

**Audit of Utilities Storage,
Handling, Management and
Disposal of Hazardous
Materials and Waste**



**Phil Diamond, CPA
County Comptroller
Orange County, Florida**

www.occompt.com



**Report No. 502
August 2023**

County Audit Division

Wendy Kittleson, CPA, CISA, CIA
Assistant Comptroller

Lisa Fuller, CISA, CIA, CGAP
Director

Erin Boley, CPA, CIA
Deputy Director

Audit Team

Krupali Patel, CIA, CFE
Audit Supervisor

Christina Eng
Senior Auditor

Malica Williams
Senior Auditor

Orange County Comptroller's Office

Mission

The mission of the Orange County Comptroller's Office is to serve the citizens of Orange County and our customers by providing responsive, ethical, effective, and efficient protection and management of public funds, assets, and documents, as specified in the Florida Constitution and Florida Statutes.

Vision

The vision of the Orange County Comptroller's Office is to be recognized as a highly competent, cohesive team leading the quest for continuing excellence in the effective safeguarding and ethical management of public funds, assets, and documents.



TABLE OF CONTENTS

TRANSMITTAL LETTER	1
EXECUTIVE SUMMARY	2
Background.....	5
Audit Scope.....	8
Audit Objectives	8
Audit Methodology	8
Overall Evaluation.....	9
RECOMMENDATIONS FOR IMPROVEMENT	10
1. Management Should Ensure Materials, Waste, and Safety Equipment are Properly Managed and Maintained.	10
2. Management Should Properly Dispose of Hazardous Waste.....	16
3. Management Should Properly Remove, Transfer, and Dispose of Asbestos Containing Material.....	18
4. Management Should Complete Exposure Level Monitoring and Prevention Procedures.	20
5. Management Should Comply With FDEP Waste Tire Collection Center Requirements.	22
ACTION PLAN	25
APPENDIX A — INSPECTION CRITERIA	27
APPENDIX B — MANAGEMENT’S RESPONSE	35



OFFICE OF THE COMPTROLLER

**ORANGE
COUNTY
FLORIDA**

PHIL DIAMOND, CPA
County Comptroller
County Audit Division
Post Office Box 38
Orlando, FL 32802
Telephone: 407-836-5775
www.occompt.com

August 09, 2023

Jerry L. Demings, County Mayor
and
Board of County Commissioners

We have conducted an audit of Utilities' hazardous materials and waste management program. The audit was limited to a review of Utilities' storage, handling, management, and disposal of various hazardous materials and waste. The period audited was January 2020 through October 2020 with site inspections performed in August 2021.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Responses to our Recommendations for Improvement were received from the Director of Utilities and are incorporated herein.

We appreciate the cooperation of Utilities personnel during the course of the audit.

Phil Diamond, CPA
County Comptroller

c: Byron Brooks, County Administrator
Jon V. Weiss, Deputy County Administrator
Ed Torres, Director, Utilities Department



Why This Audit Is Important

The proper storage, handling, management, and/or disposal of hazardous and other regulated materials and waste is essential to providing a safe environment for Orange County employees, contractors, and the public. In addition to protecting individuals, an uncontrolled release of hazardous materials could pose a threat to drinking water or harm the environment, animals and plant life.

The Objective of Our Audit

The objective of the audit was to ensure that hazardous materials and waste were stored, handled, managed, and disposed of in accordance with Utilities policies and state and federal regulations.

What We Found

Materials, Waste, and Safety Equipment were not Properly Stored, Managed, or Maintained (Page 10).

During inspections, hazardous materials and hazardous waste containers were observed without labels or with illegible labels. Flammable materials were stored outside of fire safety cabinets and used oil was not stored in a manner to prevent spills. Additionally, safety and emergency response equipment at several facilities was not clearly identified, easily accessible, or inspected timely.

Hazardous Waste was Improperly Accepted by the Water Laboratory (Page 16).

The Water Laboratory accepted waste from Orange County wastewater treatment plants and water supply facilities. Acceptance of the waste subjected the lab to the full hazardous waste regulations-which can be difficult and costly to implement.

Waste Shipment Records for Asbestos Containing Materials were not Properly Completed nor Maintained (Page 18).

A pipe containing asbestos was removed in 2020 by Field Services. However, there was no waste shipment record showing that the pipe was properly disposed of. Shipping records for two other discarded pipes containing asbestos were missing required information.

Evidence of Proper Supervision and Use of Safety Equipment for the Removal of Asbestos Containing Material was not Maintained (Page 18).

None of the three reviewed work orders for the removal of asbestos containing pipe showed that personal protective equipment (PPE) was used during the removals. The work orders also didn't describe the method used to perform the work. Additionally, one of the three work orders did not show that a "competent person" trained in the supervision of asbestos removal work supervised the removal of the asbestos containing pipe. Twenty-five Field Services employees were identified as "competent persons" trained to supervise asbestos removal. However, refresher training was not completed in 2018 or 2019 for any of the 25 employees.

Exposure Level Monitoring was not Timely Completed (Page 20).

There was no evidence of any exposure level monitoring of the Wet Chemistry Lab. The last known monitoring of the Metals Lab was performed in 2011. Risk assessments should be conducted to ensure exposure remains at permissible levels and to determine whether further exposure level monitoring may be required.

Chemical Fume Hoods were Operating Outside the Acceptable Range and Evidence of Corrective Actions was not Available (Page 20).

Chemical fume hood face velocity was above the acceptable range in 37 of 85 fume hood inspections reviewed. More than 25% of the face velocities were 20% higher than the maximum velocity allowed. Thirty-three of the 37 (89%) fume hoods were not included in subsequent corrective action plan documentation.

FDEP Waste Tire Collection Center Requirements were not Consistently Followed (Page 22).

The following Florida Department of Environmental Protection (FDEP) Waste Tire Collection Center requirements were not met:

- A fire safety survey of the landfill waste tire collection center, where the majority of waste tires are collected from the public, has never been conducted.
- The Porter Transfer Station is not registered as a waste tire collection center, however tires from the public were accepted at the transfer station.
- Solid Waste's written procedures failed to address procedures to contain and dispose of oily material generated by accidental waste tire fires and subsequent reporting of such fires to the FDEP.



Overall Evaluation (Page 9)

Based on the results of our testing, the storage, handling, management, and disposal of hazardous materials and waste could be improved to limit exposure and unsafe conditions for employees, contractors and the environment. We noted multiple areas of improvement in the Recommendations section of this report.



INTRODUCTION

Background

Orange County Utilities has over 1,000 team members working to provide water resources and solid waste recovery services to the public. The Department includes the following divisions:

- **Water:** Water provides a safe and reliable water supply for Orange County customers and is responsible for the operation of the laboratory, three regional and nine remote water supply facilities.
- **Water Reclamation:** Water Reclamation provides environmentally safe wastewater treatment and operates and maintains four wastewater treatment plants, as well as the production of reclaimed water.
- **Field Services:** Field Services inspects, operates, and maintains the water transmission and distribution, wastewater collections, and reclaimed water transmission systems, including over 800 pump stations, transfer stations and over 4,000 miles of underground piping.
- **Solid Waste:** Solid Waste provides residential curbside collection of garbage, yard waste, and recyclable materials and oversees the largest publicly owned landfill in Florida, two transfer stations, and one recycling transfer station.

