

Structures within One Mile of Abandoned Uranium Mines on the Navajo Nation



Data format: Shapefile

File or table name: NN_Structures_1mi

Coordinate system: Geographic

Theme keywords: Buildings, Structures, Population

Abstract: This point shapefile documents the location of building structures within one mile of Abandoned Uranium Mines (AUM) on and within one mile of the Navajo Nation as mapped from various sources. This dataset covers the six (6) AUM Regions where uranium mining was documented to have occurred on the Navajo Nation. The locations of structures were mapped by photointerpreting US Geological Survey (USGS) Digital Orthophoto Quarter Quadrangles (DOQQs) and reviewing USGS Digital Raster Graphics (DRGs) for 1:24,000 scale topographic maps, and by limited field visits to establish photo interpretation keys. Utility meter locations (water, gas, electric) were provided by the Navajo Tribal Utility Authority (NTUA) and were used to locate "assumed" structures.

FGDC and ESRI Metadata:

- [Identification Information](#)
- [Data Quality Information](#)
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Metadata elements shown with blue text are defined in the Federal Geographic Data Committee's (FGDC) [Content Standard for Digital Geospatial Metadata \(CSDGM\)](#). Elements shown with green text are defined in the [ESRI Profile of the CSDGM](#). Elements shown with a green asterisk (*) will be automatically updated by ArcCatalog. ArcCatalog adds hints indicating which FGDC elements are mandatory; these are shown with gray text.

Identification Information:

Citation:

Citation information:

Originators: TerraSpectra Geomatics

Title:

Structures within One Mile of Abandoned Uranium Mines on the Navajo Nation

***File or table name:** NN_Structures_1mi

Publication date: July 2007

***Geospatial data presentation form:** vector digital data

***Online linkage:** \\Terra_dc\Navajo\NAUM_NN_Summary\Products\FINAL\TSG-07066

[\DVD_GIS\DB\Cultural\NN_Structures_1mi.shp](#)

Description:

Abstract:

This point shapefile documents the location of building structures within one mile of Abandoned Uranium Mines (AUM) on and within one mile of the Navajo Nation as mapped from various sources. This dataset covers the six (6) AUM Regions where uranium mining was documented to have occurred on the Navajo Nation. The locations of structures were mapped by photointerpreting US Geological Survey (USGS) Digital Orthophoto Quarter Quadrangles (DOQQs) and reviewing USGS Digital Raster Graphics (DRGs) for 1:24,000 scale topographic maps, and by limited field visits to establish photo interpretation keys. Utility meter locations (water, gas, electric) were provided by the Navajo Tribal Utility Authority (NTUA) and were used to locate "assumed" structures.

Purpose:

Structures were mapped to provide a key input to the initial screening assessments of AUMs using a modified Hazard Ranking System (HRS) derived model. Structures may be used as a surrogate for residence or gathering locations (Chapter House, Trading Post, commercial locations, churches, etc.) for population exposure to abandoned uranium mine wastes. Categories of structures include: structure, possible structure, and assumed structure with no attempt to identify the type of structure (e.g. residence, commercial, Chapter House, school, etc).

***Language of dataset:** en

Time period of content:

Time period information:

Range of dates/times:

Beginning date: 10/06/97

Ending time: 03/26/07

Currentness reference:

ground condition

Status:

Progress: Complete

Maintenance and update frequency: None planned

Spatial domain:

Bounding coordinates:

***West bounding coordinate:** -111.633167

***East bounding coordinate:** -107.834751

***North bounding coordinate:** 37.420021

***South bounding coordinate:** 35.328024

Local bounding coordinates:

***Left bounding coordinate:** -111.633167

***Right bounding coordinate:** -107.834751

***Top bounding coordinate:** 37.420021

***Bottom bounding coordinate:** 35.328024

Keywords:

Theme:

Theme keywords: Buildings, Structures, Population

Theme keyword thesaurus: None

Place:

Place keywords: Navajo Nation, New Mexico, United States

Place keyword thesaurus: None

Access constraints: None.

Use constraints:

This dataset maps structures or buildings that are located within one mile of AUMs on or within one mile of the Navajo Nation. This dataset covers the six (6) AUM Regions where uranium mining was documented to have occurred. These structures do not necessarily have people living in them, although, a majority of the mapped structures are assumed to be occupied. People also gather in structures for commercial or governmental activity, education, entertainment, and worship. This dataset is considered appropriate for a scale of 1:24,000 or smaller.

