



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
RESOURCE CONSERVATION AND RECOVERY ACT**

BASIC INFORMATION

Facility Name: University of Colorado – Boulder **RCRA ID:** COD007431505

Facility Location:

1000 Regent Drive
UCB 413
Boulder, CO 80309-0413

Facility Contact:

Chris Quattrociocchi
Hazardous Materials Program Manager
303-492-6390 (office)
303-435-3114 (cell)

Notification Status:

TSDF
Large Quantity Generator

Date of Inspection: July 9, 2021

Arrival Time: 9:10 a.m.

Departure Time: 5:00 p.m.

Weather Conditions: All parts of the facility that were inspected were indoors.

Lead Inspector: Kristin McNeill, U.S. EPA RCRA Inspector

Other Attendees:

1. Annette Maxwell, U.S. EPA RCRA Inspector
2. James Hindman, Colorado Department of Public Health and Environment (CDPHE) RCRA Permit Writer
3. Chris Quattrociocchi, University of Colorado (CU) Boulder, Environmental Health & Safety (EH&S) Hazardous Materials Program Manager
4. Brandon Boger, CU Boulder, EH&S Director
5. Mark Lapham, CU Boulder, EH&S Associate Director/Compliance Manager
6. Bryan Browne, CU Boulder, EH&S Chemical Safety Officer
7. Eric Wright, CU Boulder, EH&S Chemical Safety & Compliance Inspector
8. Holly Gates-Mayer, CU Boulder, EH&S Assistant Director
9. Brad Denton, CU Boulder, Radiation Safety Specialist

Type and Purpose of Inspection: Compliance Evaluation Inspection
Compliance with RCRA Subtitle C

Facility Type: Public university with teaching and research labs

Applicable Regulations to Inspection: 40 CFR Parts 260-279
CDPHE State RCRA Permit No. CO-20-11-23-01

Inspection Type: Announced Inspection per CDPHE's inspection notification requirement
EPA lead inspection with CDPHE accompanying

Disclaimer

This report is a summary of observations and information gathered from the facility at the time of the inspection. The information provided does not constitute a final decision on compliance with RCRA regulations, nor is it meant to be a comprehensive summary of all activities and processes conducted at the facility.

OPENING CONFERENCE

We met Mr. Quattrociochi outside of the Environmental Health & Safety Center located at 1000 Regent Drive, EH&S Building H-13, and he brought us to a conference room for the opening conference. Ms. Maxwell and I presented our credentials to Mr. Lapham and Mr. Quattrociochi. We were not denied access to the facility and were allowed to inspect all areas that we selected for inspection. Mr. Lapham, Mr. Quattrociochi, Mr. Browne and Mr. Wright accompanied us throughout the inspection.

☒ Credentials Presented to Chris Quattrociochi and Mark Lapham

☒ CBI warning to facility provided

☐ Small Business Resources Information Sheet provided to facility contact (only applicable for small businesses)

☐ CBI was provided or discussed during the inspection

The following information was obtained verbally during the inspection from Mr. Quattrociochi, Mr. Lapham, Mr. Browne, or Mr. Wright unless otherwise noted.

Company Ownership: CU Boulder is a state-run university owned by the state of Colorado.

General Facility and Process Description:

During the opening conference of the inspection, Mr. Quattrociochi, Mr. Lapham, Mr. Browne, and Mr. Wright, explained the university's hazardous waste generation and storage.

Regulatory Status

According to RCRAInfo, the main campus of CU Boulder is a large quantity generator (LQG) of hazardous waste and is a permitted hazardous waste storage facility under CDPHE State RCRA Permit No. CO-20-22-23-01. During the inspection, Mr. Quattrociochi confirmed that CU Boulder was an LQG and TSD. Based on my observations of waste generation and the amount of waste on-site, the facility appeared to be generating at least 2200 pounds of hazardous waste per month and was therefore a large quantity generator at the time of the inspection.

Site Hazardous Waste Information

This inspection only addressed the CU Boulder main campus. There are a number of CU Boulder and CU Denver extension campuses that operate under separate EPA RCRA ID numbers. In addition to hazardous waste generated on the main campus, CU Boulder receives, consolidates, and stores hazardous waste from all of the other campuses, which is allowed by their permit. Hazardous waste generated on other campuses is accumulated in 90- and 180-day areas before it is transported to the CU Boulder main campus permitted storage area under a manifest. CU Boulder signs as the destination

facility when the waste is received and then manifests the hazardous waste when it is shipped to the final TSD. Hazardous waste is stored in the permitted storage area in the lower level of the Environmental Health & Safety Center building. The hazardous waste storage area is trenched (with no drains) and wastes are separated based on compatibility. There is a separate room with a door where oxidizers are stored. CU Boulder also stores mixed radioactive waste in a separate area of the same building.

CU Boulder has 188 teaching and research labs on its main campus that generate the majority of the hazardous waste managed at the site. A small amount of hazardous waste is also generated in the ceramics and photography studios in the art department, among other locations. Some vehicle maintenance is also performed onsite. There is one 90-day area and approximately 310 satellite accumulation areas (SAAs) on the main campus. CU Boulder tracks hazardous waste generated at various locations across all campuses using a paper tagging system. They also use Bioraft Lab Management software that tracks lab management, training, equipment and weekly SAA inspections performed by lab personnel, in addition to other elements. Mr. Wright stated that he conducts an annual inspection at every SAA on campus.

According to Mr. Quattrociochi, the EH&S staff make hazardous waste determinations based on the information provided by the labs once the waste is received at the hazardous waste storage area. The hazardous waste is picked up by Veolia three times per year; approximately every four months. The next pick up following the inspection was scheduled for July 22, 2021. Mr. Quattrociochi said that they generally ship approximately 90 bulk containers and 30 lab packs during each shipment, which fills a trailer.