Each division operates large industrial complexes with hazardous materials and/or varying types of hazardous or other regulated wastes generated as part of day-to-day operations. The different types of materials and wastes are described below.

Hazardous Materials:

All Utilities divisions use hazardous materials such as fuel, paint, and cleaning supplies for day-to-day operations. The Utilities Water Lab maintains chemicals for lab tests including, but not limited to: toxic and corrosive substances, carcinogens, flammable liquids, and compressed gases. OSHA's Hazard Communication Standard requires hazardous chemicals to be labeled with pictograms*, a signal word, hazard and precautionary statements, the product identifier, and supplier identification.

OSHA Hazard Pictograms*



*OSHA Pictograms are hazard symbols printed on labels that are adhered to chemical as a warning of the chemical's hazards.

INTRODUCTION



Chlorine and Fluoride are some of the chemicals used to treat water or wastewater at the Water Supply Facilities and Wastewater Treatment Plants. The chemicals are stored in large tanks referred to as above ground storage tanks (AST). To protect from an uncontrolled release, AST's should be in good condition, have overfill protection in place, and be placed in secondary containment.

Used Oil

Some divisions store used oil or filters after performing vehicle or equipment maintenance on site. The divisions contract with a third party to transport used oil or filters to a permitted facility for reuse or disposal.

FDEP has implemented a used oil management program that addresses proper used oil and filter management and disposal to protect natural resources and underground drinking water.

Household Hazardous Waste (HHW)



Hazardous waste generated in a household, such as paint products, pool chemicals, or household cleaners, is not regulated as hazardous waste. Instead, it is regulated as household hazardous waste (HHW). Solid Waste operates a HHW collection program. HHW collection facilities are operated by third party contractors that collect, sort and prepare the waste for transport to a permitted Treatment, Storage, and Disposal Facility (TSDF).

FDEP provides collection facility standards for required on-site containment and safety equipment. They also require training for site personnel, operational and maintenance requirements, and contingency and emergency response plans.

INTRODUCTION

Asbestos Containing Material

Cement piping constructed with Asbestos-Cement (A-C) was widely used until it was phased out in the late 1980s. These pipes had estimated service lives of 50 to 70 years. Approximately 32 miles of A-C piping are still in service throughout Orange County. When A-C pipes fail, Field Services replaces and disposes of the piping. Federal rules¹ provide specific requirements for removal and disposal of asbestos containing materials to limit the release of asbestos. OSHA standards require training for employees involved in asbestos removal.

Waste Tires



Solid Waste collects waste tires through the curbside collection program and drop-off at the landfill. The tires are stored at a designated outdoor area before third party collection for recycling or disposal.

FDEP regulates storage, collection, transportation and disposal of waste tires. These requirements address

fire prevention, emergency response and reporting procedures.

Hazardous Waste & Hazardous Waste Generators:

Tests performed by the Utilities water lab, water supply facilities, and wastewater treatment plants may generate hazardous waste as a byproduct. Waste is considered hazardous if:

1. It is known to be harmful to human health and the environment when not managed properly; or,
2. It exhibits one or more of the following characteristics: ignitable, corrosive, reactive, or toxic.



Corrosive: Rust or
Decompose Metals



Toxic:
Poisonous



Ignitable:
Catches Fire



Reactive: Unstable
and Explodes

The Environmental Protection Agency (EPA) regulates hazardous waste under the Resource Conservation and Recovery Act (RCRA) to protect human health and the environment.

¹ The Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP)



INTRODUCTION

Audit Scope

The audit scope was limited to procedures for safe storage, handling, management, and disposal of hazardous materials and waste. The audit period was January 2020 through October 2020 with site inspections performed in August 2021.

Audit Objectives

The objective of the audit was to ensure that hazardous materials and waste were stored, handled, managed, and disposed of in accordance with Utilities policies and state and federal regulations.

Audit Methodology

To meet the audit objectives, we inspected records to confirm that:

- Written plans, policies, and standard operating procedures existed, included all required elements, and were available to employees;
- Applicable Field Services employees received training, including annual refresher training, on asbestos containing materials removal procedures;
- Asbestos containing materials and hazardous waste removed, transported, and disposed during the testing period had proper documentation in accordance with federal and state regulations and internal policy;
- Household hazardous waste contractors received timely operational and safety trainings;
- An annual fire safety survey was performed by a fire marshal for all waste tire collection centers;
- Chemical hygiene plan and emergency response training was completed timely for a sample of 14 laboratory employees, including five (5) new hires; and,
- Timely inspections of laboratory safety equipment were completed in accordance with internal policy and corrective actions taken were documented.

Audit also observed facility operations with the assistance of a professional environmental consulting firm (Consultants) to validate:²

- Hazardous materials, used oil, and hazardous and universal waste were labeled, stored, and disposed of appropriately;

² The list of procedures performed by subject matter experts included is not inclusive of all work performed.



INTRODUCTION

- Above ground storage tanks (AST) were in good condition and had proper secondary containment;
- Safety and emergency response equipment were clearly identified, easily accessible, and inspected timely;
- Safety Data Sheets (SDS) were made available for hazardous chemicals.
- Risk assessments were completed to assess whether additional exposure monitoring was required to ensure employees were not exposed or potentially exposed to hazardous chemicals above OSHA's permissible exposure limits;
- Household hazardous waste and waste tire collection centers were managed in accordance with FDEP standards and best practices; and
- Facilities were physically secure.

Overall Evaluation

Based on the results of our testing, the storage, handling, management, and disposal of hazardous materials and waste could be improved to limit exposure and unsafe conditions for employees, contractors and the environment. We noted multiple areas of improvement in the Recommendations section of this report.

1. Management Should Ensure Materials, Waste, and Safety Equipment are Properly Managed and Maintained.

In order to verify that Utilities sites were complying with state and federal regulations, audit inspected 13 locations, including:

- Solid Waste: the Orange County landfill, one transfer station, two household hazardous waste collection facilities, and one waste tire collection center
- Water Reclamation: three regional wastewater treatment plants
- Water Division: the water lab and three regional water supply facilities
- Field Services Division: one storage warehouse

Our office contracted with a professional environmental consulting firm (Consultants) to assist with inspections. Inspections included, but were not limited to, validating whether:

- Hazardous materials, used oil, and universal waste were labeled, stored, and disposed of appropriately;
- Above ground storage tanks (AST) were in good condition and had proper secondary containment;
- Safety and emergency response equipment were clearly identified, easily accessible, and inspected timely; and
- Safety Data Sheets (SDS) were made available for hazardous chemicals.

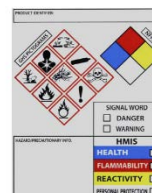
Several areas of improvement were identified during the inspections and are summarized below. Refer to Appendix A (Page 27) for the criteria related to each issue noted below.



