

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Haystack Navajo Radioactive Structures Site - Removal Polrep



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IX

Subject: POLREP #10
Final
Haystack Navajo Radioactive Structures Site

Haystack, NM
Latitude: 35.3553091 Longitude: -107.9475609

To: Vivian Craig, N.N. EPA

From: Randy Nattis, Federal On Scene Coordinator

Date: 9/30/2016

Reporting Period: 2015 - 2016

1. Introduction

1.1 Background

Site Number:	09WW	Contract Number:	EP-S5-08-02
D.O. Number:	0096	Action Memo Date:	9/15/2011
Response Authority:	CERCLA	Response Type:	Time-Critical
Response Lead:	EPA	Incident Category:	Removal Action
NPL Status:	Non NPL	Operable Unit:	Entire site
Mobilization Date:	5/5/2013	Start Date:	5/6/2013
Demob Date:	9/30/2016	Completion Date:	9/30/2016
CERCLIS ID:	NNN000909132	RCRIS ID:	
ERNS No.:		State Notification:	
FPN#:		Reimbursable Account #:	

1.1.1 Incident Category

Removal Action

1.1.2 Site Description

The Site consists of 12 structures and 8 exterior areas containing areas of elevated Uranium contamination soils or materials on residential properties known as Allotments. Allotments are reservation land the federal government distributed to individual Indians, generally in 40-, 80-, and 160-acre parcels. Typically, the allotment includes residential structures, Navajo ceremonial buildings, called Hogans, and frequently an outer storage building. The Hogan and storage buildings are usually located in close proximity (within 200 feet) of the residential structures. Exterior surveys include approximately ½ an acre surrounding each primary structure; however, in some cases where the structures are closer together the survey areas may consist of less than ½ an acre apiece.

In February, June, July and August of 2011, U.S. EPA, in partnership with Navajo Nation EPA (NNEPA), investigated 58 residential properties containing 171 structures in the Haystack and Church Rock Chapter areas. U.S. EPA assistance was requested by Navajo Nation to conduct these investigations based on results of the initial screenings conducted by NNEPA in these same areas in 2009 and 2010. The U.S. EPA investigation identified 12 structures and 8 yards; all located within the Haystack and Church Rock Chapter areas, requiring response action. All of the structures are occupied and used for residential purposes.

1.1.2.1 Location

The Site is located within the Navajo Nation Indian Reservation in New Mexico. The Site is situated within the Navajo Nation Chapters known as Haystack and Church Rock.

1.1.2.2 Description of Threat

Current Site conditions pose ongoing releases and the threat of future releases of hazardous substances, namely: Uranium and its progeny (i.e. Radium-226 and Radon) and ionizing gamma and alpha radiation associated with those progeny. The likelihood of direct human exposure, via ingestion and/or inhalation of hazardous substances, and the threat of future releases and migration of those substances, pose an imminent and substantial endangerment to public health, welfare and the environment based on the factors

set forth in the NCP, 40 CFR 300.415(b)(2).

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

In February and throughout the summer of 2011, U.S. EPA conducted radiation assessments of 58 residential properties and all of the structures associated with each residential property, which amounted to a total of 171 structures. Most of the subject residential properties had been identified during previous screenings as potential concerns. These earlier screenings were conducted separately by NNEPA in order to streamline U.S. EPA's assessment activities.

Past and present investigations were requested based on anecdotal evidence that residents transported contaminated mine materials to their residential properties for use in structure construction. Many of these residents worked in nearby uranium mines and reportedly carried contaminated construction materials home from the mine.

In addition, some of the residential properties are situated down gradient from abandoned uranium mines (both reclaimed and un-reclaimed). Therefore, some of the contamination in residential soils may be the result of contaminant transport forces (i.e., contaminant migration due to wind and runoff).

U.S. EPA conducted the radiological assessments of these 171 structures in partnership with NNEPA. In each structure, U.S. EPA measured total gamma radiation and gamma radiation dose rate. NNEPA measured total radon in select rooms in structures where there were current residents. Outside of each structure on the residential property yard, U.S. EPA measured total gamma radiation using a GPA integrated radiation ratemeter. The equipment logged the GPS location for each reading, collecting thousands of mapped data points per residential property.

Inside each structure and in every room, U.S. EPA conducted gross gamma scanning surveys of structure floors and walls with a ratemeter and a Ludlum Model 44-20 (a 3" by 3" unshielded sodium iodide scintillator). In those same locations U.S. EPA conducted an area gross gamma dose rate measurement with a Reuter-Stokes RSS-131 Pressurized Ionization Chamber (PIC). Finally, radon measurements were collected using Rad Elec model radon detection equipment. Results from all instruments at all locations were tabulated for use in removal decision-making in consultation with NNEPA.

Daily background PIC and ratemeter measurements were also included in these tables. These background measurements were collected at a field calibration site visually determined to be uncontaminated by the assessment team. The average background measurements were used to determine daily instrument investigation levels (ILs) (Average background plus 3 times the standard deviation). Areas exceeding ILs for any of the instruments were flagged and photographed by the assessment team during each residential property and structure investigation.

Based on the assessment results, U.S. EPA determined that twelve structures in the Haystack and Church Rock Chapters area required a removal action. These structures are identified as EPA Structure ID Nos: BH-02-A, BH-05-A, BH-07-A, BH-07-B, BH-19-D, BH-26-A, BH-34-A, BH-38-C, BH-42-A, BH-42-B, and CR-81-A. At nine of these structures, the indoor dose levels collected with the PIC exceeded the dose action level. At the remaining three structures, the indoor dose does not exceed the action level; however, high levels of gamma radiation measured by other instruments as well as elevated interior radon levels indicate the need for removal of all or part of the structure. All twelve structures are located within the Navajo Nation.

