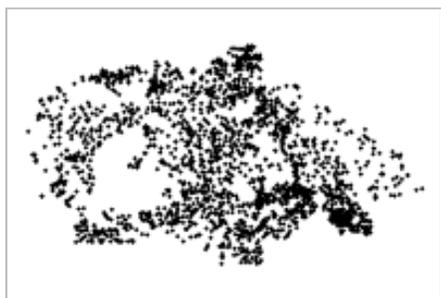


Water Wells and Developed Springs on the Navajo Nation



Data format: Shapefile

File or table name: NN_Wells

Coordinate system: Geographic

Theme keywords: Well, Water Wells, Spring, Developed Springs

Abstract: This is point shapefile for water wells and springs on the Navajo Nation. It compiles the shapefile for updated wells within 4 miles of surface and underground AUMs (NN_Wells_4mi.shp) and the shapefile from the Navajo Department of Water Resources (wells_within_navajonation.shp - S08060701).

FGDC and ESRI Metadata:

- [Identification Information](#)
- [Data Quality Information](#)
- [Spatial Data Organization Information](#)
- [Spatial Reference Information](#)
- [Entity and Attribute Information](#)
- [Distribution Information](#)
- [Metadata Reference Information](#)
- [Binary Enclosures](#)

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:

Water Wells and Developed Springs on the Navajo Nation

***File or table name:** NN_Wells

Publication date: August 2007

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

Publication information:

Publication place: San Francisco, CA

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

Online linkage: \\Terra_dc\Navajo\NAUM_NN_Summary\DB\Water\NN_Wells.shp

Description:

Abstract:

This is point shapefile for water wells and springs on the Navajo Nation. It compiles the shapefile for updated wells within 4 miles of surface and underground AUMs (NN_Wells_4mi.shp) and the shapefile from the Navajo Department of Water Resources (wells_within_navajonation.shp - S08060701).

Purpose:

This dataset was developed to support the U.S. Environmental Protection Agency (USEPA) in its undertaking of an extensive scientific study to determine if abandoned uranium mines (AUM) and related mine features pose a significant risk to human health and the environment, and to identify areas requiring action to reduce risk for the Navajo Nation.

***Language of dataset:** en

Time period of content:

Time period information:

Single date/time:

Calendar date: July 2007

Currentness reference:

publication date

Status:

Progress: Complete

Maintenance and update frequency: None planned

Spatial domain:

Bounding coordinates:

***West bounding coordinate:** -111.777672

***East bounding coordinate:** -107.181953

***North bounding coordinate:** 37.453998

***South bounding coordinate:** 34.913906

Local bounding coordinates:

***Left bounding coordinate:** -111.777672

***Right bounding coordinate:** -107.181953

***Top bounding coordinate:** 37.453998

***Bottom bounding coordinate:** 34.913906

Keywords:

Theme:

Theme keywords: Well, Water Wells, Spring, Developed Springs

Theme keyword thesaurus: None

Place:

Place keywords: Navajo Nation, Arizona, New Mexico, Utah, United States

Place keyword thesaurus: None

Access constraints: None

Use constraints:

This is point shapefile for water wells and springs on the Navajo Nation. It compiles the

shapefile for updated wells within 4 miles of surface and underground AUMs (see the metadata for NN_Wells_4mi.shp) and the shapefile from the Navajo Department of Water Resources - NDWR (wells_within_navajonation.shp - S08060701). The wells from NDWR (wells_within_navajonation.shp) were not quality checked for position or updated. This dataset covers the entire Navajo Nation.

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. 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 abandoned uranium mines. No 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:**

Attribute accuracy was verified by visual inspection against original source materials.

Logical consistency report:

No tests for logical consistency was performed for this point data.

Completeness report:

This is point shapefile for water wells and springs on the Navajo Nation. It compiles the shapefile for updated wells within 4 miles of surface and underground AUMs (see the metadata for NN_Wells_4mi.shp) and the shapefile from the Navajo Department of Water Resources - NDWR (wells_within_navajonation.shp - S08060701). The wells from NDWR (wells_within_navajonation.shp) were not quality checked for position or updated. This dataset

covers the entire Navajo Nation.

Positional accuracy:

Horizontal positional accuracy:

Horizontal positional accuracy report:

These wells and developed springs are located at least by the center of a section of a township, resulting in a potential error of one half mile. Wells and springs within four miles of surface and underground AUMs were inspected for positional accuracy in comparison to other datasets, and especially in comparison to well and spring positions mapped on USGS (1:24,000 scale) DRGs and photointerpreted on USGS DOQQs (1-meter resolution). Wells and springs beyond 4 miles were not checked.

Lineage:

Process step:

Process description:

The NDWR provided an instance of their well database shapefile, wells_within_navajonation.shp, via email dated 3/26/07 (S08060701). From this shapefile all wells and springs within 4 miles of surface or underground AUMs were eliminated. Attributes were renamed to be consistent with NN_Wells_4mi.shp. The attribute 4mi_Buffer was added and populated with "No". These remaining wells and springs were merged with those in the NN_Wells_4mi.shp shapefile, creating this shapefile, NN_Wells.shp.

