

GPR 2014_001_ReadMe.PDF

WRANGELLIA SURVEY AREA: Airborne Magnetic and Electromagnetic Data in Line (Point), Grid, Vector, and Map formats, Talkeetna Mountains, Healy, and Mount Hayes quadrangles, south-central Alaska

by
L.E.Burns, CGG, and Fugro Geosciences



PROJECT AND TECHNICAL INFORMATION

Project Name:..... Wrangellia
Contracting Agency: State of Alaska, Department of Natural Resources,
..... Division of Geological & Geophysical Surveys (DGGS)
DGGS Section:..... Minerals Section
Program:..... Alaska Strategic & Critical Mineral Capital Improvement Project,
..... part of the Alaska Airborne Geophysical/Geological Mineral Inventory
..... (AGGMI) Program
Funding Source:..... Alaska State Legislature
Contractor: Fugro GeoServices, Inc.
Survey Flown By: CGG
CGG Project Number:..... 13032
DGGS Contract Manager:..... Laurel E. Burns
Data Acquisition: Digitally acquired
Line miles (km):..... 6553.82 (10547.35 km)
Data Acquisition:
 Start Date (YYYY-MM-DD):..... 2013-06-30
 End Date (YYYY-MM-DD):..... 2013-08-27
Platform: Helicopter
Platform: Model:..... AS-350-B3 Squirrel
Survey Altitude Model:..... Mean terrain clearance (height above ground)
Nominal Helicopter Height:..... 200 feet
Nominal Bird Height: 100 feet
Traverse: Line Azimuth: N45°W (heading of 315 degrees)
..... N18°W (heading of 342 degrees)
..... N-S (heading of 0 degrees)
Traverse: Line Spacing: 1/4 mile (402.3 m) (includes 728.28 km of 1/8 mile (201.15 m) infill)
Tie: Line Azimuth:..... N45°E (heading of 45 degrees)
..... N72°E (heading of 72 degrees)
..... E-W (heading of 90 degrees)
Tie: Line Spacing: approximately 3 miles (approximately 4828 m) where lines spaced 1/4 mi;
..... approximately 1.5 miles (approximately 2414 m) where lines spaced 1/8 mi
Border lines:..... present around all non-parallel and non-perpendicular edges
Magnetics: Magnetometer: Scintrex CS3 cesium censor, mounted in bird
Electromagnetics: Sensor Model: Dighem(V)
Navigation System: Sensor:..... Global Positioning System
Navigation System: Sensor:..... Novatel OEM5-GL2
Navigation System: Method: Post-flight differential positioning
Additional equipment: Radar and laser altimeters, video camera, and 50/60 Hz monitors



CONTENTS of the PUBLICATION:

This publication, GPR2014-1, consists of 6 categories of downloadable zip files plus metadata and supplementary files such as this file. The publication will also be available on DVD(s) with files in the root directory and in 7 main folders: metadata, linedata, grids, geotiffs, kmzs, maps, and vectors.

ROOT DIRECTORY FILES:

gpr2014_001_readme.....This file; PDF and TXT format.
gpr2014_001_browsegraphic.pdf

METADATA (Folder)

Metadata is provided in three formats.

GPR2014-1.faq.htmlHypertext Markup Language format (Question and Answer)
GPR2014-1.txtASCII text
GPR2014-1.xmlExtensible Markup Language format

LINEDATA (Folder)

GPR2014-1_linedata.txt..... Channel list and EM operating frequencies

Downloadable files

Wrangellia_LinedataAsGDB_Part1.GDB Blocks 2 and 3; Oasis Montaj binary GDB format
Wrangellia_LinedataAsGDB_Part1.GDB. Block 4 and 1, and all tie lines; Oasis Montaj binary GDB format

Files on DVD

Wrangellia.gdb.....Oasis Montaj binary GDB database format for mag & EM
Wrangellia.XYZ..... Oasis Montaj ASCII XYZ format for mag and EM
Wrangellia_XYZtoGDB.i0.....Oasis Montaj import template for XYZ file for mag & EM



OVERVIEW: GRIDS, GEOTIFFS, and GOOGLE EARTH KMZs (3 Separate Folders)

The same data are provided as grids, GeoTiffs, and Google Earth KMZs files. The list of the files and the definition is provided below the short sections for the three folders. Gridded files can be manipulated to produce different images. Each GeoTiff and KMZ file is just basically one image. For the grids that were made into maps, the corresponding images in the GeoTiff and KMZ files are the same image used for the grid in the map.

