

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.

Section 1 Lease AUM Site

Navajo AUM Western Region

Prepared by:

Weston Solutions, Inc.

Contract: W91238-06-F-0083

12767.063.599.1111

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Part I Site Identification, Location and Status

Site Names and ID numbers as applicable

Mine ID: 454; 527

Map ID: 454: W85; 527: W86

CERCLIS: NNN000909108

Navajo Abandoned Mine Land Reclamation Program: None

Local name / Aliases: Section #1

Chapter and local area: State of Arizona

County: Coconino **State:** Arizona

Lat/Long: 454: 35.7479190449 N / -111.386011071 W
527: 35.7551103116 N / -111.388096354 W

Nearby road and highway: Highway 89 **Local Post Office:** Cameron, AZ

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

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

Subsurface Mineral Rights:

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

Claim and operator information:

The Section 1 Lease mine claim consists of 2 separate mine sites (#'s 454, 527). The mine claim surface land status is classified as State of Arizona land. Historical documents showed the operator of the mine as A. C. Nordell in 1954, and C.L. Rankin in 1958. No additional ownership / lease information was identified in the EPA/AUM database.

Number of residential structures within 200 feet of mine: None

Estimated volume of mine waste onsite: 454: 463 yd³
527: 4 yd³

Part II Summary of radiological readings

Mine ID: 454

Highest gamma radiation measurement:

332,288 counts per minute (cpm)

Describe any other radiological measurements:

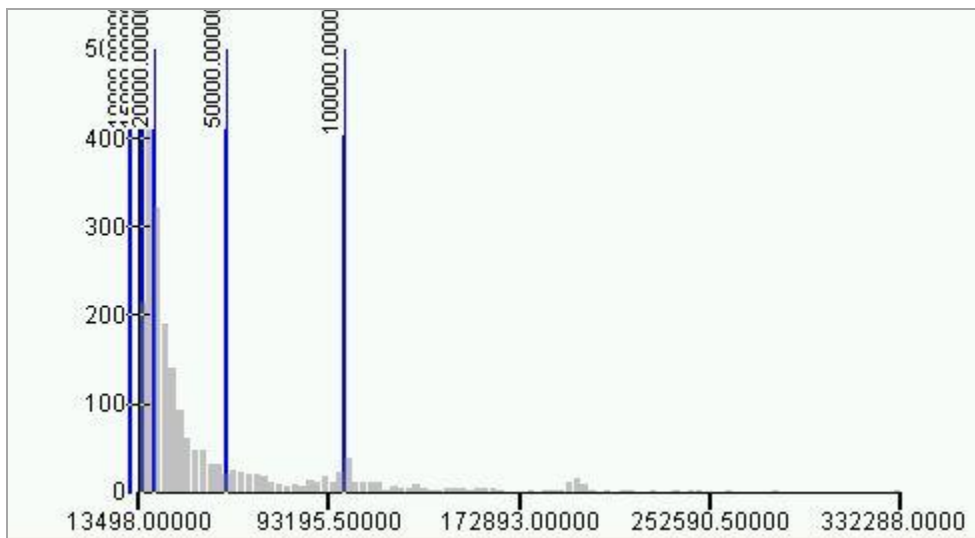
A total of 2,108 gamma radiation measurements were collected from the mine site, ranging from 13,498 cpm to 332,288 cpm. The measurements collected at the waste pile were found at a maximum level of approximately 40,000 cpm, and at the exposed ore at a maximum level of approximately 330,000 cpm. The measurements are represented in Figures 1, 2, 3, and 4.

Background Readings: 20,121 cpm

Background Average: 20,121 cpm (mine claim background average was 16,548 cpm)

Distribution Chart and Statistics:

The following chart and statistics were generated by ESRI ArcGIS 9.3.1, and show the general distribution of the site gamma radiation measurements. The horizontal X axis represents the gamma radiation reading levels in cpm (lowest levels to the left). The vertical Y axis represents the frequency of each gamma radiation level.



