

WASTE SCREENING AND RADIATION MONITORING

An aerial photograph of a waste management facility. The central focus is a large, multi-lobed area filled with dark, mounded piles of waste or debris. This area is surrounded by a network of paved roads and several large, rectangular basins or ponds. In the background, there are several industrial buildings with white roofs and some smaller structures. The facility is situated in a rural area with green fields and dense forests surrounding it. The lighting suggests it's either early morning or late afternoon, with long shadows cast across the landscape.

By: Greg Gelewski, MCDSW

Lesson Objectives

- Describe regulated wastes (accepted and prohibited)
- Provide a general list of prohibited wastes
- Discuss special handling and disposal requirements
- Provide guidelines for developing a haz-waste screening program
- Role of public sector in acceptance and screening program

Regulatory Requirements

- Both Federal and State reg's require Hazardous Waste screening programs be developed, to include:
 - Random inspections of loads
 - Records of inspections
 - Personnel training
 - Procedures for notifying appropriate officials

The problem with accepting unauthorized/prohibited wastes

- Liability associated with future release of contaminants to the environment
- Special handling procedures and additional disposal costs



Problems with prohibited wastes, cont.

- ⦿ Poor publicity (media)
- ⦿ Worker injury
- ⦿ Increase in compliance costs



Hazmat incident



So, we need procedures to

- Identify prohibited wastes
- Define how to handle these wastes
- Define alternate options
- Develop public information program
- Continuously screen wastes at the site



What is allowed?

◎ Very basically, we can accept Non-Hazardous Solid Waste.

- MSW
- C&D
- Industrial Waste
- Sludge



So then, what is *not* allowed?



Hazardous Wastes

A waste is considered to be “Hazardous” if either of two things is true

- *It is listed. The DEC and EPA maintain lists of wastes which pose significant risk to human health and the environment.*
 - *40 CFR part 261*

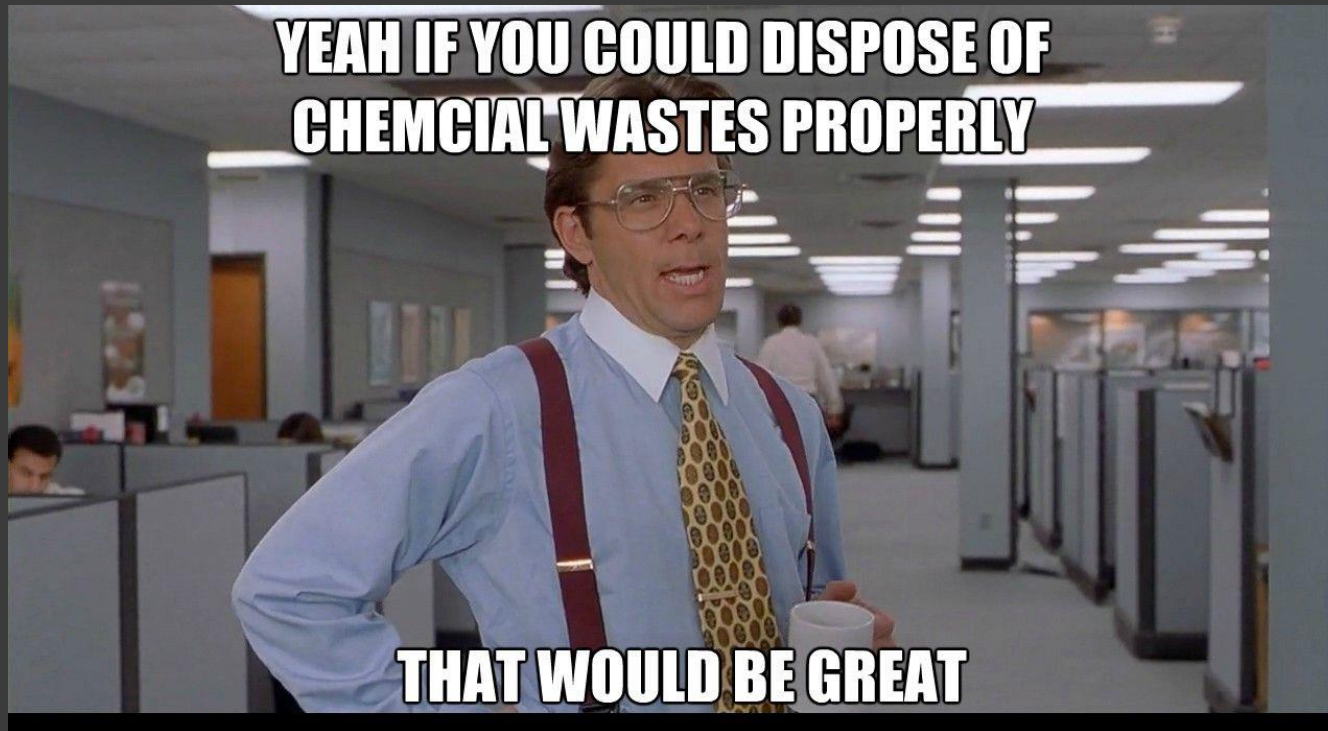
Four Types of Listed Hazardous Waste

Type	Waste code
Non-Specific Sources	F001 – F039
Specific Sources	K001 – K181
Acute Hazardous Waste	P001 – P205
Toxic Hazardous Waste	U001 – U411



