

EnergySolutions **Disposal Update**

March 3, 2008

Jeffrey Ginsburg
Director, Technical Services



Utah Attractions

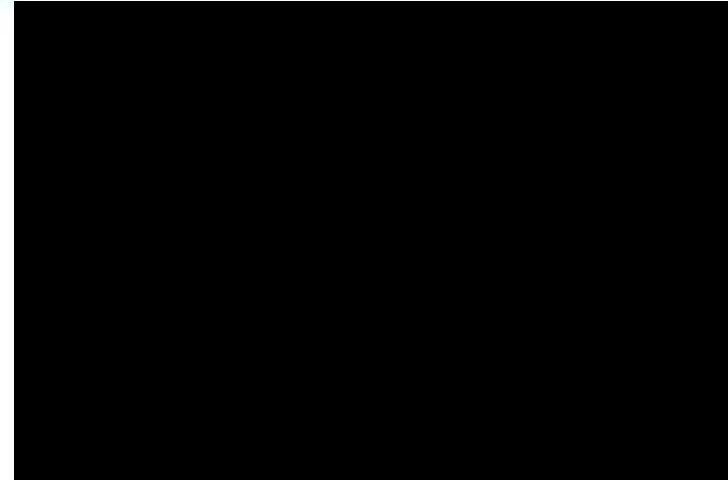
ENERGY SOLUTIONS



DEER VALLEY®

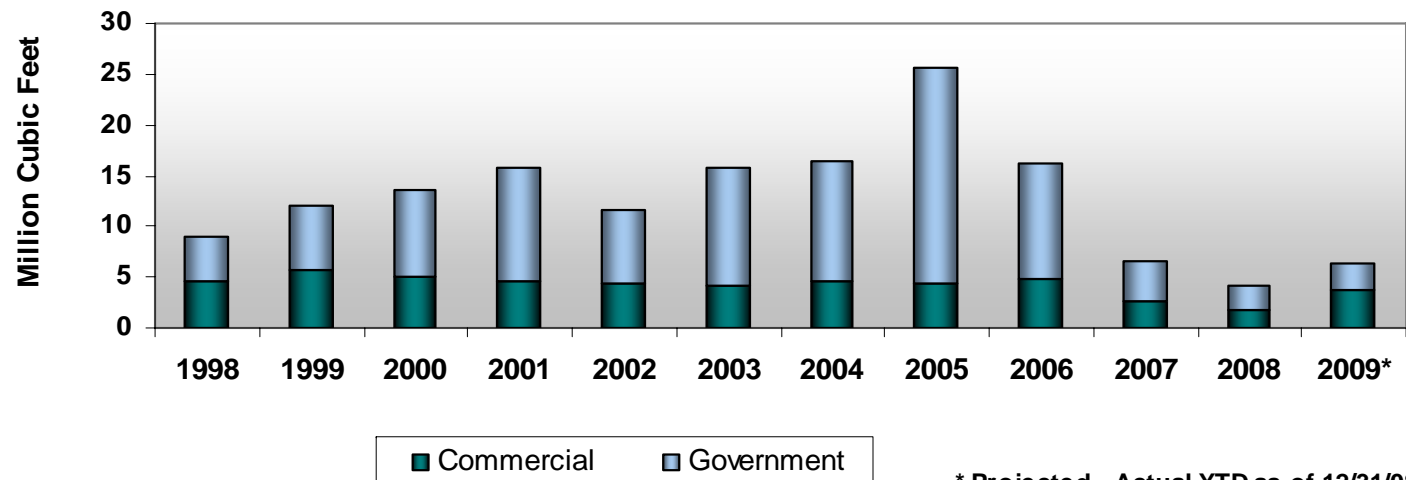


Clive, Exit 49

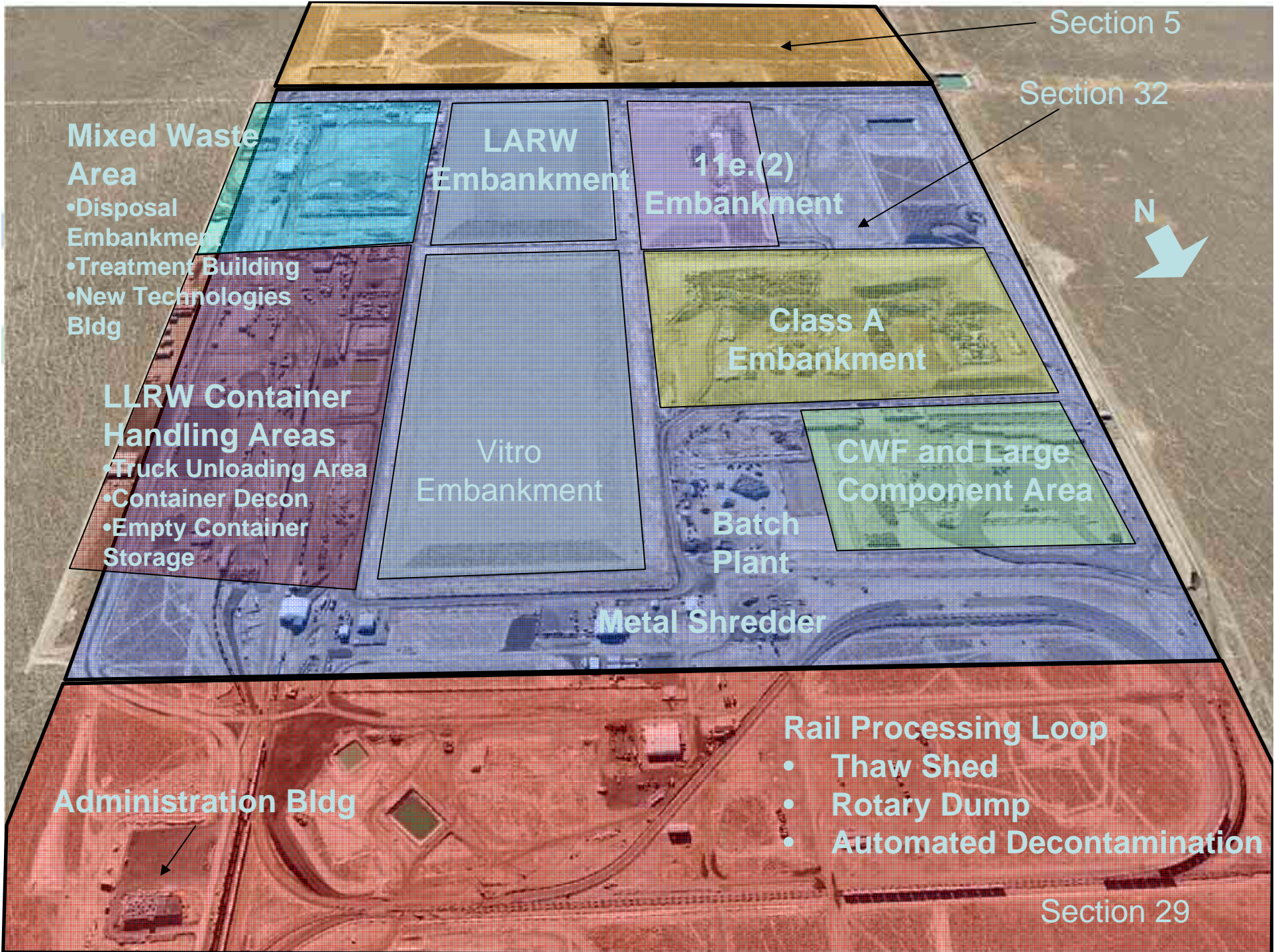


EnergySolutions Clive Receipt Volumes

**Annual Waste Volume Receipts
Clive Disposal Facility
(1998 to 2009*)**



* Projected - Actual YTD as of 12/31/08



Section 5

Section 32



Mixed Waste Area

- Disposal Embankment
- Treatment Building
