Compliance Topic	Compliance Status	Discussion
Hazardous Building Materials		
<p>Lead-Based Paint</p>	<p> <input type="checkbox"/> Not Applicable <input checked="" type="checkbox"/> In Compliance <input type="checkbox"/> Potential Non-compliance <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>
<p>Asbestos and ACM</p>	<p> <input type="checkbox"/> Not Applicable <input type="checkbox"/> In Compliance <input checked="" type="checkbox"/> Potential Non-compliance <input type="checkbox"/> Non-compliance </p>	<p>A large piece of pipe insulation was exposed next to the electrician's office. It was suspected to be asbestos containing material (ACM) but due to age of building. If it contains ACM, there is a lack of labelling and proper management plan for ACM.</p> <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: Aspinwall Water Treatment Plant

(Audit performed in November and December 2023)

The drinking water compliance audit that was conducted for the Aspinwall Water Treatment Plant (WTP) in November and December 2023 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 mainly gathered through an onsite inspection, during which an auditor (from Arcadis) examined equipment, reviewed documents, and interviewed PWSA personnel. Documents and other audit-related information were also reviewed offsite. 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 WTP 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.
- Calibration records for all relevant instruments were up to date at the time of the onsite inspection. However, a spot check of the calibration records for online turbidimeters revealed a clerical error relating to the primary and secondary turbidimeters for the South CFE compliance location. The records indicated that during the most recent 60-day calibration event (which occurred in September 2023), the primary turbidimeter was calibrated twice, while the secondary turbidimeter was not calibrated at all. The PWSA staff member that conducted the calibrations explained that this was a misprint, and the error was immediately corrected. Online turbidimeter calibration records are regularly reviewed by the Laboratory Manager and presumably, clerical errors would normally be discovered and corrected during these reviews. Notably, the turbidimeter calibration records currently include all calibration data, for both compliance and process monitoring instruments. It is recommended that the calibration data for compliance instruments be recorded separately, so that QA/QC reviewers can more easily focus on (and identify errors in) the calibration data required for compliance. It is also recommended that the acceptable ranges for key parameters (e.g., the turbidity result for a 20 NTU standard) be listed on the calibration log sheet so that out-of-range values can more easily be noticed.

- A spot check of the daily grab sample chlorine results that are used to verify the accuracy of the online chlorine analyzer at the entry point (as per EPA Method 334 requirements) did not uncover any compliance issues. Grab sample chlorine results are recorded on the daily log sheet (known as the Big Board), alongside the corresponding online chlorine measurements. Consider adding the maximum acceptable difference between the grab sample and online results to the daily log sheet so that out-of-range online results (that would necessitate calibrating the online chlorine analyzer) are readily apparent.
- A spot check of the daily grab sample pH results that are used to verify the accuracy of the online pH meter at the clearwell outlet (which generates the pH values for determining the daily minimum Giardia inactivation) did not uncover any compliance issues. Grab sample pH results are recorded on the daily log sheet (Big Board), alongside the corresponding online pH measurements. Consider adding the maximum acceptable difference between the grab sample and online results to the daily log sheet so that out-of-range online results (that would necessitate calibrating the online pH meter) are readily apparent.
- A spot check of daily alkalinity results (that are used to comply with the water quality parameter monitoring requirements of the Lead and Copper Rule) did not uncover any compliance issues.
- In-house orthophosphate measurements are being used to comply with the water quality parameter monitoring requirements of the Lead and Copper Rule (25 Pa. Code Chapter 109.1103(c)(2)). Given that PWSA is accredited-by-rule for orthophosphate, these measurements must be performed by a certified operator or someone following an SOP approved by a certified operator (as per 25 Pa. Code Chapter 109.304(c)). In general, in-house orthophosphate measurements (for compliance with the Lead and Copper Rule) are performed using a Hach DR900 portable colorimeter, and at the time of the onsite inspection, an approved SOP for measuring orthophosphate using a Hach DR900 was not available. Notably, an approved SOP for measuring orthophosphate using a Hach DR6000 benchtop spectrophotometer had been developed since the previous drinking water audit (conducted in 2022), however, the DR6000 is not normally used for compliance measurements. Therefore, an SOP for measuring orthophosphate using a DR900 colorimeter (that is approved by a certified operator) will need to be developed.
- During the drinking water compliance audit (of the Aspinwall WTP) that took place in 2021, it was discovered that the historical records for certain regulated water quality parameters were incomplete. 25 Pa. Code Chapter 109.701(d) indicates that laboratory reports for regulated parameters must be maintained onsite. Since the 2021 audit, PWSA has contacted the various laboratories that previously conducted compliance measurements and asked them to provide all previous reports from the relevant timeframe. Some reports have been received and as a result, the historical records for certain parameters (that were previously incomplete) are now up to date. However, the external laboratory that performed many of the analyses for which the records are missing (ALS) has indicated that these reports are not available. Thus, the records for certain parameters (VOCs, SOCs, IOCs, and radionuclides) will likely remain incomplete until the older records that are missing are no longer needed (i.e., once the reports stored onsite cover the requisite number of years). If in the meantime information from the missing laboratory reports is needed, much of it can be accessed via the online Drinking Water Reporting System maintained by the PADEP.