Hazardous Wastes

Wastes which exhibit one or more of the 4 characteristics:



Ignitability Characteristic

- *Ignitability: flash point below 140 degrees F*
- *Defined as an oxidizer under Haz Waste Transporter regulations*
 - *Includes variety of solvents, peroxides, gasoline.*
 - *USEPA hazardous waste number D001*



Corrosivity Characteristic



- *Corrosivity: pH below 2, greater than 12.5*
- Common industry producers include fertilizer manufacturers, pharmaceutical/cosmetic industries.
 - USEPA hazardous waste number D002

Reactivity Characteristic

- *Reactivity: normally unstable, reacts violently with water, or is a cyanide or sulfide bearing substance*
 - USEPA hazardous waste number D003



Toxicity Characteristic

- Toxicity: *exceeds TCLP thresholds* for certain contaminants, i.e heavy metals
- TCLP is used to analyze heavy metals, pesticides/herbicides, and VOC/SVOC
- Acid digestion of sample, then analysis of the 'leachate' for the targeted contaminants



Screening - What Do You See?



Carefully- Search, Segregate, Investigate



Acids/Bases/Reactivity and Organics - What Happens...



CHECK LABELS ON CHEMICAL CONTAINERS



Label?



EVERY CHEMICAL CONTAINER MUST HAVE A WARNING LABEL

❖ *Household Hazardous Exemption*

- Materials that are generated by or derived from a household (regular trash)
- Would be considered 'hazardous' if they were generated by a commercial, industrial, or manufacturing activity.
- Exempt from State and Federal regulations

**Household can mean single or multiple residences, motels, ranger stations, campgrounds, or recreational areas*

***If possible, direct HHW to a special event*

Other types of prohibited wastes



**WASTE OIL
NOT
ACCEPTED**

NYS law requires vehicle service & vehicle retail businesses to accept used motor oil from the public for free recycling. See attendant for more information.

 **RETHINK WASTE IN MADISON COUNTY**
MADISONCOUNTYRECYCLES.NY.GOV 



Wastes containing PCBs

- ⦿ Polychlorinated Biphenyls
- ⦿ PCBs are suspected carcinogens that do not break down in the environment
- ⦿ May be found in:
 - Capacitors
 - Transformers
 - Circuit breakers
 - Hydraulic machines, pumps
- ⦿ >50ppm is Hazardous



Pesticides



- Disposal of pesticide containers and unwanted pesticides that are not regulated hazardous wastes is regulated under NYSDEC Section 325.4.
- Empty , non-combustible triple rinsed containers *may be disposed of* in landfill.
- Small quantities by residents okay, as long as label does not prohibit land burial.
- Larger quantities are prohibited, and should be returned to supplier or handled as haz waste.

Liquid Wastes

*prohibited



Paint filter test: add 100ml of sample to 400 micron paint filter. Anything passes through in 5 minutes, fail

Radioactive waste

- Low-level radioactive waste, processed and concentrated (NORM) waste, or nuclear accelerator-produced radioactive material (NARM) waste are prohibited.
- Waste, excluding firebrick, which exhibits a concentration greater than 25 pCi/g of radium-226 is prohibited;
- *More on this later*



Septage

Prohibited, unless authorized by the Department. Would have to be stabilized and dewatered and pass the paint filter test, usually required to be > 20% solids.



May pose health risks.
Basically liquid waste

Electronics

- Disposal Ban: Beginning January 1, 2015, consumers may no longer dispose of certain types of electronic equipment in landfills, waste-to-energy facilities, in the trash, or at curbside for trash pickup.



Tires are prohibited – Separate!



Other things you can't take

- Biomedical wastes
- Lead acid and *Rechargeable batteries*
- Bulk quantities of used oil
- Mercury added consumer products
- Locally prohibited materials, potentially included yard wastes, large animal carcasses, recyclables, etc...

Wastes requiring special handling



Tanks, Drums

- Acceptable for disposal if ends are removed, crushed and cleaned.
- DEC regulations at MSW landfills prohibit acceptance of *sealed* drums



Sludge

- Per Part 363, to dispose of sludge in the landfill the sludge must be stabilized, no free liquids per Paint Filter Liquids Test, min 20% solids.



Bulky Waste



- ⦿ May require special handling, and you may have rules to minimize its acceptance.
- ⦿ For example, large equipment, concrete slabs, etc.

Bulky Waste – Field Turf



Screening Team



TEAMWORK



MAKES DREAM WORK

Key Personnel

- Landfill waste coordinator does initial screening of incoming waste, including administrative review of analytical, generator site visits, etc.



Know your customers

- ⦿ Make sure you have a good knowledge of what is normal for your customers, and what is not
- ⦿ Be proactive – visit facility generators and understand what they are bringing
- ⦿ Require testing. Verify that a waste stream is non-hazardous
- ⦿ Communicate with them. Keep them aware of new requirements and be aware of their process changes.

