

EXPLORATION AND MINING DIVISION IRELAND

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THE PASMINGO AIRBORNE MAGNETIC SURVEY (1998) OVER THE TIPPERARY AREA

December 2002



Department of Communications, Marine
and Natural Resources

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and Natural Resources**

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OVER THE TIPPERARY AREA**

Compiled by
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INTRODUCTION

In April 1998 Pasmaenco Exploration flew a 1254 line km magnetic survey over an area around Tipperary, encompassing approximately 314 sq km (Figure 1).

Block	Line km	Approx. Area (sq. km)	Prospecting Licences covered / partially covered by Survey Areas
Tipperary	1254	314	350, 450, 468, 1457, 2654, 2655, 2657, 2839, 2840, 3319, 3421, 3551, 3552, 3581, 3582, 3654, 3704, 3705, 3782

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 Pasmaenco Exploration.

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, which is now part of Fugro Airborne Surveys.

The survey specifications and processing procedures are outlined in the survey logistics report. No separate interpretation report was submitted but the survey logistics report contains a brief structural interpretation.

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	250m
Flight Line Direction	300°
Tie Line Spacing	2000m
Mean Terrain Clearance	120 m
Nominal Survey Speed	80 knots (62 m/s)
Total Survey Area	314 sq. km
Total Line Km	1254 line km
Magnetometer	CS-2 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 survey logistics report, the readme file for the survey (included on CD) and from examination of the data.

Magnetics Processing Sequence

A system lag correction of 0.38 seconds was applied followed by noise editing (de-spiking) and filtering.. The long wavelength component (greater than 79 seconds) of the diurnal field was removed from the data. The regional magnetic field (IGRF) was also removed. The data was tie-line leveled and then microleveled and gridded using a minimum curvature interpolation.

Grid and Map Generation

No grids were lodged by Pasminco so grids were created by EMD in Geosoft grid format using a minimum curvature interpolation and a 75m grid cell spacing. Grids were produced from the final magnetics (MAG_INTERP) and DTM channels (LEV_DTM) in each database. EMD generated grids were used to generate the EMD 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 boundaries

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 format and imported into Geosoft Database format (GDB) by EMD. Readme files with channel listings are included on the CD and summarised on page X. The magnetics data is released on CD in Geosoft format.

Raw and Processed Magnetic Data (Geosoft GDB)

Database	Number of Channels	Approx. Size (Mb)	File Name (.gdb)
Magnetics	14	8.0	pas98_mag
Digital Terrain Model	11	6.7	pas98_dtm

Grids

No grids were lodged by Pasminco so the following grids were created by EMD in Geosoft grid format using a 75m grid cell spacing.

Block	Grid	Grid Name	Grid cell spacing (m)	Format
Tipperary	Final magnetics	tipp_mag_emd	75	grd
	Terrain model	tipp_dtm_emd	75	grd

Maps

All colour hardcopy maps submitted by Pasminco for this release were scanned and stored in a compressed TIF 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 Pasminco Ltd.

Block	Map Title	Filename	Scale	Format
Tipperary	Total Magnetic Intensity Image (De-cultured) and Contours (Plan 1 of Pasminco report)	pas16.1.1	1:25000	LZW compressed tiff
	Total Magnetic Intensity Image (Raw) and Contours (Plan 2 of Pasminco report)	pas16.1.2	1:25000	LZW compressed tiff
	Flight Path Map with Tie-Lines (Plan 3 of Pasminco report)	pas16.1.3	1:25000	LZW compressed tiff
	Digital Terrain Model and Contours (Plan 4 of Pasminco report)	pas16.1.4	1:25000	LZW compressed tiff

Supplied by EMD on Ordnance Survey base

Block	Map	Filename	Scale
Tipperary	Processed total magnetic intensity (IGRF removed)	tipp_tmi_emd	1:50,000

This map is available, on an Ordnance Survey 1:50,000 base, as a scanned image (jpeg format) or in hardcopy format.

Company reports

The logistics report with a brief structural interpretation discussion is included on the release CD.

