Rum Jungle Airborne Electromagnetic (AEM) Mapping Survey

Acquisition and Processing Report

for

Geoscience Australia

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L. Stenning

Authorised for release by : ……..

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Survey flown: October 2008 – May 2009

by

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FAS PROJECT # 2017

GA PROJECT # 1196

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SURVEY OPERATIONS AND LOGISTICS

1.1 Introduction

Between the 7th of October 2008 and the 24th of May 2009, Fugro Airborne Surveys Pty. Ltd., (FAS) undertook an airborne TEMPEST electromagnetic and magnetic survey for Geoscience Australia, over the Rum Jungle Project area in the Northern Territory. The survey contained one large regional block with a number of tighter line spaced infill areas. Total coverage of the Rum Jungle survey amounted to 14167 line kilometres, flown in 84 flights. The survey was flown using a Shorts Skyvan SC3-200 aircraft, registration VH-WGT, owned and operated by FAS. This report summarises the procedures and equipment used by FAS in the acquisition, verification and processing of the airborne geophysical data.

1.2 Survey Base

The survey was based out of Katherine, Bachelor and Daly River, Northern Territory. The survey aircraft was operated from each of the local airports, with the aircraft fuel available on site. A temporary office was set up at each of the base locations, from where all survey operations were run and the post-flight data verification was performed.

Base	Date	Flight	Accommodation
Katherine, NT	7/10/2008 – 6/12/2008	1 – 46	Pine Tree Motel
Bachelor, NT	15/4/2009 – 7/5/2009	47 – 66	Bachelor Resort
Daly River, NT	8/5/2009 – 13/5/2009	67 – 70	Daly River Motor Inn
Daly River, NT	14/5/2009 – 24/5/2009	71 - 84	Daly River Mango Farm

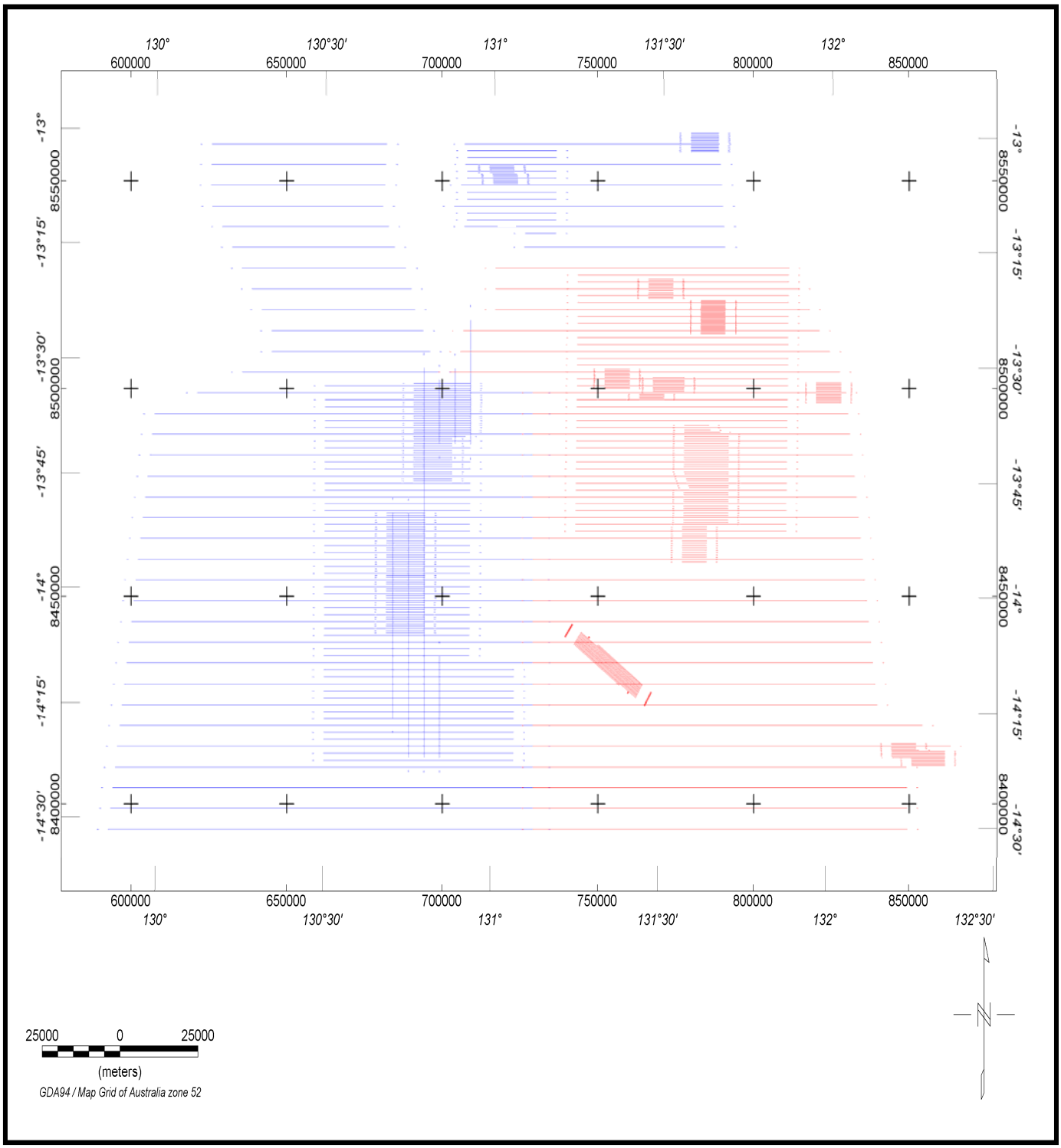
1.3 Survey Personnel

The following personnel were involved in this project:

Project Supervision	- Acquisition	Bart Anderson
	- Processing	Adam Shales
Pilot/s		Mick Young
		Troy Wilhelmi
		Peter Hiskins
		Til Ribarich
System Operator/s		Michael Githinji
		Luke Kelly
		Mike Poole
		Steve Rawlings
		John Stewart
		Ben Riggs
Aircraft Engineer/s		Clint Hazelwood
Field Data Processing		Kah Tho Lee
		Shane Mule
		Silvia Hofman
		Fanoula Ziouzia
		Glenn Gooch
Office Data Processing		Matt Lawrence

1.4 Area Map

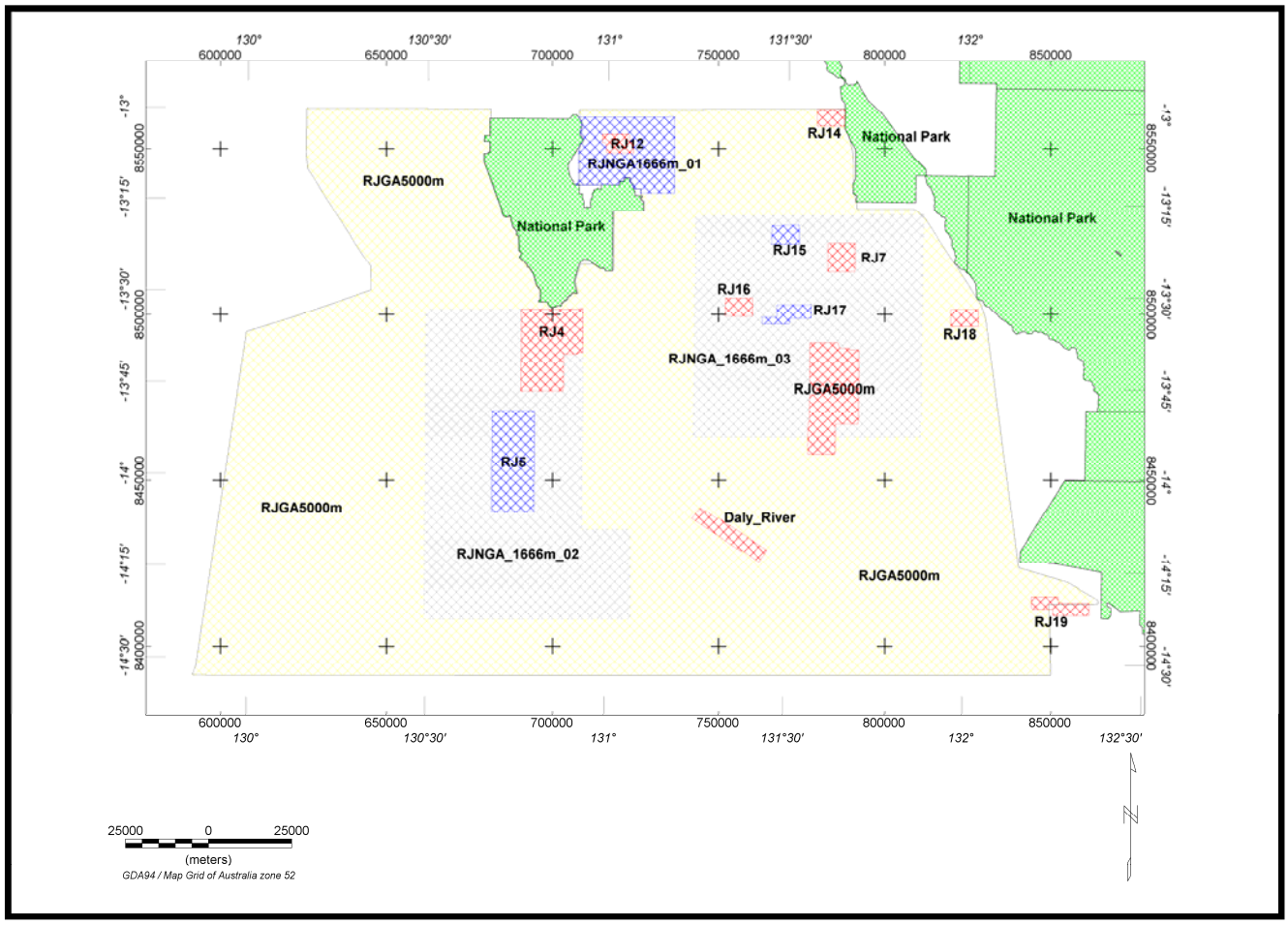
The following figure shows the areas flown as part of the Rum Jungle survey by VH-WGT. Lines in ***red*** were acquired with the PICODAS acquisition system in 2008, whilst the lines in ***blue*** were acquired with the FASDAS acquisition system in 2009.



SURVEY SPECIFICATIONS AND PARAMETERS

1.5 Area Co-ordinates

The survey area was located within Map Grid of Australia zones 52 and 53. However, all data was delivered in MGA zone 52.
Below is the naming convention for the regional and infill blocks that was used for data delivery:



The approximate co-ordinates of each of the regional and infill blocks are listed in the tables below:

Coordinates of Rum Jungle regional area **RJGA_5000m** (5000m line spacing).

Vertex	Easting (m)	Northing (m)	Vertex	Easting (m)	Northing (m)
1	625900	8559000	7	862393	8409329
2	790137	8559000	8	848200	8409132
3	808512	8531983	9	848512	8390818
4	828475	8501446	10	593375	8393111
5	839154	8421071	11	608532	8494228
6	862333	8417577	12	646109	8507168

Coordinates of Rum Jungle infill area **RJNGA_1666m_01** (1666m line spacing).

Vertex	Easting (m)	Northing (m)	Vertex	Easting (m)	Northing (m)
1	707818	8559557	6	721352	8540997
2	736707	8559676	7	720085	8538860
3	736627	8536525	8	707184	8538899
4	726496	8536604	9	708015	8550455
5	723331	8540918	10	709321	8553027

Coordinates of Rum Jungle infill area **RJNGA_1666m_02** (1666m line spacing).

Vertex	Easting (m)	Northing (m)	Vertex	Easting (m)	Northing (m)
1	709217	8501213	4	722848	8408879
2	708665	8432979	5	661730	8409352
3	723062	8432856	6	662313	8501542

Coordinates of Rum Jungle infill area **RJNGA_1666m_03** (1666m line spacing).

Vertex	Easting (m)	Northing (m)	Vertex	Easting (m)	Northing (m)
1	742996	8529041	3	810833	8464004
2	811655	8529123	4	742256	8464004

Coordinates of Rum Jungle infill area **RJ4** (555m line spacing).

Vertex	Easting (m)	Northing (m)	Vertex	Easting (m)	Northing (m)
1	690814	8501260	4	703222	8488166
2	709129	8501459	5	703140	8477532
3	709026	8488458	6	690642	8477626

Coordinates of Rum Jungle infill area **RJ5** (555m line spacing).

Vertex	Easting (m)	Northing (m)	Vertex	Easting (m)	Northing (m)
1	682057	8470035	3	694331	8441054
2	694550	8469944	4	681852	8441146

Coordinates of Rum Jungle north/south regional lines - **RJ6** (5000m line spacing).

Vertex	Easting (m)	Northing (m)	Vertex	Easting (m)	Northing (m)
1 (BOL)	684137	8420637	1 (EOL)	684137	8470266
2 (BOL)	689137	8411295	2 (EOL)	689137	8470091
3 (BOL)	694137	8411255	3 (EOL)	694137	8505083
4 (BOL)	699137	8411215	4 (EOL)	699137	8435520
5 (BOL)	699137	8486736	5 (EOL)	699137	8502116
6 (BOL)	704137	8486595	6 (EOL)	704137	8504919
7 (BOL)	709137	8486454	7 (EOL)	709137	8516429

Coordinates of Rum Jungle infill area **RJ7** (238m line spacing).

Vertex	Easting (m)	Northing (m)	Vertex	Easting (m)	Northing (m)
1	783123	8521129	3	790864	8513050
2	790951	8521045	4	783039	8513135

Coordinates of Rum Jungle infill area **RJ12** (333m line spacing).

Vertex	Easting (m)	Northing (m)	Vertex	Easting (m)	Northing (m)
1	715174	8554280	5	724354	8549258
2	723038	8554218	6	716430	8549260
3	723260	8551818	7	716300	8551812
4	724222	8551503	8	715246	8551882

Coordinates of Rum Jungle infill area **RJ14** (333m line spacing).

Vertex	Easting (m)	Northing (m)	Vertex	Easting (m)	Northing (m)
1	779866	8561661	3	787896	8556689
2	787888	8561671	4	779847	8556772

Coordinates of Rum Jungle infill area **RJ15** (333m line spacing).

Vertex	Easting (m)	Northing (m)	Vertex	Easting (m)	Northing (m)
1	766285	8526406	3	774305	8521467
2	774204	8526326	4	766175	8521395

Coordinates of Rum Jungle infill area **RJ16** (333m line spacing).

Vertex	Easting (m)	Northing (m)	Vertex	Easting (m)	Northing (m)
1	752109	8504682	3	760273	8499623
2	760231	8504603	4	752063	8499794

Coordinates of Rum Jungle infill area **RJ17** (333m line spacing).

Vertex	Easting (m)	Northing (m)	Vertex	Easting (m)	Northing (m)
1	767613	8502655	5	771286	8497082
2	777842	8502611	6	763285	8497010
3	777727	8498891	7	763243	8498886
4	771304	8498804	8	767665	8498934

Coordinates of Rum Jungle infill area **RJ18** (333m line spacing).

Vertex	Easting (m)	Northing (m)	Vertex	Easting (m)	Northing (m)
1	820019	8501551	3	828173	8496498
2	828233	8501358	4	820049	8496598

Coordinates of Rum Jungle infill area **RJ19** (333m line spacing).

Vertex	Easting (m)	Northing (m)	Vertex	Easting (m)	Northing (m)
1	844199	8414726	5	861492	8409250
2	852179	8414707	6	850754	8409342
3	852185	8412953	7	850629	8411129
4	861514	8412820	8	844271	8411279

Coordinates of Rum Jungle infill area **RJ20** (555m line spacing).

Vertex	Easting (m)	Northing (m)	Vertex	Easting (m)	Northing (m)
1	777693	8491358	7	784547	8458071
2	784911	8491281	8	777339	8458150
3	786577	8489633	9	777532	8476138
4	792108	8489356	10	779334	8476057
5	791860	8467216	11	777573	8480043
6	784649	8467296			

Coordinates of Rum Jungle infill area **Daly_River** (250m line spacing).

Vertex	Easting (m)	Northing (m)	Vertex	Easting (m)	Northing (m)
1	741933	8438394	3	764500	8428847
2	744735	8441934	4	761945	8424993

Repeat Line Coordinates

Line Number	Flt Number Range	Easting (m)	Northing (m)	End	Easting (m)	Northing (m)
82FF	03–25	770000	8453950	82FF	780000	8453950
82FF	31–46	820000	8453950	82FF	830000	8453950
911FFFFPP	0051-0064	750000	8568955	911FFFFPP	760000	8568955
912FFFFPP	0068-0082	721000	8473956	912FFFFPP	731000	8473956

(where FF and FFFF are two and four digit flight numbers and PP is the two digit part number)

1.6 Survey Area Parameters

Specifications for the Rum Jungle AEM survey:

Area Name:	Line Spacing:	Line Direction:
Regional lines RJGA_5000m	5000 metres	090 – 270°
Area RJNGA_1666m_01	1666 metres	090 – 270°
Area RJNGA_1666m_02	1666 metres	090 – 270°
Area RJNGA_1666m_03	1666 metres	090 – 270°
Area RJ4	555 metres	090 – 270°
Area RJ5	555 metres	090 – 270°
Area RJ6	5000 metres	000 – 180°
Area RJ7	238 metres	090 – 270°
Area RJ12	333 metres	090 – 270°
Area RJ14	333 metres	090 – 270°
Area RJ15	333 metres	090 – 270°
Area RJ16	333 metres	090 – 270°
Area RJ17	333 metres	090 – 270°
Area RJ18	333 metres	090 – 270°
Area RJ19	333 metres	090 – 270°
Area RJ20	555 metres	090 – 270°
Area Daly_River	250 metres	124 – 304°
Nominal terrain clearance	121.1m (transmitter terrain clearance)	
Total line kilometres	14167 kilometres	

FAS Job Number	-	2017
GA Job Number	-	1196
Survey Company	-	Fugro Airborne Surveys Pty Ltd
Date Flown	-	7th October 2008 – 24th May 2009
Client	-	Geoscience Australia
EM System	-	25 Hz TEMPEST
Navigation	-	Real-time differential GPS
Datum	-	GDA94 (MGA 52)
Nominal Terrain Clearance	-	121.1m (transmitter terrain clearance)

1.7 Job Safety Plan

A Job Safety Plan was prepared and implemented in accordance with the Fugro Airborne Surveys Occupational Safety & Health Management System.

1.8 General Disclaimer

2. AIRCRAFT EQUIPMENT AND SPECIFICATIONS

The survey conducted over the Rum Jungle area was flown using a Shorts Skyvan SC-3-200 with an aircraft registration VH-WGT. Part of the survey was carried out between the 7th October 2008 and the 6th December 2008 while the aircraft was fitted out with a Picodas PDAS-1000 data acquisition system (Flights 1-46). The aircraft returned to complete the survey between the 15th April 2009 and the 24th May 2009, after it had been refitted with a FASDAS data acquisition system (Flights 47-84). As expected there was no discernible difference in data quality / integrity between the two acquisition systems.

2.1 Aircraft

Manufacturer	-	Shorts Skyvan
Model	-	SC-3-200
Registration	-	VH-WGT
Ownership	-	Fugro Airborne Surveys Pty Ltd

2.2 TEMPEST System Specifications

Specifications of the TEMPEST Airborne EM System (Lane et al., 2000) are:

- Base frequency - 25 Hz
- Transmitter area - 186 m^2 (WGT)
- Transmitter turns - 1
- Waveform - Square
- Duty cycle - 50%
- Transmitter pulse width - 10 ms
- Transmitter off-time - 10 ms
- Peak current - 300 A (WGT)
- Peak moment - 55800 Am^2 (WGT)
- Average moment - 27900 Am^2 (WGT)
- Sample rate - 75 kHz on X and Z
- Sample interval - 13.333 microseconds
- Samples per half-cycle - 1500
- System bandwidth - 25 Hz to 37.5 kHz
- Tx Loop Flying height nominal - 121.1 m (subject to safety considerations)
- Tx Loop Flying height average - 127.0 m (WGT)
- EM sensor - Towed bird with 3 component dB/dt coils
- Tx-Rx horizontal separation average - -116.3 m (WGT)
- Tx-Rx vertical separation average - -40.5 m (WGT)
- Tx-Rx horizontal separation standard - -120.0 m (geometry corrected standard)
- Tx-Rx vertical separation standard - -35.0 m (geometry corrected standard)
- Stacked data output interval - 200 ms (~12 m)
- Number of output windows - 15
- Window centre times - 13 μs to 16.2 ms
- Magnetometer - Stinger-mounted caesium vapour
- Magnetometer compensation - Fully digital
- Magnetometer output interval - 200 ms (~12 m)
- Magnetometer resolution - 0.001 nT
- Typical noise level - 0.5 nT
- GPS cycle rate - 1 second

2.2.1 EM Receiver and Logging Computer

Picodas PDAS-1000 and EMFASDAS

For flights 1 to 46 the EM receiver computer was a Picodas PDAS-1000 data acquisition system, whilst for flights 47-84 it was an EMFASDAS. In both cases, the EM receiver computer executes a proprietary program for system control, timing, data acquisition and recording. Control, triggering and timing is provided to the TEMPEST transmitter and Digital Signal Processing (DSP) boards by the

timing card, which ensures that all waveform generation and sampling is accomplished with high accuracy. The timing card is synchronised to the Global Positioning System (GPS) through the use of the Pulse Per Second (PPS) output from the system GPS card. Synchronisation is also provided to the magnetometer processor card for the purpose of accurate magnetic sampling with respect to the EM transmitter waveform.

The EM receiver computer displays information on the main screen during system calibrations and survey line acquisition to enable the airborne operator to assess the data quality and performance of the system

2.2.2 TEMPEST Transmitter

The transmitted waveform is a square wave of alternating polarity, which is triggered directly from the EM receiver computer. The nominal transmitter base frequency was 25 Hz with a pulse width of 10ms (50 % duty cycle). Loop current waveform monitoring is provided by a current transformer located directly in the loop current path to allow for full logging of the waveform shape and amplitude, which is sampled by the EM receiver.

2.2.3 TEMPEST 3-Axis Towed Bird Assembly

The TEMPEST 3-axis towed bird assembly provides accurate low noise sampling of the X (horizontal in line), Y (horizontal transverse) and Z (vertical) components of the electromagnetic field. Note that the Y component data were not processed or delivered in the dataset for this survey. The receiver coils measure the time rate of change of the magnetic field (dB/dt). Signals from each axis are transferred to the aircraft through a tow cable specifically designed for its electrical and mechanical properties.

2.3 PDAS 1000 and FASDAS Survey Computer

The Survey computer executes a proprietary program for acquisition and recording of location, magnetic and ancillary data. Data are presented both numerically and graphically in real time on the Video Graphics Array (VGA) Liquid Crystal Display (LCD) display, which provides an on-line display capability. The operator may alter the sensitivity of the displays on-line to assist in quality control. Selected EM data are transferred from the EM receiver computer to the SURVEY computer for quality control (QC) display.

2.3.1 Caesium Vapour Magnetometer Sensor

A caesium vapour magnetometer sensor is utilised on the aircraft and consists of the sensor head, cable and the sensor electronics. The sensor head is housed at the end of a composite material tail stinger.

2.3.2 Magnetometer Processor Board

For both the Picodas and FASDAS the magnetometer processor board is used for de-coupling and processing the Larmor frequency output of the magnetometer sensor. The processor board interfaces with the survey computer, which initiates data sampling and transfer for precise sample intervals and also with the EM receiver computer to ensure that the magnetic samples remain synchronised with the EM system.

2.3.3 Fluxgate Magnetometer

A tail stinger mounted Bartington MAG-03MC three-axis fluxgate magnetometer is used to provide information on the attitude of the aircraft. This information is used for compensation of the measured magnetic total field.

2.3.4 GPS Receiver

A Novatel GPScard 951R is utilised for airborne positioning and navigation. Satellite range data are recorded for generating post processed differential solutions.

2.3.5 Differential GPS Demodulator

The OMNISTAR differential GPS service provides real time differential corrections.

2.4 Navigation System

A Picodas PNAV 2001 and then a FASDAS navigation computer were used for real-time navigation. The navigation computer loads a pre-programmed flight plan from disk which contains boundary co-ordinates, line start and end co-ordinates, local co-ordinate system parameters, line spacing, and cross track definitions. The World Geodetic System 1984 (WGS84) latitude and longitude positional data received from the Novatel GPScard contained in the SURVEY computer is transformed to the local co-ordinate system for calculation of the cross track and distance to go values. This information, along with ground heading and ground speed, is displayed to the pilot numerically and graphically on a two line LCD display, and on an analogue Horizontal Strip Indicator (HSI). It is also presented on a LCD screen in conjunction with a pictorial representation of the survey area, survey lines, and ongoing flight path.

The navigation computer is interlocked to the survey computer for auto selection and verification of the line to be flown. The GPS information passed to the navigation computer is corrected using the received real time differential data from the OMNISTAR service, enabling the aircraft to fly as close to the intended track as possible.

2.5 Altimeter System

2.5.1 Radar Altimeter

Model:	Sperry Stars RT-220 radar altimeter system
Sample interval:	0.2 second
Accuracy:	± 1.5 % of indicated altitude

The radar altimeters fitted to the aircraft are high quality instruments whose output is factory calibrated. The aircraft radar altitude is recorded onto hard drive as well as displayed on the aircraft chart recorder. The recorded value is the average of the altimeter's output during the previous 0.2 seconds.

2.5.2 Laser Altimeter

Model:	Optech 501SB
Sample interval:	0.2 second
Accuracy:	± 0.05m at survey altitude

2.5.3 Barometric Altimeter

Output of a Digiquartz 215A-101pressure transducer is used for calculating the barometric altitude of the aircraft. The atmospheric pressure is taken from a gimbal-mounted probe projecting 0.5 metres from the wing tip of the aircraft and fed to the transducer mounted in the aircraft wingtip.

2.6 Video Tracking System

The video file recorded by the digital video system is synchronised with the geophysical record by a digital fiducial display. It is also labelled with GPS latitude and longitude information and survey line number.

2.7 Data Recorded by the Airborne Acquisition Equipment

With the Picodas acquisition system the raw EM data including fiducial, local time, X and Z axis sensor response, current monitor and bird auxiliary sensor output are recorded on the EM receiver computer as "**G**" EM files.

The Survey computer records all other survey data including aeromagnetic and GPS data using as "**S**" Survey files, and "**R**" Rover files containing GPS raw range data for post processing

With the FASDAS acquisition system the raw EM data including fiducial, local time, X and Z axis sensor response, current monitor and bird auxiliary sensor output are recorded on the EM receiver computer as "*.raw" EM files. Logging to the files is continuous, however, a new *.raw EM file is created when the size of the previous one reaches 1Gb.

The FASDAS Survey computer records a continuous MSD file which contains all other ancillary data including magnetic, altimeter, GPS and analogue channels.

3. GROUND DATA ACQUISITION EQUIPMENT AND SPECIFICATIONS

3.1 Magnetic Base Station

A CF1 and a Scintrex ENVI magnetometer were used to measure the daily variations of the Earth's magnetic field. The base stations were established in an area of low gradient, away from cultural influences. The base stations were run continuously throughout the survey flying period with a sampling interval of 1 and 2 seconds respectively at a sensitivity of 0.1 nT. The magnetometer base stations were set up at each of the base airstrips.

Katherine Airport – off to the side of the access road leading to the terminal approximately 250 m apart.
Bachelor Airport – western side of airstrip in scrub, approximately 100 m apart.
Daly River Airport – north of the airstrip, approximately 80 m apart.

3.2 GPS Base Station

A GPS base logging station integrated with the CF1 unit was used throughout the survey, setup at the base airstrips as described above.

The GPS base station position was calculated by logging data continuously at the base position over a period of approximately 24 hours. Data were then averaged to obtain the position of the base station using GrafNav software.

The calculated GPS base position at Katherine Airport was (in GDA94):

Lat: -14° 30' 42.76283" S
Long: 132° 21' 44.61863" E
Height: 171.829 m. (ellipsoidal height). Sensor approximately 2m above ground surface.

The calculated GPS base position at Bachelor Airport was (in GDA94):

Lat: -13° 03' 09.20785" S
Long: 131° 01' 27.743869" E
Height: 159.017 m. (ellipsoidal height). Sensor approximately 2m above ground surface.

The calculated GPS base position at Daly River Airport was (in GDA94):

Lat: -13° 44' 49.05361" S
Long: 130° 41' 21.43045" E
Height: 57.667 m. (ellipsoidal height). Sensor approximately 2m above ground surface.

4. EM AND OTHER CALIBRATIONS AND MONITORING

At the beginning and end of each individual survey flight, the EM system is checked for background noise levels and performance. The airborne checks are conducted at a nominal terrain clearance of 1100 m (3600 ft) to eliminate ground response. These checks include:

4.1 GPS Repeat Point

Where possible, the aircraft is parked in the same position after every flight and the GPS position recorded pre and post flight, to allow for checks on GPS quality and repeatability. *Note: FFFF and FF is the flight number and PP and P is the attempt number for the FASDAS and PDAS, respectively.*

Pre-Flight GPS Repeat Point: (FASDAS line 505FFFFPP, PDAS line 80FFP)
Post-Flight GPS Repeat Point: (FASDAS line 605FFFFPP, PDAS line 81FFP)

4.2 Transmitter-off

These lines are recorded in straight and level flight with the system in standard survey geometry, with the transmitter turned off and bird response turned on to observe ambient noise and to check for noise in the receiver system (bird/coils → tow cable → winch → computer). *Note: FFFF and FF is the flight number and PP and P is the attempt number for the FASDAS and PDAS, respectively.*

Pre-Flight Transmitter-off: (FASDAS line 900FFFFPP, PDAS line 9000P)
Post-Flight Transmitter-off: (FASDAS line 906FFFFPP, PDAS line 9006P)

4.3 Noise Additive

These lines are recorded in straight and level flight with the system in standard survey geometry, with the transmitter on and the bird response turned off at the tow cable winch. This is to check the noise contribution from the acquisition system and is used in deconvolution of survey line data. *Note: FFFF and FF is the flight number and PP and P is the attempt number for the FASDAS and PDAS, respectively.*

Pre-Flight Noise Additive: (FASDAS line 901FFFFPP, PDAS line 9001P)
Post-Flight Transmitter-off: (FASDAS line 904FFFFPP, PDAS line 9004P)

4.4 Zero

These lines are recorded in straight and level flight with the system in standard survey configuration with transmitter and receiver turned on. This is used to determine the system's response in the absence of ground signal and is used to determine a standard waveform for deconvolution of survey lines. *Note: FFFF and FF is the flight number and PP and P is the attempt number for the FASDAS and PDAS, respectively.*

Additionally, through all these calibrations the airborne operator can assess the system and ambient noise levels.

Pre-Flight Zero: (FASDAS line 902FFFFPP, PDAS line 70FFP)
Post-Flight Zero: (FASDAS line 905FFFFPP, PDAS line 71FFP)

4.5 Swoops

This line is recorded immediately after the pre-flight zero. During this manoeuvre the pilot conducts a series of 'swoop' manoeuvres (pitch up/pitch down) over approximately 30-40 seconds to vary the position of the towed sensor relative to the aircraft. The EM data are monitored by the airborne operator to confirm correct operation of the system during the manoeuvre. This data is used to determine coefficients used in the processing to compensate for such variations in the survey data. *Note: FFFF and FF is the flight number and PP and P is the attempt number for the FASDAS and PDAS, respectively.*

Pre-Flight Swoop: (FASDAS line 903FFFFPP, PDAS line 9003P)

4.6 Dynamic Magnetometer Compensation

To limit aircraft manoeuvre effects on the magnetic data that can be of the same spatial wavelength as the signals from geological sources, compensation calibration lines are flown as high as practical in a low magnetic gradient area close to the survey. This involves flying a series of tests at 2500m or higher on the survey line heading and approximately 15 degrees either side to accommodate small heading variations whilst flying survey lines. The data for each heading consists of a series of aircraft manoeuvres, including pitches, rolls and yaws. This is done to artificially create the most extreme possible attitude the aircraft may encounter whilst on survey. Data from these lines are used to derive compensation coefficients for removing magnetic noise induced by the aircraft's attitude in the naturally occurring magnetic field.

Compensation data were acquired on the following dates:

Aircraft	Compensation Date	Flights Covered
VH-WGT	10/10/2008	Flt 1 – 46
VH-WGT	16/04/2009	Flt 47 – 84

Compensation data acquired the following statistics:

10th October 2008
StdDev UnComp 0.171645
StdDev Comp 0.078205
Improvement Ratio 2.9

16th April 2009
StdDev UnComp 0.120335
StdDev Comp 0.03729
Improvement Ratio 3.2

4.7 Parallax Checks

Due to the relative positions of the EM towed bird and the magnetometer instruments on the aircraft and to processing / recording time lags, raw readings from each vary in position. To correct for this and to align selected anomaly features on lines flown in opposite directions, magnetics, EM data and the altimeters are 'parallaxed' with respect to the position information. System parallax is checked by flying in opposing directions over known geophysical features. This is also monitored routinely during processing of jobs and specifically checked following any major changes in the aircraft system which are likely to affect the parallax values.

The last parallax check was performed in August 2008 to confirm GPS, Mag and altimeter parallax. Parallax values for the X and Z EM components were chosen to optimise the gridded display and for aligning, from line to line, the EM response amplitudes for horizontal or broad steeply dipping conductors, which account for the majority of responses in regolith-dominated terrains such as this.

Because of the change in acquisition system (from Picodas to EMFasdas) these values will vary depending on system.

PICODAS

Variable	Parallax Value
Magnetics	0.4 s
GPS	0 s
Radar Altimeter	0.6 s
Laser Altimeter	0 s
EM – X	0.2 s
EM – Z	1.4 s

EMFASDAS

Variable	Parallax Value
Magnetics	0 s
GPS	0 s
Radar Altimeter	0 s

Laser Altimeter	0 s
EM – X	-1.6 s
EM – Z	-0.2 s

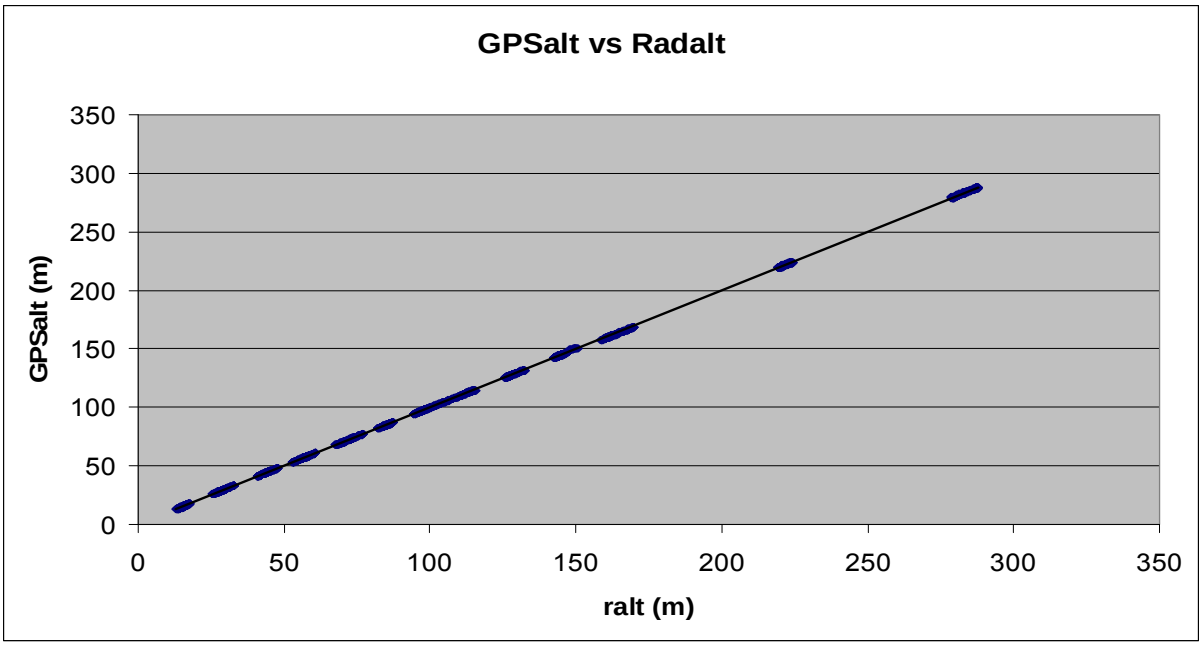
Note that a positive parallax value in the tables above indicates that samples in that data stream are moved to lower fiducial numbers.

4.8 Radar Altimeter Calibration

The radar altimeter is checked for accuracy and linearity every 12 months or when any change in a key system component requires this procedure to be carried out. This calibration involves flying a number of lines at a range of constant altitudes to allow the radar altimeter data to be compared to and assessed with other height data (GPS and barometric) to confirm the accuracy of the radar altimeter over its operating range.

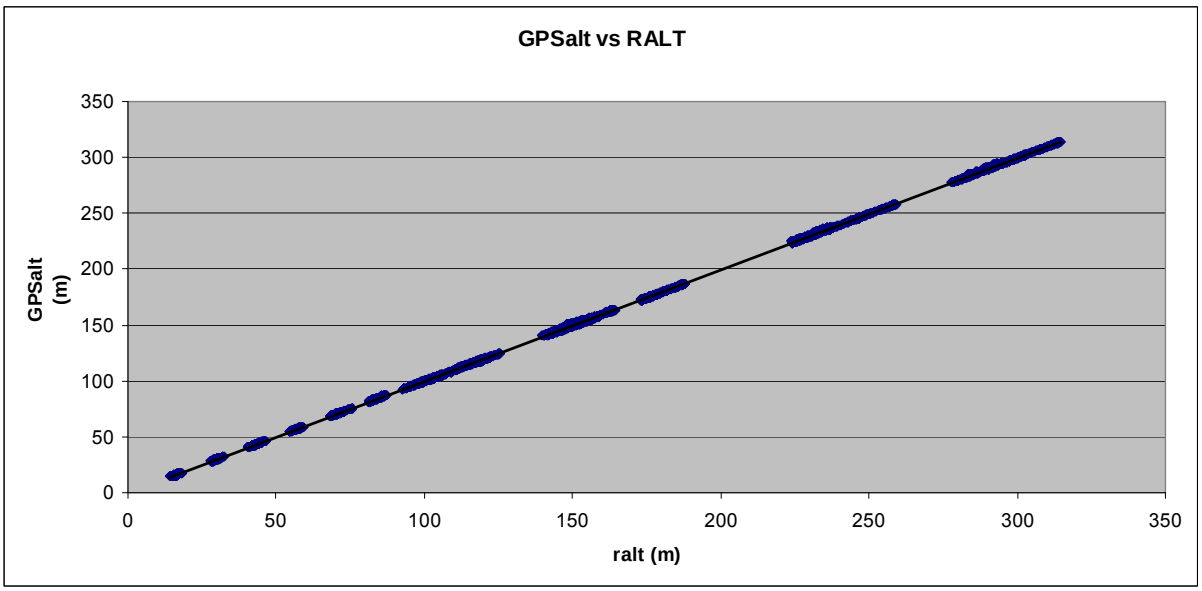
Absolute radar calibrations for VH-WGT were carried out over the ocean near Darwin on the 7th October 2008, and again over the ocean near Mandurah on the 20th February 2009.
The graphs below show the results of these calibrations as Radar Altimeter output (m) versus the GPS height normalised to altitude above the ocean (based on average GPS along the lowest altitude pass). This chart shows the linear behaviour of the radar altimeter in each range.

