

**NARATIVE EXPLANATION TO SUPPORT  
PENALTY AMOUNT FOR PROPOSED STIPULATION AND CONSENT ORDER**

NOV # 2108087

Violation Number: 1

Violation Description: **Failure to make an accurate determination as to whether its solid waste is a hazardous waste.**

1. Gravity Based Penalty: **\$2,600.00**
  - (a) Potential for Harm: **Moderate:** Failure to make an accurate hazardous waste determination could lead to hazardous waste being improperly handled and stored, posing a risk of exposure to workers and the environment. The potential for harm was mitigated by the fact that the wastes were not unknown to the central accumulation area personnel because Safety Data Sheets (SDSs), chemical constituents, or process information was provided to the EH&S staff operating the Research Agents Containment Center (RACC) using USU's waste pickup request system.  
  
Proper characterization of waste is a foundation of the hazardous waste regulation program.
  - (b) Extent of Deviation – **Moderate:** Inspectors observed up to 100 instances in the Research Agents Containment Center (RACC) where USU failed to make hazardous waste determinations. Potentially hazardous wastes were moved from points of generation to a central accumulation area without first having determined if the wastes were hazardous. However, the contents of the containers and the associated chemical hazards were known to USU staff operating the RACC but were not properly labeled for other university students and staff.
  - (c) Multiple/Multi-day – N/A
2. Adjustment Factors (if applicable)
  - (a) Good faith- N/A
  - (b) Willfulness/Negligence- N/A
  - (c) History of Compliance or Noncompliance- The previous inspection in 2017 resulted in no compliance findings.
  - (d) Ability to pay- N/A
  - (e) Other Unique Factors – N/A
3. Economic Benefit- Economic benefit was evaluated and found to be negligible. USU already provides training and hazardous waste labels to researchers and students generating hazardous waste in laboratories.
4. Recalculation of Penalty based on New Information -

**TOTAL: \$2,600.00**

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Violation Number: 2

Violation Description: **Failure to mark containers in a satellite accumulation area with the words “Hazardous Waste” and an indication of the hazards.**

1. Gravity Based Penalty: **\$2,600.00**
  - (a) Potential for Harm - **Moderate**: Failure to label hazardous waste containers with the words “Hazardous Waste” and an indication of the hazards could lead to mismanagement, improper handling of the waste, and worker exposure to dangerous chemical waste, risking human health and the environment.  
  
Properly identifying which wastes are hazardous are foundational to implementing the hazardous waste program.
  - (b) Extent of Deviation - **Moderate**: Inspectors observed 10 instances where USU failed to mark containers in satellite accumulation areas with the words “Hazardous Waste” and an indication of the hazards.
  - (c) Multiple/Multi-day – N/A
2. Adjustment Factors (if applicable)
  - (a) Good faith – N/A
  - (b) Willfulness/Negligence - N/A
  - (c) History of Compliance or Noncompliance – The previous inspection in 2017 resulted in no compliance findings.
  - (d) Ability to pay - N/A
  - (e) Other Unique Factors - N/A
3. Economic Benefit – Economic benefit was evaluated and found to be negligible. USU already provides training and hazardous waste labels to researchers and students generating hazardous waste in laboratories. Labels are insignificant because they could use a marker to mark the containers.
4. Recalculation of Penalty based on New Information -

**TOTAL: \$2,600.00**

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NOV # 2108087

Violation Number: 3

Violation description: **Failure to inspect containers at least weekly.**

1. Gravity Based Penalty: **\$260.00**
  - (a) Potential for Harm – **Minor**: The accumulation area was not authorized by the EHS Department or the Principal Investigator responsible for the research. Graduate students began using a hood in another lab room because they ran out of space in their hood a few weeks before the inspection. The EHS Department shut it down as soon as they became aware of it.
  - (b) Extent of Deviation – **Minor**: USU graduate students created an unauthorized central accumulation area (CAA) because of lack of space in the satellite accumulation area in their research lab. Documented inspections were not performed because they did not understand that inspections were required. The unauthorized CAA was visited at least weekly, and probably more often, by the students. The hazardous wastes in the unauthorized CAA were in closed containers in lab fume hoods.
  - (c) Multiple/Multi-day – N/A
2. Adjustment Factors (if applicable)
  - (a) Good faith - N/A
  - (b) Willfulness/Negligence - N/A
  - (c) History of Compliance or Noncompliance - N/A
  - (d) Ability to pay - N/A
  - (e) Other Unique Factors - N/A
3. Economic Benefit – Economic benefit was evaluated and found to be negligible. The graduate students could have conducted inspections had they known their actions caused inspections to be required.
4. Recalculation of Penalty based on New Information -