Containers with illegible or no labels

Container Labeling:

Materials were stored in containers with no labels or illegible labels. Additionally, several secondary containers³ were missing labels that include the hazard contents. On two



Example of secondary containment label

³ When you transfer contents from the original container to another container, the container the contents are transferred to is called a “secondary container”.

containers original labels were blocked out. Instead, a sticker was affixed to the containers that stated “special use.”

During inspections, we observed that hazardous waste was generated and accumulated at the water laboratory, water supply facilities, and wastewater treatment plants. There were accumulation containers that we observed with no labels showing the hazard contents, either in words or pictograms.



Hazardous Waste labeled but hazard not identified



Hazardous Waste label with hazards identified

Without appropriate labeling, container contents are unknown. That makes it difficult to identify appropriate storage and disposal requirements or spill response.

Compressed Gas Storage:



Chains around cylinders may not prevent them from tipping over.

Compressed gas cylinders should be stored upright and chained to avoid accidental tipping. Cylinders stored at one facility were chained. However, these chains may not prevent the cylinders from tipping.

At two facilities, oxygen and acetylene cylinders were stored within 20 feet of one another. Due to the combustibility between these two compressed gases, they should be separated when not in use. The cylinders were separated by Utilities team members while we were on site.



Oxygen and acetylene cylinders were stored within 20 feet of one another.

Flammable Material Storage:

When the amount of flammable or combustible materials stored in an area is over 25 gallons, they should be stored in a fire safety cabinet. During inspections, it was observed that:

- Over 25 gallons of flammable material were stored outside of fire safety cabinets in several areas;
- Combustible materials were stored on top of fire safety cabinets at various facilities;
- Incompatible materials (corrosive acid and flammable liquids) were stored within the same cabinet at one facility; and,
- A fire safety cabinet had holes drilled into it for a lock at one facility impacting the integrity of the cabinet.



Incompatible materials stored



> 25 gallons stored outside of cabinet

The integrity of fire safety cabinets should not be compromised to ensure fires do not rapidly spread between cabinets. Additionally, flammable materials greater than 25 gallons should be stored in fire safety cabinets to prevent these accelerants from increasing the size of an accidental fire.

Potentially Hazardous Waste:

Parts washers and sand blasters were located at four facilities. The use of these machines creates a byproduct containing debris/contaminates from the equipment or area being cleaned. The byproduct is contained and disposed of; however, it is not tested prior to disposal. Since the contaminants are unknown, the byproduct mixture should be tested to determine if it is hazardous and requires special disposal.

Used Oil:

Some divisions store used oil or filters after performing vehicle or equipment maintenance on site. The divisions contract with a third party to transport used oil or filters to a permitted facility for reuse or disposal. Used oil containment should be labeled, in good condition and covered when not actively being filled.

During inspections, we observed used oil containers with the following issues:

- Not labeled “used oil”;
- Stored without lids or in open containment systems left exposed to the elements when not in use;
- Visibly rusted;
- Stored in stacks of three or more containers high;
- Stored in secondary containment that was cracked or did not appear to be leak proof;
- Stored directly on the soil, with signs of oil spills; and,
- Stored in nearly full containers under a table, making it difficult to move the used oil for disposal without an accidental spill.



Open used oil container with used oil overflow



Contaminated soil from what appears to be used oil



Unlabeled and full used oil containers stored under table



Open, unlabeled used oil stored on soil

Used oil should be covered and stored on an oil impermeable surface to protect natural resources and underground drinking water in the event of an accidental release.

Safety Equipment:

Safety equipment must be easily identified, accessed, and operational in the event of an emergency. At all locations inspected, safety equipment such as fire extinguishers, eyewash stations, and safety showers were available. However, the following issues were identified:

- Many fire extinguishers had overdue monthly, annual, six-year, or 12-year maintenance according to tags affixed to the extinguishers;
- One fire extinguisher recorded an incorrect, future dated maintenance tag on the extinguisher;
- Two areas did not have necessary safety equipment including an oil storage area without a fire extinguisher and a satellite lab with no safety shower;
- Some safety equipment was blocked or was difficult to see due to lack of signage or walls blocking visibility;
- Two eyewash stations were not operating at the time of inspection — one would not turn on and one had inadequate water pressure; and,
- Two fire extinguishers no longer in use were used as door stops, which may cause team members to attempt to use these extinguishers in an emergency.



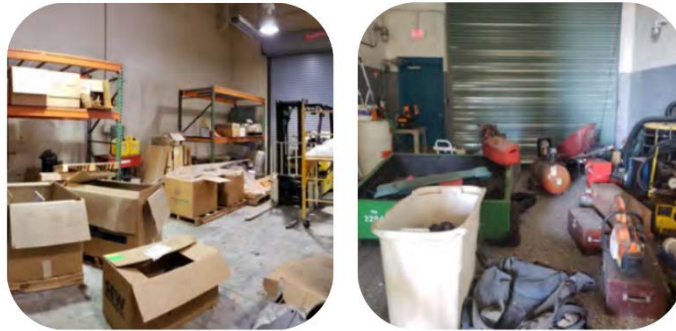
Blocked safety equipment



Safety equipment not visible



General housekeeping should be improved at several facilities. For example, corroded materials, crowded walkways, and unused equipment or materials were identified in several areas. At three locations, equipment or other materials were blocking access to safety equipment such as fire extinguishers, eyewash stations, or first aid kits. Messy or crowded areas can make it more difficult to exit or reach safety equipment in the event of an emergency.



Crowded walkways and unused equipment or materials were identified in several areas.

Utilities management corrected some identified issues while on site at the time of the inspection and has continued making improvements.



Recommendation No. 1:

Utilities management should ensure:

- A) Hazardous materials, hazardous waste, used oil, and universal waste containers or secondary containers are appropriately labeled;
 - B) Compressed gas cylinders are stored upright and chained to avoid tipping in all directions;
 - C) Oxygen and acetylene cylinders are stored at least 20 feet apart when not in use;
 - D) Flammable materials over 25 gallons are stored in fire safety cabinets,
 - E) Fire safety cabinets are free from combustible materials on top of the cabinets; do not have incompatible materials stored within the same cabinet, and do not have their integrity compromised;
 - F) Byproducts generated from parts washer or sand blasters are tested prior to disposal to determine if it requires special disposal consideration;
 - G) Used oil storage containers are covered when not in use, stored on an oil impermeable surface, and stored in a manner that prevents an accidental release;
 - H) Safety equipment is operating effectively, accessible, and easily located;
 - I) Fire extinguishers are up to date on monthly, annual, six-year, and 12-year maintenance;
 - J) Fire extinguishers are removed from the facility when no longer in use; and,
 - K) Materials and equipment no longer in use are removed or appropriately stored to prevent crowded walkways or blocked safety equipment.
-

Management's Response:

Concur. See [Appendix B](#) for full response.

2. Management Should Properly Dispose of Hazardous Waste.

The Resource Conservation and Recovery Act regulates facilities that generate hazardous waste based on the amount generated in a calendar month. The water

lab generally meets the requirements to be a Very Small Quantity Generator (VSQG) - generating less than 100 kg of hazardous waste per month.