Comparison of Radar Altimeter and GPSZ 7th October 2008



Regression equation: GPSZ=0.9989*ralt + 0.0146 R-squared = 1

Comparison of Radar Altimeter and GPSZ 20th February 2009



Regression equation: GPSZ=0.9986*ralt + 0.0064 R-squared = 1

4.9 Laser Altimeter Calibration

The Laser altimeter was checked based on the same process as that described above for the radar altimeters. The data used was from the same flights. The plots below show the laser altimeter heights compared to normalised GPS heights.

Pitch and roll manoeuvres were also conducted to determine coefficients to verify and/or correct for the laser's deviation from the vertical.

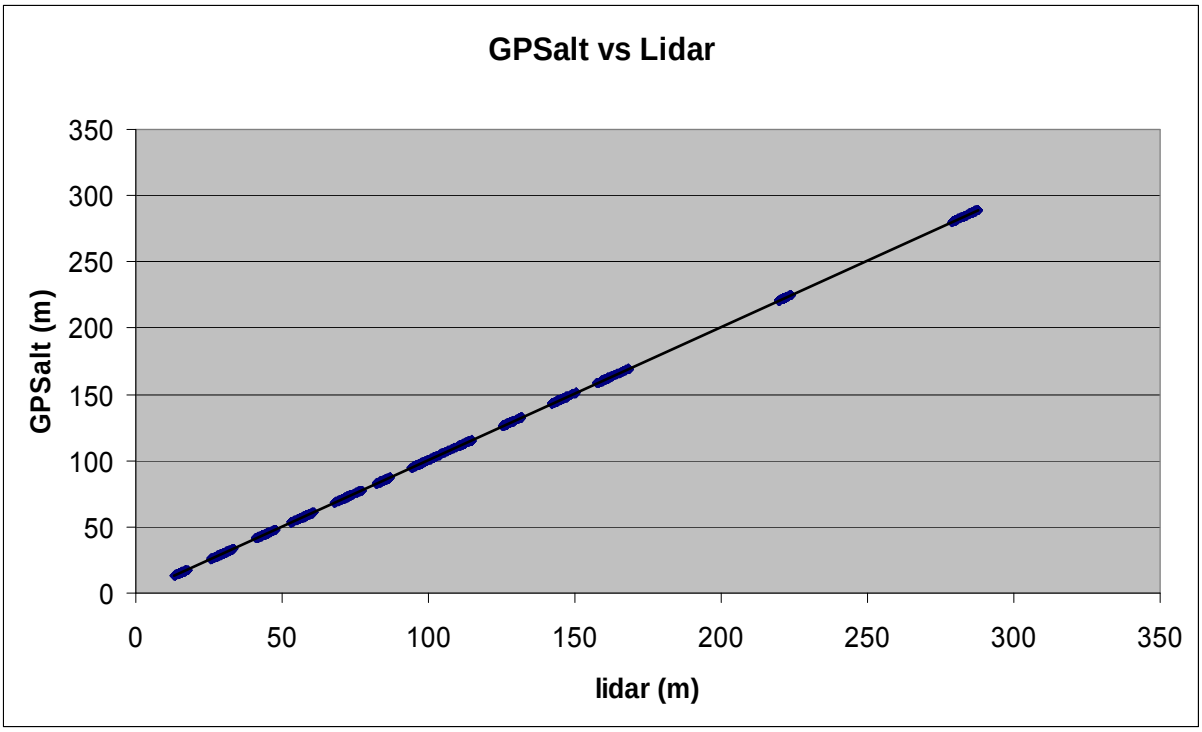
The following equation was used to correct the laser altimeter for changes in pointing direction:

$$l_c = l_m \cos(p_m + p_0)\cos(r_m + r_0) - h_l \sin(p_m + p_0)$$

Where l_c is the corrected altimeter value, l_m the raw measured altimeter value, p_m and r_m are the measured transmitter loop pitch and roll respectively, p_0 and r_0 are the laser altimeter pointing pitch and roll offsets relative to the transmitter loop orientation respectively, and h_0 is the horizontal offset between the laser altimeter and the aircraft's centre of rotation. Based on the data acquired during the calibration flights, the following values for p_0, r_0 and h_0 were used for corrections throughout the survey.

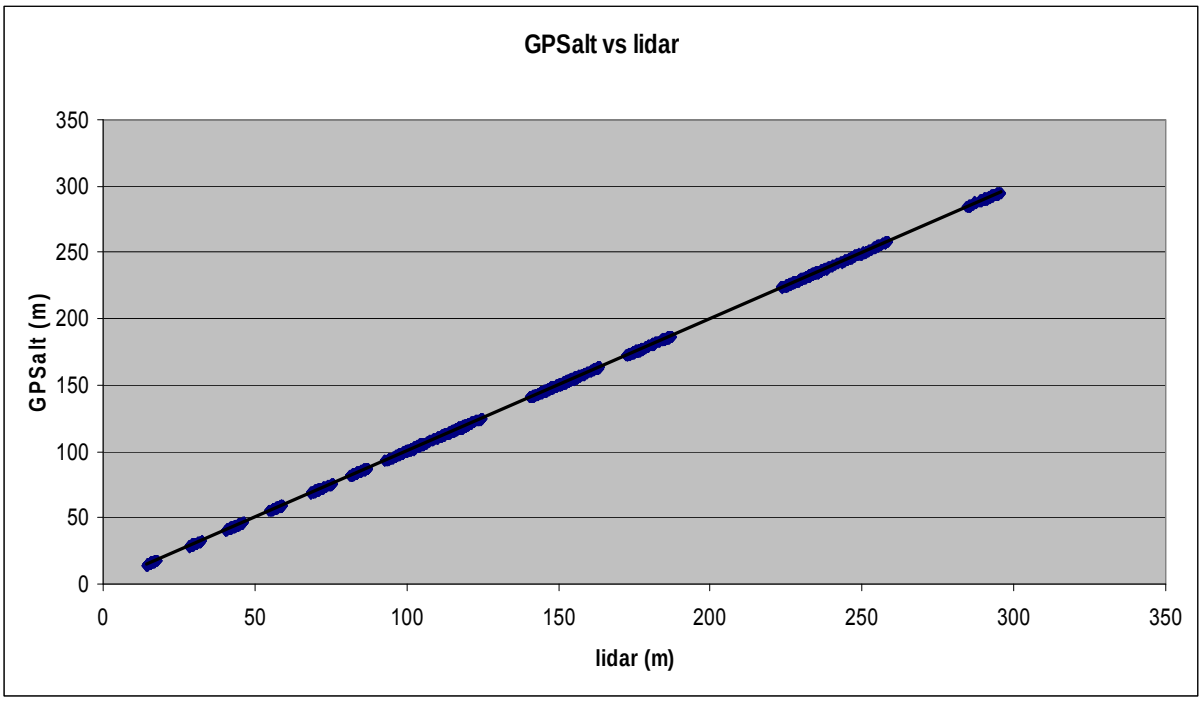
	p_0	r_0	h_0
VH-WGT	-1.00	1.60	1.03

Comparison of Laser Altimeter and GPSZ – 7th October 2008



Regression equation: GPSZ=1.0055*lidar + 0.0267 R-squared = 1

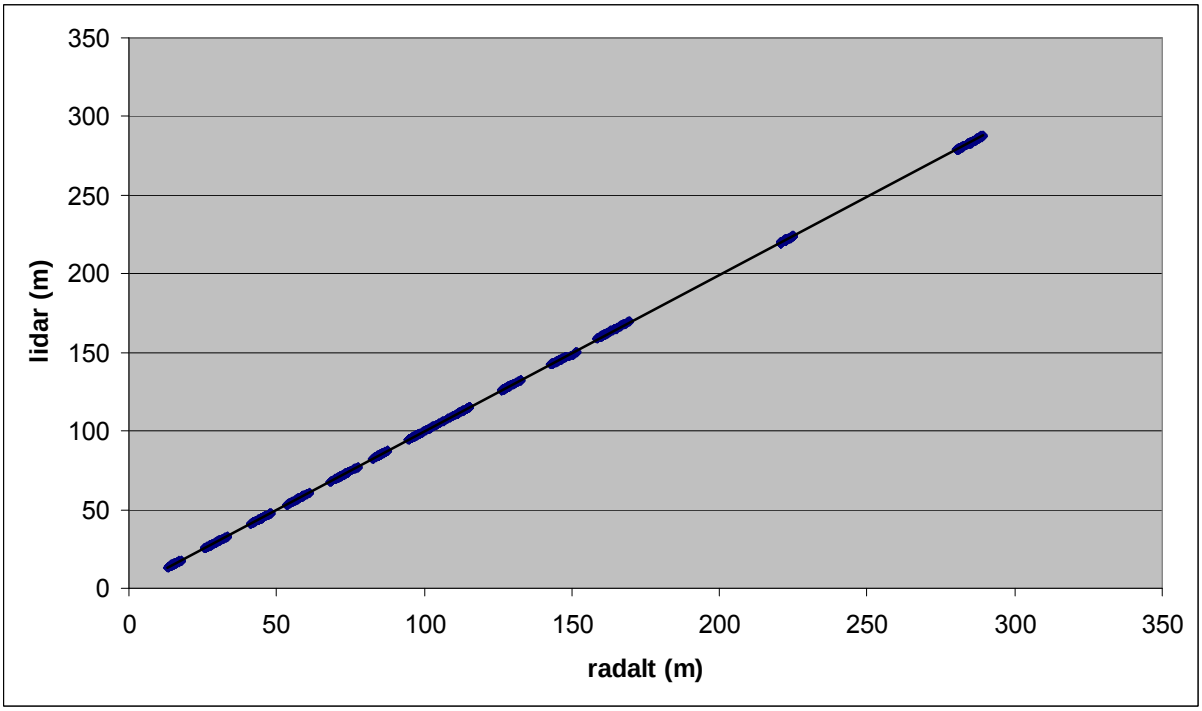
Comparison of Laser Altimeter and GPSZ – 20th February 2009



Regression equation: GPSZ=0.9981*lidar + 0.0989 R-squared = 1

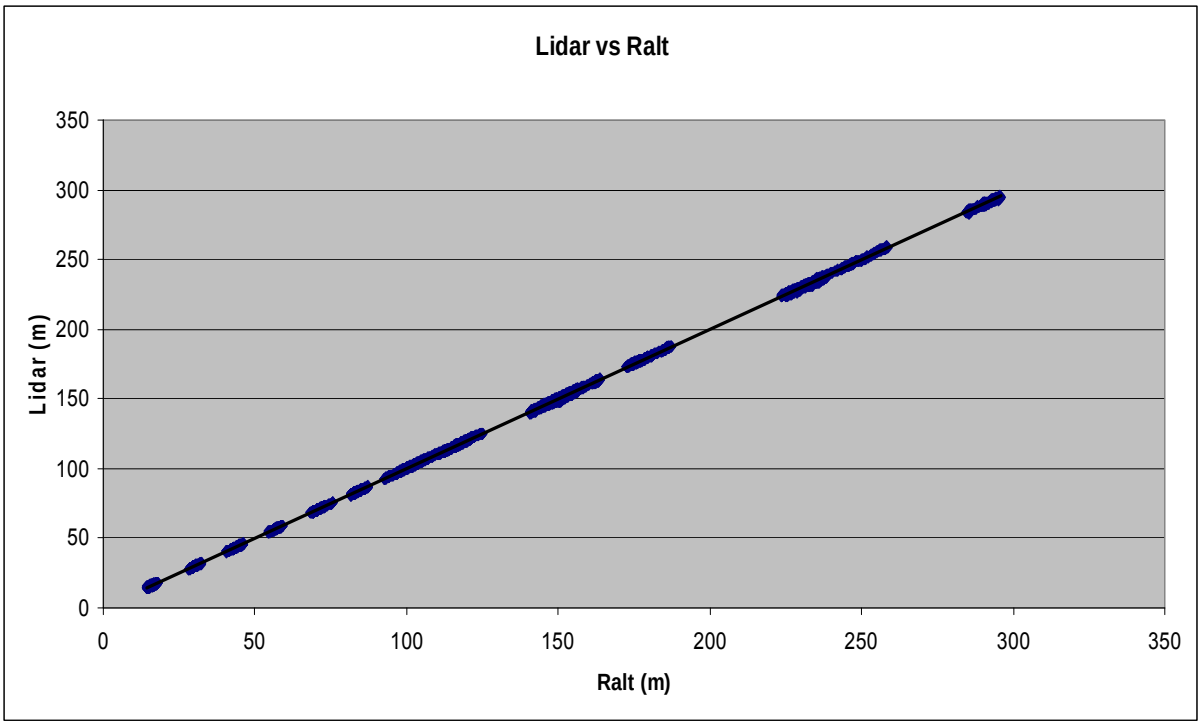
The following plot shows the radar altimeter compared to the laser altimeter, corrected for aircraft pitch and roll.

Comparison of Laser and Radar Altimeters – 7th October 2008



Regression equation: lidar=0.9956*radalt + 0.0452 R-squared = 1

Comparison of Laser and Radar Altimeters – 20th February 2009



Regression equation: lidar=0.9991*radalt + 0.1468 R-squared = 0.9999

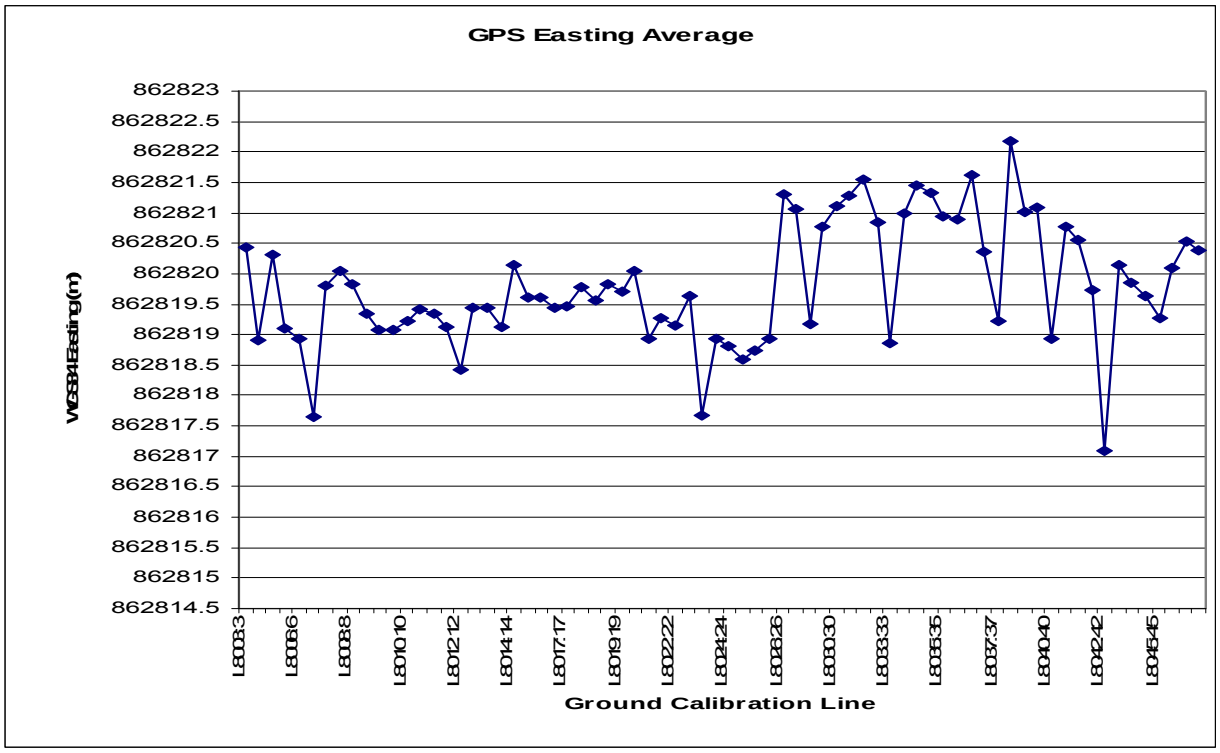
4.10 Heading Error Checks

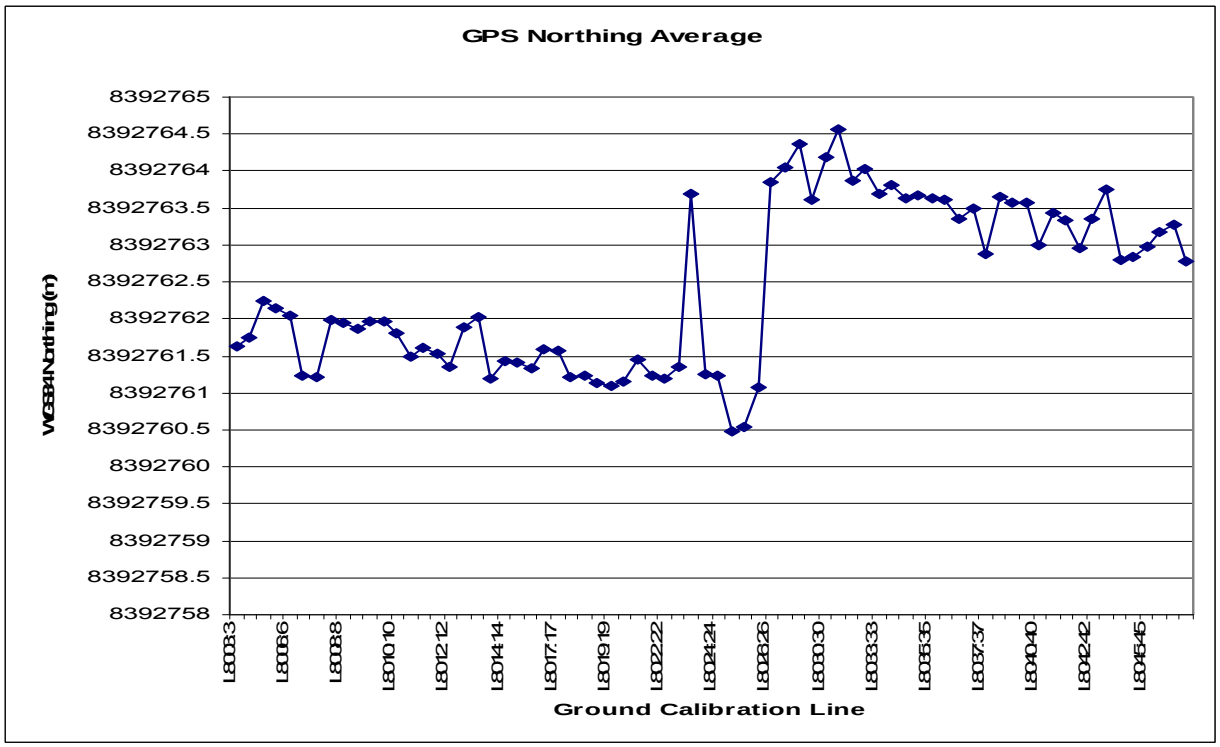
Historically, heading error checks have been part of the aeromagnetic data acquisition procedure but they are no longer used. Fugro Airborne Surveys now calculates these effects using the aircraft magnetic compensation system and specially developed software. The precision to which these effects are now calculated and corrected for is far in excess of the manual methods used in the past.

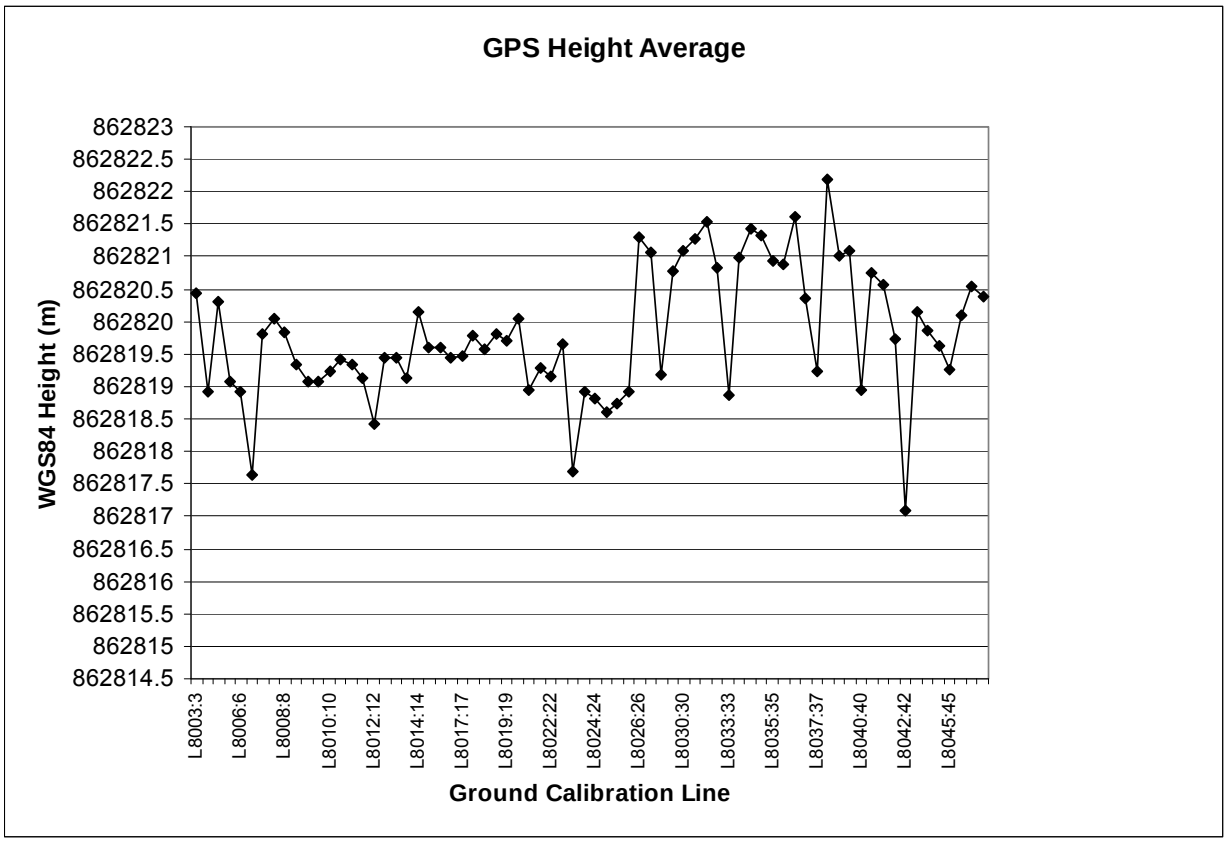
4.11 Repeat Point GPS Check

At the end of each flight the aircraft were parked as close to the same position as possible. Before and after the flight 90-120 seconds of data was recorded in this location to provide a check for consistency in navigation data. The following pages show plots of the average GPS height, northing and easting for each ground calibration during the survey.

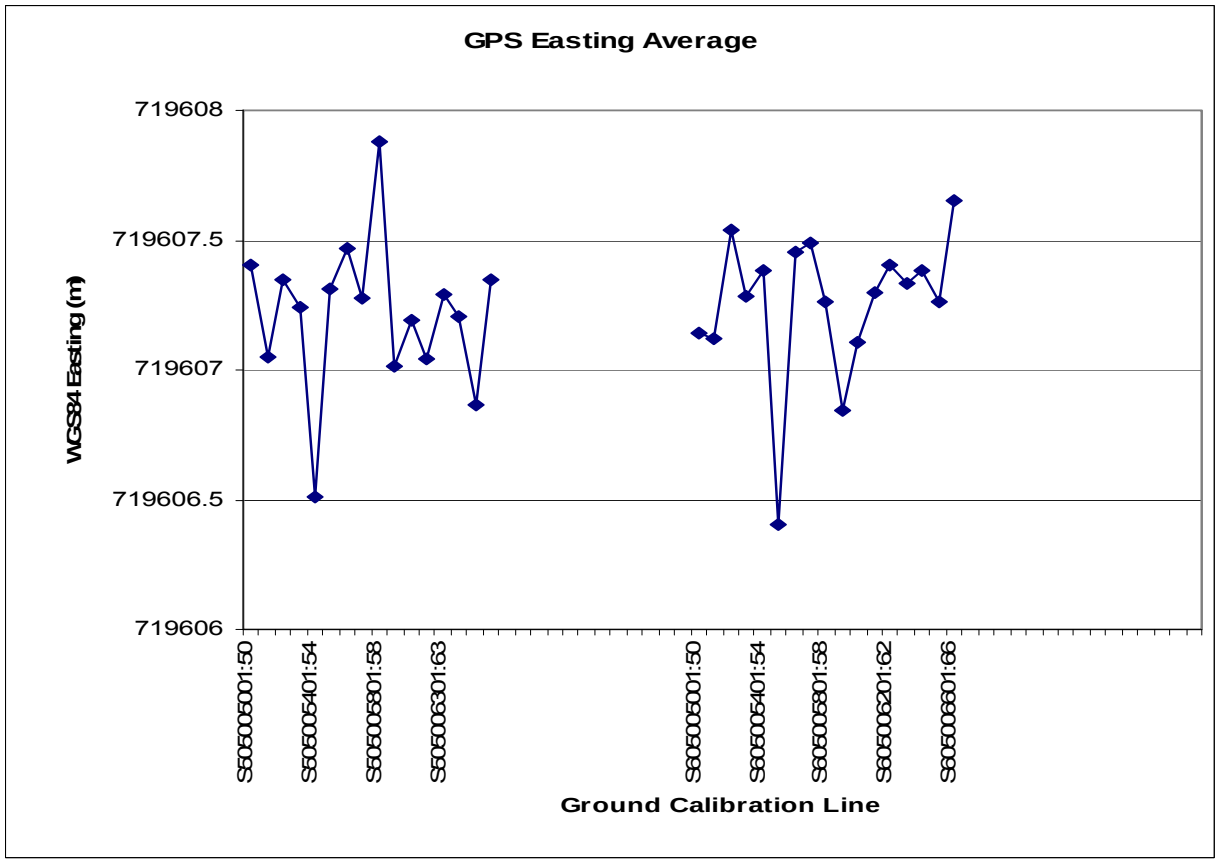
Katherine Flts 1-46

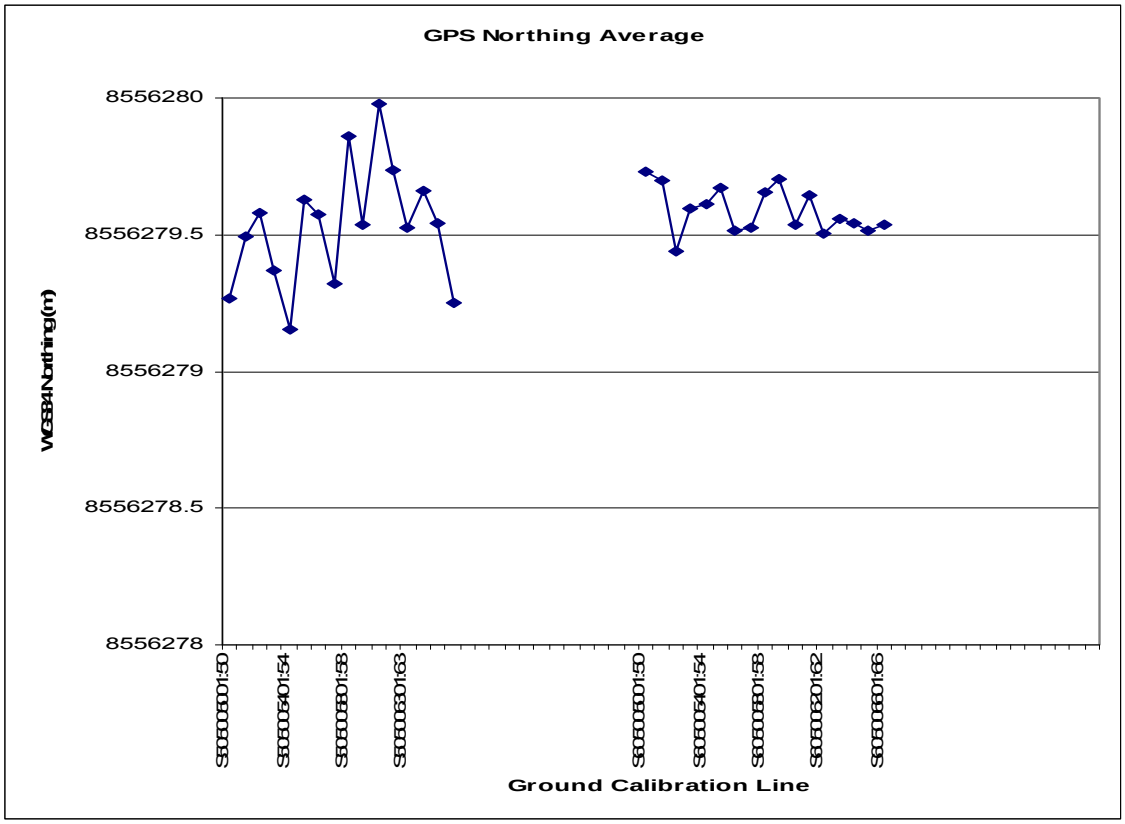


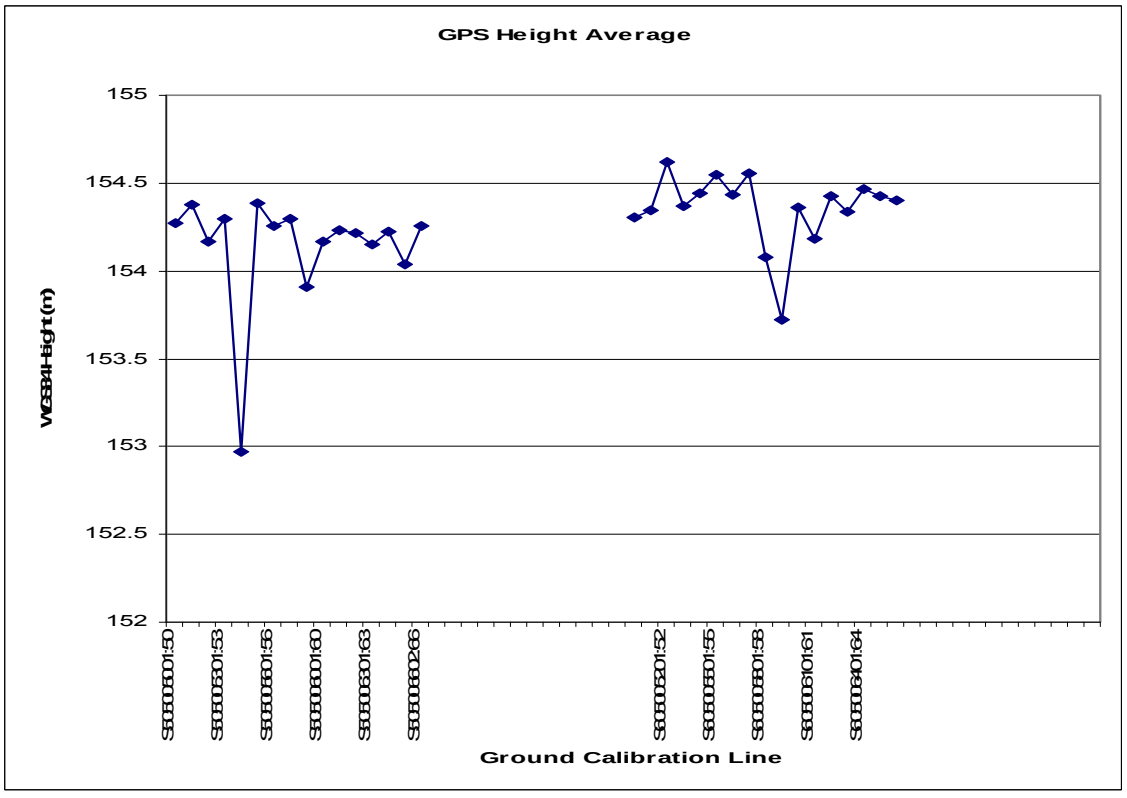




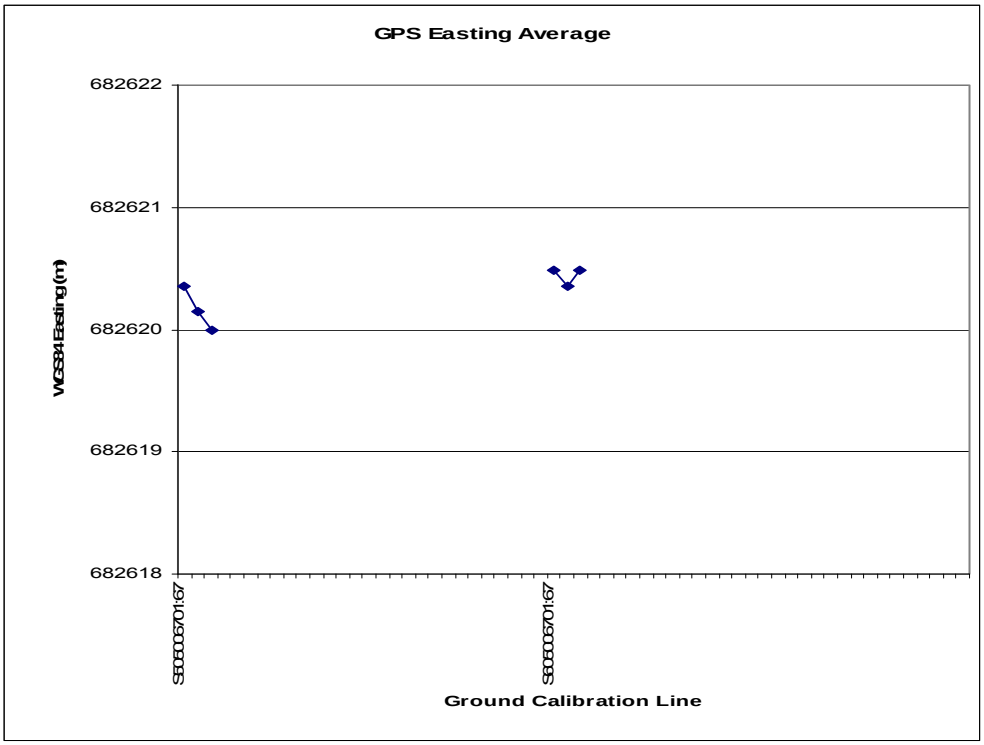
Bachelor Flts 47-66

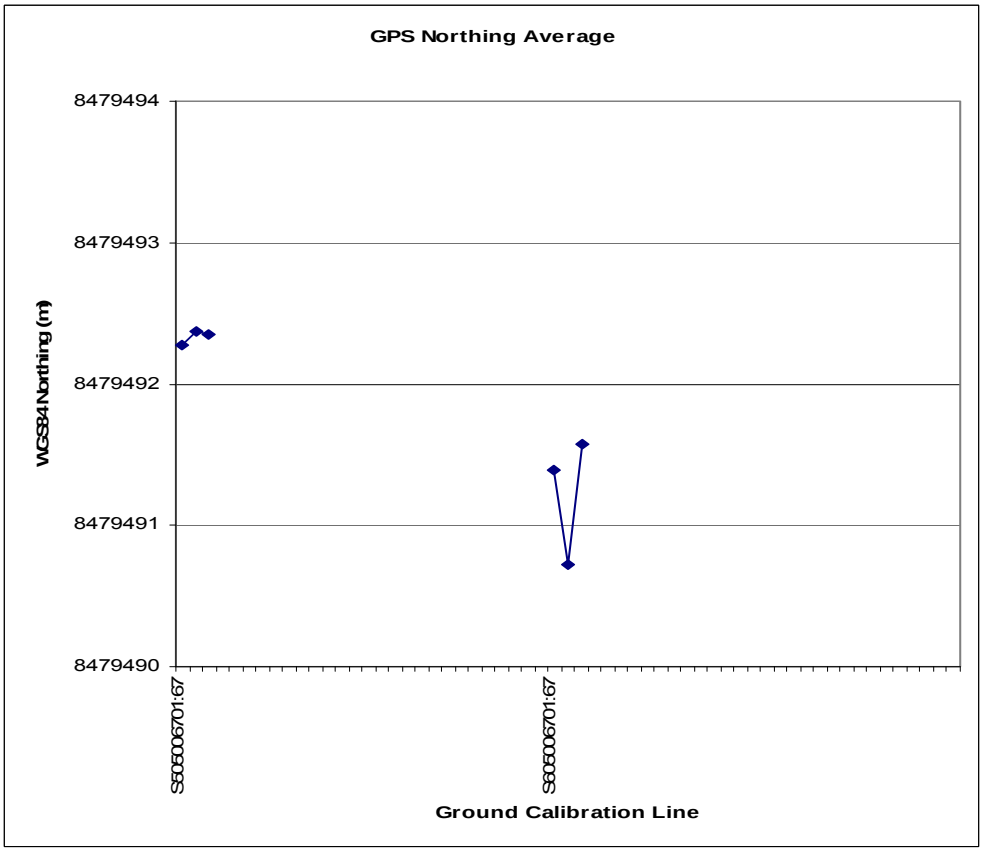


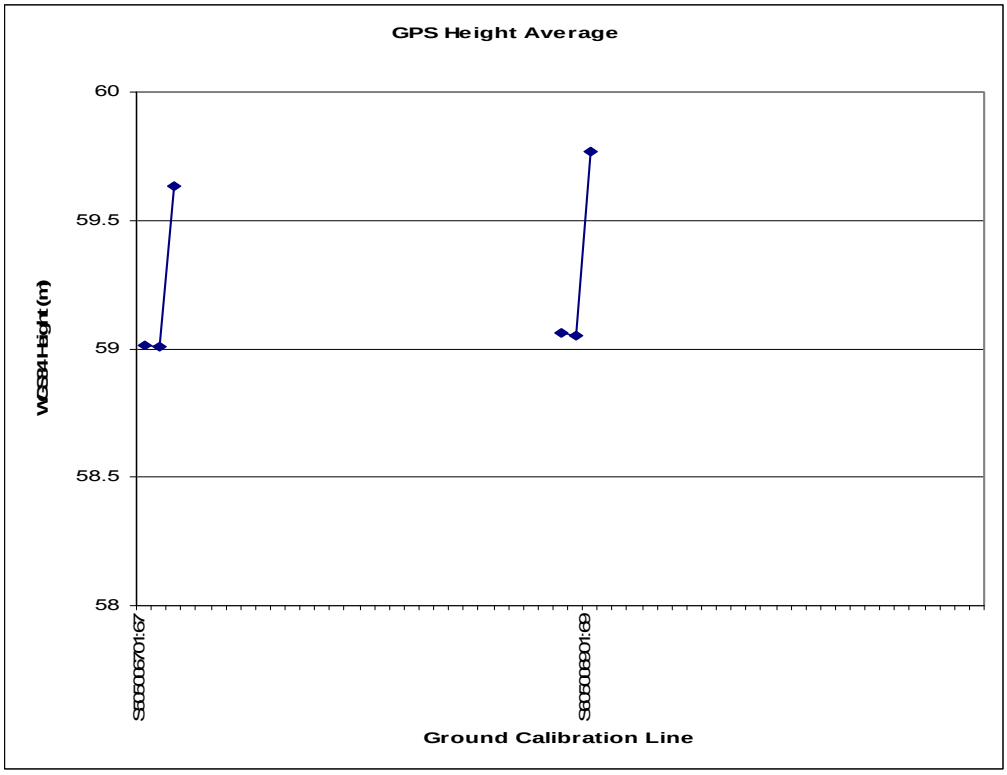

GPS Northing Average
8556280
8556279.5
8556279
8556278.5
8556278
Ground Calibration Line


