



## DIGITAL DATA DOCUMENTATION

### WIMMERA CMA

### WIMMERA RIVER TRENCH & WARRACKNABEAL- 0.5M CONTOURS

### VOLUME 1189505NOM

#### Summary

##### **Project**

Airborne Laser Scanning (ALS) was flown over the Wimmera CMA region between January 5<sup>th</sup> and January 31<sup>st</sup> 2005.

##### **Data**

This volume contains 0.5m interval cartographic contours in 431 tiles over the Wimmera River Trench & Warracknabeal Regions (Hindmarsh, Yarriambiack & Northern Grampians Shires and Horsham Rural City).

Contours have been generated from smoothed and thinned ALS ground strikes.

- 0.5m contour files are supplied in ESRI shapefile format.
- 0.5m contour tile layout is supplied in DXF format



*This data is GDA-compliant*

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## 1. PROJECT REPORT

**Acquisition:** Airborne Laser Scanning (ALS) data was acquired from a fixed wing aircraft between January 5<sup>th</sup> – January 31<sup>st</sup> 2005.

**Ground Support:** GPS base station data was acquired without incident. The ground check points acquired allowed an assessment of the accuracy of the ALS data.

**Data Processing:** Reduction of the ALS data proceeded without any significant problems. Laser strikes were classified into ground and non-ground points using a single algorithm across the project area. Manual checking and editing of the data classification further improved the quality of the terrain model.

**Further Processing:** The cartographic contours represented in this volume have been generated from thinned and smoothed ALS ground strikes.

The cartographic contours are designated “CARTOGRAPHIC CONTOURS WITHOUT BREAKLINES”. They are compiled from a rigorous smoothing and thinning of points followed by triangulation. Areas such as river-banks may not have continuous contours as vegetation canopies can prevent sufficient laser ground strikes being achieved to produce continuous contours. Contours are generated at 1m intervals.

**Data Presentation:** The data provided on this volume has been supplied in accordance with a specification agreed with the primary client. Subsequent users experiencing difficulties in handling the data should please contact AAMHatch to arrange a more appropriate data presentation.

**Further Issues:** Laser strike penetration through to the ground is reduced in areas of thick vegetation.

## 2. DATA INSTALLATION

Data format : ESRI Point Shapefile & DXF  
Number & type of media : Maxtor portable hard drive  
Number of files on media : 1724 x Shapefiles, 1 x DXF and Readme\_1189505NOM.PDF  
Data formatted on : 28.02.2007  
Disk volume : 1189505NOM  
AAMHatch Job Manager : Rohan Potter (03) 9572 1033  
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### **README FILE**

This document (Readme\_1189505NOM.PDF) is provided as an Acrobat file in this volume.

To open the file, double click on the PDF file to activate Acrobat Reader Software.

Adobe Acrobat Reader may be downloaded from:

<http://www.adobe.com/products/acrobat/readstep2.html>

### **REVISION HISTORY**

Volumes previously issued under this project include:

Volume	Date	Data Title	Contents
1189501NOM	29.09.2006	WCMA	Cartographic Contours – Priority Area
1189502NOM	31.01.2007	WCMA Contours	Yarriambiack Creek & North East Flat Plains – 1m Contours
1189503NOM	19.02.2007	WCMA Contours	West of Wimmera River Trench – 1m Contours
1189504NOM	28.02.2007	WCMA Contours	West of Wimmera River Trench, Yarriambiack Creek & North East Flat Plains Regions and South of Wimmera River Trench & Upper Wimmera – 1m contours

### **FILE SIZES AND NAMES**

Data is provided in tiles 1.5km by 1.5km to the following filenames convention:

eg. WI585059385.shp      WI - project abbreviation  
                                    5850 - coordinate easting (to 500m) of south west tile corner  
                                    59385 - coordinate northing (to 500m) of south west tile corner  
                                    .shp - ESRI Shapefile  
                                    .shx - Associated ESRI file  
                                    .prj - Associated ESRI file  
                                    .dbf - Associated ESRI file

### **FILE LISTING**

A full file listing can be provided upon request.