Disposal Application

- ① Develop a waste profile for a specific waste stream
- ① Require information that you need to determine whether a material is suitable:
 - MSDS
 - Physical State (sludge, powder, etc.)
 - Transporter information – who's hauling it
 - Special handling instructions
- **it is the responsibility of the landfill operator to verify that all wastes received are suitable for disposal at their facilities.*

Generator Name, contact info:

Approved/Disapproved

Process Generating Waste

Physical State/ Description of Waste

Note field for special handling requirements

Waste Transporter information

Generator Acknowledgement

STEBEN COUNTY
DEPARTMENT OF PUBLIC WORKS
SOLID WASTE DIVISION
3 EAST PULTENEY SQUARE
BATH, NEW YORK 14810

APPLICATION FOR DISPOSAL OF AN
INDUSTRIAL WASTE STREAM
BATH LANDFILL – SITE NO. 51S21

FOR COUNTY USE	
<input type="checkbox"/> APPROVED	<input type="checkbox"/> DISAPPROVED
DATE	DATE SENT TO DEC

Please Note: A copy of the approved application must accompany each load.

SEND INVOICE TO: _____

Company Generating Waste	Address of Generator	Telephone No.
Representative of Generator	Address of Generator	Telephone No.
Description of Process Producing Waste		
Expected Annual Waste Production _____ Tons/Year	Waste Hauled In <input type="checkbox"/> Roll-Off <input type="checkbox"/> Dump Truck <input type="checkbox"/> Compactor Truck <input type="checkbox"/> Other	
Waste Composition Average Percent Solids _____ %	Physical State <input type="checkbox"/> Slurry <input type="checkbox"/> Sludge <input type="checkbox"/> Solid	
Description of Waste 1) 2) 3) 4)		
Is An Analysis of Waste Attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	Was EPA Toxicity Test Conducted on Waste? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Attach Results	Material is: <input type="checkbox"/> Hazardous <input type="checkbox"/> Non-Hazardous
Detail All Hazardous and Nuisance Problems Associated with the Waste. List Necessary Safety, Handling, and Disposal Precautions.		
Name of Waste Transporter	Address	NYSDEC Permit No. Telephone No.
CERTIFICATION I hereby affirm under penalty of perjury that information provided in this form and attached statements exhibits is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.		
Signature and Title of Representative of Waste Generator		Date
Signature and Title of Representative of Steuben County		Date

Key Personnel

- Scale Attendant reviews any shipping documents or approvals before admitting waste into the site.



Key Personnel

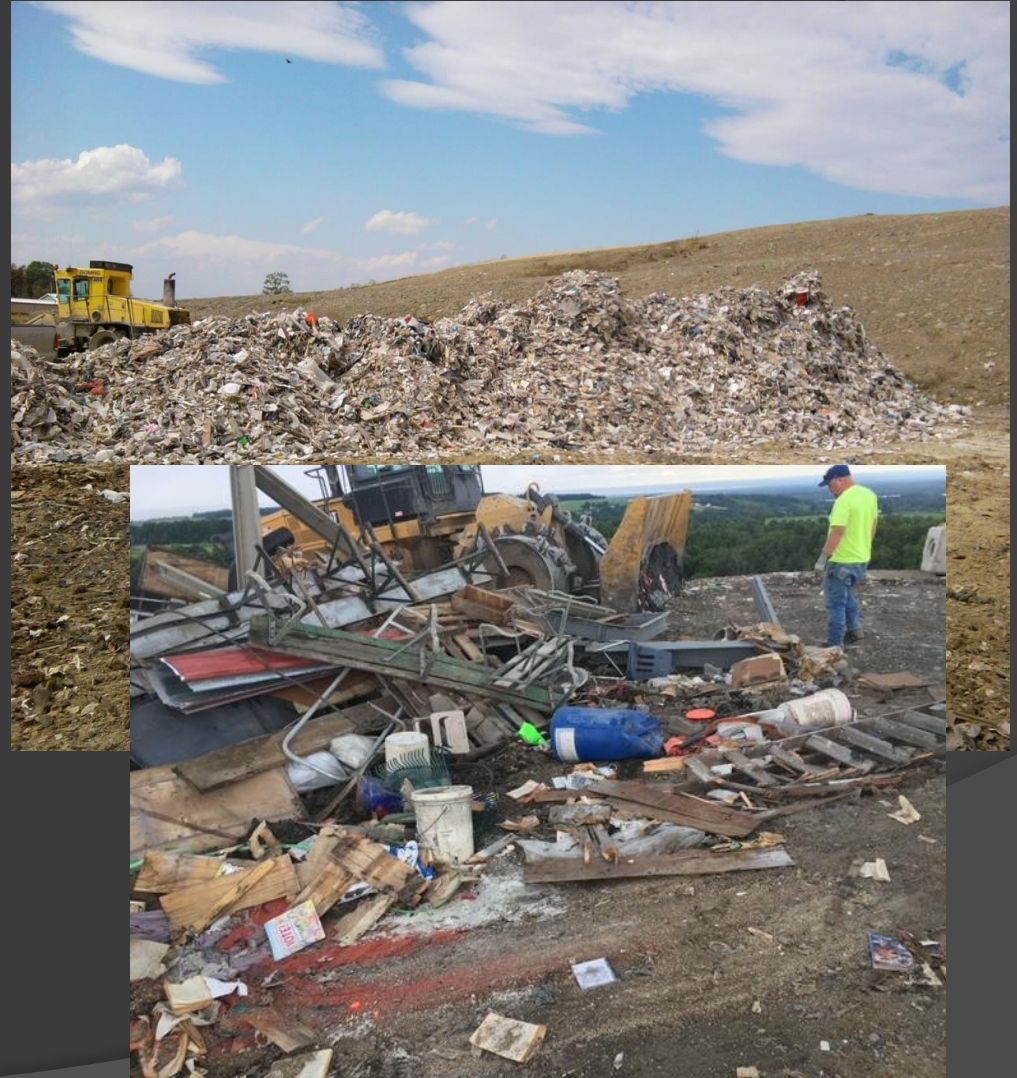
- Operating Face personnel look for inconsistencies in the waste stream. *Part 360 regs. Require load inspections be done weekly.*



