U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Stone Castle Recycling - Parowan Facility - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region VIII

Subject: **POLREP #1**
Removal Site Evaluation & Treatability Study Findings
Stone Castle Recycling - Parowan Facility
A8F5
Parowan, UT
Latitude: 37.8393198 Longitude: -112.8572735

To:
From: Steven Merritt, On-Scene Coordinator
Date: 11/21/2014
Reporting Period: 8/18/2014 - 11/21/2014

1. Introduction

1.1 Background

Site Number:	A8F5	**Contract Number:**	EP-S8-13-01
D.O. Number:	1410-01	**Action Memo Date:**	11/24/2014
Response Authority:	CERCLA	**Response Type:**	Time-Critical
Response Lead:	EPA	**Incident Category:**	Removal Assessment
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	10/14/2014	**Start Date:**	12/1/2014
Demob Date:	12/1/2014	**Completion Date:**	12/1/2014
CERCLIS ID:	UTN000801903	**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:		**Reimbursable Account #:**	

1.1.1 Incident Category

Time-Critical Removal Action - Inactive Waste Management Facility

1.1.2 Site Description

The Site is a commercial property owned by both the Wheeler Family Trust and the Carr Family Trust. There are two separate buildings on the property: an office/garage building that formerly served as a used car dealership and a smaller garage at the rear of the property used for auto repair. Stone Castle leased the used car dealership portion of the property in August 2013 for use as a recycled technology resale storefront. From August through September of 2013, Stone Castle employees moved cathode-ray tube (CRT) television sets and other electronic waste materials to the Site.

The electronic wastes brought to the Site were placed in the garage and stockpiled in corrugated cardboard boxes on the ground at the northwest corner of the Site. Once placed, they were abandoned and left to weather and burn. The burned hazardous debris pile now covers approximately 0.10 acre, ranges from one to two feet high, and contains roughly 400 tons of material. The mixed electronic waste pile covers approximately 0.09 acre, ranges from two to 10 feet high, and contains roughly 600 tons of debris. The intact CRT pile covers 0.11 acre, is roughly eight feet high throughout, and contains roughly 250 tons of material

1.1.2.1 Location

The Site consists of a commercial property that has been subdivided into two parcels in Iron County, Utah. The property is located approximately 1.5 miles west of Parowan, UT, at 1338 West 200 Road. The Site is situated between single-family residential properties, a manufactured home community, a self-storage facility, and an agricultural field. The Site is located along the Interstate 15 corridor in the southwest corner of Utah, an arid and scenic area known for Zion National Park and Cedar Breaks National Monument.

1.1.2.2 Description of Threat

The lead in the CRT glass is the primary contaminant present at the Site. Lead is listed as a hazardous substance per 40 CFR §302.4. Lead is prone to leaching from the surfaces of broken CRT glass once the cathode-ray tube is ruptured and exposed to weathering in the environment. It is estimated that there are over 380 tons of leaded glass in the electronic wastes at the Site.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

The wastes and the leaded glass, which have been left on the ground and exposed to the elements, have already caught on fire and burned. They may catch fire again since curved CRT panel glass and projection screen television lenses can concentrate solar radiation onto combustible materials in the debris piles. Burning electronic waste poses a significant threat to exposed populations and the environment because harmful quantities of toxic combustion byproducts, volatilized metal, and respirable particulates would likely be present in the smoke plume, threatening populations downwind

and facilitating the rapid migration of contaminants.

On August 13, 2014, acting on information provided by both the EPA Region 8 Resource Conservation and Recovery Act (RCRA) Program and the Solid and Hazardous Waste Division of the Utah Department of Environmental Quality (UT DEQ), the OSC conducted a preliminary assessment of the Site to determine whether a Removal Site Evaluation was warranted. At the time of this visit, UT DEQ was pursuing all available enforcement remedies available under the Utah Solid and Hazardous Waste Act and RCRA to have the PRP complete a clean-up of the Site by September 28, 2014. Because of that, and other factors, the EPA agreed to postpone activities until after the September 28, 2014 deadline.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

The Site was discovered by the Solid and Hazardous Waste Division in the Utah Department of Environmental Quality (UT DEQ) during the course of an investigation into three electronics waste recycling facilities operated by Stone Castle in Clearfield, Cedar City, and Parowan, Utah. Stone Castle, the potentially responsible party (PRP) at the Parowan Site, was in the business of scrapping used and donated cathode-ray tube (CRT) television sets on behalf of non-profit organizations and municipalities along the Interstate 15 corridor in Utah. Stone Castle operated at the Site from approximately August 2013 to March 2014, when there was a fire at the Site. After the fire, the electronic waste materials at the Site were abandoned.