GPS Height Average
155
154.5
154
153.5
153
152.5
152
Ground Calibration Line

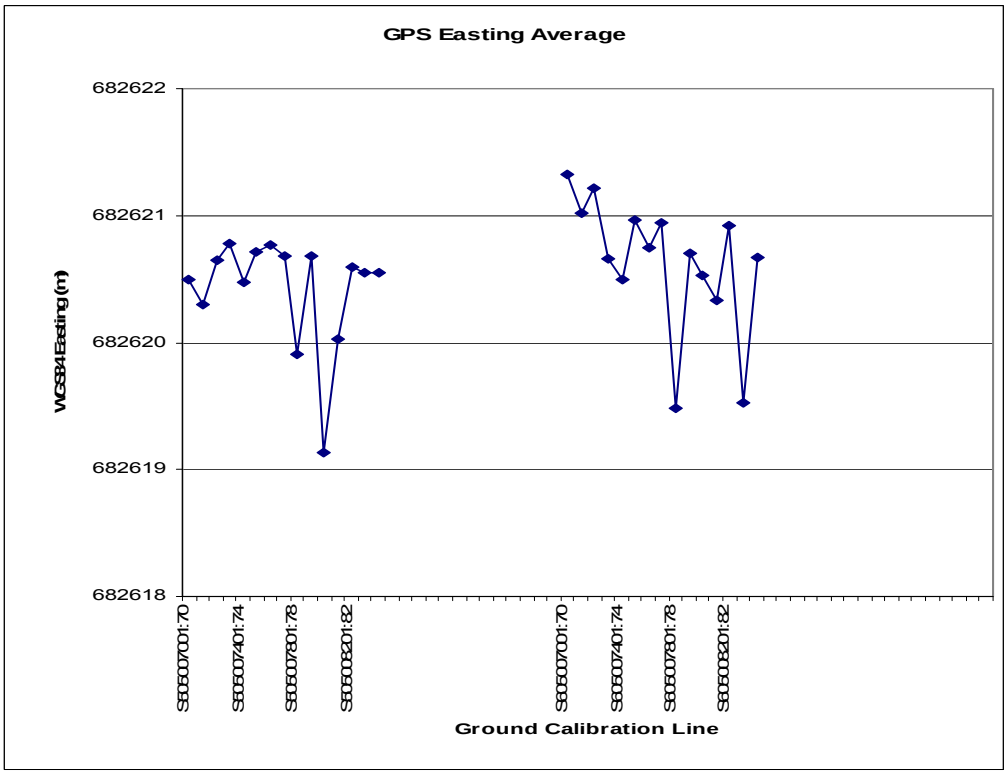
Daly River Flts 67-69

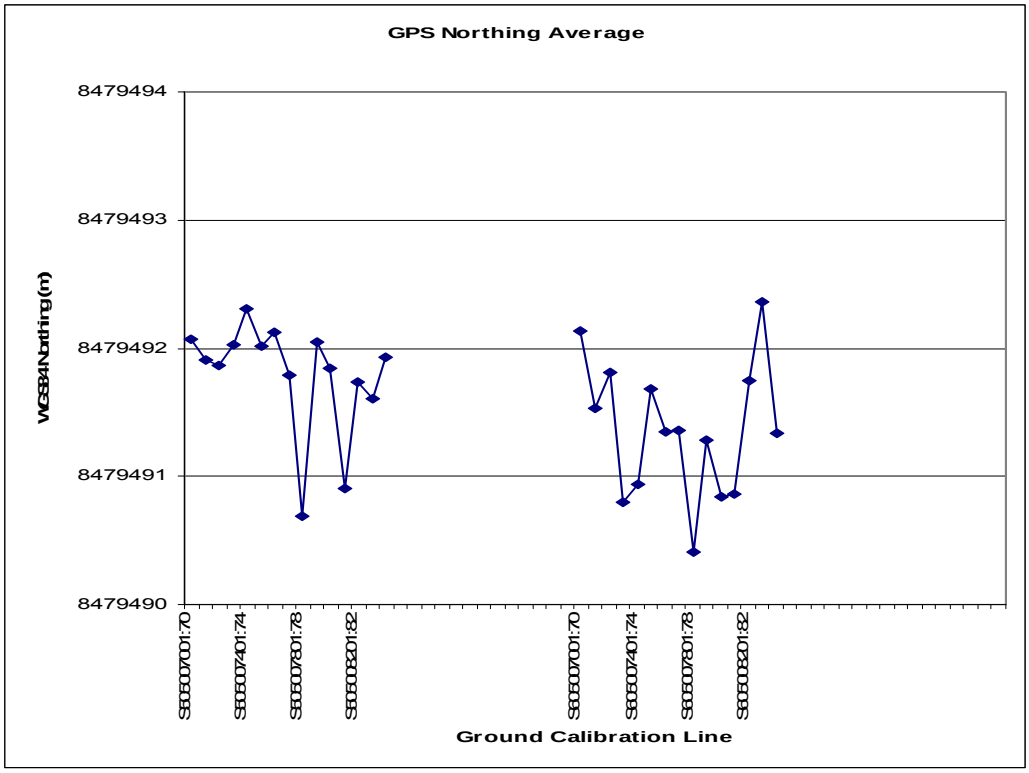


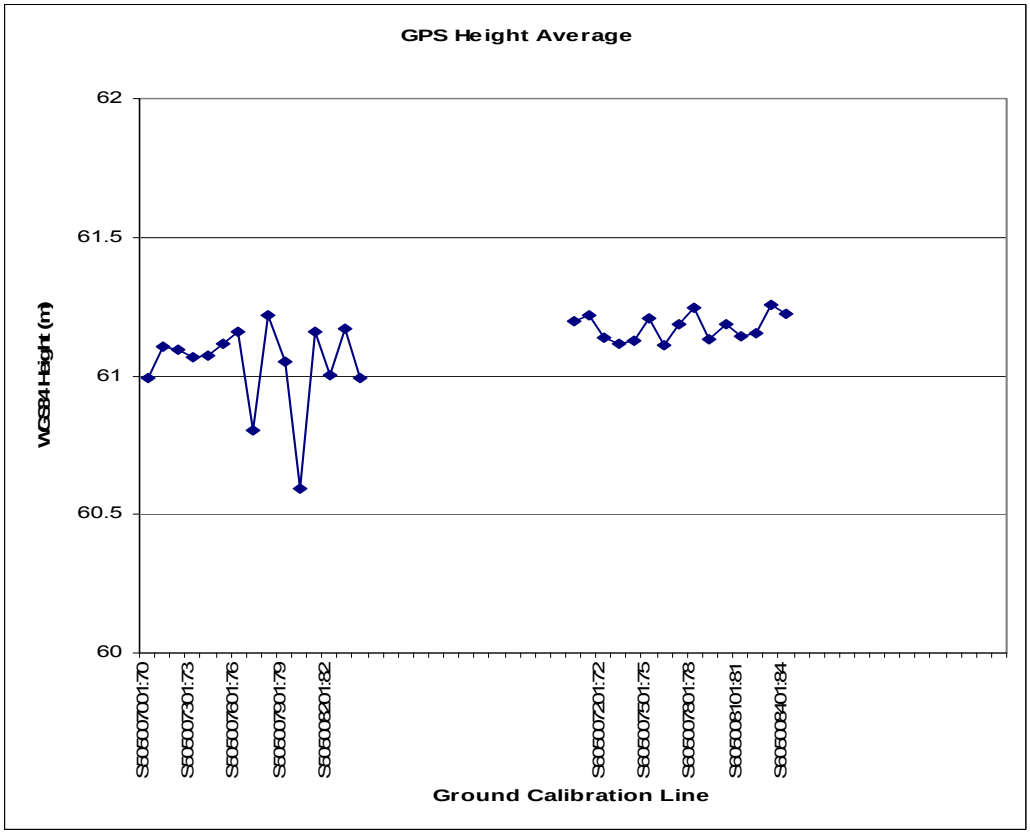




Daly River Flts 70-84




GPS Northing Average
8479494
8479493
8479492
8479491
8479490
Ground Calibration Line


GPS Height Average
62
61.5
61
60.5
60
Ground Calibration Line

5. DATA PROCESSING

5.1 Field Data Processing

5.1.1 Quality Control Specifications

5.1.1.1 Navigation Tolerance

The re-flight specifications applied for the duration of the survey were:

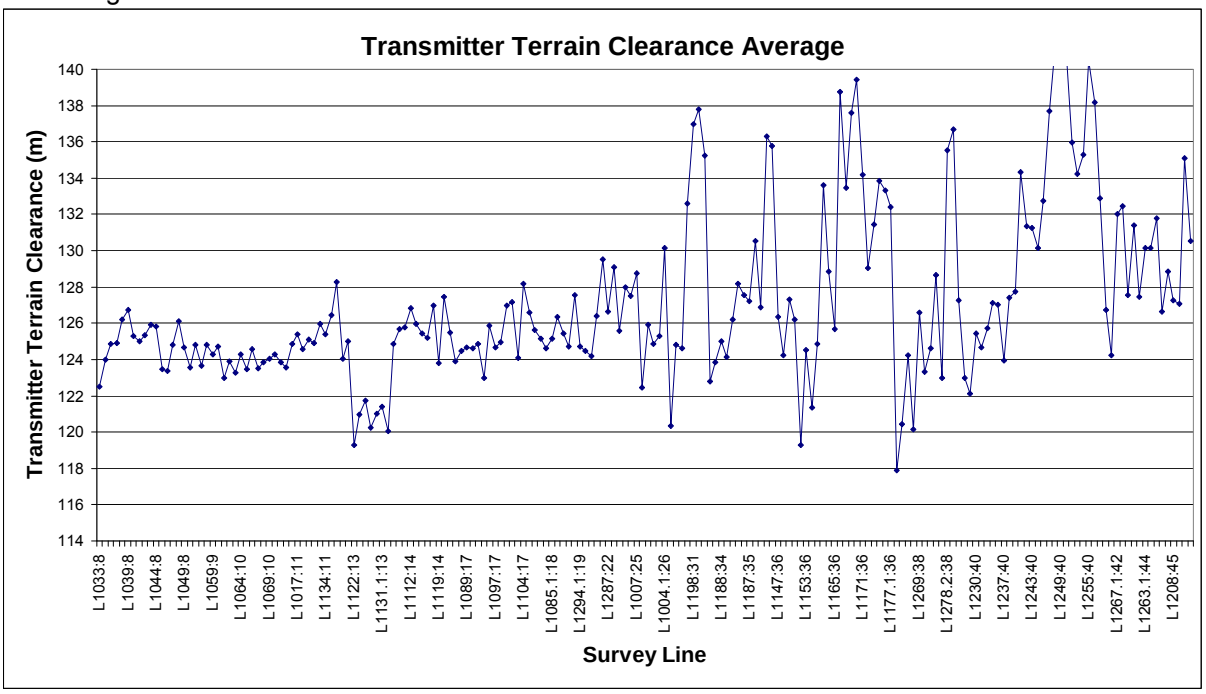
Electronic Navigation - absence of electronic navigation data (e.g. GPS base station fails).

Flight Path – flight path deviates by more than 40 metres over a continuous distance of 1500 metres or more unless the deviation is required by civil aviation requirements.

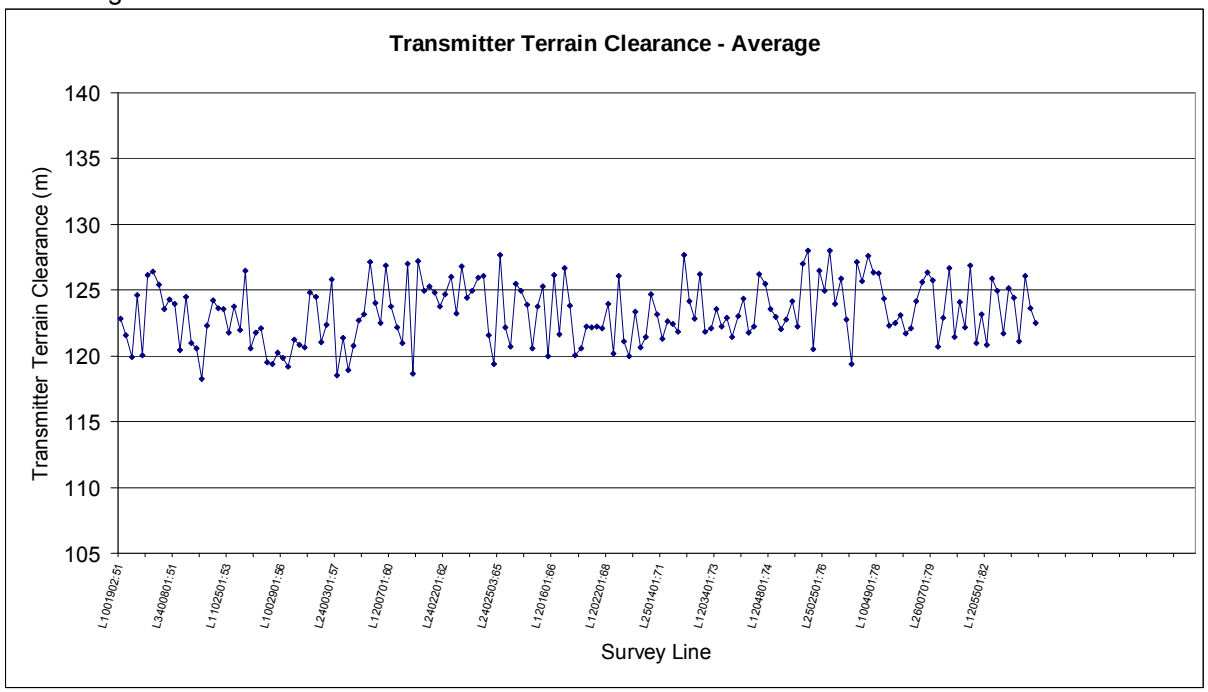
Altitude – the average terrain clearance for any one flight line shall be within ±5 metres of the nominal aircraft terrain clearance (121.1m). Portions of survey lines that are unable to be flown at the nominal survey height due to Australian Civil Aviation Safety Authority regulations of safety considerations shall be excluded from the average. Where the terrain clearance varies from that nominated by more than 20 metres over a continuous distance of two kilometres or more, a fill-in line will be flown at the Contractor's expense unless it can be reasonably demonstrated that such flying would put pilot and crew at risk.

The following plot show the average transmitter ground clearance for all survey lines. A number of lines appear to violate the above specification for average height. In all cases this was a result of rougher terrain.

Rum Jungle Flts 1-46



Rum Jungle Flts 47-84



5.1.1.2 Electromagnetic Data

Based on the high altitude reference (zero) line flown at the start and end of each flight, the quality control checks on the electromagnetic data were:

Noise – For any flight, if the standard deviation of the processed high altitude data for a window exceeds the corresponding Additive Noise specified in the Noise Characteristics table below, then that window will be deemed to be 'noisy'. If more than 25% of the windows are deemed to be noisy in either component, then that flight must be reflown at the Contractor's expense. See Appendix III for full record of zero-line standard deviation statistics.

Bias – For any flight, if the absolute value of the mean of the processed high altitude data for a window exceeds the corresponding Bias specified in the Noise Characteristics table below, then that window will be deemed to be 'biased'. If more than 25% of the windows are deemed to be biased in either component, then that flight must be reflown at the Contractor's expense. See Appendix III for full record of zero-line bias statistics.

Window	Additive Noise (standard deviation of high altitude data) (fT)		Bias (absolute value of mean of high altitude data) (fT)	
	X component	Z component	X component	Z component
1	0.0362	0.0267	0.0151	0.0145
2	0.0348	0.0160	0.0336	0.0248
3	0.0315	0.0140	0.0266	0.0195
4	0.0260	0.0134	0.0114	0.0081
5	0.0238	0.0122	0.0172	0.0132
6	0.0206	0.0123	0.0126	0.0096
7	0.0190	0.0117	0.0112	0.0093
8	0.0182	0.0118	0.0110	0.0090
9	0.0176	0.0110	0.0106	0.0087
10	0.0174	0.0102	0.0102	0.0087
11	0.0170	0.0099	0.0104	0.0081
12	0.0163	0.0084	0.0108	0.0078
13	0.0146	0.0075	0.0090	0.0066
14	0.0126	0.0070	0.0066	0.0054
15	0.0134	0.0087	0.0056	0.0051

Repeat lines – these were flown regularly to check system repeatability. Section 1.5 lists the co-ordinates for the test line used throughout the survey. The repeat line was flown once every day for the first four successful production days, and once every three production days after that. Comparison plots of derived conductivity for both repeat lines are included as an attachment (see Appendix VII).

5.1.2 In-Field Data Processing

Following acquisition, multiple copies of the EM data are made onto DVDs or CDs. The EM, location, magnetic and ancillary data are then processed at the field base to the point that the quality of the data from each flight can be fully assessed. Copies of the raw and processed data were then transferred to Perth for final data processing. A more comprehensive statement of EM data processing is given in section 5.2.3.

5.2 Final Data Processing

5.2.1 Flight Path Recovery

The GPS position of the aircraft at every point along the survey line was post-processed (differentially corrected) by applying the same X, Y and Z positional changes (deviations from averaged position) as seen at the base GPS unit (see 3.2 for a description of establishing the base GPS position).

The post-processed flight path (X and Y co-ordinates) and GPS height were then checked for spikes and level shifts, and if required, edited or improved by re-running the GPS post-processing. Section 4.12 describes the GPS repeat point test we conducted on every flight to confirm the repeatability of the GPS system. No other calibration procedures are performed for the GPS.

5.2.2 Magnetics

Magnetic data were compensated for aircraft manoeuvre noise using coefficients derived from the appropriate compensation flight (see 4.7). Base station data was edited so that all significant spikes, level shifts and null data were eliminated.

A diurnal base value was then added.

Area	Diurnal Base Value
All	47444 nT

A lag was applied to synchronise the magnetic data with the navigation data.

The International Geomagnetic Reference Field (IGRF) 2005 model (updated for secular variation 2008.8) was removed from the levelled total field magnetics. An IGRF base value, calculated at a central point within the survey area, was then added to the data.

Area	IGRF Base Value
All	46836 nT

Following this, microlevelling was applied in order to subtly level the data. The algorithm is a FAS proprietary operation used to remove the small across-line corrugations that may appear in any gridded data. The process attempts to de-corrugate the data without destroying the data's integrity. This is achieved by confining the changes to small values and applying them as a correction to the along-line data.

Note: for flight 52 there was a problem with the magnetometer data recording. For this flight the delivered magnetometer and fluxgate fields were set to a null value.

5.2.3 Altimeters

Radar altimeter data are recorded by the data acquisition system as a value in millivolts. This value is converted to metres using the relationships determined during the altimeter calibration flights. This data has a parallax applied followed by a short smoothing filter to eliminate short-wavelength system noise. Due to the dense vegetation in the survey area some false returns, due to reflection of the radar altimeter signal from the tree tops and not the ground, remain in the data. As this is not the primary altimeter used for the DEM and the EM terrain clearance corrections, manual correcting of these effects was only applied to the laser altimeter data.

The laser altimeter (lidar) data are recorded directly as a height in metres. As a first step all spurious values, and values of 0m (non-returns) were removed, followed by a routine that used local maxima and minima to remove small sharp steps & spikes, resulting from vegetation and other cultural features. Because of the particularly dense vegetation in the Rum Jungle survey area, the automated spike removal routines could not remove all false returns, hence, further manual editing of spurious responses thought to be from tree tops and not the ground, was required for the laser altimeter data.

The resulting channel from this process was splined and filtered, then finally the expression defined in section 4.10 was applied to correct for the changing pointing angle of the altimeter due to aircraft pitch and roll.

5.2.4 Derived Ground Elevation

Aircraft navigation whilst in survey mode is via real time differential GPS, obtained by combining broadcast differential corrections with on-board GPS measurements. Terrain clearance is measured with a laser altimeter.

The ground elevation, relative to the WGS84 spheroid used by GPS receiver units, is obtained by finding the difference between the terrain clearance (from the final processed and edited laser altimeter) and the aircraft GPS antenna altitude above the ellipsoid (GPS height derived from post-processing of the DGPS data using the field base station data), and taking into account that the laser altimeter is mounted 2.3 metres below the GPS antenna.

The digital elevation model derived from this survey can be expected to have an absolute accuracy of +/- several metres in areas of low to moderate topographic relief. Sources of error include uncertainty in the height of the GPS base station, variations in the laser altimeter characteristics over ground of varying surface characteristics (ie. false and non-returns are more prevalent over dense vegetation and water, respectively), and the finite footprint of the laser altimeter.

Following this, microlevelling was applied in order to more subtly level the data. The algorithm is a FAS proprietary operation used to remove the small across-line corrugations that may appear in any gridded data. The process attempts to de-corrugate the data without destroying the data's integrity. This is achieved by confining the changes to very small values and applying them as a correction to the along-line data.

An N-Value is subtracted to correct the final data to the Australian Height Datum (AHD).

The final digital elevation model was then compared to the GEODATA 9 second DEM (DEM-9S) Version 3, which is a grid of ground elevation points covering the whole of Australia, with a grid spacing of 9 seconds in longitude and latitude (approximately 250m) in the GDA94 coordinate system. The DEM-9S grid is freely available through the Geophysical Archive Data Delivery System (GADDS). The following is a summary of the FASP final DEM relative to the DEM-9S data:

FASP DEM for Rum Jungle:
Average value from final line data = 105.7m (relative to AHD)

DEM-9S for Rum Jungle:
Average value from grid-sampled line data = 108.3m (relative to AHD)

Note:

The accuracy of the elevation calculation is directly dependent on the accuracy of the two input parameters, laser altitude and GPS altitude. The GPS altitude value is dependent on the number of available satellites, plus the accuracy of the averaged GPS base position. Although post-processing of GPS data will yield X and Y accuracies in the order of 0.5 metres, the accuracy of the altitude value is usually much less, but generally still within 1-2 metres. Further inaccuracies may be introduced during the interpolation and gridding process as only 1 out of every 5 points across-line is real data. Furthermore, along line obstructions may cause the pilot to veer laterally and so data interpolated between lines may vary significantly from real topography, and do not show artificial vertical obstructions.

Because of the inherent inaccuracies of this method, no guarantee is made or implied that the information displayed is a true representation of the height above sea level. Although this product may be of some use as a general reference, THIS PRODUCT MUST NOT BE USED FOR NAVIGATION PURPOSES.

5.2.5 Electromagnetic Data Processing

Details of the pre-processing applied to TEMPEST data can be found in Lane et al. (2000), and are summarised below.

Calibration
High altitude pre and post flight zero line data (Section 4.4) are used to characterise the system response in the absence of any ground response. These calibration lines were acquired pre and post flight and were linearly interpolated during processing for use at individual transients during the flight.

Cleaning and Stacking
Routines to suppress sferic noise, powerline noise, VLF noise and coil motion noise (collectively termed “cleaning”) and to stack the data are applied to the survey line data. Output from the stacking filter is drawn at 0.2 second intervals. A cosine shaped filter making use of 152 transients (approximately 3 sec) is used in the stacking process.

Deconvolution
The survey height stacked data are deconvolved in the frequency domain using the interpolated high altitude reference waveform, to yield a quantity that is independent of system characteristics. This procedure accounts for slow variations in the transmitted current waveform’s amplitude and shape during the flight. It also accounts for the effect of eddy currents induced in the transmitter loop and airframe. The output of the deconvolved data is the summed effect of the direct coupling between the transmitter loop and receiver coils (primary field) and the coupling between currents induced in the ground and the receiver (secondary field).

Primary Field Estimation
Since the receiver’s orientation and position (relative to the transmitter) is not precisely known, the primary field cannot simply be theoretically computed and subtracted from the deconvolved data to yield the desired pure ground response. The primary field is instead estimated using knowledge of the asymptotic behaviour at the low frequency in-phase component of the deconvolved spectrum. The estimation of the primary field requires some assumptions to be made regarding the conductivity structure of the ground at depth. Once estimated the primary field is subtracted from the deconvolved data to yield the estimated pure ground response.

Transmitter-Receiver Separation Estimation
Once the primary field and coupling terms are estimated it is then possible to estimate the position of the receiver coils relative to the transmitter loop via basic dipole theory. Equations (1) and (2) define the coupling terms for an infinitesimal vertical magnetic dipole transmitter and an ideal receiver located at co-ordinates (*x,z*) with respect to the transmitter. The horizontal (or X) component coupling is defined by,

$$g_x = \frac{3xz}{\left(x^2 + z^2\right)^{5/2}}, \qquad (1)$$

and for the vertical (or Z) component data;

$$g_z = \frac{2z^2 - x^2}{\left(x^2 + z^2\right)^{5/2}} \quad . \tag{2}$$

The above equations are inverted to solve for the coil set position defined by the co-ordinates (x,z) as follows. From equations (1) and (2),

$$\frac{g_z}{g_x} = r = \frac{(2z^2 - x^2)}{3xz} \tag{3}$$

Therefore,

$$x^2 + 3rxz - 2z^2 = 0 \tag{4}$$

Therefore,

$$x = -(3rz \pm \sqrt{9r^2z^2 + 8z^2}) / 2 = z(-3r \pm \sqrt{9r^2 + 8}) / 2 = zr_1 \tag{5}$$

Substituting back into the expression for g_x, we get

$$g_x = \frac{3r_1}{z^3(r_1^2 + 1)^{5/2}} \tag{6}$$

and

$$z = \left\{\frac{3r_1}{g_x(r_1^2 + 1)^{5/2}}\right\}^{1/3}, \quad and \quad x = r_1\left\{\frac{3r_1}{g_x(r_1^2 + 1)^{5/2}}\right\}^{1/3} \tag{7}$$

where

$$r_1 = \left\{-3(g_z / g_x) + \sqrt{9(g_z / g_x)^2 + 8}\right\}/2 \tag{8}$$

The +/- solutions collapse to a single solution due to a basic knowledge that the bird is always going to be below and behind the transmitter. Therefore equations (7) and (8) provide the necessary calculation to convert g_x and g_z values to x and z values which define the position of the receiver with respect to the transmitter.

An estimate of transmitter-receiver separation is made for every 0.2 second sample drawn from the stacking filter. Along with other system geometry variables (either measured or assumed) the survey wide averages of the system geometry is shown in the table following.

Geometry Variable		**VH-WGT**
Transmitter loop pitch	Measured	2.64 deg
Transmitter loop roll	Measured	0.15 deg
Transmitter loop yaw	Assumed	0.00 deg
Transmitter loop terrain clearance	Measured	127.0 m
Transmitter-receiver in-line horizontal separation	estimated	-116.3 m
Transmitter-receiver vertical separation	estimated	-40.5 m
Transmitter-receiver transverse horizontal separation	assumed	0.00 m
Receiver pitch	assumed	0.00 deg
Receiver roll	assumed	0.00 deg
Receiver yaw	assumed	0.00 deg

Transformation to B-field Response

The pure ground response data are transformed from dB/dt to B-field responses equivalent to that which would be observed for a perfect 100% duty cycle square wave waveform with a 1 A peak to peak step.

Windowing
Finally, the evenly spaced samples are binned into a number of windows.

Table of TEMPEST window information for 25Hz base frequency

Window #	Start sample	End sample	No of samples	start time (s)	End time (s)	centre time (s)	centre time (ms)
1	1	2	2	0.000007	0.000020	0.000013	0.013
2	3	4	2	0.000033	0.000047	0.000040	0.040
3	5	6	2	0.000060	0.000073	0.000067	0.067
4	7	10	4	0.000087	0.000127	0.000107	0.107
5	11	16	6	0.000140	0.000207	0.000173	0.173
6	17	26	10	0.000220	0.000340	0.000280	0.280
7	27	42	16	0.000353	0.000553	0.000453	0.453
8	43	66	24	0.000567	0.000873	0.000720	0.720
9	67	102	36	0.000887	0.001353	0.001120	1.120
10	103	158	56	0.001367	0.002100	0.001733	1.733
11	159	246	88	0.002113	0.003273	0.002693	2.693
12	247	384	138	0.003287	0.005113	0.004200	4.200
13	385	600	216	0.005127	0.007993	0.006560	6.560
14	601	930	330	0.008007	0.012393	0.010200	10.200
15	931	1500	570	0.012407	0.019993	0.016200	16.200

Geometry Corrections to EM Data
The final EM dataset includes both “non-geometry corrected” and geometry-corrected” located EM data. The non-geometry corrected EM amplitudes reflect, not only the variations in ground conductivity, but the variations in geometry of the various parts of the EM measurements (i.e. transmitter loop pitch, transmitter loop roll, transmitter loop terrain clearance, transmitter loop to receiver coil horizontal longitudinal separation, transmitter loop to receiver coil horizontal transverse separation, and transmitter loop to receiver coil vertical separation) during the survey. For example, the largest influence on the early time EM amplitude is the terrain clearance of the transmitter loop. The larger the terrain clearance, the smaller the amplitude. Later window times (larger window number) show diminished variations due to terrain clearance.

Geometry-corrected located data are produced for optimum presentation of the EM amplitude data in image format (e.g. window amplitude images, principal component analysis images derived from the window amplitudes (Green,1998b)). Between non-geometry and geometry corrected states, the ground response data undergo an approximate correction to produce data that would be measured if the system had always maintained a nominated standard (constant) geometry. A dipole-image method (Green, 1998a) is used to adjust the data to the response that would be expected at a standard terrain clearance (120m), standard transmitter loop pitch and roll (zero degrees), and a standard transmitter loop to receiver coil geometry (120m behind and 35 below the aircraft). These geometry variables have been set to their respective standard values in the geometry corrected located data. Zero parallax is applied to the transmitter loop pitch, roll, terrain clearance, X component EM and Z component EM data prior to geometry correction. Note that the final delivered non-geometry corrected EM data has had the parallax values, defined in section 5.2.7.1, applied.

Over extremely conductive ground (e.g. > 100 S conductance), the estimates for transmitter loop to receiver coil separation determined from the primary field coupling factors may be in error at the metre scale due to uncertainty in the estimation of the primary field. This will influence the accuracy of very early time window amplitude information in the geometry-corrected located data. Receiver coil pitch has a significant effect on early time Z component response and late time X component response (Green and Lin, 1996). Receiver coil roll impacts early time Z component response.

Values used to standardise transmitter height, pitch and roll and transmitter-receiver geometry

Geometry Variable	Standard Value
Transmitter loop pitch	0.0 deg
Transmitter loop roll	0.0 deg
Transmitter loop yaw	0.0 deg
Transmitter loop terrain clearance	120.0 m
Transmitter-receiver in-line horizontal separation	-120.0 m
Transmitter-receiver vertical separation	-35.0 m
Transmitter-receiver transverse horizontal separation	0.0 m
Receiver pitch	0.0 deg
Receiver roll	0.0 deg
Receiver yaw	0.0 deg

Levelling
Once the full dataset had been corrected to the same standard geometry, the following levelling procedure was applied:

- small amplitude DC shifts to the window data to remove base-level shifts related to slight imperfections in the deconvolution stage of the EM data processing. This type of levelling is termed 'noise-levelling', and it is designed to improve the presentation and remove the small amplitude 'block' shifts in the later EM windows that may occur from flight to flight.
- limited range micro-levelling was applied to all windows for presentation purposes and to ensure the input data for CDI processing was free of striping.

5.2.6 Conductivity Depth Images (CDI)

CDI conductivity sections for TEMPEST data were calculated using EMFlow and then modified to reflect the finite depth of investigation using an in-house routine, *Sigtime*.

The *Sigtime* routine removes many of the spurious conductive features that appear at depth as a result of fitting long time constant exponential decays to very small amplitude features in the late times. For each observation, the time when the response falls below a signal threshold amplitude is determined. This time is transformed into a diffusion depth with reference to the conductivity values determined for that observation. Anomalous conductivity values below this depth are replaced by background values or set to undefined, reflecting the uncertainty in their origin. The settings and options applied are indicated in the appropriate header files for *Sigtime* output. This procedure is different to that which would be obtained by filtering conductivity values using either a constant time or constant depth across the entire line.

The "final" X and Z EM data were simultaneously input into version 5.10 of EMFlow to calculate Conductivity Depth Images (CDI). Conductivity values were calculated at each point then run through *Sigtime.*

EMFlow was developed within the CRC-AMET through AMIRA research projects (Macnae et al, 1998, Stolz and Macnae, 1998). The software has been commercialised by Encom Technology Pty Ltd. Examples of TEMPEST conductivity data can be seen in Lane et al. (2000), Lane et al. (1999), and Lane and Pracillio (2000).

Conductivity values were calculated to a depth of 200m below surface at each point, using a depth increment of 5m and a conductivity range of 1-1000mS/m.

5.2.6.1 Factors and Corrections

Geometric Factor
The geometric factor gives the ratio of the strength of the primary field coupling between the transmitter loop and the receiver coil at each observation relative to the coupling observed at high altitude during acquisition of reference waveform data. Variations in this factor indicate a change in the attitude and/or relative separation of the transmitter loop and the receiver coil.

Transmitter-Receiver Geometry
Transmitter-to-receiver geometry values for each observation are derived from the high altitude reference waveforms and knowledge of the system characteristics. The exact derivation of the primary field values and transmitter-to-receiver separation are described in section 5.2.5 above. The transmitter-to-receiver geometry values are available in the located data (see section 5.2.5 for "standardised" values).

GPS Antenna, Laser Altimeter and Transmitter Loop Offset Corrections
The transmitter loop was mounted 0.25m below the GPS antenna. And the GPS antenna is 3.3m above the belly of the aircraft. The laser altimeter sensor is mounted in the belly. Therefore a total of 3.05m was added to the laser altimeter data to determine the transmitter loop height above the ground.

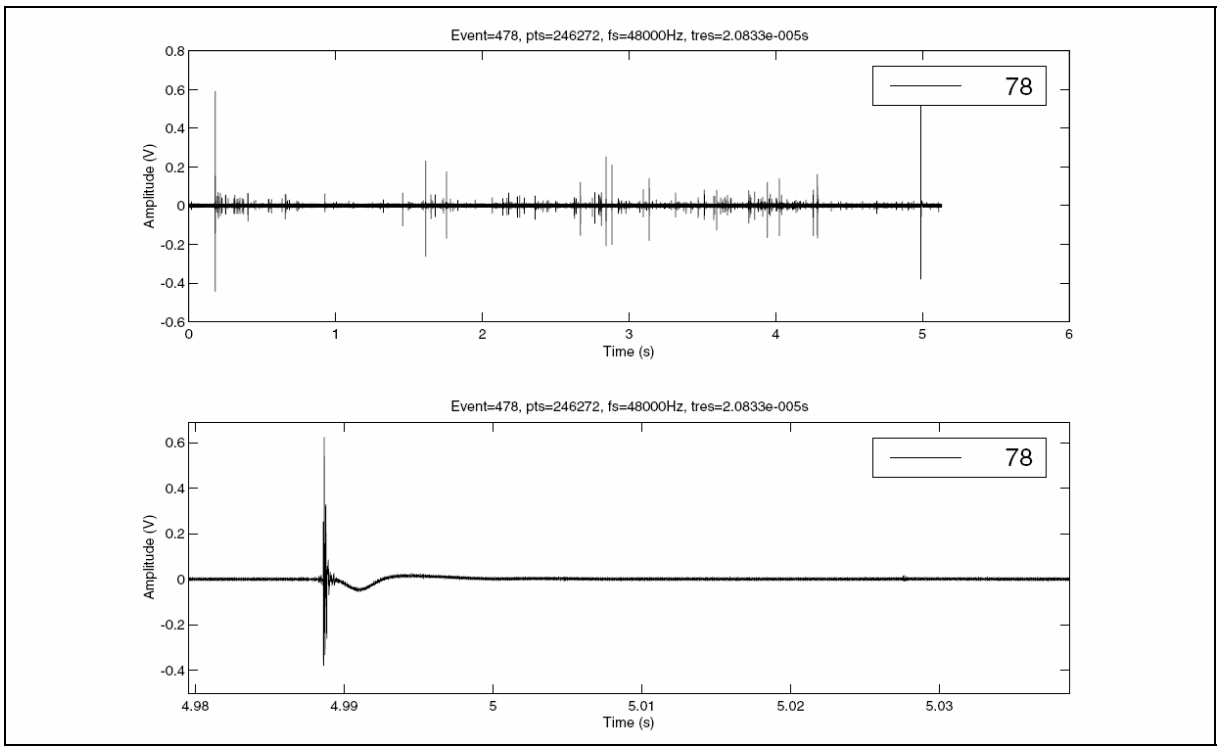
Transmitter Loop Pitch and Roll Correction
Measured vertical gyro aircraft pitch and roll attitude measurements are converted to transmitter loop pitch and roll by adding -0.45 degrees for pitch and 0.6 degrees for roll. Nose up is positive for pitch, and left wing up is positive for roll.

