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U.S. Geological Survey

Descriptions of Selected Digital Spatial Data for Former Air Force Plant 36, Evendale, Ohio

By Charles W. Schalk

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U.S. Air Force Aeronautical Systems Center

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CONVERSION FACTORS

Multiply	By	To obtain
	Length	
foot (ft)	0.3048	meter
mile (mi)	1.609	kilometer

Altitude, as used in this report, refers to distance above or below sea level.

Other abbreviations used in this report:

AFP36	Air Force Plant 36
ASC	Aeronautical Systems Center
DLG	Digital line graph
DXF	Drawing interchange file
ERPIMS	Environmental restoration program information management system
GEAE	General Electric Aircraft Engines
GIS	Geographic Information System
GOCO	Government-owned, contractor-operated
TIS	Technical information system
USGS	U.S. Geological Survey
UTM	Universal transverse mercator

Descriptions of Selected Digital Spatial Data for Former Air Force Plant 36, Evendale, Ohio

by Charles W. Schalk

Abstract

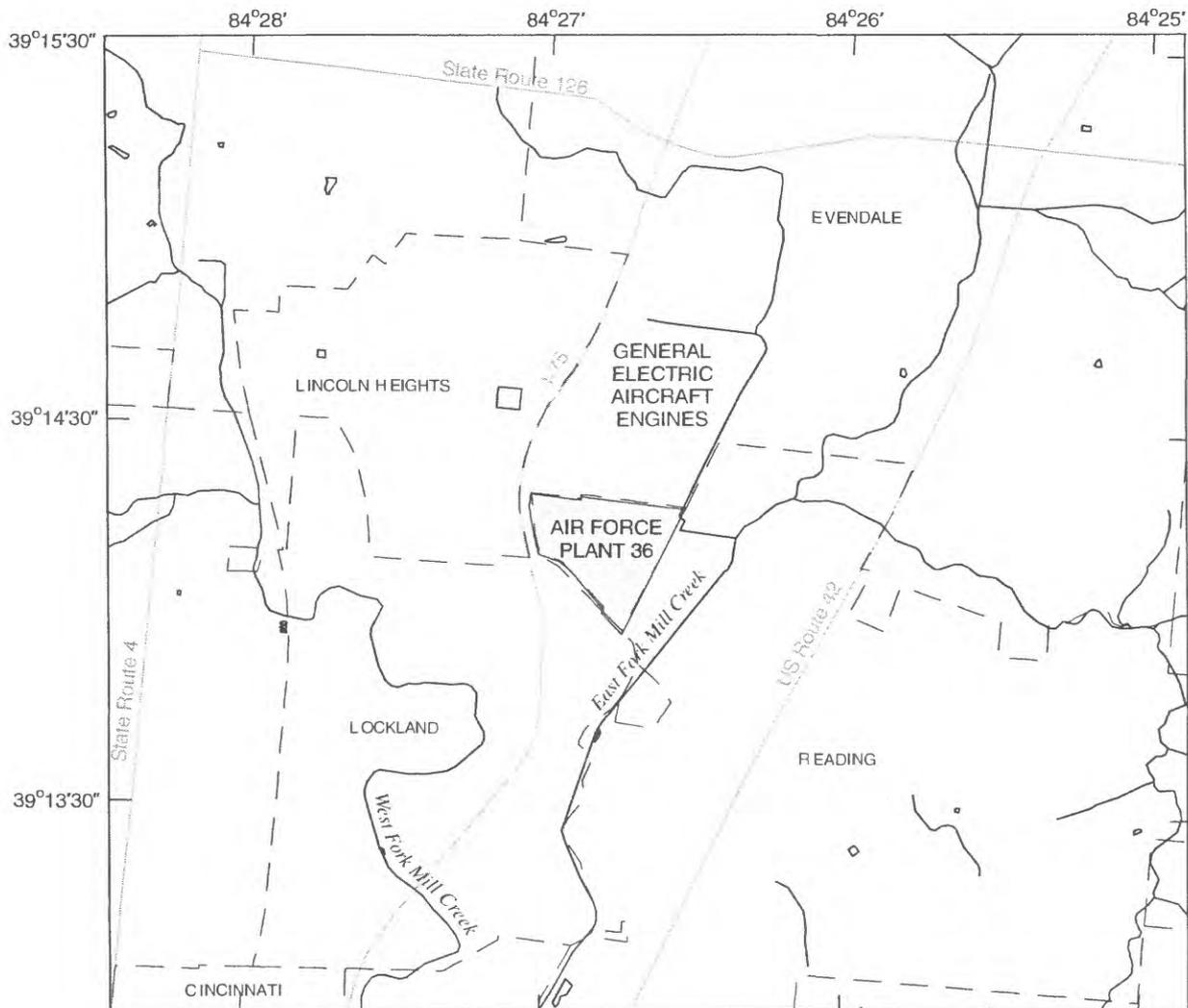
Digital spatial data of former Air Force Plant 36 in Evendale, Ohio, were compiled from existing digital and paper maps for U.S. Air Force Aeronautical Systems Center, headquartered at Wright-Patterson Air Force Base, Ohio. The data are in the Ohio south state-plane coordinate system, North American Datum of 1983, in an ARC/INFO geographic information system format. The data comprise 32 layers, which include boundaries, topography, well locations, and natural and cultural features. These data can be useful for remediation projects on former AFP36. Most of these layers are at scales of 1:4,000 or greater and provide detail needed for spatial analysis. The data were compiled for the purpose of inclusion in the technical information system operated by ASC.

Introduction

The Aeronautical Systems Center (ASC) branch of the U.S. Air Force owns eight government-owned, contractor-operated (GOCO) production plants. The purpose of these plants is to support development and production of U.S. Air Force materiel. Several GOCO's, including former Plant 36 (AFP36) in Evendale, Ohio, near Cincinnati (fig. 1), have been sold or are in the process of being sold to private industry because the Air Force no longer needs to maintain them. The Air Force, however, retains responsibility for the cleanup of existing contaminants on GOCO's it has sold. Because of this responsibility, ASC needs to maintain records concerning cleanup work on the GOCO's until the work has reached prescribed levels. Former AFP36 is immediately south of General Electric Aircraft Engines (GEAE), which bought the facility in June 1989.

Digital map and tabular data are maintained for each of the GOCO plants by ASC, which stores its environmental data in a geographical information system (GIS) known as the technical information system (TIS). The data in the TIS include digital maps (such as roads, boundaries, and buildings) and associated environmental data (such as well coordinates and sample results). The main repository of the digital maps is in ARC/INFO version 8 format on a Sun UNIX workstation at Wright-Patterson Air Force Base near Dayton, Ohio. Most of the immediate use of map layers by ASC personnel is in MapInfo format on desktop and laptop personal computers. The environmental tabular data are stored in the Air Force's Environmental Restoration Program Information Management System (ERPIMS) data base, served locally by Oracle to the UNIX workstation.

The U.S. Geological Survey cooperated with ASC to populate the TIS for former AFP36. This report contains descriptions of the data layers compiled for AFP36 for inclusion in the TIS.



Base from U.S. Geological Survey
 Digital line graph, UTM projection
 Cincinnati East and Glendale, Ohio

Study Area



EXPLANATION

— — MUNICIPAL BOUNDARY

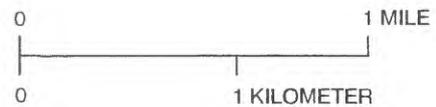


Figure 1. Vicinity of former Air Force Plant 36, Evendale, Ohio.

Purpose and Scope

This report documents the compilation of map data for former Plant 36 in Evendale, Ohio. The data were compiled and processed in ARC/INFO GIS format on a Data General workstation and were exported in uncompressed format for transferal to ASC. The data were compiled on two scales: the large-scale layers (about 1:2,000) were extracted from an AutoCAD DXF file provided by GEAE and include data layers such as walls, pavement, fences, and buildings, whereas the small-scale layers (1:24,000) were compiled from USGS digital line graphs (DLG's) and include layers such as roads, railroads, topography, boundaries, and hydrography. A data layer of well locations was created from coordinates derived from a third-order survey of the facility. Some data layers were digitized from existing reports.

Description of Study Area

Former Air Force Plant 36 (AFP36) is in Hamilton County, Ohio, just north of Cincinnati. The cities of Evendale, Lockland, Reading, and Lincoln Heights are immediately adjacent to the plant (fig. 1). General Electric Aircraft Engines, which now owns and operates AFP36, borders the plant to the north (fig. 2).

AFP36 is in the drainage basin of East Fork Mill Creek, which flows south along the eastern boundary of GEAE toward its confluence with Mill Creek about 1.5 mi south of AFP36. Mill Creek basin has had two noteworthy problems during the last 70 years. The first problem has been the diminished supply of available water. Mining of ground water for municipal and industrial purposes created water-level declines of as much as 80 ft in some places; since the mid-1970's, water levels have been recovering somewhat (Shindel and others, 1999). The second problem has been the contamination of surface and ground waters due primarily to the effects of industry in the basin (Ohio Environmental Protection Agency, 1992).

Former AFP36 consists of two primary buildings, designated B and C, and a set of four jet-fuel tanks. Other smaller buildings and parking areas also are part of the plant.

Acknowledgements

Ron Goettsch, Facilities Engineer at GEAE, provided the AutoCAD DXF file from which the large-scale data layers were extracted. Greg Walton, of G.S. Walton & Company, assisted us in locating benchmarks for our survey of well locations on former Plant 36.

Methods

Digital line graphs (DLG's) were downloaded from a public Web site (<http://www.geodata.state.oh.us/dlg/>). Some postprocessing was done, including the addition of some data fields and the editing of linework, especially in areas where lines were tightly spaced. A DLG contains vector data at a given scale, in this case 1:24,000, which corresponds to 7.5 minutes of latitude and longitude. Each DLG contains seven data layers: boundaries, roads and trails, railroads, hypsography (topography), hydrography, public land survey, and miscellaneous transportation. The DLG's in native (optional) format are stored in Universal Transverse Mercator (UTM) (feet) coordinates, Ohio zones 16 and 17, North American Datum of 1927. They were projected into the state-plane (feet) coordinate system, southern Ohio, North American Datum of 1983, by use of ARC/INFO. DLG's meet national accuracy standards at the scale of 1:24,000. The files that were downloaded were of the Glendale and Cincinnati East quadrangles. These quadrangles lie between 39°07'30" and 39°22'30" north latitude and between 84°22'30" and 84°30' west longitude. Because DLG's are reviewed by the USGS before they are released to the public, no additional review of these data layers was done.