- New Technologies Bldg

LARW Embankment

11e.(2) Embankment

Class A Embankment

LLRW Container Handling Areas

- Truck Unloading Area
- Container Decon
- Empty Container Storage

Vitro Embankment

CWF and Large Component Area

Batch Plant

Metal Shredder

Administration Bldg

Rail Processing Loop

- Thaw Shed
- Rotary Dump
- Automated Decontamination

Section 29

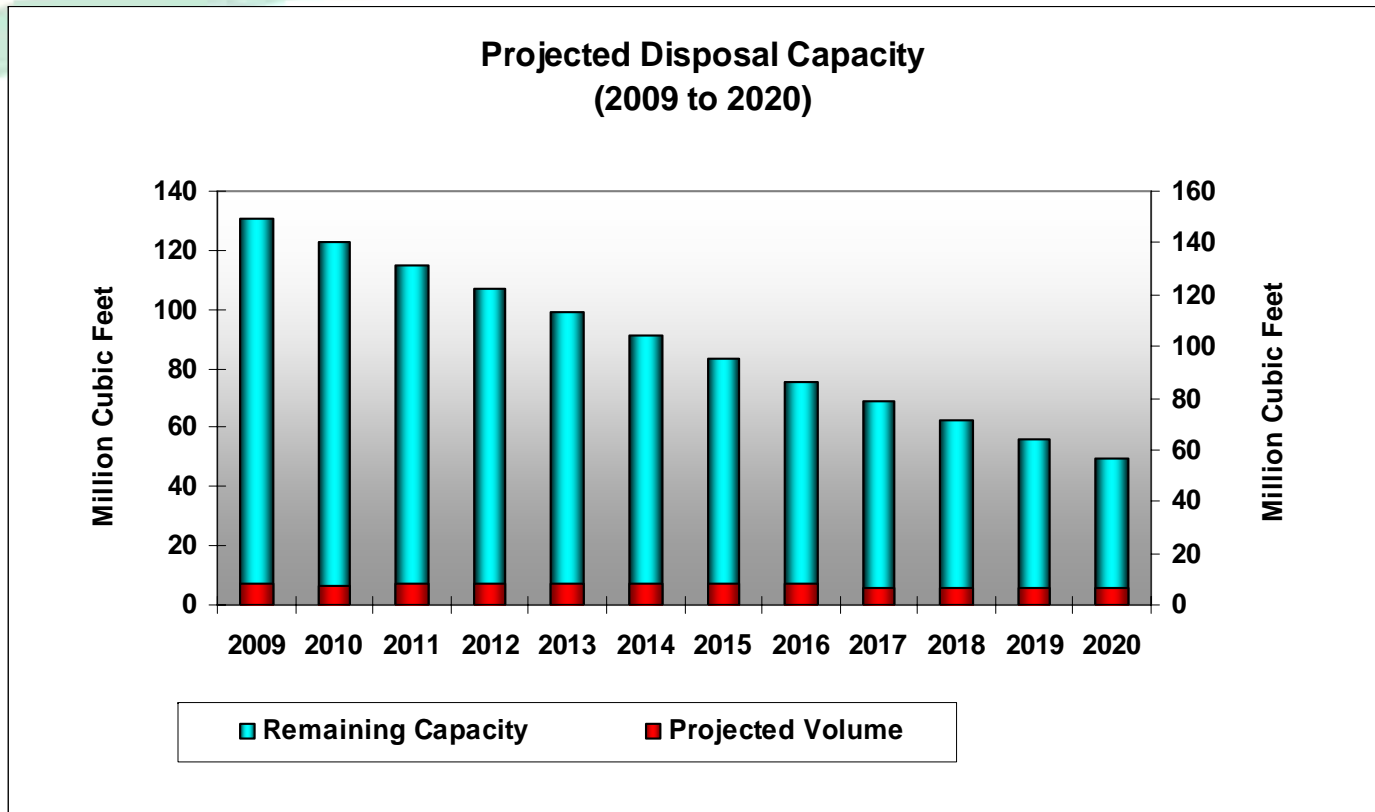
Clive Disposal Capacity



Remaining Clive Capacity

LLRW - ~135 Million ft³ MLLW - ~8.7 Million ft³

Clive LLRW Disposal Capacity



Transfer Station Operations



- Commodity DAW and Metals “Commercially Certified” for Clive disposal replacing Incineration and Compaction
- Customer Benefit:
 - Speed of processing/disposition (less than 45 day average to disposal)
 - Reduced Price under “Easy Ship” Service Line
- Transfer Station Commissioned September 2006
 - 40’ long 12’ high Container Pit Installed in Metals Building



“Super Gons”

ENERGY SOLUTIONS



“Super Gon” (Equivalent Volume)



One Super Gon shipment is equivalent to...



six truck shipments with Cargo Containers or...