CU Boulder treats some hazardous waste through neutralization. For corrosive aqueous wastes (D002) that do not contain RCRA metals, CU Boulder treats the wastes using a batch neutralization process. Mr. Lapham explained that the acid waste is treated with hydroxides to neutralize the pH and is then drummed and disposed of at a non-hazardous waste landfill. The sludge from the treatment process is tested to determine if it is hazardous waste when it is removed from the tank.

Mr. Lapham also explained that they have an ion exchange tank for silver recovery. They receive waste from the photo lab and balance the pH, pump it into columns to filter, and then into the treatment tank. After treatment, it is sampled for silver prior to discharge to the City of Boulder POTW.

Mr. Quattrociochi explained that CU Boulder also has two solvent distillation units – one in the EH&S building for ethanol and one in the Ekeley Sciences building for acetone. He said that these stills are serviced every two years.

Previous to this inspection, the areas and records falling under the CU Boulder permit were inspected by CDPHE on August 5, 2020, with no resulting violations. The last LQG inspection was a joint EPA-CDPHE inspection on May 3, 2017, resulting in a CDPHE Compliance Advisory for two violations: SAA containers not being managed at the point of generation and three containers not labeled as Hazardous Waste.

Laboratories that previously generated hazardous waste at this site, including certain chemistry, engineering, and aerospace laboratories, have recently moved to the CU Boulder East Campus, EPA RCRA ID COD980716989.

DESCRIPTION OF INSPECTION

Areas of the facility toured:

Mr. Quattrociocchi and Mr. Wright led us on a tour of the facility. We looked at the university's processes, including hazardous waste management practices, generation points, and accumulation areas. We looked for wastes that facility representatives had not yet identified or designated as hazardous. Specifically, we inspected the following areas of the facility:

- Permitted hazardous waste storage area in the EH&S building
 - Oxidizer room
 - UW storage area
- Elementary neutralization room
 - Ethanol solvent distillation unit
- Permitted mixed waste storage area (one 500 ml bottle of S35 sodium with ASD of 9/12/18)
- Grounds and Recycling Operations Center (GROC) (labeled used oil container, batteries to be sent for core charge)
- Ekeley Sciences (mainly teaching labs)
 - Room M1B10: 90-day storage and acetone distillation unit
 - Room M1B65: teaching lab
 - Room S1B25B: instrumentation shop
- Cristol Chemistry
 - Room 18: research lab
- Visual Arts Complex (VAC)
 - Room 156: ceramics glaze mix room
 - Basement near room 1B60D: photo development area
- Benson Earth Sciences Center (Geology)
 - Room 225A: research lab

Only those areas in which we observed potential compliance concerns or noted pertinent activities are further discussed below.

Observations:

Permitted hazardous waste storage area

In the permitted hazardous waste storage area, we discussed EH&S's process for labs to notify them that waste was ready to be picked up. Mr. Quattrociocchi explained that lab personnel complete the information on the tag, which is attached to each hazardous waste container and contains carbon copies. When waste is ready to be picked up, one copy of the tag is put into the campus mail, which takes 1-2 days to arrive at the EH&S office. Then it takes EH&S approximately 1-2 days to pick up the waste from the lab, although they allow up to 3-5 business days. Ms. Maxwell and I discussed with Mr. Quattrociocchi and Mr. Lapham that a full 55-gallon satellite container must be moved into the hazardous waste storage area within 3 days of being filled. Mr. Wright clarified that they have instructed lab personnel to mail in the tag when the container is not completely full, therefore no containers should reach the 55-gallon volume before being moved to the hazardous waste storage area.

The oldest date that I observed on a container in the Hazardous Waste Storage Area was 7/28/20. Mr. Quattrociocchi explained that they have a system to check the dates in their inventory and mark any containers that are nearing one year. He also explained that EH&S bulks compatible solvent waste in the hazardous waste storage area every 1-2 weeks. He said that when the waste is bulked into a new container, they have been using the date that the waste is bulked. Ms. Maxwell and I informed Mr. Quattrociocchi that they should be using the oldest original date of the bulked waste. Using the date that the waste is bulked would potentially allow waste to be stored for over one year, because it may not accurately reflect the length of time waste is stored onsite after transfer to the permitted storage area.

Ekeley Sciences

Room M1B10:

I observed an SAA for mixed solvents with two 5-gallon carboys in one tray for secondary containment (photo 1). One container was closed and labeled with the words “Hazardous Waste,” but was not labeled with an indication of the hazard. The other container was closed, but was not labeled with the words “Hazardous Waste” or an indication of the hazard.

I also observed a small solvent distillation unit used to recover acetone. The unit produces hazardous waste sludge that is cleaned out when serviced. The unit was labeled with a service date of 3/9/21. There was no acetone waste present at the time of the inspection, but I observed containers in a flammable cabinet that had been prepared to hold acetone waste. The containers had been labeled with the words “Hazardous Waste” and a space for an accumulation start date, but there was no indication of the hazard (photo 2).

According to Mr. Browne, the acetone waiting to be processed is considered to be in 90-day storage because the distillation unit is not located at the point of generation, however the flammable cabinet was labeled as a satellite accumulation area (photo 3). I noted that weekly inspections were performed of the 90-day flammable cabinet and the SAA and recorded on a log on the flammable cabinet.