An AutoCAD export file in DXF format was procured from GEAE by the USGS. The DXF file was converted to ARC/INFO format by use of the DXFARC command in ARC/INFO. Each data layer available for conversion to ARC/INFO is distinguished by the description in the field DXF-LAYER. Many DXF-LAYER's were present in one AutoCAD file, including some not useful to ASC. The data layers corresponding to buildings, boundaries, pavement (roads, sidewalks, parking lots), walls, and fences were converted for this data base. The

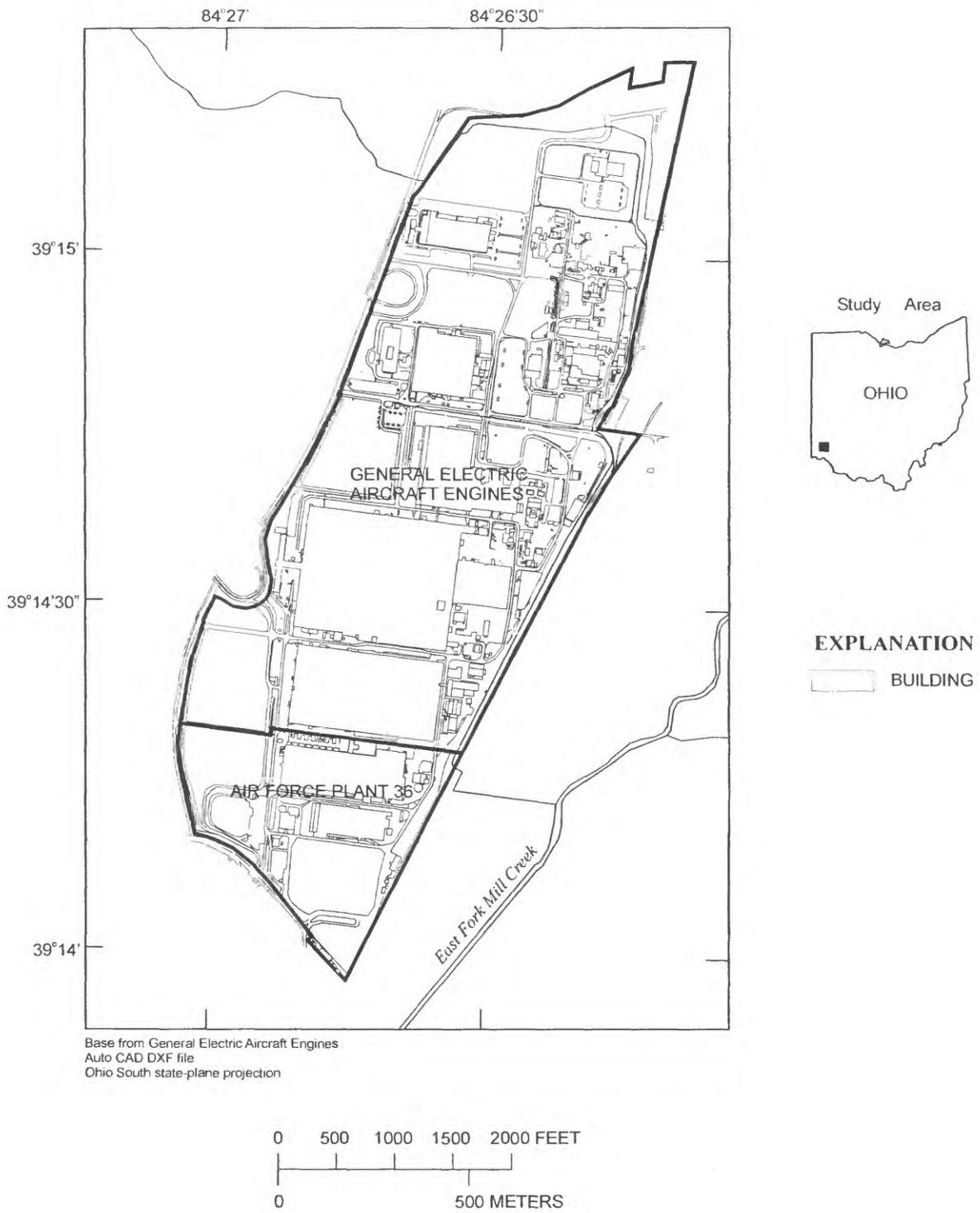


Figure 2. Former Air Force Plant 36 and General Electric Aircraft Engines, Evendale, Ohio.

map scale of the converted data layers was about 1:2,000. Also available but not converted were various engineering and utilities layers. The converted DXF layers were edited to remove duplicate lines, close polygons, and delete small and insignificant dangling lines.

A third-order survey on former AFP36 was done to determine horizontal locations of wells. The starting points of this survey were two reference marks that had been established during a previous survey (Greg Walton, G.S. Walton and Associates, oral commun., 1998). These points had known coordinates and were used to initialize our survey by use of a Sokkia total station. Locations of several wells that were not surveyed were calculated by a coordinate-transformation process.

Coordinates for most of the wells had been available previously in a local, nonstandard coordinate system. On the basis of the survey data and the relative locations of all wells in the nonstandard coordinate system, coordinates for all wells were obtained by mathematical transformation. The transformations were done by use of a software program called SDR Map, by Sokkia. All the surveyed points (about 30) that were in both coordinate systems (state-plane and nonstandard) were logged into SDR Map, which was programmed to move the points from the old coordinate system to state-plane coordinates on the basis of mathematical congruency. SDR Map generated the maximum error (distance that a point was moved from its actual state-plane coordinates to maintain integrity with the other points that were being moved) and root-mean-square (RMS) error. The point with the largest error was dropped from successive iterations of this procedure (it still was moved but was not used in the calculation to move the entire system) until satisfactory maximum and RMS errors were reached, in this case 0.25 ft and 0.15 ft, respectively. The final transformation was done with 16 of the 30 points. Altitude was not transformed along with the horizontal coordinates.

Interpretive geohydrologic and water-quality data layers were digitized from base maps obtained from various contractor reports. Included in this list are water-level maps from Earth Tech, Inc., and McLaren/Hart, Inc.; a clay-thickness map from Earth Tech, Inc.; and isocontour maps of water quality from Earth Tech, Inc. Digitizing errors were not recorded for these maps, but visual inspection indicated that the linework appeared accurate.

Metadata were created for each data layer by use of the ARC/INFO command FGDCMETA. Metadata are data about the maps, including scale, lateral extent, time and location of creation, data sources, and other information.

Description of digital spatial layers

Names and brief descriptions of data layers compiled for AFP36 are presented in table 1. The data are distinguished by type of content and scale. Four of the data layers are built as polygons, two data layers are built as points, and the rest are built as lines. More detailed descriptions of each layer are presented in the appendix. Complete metadata documentation of the layers (*.met files) are included in the delivery of the digital data layers to the Air Force.

Table 1. Data layers included in the digital spatial data base for former Air Force Plant 36 (AFP36), Evendale, Ohio

[USGS, U.S. Geological Survey; GE, General Electric; VOC, volatile organic carbon; TCA, trichloroethane; DCA, dichloroethane; DCE, dichloroethene]

Data layer	Areal extent	Type of data layer	Source
Buildings	Plant	Polygon	GE AutoCAD file ¹
Boundaries	Plant	Polygon	GE AutoCAD file
Fencelines	Plant	Line	GE AutoCAD file
Pavement (incl. roads)	Plant	Line	GE AutoCAD file
Walls	Plant	Line	GE AutoCAD file
Direct-push locations	AFP36	Point	Earth Tech, Inc. ²
1.1-DCA, lower perched	AFP36	Line	Earth Tech, Inc. ²
1.1-DCA, upper perched	AFP36	Line	Earth Tech, Inc. ²

Table 1. Data layers included in the digital spatial data base for former Air Force Plant 36 (AFP36), Evendale, Ohio—Continued

[USGS, U.S. Geological Survey; GE, General Electric; VOC, volatile organic carbon; TCA, trichloroethane; DCA, dichloroethane; DCE, dichloroethene]

Data layer	Areal extent	Type of data layer	Source
1,1-DCE, lower perched	AFP36	Line	Earth Tech, Inc. ²
1,1-DCE, upper perched	AFP36	Line	Earth Tech, Inc. ²
1,1,1-TCA, lower perched	AFP36	Line	Earth Tech, Inc. ²
1,1,1-TCA, upper perched	AFP36	Line	Earth Tech, Inc. ²
Trichloroethylene, lower perched	AFP36	Line	Earth Tech, Inc. ²
Trichloroethylene, upper perched	AFP36	Line	Earth Tech, Inc. ²
Total chlorinated VOC's, lower perched	AFP36	Line	Earth Tech, Inc. ²
Total chlorinated VOC's, upper perched	AFP36	Line	Earth Tech, Inc. ²
Perched water levels, June 1994	Plant	Line	McLaren/Hart, Inc. ³
Shallow water levels, June 1994	Plant	Line	McLaren/Hart, Inc.
Deep water levels, June 1994	Plant	Line	McLaren/Hart, Inc.
Wells	AFP36	Point	Survey
Perched water levels, January 1997	AFP36	Line	Earth Tech, Inc. ²
Perched water levels, April 1997	AFP36	Line	Earth Tech, Inc. ²
Shallow water levels, January 1997	AFP36	Line	Earth Tech, Inc. ²
Shallow water levels, April 1997	AFP36	Line	Earth Tech, Inc. ²
Deep water levels, January 1997	AFP36	Line	Earth Tech, Inc. ²
Deep water levels, April 1997	AFP36	Line	Earth Tech, Inc. ²
Boundaries	Two quadrangles	Polygon	USGS digital line graph ⁴
Hypsography	Two quadrangles	Line	USGS digital line graph
Hydrography	Two quadrangles	Polygon and line	USGS digital line graph
Roads	Two quadrangles	Line	USGS digital line graph
Railroads	Two quadrangles	Line	USGS digital line graph
Confining clay thickness	AFP36	Line	Earth Tech, Inc. ⁵

¹Ron Goetsch, GE Aircraft Engines, 1999.

²Earth Tech, Inc., 1999, Site investigation report for the source area investigation: contractor report to the U.S. Air Force, variously paginated.

³McLaren/Hart, Inc., 1997, Preliminary groundwater data analysis summary report: contractor report to GE Aircraft Engines, variously paginated.

⁴Ohio quadrangles Cincinnati East and Glendale, scale 1:24,000, UTM projection.

⁵Earth Tech, Inc., 1997, Site investigation report for the groundwater investigation of the communication area: contractor report to the U.S. Air Force, variously paginated.

Common metadata

Metadata presented here are common to all of the data layers created. The metadata were recorded by use of the ARC/INFO command FGDCMETA. Following the metadata common to all data layers are metadata for each specific data layer.

