

**Airborne Geophysical Survey
North East Tasmania**

Project 1143

October 2007

Survey Operations and Logistics Report

For

GEOSCIENCE AUSTRALIA



Survey Flown by:



GPX Airborne

Job 2249

1	GENERAL SURVEY INFORMATION	4
1.1	INTRODUCTION	4
1.2	SURVEY BRIEF	4
1.3	SURVEY PERSONNEL	6
1.4	SURVEY EQUIPMENT	7
1.5	SURVEY AREA.....	9
1.6	1:250,000 SHEET SERIES COVERED	10
1.7	SURVEY PARAMETERS.....	12
2	SURVEY EQUIPMENT SPECIFICATIONS.....	13
2.1	DATA ACQUISITION CONSOLE.....	13
2.1.1	<i>Navigation / Flight Control</i>	<i>13</i>
2.1.2	<i>Data Recording.....</i>	<i>14</i>
2.1.3	<i>Display of real-time collected Data and status monitoring.....</i>	<i>14</i>
2.1.4	<i>Data Retrieval.....</i>	<i>14</i>
2.2	MAGNETOMETER PROCESSOR	14
2.3	FIXED WING MAGNETOMETER SENSOR.....	16
2.4	HELICOPTER MAGNETOMETER SENSOR	16
2.5	FLUXGATE MAGNETOMETER.....	16
2.6	SPECTROMETER.....	17
2.7	TEMPERATURE AND HUMIDITY SENSORS.....	17
2.8	BAROMETRIC PRESSURE SENSOR	17
2.9	RADAR ALTIMETER	18
2.10	GPS/DGPS RECEIVER	18
2.11	GEM GSM-19W OVERHAUSER MAGNETOMETER	19
2.11.1	<i>Base Station Locations.....</i>	<i>20</i>
3	EQUIPMENT CALIBRATIONS AND DATA ACQUISITION CHECKS..	25
3.1	DYNAMIC MAGNETOMETER COMPENSATION	25
3.1.1	<i>Compensation results from flight 19 (29th March 2007).....</i>	<i>26</i>
3.1.2	<i>Compensation results from flight 81 (1st July 2007)</i>	<i>28</i>
3.2	HEADING ERROR CHECK.....	30
3.3	SYSTEM PARALLAX TESTS	32
3.4	ALTIMETER CALIBRATIONS	33
3.5	RADIOMETRIC FIXED WING CALIBRATIONS	33
3.6	RADIOMETRIC HELICOPTER CALIBRATIONS.....	34
3.7	DAILY RADIOMETRIC CHECKS.....	35
3.8	DAILY TIME SYNCHRONIZATION	37
3.9	SURVEY LINE NUMBERING SYSTEM	37
4	DATA VERIFICATION AND FINAL PROCESSING	38
4.1	IN FIELD DATA PROCESSING	38
4.1.1	<i>Altimeter Data</i>	<i>38</i>
4.1.2	<i>Flight Path Data.....</i>	<i>38</i>
4.1.3	<i>Magnetic Data.....</i>	<i>38</i>
4.1.4	<i>Radiometric Data</i>	<i>39</i>
4.1.5	<i>Digital Archives</i>	<i>40</i>
4.2	FINAL PROCESSING	41
4.2.1	<i>Altimeter Data</i>	<i>41</i>
4.2.2	<i>Radiometric Data.....</i>	<i>44</i>

4.2.3	<i>Digital Archives</i>	46
5	IMAGES	47
5.1	TOTAL MAGNETIC INTENSITY IMAGE	47
5.2	DIGITAL TERRAIN MODEL	48
5.3	TOTAL COUNT IMAGE	49
6	CONTRACTOR INFORMATION	50
7	APPENDIX A: FINAL LOCATED DATA FORMAT	51
7.1	MAGNETIC DATA FIXED WING.....	51
7.2	MAGNETIC DATA HELICOPTER	52
7.3	RADIOMETRIC DATA FIXED WING.....	53
7.4	RADIOMETRIC DATA HELICOPTER	55
8	APPENDIX B: FIXED WING WEEKLY PRODUCTION SUMMARY	57
9	APPENDIX C: HELICOPTER WEEKLY PRODUCTION SUMMARY	64
10	APPENDIX D: RADIOMETRIC CALIBRATIONS	85
10.1	THORIUM BUTTON TEST.....	85
10.1.1	<i>Fixed Wing</i>	85
10.1.2	<i>Helicopter</i>	88
10.2	LOW LEVEL TEST LINE	99
10.2.1	<i>Fixed Wing</i>	99
10.2.2	<i>Helicopter</i>	102
10.3	GROUND CALIBRATION POSITION CHECK	113
10.3.1	<i>Fixed Wing</i>	113
10.3.2	<i>Helicopter</i>	116
11	APPENDIX E: INCIDENT REPORTS	127

1 GENERAL SURVEY INFORMATION

1.1 INTRODUCTION

In March 2007, GPX Airborne commenced a fixed wing airborne magnetic and radiometric survey for Geoscience Australia in North East Tasmania. The survey was flown using a Cessna 210 and a helicopter which was used to fly the regions with more severe topographic relief. The Helicopter was a Eurocopter AS-350D Squirrel operated under contract to GPX Airborne by Heli Aust. This report summarizes the procedures, details and equipment used by GPX Airborne in the acquisition, verification and processing of the airborne geophysical data.

Client: Geoscience Australia
GPX Job Number: 2249.
Survey Area: North Eastern Tasmania.

Data Processing Bases: St Helens.
Ringarooma
Launceston.

Fixed Wing Mobilisation: 6th March 2007
Production: 18th March 2007 to 20th April 2007.
Demobilisation: 21st April 2007.

Helicopter Installation: 23rd April 2007 to 26th April 2007.
Calibrations: 26th April 2007 to 29th April 2007.
Mobilisation: 30th April 2007.
Production: 8th May 2007 to 12th September 2007.
Demobilisation: 13th September 2007.

Line km surveyed:
Fixed Wing: 21,202 Kms.
Helicopter: 30,796 Kms.
Total: 51,998 Kms.

1.2 SURVEY BRIEF

The fixed wing aircraft equipment installation, ground tests and radiometric calibration flights were carried out during August 2006 in Perth, Western Australia. Initially the fixed wing crew arrived at St Helens to perform the fixed wing part of the survey, which comprised of the Northern portion of the survey block. Early in April an area south of St Helens was marked as unsafe to be flown by the fixed wing aircraft, see the hashed green area on the map on page 11 of this report. Additionally the crew avoided flying over Mt Cameron and Mt Horror with the fixed wing aircraft, this was later flown with the helicopter system.

The fixed wing component of the survey was completed late in April and the aircraft was moved to NSW where the survey equipment was transferred to the helicopter. The altimeter stacks were flown out of Bankstown and the ground radiometric pad calibrations were done in Canberra before the aircraft was moved to Tasmania. Due to weather and operation issues the crew moved several times between the various bases, base stations were moved at the same time and repositioned as closely to the same place each time. The helicopter survey was completed on the 12th of September when the radiometric attenuation stack was performed near Avoca.

For both the fixed wing and helicopter survey there were 29.5 days lost due to weather and diurnal activity.

There was an additional 30 days down time was lost during the survey due to aircraft scheduled and non scheduled maintenance. For the fixed wing aircraft 11 days were lost for an aircraft engine change, 4 days were used for the standard hundred hourly maintenance of the aircraft, 2 days were lost due to fuel contamination and 1 day for maintenance to the starter motor. The helicopter lost 9 days for normal hundred hourly maintenance, 1½ days lost for gearbox inspection and replacement, 1 day for stinger section replacement and ½ a day to inspect aircraft after a bird strike.

There were two incidents during the helicopter part of the survey. On the 10th May a farmer had threatened the aircraft which was flying over the farmers property. On the 15th August the aircraft struck a bird while on line, survey operations were suspended for the remainder of the day to allow for a comprehensive damage inspection to be completed.

1.3 SURVEY PERSONNEL

The following personnel were involved on this project:

Operations and Safety Manager:	Bob Blizzard Greg Reudavey	
Project Leaders	Jason Wooster Don Copley Daniel Ting Terry McCambridge	
Technical Support:	Bob Taylor Mike Barrett.	
Operators:	Don Copley Tim Cousins Daniel Ting Liam Parry Anthony Jenkinson	
Pilot:	Fixed Wing:	Noel Fuller Guy Nash Vincent Wong
	Helicopter:	Dale Bourke L. Garry M. Watson T. Duchworth J. McKinstry
Data Processing:	Cathy Car	

1.4 SURVEY EQUIPMENT

Survey Platform

Fixed Wing: Cessna 210 (VH-MNN).
Helicopter: Eurocopter AS-350D Squirrel (VH-JWD)

Data Acquisition System Pico Envirotec AGIS PC104 Console.
Magnetometer Processor Pico Envirotec MMS4 Magnetometer Processor
Magnetometer

Fixed Wing: Geometrics G-822A Cesium Vapour
Helicopter: Scintrex CS3 Cesium Vapour

Spectrometer

Fixed Wing: Exploranium GR820 (32 Litre Crystal)
Helicopter: Exploranium GR820 (16 Litre Crystal)

Fluxgate Magnetometer Billingsley TFM100-G2
GPS / DGPS Receiver CSI DGPSMax
Radar Altimeter Collins ALT-50A
Magnetic Base Stations Gem Systems GSM-19W
In-field Computer Toshiba Notebook
In-field Software Pico Envirotec PEIView, ChrisDBF



VH-MNN at St Helens.



VH-JWD in Launceston

1.5 SURVEY AREA

The following coordinates are in GDA94 / Map Grid of Australia zone 55 and defines the survey area.

Fixed Wing Area

EASTING	NORTHING
513512.1	5436583.4
495112.2	5459783.5
495112.2	5463583.5
518512.6	5463583.6
521312.6	5468383.6
524912.6	5468383.7
524912.6	5470583.7
540312.6	5470583.6
540312.7	5481183.6
578112.8	5481183.3
578112.8	5490183.4
587112.7	5490183.4
603912.6	5477583.3
614112.5	5460983.1
610112.4	5456583.1
607512.3	5438183.0
614512.4	5429383.1
610712.3	5423383.0
607312.2	5413783.1
606312.2	5406183.2

Helicopter Area

EASTING	NORTHING
574112.5	5362782.7
563712.5	5362782.7
547512.6	5392783.1
565112.6	5392783.0
555712.5	5406183.2
549512.5	5405183.2
547112.5	5399783.2
535512.4	5399783.2
528312.3	5414783.4
518512.1	5430183.5
512712.2	5437683.4
521112.2	5437683.4
521112.3	5442783.5
545712.6	5442783.7
545712.6	5446683.6
569112.6	5446683.3
569112.7	5450183.4
592312.4	5450183.2
592312.2	5403983.0
607112.2	5403983.2
610112.2	5396583.1
610112.3	5390183.1
608712.3	5388183.2
608712.3	5382583.1
604112.3	5382583.0
594112.2	5390583.0
586112.3	5390582.9
575112.4	5380982.8
575112.4	5376182.9

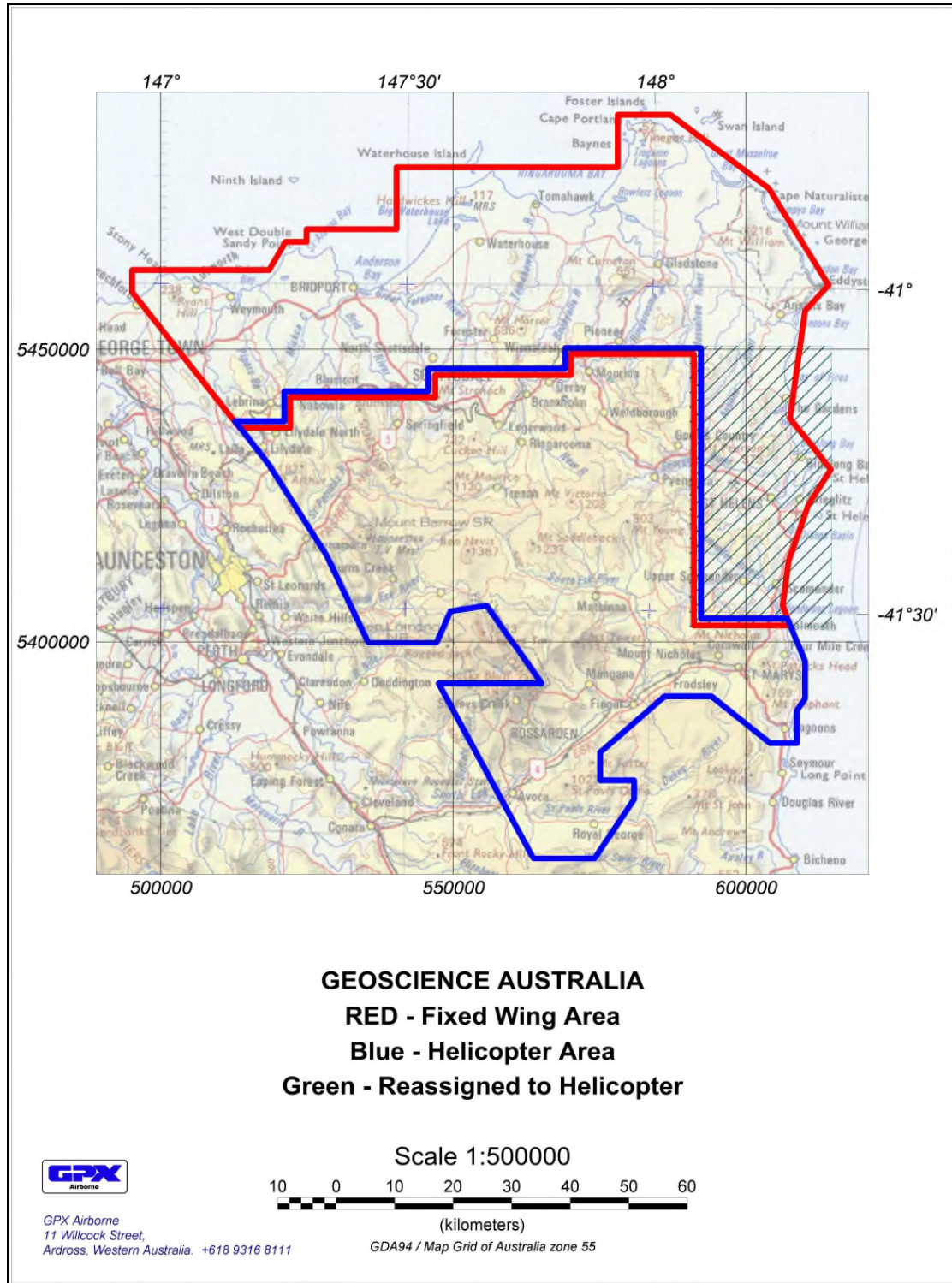
1.6 1:250,000 SHEET SERIES COVERED

The following 1:250,000 Australian mapping series maps that were in part covered by this survey:

1:250,000 Sheet Name

Tasmania North East

Tasmania South East



Survey Areas on Australian Topography

1.7 SURVEY PARAMETERS

Line spacing:	200 metres
Line direction:	090° and 270°
Tie line spacing:	2000 metres
Tie line direction:	000° and 180°
Minimum line length:	5000 metres
Sensor height:	60 metres
Magnetometer sample rate:	10 Hz
Spectrometer sample rate:	1 Hz recording 256 channels
Altimeter sample rate:	1 Hz
Base magnetometer sample rate:	1 Hz

2 SURVEY EQUIPMENT SPECIFICATIONS

2.1 DATA ACQUISITION CONSOLE

The Data Acquisition console is a Pico Envirotec AGIS PC104. This is a versatile multi-function system that is capable of operation in many different configurations, depending on platform type, navigation and system requirements. The AGIS PC104 provides the following functions:

- Navigation / flight control
- Data recording
- Display of real-time collected data and status monitoring
- Data retrieval access



Real time monitor and navigation console.

2.1.1 Navigation / Flight Control

The AGIS PC104 is used to guide the aircraft on a pre-defined flight plan that can be generated in UTM or Latitude/Longitude coordinates. The pre-defined flight plan can be designed to file prior to the start of the project, entered or altered in the AGIS system or delineated 'on-the-fly' e.g. while in the air flying the boundary and entering corner coordinates. Co-ordinates can only be entered in the WGS84 datum system, this has been implemented to avoid confusion and eliminate possible conversion errors. Normal survey altitude and ground speed, with pre-set tolerances are also entered.

The pilot display consisted of a 2-line strip display or more comprehensive Pilot Guidance Unit (PGU). The strip display is driven directly from the AGIS

PC104 console; whereas the PGU is a self-contained computer system that is capable of more demanding navigation functions such as “drape” flying using a pre-programmed altitude grid.

The desired flight line is selected from the operator interface, which will either be a keyboard or touch-screen.

2.1.2 Data Recording

The AGIS PC104 relates all acquired data to the instant position from the GPS receiver and records the collected data to three separate data files. The data is recorded in compressed binary format, to a commercial solid-state hard disk.

The flight path file is recorded from AGIS program start-up to shutdown and cannot be turned off by the operator. It contains position, timing, altitude and basic data.

The data file is recorded whenever the acquisition system is “On-line”. It contains all navigation data plus “enabled” data.

The raw data file, when enabled and supported by the GPS receiver in use, contains raw GPS data necessary for post-flight position correction. It is recorded from AGIS program start-up to shutdown.

2.1.3 Display of real-time collected Data and status monitoring

The AGIS displays flight path and geophysical data as it is acquired aiding the data quality control and real time navigation guidance. The user is presented with graphical representations of the survey area, flight lines, navigation status, and sensor data. The spectra data was also displayed.

Several other status indications are also provided which will either change state indicating a major system malfunction, such as a magnetometer or spectrometer failure, or will change state during normal operation, indicating data being written to a file etc

2.1.4 Data Retrieval

The AGIS PC104 provides facility to transfer the recorded data from the internal solid-state disk to compact flash media immediately following the completion of the survey flight. Recorded data is not deleted from the main disk until this “retrieved” data has been verified “error free”.

2.2 MAGNETOMETER PROCESSOR

The Magnetometer Processor is a Pico Envirotec MMS4 Magnetometer Processor. This is an advanced frequency-measuring device that can support several continuous signal magnetometers (Cs, He, K). It is a hardware-software designed system, exhibiting simplicity, easy interfacing and

substantial versatility. Magnetometer readings are synchronized with the PPS (Pulse Per Second) signal derived from the GPS for accurate timing.

The MMS4 contains 8 channels of analog differential inputs. The first 4 analog channels are sampled synchronously with MMS4 magnetometer at up to 50 samples per second. The remaining 4 analog channels are sampled at 10 samples per second. Analog data is integrated into the magnetometer data stream.

Specifications:

Input:	Coaxial - Larmour signal over DC Power Supply
Resolution:	0.0002 nT (Gamma) = 0.2 picoTesla
Sampling rates:	10, 20, 50 samples per second
Dynamic range:	15000 to 100000nT
Synchronization:	GPS – PPS (Pulse Per Second)
Data Storage:	Removable Compact Flash Memory

2.3 FIXED WING MAGNETOMETER SENSOR

The Magnetometer Sensor is a Geometrics G-822A, which employs an optically pumped cesium-vapour atomic magnetic resonance system that function as the frequency control element in an oscillator circuit.

Specifications:

Model:	Geometrics G-822A
Operating Range:	20,000 – 100,000 nT
Sensitivity:	Typically 0.002 nT P-P at a 10Hz sample rate
Heading Error:	< 0.15 nT over entire 360°
Output:	Larmour frequency, 3.498572 Hz/nT

2.4 HELICOPTER MAGNETOMETER SENSOR

The Magnetometer Sensor is a Scintrex CS3, which employs an optically pumped cesium-vapour atomic magnetic resonance system that functions as the frequency control element in an oscillator circuit.

Specifications:

Model:	Scintrex CS3
Type:	Cesium Vapour Magnetometer
Operating Range:	15,000 – 105,000 nT
Sensitivity:	0.002nT P-P in 0.1-1Hz bandwidth
Heading Error:	± 0.25nT inside the optical axis to the field direction angle range 20° to 70° and 110° to 160°
Output:	Larmour frequency, 3.498577 Hz/nT

2.5 FLUXGATE MAGNETOMETER

The Fluxgate Magnetometer is a Billingsley Ultra Miniature TFM 100G2. This unit is a low noise, high sensitivity unit, packaged into a compact housing. An analog DC output voltage is produced for each of the measured X, Y and Z orthogonal components of the current magnetic field.

Specifications:

Model:	Billingsley TFM 100G2
Axial Alignment:	Orthogonality better than ±1°
Sensitivity:	100uV / nT
Noise:	20pT RMS / Hz @ 1Hz
Output:	± 100uT = ± 10V

2.6 SPECTROMETER

The Spectrometer is an Exploranium GR820 system. The unit comprises of 2 detector crystal packs which were used on the fixed wing component of the survey, which give a total volume for detection of 32 litres. The helicopter part of the survey used a single pack which had a volume of detection of 16 litres. The spectrometer employs automatic gain stabilisation control to eliminate the need to heat the detectors. Signal processing automatically perform digital gain control to the individual crystal spectra, ensuring the summed spectrum is stable.

Model:	Exploranium GR820
Sensitivity:	0 – 3.0 MeV
Maximum count rate:	100,000 counts/sec
Detector volume:	16.7 Litres (each)
Detector weight:	83.9 kgs (each)

2.7 TEMPERATURE AND HUMIDITY SENSORS

The Temperature and Humidity transmitter is a Vaisala HMP233. The unit provides both a digital RS232 output and Analogue voltage or current output directly proportional to the measured Temperature and Humidity. The unit is a commercial grade device housed in a rugged aluminium enclosure.

Specifications:

Model:	HMP233
Humidity Range:	0 – 100% RH
Humidity Accuracy:	±1 %RH (0...90 %RH) ±2 %RH (90...100 %RH)
Temperature Range:	-40 to +80°C
Temperature Accuracy:	± 0.1°C
Analog Output Accuracy:	±0.05 % full scale

2.8 BAROMETRIC PRESSURE SENSOR

The Barometric Pressure transmitter is a Vaisala PTB220. The unit provides both a digital RS232 output and Analogue voltage or current output directly proportional to the measured Barometric Pressure. The unit is a Class “A” commercial grade device housed in a rugged aluminium enclosure.

Specifications:

Model:	PTB220
Range:	500 – 1100 hPa
Resolution:	0.01 hPa
Accuracy at +20°C:	± 0.1 hPa

2.9 RADAR ALTIMETER

The Radar Altimeter is a Rockwell Collins ALT-50 two-antenna unit operating at a centre frequency of 4300MHz. The voltage output to the data system is directly proportional to the aircraft flying height with an output characteristic of 20mV/ft up to 500ft, then 10.4V + 3mV/ft above 500ft.

Specifications:

Model:	Collins ALT-50A Radio Altimeter System
Accuracy:	± 3ft - 0 to 150ft range ± 2% of indicated altitude – 150 to 500ft range ± 3.5% of indicated altitude – 500 to 200ft range
Measurement Rate:	Same rate as magnetometer, 10Hz minimum.

2.10 GPS/DGPS RECEIVER

The DGPS receiver is a CSI DGPS MAX, which is a 12-channel combined GPS/DGPS unit. The DGPS MAX is able to use differential corrections received through an internal WAAS demodulator, VLF beacon receiver, or the OmniSTAR DGPS Service.

Specifications:

Receiver:	CSI DGPS MAX
GPS Position update rate:	5Hz
GPS Input frequency:	L1
Antenna:	Wideband – Stinger Mounted
DGPS Update rate:	Typically every 6 seconds
DGPS Solution Used:	OmniSTAR VBS

2.11 GEM GSM-19W OVERHAUSER MAGNETOMETER

The Earth's diurnal activity was monitored using a GEM GSM-19W Overhauser Magnetometer and sampled at 1 Hz. The portable unit has a built-in GPS receiver.

Specifications:

Model:	GEM GSM-19W Overhauser
Type:	Overhauser Magnetometer
Resolution:	0.01 nT
Sensitivity:	0.02 nT
Absolute Accuracy:	+/- 0.1nT
Dynamic Range:	10,000 to 120,000 nT
Sampling Rate:	1 hour to 5 Hz
Data Storage:	Internal memory
Data Retrieval:	Up to 115,200bps serial transfer

2.11.1 Base Station Locations



Base station magnetic and GPS sensors

The primary base station at St Helens was located at

Longitude: 148° 15' 01.4" E

Latitude: 41° 21' 31.5" S



Sketch of the base station location at St Helens
(Image courtesy of Google Earth)

The primary base station at Launceston was located at

Longitude: 147° 11' 32.8" E

Latitude: 41° 32' 36.5" S



Sketch of the base stations location at Launceston
(Image courtesy of Google Earth)

The primary base station at Ringarooma was located at

Longitude: 147° 42' 29.2" E

Latitude: 41° 16' 51.7" S

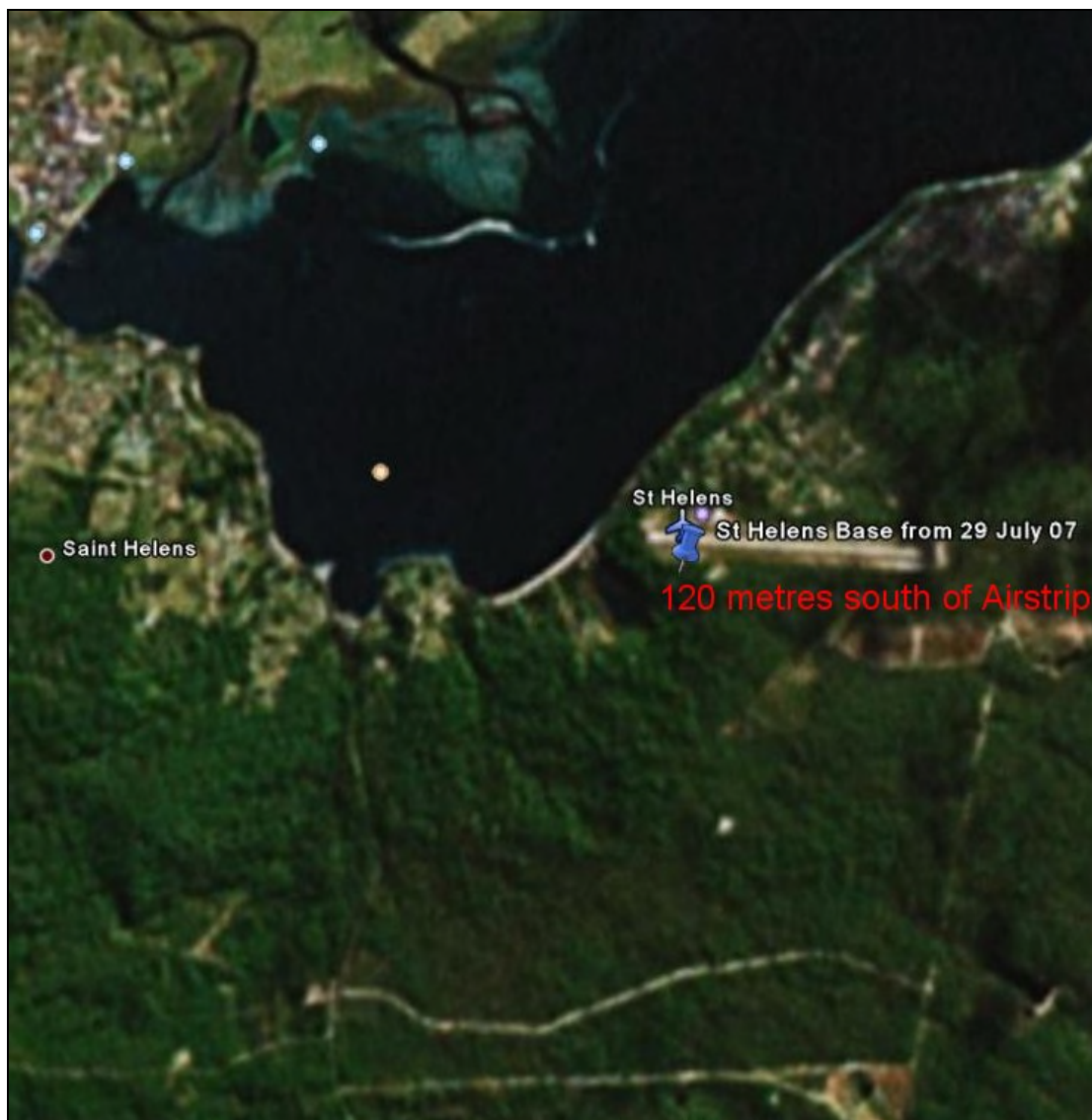


**Sketch of the base stations location at Ringarooma
(Image courtesy of Google Earth)**

The primary base station at St Helens after 24th July 2007 was located at

Longitude: 148° 16' 49.7" E

Latitude: 41° 20' 20.2" S



Sketch of the base stations location at Ringarooma
(Image courtesy of Google Earth)

3 EQUIPMENT CALIBRATIONS AND DATA ACQUISITION CHECKS

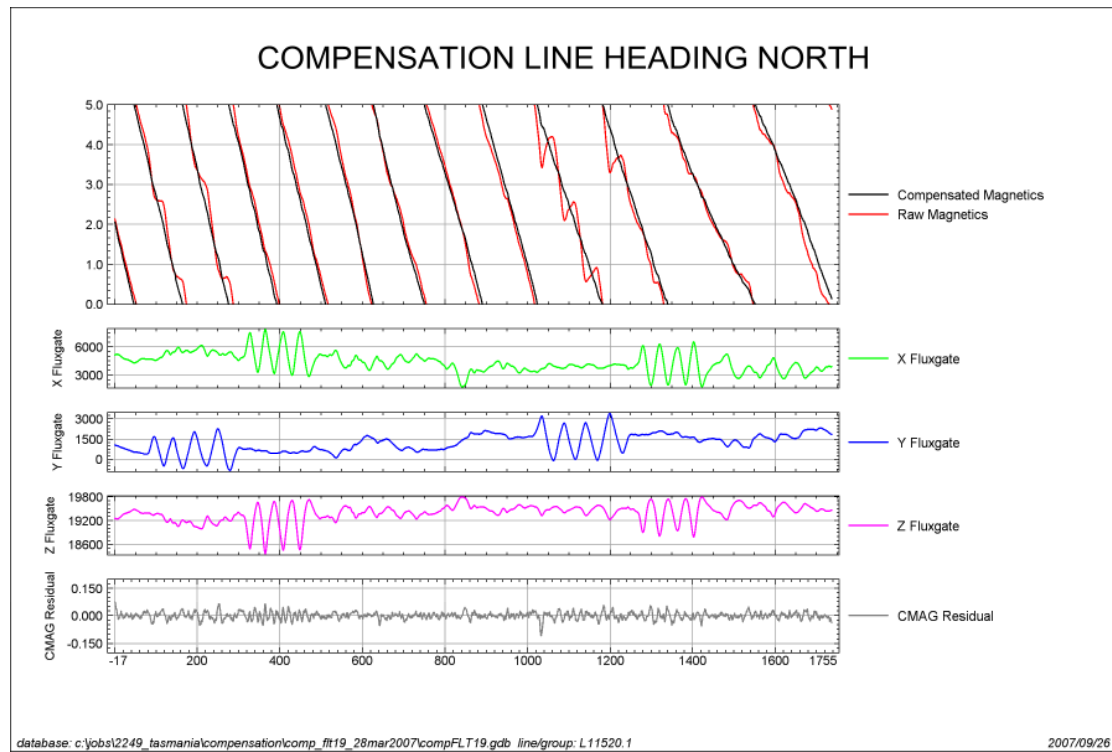
3.1 DYNAMIC MAGNETOMETER COMPENSATION

Aircraft compensation tests were flown at high altitude on the 4 survey line headings and also at $\pm 15^\circ$ to the line headings (to accommodate for cross wind flying conditions). The data for each heading consists of a series of aircraft manoeuvres with large angular excursions: specifically pitches, rolls and yaws. This is done to artificially create the worst possible attitudes and rates of attitudinal change likely to be encountered while on line and compensate for any magnetic noise created by the aircraft's motion within the earth's magnetic field. This data is processed to obtain the REAL TIME COMPENSATION terms of which the aircraft used the standard 17-term model. These terms include permanent, induced and eddy values. These coefficients may be applied in real time or during post processing. Note that this form of compensation will only remove those noise effects modelled in the manoeuvres test flight. External noise sources and random motions of the stinger with respect to the aircraft airframe generally establish the noise floor for this type of installation. The surveyor's goal is to achieve a 4th difference noise level on the order of 0.01nT RMS during normal surveying conditions. In general, this noise level was routinely achieved or bettered as a matter of course.

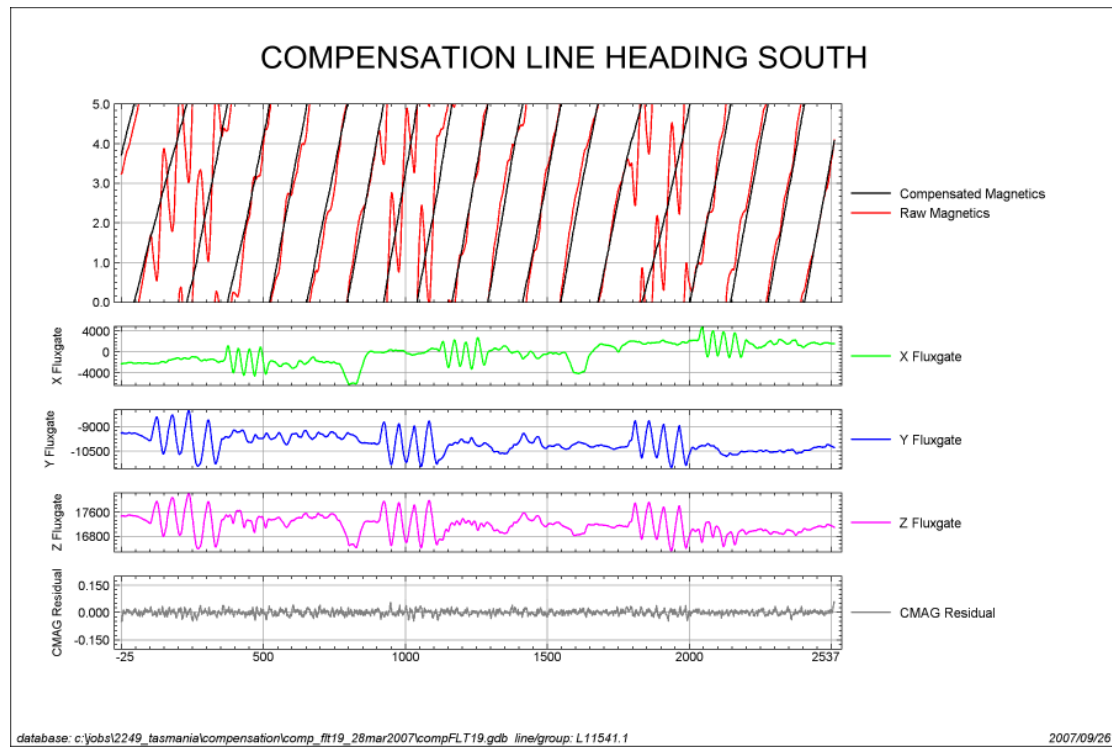
The following is a list of dates in which a compensation test had been flown and the flights they were used on.