5.2.6.2 Primary Sources of EM Noise

A number of "monitor" values are calculated during processing to assist with interpretation. They generally represent quantities that have been removed as far as is practical from the data, but may still be present in trace amounts. These are more significant for interpretation of discrete conductors than for general mapping applications.

Sferic Monitor
Sferics are the electromagnetic signals associated with lightning activity. These signals travel large distances around the Earth. Background levels of sferics are present at all times from lightning activity in tropical areas of the world (eg tropical parts of Asia, South America and Africa). Additional higher amplitude signals are produced by "local" lightning activity (ie at distances of kilometres to hundreds of kilometres).

The sferic monitor is the sum of the absolute differences brought about by the sferic filter operations, summed over 0.2 second intervals, normalised by the receiver effective area. It is given in units of uV/sq.m/0.2s. Many sferics have a characteristic form that is well illustrated by figure 2 in Garner and Thiel (2000), shown below. The high frequency, initial part of a sferic event can be detected and filtered more easily than the later, low frequency portion. The sferic monitor indicates where at least the high frequency portion of a sferic has been successfully removed, but it is quite possible that lower frequency elements of the sferic event may have eluded detection, passing through to the window amplitude data. Thus, discrete anomalies coincident with sferic activity as indicated by the sferic monitor should be down-weighted relative to features clear of any sign of sferic activity.



An electric field time-series sampled at 48 kilo samples per second using MIMDAS. The top panel exhibits the entire event, while the lower panel depicts a close up view of an individual sferic from that event. The sample rate and resolution in time are denoted by fs and tres, respectively. (Garner & Thiel, 2000.)

Low Frequency Monitor

The Low Frequency Monitor (LFM) makes use of amplitudes at frequencies below the base frequency which are present in the streamed data to estimate the amplitude of coil motion noise at the base frequency in log10(pV/sqrt(Hz)/sq.m). This noise is primarily induced by the coil's motion through the earth's magnetic field – a change in coupling between the receiver coil and the ambient magnetic field will induce a voltage in the receiver coil. This noise is referred to as coil motion or Earth field noise. Receiver coils in the towed bird are suspended in a fashion that attempts to keep this noise below the noise floor at frequencies equal to and above the base frequency of the system. Severe turbulence, however, can result in 'coil knock events' that introduce noise into the processed data. Note that the LFM will also respond to sferic events with an appreciable low frequency (sub-base frequency) component. This situation can be inferred when both the LFM and sferic monitors show a discrete kick.

The coil motion noise below the base frequency is rejected through the use of tapered stacking, but the coil motion noise at the base frequency itself is not easily removed.

Powerline Monitor

The powerline monitor gives the amplitude of the received signal at the powerline frequency (50 or 60 Hz) in log10(pV/sqrt(Hz)/sq.m). Careful selection of the base frequency (such that the powerline frequency is an even harmonic of the base frequency) and tapered stacking combine to strongly attenuate powerline signals. When passing directly over a powerline, the rapid lateral variations in the strength and direction of the magnetic fields associated with the powerline can result in imperfect cancellation of the powerline response during stacking. Some powerline-related interference can manifest itself in a form that is similar to the response of a discrete conductor. The exact form of the monitor profile over a powerline depends on the line direction, powerline direction, powerline current, and receiver component, but the monitor will show a general increase in amplitude approaching the powerline.

Grids (or images) of the powerline monitor reveal the location of the transmission lines. Note that the X component (horizontal receiver coil axis parallel with the flight line direction) does not register any response from powerlines parallel to the flight line direction since the magnetic fields associated with powerlines only vary in a direction perpendicular to the powerline. Note also that the Z component (vertical receiver coil axis) shows a narrow low directly over the powerline where the magnetic fields are purely horizontal.

Very Low Frequency Monitors
Wide area VLF communication signals in the 15 to 25 kHz frequency band are monitored by the TEMPEST system. In the Australian region, signals at 18.2 kHz, 19.8 kHz, 21.4 kHz and 22.2 kHz are monitored as the amplitude of the received signal at these frequencies in log10(pV/sqrt(Hz)/sq.m). The strongest signal comes from North West Cape (19.8 kHz). The signal at 18.2 kHz is often observed to pulse in a regular sequence. These strong narrow band signals have some impact on the high frequency response of the system, but they are strongly attenuated by selection of the base frequency and tapered stacking. The VLF transmissions are strongest in amplitude, in the horizontal direction at right angles to the direction to the VLF transmitter. This directional dependence enables the VLF monitors to be used to indicate the receiver coil attitude.

5.2.6.3 Other Sources of EM Noise

Man-made periodic discharges
If an image of the Z component sferic monitor shows the presence of spatially coherent events, then pulsed cultural interference would be strongly suspected. Since sferic signals are much stronger in the horizontal plane than in the vertical plane, few sferics of significant amplitude are recorded in Z component data. In contrast, evidence of cultural interference is generally swamped by true sferics in X component sferic monitor images.

Electric fences are the most common source of pulsed cultural interference. Periodic discharges (eg every second or so) into a large wire loop (fence) produce very large spikes in raw data. These are attenuated to a large degree by the sferic filter, but a residual artefact can still be present in the processed data.

Grounded metal objects
Grounded extensive metal objects such as pipelines and rail lines can qualify as conductors and may produce a response that is visible in processed data. Grounded metal objects produce a response similar to shallow, highly conductive, steeply dipping conductors. These objects can sometimes be identified from good quality topographic maps, from aerial photographs, by viewing the tracking video, from their unusual spatial distribution (ie often a series of linear segments) and in some circumstances from their effect on the powerline monitor. A powerline running close to a long metal object will induce a 50 Hz response in the object.

5.2.7 System Specifications for Modelling TEMPEST Data

Differences between the specifications for the acquisition system, and those of the virtual system for which processed results are given, must be kept in mind when forward modelling, transforming or inverting TEMPEST data.

Acquisition is carried out with a 50% duty cycle square transmitter current waveform and dB/dt sensors.

During processing, TEMPEST EM data are transformed to the response that would be obtained with a B-field sensor for a 100% duty cycle square waveform at the base frequency, involving a 1A change in current (from -0.5A to +0.5A to -0.5A) in a 1sq.m transmitter. Data are given in units of femtoTesla (fT = 10^{-15} Tesla). It is this configuration, rather than the actual acquisition configuration, which must be specified when modelling fully pre-processed TEMPEST data.

Window timing information is given above (see section 5.2.5).

The geometry-corrected EM data have been standardised through an approximate transformation to a standard transmitter loop terrain clearance, transmitter loop pitch and roll of zero degrees, and a fixed transmitter loop to receiver coil geometry (roughly equal to the average estimated geometry values). Transmitter loop pitch, transmitter loop roll and transmitter loop terrain clearance values for each observation have been modified to reflect the standard values. Hence, the standardised geometry values should be used if modelling with the geometry corrected X and Z-component amplitude data (see table in section 5.2.5).

5.2.7.1 Parallax

The located data files utilise the following parallax values :-

for PICODAS flights 1 to 46:

- magnetics = 0.4 sec
- radar altimeter = 0.6 sec
- laser altimeter = 0.0 sec
- GPS co-ordinates = 0.0 sec
- EM X-component = 0.2 sec
- EM Z-component = 1.4 sec

for FASDAS flights 47 to 84:

- magnetics = 0.0 sec
- radar altimeter = 0.0 sec
- laser altimeter = 0.0 sec
- GPS co-ordinates = 0.0 sec
- EM X-component = -1.6 sec
- EM Z-component = -0.2 sec

As per the above, the parallax values are different for the two acquisition systems. This can be attributed to different data recording / buffering methods employed by the acquisition systems, rather than changes in the physical position of different sensors.

For the Tempest Airborne EM system, due to the asymmetry in the transmitter loop-receiver coil geometry with respect to flight direction, there is no single EM parallax value which will align the peak response for all conductivity distributions for lines flown in opposite directions.

The choice of EM parallax value depends on the intended usage, but with the predominance of broad, shallowly dipping conductors, and the client's desire to grid the data, parallax has been applied so that data are optimised for gridding. The 'optimum' depends on the conductor depth, the acquisition geometry and the delay time, and hence, the selected value will be a compromise.

(NB negative parallax values are defined in this case as shifting the indicated quantity forward along line to larger fiducial values. Location information remains in the zero parallax state)

5.2.8 CDI Depth Slicing

Following calculation of CDI data as described in section 5.2.6, conductivity depth slices were derived by averaging conductivity data over the following depth intervals:

0 – 5m
5 – 10m
10 – 15m
15 – 20m
20 – 30m
30 – 40m
40 – 60m
60 – 100m
100 – 150m
150 – 200m

The conductivity depth slice data were gridded for each of the regional and infill areas using a grid cell size of 1/5th of the line spacing. The areas were gridded using a bi-directional spline interpolation (with no anti-aliasing) algorithm with a square cell size.

Finally, a 5-cell median filter and a 5-cell mean filter were applied to the conductivity depth slice grids to improve their appearance and smooth the blocky nature of the raw grids, which is a result of using 20 discretely defined conductivities in the CDI calculation.

5.2.9 Delivered Products

Appendix VI contains a complete list of all data supplied digitally.

Digital located data in ASCII format was produced containing the non-geometry corrected and geometry corrected X and Z EM data as well as magnetics, digital elevation and derived conductivity data. The header file can be found in Appendix III.

Grids (in ER Mapper format) of selected conductivity slices, total magnetic field and digital elevation were also produced.

CDI multiplots in Adobe PDF format were produced for all survey lines.

Acquisition and processing report in hardcopy and digital format.

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APPENDIX I – Weekly Acquisition Reports VH-WGT

System: Tempest
Aircraft: VH-WGT

Total Job kms: 6609.700 Kms

Plan Kms Remain: 6249.000 Kms
% Complete: 5.461 %

9130.0 Hrs - Progressive M/R Hrs at the start of job, prior to mobilisation

9288.0 Hrs - The hours the Periodic Inspection is actally due at start of the job

Job Number: 2017
Contract Number: 2017
Job Name: Rum Jungle
Area Names: Rum Jungle
Client: Geoscience Australia

Date	Flt	Pilot initials	On board Oper initials	Production inc. Exc. Scrubs	FAS Scrub	Time Start	Time End	Engine Hours on M/R	Hours to Periodic Inspectio	Job Hrs to Date	Prod. to Date	FAS Scrubs to Date	Stdby Days	Activity Contribution	Activity	COMMENTS Weather, Data delivery Aircraft movement, etc
06-October-2008														1.00	A	Roland Meier works on comms system and fault
Julian Day 280															Comment	tests electrical ststem.
Monday																
									158.0							
Date 7-Oct	1	AR	SR			7:10:00	9:30:00	2.3						1.00	TF	altimeter calibration flight
Julian Day 281															Comment	Roland Meier leaves Darwin.
Tuesday																
									155.7	2.3						
Date 8-Oct		AR				9:00:00	10:20:00	1.3						0.50	MO	aircraft mobilised to Katherine
Julian Day 282															Comment	SR drives from Darwin to Katherine
Wednesday															Comment	SH returned to Perth
														0.50	SETUP	setup office in Katherine
									154.3	3.7						
Date 9-Oct														1.00	SETUP	organise airport access and set up base mags.
Julian Day 283																
Thursday																
									154.3	3.7						
Date 10-Oct	2	AR	SR			7:00:00	9:05:00	2.1						1.00	TF	comp box & recce
Julian Day 284															Comment	KTL and FZ arrive from Perth via Darwin in hire
Friday																
									152.2	5.8						
Date 11-Oct	3	AR	SR	361.000		6:50:00	10:30:00	3.7						1.00	P	data still being processed
Julian Day 285																
Saturday																
									148.6	9.4	361.000					
Date 12-Oct														1.00	PDO	Pilot's Day Off
Julian Day 286																
Sunday																
									148.6	9.4	361.000					
Totals This Week: ►				**361.000**		Week Hours:►		**9.4**	▲: A/C Hrs to Next Service					**7.00**		

System: Tempest
Aircraft: VH-WGT

Total Job kms: 6610.000 Kms

Plan Kms Remain: 4930.200 Kms
% Complete: 25.413 %

9130.0 Hrs - Progressive M/R Hrs at the start of job, prior to mobilisation

9288.0 Hrs - The hours the Periodic Inspection is actally due at start of the job

Job Number: 2017
Contract Number: 2017
Job Name: Rum Jungle
Area Names: Rum Jungle
Client: Geoscience Australia

Date	Flt	Pilot initials	On board Oper initials	Production inc. Reflights Exc. Scrubs	FAS Scrub	Time Start	Time End	Engine Hours on M/R	Hours to Periodic Inspectio	Job Hrs to Date	Prod. to Date	FAS Scrubs to Date	Stdby Days	Activity Contribution	Activity	COMMENTS Weather, Data delivery Aircraft movement, etc
13-October-2008	4	AR	SR	254.600		6:15:00	9:15:00	3.0						1.00	P	
Julian Day 287															Comment	aircraft must land by 9:30 due to military operations
Monday																
									145.6	12.4	615.600					
Date 14-Oct														1.00	E	Gyro signal not reaching acquisition computer - fixed.
Julian Day 288															Comment	Baro Altimeter not working
															Comment	aircraft must land by 9:30 due to military operations
Tuesday																
									145.6	12.4	615.600					
Date 15-Oct	5	AR	SR			6:17:00	7:35:00	1.3						0.50	TF	comp box
Julian Day 289													0.50	0.50	W	Storms in survey area. Pilot declares unsafe to fly.
															Comment	aircraft must land by 9:30 due to military operations
Wednesday																
									144.3	13.7	615.600					
Date 16-Oct	6	AR	SR	236.100		6:10:00	9:30:00	3.3						1.00	P	comp box and production
Julian Day 290															Comment	Marek arrives in Katherine
															Comment	aircraft must land by 9:30 due to military operations
Thursday																
									140.9	17.1	851.700					
Date 17-Oct	7	AR	SR	436.500		6:15:00	9:45:00	3.5						1.00	P	
Julian Day 291															Comment	TW arrives via Darwin to replace AR.
Friday																
									137.4	20.6	1288.200					
Date 18-Oct	8	TW	SR & MB	191.700		6:48:00	9:40:00	2.9						1.00	P	
Julian Day 292															Comment	KTL returns to Perth via Darwin
															Comment	AR returns to Perth via Darwin
Saturday															Comment	MB onboard for Skyvan Operator training (reduced
									134.6	23.4	1479.900					
Date 19-Oct	9	TW	SR & MB	199.900		6:18:00	9:10:00	2.9						1.00	P	
Julian Day 293															Comment	MB onboard for Skyvan Operator training (reduced
Sunday																
									131.7	26.3	1679.800					
Totals This Week: ►				**1318.800**		Week Hours:►		**16.9**	▲: A/C Hrs to Next Service				**0.50**	**7.00**		

System: Tempest
Aircraft: VH-WGT

Total Job kms: 6610.000 Kms

Plan Kms Remain: 3724.300 Kms
% Complete: 43.657 %

9130.0 Hrs - Progressive M/R Hrs at the start of job, prior to mobilisation

9288.0 Hrs - The hours the Periodic Inspection is actally due at start of the job

Job Number: 2017
Contract Number: 2017
Job Name: Rum Jungle
Area Names: Rum Jungle
Client: Geoscience Australia

Date	Flt	Pilot initials	On board Oper initials	Production inc. Reflights Exc. Scrubs	FAS Scrub	Time Start	Time End	Engine Hours on M/R	Hours to Periodic Inspectio	Job Hrs to Date	Prod. to Date	FAS Scrubs to Date	Stdby Days	Activity Contribution	Activity	COMMENTS Weather, Data delivery Aircraft movement, etc
20-October-2008	10	TW	SR & MB	201.500		5:58:00	9:07:00	3.2						1.00	P	
Julian Day 294															Comment	MB onboard for Skyvan Operator training (reduced
															Comment :	
Monday																
									128.6	29.4	1881.300					
Date 21-Oct	11	TW	SR & MB	254.300	16.000	5:50:00	9:07:00	3.3						1.00	P & S	two lines scrubbed due to height bust
Julian Day 295															Comment	MB onboard for Skyvan Operator training (reduced
															Comment	occasional spikes in LGEN - cause faulty generator?
Tuesday																
									125.3	32.7	2135.600	16.000				
Date 22-Oct	12	TW	SR & MB	347.300		6:06:00	9:09:00	3.1						1.00	P	
Julian Day 296															Comment	MB onboard for Skyvan Operator training (reduced
															Comment	spikes in LGEN getting more frequent
Wednesday																
									122.2	35.8	2482.900	16.000				
Date 23-Oct	13	TW	SR & MB	265.000		5:50:00	9:31:00	3.7						1.00	P & R	two lines reflown
Julian Day 297															Comment	MB onboard for Skyvan Operator training (reduced
															Comment	simultaneous spikes occurring in all analogue
Thursday															Comment	removed and inspected analogue card & connections.
									118.6	39.5	2747.900	16.000				
Date 24-Oct														1.00	PDO	pilot's day off
Julian Day 298																
Friday																
									118.6	39.5	2747.900	16.000				
Date 25-Oct	14	TW	SR	137.800		5:59:00	8:22:00	2.4						1.00	P	test flight - spiking problem has been resolved
Julian Day 299																
Saturday																
									116.2	41.8	2885.700	16.000				
Date 26-Oct	15	TW	MB			5:54:00	7:26:00	1.5						1.00	E	calibration lines clean but all channels
Julian Day 300															Comment	began spiking shortly after first survey line
															Comment	Seen in aircraft but not processed data.
Sunday																
									114.6	43.4	2885.700	16.000				
Totals This Week: ►				**1205.900**	**16.000**	Week Hours:►		**17.1**	▲: A/C Hrs to Next Service					**7.00**		

System: Tempest
Aircraft: VH-WGT

Total Job kms: 6610.000 Kms

Plan Kms Remain: 2672.700 Kms
% Complete: 59.567 %

9130.0 Hrs - Progressive M/R Hrs at the start of job, prior to mobilisation

9288.0 Hrs - The hours the Periodic Inspection is actally due at start of the job

Job Number: 2017
Contract Number: 2017
Job Name: Rum Jungle
Area Names: Rum Jungle
Client: Geoscience Australia

Date	Flt	Pilot initials	On board Oper initials	Production inc. Reflights Exc. Scrubs	FAS Scrub	Time Start	Time End	Engine Hours on M/R	Hours to Periodic Inspectio	Job Hrs to Date	Prod. to Date	FAS Scrubs to Date	Stdby Days	Activity Contribution	Activity	COMMENTS Weather, Data delivery Aircraft movement, etc
27-October-2008	16	TW	SR	103.500	12.700	5:51:00	7:51:00	2.0						1.00	P & S	spikes in all analogue channels. EM clean. 1 line
Julian Day 301															Comment	shortened flight to diagnose problems from previous flt
															Comment	LAME (Clint Hazelwood) arrived
Monday															Comment	removed and inspected analogue card.
									112.6	45.4	2989.200	28.700				
Date 28-Oct	17	TW	SR	196.800	63.400	5:52:00	9:13:00	3.4						1.00	P & R & S	5 lines scrubbed due em dropouts. Analogue data clean.
Julian Day 302															Comment	John Stewart arrives to diagnose equipment problems.
Tuesday																
									109.3	48.7	3186.000	92.100				
Date 29-Oct	18	TW	SR & JS	207.100	67.800	6:00:00	9:27:00	3.5						1.00	P & R & S	2 lines scrubbed due em dropouts. Analogue data clean.
Julian Day 303															Comment	Replace Digibaro sn 61909 with sn:50269
Wednesday																
									105.8	52.2	3393.100	159.900				
Date 30-Oct	19	TW	SR & JS	272.800		5:47:00	8:45:00	3.0						1.00	P & R	EM & analogue data clean.New hard disk to record em
Julian Day 304															Comment	Mark Harradence arrived for pilot rating renewal.
Thursday																
									102.9	55.1	3665.900	159.900				
Date 31-Oct	20	TW				6:30:00	7:15:00	0.8						1.00	TR	Pilot instrument rating renewal.
Julian Day 305															Comment	Ben Riggs arrived via Darwin.
Friday																
									102.1	55.9	3665.900	159.900				
Date 1-Nov	21	TW	SR & JS	135.700	135.700	5:50:00	8:18:00	2.5						1.00	P & S	Analogue spikes returned.
Julian Day 306															Comment	Peter Hiskins arrived via Darwin.
Saturday																
									99.6	58.4	3801.600	295.600				
Date 2-Nov	22	PH	SR & BR	135.700	67.800	6:14:00	9:01:00	2.8						1.00	P & S	One line scrubbed due to spherix. Analogue spikes.
Julian Day 307															Comment	Troy Wilhelmi leaves via Darwin.
Sunday															Comment	new pilot
									96.9	61.1	3937.300	363.400				
Totals This Week: ►				**1051.600**	**347.400**	Week Hours:►		**17.8**	▲: A/C Hrs to Next Service					**7.00**		

Aircraft: VH-WGT

Total Job kms: 6610.000 Kms

Plan Kms Remain: 1682.500 Kms

% Complete: 74.546 %

9130.0 Hrs - Progressive M/R Hrs at the start of job, prior to mobilisation

9288.0 Hrs - The hours the Periodic Inspection is actally due at start of the job

Contract Number: 2017

Job Name: Rum Jungle

Area Names: Rum Jungle

Client: Geoscience Australia

Date	Flt	Pilot initials	On board Oper initials	Production inc. Reflights Exc. Scrubs	FAS Scrub	Time Start	Time End	Engine Hours on M/R	Hours to Periodic Inspectio	Job Hrs to Date	Prod. to Date	FAS Scrubs to Date	Stdby Days	Activity Contribution	Activity	COMMENTS Weather, Data delivery Aircraft movement, etc
03-November-2008	23	PH	MB&BR	101.500	334.300	5:55:00	9:20:00	3.4						0.90	P & S	EM Spikes
Julian Day 308														0.10	E	Spikes in Analog channels and EM Data
Monday																
									93.5	64.6	4038.800	697.700				
Date 4-Nov	24	PH	MB&BR	186.700	125.600	5:55:00	9:25:00	3.5						0.30	P & R & S	EM spikes
Julian Day 309														0.40	E	Spikes in Analog channels and EM Data
														0.10	E	EM:XFR errors in EM system. Data drive replaced
Tuesday														0.20	MO	SR and JS leave
									90.0	68.1	4225.500	823.300				
Date 5-Nov	25	PH	MB&BR	294.300		6:09:00	9:45:00	3.6						0.20	R	Reflights only.
Julian Day 310														0.40	E	Spikes in Analog channels and EM Data
														0.20	E	Difficulty booting EM computer
Wednesday														0.20	MA	100 hourly
									86.4	71.7	4519.800	823.300				
Date 6-Nov	26	PH	MB&BR	407.700		5:55:00	9:28:00	3.6						0.20	P & S	Spikes in EM data.
Julian Day 311														0.40	E	Spikes in Analog channels and EM Data
															Comment	EM computer flat survey battery.
Thursday														0.20	E	Survey battery in aircraft not holding charge.
									82.8	75.2	4927.500	823.300		0.20	MO	CH mobilises to Casa
Date 7-Nov	27	PH	MB&BR			5:57:00	7:31:00	1.6						0.20	Comment	No Production due to spiking in EM data.
Julian Day 312														0.80	E	Spikes in Analog channels and EM Data
															Comment	Discovered the spikes in EM data caused by 5 broken
Friday															Comment	conductors in tow cable
									81.2	76.8	4927.500	823.300				
Date 8-Nov														1.00	E	Tow cable re-terminated
Julian Day 313															Comment	Unable to fully test system on the ground due to
															Comment	survey battery and ground power
Saturday																
									81.2	76.8	4927.500	823.300				
Date 9-Nov	28	PH	MB&BR			5:57:00	7:30:00	1.6						0.20	P & S	Flight abandoned due to non-working Lidar.
Julian Day 314														0.20	E	Spikes in Analog Channels
														0.20	E	Lidar settings corrupted due to power brownout.
Sunday														0.30	E	Tow cable measured and remarked.
									79.7	78.3	4927.500	823.300		0.10	E	Re-installed charge controller on envimag.
	Totals This Week: ►			**990.200**	**459.900**	Week Hours:►		**17.2**	▲: A/C Hrs to Next Service					**7.00**		

System: Tempest
Aircraft: VH-WGT

Total Job kms: 6610.000 Kms

Plan Kms Remain: 1473.400 Kms
% Complete: 77.710 %

9130.0 Hrs - Progressive M/R Hrs at the start of job, prior to mobilisation

9288.0 Hrs - The hours the Periodic Inspection is actally due at start of the job

Job Number: 2017
Contract Number: 2017
Job Name: Rum Jungle
Area Names: Rum Jungle
Client: Geoscience Australia

Date	Flt	Pilot initials	On board Oper initials	Production inc. Reflights Exc. Scrubs	FAS Scrub	Time Start	Time End	Engine Hours on M/R	Hours to Periodic Inspectio	Job Hrs to Date	Prod. to Date	FAS Scrubs to Date	Stdby Days	Activity Contribution	Activity	COMMENTS Weather, Data delivery Aircraft movement, etc
10-November-2008	29	PH	MB&BR		135.700	6:00:00	8:10:00	2.2						0.80	P & S	Flight abandonded due to spherix
Julian Day 315														0.10	E	Spikes in analog channels gone without explanation
														0.10	E	No signal on x-axis of fluxgate.
Monday															Comment	EM spiking repaired.
									77.5	80.5	4927.500	959.000				
Date 11-Nov	30	PH	MB&BR		135.700	5:46:00	7:50:00	2.1						0.70	P & S	Flight abandonded due to spherix
Julian Day 316														0.10	E	Spikes in the analog channels returned.
															Comment	Problem with fluxgate identified and repaired.
Tuesday														0.10	E	Novatel GPS card in PDAS not locking out sat32
									75.5	82.6	4927.500	1094.700		0.10	E	Replacement keyboard installed
Date 12-Nov	31	PH	MB&BR	40.700	84.200	5:57:00	9:16:00	3.3						0.80	P & R & S	abandoned due to poor visibilty caused by bushfires.
Julian Day 317														0.10	E	Spikes in the analog channels and baro.
														0.10	E	labelled power cables now connected to the correct
Wednesday															Comment	corresponding rack components and circuit breaker
									72.1	85.9	4968.200	1178.900				
Date 13-Nov	32	PH	MB&BR	135.700	168.400	6:00:00	9:24:00	3.4						0.90	P & S	EM computer failing to record half the flights data
Julian Day 318														0.10	E	Analog/baro spikes gone without explanation?
Thursday																
									68.7	89.3	5103.900	1347.300				
Date 14-Nov														0.90	PDO	Pilots day off
Julian Day 319														0.10	E	survey displays removed from co-pilot position
															Comment	Not safely possible for operator and tech to monitor
Friday															Comment	survey screens simultaniously while on survey.
									68.7	89.3	5103.900	1347.300			Comment	Will be returned to front after training.
Date 15-Nov	33	PH	MB&BR			5:54:00	7:00:00	1.1						0.80	W	Spherix
Julian Day 320														0.10	E	Screens moved back due operational saftey
														0.10	E	Analog/baro spikes still absent with no explanation.
Saturday																
									67.6	90.4	5103.900	1347.300				
Date 16-Nov	34	PH	MB&BR	32.700	160.200	5:44:00	9:08:00	3.4						0.90	P & R & S	scrubs due to spherix
Julian Day 321														0.10	E	Analog/baro spikes returned briefly.
Sunday																
									64.2	93.8	5136.600	1507.500				
	Totals This Week: ►			**209.100**	**684.200**	Week Hours:►		**15.5**	▲: A/C Hrs to Next Service					**7.00**		

System: Tempest
Aircraft: VH-WGT

Total Job kms: 6610.000 Kms

Plan Kms Remain: 668.100 Kms
% Complete: 89.893 %

9130.0 Hrs - Progressive M/R Hrs at the start of job, prior to mobilisation

9288.0 Hrs - The hours the Periodic Inspection is actally due at start of the job

Job Number: 2017
Contract Number: 2017
Job Name: Rum Jungle
Area Names: Rum Jungle
Client: Geoscience Australia

Date	Flt	Pilot initials	On board Oper initials	Production inc. Reflights Exc. Scrubs	FAS Scrub	Time Start	Time End	Engine Hours on M/R	Hours to Periodic Inspectio	Job Hrs to Date	Prod. to Date	FAS Scrubs to Date	Stdby Days	Activity Contribution	Activity	COMMENTS Weather, Data delivery Aircraft movement, etc
17-November-2008														0.90	W	Spherix
Julian Day 322														0.10	MO	GG arrives
Monday																
									64.2	93.8	5136.600	1507.500				
Date 18-Nov														1.00	W	Spherix
Julian Day 323																
Tuesday																
									64.2	93.8	5136.600	1507.500				
Date 19-Nov	35	PH	MB&BR	176.600		6:08:00	9:10:00	3.0						1.00	P	
Julian Day 324															Comment	Analog/baro spikes still absent with no
Wednesday																
									61.2	96.8	5313.200	1507.500				
Date 20-Nov	36	PH	MB&BR	189.100		6:05:00	9:40:00	3.6						1.00	P	
Julian Day 325															Comment	Analog/baro spikes still absent with no
Thursday																
									57.6	100.4	5502.300	1507.500				
Date 21-Nov	37	PH	BR	32.500	271.400	5:39:00	8:45:00	3.1						0.90	P & S	Spherix
Julian Day 326															Comment	Analog/baro spikes still absent with no
Friday														0.10	MO	MB/ FZ depart.
									54.5	103.5	5534.800	1778.900				
Date 22-Nov	38	PH	BR	407.100		6:13:00	9:38:00	3.4						1.00	P	
Julian Day 327															Comment	Analog/baro spikes still absent.
Saturday															Comment	MY arrives
									51.1	106.9	5941.900	1778.900				
Date 23-Nov														1.00	W	Spherix
Julian Day 328																
Sunday																
									51.1	106.9	5941.900	1778.900				
Totals This Week: ►				**805.300**	**271.400**	Week Hours:►		**13.1**	▲: A/C Hrs to Next Service					**7.00**		

System: Tempest
Aircraft: VH-WGT

Total Job kms: 6610.000 Kms

Plan Kms Remain: 452.100 Kms
% Complete: 93.160 %

9130.0 Hrs - Progressive M/R Hrs at the start of job, prior to mobilisation

9288.0 Hrs - The hours the Periodic Inspection is actally due at start of the job

Job Number: 2017
Contract Number: 2017
Job Name: Rum Jungle
Area Names: Rum Jungle
Client: Geoscience Australia

Date	Flt	Pilot initials	On board Oper initials	Production inc. Reflights Exc. Scrubs	FAS Scrub	Time Start	Time End	Engine Hours on M/R	Hours to Periodic Inspectio	Job Hrs to Date	Prod. to Date	FAS Scrubs to Date	Stdby Days	Activity Contribution	Activity	COMMENTS Weather, Data delivery Aircraft movement, etc
24-November-2008														1.00	W	Sferics
Julian Day 329															Comment	PH departs
Monday																
									51.1	106.9	5941.900	1778.900				
Date 25-Nov	39	MY	BR		16.000	6:35:00	8:35:00	2.0						1.00	P & S	Sferics
Julian Day 330																
Tuesday																
									49.1	108.9	5941.900	1794.900				
Date 26-Nov														1.00	W	Sferics
Julian Day 331																
Wednesday																
									49.1	108.9	5941.900	1794.900				
Date 27-Nov	40	MY	BR	216.000		6:25:00	9:55:00	3.5						1.00	P	
Julian Day 332																
Thursday																
									45.6	112.4	6157.900	1794.900				
Date 28-Nov														1.00	W	Sferics
Julian Day 333																
Friday																
									45.6	112.4	6157.900	1794.900				
Date 29-Nov	41	MY	BR		287.500	8:00:00	11:30:00	3.5						0.90	P & R & S	all scrubbed due to Sferics and system noise.
Julian Day 334														0.10	E	Noise occuring in X axis. Pre-amp in bird
Saturday																
									42.1	115.9	6157.900	2082.400				
Date 30-Nov														1.00	W	Sferics
Julian Day 335																
Sunday																
									42.1	115.9	6157.900	2082.400				
Totals This Week: ►				**216.000**	**303.500**	Week Hours:►		**9.0**	▲: A/C Hrs to Next Service					**7.00**		

System: Tempest
Aircraft: VH-WGT

Total Job kms: 6610.000 Kms

Plan Kms Remain: 0.000 Kms
% Complete: 100.000 %

9130.0 Hrs - Progressive M/R Hrs at the start of job, prior to mobilisation

9288.0 Hrs - The hours the Periodic Inspection is actally due at start of the job

Job Number: 2017
Contract Number: 2017
Job Name: Rum Jungle
Area Names: Rum Jungle
Client: Geoscience Australia

Date	Flt	Pilot initials	On board Oper initials	Production inc. Reflights Exc. Scrubs	FAS Scrub	Time Start	Time End	Engine Hours on M/R	Hours to Periodic Inspectio	Job Hrs to Date	Prod. to Date	FAS Scrubs to Date	Stdby Days	Activity Contribution	Activity	COMMENTS Weather, Data delivery Aircraft movement, etc
01-December-2008	42	MY	BR	84.100	67.900	7:50:00	11:00:00	3.2						1.00	P & S	Scrubs due to wrong line being flown.
Julian Day 336																
Monday																
									38.9	119.1	6242.000	2150.300				
Date 2-Dec	43	MY	BR	215.000		8:00:00	11:05:00	3.1						1.00	P & R	Spherics scrubs
Julian Day 337																
Tuesday																
									35.9	122.2	6457.000	2150.300				
Date 3-Dec														1.00	W	Spherics
Julian Day 338																
Wednesday																
									35.9	122.2	6457.000	2150.300				
Date 4-Dec	44	MY	BR	96.000	23.000	8:02:00	11:12:00	3.2						1.00	P & R	Spherics Scrubs
Julian Day 339																
Thursday																
									32.7	125.3	6553.000	2173.300				
Date 5-Dec	45	MY	BR	48.600	84.100	8:05:00	10:55:00	2.8						1.00	P & S	Spherics Scrubs
Julian Day 340																
Friday																
									29.9	128.2	6601.600	2257.400				
Date 6-Dec	46	MY	BR	166.000		7:55:00	10:40:00	2.8						1.00	P & R	Previous Scrubs - Block finished
Julian Day 341																
Saturday																
									27.1	130.9	6767.600	2257.400				
Date 7-Dec																
Julian Day 342																
Sunday																
									27.1	130.9	6767.600	2257.400				
Totals This Week: ►				**609.700**	**175.000**	Week Hours:►		**15.0**	▲: A/C Hrs to Next Service					**6.00**		

System: FASDAS
Aircraft: VH-WGT

Total Job kms: 7522.000 Kms

Plan Kms Remain: 7522.000 Kms
% Complete: 0.000 %

9435.4 Hrs - Progressive M/R Hrs at the start of job, prior to mobilisation

9569.8 Hrs - The hours the Periodic Inspection is actally due at start of the job

Job Number: 2017
Contract Number: ME_72102158_1
Job Name: Pine Creek
Area Names: Rum Jungle
Client: Geoscience Australia

Date	Flt	Pilot initials	On board Oper initials	Production inc. Reflights Exc. Scrubs	FAS Scrub	Time Start	Time End	Engine Hours on M/R	Hours to Periodic Inspectio	Job Hrs to Date	Prod. to Date	FAS Scrubs to Date	Stdby Days	Activity Contribution	Activity	COMMENTS Weather, Data delivery Aircraft movement, etc
13-April-2009		MY	LK,KTL			6:00:00	13:05:00	7.1						1.00	MO	Mob vehicles from Kununarra to Batchelor
Julian Day 103															Comment	Fixed punctured trailer tyre 25 mins, 45 mins
Monday															Comment	including lunch break and driver change over
									127.3	7.1						
Date 14-Apr														1.00	SETUP	Setup CF1 started logging for 24 hr gps and
Julian Day 104																
Tuesday																
									127.3	7.1						
Date 15-Apr	47	MY	LK			8:35:00	9:45:00	1.2						0.50	TF	Completed a Recce Flight and Comp boxes
Julian Day 105														0.50	SETUP	
Wednesday																
									126.2	8.3						
Date 16-Apr	48	MY	LK			7:48:00	8:36:00	0.8						0.50	TF	Flew another comp box
Julian Day 106														0.50	W	high sferics suspended production flying
Thursday																
									125.4	9.1						
Date 17-Apr	49	MY	LK		82.000	7:02:00	8:52:00	1.8						0.50	S	Flew test line and production line 10017
Julian Day 107														0.50	W	High sferics, turbulence, rain suspended flying
Friday																
									123.5	10.9		82.000				
Date 18-Apr	50	MY	LK		221.600	7:45:00	10:05:00	2.3						1.00	S	Flew test line and production lines 10017-
Julian Day 108															Comment	spherics and turbulence
Saturday																
									121.2	13.2		303.600				
Date 19-Apr													1.00	1.00	W	High Sferics and winds gusting flight
Julian Day 109																
Sunday																
									121.2	13.2		303.600				
Totals This Week: ►					**303.600**	Week Hours:►		**13.2**	▲: A/C Hrs to Next Service				**1.00**	**7.00**		

System: FASDAS
Aircraft: VH-WGT

Total Job kms: 7522.000 Kms

Plan Kms Remain: 5912.300 Kms
% Complete: 21.400 %

9435.4 Hrs - Progressive M/R Hrs at the start of job, prior to mobilisation

9569.8 Hrs - The hours the Periodic Inspection is actally due at start of the job

Job Number: 2017
Contract Number: ME_72102158_1
Job Name: Pine Creek
Area Names: Rum Jungle
Client: Geoscience Australia