Originator and publisher: U.S. Geological Survey Publication date: 19991201
 Edition: Version 1.0, November 2, 1999 Geospatial data presentation form: map
 Issue identification: USGS OFR 00-91 Publication place: Columbus, Ohio

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The act of distribution shall not constitute any such warranty, and no responsibility is assumed by the U.S. Geological Survey in the use of this data, software, or related materials.

Progress: Complete
Place keyword: Cincinnati

Maintenance and update frequency: None planned
Access constraints: None

Contact person: Charles Schalk
Contact position: Hydrologist
City: Columbus
Postal code: 43229-1111
Contact voice telephone: 614-430-7700
Contact electronic mail address: cwschalk@usgs.gov

Contact organization: U.S. Geological Survey
Address: 6480 Doubletree Ave
State: OH
Country: USA
Contact facsimile telephone: 614-430-7777

Native data set environment: dgux, 5.4R3.10, AViiON UNIX, ARC/INFO version 7.0.4
Grid coordinate system: State plane coordinate system
SPCS zone identifier: 5001
Horizontal datum: North American Datum of 1983

Planar distance units: Feet
Ellipsoid: GRS1980

Summary

Thirty-two geographic information system (GIS) data layers, including base, hydrogeologic, and water-quality layers, were compiled or generated from numerous sources for U.S. Air Force Aeronautical Systems Center (ASC). All of the data layers are centered on former Air Force Plant 36 in Evendale, Ohio, and were compiled in the Ohio state-plane coordinate system, North American Datum of 1983.

These data can be useful for remediation projects on former AFP36. Most of these layers are at scales of 1:4,000 or greater and provide detail needed for spatial analysis.

Documentation of the data is included digitally in *.met files. Use of the data in a GIS other than ARC/INFO requires conversion of the data.

References cited

- Ohio Environmental Protection Agency, 1992, Mill Creek: Available on World-Wide Web at URL <http://swdoweb.epa.state.oh.us/mill.htm>.
- Shindel, H.L., Mangus, J.P., and Trimble, L.E., 1999, Water resources data of Ohio, water year 1998: U.S. Geological Survey Water-Data Report OH-97-2, 425 p.

Appendix. Data-layer metadata

Title: BLDG — Buildings on Air Force Plant 36 and GE Aircraft Engines, Evendale, Ohio

Abstract: This coverage, originally part of an AutoCAD file owned and maintained by GE Aircraft Engines, displays buildings on GEAE and former Air Force Plant 36, Evendale, Ohio. It was developed as part of a GIS-database-building project by USGS for the Air Force Aeronautical Systems Center.

Purpose: Part of a package of GIS deliverables. ASC personnel use these data in their technical information system. It is to be used by ASC and their assignees.

Supplemental information: The data were derived from an AutoCAD file provided by Ron Goettsch, GEAE. The file was called "12main2.dxf" and was provided on CD from GEAE. The translation by DXFARC was accomplished in the Michigan District of USGS.

Spatial domain:

West bounding coordinate: -84.44972191

East bounding coordinate: -84.43648475

North bounding coordinate: 39.25267653

South bounding coordinate: 39.23281164

Use constraints: Scale unknown, but probably in the range of 1:2,000. Developed as property-specific data layer.

Data set credit: Ron Goettsch, GEAE. Steve Aichele, USGS, Michigan

Citation information:

Originator: GE Aircraft Engines

Title: 12main2.dxf

Publication place: Evendale, Ohio

Publisher: GE Aircraft Engines

Type of source media: AutoCAD DXF file

Data quality information: Unknown. Corresponds closely to digital line graph data.

Logical consistency report: Polygon and chain-node topology present.

Completeness report: Building identifiers (FACNO's) were not obtained for every building.

Process step: AutoCAD DXF file 12main2.dxf was copied to the Data General, then transferred to Steve Aichele. He converted the files using DXFARC and saving the layers BLDG, BOUND, FENCE, PAVT, and WALL. Clean-up of this coverage included deleting duplicate arcs, closing polygons, and adding label points and attributes to the coverage. Process date: 19990601.

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 0.7159405

Ordinate resolution: 0.7159405

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute overview:

FACNO: Facility number or building number.

Title: BOUND — Administrative boundaries of former Air Force Plant 36 and GE Aircraft Engines facility, Evendale, Ohio

Abstract: This coverage, originally part of an AutoCAD file owned and maintained by GE Aircraft Engines, displays property boundaries of GEAE and former Air Force Plant 36, Evendale, Ohio. It was developed as part of a GIS-database-building project by USGS for the Air Force Aeronautical Systems Center.

Purpose: Part of a package of GIS deliverables. ASC personnel use these data in their technical information system. It is to be used by ASC and their assignees.

Supplemental information: The data were derived from an AutoCAD file provided by Ron Goettsch, GEAE. The file was called "12main2.dxf" and was provided on CD from GEAE. The translation by DXFARC was accomplished in the Michigan District of USGS because the Ohio District did not have a recent enough version of ARC to handle some of the DXF data structures.

Bounding coordinates:

West bounding coordinate: -84.45139639

East bounding coordinate: -84.43524316

North bounding coordinate: 39.2547853

South bounding coordinate: 39.23273369

Use constraints: Scale unknown, but probably in the range of 1:2,000. Developed as property-specific data layer.

Data set credit: Ron Goettsch, GEAE. Steve Aichele, USGS, Michigan

Originator: GE Aircraft Engines

Title: 12main2.dxf

Publication place: Evendale, Ohio

Publisher: GE Aircraft Engines

Type of source media: AutoCAD DXF file

Attribute accuracy report: Unknown. Corresponds closely to digital line graph data.

Logical consistency report: Polygon topology present. All polygons closed and labelled, though the labels have nonspecific descriptions.

Process step: AutoCAD DXF file 12main2.dxf was copied to the Data General, then transferred to Steve Aichele. He converted the files using DXFARC and saving the layers BLDG, BOUND, FENCE, PAVT, and WALL. Cleanup of this coverage included deleting duplicate arcs, closing polygons, and adding label points and attributes to the coverage. Process date: 19990601.

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 0.5992401077

Ordinate resolution: 0.5992401077

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute overview: None.

Title: FENCE — Fences around AFP36 and GEAE

Abstract: Fencelines around former Air Force Plant 36 and GE Aircraft Engines facilities in Evendale, Ohio. Derived from an AutoCAD file provided by GEAE.

Purpose: Data set is part of a deliverable to Aeronautical Systems Center for inclusion in their technical information system. Data set can be used by ASC personnel and their designees.

Supplemental information: Data converted from AutoCAD DXF file by DXFARC. Data were delivered to USGS on CD-ROM as "12main2.dxf" by Ron Goettsch, GEAE. Conversion by DXFARC by Steve Aichele, USGS, Michigan.

Bounding coordinates:

West bounding coordinate: -84.45138723

East bounding coordinate: -84.43590299

North bounding coordinate: 39.25269376

South bounding coordinate: 39.23269601

Use constraints: Scale unknown, but probably around 1:2,000. Coverage probably should be used only for illustrative purposes.

Data set credit: Ron Goettsch, GEAE. Steve Aichele, USGS, Michigan.

Originator: GE Aircraft Engines

Title: 12main2.dxf

Publication place: Evendale, OH

Type of source media: AutoCAD DXF file

Logical consistency report: No editing of linework was done, owing to the disjointed nature of the data. Coverage probably should be used only for illustrative purposes.

Process description: AutoCAD DXF file 12main2.dxf was copied from CD-ROM to the Data General, then transferred to Steve Aichele. He converted this coverage from DXF to ARC by DXFARC, using "FENCE" as DXF-LAYER. No postprocessing of the linework was done.

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 0.7194094

Ordinate resolution: 0.7194094

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute overview: None.

Title: PAVT — Roads and pavement

Abstract: Roads and pavement on GE Aircraft Engines and former Air Force Plant 36 facilities, Evendale, Ohio.

Purpose: This coverage is provided for inclusion in Aeronautical Systems Center's technical information system. The coverage of roads is large scale; another coverage, SP_RD, shows road linework in a two-quadrangle area.

Supplemental information: Data source is Ron Goetsch, GEAE, who provided the data as one of the layers in "12main2.dxf", an AutoCAD export file.

Bounding coordinates:

West bounding coordinate: -84.45159914

East bounding coordinate: -84.43598609

North bounding coordinate: 39.25371208

South bounding coordinate: 39.23278954

Use constraints: For use by Aeronautical Systems Center and its designees. Scale is unknown, but approximately 1:2,000.

Data set credit: Ron Goetsch, GEAE, who provided the DXF data. Steve Aichele, USGS, Michigan, who converted the DXF file to ARC.

Originator: GE Aircraft Engines

Title: 12main2.dxf

Publication place: Evendale, Ohio

Type of source media: AutoCAD DXF file

Logical consistency report: Chain-node topology present.

Completeness report: Some isolated and duplicate lines were deleted from this final coverage. Most of the other postprocessing was cleaning up split lines. In a few locations, lines were added to connect linework that was obviously missing.

Process description: AutoCAD DXF file 12main2.dxf was copied from CD-ROM to the Data General, then transferred to Steve Aichele. He converted it to ARC using DXFARC and DXF-LAYER "PAVT". Editing included cleaning up duplicate arcs; joining (unsplitting) adjacent arcs that ended with matched dangling nodes; deleting small, isolated arcs.

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 0.7530362

Ordinate resolution: 0.7530362

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute overview: None.

Title: WALL — Walls around the facility described below.

Abstract: Walls around GE Aircraft Engines and former Air Force Plant 36 facilities.

Purpose: This data layer is intended for inclusion in the technical information system of Aeronautical Systems Center. It is good for illustrative purposes only.

Supplemental information: Data source was Ron Goetsch, GEAE, who provided an exported AutoCAD file, "12main2.dxf", that included this data layer.

Bounding coordinates:

West bounding coordinate: -84.45118423

East bounding coordinate: -84.43518094

North bounding coordinate: 39.25340301

South bounding coordinate: 39.23269592

Use constraints: Scale unknown, but probably around 1:2,000. This data layer should be used for illustrative purposes only.

Data set credit: Ron Goetsch, GEAE, who provided the DXF data set. Steve Aichele, USGS, Michigan, who converted the DXF file to ARC.

Originator: GE Aircraft Engines

Title: 12main2.dxf

Publication place: Evendale, OH

Type of source media: AutoCAD DXF file

Process description: AutoCAD DXF file "12main2.dxf" was copied from CD-ROM to the Data General, then transferred to Steve Aichele. He converted it to ARC/INFO format by use of the command DXFARC, using the DXF-LAYER WALL to retrieve these data. Postprocessing included deleting duplicate arcs, unsplitting continuous lines at dangling nodes, and deleting small, isolated lines.