Hazardous Waste Generator Categories

	Very Small Quantity Generator (VSQG)	Small Quantity Generator (SQG)	Large Quantity Generator (LQG)
Monthly Generator Quantity Limits	≤ 100 kg	> 100 kg and < 1,000 kg	≥ 1,000 kg
On-Site Accumulation Limits	≤ 1,000 kg	≤ 6,000 kg	No Limits
Accumulation Time Limits	None	≤ 180 Days	≤ 90 Days

The wastewater treatment plants and regional water supply facilities also generate small amounts of hazardous waste each month. The hazardous waste generated at these other locations is periodically transported to the water lab for storage prior to disposal.

Only large quantity generators can accept hazardous waste from other facilities. As a VSQG, the Lab must comply with three basic hazardous waste management requirements. Acceptance of the waste exposes the lab to the full hazardous waste regulations that apply to large quantity generators which can be costly to implement.

Facilities Should Not Send Hazardous Waste to the Water Lab for Disposal





Recommendation No. 2:

Utilities' Management should:

- A) Stop sending hazardous waste from the water supply facilities and wastewater treatment plants to the Water Lab, and
 - B) Contract with a registered hazardous waste transporter to transport hazardous waste generated at the water supply facilities and wastewater treatment plants directly to a regulated treatment, storage, or disposal facility.
-

Management's Response:

Concur. See [Appendix B](#) for full response.

3. Management Should Properly Remove, Transfer, and Dispose of Asbestos Containing Material.

Water pipes constructed with Asbestos-Cement were widely used until it was phased out in the late 1980s. There are approximately 32 miles of Asbestos Cement piping in service throughout Orange County. Field Services removes and replaces the piping whenever the piping requires repair. After the asbestos containing material is removed, federal regulations⁴ require proper disposal. The requirements detail waste shipping and record retention requirements.

Audit identified three work orders completed in 2020 where asbestos containing pipes were removed by Field Services. Although the shipper and receiver are required to maintain asbestos disposal records, neither Solid Waste nor Field Services could provide any waste shipment record for one of the three work orders. Thus there was no evidence that the asbestos was disposed of properly at the Orange County Landfill.

⁴ 40 CFR Part 61, Subpart M



The shipping records for the other two disposals were missing required information, as summarized below.

	Waste Shipment Record #1	Waste Shipment Record #2
The waste generator's name	✓	✓
The waste generator's address	✗	✗
The quantity of asbestos containing waste material	✓	✓
The name and physical location of the disposal site	✓	✓
A statement indicating the contents are classified, packed, marked, and labeled	✓	✗
The disposal site operator's signature	✗	✗

In addition to waste shipment records, Utilities policy requires the following to be documented on all work orders for asbestos containing pipe removal:

- Type of work performed
- Method used to perform the work
- Type of PPE worn

None of the three reviewed work orders indicated that PPE was used during the removal. Additionally, none of the work orders described the method used to perform the work.

Utilities policy also states that all asbestos containing pipe repair and replacement work shall be performed under the supervision of a “competent person.” The competent person must have initial and annual refresher training for supervising asbestos removal work. One of the three work orders that included asbestos materials did not have a “competent person” assigned. Thus a “competent person” may not have completed or supervised the removal of the asbestos containing pipe.

Twenty-five Field Services employees were identified as “competent persons” who can supervise asbestos removal. Refresher training was not completed in 2018 nor 2019 for any of these 25 employees. Refresher training was offered beginning



December 2020. As of February 2021, three of the 25 employees still had not received refresher training.

Asbestos fibers may be released into the air when asbestos containing piping is removed and transported. Without properly trained personnel, improper removal or disposal could lead to a release of asbestos into the air which could lead to harmful health effects.

Recommendation No. 3:

Field Services' Management should:

- A) Ensure employees follow the asbestos removal process, including work order documentation requirements per Utilities policy;
 - B) Dispose of asbestos containing material properly and retain the related waste shipping records evidencing the proper disposal, including all required elements;
 - C) Ensure competent persons are assigned to and identified in each work order containing asbestos containing materials; and,
 - D) Ensure competent persons receive timely initial and annual refresher training on asbestos removal activities.
-

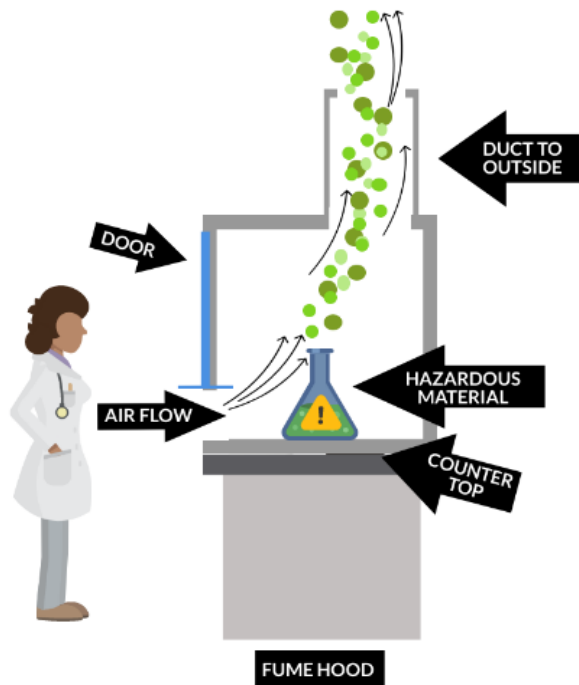
Management's Response:

Concur. See [Appendix B](#) for full response.

4. Management Should Complete Exposure Level Monitoring and Prevention Procedures.

Water Lab employees are exposed to various hazardous chemicals while performing tests and analyses. To protect employee safety, OSHA established permissible exposure limits (PEL) for certain hazardous substances. Management is required to ensure exposure to such substances does not exceed the PEL.

Chemical Fume Hood



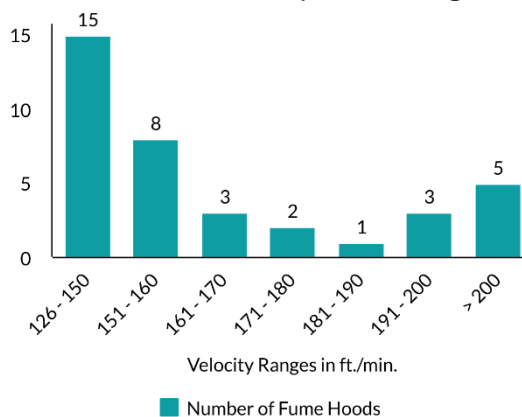
We conducted a Water Lab inspection with the assistance of consultants. At that time, there was no evidence of any exposure level monitoring of the Wet Chemistry Lab. The last known monitoring of the Metals Lab was performed in 2011. Risk assessments of the Wet Chemistry and Metals Labs should be conducted to ensure exposure remains at a permissible level. Based on the results of the risk assessments, further exposure level monitoring may be required.

In addition to exposure level monitoring, chemical fume hoods are used in labs to control inhalation exposure of hazardous

substances. OSHA’s laboratory standard requires that the Chemical Hygiene Plan (CHP) identify specific measures the employer will take to ensure proper and adequate performance of fume hoods. Water Lab personnel inspect fume hoods monthly to check the hood’s face velocity to ensure air flow is maintained between 75 and 125 ft./min., the industry standard.