Compensation flight date	Flight range compensation applied to
29 th March 2007	Fixed Wing Flights 1 to 50
27 th July 2007	Helicopter flights 1 to 68

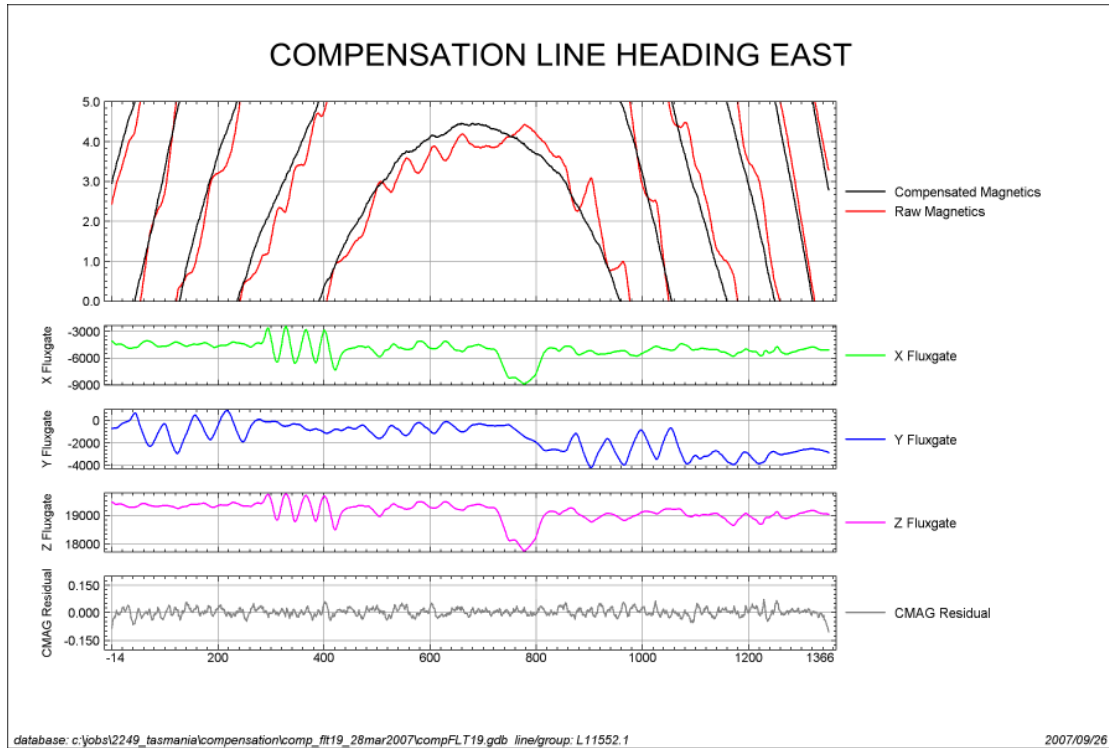
3.1.1 Compensation results from flight 19 (29th March 2007)



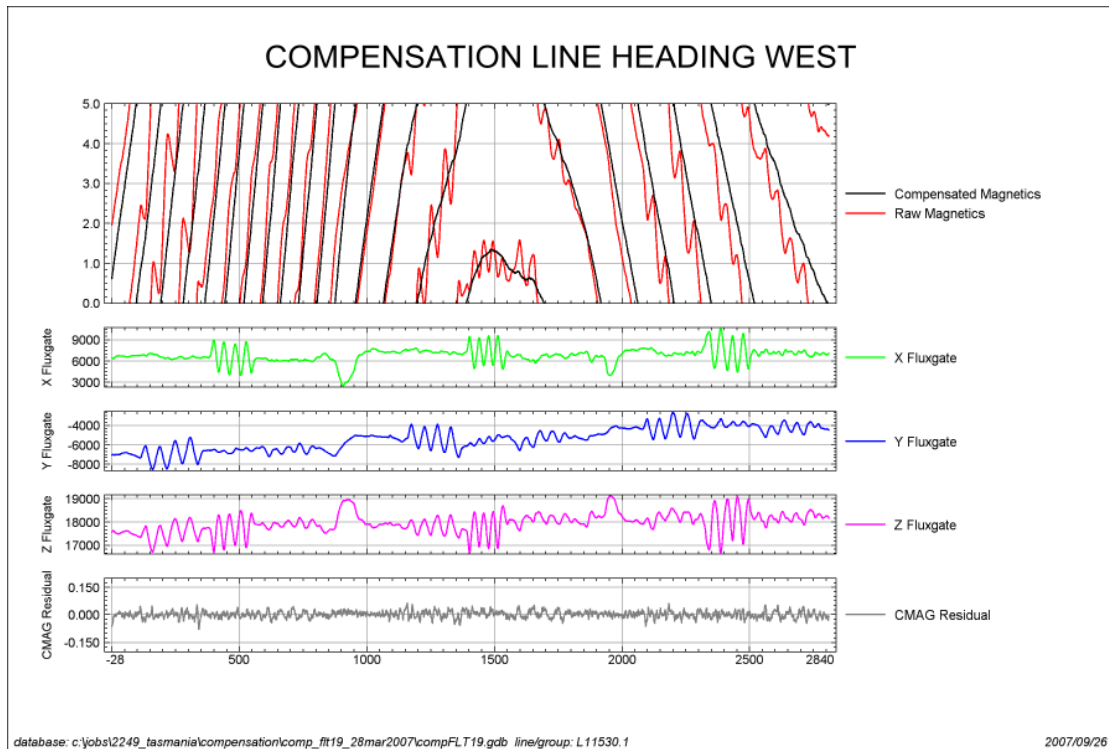
(Bottom profile shows the resultant maneuver noise)



(Bottom profile shows the resultant maneuver noise)

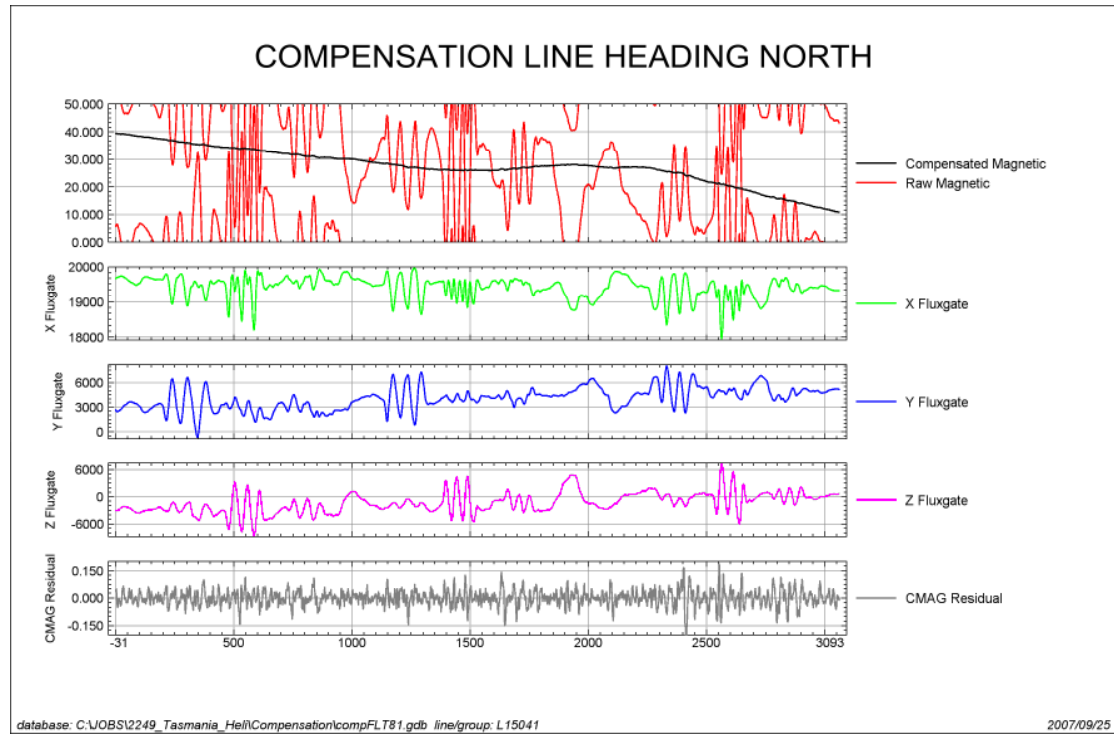


(Bottom profile shows the resultant maneuver noise)

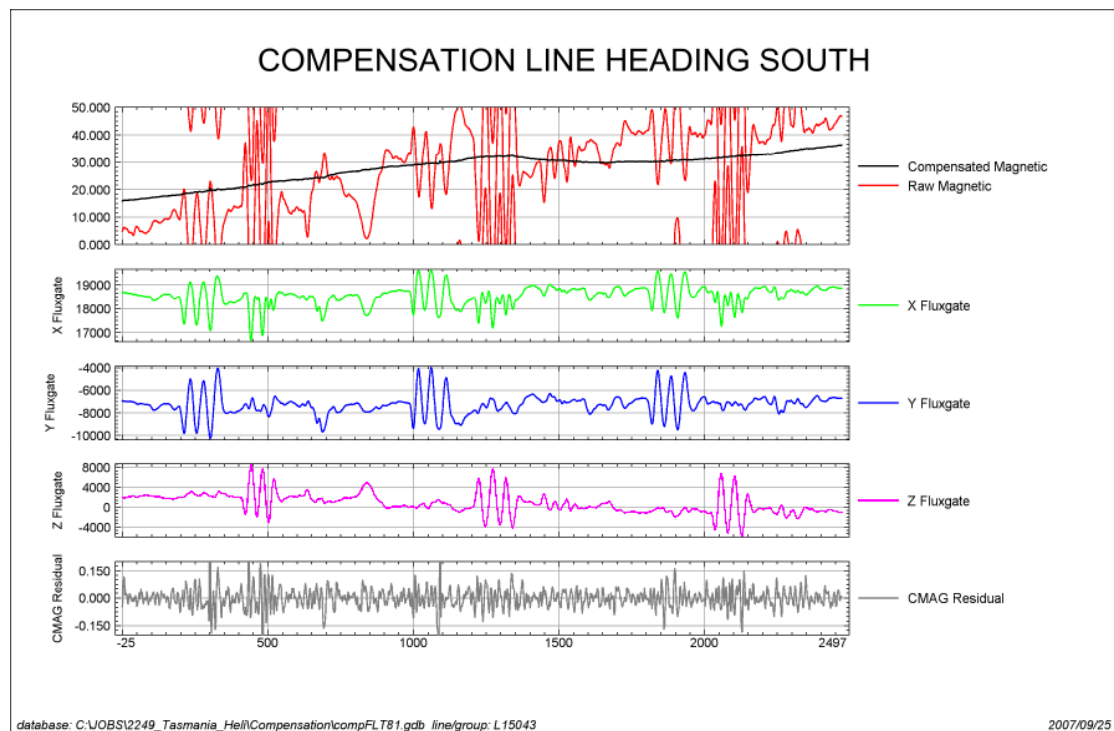


(Bottom profile shows the resultant maneuver noise)

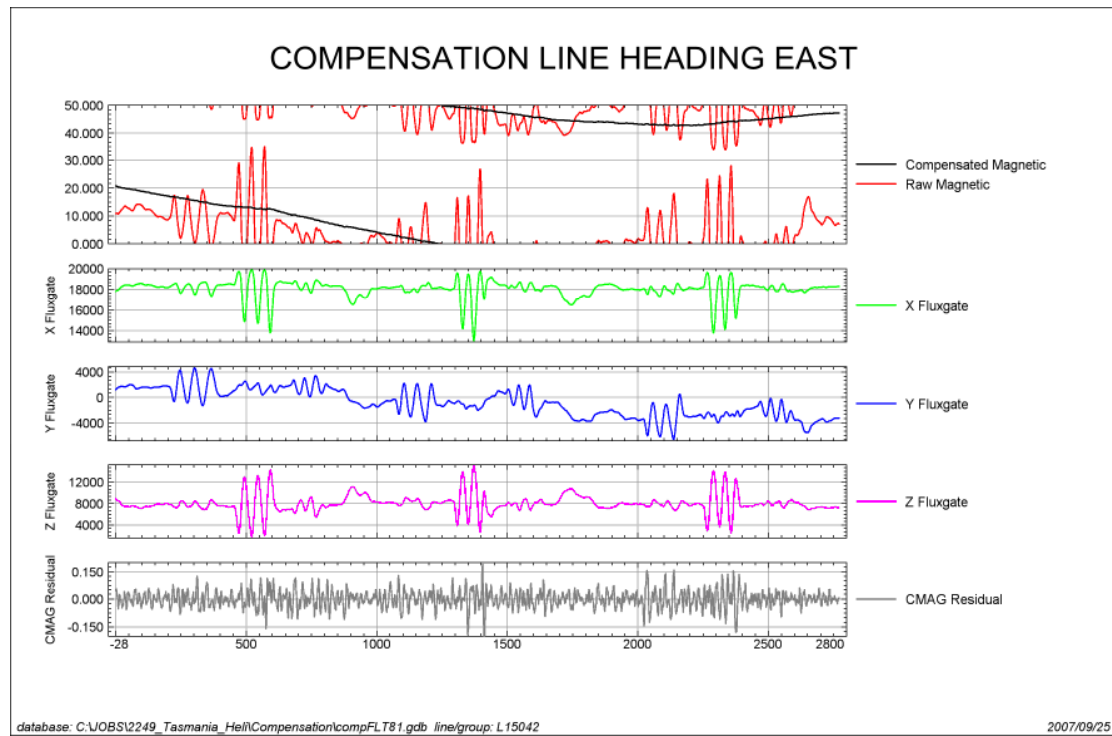
3.1.2 Compensation results from flight 81 (1st July 2007)



(Bottom profile shows the resultant maneuver noise)



(Bottom profile shows the resultant maneuver noise)



(Bottom profile shows the resultant maneuver noise)



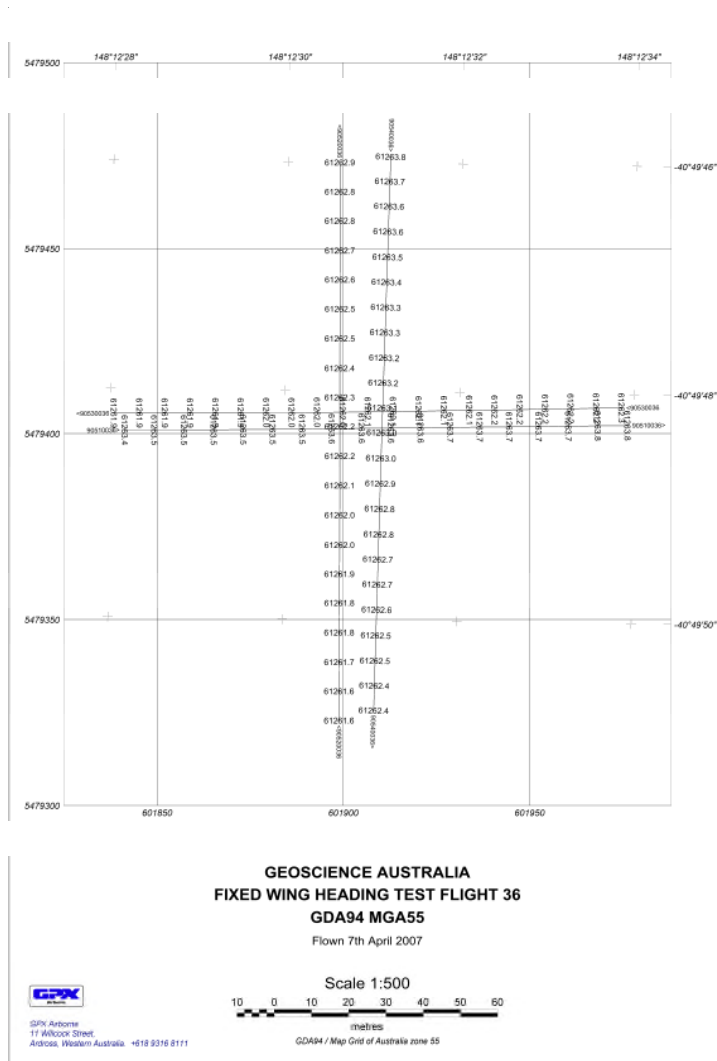
(Bottom profile shows the resultant maneuver noise)

3.2 HEADING ERROR CHECK

Historically, heading error checks have been an essential part of the aeromagnetic data acquisition procedure but their importance now has diminished. GPX Airborne now corrects for these effects using the dynamic aircraft magnetic compensation system and specially developed software. In the past, repeatable heading errors of less than one nanotesla (1.0nT) were considered good. Dynamic compensation typically yields heading errors in the order of 0.1 to 0.3 nT, which are effectively eliminated by modern data levelling techniques.

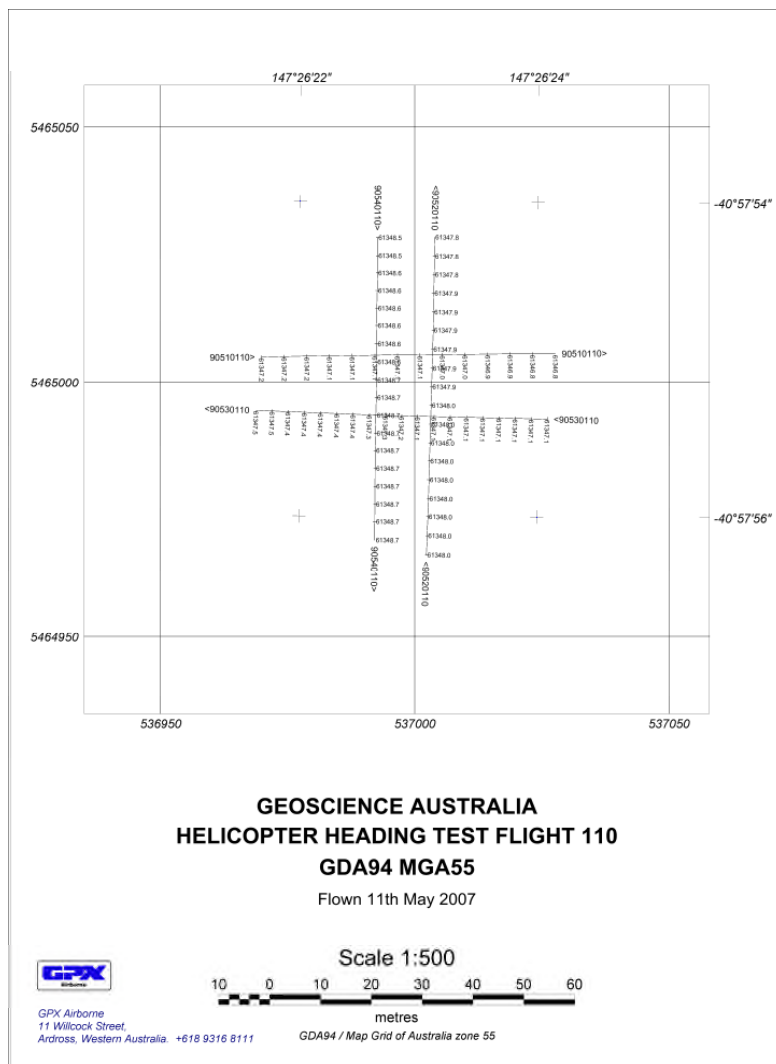
Results from heading check of VH-MNN at commencement of survey.

Line Number	Heading	Minimum	Maximum	Mean	Heading	Std.dev.	# of readings
L90510036:0	East	61263.431	61263.788	61263.606	0.891	0.114	18
L90520036:0	North	61261.573	61262.902	61262.226	-0.489	0.419	20
L90530036:0	West	61261.885	61262.25	61262.059	-0.656	0.118	21
L90540036:0	South	61262.362	61263.763	61263.044	0.329	0.432	23
ALL		61261.573	61263.788	61262.715		0.69	82



Results from heading check of VH-JWD

Line Number	Heading	Minimum	Maximum	Mean	Heading	Std.dev.	# of readings
L90510110:0	East	61346.791	61347.183	61347.025	-0.728	0.137	14
L90520110:0	North	61347.814	61348.04	61347.944	0.191	0.072	18
L90530110:0	West	61347.108	61347.494	61347.255	-0.498	0.144	19
L90540110:0	South	61348.519	61348.748	61348.654	0.901	0.068	18
ALL		61346.791	61348.748	61347.753		0.644	69



3.3 SYSTEM PARALLAX TESTS

One of the processing parameters required to process digital data was the parallax or offset time, between the time the digital reading was taken by the instrument and the time the position fix for the fiducial of the reading was obtained. Each instrument - magnetometer, altimeter - may have a different parallax, so the parallax must be computed for each instrument.

The parallax correction derived is the correction to be applied to each survey line. A positive parallax indicates the instrument reading is ahead of the position of the fiducial. Each integer fiducial represents one second so the parallax can be expressed in either fiducial or seconds.

The correct fiducial is computed by:

$$\text{Parallax corrected fid} = \text{Fid for recorded reading} - \text{Instrument parallax}$$

Results of parallax test. VH-MNN

Channel	Parallax applied
Position	0.6
Magnetic	1.6
Radiometric data	0.0
Radar Altimeter	1.6
Barometric Altimeter	1.6
GPS derived DEM	0.0
Barometric derived DEM	0.0
Temperature	1.6
Pressure	1.6
Humidity	1.6
GPS Altimeter	0.6
Fluxgates	0.0

Results of parallax test. VH-JWD

Channel	Parallax applied
Position	2.5
Magnetic	1.5
Radiometric data	0.0
Radar Altimeter	1.5
Barometric Altimeter	1.5
GPS derived DEM	0.0
Barometric derived DEM	0.0
Temperature	1.5
Pressure	1.5
Humidity	1.5
GPS Altimeter	2.5
Fluxgates	0.0

3.4 ALTIMETER CALIBRATIONS

The height of the aircraft above ground is recorded by a radar altimeter as a voltage every 0.1 second. The voltage data is converted to height via a lookup table determined by calibration with the GPS altitude.

3.5 RADIOMETRIC FIXED WING CALIBRATIONS

The results of radiometric calibrations conducted by flying over the Yarra Yarra salt lake, and the Carnamah test range in Western Australia. The Pad tests were completed in August 2006 at the Jandakot Airport.

Data acquisition was by GPX Airborne, using a Cessna 210, VH-MNN. The total crystal volume was 33 litres.

The Calibration methods are as generally described by Grasty and Minty (1995).

A summary of the results for VH_MNN is shown in Table 1 below.

VH-MNN	Date	Window	Value
Aircraft Background	9-August 2006	TC	81.67
		K	23.35
		U	0.59
		Th	0.67
Cosmic Background	9-August 2006	TC	0.811201
		K	0.044663
		U	0.038646
		Th	0.043791
Stripping	1-August 2006	Alpha	0.2500
		Beta	0.4000
		Gamma	0.8100
		a	0.0600
		b	-0.0089
		c	-0.0041
Height Attenuation	4-August 2006	TC	0.006928
		K	0.009043
		U	0.007186
		Th	0.006892
Air/Ground @90m	4-August 2006	Dose	31.243915
		K	113.982381
		U	10.5493357
		Th	6.47931431

3.6 RADIOMETRIC HELICOPTER CALIBRATIONS

The results of radiometric calibrations conducted by flying over a test range South East of Launceston, Tasmania. The Pad tests were completed in March 2007 using the calibration pads stored at Geoscience Australia in Symonston. Background checks were performed in March 2007 near Bankstown, NSW.

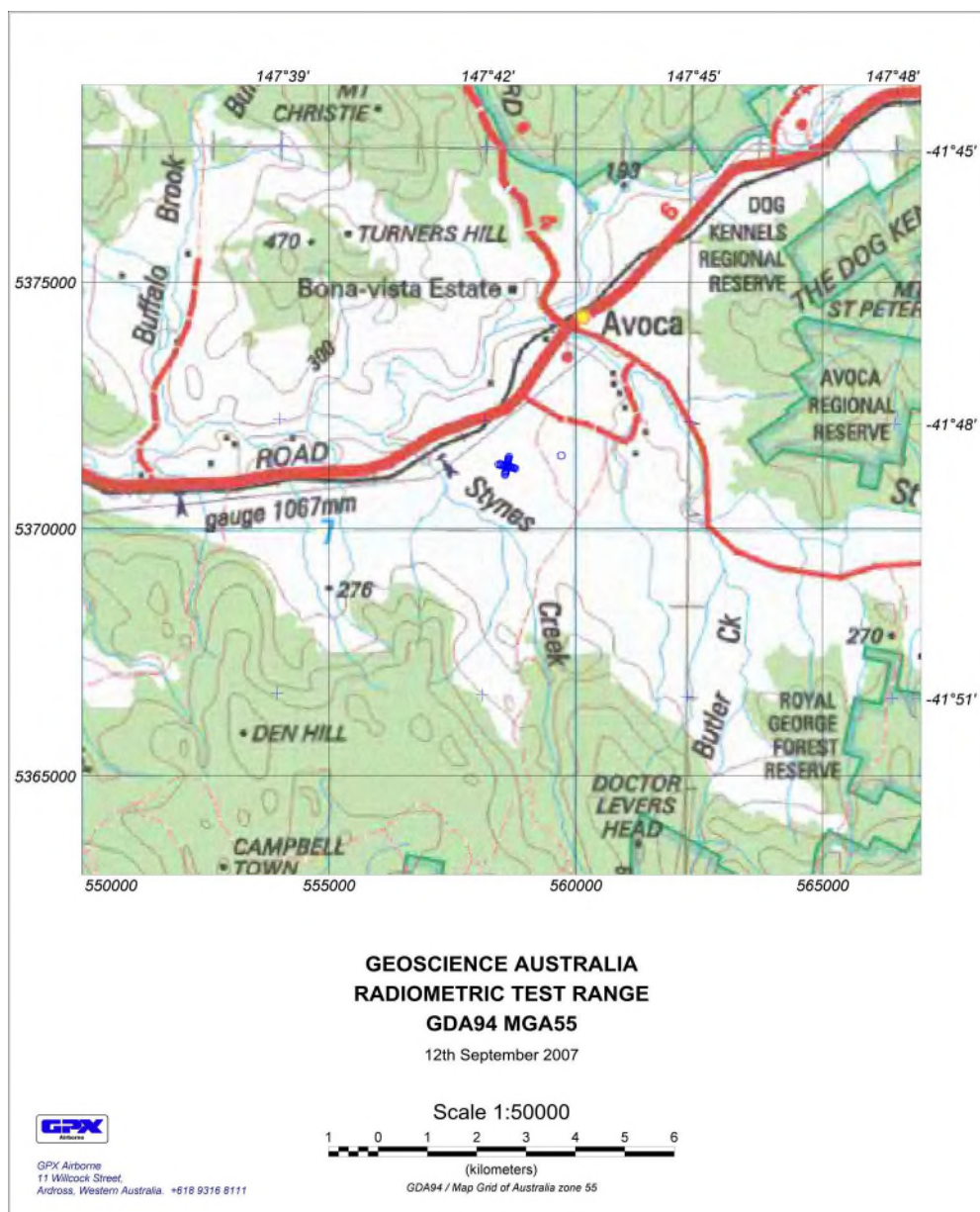
Data acquisition was by GPX Airborne, using a Eurocopter AS-350D Squirrel, VH-JWD. The total crystal volume was 16 litres.

The Calibration methods are as generally described by Grasty and Minty (1995).

A summary of the results for VH-JWD is shown in Table 1 below.

VH-JWD	Date	Window	Value
Aircraft Background	27-March 2007	TC	68.07
		K	8.74
		U	2.34
		Th	1.43
Cosmic Background	27-March 2007	TC	0.809713
		K	0.066459
		U	0.033387
		Th	0.046899
Stripping	29-March 2007	Alpha	0.2540
		Beta	0.5145
		Gamma	0.7997
		a	0.0692
		b	-0.0089
Height Attenuation	12-September 2007	c	-0.0041
		TC	0.009414
		K	0.012094
		U	0.009558
Air/Ground @90m	12-September 2007	Th	0.009178
		Dose	18.9500
		K	57.2600
		U	5.4300
		Th	3.9700

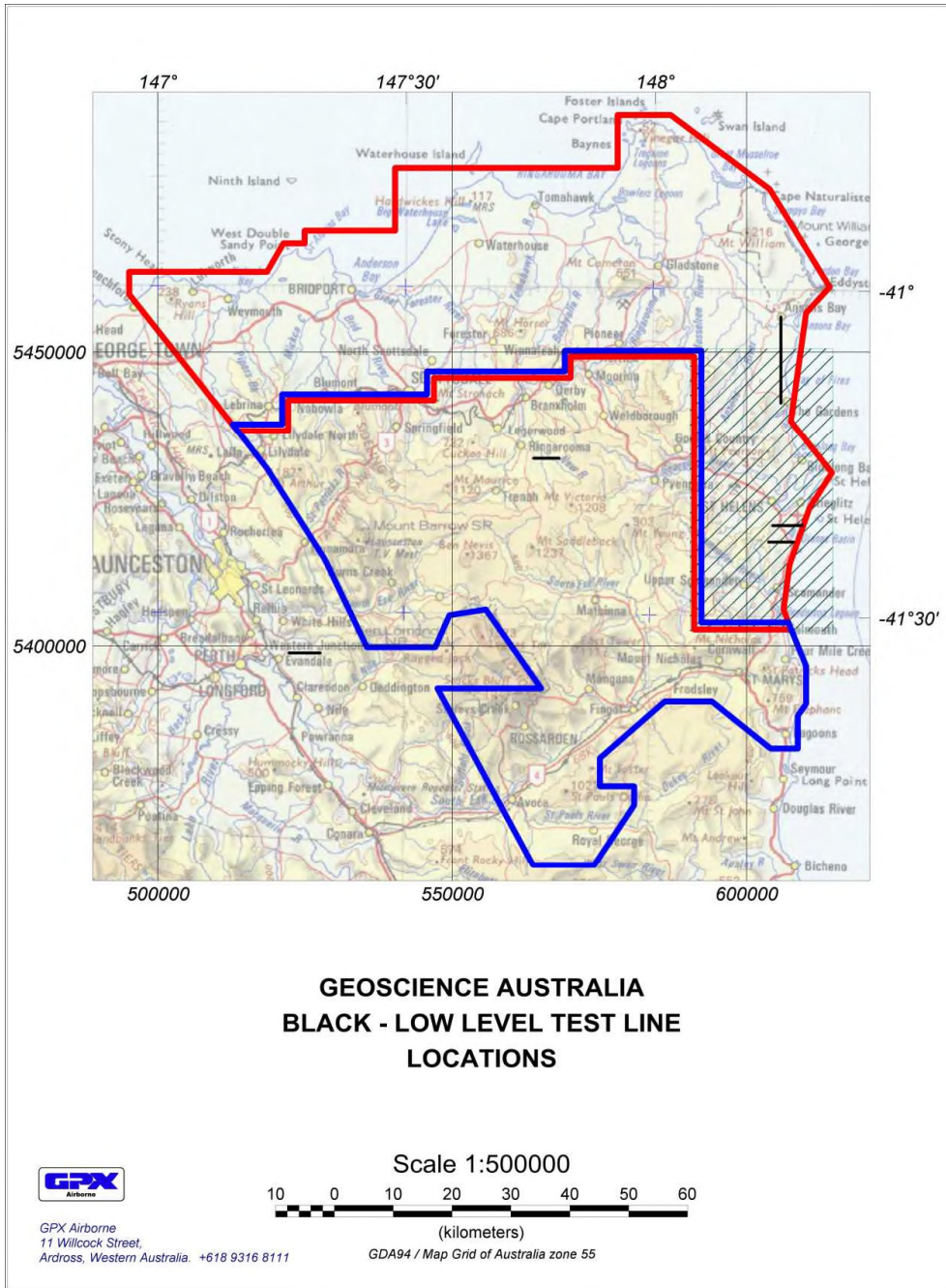
The test range selected was situated 3 ½ Kms South West of Avoca over a radiometric consistent paddock. The test involved the Helicopter hovering over a central point located at 558607mE and 5371260mN (147° 42' 20.0"E, 41° 48' 30.1")



3.7 DAILY RADIOMETRIC CHECKS

A system stability test was performed at the start and end of each day. This was done using a thorium source placed a least 40cm from the centre of each detector. The average deadtime and background corrected thorium window was calculated and checked to be within 3 percent from the average of all other calibrations.

Additionally a low-level test line was flown of at least 100 seconds in duration, this was used to establish that the soil moisture had not changed significantly and that the spectrometer system is functioning correctly.



Low level test line locations

Start Easting	End Easting	Start Northing	End Northing	Length of Line
605824	605824	5455930	5441289	14.6
604455	609465	5420377	5420377	5
603739	607960	5417617	5417617	4.2
563817	568151	5431805	5431805	4.3
522245	527534	5398796	5398796	5.3

All coordinates are in GDA94 Map Grid of Australia Zone 55

3.8 DAILY TIME SYNCHRONIZATION

Before each days survey the magnetic base station is automatically synchronized with the GPS receiver time in the aircraft. Prior to the commencement of survey, the temporal drift of this base station was determined. The unit is automatically updated by the GPS so there is no time drift in the system.

3.9 SURVEY LINE NUMBERING SYSTEM

The first digit in any line number represents the area number, i.e. 100050 is area no. 1.

The next four numbers are the line number it self, i.e. 101030 is line number 103.

All Tie lines begin with the digit 7, i.e. 170020.

The sixth digits of any line number represent the attempt number, i.e. 100010 is the first attempt.

4 DATA VERIFICATION AND FINAL PROCESSING

4.1 IN FIELD DATA PROCESSING

All data verification and preliminary processing and map production was conducted at the field office using a Toshiba Notebook computer. ChrisDBF was the primary field quality control software.

At the conclusion of each days survey all magnetic, radiometric, altimeter, flight path and diurnal data was transferred via compact flash memory onto the office computer for preliminary data verification.

4.1.1 Altimeter Data

Radar Altimeter Data

The radar altimeter is verified to check that a reasonably constant height above the terrain specified in section 1.7 was flown; readings during the course of the survey did not exceed the specified tolerances. The radar altimeter data is used in the production of digital terrain maps.

GPS Height Data

The aircraft's height above mean sea level each second was determined by data from the post-processed GPS. The GPS height of the aircraft is verified to check for data masking and for equipment reliability. The GPS height data is used in the production of digital terrain maps.

Digital Terrain Data

After verification the radar altimeter height was subtracted from the GPS height to give the elevation of the terrain above mean sea level.

Gridding and Inspection

The digital terrain data was gridded and grid image enhancements were computed and displayed on screen. These were viewed also with the aid of crossline sun angles and inspected for inconsistencies and errors and appropriate corrections were made if required.

4.1.2 Flight Path Data

The flight path is plotted daily to ensure it was within survey specifications. Any data not within specification was re-flown. The aircraft GPS recorded the data in the WGS84 datum.

4.1.3 Magnetic Data

The raw un-edited magnetic data was checked to identify noise and spikes. Single reading spikes were manually edited and if the noise exceeded the contract specifications, the line was re-flown.

Magnetic Diurnal Data

Diurnal data recorded every 1 second from the primary base station was downloaded from the magnetometer's memory onto the field processing computer via compact flash. The diurnal data was then checked and corrected for spikes. Single reading spikes were manually edited and multiple erroneous readings flagged as invalid. If invalid diurnal data occurred whilst survey data was being acquired the affected section was re-flown. The diurnal data was also checked to see that the change in diurnal readings during the course of the survey did not exceed the specified tolerances. When this occurred the affected survey lines were re-flown. The diurnal data was merged with the aircraft data and used in the verification of the magnetic data.

Diurnal Correction

The synchronized digital diurnal data collected by the base station was first subtracted from the corresponding airborne magnetic readings to calculate a difference. The resultant difference was then subtracted from the base value to produce diurnally corrected magnetic data.

Parallax Correction

The aircraft system parallax is also checked prior to project commencement. A parallax error correction of 0.0 second was used for in field verification.

Gridding and Inspection

The magnetic data was gridded and grid image enhancements were computed and displayed on screen. These were also viewed with the aid of crossline sun angles and inspected for inconsistencies and errors and appropriate corrections were made if required.

4.1.4 Radiometric Data

Spectra Verification

The 256-channel radiometric data is viewed to confirm that the spectra peaks are correctly calibrated. The following peak locations are checked daily.

- Potassium 1460 keV
- Uranium 1760 keV
- Thorium 2614 keV

Parallax Correction

The aircraft system parallax is also checked prior to project commencement. A parallax error correction of 0.0 second was used for in field verification.

Gridding and Inspection

The radiometric data was gridded and grid image enhancements were computed and displayed on screen. These were also viewed with the aid of crossline sun angles and inspected for inconsistencies and errors and appropriate corrections were made if required.

4.1.5 Digital Archives

All raw aircraft, and diurnal base data were backed up on CD-ROM disk at the end of each day's survey. A further backup of all raw and edited data remained on the field-processing computer for the entire duration of the project. A copy of each days flying was transferred to the company's ftp site for further verification.

4.2 FINAL PROCESSING

All final data processing of the data was performed in the offices of GPX Airborne. Raw field data was transferred to the offices and processed to produce the final data. No field-processed data was used in the making of the final data. The final processing of the data follows the same quality control checks that are made in the field, however the final data has additional processes performed.

4.2.1 Altimeter Data

Radar Altimeter Data

The radar altimeter is verified to check that a reasonably constant height above the terrain specified in section 1.7 was flown; readings during the course of the survey did not exceed the specified tolerances. The radar altimeter data is used in the production of digital terrain maps.

GPS Height Data

The aircraft's height above mean sea level each second was determined by data from the post-processed GPS. The GPS height of the aircraft is verified to check for data masking and for equipment reliability. The GPS height data is used in the production of digital terrain maps.

Parallax Correction

A parallax error correction as described in section 3.3 was applied to the coordinate data.

Tie Line Levelling

A crossover program was used to compute the height difference between each tie line and the traverse line intersection. These differences were then applied to level the traverse lines to the tie lines.

Micro Levelling

Micro levelling was used to remove residual differences with a long wavelength along line and short wavelength across line. Application of the micro levelling process removed the streaks that were sometimes visible when using various grid enhancements. The process used a window width of 17 grid cells and a tolerance of 5m.

Digital Terrain Data

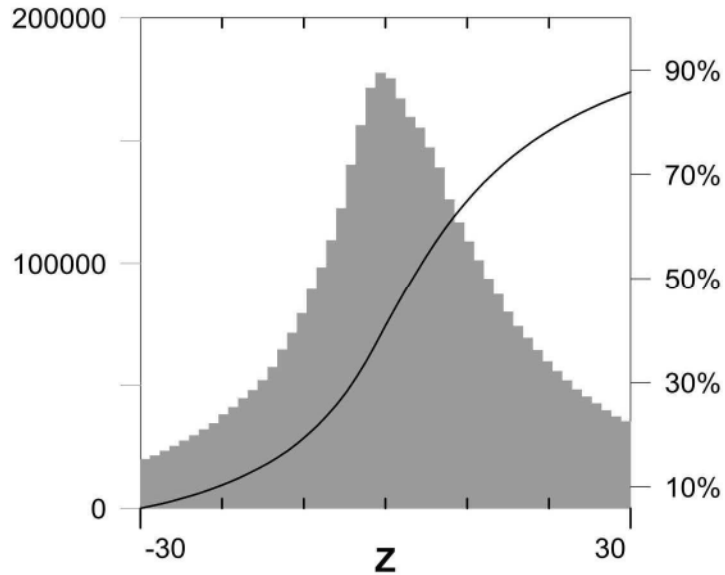
After verification the radar altimeter height was subtracted from the GPS height and the Geoid – Ellipsoid separation correction applied to give the elevation of the terrain above mean sea level.

Gridding and Inspection

The digital terrain data was gridded and grid image enhancements were computed and displayed on screen. These were viewed also with the aid of crossline sun angles and inspected for inconsistencies and errors and appropriate corrections were made if required.

Difference between the 9 second DEM and the calculated DEM

The survey DEM was compared to the publicly available 9 second DEM downloaded from Geoscience Australia. The average difference between them was approximately +10.6 metres and this was subtracted from the survey DEM (See table below).



The above graph shows the resulting distribution of differences after subtracting a mean difference of 10.6 from the data collected by the aircraft, the resultant mean difference after correction is less than 0.05 metres.

Magnetic Data

The raw un-edited magnetic data was checked to identify noise and spikes. Single reading spikes were manually edited.

Magnetic Diurnal Data

The diurnal data was then checked and corrected for spikes. Single reading spikes were manually edited and multiple erroneous readings flagged as invalid.

Diurnal Correction

The synchronized digital diurnal data collected by the base station was first subtracted from the corresponding airborne magnetic readings to calculate a difference. The resultant difference was then subtracted from the base value to produce diurnally corrected magnetic data.

Parallax Correction

A parallax error correction as described in section 3.3 was applied to the coordinate data.

IGRF correction

The magnetics data has been corrected for the regional gradient by subtracting the calculated IGRF (2005 model) computed continuously over the whole area. The calculation of these corrections used the GPS flying height.

Tie Line Levelling

A crossover program was used to compute the magnetic difference between each tie line and the traverse line intersection. These differences were then applied to level the traverse lines to the tie lines.

Micro Levelling

Micro levelling was used to remove residual differences with a long wavelength along line and short wavelength across line. Application of the micro levelling process removed the streaks that were sometimes visible when using various grid enhancements. The process used a window width of 17 grid cells and a tolerance of 1.5nT.

Gridding and Inspection

The magnetic data was gridded and grid image enhancements were computed and displayed on screen. These were also viewed with the aid of crossline sun angles and inspected for inconsistencies and errors and appropriate corrections were made if required.

4.2.2 Radiometric Data.

IAEA Processing.

The processing of the radiometric data is summarized below.

- Apply the deadtime correction.
- Energy recalibrate the 256 channel spectra and re-window the data.
- Noise adjusted Singular Value Decomposition (NASVD).
- Remove spikes from the altimeter, temperature and pressure values.
- Correct radiometric data to standard temperature and pressure.
- Remove the aircraft background, apply the cosmic correction, remove radon, apply the stripping values and finally apply the height correction.

Deadtime correction.

The GR-820 spectrometer requires a finite time to process each pulse from the detectors. The deadtime of the GR-820 is less than 5 microseconds per detector and this correction was applied.

Energy Recalibration.

Spectra analysis was performed on each line of data and the position of the thorium and potassium peak positions determined and compared to their theoretical positions. The original spectra data was then mapped to the correct peak positions and new windowed data created for each of the standard IAEA windows as follows.

Window	Peak Energy (KeV)	Energy Window (KeV)		
Total Count		410	-	2810
Potassium	1460	1370	-	1570
Uranium	1760	1660	-	1860
Thorium	2615	2410	-	2810
Cosmic		3000		

256 Channel Noise Reduction.

The 2 most common processing methods are: –

- Noise adjusted Singular Value Decomposition (NASVD). This was developed specifically for radiometric processing.
- Maximum Noise Fraction (MNF). This was developed for removing noise from satellite images and subsequently used in radiometric processing.

Both methods use Principal Component Analysis (PCA) with the only difference being in the estimation of noise in the raw spectra and subsequent scaling before PCA.

We have implemented and extensively used both methods but prefer NASVD because it is simpler, requires one less pass of the data and less observations for a good join when adjacent data sets are merged. However the 2 methods give almost the same result and both work well.

Careful analysis of the eigenvalues and eigenvectors of the PCA is required to ensure the process has worked correctly. We use the 7 most significant principal components to reduce the data with the remainder considered to be noise. If this is not the case, as seen from eigenvalue and eigenvector plots, then there is a problem with the data. So this is an excellent quality control tool as well as a noise reduction method. There are strong theoretical reasons for this approach and if less than 7 components are used some signal is likely to be removed. On large surveys we have found it is best to use 7 components globally rather than having to make difficult decisions for different segments of the survey as this provides a globally consistent result.

As final proof the method has worked correctly, residual line profiles and images of potassium, uranium and thorium must confirm that no signal is present. Also the ternary potassium, uranium and thorium image must be sharp. If signal has been removed this image will be blurred.

Standard Temperature and Pressure correction.

The data was converted to effective height at standard temperature and pressure using the expression:

$$\text{STP(alt)} = \text{Radar Altitude} * (\text{Pressure}/1013) * (273 / (\text{Temperature}+273))$$

Cosmic Correction

The aircraft background radiation was removed by subtracting the aircraft background values determined in the Yarra Yarra test from the Total Count, Potassium, Uranium and Thorium windows. The effect of cosmic radiation was removed from each window by multiplying the cosmic channel by the cosmic stripping factor for each window and subtracting the result from the window data.

Stripping

The radiometric spectra of potassium (K), uranium (U) and thorium (Th) series overlap. To evaluate of any one spectral window, which is designed to detect one radioelement, requires removal of the spectral overlap. This process of removal of the spectral overlap is known as stripping. The stripping procedure uses spectral stripping ratios determined experimentally using concrete calibration pads of known K, U and Th concentration.

Parallax Correction

A parallax error correction as described in section 3.3 was applied to the coordinate data.

Tie Line Levelling

A crossover program was used to compute the radiometric difference between each tie line and the traverse line intersection. These differences were then applied to level the traverse lines to the tie lines.

Micro Levelling

Micro levelling was used to remove residual differences with a long wavelength along line and short wavelength across line. Application of the micro levelling process removed the streaks that were sometimes visible when using various grid enhancements. The microlevel window width of 17 grid cells was used with the following tolerances for each channel.

