



WICC II Work Instruction

DIRECTIVE NO.	<u>WICCII-SOW-08.HW4B.007490</u>	APPROVED BY Signature:	<u>Original Signed by</u>
EFFECTIVE DATE:	<u>08-22-2019</u>	NAME:	<u>Marianne Simko</u>
EXPIRATION DATE:	<u>11-22-2021</u>	TITLE:	<u>Division Manager Medical and Environmental Division</u>

Responsible Office: LJT/WICCII/Environmental Office

Title: Hazardous Waste: Hazardous waste and Non-regulated waste collection

PREFACE

P.1 PURPOSE

The purpose of this Work Instruction (WI) is to establish the procedures for the safe waste collection to comply with applicable state and federal regulations.

P.2 APPLICABILITY

This WI applies to environmental management services performed by the WICC Environmental Office at NASA Goddard Space Flight Center's Wallops Flight Facility (WFF), Wallops Island, Virginia.

P.3 REFERENCES

- Code of Federal Regulations (CFR) 40 Parts 261 and 262
- Goddard Procedural requirement (GPR) 8500.3 Waste Management

P.4 CANCELLATION

P.5 TOOLS, EQUIPMENT, AND MATERIALS

- Personal protective equipment (PPE; Level C recommended).
- Emergency communication device.
- Bung wrench.
- Drum cart.
- pH paper.
- Labels: HW, NON-REG
- Permanent black marker
- Two way radio

P.6 SAFETY PRECAUTIONS AND WARNINGS

- **CONDUCT TAILGATE SAFETY MEETING PRIOR TO MOVING WASTE.**
- Follow Hazardous Waste Job Hazard Analysis.
- Wear appropriate personal protective equipment (PPE), minimum Level D
- Technicians performing these task should be HAZWOPER certified in accordance with 29CFR1910.120
- Carry radio for weather alerts and emergency communication.
- Read container label and/or Safety Data Sheet (SDS).

- Open waste containers SLOWLY. Turn your face away when opening a bung or lid. Temperature changes may have caused pressure to build up in the container. A bung can forcefully be propelled off of the final threads once loosened. (Note: This is a lesson learned. This has happened before.)
- Segregate wastes according to compatibility. Otherwise incompatible wastes may combine to produce fires, toxic fumes or build-up of pressure.
- Utilize secondary containment and have emergency spill response equipment/supplies available.
- Ensure proper selection and use of tools.
- Practice the “buddy system”.
- Do not collect waste in inclement weather (i.e. rain, lightning).

P.7 TRAINING

- HAZCOM
- HAZWOPER

P.8 RECORDS

Record Title	Record Custodian	Retention
GSFC 23-54 (05/2018) HAZARDOUS WASTE DISPOSAL INVENTORY FORM	NASA WFF Medical and Environmental Management Division (MEMD)	Handle as permanent pending retention approval.

* *NRRS – NASA Records Retention Schedule ([NPR 1441.1](#))*

P.9 MEASUREMENT/VERIFICATION

INSTRUCTIONS

In this document, a requirement is identified by “shall,” a good practice by “should,” permission by “may” or “can,” expectation by “will,” and descriptive material by “is.”

PREPARATION

Hazardous waste is primarily accumulated at Satellite Accumulation Areas (SAA), though any work area on base may occasionally generate hazardous waste. If a SAA exceeds 55 gallons of HW or 1 quart of Acute Hazardous Waste, IT MUST BE RELOCATED BY THE ENVIRONMENTAL OFFICE TO AN ACCUMULATION AREA (AA) WITHIN 72 HOURS OF EXCEEDING SAA STORAGE QUANTITIES. Ordinarily HW is collected as needed.

The preparation process comprises those activities necessary to ensure that the HW containers are in satisfactory condition, the necessary paperwork is complete, and that the waste can be transported and stored safely.

1. Conduct yearly, as well as random loading dock, generator training.
 TO VERIFY THIS IS THE CORRECT VERSION, CHECK THE WICCII WIIMS SYSTEM AT
<https://wiims.wff.nasa.gov/WIIMSportal/portal-II.jsp> PRIOR TO USE.