Room M1B65 Teaching Lab:

Mr. Wright stated that this was a teaching lab. I observed two 55-gallon and two 5-gallon SAA containers to collect lab waste (photo 5). The containers were closed and there were signs on the windowsills near the containers identifying one 55-gallon container as “hazardous waste – organic waste,” the other 55-gallon container as “hazardous waste – aqueous waste,” and the two 5-gallon containers as “hazardous waste – acetone recycling.” However, the two 55-gallon and two 5-gallon SAA containers themselves were not labeled with the words “Hazardous Waste” or an indication of the hazard (photos 6 and 7).

I also observed three 500 ml containers in one of the hoods that were closed and labeled as “hazardous waste – organic,” “hazardous waste – aqueous,” and “hazardous waste – acetone.” These containers were approximately half full of waste even though classes were not currently occurring in this classroom. In another hood, I observed another 500 ml container labeled “hazardous waste – aqueous” that was not closed but contained waste. Upon further review, these containers are considered part of the SAA for room M1B65, and so must be labeled with the words “Hazardous Waste,” an indication of the hazard, and must be closed. Waste collected in these small containers may be consolidated into the 5- or 55-gallon SAA containers in the same room; however, the total amount of waste for a given waste stream may not exceed 55 gallons, which is the limit for an SAA. The four small containers were not labeled

with an indication of the hazard and one was not closed. At the time of the inspection, waste was not being added, removed, or consolidated.

Room S125B Instrumentation Shop:

I observed an SAA in the instrumentation shop for 99% isopropyl/1% polymethylmethacrylate that was closed and labeled with the words “Hazardous Waste,” but was not labeled with an indication of the hazard.

Cristol Chemistry

Rooms 18 and 20 Research Lab:

I observed an SAA designated as “bench top SAA” next to the sink near hood 305 with two small containers. One was labeled as containing acetone, dichloromethane, ethyl acetate, hexanes, methanol, chloroform, toluene, and water, and the other was labeled as containing water, sodium chloride, sodium sulfate, magnesium sulfate, and potassium hydroxide. The containers were closed, but the hazardous waste tags, containing the words “Hazardous Waste” and an indication of the hazards, were on the benchtop under the containers and were not attached to the containers (photo 9). The two SAA containers were not labeled with the words “Hazardous Waste” or an indication of the hazards.

Visual Arts Complex (VAC)

Room 156 ceramics glaze mix room:

I observed a 55-gallon SAA container for hazardous waste ceramics glaze containing heavy metals that was labeled with the words “Hazardous Waste” but was not labeled with an indication of the hazard and was not closed (photo 12). At the time of the inspection, waste was not being added, removed or consolidated.

Basement outside of room 1B60N:

I observed an SAA that contained four 30-gallon poly containers to collect hazardous waste from the photo development process. These containers were labeled as “paper developer waste,” “stop bath waste,” “fixer waste,” and “archive fixer remover.” These four containers were closed and labeled with hazardous waste tags that contained the words “Hazardous Waste,” but were not labeled with an indication of the hazards (photo 13).

Benson Earth Sciences Center (Geology)

Room 225A:

I observed a 5-gallon container in the hood for used sample collection waste containing 5% nitric acid and <1% hydrofluoric acid. The container was labeled with the words “Hazardous Waste” and an indication of the hazard (corrosive). It had an open white funnel in the hole with the cap sitting on top of the container, so was not closed (photo 14). At the time of the inspection, waste was not being added, removed, or consolidated.

Records Review:

The following documents were reviewed at the facility:

- Permitted hazardous waste storage area daily, weekly, and monthly inspection logs (8/5/20 – present)
- Hazardous waste manifests with land disposal notifications from the past year: 7/23/20, 11/25/20, and 3/25/21

- Hazardous waste training records for EH&S staff (Chris Quattrociocchi, Joe Gibbs, John McCammon, Stephen Kupecz, Will Moore, and Ralph Bogle)
- Employee job descriptions for positions related to hazardous waste

The only issue noted was that the training records were missing dates for contingency plan and emergency procedures on-the-job trainings, as required by the CU Boulder State RCRA Permit.

Requested documents: As part of the inspection, I requested that Mr. Quattrociocchi email me the contingency plan. He emailed it to me on July 19, 2021, and I reviewed it offsite. According to the contingency plan, “the procedures outlined in the Contingency Plan are used exclusively at the Hazardous Waste Container Storage Facility and the Mixed Waste Facility” and I saw no issues with the contingency plan as related to those areas. As of the date of this report, I contacted Mr. Quattrociocchi to determine if CU Boulder has a contingency plan for the LQG areas, but have not yet received a reply.

Compliance Assistance:

I advised Mr. Wright that he or other lab personnel can write the indication of the hazard on their existing hazardous waste tags to meet the requirement that SAA containers be labeled with an indication of the hazards of the contents. I also advised him that if a waste was non-hazardous, they should label it as such and cross out the word “hazardous” on the paper tag to clarify that the waste is not hazardous and is not required to be managed as such.

CLOSING CONFERENCE

We held a closing conference with Mr. Quattrociocchi, Mr. Lapham, Mr. Browne, Mr. Wright, Mr. Boger, and Ms. Gates-Mayer in which I summarized the concerns that we had noted during the walk-through inspection and the records review.

