

# Navajo Abandoned Uranium Mine

## Site Screen Report

*This form is for use at the site of abandoned uranium mines (AUM) located on Navajo Nation lands. Applicable sites include all mine and mine features that have or have not undergone reclamation by the Navajo Abandoned Mine Lands Reclamation Program, including features, adits, pits and waste piles. Applicable sites also include all AUM sites listed in the USEPA CERCLIS database, all sites listed in the 2008 AUM GIS Report issued by USACOE and USEPA, all AUM sites on allotment lands associated with the Navajo Nation, and any and all AUM sites not listed in any database located on Navajo lands. Reconnaissance of any sites located on lands adjacent to Navajo lands that may be impacting Navajo lands will need to be coordinated with the authorities appropriate to those lands.*

*The purpose of the form is to ascertain the status and location of the identified AUM site, and record all immediate site information associated with the mine site. Decisions and recommendations on what additional steps are needed will be provided on a separate document.*

**Mine Name: Bluestone No. 1**  
**Mine ID: 237**

**Navajo AUM North Central Region**

**Prepared by:**

**Weston Solutions, Inc.**

**Contract: W91238-06-F-0083**

**20074.063.039.0020**

**April 2012**

**Part I Site Identification, Location and Status**

**Site Names and ID numbers as applicable**

**Mine ID:** 237

**Map ID:** NC67

**CERCLIS:** NNN000909258

**Navajo Abandoned Mine Land Reclamation Program:** NA-0213

**Local name / Aliases:** Bluestone Claim No. 1; Keith Francis Claim; Bluestone #1; Garnet Ridge Diatreme; Keith Francis Claims

**Chapter and local area:** Dennehotso

**County:** Apache **State:** AZ

**Lat/Long:** 36.9298282705 N / -109.791576333 W

**Nearby road and highway:** Route 160 **Local Post Office:** Dennehotso, AZ

**Surface Land Status: check one or more and provide ownership and contact information below**

<b>Tribal Trust Land</b>	<input checked="" type="checkbox"/>	<b>Public lands</b>	<input type="checkbox"/>
<b>Private</b>	<input type="checkbox"/>	<b>Tribal Fee Land</b>	<input type="checkbox"/>
<b>Bureau of Land Mgmt</b>	<input type="checkbox"/>	<b>Allotment</b>	<input type="checkbox"/>
<b>State</b>	<input type="checkbox"/>	<b>Fee land</b>	<input type="checkbox"/>

**Subsurface Mineral Rights:**

No information on subsurface mineral rights ownership was found in the EPA/AUM Database.

**Claim and operator information:**

Historical documents identified the operator of the mine in 1951 as Keith Francis, from 1951 to 1952 as Atomic Energy Commission, in 1954 as Keith Francis, from 1954 to 1956 as Magor Mining Co., and in 1960 as Texas-Zinc Minerals Corp. No additional historical ownership / lease information was identified in the EPA / AUM database.

**Number of residential structures within 200 feet of mine:** None

## Part II Summary of Radiological Readings

Mine ID: 237

**Highest gamma radiation measurement:** 136,627 counts per minute (cpm)

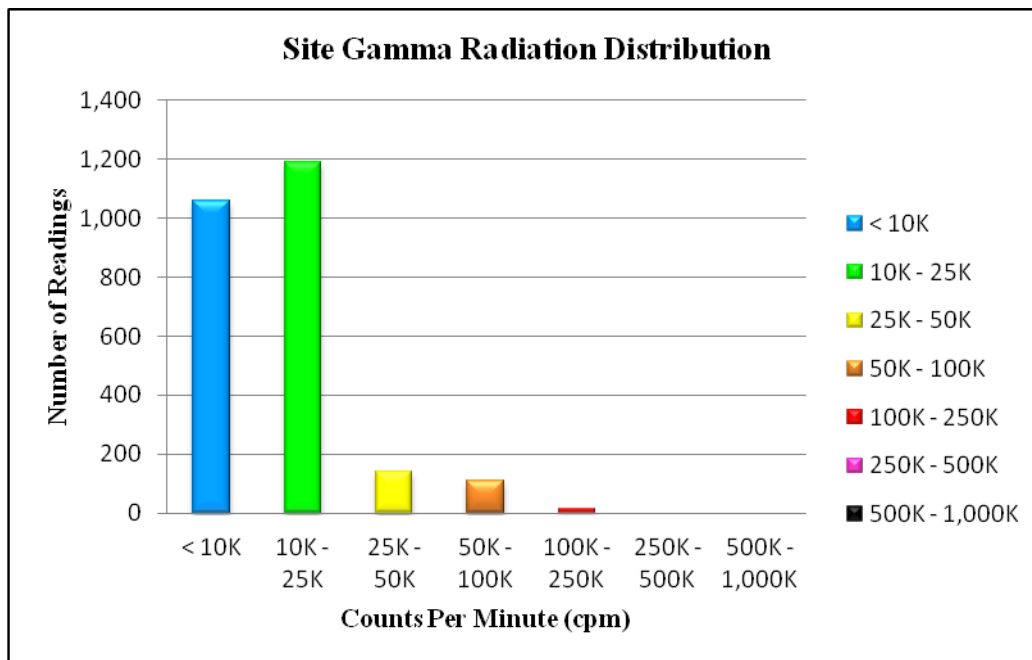
**Background Average:** 8,787 cpm      **Two Times Background:** 17,574 cpm

**Describe any other radiological measurements:**

A total of 2,511 gamma radiation measurements were collected from the mine site, ranging from 6,545 cpm to 136,627 cpm. Maximum levels of approximately 75,000 cpm were found in the vicinity of the waste rock, 135,000 cpm were found in the bermed area, and 20,000 cpm near the covered adit. The measurements are represented in Figures 1 and 2.