Count:	2108
Minimum:	13498.00000
Maximum:	332288.00000
Sum:	93556896.00000
Mean:	44381.82922
Median:	24052.50000
Standard Deviation:	47791.96355

Mine ID: 527

Highest gamma radiation measurement:

604,524 counts per minute (cpm)

Describe any other radiological measurements:

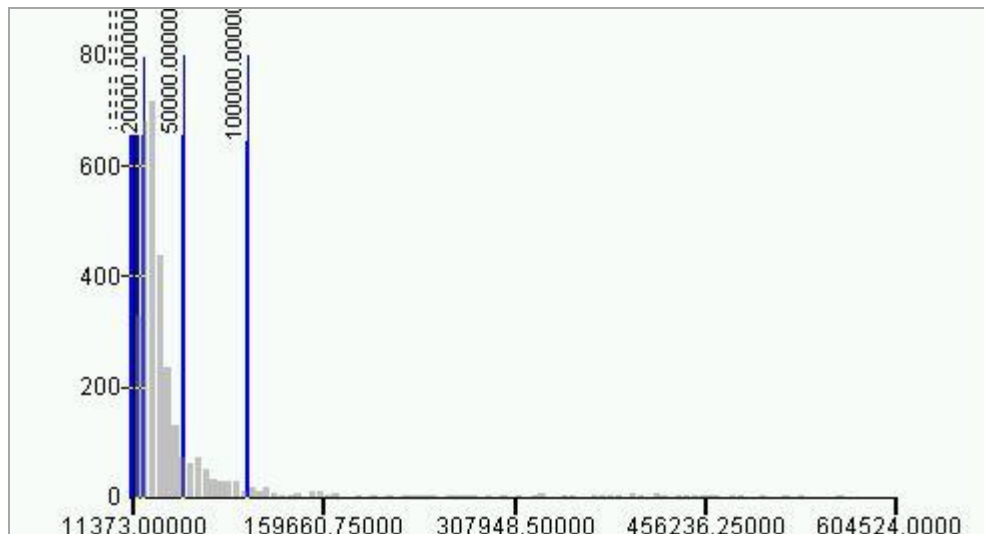
A total of 3,152 gamma radiation measurements were collected from the mine site, ranging from 11,373 cpm to 604,524 cpm. The measurements collected at the waste piles were found at a maximum level ranging from approximately 150,000 cpm to 600,000 cpm, and at the trench areas at a maximum level ranging from approximately 30,000 cpm to 80,000 cpm. The measurements are represented in Figures 1, 2, 5, and 6.

Background Readings: 13,701 cpm

Background Average: 13,701 cpm (mine claim background average was 16,548 cpm)

Distribution Chart and Statistics:

The following chart and statistics were generated by ESRI ArcGIS 9.3.1, and show the general distribution of the site gamma radiation measurements. The horizontal X axis represents the gamma radiation reading levels in cpm (lowest levels to the left). The vertical Y axis represents the frequency of each gamma radiation level.



Count:	3152
Minimum:	11373.00000
Maximum:	604524.00000
Sum:	155735714.00000
Mean:	49408.53871
Median:	27819.00000
Standard Deviation:	75287.90036

Part III Status of Reclamation and Mine Waste

Mine ID: 454

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

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

NAMLRP Project Number: None

NAMLRP Mine features: None

The following information was obtained from field observations collected during the 2010 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

None

Waste Piles

Many small waste piles throughout site, estimated total 50' x 50' x 5'

Pits

None

Shafts

None

Other Debris and Mine Features

Exposed ore

Mine ID: 527

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

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

NAMLRP Project Number: None

NAMLRP Mine features: None

The following information was obtained from field observations collected during the 2010 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

None

Waste Piles

4 waste piles: 1- 4' x 6' x 2' yellow brown; 2- 8' diameter x 1' h, yellow brown with berm surrounding pile; 3- 5' diameter x 2' h yellow brown; 5' diameter x 0.5' h yellow brown with berm surrounding pile

Pits

None

Shafts

None

Other Debris and Mine Features

Shallow trenches throughout site

Part IV

Site observations and Environs

Observed Structures: list number of and describe human habitation status of structures at the following distances from mine:

0 to 200 feet: None

200 feet to 0.25 mile: None

Observed Public or commercial structure: list and describe all schools, clinics, Chapter Houses, places of business and any other structure used by members of the community at the following distances:

0 to 200 feet: None

200 feet to 0.25 mile: None

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

None

Observed water sources: list the number and type of wells and surface water sources that are potentially used for human consumption at the following distances from the mine:

0 to 0.25 miles: None

0.25 miles to 4 miles: Windmill Well approximately 1.25 mi NW of the site 527, 1.75 mi NW of site 454; Little Colorado River Basin approximately 3.5 mi E of the sites

Sensitive environments: note and describe 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

Known Site History: include information from interviews with Chapter officials and residents. Note information on mine ownership, type of mining operation, period of operation, known amount of production, and any other information as provided.

Section 1 Lease mine claim consists of 2 separate mine sites (#'s 454, 527) with a total combined area of 31,900.37 m². The mine claim was identified as being operational from 1954 to 1958. Historical documents showed the operator of the mine as A. C. Nordell in 1954, and C.L. Rankin in 1958. While operational, the mine had a total production volume of 44 tons. No other historical information or any additional 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?

Yes

Reclamation:

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

Unknown

Part VI Photos



Photo 1. Section 1 Lease, Site #454



Photo 2. Section 1 Lease, Site #454, area of elevated gamma readings



Photo 3. Section 1 Lease, Site #527



Photo 4. Section 1 Lease, Site #527, shallow trench



Photo 5. Section 1 Lease, Site #527, small waste piles



Photo 6. Section 1 Lease, Site #527, small waste piles

Part VII Contacts Reports and Information

Name: Stanley Edison (928) 871-6861

Eugene Esplain (928) 871-7331

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

Address PO Box 2946, Window Rock, AZ 86515

Information provided Lead Regulatory Agency

Name _____

Title or official role (if any) _____

Address _____

Telephone number _____

Information provided _____

Name _____

Title or official role (if any) _____

Telephone number _____

Information provided _____

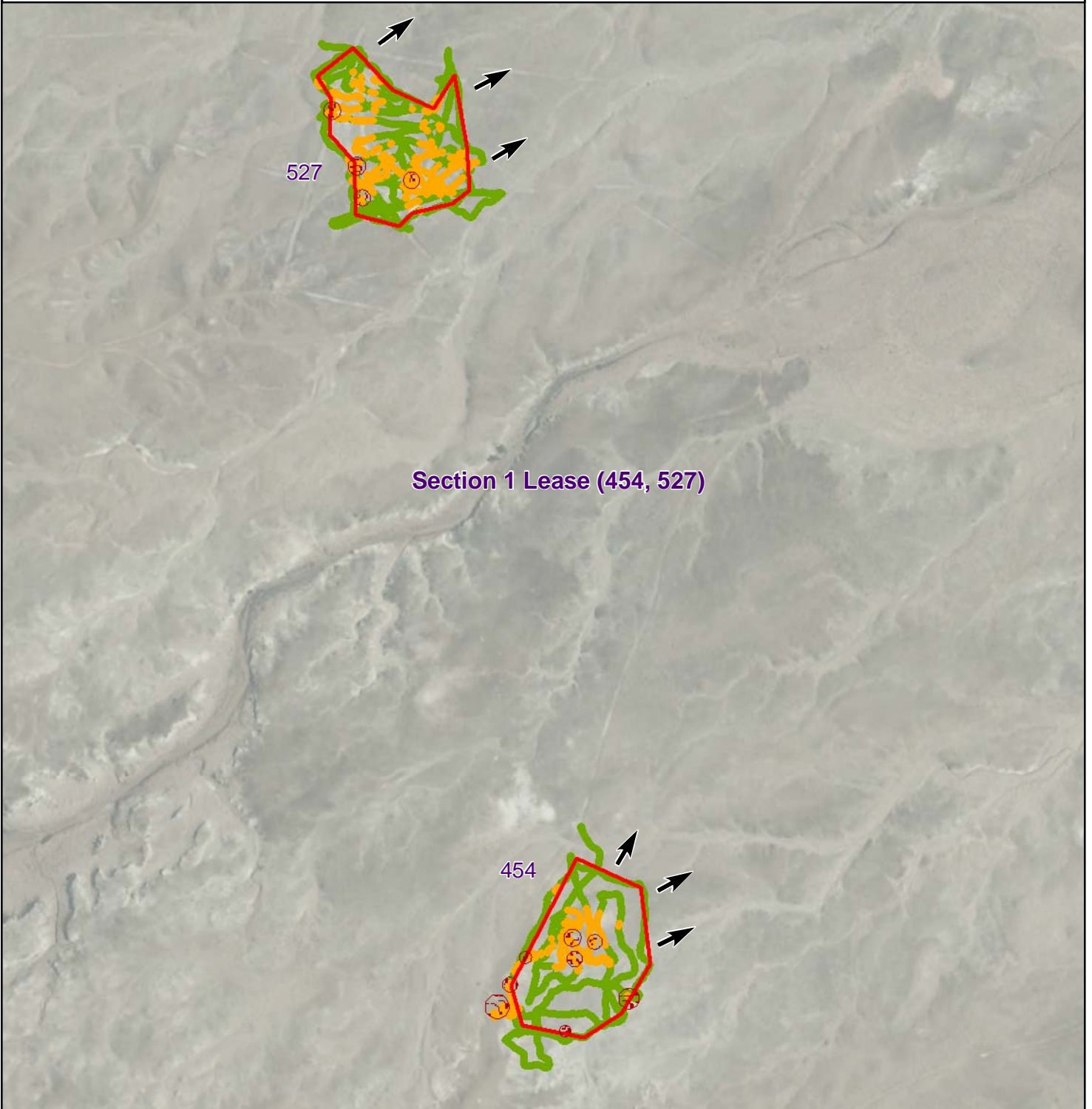
Name _____

Title or official role (if any) _____

Telephone number _____

Information provided _____



**Figure 1 - Gamma Radiation Measurements, Above Two Times Background
Section 1 Lease (454, 527)
Coconino County, Arizona**