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 0.7449482

Ordinate resolution: 0.7449482

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute overview: None.

Title: ETDP — Earth Tech direct-push sampling points

Abstract: This coverage describes sampling points used by Earth Tech, Inc., during a source-area investigation, Sept. 1998. The data were then used by Earth Tech to delineate VOC plume maps.

Purpose: Archival purposes for U.S. Air Force Aeronautical Systems Center. ASC also can use the data set in their technical information system (TIS) for program management purposes.

Supplemental information: Source of data was an Earth Tech report described below.
Calendar date: 19980929

Bounding coordinates:

West bounding coordinate: -84.44655973	East bounding coordinate: -84.4426572
North bounding coordinate: 39.23860094	South bounding coordinate: 39.23399867

Use constraints: Horizontal coordinates were surveyed to 0.01 ft.

Data set credit: Earth Tech, Inc.

Originator: Earth Tech, Inc.	Publication date: 19990301
Title: Draft Site Investigation Report AFP36 Source Area Investigation	
Issue identification: #F41624-97-D-8018	Publication place: Alexandria, VA
Type of source media: Table (Appendix D) of points in state-plane coordinates	

Attribute accuracy report: Sample-point designations, altitudes, and VOC concentrations as reported by Earth Tech, Inc.

Logical consistency report: Point features present.

Horizontal positional accuracy report: Coordinates were surveyed by Earth Tech to 0.01 ft.

Process description: Coordinates were transcribed from table in Appendix D of the originating report. Data were used to create coverage ETDP (meaning Earth Tech Direct Push) using ARC's GENERATE command. Attribute data were loaded into INFO and brought into the coverage by JOINITEM.

Planar coordinate encoding method: coordinate pair	
Abscissa resolution: 0.16535625	Ordinate resolution: 0.16535625
Semi-major axis: 6378206.4	Denominator of flattening ratio: 294.98

Entity and attribute information in ETDP.PAT:

PNAME - name of push location, from Earth Tech

ALT - land-surface altitude, feet above mean sea level

VOC - total VOC concentration (not only chlorinated) in sample from shallowest part of hole; added by calculator from table 3.1-1 of Earth Tech report, then rounded to nearest whole number

VOCLOG - natural logarithm of total VOC concentration

Title: ETDPCAL — 1,1-Dichloroethane concentrations, Earth Tech direct push, lower part of perched aquifer

Abstract: The data are contours of 1,1-DCA in the lower portion of the perched water-bearing zone on former AFP36, Evendale, Ohio, September 1998. Work done by Earth Tech, Inc. (see citation). Concentrations in micrograms per liter, contour interval 100 micrograms per liter.

Purpose: These data are for inclusion in the technical information system (TIS) of Aeronautical Systems Center, U.S. Air Force, to be used as program managers deem appropriate.

Supplemental information: Data source is an Earth Tech report cited below, their figure 3.1-10.
Calendar date: 19980929

Bounding coordinates:

West bounding coordinate: -84.44663342

East bounding coordinate: -84.44333439

North bounding coordinate: 39.23874885

South bounding coordinate: 39.23388402

Use constraints: Locations of sampling points (coverage ETDP) were surveyed to 0.01 ft horizontally. Data were contoured at a scale of about 1:2,000.

Originator: Earth Tech, Inc.

Publication date: 19990301

Title: Draft Site Report Former AFP36 Source Area Investigation

Issue identification: F41624-97-D-8018

Publication place: Alexandria, VA

Publisher: Earth Tech, Inc.

Type of source media: paper

Calendar date: 19980927

Source contribution: contours from Fig. 3.1-10

Data quality information: Data recorded from originating report.

Logical consistency report: Polygon and chain-node topology present.

Horizontal positional accuracy report: Map was digitized from 11"x17" paper copy of figure 3.1-10 of originating report. Digitizer transformation errors were not recorded, but results seem to be fairly accurately placed.

Process description: Map ticks are locations of several pushed holes (included in the coverage ETDP) that were used to contour these data (DP034, DP042, DP093, DP074).

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 0.608337521553

Ordinate resolution: 0.608337521553

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute overview in ETDPCAL. AAT:

LINE - This item indicates "DASHED" and "SOLID" for uncertain and certain locations, respectively, of the contours.

SYM - Line symbols from ARC/INFO lineset plotter.lin.

CONC - Value of 1,1-DCA concentration, in micrograms per liter ($\mu\text{g/L}$), in lower part of perched water-bearing zone.

Title: ETDPCAUC — 1,1-Dichloroethane concentrations, Earth Tech direct push, upper part of perched aquifer

Abstract: The data are contours of 1,1-DCA in the upper portion of the perched water-bearing zone on former AFP36, Evendale, Ohio, September 1998. Work done by Earth Tech, Inc. (see citation). Concentrations in micrograms per liter, contour interval 50 micrograms per liter.

Purpose: These data are for inclusion in the technical information system (TIS) of Aeronautical Systems Center, U.S. Air Force, to be used as program managers deem appropriate.

Supplemental information: Data source is an Earth Tech report cited below, their figure 3.1-10.
Calendar date: 19980929

Bounding coordinates:

West bounding coordinate: -84.4467656

East bounding coordinate: -84.44268315

North bounding coordinate: 39.23865757

South bounding coordinate: 39.23384873

Use constraints: Locations of sampling points (coverage ETDPCAUC) were surveyed to 0.01 ft horizontally. Data were contoured at a scale of about 1:2,000.

Originator: Earth Tech, Inc.

Publication date: 19990301

Title: Draft Site Report Former AFP36 Source Area Investigation

Issue identification: F41624-97-D-8018

Publication place: Alexandria, VA

Publisher: Earth Tech, Inc.

Type of source media: paper

Source contribution: Contours from Fig. 3.1-5

Data quality information: Data recorded from originating report.

Logical consistency report: Polygon and chain-node topology present.

Horizontal positional accuracy report: Map was digitized from 11"x17" paper copy of figure 3.1-5 of originating report. Digitizer transformation errors were not recorded, but results seem to be fairly accurately placed.

Process description: Map ties are locations of several pushed holes that were used to contour these data (DP034, DP028, DP093, DP017, DP051).

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 0.700325012207

Ordinate resolution: 0.700325012207

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute information in ETDPCAUC.AAT:

CONC - Value of 1,1-DCA concentration, in µg/L, in upper part of perched water-bearing zone.

LINE - This item indicates "DASHED" and "SOLID" for uncertain and certain locations, respectively, of the contours.

SYM - Line symbols from ARC/INFO lineset plotter.lin.

Title: ETDPDCEL — 1,1-Dichloroethene concentrations, Earth Tech direct push, lower part of perched aquifer

Abstract: The data are contours of 1,1-DCE in the lower portion of the perched water-bearing zone on former AFP36, Evendale, Ohio, September 1998. Work done by Earth Tech, Inc. (see citation). Concentrations in micrograms per liter, contour interval 100 micrograms per liter.

Purpose: These data are for inclusion in the technical information system (TIS) of Aeronautical Systems Center, U.S. Air Force, to be used as program managers deem appropriate.

Supplemental information: Data source is an Earth Tech report cited below, their figure 3.1-10. Calendar date: 19980929

Bounding coordinates:

West bounding coordinate: -84.44635822

East bounding coordinate: -84.4435333

North bounding coordinate: 39.23851143

South bounding coordinate: 39.23390165

Use constraints: Locations of sampling points (coverage ETDP) were surveyed to 0.01 ft horizontally. Data were contoured at a scale of about 1:2,000.

Originator: Earth Tech, Inc.

Publication date: 19990301

Title: Draft Site Report Former AFP36 Source Area Investigation

Issue identification: F41624-97-D-8018

Publication place: Alexandria, VA

Publisher: Earth Tech, Inc.

Type of source media: paper

Calendar date: 19980927

Source contribution: Contours from Fig. 3.1-11

Data quality information: Data recorded from originating report.

Logical consistency report: Polygon and chain-node topology present.

Horizontal positional accuracy report: Map was digitized from 11"x17" paper copy of figure 3.1-11 of originating report. Digitizer transformation errors were not recorded, but results seem to be fairly accurately placed.

Process description: Map ties are locations of several pushed holes that were used to contour these data (DP034, DP042, DP093, DP074).

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 0.1662874966859

Ordinate resolution: 0.1662874966859

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute information in ETDPDCEL.AAT:

LINE - This item indicates "DASHED" and "SOLID" for uncertain and certain locations, respectively, of the contours.

SYM - Line symbols from ARC/INFO lineset plotter.lin.

CONC - Value of 1,1-DCE concentration, in µg/L, in lower part of perched water-bearing zone.

Title: ETPDCEU — 1,1-Dichloroethene concentrations, Earth Tech direct push, upper part of perched aquifer

Abstract: The data are contours of 1,1-DCE in the upper portion of the perched water-bearing zone on former AFP36, Evendale, Ohio, September 1998. Work done by Earth Tech, Inc. (see citation). Concentrations in micrograms per liter, contour interval 50 micrograms per liter.

Purpose: These data are for inclusion in the technical information system (TIS) of Aeronautical Systems Center, U.S. Air Force, to be used as program managers deem appropriate.

Supplemental information: Data source is an Earth Tech report cited below, their figure 3.1-6.
Calendar date: 19980927

Bounding coordinates:

West bounding coordinate: -84.44664076

East bounding coordinate: -84.4436273

North bounding coordinate: 39.23859504

South bounding coordinate: 39.23391368

Use constraints: Locations of sampling points (coverage ETDPA) were surveyed to 0.01 ft horizontally. Data were contoured at a scale of about 1:2,000.

Originator: Earth Tech, Inc.

Publication date: 19990301

Title: Draft Site Report Former AFP36 Source Area Investigation

Issue identification: F41624-97-D-8018

Publication place: Alexandria, VA

Type of source media: paper

Calendar date: 19980927

Source contribution: Contours from Fig. 3.1-6

Attribute accuracy report: Data recorded from originating report.

Logical consistency report: Polygon and chain-node topology present.

Horizontal positional accuracy report: Map was digitized from 11"x17" paper copy of figure 3.1-6 of originating report. Digitizer transformation errors were not recorded, but results seem to be fairly accurately placed.

Process description: Map ticks are locations of several pushed holes that were used to contour these data (DP034, DP028, DP093, DP017, DP051).

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 0.1687812507152

Ordinate resolution: 0.1687812507152

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute information in ETPDCEU.AAT:

LINE - This item indicates "DASHED" and "SOLID" for uncertain and certain locations, respectively, of the contours.