2. Schedule waste pick-up. When the high temperature for the day is forecast to be greater than 85F, schedule pick-ups of liquid HW in the morning so they can be inspected, offloaded, and stored before temperatures elevate. During cold weather (temperatures less than 32F), schedule pick-ups of water-based HW and cold sensitive HW so they can be immediately inspected, offloaded, and stored.
3. Read Safety Data Sheet.
4. **CONDUCT TAILGATE SAFETY MEETING PRIOR TO MOVING ANY WASTE.** Waste of an unusual shape, type, or weight will take preplanning to move. (Note: This is a Lesson Learned. Issues have occurred while moving 100 pound glass batteries and 600 pound soil drums which might have resulted in injury had not solutions to move the item been discussed in advance and coordinated between both "buddies").
5. Inspect containers prior to loading on the truck. The inspection will be performed in an area with adequate lighting, ventilation, protection from the elements, and emergency equipment. Container inspection should include but not be limited to ensuring the following:
 - All containers are securely closed.
 - Containers holding liquids have adequate expansion space – 5 percent minimum. The expansion space in containers holding nonflammable liquids can be determined by lightly tapping on the container. Begin at the bottom and lightly tap on the container until a difference in tone is heard. The tone difference will signify the liquid/air interface.
 - Incompatible materials are not packaged together (example: acids not with bases, latex paint not with oil based paint).
 - Containers are compatible with contents (ignitables-metal, corrosives-plastic)
 - The containers do not have dents or bulges.
 - The containers are not corroded or otherwise deteriorated, especially near openings and seams.
 - Packages are not stained or wet.
 - Odors from the HW in the container are not excessive.
 - The containers do not have un-closeable vent holes, punctures or shipping closures, such as staples, which could penetrate the container.
 - Lab packs and over packs should include absorbent material surrounding inner packaging to prevent leaking and breaking
 - **THE CONTAINERS ARE NON-LEAKING, SAFE TO HANDLE, AND ABLE TO WITHSTAND NORMAL HANDLING.**

Label inspection should include ensuring proper labeling as below:

- Hazardous Waste Label at Wallops - Generator
NASA/WFF
Wallops Island, VA 23337
EPA ID # VA8800010763 (Main Base)
EPA ID # VA7800020888 (Island and Mainland)
Correct Waste Code refer to 40CFR 261.21-261.31

Description of Contents

Hazard Warning

- Non –Regulated Label
NASA/WFF or NASA/GSFC
Description of Contents
Building of origin
- For pesticides please also include on the label –percent active
- For PCB’s remove the Hazardous Waste words from label and include results of laboratory analysis (in ppm PCB) on label. Also attach a copy of laboratory analysis to container.
- Write the words “Used Motor Oil” on containers that contain such. “Waste Motor Oil” should not be labeled as such unless determined by the EO.
- Universal Waste containers should be labeled with the words “Universal Waste Batteries” and the accumulation start date.

6. Call generator prior to actual pick-up, if required.

7. Ensure adequate supply of HWDI forms, tools, drums, pails, and PPE.

CODE 250.W/WICC CANNOT ACCEPT UNKNOWNNS (see WICC WI HW2, *Management of Unknowns*).

Code 250.W/WICC will not accept custody of or accountability for the following categories of hazardous property:

- Toxicological, biological, radiological, and lethal chemical warfare materials, which, by U.S. Law, must be destroyed.
- Sludges and residues generated by industrial plant processes or operations. These services are responsible for disposal of sludges and residues from industrial waste treatment facilities and for commingled materials from industrial plant facilities that have been accumulated into co-mingled storage for disposition in lieu of processing through industrial waste treatment facilities.
- Refuse and other discarded materials resulting from mining, dredging, construction, and demolition operations.
- Radioactive commodities requiring a Nuclear Regulatory Commission (NRC) license.

- Non-saleable material (material for which sale or other disposal is prohibited by U.S. law or military regulations). This category includes, but is not limited to, classified material, radioactive waste, thermal batteries, and DoD inspection stamps and devices.

Code 250.W may accept accountability for, but cannot accept custody of the following hazardous property:

- Compressed gas cylinders containing poisonous or incendiary gases (including flammable and toxic or poisonous gas, nonflammable and toxic or poisonous gas, chlorine gas, oxygen or oxidizers, and acetylene gas)
- Explosives, Classes A, B, and C.
- Etiological agents: including drugs, biologics, and controlled substances.
- Irritants.
- Pyrophorics.
- Unbalanced lithium (Li/SO₂) batteries.

PICK-UP PROCEDURES

1. Go to point of waste generation or the SAA.
2. Wear appropriate PPE as determined in the tailgate safety meeting.
3. Obtain HWDI form GSFC 23-54 (05/2018) from generator, Safety Data Sheets for any new wastes, and profile, for bulk waste.
4. Verify that information on documentation in 3 is complete and correct. On the HWDI form, the generator must complete the generator information section, the inventory section, the comment section, and print, sign, and date the form. Advise the generator of necessary corrections.
5. Complete “date received, collected, and initials” on lower portion of form and give copy to generator.
6. Read MSDS if not received prior to collection.
7. Inspect containers of wastes (See *Preparation*, #4 –if a pre-pickup inspection was not performed).
8. Provide a more suitable container if necessary.
9. Label containers completely (See *Preparation*, #4 –if a pre -pickup inspection was not performed).