Date	Flt	Pilot initials	On board Oper initials	Production inc. Reflights Exc. Scrubs	FAS Scrub	Time Start	Time End	Engine Hours on M/R	Hours to Periodic Inspectio	Job Hrs to Date	Prod. to Date	FAS Scrubs to Date	Stdby Days	Activity Contribution	Activity	COMMENTS Weather, Data delivery Aircraft movement, etc
20-April-2009	51	MY	LK	211.700	82.000	7:06:00	10:00:00	2.9						1.00	P & S	Flight in the morning flew lines 10017,11022,10023
Julian Day 110															Comment	,10019,34001-34008, high sferics ended flight
Monday																
									118.3	16.1	211.700	385.600				
Date 21-Apr	52	MY	LK	54.300		8:50:00	10:26:00	1.6						1.00	P	Flight this morning flew line 34009-34015,
Julian Day 111															Comment	high sferics and strong turbulence
Tuesday																
									116.7	17.7	266.000	385.600				
Date 22-Apr	53	MY	LK	367.400		7:04:00	10:18:00	3.2						1.00	P & R	Flight in the morning reflew 10017, 6 production
Julian Day 112															Comment	spherics and mild turbulence
Wednesday																
									113.4	21.0	633.400	385.600				
Date 23-Apr	54	MY	LK	311.800		7:00:00	10:24:00	3.4						1.00	P	Flight in the morning flew lines 32002-32015
Julian Day 113															Comment	11031, 11032, 11034, 10028, 11025
Thursday															Comment	mild turbulence and spherics
									110.0	24.4	945.200	385.600				
Date 24-Apr	55	MY	LK	223.700		11:20:00	14:01:00	2.7						1.00	P	mid morning flt lines 10016, 10018, 10020, 10022,
Julian Day 114															Comment	strong turbulence
Friday																
									107.4	27.0	1168.900	385.600				
Date 25-Apr	56	MY	LK	440.800		7:03:00	10:28:00	3.4						1.00	P	am flt 10024,10026,10029-10034,24001
Julian Day 115															Comment	strong turbulence toward end of flight
Saturday																
									104.0	30.5	1609.700	385.600				
Date 26-Apr														1.00	PDO	Pilots Day Off
Julian Day 116																
Sunday																
									104.0	30.5	1609.700	385.600				
Totals This Week: ►				**1609.700**	**82.000**	Week Hours:►		**17.2**	▲: A/C Hrs to Next Service					**7.00**		

**** Note: for flight 52 there was a problem with the magnetometer data recording. For this flight the delivered magnetometer and fluxgate fields were set to a null value.*

System: FASDAS
Aircraft: VH-WGT

9435.4 Hrs - Progressive M/R Hrs at the start of job, prior to mobilisation

Total Job kms: 7522.000 Kms

9569.8 Hrs - The hours the Periodic Inspection is actally due at start of the job

Plan Kms Remain: 4784.000 Kms
% Complete: 36.400 %

Job Number: 2017
Contract Number: ME_72102158_1
Job Name: Pine Creek
Area Names: Rum Jungle
Client: Geoscience Australia

Date	Flt	Pilot initials	On board Oper initials	Production inc. Reflights Exc. Scrubs	FAS Scrub	Time Start	Time End	Engine Hours on M/R	Hours to Periodic Inspectio	Job Hrs to Date	Prod. to Date	FAS Scrubs to Date	Stdby Days	Activity Contribution	Activity	COMMENTS Weather, Data delivery Aircraft movement, etc
27-April-2009	57	MY	LK	253.900	109.800	6:56:00	9:56:00	3.0						1.00	P & S	Flight in the morning flew production lines
Julian Day 117															Comment	10035, 10036, 12003, 12004, 24003, 24004
															Comment	very strong wind gusts
Monday																
									101.0	33.5	1863.600	495.400				
Date 28-Apr	58	MY	LK	18.300	46.900	6:58:00	9:03:00	2.1						1.00	P & S	lines 911,12001,24007, very strong winds ,
Julian Day 118															Comment	line 12001 flown wrong direction reflown on
Tuesday																
									98.9	35.5	1881.900	542.300				
Date 29-Apr	59	MY	LK	36.600	65.200	7:15:00	9:19:00	2.1						1.00	P & R & S	Flight in the morning reflew line 12001,
Julian Day 119															Comment	lines 24006,24009,24013, very strong winds
Wednesday																
									96.8	37.6	1918.500	607.500				
Date 30-Apr	60	MY	LK	148.700	46.900	6:51:00	9:20:00	2.5						1.00	P & R & S	lines flown 12006,12007,12010,24010,24015,
Julian Day 120															Comment	very strong winds and high sferics
Thursday																
									94.3	40.1	2067.200	654.400				
Date 1-May	61	MY	LK	234.800	46.900	7:02:00	10:00:00	3.0						1.00	P & R & S	Flight in the am reflew 10035 and lines
Julian Day 121															Comment	strong winds and spherics
Friday																
									91.3	43.1	2302.000	701.300				
Date 2-May	62	MY	LK	185.300	12.500	6:56:00	9:36:00	2.7						1.00	P & R & S	Flight in the morning reflew 12010,
Julian Day 122															Comment	production lines 12009, 24012-24025
Saturday															Comment	coil knocks and sferics were seen in data
									88.7	45.7	2487.300	713.800				
Date 3-May	63	MY	LK	250.700		6:56:00	9:16:00	2.3						1.00	P	Flight in the morning flew lines 10037,10040,
Julian Day 123															Comment	strong winds and sferics restricted further flying
Sunday																
									86.3	48.1	2738.000	713.800				
Totals This Week: ►				**1128.300**	**328.200**	Week Hours:►		**17.6**	▲: A/C Hrs to Next Service					**7.00**		

System: FASDAS
Aircraft: VH-WGT

Total Job kms: 7522.000 Kms

Plan Kms Remain: 4182.300 Kms
% Complete: 44.400 %

9435.4 Hrs - Progressive M/R Hrs at the start of job, prior to mobilisation

9569.8 Hrs - The hours the Periodic Inspection is actally due at start of the job

Job Number: 2017
Contract Number: ME_72102158_1
Job Name: Pine Creek
Area Names: Rum Jungle
Client: Geoscience Australia

Date	Flt	Pilot initials	On board Oper initials	Production inc. Exc. Scrubs	FAS Scrub	Time Start	Time End	Engine Hours on M/R	Hours to Periodic Inspectio	Job Hrs to Date	Prod. to Date	FAS Scrubs to Date	Stdby Days	Activity Contribution	Activity	COMMENTS Weather, Data delivery Aircraft movement, etc
04-May-2009	64	MY	LK	54.300	12.500	6:58:00	9:18:00	2.3						1.00	P & S	Flight in the morning flew lines 24024-24028,
Julian Day 124															Comment	turbulence and sferics apparent
Monday																
									84.0	50.4	2792.300	726.300				
Date 5-May														1.00	PDO	Pilots day off
Julian Day 125																
Tuesday																
									84.0	50.4	2792.300	726.300				
Date 6-May	65	MY	LK	206.200		7:00:00	9:56:00	2.9						1.00	P & R	Flight in the morning reflew 24025,
Julian Day 126															Comment	flew production lines 24033-24043, 12012,
Wednesday																
									81.1	53.3	2998.500	726.300				
Date 7-May													1.00	1.00	W	Very strong winds, rain and high sferics
Julian Day 127															Comment	Flight suspended
Thursday																
									81.1	53.3	2998.500	726.300				
Date 8-May	66	MY	LK	269.400		7:25:00	10:16:00	2.9						1.00	P	production lines 12016-12019, 26001-26003
Julian Day 128															Comment	frequent sferics, mob to Daly River
Friday																
									78.2	56.2	3267.900	726.300				
Date 9-May														1.00	SETUP	Setup base stations and office equipment
Julian Day 129															Comment	Picked up Shane Mule from the Darwin airport
Saturday																
									78.2	56.2	3267.900	726.300				
Date 10-May	67	MY	LK	71.800	125.700	7:25:00	10:05:00	2.7						1.00	P & S	morning flew lines 10039,12021,25001,25002
Julian Day 130															Comment	strong winds and sferics, 10039 scrubbed
Sunday																
									75.6	58.8	3339.700	852.000				
Totals This Week: ►				**601.700**	**138.200**	Week Hours:►		**10.8**	▲: A/C Hrs to Next Service				**1.00**	**7.00**		

System: FASDAS
Aircraft: VH-WGT

Total Job kms: 7522.000 Kms

Plan Kms Remain: 2748.800 Kms
% Complete: 63.456 %

9435.4 Hrs - Progressive M/R Hrs at the start of job, prior to mobilisation

9569.8 Hrs - The hours the Periodic Inspection is actally due at start of the job

Job Number: 2017
Contract Number: ME_72102158_1
Job Name: Pine Creek
Area Names: Rum Jungle
Client: Geoscience Australia

Date	Flt	Pilot initials	On board Oper initials	Production inc. Reflights Exc. Scrubs	FAS Scrub	Time Start	Time End	Engine Hours on M/R	Hours to Periodic Inspectio	Job Hrs to Date	Prod. to Date	FAS Scrubs to Date	Stdby Days	Activity Contribution	Activity	COMMENTS Weather, Data delivery Aircraft movement, etc
11-May-2009	68	MY	LK		46.800	7:05:00	8:25:00	1.3						1.00	S	flew test line 912, production line 12022
Julian Day 131															Comment	Michael Githinji arrivied on site
															Comment	very strong winds, line scrubbed
Monday																
									74.2	60.2	3339.700	898.800				
Date 12-May	69	MY	LK		46.800	7:07:00	8:55:00	1.8						1.00	S	line 12024, strong winds prevented further flying
Julian Day 132																
Tuesday																
									72.4	62.0	3339.700	945.600				
Date 13-May	70	MY	LK	140.500		17:00:00	18:45:00	1.8						1.00	P	Flight in late pm flew lines 12025,12027,12028
Julian Day 133															Comment	some wind and sferics
Wednesday																
									70.7	63.7	3480.200	945.600				
Date 14-May	71	MY	MG	99.900	12.500	7:00:00	8:55:00	1.9						0.20	P & S	very few lines flown due turbulence
Julian Day 134														0.80	Comment	all crew moved to river mango farm
															Comment	LK, MY,KL left daly river for break TW replaced MY
Thursday																
									68.8	65.6	3580.100	958.100				
Date 15-May													0.50	0.50	W	Very strong winds in the morning no flight done
Julian Day 135	72	TW	MG	384.000		16:05:00	18:55:00	2.8						0.50	P	attempted pm flight good production achieved
Friday																
									65.9	68.5	3964.100	958.100				
Date 16-May	73	TW	MG	140.500	106.100	6:40:00	9:00:00	2.3						1.00	P & S	short flight done due strong winds in the valleys
Julian Day 136															Comment	making flying conditions very difficult
Saturday																
									63.6	70.8	4104.600	1064.200				
Date 17-May	74	TW	MG/MP	277.100	215.900	6:30:00	10:00:00	3.5						0.50	P & S	some long lines scrubbed due turbulence in the
Julian Day 137	75	TW	MG	391.500		15:55:00	18:50:00	2.9						0.50	P	good production achieved
															Comment	MP training in the morning flight
Sunday																
									57.2	77.2	4773.200	1280.100				
Totals This Week: ►				**1433.500**	**428.100**	Week Hours:►		**18.4**	▲: A/C Hrs to Next Service				**0.50**	**7.00**		

System: FASDAS
Aircraft: VH-WGT

Total Job kms: 7522.000 Kms

Plan Kms Remain: 0.000 Kms
% Complete: 100.000 %

9435.4 Hrs - Progressive M/R Hrs at the start of job, prior to mobilisation

9569.8 Hrs - The hours the Periodic Inspection is actally due at start of the job

Job Number: 2017
Contract Number: ME_72102158_1
Job Name: Pine Creek
Area Names: Rum Jungle
Client: Geoscience Australia

Date	Flt	Pilot initials	On board Oper initials	Production inc. Reflights Exc. Scrubs	FAS Scrub	Time Start	Time End	Engine Hours on M/R	Hours to Periodic Inspectio	Job Hrs to Date	Prod. to Date	FAS Scrubs to Date	Stdby Days	Activity Contribution	Activity	COMMENTS Weather, Data delivery Aircraft movement, etc
18-May-2009	76	TW	MG/MP	299.600	12.500	6:45:00	10:08:00	3.4						0.50	P & R & S	one line scrubbed coil knock in hills
Julian Day 138	77	TW	MG	61.100		15:50:00	17:00:00	1.2						0.50	P	one line done excessive spherics noticed
															Comment	MP training in the morning flight
Monday																
									52.6	81.8	5133.900	1292.600				
Date 19-May	78	TW	MG	387.600		6:30:00	9:55:00	3.4						1.00	P	good production attained
Julian Day 139																
Tuesday																
									49.2	85.2	5521.500	1292.600				
Date 20-May	79	TW	MG/MP	324.400	93.800	6:38:00	10:15:00	3.6						0.50	P & R & S	one tie line 26006 scrubbed due Gps data
Julian Day 140	80	TW	MG	301.600		15:55:00	18:30:00	2.6						0.50	P & R	production ok
															Comment	MP training in the morning flight
Wednesday																
									43.0	91.4	6147.500	1386.400				
Date 21-May														1.00	PDO	pilot day off of the week
Julian Day 141																
Thursday																
									43.0	91.4	6147.500	1386.400				
Date 22-May	81	TW	MG/MP	466.900		6:33:00	9:45:00	3.2						0.50	P & R	all lines done data ok
Julian Day 142	82	TW	MG	120.500		15:55:00	18:00:00	2.1						0.50	R	few lines done windy around hills
															Comment	MP training in the morning flight
Friday																
									37.7	96.7	6734.900	1386.400				
Date 23-May	83	TW	MG/MP	413.200		6:33:00	9:33:00	3.0						1.00	P	Good weather, good production
Julian Day 143															Comment	MP training in the morning flight
Saturday																
									34.7	99.7	7148.100	1386.400				
Date 24-May	84	TW	MG	373.900		6:32:00	9:33:00	3.0						1.00	P & R	very good weather, job completed
Julian Day 144															Comment	waiting permission for final comp box &
Sunday																
									31.7	102.7	7522.000	1386.400				
Totals This Week: ►				**2748.800**	**106.300**	Week Hours:►		**25.5**	▲: A/C Hrs to Next Service					**7.00**		

APPENDIX II – Flight Summary (Survey Line Listing)

PDAS Line numbering:
80FFP – pre-flight barometer calibration for flight FF and part P
81FFP - post-flight barometer calibration for flight FF and part P
70FFP – pre-flight 'zero' calibration line for flight FF and part P
71FFP – post-flight 'zero' calibration line for flight FF and part P
9000--9007 – other pre/post flight EM calibrations
82FFP – pre-flight repeat line from flight FF and part P
83FFP – post-flight repeat line from flight FF and part P

FASDAS Line numbering:
505FFFFPP – pre-flight barometer calibration for flight FFFF and part PP
605FFFFPP -- post=-flight barometer calibration for flight FFFF and part PP
902FFFFPP – pre-flight 'zero' calibration line for flight FFFF and part PP
905FFFFPP – post-flight 'zero' calibration line for flight FFFF and part PP
900FFFFPP-906FFFFPP – other pre/post flight EM calibrations (See Chapter 4)
810FFFFPP – 814FFFFPP – magnetic compensation lines
911FFFFPP-912FFFFPP – repeat line from flight FFFF and part PP

Shorts Skyvan – VH-WGT

Flight	Date (yyyymmdd)	Line	Direction	Start Fid	End Fid	Start Time (UTC)	End Time (UTC)
3	20081011	C80030	E	1	60	06:44:07	06:45:07
3	20081011	C90000	W	61	150	07:07:53	07:09:23
3	20081011	C90010	W	151	240	07:12:05	07:13:35
3	20081011	C70030	W	241	330	07:14:40	07:16:10
3	20081011	C90030	W	331	415	07:17:45	07:19:10
3	20081011	C82030	W	416	635	07:28:06	07:31:46
3	20081011	10280	E	636	2792	08:00:45	08:36:42
3	20081011	10271	W	2830	4791	08:42:13	09:14:55
3	20081011	10260	E	4792	6915	09:17:15	09:52:39
3	20081011	C71030	W	6916	7005	09:59:52	10:01:22
3	20081011	C90040	W	7006	7095	10:02:34	10:04:04
3	20081011	C90060	W	7096	7185	10:05:12	10:06:42
3	20081011	C81030	E	7186	7245	10:33:39	10:34:39
4	20081013	C80040	E	1	60	06:12:50	06:13:50
4	20081013	C90000	W	61	150	06:33:12	06:34:42
4	20081013	C90010	W	151	240	06:36:34	06:38:04
4	20081013	C70040	W	241	330	06:38:54	06:40:24
4	20081013	C90030	W	331	441	06:41:07	06:42:58
4	20081013	C82040	W	442	651	06:54:47	06:58:17
4	20081013	10250	W	652	2701	07:25:19	07:59:29
4	20081013	10240	E	2702	4845	08:05:07	08:40:51
4	20081013	C71040	W	4846	4935	08:48:42	08:50:12
4	20081013	C90040	W	4936	5025	08:51:26	08:52:56
4	20081013	C90060	W	5026	5115	08:54:11	08:55:41
4	20081013	C81040	E	5116	5175	09:17:59	09:18:59
6	20081016	C80060	E	1	60	06:06:39	06:07:39
6	20081016	C90000	W	851	940	06:52:26	06:53:56
6	20081016	C90010	W	941	1030	06:54:54	06:56:24
6	20081016	C70060	W	1031	1120	06:57:31	06:59:01
6	20081016	C90030	W	1121	1199	06:59:35	07:00:54
6	20081016	C82060	W	1200	1416	07:17:38	07:21:15

6	20081016	10220	E	1417	3182	07:38:18	08:07:44
6	20081016	10230	W	3183	5235	08:13:13	08:47:26
6	20081016	C90070	E	5236	5291	08:53:13	08:54:09
6	20081016	C71060	E	5292	5381	08:55:14	08:56:44
6	20081016	C90040	E	5382	5471	08:57:44	08:59:14
6	20081016	C90060	W	5472	5561	09:00:12	09:01:42
6	20081016	C81060	E	5562	5621	09:31:04	09:32:04
7	20081017	C80070	E	1	60	06:10:16	06:11:16
7	20081017	C90000	N	61	150	06:29:58	06:31:28
7	20081017	C90010	W	151	240	06:32:46	06:34:16
7	20081017	C70070	W	241	330	06:35:10	06:36:40
7	20081017	C90030	W	331	385	06:37:18	06:38:13
7	20081017	C82070	W	386	599	06:47:40	06:51:14
7	20081017	10210	W	600	2435	07:14:00	07:44:36
7	20081017	10200	E	2436	4246	07:46:34	08:16:45
7	20081017	10190	W	4247	6026	08:19:20	08:49:00
7	20081017	10180	E	6027	7824	08:52:03	09:22:01
7	20081017	C90070	E	7825	7857	09:26:54	09:27:27
7	20081017	C71070	E	7858	7947	09:28:29	09:29:59
7	20081017	C90040	E	7948	8037	09:30:52	09:32:22
7	20081017	C90060	E	8038	8127	09:33:03	09:34:33
7	20081017	C81070	E	8128	8187	09:52:18	09:53:18
8	20081018	C80080	E	1	60	06:39:29	06:40:29
8	20081018	C90000	E	61	150	06:58:54	07:00:24
8	20081018	C90010	E	151	240	07:03:32	07:05:02
8	20081018	C70080	E	241	330	07:07:01	07:08:31
8	20081018	C90030	E	331	380	07:09:21	07:10:11
8	20081018	10490	E	381	614	07:26:05	07:29:59
8	20081018	10480	W	615	848	07:33:14	07:37:08
8	20081018	10470	E	849	1065	07:39:20	07:42:57
8	20081018	10460	W	1066	1293	07:44:54	07:48:42
8	20081018	10450	E	1294	1505	07:50:42	07:54:14
8	20081018	10440	W	1506	1729	07:56:00	07:59:44
8	20081018	10430	E	1730	2044	08:02:38	08:07:53
8	20081018	10420	W	2045	2377	08:09:40	08:15:13
8	20081018	10410	E	2378	2706	08:16:47	08:22:16
8	20081018	10400	W	2707	3040	08:24:07	08:29:41
8	20081018	10390	E	3041	3370	08:31:14	08:36:44
8	20081018	10380	W	3371	3564	08:40:57	08:44:11
8	20081018	10370	E	3565	3753	08:45:57	08:49:06
8	20081018	10360	W	3754	3944	08:50:58	08:54:09
8	20081018	10330	E	3945	4127	08:55:57	08:59:00
8	20081018	10340	W	4128	4313	09:00:46	09:03:52
8	20081018	C90070	E	4314	4376	09:10:44	09:11:47
8	20081018	C71080	E	4377	4466	09:12:31	09:14:01
8	20081018	C90040	E	4467	4556	09:15:52	09:17:22
8	20081018	C90060	E	4557	4646	09:19:07	09:20:37
8	20081018	C81080	E	4647	4706	09:42:17	09:43:17
9	20081019	C80090	E	1	60	06:09:07	06:10:07
9	20081019	C90000	W	61	150	06:29:15	06:30:45
9	20081019	C90010	W	151	240	06:33:27	06:34:57
9	20081019	C70090	W	241	330	06:37:55	06:39:25

9	20081019	C90030	W	331	402	06:40:42	06:41:54
9	20081019	10550	E	403	751	07:00:01	07:05:50
9	20081019	10561	W	808	1127	07:14:03	07:19:23
9	20081019	10570	E	1128	1561	07:23:17	07:30:31
9	20081019	10580	W	1562	1976	07:33:57	07:40:52
9	20081019	10590	E	1977	2417	07:43:52	07:51:13
9	20081019	10600	W	2418	2855	07:54:44	08:02:02
9	20081019	10610	E	2856	3286	08:05:50	08:13:01
9	20081019	10620	W	3287	3710	08:16:08	08:23:12
9	20081019	10630	E	3711	4148	08:25:52	08:33:10
9	20081019	C90070	E	4149	4219	08:38:46	08:39:57
9	20081019	C71090	E	4220	4309	08:41:49	08:43:19
9	20081019	C90040	E	4310	4399	08:46:12	08:47:42
9	20081019	C90060	E	4400	4490	08:50:41	08:52:12
10	20081020	C80100	E	1	60	05:52:05	05:53:05
10	20081020	C90000	N	61	150	06:20:35	06:22:05
10	20081020	C90010	W	151	240	06:25:10	06:26:40
10	20081020	C70100	W	241	330	06:28:19	06:29:49
10	20081020	C90030	W	331	387	06:30:52	06:31:49
10	20081020	C82101	W	614	830	06:49:50	06:53:27
10	20081020	10640	W	831	1262	07:03:24	07:10:36
10	20081020	10650	E	1263	1693	07:13:47	07:20:25
10	20081020	10660	W	1694	2116	07:23:09	07:30:12
10	20081020	10670	E	2117	2547	07:33:04	07:40:15
10	20081020	10680	W	2548	2976	07:42:42	07:49:51
10	20081020	10690	E	2977	3404	07:52:14	07:59:21
10	20081020	10700	W	3404	3830	08:01:00	08:08:07
10	20081020	10710	E	3831	4161	08:09:50	08:15:21
10	20081020	10720	W	4162	4500	08:17:00	08:22:39
10	20081020	C90070	W	4501	4565	08:27:45	08:28:50
10	20081020	C71100	W	4566	4655	08:30:26	08:31:56
10	20081020	C90040	W	4656	4745	08:33:57	08:35:27
10	20081020	C90060	W	4746	4835	08:38:23	08:39:53
10	20081020	C81100	E	4836	4895	09:11:28	09:12:28
11	20081021	C80110	E	1	60	05:45:30	05:46:30
11	20081021	C90000	E	61	150	06:02:02	06:03:32
11	20081021	C90010	E	151	240	06:05:45	06:07:15
11	20081021	C70110	E	269	358	06:10:26	06:11:56
11	20081021	C90030	E	359	415	06:13:13	06:14:10
11	20081021	10170	W	416	2155	06:34:05	07:03:05
11	20081021	10160	E	2156	3949	07:06:00	07:35:54
11	20081021	11350	W	3950	4148	07:50:06	07:53:25
11	20081021	11360	E	4149	4362	07:55:32	07:59:06
11	20081021	11330	W	4363	4556	08:01:33	08:04:47
11	20081021	11340	E	4557	4775	08:06:53	08:10:32
11	20081021	11310	W	4776	4947	08:12:23	08:15:15
11	20081021	11320	E	4948	5146	08:17:08	08:20:27
11	20081021	11290	W	5147	5332	08:22:13	08:25:19
11	20081021	11300	E	5333	5529	08:27:46	08:31:03
11	20081021	C90070	E	5530	5587	08:36:09	08:37:07
11	20081021	C71110	E	5588	5677	08:38:30	08:40:00
11	20081021	C90040	E	5678	5767	08:41:41	08:43:11

11	20081021	C90060	E	5768	5857	08:47:00	08:48:30
11	20081021	C81110	E	5858	5917	09:11:34	09:12:34
12	20081022	C80120	E	1	60	05:53:38	05:54:38
12	20081022	C90000	E	61	150	06:14:21	06:15:51
12	20081022	C90010	E	209	298	06:20:05	06:21:35
12	20081022	C70120	E	299	388	06:23:38	06:25:08
12	20081022	C90030	E	389	445	06:26:12	06:27:09
12	20081022	10150	W	446	2187	06:45:38	07:14:40
12	20081022	10140	E	2188	3966	07:16:53	07:46:32
12	20081022	13000	W	3967	5110	07:53:43	08:12:47
12	20081022	12990	E	5111	6268	08:14:44	08:34:02
12	20081022	C90070	E	6269	6331	08:39:25	08:40:28
12	20081022	C71120	E	6332	6421	08:42:04	08:43:34
12	20081022	C90040	E	6422	6511	08:45:10	08:46:40
12	20081022	C90060	E	6512	6601	08:48:10	08:49:40
12	20081022	C81120	E	6602	6661	09:16:28	09:17:28
13	20081023	C80130	E	1	60	05:47:29	05:48:29
13	20081023	C90001	E	65	154	06:06:09	06:07:39
13	20081023	C90010	E	155	244	06:09:57	06:11:27
13	20081023	C70130	E	245	334	06:12:40	06:14:10
13	20081023	C90030	E	335	387	06:14:59	06:15:52
13	20081023	10130	W	400	2207	06:31:55	07:02:03
13	20081023	10121	E	1	1732	07:14:32	07:43:24
13	20081023	C82130	W	1733	1950	08:00:26	08:04:04
13	20081023	11361	E	1951	2147	08:10:54	08:14:11
13	20081023	11311	W	2191	2379	08:19:43	08:22:52
13	20081023	11280	E	2480	2697	08:24:49	08:30:07
13	20081023	11270	W	2698	2879	08:33:21	08:36:23
13	20081023	11240	E	2880	3079	08:40:06	08:43:26
13	20081023	11250	W	3080	3260	08:45:40	08:48:41
13	20081023	11220	E	3261	3445	08:51:27	08:54:32
13	20081023	C90070	E	3446	3498	09:00:21	09:01:14
13	20081023	C71130	E	3499	3588	09:02:23	09:03:53
13	20081023	C90040	E	3589	3678	09:05:03	09:06:33
13	20081023	C90060	E	3679	3768	09:07:56	09:09:26
13	20081023	C81130	E	3769	3828	09:35:17	09:36:17
14	20081025	C80140	E	1	60	05:46:56	05:47:56
14	20081025	C90000	N	61	150	05:50:52	05:52:22
14	20081025	C90001	N	151	240	06:09:31	06:11:01
14	20081025	C90010	N	241	330	06:12:51	06:14:21
14	20081025	C70140	W	331	420	06:15:51	06:17:21
14	20081025	C90030	W	421	473	06:18:19	06:19:12
14	20081025	C82140	W	474	703	06:35:24	06:39:14
14	20081025	11210	W	704	888	06:49:06	06:52:11
14	20081025	11180	E	889	1179	06:53:56	06:58:47
14	20081025	11190	W	1180	1476	07:00:42	07:05:39
14	20081025	11160	E	1477	1761	07:07:30	07:12:15
14	20081025	11150	W	1762	2043	07:14:04	07:18:46
14	20081025	11120	E	2044	2329	07:20:34	07:25:20
14	20081025	11130	W	2330	2612	07:27:11	07:31:54
14	20081025	11100	E	2613	2902	07:33:30	07:38:20
14	20081025	11090	W	2903	3197	07:40:14	07:45:09

14	20081025	11060	E	3198	3483	07:47:08	07:51:54
14	20081025	C90070	E	3484	3542	07:57:22	07:58:21
14	20081025	C71140	E	3543	3632	07:59:12	08:00:42
14	20081025	C90040	S	3633	3722	08:02:24	08:03:54
14	20081025	C90060	S	3723	3812	08:04:57	08:06:27
14	20081025	C81140	E	3813	3872	08:26:55	08:27:55
16	20081027	C80160	E	1	60	05:45:30	05:46:30
16	20081027	C90000	N	61	150	06:03:24	06:04:54
16	20081027	C90010	N	151	240	06:06:14	06:07:44
16	20081027	C70160	E	241	330	06:09:17	06:10:47
16	20081027	C90030	E	331	388	06:12:01	06:12:59
16	20081027	10110	W	389	2073	06:31:16	06:59:21
16	20081027	11040	E	2074	2335	07:14:02	07:18:24
16	20081027	C90070	E	2336	2402	07:24:53	07:26:00
16	20081027	C90040	E	2403	2492	07:27:15	07:28:45
16	20081027	C71161	E	1	90	07:31:59	07:33:29
16	20081027	C90060	S	91	180	07:35:00	07:36:30
16	20081027	C81160	E	181	240	07:56:07	07:57:07
17	20081028	C80170	E	1	60	05:47:25	05:48:25
17	20081028	C90000	N	61	150	06:00:55	06:02:25
17	20081028	C90010	N	151	240	06:03:47	06:05:17
17	20081028	C70170	W	241	330	06:08:39	06:10:09
17	20081028	C90030	W	331	388	06:10:57	06:11:55
17	20081028	11070	W	389	673	06:28:00	06:32:45
17	20081028	11040	E	674	921	06:34:42	06:38:50
17	20081028	11030	W	922	1185	06:40:38	06:45:02
17	20081028	11000	E	1186	1468	06:46:21	06:51:04
17	20081028	11010	W	1469	1748	06:52:53	06:57:33
17	20081028	10980	E	1749	2033	06:59:09	07:03:54
17	20081028	10970	W	2034	2321	07:05:38	07:10:26
17	20081028	10940	E	2322	2611	07:11:52	07:16:42
17	20081028	10950	W	2612	2898	07:18:41	07:23:28
17	20081028	10920	E	2899	3186	07:24:55	07:29:43
17	20081028	10910	W	3187	3477	07:32:11	07:37:02
17	20081028	10880	E	3478	3763	07:40:07	07:44:53
17	20081028	10890	W	3764	4052	07:47:27	07:52:16
17	20081028	10860	E	4053	4338	07:54:38	07:59:24
17	20081028	C71170	E	5898	5987	08:51:18	08:52:48
17	20081028	C90060	S	5988	6077	08:54:24	08:55:54
17	20081028	C81170	E	6078	6137	09:18:35	09:19:35
18	20081029	C80180	E	1	60	05:53:55	05:54:55
18	20081029	C90000	N	61	150	06:10:34	06:12:04
18	20081029	C90010	N	151	240	06:12:51	06:14:21
18	20081029	C70180	W	241	330	06:15:39	06:17:09
18	20081029	C90030	W	331	391	06:17:38	06:18:39
18	20081029	C82180	W	392	621	06:35:47	06:39:37
18	20081029	10851	W	622	898	06:53:40	06:58:17
18	20081029	10821	E	899	1171	07:00:14	07:04:47
18	20081029	10831	W	1172	1469	07:06:50	07:11:48
18	20081029	10801	E	1470	1702	07:13:31	07:17:24
18	20081029	10791	W	1703	1889	07:20:25	07:23:32
18	20081029	10770	W	1890	2075	07:28:19	07:31:25

18	20081029	12960	W	2076	3225	07:44:42	08:03:52
18	20081029	C90040	W	5490	5579	08:48:22	08:49:42
18	20081029	C90070	E	5580	5629	08:55:19	08:56:09
18	20081029	C71180	E	5630	5719	08:57:02	08:58:32
18	20081029	C90060	E	5720	5809	08:59:26	09:00:56
18	20081029	C81180	E	5810	5869	09:30:21	09:31:21
19	20081030	C80190	E	1	60	05:40:43	05:41:43
19	20081030	C90000	N	61	150	05:54:43	05:56:13
19	20081030	C90010	N	151	240	05:57:09	05:58:39
19	20081030	C70190	E	241	330	06:00:52	06:02:22
19	20081030	C90030	W	331	395	06:03:58	06:05:03
19	20081030	10090	W	396	2201	06:24:36	06:54:42
19	20081030	10100	E	2202	3824	06:56:51	07:23:54
19	20081030	12941	W	3825	4993	07:31:43	07:51:12
19	20081030	C90040	E	13	102	08:12:11	08:13:41
19	20081030	C90070	E	103	156	08:14:32	08:15:26
19	20081030	C71190	E	157	246	08:16:40	08:18:10
19	20081030	C90060	E	247	336	08:19:10	08:20:40
19	20081030	C81190	E	337	396	08:49:14	08:50:14
21	20081101	C80210	E	1	60	05:44:34	05:45:34
21	20081101	C90000	N	61	150	06:02:12	06:03:42
21	20081101	C90010	N	151	240	06:04:36	06:06:06
21	20081101	C70210	W	247	322	06:07:02	06:08:32
21	20081101	C90030	W	331	391	06:09:04	06:10:05
21	20081101	12900	W	395	1594	06:25:02	06:45:05
21	20081101	12930	E	1598	2700	06:47:59	07:06:25
21	20081101	12880	W	2704	3864	07:09:57	07:29:21
21	20081101	12910	E	3868	4974	07:31:32	07:50:02
21	20081101	C90040	S	4975	5064	07:52:30	07:54:00
21	20081101	C90070	S	5065	5123	07:55:12	07:56:11
21	20081101	C71210	E	5127	5213	07:57:31	07:59:01
21	20081101	C90060	S	5214	5303	08:00:15	08:01:45
21	20081101	C81210	E	5304	5363	08:22:23	08:23:23
22	20081102	C80220	E	1	60	06:06:16	06:07:16
22	20081102	C90000	W	61	150	06:34:59	06:36:29
22	20081102	C90010	W	151	240	06:37:15	06:38:45
22	20081102	C70220	W	241	330	06:39:28	06:40:58
22	20081102	C90030	W	331	373	06:41:29	06:42:12
22	20081102	C82220	W	374	594	06:54:52	06:58:33
22	20081102	12870	E	595	1704	07:12:30	07:31:00
22	20081102	12850	E	2834	3989	08:00:28	08:19:44
22	20081102	C90040	S	3990	4079	08:28:28	08:29:58
22	20081102	C90070	S	4080	4117	08:30:54	08:31:32
22	20081102	C71220	E	4118	4207	08:32:38	08:34:08
22	20081102	C90060	E	4208	4297	08:34:56	08:36:26
22	20081102	C81220	E	4298	4357	09:04:37	09:05:37
23	20081103	C80230	W	1	60	05:50:42	05:51:42
23	20081103	C70230	W	1	90	06:17:31	06:19:01
23	20081103	C90030	N	91	137	06:20:20	06:21:07
23	20081103	10070	W	138	1833	06:31:52	07:00:08
23	20081103	10080	E	1834	3390	07:02:52	07:28:49
23	20081103	C90070	E	7291	7331	08:45:01	08:45:42

23	20081103	C71230	E	7332	7422	08:47:18	08:48:49
23	20081103	C90041	S	7434	7523	08:51:19	08:52:49
23	20081103	C90060	S	7524	7613	08:54:01	08:55:31
23	20081103	C81230	E	7614	7673	09:22:23	09:23:23
24	20081104	C80240	E	1	60	05:47:55	05:48:55
24	20081104	C90000	N	61	150	06:06:17	06:07:47
24	20081104	C90010	N	151	240	06:09:09	06:10:39
24	20081104	C70240	N	241	330	06:12:15	06:13:45
24	20081104	C90030	N	331	371	06:16:11	06:16:52
24	20081104	10050	W	1	2007	06:53:45	07:27:12
24	20081104	12841	W	3950	5117	08:19:57	08:39:25
24	20081104	C90070	E	5118	5154	08:44:45	08:45:22
24	20081104	C71240	E	5155	5244	08:46:29	08:47:59
24	20081104	C90040	E	5245	5334	08:48:56	08:50:26
24	20081104	C90060	E	5335	5424	08:51:55	08:53:25
24	20081104	C71241	E	5425	5514	08:57:45	08:59:15
24	20081104	C81240	E	5515	5574	09:26:33	09:27:33
25	20081105	C80250	E	1	60	06:00:59	06:01:59
25	20081105	C90000	N	61	150	06:18:16	06:19:46
25	20081105	C90010	N	151	240	06:21:21	06:22:51
25	20081105	C70250	W	1	90	06:25:24	06:26:54
25	20081105	C90030	N	91	140	06:28:16	06:29:06
25	20081105	C82250	W	141	358	06:48:35	06:52:13
25	20081105	10060	E	359	2423	07:19:11	07:53:36
25	20081105	10070	W	2424	4137	07:57:43	08:26:17
25	20081105	12911	E	4138	5216	08:44:47	09:02:46
25	20081105	C90070	E	5217	5250	09:08:58	09:09:32
25	20081105	C71250	E	5251	5340	09:10:41	09:12:11
25	20081105	C90040	E	5341	5430	09:13:27	09:14:57
25	20081105	C90060	E	5431	5520	09:16:10	09:17:40
25	20081105	C81250	E	5521	5580	09:44:48	09:45:48
26	20081106	C80260	E	1	60	05:49:09	08:50:09
26	20081106	C90000	N	61	74	06:00:23	06:00:37
26	20081106	C90000	N	75	164	06:07:05	06:08:35
26	20081106	C90010	N	165	254	06:10:17	06:11:47
26	20081106	C70260	W	255	344	06:13:21	06:14:51
26	20081106	C90030	N	345	392	06:16:20	06:17:08
26	20081106	10030	W	393	2136	06:37:56	07:07:00
26	20081106	10041	E	2181	4041	07:17:50	07:48:51
26	20081106	10010	W	4042	5635	07:55:40	08:22:14
26	20081106	10020	E	5636	7185	08:25:35	08:51:25
26	20081106	C90070	S	7186	7215	08:57:40	08:58:10
26	20081106	C71261	E	7334	7423	09:02:42	09:04:12
26	20081106	C90040	S	7424	7513	09:05:29	09:06:59
26	20081106	C90060	S	7514	7603	09:08:08	09:09:38
26	20081106	C81260	E	7604	7663	09:29:45	09:30:45
29	20081110	C80290	E	24	83	05:49:45	05:50:45
29	20081110	C90000	N	84	173	06:11:19	06:12:49
29	20081110	C90010	N	237	326	06:19:25	06:20:55
29	20081110	C70290	W	327	416	06:23:09	06:24:39
29	20081110	C90030	W	417	457	06:27:34	06:28:15
29	20081110	C82290	W	458	641	06:37:08	06:40:12