Channel	Tolerance
Total	40 cps
Potassium	12 cps
Uranium	15 cps
Thorium	4 cps

Gridding and Inspection

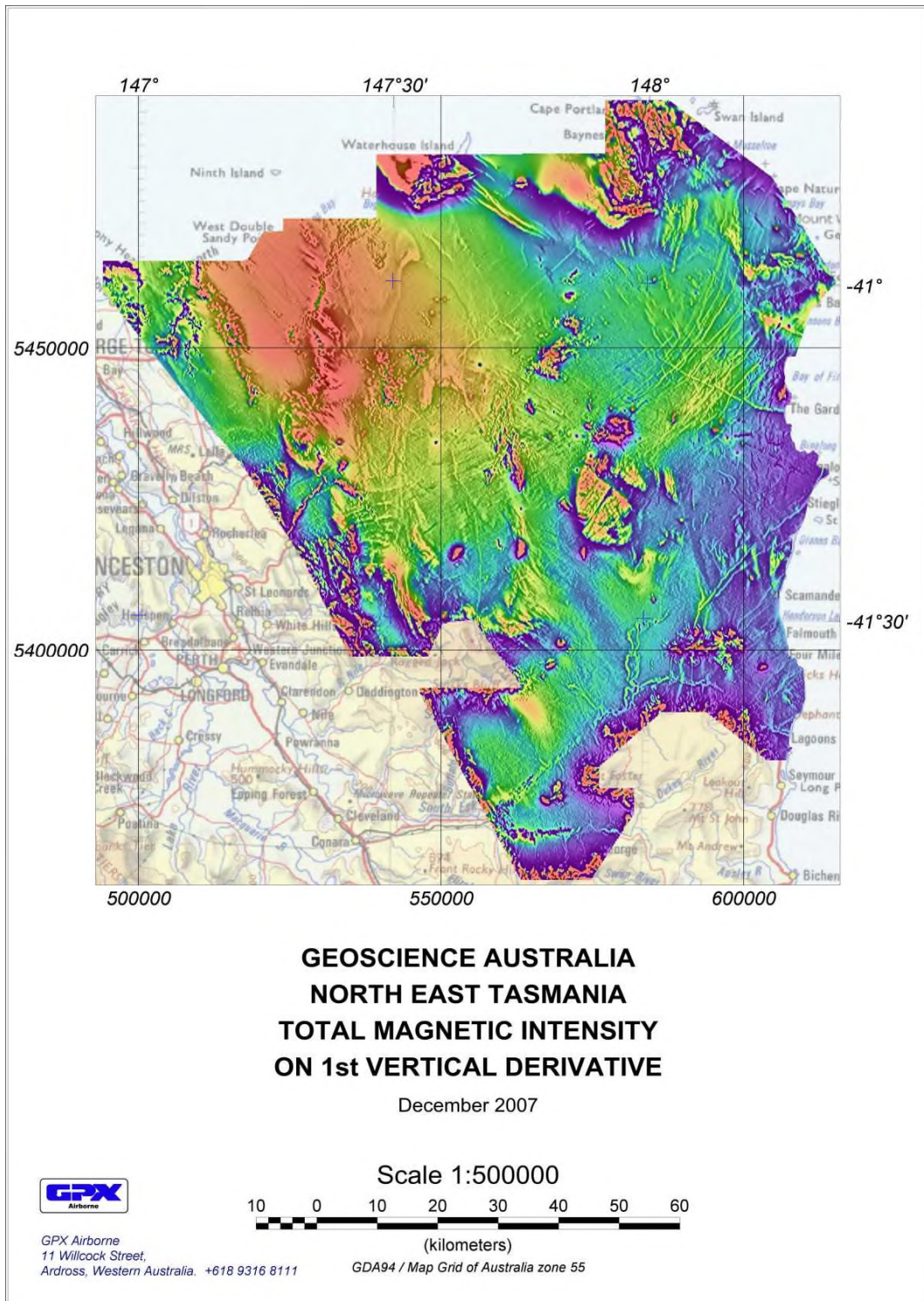
The radiometric data was gridded and grid image enhancements were computed and displayed on screen. These were also viewed with the aid of crossline sun angles and inspected for inconsistencies and errors and appropriate corrections were made if required.

4.2.3 Digital Archives

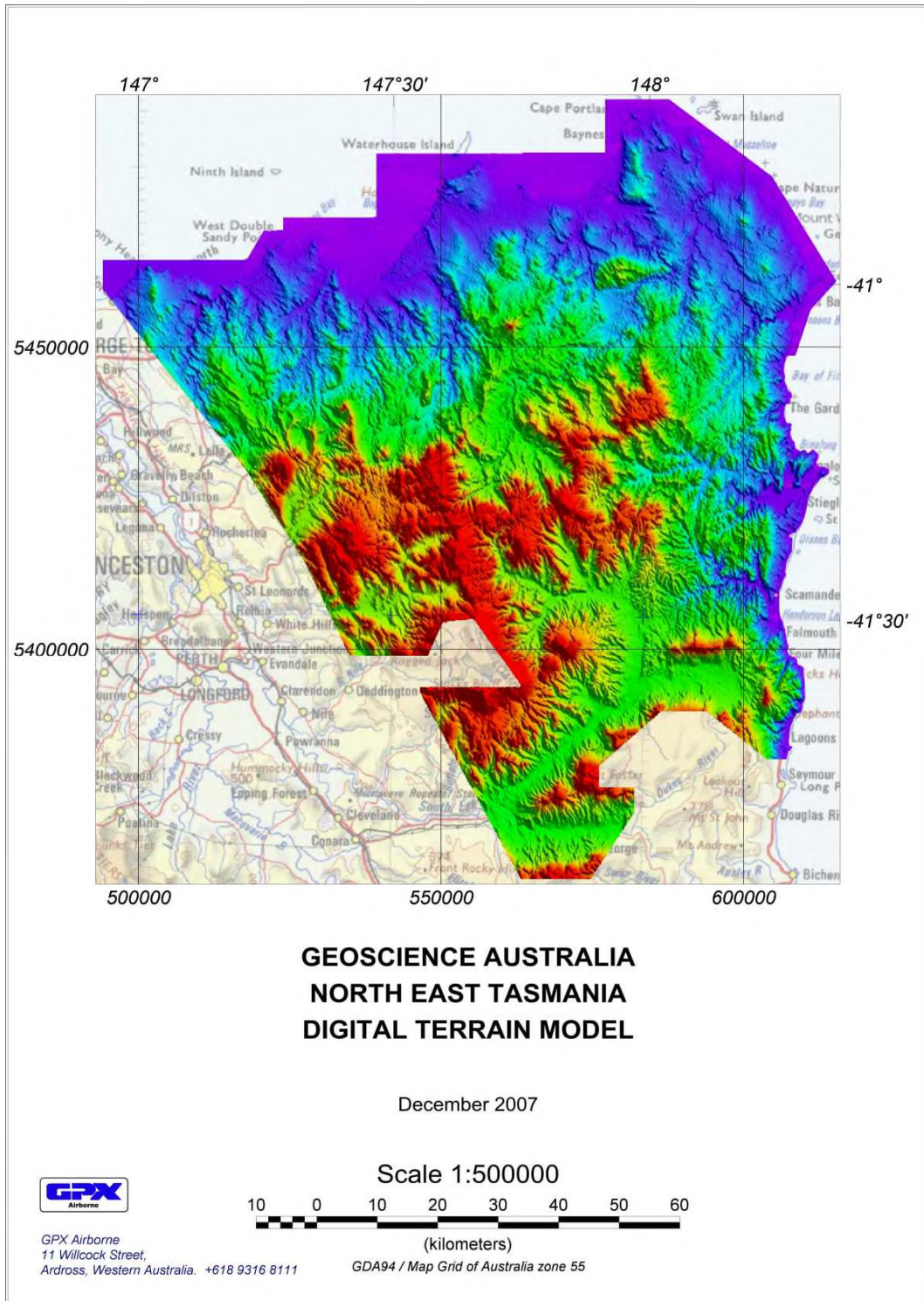
The final digital data was written out as a flat ASCII located data file. The format and channel description can be found in Appendix A. Grids of the final data were created in ERMapper format.

5 IMAGES

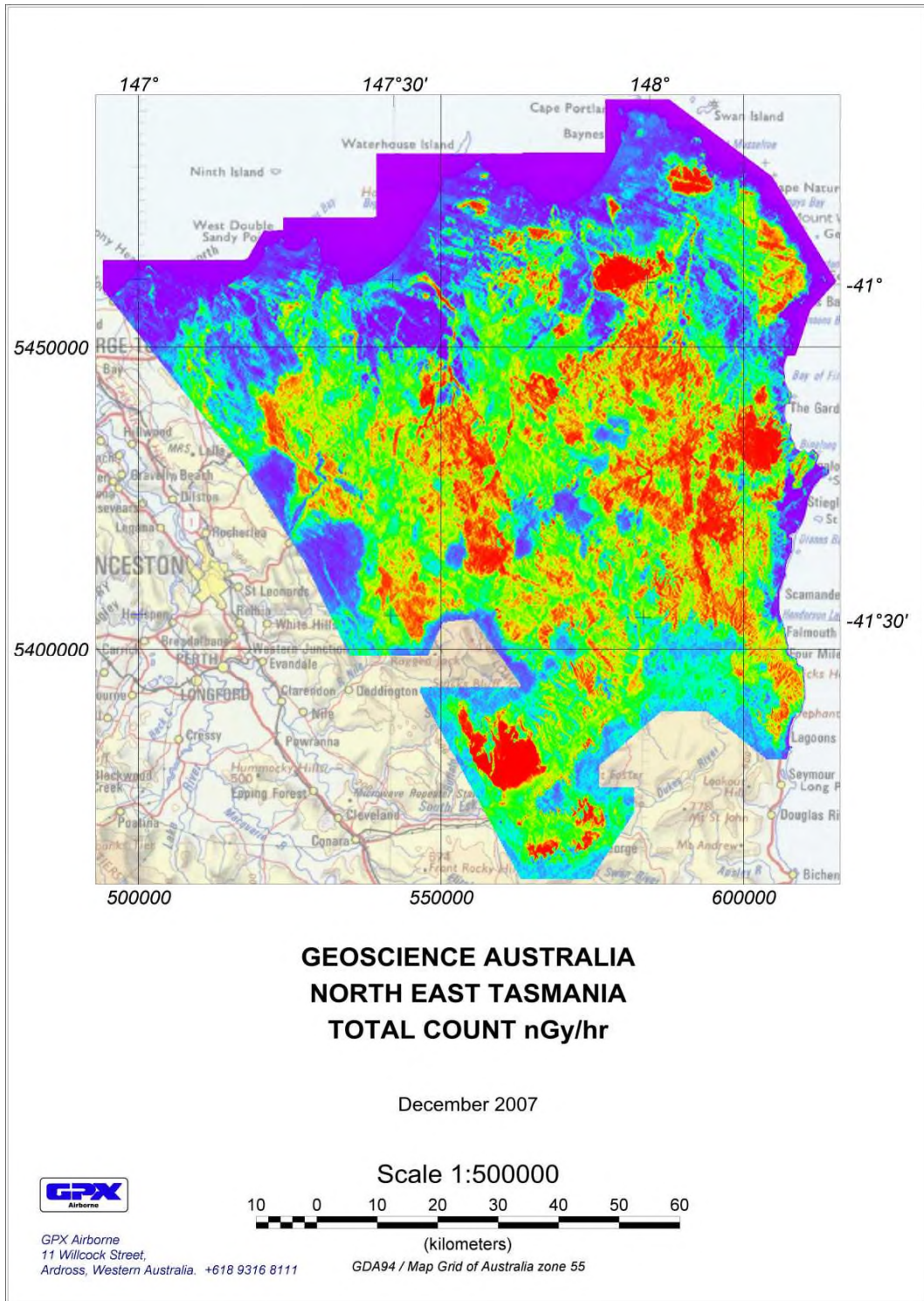
5.1 TOTAL MAGNETIC INTENSITY IMAGE



5.2 DIGITAL TERRAIN MODEL



5.3 TOTAL COUNT IMAGE



6 CONTRACTOR INFORMATION



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7 APPENDIX A: FINAL LOCATED DATA FORMAT.

7.1 MAGNETIC DATA FIXED WING

Project GEOSCIENCE AUSTRALIA MAG/SPEC SURVEY
 Survey area NORTH EAST TASMANIA
 Located data type 1 Second FINAL MAGNETIC Data

 Surveyed by GPX AIRBORNE PTY LTD.
 Job number 2249
 Processed by GPX AIRBORNE PTY LTD.
 Creation date November 2007

SURVEY SPECIFICATIONS

Survey flown March - September 2007
 Traverse line spacing 200 metres
 Traverse line direction 090-270 degrees
 Tie line spacing 2000 metres
 Tie line direction 000-180 degrees

Survey height 90 metres

LOCATED DATA FORMAT

Variable	Units	Undefined	From	To	Format
Project number		9999	1	5	I5
Line number		9999999	6	13	I8
Easting (MGA55)	metres	9999999.99	14	24	F11.2
Northing (MGA55)	metres	9999999.99	25	35	F11.2
Fiducial		99999999	36	44	F9.0
Flight number		999	45	48	I4
Date (YYYYMMDD)		99999999	49	57	I9
Longitude (GDA94)	degrees	999.999999	58	68	F11.6
Latitude (GDA94)	degrees	999.999999	69	79	F11.6
Bearing	degrees	999	80	83	F4.0
Radar altimeter	metres	9999.9	84	90	F7.1
Tie-levelled magnetics	nT	99999.999	91	100	F10.3
Final magnetics	nT	99999.999	101	110	F10.3
Pressure	millibars	9999.9	111	117	F7.1
Temperature	degrees C	99.9	118	122	F5.1

DATA PROCESSING

COORDINATE DATA

All lines are scissored to the following rules:

- 1) A 'smooth' edge outside the area boundary.
- 2) Maximum line overlap of 0 fiducials within the area boundary.

The local projection is a UTM projection based on the GDA94 spheroid with a central meridian of 147 East degrees. System parallax of 0.6 fiducial has been removed.

MAGNETIC DATA

The magnetic data has been corrected for regional gradient by subtraction of IGRF model 2005 computed continuously over the whole area based on the GPS height.

Diurnal magnetic variations have been removed.

System parallax of 1.6 fiducial has been removed.

Tie-line levelling has been applied.

Microlevelling has been applied.

A base value of 61320 nT has been added to the data.

7.2 MAGNETIC DATA HELICOPTER

Project GEOSCIENCE AUSTRALIA MAG/SPEC SURVEY
 Survey area NORTH EAST TASMANIA
 Located data type 1 Second FINAL MAGNETIC Data

Surveyed by GPX AIRBORNE PTY LTD.
 Job number 2249
 Processed by GPX AIRBORNE PTY LTD.
 Creation date November 2007

SURVEY SPECIFICATIONS

Survey flown March - September 2007
 Traverse line spacing 200 metres
 Traverse line direction 090-270 degrees
 Tie line spacing 2000 metres
 Tie line direction 000-180 degrees

Survey height 70 metres

LOCATED DATA FORMAT

Variable	Units	Undefined	From	To	Format
Project number		9999	1	5	I5
Line number		9999999	6	13	I8
Easting (MGA55)	metres	9999999.99	14	24	F11.2
Northing (MGA55)	metres	9999999.99	25	35	F11.2
Fiducial		99999999	36	44	F9.0
Flight number		999	45	48	I4
Date (YYYYMMDD)		99999999	49	57	I9
Longitude (GDA94)	degrees	999.999999	58	68	F11.6
Latitude (GDA94)	degrees	999.999999	69	79	F11.6
Bearing	degrees	999	80	83	F4.0
Radar altimeter	metres	9999.9	84	90	F7.1
Tie-levelled magnetics	nT	99999.999	91	100	F10.3
Final magnetics	nT	99999.999	101	110	F10.3
Pressure	millibars	9999.9	111	117	F7.1
Temperature	degrees C	99.9	118	122	F5.1

DATA PROCESSING

COORDINATE DATA

All lines are scissored to the following rules:

- 1) A 'smooth' edge outside the area boundary.
- 2) Maximum line overlap of 0 fiducials within the area boundary.

The local projection is a UTM projection based on the GDA94 spheroid with a central meridian of 147 East degrees. System parallax of 2.5 fiducial has been removed.

MAGNETIC DATA

The magnetic data has been corrected for regional gradient by subtraction of IGRF model 2005 computed continuously over the whole area based on the GPS height.

Diurnal magnetic variations have been removed.

System parallax of 1.5 fiducial has been removed.

Tie-line levelling has been applied.

Microlevelling has been applied.

A base value of 61320 nT has been added to the data.

7.3 RADIOMETRIC DATA FIXED WING

Project GEOSCIENCE AUSTRALIA MAG/SPEC SURVEY
 Survey area NORTH EAST TASMANIA
 Located data type 1 Second FINAL RADIOEMTRIC Data

Surveyed by GPX AIRBORNE PTY LTD.
 Job number 2249
 Processed by GPX AIRBORNE PTY LTD.
 Creation date November 2007

SURVEY SPECIFICATIONS

Survey flown March - September 2007
 Traverse line spacing 200 metres
 Traverse line direction 090-270 degrees
 Tie line spacing 2000 metres
 Tie line direction 000-180 degrees

Survey height 90 metres

LOCATED DATA FORMAT

Variable	Units	Undefined	From	To	Format
Project number		9999	1	5	I5
Line number		9999999	6	13	I8
Easting (MGA55)	metres	9999999.99	14	24	F11.2
Northing (MGA55)	metres	9999999.99	25	35	F11.2
Fiducial		99999999	36	44	F9.0
Flight number		999	45	48	I4
Date (YYYYMMDD)		99999999	49	57	I9
Longitude (GDA94)	degrees	999.999999	58	68	F11.6
Latitude (GDA94)	degrees	999.999999	69	79	F11.6
Bearing	degrees	999	80	83	F4.0
Radar altimeter	metres	9999.9	84	90	F7.1
Pressure	millibars	9999.9	91	97	F7.1
Temperature	degrees C	99.9	98	102	F5.1
Final dose rate smoothed	nGy/hr	999.999	103	110	F8.3
Final potassium smoothed	%	99.999	111	117	F7.3
Final uranium smoothed	ppm	99.999	118	124	F7.3
Final thorium smoothed	ppm	999.999	125	132	F8.3
Final total count not smoothed	nGy/hr	999.999	133	140	F8.3
Final potassium not smoothed	%	99.999	141	147	F7.3
Final uranium not smoothed	ppm	99.999	148	154	F7.3
Final thorium not smoothed	ppm	999.999	155	162	F8.3

DATA PROCESSING

COORDINATE DATA

All lines are scissored to the following rules:
 1) A 'smooth' edge outside the area boundary.
 2) Maximum line overlap of 0 fiducials within the area boundary.

The local projection is a UTM projection based on the GDA94 spheroid with a central meridian of 147 East degrees. System parallax of 0.6 fiducial has been removed.

RADIOMETRIC DATA

Raw channel data provided has been energy calibrated
 NASVD has been applied to channel data prior to windowing
 System parallax of 0.0 fiducial has been removed.
 Height attenuated to 90m AGL
 Airborne radon has been removed

AIRCRAFT BACKGROUND		UNITS
Total Count	81.67	cps
Potassium	23.35	cps
Uranium	0.59	cps
Thorium	0.67	cps
COSMIC STRIPPING RATIOS		
Total Count	0.811201	

Potassium	0.044663		
Uranium	0.038646		
Thorium	0.043791		
COMPTON STRIPPING RATIOS			
alpha	0.250		
beta	0.400		
gamma	0.810		
a	0.060		
HEIGHT ATTENUATION COEFFICIENT			
Total Count	0.006928	per metre	
Potassium	0.009043	per metre	
Uranium	0.007186	per metre	
Thorium	0.006892	per metre	
SENSITIVITY CONSTANTS			
Total Count - nGy/hr	31.243915	cps	
Potassium - 1%	113.982381	cps	
Uranium - 1ppm	10.549335	cps	
Thorium - 1ppm	6.479314	cps	
WINDOW ENERGY LEVELS			
Total Count	410.0	2810.0	keV
Potassium	1370.0	1570.0	keV
Uranium	1660.0	1860.0	keV
Thorium	2410.0	2810.0	keV

7.4 RADIOMETRIC DATA HELICOPTER

Project GEOSCIENCE AUSTRALIA MAG/SPEC SURVEY
 Survey area NORTH EAST TASMANIA
 Located data type 1 Second FINAL RADIOEMTRIC Data

Surveyed by GPX AIRBORNE PTY LTD.
 Job number 2249
 Processed by GPX AIRBORNE PTY LTD.
 Creation date November 2007

SURVEY SPECIFICATIONS

Survey flown March - September 2007
 Traverse line spacing 200 metres
 Traverse line direction 090-270 degrees
 Tie line spacing 2000 metres
 Tie line direction 000-180 degrees

Survey height 70 metres

LOCATED DATA FORMAT

Variable	Units	Undefined	From	To	Format
Project number		9999	1	5	I5
Line number		9999999	6	13	I8
Easting (MGA55)	metres	9999999.99	14	24	F11.2
Northing (MGA55)	metres	9999999.99	25	35	F11.2
Fiducial		99999999	36	44	F9.0
Flight number		999	45	48	I4
Date (YYYYMMDD)		99999999	49	57	I9
Longitude (GDA94)	degrees	999.999999	58	68	F11.6
Latitude (GDA94)	degrees	999.999999	69	79	F11.6
Bearing	degrees	999	80	83	F4.0
Radar altimeter	metres	9999.9	84	90	F7.1
Pressure	millibars	9999.9	91	97	F7.1
Temperature	degrees C	99.9	98	102	F5.1
Final dose rate smoothed	nGy/hr	999.999	103	110	F8.3
Final potassium smoothed	%	99.999	111	117	F7.3
Final uranium smoothed	ppm	99.999	118	124	F7.3
Final thorium smoothed	ppm	999.999	125	132	F8.3
Final total count not smoothed	nGy/hr	999.999	133	140	F8.3
Final potassium not smoothed	%	99.999	141	147	F7.3
Final uranium not smoothed	ppm	99.999	148	154	F7.3
Final thorium not smoothed	ppm	999.999	155	162	F8.3

DATA PROCESSING

COORDINATE DATA

All lines are scissored to the following rules:
 1) A 'smooth' edge outside the area boundary.
 2) Maximum line overlap of 0 fiducials within the area boundary.

The local projection is a UTM projection based on the GDA94 spheroid with a central meridian of 147 East degrees. System parallax of 2.5 fiducial has been removed.

RADIOMETRIC DATA

Raw channel data provided has been energy calibrated
 NASVD has been applied to channel data prior to windowing
 System parallax of 0.0 fiducial has been removed.
 Height attenuated to 90m AGL
 Airborne radon has been removed

AIRCRAFT BACKGROUND		UNITS
Total Count	68.07	cps
Potassium	8.74	cps
Uranium	2.32	cps
Thorium	1.43	cps

COSMIC STRIPPING RATIOS

Total Count	0.809713
Potassium	0.066459
Uranium	0.033387
Thorium	0.046899

COMPTON STRIPPING RATIOS

alpha	0.2540
beta	0.5145
gamma	0.7997
a	0.0692

HEIGHT ATTENUATION COEFFICIENT

Total Count	0.009414	per metre
Potassium	0.012094	per metre
Uranium	0.009558	per metre
Thorium	0.009178	per metre

SENSITIVITY CONSTANTS

Total Count - nGy/hr	18.95	cps
Potassium - 1%	57.26	cps
Uranium - 1ppm	5.43	cps
Thorium - 1ppm	3.97	cps

WINDOW ENERGY LEVELS

	Low Energy	High Energy	
Total Count	410.0	2810.0	keV
Potassium	1370.0	1570.0	keV
Uranium	1660.0	1860.0	keV
Thorium	2410.0	2810.0	keV

8 APPENDIX B: FIXED WING WEEKLY PRODUCTION SUMMARY

Client	GPXAir Job No.	Area(s)	Job Name	Flying Base	Aircraft Type (s)	Crew Contact Phone No	Crew Contact Sat No																																																																																																																																																																																																					
GA	2249	1	NE Tasmania	St Helens / Tasmania	C210	+61 (0)408 930 447	+881621462769																																																																																																																																																																																																					
Aircraft:	VHMNN	AOM	Bob Blizzard	FPM	Don Copley	Field Operator	Tim Cousin	Pilots	Vincent Wong	Guy Nash																																																																																																																																																																																																		
<table border="1"> <thead> <tr> <th rowspan="2">Date</th> <th rowspan="2">Flt</th> <th colspan="6">Kilometres</th> <th colspan="9">Aircraft Time</th> </tr> <tr> <th>Prod</th> <th>Scrub</th> <th>Reflight</th> <th>Total Planned</th> <th>Flown to date</th> <th>Remain</th> <th>Prod</th> <th>Scrub</th> <th>Turns</th> <th>Ferry</th> <th>Cals Daily</th> <th>Cals Setup</th> <th>Mob</th> <th>Total</th> <th>Hrs to 100 Hrly</th> <th>Standby Hrs</th> <th>Reason</th> </tr> </thead> <tbody> <tr> <td>Sat</td> <td>03/03/07</td> <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>26,564.1</td> <td>0.0</td> <td>26,564.1</td> <td>0.0</td> <td>0.0</td> <td></td> <td>0.0</td> <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>39.0</td> <td>0.0</td> <td></td> </tr> <tr> <td>Sun</td> <td>04/03/07</td> <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>26,564.1</td> <td>0.0</td> <td>26,564.1</td> <td>0.0</td> <td>0.0</td> <td></td> <td>0.0</td> <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>39.0</td> <td>0.0</td> <td></td> </tr> <tr> <td>Mon</td> <td>05/03/07</td> <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>26,564.1</td> <td>0.0</td> <td>26,564.1</td> <td>0.0</td> <td>0.0</td> <td></td> <td>0.0</td> <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>39.0</td> <td>0.0</td> <td></td> </tr> <tr> <td>Tue</td> <td>06/03/07</td> <td>01</td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>26,564.1</td> <td>0.0</td> <td>26,564.1</td> <td>0.0</td> <td>0.0</td> <td></td> <td>0.0</td> <td></td> <td>0.0</td> <td>0.3</td> <td>0.3</td> <td>38.7</td> <td>8.0</td> <td>A/craft</td> </tr> <tr> <td>Wed</td> <td>07/03/07</td> <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>26,564.1</td> <td>0.0</td> <td>26,564.1</td> <td>0.0</td> <td>0.0</td> <td></td> <td>0.0</td> <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>38.7</td> <td>8.0</td> <td>A/craft</td> </tr> <tr> <td>Thu</td> <td>08/03/07</td> <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>26,564.1</td> <td>0.0</td> <td>26,564.1</td> <td>0.0</td> <td>0.0</td> <td></td> <td>0.0</td> <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>38.7</td> <td>8.0</td> <td>A/craft</td> </tr> <tr> <td>Fri</td> <td>09/03/07</td> <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>26,564.1</td> <td>0.0</td> <td>26,564.1</td> <td>0.0</td> <td>0.0</td> <td></td> <td>0.0</td> <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>38.7</td> <td>8.0</td> <td>A/craft</td> </tr> <tr> <td>Totals:</td> <td></td> <td>0.0%</td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>26,564.1</td> <td>0.0</td> <td>26,564.1</td> <td>0.0</td> <td>0.0</td> <td></td> <td>0.0</td> <td></td> <td>0.0</td> <td>0.3</td> <td>0.3</td> <td></td> <td>32.0</td> <td></td> </tr> </tbody> </table>											Date	Flt	Kilometres						Aircraft Time									Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Mob	Total	Hrs to 100 Hrly	Standby Hrs	Reason	Sat	03/03/07		0.0	0.0	0.0	26,564.1	0.0	26,564.1	0.0	0.0		0.0		0.0	0.0	0.0	39.0	0.0		Sun	04/03/07		0.0	0.0	0.0	26,564.1	0.0	26,564.1	0.0	0.0		0.0		0.0	0.0	0.0	39.0	0.0		Mon	05/03/07		0.0	0.0	0.0	26,564.1	0.0	26,564.1	0.0	0.0		0.0		0.0	0.0	0.0	39.0	0.0		Tue	06/03/07	01	0.0	0.0	0.0	26,564.1	0.0	26,564.1	0.0	0.0		0.0		0.0	0.3	0.3	38.7	8.0	A/craft	Wed	07/03/07		0.0	0.0	0.0	26,564.1	0.0	26,564.1	0.0	0.0		0.0		0.0	0.0	0.0	38.7	8.0	A/craft	Thu	08/03/07		0.0	0.0	0.0	26,564.1	0.0	26,564.1	0.0	0.0		0.0		0.0	0.0	0.0	38.7	8.0	A/craft	Fri	09/03/07		0.0	0.0	0.0	26,564.1	0.0	26,564.1	0.0	0.0		0.0		0.0	0.0	0.0	38.7	8.0	A/craft	Totals:		0.0%	0.0	0.0	0.0	26,564.1	0.0	26,564.1	0.0	0.0		0.0		0.0	0.3	0.3		32.0	
Date	Flt	Kilometres						Aircraft Time																																																																																																																																																																																																				
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Sat	03/03/07		0.0	0.0	0.0	26,564.1	0.0	26,564.1	0.0	0.0		0.0		0.0	0.0	0.0	39.0	0.0																																																																																																																																																																																										
Sun	04/03/07		0.0	0.0	0.0	26,564.1	0.0	26,564.1	0.0	0.0		0.0		0.0	0.0	0.0	39.0	0.0																																																																																																																																																																																										
Mon	05/03/07		0.0	0.0	0.0	26,564.1	0.0	26,564.1	0.0	0.0		0.0		0.0	0.0	0.0	39.0	0.0																																																																																																																																																																																										
Tue	06/03/07	01	0.0	0.0	0.0	26,564.1	0.0	26,564.1	0.0	0.0		0.0		0.0	0.3	0.3	38.7	8.0	A/craft																																																																																																																																																																																									
Wed	07/03/07		0.0	0.0	0.0	26,564.1	0.0	26,564.1	0.0	0.0		0.0		0.0	0.0	0.0	38.7	8.0	A/craft																																																																																																																																																																																									
Thu	08/03/07		0.0	0.0	0.0	26,564.1	0.0	26,564.1	0.0	0.0		0.0		0.0	0.0	0.0	38.7	8.0	A/craft																																																																																																																																																																																									
Fri	09/03/07		0.0	0.0	0.0	26,564.1	0.0	26,564.1	0.0	0.0		0.0		0.0	0.0	0.0	38.7	8.0	A/craft																																																																																																																																																																																									
Totals:		0.0%	0.0	0.0	0.0	26,564.1	0.0	26,564.1	0.0	0.0		0.0		0.0	0.3	0.3		32.0																																																																																																																																																																																										
Chargeable Lost Time (Hrs):				Non-Chargeable Lost Time (Hrs):				32.0																																																																																																																																																																																																				
Date	Julian Day	GPXAir Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs	S / U	Equip Maint' Hrs	S / U	General / Processing / QC Comments																																																																																																																																																																																																		
Sat	03/03/07	62	0	0	0																																																																																																																																																																																																							
Sun	04/03/07	63	2	0	2	1				R. Blizzard & T. Cousin departed Perth and arrived Launceston in the late pm. Overnight in Launceston.																																																																																																																																																																																																		
Mon	05/03/07	64	2	0	2	1				R. Blizzard & T. Cousin xsted to St Helens to wait for aircraft. Logistics calls to St Helens Police and St Helens Shire offices to inform of survey.																																																																																																																																																																																																		
Tue	06/03/07	65	3	3	6	2	8.0	U		Aircraft VH-MNN departed Strahan enroute St Helens. Engine malfunction and emergency landing at Queenstown. Suspected faulty engine.																																																																																																																																																																																																		
Wed	07/03/07	66	3	3	6	2	8.0	U		R. Blizzard picked up engineer G. Woolcock and xsitted to Queenstown arriving early am of 08/03/2007. J. Ibbotson & G. Nash on site.																																																																																																																																																																																																		
Thu	08/03/07	67	3	3	4	2	8.0	U		Engineer inspected aircraft engine and confirmed blown. Logistical plans put in place for shipment and new engine. Due to arrive 12/03.																																																																																																																																																																																																		
Fri	09/03/07	68	3	3	0	2	8.0	U		R. Blizzard & J. Ibbotson drove to St Helens doing recon of area enroute. Crew demobbed until engine due to arrive.																																																																																																																																																																																																		
Totals:						32.0		0.0																																																																																																																																																																																																				

KEY:
 Enter numbers/data into blue marked sections only.
 All areas marked in black are self calculating & should not be changed.
 Ferry = operations base to survey area & return times.

Mob = (Mob/Demob) initial flying time to project & from project.
 Aircraft/Equipment Maint': S = scheduled / U = unscheduled.
 General/Processing/QC Comments should include basic weather description.

Client	GPX Air Job No.	Area(s)	Job Name	Flying Base	Aircraft Type (s)	Crew Contact Phone No	Crew Contact Sat No											
GA	2249	1	NE Tasmania	St Helens / Tasmania	C210	+61 (0)408 930 447	+881621462769											
Aircraft:	VHMNN	AOM	Bob Blizzard	FPM	Don Copley	Field Operator	Tim Cousin	Pilots	Vincent Wong									
Kilometres			Aircraft Time					Standby										
Date	Flt	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Mob	Total	Hrs to 100 Hrly	Hrs	Reason
Sat	10/03/07	0.0	0.0	0.0	26,564.1	0.0	26,564.1	0.0	0.0		0.0		0.0	0.0	0.0	38.7	8.0	A/craft
Sun	11/03/07	0.0	0.0	0.0	26,564.1	0.0	26,564.1	0.0	0.0		0.0		0.0	0.0	0.0	38.7	8.0	A/craft
Mon	12/03/07	0.0	0.0	0.0	26,564.1	0.0	26,564.1	0.0	0.0		0.0		0.0	0.0	0.0	38.7	8.0	A/craft
Tue	13/03/07	0.0	0.0	0.0	26,564.1	0.0	26,564.1	0.0	0.0		0.0		0.0	0.0	0.0	38.7	8.0	A/craft
Wed	14/03/07	0.0	0.0	0.0	26,564.1	0.0	26,564.1	0.0	0.0		0.0		0.0	0.0	0.0	38.7	8.0	A/craft
Thu	15/03/07	0.0	0.0	0.0	26,564.1	0.0	26,564.1	0.0	0.0		0.0		0.0	0.0	0.0	38.7	8.0	A/craft
Fri	16/03/07	0.0	0.0	0.0	26,564.1	0.0	26,564.1	0.0	0.0		0.0		0.0	0.0	0.0	38.7	8.0	A/craft
Totals:		0.0%	0.0	0.0	0.0	26,564.1	0.0	26,564.1	0.0	0.0		0.0		0.0	0.0			56.0
Chargeable Lost Time (Hrs):				Non-Chargeable Lost Time (Hrs):		56.0												
Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs	S / U	Equip Maint' Hrs	S / U	General / Processing / QC Comments								
Sat	10/03/07	69	0	0	1	1	8.0	U		Crew Demobbed.								
Sun	11/03/07	70	0	0	1	1	8.0	U		Crew Demobbed.								
Mon	12/03/07	71	0	2	3	2	8.0	U		V. Wong & G. Woolcock to Launceston to pick up new aircraft engine. Overnight in Launceston - pickup engine @ 6 am - to Queenstown.								
Tue	13/03/07	72	3	2	4	3	8.0	U		R. Blizzard & T. Cousin to Launceston - then xsit to St Helens.								
Wed	14/03/07	73	3	2	4	3	8.0	U		Crew on standby - St Helens. Aircraft engineer working on new engine install at Queenstown.								
Thu	15/03/07	74	3	2	4	3	8.0	U		Crew on standby - St Helens. Aircraft engineer ill this date - further delay..								
Fri	16/03/07	75	3	2	4	3	8.0	U		Crew on standby - St Helens. Aircraft engineer working on new engine install at Queenstown.								
Totals:							56.0		0.0									
KEY:																		
Enter numbers/data into blue marked sections only.																		
All areas marked in black are self calculating & should not be changed.																		
Ferry = operations base to survey area & return times.																		
Mob = (Mob/Demob) initial flying time to project & from project.																		
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Client	GPXAir Job No.	Area(s)	Job Name		Flying Base		Aircraft Type (s)		Crew Contact Phone No		Crew Contact Sat No								
GA	2249	1	NE Tasmania		St Helens / Tasmania		C210		+61 (0)408 930 447		+881621462769								
Aircraft:	VHMNN	AOM	Bob Blizzard	FPM	Don Copley	Field Operator	Tim Cousin	Pilots		Vincent Wong	Noel Fuller								
Kilometres						Aircraft Time													
Date	Fit	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Mob	Total	Hrs to 100 Hrly	Standby Hrs	Reason	
Sat	17/03/07	2	0.0	0.0	0.0	26,564.1	0.0	26,564.1	0.0	0.0		0.0		0.0	0.0	11.2	0.0		
Sun	18/03/07	3/4	144.7	0.0	0.0	26,564.1	144.7	26,419.4	1.1	0.0		2.1		0.2	0.0	3.4	7.8	0.0	
Mon	19/03/07		0.0	0.0	0.0	26,564.1	144.7	26,419.4	0.0	0.0		0.0		0.0	0.0	0.0	7.8	8.0	Service
Tue	20/03/07	5	0.0	0.0	0.0	26,564.1	144.7	26,419.4	0.0	0.0		2.0		0.0	0.0	2.0	98.0	8.0	Service
Wed	21/03/07	6/7/8/9	1,111.1	0.0	0.0	26,564.1	1,255.8	25,308.3	6.5	0.0		2.0		0.6	0.0	9.1	88.9	0.0	
Thu	22/03/07	10/11	1,517.0	0.0	0.0	26,564.1	2,772.8	23,791.3	7.6	0.0		0.4		0.4	0.0	8.4	80.5	0.0	
Fri	23/03/07	12/13	731.8	0.0	0.0	26,564.1	3,504.6	23,059.5	4.0	0.0		1.1		0.4	0.0	5.5	75.0	0.0	
Totals:		13.2%	3,504.6	0.0	0.0	26,564.1	3,504.6	23,059.5	19.2	0.0		7.6		1.6	0.0	28.4		16.0	
Chargeable Lost Time (Hrs):				Non-Chargeable Lost Time (Hrs):															
Date	Julian Day	GPXAir Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs		Equip Maint' Hrs		General / Processing / QC Comments									
Sat	17/03/07	76	3	3	4	3				V.WONG ARRIVED WITH VH-MNN, N FULLER AND G WOOLCOCK ARRIVED BY GROUND VEHICAL									
Sun	18/03/07	77	3	3	4	3				2x Flights (1 Recon Flight and 1 Prod Flight) B BLIZZARD DEPARTED									
Mon	19/03/07	78	2	3	4	3	8.0	S		G WOOLCOCK, to Launceston and return, started service PM.									
Tue	20/03/07	79	2	3	4	3	4.0	S		G WOOLCOCK, continued service AM. T Cousins, to launceston and return for power inverter. 1x Test Flight									
Wed	21/03/07	80	2	3	4	3				3x Production Flights, G Woolcock departed by air from Launceston									
Thu	22/03/07	81	2	2	4	2				2X Prod flights									
Fri	23/03/07	82	2	2	4	2				2x prod flights, second flight called off due to bad weather, T COUSINS AND V WONG, TO LAUNCESTON, FOR FUEL.									
Totals:							12.0		0.0										
KEY:																			
Enter numbers/data into blue marked sections only.												Mob = (Mob/Demob) initial flying time to project & from project.							
All areas marked in black are self calculating & should not be changed.												Aircraft/Equipment Maint': S = scheduled / U = unscheduled.							
Ferry = operations base to survey area & return times.												General/Processing/QC Comments should include basic weather description.							