Legend

Gamma Radiation Measurements

- < 2X Background
- > 2X Background

- General Slope Direction
-  Observed Waste Pile
-  Mine Site Boundary

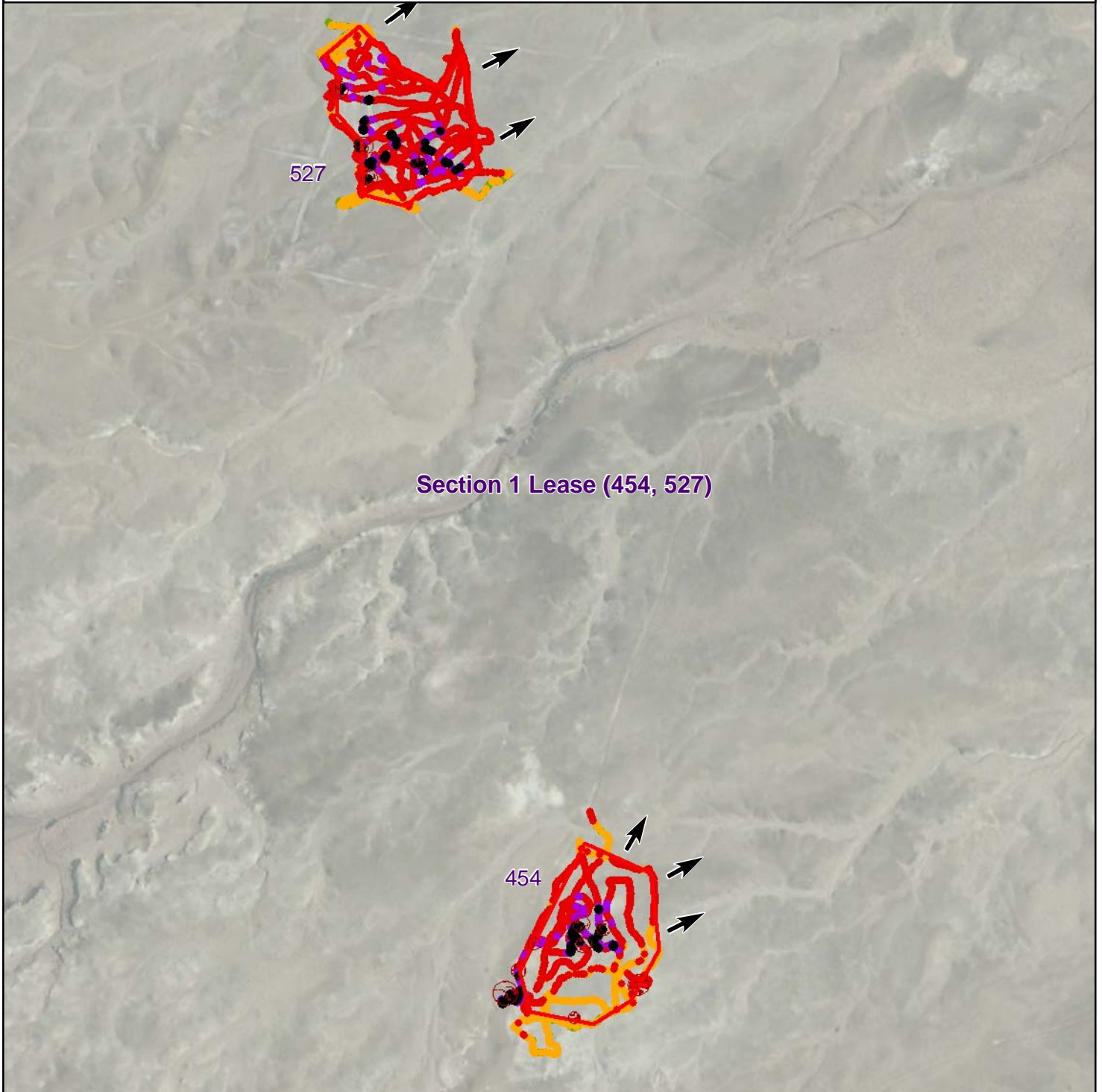


Gamma survey conducted 11/2010
Measured as counts per minute (cpm)

Average background 16,548 cpm



**Figure 2 - Gamma Radiation Measurements
Section 1 Lease (454, 527)
Coconino County, Arizona**



Legend

Gamma Radiation Measurements

- 0 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 50,000
- 50,000 - 100,000
- > 100,000