Concerns or Deficiencies:

1. In Ekeley Sciences M1B10, a 5-gallon SAA container was not labeled with the words “Hazardous Waste” or an indication of the hazard [6 CCR 1007-3 262.15(a)(5)(i) and 6 CCR 1007-3 262.15(a)(5)(ii)].
2. In Ekeley Sciences M1B65, two 55-gallon and two 5-gallon SAA containers were not labeled with the words “Hazardous Waste” or an indication of the hazard [6 CCR 1007-3 262.15(a)(5)(i) and 6 CCR 1007-3 262.15(a)(5)(ii)].
3. In Ekeley Sciences M1B65, four 500 ml SAA containers were not labeled with an indication of the hazard [6 CCR 1007-3 262.15(a)(5)(ii)] and one 500 ml SAA container was not closed [6 CCR 1007-3 262.15(a)(4)].
4. In Ekeley Sciences S125B, a 5-gallon SAA container was not labeled with an indication of the hazard [6 CCR 1007-3 262.15(a)(5)(ii)].
5. In Cristol Chemistry 18, two small SAA containers were not labeled with the words “Hazardous Waste” or an indication of the hazard [6 CCR 1007-3 262.15(a)(5)(i) and 6 CCR 1007-3 262.15(a)(5)(ii)].
6. In VAC 156, a 55-gallon SAA was not closed [6 CCR 1007-3 262.15(a)(4)] and was not labeled with the words “Hazardous Waste” [6 CCR 1007-3 262.15(a)(5)(i)].

7. Outside of VAC 1B60N, four 30-gallon SAA containers were not labeled with an indication of the hazard [6 CCR 1007-3 262.15(a)(5)(ii)].
8. In Benson Earth Sciences 225A, one 5-gallon container was not closed [6 CCR 1007-3 262.15(a)(4)].
9. The training records were missing dates for contingency plan and emergency procedures on-the-job trainings, as required by the CU Boulder State RCRA Permit Section II.F.3, which refers to Permit Attachment 5, Table 1, number 5.

INSPECTION FOLLOW-UP

Concerns or Deficiencies Corrected:

Brandon Boger, EH&S Director, sent an email on August 16, 2021, detailing corrective actions that CU Boulder has taken in response to concerns identified during the inspection (Appendix B). According to this submittal, most of the deficiencies have been corrected, including:

- Properly labeling the 5-gallon SAA for mixed solvents in Ekeley Sciences M1B10
- Adding an indication of the hazard to the 90-day acetone containers in Ekeley Sciences M1B10
- Properly labeling the two 55-gallon and two 5-gallon SAAs in Ekeley Sciences M1B65
- Initiating new management practices for the small SAA containers in the hoods in Ekeley Sciences M1B65
- Properly labeling the 5-gallon SAA in Ekeley Sciences S1B25B
- Properly labeling and closing the container, and ordering a new lid for the SAA ceramics glaze container in VAC 156
- Properly labeling the four 30-gallon SAAs outside of VAC 1B60N
- Properly labeling the 5-gallon SAA in the hood in Benson 225A

Outstanding Concerns or Deficiencies:

While the submittal sent by Mr. Boger on August 16, 2021, addressed most of the deficiencies observed during the inspection, a few remain to be corrected, including:

- In Ekeley Sciences room M1B10, the 90-day storage area in the flammable cabinet is labeled as a satellite accumulation area.
- In Cristol Chemistry 18, no correction was noted for the two small SAA containers with the tags on the benchtop under the containers.
- The training records were missing dates for contingency plan and emergency procedures on-the-job trainings.
- It is unclear if there is a contingency plan for the LQG areas.

Facility Name: University of Colorado – Boulder (COD007431505)

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Facility Location: 1000 Regent Drive, Boulder CO

Date of Inspection: July 9, 2021

SIGNATURES

Lead Inspector: KRISTIN MCNEILL Digitally signed by KRISTIN MCNEILL
Date: 2021.09.07 09:23:40 -06'00'

RCRA/OPA Branch Chief: JANICE PEARSON Digitally signed by JANICE PEARSON
Date: 2021.09.07 07:52:40 -06'00'

APPENDICES AND ATTACHMENTS

Appendix A: Photo log

Appendix B: Email received from Mr. Boger, EH&S Director, on August 16, 2021

APPENDIX A: PHOTO LOG

The photos are original and have not been modified in any way. All photos were taken by Kristin McNeill on July 9, 2021 using a Nikon Coolpix S7000 camera.



Photo 1: SAA in Ekeley Sciences storage room with two 5-gallon containers of solvent mix (DSCN1411.JPG)



Photo 2: 90-day area for acetone waste in Ekeley Sciences storage room flammable cabinet (DSCN1412.JPG)



Photo 3: Flammable cabinet for acetone waste in Ekeley Sciences storage room (DSCN1413.JPG)

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Facility Location: 1000 Regent Drive, Boulder CO

Date of Inspection: July 9, 2021

University of Colorado at Boulder

HAZARDOUS MATERIAL /WASTE TAG

Environmental Health & Safety, 413 UCB (303) 492-7845
hazmat@colorado.edu • <http://www.colorado.edu/ehs>

PRESS HARD USING INK - MULTIPLE COPIES

Dept. _____ Bldg. _____ Rm. # _____
Generator Name _____ Phone _____
Principal Investigator _____
Exact Container Location _____

% (Must Total 100)	Container Contents	DOT/EPA Codes EH&S
	USE COMPLETE CHEMICAL NAMES	Use Only

☐ IGNITABLE ☐ TOXIC ☐ OXIDIZER ☐ CORROSIVE ☐ REACTIVE

Continued Next Tag? No ___ Yes ___ (Tag ___ of ___) Do Not Write On Back
Container Size and Type _____ pH _____
Net Quantity Contained: Liters (liquid) _____ or Kilograms (solid) _____

I certify that I have taken the EHS Hazardous Waste Generator Training and
that this waste disposal tag is accurate and complete.