U.S. EPA also determined that eight yards in the Haystack and Church Rock Chapter areas require a removal action. The eight yards are identified as EPA Site ID Nos: BH-16, BH-26, BH-29, BH-35, BH-40, BH-42 and CR-92. Each of these residential properties has areas containing areas of elevated Uranium contamination soils which is above the action level of two times background.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

The EPA Emergency Response Section is conducting a CERCLA removal action to mitigate the imminent and substantial threats to human health, welfare, or the environment by taking steps to prevent the release of radium-226, uranium, and the external gamma radiation. The removal action will include the following objectives to prevent direct human contact with external alpha and gamma radiation as well as uranium and its progeny radium-226 and the radon from building materials and in residential soils at up to 9 properties. Remove portions of or the entirety of 9 contaminated structures. Remove contaminated soil or material from eight residential properties. Transport and dispose excavated material at an appropriate facility. Replace excavated soils with clean fill and restore property to pre-removal conditions. Conduct confirmation scanning, sampling and analysis. Provide voluntary temporary lodging for families of affected residential properties.

2.1.2 Response Actions to Date - 9.29.2013 - 9.30.2016 - Operational Period

It took upwards to 16 months to get an approved homesite lease for BH-36-H. Additionally, it took upwards of 12 months to get approval from BIA and NTUA to extend utilities to BH-36-H. This removal action was on hold (and fully demobilized of staff and equipment for nearly 2 years)

All homes have been demolished and rebuilt where appropriate:

	Structure ID	Removal Status	Building Status	Notes
1	BH-02-A	Demolition	Building Complete	
2	BH-05-A	Demolition	Building Complete	
3	BH-07-A	Demolition	Building Complete	

4	BH-07-D	Demolition	Building Complete	
5	BH-26-A	Demolition	Building Complete	
6	BH-34-A	Demolition	Building Complete	
7	BH-34-H	Demolition	Building Complete	
8	BH-36-A	Demolition	Building Complete	
9	BH-42-B	Demolition	Settlement	
10	CR-81-A	Demolition	Building Complete	
	Yard ID	Removal Status	Est. Area (square feet)	Est. Volume (cubic yards)
1	BH-13B	Removal Complete	100	3.70
2	BH-16	Removal Complete	25	1.85
3	BH-19	Removal Complete	4	0.07
4	BH-26	Removal Complete	100	3.70
5	BH-27	Removal Complete	1	0.04
6	BH-29	Removal Complete	195	14.47
7	BH-35	Removal Complete	755	55.94
8	BH-38	Removal Complete	25	1.85
9	BH-40	Removal Complete	4,465	191.84
10	BH-41	Removal Complete	Concrete Pad 15ft2	0.28
11	BH-42	Removal Complete	100	7.41
12	CR-81	Removal Complete	1011	149.76
13	CR-92	Removal Complete	800	14.81
		Totals	7580.95662	445.73
	Key:			
	Pending - Removal has been scheduled			
	Demolition - Demolition of structure in progress			
	Sorting - Materials from structure are being sorted for disposal / reuse			
	Excavation - Over excavation of foundation in progress			
	Compaction - Backfill and compaction of pad for the foundation in progress			
	Foundation - Foundation work for structure in progress			
	Removal Complete - All hazard remediation is completed			
	Framing - Exterior of structure being built			
	Rough plumbing, Mechanical & Electrical - Plumbing, mechanical and electrical installation			
	Insulation & Drywall - Insulation and Drywall insulation			
	Paint, Trim Finishes - All finishes being installed and final painting of structure			
	Building complete - Final inspection by CHID, USACE and homeowner			
	Queue - The removal specification are still in the works (settlement, disputed land, etc)			
	Settlement - U.S. EPA has entered into a financial settlement agreement with the resident - No rebuild will take place			

Disposal has been completed

For up to date information on the status of all removal and building activities, please visit the profile page of the OSC website www.epaossc.org/BACAHAYSTACK and scroll down to the 'Removal Status Progress Report'

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

N/A

2.2 Planning Section

2.2.1 Anticipated Activities

BH-34-H remains under warranty until 4/2017. Any warranty work that is required will be handled by the USACE

2.2.1.1 Planned Response Activities

N/A

2.2.1.2 Next Steps

N/A

2.2.2 Issues

N/A

2.3 Logistics Section

OSC Nattis, USACE, NNEPA, CHID, ERRS and START PMs are coordinating all logistical needs

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

2.5.1 Safety Officer

Site has demobilized

2.5.2 Liaison Officer

Site has demobilized

3. Participating Entities

USEPA
NNEPA
USACE
CHID

4. Personnel On Site

Site has demobilized

5. Definition of Terms

CERCLA: Comprehensive Environmental Response Compensation and Liability Act of 1980
U.S. EPA: United States Environmental Protection Agency
U.S. ACE: U.S. Army Corps of Engineers
ERRS: Emergency and Rapid Removal Services contractor (EQM, Inc.)
µg/hr: Micrograms per hour
µR/hr: Microroentgen per hour
N.N. EPA: Navajo Nation Environmental Protection Agency
CHID: Community Housing & Infrastructure Department
OSC: On-Scene Coordinator
START: Superfund Technical Assessment and Response Team contractor (Ecology and Environment, Inc.)
TDD: Technical Direction Document
DO: Delivery Order

6. Additional sources of information

No information available at this time.

7. Situational Reference Materials

No information available at this time.