Average background 16,548 cpm

➔ General Slope Direction

 Observed Waste Pile

 Mine Site Boundary



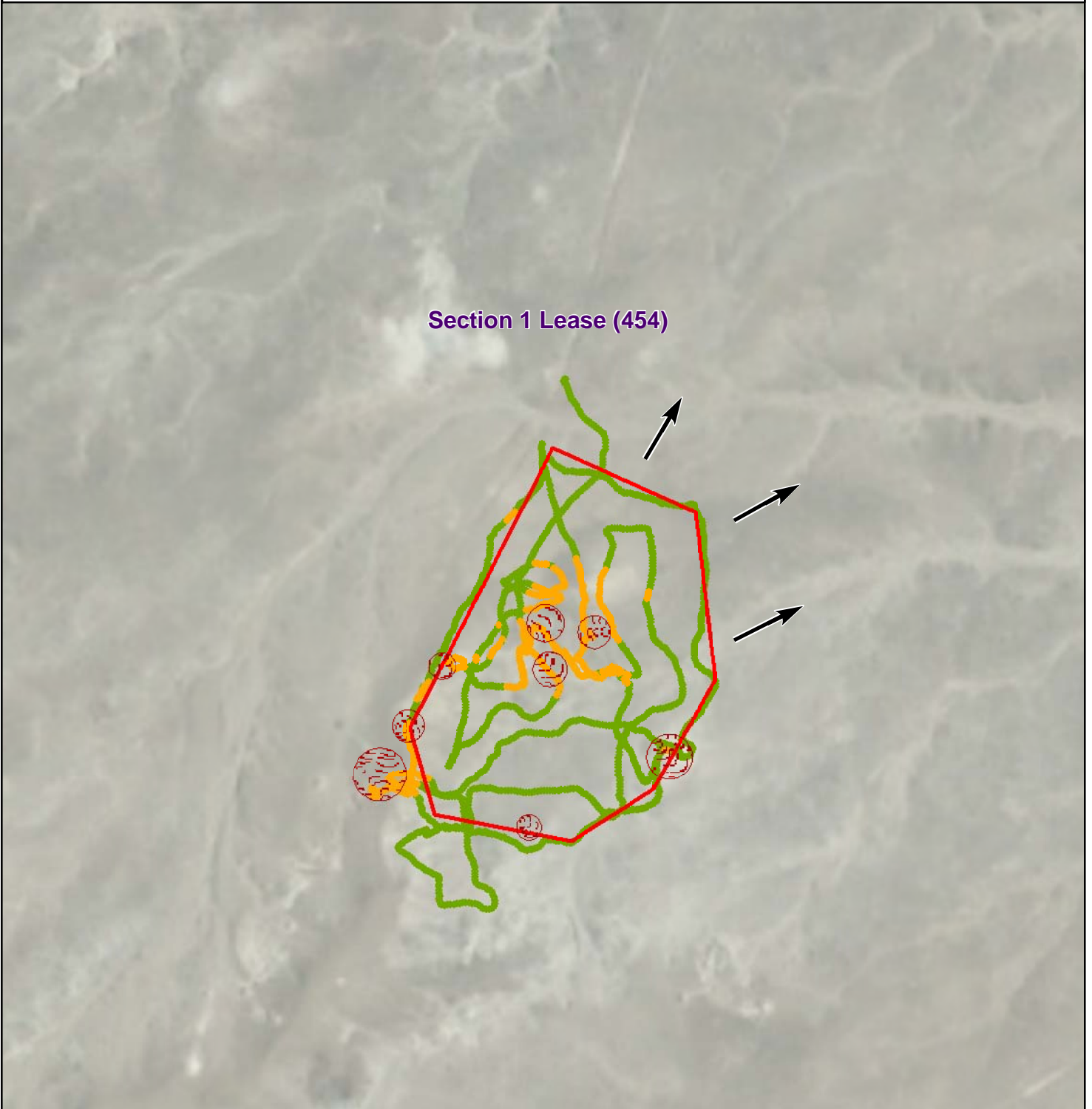
0 500 Feet



Gamma survey conducted 11/2010
Measured as counts per minute (cpm)