**LEGEND****Layername**

MINOR CONTOUR  
MAJOR CONTOUR

**Description**

0.5m contour interval  
2.5m contour interval

**SAMPLE LISTING (ESRI FORMAT)**

Attributes of W1585059385			
FID	Shape	ELEVATION	CONTOURTYP
0	Polyline ZM	110.5	Minor Contour
1	Polyline ZM	110.5	Minor Contour
2	Polyline ZM	110.5	Minor Contour
3	Polyline ZM	111	Minor Contour
4	Polyline ZM	111	Minor Contour
5	Polyline ZM	111	Minor Contour
6	Polyline ZM	111	Minor Contour
7	Polyline ZM	111.5	Minor Contour
8	Polyline ZM	111.5	Minor Contour
9	Polyline ZM	111.5	Minor Contour
10	Polyline ZM	111.5	Minor Contour
11	Polyline ZM	111.5	Minor Contour
12	Polyline ZM	111.5	Minor Contour
13	Polyline ZM	111.5	Minor Contour
14	Polyline ZM	111.5	Minor Contour
15	Polyline ZM	112	Minor Contour

Record: 1 Show: All Selected Records (0 out of 71 Selected) Options

### 3. METADATA

#### DATA CHARACTERISTICS

Characteristic	Description
Format	ESRI Point Shapefile & DXF
Captured terrain model	1.3m average point separation
Data smoothing	Cartographic dataset smoothed to 0.25m tolerances
Data thinning	Cartographic dataset thinned to 0.15m tolerances
Contours	0.5m interval generated from thinned and smoothed ALS ground strikes
Laser return	Last pulse
Laser footprint size	0.24m

#### REFERENCE SYSTEMS

	Horizontal	Vertical
Datum	GDA94	AHD
Projection	MGA Zone 54	N/A
Geoid Model	N/A	Ausgeoid98
Reference Points	GW01 664 022.012 E 5 884 903.992 N  WA01 624 088.246 E 5 988 292.940 N  JE01 589 893.491 E 6 001 142.074 N  GPSnet Horsham 604 915.999 E 5 935 320.595 N	GW01 260.592 RL  WA01 118.763 RL  JE01 81.001 RL  GPSnet Horsham 137.82 RL



*This data is GDA-compliant*

**SOURCE DATA**

	Source	Description	Ref No	Date
Laser scanning	AAMHatch	25,000 Hz	2200810	05-31.01.2005
GPS base data	AAMHatch / Geomatix	Static GPS	2200810	05-31.01.2005
Base Stn coords	AAMHatch / Geomatix	Static GPS	2200810	31.01.2005
Test points	AAMHatch / Geomatix	GPS	2200810	25.02.2005

**EXPECTED ACCURACY**

Project specifications and technical processes were designed to achieve accuracies as follows:

	Measured Point	Derived Point	Basis of Estimation
Vertical data		0.15m	Deductive estimate / Project design
Horizontal data	< 0.55m		System specifications ( $1/2000$ flying height)
Test points		0.10m	Comparison with 798 test points

**NOTES ON EXPECTED ACCURACY:**

- Values shown represent standard error (68% confidence level or 1 sigma), in metres.
- “Derived points” are those interpolated from a terrain model.
- “Measured points” are those observed directly.
- Accuracy estimates for terrain modeling refer to the terrain definition on clear ground. Ground definition in vegetated terrain may contain localised areas with systematic errors or outliers which fall outside this accuracy estimate.
- Laser strikes have been classified into “ground” and “non-ground”, based upon algorithms tailored for major terrain/vegetation combinations existing in the project area. The definition of the ground may be less accurate in isolated pockets of dissimilar terrain/vegetation combinations.

**LIMITATIONS OF DATA**

- The definition of the ground under trees may be less accurate.
- Laser strike penetration through to the ground is reduced in areas of thick vegetation.

**DATA VALIDATION**

- Ground data in this volume has been compared to 798 test points obtained by field survey and assumed to be error-free. The test points were distributed in four groups across the mapping area and located on clear ground.
- Data classification has been manually checked and edited against the project orthophoto imagery.

**USE OF DATA**

- Intended use : Accurate terrain definition for natural resource management

#### 4. CONDITIONS OF SUPPLY

The data in this volume has been commissioned by **WIMMERA CMA**.