For those wells and springs designated with a "No" in the attribute 4mi_Buffer (i.e. from the wells_within_navajonation.shp) there were fewer attributes provided than in the wells shapefile, wells.shp, provided by NDWR in 2002 (Skey=S12160204).

wells.shp (NDWR 2002) was joined with this new NN_Wells.shp based upon Well IDs. For wells shared by the two shapefiles, and where the attribute 4mi_Buffer equaled "No" the attributes were transferred from wells wells.shp (NDWR 2002) to this new NN_Wells.shp.

Process software and version: ESRI ArcMap 9.1

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_Wells

***SDTS point and vector object type:** Entity point

***Point and vector object count:** 3210

ESRI terms description:

***Name:** NN_Wells

***ESRI feature type:** Simple

***ESRI feature geometry:** Point

***ESRI topology:** FALSE

***ESRI feature count:** 3210

***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_Wells

Entity type:

***Entity type label:** NN_Wells

***Entity type type:** Feature Class

***Entity type count:** 3210

Entity type definition:

Wells and Developed Springs

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:** TYPE
***Attribute alias:** TYPE

***Attribute type:** String
***Attribute width:** 35

Attribute:

***Attribute label:** TYPE_SRC
***Attribute alias:** TYPE_SRC

***Attribute type:** String
***Attribute width:** 10

Attribute:

***Attribute label:** USE
***Attribute alias:** USE

***Attribute type:** String
***Attribute width:** 26

Attribute:

***Attribute label:** USE_SRC

*Attribute alias: USE_SRC

*Attribute type: String

*Attribute width: 25

Attribute:

*Attribute label: WELLID_SRC

*Attribute alias: WELLID_SRC

*Attribute type: String

*Attribute width: 10

Attribute:

*Attribute label: CORROB_SRC

*Attribute alias: CORROB_SRC

*Attribute type: String

*Attribute width: 25

Attribute:

*Attribute label: MOVE_SRC

*Attribute alias: MOVE_SRC

*Attribute type: String

*Attribute width: 10

Attribute:

*Attribute label: ADD_SRC

*Attribute alias: ADD_SRC

*Attribute type: String

*Attribute width: 3

Attribute:

*Attribute label: OPERATOR

*Attribute alias: OPERATOR

*Attribute type: String

*Attribute width: 10

Attribute:

*Attribute label: AQUIFER

*Attribute alias: AQUIFER

*Attribute type: Number

*Attribute width: 11

*Attribute number of decimals: 1

Attribute:

*Attribute label: SWL

*Attribute alias: SWL

*Attribute type: String

*Attribute width: 8

Attribute:

***Attribute label:** PWSID
***Attribute alias:** PWSID

***Attribute type:** Number
***Attribute width:** 11
***Attribute number of decimals:** 1

Attribute:

***Attribute label:** USGS_ID
***Attribute alias:** USGS_ID

***Attribute type:** String
***Attribute width:** 9

Attribute:

***Attribute label:** WELLSTATUS
***Attribute alias:** WELLSTATUS

***Attribute type:** String
***Attribute width:** 15

Attribute:

***Attribute label:** COMMENT
***Attribute alias:** COMMENT

***Attribute type:** String
***Attribute width:** 24

Attribute:

***Attribute label:** Well_ID
***Attribute alias:** Well_ID

***Attribute type:** String
***Attribute width:** 40

Attribute:

***Attribute label:** WellID_Src
***Attribute alias:** WellID_Src

***Attribute type:** String
***Attribute width:** 40

Attribute:

***Attribute label:** Alias
***Attribute alias:** Alias

***Attribute type:** String
***Attribute width:** 40

Attribute:

***Attribute label:** Type
***Attribute alias:** Type

***Attribute type:** String
***Attribute width:** 150

Attribute:

- * **Attribute label:** Type_Src
- * **Attribute alias:** Type_Src

- * **Attribute type:** String
- * **Attribute width:** 3

Attribute:

- * **Attribute label:** Use
- * **Attribute alias:** Use

- * **Attribute type:** Number
- * **Attribute width:** 4

Attribute:

- * **Attribute label:** Use_Src
- * **Attribute alias:** Use_Src

- * **Attribute type:** String
- * **Attribute width:** 10
- * **Attribute precision:** 0
- * **Attribute scale:** 0

Attribute:

- * **Attribute label:** WellStatus
- * **Attribute alias:** WellStatus

- * **Attribute type:** String
- * **Attribute width:** 3
- * **Attribute precision:** 0
- * **Attribute scale:** 0

Attribute:

- * **Attribute label:** Operator
- * **Attribute alias:** Operator

- * **Attribute type:** String
- * **Attribute width:** 10
- * **Attribute precision:** 0
- * **Attribute scale:** 0

Attribute:

- * **Attribute label:** Well_Depth
- * **Attribute alias:** Well_Depth

- * **Attribute type:** Double
- * **Attribute width:** 11
- * **Attribute precision:** 10
- * **Attribute scale:** 1

Attribute:

- * **Attribute label:** Aquifer
- * **Attribute alias:** Aquifer

- * **Attribute type:** String
- * **Attribute width:** 8

*Attribute precision: 0

*Attribute scale: 0

Attribute:

*Attribute label: DataSource

*Attribute alias: DataSource

*Attribute type: String

*Attribute width: 24

*Attribute precision: 0

*Attribute scale: 0

Attribute:

*Attribute label: Corrob_Src

*Attribute alias: Corrob_Src

*Attribute type: String

*Attribute width: 40

*Attribute precision: 0

*Attribute scale: 0

Attribute:

*Attribute label: Move_Src

*Attribute alias: Move_Src

*Attribute type: String

*Attribute width: 40

*Attribute precision: 0

*Attribute scale: 0

Attribute:

*Attribute label: Add_Src

*Attribute alias: Add_Src

*Attribute type: String

*Attribute width: 40

*Attribute precision: 0

*Attribute scale: 0

Attribute:

*Attribute label: Comment

*Attribute alias: Comment

*Attribute type: String

*Attribute width: 150

*Attribute precision: 0

*Attribute scale: 0

Attribute:

*Attribute label: 4Mi_Buffer

*Attribute alias: 4Mi_Buffer

*Attribute type: String

*Attribute width: 3

*Attribute precision: 0

*Attribute scale: 0

Attribute:

- ***Attribute label:** UID
- ***Attribute alias:** UID

- ***Attribute type:** SmallInteger
- ***Attribute width:** 4
- ***Attribute precision:** 4
- ***Attribute scale:** 0

Overview description:**Dataset overview:**

3210 points representing water wells and developed springs are present.

Entity and attribute overview:

There are 21 thematic attributes:

- Well_ID - Well Identifier
- WellID_Src - Source of Well Identifier
- Alias - Alternate well designations
- Type - Well type
 - Observation Well
 - Unknown
 - Water Well
 - Developed Spring
 - Well
 - Artesian Well
 - Natural Spring
 - Mineral Well
- Type_Src - Well type source
- Use - Primary water use
- Use_Src - Water use source
- Corrob_Src - source of well/developed spring that corroborates the presence of an NDWR well/developed spring
- Move_Src - source of well/developed spring that justifies the repositioning of an NDWR well/developed spring
- Add_Src - source of well/developed spring added to this wells/developed springs shapefile
- Comment - attribute for other pertinent information about the well or developed spring.
- 4Mi_Buffer - Yes, if within 4 miles of a surface or underground AUM and No if greater than 4 miles (all are Yes in this dataset)
- UID - arbitrary unique ID

Source attributes used above:

- NDWR - Navajo Dept. of Water Resources
- ADWR - Arizona Dept. of Water Resources
- CRUMP - Church Rock Uranium Monitoring Project, Church Rock Uranium Monitoring Project (CRUMP) results, 2003-2004, Report to the Navajo Nation Council Resources Committee, Church Rock Chapter House (S06160501, see CRUMP_Samples.shp)
- DOQQ - USGS 1990's Black and White Digital Orthophoto Quarter Quadrangles
- DRG - USGS Digital Raster Graphic (USGS 7.5 minute topographic map)
- GWSI - USGS Ground-water Site Inventory
- GNIS - Geographic Names Information System
- NHD - USGS National Hydrography Dataset (see NN_Points_NHDH.shp)

- NMOSE - New Mexico Office of the State Engineer
- S01140501 - Church Rock Uranium Monitoring Project, Water Sources in Church Rock Area: General Chemistry, Heavy Metals and Aesthetic Parameters, and Selected Radionuclide Samples
 - S07120505 - State of NM Northeast Church Rock Mine Closeout Plan
 - UDWR - Utah Div. of Water Rights
 - USACE - US Army Corps of Engineers (see NN_USACE_Samples.shp)

NDWR Attributes

- WellStatus - Well status
- Operator - Well operator
- Well_Depth - Total well depth in feet
- Aquifer - aquifer used for water source
- SWL - Static water level in feet
- PWSID - Public Water System ID
- USGS_ID - USGS Station Number
- DataSource - Source of well information

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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: NN_Wells

Distribution liability:

Although these data have been processed successfully on a computer system for the USEPA, no warranty expressed or implied is made by the USEPA 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 USEPA or its contractors in the use of these data.

Standard order process:

Digital form:

Digital transfer information:

***Transfer size:** 0.086

***Dataset size:** 0.086

Fees: None

Custom order process:

Contact the USEPA 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.

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Metadata Reference Information:

***Metadata date:** 20070806

***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>

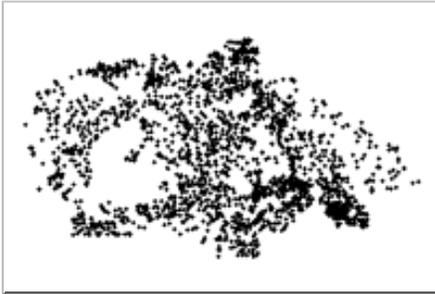
***Profile name:** ESRI Metadata Profile

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Binary Enclosures:

Thumbnail:

Enclosure type: Picture



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