**Figure 3 - Gamma Radiation Measurements, Above Two Times Background
Section 1 Lease (454)
Coconino County, Arizona**



Legend

Gamma Radiation Measurements

- < 2X Background
- > 2X Background

- General Slope Direction
-  Observed Waste Pile
-  Mine Site Boundary

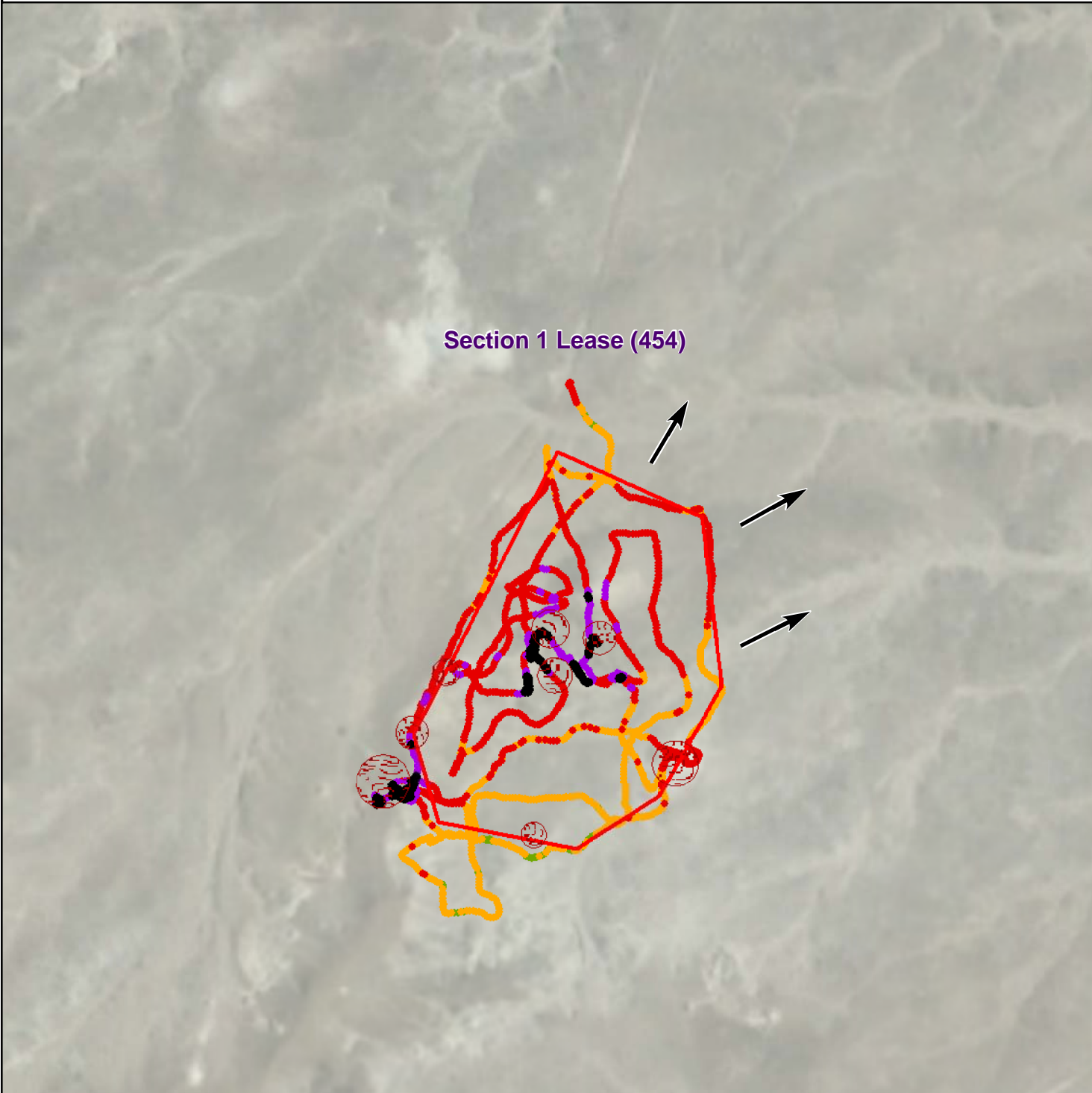


Gamma survey conducted 11/2010
Measured as counts per minute (cpm)

Average background 16,548 cpm



**Figure 4 - Gamma Radiation Measurements
Section 1 Lease (454)
Coconino County, Arizona**



Legend

Gamma Radiation Measurements

- 0 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 50,000
- 50,000 - 100,000
- > 100,000

Average background 16,548 cpm

→ General Slope Direction

 Observed Waste Pile

 Mine Site Boundary



Gamma survey conducted 11/2010
Measured as counts per minute (cpm)