SYM - Line symbols from ARC/INFO lineset plotter.lin.

CONC - Value of 1,1-DCE concentration, in µg/L, in upper part of perched water-bearing zone.

Title: ETDPTCAL — 1,1,1-Trichloroethane concentrations, Earth Tech direct push, lower part of perched aquifer

Abstract: The data are contours of 1,1,1-TCA in the lower portion of the perched water-bearing zone on former AFP36, Evendale, Ohio, September 1998. Work done by Earth Tech, Inc. (see citation). Concentrations in micrograms per liter, contour interval 500 micrograms per liter.

Purpose: These data are for inclusion in the technical information system (TIS) of Aeronautical Systems Center, U.S. Air Force, to be used as program managers deem appropriate.

Supplemental information: Data source is an Earth Tech report cited below, their figure 3.1-9. Calendar date: 19980929

Bounding coordinates:

West bounding coordinate: -84.44660617

East bounding coordinate: -84.44331913

North bounding coordinate: 39.23876893

South bounding coordinate: 39.23390687

Use constraints: Locations of sampling points (coverage ETDP) were surveyed to 0.01 ft horizontally. Data were contoured at a scale of about 1:2,000.

Originator: Earth Tech, Inc.

Publication date: 19990301

Title: Draft Site Report Former AFP36 Source Area Investigation

Issue identification: F41624-97-D-8018

Publication place: Alexandria, VA

Type of source media: paper

Calendar date: 19980927

Source contribution: contours from Fig. 3.1-9

Attribute accuracy report: Data recorded from originating report.

Logical consistency report: Polygon and chain-node topology present.

Horizontal positional accuracy report: Map was digitized from 11"x17" paper copy of figure 3.1-9 of originating report. Digitizer transformation errors were not recorded, but results seem to be fairly accurately placed.

Process description: Map ties are locations of several pushed holes that were used to contour these data (DP034, DP042, DP093, DP074).

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 0.4673624932766

Ordinate resolution: 0.4673624932766

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute information in ETDPTCAL.AAT:

LINE - This item indicates "DASHED" and "SOLID" for uncertain and certain locations, respectively, of the contours.

SYM - Line symbols from ARC/INFO lineset plotter.lin.

CONC - Value of 1,1-DCA concentration, in µg/L, in lower part of perched water-bearing zone.

Title: ETDPTCAU — 1,1,1-Trichloroethane concentrations, Earth Tech direct push, upper part of perched aquifer

Abstract: The data are contours of 1,1,1-TCA in the upper portion of the perched water-bearing zone on former AFP36, Evendale, Ohio, September 1998. Work done by Earth Tech, Inc. (see citation). Concentrations in micrograms per liter, contour interval 500 micrograms per liter.

Purpose: These data are for inclusion in the technical information system (TIS) of Aeronautical Systems Center, U.S. Air Force, to be used as program managers deem appropriate.

Supplemental information: Data source is an Earth Tech report cited below, their figure 3.1-4.
Calendar date: 19980929

Bounding coordinates:

West bounding coordinate: -84.4468791

East bounding coordinate: -84.44262001

North bounding coordinate: 39.23866223

South bounding coordinate: 39.23384511

Use constraints: Locations of sampling points (coverage ETDP) were surveyed to 0.01 ft horizontally. Data were contoured at a scale of about 1:2,000.

Originator: Earth Tech, Inc.

Publication date: 19990301

Title: Draft Site Report Former AFP36 Source Area Investigation

Issue identification: F41624-97-D-8018

Publication place: Alexandria, VA

Type of source media: paper

Calendar date: 19980927

Source contribution: Contours from Fig. 3.1-4

Attribute accuracy report: Data recorded from originating report.

Logical consistency report: Polygon and chain-node topology present.

Horizontal positional accuracy report: Map was digitized from 11"x17" paper copy of figure 3.1-4 of originating report. Digitizer transformation errors were not recorded, but results seem to be fairly accurately placed.

Process description: Map ties are locations of several pushed holes that were used to contour these data (DP034, DP028, DP093, DP017, DP051).

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 0.1729687452316

Ordinate resolution: 0.1729687452316

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute information in ETDPTCAU.AAT:

LINE - This item indicates "DASHED" and "SOLID" for uncertain and certain locations, respectively, of the contours.

SYM - Line symbols from ARC/INFO lineset plotter.lin.

CONC - Value of TCA concentration, in µg/L, in upper part of perched water-bearing zone.

Title: ETDPTCEL — Trichloroethylene concentrations, Earth Tech direct push, lower part of perched aquifer

Abstract: The data are contours of TCE in the lower portion of the perched water-bearing zone on former AFP36, Evendale, Ohio, September 1998. Work done by Earth Tech, Inc. (see citation). Concentrations in micrograms per liter, contour interval 250 micrograms per liter.

Purpose: These data are for inclusion in the technical information system (TIS) of Aeronautical Systems Center, U.S. Air Force, to be used as program managers deem appropriate.

Supplemental information: Data source is an Earth Tech report cited below, their figure 3.1-8.
Calendar date: 19980929

Bounding coordinates:

West bounding coordinate: -84.44604637	East bounding coordinate: -84.44358445
North bounding coordinate: 39.23841871	South bounding coordinate: 39.23374651

Use constraints: Locations of sampling points (coverage ETDP) were surveyed to 0.01 ft horizontally. Data were contoured at a scale of about 1:2,000.

Originator: Earth Tech, Inc.	Publication date: 19990301
Title: Draft Site Report Former AFP36 Source Area Investigation	
Issue identification: F41624-97-D-8018	Publication place: Alexandria, VA
Type of source media: paper	Calendar date: 19980927
Source contribution: Contours from Fig. 3.1-8	

Attribute accuracy report: Data recorded from originating report.

Logical consistency report: Polygon and chain-node topology present.

Horizontal positional accuracy report: Map was digitized from 11"x17" paper copy of figure 3.1-8 of originating report. Digitizer transformation errors were not recorded, but results seem to be fairly accurately placed.

Process description: Map ties are locations of several pushed holes that were used to contour these data (DP034, DP042, DP093, DP074).

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 0.1687843799591	Ordinate resolution: 0.1687843799591
Semi-major axis: 6378206.4	Denominator of flattening ratio: 294.98

Entity and attribute information in ETDPTCEL.AAT:

LINE - This item indicates "DASHED" and "SOLID" for uncertain and certain locations, respectively, of the contours.

CONC - Value of TCE concentration, in $\mu\text{g/L}$, in lower part of perched water-bearing zone.

SYM - Line symbols from ARC/INFO lineset plotter.lin.

Title: ETDPTCEU — Trichloroethylene concentrations, Earth Tech direct push, upper part of perched aquifer

Abstract: The data are contours of TCE in the upper portion of the perched water-bearing zone on former AFP36, Evendale, Ohio, September 1998. Work done by Earth Tech, Inc. (see citation). Concentrations in micrograms per liter, contour interval 250 micrograms per liter.

Purpose: These data are for inclusion in the technical information system (TIS) of Aeronautical Systems Center, U.S. Air Force, to be used as program managers deem appropriate.

Supplemental information: Data source is an Earth Tech report cited below, their figure 3.1-3.
Calendar date: 19980927

Bounding coordinates:

West bounding coordinate: -84.44680977

East bounding coordinate: -84.44248249

North bounding coordinate: 39.23867816

South bounding coordinate: 39.23345263

Use constraints: Locations of sampling points (coverage ETDP) were surveyed to 0.01 ft horizontally. Data were contoured at a scale of about 1:2,000.

Originator: Earth Tech, Inc.

Publication date: 19990301

Title: Draft Site Report Former AFP36 Source Area Investigation

Issue identification: F41624-97-D-8018

Publication place: Alexandria, VA

Type of source media: paper

Calendar date: 19980927

Source contribution: Contours from Fig. 3.1-3

Attribute accuracy report: Data recorded from originating report.

Logical consistency report: Polygon and chain-node topology present.

Horizontal positional accuracy report: Map was digitized from 11"x17" paper copy of figure 3.1-3 of originating report. Digitizer transformation errors were not recorded, but results seem to be fairly accurately placed.

Process description: Map ties are locations of several pushed holes that were used to contour these data (DP034, DP028, DP093, DP017, DP051).

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 0.1878125071525

Ordinate resolution: 0.1878125071525

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute information in ETDPTCEU.AAT:

LINE - This item indicates "DASHED" and "SOLID" for uncertain and certain locations, respectively, of the contours.

SYM - Line symbols from ARC/INFO lineset plotter.lin.

CONC - Value of TCE concentration, in $\mu\text{g/L}$, in upper part of perched water-bearing zone.

Title: ETDPTVOCL — Total chlorinated volatile organic compound (VOC) concentrations by direct push, lower part of perched aquifer

Abstract: The data are contours of total chlorinated VOC's in the lower portion of the perched water-bearing zone on former AFP36, Evendale, Ohio, September 1998. Work done by Earth Tech, Inc. (see citation). Concentrations in micrograms per liter, contour interval 1000 micrograms per liter.

Purpose: These data are for inclusion in the technical information system (TIS) of Aeronautical Systems Center, U.S. Air Force, to be used as program managers deem appropriate.

Supplemental information: Data source is an Earth Tech report cited below, their figure 3.1-7.
Calendar date: 19980929

Bounding coordinates:

West bounding coordinate: -84.44668954

East bounding coordinate: -84.44371123

North bounding coordinate: 39.23847529

South bounding coordinate: 39.23398032

Use constraints: Locations of sampling points (coverage ETDPT) were surveyed to 0.01 ft horizontally. Data were contoured at a scale of about 1:2,000.

Originator: Earth Tech, Inc.

Publication date: 19990301

Title: Draft Site Report Former AFP36 Source Area Investigation

Issue identification: F41624-97-D-8018

Publication place: Alexandria, VA

Type of source media: paper

Calendar date: 19980927

Source contribution: Contours from Fig. 3.1-7

Attribute accuracy report: Data recorded from originating report.

Logical consistency report: Polygon and chain-node topology present.

Horizontal positional accuracy report: Map was digitized from 11"x17" paper copy of figure 3.1-11 of originating report. Digitizer transformation errors were not recorded, but results seem to be fairly accurately placed.

Process description: Map tics are locations of several pushed holes that were used to contour these data (DP034, DP042, DP093, DP074).

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 0.1620093733072

Ordinate resolution: 0.1620093733072

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute overview in ETDPTVOCL.AAT:

LINE - This item indicates "DASHED" and "SOLID" for uncertain and certain locations, respectively, of the contours.