Use of these data generally requires computer workstations with ESRI's Arc/Info (8.x or above), ArcGIS (8.x or above), or ArcView (3.x), or some other GIS or CAD software that is capable of reading or converting this dataset. The data are provided "as-is," without warranty of any kind, either express or implied. These data have been compiled as part of a desktop project to collect existing spatial data to support the study of Navajo AUM studies. Limited field verifications were undertaken as part of this desktop study.

Point of contact:

Contact information:

Contact organization primary:

Contact organization: U. S. Environmental Protection Agency, Region 9, Superfund Program

Contact address:

Address type: mailing and physical address

Address:

75 Hawthorne St (SFD 8-2)

City: San Francisco

State or province: CA

Postal code: 94105

Country: USA

Contact voice telephone: 415-972-3167

Security information:

Security classification system: None

***Native dataset format:** Shapefile

***Native data set environment:**

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog 9.1.0.780

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Data Quality Information:

Attribute accuracy:

Attribute accuracy report:

Most structures were readily apparent on the monoscopic black and white USGS DOQQs. Some limited field checks for training and development of photo-interpretation keys was undertaken. Structures mapped and attributed using USGS DOQQs were corroborated by the other multiple sources where possible. Generally good agreement was found comparing DOQQ results to USGS 7.5 minute DRGs of similar time periods. Navajo Tribal Utility Authority (NTUA) utility meter locations were collected using a Global Positioning System (GPS) and were used to locate structures that were constructed after the date of the DOQQ or DRG. Structures that were added using the NTUA meter data as the only source are coded as "assumed" structures.

Logical consistency report:

These data were visually inspected for consistency with source reference documents. Limited field observation were incorporated as part of this desktop study.

Completeness report:

This dataset maps structures or buildings that occur within one mile of AUMs on or within one mile of the Navajo Nation. This dataset covers the six (6) AUM Regions where uranium mining was documented to have occurred on the Navajo Nation. These six (6) regions are 1) Northern AUM Region including the following Chapters: Aneth, Beclabito, Cove, Lukachukai, Red Mesa, Red Valley, Round Rock, Sanostee, Shiprock, Sweetwater, and Teec Nos, Pos; 2) Western AUM Region including the following Chapters: Bodaway/Gap, Cameron, Coalmine Canyon, Coppermine, LeChee, Leupp, and Tuba City; 3) North Central AUM Region including the following Chapters: Dennehotso, Kayenta, Mexican Water, Oljato, and Shonto; 4) Central AUM Region including the following Chapters: Black Mesa, Chilchinbeto, Chinle, Many Farms, Rock Point, Rough Rock, Tachee/Blue Gap, Tsaile/Wheatfields and Tsalani/Cottonwood; 5) Southern AUM Region including the following Chapters: Dilkon, Greaswood Springs, Indian Wells, Steamboat, Teesto, and White Cone Chapters; and Eastern AUM)Region including the following Chapters: Baca/Prewitt, Becenti, Bread Springs, Casamero Lake, Church Rock, Coyote Canyon, Crownpoint, Iyanbito, Littlewater, Mariano Lake, Nahodishgish, Pinedale, Red Rock, Rock Springs, Smith Lake, Standing Rock, and Thoreau of the Navajo Nation. These structures do not necessarily have people living in them, although, a majority of the mapped structures are assumed to be occupied. People also gather in structures for commercial or governmental activity, education, entertainment, and worship. This dataset is considered appropriate for a scale of 1:24,000 or smaller.

Positional accuracy:**Horizontal positional accuracy:****Horizontal positional accuracy report:**

DOQQs are the positioning source for structures. The Root Mean Square Error for USGS DOQQs is required to be less than 30 feet. NTUA utility meter locations are the positioning source for assumed structures and were collected using GPS.

Lineage:**Source information:**

Source scale denominator: NA

Type of source media: CD-ROM

Source citation abbreviation:

USGS DOQQ

Source contribution:

USGS Digital Orthophoto Quarter Quads (DOQQs) were used to photointerpret and map structures via heads-up digitizing. This source was also a corroborative mapping source when other sources were the primary indicator for a structure. DOQQs have a 1 meter resolution with a 7m (30ft) RMSE.

Source time period of content:**Time period information:****Range of dates/times:**

Beginning date: 10/06/97

Ending date: 9/24/98

Source currentness reference:

ground condition

Source information:

Source scale denominator: 24,000

Type of source media: Download

Source citation abbreviation:

USGS DRG

Source contribution:

Structures were mapped from USGS 1:24,000 scale Digital Raster Graphics (DRGs). This source was also a corroborative mapping source.