The storage of these materials outside led to multiple fires at the Stone Castle facilities throughout Utah, potentially caused by projection television lenses concentrating heat from solar radiation onto flammable materials. The CRT stockpile left outside at the Site caught fire on March 2, 2014, following a fire at the Stone Castle facility in Clearfield, UT, in 2008, and preceding fires at the Stone Castle facilities in Cedar City, UT, on July 8, 2014 and Clearfield, UT, on November 2, 2014. During the fire at the Site, the Parowan Fire Department used heavy equipment to push containerized CRTs and electronic wastes away from the waste materials engulfed in the fire to create a fire break. As a result, there are three discrete piles of material at the Site: burned electronic waste debris containing approximately 340 cubic yards of material, mixed electronic waste debris containing approximately 830 cubic yards of material, and 640 cubic yards of intact CRT televisions in deteriorating corrugated cardboard boxes.

2.1.2 Response Actions to Date

Week of September 29, 2014

On September 29, 2014, after Stone Castle failed to comply with the UT DEQ enforcement order deadline for removing wastes, the property owner contacted the OSC and agreed to provide legal access to the EPA. The OSC immediately tasked the Superfund Technical Assessment and Response Team (START) contractor to perform an assessment and treatability study on the wastes at the Site to determine if a removal action was warranted and feasible. The OSC also issued EPA's Emergency and Rapid Response (ERRS) contractor a pre-planning delivery order to begin making logistical arrangements for the Site, including gathering recycling and disposal quotes.

Week of October 6, 2014

START received the TDD and provided EPA with a draft work plan for review and comment. START then began to develop the treatability study approach by researching technical literature for viable treatment options for lead-laden substrates. The technical literature and review of the RCRA provisions indicated that some combination of stabilization and solidification techniques might be appropriate and cost-effective for the wastes present at the Site. START developed a Site-specific geospatial information system viewer to display sampling data, field data, and photographs for the assessment. START also developed the Health and Safety Plan and the Sampling and Analysis Plan.

EPA led a teleconference with the project team to discuss the deliverables, the plan for the assessment work and sampling activities, the treatability study and disposal options, and the plan for the Action Memorandum. Following the meeting, EPA coordinated with the property owner regarding the planned assessment visit.

Week of October 13, 2014

On October 13, 2014, EPA's START contractor mobilized personnel and equipment to Parowan, UT, to conduct the Removal Site Evaluation at the Site. On October 14, 2014, START collected soil samples and samples of each of the debris piles for laboratory analysis and use in a treatability study. START also evaluated the time required to disassemble CRT televisions at the Site to determine the weight of the components. START collected photographic documentation and geospatial measurements of the features present at the Site. START also conducted limited soil metals analysis using a portable XRF instrument. Representatives of the UT DEQ from the Division of Solid and Hazardous Waste were present at the Site during a portion of these activities. START demobilized from the site on October 15, 2014, and submitted samples of the soils and the waste materials collected to laboratories for analysis, once they arrived back in Denver, CO.

Week of October 20, 2014

EPA held a follow-up call with the project team on Tuesday, October 21, 2014, to discuss the treatability study, data collected in the field, and the status of samples submitted to the analytical laboratories. START explained that prior to evaluating the leachability of the waste samples collected at the Site during the Removal Site Evaluation, the materials would need particle size reduction so that the materials could pass through a 3/8" sieve for the Toxicity Characteristic Leaching Procedure (TCLP) method. START sent the samples of electronic wastes to Hazen Research in Golden, CO, to have the materials processed using industrial grinding equipment which was decontaminated after each sample. Some of these processed samples were then treated with monoammonium phosphate (MAP) fertilizer according to the initial approach START developed for the treatability study and submitted to an analytical laboratory for TCLP analysis.

Week of October 27, 2014

START received results from the laboratory for the soil samples collected at the Site which indicated that lead and trace amounts of other metals had migrated into the soils from the electronic wastes present at the Site. The debris samples confirmed that lead present in the CRT glass was leachable and prone to migrate. It also confirmed that the hazardous debris and contaminated soils would need chemical treatment to bind the metals, and that the treated wastes could pass the TCLP in some circumstances, which enables disposal in a solid waste landfill.

EPA held a follow-up call with the project team to discuss the results and validate the deliverables received from START, including the HASP, the SAP, and the Treatability Study SOP. On the call, the team discussed the TCLP results, noting that there were inconsistencies related to treatment that could pose operational and disposal issues in the field. EPA asked START to evaluate potential solutions that would make treatment more effective. ERRS reported on the potential disposal and recycling options for the debris and waste streams at the Site.