**TOTAL: \$260.00**

**NARRATIVE EXPLANATION TO SUPPORT  
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NOV # 2108087

Violation Number: 4

Violation Description: **Failure to mark containers of hazardous waste in a central accumulation area with the words "Hazardous Waste" and an indication of the hazards of the contents.**

1. Gravity Based Penalty: **\$2,600.00**

- (a) Potential for Harm - **Moderate:** Failure to label hazardous waste containers with the words "Hazardous Waste" and an indication of the hazards could lead to mismanagement, improper handling of the waste, and worker exposure to dangerous chemical waste, risking human health and the environment. The potential for harm was mitigated by the fact that the wastes were not unknown to the central accumulation area personnel because Safety Data Sheets (SDSs), chemical constituents, or process information was provided to the EHS staff operating the Research Agents Containment Center (RACC) using USU's waste pickup request system.

Hazardous waste being identified as such is critical to implementation of the hazardous waste program.

- (b) Extent of Deviation – **Moderate:** Inspectors observed at least 12 instances where USU graduate students failed to mark containers in a laboratory hood being used as an unauthorized central accumulation area with the words "Hazardous Waste" and an indication of the hazards.

More than 50% of the containers in the authorized central accumulation area were marked or labeled appropriately. SDSs, chemical constituents, or process information was provided to the EHS staff operating the Research Agents Containment Center (RACC), USU's central accumulation area using USU's waste pickup request system so the wastes were not unknown to the RACC personnel.

- (c) Multiple/Multi-day - NA

2. Adjustment Factors (if applicable)

- (a) Good faith – N/A

- (b) Willfulness/Negligence - N/A

- (c) History of Compliance or Noncompliance - N/A

- (d) Ability to pay - N/A

- (e) Other Unique Factors - N/A

3. Economic Benefit - Economic benefit was evaluated and found to be negligible. USU had labels and staff to apply labels.

4. Recalculation of Penalty based on New Information -

**TOTAL: \$2,600.00**

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NOV # 2108087

Violation Number: 5

Violation Description: **Failure to mark containers of hazardous waste with the date they began accumulating.**

1. Gravity Based Penalty: **\$260.00**
  - (b) Potential for Harm – **Minor:** Because the accumulation area was not authorized, students began using a hood in another lab room because they ran out of space in their hood. The EHS Department shut it down as soon as they became aware of it. The students knew when the waste began accumulating in the lab hood, so USU EHS staff were able to ensure that hazardous waste was not stored >90 days. The hazardous wastes in the unauthorized CAA were in closed containers in lab fume hoods.
  - (b) Extent of Deviation – **Minor:** USU graduate students created an unauthorized central accumulation area (CAA) because of lack of space in the satellite accumulation area in a laboratory fume hood in their research lab.
  - (c) Multiple/Multi-day – N/A
2. Adjustment Factors (if applicable)
  - (a) Good faith - Decrease 50% - Utah State University immediately after the inspection, modified their training curriculum to emphasize correct hazardous waste handling procedures and updated their hazardous waste collection site inspection procedures.
  - (b) Willfulness/Negligence - N/A
  - (c) History of Compliance or Noncompliance - N/A
  - (d) Ability to pay - N/A
  - (e) Other Unique Factors - N/A
3. Economic Benefit - Economic benefit was evaluated and found to be negligible. USU graduate students could have marked containers with the accumulation start date for no extra cost.
4. Recalculation of Penalty based on New Information -

**TOTAL: \$130.00**

**NARRATIVE EXPLANATION TO SUPPORT  
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NOV # 2108087

Violation Number: 6

Violation Description: **Failure to maintain training records for employees with hazardous waste management duties.**

1. Gravity Based Penalty: **\$2,600.00**
  - (a) Potential for Harm - **Moderate:** Not maintaining training records with a description of the required training for each position could cause mismanagement of waste by untrained individuals. USU cannot ensure that untrained individuals are not managing hazardous waste. By not having a central repository for training records, instead expecting each individual employee to maintain their own training records, USU could not ensure that each employee was trained appropriately and could not demonstrate to inspectors that employees with hazardous waste and emergency response duties were trained.  
  
