

EXPLORATION AND MINING DIVISION IRELAND

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THE AMCORP IRELAND LTD AIRBORNE MAGNETIC SURVEY (1999) OVER THE NORTH CORK AREA

August 2004



**Department of Communications, Marine
and Natural Resources**

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AIRBORNE MAGNETIC SURVEY (1999)
OVER THE NORTH CORK AREA**

Compiled by
Orla Dardis

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INTRODUCTION

In November 1999 Amcorp Ireland Ltd. (Anglo Exploration Ireland Ltd) flew a 5504 line km magnetic survey over an area between Mallow and Fermoy, encompassing approximately 946 sq km (Figure 1).

Block	Line km	Approx. Area (sq. km)	Prospecting Licences covered / partially covered by Survey Areas
Mallow-Fermoy	5504	946	1554, 2024, 2280, 2331, 2597, 2599, 2637, 3112, 3294, 3295, 3338, 3339, 3340, 3365, 3535, 3536, 3537, 3538, 3604, 3612, 3613, 3619, 3626, 3702, 3716, 3717, 3718, 3719, 3733, 3741, 3899, 3900, 3901, 3902

This survey was lodged over four years ago and is available to the general public in fulfilment of the 'Open Skies' policy of the Exploration and Mining Division (EMD). The Division acknowledges the cooperation of Amcorp Ireland Ltd.

At this time EMD is primarily concerned with prompt data release and no attempt was made to reprocess or correct survey data. Data is released as submitted and no liability is accepted on the part of the EMD for data quality or accuracy. However, to facilitate ease of use, grids are provided with an Ordnance Survey base map for ease of geographical reference.

Tesla Airborne Geoscience Pty Ltd conducted the survey using a tail-mounted magnetometer. Magnetic, radar altimeter and navigation data was acquired during the survey. All processing was carried out by Tesla-10 Pty Ltd, which is now part of Fugro Airborne Surveys.

A report containing the survey acquisition and processing procedures and an aeromagnetic interpretation was lodged with EMD and is included on the release CD. A listing of all digital and hardcopy data (databases, grids, maps and company reports) lodged with the Exploration and Mining Division is included in this publication and outlined below in the data listings section.

SURVEY EQUIPMENT AND SPECIFICATIONS

Flight Line Spacing	200m
Flight Line Direction	0°
Tie Line Spacing	1000m
Mean Terrain Clearance	80 m
Nominal Survey Speed	120 knots (62 m/s)
Total Survey Area	5504 sq. km
Total Line Km	946 line km
Magnetometer	Geometrics G-822A Cesium Vapour
Sensitivity	0.001 nT
Sample Rate	10 samples /sec
Mounting	Tail mounted
Sensor Height above ground	80 m

PROCESSING OVERVIEW AND MAP GENERATION

The information provided in this section was taken from the lodged survey report and readme files (included on CD) and from examination of the data.

Magnetics Processing Sequence

A system lag (parallax) correction of 0.4 seconds was applied followed by noise editing (de-spiking) and filtering. The survey report outlines the field processing sequence in more detail. The diurnal field and IGRF were removed from the data. The data was tie-line leveled and microleveled. Following data reduction to the pole, cultural responses, as determined from topographic maps, were removed. The regional field was also removed.

Grid and Map Generation

Amcorp Ireland Ltd submitted grids in ER Mapper format, which were created with a 60 m grid cell spacing. These were converted to Geosoft GRD format in EMD. The grids lodged by Amcorp were used to generate the maps on an Ordnance Survey base.

All digital and hardcopy products are in the Irish National Grid (ING) coordinate system:

Datum:	TM65 / Airy Modified 1849
Ellipsoid:	Airy Modified 1849
	Major axis: 6377340.189
	Eccentricity: 0.081673374
	1/f: 299.3249646
Projection	Transverse Mercator
Central Meridian	-8.00.00.000
Latitude of origin	53.30.00.000
False Northing:	250,000 m
False Easting:	200,000 m
Scale factor:	1.000035

DATA LISTING

Geosoft polygon files of survey boundary

A geosoft polygon file (*.ply) for the survey area is included on the CD. The file is in ASCII format and can be opened in any text editor to view survey boundary coordinates (in ING).