Generator Signature _____
Date Tag Submitted _____ Received _____ P/U _____

EH&S
Use Only

CONTAINER TRACKING # 218522

Classification:

For Disposal: Campus mail the top white copy to EHS box 413 UCB or submit it directly to EHS
Rev. 05/19 ODB

7.9.2021 13:35

Photo 4: Example CU Boulder hazardous material/waste tag with area to indicate hazards (DSCN1414.JPG)



Photo 5: SAA in Ekeley Sciences room M1B10 with two 55-gallon containers and two 5-gallon containers of solvent waste. Containers are not labeled as hazardous waste; labels are on the signs on the windowsill. (DSCN1415.JPG)



Photo 6: Sign for one of the 55-gallon SAA containers in Ekeley Sciences room M1B10 (DSCN1416.JPG)

Solid Waste Contents	Organic Waste Contents	Aqueous Waste Contents
Filter paper	Water	Water
Weighing paper	Acetone	Acetone
Paper towels	Hexanes	Ethanol
Gloves	Ethyl Acetate	Methanol
Sodium sulfate	Dichloromethane	Sulfuric Acid
Glass	Ethanol	Sodium Chloride
Silica	Methanol	tert-Butanol
Benzoic acid	Acetic Acid	Hydrochloric Acid
Plastic bags	Limonene	Acetic Acid
Acetone	Dibromodiphenylethane	Sodium Acetate
	Cyclohexane	Sodium Bicarbonate
	Methylcyclohexane	Sodium Borohydride
	Toluene	Sodium Hydroxide
	Ethylbenzene	m-Chlorobenzoic Acid
	Isopropylbenzene	Crystal Violet
	tert-Butylbenzene	Sodium Thiosulfate
	Bromine	Sodium Phosphate
	Cyclohexanol	Magnesium Bromide
	Chloroform	Benzalacetophenone
	Tetrahydrofuran	Aliquat 336
	Hydrochloric Acid	Sodium Tungstate Dihydrate
	Crystal Violet	Potassium Hydrogen Phosphate
	Methyl 4-Chlorobenzoate	Hydrogen Peroxide
	Methyl Phenylacetate	Ammonium carbonate
	Methyl Cinnamate	Tin
	Methyl N-Methyl Anthranilate	Nitrobenzene
	Methyl Salicylate	Diethyl Phosphite
	Dimethyl Maleate	Dimethyl Formamide
	Diethyl Ether	Coumarin 334
	2-Ethyl-1,3-Hexanediol	
	Sodium Thiosulfate	
	Eugenol	
	Grubbs (I) Catalyst	
	Petroleum Ether	
	Methyl tert-Butyl Ether	
	Frambinone	
	Coumarin 334	

Photo 7: Sign indicating the contents of the SAA containers in Ekeley Sciences room M1B10 (DSCN1417.JPG)

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Facility Location: 1000 Regent Drive, Boulder CO

Date of Inspection: July 9, 2021

HAZARDOUS MATERIAL WASTE TAG
Environmental Health & Safety, 413 UCB (303) 492-7845
hazmat@colorado.edu • http://www.colorado.edu/ehs
PRESS HARD USING INK - MULTIPLE COPIES

Dept. Chemistry Bldg. Cristol Rm. # 20
Generator Name Nathan Osherson Phone 2-6615
Principal Investigator Josh Scharfman
Exact Container Location near sinks

% (Must Total 100)	Container Contents USE COMPLETE CHEMICAL NAMES	DOT/EPA Codes EH&S Use Only
100	Sharps	
	needles, syringes,	
	razor blades	
tr	organics	

☐ IGNITABLE ☐ TOXIC ☐ OXIDIZER ☐ CORROSIVE ☐ REACTIVE

Continued Next Tag? No ☒ Yes (Tag 1 of 1) Do Not Write On Back
Container Size and Type 20 L metal can pH —
Net Quantity Contained: Liters (liquid) — or Kilograms (solid) —

I certify that I have taken the EHS Hazardous Waste Generator Training and that this waste disposal tag is accurate and complete.

Generator Signature Nathan Osherson
Date Tag Submitted 7/9/21 Received — PU —
207599
CONTAINER TRACKING #
Classification:
For Disposal: Campus mail the top white copy to EHS box 413 UCB or submit it directly to EHS
Rev. 06/19 CDB

7.9.2021 14:13

Photo 8: Hazardous material tag on sharps container in Cristol Chemistry room 20 (DSCN1418.JPG)



Photo 9: Unlabeled SAA containers with unattached hazardous waste tags in Cristol Chemistry room 18 (DSCN1419.JPG)



Photo 10: Open SAA containers being vented in Cristol Chemistry room 18 (DSCN1420.JPG)

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7.9.2021 14:18

Photo 11: Hazardous material tag on open container in Cristol Chemistry room 18 (DSCN1421.JPG)



Photo 12: Open SAA container for ceramics glaze in Visual Arts Complex room 156 (DSCN1422.JPG)



Photo 13: SAA containers for waste related to the photo development process in Visual Arts Complex outside of room 1B60N (DSCN1423.JPG)