Initial 8-Hour
Spotter Course

Waste screening includes

- Visual checks at the working face by the operators
- Checking paperwork that comes in with the loads
- Random load inspections after unloading



IMPORTANT REMINDER

Please be advised that there are certain items which are prohibited from going into the landfill. If these items are found within the load, there will be a minimum charge of \$25 per item. Other fees may apply.

See the reverse side of this sheet for a list of prohibited materials. For more information on disposal and recycling in Madison County, visit: madisoncountyrecycles.ny.gov or call the main office at (315) 361-8408.



UNACCEPTABLE MATERIALS FOR TRASH

- Tires
- Electronics
- Source Separated Recyclables
- Scrap Metal
- White goods (ovens, refrigerators, washers)
- Household Hazardous Waste
- Hazardous & Regulated Medical Wastes
- Lead Acid / Vehicle Batteries
- Household Batteries
- Trees / Brush / Yard Waste
- Waste Oil
- Radioactive Wastes
- Explosives
- Junked Vehicles
- Items with Mercury
- Friable Asbestos
- Hot Ashes
- Drums
- Septic Tank Pumpings
- Liquids / < 20% solids



For more information, call the Department of Solid Waste's main office at (315) 361-8408 or visit our website at: madisoncountyrecycles.ny.gov



Key Personnel

- Environmental & Safety Coordinator
- Scale Attendant / Weighmaster
- Spotter and Working-face Staff
- Contract Engineering Services
- Recycling and Outreach Coordinator



SAFETY RESPONSIBILITY



DEPENDS ON EVERYONE

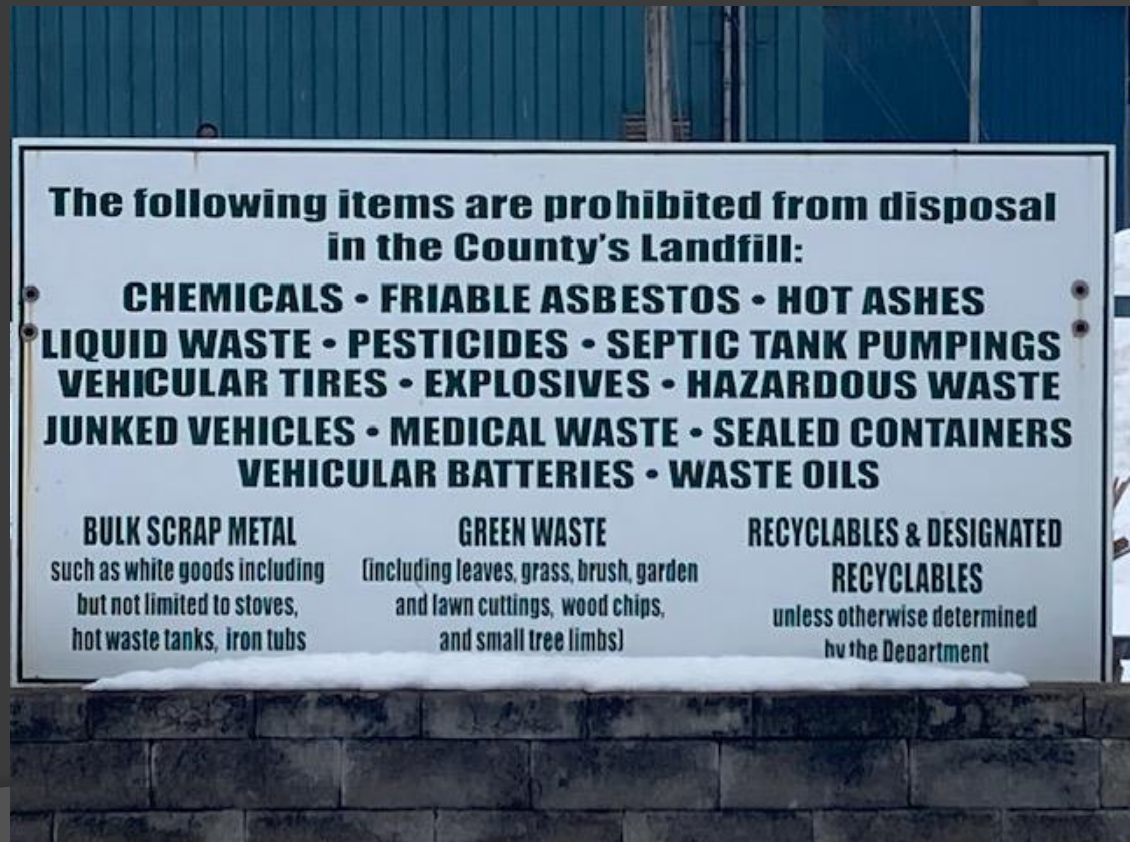
Unacceptable Wastes. What do you do?