Client	GPXAir Job No.	Area(s)	Job Name		Flying Base		Aircraft Type (s)		Crew Contact Phone No		Crew Contact Sat No																																																																																																																																																																																																		
GA	2249	1	NE Tasmania		St Helens / Tasmania		C210		+61 (0)408 930 447		+881621462769																																																																																																																																																																																																		
Aircraft:	VHMNN	AOM	Bob Blizzard	FPM	Don Copley	Field Operator	Tim Cousin	Pilots	Vincent Wong	Guy Nash																																																																																																																																																																																																			
<table border="1"> <thead> <tr> <th rowspan="2">Date</th> <th rowspan="2">Fit</th> <th colspan="6">Kilometres</th> <th colspan="6">Aircraft Time</th> <th rowspan="2">Hrs to 100 Hrly</th> <th colspan="2">Standby</th> </tr> <tr> <th>Prod</th> <th>Scrub</th> <th>Reflight</th> <th>Total Planned</th> <th>Flown to date</th> <th>Remain</th> <th>Prod</th> <th>Scrub</th> <th>Turns</th> <th>Ferry</th> <th>Cals Daily</th> <th>Cals Setup</th> <th>Mob</th> <th>Total</th> <th>Hrs</th> <th>Reason</th> </tr> </thead> <tbody> <tr> <td>Sat</td> <td>24/03/07</td> <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>26,564.1</td> <td>3,504.6</td> <td>23,059.5</td> <td>0.0</td> <td>0.0</td> <td></td> <td>0.0</td> <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>75.0</td> <td>8.0</td> <td>weather</td> </tr> <tr> <td>Sun</td> <td>25/03/07</td> <td>14/15/16</td> <td>1,220.2</td> <td>0.0</td> <td>0.0</td> <td>26,564.1</td> <td>4,724.8</td> <td>21,839.3</td> <td>6.2</td> <td>0.0</td> <td></td> <td>0.5</td> <td></td> <td>0.4</td> <td>0.0</td> <td>7.1</td> <td>67.9</td> <td>0.0</td> <td></td> </tr> <tr> <td>Mon</td> <td>26/03/07</td> <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>26,564.1</td> <td>4,724.8</td> <td>21,839.3</td> <td>0.0</td> <td>0.0</td> <td></td> <td>0.0</td> <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>67.9</td> <td>8.0</td> <td>Plane</td> </tr> <tr> <td>Tue</td> <td>27/03/07</td> <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>26,564.1</td> <td>4,724.8</td> <td>21,839.3</td> <td>0.0</td> <td>0.0</td> <td></td> <td>0.0</td> <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>67.9</td> <td>8.0</td> <td>Plane</td> </tr> <tr> <td>Wed</td> <td>28/03/07</td> <td>17/18</td> <td>1,287.6</td> <td>0.0</td> <td>0.0</td> <td>26,564.1</td> <td>6,012.4</td> <td>20,551.7</td> <td>7.0</td> <td>0.0</td> <td></td> <td>0.4</td> <td></td> <td>0.4</td> <td>0.0</td> <td>7.8</td> <td>60.1</td> <td>0.0</td> <td></td> </tr> <tr> <td>Thu</td> <td>29/03/07</td> <td>19</td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>26,564.1</td> <td>6,012.4</td> <td>20,551.7</td> <td>0.0</td> <td>0.0</td> <td></td> <td>0.0</td> <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>60.1</td> <td>8.0</td> <td>weather</td> </tr> <tr> <td>Fri</td> <td>30/03/07</td> <td>20/21/22</td> <td>906.8</td> <td>0.0</td> <td>0.0</td> <td>26,564.1</td> <td>6,919.2</td> <td>19,644.9</td> <td>4.8</td> <td>0.0</td> <td></td> <td>0.4</td> <td></td> <td>0.4</td> <td>0.0</td> <td>5.6</td> <td>54.5</td> <td>0.0</td> <td></td> </tr> <tr> <td colspan="2">Totals:</td> <td>26.0%</td> <td>3,414.6</td> <td>0.0</td> <td>0.0</td> <td>26,564.1</td> <td>6,919.2</td> <td>19,644.9</td> <td>18.0</td> <td>0.0</td> <td></td> <td>1.3</td> <td></td> <td>0.0</td> <td>20.5</td> <td></td> <td>32.0</td> <td></td> <td></td> </tr> </tbody> </table>													Date	Fit	Kilometres						Aircraft Time						Hrs to 100 Hrly	Standby		Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Mob	Total	Hrs	Reason	Sat	24/03/07		0.0	0.0	0.0	26,564.1	3,504.6	23,059.5	0.0	0.0		0.0		0.0	0.0	0.0	75.0	8.0	weather	Sun	25/03/07	14/15/16	1,220.2	0.0	0.0	26,564.1	4,724.8	21,839.3	6.2	0.0		0.5		0.4	0.0	7.1	67.9	0.0		Mon	26/03/07		0.0	0.0	0.0	26,564.1	4,724.8	21,839.3	0.0	0.0		0.0		0.0	0.0	0.0	67.9	8.0	Plane	Tue	27/03/07		0.0	0.0	0.0	26,564.1	4,724.8	21,839.3	0.0	0.0		0.0		0.0	0.0	0.0	67.9	8.0	Plane	Wed	28/03/07	17/18	1,287.6	0.0	0.0	26,564.1	6,012.4	20,551.7	7.0	0.0		0.4		0.4	0.0	7.8	60.1	0.0		Thu	29/03/07	19	0.0	0.0	0.0	26,564.1	6,012.4	20,551.7	0.0	0.0		0.0		0.0	0.0	0.0	60.1	8.0	weather	Fri	30/03/07	20/21/22	906.8	0.0	0.0	26,564.1	6,919.2	19,644.9	4.8	0.0		0.4		0.4	0.0	5.6	54.5	0.0		Totals:		26.0%	3,414.6	0.0	0.0	26,564.1	6,919.2	19,644.9	18.0	0.0		1.3		0.0	20.5		32.0		
Date	Fit	Kilometres						Aircraft Time							Hrs to 100 Hrly	Standby																																																																																																																																																																																													
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Sat	24/03/07		0.0	0.0	0.0	26,564.1	3,504.6	23,059.5	0.0	0.0		0.0		0.0	0.0	0.0	75.0	8.0	weather																																																																																																																																																																																										
Sun	25/03/07	14/15/16	1,220.2	0.0	0.0	26,564.1	4,724.8	21,839.3	6.2	0.0		0.5		0.4	0.0	7.1	67.9	0.0																																																																																																																																																																																											
Mon	26/03/07		0.0	0.0	0.0	26,564.1	4,724.8	21,839.3	0.0	0.0		0.0		0.0	0.0	0.0	67.9	8.0	Plane																																																																																																																																																																																										
Tue	27/03/07		0.0	0.0	0.0	26,564.1	4,724.8	21,839.3	0.0	0.0		0.0		0.0	0.0	0.0	67.9	8.0	Plane																																																																																																																																																																																										
Wed	28/03/07	17/18	1,287.6	0.0	0.0	26,564.1	6,012.4	20,551.7	7.0	0.0		0.4		0.4	0.0	7.8	60.1	0.0																																																																																																																																																																																											
Thu	29/03/07	19	0.0	0.0	0.0	26,564.1	6,012.4	20,551.7	0.0	0.0		0.0		0.0	0.0	0.0	60.1	8.0	weather																																																																																																																																																																																										
Fri	30/03/07	20/21/22	906.8	0.0	0.0	26,564.1	6,919.2	19,644.9	4.8	0.0		0.4		0.4	0.0	5.6	54.5	0.0																																																																																																																																																																																											
Totals:		26.0%	3,414.6	0.0	0.0	26,564.1	6,919.2	19,644.9	18.0	0.0		1.3		0.0	20.5		32.0																																																																																																																																																																																												
Chargeable Lost Time (Hrs):			Non-Chargeable Lost Time (Hrs):																																																																																																																																																																																																										
Date	Julian Day	GPXAir Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs		Equip Maint' Hrs		General / Processing / QC Comments																																																																																																																																																																																																			
Sat	24/03/07	83	2	2	4	2					No flights due to bad weather																																																																																																																																																																																																		
Sun	25/03/07	84	2	2	4	2					3x Prod Flights																																																																																																																																																																																																		
Mon	26/03/07	85	2	3	4	2	8.0	U			Fuel Contamination, ceased flying for the day/ P Brackfield, arrived to attend to Fuel Contaminatio																																																																																																																																																																																																		
Tue	27/03/07	86	2	3	4	2	8.0	U			Fuel Contamination was resolved, however in the afternoon, a brake failure occurred and again, ceased any chance of Prod Flying																																																																																																																																																																																																		
Wed	28/03/07	87	2	3	4	2					2x Prod Flights, P Brackfield depart St Helens.																																																																																																																																																																																																		
Thu	29/03/07	88	2	2	4	2					1x Prod Flight, Comp-box was completed, fly was called off by N Fuller, due to bad weather. Rain fell on the survey area, throughout the day.																																																																																																																																																																																																		
Fri	30/03/07	89	2	2	4	2					2x prod Flights, Bad weather in the morning caused cancellation of Flight 20, however we pushed flight 21/22 through, later in the day.																																																																																																																																																																																																		
Totals:							16.0	0.0																																																																																																																																																																																																					

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Client	GPXAir Job No.	Area(s)	Job Name			Flying Base			Aircraft Type (s)			Crew Contact Phone No		Crew Contact Sat No																																																																																																																																																																																														
GA	2249	1	NE Tasmania			St Helens / Tasmania			C210			+61 (0)408 930 447		+881621462769																																																																																																																																																																																														
Aircraft:	VHMNN	AOM	Bob Blizzard	FPM	Don Copley	Field Operator	Tim Cousin	Pilots		Vincent Wong																																																																																																																																																																																																		
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Date	Fit	Kilometres							Aircraft Time							Standby																																																																																																																																																																																												
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Sat	31/03/07	23/24	1,541.1	74.1	0.0	26,564.1	8,460.3	18,029.7	8.0	0.0		0.4		0.0	0.0	8.4	46.1																																																																																																																																																																																											
Sun	01/04/07	25/26	796.1	0.0	0.0	26,564.1	9,256.4	17,233.6	5.6	0.0		0.4		0.0	0.0	6.0	40.1																																																																																																																																																																																											
Mon	02/04/07	27/28	1,242.0	176.0	0.0	26,564.1	10,322.4	15,815.6	6.7	0.0		0.4		0.0	0.0	7.1	33.0																																																																																																																																																																																											
Tue	03/04/07	29/30	1,660.8	0.0	0.0	26,564.1	11,983.2	14,154.7	7.9	0.0		0.4		0.0	0.0	8.3	24.7																																																																																																																																																																																											
Wed	04/04/07	31/32	1,059.6	102.8	0.0	26,564.1	12,940.0	12,992.3	6.9	0.0		0.4		0.0	0.0	7.3	17.4																																																																																																																																																																																											
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Fri	06/04/07	34/35	1,680.1	0.0	0.0	26,564.1	15,259.7	10,672.6	8.2	0.0		0.3		0.0	0.0	8.5	4.8																																																																																																																																																																																											
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Date	Julian Day	GPXAir Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs		Equip Maint' Hrs		General / Processing / QC Comments																																																																																																																																																																																																		
Sat	31/03/07	90	2	2	4	2					2x Prod Flights																																																																																																																																																																																																	
Sun	01/04/07	91	2	2	4	2					2x Prod Flights, V Wong and D Copley, to Launceston for fuel run and back to St Helens.																																																																																																																																																																																																	
Mon	02/04/07	92	2	2	4	2					2x Prod Flights																																																																																																																																																																																																	
Tue	03/04/07	93	2	2	4	2					2x Prod Flights, J Kita, arrived and stayed the night in Launceston, Fuel Run to Launceston also made.																																																																																																																																																																																																	
Wed	04/04/07	94	3	2	5	2					2x Prod Flights, J Kita, arrived at St Helens, Fuel drop was made at St Helens, 20 drums.																																																																																																																																																																																																	
Thu	05/04/07	95	3	2	5	2					1x Prod Flights																																																																																																																																																																																																	
Fri	6/04/07	96	3	2	5	2					2x Prod Flights																																																																																																																																																																																																	
Totals:							0.0		0.0																																																																																																																																																																																																			

KEY:

Enter numbers/data into blue marked sections only.

All areas marked in black are self calculating & should not be changed.

Ferry = operations base to survey area & return times.

= Safety Meeting (SM) / Toolbox Meeting (TBM) check box.

Mob = (Mob/Demob) initial flying time to project & from project.

Aircraft/Equipment Maint': S = scheduled / U = unscheduled.

General/Processing/QC Comments should include basic weather description.

Client	GPX Air Job No.	Area(s)	Job Name			Flying Base			Aircraft Type (s)			Crew Contact Phone No		Crew Contact Sat No																																																																																																																																																																																															
GA	2249	1	NE Tasmania			St Helens / Tasmania			C210			+61 (0)408 930 447		+881621462769																																																																																																																																																																																															
Aircraft:	VHMNN	AOM	Bob Blizzard	FPM	Don Copley	Field Operator	Tim Cousin	Pilots	Vincent Wong	Guy Nash																																																																																																																																																																																																			
<table border="1"> <thead> <tr> <th rowspan="2">Date</th> <th rowspan="2">Fit</th> <th colspan="7">Kilometres</th> <th colspan="7">Aircraft Time</th> <th rowspan="2">Hrs to 100 Hrly</th> <th colspan="2">Standby</th> </tr> <tr> <th>Prod</th> <th>Scrub</th> <th>Reflight</th> <th>Total Planned</th> <th>Flown to date</th> <th>Remain</th> <th>Prod</th> <th>Scrub</th> <th>Turns</th> <th>Ferry</th> <th>Cals Daily</th> <th>Cals Setup</th> <th>Mob</th> <th>Total</th> <th>Hrs</th> <th>Reason</th> </tr> </thead> <tbody> <tr> <td>Sat 07/04/07</td> <td>36</td> <td>490.8</td> <td>0.0</td> <td>0.0</td> <td>26,564.1</td> <td>15,750.5</td> <td>10,181.8</td> <td>4.0</td> <td>0.0</td> <td></td> <td>0.4</td> <td></td> <td>0.0</td> <td>0.0</td> <td>4.4</td> <td>0.4</td> <td>4.0</td> <td>PLANE</td> </tr> <tr> <td>Sun 08/04/07</td> <td></td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>26,564.1</td> <td>15,750.5</td> <td>10,181.8</td> <td>0.0</td> <td>0.0</td> <td></td> <td>0.0</td> <td></td> <td>0.0</td> <td>0.0</td> <td>100.0</td> <td>8.0</td> <td>8.0</td> <td>PLANE</td> </tr> <tr> <td>Mon 09/04/07</td> <td>37</td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>26,564.1</td> <td>15,750.5</td> <td>10,181.8</td> <td>0.0</td> <td>0.0</td> <td></td> <td>0.5</td> <td></td> <td>0.0</td> <td>0.0</td> <td>0.5</td> <td>99.5</td> <td>8.0</td> <td>PLANE</td> </tr> <tr> <td>Tue 10/04/07</td> <td>38</td> <td>436.2</td> <td>0.0</td> <td>0.0</td> <td>26,564.1</td> <td>16,186.7</td> <td>9,745.6</td> <td>2.2</td> <td>0.0</td> <td></td> <td>0.2</td> <td></td> <td>0.0</td> <td>0.0</td> <td>2.4</td> <td>97.1</td> <td>6.0</td> <td>PLANE</td> </tr> <tr> <td>Wed 11/04/07</td> <td>39</td> <td>912.6</td> <td>0.0</td> <td>0.0</td> <td>26,564.1</td> <td>17,099.3</td> <td>8,833.0</td> <td>4.2</td> <td>0.0</td> <td></td> <td>0.3</td> <td></td> <td>0.0</td> <td>0.0</td> <td>4.5</td> <td>92.6</td> <td>4.0</td> <td>WEATHER</td> </tr> <tr> <td>Thu 12/04/07</td> <td>40/41</td> <td>1,782.2</td> <td>30.0</td> <td>0.0</td> <td>26,564.1</td> <td>18,851.5</td> <td>7,020.8</td> <td>7.6</td> <td>0.0</td> <td></td> <td>0.4</td> <td></td> <td>0.0</td> <td>0.0</td> <td>8.0</td> <td>84.6</td> <td></td> <td></td> </tr> <tr> <td>Fri 13/04/07</td> <td>42/43</td> <td>1,746.6</td> <td>0.0</td> <td>0.0</td> <td>26,564.1</td> <td>20,598.1</td> <td>5,274.0</td> <td>8.5</td> <td>0.0</td> <td></td> <td>0.4</td> <td></td> <td>0.0</td> <td>0.0</td> <td>8.9</td> <td>75.7</td> <td></td> <td></td> </tr> <tr> <td>Totals:</td> <td>77.5%</td> <td>5,368.4</td> <td>30.0</td> <td>0.0</td> <td>26,564.1</td> <td>20,598.1</td> <td>5,274.0</td> <td>26.5</td> <td>0.0</td> <td></td> <td>2.2</td> <td></td> <td>0.0</td> <td>0.0</td> <td>28.7</td> <td></td> <td>30.0</td> <td></td> </tr> </tbody> </table>																			Date	Fit	Kilometres							Aircraft Time							Hrs to 100 Hrly	Standby		Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Mob	Total	Hrs	Reason	Sat 07/04/07	36	490.8	0.0	0.0	26,564.1	15,750.5	10,181.8	4.0	0.0		0.4		0.0	0.0	4.4	0.4	4.0	PLANE	Sun 08/04/07		0.0	0.0	0.0	26,564.1	15,750.5	10,181.8	0.0	0.0		0.0		0.0	0.0	100.0	8.0	8.0	PLANE	Mon 09/04/07	37	0.0	0.0	0.0	26,564.1	15,750.5	10,181.8	0.0	0.0		0.5		0.0	0.0	0.5	99.5	8.0	PLANE	Tue 10/04/07	38	436.2	0.0	0.0	26,564.1	16,186.7	9,745.6	2.2	0.0		0.2		0.0	0.0	2.4	97.1	6.0	PLANE	Wed 11/04/07	39	912.6	0.0	0.0	26,564.1	17,099.3	8,833.0	4.2	0.0		0.3		0.0	0.0	4.5	92.6	4.0	WEATHER	Thu 12/04/07	40/41	1,782.2	30.0	0.0	26,564.1	18,851.5	7,020.8	7.6	0.0		0.4		0.0	0.0	8.0	84.6			Fri 13/04/07	42/43	1,746.6	0.0	0.0	26,564.1	20,598.1	5,274.0	8.5	0.0		0.4		0.0	0.0	8.9	75.7			Totals:	77.5%	5,368.4	30.0	0.0	26,564.1	20,598.1	5,274.0	26.5	0.0		2.2		0.0	0.0	28.7		30.0	
Date	Fit	Kilometres							Aircraft Time							Hrs to 100 Hrly	Standby																																																																																																																																																																																												
		Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Mob	Total		Hrs	Reason																																																																																																																																																																																											
Sat 07/04/07	36	490.8	0.0	0.0	26,564.1	15,750.5	10,181.8	4.0	0.0		0.4		0.0	0.0	4.4	0.4	4.0	PLANE																																																																																																																																																																																											
Sun 08/04/07		0.0	0.0	0.0	26,564.1	15,750.5	10,181.8	0.0	0.0		0.0		0.0	0.0	100.0	8.0	8.0	PLANE																																																																																																																																																																																											
Mon 09/04/07	37	0.0	0.0	0.0	26,564.1	15,750.5	10,181.8	0.0	0.0		0.5		0.0	0.0	0.5	99.5	8.0	PLANE																																																																																																																																																																																											
Tue 10/04/07	38	436.2	0.0	0.0	26,564.1	16,186.7	9,745.6	2.2	0.0		0.2		0.0	0.0	2.4	97.1	6.0	PLANE																																																																																																																																																																																											
Wed 11/04/07	39	912.6	0.0	0.0	26,564.1	17,099.3	8,833.0	4.2	0.0		0.3		0.0	0.0	4.5	92.6	4.0	WEATHER																																																																																																																																																																																											
Thu 12/04/07	40/41	1,782.2	30.0	0.0	26,564.1	18,851.5	7,020.8	7.6	0.0		0.4		0.0	0.0	8.0	84.6																																																																																																																																																																																													
Fri 13/04/07	42/43	1,746.6	0.0	0.0	26,564.1	20,598.1	5,274.0	8.5	0.0		0.4		0.0	0.0	8.9	75.7																																																																																																																																																																																													
Totals:	77.5%	5,368.4	30.0	0.0	26,564.1	20,598.1	5,274.0	26.5	0.0		2.2		0.0	0.0	28.7		30.0																																																																																																																																																																																												
Chargeable Lost Time (Hrs):					Non-Chargeable Lost Time (Hrs):																																																																																																																																																																																																								
Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs		Equip Maint' Hrs		General / Processing / QC Comments																																																																																																																																																																																																			
Sat 07/04/07	97	3	3	5	2	4.0		S		1x Prod Flight, G Woolcock, started 100hrly service in arvo																																																																																																																																																																																																			
Sun 08/04/07	98	2	3	5	2	8.0		S		100hrly Service continues/Finished in the PM.																																																																																																																																																																																																			
Mon 09/04/07	99	2	3	4	2	8.0		U		PROBLEM WITH PLANES STARTER MOTOR																																																																																																																																																																																																			
Tue 10/04/07	100	2	3	4	2	6.0		U		WORK CONTINUES ON PLANE, RESOLVED IN AFTERNOON AND 1X PRODUCTION FLIGHT																																																																																																																																																																																																			
Wed 11/04/07	101	2	2	4	2					STRONG WINDS IN MORNING, 20+ KNOTS, HOWEVER 1X PROD FLIGHT IN AFTERNOON																																																																																																																																																																																																			
Thu 12/04/07	102	2	2	4	2					2X PROD FLIGHTS																																																																																																																																																																																																			
Fri 13/04/07	103	2	2	4	2					2X PROD FLIGHTS																																																																																																																																																																																																			
Totals:						26.0		0.0																																																																																																																																																																																																					

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 Ferry = operations base to survey area & return times.
 = Safety Meeting (SM) / Toolbox Meeting (TBM) check box.
 Mob = (Mob/Demob) initial flying time to project & from project.
 Aircraft/Equipment Maint': S = scheduled / U = unscheduled.
 General/Processing/QC Comments should include basic weather description.

Client	GPX Air Job No.	Area(s)	Job Name			Flying Base			Aircraft Type (s)			Crew Contact Phone No		Crew Contact Sat No				
GA	2249	1	NE Tasmania			St Helens / Tasmania			C210			+61 (0)408 930 447		+881621462769				
Aircraft:	VHMNN	AOM	Bob Blizzard	FPM			Don Copley	Field Operator		Tim Cousin	Pilots		Vincent Wong					
Kilometres																		
Aircraft Time																		
Date	Fit	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Mob	Total	Hrs to 100 Hrly	Standby Hrs	Reason
Sat	14/04/07	44	788.9	0.0	0.0	26,564.1	21,387.0	5,177.1	3.9	0.0		0.2		0.0	0.0	4.1	67.2	
Sun	15/04/07		0.0	0.0	0.0	26,564.1	21,387.0	5,177.1	0.0	0.0		0.0		0.0	0.0	63.0		
Mon	16/04/07		0.0	0.0	0.0	26,564.1	21,387.0	5,177.1	0.0	0.0		0.0		0.0	0.0	63.0		
Tue	17/04/07		0.0	0.0	0.0	26,564.1	21,387.0	5,177.1	0.0	0.0		0.0		0.0	0.0	63.0	8.0	Weather
Wed	18/04/07		0.0	0.0	0.0	26,564.1	21,387.0	5,177.1	0.0	0.0		0.0		0.0	0.0	63.0	8.0	Weather
Thu	19/04/07	49	0.0	0.0	193.0	26,564.1	21,580.0	4,984.1	0.9	0.0		0.2		0.0	0.0	1.1	54.7	
Fri	20/04/07	50	0.0	0.0	190.2	26,564.1	21,770.2	4,793.9	0.8	0.0		0.2		0.0	0.0	1.0	50.2	
Totals:		82.0%	788.9	0.0	383.2	26,564.1	21,770.2	4,793.9	5.6	0.0		0.6		0.0	0.0	6.2	16.0	
Chargeable Lost Time (Hrs):						Non-Chargeable Lost Time (Hrs):												
Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs		Equip Maint' Hrs		General / Processing / QC Comments								
Sat	14/04/07	104	2	2	4	2					1x Prod Flight, 1x Flight for Lefroy							
Sun	15/04/07	105	2	2	4	2					Production for Lefroy							
Mon	16/04/07	106	2	2	4	2					Production for Lefroy							
Tue	17/04/07	107	2	2	4	2					Bad Weather							
Wed	18/04/07	108	2	2	4	2					Bad Weather							
Thu	19/04/07	109	2	2	4	2					1x Prod Flight (Reflights), 1x Flight for Lefroy							
Fri	20/04/07	110	2	2	4	2					1x Prod Flight (Reflights), 1x Flight for Lefroy							
Totals:							0.0		0.0									
<p>KEY: Enter numbers/data into blue marked sections only. All areas marked in black are self calculating & should not be changed. Ferry = operations base to survey area & return times.</p>																		
<p>KEY: = Safety Meeting (SM) / Toolbox Meeting (TBM) check box. Mob = (Mob/Demob) initial flying time to project & from project. Aircraft/Equipment Maint': S = scheduled / U = unscheduled. General/Processing/QC Comments should include basic weather description.</p>																		

9 APPENDIX C: HELICOPTER WEEKLY PRODUCTION SUMMARY

Client	GPX Air Job No.	Area(s)	Job Name	Flying Base	Aircraft Type (s)	Crew Contact Phone No	Crew Contact Sat No											
GA	2249	1	NE Tasmania	Launceston	AS-350D	+61 (0)400 173 754	+881621462769											
Aircraft:	VHJWD	AOM	Bob Blizzard	FPM	Jason Wooster	Field Operator	Tim Cousin	Pilots	Dale/Mark/Sam									
		Kilometres						Aircraft Time										
Date	Fit	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Training	Mob	Hrs to 100 Hrly	Standby Hrs	Reason
Sat 05/05/07		0.0	0.0	0.0	29,873.0	0.0	29,873.0	0.0	0.0		1.8		0.0	0.0	1.8	75.0	8.0	Logist's
Sun 06/05/07		0.0	0.0	0.0	29,873.0	0.0	29,873.0	0.0	0.0		0.9		1.1	0.0	2.0	73.0		
Mon 07/05/07		0.0	0.0	0.0	29,873.0	0.0	29,873.0	0.0	0.0		0.0		0.0	0.9	0.9	72.1		
Tue 08/05/07	03/04/05	326.4	0.0	0.0	29,873.0	326.4	29,546.6	6.0	0.0		0.0		0.0	0.0	6.0	66.1		
Wed 09/05/07	06/07	333.2	0.0	0.0	29,873.0	659.6	29,213.4	5.1	0.0		0.0		0.0	0.0	5.1	61.0		
Thu 10/05/07	08	149.8	0.0	0.0	29,873.0	809.4	29,063.6	2.6	0.0		0.0		0.0	0.0	2.6	58.4		
Fri 11/05/07	09/10	145.4	0.0	31.0	29,873.0	985.8	28,887.2	2.6	0.0		0.0		3.0	0.0	5.6	52.8		
Totals:		954.8	0.0	31.0	29,873.0	985.8	28,887.2	16.3	0.0		2.7		4.1	0.9	24.0		8.0	
Chargeable Lost Time (Hrs):				Non-Chargeable Lost Time (Hrs):		8.0												
Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs S / U		Equip Maint' Hrs S / U		General / Processing / QC Comments								
Sat 05/05/07	125	2	2	4	2					Relocate to St Helens, fuel on site as organised.								
Sun 06/05/07	126	2	2	4	2					Relocate to Launceston, strong wind (Gale warnings). Calibrations done off St Helens. TBM								
Mon 07/05/07	127	2	2	4	2					Heli Aust chief pilot arrives (Sam Borg), check flight with Mark Watson. Had problem getting onto strip with no ASIC cards - OK now. TBM								
Tue 08/05/07	128	2	2	4	2					Production flights 3, 4 & 5. TBM								
Wed 09/05/07	129	2	2	4	2					Production flights 6 & 7. Farmer upset about heli flying over his house - J. Wooster visited him and will call him if flying in the area again. TBM								
Thu 10/05/07	130	2	1	3	2					Sam Borg departed. Had extensive briefing with the operator about his responsibilities flying. Production flight 8. Another farmer upset. TBM								
Fri 11/05/07	131	2	1	3	2					Flew flights 9 & 10 - one was production and the other calibrations over the ocean. Avoided farmers area who is making threats. TBM								
Totals:						0.0		0.0										

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 Mob = (Mob/Demob) initial flying time to project & from project.
 Aircraft/Equipment Maint': S = scheduled / U = unscheduled.
 General/Processing/QC Comments should include basic weather description.

Client	GPX Air Job No.	Area(s)	Job Name	Flying Base	Aircraft Type (s)	Crew Contact Phone No	Crew Contact Sat No												
GA - NE Tasmania	2249	1 & 2	Stonehenge/Sweenys	Zeehan	AS-350D	+61 (0)400 173 754	+881621462769												
Aircraft:	VHJWD	AOM	Bob Blizzard	FPM	Jason Wooster	Field Operator	Tim Cousin	Pilots	Dale Bourke	Mark Watson									
Kilometres					Aircraft Time							Standby							
Date	Fit	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Mob	Total	Hrs to 100 Hrly	Hrs	Reason	
Sat	28/04/07	0.0	0.0	0.0	360.7	0.0	360.7	0.0	0.0		0.0		0.0	0.0	0.0	85.0			
Sun	29/04/07	0.0	0.0	0.0	360.7	0.0	360.7	0.0	0.0		0.0		0.0	0.0	0.0	85.0			
Mon	30/04/07	0.0	0.0	0.0	360.7	0.0	360.7	0.0	0.0		0.0		0.0	1.4	1.4	83.6			
Tue	01/05/07	0.0	0.0	0.0	360.7	0.0	360.7	0.0	0.0		0.0		0.0	5.7	5.7	77.9			
Wed	02/05/07	0.0	0.0	0.0	360.7	0.0	360.7	0.0	0.0		0.0		0.8	0.0	0.8	77.1			
Thu	03/05/07	0.0	0.0	0.0	360.7	0.0	360.7	0.0	0.0		0.0		0.3	0.0	0.3	76.8			
Fri	04/05/07	0.0	0.0	0.0	360.7	0.0	360.7	0.0	0.0		0.0		0.0	0.0	0.0	76.8	8.0	Wx	
Totals:			0.0	0.0	0.0	360.7	0.0	360.7	0.0	0.0		0.0		1.1	7.1	8.2		8.0	
Chargeable Lost Time (Hrs):				8.0	Non-Chargeable Lost Time (Hrs):														
Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs		Equip Maint' Hrs		General / Processing / QC Comments									
Sat	28/04/07	119	2	1	3	2					Canberra - Radiometric Calibrations.								
Sun	29/04/07	120	2	1	3	2					Canberra - Radiometric Calibrations.								
Mon	30/04/07	121	3	1	4	2					Heli Xsit - Canberra/Merimbula								
Tue	01/05/07	122	3	1	3	2					Heli Xsit - Merimbula/Zeehan								
Wed	02/05/07	123	3	1	3	2					Calibrations.								
Thu	03/05/07	124	3	1	3	2					Test navigation system - to confirm Flt Plan correct.								
Fri	4/05/07	125	2	2	4	2					Mike Barrett departed to Perth. Mark Watson the second pilot arrived. Bad weather.								
Totals:							0.0	0.0											
KEY:										= Safety Meeting (SM) / Toolbox Meeting (TBM) check box. Mob = (Mob/Demob) initial flying time to project & from project. Aircraft/Equipment Maint': S = scheduled / U = unscheduled. General/Processing/QC Comments should include basic weather description.									
Enter numbers/data into blue marked sections only.																			
All areas marked in black are self calculating & should not be changed.																			
Ferry = operations base to survey area & return times.																			

Client	GPX Air Job No.	Area(s)	Job Name	Flying Base	Aircraft Type (s)	Crew Contact Phone No	Crew Contact Sat No											
GA	2249	1	NE Tasmania	Launceston	AS-350D	+61 (0)400 173 754	+881621462769											
Aircraft:	VHJWD	AOM	Bob Blizzard	FPM	Jason Wooster	Field Operator	Tim Cousin	Pilots	Dale/Mark/Sam									
Kilometres					Aircraft Time							Standby						
Date	Fit	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Training	Mob	Hrs to 100 Hrly	Hrs	Reason
Sat 05/05/07		0.0	0.0	0.0	29,873.0	0.0	29,873.0	0.0	0.0		1.8		0.0	0.0	1.8	75.0	8.0	Logist's
Sun 06/05/07		0.0	0.0	0.0	29,873.0	0.0	29,873.0	0.0	0.0		0.9		1.1	0.0	2.0	73.0		
Mon 07/05/07		0.0	0.0	0.0	29,873.0	0.0	29,873.0	0.0	0.0		0.0		0.0	0.9	0.9	72.1		
Tue 08/05/07	03/04/05	326.4	0.0	0.0	29,873.0	326.4	29,546.6	6.0	0.0		0.0		0.0	0.0	6.0	66.1		
Wed 09/05/07	06/07	333.2	0.0	0.0	29,873.0	659.6	29,213.4	5.1	0.0		0.0		0.0	0.0	5.1	61.0		
Thu 10/05/07	08	149.8	0.0	0.0	29,873.0	809.4	29,063.6	2.6	0.0		0.0		0.0	0.0	2.6	58.4		
Fri 11/05/07	09/10	145.4	0.0	31.0	29,873.0	985.8	28,887.2	2.6	0.0		0.0		3.0	0.0	5.6	52.8		
Totals:		954.8	0.0	31.0	29,873.0	985.8	28,887.2	16.3	0.0		2.7		4.1	0.9	24.0		8.0	
Chargeable Lost Time (Hrs):				Non-Chargeable Lost Time (Hrs):		8.0												
Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs	S / U	Equip Maint' Hrs	S / U	General / Processing / QC Comments								
Sat 05/05/07	125	2	2	4	2					Relocate to St Helens, fuel on site as organised.								
Sun 06/05/07	126	2	2	4	2					Relocate to Launceston, strong wind (Gale warnings). Calibrations done off St Helens.								
Mon 07/05/07	127	2	2	4	2					Heli Aust chief pilot arrives (Sam Borg), check flight with Mark Watson. Had problem getting onto strip with no ASIC cards - OK now.								
Tue 08/05/07	128	2	2	4	2					Production flights 3, 4 & 5.								
Wed 09/05/07	129	2	2	4	2					Production flights 6 & 7. Farmer upset about heli flying over his house - J. Wooster visited him and will call him if flying in the area again.								
Thu 10/05/07	130	2	1	3	2					Sam Borg departed. Had extensive briefing with the operator about his responsibilities flying. Production flight 8. Another farmer upset.								
Fri 11/05/07	131	2	1	3	2					Flew flights 9 & 10 - one was production and the other calibrations over the ocean. Avoided farmers area who is making threats.								
Totals:						0.0		0.0										
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Client	GPX Air Job No.	Area(s)	Job Name		Flying Base	Aircraft Type (s)	Crew Contact Phone No	Crew Contact Sat No												
GA	2249	1	NE Tasmania		Launceston	AS-350D	+61 (0)400 173 754	+881621462769												
Aircraft:	VHJWD	AOM	R. Blizzard	FPM	J. Wooster/R. Blizzard	Field Operators	Tim Cousin	Liam Parry	Pilots	Mark Watson										
Kilometres										Aircraft Time							Standby			
Date	Fit	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Mob	Total	Hrs to 100 Hrly	Hrs	Reason		
Sat	12/05/07	0.0	0.0	0.0	29,873.0	985.8	28,887.2	0.0	0.0		0.0		0.0	0.0	0.0	52.8	8.0	Wx		
Sun	13/05/07	11/12/13	443.3	0.0	0.0	29,873.0	1,429.1	28,443.9	6.5	0.0	0.5		0.0	0.0	7.0	45.8	0.0			
Mon	14/05/07	14	164.2	0.0	0.0	29,873.0	1,593.3	28,279.7	2.2	0.0	0.2		0.0	0.0	2.4	43.4	4.0	Wx		
Tue	15/05/07	15/16/17	358.5	12.1	0.0	29,873.0	1,939.7	27,933.3	5.5	0.0	0.5		0.0	0.0	6.0	37.4	0.0			
Wed	16/05/07		0.0	0.0	0.0	29,873.0	1,939.7	27,933.3	0.0	0.0	0.0		0.0	0.0	0.0	37.4	8.0	Wx		
Thu	17/05/07		0.0	0.0	0.0	29,873.0	1,939.7	27,933.3	0.0	0.0	0.0		0.0	0.0	0.0	37.4	8.0	Wx		
Fri	18/05/07		0.0	0.0	0.0	29,873.0	1,939.7	27,933.3	0.0	0.0	0.0		0.0	0.0	0.0	37.4	8.0	Wx		
Totals:			966.0	12.1	0.0	29,873.0	1,939.7	27,933.3	14.2	0.0	1.2		0.0	0.0	15.4		36.0			
Chargeable Lost Time (Hrs):				36.0	Non-Chargeable Lost Time (Hrs):															
Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs		Equip Maint' Hrs		General / Processing / QC Comments										
Sat	12/05/07	132	3	1	4	2					Fogged in all day. Tried to contact farmer about flying area, was unable to contact him. Put connector on rad alt/nav box. Liam Parry arrived									TBM
Sun	13/05/07	133	3	1	4	2					Production flights 11, 12 & 13. Still unable to contact farmer.									TBM
Mon	14/05/07	134	3	1	4	2					Production flight 14. Fog until after lunch. Still unable to contact farmer. J. Wooster went to St Helens today 40 drums of Jet A1 delivered.									TBM
Tue	15/05/07	135	3	1	4	2					Production flights 15, 16 & 17. R. Blizzard arrived this date - J. Wooster departed. Helicopter oil switch faulty - new unit being sent from Heli Aust.									
Wed	16/05/07	136	3	1	4	2					No production this date due to weather.									
Thu	17/05/07	137	3	1	4	2					No production this date due to weather.									
Fri	18/05/07	138	3	1	4	2					No production this date due to weather.									
Totals:							0.0	0.0												
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Ferry = operations base to survey area & return times.																				

