

EXPLORATION AND MINING DIVISION IRELAND

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THE CMF AIRBORNE MAGNETIC SURVEY (1998) OVER THE TULLA, EAST CLARE AREA

December 2002



Department of Communications, Marine
and Natural Resources

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

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THE TULLA, EAST CLARE AREA**

Compiled by
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INTRODUCTION

In April 1998 Central Mining Finance (CMF) Ltd. flew a 1620 line km magnetic survey over an area around Tulla in East Clare encompassing approximately 176 sq km (Figure 1).

Block	Line km	Approx. Area (sq km)	Prospecting Licences covered / partially covered by Survey Areas
Tulla	1620	176	2590, 2895, 3508, 3643, 3643, 3643, 3643, 3679, 3683, 3728, 3729, 3787, 3788, 3789, 3810, 3863

This survey was lodged over four years ago and is available to the general public in fulfillment of the 'Open Skies' policy of the Exploration and Mining Division (EMD). The Division acknowledges the cooperation of Central Mining Finance 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, radiometrics, 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.

No survey report was lodged. Information provided in this report was ascertained from the readme files supplied with the survey data and from data inspection. No interpretation report was submitted.

A listing of all digital and hardcopy data (databases, grids, maps) 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	100m
Flight Line Direction	210°
Tie Line Spacing	500m
Mean Terrain Clearance	80 m
Nominal Survey Speed	120 knots (62 m/s)
Total Survey Area	176 sq. km
Total Line Km	1620 line km
Magnetometer	Cesium Vapour
Sensitivity	0.001 nT
Sample Rate	10 samples /sec
Mounting	stinger
Sensor Height above ground	80 m

PROCESSING OVERVIEW AND MAP GENERATION

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

Magnetics Processing Sequence

A system lag (parallax) correction of 0.38 seconds was applied followed by noise editing (de-spiking) and filtering. 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

CMF lodged grids in grid exchange format (gxf), which were created with a 20 m grid cell spacing. The final magnetic channel was re-gridded by EMD using a minimum curvature interpolation with a 25 m grid cell spacing and is identified by an 'emd' label in the filename. This grid was used to generate the EMD maps on an Ordnance Survey base.

Magnetic depth slice grids were also lodged for the survey. Depth slicing is a partial source separation technique based on the spectral amplitudes of the reduced to pole (RTP) data. The separation progressively removes constant gradient segments of the spectral density. The slice letter denotes the source separation with 'A' being the deepest and indicates the distance in kilometers below the sensor to the source center.

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 pages 6 and 7. The 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	13.7	cmf98_mag
Digital Terrain Model	11	11.3	cmf98_dtm

Grids

The following grids in grid exchange format (gxf) were lodged by CMF and reproduced where required by EMD in Geosoft grid format (grd).

Block	Grid	Grid Name	Grid cell spacing (m)	Format
Tulla	Final magnetics	tulla_tmi_emd	25	grd
	Total magnetic intensity	2538_mag	20	gxf
	Relative digital terrain	2538_dtm	20	gxf
	Residual magnetics (reduced to pole)	residual	20	gxf
	Depth slice (approx 800m)	slicea	20	gxf
	Depth slice (approx 250m)	sliceb	20	gxf
	Depth slice (approx 250m) downward continued 100m	sliceb_d100	20	gxf
Depth slice (approx 20m)	slicec	20	gxf	

Maps

All colour hardcopy maps submitted by CMF for this release were scanned and stored in LZW compressed TIFF format, to keep file sizes manageable. They 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.* CMF lodged some maps in compressed tif format which are also listed in the table below. 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 CMF Ltd.

Block	Map Title	Filename	Scale	Format
Tulla	Structural Interpretation (from Magnetics)	cmf15.1.1	1:25000	tiff
	Digital Terrain Model (Pseudo-colour Intensity Image with Illumination from NE)	cmf15.1.2	1:25000	LZW tiff
	Total Magnetic Intensity Profiles and Flight Path	cmf15.1.3	1:25000	LZW tiff
	Residual Magnetic Intensity (colour contours)	cmf15.1.4	1:25000	LZW tiff
	Prospecting Licences 2895, 3728, 3729, 3787, 3788, & 3789, Ballyvergin and Scariff areas, Co. Clare	cmf15.1.8	1:25000	tiff
	Total magnetic Intensity (no culture or gradient removed)	tmi_e	1:25000	LZW tiff

	Residual magnetics (reduced to pole)	resid_e	1:25000	LZW tiff
	Depth slice (approx 800m)	slicea	1:25000	LZW tiff
	Depth slice (approx 250m)	sliceb	1:25000	LZW tiff
	Depth slice (approx 250m) downward continued 100m	sliceb_d100	1:25000	LZW tiff
	Depth slice (approx 20m)	slicec	1:25000	LZW tiff

Supplied by EMD on Ordnance Survey base

Block	Map	Filename	Scale
Tulla	Processed total magnetic intensity (IGRF, regional & culture removed)	tulla_tmi_emd	1:25,000

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

Company reports

No survey or interpretation reports were lodged with the survey data.