Databases

The raw and processed data was supplied in ASCII and Geosoft Database format (GDB). Readme files with channel listings are included on the CD and summarised on page 6. The magnetics and digital terrain data is released on CD in Geosoft and ASCII format.

Raw and Processed Magnetic Data (Geosoft GDB)

Database	Number of Channels	Approx. Size (Mb)	File Name (.gdb)
Magnetics	13	80.5	amp99_mag
Digital Terrain Model	9	55.8	amp99_dtm

Grids

The following grids were lodged in ERMapper format by Amcorp Ireland Ltd and converted to Geosoft grd format in EMD.

Block	Grid	Grid Name	Grid cell spacing (m)	Format
Mallow-Fermoy	Total Magnetic Intensity	tmi	60	grd
	Reduced to Pole (decultured)	rtp_decult	60	grd
	Residual Magnetics	residual	60	grd
	Digital Terrain Model	dtm	60	grd

Maps

All colour hardcopy maps lodged by Amcorp Ireland Ltd for this release were scanned and stored in a compressed TIFF format using LZW compression to keep file sizes manageable, and can be opened in most standard packages. Compression was carried out using Imaging for Windows, which is available under the Accessories menu in Windows. *LZW compressed TIFF images can only be viewed in Geosoft when they are imported as a GeoTIFF file.* Maps produced in EMD, on an Ordnance Survey 1:50,000 base, are available on the release CD as uncompressed images in JPEG format, or in hardcopy format on request.

Supplied by Amcorp Ireland Ltd.

Block	Map Title	Filename	Scale	Format
Mallow-Fermoy	Total Magnetic Intensity	amp28.1.1	1:50,000	LZW compressed
	Reduced to Pole (decultured)	amp28.1.2	1:50,000	LZW compressed
	Residual Magnetics	amp28.1.3	1:50,000	LZW compressed
	Digital Terrain Model	amp28.1.4	1:50,000	LZW compressed

Supplied by EMD on Ordnance Survey base

Block	Map	Filename	Scale
Mallow-Fermoy	Residual Magnetics	amp99_rmi_emd	1:50,000
Mallow-Fermoy	Digital Terrain Model	amp99_dtm_emd	1:50,000

These maps are available, on an Ordnance Survey 1:50,000 base, as a scanned image (jpeg format) or in hardcopy format.

Company reports

The Tesla-10 logistics and processing report which includes an interpretation by Amcorp is included on the release CD.

Report Title	Filename (.pdf)	No. of pages
Amcorp Ireland Ltd North Cork Aeromagnetic Interpretation – including the Tesla-10 Survey Logistics and Processing Report	ampr28_1	37

GEOSOFT DATABASE CHANNEL LISTING 1

North Cork DTM Database

CHANNEL NAME	DESCRIPTION
X	Easting (ING)
Y	Northing (ING)
EastWGS84	Easting (WGS84)
NorthWGS84	Northing (WGS84)
LatitudeWGS84	Latitude (WGS84)
LongitudeWGS84	Longitude (WGS84)
Radalt	Radar altimeter (filtered radar ground clearance)
Gpsalt	GPS elevation
Terrain	Corrected to mean seal level (msl)

GEOSOFT DATABASE CHANNEL LISTING 2

North Cork Magnetics Database

CHANNEL NAME	DESCRIPTION
X	Easting (ING)
Y	Northing (ING)
EastWGS84	Easting (WGS84)
NorthWGS84	Northing (WGS84)
LatitudeWGS84	Latitude (WGS84)
LongitudeWGS84	Longitude (WGS84)
Gpsweek	
Diurnal	Diurnal magnetics (filtered)
Rawmag	Compensated and filtered raw magnetics
Levmag	Total field magnetics (IGRF corrected & levelled)
Decultured	Reduced to pole total magnetic intensity (TMI)
Interpolate	TMI with culture removed
Gridflag	Interpolation flag (=1 if interpolated)