The lab had 17 fume hoods at the time of our audit. We reviewed a sample of 85 inspections over a ten month period. For 37 of the 85 inspections, the fume hood’s face velocity was above the acceptable range. The chemical fume hood velocities ranged from 126 to 450 ft./min. More than 25% of the face velocities sampled were over 150 ft./ min., 20% higher than the maximum velocity allowed per the CHP.

Chemical Fume Hoods Inspected Outside the Acceptable Range





Of the 37 inspections identified out of the acceptable range:

- Thirty-three were not reviewed as part of the corrective action follow-up process, and
- Four included observations on corrective action forms, yet the form did not indicate whether the fume hood issues were ever resolved.

High exposure to hazardous substances could lead to health concerns for Water Lab team members. Without timely assessment of exposure levels and monitoring of equipment, employees could be exposed to hazardous substances.

Recommendation No 4:

Water Lab Management should:

- A) Perform and document a risk assessment of the Metals and Wet Chemistry Labs to identify any high-risk processes or chemicals that require exposure level monitoring;
 - B) Perform exposure level monitoring if high-risk processes or chemicals are identified as part of the risk assessment; and,
 - C) Re-train team members on chemical fume hood inspection procedures, including remediation requirements when fume hoods are operating above the expected range.
-

Management's Response:

Concur. See [Appendix B](#) for full response.

5. Management Should Comply With FDEP Waste Tire Collection Center Requirements.

The Florida Department of Environmental Protection (FDEP) has established procedures to properly store waste tires. These include provisions to prevent and properly respond to fires. Specifically:

- Solid waste facilities must obtain a permit to accept and/or store waste tires;
-



- Waste tire collection center fire safety surveys should be conducted at least annually by a fire marshal to assess and limit the fire hazards in the area; and,
- Waste tire collection centers should have procedures to contain and dispose of the oily material generated by accidental tire fires and report accidental fires to FDEP within two weeks.

After inspecting the Solid Waste facilities, we determined that waste tires are accepted from the public at the Porter Transfer Station. However, after reviewing the FDEP permit for the Porter Transfer Station, the permit states that whole waste tires are not accepted at the facility, and the station is not registered as a waste tire collection center.

Additionally, a fire safety survey of the landfill waste tire collection center, where the majority of waste tires are collected from the public, has never been conducted. We also noted that Solid Waste's written emergency response procedures did not include procedures to contain and dispose of oily material generated by accidental waste tire fires. The procedures also failed to address accidental fire reporting to the FDEP.

Waste tire collection centers should be permitted and managed in accordance with FDEP regulations. Unidentified fire hazards may present an increased risk of waste tire fires. This could result in harm to Solid Waste team members, contractors, or the public.

Recommendation No 5:

Solid Waste Management should:

- A) Stop accepting waste tires from customers at the Porter Transfer Station or register the Porter Transfer Station as a waste tire collection center;
 - B) Contract with a local fire marshal to conduct a fire safety survey of the landfill's waste tire collection center; and,
 - C) Draft written procedures to include FDEP reporting requirements and procedures for the containment and disposal of oily material generated from accidental fires.
-



Management's Response:

Partially Concur. See [Appendix B](#) for full response.



ACTION PLAN

NO.	RECOMMENDATIONS	MANAGEMENT'S RESPONSE		
		CONCUR	PARTIALLY CONCUR	DO NOT CONCUR
1.	Utilities management should ensure:			
A)	Hazardous materials, hazardous waste, used oil, and universal waste containers or secondary containers are appropriately labeled;	✓		
B)	Compressed gas cylinders are stored upright and chained to avoid tipping in all directions;	✓		
C)	Oxygen and acetylene cylinders are stored at least 20 feet apart when not in use;	✓		
D)	Flammable materials over 25 gallons are stored in fire safety cabinets;	✓		
E)	Fire safety cabinets are free from combustible materials on top of the cabinets, do not have incompatible materials stored within the same cabinet, and do not have their integrity compromised;	✓		
F)	Byproducts generated from parts washer or sand blasters are tested prior to disposal to determine if it requires special disposal consideration;	✓		
G)	Used oil storage containers are covered when not in use, stored on an oil impermeable surface, and stored in a manner that prevents an accidental release	✓		
H)	Safety equipment is operating effectively, accessible, and easily located;	✓		
I)	Fire extinguishers are up to date on monthly, annual, six-year, and 12-year maintenance;	✓		
J)	Fire extinguishers are removed from the facility when no longer in use; and,	✓		
K)	Materials and equipment no longer in use are removed or appropriately stored to prevent crowded walkways or blocked safety equipment.	✓		
2.	Utilities' Management should:			
A)	Stop sending hazardous waste from the water supply facilities and wastewater treatment plants to the Water Lab, and	✓		
B)	Contract with a registered hazardous waste transporter to transport hazardous waste generated at the water supply facilities and	✓		



ACTION PLAN

NO.	RECOMMENDATIONS	MANAGEMENT'S RESPONSE		
		CONCUR	PARTIALLY CONCUR	DO NOT CONCUR
	wastewater treatment plants directly to a regulated treatment, storage, or disposal facility.			
3.	Field Services' Management should:			
A)	Ensure employees follow the asbestos removal process, including work order documentation requirements per Utilities policy;	✓		
B)	Dispose of asbestos containing material properly and retain the related waste shipping records evidencing the proper disposal, including all required elements;	✓		
C)	Ensure competent persons are assigned to and identified in each work order containing asbestos containing materials; and,	✓		
D)	Ensure competent persons receive timely initial and annual refresher training on asbestos removal activities.	✓		
4.	Water Lab Management should:			
A)	Perform and document a risk assessment of the Metals and Wet Chemistry Labs to identify any high-risk processes or chemicals that require exposure level monitoring;	✓		
B)	Perform exposure level monitoring if high-risk processes or chemicals are identified as part of the risk assessment; and,	✓		
C)	Re-train team members on chemical fume hood inspection procedures, including remediation requirements when fume hoods are operating above the expected range.	✓		
5.	Solid Waste Management should:			
A)	Stop accepting waste tires from customers at the Porter Transfer Station or register the Porter Transfer Station as a waste tire collection center;		✓	
B)	Contract with a local fire marshal to conduct a fire safety survey of the landfill's waste tire collection center; and,	✓		
C)	Draft written procedures to include FDEP reporting requirements and procedures for the containment and disposal of oily material generated from accidental fires.	✓		









The below table describes the criteria used during inspections performed in August 2021. Each issue described in recommendation #1 is mapped to the related criteria and its source.