GEOSOF T DATABASE CHANNEL LISTING 1

Tulla DTM Database

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

GEOSOF Database CHANNEL LISTING 2

Tulla 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
FINAL_MAG	Residual magnetics (regional gradient & culture removed)	nT
FINAL_MAG_INTERPOL	FINAL_MAG channel interpolated	nT

SURVEY LOCATION

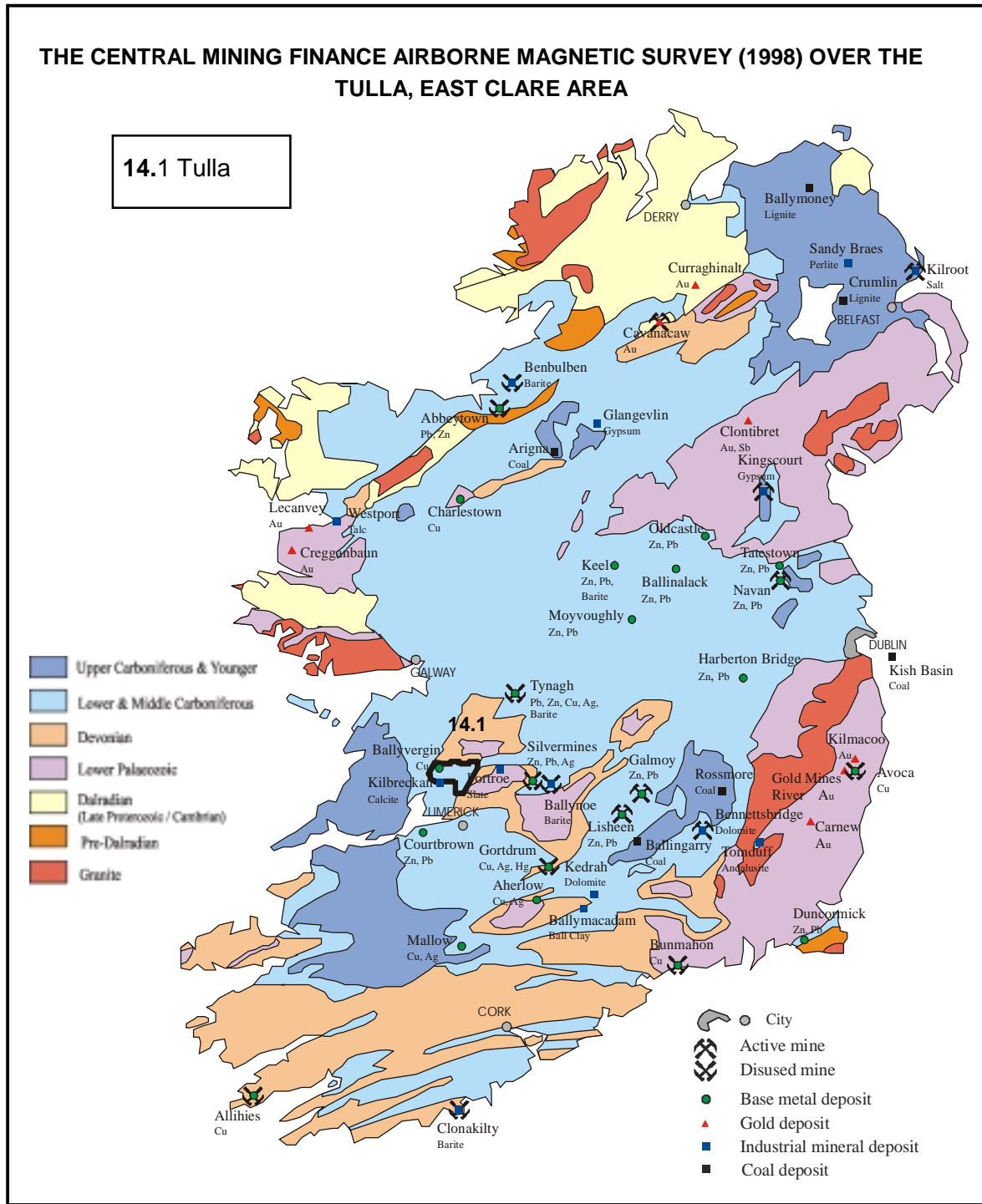


Figure 1. Location of the survey area on a simplified geology map of Ireland.