SURVEY LOCATION

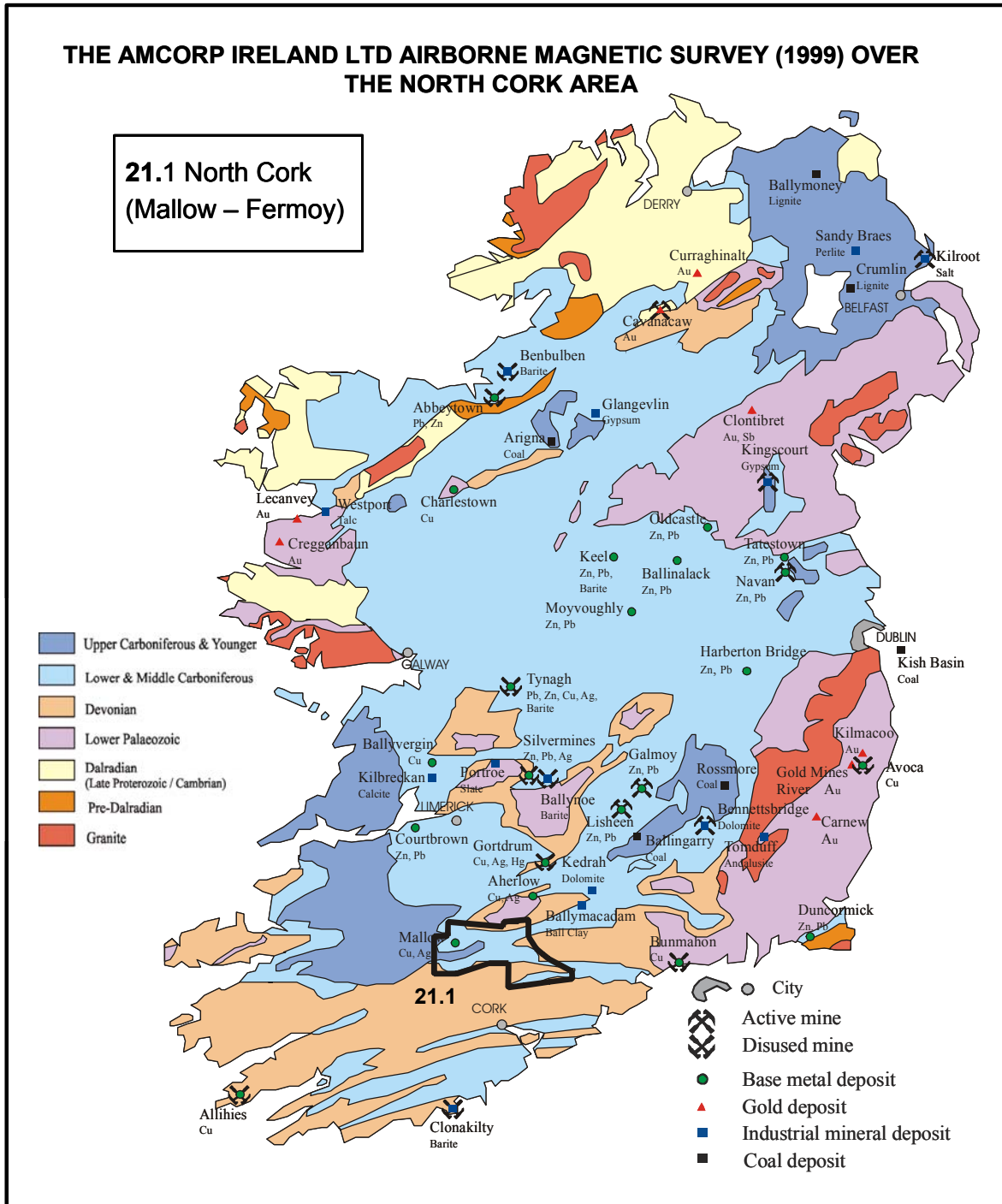


Figure 1. Location of the survey area on a simplified geology map of Ireland.