Week of November 3, 2014

EPA received word from UT DEQ that the Stone Castle Recycling outdoor CRT storage facility in Clearfield, UT, caught fire and partially burned on November 2, 2014. Regional management engaged and inquired about the status of the treatability study and the potential for a removal action at the Site. The OSC met with representatives from the RCRA and CERCLA enforcement program during which the legal approach for conducting a removal action at the various Stone Castle Recycling sites was discussed.

EPA held another follow-up call with the project team to discuss additional treatability study options for the hazardous debris at the Site. During the call, a second round of treatability study was proposed that included evaluating Portland cement alone and in combination with the MAP fertilizer to see whether more consistent TCLP results could be achieved. Following the call, EPA amended the START TDD to permit the second round of treatability study with the Portland cement. START conducted the second round of treatment on November 7, 2014, and submitted the samples to the laboratory for TCLP analysis.

Week of November 10, 2014

While awaiting the TCLP results, EPA was in contact with ERRS and the Basel Action Network (BAN) regarding recycling and disposal options for the debris at the Site. BAN issued a press release following the fire in Clearfield, UT, that brought additional media attention to the planned EPA removal action in Parowan. As a result, the OSC engaged Public Affairs Officer Rich Mylott and also began coordinating with Community Involvement Coordinator Jennifer Chergo to draft a Fact Sheet for distribution to local stakeholders. The OSC also began drafting the Action Memorandum for the removal action.

Week of November 17, 2014

The OSC completed the Action Memorandum and routed it for review and approval. Regional management made a request for additional funding to EPA HQ for an advance on the FY15 regional removal allowance due to the continuing resolution and other competing projects. There was a follow-up meeting with the RCRA and CERCLA enforcement programs to discuss all the Stone Castle Recycling sites and to give management a clearer picture of the planned removal action in Parowan, UT. RCRA stated that they were working directly with UT DEQ in an attempt to formulate an approach to address the other sites. RCRA and CERCLA enforcement also finalized and sent General Notice Letters to the property owners and the operator at Parowan.

EPA held another follow-up call with the project team to discuss the results from the second round of treatability study, to finalize the operational approach for treating the wastes present at the Site, and to schedule a visit with the property owner and other stakeholders prior to initiating the removal action. During the call, the TCLP results indicated definitively that the combination of MAP and Portland cement at 3% w/w with the hazardous debris was sufficient to meet the regulatory limits and remove the toxicity characteristics from the wastes at the Site (See Section 2.1.4 Progress Metrics). ERRS, START and EPA agreed to pursue the removal action using a horizontal grinder to reduce the particle size of the waste, add necessary moisture, and mix in the MAP, followed by the addition of Portland cement into a pug mill mixer to achieve micro-encapsulation. ERRS initiated the coordination with the necessary vendors, anticipating funding from EPA.

On November 18-19, 2014, the OSC, UT DEQ, and the ERRS Removal Manager visited the Site to discuss the planned removal action with the property owner and provide local stakeholders with information about what to expect. The property owner provided EPA guidance on what materials could be removed and his expectations on the restoration and revegetation of impacted soils. The OSC and UT DEQ representative went door-to-door in the neighborhoods surrounding the Site to talk with homeowners and business owners about the upcoming removal action and provide them with the website address and Fact Sheets. Overall, the community was very supportive of the plan.

Following the Site visit, EPA held a conference call with UT DEQ and RCRA experts to discuss whether there were viable disposal facilities closer to the Site that might be eligible for the CERCLA Off-Site Rule designation. Unfortunately, the closest, the Washington County Landfill, was ineligible since they were not presently filling a lined cell and UT DEQ indicated that was preferable for this waste. EPA and UT DEQ also held a conference call with the Parowan City Manager about the removal action to inform him about what to expect, discuss Site logistics and traffic patterns, and request assistance in gaining access to water supplies for dust suppression. Parowan City officials all expressed support for the plan to conduct the removal action on December 1, 2014.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

2.1.4 Progress Metrics

Treatability Study	Sample ID (SCOU1_ _ _)											
	T01	T02	T03	T04	T05	T06	T07	T08	T09	T10	T11	T12
Size (in)	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3 **
Portland (% w/w)	0	0	0	0	0	0	0	0	3	10	3	0
MAP (% w/w)	1	3	1	3	1	3	3 *	0	0	0	3	3
Waste Matrix	Glass	Glass	Burned Debris	Burned Debris	Mixed Waste	Mixed Waste	Mixed Waste	Glass	Glass	Glass	Glass	Glass
TCLP Lead Concentration (mg/L) ***	3.9	8.5	3.2	1.8	8.1	0.6	0.7	16.8	6.4	1.7	0.1	10.9