**Distribution Chart and Statistics:**

<b>Site Gamma Radiation Statistics</b>	
Number of Readings	2,511
Minimum (cpm)	6,545
Maximum (cpm)	136,627
Mean (cpm)	15,093
Median (cpm)	10,509
Standard Deviation	14,289



### **Part III      Status of Reclamation and Mine Waste**

**Mine ID: 237**

**The following information was obtained from the Navajo Abandoned Mine Land Reclamation Program (NAMLRP) Point Features Database:**

**NAMLRP Status of the mine site: Reclaimed: Yes      Waste Pile onsite: No**

**NAMLRP Project Number: NA-0213**

**NAMLRP Mine features: 1 Rim Strip / Pit; 1 Vertical**

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**The following information was obtained from field observations collected during the 2011 site screening:**

**Provide description and status of all mine sites and features at site. Include all waste piles, adits, pits and other features, and indicate whether they are open, closed, covered, capped, buried or unreclaimed. Indicate approximate size, shape and extent, including description of any reclamation caps. Note condition of all caps.**

**Observed reclamation work and status:**

**Adits:**

Possible covered adit west-center portion of the site

**Waste Piles:**

Some scattered waste rock northwest of the site boundary

**Pits:**

None Observed

**Shafts:**

None Observed

**Other Debris and Mine Features:**

Reclamation berms northwest of the site boundary

## **Part IV Site Observations and Environs**

### **Observed Residential Structures (number and human habitation status of structures at the following distances from the mine site):**

**0 to 200 feet:** None Observed

**200 feet to 0.25 mile:** None Observed

### **Observed Public or Commercial Structures (schools, clinics, Chapter Houses, places of business and any other structures used by members of the community at the following distances from the mine site):**

**0 to 200 feet:** None observed

**200 feet to 0.25 mile:** None observed

### **Levels measured around the perimeter(s) of the identified structure(s):**

None

### **Observed Water Sources (number and type of wells and surface water sources that are potentially used for human consumption at the following distances from the mine site):**

**0 to 0.25 miles:** None Observed

**0.25 miles to 4 miles:** None Observed

### **Sensitive Environments (all sensitive environments located within visible range of the mine site, including: wetlands, endangered species, habitats and approximate locations of sites that may be under protection of the government of the Navajo Nation):**

None observed

### **Known Site History (information from interviews with Chapter officials and residents and database review, includes: mine ownership, type of mining operation, period of operation, known amount of production, and any other information provided):**

The Bluestone No. 1 mine claim consists of an area of 6,903 m<sup>2</sup>. The mine was identified as being operational from 1955 to 1956. While operational, the mine had a total reported production volume of 53 tons. No additional historical ownership / lease information was identified in the EPA / AUM database.

**Part V Response Action Summary**

**Summary of Evaluation Factors:**

*Accessibility:*

**Was the mine easily accessible to potential human activity?**

Yes

*Radiological Measurements:*

**Were any gamma radiation measurements collected at the mine greater than two times the site-specific background levels?**

Yes

*Waste Piles:*

**Were any unreclaimed waste piles observed at the mine with gamma radiation measurements greater than two times the site-specific background levels?**

Yes

*Structures:*

**Were any structures observed within 200 feet of the mine?**

No

*Potential Drinking Water Sources:*

**Were any potential drinking water sources observed within 4 miles of the mine?**

No

*Reclamation:*

**Was the mine reported to be previously reclaimed, or did the mine appear to be reclaimed?**

Yes

**Part VI      Photos**



**Photo 1**

Mine Site #237 – Marked rock



**Photo 2**

Mine Site #237 – Berm area



**Photo 3**

Mine Site #237



**Part VII Contact Reports and Information**

Name: Eugene Esplain

Title or official role (if any): Navajo EPA Superfund Program

Telephone number: (928) 871-7331

Address: PO Box 2946, Window Rock, AZ 86515

Information provided: Lead Regulatory Agency

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Name: \_\_\_\_\_

Title or official role (if any): \_\_\_\_\_

Telephone number: \_\_\_\_\_

Address: \_\_\_\_\_

Information provided: \_\_\_\_\_

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Name: \_\_\_\_\_

Title or official role (if any): \_\_\_\_\_

Telephone number: \_\_\_\_\_

Address: \_\_\_\_\_

Information provided: \_\_\_\_\_

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**Figure 1 - Gamma Radiation Measurements, Above Two Times Background  
Bluestone No. 1 (237)  
Dennehotso Chapter, Navajo Nation**