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.
- It was noted that locating electronic versions of certain compliance documents, including the Operation and Maintenance Plan and Emergency Response Plan, can be challenging. The PWSA leadership personnel that participated in the onsite inspection were not able to locate the aforementioned documents without help from other staff members. It is recommended that a site map be developed for the shared intranet folders that house compliance documents. This would allow for easier retrieval of these documents during audits, emergencies, etc.
- The PWSA staff member responsible for reviewing/updating the Emergency Response Plan indicated that the plan had been updated several times in 2023. However, at the time of the onsite inspection, the date of the last update was not recorded on the plan. 25 Pa. Code Chapter 109.707(c) indicates that the Emergency Response Plan must include the date of the last update. Also, given that the Emergency Response Plan must at least be reviewed annually (see 25 Pa. Code Chapter 109.701(c)), consider also recording the date of last review. Although recording the date of last review is not required, including it on the Emergency Response Plan would be a simple way to demonstrate that the document has at least been reviewed during a year when no updates occurred.
- The Comprehensive Monitoring Plan includes several sections, and these are stored as separate documents. Some of the sections (e.g., the Lead and Copper Rule sampling plan) have been revised several times since the entire Plan was reviewed and updated in July 2022. The individual sections (documents) include the date of last update, as required under 25 Pa. Code Chapter 109.718(c). Consider developing a cover page for the Comprehensive Monitoring Plan that lists the date of last update for each section of the Plan, so that these required (compliance) dates are stored in one location. Also, consider recording the date of last review for each section on the cover page. Every section of the Comprehensive Monitoring Plan must at least be reviewed annually. Although recording the dates of last review for the various sections is not required, including it on the cover page would be a simple way to demonstrate that each section has at least been reviewed during a year when no updates occurred.