Source information:

Source scale denominator: NA

Source citation abbreviation:

Visual Estimate

Source contribution:

Some structures were mapped during field surveys conducted on Nov. 22, 2002. and April 2005 as part of a photo interpretation key development.

Source information:

Source scale denominator: NA

Type of source media: electronic mail system

Source citation abbreviation:

NTUA

Source contribution:

Navajo Tribal Utility Authority (NTUA) utility meter locations were used to add "assumed" structure locations. The meter locations were collected by NTUA using GPS technology. The meter locations were also used as a source to corroborate structures mapped using DOQQs and DRGs.

Source time period of content:

Time period information:

Multiple dates/times:

Single date/time:

Calendar date: 04/12/2005

Single date/time:

Calendar date: 02/08/2006

Single date/time:

Calendar date: 03/26/2007

Process step:

Process description:

Most of the features were mapped directly by photointerpretation from USGS DOQQs via heads-up digitizing and keyboard attribute entry. Some features were also identified and heads up digitized from USGS DRGs with keyboard attribute entry. A limited number of field photographs were taken of structures that were added from the field. NTUA meter locations were used as a corroborative source for structures that were originally mapped from sources listed above. If none of the other sources could be used to interpret the presence of a structure, then an "assumed" structure point was added to the dataset where a meter was located.

Process software and version: ESRI ArcGIS 8.3 & 9.1

Process date: December 2005

Source used citation abbreviation:

USGS DOQQ

Source used citation abbreviation:

USGS DRG

Source used citation abbreviation:

Visual Estimate

Source used citation abbreviation:

NTUA Meters

Process contact:

Contact information:

Contact organization primary:**Contact organization:** TerraSpectra Geomatics**Contact address:****Address type:** mailing and physical address**Address:**

2700 E Sunset Rd, Ste A-10

City: Las Vegas**State or province:** NV**Postal code:** 89120**Country:** USA**Process step:****Process description:**

The structures dataset was modified for the Western Abandoned Uranium (AUM) Region, including the following Chapters: Bodaway/Gap, Cameron, Coalmine Canyon, Coppermine, LeChee, Leupp, and Tuba City of the Navajo Nation. The modification included "assumed structures" from NTUA utility meter locations.

Process software and version: ESRI ArcGIS 9.1**Process date:** March 2006**Process contact:****Contact information:****Contact organization primary:****Contact organization:** TerraSpectra Geomatics**Contact address:****Address type:** mailing and physical address**Address:**

2700 E Sunset Rd, Ste A-10

City: Las Vegas**State or province:** NV**Postal code:** 89120**Country:** USA**Contact voice telephone:** 702-795-8254**Process step:****Process description:**

The structures dataset was modified for the Central Abandoned Uranium (AUM) Region, including the following Chapters: Black Mesa, Chilchinbeto, Chinle, Many Farms, Rock Point, Rough Rock, Tachee/Blue Gap, Tsaile/Wheatfields, and Tselani/Cottonwood of the Navajo Nation. The modification included "assumed structures" from NTUA utility meter locations.

Process software and version: ESRI ArcGIS 9.1**Process date:** August 2006**Process contact:****Contact information:****Contact organization primary:****Contact organization:** TerraSpectra Geomatics**Contact address:****Address type:** mailing and physical address**Address:**

2700 E Susnet Rd, Ste A-10

City: Las Vegas

State or province: NV
Postal code: 89120
Country: USA

Contact voice telephone: 702-795-8254

Process step:

Process description:

The structures dataset was modified for the Southern Abandoned Uranium (AUM) Region, including the following Chapters: Dilkon, Greasewood Springs, Indian Wells, Steamboat, Teesto, and White Cone of the Navajo Nation. The modification included "assumed structures" from NTUA utility meter locations.

Process software and version: ESRI ArcGIS 9.1

Process date: June 2006

Process contact:

Contact information:

Contact organization primary:

Contact organization: TerraSpectra Geomatics

Contact address:

Address type: mailing and physical address

Address:

2700 E Sunset Rd, Ste A-10

City: Las Vegas

State or province: NV

Postal code: 89120

Country: USA

Contact voice telephone: 702-795-8254

Process step:

Process description:

The structures dataset was modified for the Eastern Abandoned Uranium (AUM) Region, including the following Chapters: Baca/Prewitt, Becenti, Bread Springs, Casamero Lake, Church Rock, Coyote Canyon, Crownpoint, Iyanbito, Littlewater, Mariano Lake, Nahodishgish, Pinedale, Red Rock, Rock Springs, Smith Lake, Standing Rock, and Thoreau of the Navajo Nation. The modification included "assumed structures" from NTUA utility meter locations.