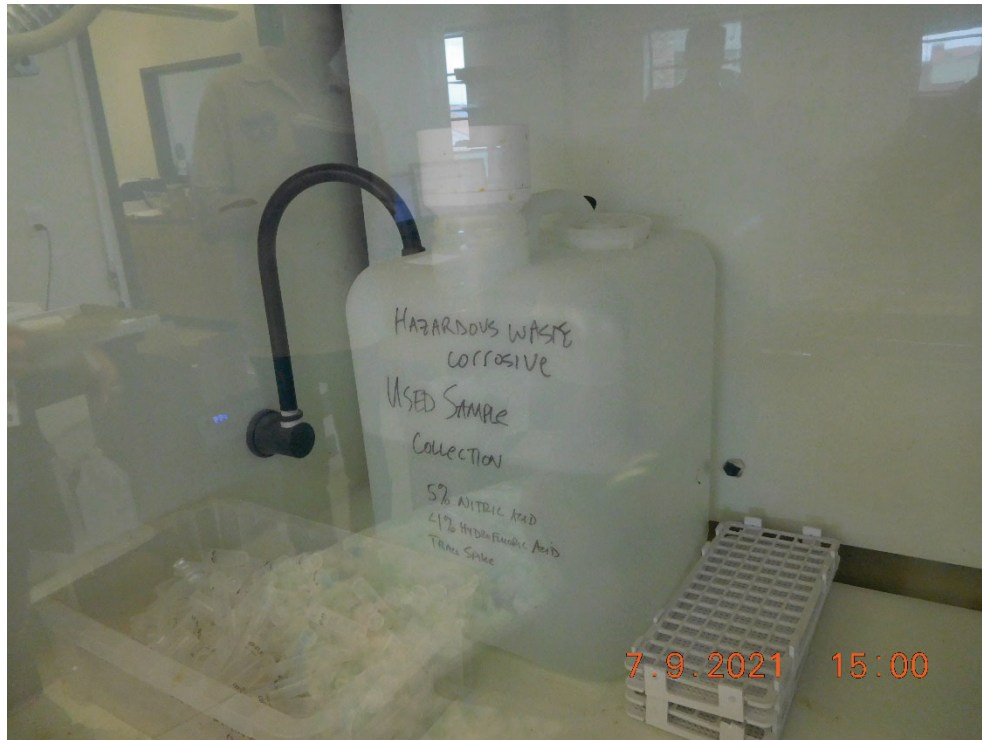


Photo 14: Open SAA in hood in Benson room 225A (DSCN1424.JPG)

APPENDIX B:

Email received from Mr. Boger, EH&S Director

August 16, 2021

University of Colorado – Boulder (COD007431505)

1000 Regent Drive, Boulder CO

July 9, 2021

From: [Brandon Boger](#)
To: [McNeill, Kristin](#)
Cc: [Maxwell, Annette](#); [James Hindman](#); [David Kang](#); [Mark Lapham](#); [Holly Gates-Mayer](#); [Bryan W Browne](#); [Eric Scott Wright](#); [Christopher John Quattrociocchi](#); [Margaret Ashton](#)
Subject: Univ. of CO Boulder inspection July 9, 2021
Date: Monday, August 16, 2021 3:51:15 PM
Attachments: [2021 RCRA Inspection Follow Up Response.pdf](#)

Kristin,

As a follow up to the EPA/CDPHE inspection at the University of Colorado Boulder on July 9, 2021, we are submitting the attached report that details actions we have taken to address items that were noted during the visit.

Please feel free to contact me directly with any questions or concerns, and we look forward to receiving your feedback regarding the inspection.

brandon

Brandon Boger, CHMM
Director, Environmental Health & Safety Department
University of Colorado Boulder
303-492-4002 office
303-265-1098 cell
303-492-2854 fax
Brandon.Boger@Colorado.EDU



University of Colorado
Boulder

Environmental Health & Safety
1000 Regent Drive
413 UCB
Boulder, Colorado 80309

t 303 492 6025
f 303 492 2854
ehs@colorado.edu

August 13 2021

Kristin McNeill, Environmental Scientist
RCRA Enforcement Branch
Environmental Protection Agency
Region 8, ENF-ROR
1595 Wynkoop Street
Denver, Colorado, 80202

RE: Response to Notice of Inspection

Dear Kristin McNeill,

Thank you for spending time with us on July 9th 2021, checking hazardous waste records and performing compliance inspections for our main campus location, EPA I.D. # COD007431505. This letter summarizes CU-Boulder's response to the Notice of Inspection and the various compliance items observed during the walkthrough of our campus satellite accumulation areas.

1. EKLC M1B10

- a. Observed: Two carboys of presumed hazardous waste did not have full correct labeling to meet all hazardous waste requirements.
 - i. Response: The contents of the carboys were identified and confirmed to be waste. They were fully labeled with our hazardous waste disposal tags to meet all hazardous waste regulations.



M1B10: Carboys fully identified and tagged

- b. Observed: In the 90-day storage area within the room, there are collection bottles that are pre-labeled and get used for storage of waste solvent to be recycled in our distillation unit. These bottles were all empty during the inspection, however they were lacking the required designation of its waste characteristic for when they will contain solvent waste.
- i. Response: All 90-day reuse bottles were applied with a “flammable” label, in order to ensure they meet labeling requirements when they eventually hold hazardous waste.



M1B10: 90-Day storage area reuse solvent waste bottles with new characteristic labels