Inspection Criteria		
Issue	Source	Criteria
Container Labeling:		
Materials were stored in containers with no labels or illegible labels.	OSHA 1910.1200 (f) (6)	<i>Workplace labeling. Except as provided in paragraphs (f)(7) and (f)(8) of this section, the employer shall ensure that each container of hazardous chemicals in the workplace is labeled, tagged or marked with either: 1910.1200(f)(6)(i) The information specified under paragraphs (f)(1)(i) through (v) of this section for labels on shipped containers; or, 1910.1200(f)(6)(ii) Product identifier and words, pictures, symbols, or combination thereof, which provide at least general information regarding the hazards of the chemicals, and which, in conjunction with the other information immediately available to employees under the hazard communication program, will provide employees with the specific information regarding the physical and health hazards of the hazardous chemical.</i>
Several secondary containers were missing labels that include the hazard contents.		
On two containers original labels were blocked out. Instead, a sticker was affixed to the containers that stated "special use."		
(There were hazardous waste) accumulation containers that we observed with no labels showing the hazard contents, either in words or pictograms.	EPA 40 CFR 262.14 (a) (5) (viii) (B)	<i>The very small quantity generator marks its container(s) of hazardous waste with: (1) The words "Hazardous Waste"; and (2) An indication of the hazards of the contents (examples include, but are not limited to, the applicable hazardous waste characteristic(s) (i.e., ignitable, corrosive, reactive, toxic); hazard communication consistent with the Department of Transportation requirements at 49 CFR part 172 subpart E (labeling) or subpart F (placarding); a hazard statement or pictogram consistent with the Occupational Safety and Health Administration Hazard Communication Standard at 29 CFR 1910.1200; or a chemical hazard label consistent with the National Fire Protection Association code 704);</i>
Compressed Gas Storage:		
Cylinders stored at one facility were chained. However, these chains may not prevent the cylinders from tipping.	OSHA 1910.101 (b)	<i>Compressed gases. The in-plant handling, storage, and utilization of all compressed gases in cylinders, portable tanks, rail tankcars, or motor vehicle cargo tanks shall be in accordance with Compressed Gas Association Pamphlet P-1-1965, which is incorporated by reference as specified in § 1910.6.</i>

APPENDIX A – Inspection Criteria



Audit of Utilities Storage, Handling, Management and Disposal of Hazardous Materials and Waste

	Best Practice	<i>Gas cylinders should be properly secured at all times to prevent tipping, falling or rolling. They can be secured with straps or chains connected to a wall bracket or other fixed surface, or by use of a cylinder stand.</i>															
At two facilities, oxygen and acetylene cylinders were stored within 20 feet of one another.	OSHA 1910.253 (b) (4) (iii)	<i>Oxygen cylinders in storage shall be separated from fuel-gas cylinders or combustible materials (especially oil or grease), a minimum distance of 20 feet (6.1 m) or by a noncombustible barrier at least 5 feet (1.5 m) high having a fire-resistance rating of at least one-half hour.</i>															
Flammable Material Storage:																	
Over 25 gallons of flammable material were stored outside of fire safety cabinets in several areas.	OSHA 1926.152 (b) (1)	<i>No more than 25 gallons of flammable liquids shall be stored in a room outside of an approved storage cabinet. For storage of liquefied petroleum gas, see §1926.153.</i>															
Combustible materials were stored on top of fire safety cabinets at various facilities.	NFPA 30 Chapter 14.6.5	<i>Miscellaneous combustible materials, including but not limited to idle pallets, excessive vegetation, and packing materials, shall not be permitted within 5 ft (1.5m) of the designated site approved for lockers.</i>															
Incompatible materials (corrosive acid and flammable liquids) were stored within the same cabinet at one facility.	Chemical segregation table (NIH.GOV)	<table border="1"> <thead> <tr> <th>Class of Chemicals</th> <th>Common Chemical Examples</th> <th>Additional Concerns and Storage Recommendations</th> <th>Common Incompatible Chemical Types</th> <th>Possible Reactions Mixed/Health Co</th> </tr> </thead> <tbody> <tr> <td> Corrosive Acids-Organic</td> <td>Acetic Acid Glacial Acetic Acid Butyric Acid Trifluoroacetic Acid Picric Acid Propionic Acid Formic Acid</td> <td>Store in ventilated corrosives cabinet on protected shelving using secondary containment, keep away from water sources *Do not store under the sink *Do not store acids on metal shelving</td> <td>Flammable Liquids Flammable Solids Bases Oxidizers Inorganic Acids Cyanides Sulfides Poisons/Toxins</td> <td>Heat Gas Generation Violent Reaction * DO NOT POUR WATER INTO ACID</td> </tr> <tr> <td> Corrosive Acids-Inorganic</td> <td>Nitric Acid Sulfuric Acid Perchloric Acid Phosphoric Acid Hydrochloric Acid Chromic Acid Hydrofluoric Acid</td> <td>Store concentrated Nitric acid (≥68%) and Sulfuric acid (≥93%) in a secondary container Store in a corrosive cabinet labeled "Acid" or on shelving using a secondary containment *Do not store under the sink *Do not store acids on metal shelving *Hydrofluoric acid should be stored in an area accessible only by authorized personnel; do not store in glass; use plastic containers and secondary containment</td> <td>Flammable Liquids Flammable Solids Bases Oxidizers Organic Acids Cyanides Sulphides Poisons/Toxins</td> <td>Heat Gas Generation Violent Reaction *DO NOT POUR WATER INTO ACID * Perchloric acid vapor form explosive compounds within fume hood do in severe burns to lungs *Hydrofluoric acid can in severe burns to lungs</td> </tr> </tbody> </table>	Class of Chemicals	Common Chemical Examples	Additional Concerns and Storage Recommendations	Common Incompatible Chemical Types	Possible Reactions Mixed/Health Co	 Corrosive Acids-Organic	Acetic Acid Glacial Acetic Acid Butyric Acid Trifluoroacetic Acid Picric Acid Propionic Acid Formic Acid	Store in ventilated corrosives cabinet on protected shelving using secondary containment, keep away from water sources *Do not store under the sink *Do not store acids on metal shelving	Flammable Liquids Flammable Solids Bases Oxidizers Inorganic Acids Cyanides Sulfides Poisons/Toxins	Heat Gas Generation Violent Reaction * DO NOT POUR WATER INTO ACID	 Corrosive Acids-Inorganic	Nitric Acid Sulfuric Acid Perchloric Acid Phosphoric Acid Hydrochloric Acid Chromic Acid Hydrofluoric Acid	Store concentrated Nitric acid (≥68%) and Sulfuric acid (≥93%) in a secondary container Store in a corrosive cabinet labeled "Acid" or on shelving using a secondary containment *Do not store under the sink *Do not store acids on metal shelving *Hydrofluoric acid should be stored in an area accessible only by authorized personnel; do not store in glass; use plastic containers and secondary containment	Flammable Liquids Flammable Solids Bases Oxidizers Organic Acids Cyanides Sulphides Poisons/Toxins	Heat Gas Generation Violent Reaction *DO NOT POUR WATER INTO ACID * Perchloric acid vapor form explosive compounds within fume hood do in severe burns to lungs *Hydrofluoric acid can in severe burns to lungs
Class of Chemicals	Common Chemical Examples	Additional Concerns and Storage Recommendations	Common Incompatible Chemical Types	Possible Reactions Mixed/Health Co													
 Corrosive Acids-Organic	Acetic Acid Glacial Acetic Acid Butyric Acid Trifluoroacetic Acid Picric Acid Propionic Acid Formic Acid	Store in ventilated corrosives cabinet on protected shelving using secondary containment, keep away from water sources *Do not store under the sink *Do not store acids on metal shelving	Flammable Liquids Flammable Solids Bases Oxidizers Inorganic Acids Cyanides Sulfides Poisons/Toxins	Heat Gas Generation Violent Reaction * DO NOT POUR WATER INTO ACID													
 Corrosive Acids-Inorganic	Nitric Acid Sulfuric Acid Perchloric Acid Phosphoric Acid Hydrochloric Acid Chromic Acid Hydrofluoric Acid	Store concentrated Nitric acid (≥68%) and Sulfuric acid (≥93%) in a secondary container Store in a corrosive cabinet labeled "Acid" or on shelving using a secondary containment *Do not store under the sink *Do not store acids on metal shelving *Hydrofluoric acid should be stored in an area accessible only by authorized personnel; do not store in glass; use plastic containers and secondary containment	Flammable Liquids Flammable Solids Bases Oxidizers Organic Acids Cyanides Sulphides Poisons/Toxins	Heat Gas Generation Violent Reaction *DO NOT POUR WATER INTO ACID * Perchloric acid vapor form explosive compounds within fume hood do in severe burns to lungs *Hydrofluoric acid can in severe burns to lungs													
A fire safety cabinet had holes drilled in to it for a lock at one facility impacting the integrity of the cabinet.	Justrite.com (Safety Cabinet Manuf.)	<i>Never drill into the cabinet, as this will compromise the double wall design and its fire protection, along with its FM approval.</i>															
Potentially Hazardous Waste:																	
The byproduct (from use of parts washers and sand blasters) is contained and disposed of; however, it is not tested prior to disposal.	EPA 40 CFR 262.11(a)	<i>The hazardous waste determination for each solid waste must be made at the point of waste generation, before any dilution, mixing, or other alteration of the waste occurs, and at any time in the course of its management that it has, or may have, changed its properties as a result of exposure to the environment or other factors that may change the properties of the waste such that the RCRA classification of the waste may change.</i>															
Used Oil:																	
Used oil containers were not labeled "used oil."	FDEP 62-710.401 (6)	<i>No person may store used oil in tanks or containers unless they are clearly labeled with the words "used</i>															