GRIDS (Folder)

All grids are provided in Geosoft binary float and ER Mapper formats. Two files are included for one Geosoft file: the grid file (.GRD) and the projection file (.GRD.GI). Three files are provided for ER Mapper data -- a header (.ERS), a data file (no extension), and the projection file (.ERS.GI).

GEOTIFFS (Folder)

All file names in the GEOTIFF folder have the extension '.TIF'. GeoTiff files automatically register correctly as NAD 27, UTM Zone 6N in GIS programs. GeoTiff files can be opened in any graphics program and as long as the file is not saved, the registration information will still be valid.

KMZS (Folde)

All files in the KMZs folder have the extension '.kmz' (Google Earth zip format). One may drag and drop the KMZ files into 'My Places' in the free downloadable Google Earth program (<http://earth.google.com/download-earth.html>); data will be automatically registered with the locational information used by Google Earth, i.e. WGS84 datum and CGS projection.

FILES IN THE GRIDS, GEOTIFFS, and KMZS FOLDERS:

Wran_MagRMI	Residual magnetic intensity (RMI) (nT) – final with IGRF removed
Wran_MagIGRF	Total magnetic field (nT) - final, with IGRF removed
Wran_1VD	First vertical derivative 'dz' (nT/m) of the RMI
Wran_ASig	Analytic signal (nT/m) calculated from the RMI
Wran_TiltDer	Tilt derivative (degrees) of the RMI
Wran_Res56k	Apparent coplanar resistivity (ohm-m) for 56,000 (56k) Hz
Wran_Res7200	Apparent coplanar resistivity (ohm-m) for 7200 Hz
Wran_Res900	Apparent coplanar resistivity (ohm-m) for 900 Hz
Wran_DTM	Digital terrain or elevation model (m)
Wran_AltLasBird	EM bird height (m) above surface, measured by laser altimeter in EM bird, not included as a KMZ file



VECTORS (Folder on DVD)

Data contours provided were made for the maps with this publication. The flight line path, not included on any maps, is also included. The vectors are provided in ESRI shape file (SHP) format. The files can be opened in variety of geophysical and GIS/CAD software such as Oasis Montaj, MapInfo, ArcGIS, and AutoCAD

DATA CONTOURS:

Wran_MagRMI.....	Residual magnetic intensity (RMI) (nT) - final
Wran_ASig	Analytic signal (nT/m) calculated from the RMI
Wran_TiltDer.....	Tilt derivative (degrees) of the RMI
Wran_Res56k.....	Apparent coplanar resistivity (ohm-m) for 56,000 (56k) Hz
Wran_Res7200.....	Apparent coplanar resistivity (ohm-m) for 7200 Hz.
Wran_Res900.....	Apparent coplanar resistivity (ohm-m) for 9000 Hz.

OTHER VECTORS:

Wran_FP	Flight path
Wran_SecGrid.....	Alaska PLSS Section Grid for the map sheets; includes township and range labels.
Wran_UTMGrid	Alaska UTM Grid for the map sheets; includes UTM labels on edges



MAPS (Folder on DVD)

The HPGL/2 files were created with HP Designjet T1300ps HPGL driver v61.132.2518.500 and plot on some plotters, but not all plotters correctly. The Adobe Acrobat format files were created with Adobe Acrobat Distiller v9.0 from Postscript

files. The HPGL/2 files have brighter colors and sharper topography than the Adobe Acrobat files, and should be used or requested if at all possible. Freeware software 'printfile', available currently at (<http://www.lerup.com/printfile>) prints HPGL/2 files easily on compatible printers. The Adobe Acrobat format files were created with Adobe Acrobat Distiller v9.0 from Postscript files.

Four sheets are needed to cover the area at 1:63,360-scale. Sheet A is in the southwest; maps B, C, and D are north of Sheet A and go from west to east. See gpr2014-1_browsegraphic.pdf, figure 3.