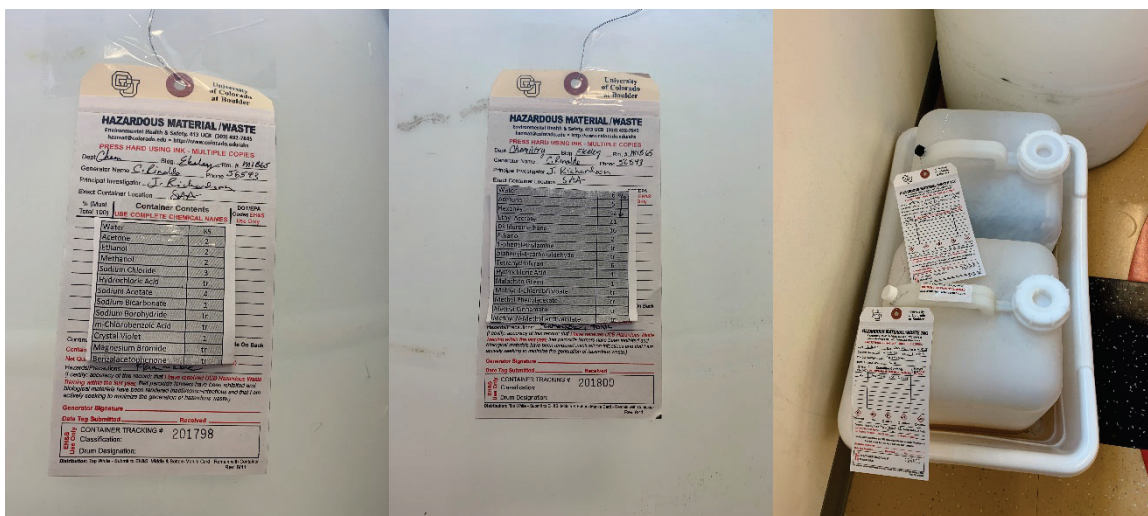
2. EKLC M1B65

- a. Observed: Two 55-gal drums and two 5-gal carboys had their labeling and list of contents posted on the wall adjacent to the containers, instead of on the containers themselves. They were also lacking their labeling of hazard characteristic.



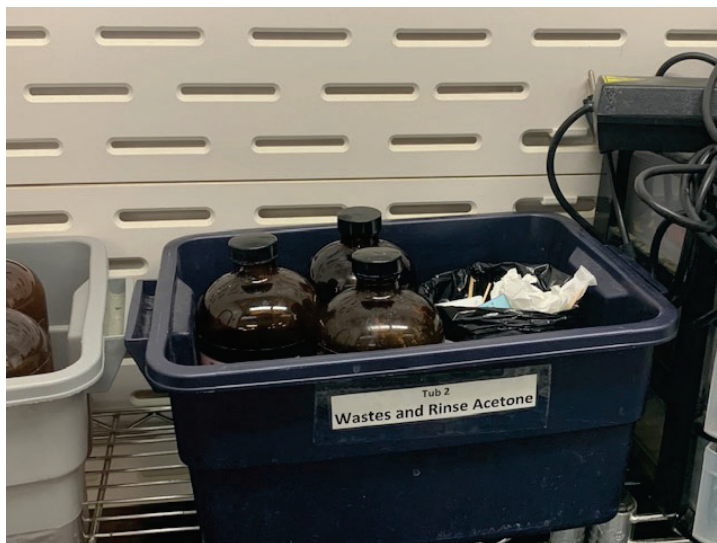
EKLC M1B65: Drum and carboy SAAs pre-tagging.

- i. Response: All of these containers received a hazardous waste labeling tag, and had its hazard characteristic denoted.



EKLC M1B65: Tags added to the 2 drums and 2 carboys

- b. Observed: Within the teaching lab fume hoods of this room, there are smaller 1-liter bottles that are filled during a class day, and should then be emptied into the main drums/carboys by the end of the day. It was observed that these waste bottles still contained some hazardous waste, most likely abandoned due to the pandemic ceasing in-person classes last year.

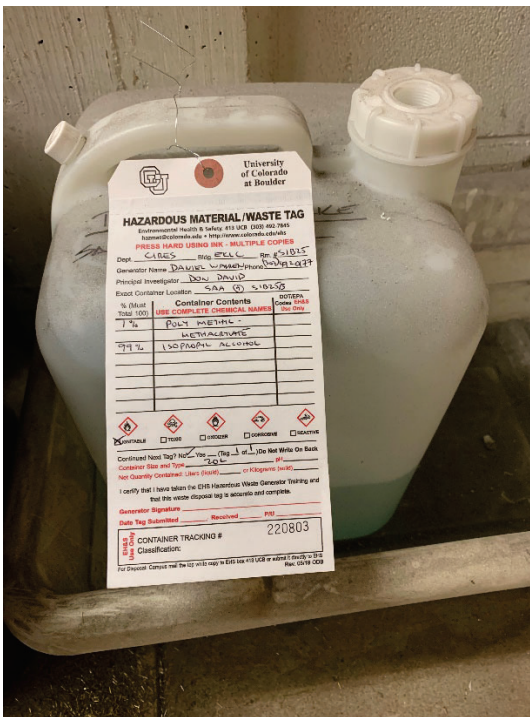


EKLC M1B65: Teaching Lab hoods with leftover waste

- i. Response: All waste containers throughout these teaching hoods have been emptied into their respective waste consolidation SAAs, and no waste remains in the hoods. To ensure this does not happen again, we are working with the teaching lab supervisor and are currently investigating new methods to ensure these containers are emptied into the SAA drums and carboys at the end of each work shift for the coming fall semester of in-person classes.”

3. EKLC S1B25B

- a. Observed: There was a hazardous waste carboy observed in this SAA that was missing the labeling of its hazard characteristic.
 - i. Response: The carboy received a new tag and had its hazard characteristic labeled.



EKLC S1B25B: Carboy with hazard characteristic marked on tag

4. CHEM 20

- a. Observed: There was a can of sharps hazardous waste observed in an SAA that was missing the labeling of its hazard characteristic.
 - i. Response: The contents of the waste container was labeled with its hazard characteristic. A walk through of the lab was performed to ensure that every waste container had its hazard characteristic marked/labeled.
- b. Observed: There was bottle of hazardous waste that had its cap loosely closed, in order to prevent the building of gas pressure which could lead to a hazardous situation developing.
 - i. Response: We confirmed with the lab members that this is used only

as a temporary measure, and that the container is fully sealed once the off gassing stops and the hazard subsides. Return inspections by EH&S to the lab confirmed that the container is fully sealed.