APPENDIX A – Inspection Criteria



Used oil containers were visibly rusted.		<i>oil,” are in good condition (no severe rusting, apparent structural defects or deterioration), and not leaking (no visible leaks).</i>
Used oil containers were Stored in stacks of three or more containers high.	OSHA 1910.176 (b)	<i>Secure storage. Storage of material shall not create a hazard. Bags, containers, bundles, etc., stored in tiers shall be stacked, blocked, interlocked and limited in height so that they are stable and secure against sliding or collapse.</i>
	OHSA 1910.106 (f) (1) (iii)	<i>(iii) Piling containers. Containers of flammable liquids when piled one upon the other shall be separated by dunnage sufficient to provide stability and to prevent excessive stress on container walls. The height of the pile shall be consistent with the stability and strength of containers.</i>
Used oil containers were stored in secondary containment that was cracked or did not appear to be leak proof.	FDEP 62-710.401 (6)	<i>If tanks or containers are not double-walled, they shall be stored on an oil-impermeable surface such as sealed concrete or asphalt, and must have secondary containment which has the capacity to hold 110% of the volume of the largest tank or container within the containment area.</i>
Used oil containers were stored directly on the soil, with signs of oil spills next to the containers.	FDEP 62-710.401 (2)	<i>No person may discharge used oil into soils, sewers, drainage systems, septic tanks, surface or ground waters, watercourses, or marine waters.</i>
Used oil containers were stored in nearly full containers under a table, making it difficult to move the used oil for disposal without an accidental spill.		
Used oil containers were stored without lids or in open containment systems left exposed to the elements when not in use.	FDEP 62-710.401 (6)	<i>If tanks or containers are not stored inside a structure, the contents shall be closed, covered or otherwise protected from the weather.</i>
Safety Equipment:		
Many fire extinguishers had overdue monthly, annual, six-year, or 12-year maintenance according to tags affixed to the extinguishers.	OSHA 1910.157 (e)	<i>Inspection, maintenance and testing. (1) The employer shall be responsible for the inspection, maintenance and testing of all portable fire extinguishers in the workplace. (2) Portable extinguishers or hose used in lieu thereof under paragraph (d)(3) of this section shall be visually inspected monthly. (3) The employer shall assure that portable fire extinguishers are subjected to an annual maintenance check. Stored pressure extinguishers do not require an internal examination. The</i>
One fire extinguisher recorded an incorrect, future dated maintenance tag on the extinguisher.		

APPENDIX A – Inspection Criteria



		<i>employer shall record the annual maintenance date and retain this record for one year after the last entry or the life of the shell, whichever is less. The record shall be available to the Assistant Secretary upon request.</i>
Two areas did not have necessary safety equipment including an oil storage area without a fire extinguisher and a satellite lab with no safety shower.	OSHA 1910.151 (c)	<i>Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use.</i>
	OSHA 1910.157 (c)	<i>General requirements. (1) The employer shall provide portable fire extinguishers and shall mount, locate and identify them so that they are readily accessible to employees without subjecting the employees to possible injury.</i>
Some safety equipment was blocked or was difficult to see due to lack of signage or walls blocking visibility.	OSHA 1910.157 (c)	<i>General requirements. (1) The employer shall provide portable fire extinguishers and shall mount, locate and identify them so that they are readily accessible to employees without subjecting the employees to possible injury.</i>
Two eyewash stations were not operating at the time of inspection — one would not turn on and one had inadequate water pressure.	OSHA 1910.151 (c)	<i>Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use.</i>
	ANSI/ISEA 358.1 6.1.6	<i>Eye/face washes shall be capable of delivering flushing fluid to the eyes and face not less than 11.4 liters per minute (3.0 gpm) for 15 minutes.</i>
Two fire extinguishers no longer in use were used as door stops, which may cause team members to attempt to use these extinguishers in an emergency.	OSHA 1910.157(f)(14)	<i>Extinguisher shells, cylinders, or cartridges which fail a hydrostatic pressure test, or which are not fit for testing shall be removed from service and from the workplace.</i>
General Housekeeping:		
Corroded materials, crowded walkways, and unused equipment or materials were identified in several areas. At three locations, equipment or other materials were blocking access to safety equipment such as fire extinguishers, eyewash stations, or first aid kits.	OSHA 1910.106 (9)	<i>Housekeeping—(i) General. Maintenance and operating practices shall be in accordance with established procedures which will tend to control leakage and prevent the accidental escape of flammable liquids. Spills shall be cleaned up promptly. (ii) Access. Adequate aisles shall be maintained for unobstructed movement of personnel and so that fire protection equipment can be brought to bear on any part of flammable liquid storage, use, or any unit physical operation. (iii) Waste and residue. Combustible waste material and residues in a building or unit operating area shall</i>

APPENDIX A – Inspection Criteria



		<p><i>be kept to a minimum, stored in covered metal receptacles and disposed of daily.</i></p> <p><i>(iv) Clear zone. Ground area around buildings and unit operating areas shall be kept free of weeds, trash, or other unnecessary combustible materials.</i></p>
--	--	---