Client	GPX Air Job No.	Area(s)	Job Name			Flying Base			Aircraft Type (s)			Crew Contact Phone No		Crew Contact Sat No															
GA	2249	1	NE Tasmania			Launceston			AS-350D			+61 (0)400 173 754		+881621462769															
Aircraft:	VH-JWD	AOM	R. Blizzard			FPM	R. Blizzard			Field Operators			Tim Cousin		Liam Parry		Pilots		Mark Watson										
Kilometres																				Aircraft Time									
Date	Fit	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Mob	Total	Hrs to 100 Hrly	Standby		Reason										
Sat	19/05/07	18/19	228.7	0.0	0.0	29,873.0	2,168.4	27,704.6	3.2	0.0		0.3		0.0	0.0	3.5	33.9	4.9	Wx										
Sun	20/05/07	20/21/22	563.4	0.0	0.0	29,873.0	2,731.8	27,141.2	7.0	0.0		0.5		0.0	0.0	7.5	26.7	0.0											
Mon	21/05/07		0.0	0.0	0.0	29,873.0	2,731.8	27,141.2	0.0	0.0		0.0		0.0	0.0	0.0	26.7	8.0	Wx										
Tue	22/05/07	23/24	350.8	0.0	0.0	29,873.0	3,082.6	26,790.4	4.9	0.0		0.5		0.0	0.0	5.4	21.3	0.0											
Wed	23/05/07	25	73.6	0.0	0.0	29,873.0	3,156.2	26,716.8	1.8	0.0		0.2		0.0	0.0	2.0	19.3	6.9	Ins/Wx										
Thu	24/05/07		0.0	0.0	0.0	29,873.0	3,156.2	26,716.8	0.0	0.0		0.0		0.0	0.0	0.0	19.3	8.0	Wx										
Fri	25/05/07	26/27	424.9	49.4	0.0	29,873.0	3,531.7	26,341.3	5.0	0.0		0.4		0.0	0.0	5.4	13.9	2.6	Wx										
Totals:			1,641.4	49.4	0.0	29,873.0	3,531.7	26,341.3	21.9	0.0		1.9		0.0	0.0	23.8		30.4											
Chargeable Lost Time (Hrs):				25.4				Non-Chargeable Lost Time (Hrs):				5.0																	
Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs		Equip Maint' Hrs		General / Processing / QC Comments																			
Sat	19/05/07	139	3	1	4	2					Production flights 18 & 19. Late start due to fog. Second sortie cut short due encroaching storms and low level cloud for remainder of day.																		
Sun	20/05/07	140	3	1	4	2					Production flights 20, 21 & 22. Clear day with storm clouds moving into area after third flight - winds gusting.																		
Mon	21/05/07	141	3	1	4	2					No production due to weather - low level cloud and rain. Central area wind storms.																		
Tue	22/05/07	142	3	1	4	2					Production flights 22 & 23. Late start due to fog.																		
Wed	23/05/07	143	3	1	4	2			5.0	U	Instrument technical problems causing late start. One production flight and early return to gusting winds in central survey area (30 to 35 knts). TBM																		
Thu	24/05/07	144	3	1	4	2					No production due to weather - low level cloud and rain. High gusting winds in the afternoon.																		
Fri	25/05/07	145	3	1	4	2					Production flights 26 & 27. High winds and rain in the afternoon. Lines 3080 & 3090 scrubbed - cut short due to Rin & diurnal out of spec.																		
Totals:							0.0	5.0																					
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Client	GPX Air Job No.	Area(s)	Job Name		Flying Base		Aircraft Type (s)		Crew Contact Phone No		Crew Contact Sat No							
GA	2249	1	GA		Launceston		AS-350D		+61 (0)400 173 754		+881621462769							
Aircraft:	VH-JWD	AOM	R. Blizzard	FPM	R. Blizzard/J. Wooster	Field Operators	T. Cousin	L. Parry	Pilots	M. Watson	J. McKinstry							
Kilometres													Aircraft Time					
Date	Fit	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Mob	Total	Hrs to 100 Hrly	Standby Hrs	Reason
Sat	26/05/07	28/29/30	475.9	0.0	0.0	29,873.0	4,007.6	25,865.4	6.6	0.0	0.5	0.0	0.0	0.0	7.1	6.8	0.0	
Sun	27/05/07	31/32	219.3	0.0	0.0	29,873.0	4,226.9	25,646.1	4.9	0.0	0.3	0.0	0.0	0.0	5.2	2.4	3.0	Wx
Mon	28/05/07		0.0	0.0	0.0	29,873.0	4,226.9	25,646.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0	Wx
Tue	29/07/05	33	39.4	0.0	122.3	29,873.0	4,266.3	25,606.7	3.0	0.0	0.0	0.0	0.0	0.0	3.0	-0.6	4.0	A/C Maint
Wed	30/05/07	34	90.5	0.0	92.4	29,873.0	4,356.8	25,516.2	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	6.0	A/C & Inst
Thu	31/05/07		0.0	0.0	0.0	29,873.0	4,356.8	25,516.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.4	8.0	A/C Maint
Fri	01/06/07	35/36/37	223.4	0.0	130.8	29,873.0	4,580.2	25,292.8	6.1	0.0	0.0	0.0	0.0	0.0	6.1	93.3	0.0	
Totals:			1,048.5	0.0	345.5	29,873.0	4,580.2	25,292.8	23.6	0.0	0.8	0.0	0.0	0.0	24.4		29.0	
Chargeable Lost Time (Hrs):				11.0		Non-Chargeable Lost Time (Hrs):				18.0								
Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs		Equip Maint' Hrs		General / Processing / QC Comments								
Sat	26/05/07	146	3	1	4	2					Production flights 28, 29 & 30. Windy and slightly overcast conditions in the am - improving in the afternoon.							
Sun	27/05/07	147	3	2	5	2					Production flights 31 & 32. Morning fog - cleared mid morning with windy and heavy overcast conditions in the pm. Comp ox this date.							
Mon	28/05/07	148	3	2	5	2					No production this date due to weather. Low level cloud and constant rain (drizzle).							
Tue	29/05/07	149	2	4	6	2	4.0	S			Production flight 33. Windy & cloudy in afternoon, engineers start 100 hour service. 2 pilots, 2 engineers & 2 GPX crew.							
Wed	30/05/07	150	2	4	6	2	4.0	S	2.0	U	Production flight 34. Fixed problem with spec system, Crystal 3 had lost gain and wasn't operating. 50 drums Jet A1 delivered to Ringarooma.							
Thu	31/05/07	151	2	1	3	2	3.0 5.0	S U			100 hourly helicopter inspection finished, avionics tech arrived in Launceston to repair plug. Mark Watson & 3 Heli Aust tech's gone.							
Fri	01/06/07	152	2	1	4	2					Production flights 35, 36 & 37. J. Wooster went to Zeehan to prepare for 2280 Stongehenge job.							
Totals:							16.0		2.0									
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GA - NE Tasmania	2249	1	GA - NE Tasmania		Launceston/Ringarooma		AS-350D		+61 (0)400 173 754		+881621462769								
Aircraft:	VH-JWD	AOM	R. Blizzard	FPM	J. Wooster	Field Operators		L. Parry	Pilots		J. McKinstry								
Kilometres													Aircraft Time						
Date	Fit	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Mob	Total	Hrs to 100 Hrly	Standby Hrs	Reason	
Sat 02/06/07		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0	86.6	0.0		
Sun 03/06/07		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0	81.0	0.0		
Mon 04/06/07	38/39/40	0.0	39.5	138.1	29,873.0	4,580.2	25,292.8	3.5	0.4		0.5		0.0	0.0	4.4	76.6	0.0		
Tue 05/06/07	41/42	281.6	0.0	45.9	29,873.0	4,298.6	25,574.4	4.8	0.0		0.5		0.0	0.0	5.3	71.3	0.0		
Wed 06/06/07	43/44	339.6	0.0	39.6	29,873.0	4,638.2	25,234.8	4.9	0.0		0.5		0.0	0.0	5.4	65.9	0.0		
Thu 07/06/07	45/46	395.7	0.0	0.0	29,873.0	5,033.9	24,839.1	5.1	0.0		0.5		0.0	0.0	5.6	60.3	0.0		
Fri 08/06/07	47	200.7	0.0	0.0	29,873.0	5,234.6	24,638.4	3.0	0.0		0.2		0.0	0.0	3.2	57.1	0.0		
Totals:		1,217.6	39.5	223.6	29,873.0	5,234.6	24,638.4	21.3	0.4		2.2		0.0	0.0	23.9		0.0		
Chargeable Lost Time (Hrs):				Non-Chargeable Lost Time (Hrs):															
Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs S / U		Equip Maint' Hrs S / U		General / Processing / QC Comments									
Sat 02/06/07	153	2	1	4	2					Aircraft on West Coast (Zeehan) for Stonehenge survey.									
Sun 03/06/07	154	2	1	3	2					Aircraft on West Coast (Zeehan) for Stonehenge survey.									
Mon 04/06/07	155	2	1	3	2					Production flight 38 Cals were done couldn't get into area due to cloud. Flt 39 comp box completed good. Flt 40 reflights, 1 line scrub diurnal.									
Tue 05/06/07	156	2	1	3	2					Production flights 41 & 42. J. Wooster went to Ringarooma / Scottsdale sort out fuel and accommodation, relocate Friday. TBM									
Wed 06/06/07	157	2	1	3	2					Production flights 43 & 44, all current reflights completed.									
Thu 07/06/07	158	2	1	3	2					Production flights 45 & 46.									
Fri 08/06/07	159	2	1	3	2					Production flight 47, relocate base to Ringarooma (Scottsdale) from Launceston. TBM									
Totals:						0.0		0.0											
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Client	GPX Air Job No.	Area(s)	Job Name			Flying Base			Aircraft Type (s)			Crew Contact Phone No		Crew Contact Sat No				
GA	2249	1	GA			Ringarooma			AS-350D			+61 (0)400 173 754		+881621462769				
Aircraft:	VH-JWD	AOM	R. Blizzard	FPM	J. Wooster	Field Operators			L. Parry	Pilots			J. McKinstry					
Kilometres																		
Date	Fit	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Mob	Total	Hrs to 100 Hrly	Standby	
Sat	09/06/07	48/49	513.1	0.0	0.0	29,873.0	13,301.6	24,125.3	6.4	0.0		0.2	0.0	0.0	6.6	50.5	0.0	
Sun	10/06/07	50/51	399.4	0.0	0.0	29,873.0	13,701.0	23,725.9	4.9	0.0		0.2	0.0	0.0	5.1	45.4	2.9	Wx
Mon	11/06/07	N/A	0.0	0.0	0.0	29,873.0	13,701.0	23,725.9	0.0	0.0		0.0	0.0	0.0	0.0	45.4	8.0	Pilot
Tue	12/06/07	52/53	527.7	0.0	0.0	29,873.0	14,228.7	23,198.2	6.5	0.0		0.2	0.0	0.0	6.7	38.7	0.0	
Wed	13/06/07	54/55	363.2	22.1	0.0	29,873.0	14,569.8	22,835.0	4.9	0.4		0.2	0.0	0.0	5.5	33.2	2.5	Wx
Thu	14/06/07	N/A	0.0	0.0	0.0	29,873.0	14,569.8	22,835.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	8.0	Pilot
Fri	15/06/07	56/57	560.8	0.0	0.0	29,873.0	15,130.6	22,274.2	7.3	0.0		0.2	0.0	0.0	7.5	25.7	0.0	
Totals:			2,364.2	22.1	0.0	29,873.0	15,130.6	22,274.2	30.0	0.4		1.0	0.0	0.0	31.4		21.4	
Chargeable Lost Time (Hrs):				5.4		Non-Chargeable Lost Time (Hrs):				16.0								
Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs		Equip Maint' Hrs		General / Processing / QC Comments								
Sat	09/06/07	160	2	1	3	2					Production flights 48 & 49 in new location, Ringarooma. TBM							
Sun	10/06/07	161	2	1	3	2					Production flights 50 & 51, Flight 51 was called a little short due to bad weather. TBM							
Mon	11/06/07	162	2	1	3	2					Pilot duty time day off. TBM							
Tue	12/06/07	163	2	1	3	2					Production flights 52 & 53. TBM							
Wed	13/06/07	164	2	1	3	2					Production flights 54 & 55. Wind came up and one line near mountains was broken off half way down, scrub line. TBM							
Thu	14/06/07	165	2	1	3	2					Pilot duty time day off. TBM							
Fri	15/06/07	166	2	1	3	2					Production flights 56 & 57. TBM							
Totals:							0.0	0.0										

KEY:
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 Ferry = operations base to survey area & return times.

= Safety Meeting (SM) / Toolbox Meeting (TBM) check box.
 Mob = (Mob/Demob) initial flying time to project & from project.
 Aircraft/Equipment Maint': S = scheduled / U = unscheduled.
 General/Processing/QC Comments should include basic weather description.

Client	GPX Air Job No.	Area(s)	Job Name	Flying Base	Aircraft Type (s)	Crew Contact Phone No	Crew Contact Sat No												
GA	2249	Ringarooma	GA	Ringarooma	AS-350D	+61 (0)400 173 754	+881621462769												
Aircraft:	VH-JWD	AOM R. Blizzard	FPM J. Wooster / D. Ting	Field Operators L. Parry	Pilots J. McKinstry	L. Garry													
Kilometres								Aircraft Time											
Date	Fit	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Mob	Total	Hrs to 100 Hrly	Standby Hrs	Reason	
Sat	16/06/07	58/59	377.2	0.0	0.0	29,873.0	7,976.0	21,897.0	5.0	0.0		0.2		0.0	0.0	5.2	20.2	0.0	
Sun	17/06/07	60	140.5	0.0	0.0	29,873.0	8,116.5	21,756.5	2.1	0.0		0.2		0.0	0.0	2.3	17.9	4.0	WX
Mon	18/06/07	61/62	450.8	0.0	0.0	29,873.0	8,567.3	21,305.7	6.1	0.0		0.2		0.0	0.0	6.3	11.6	0.0	
Tue	19/06/07	N/A	0.0	0.0	0.0	29,873.0	8,567.3	21,305.7	0.0	0.0		0.0		0.0	0.0	0.0	11.6	8.0	WX
Wed	20/06/07	63/64	377.7	0.0	0.0	29,873.0	8,945.0	20,928.0	5.4	0.0		0.2		0.0	0.0	5.6	6.0	0.0	
Thu	21/06/07	65/66	318.2	0.0	0.0	29,873.0	9,263.2	20,609.8	5.0	0.0		0.2		0.0	0.0	5.2	0.8	0.0	
Fri	22/06/07	67/68	259.1	0.0	0.0	29,873.0	9,522.3	20,350.7	4.4	0.0		0.2		0.0	0.0	4.6	-3.8	0.0	
Totals:			1,923.5	0.0	0.0	29,873.0	9,522.3	20,350.7	28.0	0.0		1.2		0.0	0.0	29.2		12.0	
Chargeable Lost Time (Hrs):				12.0				Non-Chargeable Lost Time (Hrs):											
Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs	S / U	Equip Maint' Hrs	S / U	General / Processing / QC Comments									
Sat	16/06/07	167	2	1	3	2				Production flights 58 & 59, stopped flying due to rain in survey area.									
Sun	17/06/07	168	2	1	3	2				Production flight 60, flying stopped due to low cloud over ranges and fog sitting in valleys. Farmer waved gun at us Line # 7260.									
Mon	18/06/07	169	2	1	3	2				Production flight 61 & 62. Morning ground calcs done in different position as the generator wouldn't start. Heli moved to farmers mains power.									
Tue	19/06/07	170	2	1	3	2				No flying due to strong winds.									
Wed	20/06/07	171	2	2	4	2				Production flights 63 & 64, Mt Cameron was finished. New pilot Leon Garry arrives.									
Thu	21/06/07	172	3	2	5	2				Production flights 65 & 66. New Project Manager Dan Ting arrives. Strong winds in main area but Mt Horror is ok for production (coastal).									
Fri	22/06/07	173	3	2	5	2				Production flights 67 & 68.									
Totals:							0.0		0.0										
KEY:										<input type="checkbox"/> = Safety Meeting (SM) / Toolbox Meeting (TBM) check box. Mob = (Mob/Demob) initial flying time to project & from project. Aircraft/Equipment Maint': S = scheduled / U = unscheduled. General/Processing/QC Comments should include basic weather description.									
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Ferry = operations base to survey area & return times.																			

Client	GPX Air Job No.	Area(s)	Job Name		Flying Base	Aircraft Type (s)		Crew Contact Phone No		Crew Contact Sat No								
GA	2249	1	NE Tasmania		Ringarooma	AS-350D		+61 (0)432 423 385		+881621462769								
Aircraft:	VHJWD	AOM	Bob Blizzard	FPM	D. Ting	Field Operator	L. Parry	Pilots		L. Garry								
Kilometres												Aircraft Time						
Date	Fit	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Mob	Total	Hrs to 100 Hrly	Standby Hrs	Reason
Mon	25/06/07	0.0	0.0	0.0	29,873.0	10,113.2	19,759.8	0.0	0.0		0.3		0.0	0.0	0.3	84.7	8.0	A/Craft
Tue	26/06/07	72/73	401.3	0.0	29,873.0	10,514.5	19,358.5	4.9	0.0		0.0		0.0	0.0	4.9	79.8		
Wed	27/06/07	74	187.9	0.0	29,873.0	10,702.4	19,170.6	2.4	0.0		0.0		0.0	0.0	2.4	77.4	4.0	WX
Thu	28/06/07	75/76	266.1	0.0	29,873.0	10,968.5	18,904.5	4.6	0.0		0.0		0.0	0.0	4.6	72.8	2.0	WX
Fri	29/06/07	77/78	427.6	0.0	29,873.0	11,396.1	18,476.9	6.3	0.0		0.0		0.0	0.0	6.3	66.5		
Sat	30/06/07	79/80	525.7	0.0	29,873.0	11,921.8	17,951.2	6.8	0.0		0.3		0.0	0.0	7.1	59.4		
Sun	01/07/07		0.0	0.0	29,873.0	11,921.8	17,951.2	0.0	0.0		0.3		0.9	0.0	1.2	58.2	8.0	Instrum's
Totals:			1,808.6	0.0	29,873.0	11,921.8	17,951.2	25.0	0.0		0.9		0.9	0.0	26.8		22.0	
Chargeable Lost Time (Hrs):				6.0	Non-Chargeable Lost Time (Hrs):				16.0									
Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs		Equip Maint' Hrs		General / Processing / QC Comments								
Mon	25/06/07	176	2	3	5	2	8.0	S			Heli down for 100Hr service. Back on site late afternoon. 50 drums Jet A1 arrive on site.							
Tue	26/06/07	177	2	1	3	2					2 x production flights.							
Wed	27/06/07	178	2	1	3	2					1 x production flight. No flying in morning due to poor weather conditions.							
Thu	28/06/07	179	2	1	3	2					2 x production flights plus a recce of the eastern block. Second flight cut short due to high winds. Western block completed.							
Fri	29/06/07	180	2	1	3	2					Comp box and 2 x production flights.							
Sat	30/06/07	181	3	1	6	2					3 x production flights, ferry to Launceston for stinger change.							
Sun	1/07/07	182	3	1	4	2			8.0	U	Heli stinger section change, load Agis V6 software, comp box, heli returns to Ringarooma late afternoon.							
Totals:							8.0		8.0									
KEY:												= Safety Meeting (SM) / Toolbox Meeting (TBM) check box.						
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Client	GPX Air Job No.	Area(s)	Job Name		Flying Base	Aircraft Type (s)	Crew Contact Phone No	Crew Contact Sat No											
GA	2249	1	NE Tasmania		Ringarooma	AS-350D	+61 (0)432 423 385	+881621462769											
Aircraft:	VHJWD	AOM	Bob Blizzard	FPM	D.Ting	Field Operator	Pilots	L. Garry											
		Kilometres						Aircraft Time											
Date	Fit	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Mob	Total	Hrs to 100 Hr	Standby Hrs	Reason	
Mon	02/07/07	0.0	0.0	0.0	29,873.0	11,921.8	17,951.2	0.0	0.0		0.0		0.0	0.0	0.0	58.2	8.0	Pilot	
Tue	03/07/07	82/83	194.5	0.0	29,873.0	12,116.3	17,756.7	2.1	0.0		0.0		0.0	0.0	2.1	56.1	4.9	WX	
Wed	04/07/07		0.0	0.0	29,873.0	12,116.3	17,756.7	0.0	0.0		0.0		0.0	0.0	0.0	56.1	8.0	Pilot	
Thu	05/07/07	84/85	188.2	0.0	29,873.0	12,304.5	17,568.5	2.8	0.0		0.0		0.0	0.0	2.8	53.3	4.2	WX	
Fri	06/07/07	86/87/88	446.2	0.0	29,873.0	12,750.7	17,122.3	5.7	0.0		0.0		0.0	0.0	5.7	47.6	0.0		
Sat	07/07/07		0.0	0.0	29,873.0	12,750.7	17,122.3	0.0	0.0		0.0		0.0	0.0	0.0	47.6	8.0	WX	
Sun	08/07/07	89	37.8	0.0	29,873.0	12,788.5	17,084.5	1.2	0.0		0.0		0.0	0.0	1.2	46.4	6.0	WX	
Totals:			866.7	0.0	29,873.0	12,788.5	17,084.5	11.8	0.0		0.0		0.0	0.0	11.8		39.1		
Chargeable Lost Time (Hrs):				23.1	Non-Chargeable Lost Time (Hrs):				16.0										
Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs	S / U	Equip Maint' Hrs	S / U	General / Processing / QC Comments									
Mon	02/07/07	183	1	1	2	1				Pilots day off.									
Tue	03/07/07	184	1	1	2	1				Two production flights. Flights cut short due to low level cloud and high winds. TBM									
Wed	04/07/07	185	1	1	2	1				Pilots day off.									
Thu	05/07/07	186	1	1	2	1				Two production flights. First flight cut short due to rain.									
Fri	06/07/07	187	1	1	2	1				Three production flights. Last flight cut short due to rain.									
Sat	07/07/07	188	1	1	2	1				No flying due to rain.									
Sun	8/07/07	189	1	1	2	1				One production flight. Flight cut short due to rain.									
Totals:							0.0		0.0										
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Ferry = operations base to survey area & return times.																			

Client	GPX Air Job No.	Area(s)	Job Name		Flying Base	Aircraft Type (s)		Crew Contact Phone No		Crew Contact Sat No								
GA	2249	1	NE Tasmania		Ringarooma	AS-350D		+61 (0)432 423 385		+881621462769								
Aircraft:	VHJWD	AOM	Bob Blizzard	FPM	D.Ting	Field Operator	D.Ting	Pilots		L.Garry								
Kilometres																		
Date	Fit	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Aircraft Time				Hrs to 100 Hr	Standby					
								Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Mob	Total	Hrs	Reason	
Mon	09/07/07	90/91	515.4	0.0	0.0	29,873.0	13,303.9	16,569.1	6.4	0.0		0.0	0.0	0.0	6.4	40.0	0.0	
Tue	10/07/07	92/93	395.3	0.0	0.0	29,873.0	13,699.2	16,173.8	5.6	0.0		0.0	0.0	0.0	5.6	34.4	0.0	
Wed	11/07/07	94	0.0	0.0	0.0	29,873.0	13,699.2	16,173.8	1.0	0.0		0.0	0.0	0.0	1.0	33.4	8.0	WX
Thu	12/07/07		0.0	0.0	0.0	29,873.0	13,699.2	16,173.8	0.0	0.0		0.0	0.0	0.0	0.0	33.4	8.0	WX
Fri	13/07/07	95/96/97	361.3	0.0	0.0	29,873.0	14,060.5	15,812.5	5.3	0.0		0.0	0.0	0.0	5.3	28.1	2.7	Maint(U)
Sat	14/07/07	98	87.7	0.0	0.0	29,873.0	14,148.2	15,724.8	1.3	0.0		0.0	0.0	0.0	1.3	26.8	6.0	WX
Sun	15/07/07	99/100	530.6	0.0	0.0	29,873.0	14,678.8	15,194.2	6.5	0.0		0.0	0.0	0.0	6.5	20.3	0.0	
Totals:			1,890.3	0.0	0.0	29,873.0	14,678.8	15,194.2	26.1	0.0		0.0	0.0	0.0	26.1		24.7	
Chargeable Lost Time (Hrs):				2.7	Non-Chargeable Lost Time (Hrs):				22.0									
Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs		Equip Maint' Hrs		General / Processing / QC Comments								
							S / U		S / U									
Mon	09/07/07	190	1	1	2	1				2 production flights (hot refuel 1st flight).								
Tue	10/07/07	191	1	2	2	1				2 production flights (hot refuel 1st flight). Chief Pilot Sam Borg arrives on site. TBM								
Wed	11/07/07	192	1	2	2	1				Pilot proficiency training. No survey due to low level cloud and showers. Sam Borg leaves site.								
Thu	12/07/07	193	1	1	2	1				Rain, no production.								
Fri	13/07/07	194	1	1	2	1	2.7	U		3 production flights. 1st flight cut short due to gearbox chip warning light. Lower gearbox plug removed, inspected / cleaned and re-fitted.								
Sat	14/07/07	195	1	1	2	1				1 production flight, cut short due to strong winds. Strong winds throughout rest of day.								
Sun	15/07/07	196	1	1	2	1				2 production flights.								
Totals:							2.7		0.0									
KEY:																		
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												General/Processing/QC Comments should include basic weather description.						

Client	GPX Air Job No.	Area(s)	Job Name		Flying Base	Aircraft Type (s)	Crew Contact Phone No	Crew Contact Sat No											
GA	2249	1	NE Tasmania		Ringarooma	AS-350D	+61 (0)432 423 385	+881621462769											
Aircraft:	VHJWD	AOM	Bob Blizzard	FPM	D. Ting	Field Operator	L. Parry	Pilots	L. Garry										
Kilometres					Aircraft Time														
Date	Fit	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Mob	Total	Hrs to 100 Hr	Standby Hrs	Reason	
Mon	16/07/07		0.0	0.0	0.0	29,873.0	14,678.8	15,194.2	0.0	0.0		0.0		0.0	0.0	20.3	8.0	WX	
Tue	17/07/07		0.0	0.0	0.0	29,873.0	14,678.8	15,194.2	0.0	0.0		0.0		0.0	0.0	20.3	8.0	WX	
Wed	18/07/07	101/102	396.2	0.0	0.0	29,873.0	15,075.0	14,798.0	5.5	0.0		0.0		0.0	5.5	14.8	0.0		
Thu	19/07/07	103/104	386.0	0.0	0.0	29,873.0	15,461.0	14,412.0	4.8	0.0		0.0		0.0	4.8	10.0	0.0		
Fri	20/07/07	105/106	489.4	0.0	0.0	29,873.0	15,950.4	13,922.6	5.7	0.0		0.0		0.0	5.7	4.3	0.0		
Sat	21/07/07	107	200.5	0.0	0.0	29,873.0	16,150.9	13,722.1	2.1	0.0		0.0		0.0	2.1	2.2	5.9	Maint(S)	
Sun	22/07/07		0.0	0.0	0.0	29,873.0	16,150.9	13,722.1	0.0	0.0		0.0		0.0	0.0	2.2	8.0	Maint(S)	
Totals:			1,472.1	0.0	0.0	29,873.0	16,150.9	13,722.1	18.1	0.0		0.0		0.0	18.1		29.9		
Chargeable Lost Time (Hrs):				16.0	Non-Chargeable Lost Time (Hrs):				13.9										
Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs	S / U	Equip Maint' Hrs	S / U	General / Processing / QC Comments									
Mon	16/07/07	197	1	1	2	1				No production today due to weather.									
Tue	17/07/07	198	2	1	3	2				No production today due to weather. Operator Liam Parry arrives on-site.									
Wed	18/07/07	199	2	1	3	2				2 production flights today.									
Thu	19/07/07	200	2	2	4	2				2 production flights today. New pilot Tony Duckworth arrives on-site.									
Fri	20/07/07	201	2	1	3	2				2 production flights today. New pilot Tony Duckworth leaves site.									
Sat	21/07/07	202	2	1	3	2	5.9	S		1 production flight today. Heli flies to Hobart for 100Hr (turbine).									
Sun	22/07/07	203	2	1	3	2	8.0	S		Heli maintenance.									
Totals:							13.9		0.0										
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Client	GPX Air Job No.	Area(s)	Job Name	Flying Base	Aircraft Type (s)	Crew Contact Phone No	Crew Contact Sat No												
GA	2249	1	NE Tasmania	Ringarooma	AS-350D	+61 (0)432 423 385	+881621462769												
Aircraft:	VHJWD	AOM	Bob Blizzard	FPM	D. Ting	Field Operator	L. Parry	Pilots	L. Garry										
Kilometres					Aircraft Time														
Date	Fit	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Mob	Total	Hrs to 100 Hr	Standby Hrs	Reason	
Mon	23/07/07	0.0	0.0	0.0	29,873.0	16,150.9	13,722.1	0.0	0.0		0.0		0.0	0.0	0.0	0.0	8.0	Maint(S)	
Tue	24/07/07	0.0	0.0	0.0	29,873.0	16,150.9	13,722.1	0.0	0.0		0.0		0.0	1.6	1.6	98.4	8.0	Maint(S)	
Wed	25/07/07	108-110	140.6	0.0	29,873.0	16,291.5	13,581.5	3.7	0.0		0.0		0.0	0.0	3.7	94.7	4.0	WX	
Thu	26/07/07		0.0	0.0	29,873.0	16,291.5	13,581.5	0.0	0.0		0.0		0.0	0.0	0.0	94.7	8.0	WX	
Fri	27/07/07		0.0	0.0	29,873.0	16,291.5	13,581.5	0.0	0.0		0.0		0.0	0.0	0.0	94.7	8.0	WX	
Sat	28/07/07	111-113	462.9	0.0	29,873.0	16,754.4	13,118.6	5.9	0.0		0.0		0.0	0.0	5.9	88.8	0.0		
Sun	29/07/07	114-116	464.9	0.0	29,873.0	17,219.3	12,653.7	5.6	0.0		0.0		0.0	0.0	5.6	83.2	0.0		
Totals:			1,068.4	0.0	29,873.0	17,219.3	12,653.7	15.2	0.0		0.0		0.0	1.6	16.8		36.0		
Chargeable Lost Time (Hrs):				20.0	Non-Chargeable Lost Time (Hrs):				16.0										
Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs	S / U	Equip Maint' Hrs	S / U	General / Processing / QC Comments									
Mon	23/07/07	204	2	0	2	2	8.0	S		Heli maintenance.									
Tue	24/07/07	205	2	1	3	2	8.0	S		Heli maintenance, arrives at St Helens in late afternoon.									
Wed	25/07/07	206	2	1	3	2				Completed comp box. Low production due to strong winds. Located suitable test line.									
Thu	26/07/07	207	2	1	3	2				No production due to bad weather.									
Fri	27/07/07	208	2	1	3	2				No production due to bad weather.									
Sat	28/07/07	209	2	1	3	2				3 x production flights.									
Sun	29/07/07	210	2	1	3	2				3 x production flights.									
Totals:						16.0		0.0											

KEY:
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 Ferry = operations base to survey area & return times.

= Safety Meeting (SM) / Toolbox Meeting (TBM) check box.
 Mob = (Mob/Demob) initial flying time to project & from project.
 Aircraft/Equipment Maint': S = scheduled / U = unscheduled.
 General/Processing/QC Comments should include basic weather description.

Client	GPX Air Job No.	Area(s)	Job Name			Flying Base			Aircraft Type (s)			Crew Contact Phone No		Crew Contact Sat No					
GA	2249	1	NE Tasmania			St Helens			AS-350D			+61 (0)432 423 385		+881621462769					
Aircraft:	VHJWD	AOM	Bob Blizzard	FPM	D. Ting	Field Operator	L. Parry	Pilots		L. Garry									
Kilometres																			
Aircraft Time																			
Date	Fit	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Mob	Total	Hrs to 100 Hr	Standby Hrs	Reason	
Mon	30/07/07	117-119	469.9	0.0	0.0	29,873.0	17,689.2	12,183.8	6.0	0.0		0.0		0.0	0.0	6.0	77.2	0.0	
Tue	31/07/07	120-121	261.7	0.0	0.0	29,873.0	17,950.9	11,922.1	3.7	0.0		0.0		0.0	0.0	3.7	73.5	4.3	WX
Wed	01/08/07		0.0	0.0	0.0	29,873.0	17,950.9	11,922.1	0.0	0.0		0.0		0.0	0.0	0.0	73.5	8.0	WX
Thu	02/08/07		0.0	0.0	0.0	29,873.0	17,950.9	11,922.1	0.0	0.0		0.0		0.0	0.0	0.0	73.5	8.0	WX
Fri	03/08/07	122-123	352.3	0.0	0.0	29,873.0	18,303.2	11,569.8	4.4	0.0		0.0		0.0	0.0	4.4	69.1	0.0	
Sat	04/08/07	124-125	225.6	0.0	0.0	29,873.0	18,528.8	11,344.2	3.2	0.0		0.0		0.0	0.0	3.2	65.9	4.8	WX
Sun	05/08/07	126-128	447.4	0.0	0.0	29,873.0	18,976.2	10,896.8	5.7	0.0		0.0		0.0	0.0	5.7	60.2	0.0	
Totals:			1,756.9	0.0	0.0	29,873.0	18,976.2	10,896.8	23.0	0.0		0.0		0.0	0.0	23.0		25.1	
Chargeable Lost Time (Hrs):				25.1				Non-Chargeable Lost Time (Hrs):				0.0							
Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs		Equip Maint' Hrs		General / Processing / QC Comments									
Mon	30/07/07	211	2	1	3	2					3 x productions flights.								
Tue	31/07/07	212	2	1	3	2					2 x production flights. Strong winds prevent afternoon flying.								
Wed	01/08/07	213	2	1	3	2					No production due to weather conditions.								
Thu	02/08/07	214	2	1	3	2					No production due to weather conditions.								
Fri	03/08/07	215	2	1	3	2					2 x production flights.								
Sat	04/08/07	216	2	1	3	2					2 x production flights, second flight cut short due to strong winds.								
Sun	5/08/07	217	3	1	4	2					3 x productions flights. T.McCambridge arrives on site.								
Totals:							0.0		0.0										

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 = Safety Meeting (SM) / Toolbox Meeting (TBM) check box.
 Mob = (Mob/Demob) initial flying time to project & from project.
 Aircraft/Equipment Maint': S = scheduled / U = unscheduled.
 General/Processing/QC Comments should include basic weather description.

Client	GPX Air Job No.	Area(s)	Job Name		Flying Base	Aircraft Type (s)	Crew Contact Phone No	Crew Contact Sat No											
GA	2249	1	NE Tasmania		St Helens	AS-350D	+61 (0)400 594 339	+881621462769											
Aircraft:	VH-JWD	AOM	Bob Blizzard	FPM	T. McCambridge	Field Operator	L. Parry	Pilots T. Duckworth / M. Watson											
Kilometres									Aircraft Time										
Date	Fit	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Mob	Total	Hrs to 100 Hr	Standby Hrs	Reason	
Mon	06/08/07	129/130	302.3	0.0	0.0	29,873.0	19,278.5	10,594.5	4.3	0.0		0.0		0.0	0.0	4.3	52.4	4.4	WX
Tue	07/08/07	131/132	474.4	42.6	0.0	29,873.0	19,710.3	10,162.7	6.8	0.0		0.0		0.0	0.0	6.8	45.6	1.2	WX
Wed	08/08/07		0.0	0.0	0.0	29,873.0	19,710.3	10,162.7	0.0	0.0		0.0		0.0	0.0	0.0	45.6	8.0	WX
Thu	09/08/07		0.0	0.0	0.0	29,873.0	19,710.3	10,162.7	0.0	0.0		0.0		0.0	0.0	0.0	45.6	8.0	WX
Fri	10/08/07		0.0	0.0	0.0	29,873.0	19,710.3	10,162.7	0.0	0.0		0.0		0.0	0.0	0.0	45.6	8.0	WX
Sat	11/08/07	133	597.6	0.0	42.6	29,873.0	20,350.5	9,522.5	8.9	0.0		0.0		0.0	0.0	8.9	36.7	0.0	
Sun	12/08/07	134	588.1	0.0	94.4	29,873.0	21,033.0	8,840.0	8.9	0.0		0.0		0.0	0.0	8.9	27.8	0.0	
Totals:			1,962.4	42.6	94.4	29,873.0	21,033.0	8,840.0	28.9	0.0		0.0		0.0	0.0	28.9		29.6	
Chargeable Lost Time (Hrs):				29.6					Non-Chargeable Lost Time (Hrs):										
Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs	S / U	Equip Maint' Hrs	S / U	General / Processing / QC Comments									
Mon	06/08/07	218	3	2	5	2				2 x productions flights. High Winds Over hills. M Watson Pilot arrives in St Helens.									
Tue	07/08/07	219	2	1	3	2				2 x production flights. Strong winds prevent afternoon flying. D. Ting & T. Duckworth depart St Helens.									
Wed	08/08/07	220	2	1	3	2				No production due to weather conditions. High Winds.									
Thu	09/08/07	221	2	1	3	2				No production due to weather conditions. High Winds. 28 drums JetA1 delivered.									
Fri	10/08/07	222	2	1	3	2				No production due to weather conditions. High Winds.									
Sat	11/08/07	223	2	1	3	2				4 x production flights. (Hot refuels).									
Sun	12/08/07	224	2	1	3	2				4 x production flights. (Hot refuels).									
Totals:							0.0		0.0										
KEY:										= Safety Meeting (SM) / Toolbox Meeting (TBM) check box.									
Enter numbers/data into blue marked sections only.										Mob = (Mob/Demob) initial flying time to project & from project.									
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Ferry = operations base to survey area & return times.										General/Processing/QC Comments should include basic weather description.									

Client	GPX Air Job No.	Area(s)	Job Name			Flying Base			Aircraft Type (s)			Crew Contact Phone No		Crew Contact Sat No				
GA	2249	1	NE Tasmania			St Helens			AS-350D			+61 (0)400 594 339		+881621462769				
Aircraft:	VHJWD	AOM	Bob Blizzard	FPM	T.McCambridge	Field Operator	L.Parry	Pilots	M.Watson									
Kilometres																		
Date	Fit	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Mob	Total	Hrs to 100 Hr	Standby Hrs	Reason
Mon	13/08/07	135	512.1	0.0	179.8	29,873.0	21,033.0	8,327.9	9.8	0.0		0.0	0.0	0.0	9.8	19.1	0.0	
Tue	14/08/07		0.0	0.0	0.0	29,873.0	21,033.0	8,840.0	1.2	0.0		0.0	0.0	0.0	1.2	17.9	8.0	WX/Heli
Wed	15/08/07	136/137	227.7	0.0	0.0	29,873.0	21,260.7	8,612.3	3.6	0.0		0.0	0.0	0.0	3.6	14.3	4.4	WX/Heli
Thu	16/08/07	138	0.0	0.0	0.0	29,873.0	21,260.7	8,612.3	0.4	0.0		0.0	0.0	0.0	0.4	13.9	7.6	WX
Fri	17/08/07	139	647.3	0.0	0.0	29,873.0	21,908.0	7,965.0	8.7	0.0		0.0	0.0	0.0	8.7	5.2	0.0	
Sat	18/08/07	140	758.9	0.0	0.0	29,873.0	22,666.9	7,206.1	10.3	0.0		0.0	0.0	0.0	10.3	-5.1	0.0	
Sun	19/08/07	141	657.4	0.0	0.0	29,873.0	23,324.3	6,548.7	8.5	0.0		0.6	0.0	0.0	9.1	-14.2	0.0	
Totals:			2,803.4	0.0	179.8	29,873.0	23,324.3	6,548.7	42.5	0.0		0.6	0.0	0.0	43.1		20.0	
Chargeable Lost Time (Hrs):				16.0	Non-Chargeable Lost Time (Hrs):				4.0									
Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs		Equip Maint' Hrs		General / Processing / QC Comments								
							S / U		S / U									
Mon	13/08/07	225	2	1	3	2				4 x production flights. (Hot refuels) TBM								
Tue	14/08/07	226	2	1	3	2	2.0	U		No production.Heavy Rain & Low Cloud.Late afternoon flight aborted due to Helicopter Chip Light Detector .Return to St Helens. TBM								
Wed	15/08/07	227	2	1	3	2	2.0	U		2 x Production flights Low Cloud over hills stops flying.Helicopter has bird strike returns to St Helens.OK TBM								
Thu	16/08/07	228	2	1	3	2				No production.Heavy Rain & Low Cloud. 								
Fri	17/08/07	229	2	1	3	2				4 x production flights. (Hot refuels) TBM								
Sat	18/08/07	230	2	1	3	2				5 x production flights. (Hot refuels) TBM								
Sun	19/08/07	231	2	1	3	2				4 x production flights. (Hot refuels)Helicopters Ferries to Launceston for 100Hrly TBM								
Totals:							4.0		0.0									
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Ferry = operations base to survey area & return times.																		