29	20081110	12820	W	642	1757	06:51:48	07:10:24
29	20081110	12810	E	1758	2931	07:13:32	07:33:06
29	20081110	C90070	S	2932	2976	07:40:03	07:40:48
29	20081110	C71290	E	2977	3066	07:41:39	07:43:09
29	20081110	C90040	S	3067	3156	07:44:20	07:45:50
29	20081110	C90060	S	3157	3246	07:47:11	07:48:41
29	20081110	C81290	E	3247	3306	08:13:04	08:14:04
30	20081111	C80300	E	1	60	05:35:40	05:36:40
30	20081111	C90000	N	61	150	05:58:36	06:00:06
30	20081111	C90010	N	151	240	06:00:59	06:02:29
30	20081111	C70300	E	241	330	06:03:52	06:05:22
30	20081111	C90030	E	331	379	06:06:34	06:07:23
30	20081111	C82300	W	380	603	06:15:50	06:19:34
30	20081111	12820	W	604	1800	06:32:43	06:52:40
30	20081111	12810	E	1801	2867	06:54:43	07:12:30
30	20081111	C90070	S	2868	2920	07:20:31	07:21:24
30	20081111	C71300	E	2921	3010	07:22:24	07:23:54
30	20081111	C90040	S	3011	3100	07:25:15	07:26:45
30	20081111	C90060	S	3101	3190	07:27:58	07:29:28
30	20081111	C81300	E	3193	3282	07:52:16	07:53:46
31	20081112	C80310	W	61	120	05:48:00	05:49:00
31	20081112	C90000	N	121	210	06:13:00	06:14:30
31	20081112	C90010	N	211	300	06:15:46	06:17:16
31	20081112	C70310	W	301	390	06:18:36	06:20:06
31	20081112	C90030	W	391	423	06:21:36	06:22:09
31	20081112	C82310	W	424	634	06:26:46	06:30:17
31	20081112	11980	E	428	594	08:00:42	08:03:29
31	20081112	11970	W	595	793	08:05:12	08:08:31
31	20081112	11960	E	794	960	08:10:51	08:13:38
31	20081112	11940	E	1148	1294	08:20:17	08:22:44
31	20081112	11930	W	1295	1482	08:23:55	08:27:03
31	20081112	C90070	E	1657	1711	08:36:14	08:37:09
31	20081112	C71310	E	1712	1801	08:38:00	08:39:30
31	20081112	C90040	S	1802	1891	08:40:41	08:42:11
31	20081112	C90060	E	1892	1981	08:43:24	08:44:54
31	20081112	C81310	E	1982	2042	09:23:01	09:24:02
32	20081113	C80320	E	1	60	05:49:17	05:50:17
32	20081113	C90000	N	100	238	06:16:00	06:18:19
32	20081113	C90010	N	239	328	06:19:52	06:21:22
32	20081113	C70320	W	329	418	06:22:52	06:24:22
32	20081113	C90030	S	419	484	06:25:19	06:26:25
32	20081113	C82320	W	485	694	06:32:51	06:36:21
32	20081113	12880	W	695	1930	06:46:46	07:07:22
32	20081113	12810	E	1931	3044	07:11:36	07:30:10
32	20081113	12820	W	3048	3556	07:33:13	07:52:16
33	20081115	C80330	E	1	60	05:41:46	05:42:46
33	20081115	C90000	N	81	170	05:57:07	05:58:37
33	20081115	C90010	N	171	260	06:00:26	06:01:56
33	20081115	C70330	W	261	350	06:05:35	06:07:05
33	20081115	C90030	N	351	407	06:08:09	06:09:06
33	20081115	C90070	W	639	692	06:26:04	06:26:58
33	20081115	C71320	W	693	782	06:27:58	06:29:28

33	20081115	C90040	E	783	872	06:30:42	06:32:12
33	20081115	C90060	E	873	962	06:33:27	06:32:57
33	20081115	C81330	E	963	1022	07:03:08	07:04:08
34	20081116	C80340	E	1	60	05:41:35	05:42:35
34	20081116	C90000	N	1	124	06:00:35	06:02:39
34	20081116	C90010	N	125	217	06:07:41	06:09:11
34	20081116	C70340	W	228	318	06:11:01	06:12:32
34	20081116	C90030	W	319	382	06:13:33	06:14:37
34	20081116	C82340	W	383	572	06:21:40	06:24:50
34	20081116	11920	E	2227	2400	07:54:08	07:57:02
34	20081116	11860	E	3349	3545	08:28:34	08:31:51
34	20081116	C90070	S	3546	3599	08:37:22	09:38:16
34	20081116	C71340	W	3600	3689	08:39:49	08:41:19
34	20081116	C90040	S	3690	3790	08:42:34	08:44:15
34	20081116	C90060	S	3791	3880	08:45:35	08:47:05
34	20081116	C81340	E	3881	3940	09:12:22	09:13:22
35	20081119	C80350	E	1	60	05:44:37	05:45:37
35	20081119	C90000	N	41	130	06:31:10	06:32:40
35	20081119	C90010	E	131	220	06:34:40	06:36:10
35	20081119	C70350	W	221	310	06:37:18	06:38:48
35	20081119	C90030	S	311	392	06:39:55	08:41:17
35	20081119	C82350	W	393	587	06:48:07	06:51:22
35	20081119	12820	W	588	1695	07:03:11	07:21:39
35	20081119	12790	E	1696	2844	07:23:37	07:42:46
35	20081119	11920	E	1	183	07:57:04	08:00:07
35	20081119	11950	W	184	381	08:02:51	08:06:09
35	20081119	11840	E	382	579	08:09:03	08:12:21
35	20081119	11870	W	580	762	08:13:24	08:16:27
35	20081119	11850	W	763	937	08:22:58	08:25:53
35	20081119	C90070	S	938	989	08:33:21	08:34:13
35	20081119	C71350	E	990	1079	08:35:07	08:36:37
35	20081119	C90040	S	1080	1169	08:37:37	08:39:07
35	20081119	C90060	S	1170	1259	08:40:24	08:41:54
35	20081119	C81350	E	1260	1319	09:18:08	09:19:08
36	20081120	C80360	E	1	60	05:24:19	05:25:19
36	20081120	C90000	N	61	150	06:23:32	06:25:02
36	20081120	C90010	N	161	250	06:26:56	06:27:26
36	20081120	C70360	W	294	383	06:30:55	06:32:25
36	20081120	C90030	W	384	453	06:33:17	06:34:27
36	20081120	11771	W	473	657	06:51:54	06:54:59
36	20081120	11760	E	658	819	06:56:10	06:58:52
36	20081120	11750	W	820	993	07:00:05	07:02:59
36	20081120	11740	E	994	1173	07:04:00	07:07:00
36	20081120	11710	W	1174	1389	07:09:49	07:13:25
36	20081120	11720	E	1390	1610	07:14:44	07:18:25
36	20081120	11690	W	1611	1820	07:19:58	07:23:28
36	20081120	11550	W	1821	2026	07:24:20	07:27:46
36	20081120	11560	E	2027	2216	07:29:10	07:32:20
36	20081120	11700	E	2217	2418	07:33:24	07:36:46
36	20081120	11670	W	2419	2616	07:38:30	07:41:48
36	20081120	11530	W	2617	2809	07:42:35	07:45:48
36	20081120	11520	E	2810	2998	07:48:38	07:51:47

36	20081120	11660	E	2999	3206	07:52:54	07:56:22
36	20081120	11650	W	3207	3419	07:58:08	08:01:41
36	20081120	11510	W	3420	3602	08:02:33	08:05:36
36	20081120	11500	E	3603	3794	08:06:56	08:10:08
36	20081120	11640	E	3795	3976	08:11:31	08:14:33
36	20081120	11470	W	3977	4174	08:20:32	08:23:50
36	20081120	11480	E	4175	4365	08:25:02	08:28:13
36	20081120	11620	E	4366	4576	08:29:59	08:33:30
36	20081120	C82360	W	4577	4778	08:51:52	08:55:14
36	20081120	C90070	N	4779	4834	09:01:55	09:02:51
36	20081120	C71360	E	4835	4924	09:04:33	09:06:03
36	20081120	C90040	S	4925	5014	09:07:32	09:09:02
36	20081120	C90060	S	5015	5104	09:10:18	09:11:48
36	20081120	C81360	E	5105	5169	09:44:58	09:46:03
37	20081121	C80370	E	1	60	05:33:18	05:34:18
37	20081121	C90000	N	61	150	05:51:15	05:52:45
37	20081121	C90010	S	151	240	05:53:32	05:55:02
37	20081121	C70370	W	241	330	05:56:10	05:57:40
37	20081121	C90030	S	331	380	05:58:29	05:59:19
37	20081121	11460	E	1521	1711	06:39:29	06:42:40
37	20081121	11450	W	1712	1905	06:45:17	06:48:31
37	20081121	11420	E	1906	2101	06:49:46	06:53:02
37	20081121	11430	W	2102	2285	06:55:10	06:58:14
37	20081121	C90070	S	5671	5720	08:11:49	08:12:39
37	20081121	C71370	W	5721	5810	08:14:18	08:15:48
37	20081121	C90040	S	5811	5900	08:17:18	08:18:48
37	20081121	C90060	S	5901	5990	08:19:25	08:20:55
37	20081121	C81370	E	5991	6050	08:46:37	08:47:37
38	20081122	C80380	E	1	60	06:07:47	06:08:47
38	20081122	C90000	N	61	150	06:22:58	06:24:28
38	20081122	C90010	N	151	240	06:25:26	06:26:56
38	20081122	C70380	W	241	330	06:27:29	06:28:59
38	20081122	C90030	N	331	390	06:29:48	06:30:48
38	20081122	C82380	W	391	620	06:37:26	06:41:16
38	20081122	12782	W	621	1779	06:56:09	07:15:28
38	20081122	12751	E	1780	2819	07:18:02	07:35:22
38	20081122	12761	W	2820	3993	07:37:16	07:56:50
38	20081122	12731	E	3994	5055	09:59:04	08:16:46
38	20081122	12720	W	5056	6194	08:17:41	08:36:40
38	20081122	12690	E	6195	7306	08:38:55	08:57:27
38	20081122	C90070	S	7307	7346	09:03:04	09:03:44
38	20081122	C71381	W	7361	7450	09:05:36	09:07:06
38	20081122	C90040	S	7451	7540	09:08:00	09:09:30
38	20081122	C90060	S	7541	7630	09:10:22	09:11:52
38	20081122	C81380	E	7631	7690	09:38:34	09:39:34
39	20081125	C80391	E	18	77	06:18:29	06:19:29
39	20081125	C90000	N	78	167	06:51:05	06:52:35
39	20081125	C90010	N	168	257	06:53:29	06:54:59
39	20081125	C70390	W	258	347	06:56:20	06:57:50
39	20081125	C90030	N	348	412	06:59:23	07:00:28
39	20081125	12570	W	413	571	07:26:22	07:29:01
39	20081125	12560	E	572	756	07:38:44	07:41:49

39	20081125	C90070	S	757	820	07:58:55	07:59:59
39	20081125	C71390	E	821	910	08:01:13	08:02:43
39	20081125	C90040	S	911	1000	08:04:25	08:05:55
39	20081125	C90060	S	1001	1090	08:06:27	08:07:57
39	20081125	C81390	E	1091	1150	08:29:17	08:30:17
40	20081127	C80400	E	1	60	06:12:14	06:13:14
40	20081127	C90000	N	61	150	06:40:09	06:41:39
40	20081127	C90010	S	151	240	06:42:33	06:44:03
40	20081127	C70400	W	241	330	06:45:16	06:46:46
40	20081127	C90030	N	331	400	06:47:38	06:48:48
40	20081127	12571	W	401	566	07:06:23	07:09:09
40	20081127	12561	E	567	742	07:11:39	07:14:35
40	20081127	12550	W	743	927	07:16:41	07:19:46
40	20081127	12520	E	928	1097	07:21:10	07:24:00
40	20081127	12530	W	1098	1281	07:25:57	07:29:01
40	20081127	12500	E	1282	1453	07:30:25	07:33:17
40	20081127	12510	W	1454	1635	07:35:19	07:38:21
40	20081127	12480	E	1636	1807	07:39:42	07:42:34
40	20081127	12490	W	1808	1995	07:44:15	07:47:23
40	20081127	12461	E	1996	2165	07:48:55	07:51:45
40	20081127	12450	W	2166	2348	07:53:48	07:56:51
40	20081127	12440	E	2349	2526	07:58:10	08:01:08
40	20081127	12430	W	2527	2708	08:02:53	08:05:55
40	20081127	12420	E	2709	2882	08:07:27	08:10:21
40	20081127	12410	W	2883	3065	08:11:47	08:14:50
40	20081127	12380	E	3066	3239	08:16:08	08:19:02
40	20081127	12390	W	3240	3414	08:20:26	08:23:21
40	20081127	12360	E	3415	3578	08:24:39	08:27:23
40	20081127	12370	W	3579	3755	08:28:45	08:31:42
40	20081127	12340	E	3756	3924	08:33:17	08:36:06
40	20081127	12350	W	3925	4099	08:37:43	08:40:38
40	20081127	12320	E	4100	4269	08:42:40	08:45:30
40	20081127	12310	W	4270	4447	08:46:43	08:49:41
40	20081127	12300	E	4448	4618	08:51:13	08:54:04
40	20081127	12290	W	4619	4798	08:55:26	08:58:26
40	20081127	12280	E	4799	4970	09:00:00	09:02:52
40	20081127	12270	W	4971	5147	09:04:15	09:07:12
40	20081127	12240	E	5148	5322	09:08:32	09:11:27
40	20081127	C90070	S	5323	5376	09:18:53	09:19:47
40	20081127	C71400	E	5377	5466	09:21:09	09:22:39
40	20081127	C90040	S	5467	5556	09:23:56	09:25:26
40	20081127	C90060	S	5557	5646	09:26:05	09:27:35
40	20081127	C81400	E	5647	5706	09:59:26	10:00:26
41	20081129	C80410	E	1	60	07:48:14	07:49:14
41	20081129	C90000	N	61	150	08:16:56	08:18:26
41	20081129	C90010	N	151	240	08:19:14	08:20:44
41	20081129	C70410	W	241	330	08:23:38	08:25:08
41	20081129	C90030	N	331	380	08:26:30	08:27:20
41	20081129	C82410	W	5416	5616	10:59:05	11:02:25
41	20081129	C90070	S	5616	5665	11:08:55	11:09:45
41	20081129	C71410	E	5666	5755	11:10:53	11:12:23
41	20081129	C90040	S	5756	5845	11:13:11	11:14:41

41	20081129	C90061	S	5856	5945	11:16:00	11:17:30
41	20081129	C81410	E	5946	6006	11:42:08	11:43:09
42	20081201	C80420	E	1	60	05:45:33	05:46:33
42	20081201	C90000	N	61	150	06:09:30	06:11:00
42	20081201	C90010	E	151	240	06:12:30	06:14:00
42	20081201	C70420	E	241	330	06:14:32	06:16:02
42	20081201	C90030	W	331	391	06:17:12	06:18:13
42	20081201	C82420	W	392	623	06:25:04	06:28:56
42	20081201	12352	W	624	803	06:47:57	06:50:57
42	20081201	12251	W	804	991	06:56:01	06:59:09
42	20081201	12701	W	992	2200	07:09:15	07:29:24
42	20081201	12671	E	2201	3337	07:31:30	07:50:27
42	20081201	C83420	E	3338	3533	08:17:17	08:20:33
42	20081201	C83421	E	3534	3729	08:26:06	08:29:22
42	20081201	C90070	S	3730	3779	08:41:58	08:42:48
42	20081201	C71421	E	3800	3889	08:44:35	08:46:05
42	20081201	C90040	S	3890	3979	08:49:10	08:50:40
42	20081201	C90060	S	3980	4069	08:51:18	08:52:48
42	20081201	C81420	E	4070	4129	09:29:51	09:30:51
44	20081204	C80440	E	1	60	07:20:31	07:21:31
44	20081204	C90000	N	61	150	07:44:13	07:45:43
44	20081204	C90010	N	151	240	07:46:58	07:48:28
44	20081204	C70440	W	241	330	07:51:07	07:52:37
44	20081204	C90030	N	331	380	07:53:35	07:54:25
44	20081204	12701	W	381	1570	08:16:02	08:35:52
44	20081204	12702	W	1571	2743	08:57:41	09:17:14
44	20081204	12631	E	2744	3889	09:21:17	09:40:23
44	20081204	12641	W	3890	5063	09:42:16	10:01:50
44	20081204	12171	E	5072	5239	10:16:44	10:19:32
44	20081204	12180	W	5240	5428	10:21:06	10:24:15
44	20081204	12150	E	5429	5599	10:25:32	10:28:23
44	20081204	12140	W	5600	5798	10:29:48	10:33:07
44	20081204	C90070	S	5799	5843	10:45:22	10:46:07
44	20081204	C71440	E	5844	5933	10:46:59	10:48:29
44	20081204	C90040	S	5934	6023	10:49:31	10:51:01
44	20081204	C90060	S	6024	6113	10:51:43	10:53:13
44	20081204	C81440	E	6114	6173	11:24:41	11:25:41
45	20081205	C80450	E	1	60	06:59:38	07:00:38
45	20081205	C90000	N	61	150	07:28:22	07:29:52
45	20081205	C90010	N	151	240	07:30:34	07:32:04
45	20081205	C70450	W	241	330	07:33:28	07:34:58
45	20081205	C90030	N	331	385	07:36:26	07:37:21
45	20081205	12130	E	1546	1714	08:23:21	08:26:10
45	20081205	12120	W	1715	1894	08:27:24	08:30:24
45	20081205	12090	E	1895	2064	08:31:32	08:34:22
45	20081205	12070	E	2248	2414	08:39:41	08:42:28
45	20081205	12080	W	2415	2596	08:43:39	08:46:41
45	20081205	12050	E	2597	2769	08:47:45	08:50:38
45	20081205	C90070	S	2953	3000	09:07:23	09:08:11
45	20081205	C71450	E	3001	3090	09:09:01	09:10:31
45	20081205	C90040	S	3091	3180	09:11:33	09:13:03
45	20081205	C90061	S	3260	3349	09:16:22	09:17:52

45	20081205	C81450	E	3350	3409	09:49:15	09:50:15
46	20081206	C80460	E	1	60	07:03:23	07:04:23
46	20081206	C90000	W	61	151	07:29:54	07:31:25
46	20081206	C90010	W	152	241	07:32:23	07:33:53
46	20081206	C70460	W	242	331	07:34:58	07:36:28
46	20081206	C90030	W	332	390	07:37:06	07:38:05
46	20081206	12971	E	391	1545	07:56:57	08:16:12
46	20081206	10852	W	1546	1823	08:27:57	08:32:35
46	20081206	12662	W	1824	2998	08:52:36	09:12:11
46	20081206	12101	W	2999	3165	09:25:21	09:28:08
46	20081206	12041	W	3166	3336	09:33:42	09:36:33
46	20081206	C82460	W	3337	3519	10:06:14	10:09:17
46	20081206	C90070	S	3520	3560	10:15:44	10:16:25
46	20081206	C71460	E	3561	3650	10:17:19	10:18:49
46	20081206	C90040	S	3651	3740	10:19:48	10:21:18
46	20081206	C90060	S	3741	3830	10:21:48	10:23:18
46	20081206	C81460	E	3831	3890	10:38:39	10:39:39
51	20090420	C505000101		405	467	21:34:33	21:35:35
51	20090420	C900005101		1183	1273	21:47:31	21:49:01
51	20090420	C901005101		1337	1428	21:50:05	21:51:36
51	20090420	C902005101		1461	1551	21:52:09	21:53:39
51	20090420	C903005101		1576	1641	21:54:04	21:55:09
51	20090420	C911005101		2186	2369	22:04:14	22:07:17
51	20090420	1001703	W	3230	4521	22:21:38	22:43:09
51	20090420	1102202	E	4700	5200	22:46:08	22:54:28
51	20090420	1102302	W	5278	5748	22:55:46	23:03:36
51	20090420	1001902	E	5837	7215	23:05:05	23:28:03
51	20090420	3400101	W	7557	7716	23:33:45	23:36:24
51	20090420	3400201	E	7834	8001	23:38:22	23:41:09
51	20090420	3400301	W	8084	8252	23:42:32	23:45:20
51	20090420	3400401	E	8369	8550	23:47:17	23:50:18
51	20090420	3400501	W	8653	8819	23:52:01	23:54:47
51	20090420	3400601	E	8929	9108	23:56:37	23:59:36
51	20090420	3400701	W	9210	9374	00:01:18	00:01:02
51	20090420	3400801	E	9509	9687	00:06:17	00:09:15
51	20090420	C904005101		10100	10189	00:16:08	00:17:37
51	20090420	C905005101		10215	10306	00:18:03	00:19:34
51	20090420	C906005101		10338	10431	00:20:06	00:21:39
51	20090420	C605005101		11391	11451	00:37:39	00:38:39
52	20090421	C505005201		222	297	23:17:02	23:18:17
52	20090421	C900005201		1198	1291	23:33:18	23:34:51
52	20090421	C901005201		1316	1406	23:35:16	23:36:46
52	20090421	C902005201		1513	1603	23:38:33	23:40:03
52	20090421	C903005201		1663	1699	23:41:03	23:41:39
52	20090421	C911005201		2101	2289	23:48:22	23:51:29
52	20090421	3401001	E	2830	3002	00:00:30	00:03:22
52	20090421	3401101	W	3184	3343	00:06:24	00:09:03
52	20090421	3401201	E	3493	3677	00:11:33	00:14:37
52	20090421	3401301	W	3783	3943	00:16:23	00:19:03
52	20090421	3401401	E	4076	4258	00:21:16	00:24:18
52	20090421	3401501	W	4380	4536	00:26:20	00:28:56
52	20090421	C904005201		5004	5095	00:36:44	00:38:15

52	20090421	C905005201		5115	5207	00:38:35	00:40:07
52	20090421	C906005201		5236	5326	00:40:36	00:42:06
52	20090421	C605005201		6650	6710	01:04:10	01:05:10
53	20090422	C505005301		164	224	21:32:33	21:33:33
53	20090422	C900005301		1173	1277	21:49:22	21:51:06
53	20090422	C901005301		1733	1832	21:58:42	22:00:21
53	20090422	C902005301		1847	1939	22:00:36	22:02:08
53	20090422	C903005301		2008	2043	22:03:17	22:03:52
53	20090422	C911005301		2494	2677	22:11:23	22:14:26
53	20090422	1001704	W	3365	4677	22:25:54	22:47:46
53	20090422	1102601	E	4924	5412	22:51:53	23:00:01
53	20090422	1102501	W	5541	6006	23:02:10	23:09:55
53	20090422	1102801	E	6276	6794	23:14:25	23:23:03
53	20090422	1102901	W	6863	7333	23:24:12	23:32:02
53	20090422	1002301	E	7563	9003	23:35:52	23:59:52
53	20090422	1002101	W	9210	10518	00:03:19	00:25:07
53	20090422	C904005301		10819	10933	00:30:08	00:32:02
53	20090422	C905005301		10950	11040	00:32:19	00:33:49
53	20090422	C906005301		11087	11178	00:34:36	00:36:07
53	20090422	C605005301		12316	12378	00:55:05	00:56:07
54	20090423	C505005401		181	242	21:28:27	21:29:28
54	20090423	C900005401		1157	1250	21:44:43	21:46:16
54	20090423	C901005401		1290	1381	21:46:56	21:48:27
54	20090423	C902005401		1408	1504	21:48:54	21:50:30
54	20090423	C903005401		1635	1677	21:52:41	21:53:23
54	20090423	3200201	W	2302	2445	22:03:48	22:06:11
54	20090423	3200301	E	2561	2729	22:08:07	22:10:55
54	20090423	3200401	W	2905	3049	22:13:51	22:16:15
54	20090423	3200501	E	3204	3374	22:18:50	22:21:40
54	20090423	3200801	W	3846	3988	22:29:32	22:31:54
54	20090423	3200701	E	4078	4248	22:33:24	22:36:14
54	20090423	3201001	W	4381	4525	22:38:27	22:40:51
54	20090423	3200901	E	4646	4813	22:42:52	22:45:39
54	20090423	3201201	W	4928	5076	22:47:34	22:50:02
54	20090423	3201301	E	5176	5346	22:51:42	22:54:32
54	20090423	3201401	W	5436	5584	22:56:02	22:58:30
54	20090423	3201501	E	5705	5870	23:00:31	23:03:16
54	20090423	1103101	W	6190	6669	23:08:36	23:16:35
54	20090423	1103201	E	6903	7131	23:20:29	23:24:17
54	20090423	1103202	E	7161	7385	23:24:47	23:28:31
54	20090423	1002801	E	7894	8993	23:37:00	23:55:19
54	20090423	1002501	W	9158	10518	23:58:04	00:20:44
54	20090423	1103401	E	10952	11148	00:27:58	00:31:14
54	20090423	C904005401		11546	11637	00:37:52	00:39:23
54	20090423	C905005401		11661	11752	00:39:47	00:41:18
54	20090423	C906005401		11778	11869	00:41:44	00:43:15
54	20090423	C605005401		12754	12814	00:58:00	00:59:00
55	20090424	C505005501		184	246	01:49:19	01:50:21
55	20090424	C900005501		890	980	02:01:05	02:02:35
55	20090424	C901005501		1007	1102	02:03:02	02:04:37
55	20090424	C902005501		1150	1243	02:05:25	02:06:58
55	20090424	C903005501		1358	1402	02:08:53	02:09:37

55	20090424	C911005501		2245	2425	02:23:40	02:26:40
55	20090424	1001601	W	3803	4753	02:49:38	03:05:28
55	20090424	1001801	E	4967	5891	03:09:02	03:24:26
55	20090424	1002001	W	6191	7133	03:29:26	03:45:08
55	20090424	1002201	E	7374	8262	03:49:09	04:03:57
55	20090424	C904005501		8665	8758	04:10:40	04:12:13
55	20090424	C905005501		8782	8874	04:12:37	04:14:09
55	20090424	C906005501		8895	8988	04:14:30	04:16:03
55	20090424	C605005501		10180	10240	04:35:55	04:36:55
56	20090425	C505005601		199	263	21:29:29	21:30:33
56	20090425	C900005601		1069	1162	21:43:59	21:45:32
56	20090425	C901005601		1187	1280	21:45:57	21:47:30
56	20090425	C902005601		1303	1394	21:47:53	21:49:24
56	20090425	C903005601		1414	1476	21:49:44	21:50:46
56	20090425	1002401	W	2156	3032	22:02:06	22:16:42
56	20090425	1002601	E	3166	4033	22:18:56	22:33:23
56	20090425	1002901	W	4307	5155	22:37:57	22:52:05
56	20090425	1003001	E	5334	6177	22:55:04	23:09:07
56	20090425	1003101	W	6342	7139	23:11:52	23:25:09
56	20090425	1003201	E	7314	8108	23:28:04	23:41:18
56	20090425	1003301	W	8286	9121	23:44:16	23:58:11
56	20090425	1003401	E	9328	10400	00:01:38	00:19:30
56	20090425	2400101	W	10686	10996	00:24:16	00:29:26
56	20090425	C904005601		11787	11879	00:42:37	00:44:09
56	20090425	C905005601		11904	12003	00:44:34	00:46:13
56	20090425	C906005601		12031	12121	00:46:41	00:48:11
56	20090425	C605005601		13185	13247	01:05:55	01:06:57
57	20090427	C505005701		165	238	21:24:30	21:25:43
57	20090427	C900005701		1081	1174	21:39:47	21:41:20
57	20090427	C901005701		1214	1319	21:42:00	21:43:45
57	20090427	C902005701		1343	1437	21:44:09	21:45:43
57	20090427	C903005701		1518	1568	21:47:04	21:47:54
57	20090427	1003501	W	2060	3799	21:56:06	22:25:05
57	20090427	1003601	E	4229	6402	22:32:15	23:08:28
57	20090427	1200401	W	6835	7583	23:15:41	23:28:09
57	20090427	1200301	E	7650	8471	23:29:16	23:42:57
57	20090427	2400301	W	8618	8929	23:45:24	23:50:35
57	20090427	2400401	E	9102	9439	23:53:28	23:59:05
57	20090427	C904005701		9953	10049	00:07:39	00:09:15
57	20090427	C905005701		10065	10158	00:09:31	00:11:04
57	20090427	C906005701		10214	10306	00:12:00	00:13:32
57	20090427	C605005701		11406	11470	00:31:52	00:32:56
58	20090428	C505005801		168	237	21:26:43	21:27:52
58	20090428	C900005801		980	1073	21:40:15	21:41:48
58	20090428	C901005801		1098	1191	21:42:13	21:43:46
58	20090428	C902005801		188	283	21:50:41	21:52:16
58	20090428	C903005801		318	357	21:52:51	21:53:30
58	20090428	C911005801		777	978	22:00:30	22:03:51
58	20090428	1200101	E	2986	3867	22:37:19	22:52:00
58	20090428	2400701	W	4139	4437	22:56:32	23:01:30
58	20090428	C904005801		5117	5219	23:12:50	23:14:32
58	20090428	C905005801		5235	5326	23:14:48	23:16:19

58	20090428	C906005801		5356	5448	23:16:49	23:18:21
58	20090428	C605005801		6669	6732	23:38:42	23:39:45
59	20090429	C900005901		377	470	22:11:44	22:13:17
59	20090429	C901005901		604	704	22:15:31	22:17:11
59	20090429	C902005901		755	846	22:18:02	22:19:33
59	20090429	C903005901		859	898	22:19:46	22:20:25
59	20090429	C903005902		943	976	22:21:10	22:21:43
59	20090429	1200102	E	1658	2514	22:33:05	22:47:21
59	20090429	2400901	W	2819	3118	22:52:26	22:57:25
59	20090429	2400601	E	3488	3846	23:03:35	23:09:33
59	20090429	2401301	W	3976	4277	23:11:43	23:16:44
59	20090429	C904005901		4880	4971	23:26:47	23:28:18
59	20090429	C905005901		5006	5099	23:28:53	23:30:26
59	20090429	C906005901		5139	5231	23:31:06	23:32:38
59	20090429	C605005901		6466	6529	23:53:13	23:54:16
60	20090430	C505006001		401	466	21:18:38	21:19:43
60	20090430	C900006001		1405	1497	21:35:22	21:36:54
60	20090430	C901006001		1536	1632	21:37:33	21:39:09
60	20090430	C902006001		1658	1760	21:39:35	21:41:17
60	20090430	C903006001		1871	1915	21:43:08	21:43:52
60	20090430	2400602	E	2990	3353	22:01:47	22:07:50
60	20090430	1200601	W	3669	4393	22:13:06	22:25:10
60	20090430	1200701	E	4541	5424	22:27:38	22:42:21
60	20090430	1201001	W	5631	6345	22:45:48	22:57:42
60	20090430	2401001	E	7005	7361	23:08:42	23:14:38
60	20090430	2401501	W	7479	7782	23:16:36	23:21:39
60	20090430	C904006001		8415	8508	23:32:12	23:33:45
60	20090430	C905006001		8527	8621	23:34:04	23:35:38
60	20090430	C906006001		8643	8735	23:36:00	23:37:32
60	20090430	C605006001		9865	9926	23:56:22	23:57:23
61	20090501	C505006101		204	269	21:31:17	21:32:22
61	20090501	C900006101		964	1057	21:43:57	21:45:30
61	20090501	C901006101		1105	1199	21:46:18	21:47:52
61	20090501	C902006101		1222	1315	21:48:15	21:49:48
61	20090501	C903006101		1331	1387	21:50:04	21:51:00
61	20090501	C911006101		1964	2147	22:00:37	22:03:40
61	20090501	1003502	W	3460	5095	22:25:33	22:52:48
61	20090501	1003801	E	5564	7791	23:00:37	23:37:41
61	20090501	1201002	W	8256	8975	23:45:29	23:57:28
61	20090501	C904006101		9670	9765	00:09:03	00:10:38
61	20090501	C905006101		9786	9879	00:10:59	00:12:32
61	20090501	C906006101		9897	9989	00:12:50	00:14:22
61	20090501	C605006101		11168	11248	00:34:01	00:35:21
62	20090502	C505006201		202	314	21:23:00	21:24:52
62	20090502	C900006201		1315	1351	21:41:33	21:42:09
62	20090502	C900006201		1365	1457	21:42:23	21:43:55
62	20090502	C901006201		1486	1579	21:44:24	21:45:57
62	20090502	C902006201		1651	1743	21:47:09	21:48:41
62	20090502	C903006201		1813	1855	21:49:51	21:50:33
62	20090502	1201003	W	2727	3430	22:05:05	22:16:48
62	20090502	1200901	E	3586	4481	22:19:24	22:34:19
62	20090502	2401201	E	5008	5374	22:43:06	22:49:12

62	20090502	2401901	W	5664	5955	22:54:02	22:58:53
62	20090502	2401601	E	6160	6512	23:02:18	23:08:10
62	20090502	2402101	W	6647	6939	23:10:25	23:15:17
62	20090502	2401801	E	7065	7425	23:17:23	23:23:23
62	20090502	2402501	W	7623	7831	23:26:41	23:30:09
62	20090502	2402201	E	7960	8311	23:32:18	23:38:09
62	20090502	C904006201		8712	8809	23:44:50	23:46:27
62	20090502	C905006201		8852	8945	23:47:10	23:48:43
62	20090502	C906006201		8968	9061	23:49:06	23:50:39
62	20090502	C605006201		10432	10505	00:13:30	00:14:43
63	20090503	C505006301		244	307	21:23:06	21:24:09
63	20090503	C900006301		1236	1333	21:39:38	21:41:15
63	20090503	C901006301		1377	1480	21:41:59	21:43:42
63	20090503	C902006301		1505	1598	21:44:07	21:45:40
63	20090503	C903006301		1739	1784	21:48:01	21:48:46
63	20090503	1003701	W	2358	4169	21:58:20	22:28:31
63	20090503	1004001	E	4574	6930	22:35:16	23:14:32
63	20090503	C904006301		7329	7421	23:21:11	23:22:43
63	20090503	C905006301		7449	7544	23:23:11	23:24:46
63	20090503	C906006301		7562	7655	23:25:04	23:26:37
63	20090503	C605006301		9231	9299	23:52:53	23:54:01
64	20090504	C505006401		140	207	21:26:54	21:28:01
64	20090504	C900006401		957	1080	21:40:31	21:42:34
64	20090504	C901006401		1116	1209	21:43:10	21:44:43
64	20090504	C902006401		1275	1369	21:45:49	21:47:23
64	20090504	C903006401		1460	1513	21:48:54	21:49:47
64	20090504	C911006401		2150	2345	22:00:24	22:03:39
64	20090504	2402401	E	4340	4677	22:36:54	22:42:31
64	20090504	2402502	W	4804	5018	22:44:38	22:48:12
64	20090504	2402701	W	5146	5397	22:50:20	22:54:31
64	20090504	2403001	E	5809	6062	23:01:23	23:05:36
64	20090504	2403101	W	6157	6373	23:07:11	23:10:47
64	20090504	2402801	E	6507	6763	23:13:01	23:17:17
64	20090504	C904006401		7254	7347	23:25:28	23:27:01
64	20090504	C905006401		7370	7461	23:27:24	23:28:55
64	20090504	C906006401		7487	7578	23:29:21	23:30:52
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65	20090506	C505006501		159	221	21:28:08	21:29:10
65	20090506	C900006501		1219	1311	21:45:48	21:47:20
65	20090506	C901006501		1338	1430	21:47:47	21:49:19
65	20090506	C902006501		1460	1555	21:49:49	21:51:24
65	20090506	C903006501		1686	1739	21:53:35	21:54:28
65	20090506	2402503	W	2534	2750	22:07:43	22:11:19
65	20090506	2403401	E	2952	3200	22:14:41	22:18:49
65	20090506	2403301	W	3310	3525	22:20:39	22:24:14
65	20090506	2403601	E	3875	4117	22:30:04	22:34:06
65	20090506	2403701	W	4301	4523	22:37:10	22:40:52
65	20090506	2404001	E	5040	5286	22:49:29	22:53:35
65	20090506	2403901	W	5401	5614	22:55:30	22:59:03
65	20090506	2404201	E	5775	6024	23:01:44	23:05:53
65	20090506	2404301	W	6147	6356	23:07:56	23:11:25
65	20090506	1201201	W	7186	7902	23:25:15	23:37:11