10. Ensure lids and/or bungs are tight. Each container has proper closing requirements. Follow manufacturer's instructions.
11. Utilize proper lifting techniques; drum carts, and truck lift gate as required to move waste to the transport vehicle (truck). The following precautions and procedures should be followed for the truck's lift gate operation:
- The Truck Lift Gate is not designed to transport people. **DO NOT RIDE THE LIFTGATE**
 - **KEEP ALL HANDS AND FEET CLEAR OF THE LIFTGATE AND THE AREA BENEATH THE LIFT GATE WHILE IT IS BEING OPERATED. (Note: This is a lesson learned. While riding the lift gate, which was not designed for human transportation, the employee's foot slipped off, resulting in a foot crushing injury)**
 - Unlatch the lift gate from both sides.
 - One Environmental Specialist should enter the bed of the truck at this time. If assistance is needed to reach the bed, the lift may be lowered half way. Then the employee may step onto the gate followed by the bed. The lift gate must be fully stopped and must not be moved while an employee is on it.
 - The lift gate will be fully lowered to the ground. Although the operation of the lift gate differs from vehicle to vehicle, the basic operation involves pressing the control button until both lights are lit, before the toggle down or up switch will operate. The employee on the ground will operate the controls. **KEEP FEET CLEAR OF THE LIFT GATE.** If a vehicle must be kept running to power the lift, the parking brake must be engaged.
 - Place the waste on the lift gate.
 - Raise the lift gate.
 - Maneuver the waste into the truck.
 - **BE AWARE OF HAND POSITION. BE AWARE OF PINCH POINTS BETWEEN DRUMS.** (Note: This is a Lesson Learned. When a drum is rotated, that may rotation can bring two drums closer than expected, resulting in a pinching injury.)
 - Secure the waste in the truck, using ropes or straps as needed. Securing the waste in the truck prevents the possibility of spilling waste as well as damaging the truck.
 - Latch lift gate on both sides.

Observe the following lifting techniques:

- **SQUAT TO LIFT AND LOWER. DO NOT BEND AT THE WAIST.**
- Keep your lower back arched while bending over.
- Keep the weight as close to you as possible.
- Bow your back in and raise up with your head, first.
- If you must turn, turn with your feet, not your body.
- Never jerk or twist!
- Put the weight down by keeping your back arched.
- Keep your feet apart, staggered if possible.
- Wear shoes with steel toes and non-slip soles.

- Use two or more people and material handling equipment, such as carts, dollies, or forklifts operated by properly trained fork-lift operators whenever possible.

Use the following procedures for proper operation of a drum cart.

- Place the drum cart next to the drum to be moved. The cart feet should be at the lower edge of the drum. Position the cart so that the label is facing you.
- Slide the lip holder up and over the rim of the drum.
- Place one foot on the lower bar of the cart and **SLOWLY** lower the drum cart, making sure that the cart feet have caught under the drum before lowering the cart to a full recline.
- If the cart feet have not slid under the drum, raise the cart to vertical and reposition. Slowly lower the cart again. Be careful not to place your head directly in line with the handle. The cart can slip, jerking back to vertical and striking the user in the chin. **DO NOT MOVE THE DRUM UNLESS THE CART FEET ARE UNDER THE DRUM AND THE LIP HOLDER IS SNUG ON THE RIM.** (Note: Discussion in this bullet is based on Lessons learned.)
- Remember that in most cases it will be easier to pull than push the drum cart.
- When the drum is at its desired location, again place one foot on the lower bar, slowly raise the cart and drum to vertical.
- Remove the lip catcher from the rim and slide out the cart feet from under the drum.
- Do not take a drum cart down steps!!! (Note: This is a Lesson Learned: The user will lose control of the drum cart and drum and the drum will roll off.)

Use the following techniques for rolling drums.

- Sometimes due to space constraints, it may be necessary to move a drum without a cart. Manually moving a drum is a matter of technique rather than strength. If a drum is on a soft surface, such as soil, it may be impossible to roll the drum. The employee's safety is most important. **In the event that a drum is dropped, get out of the way.**
 - Never move a drum without a partner. Always discuss with your partner how you are going to move the drum before it is moved.
 - Reach across the drum with one hand. Place the other hand on the rim of the drum nearest you.
 - Rock the drum towards you until the drum rests on the lower rim closest to you. Ask your partner for help, if necessary. Tell your partner, "I've got it", meaning I've got control of the drum when it is resting on the lower rim.
 - Slowly rotate the drum on the lower rim, maintaining the drum about 15 degrees out of vertical.
 - If the drum starts to slip, LET IT GO!
 - Continue to rotate the drum until it reaches its desired location, and then let the drum return to vertical slowly. **KEEP HANDS FROM BETWEEN DRUMS AND WALLS AND FEET FROM UNDER DRUM.**
12. Transport waste to a less than 90-day storage facility. Ensure that the transport vehicle is in a position to allow convenient offloading. Ensure that the vehicle is secured against inadvertent movement (parking brake).