The data in this volume is provided by AAMHatch Pty Limited (AAMHatch) to **WIMMERA CMA** under the client's Terms of Engagement, which require **WIMMERA CMA** to assume beneficial ownership, subject to the following conditions:

1. This file (Readme\_1189505NOM.PDF) is always stored with the unaltered data contained in this volume.
2. The data is not altered in any way without the approval of AAMHatch. The data may be copied from this file to another.
3. The data is not used for purposes beyond that explicitly agreed in the description of the Services provided by AAMHatch.

Any breach of these conditions will result in the immediate termination of the license issued by AAMHatch, and **WIMMERA CMA** will indemnify AAMHatch from all resulting liabilities.

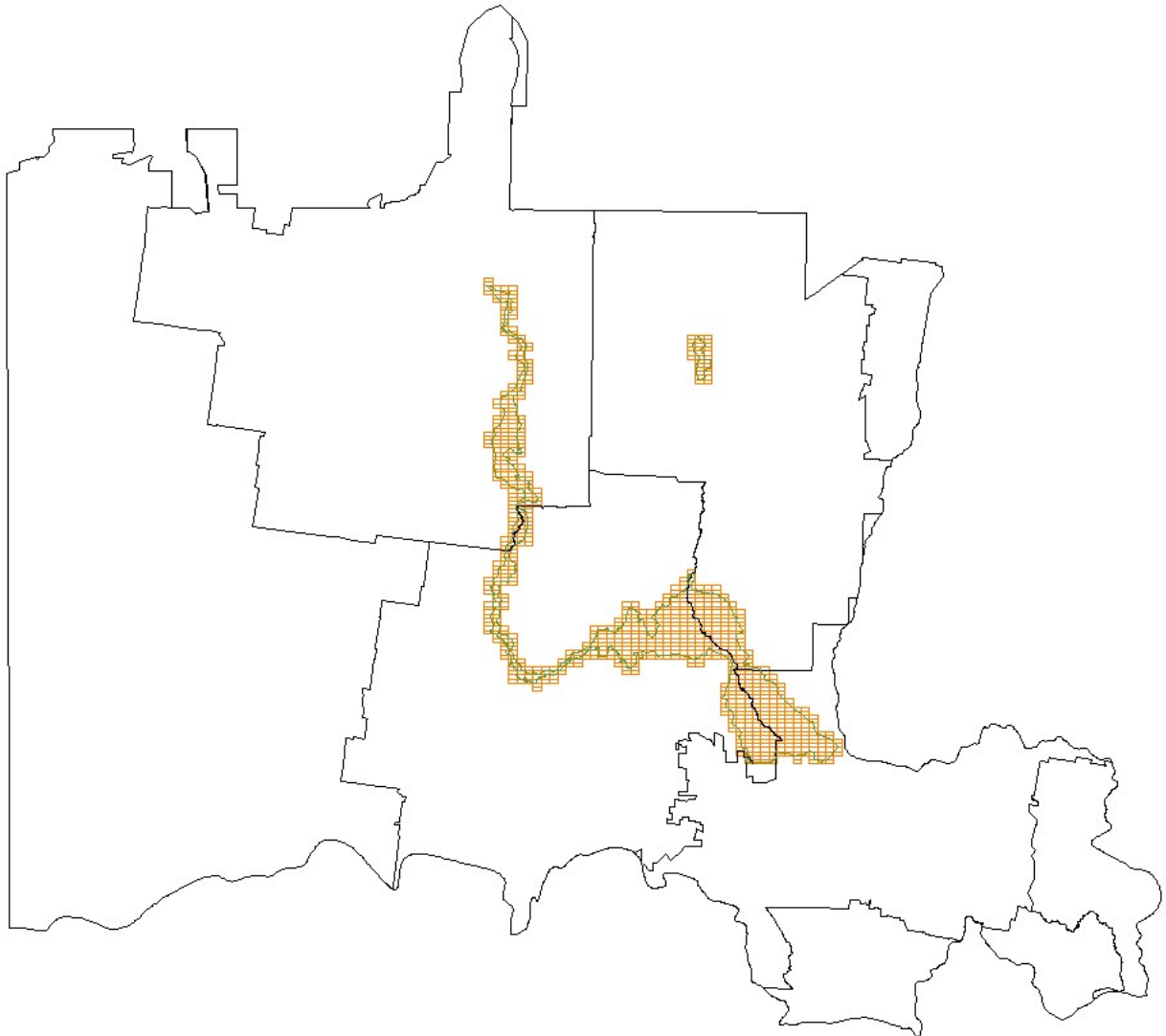
Any problems associated with the information in the data files contained in this volume should be reported to:

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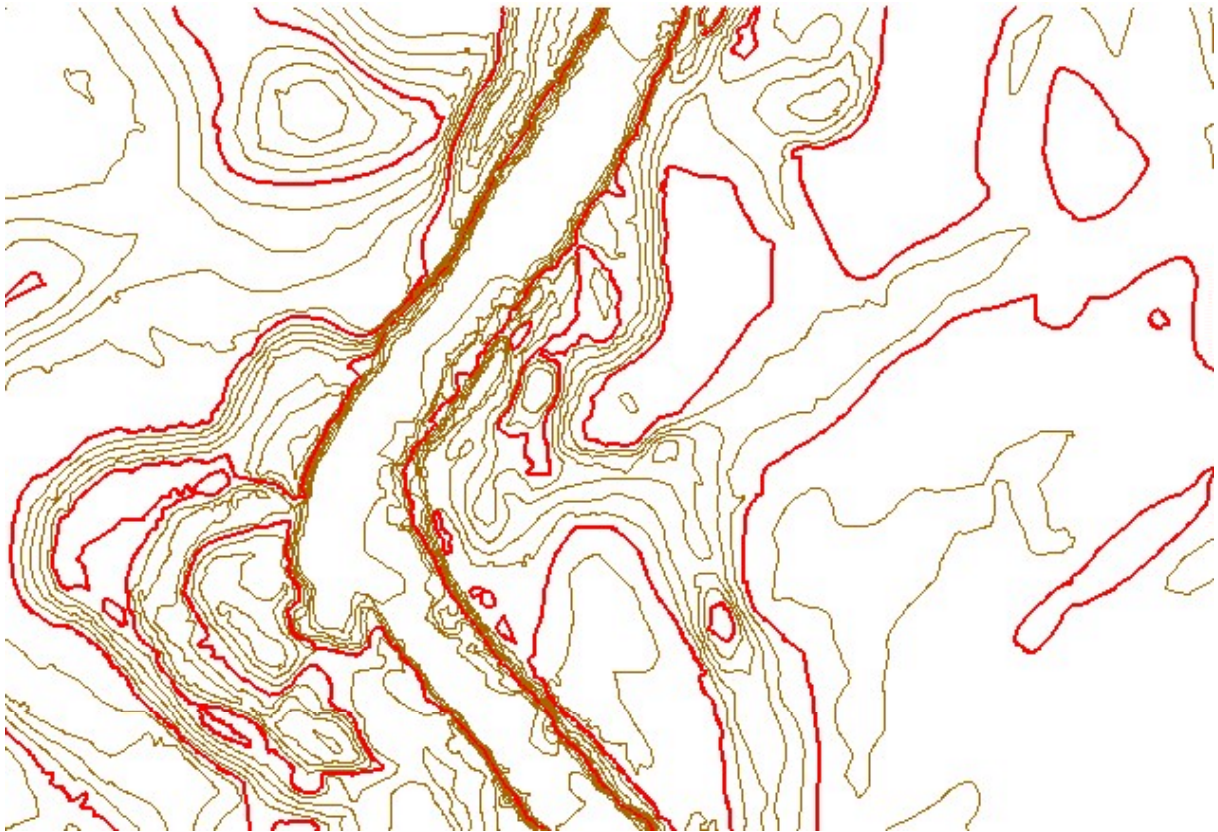
## 5. VALIDATION PLOTS

(i) Tiles supplied in this Volume





(ii) Screen grab of typical 0.5m cartographic contours (river)



(ii) Screen grab of typical 0.5m cartographic contours (flat terrain)