Report Title	Filename (.pdf)	No. of pages
Tipperary Airborne Geophysical Survey Logistics Report PL 468/3552/3782/2654/2655	pasr16_1	14

GEOSOF Database CHANNEL LISTING 1

Tipperary DTM Database

CHANNEL NAME	DESCRIPTION	UNITS
FID	Fiducial	seconds
GPS_WEEK	-	-
LAT	Latitude	-
LONG	Longitude	-
GPS_ALT	GPS elevation	metres
EASTING_WGS84	-	metres
NORTHING_WGS84	-	metres
X	Easting (ING)	metres
Y	Northing (ING)	metres
LEV_DTM	Digital terrain referenced to WGS84 spheroid	metres
RAD	Radar altimeter (filtered radar ground clearance)	metres

GEOSOFTE DATABASE CHANNEL LISTING 2

Tipperary Magnetics Database

CHANNEL NAME	DESCRIPTION	UNITS
X	Easting (ING)	metres
Y	Northing (ING)	metres
FID	Fiducial	seconds
RAD	Radar altimeter	metres
GPS_WEEK	-	
EASTING_WGS84	-	metres
NORTHING_WGS84	-	metres
LAT	Latitude	-
LONG	Longitude	-
DIURNAL	Diurnal magnetics (filtered)	nT
COMP_MAG	Compensated and filtered raw magnetics	nT
LEV_MAG	Total field magnetics (IGRF corrected & leveled)	nT
CULT_MAG	LEV_MAG channel with culture removed	nT
MAG_INTERP	CULT_MAG channel interpolated	nT

SURVEY LOCATION

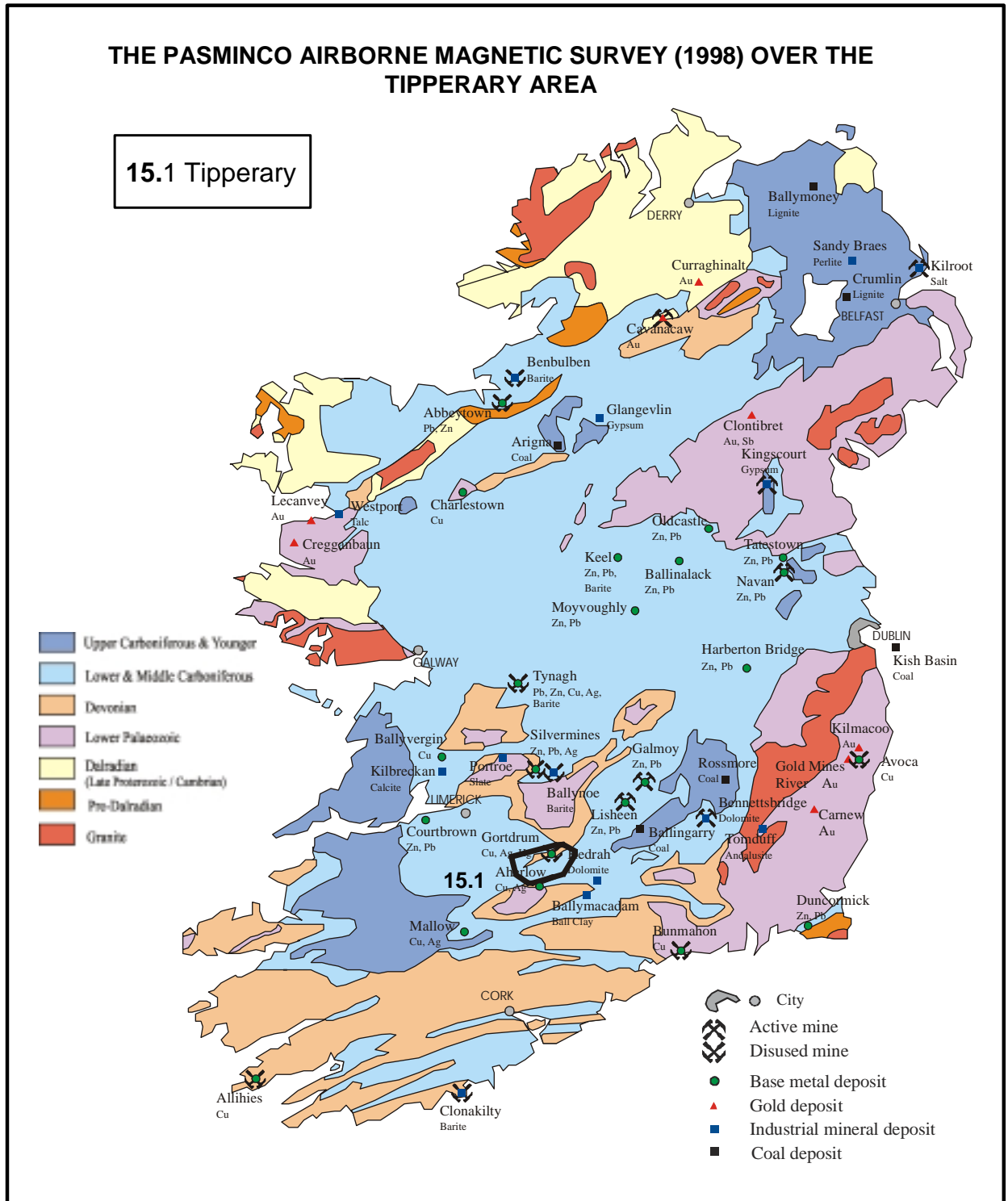


Figure 1. Location of the survey area on a simplified geology map of Ireland.