Zip files include:

- gpr2014-1_MAPS_1A-7B_asHPGL2.zip
- gpr2014-1_MAPS_7C-14D_asHPGL2.zip
- gpr2014-1_MAPS_1A-7B_asPDFS.zip
- gpr2014-1_MAPS_7C-14D_asPDFS.zip

Map No.	Grid shown	With
GPR2014-1-1	Residual magnetic intensity, IGRF removed	topography
GPR2014-1-2	Residual magnetic intensity, IGRF removed	magnetic contours
GPR2014-1-3	First vertical derivative of the RMI	topography
GPR2014-1-4	Analytic Signal of the RMI	topography
GPR2014-1-5	Analytic Signal of the RMI	Analytic signal contours
GPR2014-1-6	Tilt Derivative of the RMI	Topography and Tilt Derivative contours
GPR2014-1-7	Shadowed RMI	Topography and Tilt Derivative contours
GPR2014-1-8	56K Hz coplanar apparent resistivity	topography
GPR2014-1-9	56K Hz coplanar apparent resistivity	56K contours
GPR2014-1-10	7200 Hz coplanar apparent resistivity	topography
GPR2014-1-11	7200 Hz coplanar apparent resistivity	7200 contours
GPR2014-1-12	900 Hz coplanar apparent resistivity	topography
GPR2014-1-13	900 Hz coplanar apparent resistivity	900 contours
GPR2014-1-14	Flight Line	topography

PROJECTION INFORMATION:

DATUM & PROJECTION ITEMS	GRIDS, GEOTIFFS, & VECTORS	LINEDATA: HORIZONTAL LOCATION CHANNELS		KMZ FILES
		X_NAD27z6n Y_NAD27z6n	LAT_WGS84 LON_WGS84	
DATUM	NAD27 Spheroid; Clarke 1866		WGS84	WGS84
PROJECTION	UTM Zone 6N		LAT/LON WGS 84	Simple Cylindrical / LAT/LON WGS 84
CENTRAL MERIDIAN	-147		-147	
FALSE EASTING	500000		500000	
FALSE NORTHING	0		0	
SCALE FACTOR	0.9996		0.9996	
NORTHERN PARALLEL	N/A		N/A	
BASE PARALLEL	N/A		N/A	
WGS84 TO LOCAL	Molodensky conversion method		Molodensky conversion method	
DELTA X SHIFT	+5		+5	
DELTA Y SHIFT	-135		-135	
DELTA Z SHIFT	-172		-172	



AVAILABILITY and TECHNICAL REQUIREMENTS:

- ON-LINE: All parts of this publication can be downloaded from the DGGS Web link <http://www.dggs.alaska.gov/pubs/id/27022> in data groups, e.g. MapsAsPDFS. The downloadable groups are near the bottom of the web page.
- DVD-ROM: Purchased by mail, e-mail (mailto:dggs pubs@alaska.gov), or in person from DGGS, 3354 College Road, Fairbanks, Alaska, 99709-3707 for \$10 per DVD-ROM plus postage.
<http://www.dggs.alaska.gov/pubs/project-orderform/1207>

MAPS: The PDF version of the maps may be viewed, downloaded, or printed individually from the same link as the downloads: <http://www.dggs.alaska.gov/pubs/id/27022> or through the Wrangellia Geophysics Project page <http://www.dggs.alaska.gov/pubs/project-orderform/1207> which will contain related geophysical or geological data that are produced in the future. Maps are also available on paper or Mylar through the DGGS office for \$13/sheet plus mail costs.

- Please ask for the maps to be printed from HPGL/2 files to ensure the best quality image.

TECHNICAL REQUIREMENTS FOR USE OF THE DATA: Technical requirements for use of all of the data on this publication includes software with ability to use, import, or convert Geosoft float GRD, Geosoft binary GDB,, ESRI Shape files or Autocad DXF, Adobe Acrobat PDF, Google Earth files, and text files. Free downloadable interfaces to view or convert the gridded and shape files are available at the Geosoft Web site (<http://www.geosoft.com>; Oasis Montaj viewer). The KMZ files can be dragged and dropped into the 'My Places' folder of the free downloadable 'Google Earth' software. Freeware software 'printfile' (<http://www.lerup.com/printfile>) prints HPGL/2 files easily on compatible printers. The HPGL/2 files have brighter colors and sharper topography than the PDF maps and should be used for printing when possible. The PDF format maps are the only maps digitally viewable in this publication.

If you have any problems with this archive please contact Laurel Burns or the current geophysicist at the DGGS office.