- Notify internal site management
- Notify generator of waste
- Notify governing agencies (NYSDEC)
- Segregate and secure area
- Document



Public Education

- You must educate the public, since they are your customers.
- Need to know the rules, and know what you do.
- Signage is key, and is required



Record Keeping

- Make sure that you keep waste approvals onsite so they are available for review by staff and/or regulators
- Follow record retention requirements established by USEPA and/or NYSDEC (7 years)
- Generator is responsible for the waste from cradle to grave

Waste Screening in Review

- ⦿ Maintain and Prominently display lists of acceptable/unacceptable /special handling wastes
- ⦿ Have alternate disposal plan for unacceptable wastes
- ⦿ Prepare information materials to educate the general public on unacceptable wastes
- ⦿ Know which tests are required
- ⦿ Know which documents must accompany loads
- ⦿ Establish contact with waste haulers and generators before they arrive at your scale
- ⦿ Train your personnel in waste screening techniques
- ⦿ Keep your records up to date

RADIATION MONITORING AT THE LANDFILL

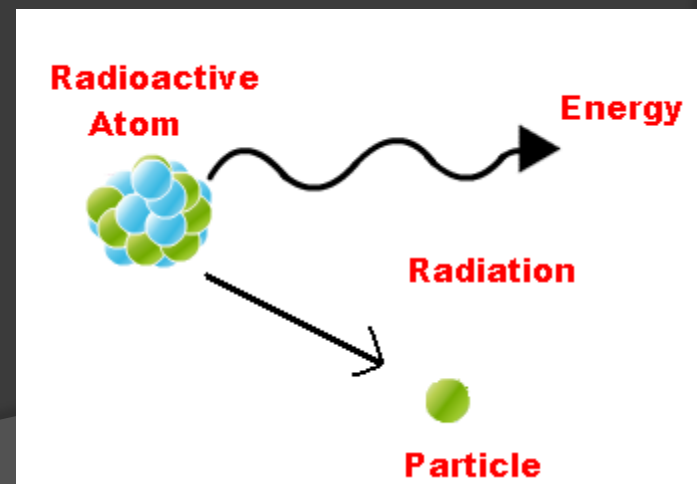
Topics

- Basics
- New Part 360's require us to install a fixed radiation detection unit.
- Example protocol and setup
- Experiences - investigation

ra·di·a·tion

◎ ,rādē'āSH(ə)n/

1. the emission of energy as electromagnetic waves or as moving subatomic particles, especially high-energy particles that cause ionization.

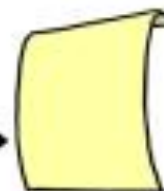


Types of Radiation

WHAT IT TAKES TO STOP RADIATION

Alpha particles

α



sheet of paper

Beta particles

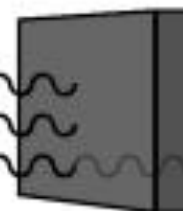
β



aluminium sheet

Gamma rays

γ



lead, steel, concrete

Gamma Rays



Key Terms

- ◎ *Background*— this is the ambient reading at the site. Should be taken daily in the morning and tracked. Ours ranges from 2 – 4, and changes daily.
- ◎ *Sigma alarm* – alarms when a sudden spike in background is detected.
- ◎ *Investigation Level* – Level at which we are required to determine source of radiation in a load.

Key Terms

- ◎ **Isotope** - a radioactive form of a particular element.
 - K-40, Ra-226, Am-241, I-131
- ◎ **Kcps** (thousand counts per second, units your detector may read)
- ◎ **pCi/g** – picocuries per gram. Measure of concentration of radioactivity in a sample

Things you will see



Types:

- ◎ NORM: Naturally Occurring Radioactive Materials
 - Can not be processed or concentrated. Examples would be rock, gypsum, sand blast media, ceramics, colored glass. **Acceptable in the landfill.**
- ◎ Medical Use Isotopes
 - Such as Iodine-131, technicium-99m or other short half-lived isotopes. **Acceptable** if they have been excreted (diapers), but **NOT** acceptable if in vials or syringes.

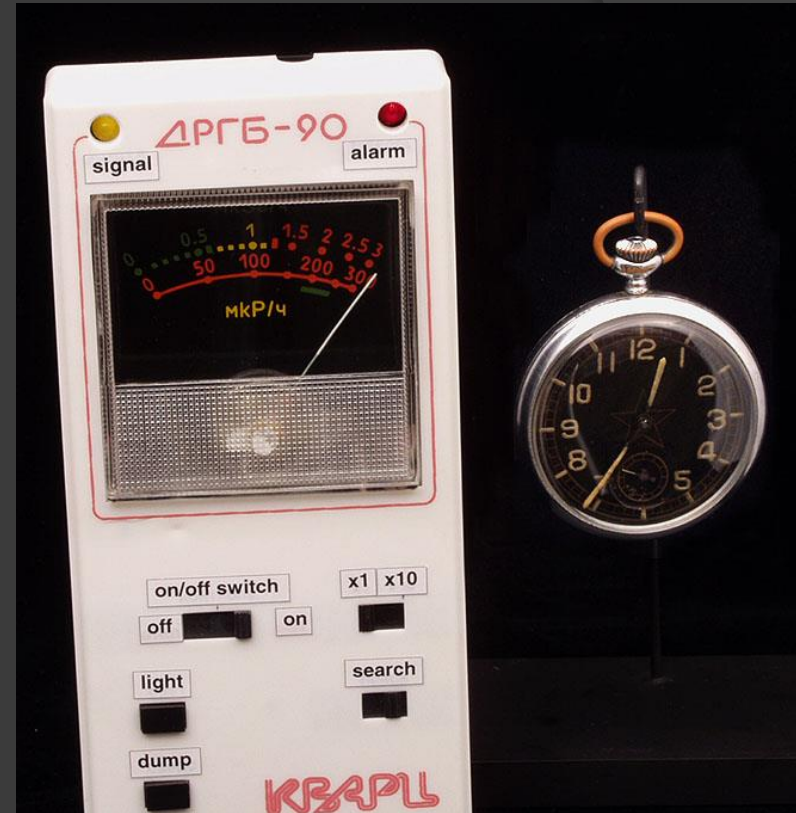
Radiation, cont.