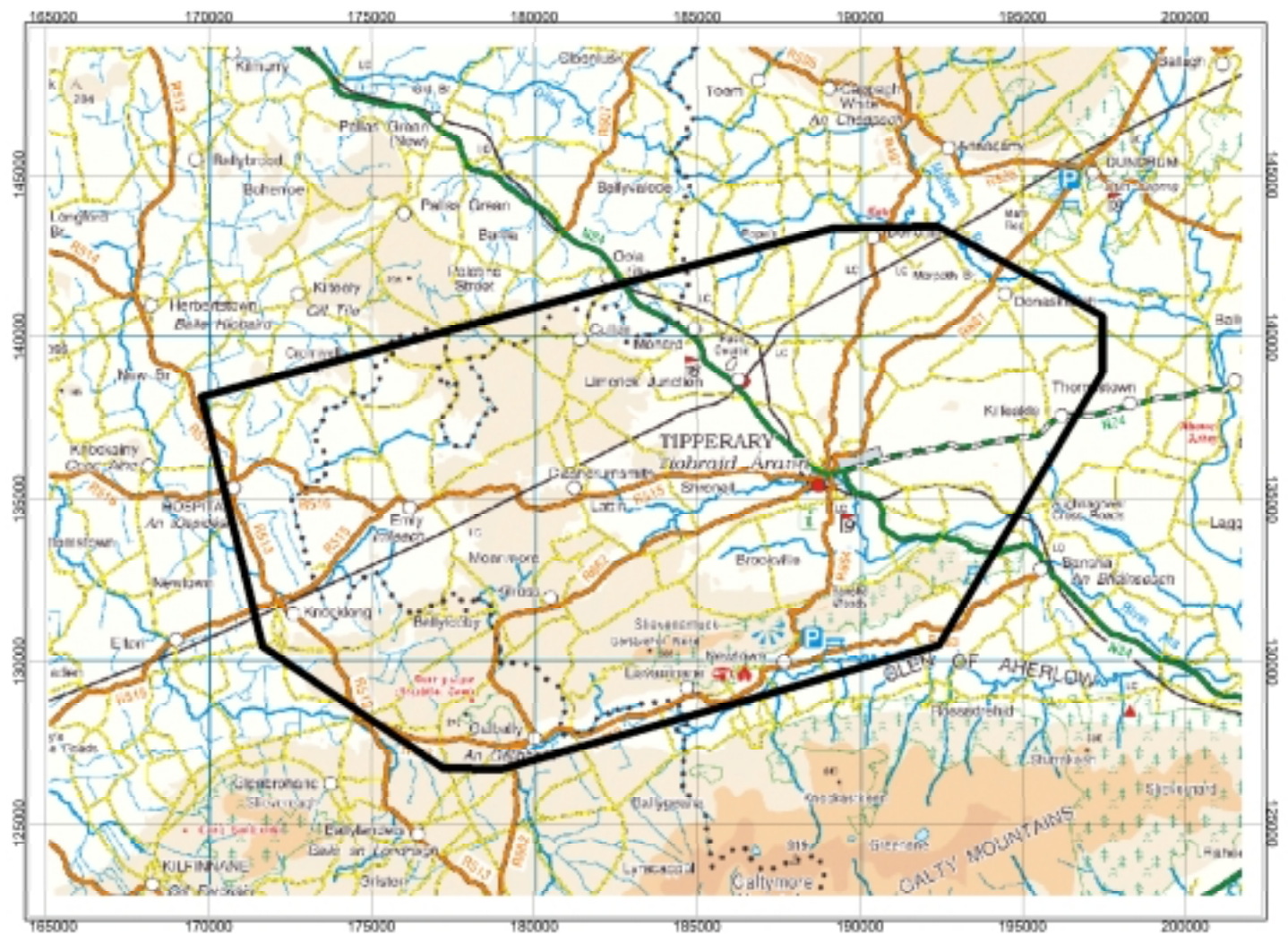


Figure 2. The Tipperary survey area on a 1:250,000 Ordnance Survey base.