Client	GPX Air Job No.	Area(s)	Job Name			Flying Base		Aircraft Type (s)		Crew Contact Phone No		Crew Contact Sat No							
GA	2249	1	NE Tasmania			St Helens		AS-350D		+61 (0)400 594 339		+881621462769							
Aircraft:	VHJWD	AOM	Bob Blizzard	FPM	D.Ting	T.McCambridge	Field Operator	L.Parry	Pilots	M.Watson									
Kilometres								Aircraft Time											
Date	Fit	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Mob	Total	Hrs to 100 Hr	Standby Hrs	Reason	
Mon	20/08/07		0.0	0.0	0.0	29,873.0	23,324.3	6,548.7	0.0	0.0		0.0		0.0	0.0	100.0	8.0	Heli	
Tue	21/08/07		0.0	0.0	0.0	29,873.0	23,324.3	6,548.7	0.0	0.0		0.0		0.0	0.0	100.0	8.0	Heli	
Wed	22/08/07	142	0.0	0.0	0.0	29,873.0	23,324.3	6,548.7	0.0	0.0		0.9		0.0	0.9	99.1	7.1	Heli	
Thu	23/08/07	143/144	663.0	0.0	0.0	29,873.0	23,987.3	5,885.7	9.4	0.0		0.0		0.0	9.4	89.7	0.0		
Fri	24/08/07	145/146	761.8	0.0	0.0	29,873.0	24,749.1	5,123.9	9.3	0.0		0.0		0.0	9.3	80.4	0.0		
Sat	25/08/07	147/148	726.3	0.0	0.0	29,873.0	25,475.4	4,397.6	10.0	0.0		0.0		0.0	10.0	70.4	0.0		
Sun	26/08/07	149/150	823.2	0.0	0.0	29,873.0	26,298.6	3,574.4	10.0	0.0		0.0		0.0	10.0	60.4	0.0		
Totals:			2,974.3	0.0	0.0	29,873.0	26,298.6	3,574.4	38.7	0.0		0.0		0.0	39.6		23.1		
Chargeable Lost Time (Hrs):				Non-Chargeable Lost Time (Hrs):															
Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs		Equip Maint' Hrs		General / Processing / QC Comments									
Mon	20/08/07	232	2	1	3	2	8.0	S			No production. Helicopter out for 100hrly.								
Tue	21/08/07	233	2	1	3	2	8.0	S			No production. Helicopter out for 100hrly.								
Wed	22/08/07	234	2	1	3	2	7.1	S			No production. Helicopter out for 100hrly, returns to St Helens. Check out Rad Stack line on return.								
Thu	23/08/07	235	3	1	4	2					4 x production flights. Late start due low cloud in survey area.								
Fri	24/08/07	236	2	1	3	1					4 x production flights.								
Sat	25/08/07	237	2	1	3	1					4 x production flights, heli landed and shut down during final flight to clear gearbox chip.								
Sun	26/08/07	238	2	1	3	1					4 x production flights.								
Totals:							23.1		0.0										
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Client	GPX Air Job No.	Area(s)	Job Name	Flying Base	Aircraft Type (s)	Crew Contact Phone No	Crew Contact Sat No												
GA	2249	1	NE Tasmania	St Helens / Launceston	AS-350D	+61 (0)432 423 385	+881621462769												
Aircraft:	VHJWD	AOM	Bob Blizzard	FPM	D.Ting	Field Operator	L.Parry	Pilots	M.Watson & L.Garry										
Kilometres								Aircraft Time											
Date	Fit	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Mob	Total	Hrs to 100 Hr	Standby Hrs	Reason	
Mon	27/08/07	151/152	679.0	0.0	0.0	29,873.0	26,977.6	2,895.4	9.5	0.0		0.0		0.0	0.0	9.5	50.9	0.0	
Tue	28/08/07	153	132.4	0.0	0.0	29,873.0	27,110.0	2,763.0	3.3	0.0		0.0		0.0	0.0	3.3	47.6	6.0	
Wed	29/08/07		0.0	0.0	0.0	29,873.0	27,110.0	2,763.0	0.0	0.0		0.0		0.0	0.0	0.0	47.6	8.0	Maint
Thu	30/08/07		0.0	0.0	0.0	29,873.0	27,110.0	2,763.0	0.0	0.0		0.0		0.0	0.0	0.0	100.0	8.0	WX
Fri	31/08/07	154	175.4	0.0	0.0	29,873.0	27,285.4	2,587.6	4.4	0.0		0.0		0.0	0.0	4.4	95.6	6.0	
Sat	01/09/07	155/156	321.2	0.0	0.0	29,873.0	27,606.6	2,266.4	6.2	0.0		0.0		0.0	0.0	6.2	89.4	2.0	
Sun	02/09/07		0.0	0.0	0.0	29,873.0	27,606.6	2,266.4	0.0	0.0		0.0		0.0	0.0	0.0	89.4	8.0	WX
Totals:			1,308.0	0.0	0.0	29,873.0	27,606.6	2,266.4	23.4	0.0		0.0		0.0	0.0	23.4		38.0	
Chargeable Lost Time (Hrs):				16.0	Non-Chargeable Lost Time (Hrs):				22.0										
Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs	S / U	Equip Maint' Hrs	S / U	General / Processing / QC Comments									
Mon	27/08/07	239	2	1	3	1				4 x production flights. TBM									
Tue	28/08/07	240	2	1	3	2				1 x production flight. Excessive wind prevents further survey. Packed up gear and moved to Launceston. 5 drums dropped at Benham (Avoca). TBM									
Wed	29/08/07	241	2	2	4	2	8.0	S		Heli down for gearbox change and early 100hrly. Fuel delivery of 20 drums arrives at Benham Station. Leon Garry arrives on-site. TBM									
Thu	30/08/07	242	2	1	3	2	3.0	S		Heli work finished mid morning. Survey not possible due to excessive wind. Mark Watson flies out this morning. TBM									
Fri	31/08/07	243	2	1	3	2				1 x production flight. Excessive wind prevents further survey. TBM									
Sat	01/09/07	244	2	1	3	2				3 x production flights, including comp box. Test line adjusted. Strong wind prevents further survey. TBM									
Sun	2/09/07	245	2	1	3	2				No production due to poor weather. TBM									
Totals:							11.0		0.0										
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Client	GPX Air Job No.	Area(s)	Job Name			Flying Base			Aircraft Type (s)			Crew Contact Phone No		Crew Contact Sat No					
GA	2249	1	NE Tasmania			Launceston			AS-350D			+61 (0)432 423 385		+881621462769					
Aircraft:	VHJWD	AOM	Bob Blizzard	FPM	D.Ting			Field Operator	L.Parry A.Jenkinso			Pilots	L.Garry						
Kilometres								Aircraft Time											
Date	Fit	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Mob	Total	Hrs to 100 Hr	Standby Hrs	Reason	
Mon	03/09/07	157/158	727.5	0.0	0.0	29,873.0	27,359.6	2,513.4	9.8	0.0		0.0		0.0	0.0	9.8	79.6	0.0	
Tue	04/09/07	159/160	218.2	0.0	0.0	29,873.0	27,884.1	1,988.9	8.5	0.0		0.0		0.0	0.0	8.5	71.1	0.0	
Wed	05/09/07	161/162	270.9	0.0	0.0	29,873.0	28,529.3	1,343.7	10.1	0.0		0.0		0.0	0.0	10.1	61.0	0.0	
Thu	06/09/07	163/164	747.8	0.0	0.0	29,873.0	29,277.1	595.9	9.1	0.0		0.0		0.0	0.0	9.1	51.9	0.0	
Fri	07/09/07	165/166	411.6	0.0	0.0	29,873.0	29,688.7	184.3	7.6	0.0		0.0		0.0	0.0	7.6	44.3	0.0	
Sat	08/09/07	167	0.0	0.0	0.0	29,873.0	29,819.0	54.0	3.4	0.0		0.0		0.0	0.0	3.4	40.9	0.0	
Sun	09/09/07		0.0	0.0	0.0	29,873.0	29,819.0	54.0	0.0	0.0		0.0		0.0	0.0	0.0	40.9	0.0	
Totals:			2,376.0	0.0	0.0	29,873.0	29,819.0	54.0	48.5	0.0		0.0		0.0	0.0	48.5	40.9	0.0	
Chargeable Lost Time (Hrs):				Non-Chargeable Lost Time (Hrs):															
Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs		Equip Maint' Hrs		General / Processing / QC Comments									
Mon	03/09/07	246	3	1	4	2					4 x production flights. New operator A.Jenkinson arrives on-site.								
Tue	04/09/07	247	3	1	4	2					4 x production flights.								
Wed	05/09/07	248	3	1	4	2					4 x production flights.								
Thu	06/09/07	249	2	1	3	2					4 x production flights. L.Parry leaves site.								
Fri	07/09/07	250	2	1	3	2					2 x production flights.								
Sat	08/09/07	251	2	1	3	2					1 x reflight.								
Sun	9/09/07	252	2	1	3	2					NOTE: Still to refly all of line 1550 and east for 18km on line 1610 due to diurnal out of spec.								
Totals:							0.0	0.0											
KEY:										= Safety Meeting (SM) / Toolbox Meeting (TBM) check box.									
Enter numbers/data into blue marked sections only.										Mob = (Mob/Demob) initial flying time to project & from project.									
All areas marked in black are self calculating & should not be changed.										Aircraft/Equipment Maint': S = scheduled / U = unscheduled.									
Ferry = operations base to survey area & return times.										General/Processing/QC Comments should include basic weather description.									

Client	GPX Air Job No.	Area(s)	Job Name		Flying Base	Aircraft Type (s)	Crew Contact Phone No	Crew Contact Sat No											
GA	2249	1	NE Tasmania		Launceston	AS-350D	+61 (0)432 423 385	+881621462769											
Aircraft:	VHJWD	AOM	Greg Reudavey	FPM	D.Ting	Field Operator	A.Jenkinson	Pilots	L.Garry										
			Kilometres					Aircraft Time											
Date	Fit	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Turns	Ferry	Cals Daily	Cals Setup	Mob	Total	Hrs to 100 Hr	Standby Hrs	Reason	
Mon	10/09/07		0.0	0.0	0.0	29,873.0	29,819.0	54.0	0.0	0.0		0.0	0.0	0.0	0.0	40.9	8.0	WX	
Tue	11/09/07		0.0	0.0	0.0	29,873.0	29,819.0	54.0	0.0	0.0		0.0	0.0	0.0	0.0	40.9	8.0	WX	
Wed	12/09/07	168	54.0	0.0	0.0	29,873.0	29,873.0	0.0	3.3	0.0		0.0	0.0	0.0	3.3	37.6	0.0		
Thu	13/09/07		0.0	0.0	0.0	29,873.0	29,873.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	37.6	0.0		
Fri	14/09/07		0.0	0.0	0.0	29,873.0	29,873.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	37.6	0.0		
Sat	15/09/07		0.0	0.0	0.0	29,873.0	29,873.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	37.6	0.0		
Sun	16/09/07		0.0	0.0	0.0	29,873.0	29,873.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	37.6	0.0		
Totals:			54.0	0.0	0.0	29,873.0	29,873.0	0.0	3.3	0.0		0.0	0.0	0.0	3.3	37.6	16.0		
Chargeable Lost Time (Hrs):						Non-Chargeable Lost Time (Hrs):													
Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs		Equip Maint' Hrs		General / Processing / QC Comments									
Mon	10/09/07	253	2	1	3	2					Poor weather conditions. TBM								
Tue	11/09/07	254	2	1	3	2					Bad weather. Cameron Hamilton from University of Tasmania arrives. He will take ground measurements tomorrow at the Benham test range. TBM								
Wed	12/09/07	255	2	1	3	2					1 x reflight for two lines which were out of spec diurnal. Completed Radiometric hover stack test and background at Benham Test Range. TBM								
Thu	13/09/07	256	2	1	3	2					Crew departs Launceston. 								
Fri	14/09/07	257																	
Sat	15/09/07	258																	
Sun	16/09/07	259																	
Totals:							0.0	0.0											
KEY:										= Safety Meeting (SM) / Toolbox Meeting (TBM) check box. Mob = (Mob/Demob) initial flying time to project & from project. Aircraft/Equipment Maint': S = scheduled / U = unscheduled. General/Processing/QC Comments should include basic weather description.									
Enter numbers/data into blue marked sections only. All areas marked in black are self calculating & should not be changed. Ferry = operations base to survey area & return times.																			

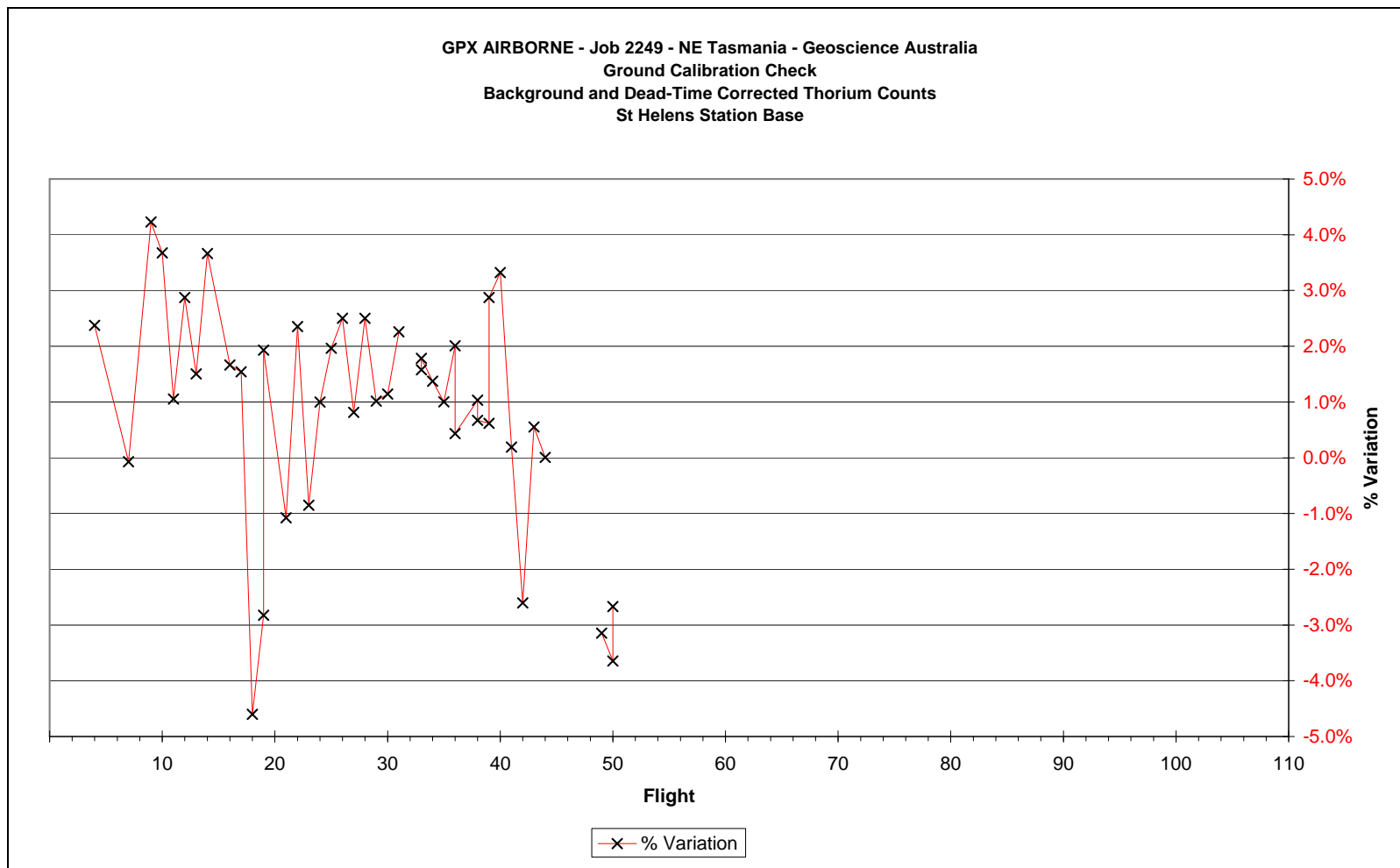
10 APPENDIX D: RADIOMETRIC CALIBRATIONS

10.1 THORIUM BUTTON TEST

10.1.1 Fixed Wing

Flt#	Channel	Peak Posn	PHR	Raw (cps)	B/G (cps)	Normalised(cps)	FHTM/FHHM	Readings	Running average	% Change
4	Thorium	218.1098	4.436891	201.791	56.4172	145.374	1.835028	200	145.37370	2.4%
7	Thorium	217.8710	4.458374	218.4003	76.5011	141.899	1.845580	202	143.63650	-0.1%
9	Thorium	217.8821	4.510817	198.4006	50.3964	148.004	1.841495	200	145.09240	4.2%
10	Thorium	218.1101	4.429692	198.1014	50.8818	147.220	1.832058	200	145.62423	3.7%
11	Thorium	216.5854	4.44601	202.4113	58.91556	143.4957	1.844856	196	145.19852	1.1%
12	Thorium	217.707	4.378543	206.8991	60.81531	146.0838	1.858049	201	145.34607	2.9%
13	Thorium	217.8666	4.522035	234.0623	89.9288	144.134	1.835133	196	145.17286	1.5%
14	Thorium	218.1029	4.490803	183.8823	36.6841	147.1982	1.796796	200	145.42603	3.7%
16	Thorium	216.6095	4.495764	192.9327	48.5720	144.3607	1.806013	197	145.30766	1.7%
17	Thorium	217.832	4.446654	185.2992	41.11034	144.1889	1.827038	200	145.19578	1.5%
18	Thorium	216.5115	4.555779	176.1772	40.7102	135.4671	1.802181	193	144.31135	-4.6%
19	Thorium	217.7809	4.463798	178.854	40.8672	137.9867	1.834229	204	143.78430	-2.8%
19	Thorium	216.8746	4.459839	184.6282	39.8869	144.7413	1.81551	203	143.85792	1.9%
21	Thorium	218.1256	4.451503	180.3252	39.8523	140.4729	1.830723	203	143.61613	-1.1%
22	Thorium	218.1988	4.590837	184.9352	39.5910	145.3443	1.789847	200	143.73134	2.4%
23	Thorium	217.8585	4.479402	179.7485	38.9566	140.7919	1.851915	200	143.54763	-0.9%
24	Thorium	217.5769	4.421962	185.3666	41.9504	143.4163	1.847435	197	143.53990	1.0%
25	Thorium	217.9866	4.428554	188.3705	43.5823	144.7881	1.847906	201	143.60924	2.0%
26	Thorium	217.4356	4.505883	194.5872	49.0372	145.55	1.802246	200	143.71139	2.5%
27	Thorium	217.9004	4.555002	192.4646	49.31062	143.154	1.808781	200	143.68352	0.8%
28	Thorium	217.1358	4.509763	188.4661	42.91733	145.5487	1.7558	200	143.77234	2.5%
29	Thorium	218.0304	4.576466	186.3659	42.92296	143.4429	1.769181	200	143.75736	1.0%
30	Thorium	217.7605	4.498733	190.2477	46.6257	143.622	1.826934	197	143.75148	1.1%
31	Thorium	218.2059	4.473557	193.5079	48.29757	145.2104	1.814131	201	143.81227	2.3%

33	Thorium	217.6883	4.349458	184.7787	40.54024	144.2385	1.853606	202	143.82932	1.6%
33	Thorium	216.7615	4.522374	183.7067	39.17647	144.5302	1.814384	200	143.85627	1.8%
34	Thorium	217.8885	4.340862	183.7655	39.81928	143.9463	1.872291	202	143.85961	1.4%
35	Thorium	217.4485	4.487217	194.3817	50.95792	143.4238	1.834526	196	143.84404	1.0%
36	Thorium	218.0326	4.335367	197.109	52.25565	144.8534	1.895659	201	143.87885	2.0%
36	Thorium	217.2753	4.495547	186.4793	43.86455	142.615	1.797564	203	143.83671	0.4%
38	Thorium	217.6867	4.519681	186.0087	42.54093	143.4678	1.825962	196	143.82481	1.0%
38	Thorium	217.0454	4.507607	189.6912	46.73892	142.9523	1.796285	197	143.79755	0.7%
39	Thorium	217.5018	4.222517	188.6865	45.81007	142.8764	1.826384	4	143.76963	0.6%
39	Thorium	217.4023	4.39108	187.7591	41.68013	146.079	1.895892	196	143.83756	2.9%
40	Thorium	217.9381	4.458191	188.9508	42.23571	146.7151	1.846448	200	143.91977	3.3%
41	Thorium	217.9442	4.481939	192.3023	50.03306	142.2692	1.829309	196	143.87392	0.2%
42	Thorium	217.8489	4.456478	190.537	52.23337	138.3037	1.808281	196	143.72338	-2.6%
43	Thorium	217.2838	4.550442	185.7825	42.99717	142.7853	1.776169	200	143.69869	0.6%
44	Thorium	217.9512	4.373384	186.8241	44.81559	142.0085	1.828181	196	143.65535	0.0%
49	Thorium	216.7942	4.496241	178.374	40.84299	137.5311	1.839226	197	143.50225	-3.1%
50	Thorium	217.6873	4.382815	180.2411	43.41977	136.8214	1.844855	200	143.33930	-3.6%
50	Thorium	217.3363	4.434341	179.945	41.73457	138.2104	1.824628	205	143.21718	-2.7%



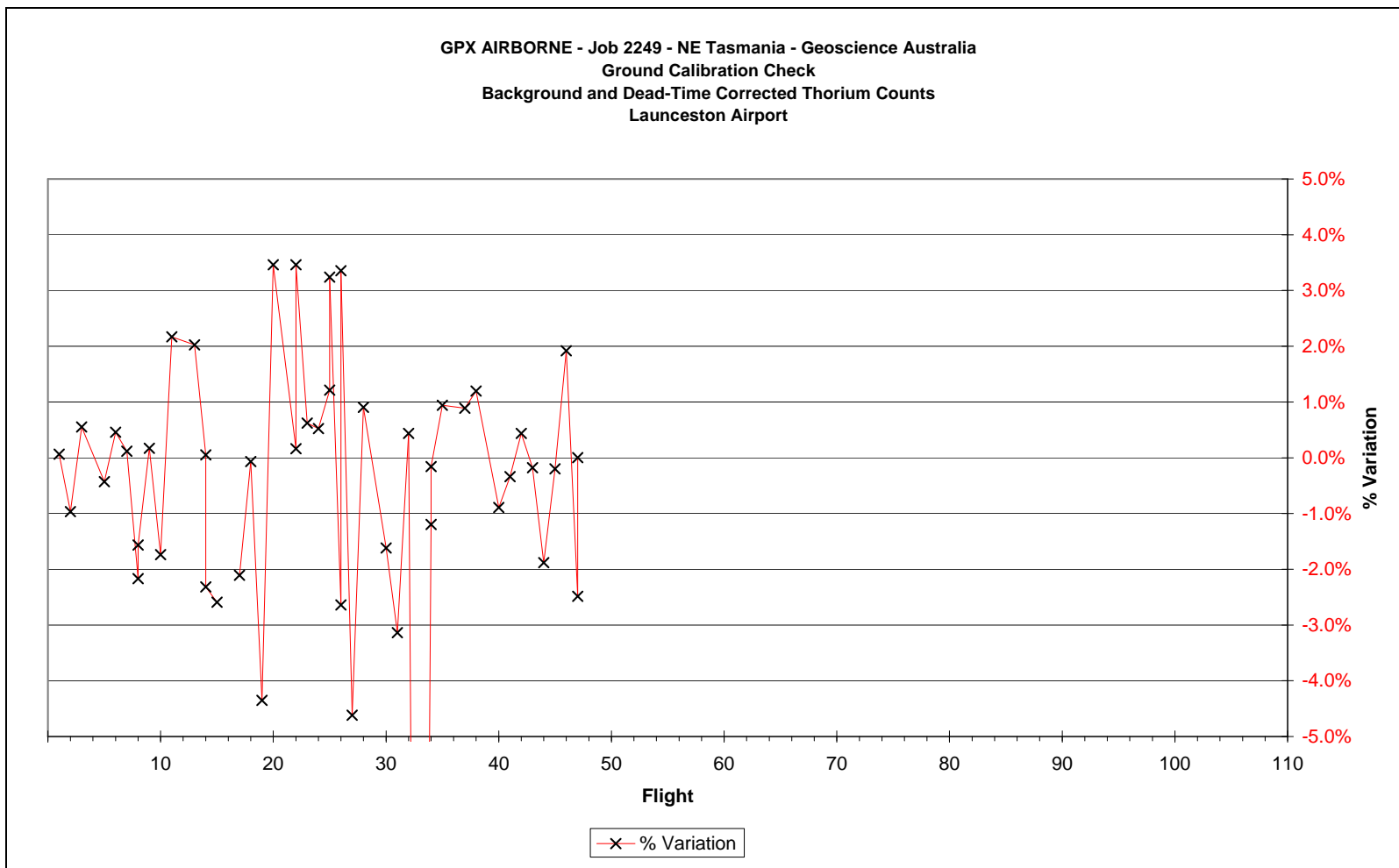
St Helens Fixed Wing Thorium Button Test

10.1.2 Helicopter

Based in Launceston

Flt#	Channel	Peak Posn	PHR	Raw (cps)	B/G (cps)	Normalised(cps)	FHTM/FHHM	Readings	Running average	% Change
1	Thorium	219.3693	4.459856	115.0422	55.0047	60.038	1.840630	202	60.03751	0.1%
2	Thorium	219.2117	4.652297	93.0433	33.6242	59.419	1.799457	202	59.72830	-1.0%
3	Thorium	219.6568	4.343601	93.07978	32.74934	60.33046	1.912612	206	59.92902	0.6%
5	Thorium	217.4909	4.498964	93.2802	33.53796	59.74225	1.82813	203	59.88233	-0.4%
6	Thorium	219.9219	4.540116	93.67699	33.40155	60.27545	1.8027	207	59.96095	0.5%
7	Thorium	216.9285	4.467221	93.58983	33.51958	60.07025	1.79706	200	59.97917	0.1%
8	Thorium	220.3055	4.650567	92.82207	34.12405	58.69802	1.87845	202	59.79615	-2.2%
8	Thorium	218.9039	4.719141	93.18394	34.12405	59.05989	1.750609	202	59.70411	-1.6%
9	Thorium	220.1881	4.235076	94.28336	34.18084	60.1025	1.914099	200	59.74838	0.2%
10	Thorium	217.4034	4.740144	93.93043	34.97355	58.95687	1.754149	202	59.66923	-1.7%
11	Thorium	219.9366	4.489633	95.34789	34.04617	61.30172	1.778409	215	59.81764	2.2%
13	Thorium	218.9724	4.762158	95.91196	34.69639	61.21558	1.927746	202	59.93413	2.0%
14	Thorium	219.7502	4.371474	95.82151	35.7901	60.03142	1.838724	200	59.94162	0.1%
14	Thorium	217.5611	4.317137	95.26255	36.65285	58.60968	1.893151	202	59.84648	-2.3%
15	Thorium	219.6075	4.494609	95.56616	37.12167	58.4445	1.831443	197	59.75301	-2.6%
17	Thorium									
17	Thorium	219.7251	4.702093	93.27797	34.54134	58.73664	1.858187	201	59.68949	-2.1%
18	Thorium	219.7742	4.720741	91.84959	31.88966	59.95994	1.781849	201	59.70540	-0.1%
19	Thorium	218.752	4.616747	88.15756	32.76867	57.3889	1.846213	200	59.57670	-4.4%
20	Thorium	220.2013	4.269824	94.47768	32.40162	62.07607	1.918579	200	59.70825	3.5%
22	Thorium	217.9219	4.650039	92.09772	32.00039	60.09732	1.861058	197	59.72770	0.2%
22	Thorium	220.2013	4.269824	94.47768	32.40162	62.07607	1.918579	200	59.83953	3.5%
23	Thorium	219.9536	4.571048	91.6423	31.2691	60.37319	1.800274	201	59.86379	0.6%
24	Thorium	217.7349	4.424725	91.66916	31.35631	60.31286	1.9236	201	59.88331	0.5%
25	Thorium	219.929	4.277858	91.99718	31.2691	60.72806	1.914624	201	59.91851	1.2%
25	Thorium	219.6919	4.650574	93.26508	31.32018	61.9449	1.77376	200	59.99957	3.2%

26	Thorium	219.1656	4.539026	90.72265	32.30666	58.41597	1.845349	200	59.93866	-2.6%
26	Thorium	219.7942	4.408692	93.25724	31.24501	62.01223	1.859883	200	60.01546	3.4%
27	Thorium	218.4299	4.614362	89.25964	32.03114	57.2285	1.785702	204	59.91592	-4.6%
28	Thorium	219.3975	4.721765	92.31616	31.77331	60.54285	1.750667	206	59.93754	0.9%
30	Thorium	218.2673	4.444727	90.87721	31.84793	59.02929	1.911076	197	59.90727	-1.6%
31	Thorium	219.4586	4.407369	91.34221	23.22564	58.11656	1.836316	202	59.84950	-3.1%
32	Thorium	218.3105	4.714921	90.91415	24.65142	60.26272	1.780741	205	59.86241	0.4%
33	Thorium	219.2916	4.471359	66.60305	23.4384	43.16465	1.839574	203	59.35642	-28.1%
33	Thorium	218.8333	4.481812	64.98949	22.57501	42.41447	1.801521	200	58.85813	-29.3%
34	Thorium	219.0341	4.68326	89.98096	30.69793	59.28303	1.782621	207	58.87027	-1.2%
34	Thorium	218.9345	4.790211	91.41595	31.51146	59.90449	1.745981	203	58.89900	-0.2%
35	Thorium	221.0002	4.693343	89.95996	29.39532	60.56464	1.92713	197	58.94401	0.9%
37	Thorium	218.9219	4.497393	89.7916	29.25797	60.53363	1.83886	200	58.98585	0.9%
38	Thorium	219.9242	4.552717	89.95873	29.24056	60.71818	1.828223	197	59.03027	1.2%
40	Thorium	219.1967	4.607213	90.9072	31.44297	59.46423	1.841164	200	59.04111	-0.9%
41	Thorium	218.1855	4.5487	90.33894	30.54234	59.79659	1.801282	195	59.05954	-0.3%
42	Thorium	219.0998	4.674946	91.22606	30.96299	60.26307	1.765024	200	59.08820	0.4%
43	Thorium	220.382	4.433434	91.10397	31.21099	59.89297	1.858599	196	59.10691	-0.2%
44	Thorium	219.2743	4.52988	90.55537	31.68462	58.87075	1.808275	197	59.10154	-1.9%
45	Thorium	219.8615	4.349342	91.7182	31.83784	59.88037	1.801326	200	59.11885	-0.2%
46	Thorium	219.0539	4.585845	92.93048	31.77917	61.15129	1.857317	201	59.16304	1.9%
47	Thorium	217.406	4.553781	90.46996	31.96178	58.50819	1.813463	195	59.14910	-2.5%
47	Thorium	219.3829	4.692693	92.33179	32.33056	60.00124	1.775027	197	59.16686	0.0%

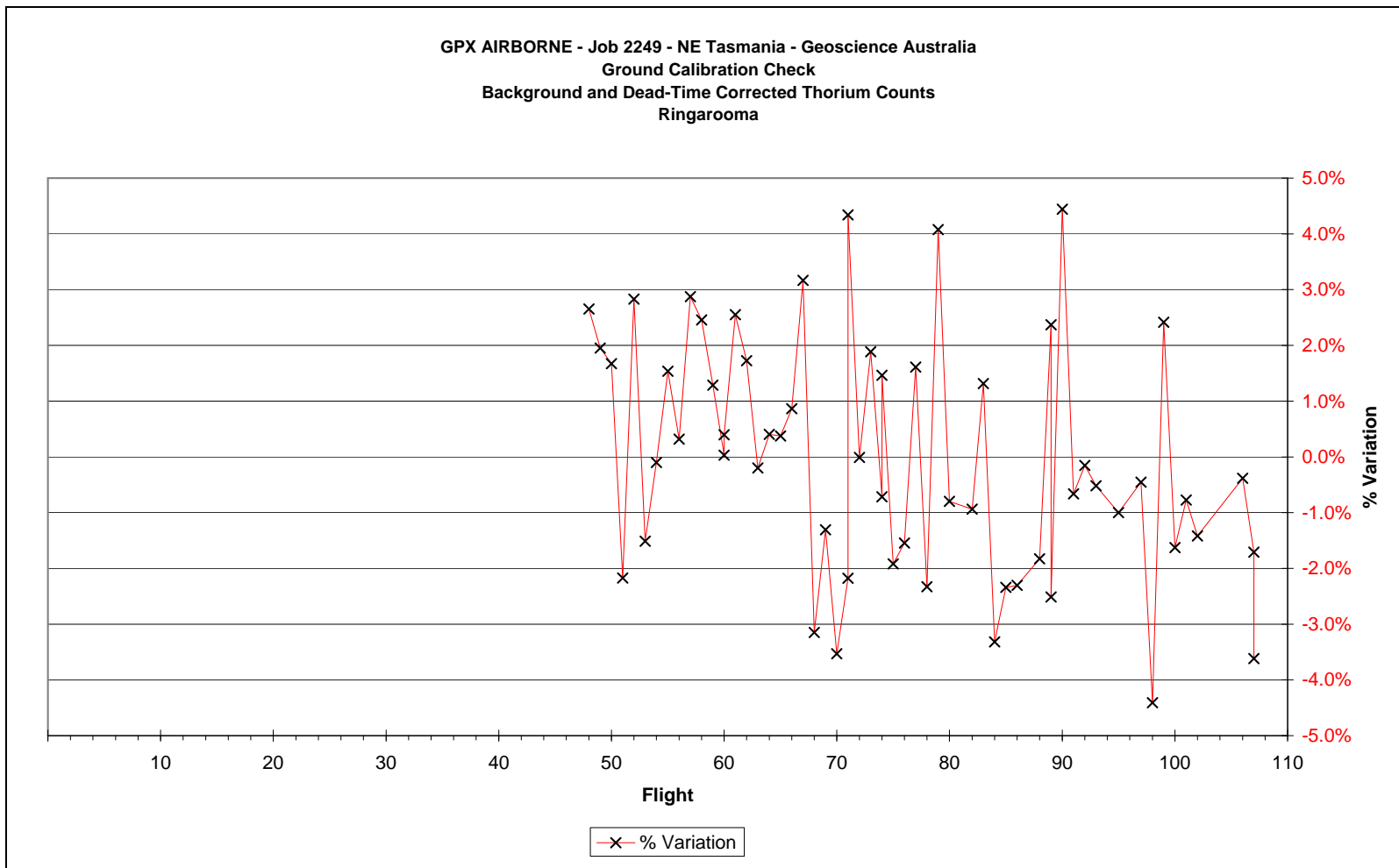


Launceston Helicopter Thorium Button Test

Based in Ringarooma

Flt#	Channel	Peak Posn	PHR	Raw (cps)	B/G (cps)	Normalised(cps)	FHTM/FHMM	Readings	Running average	% Change
48	Thorium	219.9174	4.388382	118.1425	56.5507	61.592	1.921384	197	61.59187	2.7%
49	Thorium	219.5887	4.758959	118.5454	57.3755	61.170	1.792574	200	61.38089	1.9%
50	Thorium	220.1934	4.329538	119.1013	58.09711	61.00414	1.817146	200	61.25531	1.7%
51	Thorium	219.7159	4.553964	116.4151	57.71825	58.69685	1.751066	196	60.61569	-2.2%
52	Thorium	220.9275	4.172791	120.0307	58.33258	61.69816	1.799658	201	60.83219	2.8%
53	Thorium	219.6978	4.434955	117.2743	58.18097	59.09335	1.899095	197	60.54238	-1.5%
54	Thorium	220.5214	4.299772	118.4565	58.51711	59.93935	1.804363	197	60.45623	-0.1%
55	Thorium	219.9241	4.382081	119.1876	58.26477	60.92287	1.882365	200	60.51456	1.5%
56	Thorium	219.4449	4.437585	118.7033	58.51278	60.19049	1.827529	200	60.47855	0.3%
57	Thorium	219.3746	4.635195	119.0838	57.35964	61.72418	1.783448	201	60.60312	2.9%
58	Thorium	220.5669	4.047888	119.6317	58.15913	61.4726	1.905381	190	60.68216	2.5%
59	Thorium	219.38	4.423171	118.4522	57.68038	60.77181	1.893429	202	60.68963	1.3%
60	Thorium	220.077	4.353154	117.9211	57.90158	60.0195	1.900467	195	60.63808	0.0%
60	Thorium	219.4925	4.478306	117.957	57.72009	60.2369	1.776559	197	60.60943	0.4%
61	Thorium	220.5374	4.410226	123.3094	61.77814	61.53122	1.81767	197	60.67088	2.6%
62	Thorium	219.5939	4.321532	119.1065	58.07021	61.03628	1.907687	195	60.69372	1.7%
63	Thorium	220.6669	3.88598	118.5801	58.69922	59.88089	1.880152	195	60.64590	-0.2%
64	Thorium	219.8947	4.416385	118.5658	58.3234	60.24244	1.80212	197	60.62349	0.4%
65	Thorium	219.8094	4.366833	117.3281	57.10371	60.22438	1.854578	211	60.60248	0.4%
66	Thorium	218.3623	4.377764	115.6057	55.0878	60.5179	1.870919	200	60.59825	0.9%
67	Thorium	220.5949	4.207581	117.8818	55.98194	61.8998	1.813009	197	60.66023	3.2%
68	Thorium	219.1939	4.722405	116.3759	58.26613	58.10974	1.803026	200	60.54430	-3.2%
69	Thorium	219.921	4.263837	116.8025	57.58669	59.21585	1.959215	200	60.48654	-1.3%
70	Thorium	219.8426	4.176517	115.7708	57.89	57.88075	1.938107	200	60.37797	-3.5%
71	Thorium	219.6635	4.619923	118.5111	59.81696	58.69411	1.800075	220	60.31061	-2.2%
71	Thorium	218.2106	4.402451	118.7627	56.15809	62.60458	1.84678	197	60.39884	4.3%
72	Thorium	220.2906	4.242942	117.3153	57.322	59.99327	1.912417	196	60.38382	0.0%
73	Thorium	219.9629	4.389044	118.8629	57.73274	61.13017	1.917784	196	60.41048	1.9%

74	Thorium	218.5302	4.164794	115.9359	56.36543	59.57043	1.908746	195	60.38151	-0.7%
74	Thorium	218.0777	4.577881	115.5608	54.68285	60.87793	1.827211	200	60.39806	1.5%
75	Thorium	218.8156	4.393263	114.9047	56.05521	58.84947	1.905277	195	60.34810	-1.9%
76	Thorium	218.9989	4.321094	116.4023	57.32993	59.07239	1.967738	195	60.30824	-1.5%
77	Thorium	221.4194	4.674279	118.6801	57.71303	60.96709	1.786307	193	60.32820	1.6%
78	Thorium	219.5904	4.303777	116.9166	58.31416	58.60246	1.956234	197	60.27745	-2.3%
79	Thorium	222.684	4.877537	120.2521	57.80489	62.44716	1.78908	197	60.33944	4.1%
80	Thorium	217.9521	4.323002	116.814	57.2927	59.52132	1.898318	200	60.31671	-0.8%
82	Thorium	218.5532	4.424767	115.0024	55.56546	59.43692	1.876124	196	60.29293	-0.9%
83	Thorium	217.3487	4.243281	116.2428	55.45282	60.79002	1.86129	197	60.30601	1.3%
84	Thorium	217.9733	4.447608	113.7793	55.77036	58.00898	1.872013	197	60.24712	-3.3%
85	Thorium	216.4143	4.036698	114.4344	55.83931	58.59505	1.953541	203	60.20581	-2.3%
86	Thorium	218.2276	4.370664	114.266	55.6478	58.61818	1.951512	202	60.16709	-2.3%
88	Thorium	216.619	4.460713	114.3596	55.45725	58.90234	1.7726	200	60.13698	-1.8%
89	Thorium	218.78	4.508143	115.2339	53.8118	61.42211	1.837639	202	60.16687	2.4%
89	Thorium	216.1622	4.417076	113.1958	54.7028	58.49295	1.885686	196	60.12882	-2.5%
90	Thorium	219.1899	4.48084	117.1544	54.48877	62.66564	1.874826	200	60.18520	4.4%
91	Thorium	216.2984	4.580555	114.0257	54.42437	59.60136	1.723894	202	60.17250	-0.7%
92	Thorium	218.3559	4.355601	115.6138	55.70523	59.90859	1.905528	197	60.16689	-0.2%
93	Thorium	216.8348	4.529128	115.7429	56.05519	59.68772	1.73757	200	60.15691	-0.5%
95	Thorium	218.3901	4.508136	115.7353	56.33375	59.40151	1.850422	200	60.14149	-1.0%
97	Thorium	217.2047	4.474585	114.5121	54.78506	59.72709	1.826318	200	60.13320	-0.5%
98	Thorium	214.8066	4.178165	114.0626	56.70851	57.35406	1.726279	202	60.07871	-4.4%
99	Thorium	218.1313	4.309692	117.6602	56.21051	61.44966	1.931051	202	60.10507	2.4%
100	Thorium	217.3146	4.177678	114.934	55.91047	59.02353	1.941916	202	60.08467	-1.6%
101	Thorium	223.4661	4.958288	115.0093	55.47263	59.53671	1.810273	207	60.07452	-0.8%
102	Thorium	216.5381	4.270031	114.1654	55.01539	59.14997	1.797233	204	60.05771	-1.4%
106	Thorium	217.5638	4.482034	114.4987	54.72804	59.77065	1.93054	205	60.05258	-0.4%
107	Thorium	221.2642	4.523395	115.0664	56.09244	58.97396	1.812148	203	60.03366	-1.7%
107	Thorium	216.0853	4.08332	112.6909	54.8607	57.83019	1.935729	212	59.99567	-3.6%