SYM - Line symbols from ARC/INFO lineset plotter.lin.

CONC - Value of total chlorinated VOC concentration, in µg/L, in lower part of perched water-bearing zone.

Title: ETDPTVOCU — total chlorinated volatile organic compound (VOC) concentrations by direct push, upper part of perched aquifer

Abstract: The data are contours of total chlorinated VOC's in the upper portion of the perched water-bearing zone on former AFP36, Evendale, Ohio, September 1998. Work done by Earth Tech, Inc. (see citation). Concentrations in micrograms per liter, contour interval 500 micrograms per liter.

Purpose: These data are for inclusion in the technical information system (TIS) of Aeronautical Systems Center, U.S. Air Force, to be used as program managers deem appropriate.

Supplemental information: Data source is an Earth Tech report cited below, their figure 3.1-2.
Calendar date: 19980927

Bounding coordinates:

West bounding coordinate: -84.4471112

East bounding coordinate: -84.44243151

North bounding coordinate: 39.23866573

South bounding coordinate: 39.23366203

Use constraints: Locations of sampling points (coverage ETDP) were surveyed to 0.01 ft horizontally. Data were contoured at a scale of about 1:2,000.

Originator: Earth Tech, Inc.

Publication date: 19990301

Title: Draft Site Report Former AFP36 Source Area Investigation

Issue identification: F41624-97-D-8018

Publication place: Alexandria, VA

Type of source media: paper

Calendar date: 19980927

Source contribution: Contours from Fig. 3.1-2

Attribute accuracy report: Data recorded from originating report.

Logical consistency report: Polygon and chain-node topology present.

Horizontal positional accuracy report: Map was digitized from 11"x17" paper copy of figure 3.1-2 of originating report. Digitizer transformation errors were not recorded, but result seems to be fairly accurately placed.

Process description: Map ties are locations of several pushed holes that were used to contour these data (DP034, DP028, DP093, DP017, DP051).

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 0.1795125007629

Ordinate resolution: 0.1795125007629

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute information in ETDPTVOCU.AAT:

LINE - This item indicates "DASHED" and "SOLID" for uncertain and certain locations, respectively, of the contours.

SYM - Line symbols from ARC/INFO lineset plotter.lin.

CONC - Value of total chlorinated VOC concentration, in $\mu\text{g/L}$, in upper part of perched water-bearing zone.

Title: MHP0694 — Water levels, perched zone, June 1994

Abstract: This map shows contours on the perched aquifer at the GE Aircraft Engines facility, Evendale, Ohio. Contour interval is 1 ft, and the datum is NAD83. Water levels were measured on June 9, 1994.

Purpose: This data set is part of a GIS database of general (roads, etc.) and scientific data being built for Aeronautical Systems Center of the U.S. Air Force. It can be used for historical analysis and any other use as the program managers deem appropriate.

Supplemental information: Source of data is a paper map of water levels drawn by McLaren/Hart Environmental Engineering Corporation. They had measured water levels on June 9, 1994, and plotted these results as part of their risk-assessment work.

Bounding coordinates:

West bounding coordinate: -84.45119593

East bounding coordinate: -84.43462054

North bounding coordinate: 39.2533577

South bounding coordinate: 39.23356232

Use constraints: Data were plotted at a scale of about 1:2,400.

Originator: McLaren/Hart Corp.

Publication date: 19970701

Title: Preliminary Groundwater Data Analysis Summary Report

Publication place: Cleveland, Ohio

Type of source media: paper

Calendar date: 19940609

Source contribution: Figure 3 (map plate)

Attribute accuracy report: Attributes are as they appear on the map.

Logical consistency report: Chain-node topology present.

Horizontal positional accuracy report: Digitizer errors not recorded. Linework fairly accurate according to drawn positions on original map.

Process description: Data were digitized into ARC/INFO. Attributes were added. Tics corresponded with building corners that were readily recognized in the coverage BLDG.

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 0.7113723553003

Ordinate resolution: 0.7113723553003

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute information in MHP0694.AAT:

ALT - Altitude of water-level contour, in feet above sea level.

LINE - Descriptor. SOLID indicates relative certainty of contour location during drawing.

Title: MHS0694 — Water levels, AFP36, June 1994, shallow aquifer

Abstract: This map shows contours on the shallow aquifer at the GE Aircraft Engines facility, Evendale, Ohio. Contour interval is 1 ft, and the datum is NAD83. Water levels were measured on June 9, 1994.

Purpose: This data set is part of a GIS database of general (roads, etc.) and scientific data being built for Aeronautical Systems Center of the U.S. Air Force. It can be used for historical analysis and any other use as the program managers deem appropriate.

Supplemental information: Source of data is a paper map of water levels drawn by McLaren/Hart Environmental Engineering Corporation. They had measured water levels on June 9, 1994, and plotted these results as part of their risk-assessment work.

Bounding coordinates:

West bounding coordinate: -84.45065072

East bounding coordinate: -84.43383121

North bounding coordinate: 39.24586474

South bounding coordinate: 39.2335795

Use constraints: Data were plotted at a scale of about 1:2,400.

Originator: McLaren/Hart Corp.

Publication date: 19970701

Title: Preliminary Groundwater Data Analysis Summary Report

Publication place: Cleveland, Ohio

Publisher: McLaren/Hart Corp.

Source scale denominator: 2,400

Type of source media: paper

Calendar date: 19940609

Source contribution: Figure 4 (map plate)

Attribute accuracy report: Data are as they appear on the source map.

Logical consistency report: Chain-node topology present.

Horizontal positional accuracy report: Digitizer errors not recorded. Linework fairly accurate according to drawn positions on original map.

Process description: Data were digitized into ARC/INFO. Attributes were added. Tics corresponded with building corners that were readily recognized in the coverage BLDG.

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 0.4670739458637

Ordinate resolution: 0.4670739458637

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute information in MHS0694.AAT:

ALT - Altitude of water-level contour, in feet above sea level.

LINE - Descriptor. **SOLID** indicates relative certainty of contour location during drawing.

Title: MHD0694 — Water levels, deep zone, June 1994

Abstract: This map shows contours on the deep aquifer at the GE Aircraft Engines facility, Evendale, Ohio. Contour interval is 1 ft, and the datum is NAD83. Water levels were measured on June 9, 1994.

Purpose: This data set is part of a GIS database of general (roads, etc.) and scientific data being built for Aeronautical Systems Center of the U.S. Air Force. It can be used for historical analysis and any other use as the program managers deem appropriate.

Supplemental information: Source of data is a paper map of water levels drawn by McLaren/Hart Environmental Engineering Corporation. They had measured water levels on June 9, 1994, and plotted these results as part of their risk-assessment work.

Bounding coordinates:

West bounding coordinate: -84.45178804

East bounding coordinate: -84.43468376

North bounding coordinate: 39.25270954

South bounding coordinate: 39.23209302

Use constraints: Data were plotted at a scale of about 1:2,400.

Originator: McLaren/Hart Corp.

Publication date: 19970701

Title: Preliminary Groundwater Data Analysis Summary Report

Publication place: Cleveland, Ohio

Publisher: McLaren/Hart Corp.

Source scale denominator: 2,400

Type of source media: paper

Calendar date: 19940609

Source contribution: Figure 5 (map plate)

Attribute accuracy report: Attributes are as they appear on the map.

Logical consistency report: Chain-node topology present.

Horizontal positional accuracy report: Digitizer errors not recorded. Linework fairly accurate according to drawn positions on original map.

Process description: Data were digitized into ARC/INFO. Attributes were added. Tics corresponded with building corners that were readily recognized in the coverage BLDG.

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 0.7409755985127

Ordinate resolution: 0.7409755985127

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute information in MHD0694.AAT:

ALT - Altitude of water-level contour, in feet above sea level.

Title: WELLS — On former AFP36, Evendale, Ohio

Abstract: This data layer, in ARC/INFO format, describes the locations and names of monitoring wells on former AFP36, Evendale, OH.

Purpose: This data layer will be included in the technical information system (TIS) of Aeronautical Systems Center, U.S. Air Force, and can be used for whatever purpose the program manager deems necessary. In particular, it can be used to relate Oracle-based tabular water-quality information with locations from which the water was sampled.

Supplemental information: Two sources of data: a third-order survey of well locations (Nov. 1998) and older locations data that were in the wrong coordinate system but were translated into the third-order survey results by use of SDR Map software (Sokkia). The well locations are in state-plane coordinates, NAD83.

Calendar date: 19981101

Bounding coordinates:

West bounding coordinate: -84.45094646

East bounding coordinate: -84.44363196

North bounding coordinate: 39.23860147

South bounding coordinate: 39.23418522

Data set credit: Scientists at Earth Tech, Inc., contributed some of the locational information via ERPIMS, the Air Force's central data repository.

Attribute accuracy report: Third-order survey from two known and recently placed PK nails. Wells that were converted from old coordinates, rather than surveyed directly, include AF-15, AF-16, AF-13.

Logical consistency report: Point features present. Surveyed locations were plotted with converted locations, and the agreement was close.

Completeness report: This layer includes only wells on AFP36, not GEAE.

Horizontal positional accuracy report: Third-order survey using Sokkia total station for most of the wells. Conversion of the others was with a maximum horizontal error of 0.25 ft and a root-mean-square error of 0.15 ft. Elevation was NOT included in the survey of x-y transformation.

Process description: All the points (about 30) that were in both systems (state plane from the survey and the local nonstandard one) were stored in the program SDR Map. We used SDR Map to calculate the transformation from the old coordinate system to state-plane coordinates. SDR Map then computed the maximum error (distance it had to move the point from its actual state-plane coordinates to maintain integrity with the other points that are being moved) and RMSE error. It also records which point is the least accurate. The point corresponding to the worst RMSE was dropped from the calculation, and a new maximum error and RMSE were calculated. This process was iterated until satisfactory maximum error and RMSE were reached. Sixteen of the 30 points were used for the final transformation, with maximum error equal to 0.25 ft and RMSE equal to 0.15 ft.

Process date: 19991115

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 0.20385

Ordinate resolution: 0.20385

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute information in WELLS.PAT:

NAME - name is the designation used during the third-order survey.

LOCID - the "official" name of the well as recorded in ERPIMS.

Title: WLP0197 — Ground-water levels, AFP36, January 1997, perched zone

Abstract: This coverage is a map of water levels in the perched aquifer beneath former Air Force Plant 36 in Evendale, Ohio, measured during January 1997.

Purpose: This coverage is meant for inclusion in the technical information system (TIS) of U.S. Air Force Aeronautical Systems Center. It can be used for illustration and managerial decision-making.