- ⦿ Processed and Concentrated NORM
 - Media such as filter or evaporator sludges, furnace slag, pipe scale in which the concentration of radioactive isotopes has been increased by application of heat, filtration or chemical extraction.

NOT ACCEPTABLE

Radioactive Materials.

- NORM can be accepted. Industrial, commercial, military and processed/concentrated naturally occurring cannot.



Radioactive Materials.

- Industrial, military or commercial use radioactive isotopes may NOT be accepted into the landfill. Examples are luminous dials or markers (radium), static eliminators or thickness gauges (strontium-90, krypton-85, etc.), non-destructive testing or medical sources (cesium-137, cobalt-60, iridium-192, etc), uranium counterweights, exit signs, commercial smoke detectors, thoriated aircraft engines, welding rods, etc. Inadvertent or purposeful disposal of such materials must be reported to the NYSDEC and NYSDOT.



New Part 360's. What do they say?

Section 363-7.1 Operating Requirements

- (a)(5) Radioactive waste detection procedures and requirements.

- ◎ (i) Landfills which accept MSW or drilling and production wastes must install and operate a fixed radiation detection unit at a location appropriate for the monitoring of all incoming waste.

Scale Mounted Detectors

Radiation Detection System



Model 375P-1000V



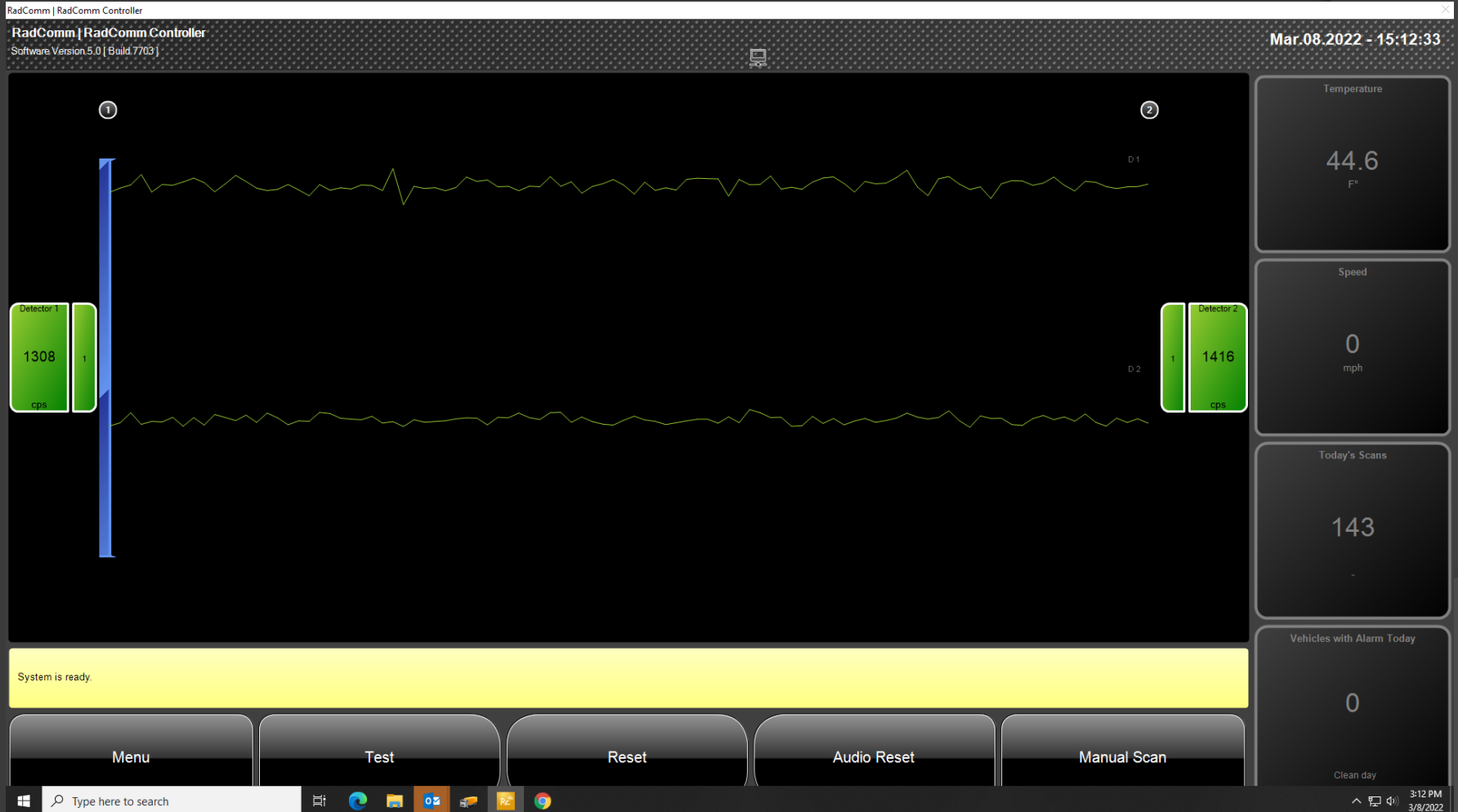
LUDLUM
MEASUREMENTS, INC.