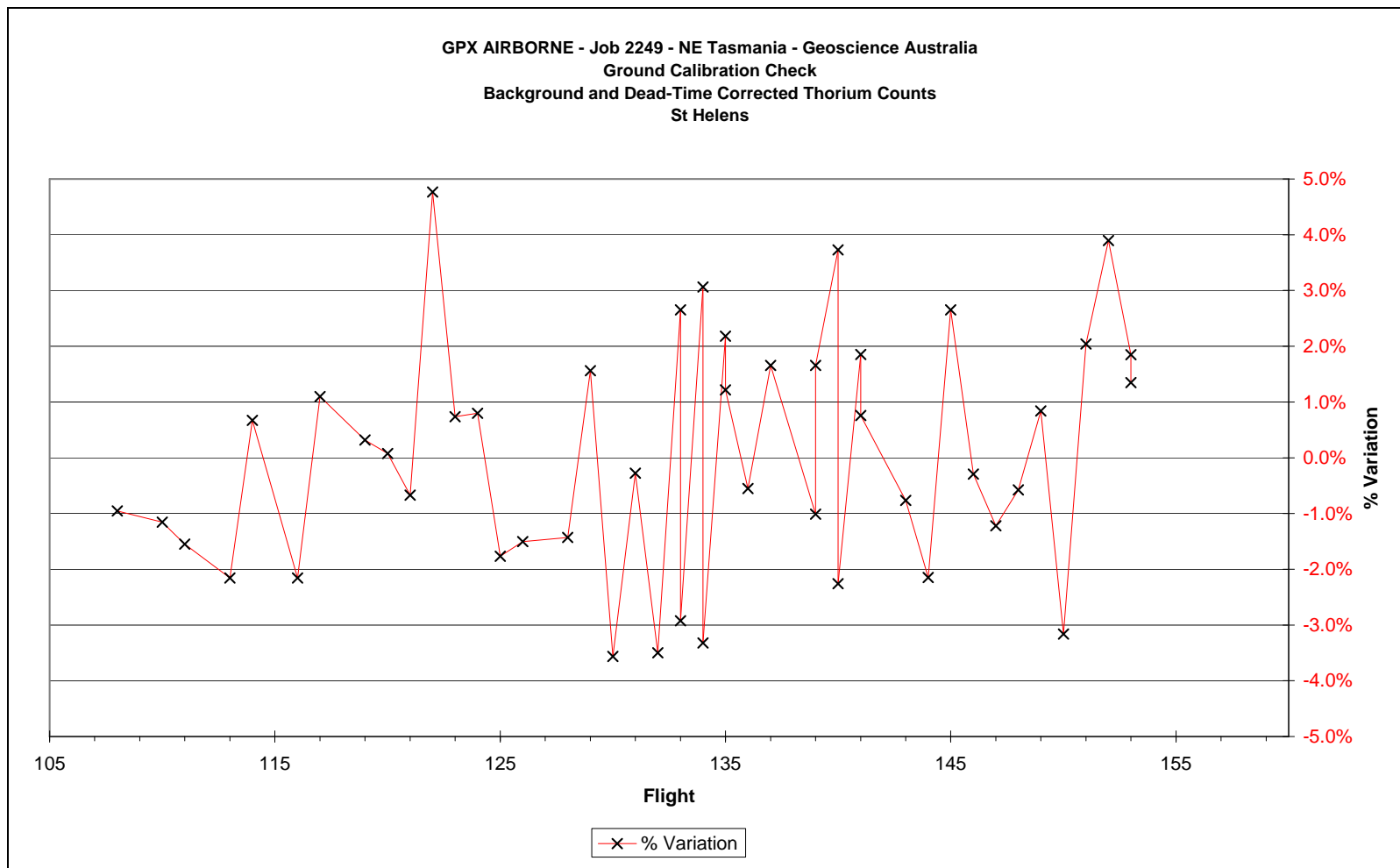


Ringarooma Helicopter Thorium Button Test

Based in St Helens

Flt#	Channel	Peak Posn	PHR	Raw (cps)	B/G (cps)	Normalised(cps)	FHTM/FHHM	Readings	Running average	% Change
108	Thorium	220.1599	4.231634	112.3418	52.91434	59.42748	1.836913	210	59.42748	-1.0%
110	Thorium	216.816	4.473494	113.5733	54.26641	59.30688	1.775573	203	59.36718	-1.2%
111	Thorium	219.5666	4.336672	113.1088	54.03787	59.07093	1.881292	210	59.26843	-1.5%
113	Thorium	217.1586	4.498188	110.2384	51.53154	58.70684	1.7577	213	59.12803	-2.2%
114	Thorium	220.2011	4.301734	113.1402	52.73737	60.40281	1.802786	213	59.38299	0.7%
116	Thorium	217.1586	4.498188	110.2384	51.53154	58.70684	1.7577	213	59.27030	-2.2%
117	Thorium	220.0965	4.556639	113.8626	52.20289	60.65973	1.823356	210	59.46879	1.1%
119	Thorium	218.1317	4.714519	113.3968	53.20649	60.19025	1.784347	213	59.55897	0.3%
120	Thorium	221.1483	5.013402	113.1418	53.09512	60.0467	1.785384	207	59.61316	0.1%
121	Thorium	215.8541	4.285055	112.348	52.75076	59.59724	1.771611	210	59.61157	-0.7%
122	Thorium	220.8717	5.123851	114.381	51.52214	62.85888	1.762555	210	59.90678	4.8%
123	Thorium	217.6226	4.701925	112.249	51.80684	60.44212	1.716176	210	59.95139	0.7%
124	Thorium	220.7188	5.007264	112.9099	52.43017	60.47974	1.82515	207	59.99203	0.8%
125	Thorium	215.7985	4.091449	111.6443	52.70506	58.93927	1.910458	206	59.91684	-1.8%
126	Thorium	219.6496	4.5972	112.0856	52.98821	59.0974	1.776841	201	59.86221	-1.5%
128	Thorium	216.9003	4.453887	111.3851	52.24318	59.14189	1.772488	210	59.81719	-1.4%
129	Thorium	220.4917	5.100601	112.8033	51.86759	60.93572	1.868737	211	59.88298	1.6%
130	Thorium	216.0727	4.151388	110.4815	52.62015	57.86139	1.887043	207	59.77067	-3.6%
131	Thorium	219.5328	4.45752	112.9653	53.13108	59.8342	1.810245	210	59.77402	-0.3%
132	Thorium	217.1723	4.461952	110.3525	52.45257	57.89994	1.88668	207	59.68031	-3.5%
133	Thorium	222.1389	5.094642	113.8885	52.29644	61.59205	1.705431	212	59.77135	2.7%
133	Thorium	217.6489	4.850341	112.2391	53.99292	58.24619	1.796771	207	59.70202	-2.9%
134	Thorium	221.4598	5.296526	115.1017	53.26303	61.83866	1.659263	212	59.79492	3.1%
134	Thorium	217.8522	4.522679	111.242	53.23564	58.00637	1.876228	211	59.72040	-3.3%
135	Thorium	217.9328	4.636832	112.2197	50.91154	61.30817	1.89165	212	59.78391	2.2%
135	Thorium	217.9921	4.425153	112.3417	51.61212	60.72961	1.832181	211	59.82028	1.2%
136	Thorium	218.3745	4.768655	113.2801	53.61097	59.66912	1.847651	210	59.81468	-0.6%
137	Thorium	217.4713	4.223272	113.7769	52.78262	60.99434	1.957196	211	59.85681	1.7%

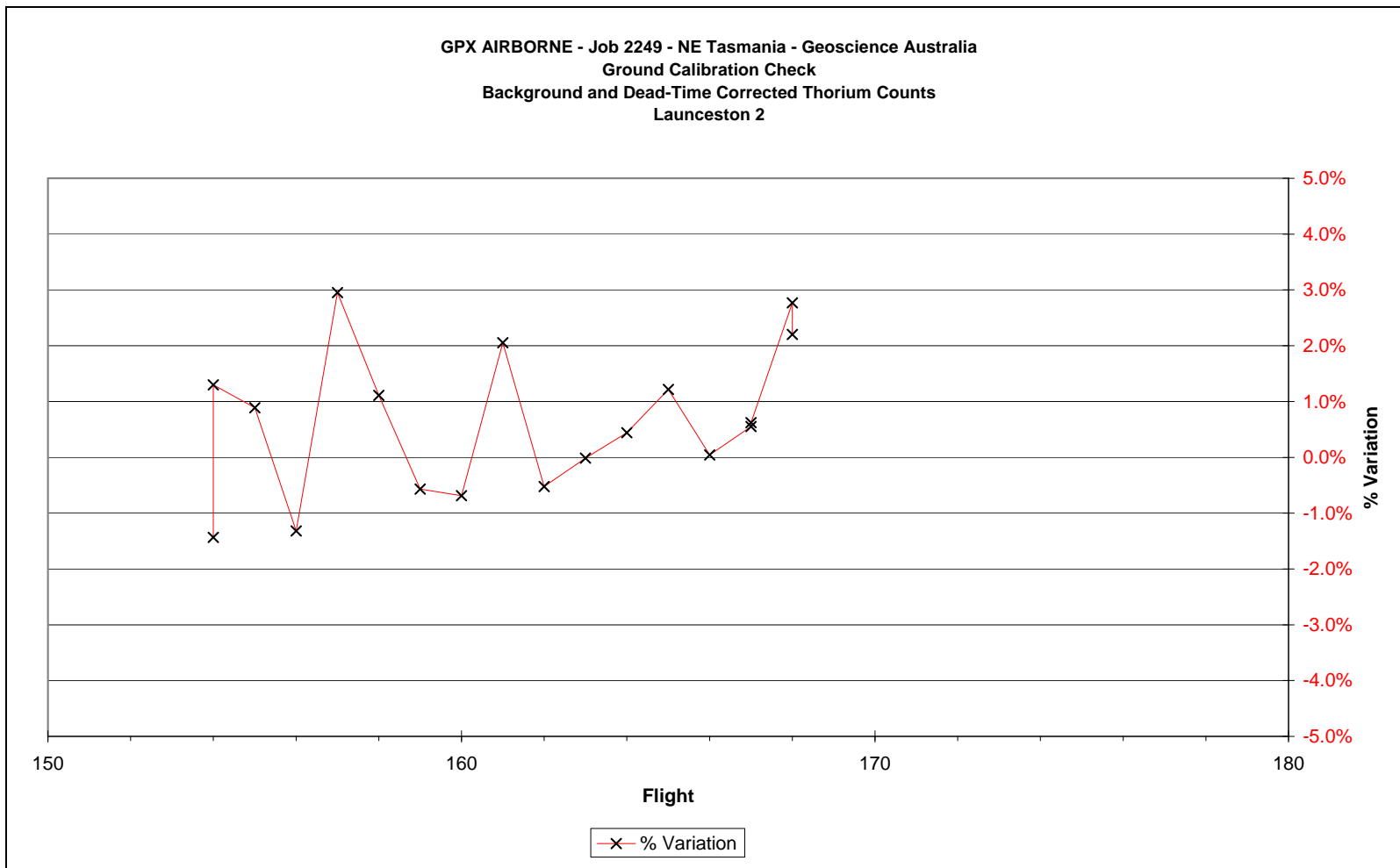
139	Thorium	218.7253	4.513072	112.0368	52.64248	59.39432	1.875268	210	59.84086	-1.0%
139	Thorium	217.4713	4.223272	113.7769	52.78262	60.99434	1.957196	211	59.87931	1.7%
140	Thorium	223.3816	4.001472	115.4055	53.16849	62.23705	1.900681	210	59.95537	3.7%
140	Thorium	218.133	4.525187	111.8625	53.21685	58.64562	1.832236	210	59.91444	-2.3%
141	Thorium	223.4944	4.29733	114.9633	53.85162	61.11172	1.889844	212	59.95072	1.9%
141	Thorium	217.9743	4.491092	113.2182	52.76373	60.45449	1.828365	206	59.96554	0.8%
143	Thorium	217.6538	4.314653	112.4706	52.92925	59.54131	1.917046	207	59.95342	-0.8%
144	Thorium	217.92	4.512959	111.3997	52.68935	58.7103	1.803031	205	59.91889	-2.1%
145	Thorium	221.1284	4.356939	112.7807	51.1884	61.59225	1.831918	204	59.96411	2.7%
146	Thorium	218.0473	4.589498	112.4574	52.63343	59.824	1.809049	210	59.96043	-0.3%
147	Thorium	218.6547	4.692224	112.4488	53.18053	59.26821	1.750351	210	59.94268	-1.2%
148	Thorium	217.7673	4.704407	113.0736	53.41872	59.65491	1.740264	207	59.93548	-0.6%
149	Thorium	219.8194	4.61326	113.1567	52.65369	60.503	1.826931	207	59.94932	0.8%
150	Thorium	219.1461	4.471271	111.3634	53.26093	58.10242	1.881461	212	59.90535	-3.2%
151	Thorium	219.9177	4.454485	113.4862	52.26218	61.224	1.87954	210	59.93602	2.0%
152	Thorium	220.1368	4.8601	115.4352	53.09864	62.33651	1.840878	205	59.99057	3.9%
153	Thorium	220.8784	4.388529	114.3845	53.27522	61.10925	1.871917	204	60.01543	1.8%
153	Thorium	221.2069	5.179362	114.882	54.07389	60.80806	1.803428	207	60.03266	1.3%



St Helens Helicopter Thorium Button Test

Based in Launceston “2”

Flt#	Channel	Peak Posn	PHR	Raw (cps)	B/G (cps)	Normalised(cps)	FHTM/FHHM	Readings	Running average	% Change
154	Thorium	218.8869	4.5218	93.0432	33.9032	59.14	1.847143	207	59.14000	-1.4%
154	Thorium	220.2435	5.052988	97.46925	36.69124	60.77803	1.869194	206	59.95902	1.3%
155	Thorium	221.3736	4.423282	95.05941	34.52691	60.53249	1.843787	213	60.15017	0.9%
156	Thorium	220.1473	4.466613	93.91989	34.71039	59.20951	1.928854	206	59.91501	-1.3%
157	Thorium	220.6453	4.734862	95.39289	33.62169	61.7712	1.857201	207	60.28625	3.0%
158	Thorium	221.1252	4.484648	94.46849	33.80212	60.66637	1.949626	213	60.34960	1.1%
159	Thorium	219.344	5.119628	93.45377	33.79593	59.65785	1.759468	207	60.25078	-0.6%
160	Thorium	219.5398	5.072213	94.11775	34.53134	59.58642	1.858101	207	60.16773	-0.7%
161	Thorium	221.4467	4.796754	95.06721	33.83595	61.23127	1.799951	207	60.28590	2.1%
162	Thorium	220.5475	4.979611	94.23894	34.55246	59.68649	1.907052	211	60.22596	-0.5%
163	Thorium	221.1941	4.477932	94.88798	34.89682	59.99115	1.977239	211	60.20462	0.0%
164	Thorium	220.7495	5.370137	95.92878	35.66426	60.26451	1.796631	212	60.20961	0.4%
165	Thorium	220.9116	4.389396	94.93941	34.20995	60.72946	1.794532	220	60.24960	1.2%
166	Thorium	220.4812	4.978438	96.50108	36.4749	60.02617	1.795676	213	60.23364	0.0%
167	Thorium	221.4187	4.626192	96.46269	36.13276	60.32994	1.859046	211	60.24006	0.5%
167	Thorium	221.7156	4.803304	96.50168	36.12974	60.37194	1.807412	212	60.24830	0.6%
168	Thorium	221.5814	5.035699	97.24498	35.58411	61.66086	1.801188	221	60.33139	2.8%
168	Thorium	221.2412	4.740489	96.02077	34.70055	61.32024	1.888696	214	60.38633	2.2%



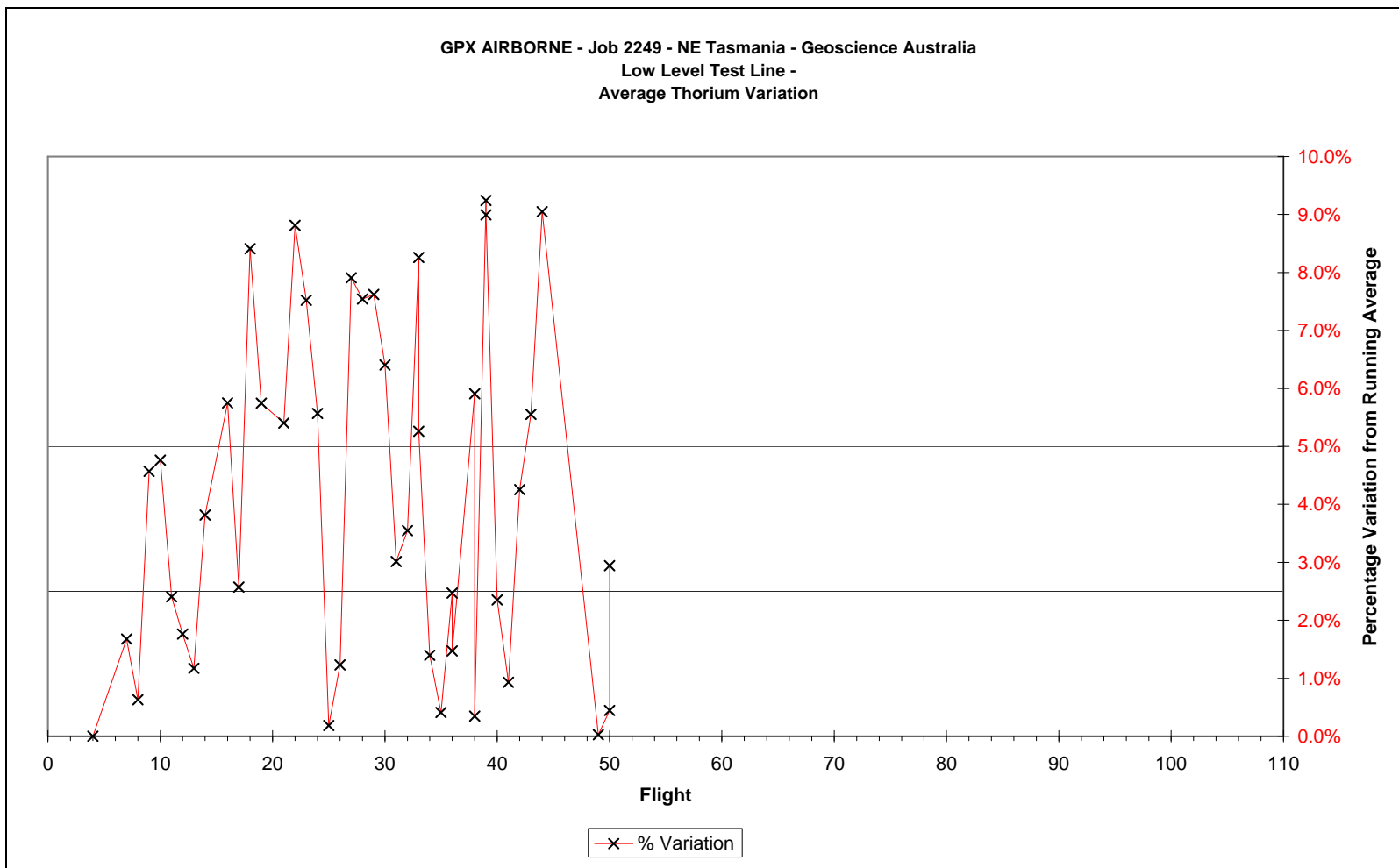
Launceston "2" Helicopter Thorium Button Test

10.2 LOW LEVEL TEST LINE

10.2.1 Fixed Wing

Flt#	Mean TC (cps)	Mean K (cps)	Mean U (cps)	Mean Th (cps)	Running average	% Change	Min	Max
4	627.6255	54.102	16.509	16.742	16.742		15.2	18.5
7	713.8996	50.630	24.337	17.923	17.332	1.68%	16.1	18.6
8	647.574	57.386	17.155	17.515	17.393	0.63%	16.3	18.5
9	637.439	54.381	16.577	18.433	17.653	4.57%	16.6	18.7
10	676.495	52.947	21.695	16.787	17.480	4.76%	16.5	18.5
11	729.899	56.398	23.058	18.051	17.575	2.41%	16.6	18.6
12	806.408	53.909	30.568	17.938	17.627	1.76%	16.7	18.6
13	979.972	58.611	42.786	17.421	17.601	1.17%	16.7	18.5
14	612.883	49.277	18.875	16.930	17.527	3.82%	16.6	18.5
16	609.349	54.626	16.206	16.519	17.426	5.75%	16.5	18.3
17	648.670	53.238	20.132	16.977	17.385	2.57%	16.5	18.3
18	617.598	52.807	17.493	15.923	17.263	8.41%	16.4	18.2
19	593.621	54.851	14.174	16.271	17.187	5.75%	16.3	18.1
21	611.131	52.325	17.554	16.259	17.121	5.40%	16.3	18.0
22	611.096	55.028	16.849	15.612	17.020	8.81%	16.2	17.9
23	610.719	50.496	17.869	15.740	16.940	7.52%	16.1	17.8
24	641.765	54.246	18.425	15.996	16.885	5.57%	16.0	17.7
25	768.407	54.754	28.981	16.916	16.886	0.19%	16.0	17.7
26	623.793	58.506	16.389	16.678	16.875	1.23%	16.0	17.7
27	573.015	49.215	15.259	15.541	16.809	7.91%	16.0	17.6
28	573.015	49.215	15.259	15.541	16.748	7.54%	15.9	17.6
29	607.872	45.239	20.134	15.472	16.690	7.62%	15.9	17.5
30	577.735	48.529	15.394	15.621	16.644	6.40%	15.8	17.5
31	668.763	47.174	25.132	16.142	16.623	3.01%	15.8	17.4

32	571.280	51.772	14.647	16.033	16.599	3.55%	15.8	17.4
33	598.169	46.099	17.769	15.228	16.547	8.26%	15.7	17.4
33	588.244	47.282	16.884	15.676	16.514	5.26%	15.7	17.3
34	624.370	52.898	18.961	16.284	16.506	1.40%	15.7	17.3
35	615.922	56.276	16.331	16.439	16.504	0.41%	15.7	17.3
36	677.475	51.700	22.526	16.096	16.490	2.47%	15.7	17.3
36	717.593	53.382	25.195	16.248	16.482	1.47%	15.7	17.3
38	682.036	48.619	23.163	15.509	16.452	5.91%	15.7	17.3
38	733.238	52.539	26.072	16.395	16.450	0.35%	15.7	17.2
39	577.414	49.361	16.038	14.930	16.405	9.24%	15.6	17.2
39	577.414	49.361	16.038	14.930	16.363	8.99%	15.6	17.2
40	655.633	46.169	24.308	16.063	16.355	2.35%	15.6	17.1
41	657.262	48.668	20.847	16.507	16.359	0.93%	15.6	17.2
42	715.554	47.099	26.803	17.055	16.377	4.25%	15.6	17.2
43	632.961	52.573	18.739	17.287	16.401	5.55%	15.6	17.2
44	678.420	47.235	22.985	17.885	16.438	9.05%	15.6	17.2
49	596.550	45.187	16.326	16.433	16.438	0.03%	15.6	17.2
50	689.366	45.169	24.497	16.365	16.436	0.44%	15.6	17.2
50	669.712	47.460	21.697	16.920	16.447	2.95%	15.7	17.2



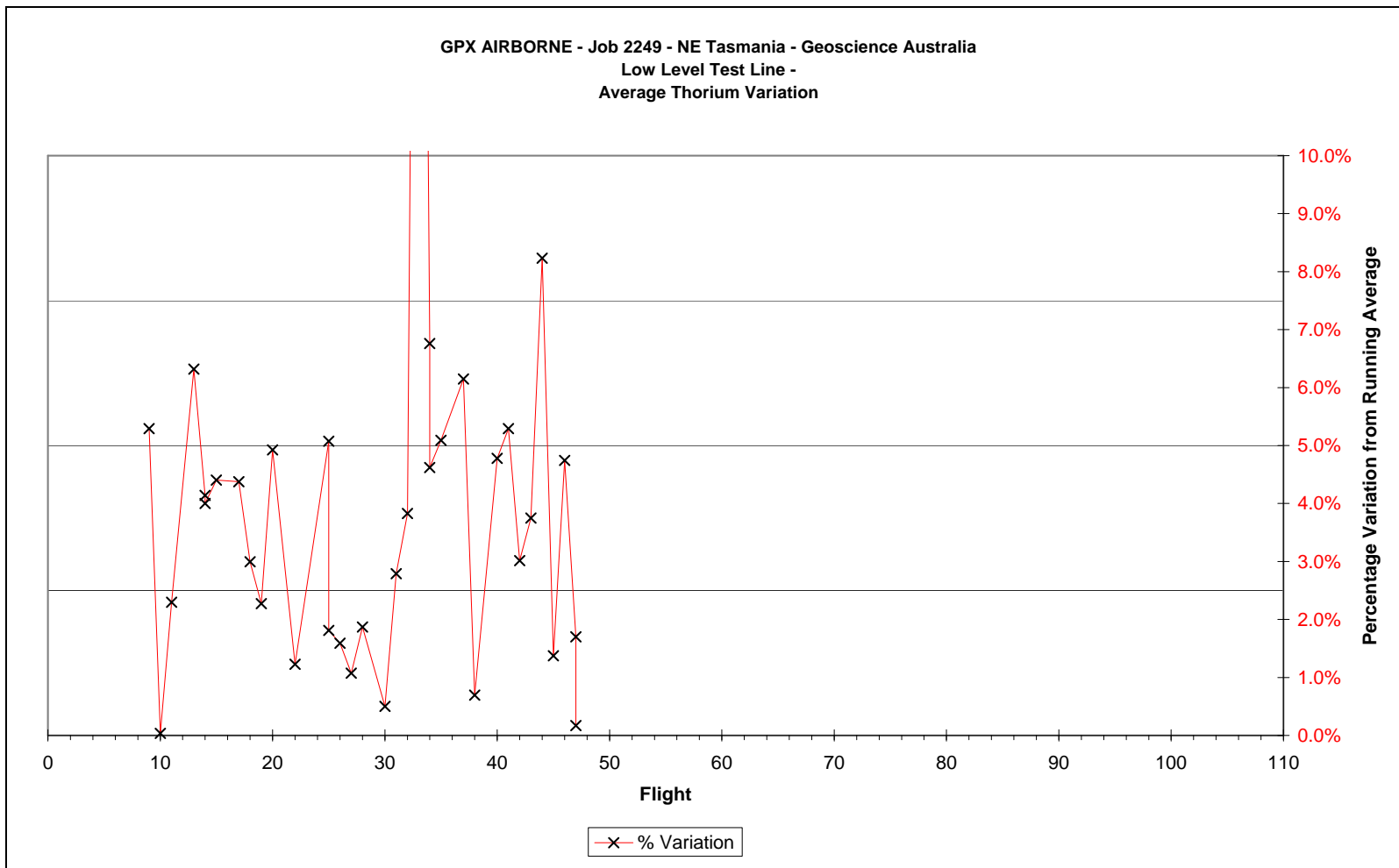
Fixed Wing Low Level Test Line

10.2.2 Helicopter

Based in Launceston

Flt#	Mean TC (cps)	Mean K (cps)	Mean U (cps)	Mean Th (cps)	Running average	% Change	Min
8	464.0247	2.158	17.598	22.058	22.058		20.0
9	512.9129	3.234	20.018	22.543	22.300	5.29%	20.7
10	561.078	7.812	22.198	23.794	22.798	0.04%	21.4
11	513.231	3.146	19.961	23.256	22.913	2.30%	21.5
13	594.835	6.250	24.125	25.307	23.392	6.32%	22.1
14	608.779	3.214	27.339	22.818	23.296	4.14%	22.0
14	611.617	6.051	26.317	24.755	23.504	4.00%	22.2
15	625.434	8.677	25.461	24.852	23.673	4.41%	22.4
17	643.877	5.957	28.460	24.844	23.803	4.38%	22.5
18	563.858	6.124	22.553	24.516	23.874	2.99%	22.6
19	543.159	6.633	20.517	24.344	23.917	2.27%	22.7
20	504.714	6.372	18.031	22.631	23.810	4.92%	22.6
22	517.219	8.042	18.964	24.095	23.832	1.23%	22.6
25	539.048	6.019	20.030	25.011	23.916	5.07%	22.7
25	533.639	7.096	19.347	24.234	23.937	1.81%	22.7
26	489.867	5.024	17.390	23.424	23.905	1.59%	22.7
27	499.528	7.067	17.876	24.058	23.914	1.07%	22.7
28	545.087	6.384	21.729	23.357	23.883	1.87%	22.7
30	574.392	7.502	23.217	23.683	23.873	0.50%	22.7
31	423.878	6.859	17.595	23.139	23.836	2.79%	22.6
32	445.603	6.492	17.831	22.892	23.791	3.83%	22.6
33	413.941	-3.700	17.422	16.704	23.469	29.82%	22.3
33	424.637	-2.351	17.646	16.520	23.167	30.60%	22.0
34	486.463	7.195	17.473	22.194	23.126	6.76%	22.0

34	488.906	5.096	18.402	22.703	23.109	4.62%	22.0
35	496.905	4.581	19.210	22.591	23.089	5.09%	21.9
37	493.592	6.127	18.651	22.339	23.062	6.15%	21.9
38	487.588	6.580	17.445	23.638	23.082	0.69%	21.9
40	512.594	7.644	18.766	22.666	23.068	4.78%	21.9
41	554.986	2.941	24.043	22.543	23.050	5.29%	21.9
42	507.367	6.298	18.829	23.085	23.051	3.02%	21.9
43	529.888	4.738	21.041	22.911	23.047	3.75%	21.9
44	535.000	5.789	20.439	21.844	23.011	8.23%	21.9
45	486.365	4.162	18.337	23.476	23.024	1.37%	21.9
46	504.808	4.172	18.961	22.674	23.014	4.74%	21.9
47	573.920	4.831	24.749	23.398	23.025	1.70%	21.9
47	518.404	6.003	19.719	23.762	23.045	0.17%	21.9

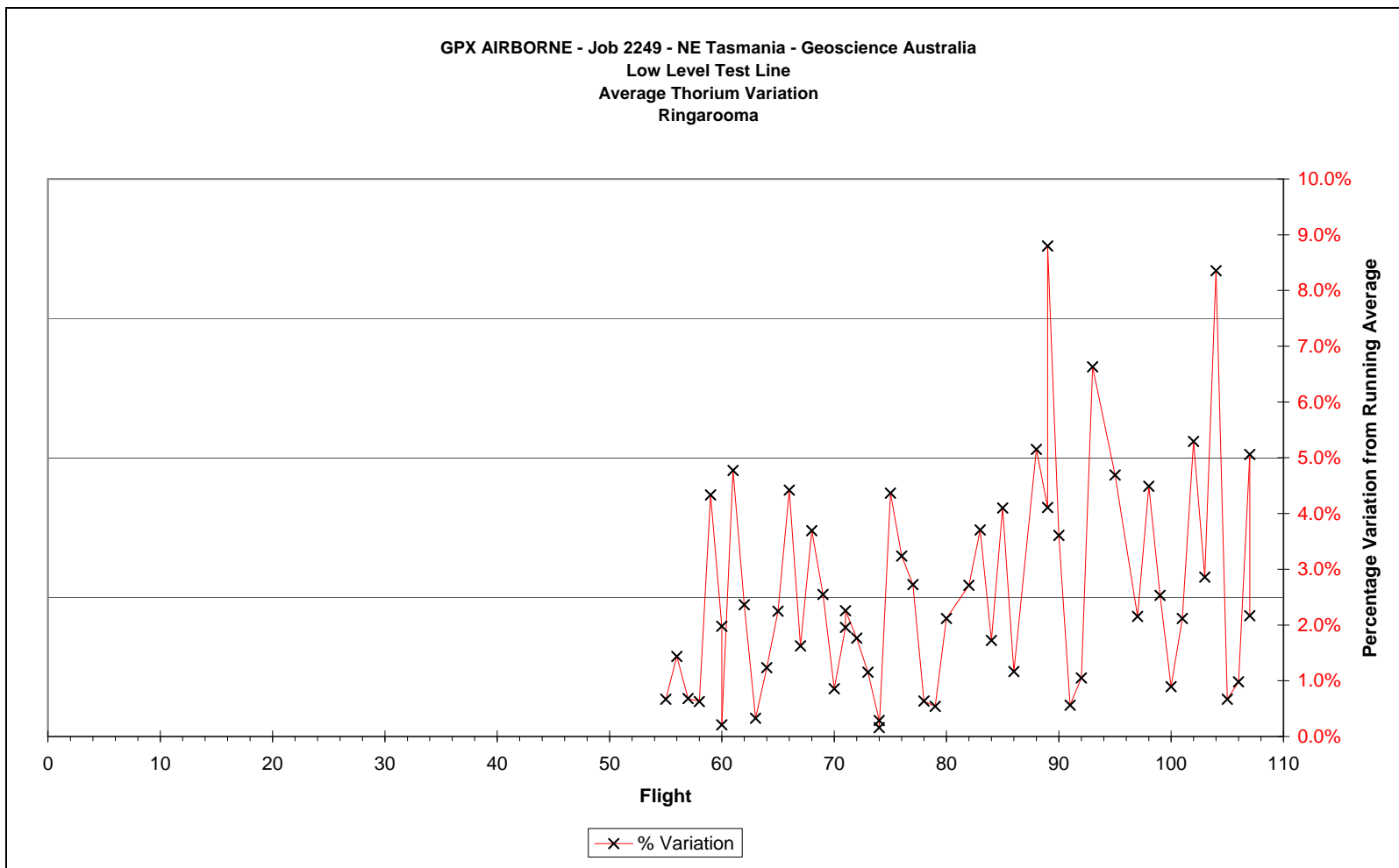


Helicopter Low Level Test Line

Based in Ringarooma

Flt#	Mean TC (cps)	Mean K (cps)	Mean U (cps)	Mean Th (cps)	Running average	% Change	Min	Max
54	722.967	35.676	21.524	27.430	27.430		24.9	30.3
55	731.023	34.963	22.067	27.846	27.638	0.67%	25.7	29.7
56	740.096	35.356	23.436	28.436	27.904	1.44%	26.1	29.7
57	731.658	35.456	22.007	28.224	27.984	0.68%	26.3	29.7
58	767.931	36.208	24.723	27.857	27.959	0.63%	26.3	29.6
59	759.441	34.237	24.414	29.248	28.173	4.33%	26.6	29.8
60	782.604	35.923	26.118	28.588	28.233	1.98%	26.7	29.8
60	819.449	33.914	29.438	27.974	28.200	0.21%	26.7	29.7
61	763.189	35.936	25.305	26.695	28.033	4.77%	26.5	29.5
62	717.991	33.057	21.932	27.370	27.967	2.37%	26.5	29.5
63	818.670	34.185	30.457	28.125	27.981	0.33%	26.5	29.5
64	748.979	36.285	23.221	27.687	27.957	1.24%	26.5	29.4
65	728.562	36.503	21.923	28.663	28.011	2.25%	26.6	29.5
66	733.789	34.871	21.890	29.272	28.101	4.42%	26.7	29.6
67	789.221	36.344	27.637	27.578	28.066	1.62%	26.6	29.5
68	824.065	35.884	29.207	29.068	28.129	3.69%	26.7	29.6
69	780.684	36.126	26.538	28.748	28.165	2.55%	26.7	29.6
70	770.610	35.469	24.889	28.273	28.171	0.86%	26.7	29.6
71	827.220	36.337	29.115	27.484	28.135	1.96%	26.7	29.6
71	748.924	37.632	22.371	28.666	28.162	2.26%	26.7	29.6
72	790.661	36.194	26.443	27.538	28.132	1.77%	26.7	29.6
73	866.518	34.999	31.789	28.357	28.142	1.15%	26.7	29.6
74	701.625	31.772	21.834	28.113	28.141	0.29%	26.7	29.6
74	716.821	35.397	21.447	27.989	28.135	0.16%	26.7	29.6
75	706.344	33.241	21.353	26.810	28.082	4.36%	26.7	29.5
76	715.282	34.533	21.231	27.126	28.045	3.24%	26.6	29.5
77	765.583	33.653	26.017	27.270	28.016	2.72%	26.6	29.4
78	808.299	35.183	27.512	28.211	28.023	0.63%	26.6	29.4

79	807.464	35.114	28.832	28.185	28.029	0.54%	26.6	29.4
80	737.555	35.902	22.430	27.440	28.009	2.12%	26.6	29.4
82	721.867	36.105	22.521	27.273	27.985	2.71%	26.6	29.4
83	712.962	34.192	21.691	26.994	27.954	3.71%	26.6	29.3
84	784.364	33.608	26.589	28.516	27.971	1.72%	26.6	29.4
85	785.496	32.765	28.847	26.884	27.939	4.10%	26.6	29.3
86	775.187	34.886	26.621	28.360	27.951	1.16%	26.6	29.3
88	746.348	34.248	23.879	26.590	27.913	5.15%	26.5	29.3
89	701.641	32.322	21.693	26.882	27.886	4.11%	26.5	29.3
89	695.562	34.102	21.574	25.567	27.825	8.80%	26.4	29.2
90	707.549	33.278	21.708	27.022	27.804	3.61%	26.4	29.2
91	701.326	31.840	21.310	28.190	27.814	0.56%	26.4	29.2
92	731.902	32.733	23.559	27.739	27.812	1.05%	26.4	29.2
93	721.574	33.189	21.953	26.175	27.773	6.63%	26.4	29.1
95	739.877	32.004	24.938	26.718	27.748	4.69%	26.4	29.1
97	750.823	33.893	24.595	28.637	27.769	2.15%	26.4	29.1
98	716.035	33.943	22.384	26.775	27.746	4.49%	26.4	29.1
99	755.753	31.637	26.335	27.324	27.737	2.53%	26.4	29.1
100	737.841	33.108	24.168	27.783	27.738	0.89%	26.4	29.1
101	712.672	31.601	23.378	27.439	27.732	2.12%	26.4	29.1
102	712.776	31.386	22.538	26.549	27.708	5.29%	26.3	29.1
103	742.209	33.610	25.284	27.232	27.698	2.86%	26.3	29.1
104	716.161	35.771	21.940	25.691	27.659	8.35%	26.3	29.0
105	792.495	34.017	27.942	28.220	27.670	0.67%	26.3	29.0
106	734.778	32.865	24.074	28.308	27.682	0.98%	26.3	29.0
107	774.677	31.255	28.814	26.615	27.662	5.06%	26.3	29.0
107	829.399	33.025	31.548	27.426	27.658	2.17%	26.3	29.0