Supplemental information: Data source is a report by Earth Tech, Inc., described below. Data were measured January 23, 1997, by Earth Tech personnel.

Bounding coordinates:

West bounding coordinate: -84.44678771

East bounding coordinate: -84.44287305

North bounding coordinate: 39.23817185

South bounding coordinate: 39.23390477

Use constraints: Data were digitized at a scale of 1:4,000. Water levels were measured to 0.01 ft.

Originator: Earth Tech, Inc.

Publication date: 19990301

Title: Source Area Investigation report

Issue identification: F41624-97-D-8018

Publication place: Alexandria, VA

Source scale denominator: 4,000

Type of source media: paper

Calendar date: 19970127

Source contribution: Their figure 1.2-10

Attribute accuracy report: Data measured to 0.01 ft.

Logical consistency report: Chain-node topology present.

Horizontal positional accuracy report: Contours were digitized from paper map. Tics used were recognizable corners of buildings. Digitizer errors were not recorded, but contours appear to be relatively accurate.

Process description: Tics were identified as corners of buildings. Map was digitized and attributes were added.

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 0.1531320184254

Ordinate resolution: 0.1531320184254

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute information in WLP0197.AAT:

ALT - Altitude of water-level contour, in feet above sea level.

Title: WLP0497 — Ground-water levels, AFP36, April 1997, perched zone

Abstract: This coverage is a map of water levels in the perched aquifer beneath former Air Force Plant 36 in Evendale, Ohio, measured during April 1997.

Purpose: This coverage is meant for inclusion in the technical information system (TIS) of U.S. Air Force Aeronautical Systems Center. It can be used for illustration and managerial decision-making.

Supplemental information: Data source is a report by Earth Tech, Inc., described below. Data were measured April 2, 1997, by Earth Tech personnel.

Bounding coordinates:

West bounding coordinate: -84.44628388

East bounding coordinate: -84.44223155

North bounding coordinate: 39.23873857

South bounding coordinate: 39.2343925

Use constraints: Data were digitized at a scale of 1:4,000. Water levels were measured to 0.01 ft.

Originator: Earth Tech, Inc.

Publication date: 19990301

Title: Source Area Investigation report

Issue identification: F41624-97-D-8018

Publication place: Alexandria, VA

Source scale denominator: 4,000

Type of source media: paper

Calendar date: 19970402

Source contribution: Their figure 1.2-11

Attribute accuracy report: Data measured to 0.01 ft.

Logical consistency report: Chain-node topology present.

Horizontal positional accuracy report: Contours were digitized from paper map. Tics used were recognizable corners of buildings. Digitizer errors were not recorded, but contours appear to be relatively accurate.

Process description: Tics were identified as corners of buildings. Map was digitized and attributes were added.

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 0.1559274355424

Ordinate resolution: 0.1559274355424

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute information in WLP0497.AAT:

ALT - Altitude of water-level contour, in feet above sea level.

Title: WLS0197 — Ground-water levels, AFP36, January 1997, shallow zone

Abstract: This coverage is a map of water levels in the shallow aquifer beneath former Air Force Plant 36 in Evendale, Ohio, measured during January 1997.

Purpose: This coverage is meant for inclusion in the technical information system (TIS) of U.S. Air Force Aeronautical Systems Center. It can be used for illustration and managerial decision-making.

Supplemental information: Data source is a report by Earth Tech, Inc., described below. Data were measured January 23, 1997, by Earth Tech personnel.

Bounding coordinates:

West bounding coordinate: -84.44893583

East bounding coordinate: -84.44356308

North bounding coordinate: 39.23795944

South bounding coordinate: 39.23356111

Use constraints: Data were digitized at a scale of 1:4,000. Water levels were measured to 0.01 ft.

Originator: Earth Tech, Inc.

Publication date: 19990301

Title: Source Area Investigation report

Issue identification: F41624-97-D-8018

Publication place: Alexandria, VA

Source scale denominator: 4,000

Type of source media: paper

Calendar date: 19970127

Source contribution: Their figure 1.2-12

Attribute accuracy report: Data measured to 0.01 ft.

Logical consistency report: Chain-node topology present.

Horizontal positional accuracy report: Contours were digitized from paper map. Tics used were recognizable corners of buildings. Digitizer errors were not recorded, but contours appear to be relatively accurate.

Process description: Tics were identified as corners of buildings. Map was digitized and attributes were added.

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 0.1570230011373

Ordinate resolution: 0.1570230011373

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute information in WLS0197.AAT:

ALT- Altitude of water-level contour, in feet above sea level.

Title: WLS0497 — Ground-water levels, AFP36, April 1997, shallow zone

Abstract: This coverage is a map of water levels in the shallow aquifer beneath former Air Force Plant 36 in Evendale, Ohio, measured during April 1997.

Purpose: This coverage is meant for inclusion in the technical information system (TIS) of U.S. Air Force Aeronautical Systems Center. It can be used for illustration and managerial decision-making.

Supplemental information: Data source is a report by Earth Tech, Inc., described below. Data were measured April 2, 1997, by Earth Tech personnel.

Bounding coordinates:

West bounding coordinate: -84.4496025
North bounding coordinate: 39.23862716

East bounding coordinate: -84.44483001
South bounding coordinate: 39.23382254

Use constraints: Data were digitized at a scale of 1:4,000. Water levels were measured to 0.01 ft.

Originator: Earth Tech, Inc.

Title: Source Area Investigation report

Publication place: Alexandria, VA

Type of source media: paper

Source contribution: Their figure 1.2-13

Publication date: 19990301

Issue identification: F41624-97-D-8018

Source scale denominator: 4,000

Calendar date: 19970402

Attribute accuracy report: Data measured to 0.01 ft.

Logical consistency report: Chain-node topology present.

Horizontal positional accuracy report: Contours were digitized from paper map. Tics used were recognizable corners of buildings. Digitizer errors were not recorded, but contours appear to be relatively accurate.

Process description: Tics were identified as corners of buildings. Map was digitized and attributes were added.

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 0.172196662897

Semi-major axis: 6378206.4

Ordinate resolution: 0.172196662897

Denominator of flattening ratio: 294.98

Entity and attribute information in WLS0497.AAT:

ALT - Altitude of water-level contour, in feet above sea level.

Title: WLD0197 — Water levels, AFP36, January 1997, deep zone

Abstract: This coverage is a map of water levels in the deep aquifer beneath former Air Force Plant 36 in Evendale, Ohio, measured during January 1997.

Purpose: This coverage is meant for inclusion in the technical information system (TIS) of U.S. Air Force Aeronautical Systems Center. It can be used for illustration and managerial decision-making.

Supplemental information: Data source is a report by Earth Tech, Inc., described below. Data were measured January 23, 1997, by Earth Tech personnel.

Bounding coordinates:

West bounding coordinate: -84.45114847

East bounding coordinate: -84.44337786

North bounding coordinate: 39.23868451

South bounding coordinate: 39.23345871

Use constraints: Data were digitized at a scale of 1:4,000. Water levels were measured to 0.01 ft.

Originator: Earth Tech, Inc.

Publication date: 19990301

Title: Source Area Investigation report

Issue identification: F41624-97-D-8018

Publication place: Alexandria, VA

Source scale denominator: 4,000

Type of source media: paper

Calendar date: 19970127

Source contribution: Their figure 1.2-14

Attribute accuracy report: Data measured to 0.01 ft.

Logical consistency report: Chain-node topology present.

Horizontal positional accuracy report: Contours were digitized from paper map. Tics used were recognizable corners of buildings. Digitizer errors were not recorded, but contours appear to be relatively accurate.

Process description: Tics were identified as corners of buildings. Map was digitized and attributes were added.

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 0.2161426000642

Ordinate resolution: 0.2161426000642

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute information in WLD0197.AAT:

ALT - Altitude of water-level contour, in feet above sea level.

Title: WLD0497 — Ground-water levels, AFP36, April 1997, deep zone

Abstract: This coverage is a map of water levels in the deep aquifer beneath former Air Force Plant 36 in Evendale, Ohio, measured during April 1997.

Purpose: This coverage is meant for inclusion in the technical information system (TIS) of U.S. Air Force Aeronautical Systems Center. It can be used for illustration and managerial decision-making.

Supplemental information: Data source is a report by Earth Tech, Inc., described below. Data were measured April 2, 1997, by Earth Tech personnel.

Bounding coordinates:

West bounding coordinate: -84.45112577

East bounding coordinate: -84.44291653

North bounding coordinate: 39.23876952

South bounding coordinate: 39.23370248

Use constraints: Data were digitized at a scale of 1:4,000. Water levels were measured to 0.01 ft.

Originator: Earth Tech, Inc.

Publication date: 19990301

Title: Source Area Investigation report

Issue identification: F41624-97-D-8018

Publication place: Alexandria, VA

Source scale denominator: 4000

Type of source media: paper

Calendar date: 19970402

Source contribution: Their figure 1.2-15

Attribute accuracy report: Data measured to 0.01 ft.

Logical consistency report: Chain-node topology present.

Horizontal positional accuracy report: Contours were digitized from paper map. Tics used were recognizable corners of buildings. Digitizer errors were not recorded, but contours appear to be relatively accurate.

Process description: Tics were identified as corners of buildings. Map was digitized and attributes were added.

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 0.2286996990148

Ordinate resolution: 0.2286996990148

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute information in WLD0497.AAT:

ALT - Altitude of water-level contour, in feet above sea level.

Title: SP_BND — Municipal/federal boundaries

Abstract: This coverage combines two 1:24,000-quadrangle DLG files in the vicinity of GE Aircraft Engines, Evendale, Ohio. The DLG's that were combined are CE BND (Cincinnati East) and GD BND (Glendale). The resultant coverage remains at a scale of 1:24,000. This category of data consists of (1) political boundaries that identify states, counties, cities, and other municipalities, and (2) administrative boundaries that identify areas such as National and State forests. Political and administrative boundaries are always collected as a single data set.

Purpose: Created for the use of program managers at Aeronautical Systems Center, WPAFB. This data layer will be included in ASC's technical information system.

Supplemental information: Data source was USGS DLG, downloaded from the World-Wide Web at <http://www.geodata.state.oh.us/dlg/>. Some postprocessing was done, including the addition of a "NAME" field to the polygon-attribute table. A DLG is a vector file containing line data, such as boundaries. Ohio is covered by 788 7.5-minute quadrangles (1:24,000 scale). Each quadrangle has seven layers: (1) boundaries, (2) hydrography, (3) public land survey, (4) roads and trails, (5) railroads, (6) miscellaneous transportation, and (7) hypsography (contours). The DLG's in native format (optional) are stored in UTM coordinates, Zone 16 & 17, NAD 27. The DLG's meet national map accuracy standards for 1:24,000 scale.