Radiation Monitoring

- ⦿ (ii) The investigation alarm set-point of the radiation detector must be set at least two times but no greater than five times site background radiation levels.
- ⦿ (iii) Background radiation readings at the facility must be measured and recorded at least daily.
 - We see between 1 – 4 kcps depending on weather conditions

Radiation Monitoring



Radiation Monitoring

- (iv) Field checks of the radiation detector utilizing a known radiation source must be performed and recorded at least weekly.

10 μ Ci
Cs-137



Radiation Monitoring

- ⦿ (v) The radiation detector must be calibrated at least annually or more often as recommended by the manufacturer, and documentation describing the calibration must be maintained at the facility.
 - *Done by a qualified service rep.*

Radiation Monitoring

- (vi) Each instance in which the radiation detector is triggered by a waste load must be documented and reported to the department within 24 hours. Recorded information must include the date the waste was received, transporter name, origin of the waste, truck number or other identifying marking, detector reading, disposition of the waste, and date of disposition.

Alarm Report

Must complete one for each alarm. Include all the information requested, and send it to the DEC.

Radiation Monitor Alarm Record

The facility must complete this if the radiation monitor alarms.

Initial Alarm: Date: _____ Time: _____ Scale-house Attendant: _____

Radiation Monitor Reading: _____ kcps Background Reading: _____ kcps

Hauler: _____ Truck Body Type: _____

Truck No. _____ Trailer No.: _____

License Plate: _____ Part 364 Permit No. _____

Driver: _____ Waste Origin (Facility): _____

Material Hauled: _____ Special Waste Number if Applicable: _____

Notes: _____

ACTIONS:

1. Alert on-site management that alarm has been triggered. Record the radiation reading and the other information shown above.
2. Record the radiation monitor reading and the other information shown above.
3. Instruct the driver to pull off the scale and park the truck away from the detectors. Turn off the engine to avoid idling. Ensure the alarm has ceased & the monitor is reading normal background.
4. Have the driver walk near a detector to determine if he has received a recent nuclear medicine procedure. If the driver is the source, re-measure the truck alone by using an alternate driver or have the original driver park on the scale and walk away from the truck and detectors. If the truck alone does not set off the alarm, it may pass through. There is no restriction on a driver who has had a medical procedure.
5. If the truck is determined to be the source, facility management will provide direction.
6. A trained staff member will check the type and original of the load and perform measurements to determine the type of radioactive materials present. Ensure that the results of the investigation are written on or are attached to this form.
7. Management shall notify NYSDEC immediately, if required and if the office is staffed, or at the earliest possible time that personnel are on duty. **NYSDEC Region 7 Solid Waste: (315) 426-7400**
8. Notify the Hauler's dispatch or representative.
9. The truck will remain parked until the situation is resolved.
10. If the diver leaves without authorization, contact NYSDEC Region 7 at the number above.