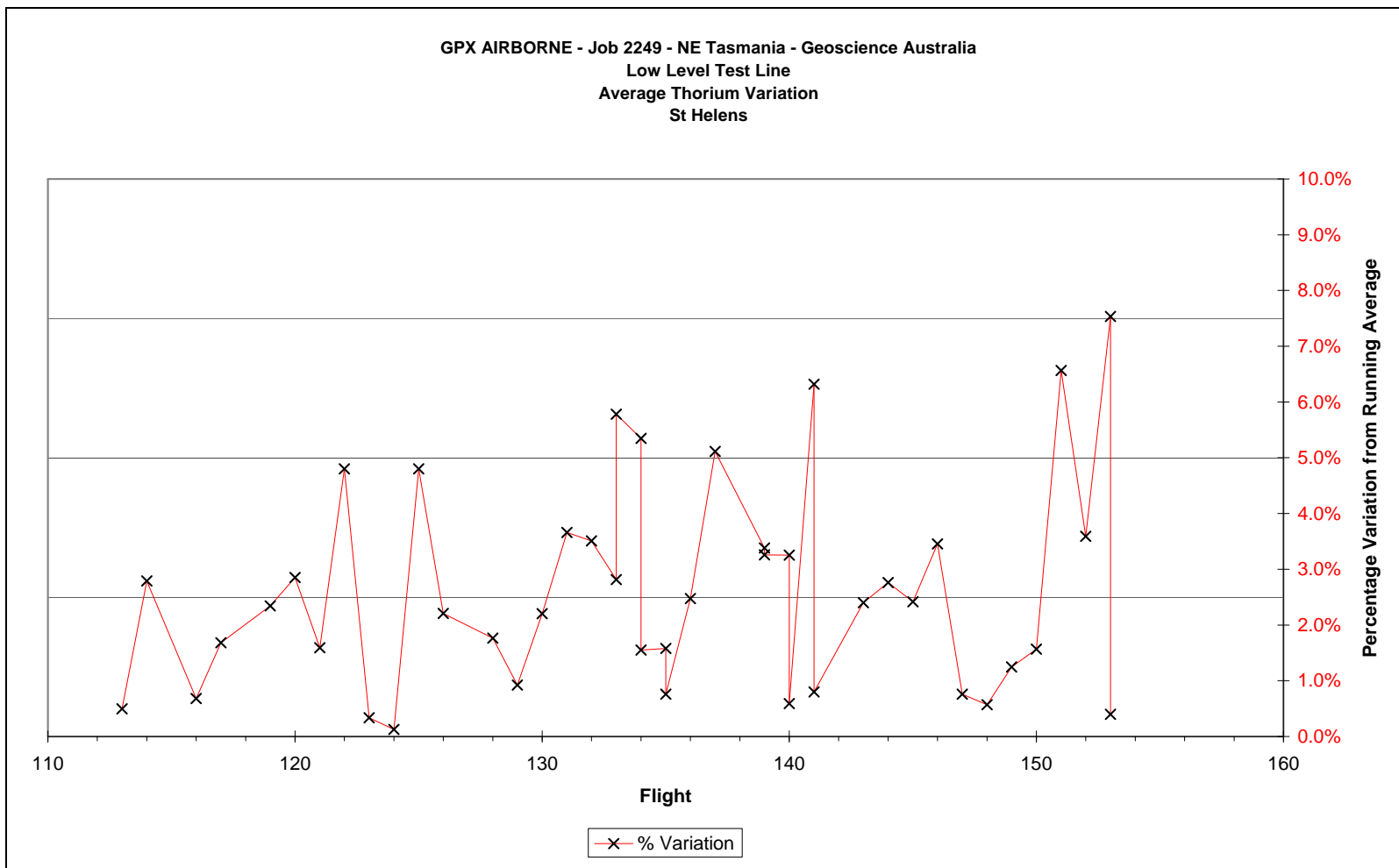


Helicopter Low Level Test Line

Based in St Helens

Flt#	Mean TC (cps)	Mean K (cps)	Mean U (cps)	Mean Th (cps)	Running average	% Change	Min	Max
111	444.896	20.046	13.701	15.338	15.338		13.9	16.9
113	449.937	21.717	13.605	15.491	15.415	0.50%	14.3	16.6
114	451.783	20.028	14.968	16.069	15.633	2.79%	14.7	16.6
116	449.937	21.717	13.605	15.491	15.597	0.68%	14.7	16.5
117	462.268	21.283	14.500	15.926	15.663	1.68%	14.8	16.6
119	519.025	23.116	18.125	16.105	15.737	2.34%	14.9	16.6
120	500.099	21.342	17.781	15.216	15.662	2.85%	14.8	16.5
121	479.647	21.633	15.586	15.948	15.698	1.59%	14.9	16.5
122	428.942	19.995	13.004	14.855	15.604	4.80%	14.8	16.4
123	427.076	21.926	12.062	15.546	15.599	0.34%	14.8	16.4
124	462.005	21.955	14.252	15.621	15.601	0.13%	14.8	16.4
125	472.662	20.612	15.855	16.421	15.669	4.80%	14.9	16.5
126	439.972	21.547	13.072	16.045	15.698	2.21%	14.9	16.5
128	437.274	20.978	12.352	15.400	15.677	1.76%	14.9	16.5
129	441.931	19.592	13.271	15.522	15.666	0.92%	14.9	16.5
130	467.050	21.837	14.169	16.035	15.689	2.21%	14.9	16.5
131	433.773	19.364	13.445	15.081	15.654	3.66%	14.9	16.4
132	424.320	19.594	12.560	15.073	15.621	3.51%	14.8	16.4
133	426.237	19.592	13.100	15.158	15.597	2.81%	14.8	16.4
133	461.745	21.334	15.004	14.650	15.550	5.78%	14.8	16.3
134	462.061	19.454	16.083	14.679	15.508	5.35%	14.7	16.3
134	438.492	18.513	14.176	15.760	15.520	1.55%	14.8	16.3
135	407.878	17.975	12.269	15.264	15.508	1.58%	14.8	16.3
135	400.722	16.844	11.980	15.386	15.503	0.76%	14.7	16.3
136	391.683	17.823	10.859	15.104	15.487	2.48%	14.7	16.2
137	448.320	18.849	14.162	14.665	15.456	5.11%	14.7	16.2
139	474.687	19.451	16.475	15.999	15.476	3.38%	14.7	16.2
139	474.687	19.451	16.475	15.999	15.495	3.26%	14.7	16.2

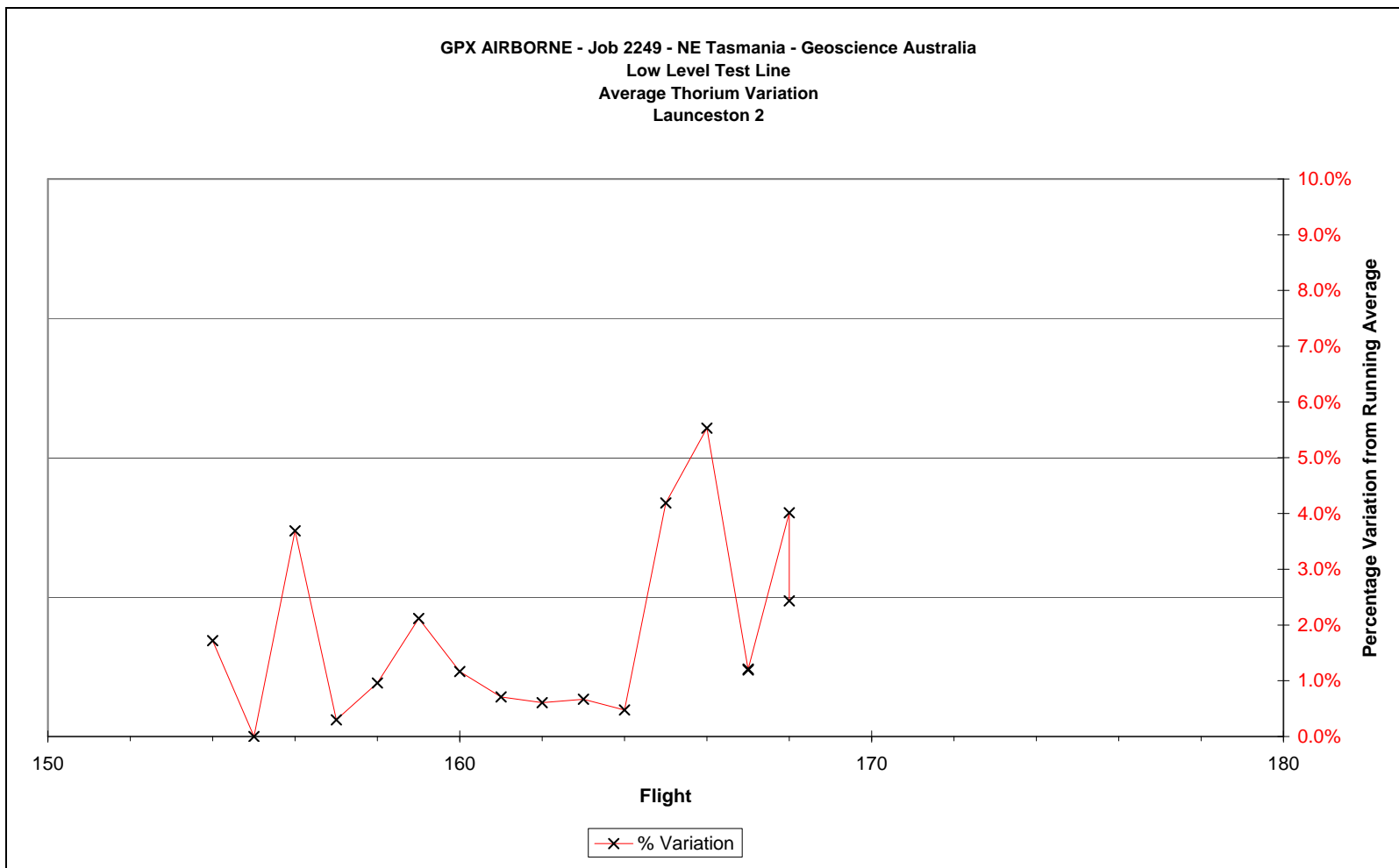
140	421.712	17.381	13.310	14.973	15.477	3.25%	14.7	16.2
140	456.341	21.205	15.083	15.571	15.480	0.59%	14.7	16.2
141	419.278	16.741	13.757	14.471	15.447	6.32%	14.7	16.2
141	441.204	20.607	13.272	15.320	15.443	0.80%	14.7	16.2
143	432.064	18.705	13.459	15.826	15.455	2.40%	14.7	16.2
144	412.719	17.857	12.768	15.895	15.468	2.76%	14.7	16.2
145	461.194	20.801	14.925	15.083	15.457	2.42%	14.7	16.2
146	443.752	18.439	14.765	14.908	15.442	3.46%	14.7	16.2
147	465.145	11.910	10.621	15.321	15.438	0.76%	14.7	16.2
148	496.155	19.372	16.642	15.529	15.441	0.57%	14.7	16.2
149	475.789	20.066	15.940	15.243	15.436	1.25%	14.7	16.2
150	432.889	18.824	13.153	15.187	15.429	1.57%	14.7	16.2
151	449.509	21.305	13.607	16.469	15.455	6.56%	14.7	16.2
152	435.968	19.375	13.526	16.023	15.468	3.59%	14.7	16.2
153	525.751	22.919	18.422	16.663	15.496	7.53%	14.8	16.2
153	470.600	20.182	16.024	15.433	15.495	0.40%	14.8	16.2



Helicopter Low Level Test Line

Based in Launceston “2”

Flt#	Mean TC (cps)	Mean K (cps)	Mean U (cps)	Mean Th (cps)	Running average	% Change	Min	Max
154	527.746	19.910	18.793	16.500	16.500		15.0	18.2
154	558.999	19.523	37.185	17.077	16.789	1.72%	15.6	18.0
155	463.092	3.657	16.261	22.957	22.957	0.00%	21.5	24.5
156	467.303	4.708	16.905	21.324	22.140	3.69%	20.8	23.5
157	462.763	3.762	16.032	22.240	22.174	0.30%	20.9	23.5
158	460.238	3.496	17.445	21.891	22.103	0.96%	20.9	23.4
159	475.139	3.864	18.295	21.522	21.987	2.12%	20.8	23.2
160	470.693	4.665	17.942	22.295	22.038	1.17%	20.9	23.2
161	485.012	3.971	19.098	22.221	22.064	0.71%	20.9	23.2
162	460.429	2.906	17.227	21.911	22.045	0.61%	20.9	23.2
163	466.741	4.526	17.247	22.211	22.064	0.67%	20.9	23.2
164	502.460	4.890	19.014	22.180	22.075	0.47%	20.9	23.2
165	472.130	2.396	17.938	23.096	22.168	4.19%	21.0	23.3
166	500.113	3.431	19.441	23.512	22.280	5.53%	21.1	23.4
167	534.908	4.601	22.131	22.569	22.302	1.19%	21.2	23.4
167	573.894	4.570	25.478	22.012	22.282	1.21%	21.2	23.4
168	537.838	5.745	21.176	23.243	22.346	4.01%	21.2	23.5
168	516.961	4.612	20.572	21.766	22.309	2.43%	21.2	23.4



Helicopter Low Level Test Line

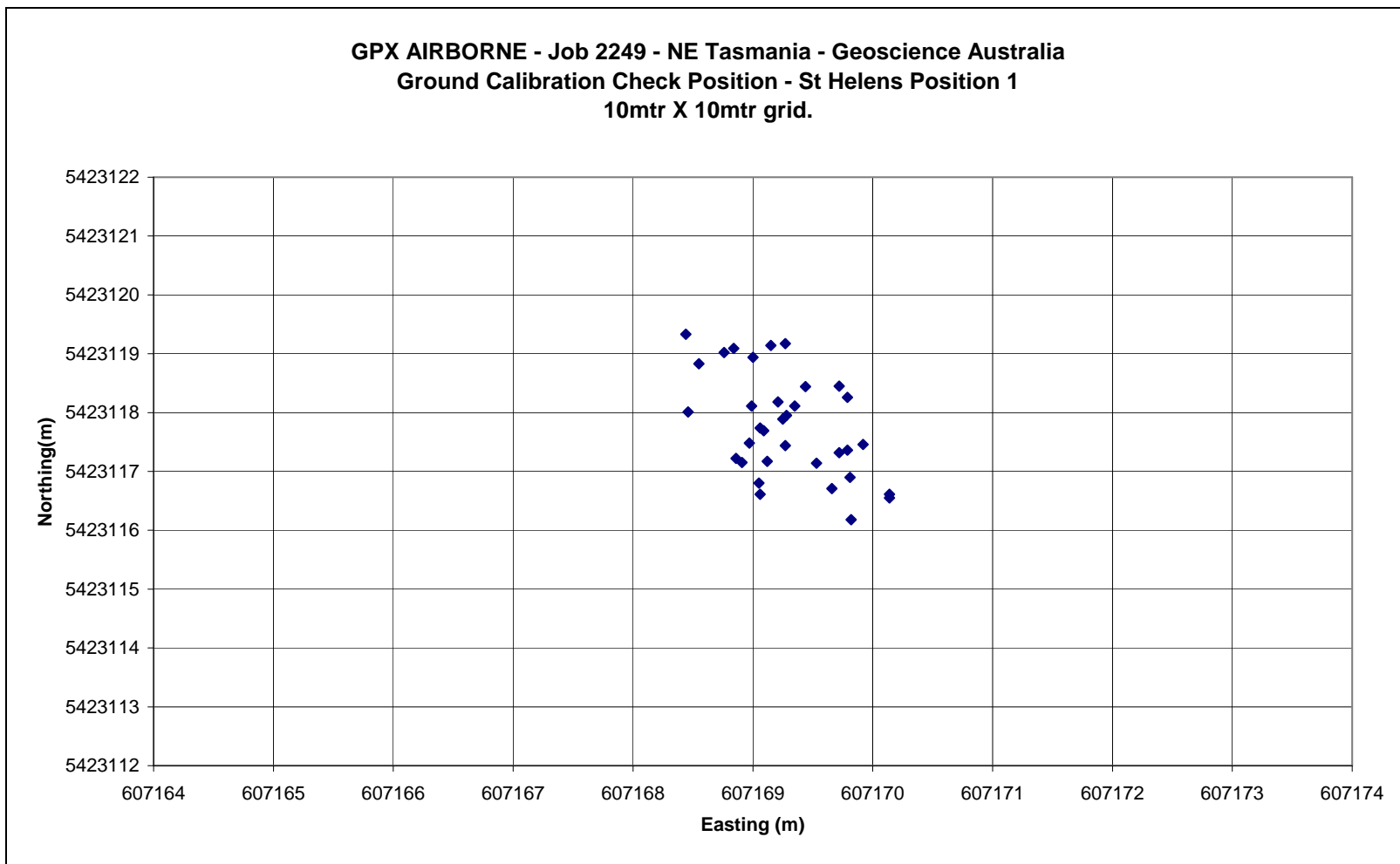
10.3 GROUND CALIBRATION POSITION CHECK

10.3.1 Fixed Wing

Based in St Helens

Day	Flight	Line No.	Easting	Northing	Height
77	4	1501004	607169	5423117	53
80	7	1501007	607169	5423117	54
80	9	1601009	607170	5423117	53
81	10	1501010	607170	5423117	54
81	11	1602011	607169	5423118	56
82	12	1502012	607170	5423117	55
82	13	1601013	607158	5423102	54
84	14	1501014	607170	5423118	51
84	16	1601016	607169	5423117	52
87	17	1501017	607169	5423118	54
87	18	1601018	607169	5423119	55
88	19	1602019	607169	5423119	57
89	22	1602022	607169	5423118	53
90	23	1501023	607169	5423119	52
90	24	1602024	607169	5423117	55
91	25	1502025	607169	5423118	53
91	26	1601026	607169	5423117	53
92	27	1501027	607169	5423117	52
92	28	1601028	607169	5423118	52
93	29	1501029	607169	5423119	53
93	30	1602030	607168	5423118	53
94	31	1502031	607169	5423118	52
95	33	1601033	607169	5423119	55
96	34	1501034	607170	5423118	53
96	35	1601035	607169	5423118	53

97	36	1501036	607170	5423117	52
100	38	1501038	607169	5423118	54
101	39	1501039	607170	5423117	53
102	40	1501040	607170	5423117	51
102	41	1601041	607170	5423116	52
103	42	1501042	607170	5423117	51
103	43	1601043	607168	5423119	53
104	44	1501044	607170	5423117	51
109	49	1601049	607169	5423119	54
110	50	1501050	607169	5423117	52



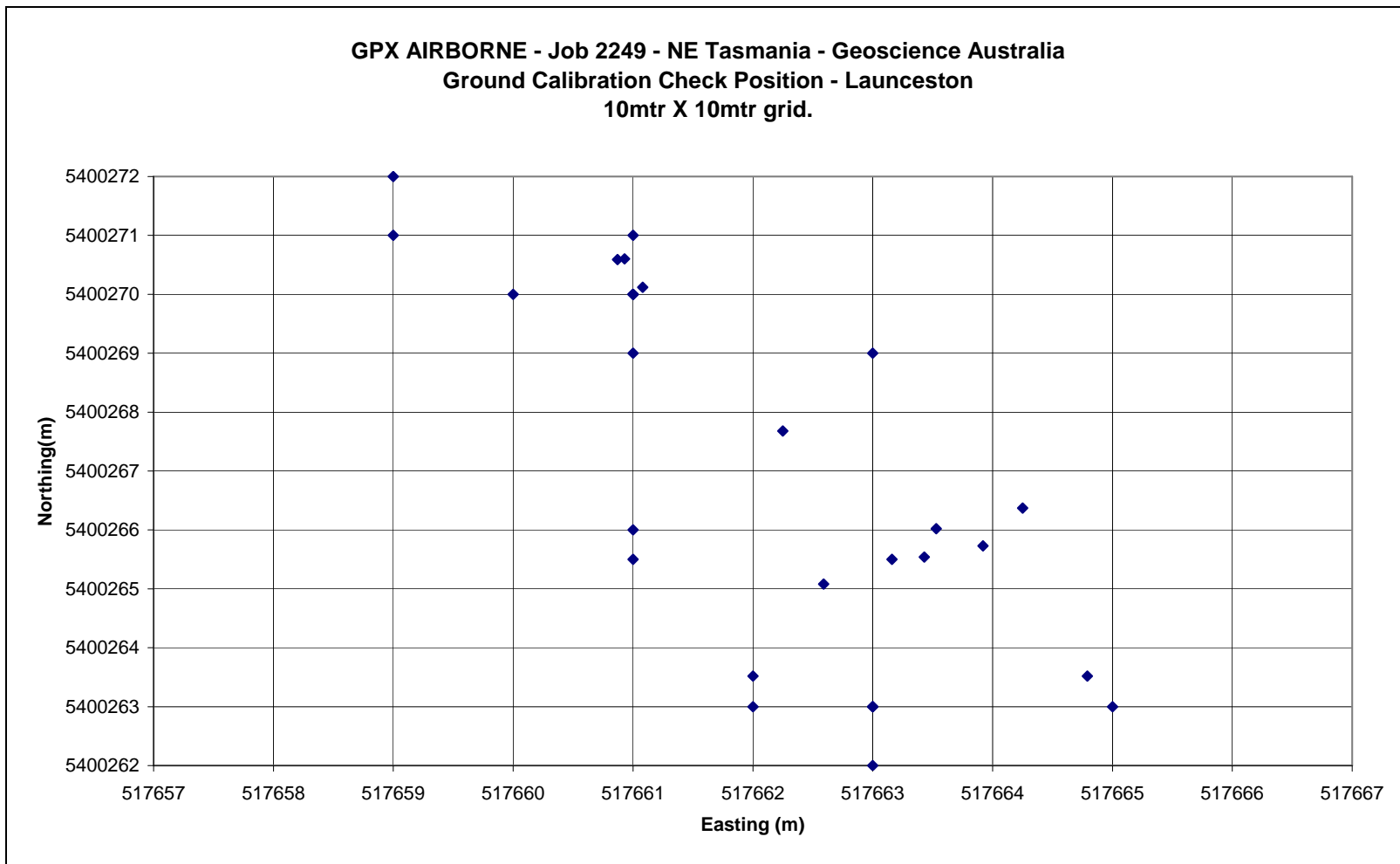
St Helens Fixed Wing Calibration site

10.3.2 Helicopter

Based in Launceston

Flight	Line No.	Easting	Northing	Height
8	1501008	517661	5400269	176
9	1501009	517659	5400272	178
10	1601010	517660	5400270	178
11	1502011	517661	5400270	177
13	1601013	517661	5400270	177
14	1501014	517661	5400270	177
14	1601014	517661	5400271	177
15	1501015	517661	5400271	177
17	1601017	517661	5400270	177
18	1501018	517661	5400271	178
19	1601018	517664	5400266	176
20	1501020	517664	5400266	177
22	1601022	517663	5400266	178
25	1501025	517663	5400266	177
25	1601025	517662	5400268	177
26	1501026	517661	5400266	178
27	1601027	517659	5400271	178
28	1501028	517663	5400265	177
30	1601030	517665	5400263	178
31	1501031	517665	5400264	177
32	1601032	517664	5400266	176
33	1501033	517662	5400264	178
33	1601033	517663	5400263	178
34	1501034	517661	5400266	177
34	1601034	517663	5400269	178
35	1501035	517663	5400263	177

37	1601037	517663	5400263	179
38	1501038	517663	5400262	177
40	1601040	517662	5400263	178
41	1501041	517662	5400263	177
42	1601042	517663	5400263	177
43	1501043	517663	5400264	176
44	1601044	517662	5400264	175
45	1501045	517663	5400264	177
46	1601046	517662	5400264	177
47	1501047	517662	5400264	177
47	1601047	517662	5400264	177

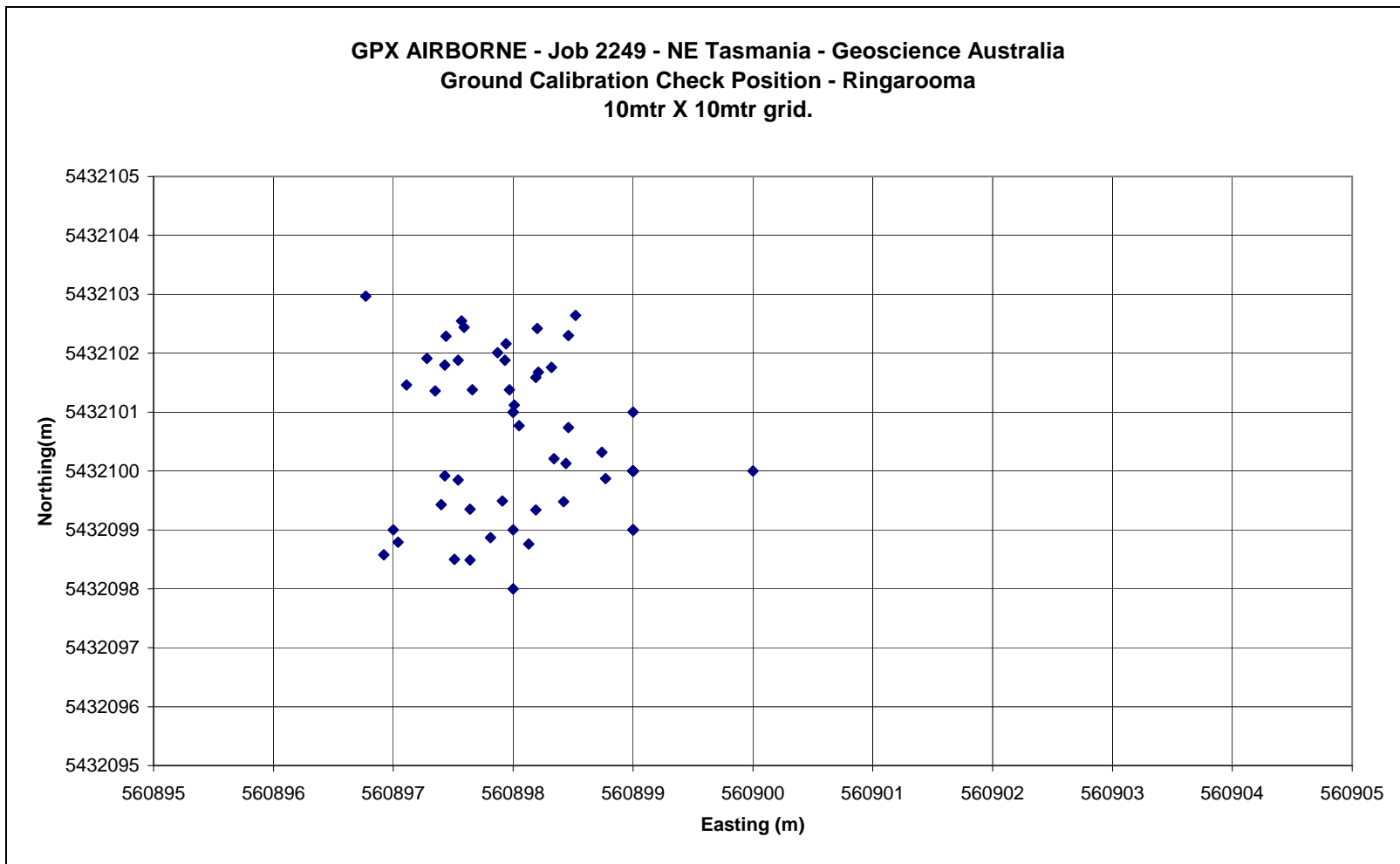


Launceston Helicopter Calibration site

Based in Ringarooma

Flight	Line No.	Easting	Northing	Height
48	1501048	560900	5432100	307
49	1601049	560898	5432098	307
50	1501050	560899	5432100	308
51	1601051	560899	5432099	309
52	1501052	560899	5432100	308
53	1601053	560899	5432100	309
54	1501054	560899	5432100	308
55	1601055	560899	5432099	309
56	1501056	560899	5432100	309
57	1601057	560899	5432099	309
58	1501058	560899	5432100	308
59	1601059	560899	5432099	307
60	1501060	560899	5432100	308
60	1601060	560898	5432099	308
61	1501061	560834	5432177	312
62	1601062	560899	5432100	308
63	1501063	560898	5432101	308
64	1601064	560899	5432101	309
65	1501065	560898	5432101	308
66	1601066	560897	5432099	309
67	1501067	560896.92	5432098.58	307.1673
68	1601068	560897.4	5432099.43	308.4935
69	1501069	560897.43	5432099.92	308.3417
70	1601070	560897.64	5432098.49	309.0594
71	1501071	560897.04	5432098.79	308.2571
71	1601071	560897.81	5432098.87	308.5187
72	1501072	560897.91	5432099.49	307.8291
73	1601073	560898.19	5432099.34	309.751
74	1501074	560898.13	5432098.76	308.4971

74	1601074	560897.51	5432098.5	308.4505
75	1501075	560897.54	5432099.85	308.4723
76	1601076	560898.74	5432100.32	307.6076
77	1501077	560898.44	5432100.13	307.2746
78	1601078	560898.77	5432099.87	306.9486
79	1501079	560898.42	5432099.48	306.9552
80	1601080	560898.34	5432100.21	308.2809
82	1501082	560898.21	5432101.68	307.6598
83	1601083	560897.54	5432101.88	308.7894
84	1501084	560897.28	5432101.91	307.2987
85	1601085	560898.01	5432101.12	307.5759
86	1501086	560897.94	5432102.16	307.6263
88	1601088	560898.46	5432102.3	308.2603
89	1501089	560898.2	5432102.42	306.5800
89	1601089	560898.46	5432100.74	308.2254
90	1501090	560898.05	5432100.77	307.0272
91	1601091	560897.44	5432102.29	306.9390
92	1501092	560897.35	5432101.36	308.8070
93	1601093	560897.93	5432101.88	307.6500
95	1501095	560897.66	5432101.38	308.8773
97	1601097	560897.59	5432102.44	308.9612
98	1501098	560897.97	5432101.38	307.8922
98	1601098	560898.32	5432101.76	308.7024
99	1501099	560898.19	5432101.59	307.8510
100	1601100	560897.57	5432102.55	306.8772
101	1501101	560897.11	5432101.46	306.8613
102	1601102	560897.43	5432101.8	307.7951
105	1501105	560897.64	5432099.35	308.9976
106	1601106	560898.52	5432102.64	308.5568
107	1501107	560897.87	5432102.01	307.9222
107	1601107	560896.77	5432102.97	310.0416

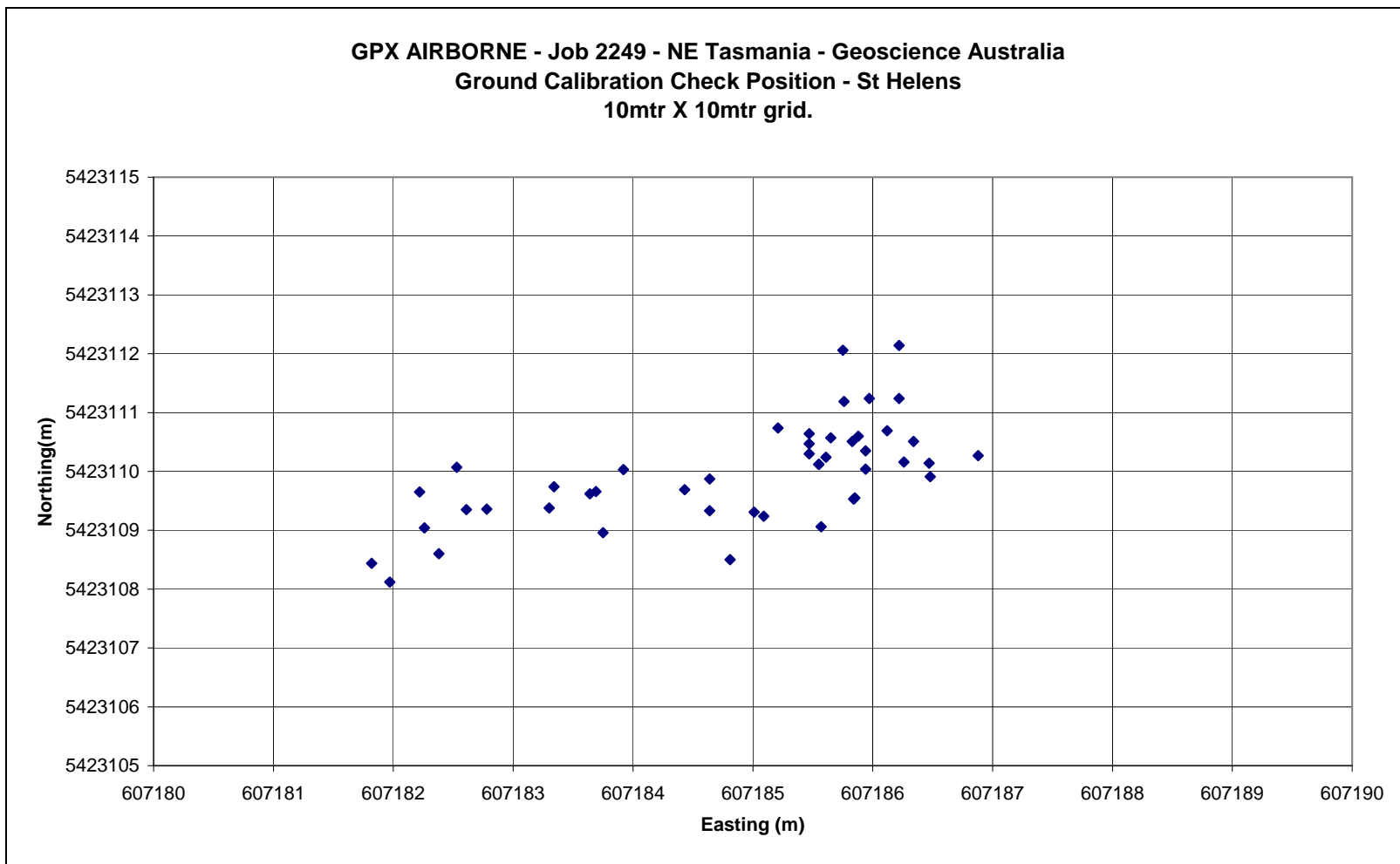


Ringarooma Helicopter Calibration site

Based in St Helens

Flight	Line No.	Easting	Northing	Height
108	1501	607186.34	5423110.51	51.3590
110	1601	607185.84	5423109.53	50.3791
111	1501	607185.01	5423109.31	50.7948
113	1601	607185.55	5423110.12	50.2580
114	1501	607185.47	5423110.47	51.5893
116	1601	607185.55	5423110.12	50.2580
117	1501	607186.47	5423110.14	50.8908
119	1601	607185.47	5423110.3	51.0669
120	1501	607185.65	5423110.57	50.7378
121	1601	607186.22	5423111.24	51.8837
122	1501	607185.94	5423110.35	51.9477
123	1601	607185.75	5423112.06	52.7705
124	1501	607185.88	5423110.6	52.6767
125	1601	607186.88	5423110.27	51.4553
126	1501	607185.61	5423110.24	52.0593
128	1601	607185.76	5423111.19	50.4807
129	1501	607186.12	5423110.69	51.9702
130	1601	607185.83	5423110.51	51.4103
131	1501	607185.94	5423110.04	52.5602
132	1601	607185.97	5423111.24	52.0394
133	1501	607186.26	5423110.16	51.8383
133	1601	607186.48	5423109.91	51.0560
134	1501	607185.57	5423109.06	52.3884
134	1601	607185.47	5423110.64	52.1036
135	1501	607185.21	5423110.74	51.8818
135	1601	607186.22	5423112.14	50.3831
136	1501	607185.09	5423109.24	52.0858
137	1601	607185.85	5423109.55	51.5621
139	1501	607184.43	5423109.69	50.9937

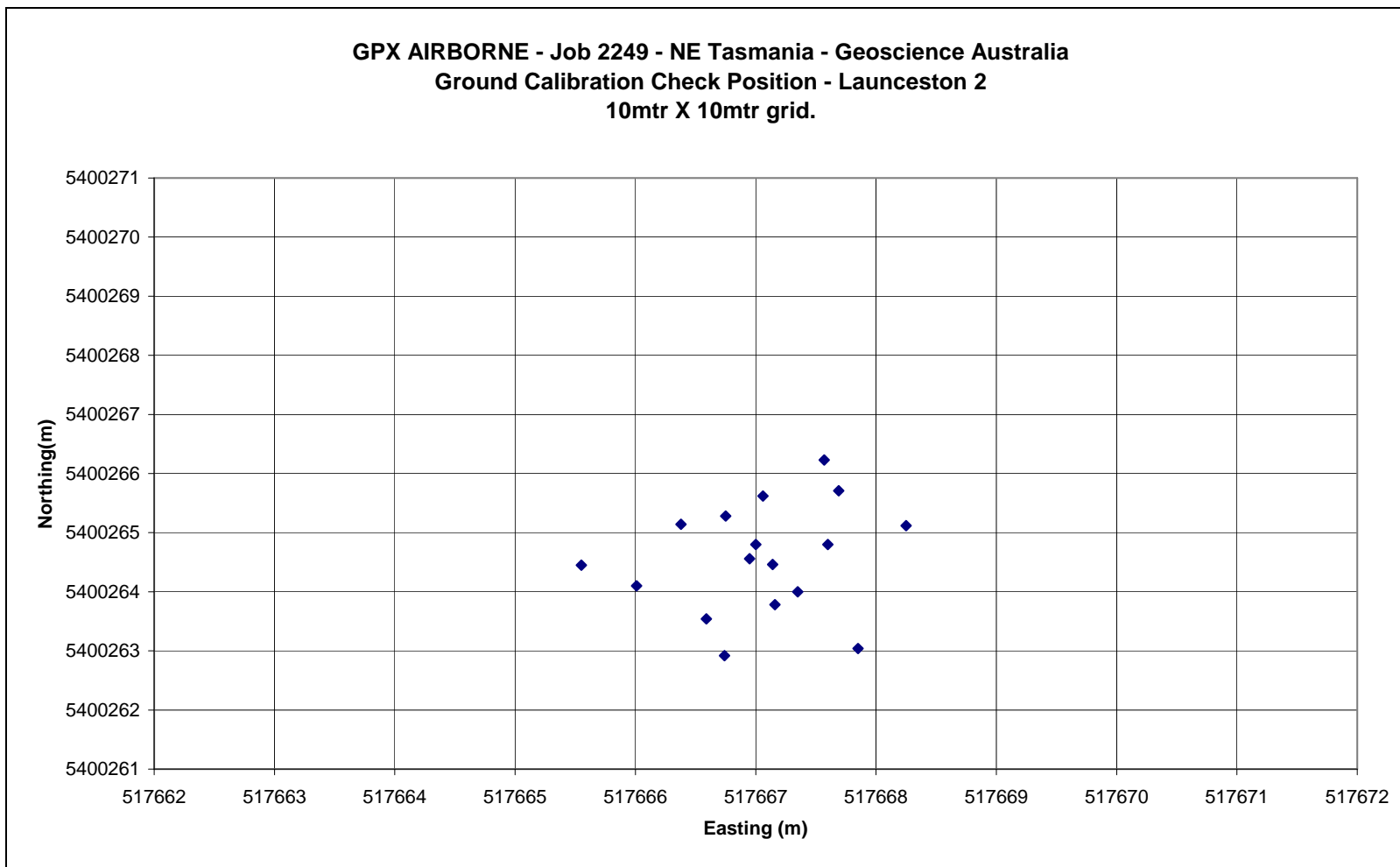
139	1601	607184.64	5423109.33	51.1841
140	1501	607183.75	5423108.96	53.4740
140	1601	607184.64	5423109.87	50.1635
141	1501	607183.64	5423109.62	50.6033
141	1601	607184.81	5423108.50	53.3000
143	1501	607182.38	5423108.60	51.1911
144	1601	607182.53	5423110.07	51.3563
145	1501	607181.82	5423108.44	
146	1601	607183.30	5423109.38	
147	1501	607181.97	5423108.12	
148	1601	607183.92	5423110.03	
149	1501	607182.61	5423109.35	
150	1601	607183.69	5423109.66	
151	1501	607182.78	5423109.36	
152	1601	607183.34	5423109.74	
153	1501	607182.22	5423109.65	
153	1601	607182.26	5423109.04	



St Helens Helicopter Calibration site

Based in Launceston “2”

Flight	Line No.	Easting	Northing	Height
154	1501	517672.51	5400256.37	
154	1601	517667.57	5400266.23	
155	1501	517667.06	5400265.62	
156	1601	517667.14	5400264.46	
157	1501	517667	5400264.8	
158	1601	517668.25	5400265.12	
159	1501	517667.35	5400264	176.5345
160	1601	517667.6	5400264.8	177.5194
161	1501	517666.59	5400263.54	177.2711
162	1601	517667.69	5400265.71	176.5755
163	1501	517666.95	5400264.56	177.1808
164	1601	517667.85	5400263.04	176.6419
165	1501	517666.74	5400262.92	177.3344
166	1601	517666.38	5400265.14	177.6041
167	1501	517665.55	5400264.45	176.7338
167	1601	517666.75	5400265.28	178.0308
168	1501	517666.01	5400264.1	176.9504
168	1601	517667.16	5400263.78	176.0685



Launceston "2" Helicopter Calibration site

11 APPENDIX E: INCIDENT REPORTS

There were two incidents on this job and a summary of these reports are as follows.

10 June 2007

Location: Upper Blessington, Tasmania

The helicopter flew Lines 3010 and 3040 on this date and on arrival back at Launceston Base. It was decided not to continue flying due to high winds. CASA advised Heli Aus that a complaint had been lodged to Mal Walker at CASA. A farmer was very upset with the helicopter flying over his property and had threatened the aircraft if it was seen flying over his property again. Heli Aust Operations Manager reported this threat to the Launceston police the next morning. The crew held a safety meeting and in consultation with GPX Airborne management and Heli Aust management determined that it was unsafe to over fly the farmer's property at this time and until contact had been made with the farmer and some agreement made to fly this area.

The crew made contact with the farmer and the issues were resolved.

15 August 2007

Location: North Eastern Block

During survey as Wedge Tailed Eagle flew into the Helicopter blades. Pilot Mark Watson landed immediately to check for damage to the Helicopter.

No damage to the Helicopter was found.