**Gamma Radiation Measurements**

- < 2X Background
- > 2X Background

Measured as counts per minute (cpm)

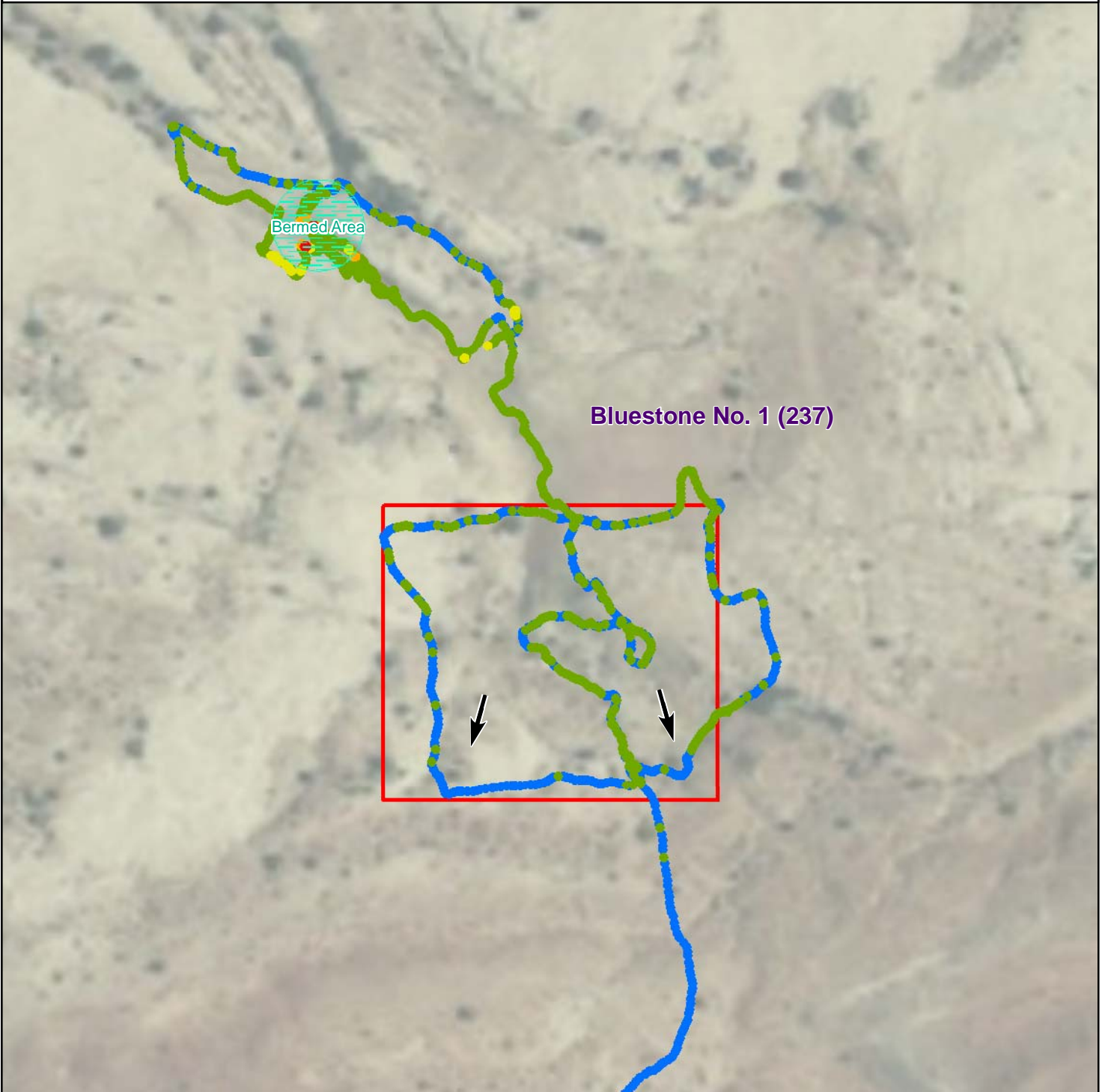
Average background 8,787 cpm

- Mine Site Boundary
- General Slope Direction
- Observed Reclamation Feature
- Observed Waste Rock
- Observed Structure
- Observed Adit


**Figure 2 - Gamma Radiation Measurements  
Bluestone No. 1 (237)  
Dennehotso Chapter, Navajo Nation**



**Gamma Radiation Measurements**

- 0 - 10,000 cpm
- 10,000 - 25,000 cpm
- 25,000 - 50,000 cpm
- 50,000 - 100,000 cpm
- 100,000 - 250,000 cpm
- 250,000 - 500,000 cpm
- 500,000 - 1,000,000 cpm

- ▭ Mine Site Boundary
- General Slope Direction
- ▨ Observed Reclamation Feature
- ▨ Observed Waste Rock
- ▤ Observed Structure
- ↔ Observed Adit



**Average background 8,787 cpm**

**Measured as counts per minute (cpm)**

