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USGS Digital Line Graph .DLG File Description

The United States Geological Survey (USGS) provides digitized base map data in "line graph" form. It is available in two formats ("standard" and "optional") on either 9-track magnetic tape or CD-ROM. The CD-ROM with 1:2,000,000-scale DLG files contains data in both standard and optional formats, as well as a "graphic" format. The definitive guide to these file formats is the USGS document: "Digital Line Graphs from 1:24,000-Scale Maps: Data Users Guide 1", "Digital Line Graphs from 1:100,000-Scale Maps: Data Users Guide 2" and "Digital Line Graphs from 1:2,000,000-Scale Maps: Data Users Guide 3".

File Information

Imported DLG files are read in the "standard" and "optional" formats, and provides point, area, and curve objects.

For the 1:2,000,000-scale files, the USGS has divided the U.S. into 21 sections. On the CD-ROM, the files associated with each section are stored in a separate subdirectory.

The 21 subdirectories use the following naming convention:

SECT00

Each subdirectory starts with the letters "SECT" followed by the section number (01 to 21). The sections correspond to the following regions:

SECT01	Northeastern States
SECT02	Middle Atlantic States
SECT03	Southeastern States
SECT04	Florida
SECT05	Southern Mississippi Valley States
SECT06	Central Mississippi Valley States
SECT07	Northern Great Lakes States
SECT08	Southern Texas

SECT09	Southern Plains States
SECT10	Central Plains States
SECT11	Northern Plains States
SECT12	Arizona and New Mexico
SECT13	Southern California
SECT14	Central Pacific States
SECT15	Northwestern States
SECT16	Southeastern Alaska
SECT17	Central Alaska
SECT18	Northern Alaska
SECT19	Southwestern Alaska
SECT20	Aleutian Islands
SECT21	Hawaiian Islands

Each section has one or more data files associated with it. The file naming convention used is as follows:

S00_XX.YYY

Each file starts with the letter "S", followed by the section number (01 to 21) and an underscore (_). The XX stands for the feature code (sometimes referred to as Overlay or Base Category). Feature codes are:

PB = Political Boundaries CF = Cultural Features

AB = Administrative Boundaries ST = Streams and Rivers

RD = Roads and Trails WB = Water Bodies

RR = Railroads HP = Hypsography (Continental Divide Only)

The YYY indicates the data format:

LGS = Line Graph Standard Format

LGO = Line Graph Optional Format

GRF = Graphic Format

If a section has more than one file for a feature, an underscore (_) and a letter are used to uniquely name the files. Examples:

S01_WB_A.LGO

S01_WB_B.LGO

LGO File

An .LGO file contains 15 records of general "header" information, followed by a series of Node, Area and Line entries, in that order. Each Node is assigned a unique ID number (1,2,...). A Node entry contains the node's ID, its coordinate (all coordinates in "optional" format files are in UTM or Albers Equal Area Ellipsoid projection) and the IDs of each line segment that begins at, ends at, or passes through the node. A "free-standing" node is one that has no line segments associated with it (i.e., the node is an isolated point).

Area ID Number

Each Area is assigned a unique ID number (1,2,...) called an [area ID](#). An Area entry contains the area's ID, the coordinate of its "reference point", a list of the IDs of each line segment that forms the area's boundary (including islands and lakes) and a list of attribute codes assigned to the area. An area's reference point is that point on a map where a textual identifier for the area was placed (such as the name of a county).

Line ID Number

Each Line is also assigned a unique ID number (1,2,...). A Line entry contains the line's ID, the Node ID of the node it starts at, the Node ID of the node it ends at, the Area ID of the area to the left of the line, the Area ID of the area to the right of the line, a list of coordinates of the line vertices and a list of attribute codes assigned to the line segment. (Left and right are relative to the line's direction. The line was digitized from the start point to the end point) . A "free-standing" line is one that is not part of an area boundary.

Attribute Codes

Attribute codes are assigned to areas and line segments for the purpose of identifying and/or grouping them. An attribute code consists of two positive integers, a Major code value and a Minor code value. For example, USGS Section 15 contains data for Washington, Oregon, Idaho and part of Montana. In the Political Boundaries file (S15_PB.LGO), each county boundary area contains two attribute codes. One indicates which state the county was associated with (Major code = 91, Minor code = two-digit FIPS code for the state) and the other indicates which county it is (Major code = 92, Minor code = three-digit FIPS code for the county). For a list of attribute codes, see Major and Minor Attributes.

Import Options Dialog

See [USGS Digital Line Graph Boundary Import Options Dialog](#).

Import Automation Options

See [USGS Digital Line Graph Boundary Import Automation Options](#).

See Also

[File Format Chart](#)