UTILITIES DEPARTMENT

9150 Curry Ford Road
Orlando, Florida 32825
Telephone: 407-254-9803
Fax: 407-254-9899
Website: www.OrangeCountyFL.net
Email: Utilities.Information@ocfl.net

July 27, 2023

To: Phil Diamond, Orange County Comptroller

From: Ed Torres, M.S., P.E., LEED AP, Director Ed Torres, M.S., P.E., LEED AP

Digitally signed by Ed Torres,
M.S., P.E., LEED AP
Date: 2023.07.27 08:32:51
-0400

Subject: Response to Audit of Orange County Utilities Storage, Handling, Management and Disposal of Hazardous Materials and Waste

In connection with the recent audit of the Orange County Utilities Storage, Handling, Management and Disposal of Hazardous Materials and Waste covering the period of January 2020 through October 2020 conducted by your office, below you will find Orange County Utilities' responses to the recommendations in the report. This audit was done in conjunction with the completed audit of the Utilities Hazardous Materials Safety Program, and was divided into three parts, finalized, presented, and responded to separately. This is the second part of the audit, with the third part nearing completion. We appreciate the independent and third-party review of the Hazardous Material Safety Program, as well as the recommendations for improvements. We have implemented several of the recommendations and work to finalize others. We look forward to our continued collaboration with your professional staff.

Recommendation No. 1:

Utilities management should ensure:

- A) Hazardous materials, hazardous waste, used oil, and universal waste containers or secondary containers are appropriately labeled;
- B) Compressed gas cylinders are stored upright and chained to avoid tipping in all directions;
- C) Oxygen and acetylene cylinders are stored at least 20 feet apart when not in use;
- D) Flammable materials over 25 gallons are stored in fire safety cabinets;
- E) Fire safety cabinets are free from combustible materials on top of the cabinets; do not have incompatible materials stored within the same cabinet, and do not have their integrity compromised;
- F) Byproducts generated from parts washer or sand blasters are tested prior to disposal to determine if it requires special disposal consideration;
- G) Used oil storage containers are covered when not in use, stored on an oil impermeable surface, and stored in a manner that prevents an accidental release;
- H) Safety equipment is operating effectively, accessible, and easily located;
- I) Fire extinguishers are up to date on monthly, annual, six-year, and 12-year maintenance;
- J) Fire extinguishers are removed from the facility when no longer in use; and,
- K) Materials and equipment no longer in use are removed or appropriately stored to prevent crowded walkways or blocked safety equipment.



Utilities Response to Recommendation No. 1

Management concurs.

Management will ensure that items listed in recommendation one are appropriately addressed. Many of the items have already been corrected, and some of the findings are in the process of being corrected.

Recommendation No. 2:

Utilities Management should:

- A) Stop sending hazardous waste from the water supply facilities and wastewater treatment plants to the Water Lab, and
- B) Contract with a registered hazardous waste transporter to transport hazardous waste generated at the water supply facilities and wastewater treatment plants directly to a regulated treatment, storage, or disposal facility.

Utilities Response to Recommendation No. 2

Management concurs.

The water supply facilities and wastewater treatment plants have stopped sending hazardous waste to our nationally certified lab. The last recorded occurrence of the lab receiving such waste was September of 2021, just after the lab received the Comptroller's audit report.

All Utilities water supply and water reclamation facilities are contracted with a registered hazardous waste transporter to transfer their waste to a regulated treatment, storage, or disposal facility as a corrective action to the audit findings report.

Recommendation No. 3:

Field Services Management should:

- A) Ensure employees follow the asbestos removal process, including work order documentation requirements per Utilities policy;
- B) Dispose of asbestos containing material properly and retain the related waste shipping records evidencing the proper disposal, including all required elements;
- C) Ensure competent persons are assigned to and identified in each work order containing asbestos containing materials; and,
- D) Ensure competent persons receive timely initial and annual refresher training on asbestos removal activities.



Utilities Response to Recommendation No. 3:

Management concurs.

Field Services and Safety has jointly developed and are finalizing a draft Standard Operating Procedure (SOP) for Field Services Asbestos Cement Pipe Removal and Disposal which when finalized, will more adequately address each of the items within the recommendation.

The Utilities Field Services training program is being established through collaboration with the Safety Administrator to ensure competent persons receive timely initial training and refresher training on asbestos cement pipe removal activities. Field staff and field supervisors will receive the required asbestos training. Courses are currently established through the University of Florida TREEO.

Recommendation No 4:

Water Lab Management should:

- A) Perform and document a risk assessment of the Metals and Wet Chemistry Labs to identify any high-risk processes or chemicals that require exposure level monitoring;
- B) Perform exposure level monitoring if high-risk processes or chemicals are identified as part of the risk assessment; and,
- C) Re-train team members on chemical fume hood inspection procedures, including remediation requirements when fume hoods are operating above the expected range.

Utilities Response to Recommendation No. 4:

Management concurs.

The lab is in the process of procuring an Industrial Hygienist to perform a risk assessment of the Metals and Wet Chemistry Labs to identify any high-risk processes or chemicals that require exposure level monitoring. The lab will perform exposure level monitoring if high-risk processes or chemicals are identified as part of the risk assessment.

The lab has long established contracts with vendors who conduct annual assessments of lab hoods. Issues identified with equipment during these assessments are corrected before being placed back in service. Despite this and based upon the recommendation, re-training of lab team members on chemical fume hood inspection procedures was completed in November of 2021.



Recommendation No 5:

Solid Waste Management should:

- A) Stop accepting waste tires from customers at the Porter Transfer Station or register the Porter Transfer Station as a waste tire collection center;
- B) Contract with a local fire marshal to conduct a fire safety survey of the landfill's waste tire collection center; and,
- C) Draft written procedures to include FDEP reporting requirements and procedures for the containment and disposal of oily material generated from accidental fires.

Utilities Response to Recommendation No. 5:

Management partially concurs.

On July 29, 2022, the Porter Station Transfer Station permit was renewed. During the renewal process, permit language was modified to clarify the provisions in the Operations Plan for the acceptance of limited quantities of waste tires to be placed in a roll-off then transported to the Orange County Solid Waste Management Facility when full. Per 62-711.300(5), Florida Administrative Code (FAC), a separate waste tire facility processing permit is not necessary. Utilities contacted the Orange County Fire Inspector to conduct a fire safety survey of the Landfill's waste tire collection center and the survey was completed May 12, 2023.

The Waste Tire Area is permitted as part of the Class I landfill. The Class I operation plan states, "All fires at the landfill must be reported to FDEP within 24 hours, and within 5 days in writing explaining the cause, remedial action, and measures taken to prevent recurrence." (Section 2.2 Fires). Solid Waste has revised the working version of the Class I landfill operation plan contingency operation section to include procedures for the containment and disposal of oily material generated from accidental fires.

In closing, Orange County Utilities would like to reiterate our current and historic positive working relationship with your staff and commend their efforts on Part II of this audit, and subsequent report. We consider these independent reviews as an opportunity to continue to strengthen our operations, our service levels to our customers and visitors, and to continuously improve as a premier utility.