*** MAP agent was added in pellet form, without grinding in mortar and pestle** Batch was mixed prior to size reduction**

***** Italicized underlined values exceed RCRA regulatory limit (5.0 mg/L) for TCLP Metals**

2.2 Planning Section

2.2.1 Anticipated Activities

2.2.1.1 Planned Response Activities

The response action will involve mechanical processing, on-Site chemical treatment, and off-Site transportation and appropriate landfill disposal of all wastes present at the Site. The mechanical processing will consist of crushing the hazardous debris with a horizontal grinder to reduce particle sizes,

maximize particle surface area, and homogenize the material for more effective chemical treatment. The chemical treatment, which will apply the approach recommended by the data from the treatability study, involves adding water and commonly used and readily available reagents, such as Portland cement and phosphate fertilizers, to the wastes in an effort to stabilize the mixture and permanently immobilize leachable metals in the hazardous debris.

During the mechanical processing and chemical treatment of the wastes, START will provide oversight and technical support to ensure the specifications developed in the treatability study are met. START will provide personal air sampling and dust monitoring to minimize exposures to airborne dust and metals during operations, in accordance with OSHA regulations. START will also conduct perimeter air sampling and respirable dust monitoring to ensure compliance with NESHAPs and to ensure that there are no off-Site exposures from the treatment process to neighboring populations.

2.2.1.2 Next Steps

- Mobilize response personnel, equipment, and treatment supplies to the Site.
- Setup Site, establish operational boundaries, and prepare for operations.
- Sort and segregate non-hazardous debris from the waste piles.
- Conduct crushing and grinding operations to reduce waste particle size.
- Treat waste materials with MAP and Portland cement.
- Package treated waste for transportation and disposal.
- Excavate, treat and dispose of impacted soils.
- Fill and revegetate excavation areas.
- Ship waste containers and demobilize personnel.

2.2.2 Issues

Funding request delayed the procurement of critical equipment, which may delay the grinding and waste treatment actions on Site, adding costs and time to the removal action.

2.3 Logistics Section

Contract Equipment:

- START Suburban
- RM Pickup Truck

Monitoring/Sampling/Safety Equipment:

- DataRAM 4000 Dust Monitor and Air Sampler
- Niton XRF Soil Metals Instrument
- Trimble GPS Unit
- Soil Sampling Kit

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

2.5.1 Safety Officer

There have been no safety issues to date. Personnel operating heavy equipment in proximity to electronic wastes have been complying with the PPE requirements of the HASP. Perimeter monitoring indicates that respirable dust emissions have been comparable to the existing background air pollution present at the Site from the nearby interstate and highway traffic.

2.5.2 Liaison Officer

N/A

2.5.3 Information Officer

Rich Mylott, EPA Region 8 PIO has been providing press support to the removal action remotely. Rich can be reached at 303-312-6654. Jennifer Chergo is the Community Involvement Coordinator. Jennifer can be reached at 303-312-6601.

3. Participating Entities

3.1 Unified Command

U.S. EPA Region 8 - Emergency Response Unit
Utah Department of Environmental Quality – Division of Solid and Hazardous Waste

3.2 Cooperating Agencies

Parowan City

4. Personnel On Site

EPA On-Scene Coordinator
START Monitoring and Sampling Support
ERRS Removal Manager

5. Definition of Terms

CERCLA – Comprehensive Environmental Response, Compensation and Liability Act
RCRA – Resource Conservation and Recovery Act
UT DEQ – Utah Department of Environmental Quality
START – Superfund Technical Assessment and Emergency Response Team
ERRS – Emergency and Rapid Response Services (EPA Contractor)
USCG – U.S. Coast Guard
PST – Pacific Strike Team
RM – Removal Manager
FOSC-R – Federal On-Scene Coordinator Representative
MAP – Monoammonium Phosphate Fertilizer
OSR – CERCLA Off-Site Rule Approved Facility

6. Additional sources of information

6.1 Internet location of additional information/report

EPA OSC Website for Removal Action
UTDEQ DSHW Website for NOV and CDO

6.2 Reporting Schedule

POLREPs will be completed regularly through the conclusion of the EPA Removal Action.

7. Situational Reference Materials

Please see the Links, Bulletins, and Documents sections of the website for additional background information on the site.