Table A-1. Drinking Water Compliance Audit: Aspinwall WTP (Nov / Dec 2023) – Regulated WQ 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)	Online instrument	Primary and secondary Hach TU5400 at each location (secondary unit serves as backup if result from primary unit is invalid)	Every 60 days Calibrations performed by PWSA lab staff	Turbidimeters are calibrated with an EPA-approved primary standard (formazin) at least every 90 days	Electronic results stored in SCADA historian (secondary server provides backup for historian); calibration data stored in lab binder	YES
	Continuous			Are calibration records up to date? YES (Note: a spot check of the calibration records for September 2023 revealed that there was no entry for the secondary turbidimeter at South CFE; this turned out to be a clerical error and it was corrected during the audit)		At least 5 years of data? YES	
Individual Filter Effluent Turbidity	Effluent pipe for each filter	Online instrument	Lovibond PTV 1000	Every 60 days Calibrations performed by PWSA laboratory staff	Turbidimeters are calibrated with an EPA-approved primary standard (formazin) at least every 90 days	Electronic results stored in SCADA historian (secondary server provides backup for historian); calibration data stored in lab binder	YES
	Continuous			Are calibration records up to date? YES		At least 5 years of data? 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?
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) Calibrations and calibration checks performed by PWSA lab staff	Chlorine analyzer is compliant with EPA Method 334	Electronic results stored in SCADA historian (secondary server provides backup for historian); calibration data stored in lab binder and on shared intranet drive At least 3 years of data? YES	YES
Giardia Inactivation – Chlorine Residual							
Giardia Inactivation – Flow	Effluent pipe for each filter (results are summed)	Online instrument	Primary Flow Signal HVT-Cl (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 (secondary server provides backup for historian); calibration records stored on shared intranet drive 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 – pH	Clearwell outlet Continuous	Online instrument	HACH DPD2P1	Calibrations occur when daily benchtop results differ from online readings by more than a threshold amount (as determined by the Laboratory or Data Manager) Calibrations and calibration checks performed by PWSA lab staff	N/A	Electronic results stored in SCADA historian (secondary server provides backup for historian); calibration data stored in lab binder and on Teams site At least 3 years of data? YES	YES
Giardia Inactivation – Temperature							
Giardia Inactivation – Clearwell Volume (volume calculated based on water level)	Clearwell inlet Continuous	Online instrument	Vegapuls 31 (radar-based level sensor); installed in March 2022	User manual for level transmitter indicates that routine calibration is not required; PWSA is developing a procedure for verifying online level result	N/A	Electronic results stored in SCADA historian (secondary server provides backup for historian) 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?
Coliforms	Distribution system Multiple samples collected monthly	PWSA lab staff	Total coliform and E. coli measurements are conducted via Colilert 24 (Standard Method 9223)	N/A	Lab accreditation for measuring total coliform and E. coli via Colilert 24 (accreditation valid through May 2024)	Electronic results stored in LIMS (third party provides daily backup for LIMS)	YES
						At least 5 years of data? YES	
Volatile Organic Chemicals	Clearwell outlet (entry point) Annually Samples collected by: PWSA lab staff Have sample collectors been trained? YES	Outside laboratory (Environmental Service Laboratories)	N/A	N/A	N/A	Outside lab reports stored on shared intranet drive At least 12 years of data? NO (records from before 2017 are not currently stored onsite; these are available via the PADEP DWRS)	NO (25 Pa. Code Chapter 109.701(d) indicates that laboratory reports must be maintained onsite)
Synthetic Organic Chemicals	Clearwell outlet (entry point) Every 3 years for most SOCs; annually for certain chemicals	Outside laboratory (Environmental Service Laboratories)	N/A	N/A	N/A	Outside lab reports stored on shared intranet drive At least 12 years of data? NO (records from before 2017 are not currently stored onsite; these are available via the PADEP DWRS)	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?
Inorganic Chemicals	Clearwell outlet (entry point) Annually	Outside laboratory (Environmental Service Laboratories)	N/A	N/A	N/A	Outsidelab reports stored on shared intranet drive NO (25 Pa. Code Chapter 109.701(d) indicates that laboratory reports must be maintained onsite) At least 12 years of data? NO (records from before 2017 are not currently stored onsite; these are available via the PADEP DWRS)	
Fluoride (operational monitoring)	Clearwell outlet (entry point) Daily	PWSA lab staff	Thermo Scientific Orion Dual Star (ion specific electrode)	Daily Calibrations performed by PWSA lab staff Are calibration records up to date? YES	PWSA lab staff that conduct fluoride measurements have been trained on an SOP prepared by PWSA and approved by a certified operator (Linda Leopold)	Written results (including calibration data) are stored in binders; data are also entered into LIMS (third party provides daily backup for LIMS)	YES
Disinfection Byproduct Precursors – Source TOC	East Intake (raw water) sample tap Quarterly	Outside laboratory (Environmental Service Laboratories)	N/A	N/A	N/A	Outsidelab reports stored on shared intranet drive At least 3 years of data? YES	YES
Disinfection Byproduct Precursors – Post-Sedimentation TOC	Clearwell outlet (entry point) Quarterly	Outside laboratory (Environmental Service Laboratories)	N/A	N/A	N/A	Outsidelab reports stored on shared intranet drive 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?
Disinfection Byproduct Precursors – Alkalinity	East Intake (raw water) sample tap Quarterly	Outside laboratory (Environmental Service Laboratories)	N/A	N/A	N/A	Outsidelab reports stored on shared intranet drive At least 3 years of data? YES	YES
Radionuclides	Clearwell outlet (entry point) Every 9 years (latest sampling event occurred in 2023)	Outside laboratory (Pace Analytical)	N/A	N/A	N/A	Outsidelab reports stored on shared intranet drive At least 12 years of data? NO (radionuclide results from 2014 (nine years ago) are not currently stored onsite; these are available via the PADEP DWRS)	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) Daily	PWSA lab staff	Thermo Scientific Orion Star A Series (pH meter)	Daily Calibrations performed by PWSA lab staff Are calibration records up to date? YES	PWSA lab staff that conduct pH measurements have been trained on an SOP prepared by PWSA and approved by a certified operator (Linda Leopold)	Written results (including calibration data) are stored in binders; data are also entered into LIMS (third party provides daily backup for 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?
Lead And Copper Water Quality Parameters – Alkalinity	Clearwell outlet (entry point) Daily	PWSA lab staff	Alkalinity measurements are conducted via manual titrations with standardized acid, using bromocresol green as the pH indicator (Standard Method 2320)	N/A	PWSA lab staff that conduct alkalinity measurements have been trained on an SOP prepared by PWSA and approved by a certified operator (Linda Leopold)	Written results (including calibration data) are stored in binders; data are also entered into LIMS (third party provides daily backup for LIMS)	YES
Lead And Copper Water Quality Parameters – Orthophosphate	Aspinwall Pump Station Daily	PWSA lab staff	HACH DR900 (portable colorimeter)	N/A	At the time of the audit, orthophosphate measurements were not being performed by a certified operator or by staff that were following an SOP approved by a certified operator	Written results are stored in binders; data are also entered into LIMS (third party provides daily backup for LIMS)	NO (Pa. Code 25 Chapter 109.304(c) indicates that orthophosphate measurements for compliance can only be performed: a) at an accredited lab, b) by a certified operator, or c) by someone following an SOP approved by a certified operator)