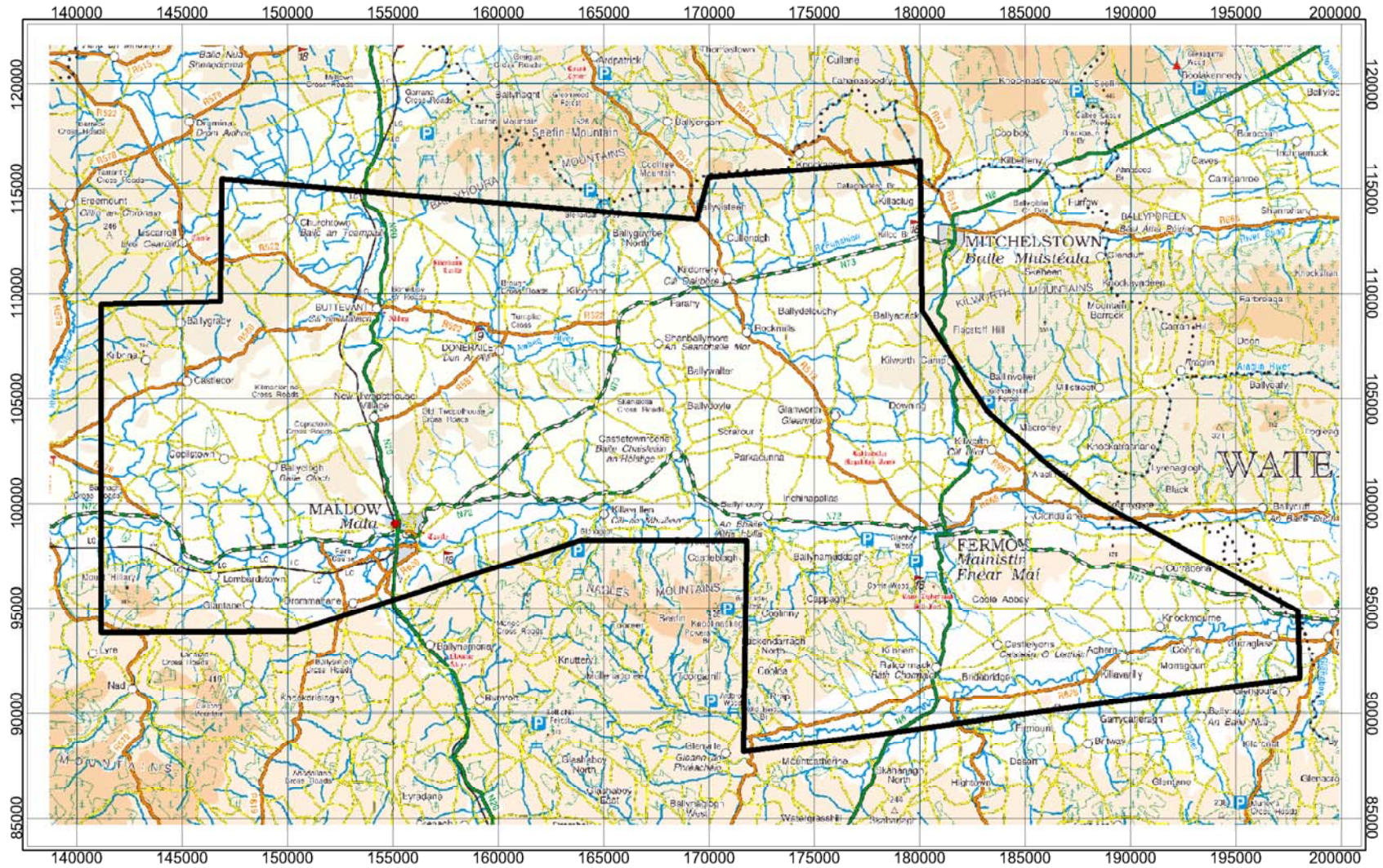


Figure 2. The Mallow-Ferrom survey area on a 1:250,000 Ordnance Survey base. (Ordnance Survey Permit DNE 001001).