13. Check PPE prior to off-loading.
14. Use mechanical devices such as lift gates; drum carts, carts, etc to assist in off-loading the transport vehicle. (See #11 above)
15. Re-inspect container condition (See *Preparation*, #4 above).
16. In the event of a Hazardous Waste spill, follow procedures outlined in the Integrated Contingency Plan.
17. Designate areas for specific hazard types. Use these areas for the same hazard type during all operations. Assure that incompatible HW is separated by a minimum of six feet. Do not stack items. Do not leave HW on the loading dock or in a staging area after the close of business.
18. Add Accumulation start date to Label. Re-inspect the label (see Preparation 4 above).
19. Properly segregate wastes at facility. Corrosives should be separated into acids and bases.
20. The following areas should be kept clear during off-loading, staging and storage:
 - Access ramps and doors;
 - A 6- to 10- foot wide aisle to allow for MHE and personnel movement;
 - Areas in front of pull-box alarms, the telephone, and emergency equipment; and
 - Personnel escape routes.
21. Complete “environmental office” section of form.
22. Electronically file data.
23. File Safety Data Sheet with HWDI.

BULK HW PROFILE PROCEDURES

The HW profile will provide workers with information on the safe storage and handling of the specific HW, but that is not the only purpose of the HW profile. A copy of the profile for each bulk packaged HW is required by the contractor in order to transport the HW for disposal. The standard profiles that are used repeatedly are stored electronically..

ORGANIZATION OF THE HW PROFILES

The Profile was designed so that minimum scripting is needed to complete the form. Some fields require only “Yes”, “No” or “None”; or are left blank. Though it may seem that the fields itemized below may be redundant, the design of the profile provides complete information required by both the personnel maintaining the bulk storage, and the transportation contractor.

- Profile Number - The number assigned to the electronic file name in the profile directory.
TO VERIFY THIS IS THE CORRECT VERSION, CHECK THE WICCI WIIMS SYSTEM AT
<https://wiims.wff.nasa.gov/WIIMSportal/portal-II.jsp> PRIOR TO USE.

- Waste Stream -
- DOT Proper Shipping Name -
- Generator Location - Usually the building number and room number.
- Waste Generating Process - Describe the process that made the waste. For example: expired shelf life, degreasing circuit boards, cleaning paint brushes, out of service ballasts, laboratory
- Hazard class -
- EPA ID Number(s) -
- RQ – Reportable Quantity
- Dioxins - Yes (how much) or None
- Infectious - Yes or No
- Radioactive - Yes or No
- > 50 PPM PCB - Yes or No
- Chemical Constituents - The chemical names of hazardous and non-hazardous constituents and contaminants and a statement or percent indicating the relative amounts of each. This information can be obtained from results of a chemical analysis of waste or from the manufacturer's label. At the very minimum, a statement of user knowledge will provide this information; however, it is recommended that an actual chemical analysis of waste be performed and the results of the analysis sent with the profile to WICC Office.
- Physical Characteristics -
 - Physical State - Solid, Liquid, or Gas.
 - Layers -
 - Free Liquids - Yes or No
 - Viscosity - Low, medium, high.
 - Polymerization - Yes or No
 - Specific Weight -
 - Appearance -
 - Odor -
 - Flash Point -
 - pH - (if applicable)
 - Reactivity -
- Metal Content - Yes (how much) or None
- Other Content
 - Free Cyanide - Yes (how much) or None
 - Free Sulfide - Yes (how much) or None
 - Phenolic - Yes (how much) or None
 - PCB - Yes (greater than 50 ppm) or None
- Organic Halogens
 - Fluorine - Yes (how much) or None
 - Chlorine - Yes (how much) or None
 - Bromine - Yes (how much) or None

RESPONSIBILITIES

1. Supervisors shall:
 - a. Provide this work instruction to all employees prior to their encountering the subject activity and ensure that these steps are followed by periodic audit, testing, or retraining.
 - b. Revise this work instructions as practices or requirements change and prior to the expiration date.

2. Employees shall:
 - a. Follow safety precautions, warnings and instructions as described above.
 - b. Notify their supervisor when they become aware of changes in practice or regulation which requires an update to this work instruction.

Appendix A – Definitions

N/A

Appendix B – Acronyms

N/A

DIRECTIVE NO. WICCII-SOW-08.HW4.007490-Rev
EFFECTIVE DATE: 7-27-2019
EXPIRATION DATE: 11-22-2021

CHANGE HISTORY LOG

Revision	Effective Date	Description of Changes
A		Initial Release
B**	7/22/2019	Changed GSFC 23-54 (06/2014) to GSFC 23-54 (05/2018)

***subsequent revisions will be alphabetical beginning with B. If this is the baseline version, leave this and the remaining revision blocks blank*