* 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: Aspinwall WTP (Nov / Dec 2023) – 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: July 17, 2022 Date of last update recorded on plan? YES	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, 2024	Licenses are displayed in the lobby outside the main operating control room	YES
System Evaluation Results	Internal sanitary survey performed in June/July 2023	Electronic versions of sanitary survey reports are stored on shared intranet drive	YES
System Map	PWSA has developed a full system map in GIS that is frequently updated	GIS server	YES
Emergency Response Plan	Date of last review/update: ERP was updated several times in 2023; however, at the time of the audit, the date of the last update was not recorded on the plan Date of last update recorded on plan? NO (see above)	Electronic version stored on shared intranet drive (access limited to leadership staff); critical ERP information is included in the Environmental Compliance Manual, which is accessible to all PWSA staff (both in printed and electronic form)	NO
Comprehensive Monitoring Plan	Date of last review/update: July 12, 2022 (sections of the CMP have been updated since the entire plan was reviewed/updated; latest versions of CMP sections include date of last update)	Electronic version stored on shared intranet drive	YES
Date of last update recorded on plan? YES			

Table A-3. Drinking Water Compliance Audit: Aspinwall WTP (Nov / Dec 2022) – 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 staff - Producing and evaluating turbidity profiles (also performed by PWSA staff) 	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 21, 2023	YES

APPENDIX B

NPDES Compliance Audit: Aspinwall Water Treatment Plant

(Audit performed in November and December 2023)

The NPDES compliance audit that was conducted for the Aspinwall Water Treatment Plant (WTP) in November and December 2022 focused on the requirements set forth in Pa. Code 25 Chapter 252 (environmental laboratory accreditation) and in the NPDES permit for the Aspinwall WTP. 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 mainly gathered via an offsite review of NPDES-related documents.

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

- 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 WTP are being met. The information gathered during the audit is summarized in Table B-1. No compliance issues were discovered.

Table B-1. NPDES Compliance Audit: Aspinwall WTP (Nov / Dec 2023) – 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 environmental compliance staff	Outfalls are not equipped with flow meters; flow is measured using a stopwatch and a container	N/A	N/A	Electronic results stored on Teams site At least 3 years** of data? YES	YES
pH	7, 8, 12-15, 19, 23-25	PWSA environmental compliance staff	Thermo Scientific Orion Star A Series (pH meter)	Within 24 hours prior to use Calibrations performed by PWSA environmental compliance staff	PWSA staff that conduct pH measurements have been trained on an SOP prepared by PWSA that aligns with Standard Method 4500-H ⁺ .B	Electronic results stored on Teams site At least 3 years** of data? YES	YES
Total Residual Chlorine	7, 8, 12, 14, 15, 19, 23-25	PWSA environmental compliance staff	HACH DR900 (portable colorimeter)	User manual for DR900 indicates that routine calibration is not required	PWSA staff that conduct total chlorine measurements have been trained on an SOP prepared by PWSA that aligns with Standard Method 4500-Cl.B	Electronic results stored on Teams site At least 3 years** of data? YES	YES
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 Teams site At least 3 years** of data? YES	YES

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?
Aluminum	7, 14, 15, 19	Outside laboratory (Environmental Service Laboratories)	N/A	N/A	N/A	Electronic results stored on Teams site At least 3 years** of data? YES	YES
Iron	7, 8, 12, 14, 15, 19	Outside laboratory (Environmental Service Laboratories)	N/A	N/A	N/A	Electronic results stored on Teams site At least 3 years** of data? YES	YES
Manganese	7, 14, 15, 19	Outside laboratory (Environmental Service Laboratories)	N/A	N/A	N/A	Electronic results stored on Teams site At least 3 years** of data? YES	YES
Oil and Grease	8, 12-19, 21, 23-25	Outside laboratory (Environmental Service Laboratories)	N/A	N/A	N/A	Electronic results stored on Teams site At least 3 years** of data? YES	YES
Nitrate-Nitrate	8, 14, 16-19, 21, 23-25	Outside laboratory (Environmental Service Laboratories)	N/A	N/A	N/A	Electronic results stored on Teams site At least 3 years** of data? YES	YES

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 Teams site At least 3 years** of data? YES	YES

* 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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