Not having the required records available for review impacts the Division's ability to inspect and determine compliance.
  - (b) Extent of Deviation – **Moderate:** USU could not demonstrate that key personnel, including the Environmental, Health & Safety Director and the Hazardous Waste Technician, had been trained for their roles.
  - (c) Multiple/Multi-day – N/A
2. Adjustment Factors (if applicable)
  - (a) Good faith – N/A
  - (b) Willfulness/Negligence - N/A
  - (c) History of Compliance or Noncompliance - N/A
  - (d) Ability to pay - N/A
  - (e) Other Unique Factors - N/A
3. Economic Benefit - Economic benefit was evaluated and found to be negligible. There was no additional cost to maintaining training records in the EHS office since USU already had administrative staff assigned to the EHS office.
4. Recalculation of Penalty based on New Information -

**TOTAL: \$2,600.00**

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NOV # 2108087

Violation Number: 7

Violation Description: **Failure to notify the Director that they were consolidating certain VSQG's hazardous waste and for consolidating hazardous waste from small quantity generators without a permit.**

1. Gravity Based Penalty: **\$500.00**
  - (a) Potential for Harm - **Minor:** Failing to follow the notification requirements for hazardous waste consolidation has the potential to harm the regulatory purpose of this rule and by impeding the Division's ability to properly oversee to determine compliance. However, in this case the potential for harm was mitigated by USU's recordkeeping that identified the source of all the consolidated waste.
  - (b) Extent of Deviation – **Moderate:** USU consolidated waste from two facilities it had not identified it was picking waste up from and picked up waste from three facilities identified as small quantity generators (SQGs). All of the facilities identified by USU as SQGs were, based on their monthly waste generation, actually very small quantity generator (VSQGs).
  - (c) Multiple/Multi-day – N/A
2. Adjustment Factors (if applicable)
  - (a) Good faith – N/A
  - (b) Willfulness/Negligence - N/A
  - (c) History of Compliance or Noncompliance - N/A
  - (d) Ability to pay - N/A
  - (e) Other Unique Factors - N/A
3. Economic Benefit – Economic benefit was evaluated and found to be negligible. Notification costs nothing, and all the facilities were in fact VSQGs whose waste could be consolidated at USU's main campus.
4. Recalculation of Penalty based on New Information -

**TOTAL: \$500.00**

**NARRATIVE EXPLANATION TO SUPPORT  
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NOV # 2108087

Violation Number: 8

Violation Description: **Failure to contain universal waste fluorescent lamps in closed containers or packages.**

1. Gravity Based Penalty: **\$4,160.00**
  - (a) Potential for Harm - **Moderate**: Universal waste lamps containing mercury were not protected from breakage, thereby risking employee exposure to broken glass and mercury vapors, as well as risking release of mercury to the environment.
  - (b) Extent of Deviation – **Major**: Four out of four containers in which universal waste lamps were being accumulated were not closed. Some of the lamps were longer than the containers in which they were stored, showing a lack of regard for the requirement to accumulate universal waste lamps in closed containers or packages.
  - (c) Multiple/Multi-day – N/A
2. Adjustment Factors (if applicable)
  - (a) Good faith – N/A
  - (b) Willfulness/Negligence – N/A
  - (c) History of Compliance or Noncompliance – N/A
  - (d) Ability to pay – N/A
  - (e) Other Unique Factors – N/A
3. Economic Benefit – A larger UN-rated fiber drum that will hold T8s and T12s was **\$89** from NewPig.
4. Recalculation of Penalty based on New Information -

**TOTAL: \$ 4,249.00**



**NARRATIVE EXPLANATION TO SUPPORT  
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NOV # 2108087

Violation Number: 9

Violation Description: **Failure to mark each container or package of universal waste fluorescent lamps with one of the following phrases: "Universal Waste-Lamp(s)", or "Waste Lamp(s)", or "Used Lamp(s)".**