nine intermodals



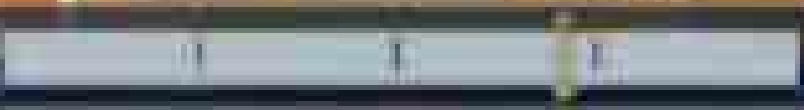


0:19:43

0:19:43

||

START



1hr 3min

Waste Acceptance Documents



All documents available online at www.energysolutions.com

Radioactive Material License
#UT 2300249

Containerized Waste Facility –
Waste Acceptance Criteria, Rev 6
(Class A LLRW, > 200 mR/hr pkgs)

Bulk Waste Disposal
and Treatment Facilities –
Waste Acceptance Criteria, Rev 7
(Class A LLRW, < 200 mR/hr pkgs)

LICENSE AMENDMENT
UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF RADIATION CONTROL
RADIOACTIVE MATERIAL LICENSE

Pursuant to Utah Code Annotated, Title 19, Chapter 3 and the Radiation Control Rules, Utah Administrative Code (RAC) R313, and in reliance on statements and representations heretofore made by the Licensee designated below, a license is hereby issued authorizing the Licensee to transfer, receive, possess, and use the radioactive material designated below; and to use radioactive material for the purpose(s) and at the place(s) designated below. The license is subject to all applicable rules, and orders now or hereafter in effect and to all conditions specified below:

LICENSEE: EnergySolutions, LLC (Environcon) 3. License Number: UT 2300249
Amendment # 22C

1. Name: EnergySolutions, LLC (Environcon)

2. Address: 423 West 300 South, Suite 200, Salt Lake City, UT 84101 4. Expiration Date: October 22, 2003 (Under Timely Renewal)

5. License Category: 4-a

6. Radioactive Material (element and mass number)	7. Chemical and/or physical form	8. Maximum Radioactivity and/or quantity of material the licensee may possess at any one time
A. Any Radioactive Material including Special Nuclear Material specified in License Condition D.A through I.	A. and B. Non-Understanding Condition 9 (Authorized Use), 14 (Prohibitions and Waste Requirements), and 56 (contaminated waste, typically large volume, bulky or contaminated, soil or debris. Debris can include both decommissioning (cleaning) and routinely generated operational waste including but not limited to radiologically contaminated paper, piping, rocks, glass, metal, concrete, wood, bricks, stones, sludge, toolings, slag, residues, personal protective equipment (PPE) that conforms to the size limitations in currently approved QA/QC Manual.	A. 20,000 Curies***
B. Special Nuclear Material	B. As specified in License Condition D.A through I.	B. As specified in License Condition D.A through I.

ENERGYSOLUTIONS
Containerized Waste Facility
Waste Acceptance Criteria
Revision 6

Copyright © 2003
 423 West 300 South, Suite 200
 Salt Lake City, UT 84101
 Phone: (801) 467-2000
 Fax: (801) 477-7741

ENERGYSOLUTIONS
Bulk Waste Disposal and Treatment Facilities
Waste Acceptance Criteria
Revision 7
(Includes Class A LLRW, Mixed Waste, and High Level Disposal Enhancement)

Customer Office
 423 West 300 South, Suite 200
 Salt Lake City, UT 84101
 Phone: (801) 467-2000
 Fax: (801) 477-7741

Large Component Management

ENERGYSOLUTIONS



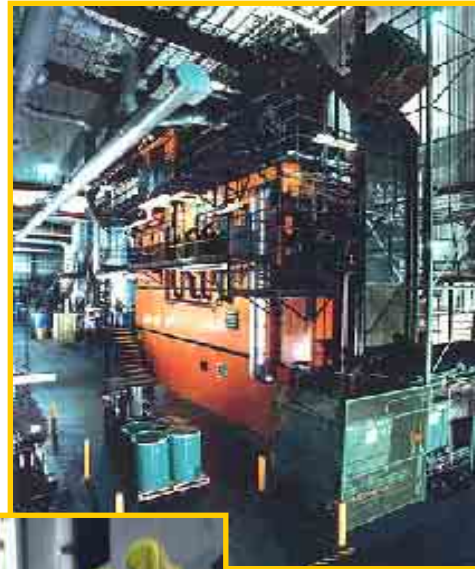
Containerized Waste Facility



Sealed Source Acceptance

Bear Creek

- Incineration: 1 uCi/cc incinerable encapsulation
- Metal Melt: <25 uCi for alpha emitters, <250 uCi for beta/gamma emitters. Sources must be 2-D electroplated.