Bounding coordinates:

West bounding coordinate: -84.50707174

East bounding coordinate: -84.36827849

North bounding coordinate: 39.37713933

South bounding coordinate: 39.12297345

Access constraints: None

Use constraints: Map scale is 1:24,000.

Originator: USGS

Publication date: 19990204

Title: ci421obd.zip

Issue identification: DLG's

Online linkage: <ftp.geodata.gis.state.oh.us/geodata/dlg/24000/data/cincinnati/ci421obd.zip>

Source scale denominator: 24,000

Logical consistency report: Chain-node topology present.

Process description: Data were downloaded from Web site cited above. The field "NAME" was added to describe the areas enclosed by the boundaries.

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 4.650870323181

Ordinate resolution: 4.650870323181

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute information in SP_BND.PAT:

NAME - Name of the municipality or other political unit, if known.

Title: SP_HP — Hypsography, northeast Cincinnati

Abstract: This coverage combines two 1:24,000-quadrangle DLG files in the vicinity of GE Aircraft Engines, Evendale, Ohio. The DLG's that were combined are CE HY (Cincinnati East) and GD HY (Glendale). The resultant coverage remains at a scale of 1:24,000. This category of data consists of 10-ft contours on the land surface, in feet above sea level.

Purpose: Created for the use of program managers at Aeronautical Systems Center, WPAFB. This data layer will be included in ASC's technical information system.

Supplemental information: Data source was USGS DLG, downloaded from the World-Wide Web at <http://www.geo-data.state.oh.us/dlg/>. Some postprocessing, described below, was done. An attribute field was added to the arc-attribute table. A DLG is a vector file containing line data, such as boundaries. Ohio is covered by 788 7.5-minute quadrangles (1:24,000 scale). Each quadrangle has seven layers: (1) boundaries, (2) hydrography, (3) public land survey, (4) roads and trails, (5) railroads, (6) miscellaneous transportation, and (7) hypsography (contours). The DLG's in native format (optional) are stored in UTM coordinates, Zone 16 & 17, NAD 27. The DLG's meet national map accuracy standards for 1:24,000 scale.

Bounding coordinates:

West bounding coordinate: -84.50706387

East bounding coordinate: -84.36828736

North bounding coordinate: 39.37712691

South bounding coordinate: 39.12314162

Access constraints: None

Use constraints: Map scale is 1:24,000.

Logical consistency report: Chain-node topology present.

Originator: USGS

Publication date: 19990204

Title: ci421obd.zip

Publisher: USGS

Source scale denominator: 24,000

Process description: Data were downloaded from the Web site cited above. The field "ALT" was added to store the value of the altitude of the contour. In some areas, density of contours was such in the original coverage that the linework was discontinuous; in these areas, contours were connected.

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 9.200881004333

Ordinate resolution: 9.200881004333

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute information:

ALT - This item is the altitude of land surface, in feet above sea level. Numerically it is equal to MINOR2, which is the altitude of land surface as used in the DLG's.

Title: SP_HY — Surface-water bodies

Abstract: This coverage combines two 1:24,000-quadrangle DLG files in the vicinity of GE Aircraft Engines, Evendale, Ohio. The DLG's that were combined are CE BND (Cincinnati East) and GD BND (Glendale). The resultant coverage remains at a scale of 1:24,000. This category of data consists of lakes, streams, and ponds that are normally present.

Purpose: Created for the use of program managers at Aeronautical Systems Center, WPAFB. This data layer will be included in ASC's technical information system.

Supplemental information: Data source was USGS DLG, downloaded from the World-Wide Web at <http://www.geodata.state.oh.us/dlg/>. Some postprocessing, including the addition of a "NAME" field to the polygon- and arc-attribute tables, was done. A DLG is a vector file containing line data, such as boundaries. Ohio is covered by 788 7.5-minute quadrangles (1:24,000 scale). Each quadrangle has seven layers: (1) boundaries, (2) hydrography, (3) public land survey, (4) roads and trails, (5) railroads, (6) miscellaneous transportation, and (7) hypsography (contours). The DLG's in native format (optional) are stored in UTM coordinates, Zone 16 & 17, NAD 27. The DLG's meet national map accuracy standards for 1:24,000 scale.

Bounding coordinates:

West bounding coordinate: -84.50706341

East bounding coordinate: -84.36841506

North bounding coordinate: 39.37684633

South bounding coordinate: 39.12297345

Access constraints: None

Use constraints: Map scale is 1:24,000.

Originator: USGS

Publication date: 19990204

Title: ci421obd.zip

Issue identification: DLG's

Online linkage: <ftp://geodata.gis.state.oh.us/geodata/dlg/24000/data/cincinnati/ci421obd.zip>

Source scale denominator: 24,000

Logical consistency report: Chain-node topology present.

Process description: Data were downloaded from Web site cited above. The field "NAME" was added to describe names of surface-water bodies.

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 4.650869846344

Ordinate resolution: 4.650869846344

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute information in SP_HY.AAT and SP_HY.PAT:

NAME - Name of surface-water feature.

Title: SP_RD — Roads

Abstract: This coverage combines two 1:24,000-quadrangle DLG files in the vicinity of GE Aircraft Engines, Evendale, Ohio. The DLG's that were combined are CE BND (Cincinnati East) and GD BND (Glendale). The resultant coverage remains at a scale of 1:24,000. This category of data consists of roads.

Purpose: Created for the use of program managers at Aeronautical Systems Center, WPAFB. This data layer will be included in ASC's technical information system.

Supplemental information: Data source was USGS DLG, downloaded from the World-Wide Web at <http://www.geodata.state.oh.us/dlg/>. Some postprocessing was done, including the addition of a "NAME" field to the arc-attribute table. A DLG is a vector file containing line data, such as boundaries. Ohio is covered by 788 7.5 minute quadrangles (1:24,000 scale). Each quadrangle has seven layers: (1) boundaries, (2) hydrography, (3) public land survey, (4) roads and trails, (5) railroads, (6) miscellaneous transportation, and (7) hypsography (contours). The DLG's in native format (optional) are stored in UTM coordinates, Zone 16 & 17, NAD 27. The DLG's meet national map accuracy standards for 1:24,000 scale.

Bounding coordinates:

West bounding coordinate: -84.50706209

East bounding coordinate: -84.36842167

North bounding coordinate: 39.37680016

South bounding coordinate: 39.12297345

Access constraints: None

Use constraints: Map scale is 1:24,000.

Originator: USGS

Publication date: 19990204

Title: ci421obd.zip

Issue identification: DLG's

Online linkage: <ftp://geodata.gis.state.oh.us/geodata/dlg/24000/data/cincinnati/ci421obd.zip>

Source scale denominator: 24,000

Logical consistency report: Chain-node topology present.

Process description: Data were downloaded from Web site cited above. The field "NAME" was added to describe the roads. Extensive cleanup of linework was done, especially at road intersections.

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 9.196401596069

Ordinate resolution: 9.196401596069

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute information in SP_RD.AAT:

NAME - Name of road.

Title: SP_RR — Railroads

Abstract: This coverage combines two 1:24,000-quadrangle DLG files in the vicinity of GE Aircraft Engines, Evendale, Ohio. The DLG's that were combined are CE BND (Cincinnati East) and GD BND (Glendale). The resultant coverage remains at a scale of 1:24,000. This category of data consists of railroads.

Purpose: Created for the use of program managers at Aeronautical Systems Center, WPAFB. This data layer will be included in ASC's technical information system.

Supplemental information: Data source was USGS DLG, downloaded from the World-Wide Web at <http://www.geo-data.state.oh.us/dlg/>. A DLG is a vector file containing line data, such as boundaries. Ohio is covered by 788 7.5 minute quadrangles (1:24,000 scale). Each quadrangle has seven layers: (1) boundaries, (2) hydrography, (3) public land survey, (4) roads and trails, (5) railroads, (6) miscellaneous transportation, and (7) hypsography (contours). The DLG's in native format (optional) are stored in UTM coordinates, Zone 16 & 17, NAD 27. The DLG's meet national map accuracy standards for 1:24,000 scale.

Bounding coordinates:

West bounding coordinate: -84.50702454

East bounding coordinate: -84.37124765

North bounding coordinate: 39.37544325

South bounding coordinate: 39.12297345

Access constraints: None

Use constraints: Map scale is 1:24,000.

Originator: USGS

Publication date: 19990204

Title: ci421obd.zip

Issue identification: DLG's

Online linkage: <ftp.geodata.gis.state.oh.us/geodata/dlg/24000/data/cincinnati/ci421obd.zip>

Source scale denominator: 24,000

Logical consistency report: Chain-node topology present.

Process description: Data were downloaded from Web site cited above.

Planar coordinate encoding method: coordinate pair

Abscissa resolution: 9.11910625

Ordinate resolution: 9.11910625

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute information in SP_RR.AAT: None.

Title: BASTHK — Thickness of basal clay confining layer

Abstract: This coverage is the result of interpretive work by Earth Tech, Inc. (see citation below). The data are contours of the thickness of the basal clay confining unit (separating what are known as the shallow and deep aquifers), in feet.

Purpose: Archival purposes for U.S. Air Force Aeronautical Systems Center. ASC also can use the data set in their technical information system (TIS) for program management purposes.

Supplemental information: Source of data was an Earth Tech report described below.

Calendar date: 19971001

Bounding coordinates:

West bounding coordinate: -84.47049359

East bounding coordinate: -84.44322756

North bounding coordinate: 39.23886637

South bounding coordinate: 39.23345012

Use constraints: The scale of the source map is about 1:4,000.

Data set credit: Earth Tech, Inc.

Originator: Earth Tech, Inc.

Publication date: 19971001

Title: Site Investigation Report for the groundwater investigation of the communication area

Geospatial data presentation form: map

Issue identification: #F41624-94-D-8055

Publication place: Alexandria, VA

Source scale denominator: 4,000

Type of source media: paper

Source contribution: Their map figure 3-12.

Attribute accuracy report: All data are as they were reported by Earth Tech, Inc.

Logical consistency report: Chain-node topology present.

Horizontal positional accuracy report: Digitized linework compares favorably to original.

Process description: Building corners were identified as reasonable tics for digitizing. Digitizer errors were not recorded. Once the linework was done, attributes were added. 19991104.

Coordinate representation:

Abscissa resolution: 0.768555398816

Ordinate resolution: 0.768555398816

Semi-major axis: 6378206.4

Denominator of flattening ratio: 294.98

Entity and attribute information in BASTHK.AAT:

ALT - Thickness of basal clay unit, in feet.