This Section to be Completed by Facility Management

Trained Responder: _____

Observations: _____

Event Resolution: Date: _____ Acknowledgement: _____

Description: _____

NYSDEC Notified: _____

Detector Installations

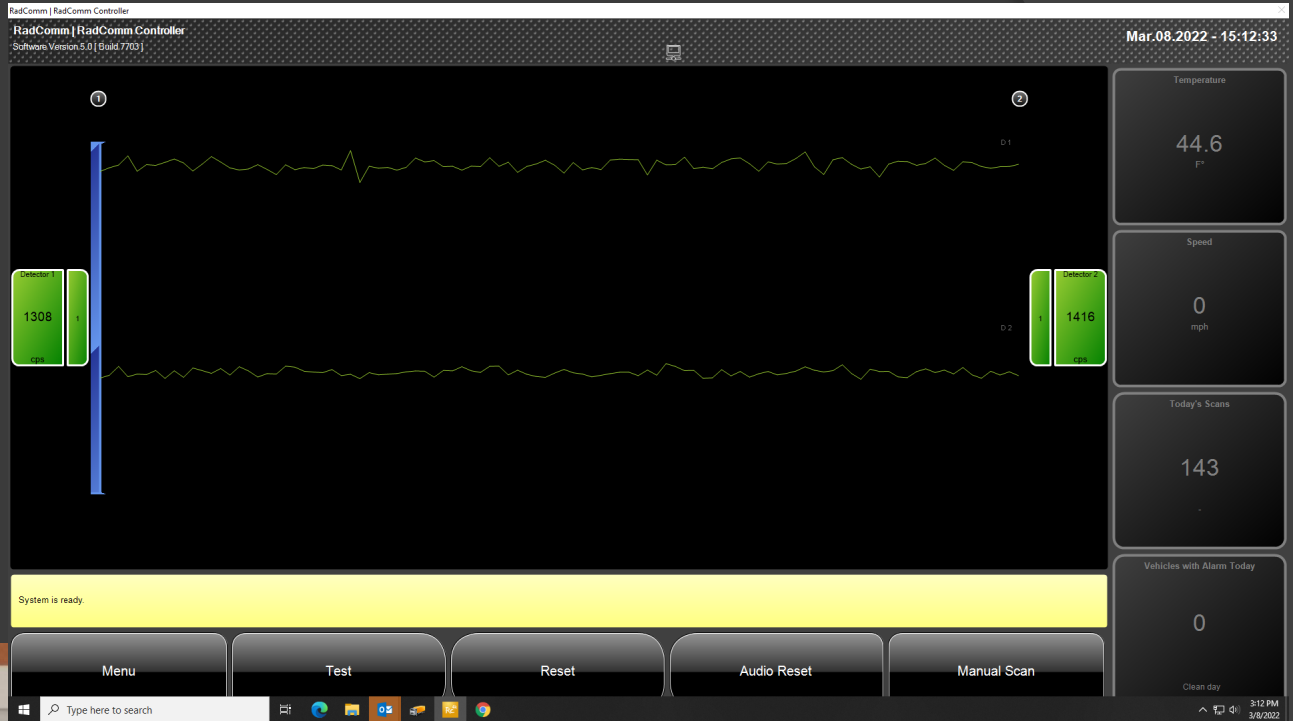
Steuben County



Madison County

Monitors

Available with
PC Screens &
Digital Readout
Versions



Handheld detector

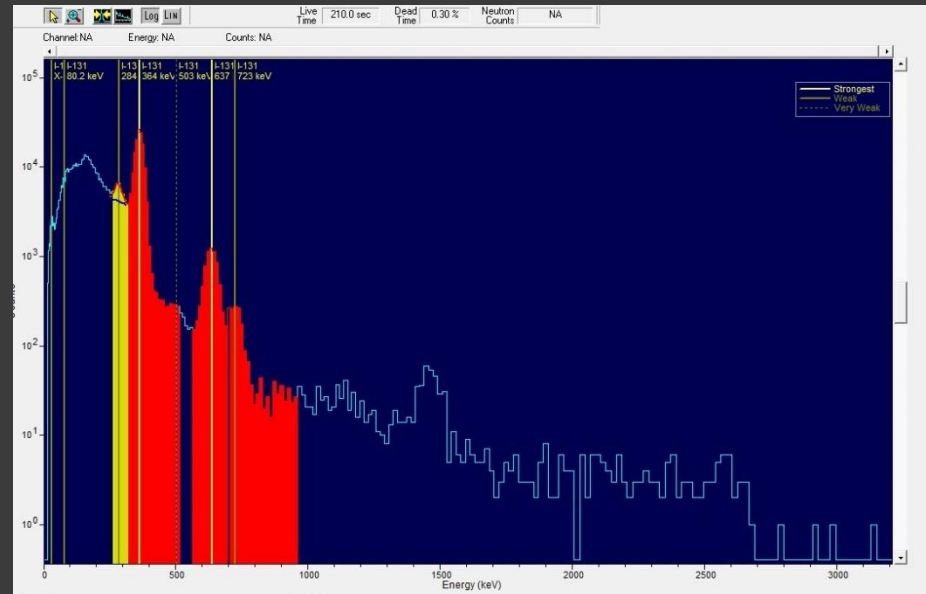


Isotope identifiers



Review of Isotopic analysis

- “As you can see from the screen captures provided, the isotope in the unknown is once again Iodine-131. Once administered to the patient, any I-131 excreted is considered unregulated and can be disposed of without concern. With an 8 day half life, this material will be indistinguishable from background after about 60 days.”



Sensitivity



Investigation



Investigation



Investigation



Other things

- Diffuse or Concentrated?
- Dump load or identify in the truck? Up to you (and your regulators).
- Avoid the potential situation of having to deal with the rejected load.



Contract Award Notification

Title	:	Group 38232 – Hazardous Incident Response Equipment (HIRE) Classification Code(s): 41, 42, 43, 46, 85, 92
Award Number	:	<u>23173</u> (Replaces 22872)
Contract Period	:	June 1, 2020 – May 31, 2025
Bid Opening Date	:	September 10, 2019
Date of Issue	:	June 1, 2020 (revised August 6, 2020)
Specification Reference	:	As Incorporated In The Solicitation
Contractor Information	:	Begins on Page 3 of This Award

Address Inquiries To:

State Agencies & Vendors		Political Subdivisions & Others	
Name	: Bradford Deforge		Procurement Services
Title	: Contract Management Specialist I		Customer Services
Phone	: 518-473-3876	Phone	: 518-474-6717
Fax	: N/A	Fax	: 518-474-2437
E-mail	: bradford.deforge@ogs.ny.gov	E-mail	: customer.services@ogs.ny.gov

**Procurement Services values your input.
Complete and return "Contract Performance Report" at end of document.**

Description

The purpose of these Contracts is to provide Authorized Users with a means of acquiring various types of Hazardous Incident Response Equipment (HIRE) consistent with the Department of Homeland Security Authorized Equipment List (DHS AEL).

PR #23173

Additional Info –

Questions?

online.ogs.ny.gov/purchase/spg/pdfdocs/3823223173ra.pdf