Clive

- Condition 16.A. of RML prohibits acceptance.
- With Barnwell closure, may consider ammendment to accept Class A sources compliant with NRC BTP for Encapsulation.

Mixed Waste Stabilization



- **Stabilization of RCRA metals by mixing reagents with waste**
- **Shredder used for debris prior to stabilization**
- **Desire soil-like treated waste stream for disposal**
- **Treatability study performed during approval of waste profile**



Macroencapsulation

- **Radioactive Lead Solids**
- **Alternative Treatment Standard for Hazardous Debris (40 CFR 268.45)**
 - > 60 mm particle size (tennis ball)
 - “Primarily” debris in the package
- **MACRO Vaults – Large Components**



Macro Vault Construction



Mercury Treatment

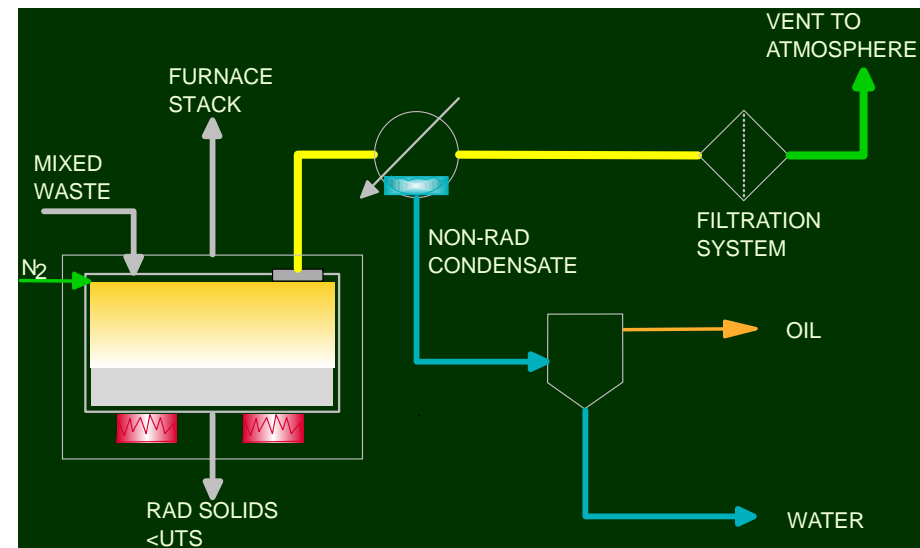


- **Low Subcategory Mercury (< 260 ppm)**
 - **Stabilization to meet concentration based treatment standard of 0.025 mg/L TCLP**
- **High Subcategory Mercury (\geq 260 ppm)**
 - **Utah DSHW granted site-specific Treatment Variance**
- **Elemental Mercury Contaminated with Radioactive Materials**
 - **Radioactive Material License and RCRA Part B Permit have been amended to receive and treat elemental Hg via AMLGM**
 - **Permitted new mixer at Treatment Facility for elemental Hg**
- **Alternative Treatment Standard for Hazardous Debris - MACRO**
 - **Elemental mercury should be removed to the extent practical such as draining pumps, hoses, pipes, etc. and wiping excessive mercury from external surfaces**
 - **Mercury contaminated “debris” may be macroencapsulated**



Vacuum-Assisted Thermal Desorption

- Separation of organics for further treatment
- Incineration of condensate (organic liquid)
- Verification of residue for LDR compliance and final disposal
- Currently operating under Interim Operation Status until final permit is issued by the Utah DSHW



Liquid Solidification

- **Utah Administrative Code (UAC R313-15-1008)**
 - “Solid waste containing liquid shall contain as little free-standing and non-corrosive liquid as is reasonably achievable, but in no case shall the liquid exceed one percent of the volume”
 - Liquid waste is greater than 1% free standing liquid by waste volume

- **Solidification and/or treatability study performed on liquid waste streams**

- **Process tanker trucks up to 20,000 gallons per day**





Jeff Ginsburg

jginsburg@energysolutions.com

(801) 649-2251