1. Gravity Based Penalty: **\$260.00**
  - (a) Potential for Harm - **Minor:** Universal waste lamps that are not identified could be mishandled, thus exposing people to mercury or releasing mercury to the environment. In this case however, the lamps were awaiting processing in the drum-top lamp crusher so there was not much likelihood they would be mishandled. However, as drum-top lamp crusher (DTC) registrants at the time, USU should be held to a standard of full compliance. Failure to identify universal waste as such interferes with implementation of the hazardous and universal waste program.
  - (b) Extent of Deviation - **Moderate:** USU failed to identify the contents of four out of six containers as universal waste lamps and the USU could not demonstrate when the lamps began accumulating.
  - (c) Multiple/Multi-day - N/A
2. Adjustment Factors (if applicable)
  - (a) Good faith – N/A
  - (b) Willfulness/Negligence – N/A
  - (c) History of Compliance or Noncompliance – N/A
  - (d) Ability to pay – N/A
  - (e) Other Unique Factors – N/A
3. Economic Benefit – Economic benefit was evaluated and found to be negligible as there is no cost to use a marker to write the correct words on a container.
4. Recalculation of Penalty based on New Information -

**TOTAL: \$260.00**

**NARRATIVE EXPLANATION TO SUPPORT  
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NOV # 2108087

Violation Number: 10

Violation description: **Failure to operate the drum-top lamp crusher in a controlled manner that prevents the release of mercury vapor or other contaminants in exceedance of the manufacturer's specifications.**

1. Gravity Based Penalty: **\$13,000.00**

- (a) Potential for Harm - **Major:** Mercury poses a serious occupational exposure risk. By not operating the DTC in a controlled manner, USU exposed workers operating the DTC and workers in the warehouse building to mercury. Mercury could also have entered the environment through an open warehouse door or been tracked out into the environment by workers walking through the warehouse.

USU's failure to operate the DTC in accordance with the terms of its approved registration undermines the effectiveness of the hazardous waste program.

- (b) Extent of Deviation – **Major:** The operator stated that 8-foot lamps broke off in the feed tube every time he fed them into drum-top crusher. Because these malfunctions were not recorded in the operating log as required it is not possible to determine how often this occurred, but since USU began crushing lamps in 2017 they crushed tens of thousands of lamps, many of which were likely 8-foot lamps.

- (c) Multiple/Multi-day – N/A

2. Adjustment Factors (if applicable)

- (a) Good faith - N/A

- (b) Willfulness/Negligence - N/A

- (c) History of Compliance or Noncompliance - N/A

- (d) Ability to pay - N/A

- (e) Other Unique Factors - N/A

3. Economic Benefit –Economic benefit was not applied because the statutory maximum was already met.

4. Recalculation of Penalty based on New Information -

**TOTAL: \$13,000.00**

**NARRATIVE EXPLANATION TO SUPPORT  
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NOV # 2108087

Violation Number: 11

Violation Description: **Failure to operate the registered drum-top lamp crusher to ensure the drum-top lamp crusher (DTC) is installed, maintained, and operated in accordance with written procedures developed by the manufacturer of the equipment including specific instructions for the frequency of filter changes.**

1. Gravity Based Penalty: **\$13,000.00**
  - (a) Potential for Harm - **Major:** Mercury poses a serious occupational exposure risk. By failing to operate and maintain the DTC according to written manufacturer instructions, USU exposed workers operating the DTC and workers in the warehouse building to mercury. USU's failure to operate the DTC in accordance with the terms of its approved registration undermines the effectiveness of the hazardous waste program.
  - (b) Extent of Deviation – **Major:** The DTC was not maintained or operated in accordance with written procedures developed by the manufacturer 101 separate times. The operator crushed more than one full drum of lamps per day 18 times. USU failed to replace the first-stage filter after every half drum of crushed lamps 80 times. USU failed to replace the HEPA filter after every 10 full drums three times.
  - (b) Multiple Events/Multi-day – Evaluated, but not included.
2. Adjustment Factors (if applicable)
  - (a) Good faith – N/A
  - (b) Willfulness/Negligence – N/A
  - (c) History of Compliance or Noncompliance – N/A
  - (d) Ability to pay – N/A
  - (e) Other Unique Factors – N/A
3. Economic Benefit - \$78 per filter x 80 times the filter should have been changed but was not changed. Taking into account the first change out, the economic benefit is \$78 per filter x 79 occurrences equals **\$6,162.00**. Economic benefit was not applied because the statutory maximum was already met.