65	20090506	1201301	E	8043	8918	23:39:32	23:54:07
65	20090506	C904006501		9389	9483	00:01:58	00:03:32
65	20090506	C905006501		9505	9596	00:03:54	00:05:25
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65	20090506	C605006501		11207	11268	00:32:16	00:33:17
66	20090508	C505006601		274	343	21:51:02	21:52:11
66	20090508	C505006602		364	446	21:52:32	21:53:54
66	20090508	C900006601		1292	1387	22:08:00	22:09:35
66	20090508	C901006601		1441	1535	22:10;29	22:12:03
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66	20090508	C903006601		1706	1751	22:14:54	22:15:39
66	20090508	1201501	E	2906	3762	22:34:54	22:49:10
66	20090508	1201601	W	4182	4907	22:56:10	23:08:15
66	20090508	1201901	E	5092	5949	23:11:20	23:25:37
66	20090508	1201801	W	6296	7027	23:31:24	23:43:35
66	20090508	2600101	N	8083	8354	00:01:11	00:05:42
66	20090508	2600201	S	8543	8884	00:08:51	00:14:32
66	20090508	2600301	N	9045	9550	00:17:13	00:25:38
66	20090508	C904006601		9914	10015	00:31:42	00:33:23
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66	20090508	C906006601		10142	10236	00:35:30	00:37:04
66	20090508	C605006601		11190	11254	00:52:58	00:54:02
67	20090510	C505006701		319	380	21:46:51	21:47:52
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67	20090510	C901006701		1898	1993	22:13:10	22:14:45
67	20090510	C902006701		2044	2139	22:15:36	22:17:11
67	20090510	C903006701		2212	2255	22:18:24	22:19:07
67	20090510	C912006701		2776	2963	22:27:48	22:30:55
67	20090510	1003901	W	3880	5775	22:46:12	23:17:47
67	20090510	1202101	E	6964	7786	23:37:36	23:51:18
67	20090510	2500101	W	8146	8363	23:57:18	00:00:55
67	20090510	2500201	E	8477	8724	00:02:49	00:06:56
67	20090510	C904006701		9056	9150	00:12:28	00:14:02
67	20090510	C905006701		9169	9260	00:14:21	00:15:52
67	20090510	C906006701		9314	9405	00:16:46	00:18:17
67	20090510	C605006701		10577	10639	00:37:49	00:38:51
68	20090511	C505006801		330	392	21:33:23	21:34:25
68	20090511	C900006801		1118	1211	21:46:31	21:48:04
68	20090511	C901006801		1242	1334	21:48:35	21:50:07
68	20090511	C902006801		1436	1531	21:51:49	21:53:24
68	20090511	C903006801		1601	1652	21:54:34	21:55:25
68	20090511	C912006801		2145	2315	22:03:38	22:06:28
68	20090511	1202201	W	2555	3266	22:10:28	22:22:19
68	20090511	C904006801		4270	4362	22:39:03	22:40:35
68	20090511	C905006801		4404	4496	22:41:17	22:42:49
68	20090511	C906006801		4529	4620	22:43:22	22:44:53
68	20090511	C605006801		5628	5690	23:01:41	23:02:43
69	20090512	C505006901		164	227	21:34:45	21:35:48
69	20090512	C900006901		1075	1167	21:49:56	21:51:28
69	20090512	C901006901		1202	1294	21:52:03	21:53:35
69	20090512	C902006901		1314	1409	21:53:55	21:55:30

69	20090512	C903006901		1425	1472	21:55:46	21:56:33
69	20090512	C912006901		2159	2325	21:08:00	22:10:46
69	20090512	1202401	W	2652	3344	22:16:13	22:27:45
69	20090512	C904006901		5100	5191	22:57:01	22:58:32
69	20090512	C905006901		5370	5462	23:01:31	23:03:03
69	20090512	C906006901		5488	5581	23:03:29	23:05:02
69	20090512	C605006901		6822	6885	23:25:43	23:26:46
70	20090513	C505007001		413	505	07:23:16	07:24:48
70	20090513	C900007001		1548	1644	07:42:11	07:43:47
70	20090513	C901007001		2067	2149	07:50:50	07:52:12
70	20090513	C902007001		2178	2255	07:52:41	07:53:58
70	20090513	C903007001		2284	2330	07:54:27	07:55:13
70	20090513	1202501	E	2660	3522	08:00:43	08:15:05
70	20090513	1202801	W	3696	4418	08:17:59	08:30:01
70	20090513	1202701	E	4520	5329	08:31:43	08:45:12
70	20090513	C904007001		5752	5864	08:52:15	08:54:07
70	20090513	C905007001		5889	5982	08:54:32	08:56:05
70	20090513	C906007001		6003	6095	08:56:26	08:57:58
70	20090513	C605007001		7208	7315	09:16:31	09:18:18
71	20090514	C505007101		543	638	21:28:03	21:29:38
71	20090514	C900007101		1545	1647	21:44:45	21:46:27
71	20090514	C901007101		1685	1780	21:47:05	21:48:40
71	20090514	C902007101		1825	1925	21:49:25	21:51:05
71	20090514	C903007101		1938	1996	21:51:18	21:52:16
71	20090514	2500801	E	2899	3145	22:07:19	22:11:25
71	20090514	2500501	W	3220	3428	22:12:40	22:16:08
71	20090514	2501001	E	3539	3792	22:17:59	22:22:12
71	20090514	2500701	W	3869	4061	22:23:29	22:26:41
71	20090514	2501401	E	4217	4460	22:29:17	22:33:20
71	20090514	2501101	W	4548	4757	22:34:48	22:38:17
71	20090514	2501601	E	4890	5136	22:40:30	22:44:36
71	20090514	2501301	W	5215	5421	22:45:55	22:49:21
71	20090514	2502001	E	5570	5832	22:51:50	22:56:12
71	20090514	C904007101		6243	6353	23:03:03	23:04:53
71	20090514	C905007101		6382	6472	23:05:22	23:06:52
71	20090514	C906007101		6499	6615	23:07:19	23:09:15
71	20090514	C605007101		7621	7731	23:26:01	23:27:51
72	20090515	C505007201		535	632	06:32:47	06:34:24
72	20090515	C900007201		1389	1480	06:47:01	06:48:32
72	20090515	C901007201		1518	1620	06:49:10	06:50:52
72	20090515	C902007201		1657	1762	06:51:29	06:53:14
72	20090515	C903007201		1784	1823	06:53:36	06:54:15
72	20090515	C912007201		2604	2809	07:07:16	07:10:41
72	20090515	1004101	W	2965	4897	07:13:17	07:45:29
72	20090515	1004201	E	5060	7300	07:48:12	08:25:32
72	20090515	1004301	W	7428	9350	08:27:40	08:59:42
72	20090515	C904007201		9711	9793	09:05:43	09:07:05
72	20090515	C905007201		9816	9920	09:07:28	09:09:12
72	20090515	C906007201		9954	10070	09:09:46	09:11:42
72	20090515	C605007201		11031	11095	09:27:43	09:28:47
73	20090516	C505007301		313	421	21:04:23	21:06:11
73	20090516	C900007301		1077	1167	21:17:07	21:18:37

73	20090516	C901007301		1208	1314	21:19:18	21:21:04
73	20090516	C902007301		1347	1453	21:21:37	21:23:23
73	20090516	C903007301		1491	1544	21:24:01	21:24:54
73	20090516	C912007301		1871	2034	21:30:21	21:33:04
73	20090516	1202402	W	2391	3100	21:39:01	21:50:50
73	20090516	1203101	E	3406	4275	21:55:56	22:10:25
73	20090516	1203001	W	4440	5175	22:13:10	22:25:25
73	20090516	1203301	E	5347	6208	22:28:17	22:42:38
73	20090516	1203401	W	6306	7035	22:44:16	22:56:25
73	20090516	2502201	E	7564	7829	23:05:14	23:09:39
73	20090516	C904007301		8145	8251	23:14:55	23:16:41
73	20090516	C905007301		8299	8403	23:17:29	23:19:13
73	20090516	C906007301		8436	8554	23:19:46	23:21:44
73	20090516	C605007301		9317	9393	23:34:27	23:35:43
74	20090517	C505007401		309	417	20:56:36	20:58:24
74	20090517	C900007401		1036	1129	21:08:43	21:10:16
74	20090517	C901007401		1185	1285	21:11:12	21:12:52
74	20090517	C902007401		1311	1413	21:13:18	21:15:00
74	20090517	C903007401		1429	1473	21:15:16	21:16:00
74	20090517	1203601	W	2183	2916	21:27:50	21:40:03
74	20090517	1203701	E	3027	3874	21:41:54	21:56:01
74	20090517	1204001	W	4026	4764	21:58:33	22:10:51
74	20090517	1203901	E	4861	5705	22:12:28	22:26:32
74	20090517	1204201	W	6063	7011	22:32:30	22:48:18
74	20090517	1204301	E	7126	8226	22:50:13	23:08:33
74	20090517	1204601	W	8367	9322	23:10:54	23:26:49
74	20090517	1204501	E	9428	10499	23:28:35	23:46:26
74	20090517	1204801	W	10701	11654	23:49:48	00:05:41
74	20090517	C904007401		12126	12247	00:13:33	00:15:34
74	20090517	C905007401		12354	12456	00:17:21	00:19:03
74	20090517	C906007401		12491	12583	00:19:38	00:21:10
74	20090517	C605007401		13298	13388	00:33:05	00:34:35
75	20090517	C505007501		301	383	06:22:56	06:24:18
75	20090517	C900007501		1100	1199	06:36:15	06:37:54
75	20090517	C901007501		1233	1341	06:38:28	06:40:16
75	20090517	C902007501		1394	1491	06:41:09	06:42:46
75	20090517	C903007501		1503	1545	06:42:58	06:43:40
75	20090517	1004501	W	2164	4202	06:53:59	07:27:57
75	20090517	1004401	E	4343	6480	07:30:18	08:05:55
75	20090517	1004701	W	6818	8916	08:11:33	08:46:31
75	20090517	C904007501		9911	10008	09:03:06	09:04:43
75	20090517	C905007501		10032	10138	09:05:07	09:06:53
75	20090517	C906007501		10262	10369	09:08:57	09:10:44
75	20090517	C605007501		10981	11076	09:20:56	09:22:31
76	20090518	C505007601		274	370	21:11:55	21:13:31
76	20090518	C900007601		1291	1375	21:28:52	21:30:16
76	20090518	C901007601		1413	1526	21:30:54	21:32:47
76	20090518	C902007601		1592	1685	21:33:53	21:35:26
76	20090518	C903007601		1699	1746	21:35:40	21:36:27
76	20090518	2402102	W	2179	2489	21:43:40	21:48:50
76	20090518	2500401	E	3070	3308	21:58:31	22:02:29
76	20090518	2501701	W	3482	3689	22:05:23	22:08:50

76	20090518	2502202	E	3818	4059	22:10:59	22:15:00
76	20090518	2501901	W	4170	4376	22:16:51	22:20:17
76	20090518	2502601	E	4545	4779	22:23:06	22:27:00
76	20090518	2502301	W	4887	5098	22:28:48	22:32:19
76	20090518	2502801	E	5215	5458	22:34:16	22:38:19
76	20090518	2502501	W	5550	5762	22:39:51	22:43:23
76	20090518	2503201	E	5894	6139	22:45:35	22:49:40
76	20090518	2502901	W	6214	6426	22:50:55	22:54:27
76	20090518	2503401	E	6548	6789	22:56:29	23:00:30
76	20090518	2503101	W	6877	7086	23:01:58	23:05:27
76	20090518	2503801	E	7216	7463	23:07:37	23:11:44
76	20090518	2503501	W	7555	7761	23:13:16	23:16:42
76	20090518	2504001	E	7866	8103	23:18:27	23:22:24
76	20090518	2503701	W	8177	8381	23:23:38	23:27:02
76	20090518	2504401	E	8489	8725	23:28:50	23:32:46
76	20090518	2504101	W	8818	9026	23:34:19	23:37:47
76	20090518	2504601	E	9128	9361	23:39:29	23:43:22
76	20090518	2504301	W	9457	9663	23:44:58	23:48:24
76	20090518	2505001	E	9808	10038	23:50:49	23:54:39
76	20090518	2504701	W	10134	10342	23:56:15	23:59:43
76	20090518	2505201	E	10439	10663	00:01:20	00:05:04
76	20090518	2504901	W	10754	10967	00:06:35	00:10:08
76	20090518	2505301	W	11321	11537	00:16:02	00:19:38
76	20090518	C904007601		11828	11922	00:24:29	00:26:03
76	20090518	C905007601		11985	12087	00:27:06	00:28:48
76	20090518	C906007601		12141	12234	00:29:42	00:31:15
76	20090518	C605007601		12879	12961	00:42:00	00:43:22
77	20090518	C505007701		187	267	06:14:52	06:16:12
77	20090518	C900007701		1059	1157	06:29:24	06:31:02
77	20090518	C901007701		1354	1444	06:34:19	06:35:49
77	20090518	C902007701		1676	1783	06:39:41	06:41:28
77	20090518	C903007701		1825	1865	06:42:10	06:42:50
77	20090518	1205201	W	2350	3293	06:50:55	07:06:38
77	20090518	C904007701		3637	3737	07:12:22	07:14:02
77	20090518	C905007701		3914	4008	07:16:59	07:18:33
77	20090518	C906007701		4035	4130	07:19:00	07:20:35
77	20090518	C605007701		5005	5078	07:35:10	07:36:23
78	20090519	C505007801		369	435	20:58:46	20:59:52
78	20090519	C900007801		164	258	21:20:32	21:22:06
78	20090519	C901007801		302	395	21:22:50	21:24:23
78	20090519	C902007801		424	518	21:24:52	21:26:26
78	20090519	C903007801		539	594	21:26:47	21:27:42
78	20090519	C912007801		1076	1259	21:35:44	21:38:47
78	20090519	1004901	W	2343	4348	21:56:51	22:30:16
78	20090519	1004601	E	4738	7005	22:36:46	23:14:33
78	20090519	1205401	W	7650	8602	23:25:18	23:41:10
78	20090519	1204901	E	8779	9821	23:44:07	00:01:29
78	20090519	C904007801		10070	10163	00:05:38	00:07:11
78	20090519	C905007801		10195	10287	00:07:43	00:09:15
78	20090519	C906007801		10326	10418	00:09:54	00:11:26
78	20090519	C605007801		11362	11425	00:27:10	00:28:13
79	20090520	C505007901		249	327	21:06:20	21:07:38

79	20090520	C900007901		1029	1136	21:19:20	21:21:07
79	20090520	C901007901		1173	1289	21:21:44	21:23:40
79	20090520	C902007901		1369	1464	21:25:00	21:26:35
79	20090520	C903007901		1477	1528	21:26:48	21:27:39
79	20090520	2600601	S	1876	3487	21:33:27	22:00:18
79	20090520	2600701	N	3802	4204	22:05:33	22:12:15
79	20090520	1204002	W	4483	5198	22:16:54	22:28:49
79	20090520	1203902	E	5335	6180	22:31:06	22:45:11
79	20090520	1005101	W	6833	8855	22:56:04	23:29:46
79	20090520	2502002	E	10505	10745	23:57:16	00:01:16
79	20090520	2502302	W	10841	11060	00:02:52	00:06:31
79	20090520	1202403	W	11712	12445	00:17:23	00:29:36
79	20090520	C904007901		12730	12860	00:34:21	00:36:31
79	20090520	C905007901		12886	12992	00:36:57	00:38:43
79	20090520	C906007901		13013	13119	00:39:04	00:40:50
79	20090520	C605007901		13792	13916	00:52:03	00:54:07
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80	20090520	C900008001		1383	1492	06:42:15	06:44:04
80	20090520	C901008001		1507	1616	06:44:19	06:46:08
80	20090520	C902008001		1672	1771	06:47:04	06:48:43
80	20090520	C903008001		1826	1863	06:49:38	06:50:15
80	20090520	1004801	E	2820	5033	07:06:12	07:43:05
80	20090520	1204802	W	5348	6302	07:48:20	08:04:14
80	20090520	1205101	E	6470	7517	08:07:02	08:24:29
80	20090520	1203402	W	8001	8710	08:32:33	08:44:22
80	20090520	C904008001		8991	9105	08:49:03	08:50:57
80	20090520	C905008001		9115	9215	08:51:07	08:52:47
80	20090520	C906008001		9233	9338	08:53:05	08:54:50
80	20090520	C605008001		10097	10166	09:07:29	09:08:38
81	20090522	C505008101		212	276	20:58:25	20:59:29
81	20090522	C900008101		1097	1190	21:13:10	21:14:43
81	20090522	C901008101		1270	1363	21:16:03	21:17:36
81	20090522	C902008101		1400	1494	21:18:13	21:19:47
81	20090522	C903008101		1521	1578	21:20:14	21:21:11
81	20090522	1005001	E	2342	4786	21:33:55	22:14:39
81	20090522	1005301	W	5114	7131	22:20:07	22:53:44
81	20090522	1005201	E	7305	9764	22:56:38	23:37:37
81	20090522	1204202	W	10141	11087	23:43:54	23:59:40
81	20090522	C904008101		11407	11499	00:05:00	00:06:32
81	20090522	C905008101		11535	11628	00:07:08	00:08:41
81	20090522	C906008101		11659	11752	00:09:12	00:10:45
81	20090522	C605008101		12437	12501	00:22:10	00:23:14
82	20090522	C505008201		188	257	06:13:45	06:14:54
82	20090522	C900008201		1022	1124	06:27:40	06:29:22
82	20090522	C901008201		1143	1242	06:29:41	06:31:20
82	20090522	C902008201		1258	1360	06:31:36	06:33:18
82	20090522	C903008201		1381	1425	06:33:39	06:34:23
82	20090522	C912008201		1750	1909	06:39:48	06:42:27
82	20090522	2402702	W	2241	2456	06:47:59	06:51:34
82	20090522	1202202	W	3983	4718	07:17:01	07:29:16
82	20090522	1205501	E	5665	6694	07:45:03	08:02:12
82	20090522	C904008201		7586	7705	08:17:04	08:16:03

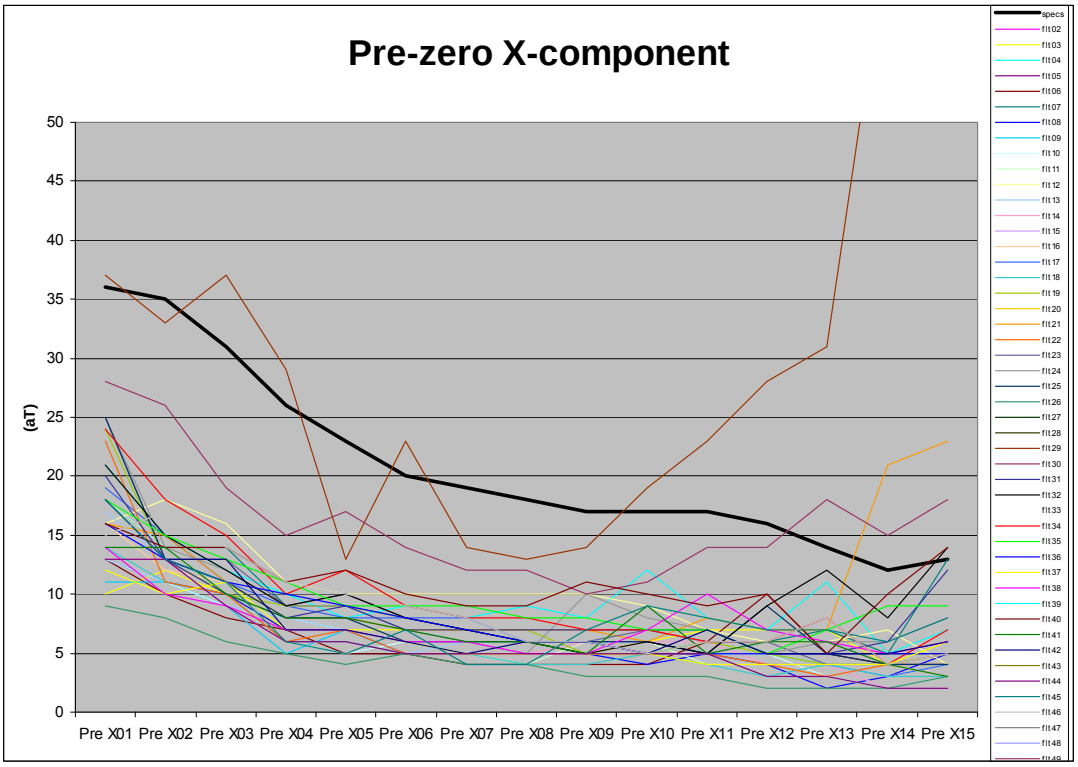
82	20090522	C905008201		7752	7855	08:19:50	08:21:33
82	20090522	C906008201		7892	7998	08:22:08	08:23:56
82	20090522	C605008201		8694	8763	08:35:32	08:36:41
83	20090523	C505008301		311	374	20:56:14	20:57:17
83	20090523	C900008301		1439	1538	21:15:02	21:16:41
83	20090523	C901008301		1574	1668	21:17:17	21:18:51
83	20090523	C902008301		1731	1825	21:19:54	21:21:28
83	20090523	C903008301		1854	1916	21:21:57	21:22:59
83	20090523	1005401	E	2673	5188	21:35:36	22:17:31
83	20090523	1005501	W	5359	7340	22:20:22	22:53:23
83	20090523	1005601	E	7516	10014	22:56:19	23:37:57
83	20090523	C904008301		10396	10490	23:44:19	23:45:53
83	20090523	C905008301		10566	10658	23:47:09	23:48:41
83	20090523	C906008301		10689	10782	23:49:12	23:50:45
83	20090523	C605008301		11869	11933	00:08:52	00:09:56
84	20090524	C505008401		285	357	20:58:05	20:59:18
84	20090524	C900008401		1032	1146	21:10:33	21:12:27
84	20090524	C901008401		1195	1311	21:13:16	21:15:12
84	20090524	C902008401		1354	1458	21:15:55	21:17:39
84	20090524	C903008401		1481	1521	21:18:02	21:18:42
84	20090524	1200103	E	2015	2810	21:26:56	21:40:11
84	20090524	2600602	S	3177	4760	21:46:18	22:12:41
84	20090524	2600501	N	4912	5838	22:15:13	22:30:39
84	20090524	2600401	S	6012	6862	22:33:33	22:47:43
84	20090524	1003902	W	8157	10121	23:09:18	23:42:02
84	20090524	C904008401		10561	10661	23:49:22	23:51:02
84	20090524	C905008401		10677	10782	23:51:18	23:53:03
84	20090524	C906008401		10793	10901	23:53:14	23:55:02
84	20090524	C605008401		11670	11745	00:07:51	00:09:06

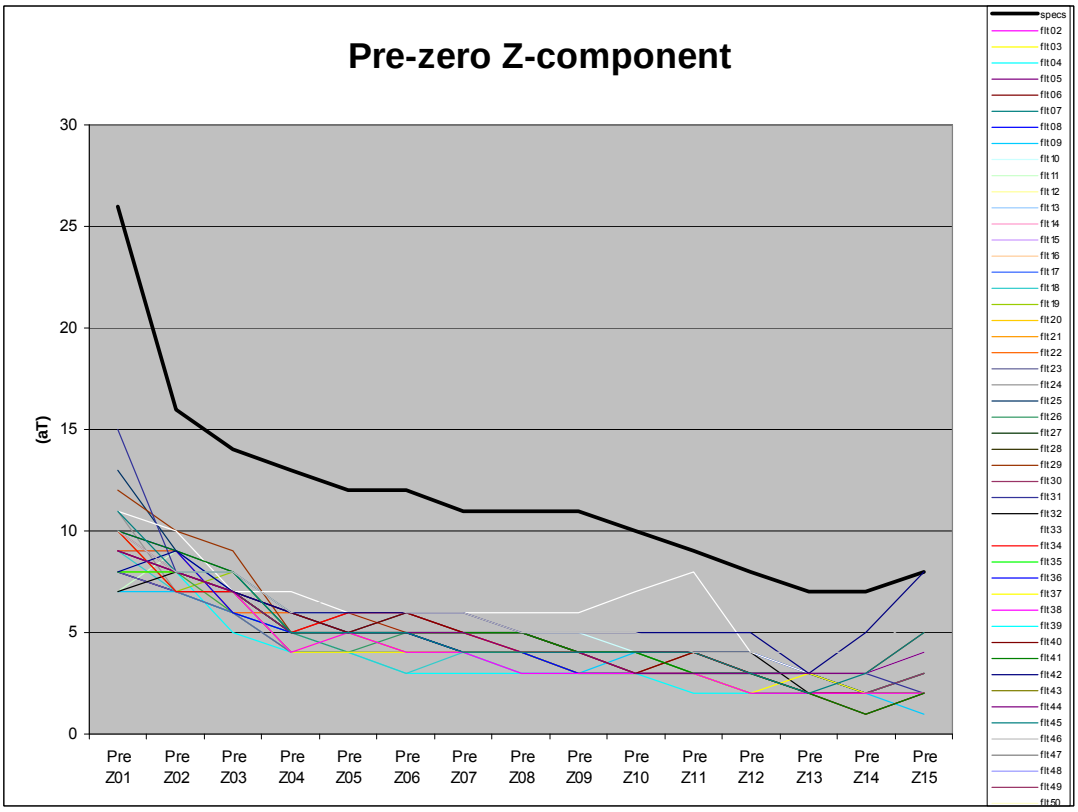
APPENDIX III – Pre and Post-flight Zero Statistics

Pre-zero Additive Noise

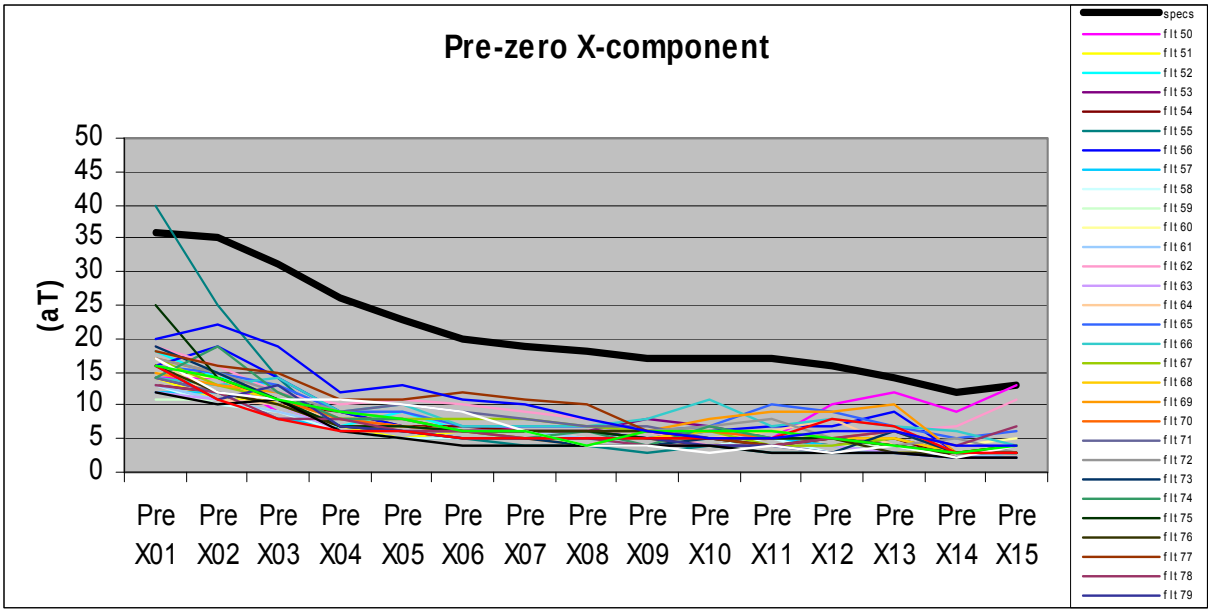
- black trace represents the contract maximum standard deviation
- coloured traces represent the standard deviation of individual lines from all production flights

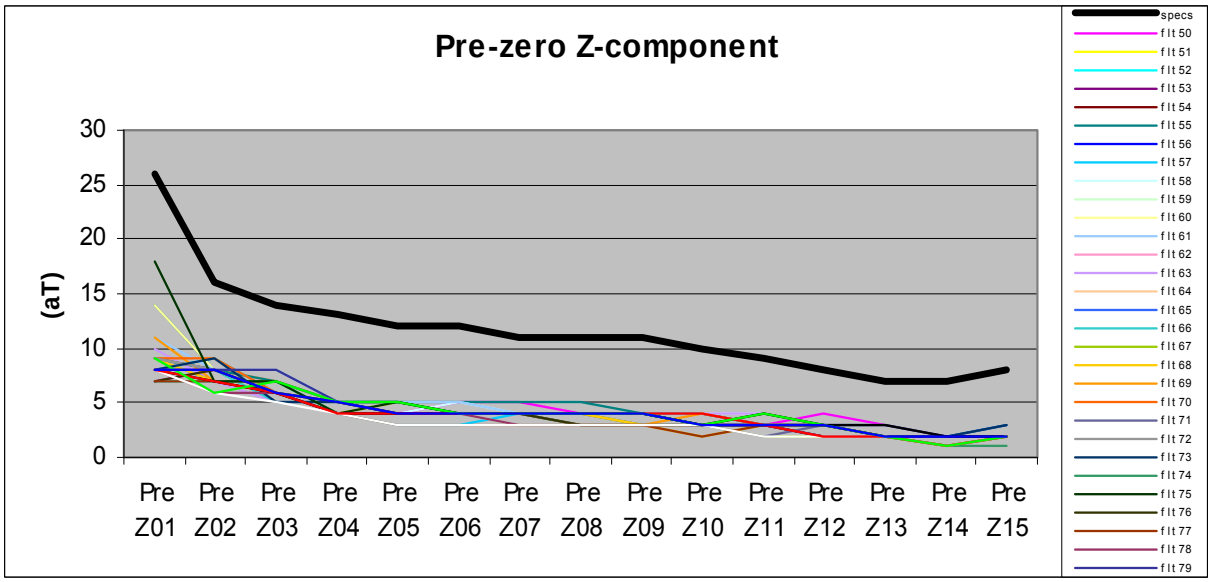
Rum Jungle Flts 1-46





Rum Jungle Flts 47-84

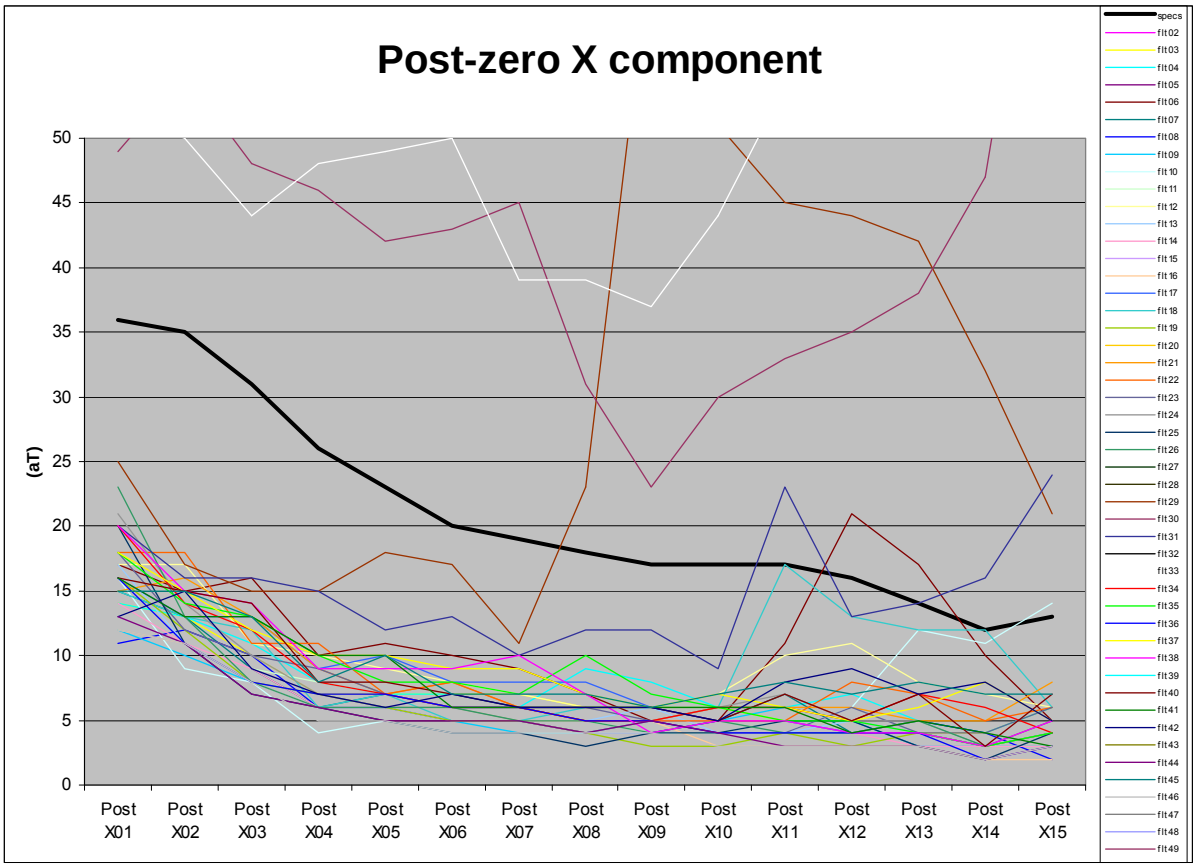


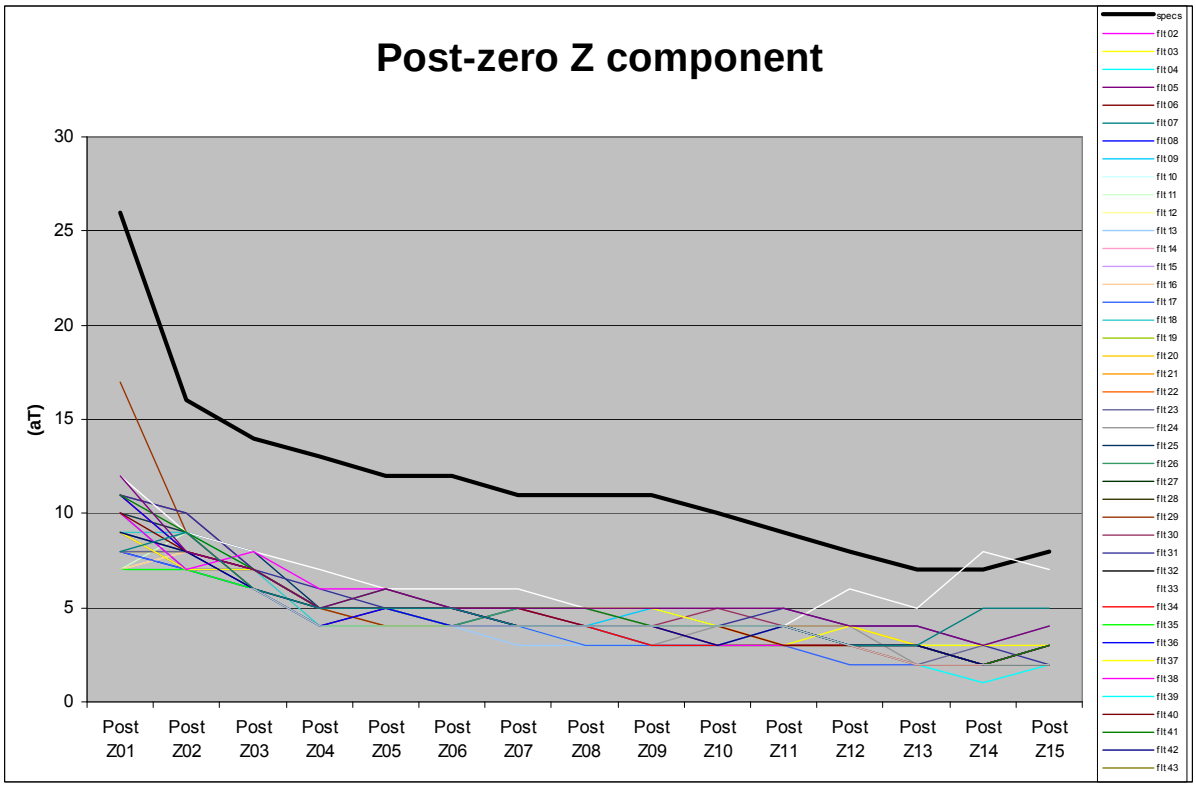


Post-zero Additive Noise

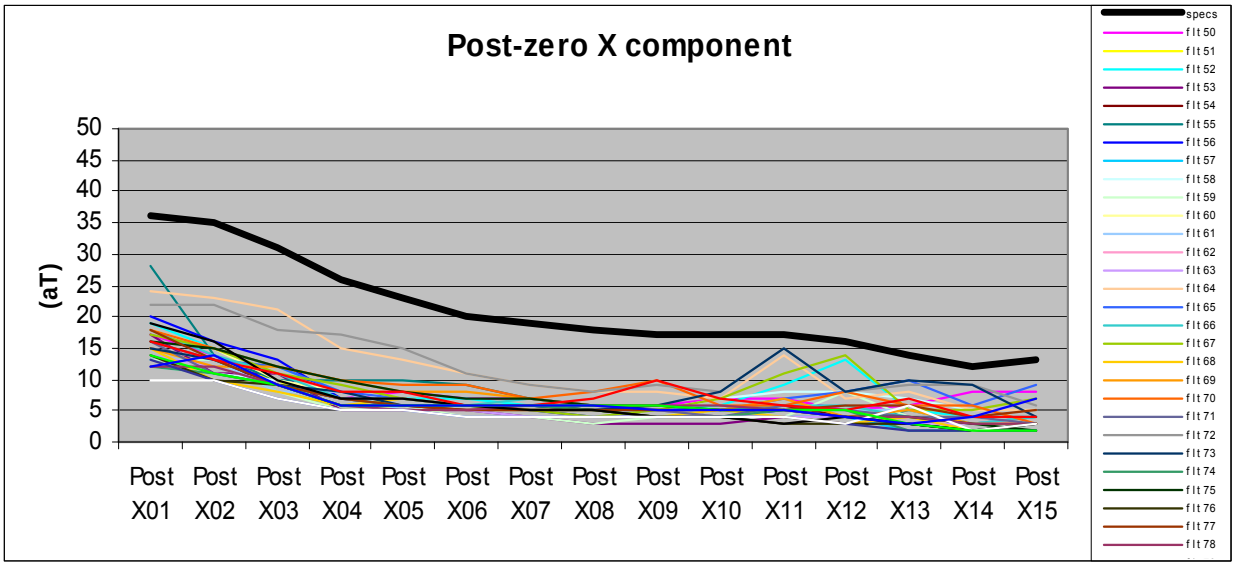
- black trace represents the contract maximum standard deviation
- coloured traces represent the standard deviation of individual lines from all production flights