Process software and version: ESRI ArcGIS 9.1

Process date: October 2006

Process step:

Process description:

The structures dataset was modified for the Northern Abandoned Uranium (AUM) Region, including the following Chapters: Aneth, Beclabito, Cove, Lukachukai, Red Mesa, Red Valley, Round Rock, Sanostee, Shiprock, Sweetwater, and Teec Nos Pos of the Navajo Nation. The modification included "assumed structures" from NTUA utility meter locations.

Process software and version: ESRI ArcGIS 9.1

Process date: March 2006

Process contact:

Contact information:

Contact organization primary:

Contact organization: TerraSpectra Geomatics

Contact address:**Address type:** mailing and physical address**Address:**

2700 E Sunset Rd, Ste A-10

City: Las Vegas**State or province:** NV**Postal code:** 89120**Country:** USA**Contact voice telephone:** 702-795-8254**Process step:****Process description:**

The structures dataset was modified for the North Central Abandoned Uranium (AUM) Region, including the following Chapters: Dennehotso, Kayenta, Mexican Water, Oljato, and Shonto of the Navajo Nation. The modification included "assumed structures" from NTUA utility meter locations.

Process software and version: ESRI ArcGIS 9.1**Process date:** June 2006**Process contact:****Contact information:****Contact organization primary:****Contact organization:** TerraSpectra Geomatics**Contact address:****Address type:** mailing and physical address**Address:**

2700 E Sunser Rd, Ste A-10

City: Las Vegas**State or province:** NV**Postal code:** 89120**Country:** USA**Contact voice telephone:** 702-795-8254**Process step:****Process description:**

The six AUM Region 1 mile structure datasets were merged into this single shapefile, NN_Structures_1mi.shp. Based on a few new AUMs across the Navajo Nation, structures were interpreted for one mile around them, using the same previous methodology.

Process date: July 2007**Process contact:****Contact information:****Contact organization primary:****Contact organization:** TerraSpectra Geomatics**Contact address:****Address type:** mailing and physical address**Address:**

2700 E Sunset Rd, Ste A-10

City: Las Vegas**State or province:** NV**Postal code:** 89120

Country: USA

Contact voice telephone: 702-795-8254

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Spatial Data Organization Information:

*Direct spatial reference method: Vector

Point and vector object information:

SDTS terms description:

- *Name: NN_Structures_1mi
- *SDTS point and vector object type: Entity point
- *Point and vector object count: 4045

ESRI terms description:

- *Name: NN_Structures_1mi
- *ESRI feature type: Simple
- *ESRI feature geometry: Point
- *ESRI topology: FALSE
- *ESRI feature count: 4045
- *Spatial index: TRUE
- *Linear referencing: FALSE

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Spatial Reference Information:

Horizontal coordinate system definition:

Coordinate system name:

- *Geographic coordinate system name: GCS_North_American_1983

Geographic:

- *Latitude resolution: 0.000000
- *Longitude resolution: 0.000000
- *Geographic coordinate units: Decimal degrees

Geodetic model:

- *Horizontal datum name: North American Datum of 1983
- *Ellipsoid name: Geodetic Reference System 80
- *Semi-major axis: 6378137.000000
- *Denominator of flattening ratio: 298.257222

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Entity and Attribute Information:

Detailed description:

- *Name: NN_Structures_1mi

Entity type:

- *Entity type label: NN_Structures_1mi
- *Entity type type: Feature Class

***Entity type count:** 4045

Entity type definition:

Building Structures within one mile of AUMs on or Within one mile of the Navajo Nation

Entity type definition source:

TerraSpectra Geomatics

Attribute:

***Attribute label:** FID

***Attribute alias:** FID

***Attribute definition:**

Internal feature number.

***Attribute definition source:**

ESRI

***Attribute type:** OID

***Attribute width:** 4

***Attribute precision:** 0

***Attribute scale:** 0

Attribute domain values:

***Unrepresentable domain:**

Sequential unique whole numbers that are automatically generated.

Attribute:

***Attribute label:** Shape

***Attribute alias:** Shape

***Attribute definition:**

Feature geometry.

***Attribute definition source:**

ESRI

***Attribute type:** Geometry

***Attribute width:** 0

***Attribute precision:** 0

***Attribute scale:** 0

Attribute domain values:

***Unrepresentable domain:**

Coordinates defining the features.