5. VAC 156

- a. Observed: There was a 55-gal drum of ceramic glaze hazardous waste in this SAA that was missing a detailed labeling of its contents, as well as its hazard characteristic. In addition, even though the drum did have its lid placed on top, it was not fully tightened down to completely seal it.
 - i. Response: The drum received a hazardous waste tag that completely lists its contents as well as its hazard characteristic. The drum also had its bolt-lock rim fully tightened to seal it.

We contacted the lab manager, and they expressed that this style of bolt locking mechanism is extremely difficult for them to do. This leads them to not fully tighten the rim every time they add to the drum like they should. EH&S is planning to purchase a lever-lock ring for the drum in this space, which is much easier to close and will help ensure the drum is fully sealed in the future.



VAC 156: Drum with labeling tag attached and drum lid fully sealed.

6. VAC 1B60

- a. Observed: There was a line of four 30-gal drums that were missing the labeling of its hazard characteristic.
- i. Response: All of the drums had its hazard characteristic clearly added to its labeling tag.

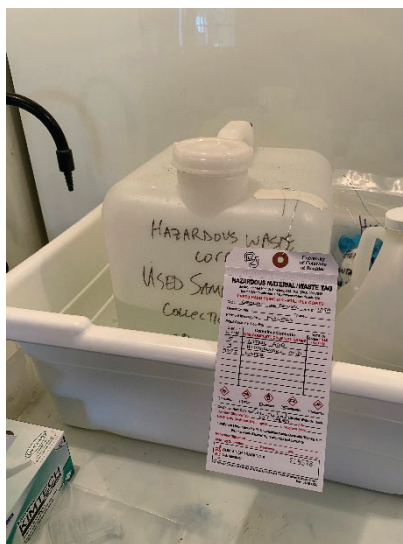


VAC 1B60: Drum tags with hazard characteristic marked.

7. BESC 225A

- b. Observed: There was a carboy of hazardous waste in the fume hood that was left open with a funnel placed in it.
- ii. Response: The carboy has had its funnel removed, and the carboy was sealed. We also attached a new hazardous waste tag to keep the

container labeling clearer. We spoke with lab members to remind them it must be closed when not actively being added to.



BESC 225A: Carboy with funnel removed, lid sealed, and a new clear hazardous waste tag attached.

Additionally, since we observed a high frequency of hazardous waste containers missing their required labeling of its hazard characteristic, we felt it was prudent to notify and remind all of our waste generators of this requirement. We sent out an email to over 2,000 generators regarding this requirement, including in infographic to inform them how to completely utilize our CU hazardous waste disposal tags.

New EH&S Disposal Tag	Old EH&S Disposal Tag
HAZARDOUS MATERIAL/WASTE TAG Environmental Health & Safety, 415 UCJ, 415 UCJ (415) 452-7445 hazmat@calstate.edu • http://www.calstate.edu/ehs PRESS HARD USING INK - MULTIPLE COPIES Dept. _____ Bldg. _____ Rm. # _____ Generator Name _____ Phone _____ Principal Investigator _____ Exact Container Location _____ % (fill) _____ Container Contents _____ Date Tagged _____ (USE COMPLETE CHEMICAL NAMES) _____ Date Tagged _____ (USE COMPLETE CHEMICAL NAMES) _____ HAZARD CHARACTERISTICS ☒ Corrosive ☐ Flammable ☐ Irritant ☐ Oxidizer ☐ Reactive ☐ Other _____ CONTAINER TRACKING # 000001	HAZARDOUS MATERIAL/WASTE TAG Environmental Health & Safety, 415 UCJ, 415 UCJ (415) 452-7445 hazmat@calstate.edu • http://www.calstate.edu/ehs PRESS HARD USING INK - MULTIPLE COPIES Dept. _____ Bldg. _____ Rm. # _____ Generator Name _____ Phone _____ Principal Investigator _____ Exact Container Location _____ % (fill) _____ Container Contents _____ Date Tagged _____ (USE COMPLETE CHEMICAL NAMES) _____ Date Tagged _____ (USE COMPLETE CHEMICAL NAMES) _____ HAZARD CHARACTERISTICS ☐ Corrosive ☐ Flammable ☐ Irritant ☐ Oxidizer ☐ Reactive ☐ Other _____ CONTAINER TRACKING # 000001

Please select at least one of these options

If the tag does not have this section, please either fill out a receiver tag, or simply write the hazard characteristic at the bottom of the list:

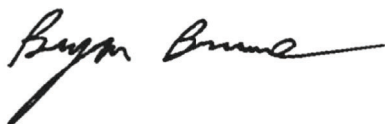
- Ignitable
- Toxic
- Oxidizer
- Corrosive
- Reactive

Infographic detailing the proper way to mark hazard characteristics.

We will continue to emphasize this requirement to waste generators through our trainings, inspections, and email reminders in order to make this a consistently followed requirement throughout all of campus.

We believe that these actions taken have successfully corrected the non-compliance issues we observed during our campus inspection. This has been a great chance for us to improve our waste management process on campus, effectively increasing the overall safety of these lab areas and the entire campus. Thank you again for the continued input and assistance that the EPA and CDPHE provides for the University of Colorado.

Sincerely,

A handwritten signature in black ink, appearing to read "Bryan Browne", with a long horizontal stroke extending to the right.

Bryan Browne
Chemical Safety Officer

Cc: (email)

David Kang, Vice Chancellor for Infrastructure and Safety, David.Kang@Colorado.edu
Brandon Boger, EH&S Director, Brandon.Boger@Colorado.edu
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