**Figure 5 - Gamma Radiation Measurements, Above Two Times Background
Section 1 Lease (527)
Coconino County, Arizona**



Legend

Gamma Radiation Measurements

- < 2X Background
- > 2X Background

- General Slope Direction
-  Observed Waste Pile
-  Mine Site Boundary

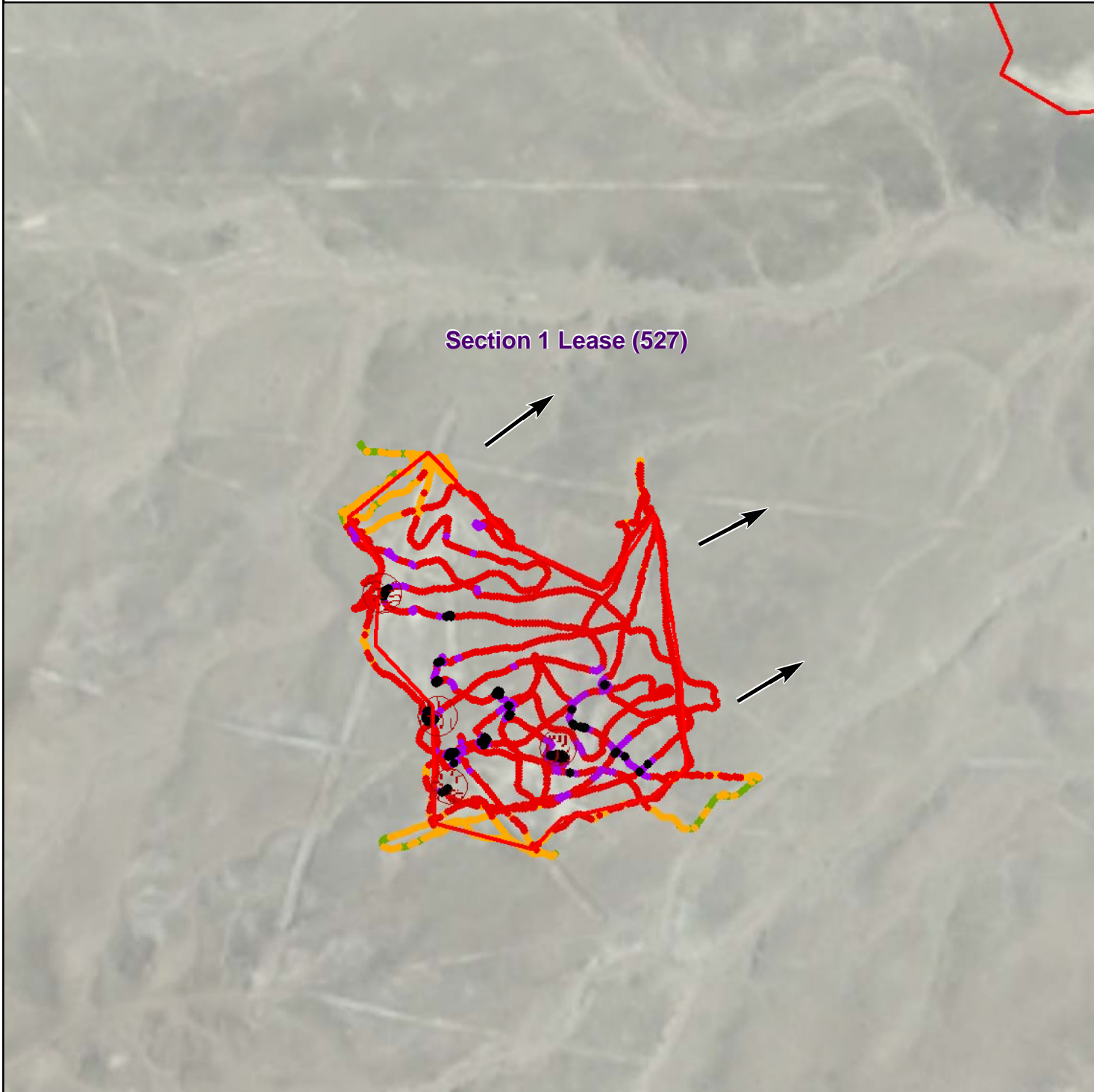


Gamma survey conducted 11/2010
Measured as counts per minute (cpm)

Average background 16,548 cpm



**Figure 6 - Gamma Radiation Measurements
Section 1 Lease (527)
Coconino County, Arizona**



Section 1 Lease (527)

Legend

Gamma Radiation Measurements

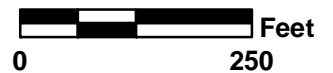
- 0 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 50,000
- 50,000 - 100,000
- > 100,000

Average background 16,548 cpm

→ General Slope Direction

 Observed Waste Pile

 Mine Site Boundary



Gamma survey conducted 11/2010
Measured as counts per minute (cpm)