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4. Recalculation of Penalty based on New Information -

**TOTAL: \$13,000.00**

**NARRATIVE EXPLANATION TO SUPPORT  
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NOV # 2108087

Violation Number: 12

Violation Description: **Failure to monitor the area in which the drum-top crusher was operated to ensure compliance with applicable Occupation Safety and Health Administration (OSHA) exposure levels for mercury.**

1. Gravity Based Penalty: **\$13,000.00**
  - (a) Potential for Harm - **Major:** Mercury is a neurotoxin. Mercury vapors are invisible and odorless. Breathing mercury vapors can harm the nervous system, lungs, and kidneys. Mercury vapors can pass easily from the lungs to the bloodstream. Elemental mercury is most dangerous when inhaled and must be handled with care. The legal airborne permissible exposure limit (PEL) is 0.1 mg/m<sup>3</sup> averaged over an 8-hour work shift. The recommended airborne exposure limit (REL) is 0.05 mg/m<sup>3</sup> (as Mercury vapor) averaged over a 10-hour work shift and 0.1 mg/m<sup>3</sup> (as Mercury), not to be exceeded at any time. Mercury vapors can remain airborne for up to a year. Failure to monitor the workspace while operating the DTC poses a serious risk to human health. Failure to operate in compliance with terms and conditions of the DTC registration undermines the effectiveness of the hazardous waste program.
  - (b) Extent of Deviation – **Major:** USU stated it conducted a single monitoring event over the three plus-year operational period. USU failed to provide to the Director any monitoring records for the three plus-year operational period to document compliance with applicable OSHA exposure levels for mercury. According to the operating record provided, USU operated the DTC 149 days without monitoring the air to document compliance with applicable OSHA exposure levels for mercury.
  - (c) Multiple/Multi-day – Evaluated, but not included.
2. Adjustment Factors (if applicable)
  - (a) Good faith - N/A
  - (b) Willfulness/Negligence - N/A
  - (c) History of Compliance or Noncompliance - N/A
  - (d) Ability to pay - N/A
  - (e) Other Unique Factors - N/A
3. Economic Benefit –The economic benefit was negligible since USU had monitoring equipment available for use.
4. Recalculation of Penalty based on New Information -

**TOTAL: \$13,000.00**

**NARRATIVE EXPLANATION TO SUPPORT  
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NOV # 2108087

Violation Number: 13

Violation Description: **Failure to maintain a complete operating record of the drum-top lamp crusher.**

1. Gravity Based Penalty: **\$7,800.00**
  - (a) Potential for Harm - **Major**: Failure to maintain an operating record of a registered DTC interferes with the Division's ability to inspect and determine compliance with the registration requirements. For example, the USU employee operating the DTC stated that 8-foot lamps broke every time he fed them into the DTC, but he did not record these malfunctions in the operating record, so it was impossible to determine how many times the equipment was operated in a manner that allowed mercury to be released into the workspace and the environment.
  - (b) Extent of Deviation – **Moderate**: USU failed to document in the DTC operating record: the size of the lamps crushed; the time of each filter changeout; the date, time, and type of maintenance (other than filter changes); occurrence of any malfunctions; and procedures for preventing malfunction. USU did maintain an operating record, but as described, it did not contain many of the required elements.
  - (c) Multiple/Multi-day - N/A
2. Adjustment Factors (if applicable)
  - (a) Good faith - N/A
  - (b) Willfulness/Negligence - N/A
  - (c) History of Compliance or Noncompliance - N/A
  - (d) Ability to pay - N/A
  - (e) Other Unique Factors - N/A
3. Economic Benefit - Economic benefit was evaluated and found to be negligible as there would have been no additional cost to maintain a complete operating record.
4. Recalculation of Penalty based on New Information -

**TOTAL: \$7,800.00**