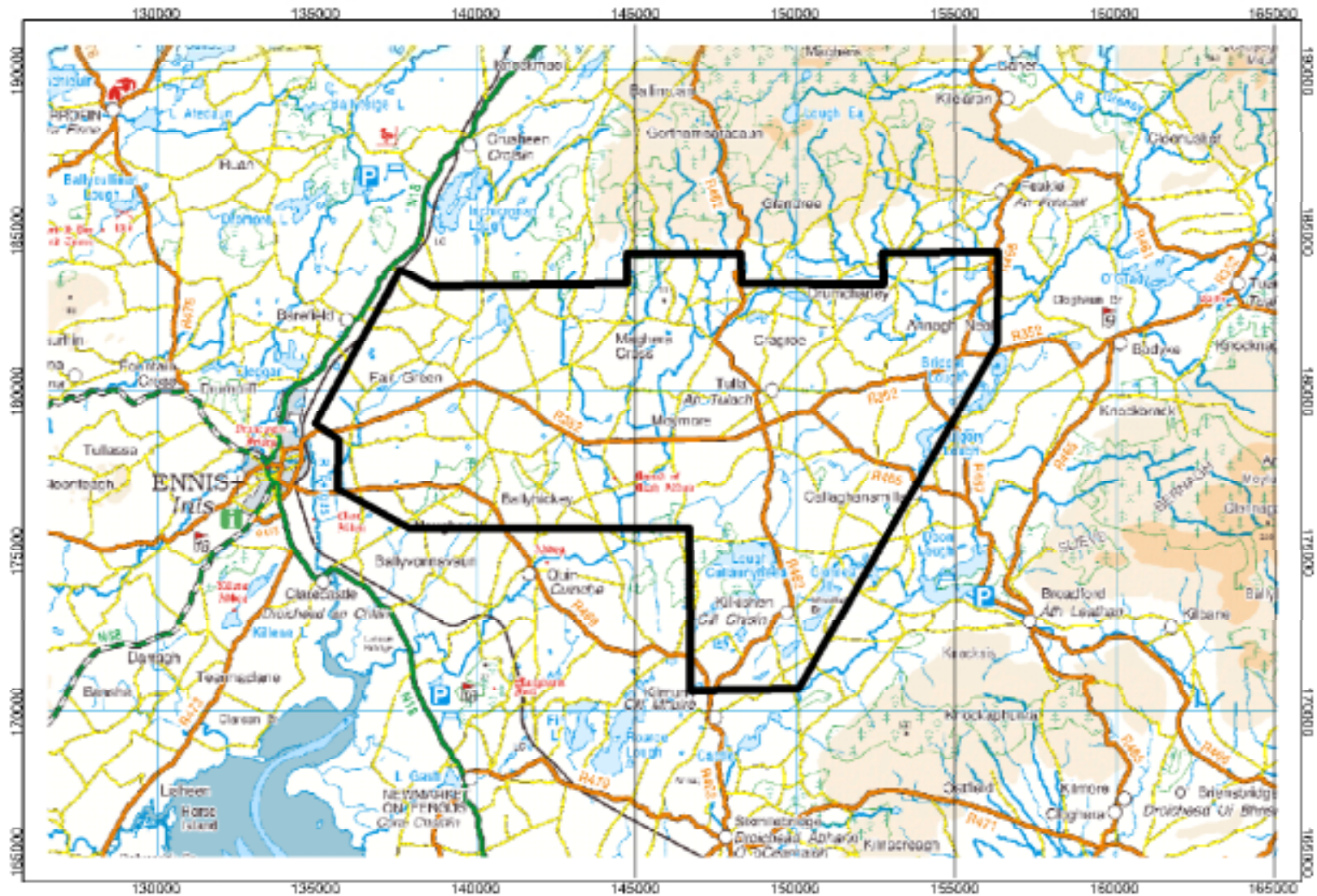


Figure 2. The Tulla survey area on a 1:250,000 Ordnance Survey base.