Attribute:

***Attribute label:** Id

***Attribute alias:** Id

***Attribute type:** Number

***Attribute width:** 16

Attribute:

***Attribute label:** COMMENTS

***Attribute alias:** COMMENTS

Attribute definition:

COMMENTS

Attribute definition source:

TerraSpectra Geomatics

***Attribute type:** String

***Attribute width:** 50

Attribute:***Attribute label:** ID***Attribute alias:** ID**Attribute definition:**

Numerical code for structure

Attribute definition source:

TerraSpectra Geomatics

Attribute type:** StringAttribute width:** 50**Attribute domain values:****Enumerated domain:****Enumerated domain value:** 1**Enumerated domain value definition:**

Structure

Enumerated domain value definition source:

TerraSpectra

Enumerated domain:**Enumerated domain value:** 2**Enumerated domain value definition:**

Possible Structure

Enumerated domain value definition source:

TerraSpectra

Enumerated domain:**Enumerated domain value:** 3**Enumerated domain value definition:**

Assumed Structure

Enumerated domain value definition source:

NTUA

Attribute:***Attribute label:** TYPE***Attribute alias:** TYPE**Attribute definition:**

TYPE

Attribute definition source:

TerraSpectra Geomatics

Attribute type:** StringAttribute width:** 50**Attribute domain values:****Enumerated domain:****Enumerated domain value definition:**

Three categories of structures mapped based on confidence: structure, possible structure, and assumed structure

Attribute:***Attribute label:** SOURCE***Attribute alias:** SOURCE**Attribute definition:**

The identification source for the mapped structure, including USGS DOQQ, USGS DRG, field visits and NTUA utility meters.

Attribute definition source:

TerraSpectra Geomatics

***Attribute type:** String

***Attribute width:** 50

Overview description:

Entity and attribute overview:

There are four thematic attributes for this point shapefile, including ID, COMMENTS, SOURCE, TYPE.

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Distribution Information:

Distributor:

Contact information:

Contact organization primary:

Contact organization: U. S. Environmental Protection Agency, Region 9,
Superfund Records Center

Contact address:

Address type: mailing address

Address:

95 Hawthorne St (SFD-7C)

City: San Francisco

State or province: CA

Postal code: 94105

Country: USA

Contact voice telephone: 415-536-2033

Resource description: Structures

Distribution liability:

Although these data have been processed successfully on a computer system for the US EPA, no warranty expressed or implied is made by the US EPA or its contractors regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. No responsibility is assumed by US EPA or its contractors in the use of these data.

Standard order process:

Digital form:

Digital transfer information:

***Transfer size:** 0.108

***Dataset size:** 0.108

Custom order process:

Contact the US EPA for a custom order.

Technical prerequisites:

Use of this data generally requires computer workstations with ESRI's Arc/Info (8.x or above), ArcGIS (8.x or above), or ArcView (3.x), or some other GIS or CAD software that is capable of reading or converting this dataset.

Available time period:

Time period information:

Single date/time:

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Metadata Reference Information:

***Metadata date:** 20070811

***Language of metadata:** en

Metadata contact:

Contact information:

Contact person primary:

Contact person: Andrew Bain

Contact organization: U. S. Environmental Protection Agency, Region 9,
Superfund Program

Contact position: Project Manager

Contact address:

Address type: mailing and physical address

Address:

75 Hawthorne St (SFD 8-2)

City: San Francisco

State or province: CA

Postal code: 94105

Country: USA

Contact voice telephone: 415-972-3167

***Metadata standard name:** FGDC Content Standards for Digital Geospatial Metadata

***Metadata standard version:** FGDC-STD-001-1998

***Metadata time convention:** local time

Metadata access constraints: None.

Metadata use constraints:

None.

Metadata security information:

Metadata security classification system: None

Metadata extensions:

***Online linkage:** <http://www.esri.com/metadata/esriprof80.html>

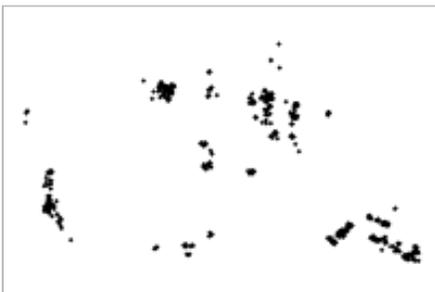
***Profile name:** ESRI Metadata Profile

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Binary Enclosures:

Thumbnail:

Enclosure type: Picture



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