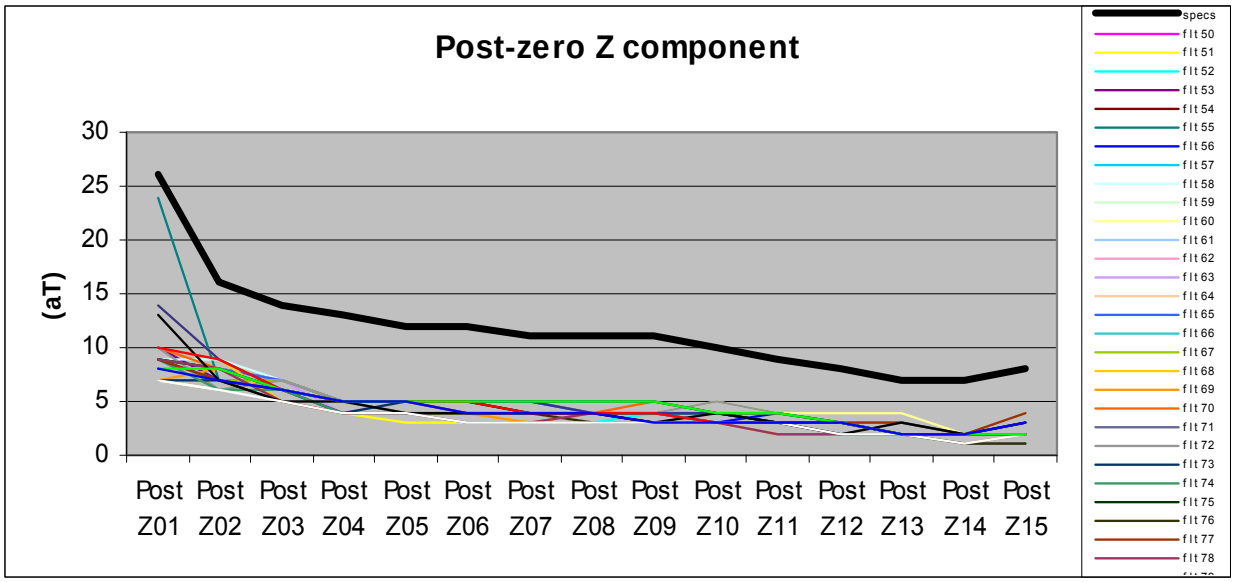
RumJungle Flts 1-46





Rum Jungle Flts 47-84

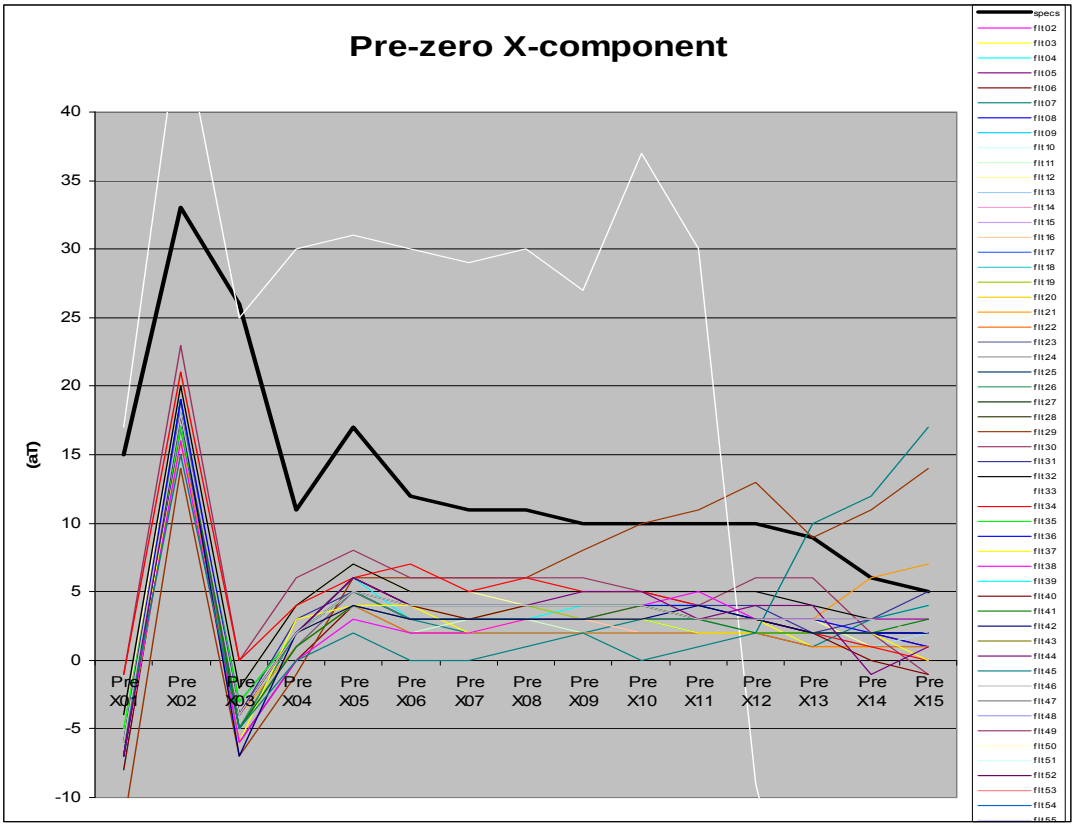


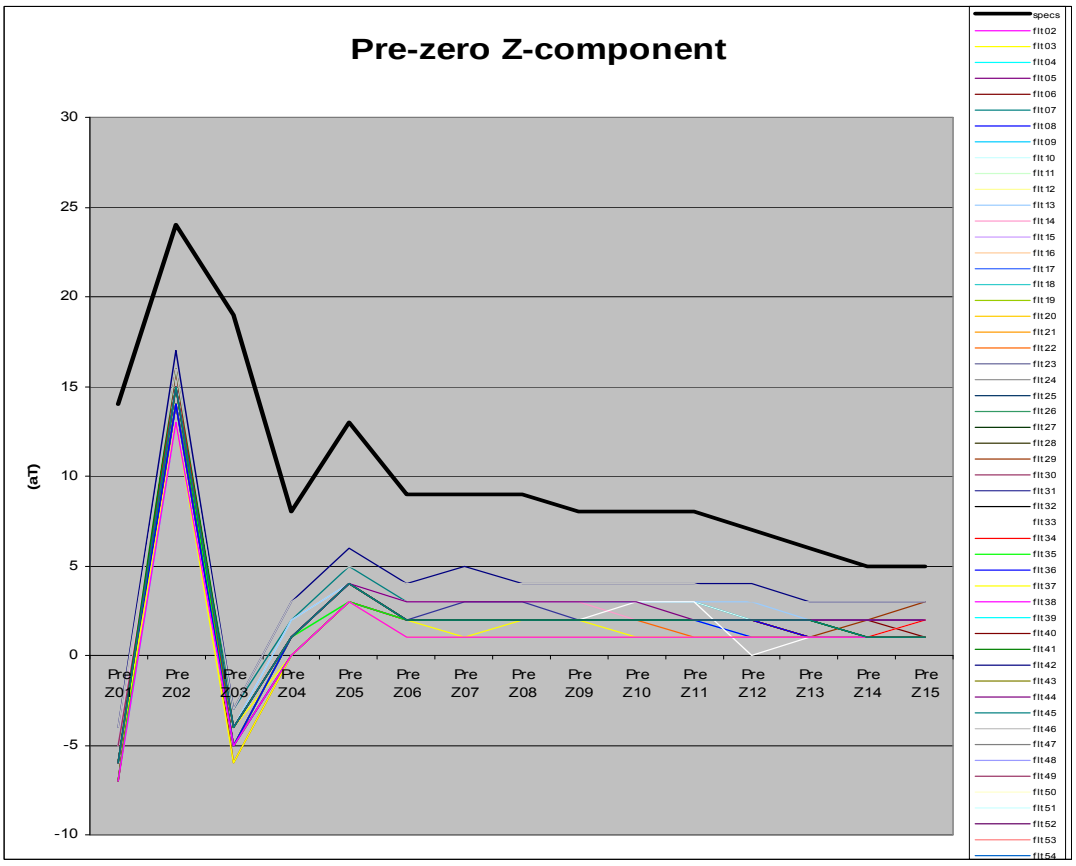


Pre-zero Window Bias

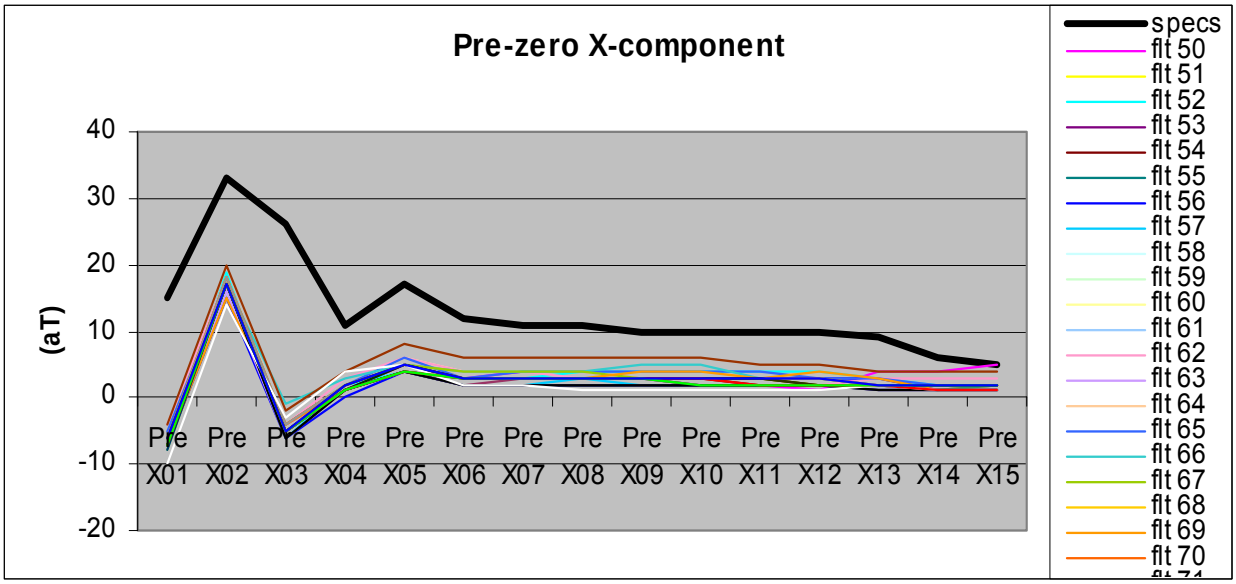
- black trace represents the contract maximum mean for each line
- coloured traces represent the mean of individual lines from all production flights

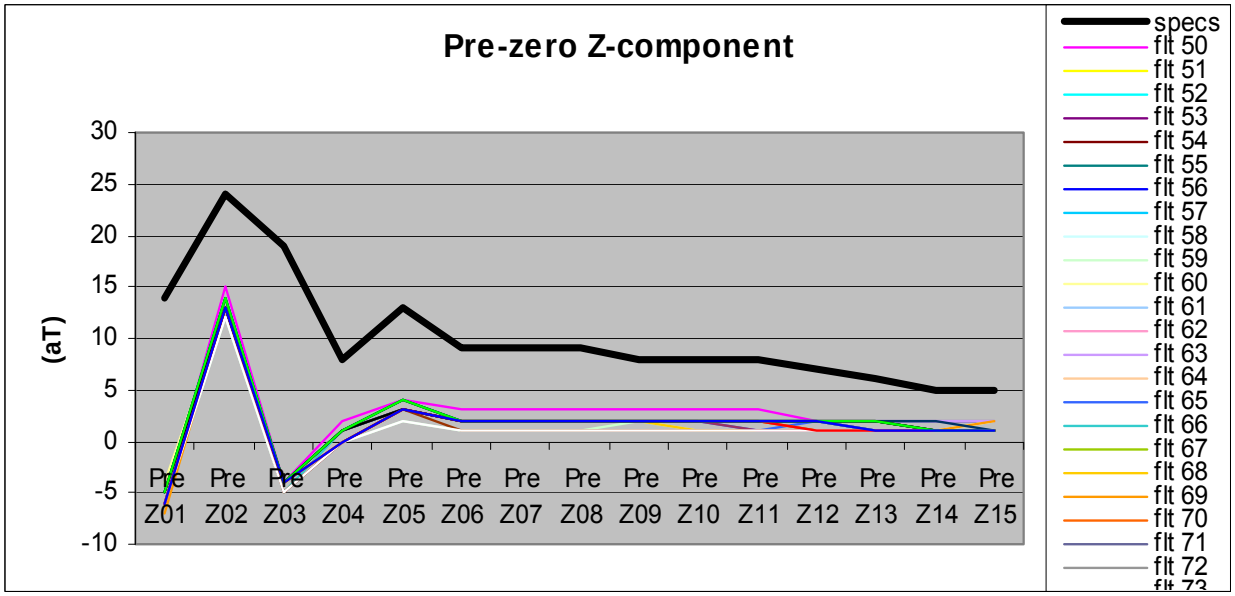
RumJungle Flts 1-46





RumJungle Flts 47-84

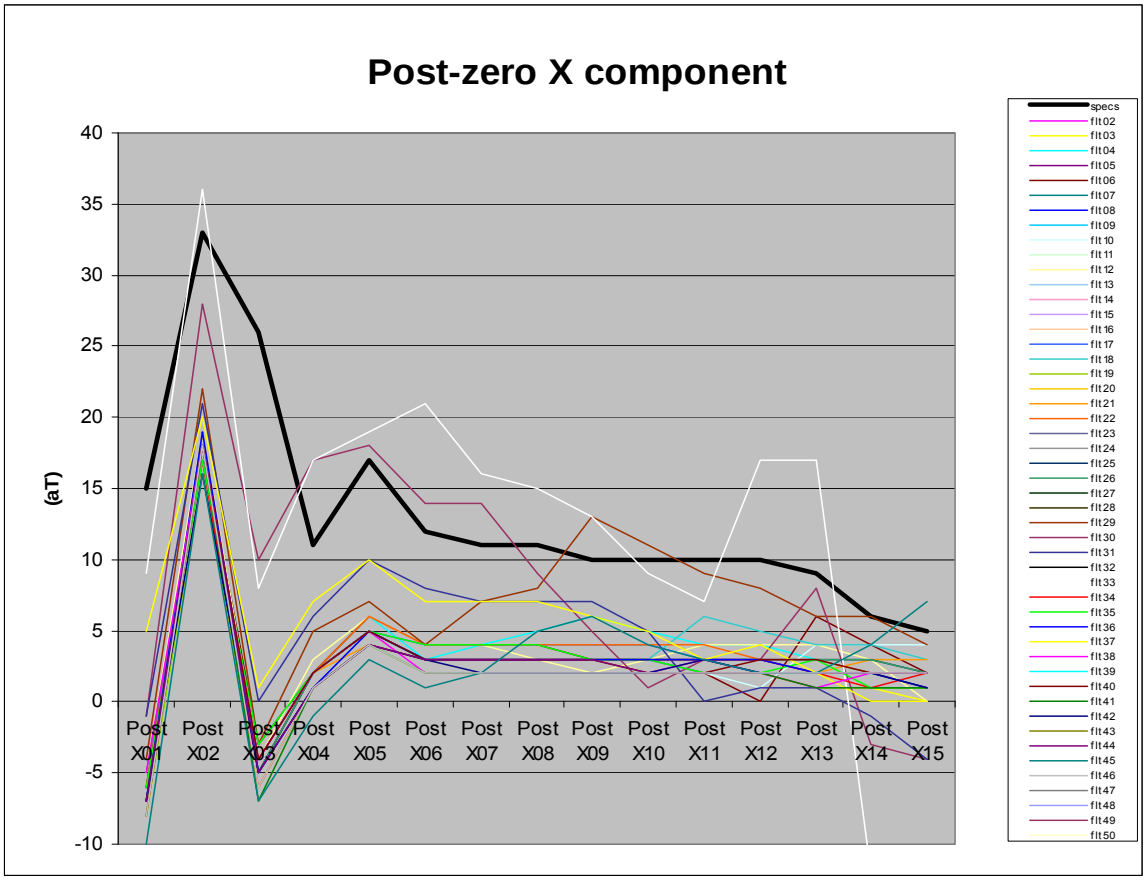


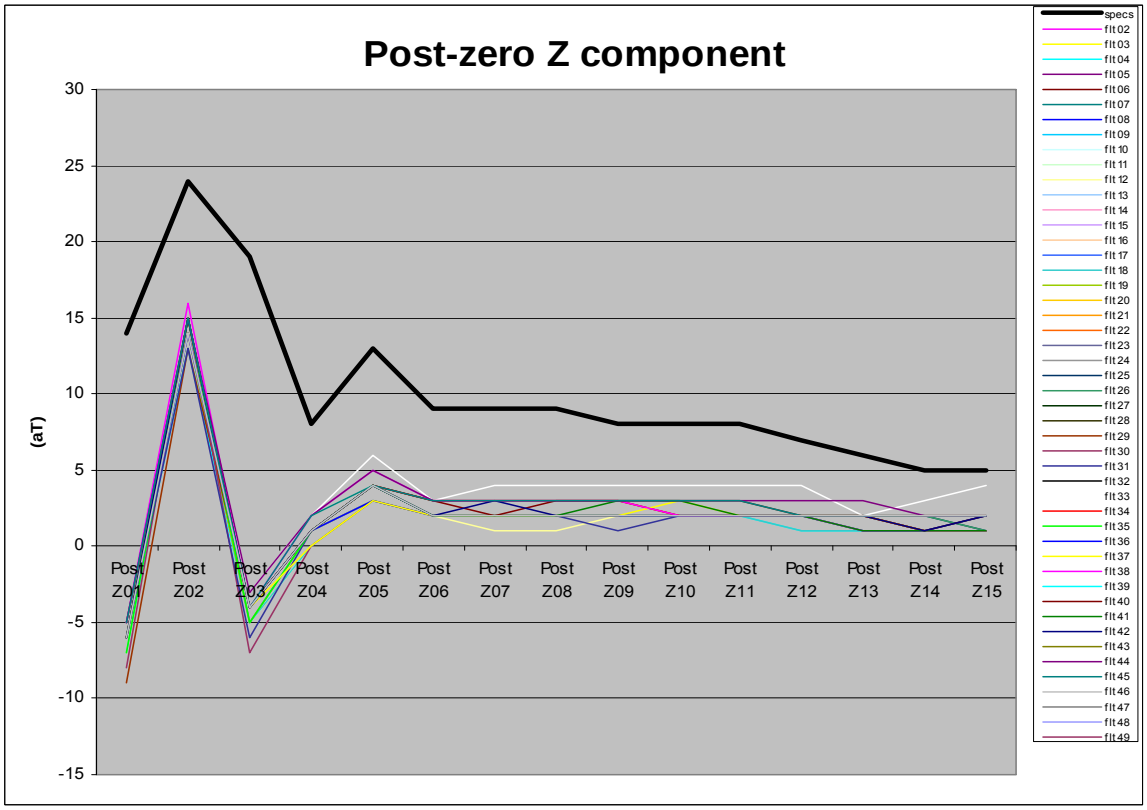


Post-zero Window Bias

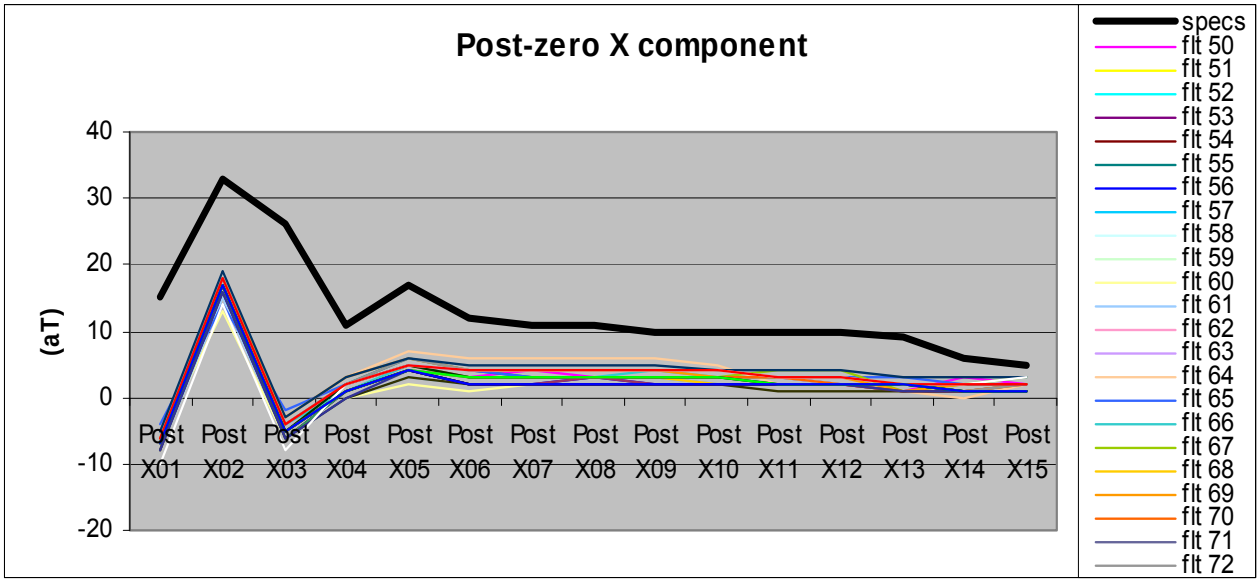
- black trace represents the contract maximum mean for each line
- coloured traces represent the mean of individual lines from all production flights

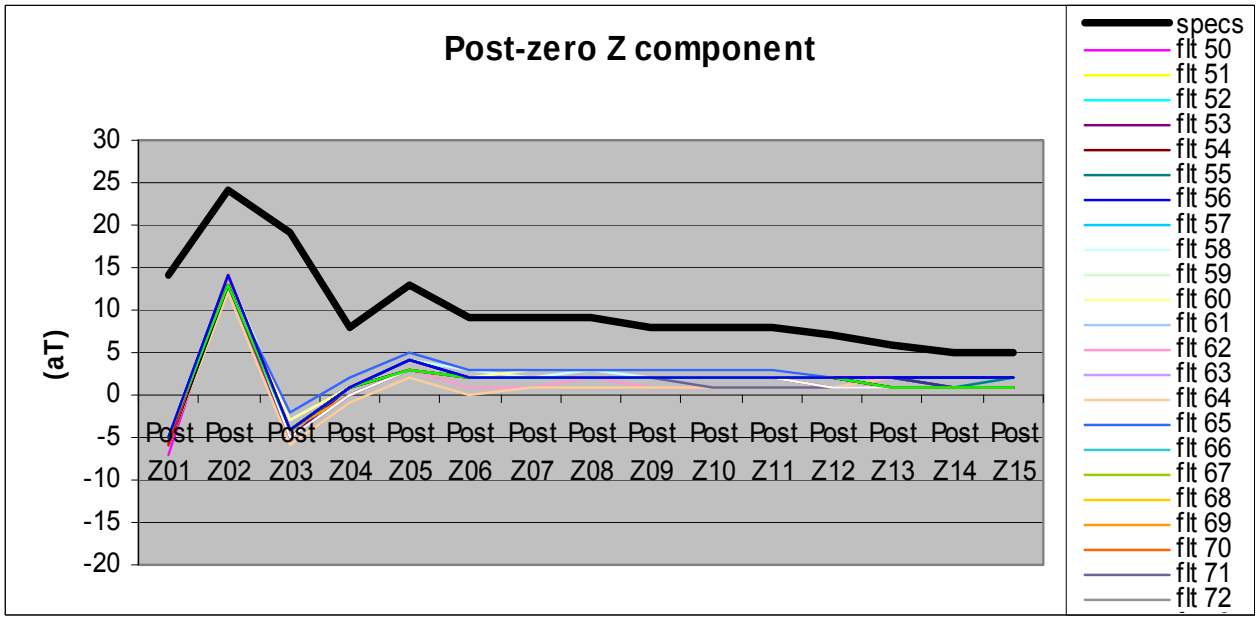
RumJungle Flts 1-46





RumJungle Flts 47-84





APPENDIX IV – Located Data Format

EM Window data – clipped survey lines

```
COMM GA PROJECT NUMBER                                                  1196
COMM FAS PROJECT NUMBER                                                 2017
COMM AREA NUMBER:                                                          1
COMM SURVEY COMPANY:                                  Fugro Airborne Surveys
COMM CLIENT:                                            Geoscience Australia
COMM SURVEY TYPE:                                        25Hz TEMPEST Survey
COMM AREA NAME:                                                  Rum Jungle
COMM STATE:                                                              NT
COMM COUNTRY:                                                       Australia
COMM SURVEY FLOWN:                                 October 2008 to May 2009
COMM LOCATED DATA CREATED:                                         July 2009
COMM
COMM DATUM:                                                            GDA94
COMM PROJECTION:                                                         MGA
COMM ZONE:                                                                52
COMM
COMM SURVEY SPECIFICATIONS
COMM
COMM TRAVERSE LINE SPACING:                                  250 - 5000 m
COMM TRAVERSE LINE DIRECTION:
COMM                    ALL AREAS EXCEPT DALY RIVER AND RJ6:   090-270 deg
COMM                                            DALY RIVER:   124-304 deg
COMM                                                   RJ6:   000-180 deg
COMM NOMINAL TERRAIN CLEARANCE:                                      120 m
COMM FINAL LINE KILOMETRES:                                        14136 km
COMM
COMM LINE NUMBERING
COMM
COMM TRAVERSE LINE NUMBERS:
COMM    Lines flown with PDAS Acquisition System:              10010 - 13000
COMM    Lines flown with FASDAS Acquisition System:        1001601 - 1005601
COMM                                                       1102202 - 1103401
COMM                                                       1200103 - 1205501
COMM                                                       2400101 - 2404301
COMM                                                       2500201 - 2505301
COMM                                                       3200201 - 3201501
COMM                                                       3400101 - 3401501
COMM
COMM SURVEY EQUIPMENT
COMM
COMM AIRCRAFT:                                 Shorts Skyvan SC3-200, VH-WGT
COMM
COMM MAGNETOMETER:                               Scintrex Cs-2 Cesium Vapour
COMM INSTALLATION:                                             stinger mount
COMM RESOLUTION:                                                  0.001 nT
COMM RECORDING INTERVAL:                                             0.2 s
COMM
COMM ELECTROMAGNETIC SYSTEM:                                      25Hz TEMPEST
COMM INSTALLATION:              Transmitter loop mounted on the aircraft
COMM                                      Receiver coils in a towed bird
COMM COIL ORIENTATION:                                                 X,Z
COMM RECORDING INTERVAL:                                             0.2 s
COMM SYSTEM GEOMETRY:
COMM RECEIVER DISTANCE BEHIND THE TRANSMITTER:                      -120 m
COMM RECEIVER DISTANCE BELOW THE TRANSMITTER:                        -35 m
COMM
COMM RADAR ALTIMETER:                                          Sperry RT-220
COMM RECORDING INTERVAL:                                             0.2 s
```

```
COMM
COMM LASER ALTIMETER:                                          Optech 501SB
COMM RECORDING INTERVAL:                                             0.2 s
COMM
COMM NAVIGATION:                                  real-time differential GPS
COMM RECORDING INTERVAL:                                             1.0 s
COMM
COMM ACQUISITION SYSTEM:                                PDAS-1000 / FASDAS
COMM
COMM DATA PROCESSING
COMM
COMM MAGNETIC DATA
COMM DIURNAL BASE VALUE APPLIED                                    47444 nT
COMM PARALLAX CORRECTION APPLIED
COMM                 PDAS LINES:                                       0.4 s
COMM               FASDAS LINES:                                       0.0 s
COMM IGRF BASE VALUE APPLIED                                       46836 nT
COMM IGRF MODEL 2005 EXTRAPOLATED TO                                 2008.8
COMM DATA HAVE BEEN MICROLEVELLED
COMM
COMM ELECTROMAGNETIC DATA
COMM SYSTEM PARALLAX REMOVED, AS FOLLOWS
COMM PDAS LINES:
COMM      X-COMPONENT EM DATA                                        0.2 s
COMM      Z-COMPONENT EM DATA                                        1.4 s
COMM FASDAS LINES:
COMM      X-COMPONENT EM DATA                                        1.6 s
COMM      Z-COMPONENT EM DATA                                        0.2 s
COMM DATA CORRECTED FOR TRANSMITTER HEIGHT, PITCH AND ROLL
COMM DATA CORRECTED FOR TRANSMITTER-RECEIVER GEOMETRY VARIATIONS
COMM DATA HAVE BEEN MICROLEVELLED
COMM CONDUCTIVITY DEPTH INVERSION CALCULATED                    EMFlow V5.10
COMM CONDUCTIVITIES CALCULATED USING HPRG CORRECTED EMX & EMZ DATA
COMM
COMM DIGITAL TERRAIN DATA
COMM PARALLAX CORRECTION APPLIED TO LIDAR ALIMETER DATA                0.0 s
COMM PARALLAX CORRECTION APPLIED TO GPS ALIMETER DATA                  0.0 s
COMM DTM CALCULATED [DTM = GPS ALTITUDE - LIDAR ALTITUDE - GPS/LIDAR DIST]
COMM N-VALUE APPLIED TO CORRECT DTM TO AUSTRALIAN HEIGHT DATUM (AHD)
COMM DATA HAVE BEEN MICROLEVELLED
COMM
COMM ------------------------------------------------------------------------
COMM DISCLAIMER
COMM ------------------------------------------------------------------------
COMM It is Fugro Airborne Survey’s understanding that the data provided to
COMM the client is to be used for the purpose agreed between the parties.
COMM That purpose was a significant factor in determining the scope and
COMM level of the Services being offered to the Client. Should the purpose
COMM for which the data is used change, the data may no longer be valid or
COMM appropriate and any further use of, or reliance upon, the data in
COMM those circumstances by the Client without Fugro Airborne Survey's
COMM review and advice shall be at the Client's own or sole risk.
COMM
COMM The Services were performed by Fugro Airborne Survey exclusively for
COMM the purposes of the Client. Should the data be made available in whole
COMM or part to any third party, and such party relies thereon, that party
COMM does so wholly at its own and sole risk and Fugro Airborne Survey
COMM disclaims any liability to such party.
COMM
COMM Where the Services have involved Fugro Airborne Survey's use of any
COMM information provided by the Client or third parties, upon which
COMM Fugro Airborne Survey was reasonably entitled to rely, then the
COMM Services are limited by the accuracy of such information. Fugro
COMM Airborne Survey is not liable for any inaccuracies (including any
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COMM incompleteness) in the said information, save as otherwise provided
COMM in the terms of the contract between the Client and Fugro Airborne
COMM Survey.
COMM
COMM With regard to DIGITAL TERRAIN DATA, the accuracy of the elevation
COMM calculation is directly dependent on the accuracy of the two input
COMM parameters lidar altitude and GPS altitude. The radar altitude value may
COMM be erroneous in areas of heavy tree cover, where the altimeter reflects
COMM the distance to the tree canopy rather than the ground. The GPS altitude
COMM value is primarily dependent on the number of available satellites.
COMM Although post-processing of GPS data will yield X and Y accuracies in
COMM the order of 1-2 metres, the accuracy of the altitude value is usually
COMM much less, sometimes in the ±5 metre range.  Further inaccuracies
COMM may be introduced during the interpolation and gridding process.
COMM Because of the inherent inaccuracies of this method, no guarantee is
COMM made or implied that the information displayed is a true
COMM representation of the height above sea level.  Although this product
COMM may be of some use as a general reference,
COMM THIS PRODUCT MUST NOT BE USED FOR NAVIGATION PURPOSES.
COMM ----------------------------------------------------------------------
COMM
COMM ELECTROMAGNETIC SYSTEM
COMM
COMM TEMPEST IS A TIME-DOMAIN SQUARE-WAVE SYSTEM,
COMM TRANSMITTING AT A BASE FREQUENCY OF 25Hz,
COMM WITH 2 ORTHOGONAL-AXIS RECEIVER COILS IN A TOWED BIRD.
COMM FINAL EM OUTPUT IS RECORDED 5 TIMES PER SECOND.
COMM THE TIMES (IN MILLISECONDS) FOR THE 15 WINDOWS ARE:
COMM
COMM WINDOW      START       END      CENTRE
COMM    1        0.007      0.020      0.013
COMM    2        0.033      0.047      0.040
COMM    3        0.060      0.073      0.067
COMM    4        0.087      0.127      0.107
COMM    5        0.140      0.207      0.173
COMM    6        0.220      0.340      0.280
COMM    7        0.353      0.553      0.453
COMM    8        0.567      0.873      0.720
COMM    9        0.887      1.353      1.120
COMM   10        1.367      2.100      1.733
COMM   11        2.113      3.273      2.693
COMM   12        3.287      5.113      4.200
COMM   13        5.127      7.993      6.560
COMM   14        8.007     12.393     10.200
COMM   15       12.407     19.993     16.200
COMM
COMM PULSE WIDTH: 10 ms
COMM
COMM TEMPEST EM data are transformed to the response that would be
COMM obtained with a B-field sensor for a 100% duty cycle square
COMM waveform at the base frequency, involving a 1A change in
COMM current (from -0.5A to +0.5A to -0.5A) in a 1sq.m transmitter.
COMM It is this configuration, rather than the actual acquisition
COMM configuration, which must be specified when modelling TEMPEST data.
COMM
COMM
COMM
LOCATED DATA FORMAT

 Output field format : DOS  - Flat ascii
 Number of fields    : 102

Field  Channel        Description                    Units  Undefined    Format
-----  -------        -----------                    -----  ---------    ------
```

1	LINE	Line		-99999999	i10
2	FLIGHT	Flight		-99	i4
3	FID	Fiducial	(s)	-999999.9	f8.1
4	PROJECT_FAS	FAS Project Number		-9999	i6
5	PROJECT_GA	GA Project Number		-9999	i6
6	AIRCRAFT	System Number		-9	i3
7	DATE	Date	ddmmyyyy	-9999999	i9
8	TIME	Time - local midnight	(s)	-9999.9	f8.1
9	BEARING	Line Bearing	(deg)	-99	i4
10	LATITUDE	Latitude GDA94	(deg)	-99.9999999	f12.7
11	LONGITUDE	Longitude GDA94	(deg)	-999.9999999	f13.7
12	EASTING	Easting MGA51	(m)	-99999.99	f10.2
13	NORTHING	Northing MGA51	(m)	-999999.99	f11.2
14	LIDAR	Final Lidar altimeter	(m)	-999.99	f8.2
15	RADALT	Final Radar altimeter	(m)	-999.99	f8.2
16	TX_ELEVATION	Final Transmitter Elevation - AHD	(m)	-999.99	f8.2
17	DTM	Final Ground Elevation - AHD	(m)	-999.99	f8.2
18	MAG	Final TMI	(nT)	-99999.999	f11.3
19	TX_PITCH	Transmitter loop pitch	(deg)	-999.99	f8.2
20	TX_ROLL	Transmitter loop roll	(deg)	-999.99	f8.2
21	TX_HEIGHT	Transmitter terrain clearance	(m)	-999.99	f8.2
22	HSep_Raw	Tx-Rx horizontal separation	(m)	-999.99	f8.2
23	VSep_Raw	Tx-Rx vertical separation	(m)	-999.99	f8.2
24	TX_HEIGHT_std	Tx HPRG terrain clearance	(m)	-999.99	f8.2
25	HSep_std	Tx-Rx HPRG horizontal separation	(m)	-999.99	f8.2
26	VSep_std	Tx-Rx HPRG vertical separation	(m)	-999.99	f8.2
27	EMX_nonhprg[1]	Raw (non-HPRG) EMX01 Window	(fT)	-999.999999	f12.6
28	EMX_nonhprg[2]	Raw (non-HPRG) EMX02 Window	(fT)	-999.999999	f12.6
29	EMX_nonhprg[3]	Raw (non-HPRG) EMX03 Window	(fT)	-999.999999	f12.6
30	EMX_nonhprg[4]	Raw (non-HPRG) EMX04 Window	(fT)	-999.999999	f12.6
31	EMX_nonhprg[5]	Raw (non-HPRG) EMX05 Window	(fT)	-999.999999	f12.6
32	EMX_nonhprg[6]	Raw (non-HPRG) EMX06 Window	(fT)	-999.999999	f12.6
33	EMX_nonhprg[7]	Raw (non-HPRG) EMX07 Window	(fT)	-999.999999	f12.6
34	EMX_nonhprg[8]	Raw (non-HPRG) EMX08 Window	(fT)	-999.999999	f12.6
35	EMX_nonhprg[9]	Raw (non-HPRG) EMX09 Window	(fT)	-999.999999	f12.6
36	EMX_nonhprg[10]	Raw (non-HPRG) EMX10 Window	(fT)	-999.999999	f12.6
37	EMX_nonhprg[11]	Raw (non-HPRG) EMX11 Window	(fT)	-999.999999	f12.6
38	EMX_nonhprg[12]	Raw (non-HPRG) EMX12 Window	(fT)	-999.999999	f12.6
39	EMX_nonhprg[13]	Raw (non-HPRG) EMX13 Window	(fT)	-999.999999	f12.6
40	EMX_nonhprg[14]	Raw (non-HPRG) EMX14 Window	(fT)	-999.999999	f12.6
41	EMX_nonhprg[15]	Raw (non-HPRG) EMX15 Window	(fT)	-999.999999	f12.6
42	EMX_hprg[1]	Final HPRG EMX01 Window	(fT)	-999.999999	f12.6
43	EMX_hprg[2]	Final HPRG EMX02 Window	(fT)	-999.999999	f12.6
44	EMX_hprg[3]	Final HPRG EMX03 Window	(fT)	-999.999999	f12.6
45	EMX_hprg[4]	Final HPRG EMX04 Window	(fT)	-999.999999	f12.6
46	EMX_hprg[5]	Final HPRG EMX05 Window	(fT)	-999.999999	f12.6
47	EMX_hprg[6]	Final HPRG EMX06 Window	(fT)	-999.999999	f12.6
48	EMX_hprg[7]	Final HPRG EMX07 Window	(fT)	-999.999999	f12.6
49	EMX_hprg[8]	Final HPRG EMX08 Window	(fT)	-999.999999	f12.6
50	EMX_hprg[9]	Final HPRG EMX09 Window	(fT)	-999.999999	f12.6
51	EMX_hprg[10]	Final HPRG EMX10 Window	(fT)	-999.999999	f12.6
52	EMX_hprg[11]	Final HPRG EMX11 Window	(fT)	-999.999999	f12.6
53	EMX_hprg[12]	Final HPRG EMX12 Window	(fT)	-999.999999	f12.6
54	EMX_hprg[13]	Final HPRG EMX13 Window	(fT)	-999.999999	f12.6
55	EMX_hprg[14]	Final HPRG EMX14 Window	(fT)	-999.999999	f12.6
56	EMX_hprg[15]	Final HPRG EMX15 Window	(fT)	-999.999999	f12.6
57	X_Sferics	X_Sferics		-9999.999	f10.3
58	X_Lowfreq	X_Lowfreq		-9999.999	f10.3
59	X_Powerline	X_Powerline		-9999.999	f10.3
60	X_VLF1	X_18.2kHz		-9999.999	f10.3
61	X_VLF2	X_19.8kHz		-9999.999	f10.3
62	X_VLF3	X_21.4kHz		-9999.999	f10.3
63	X_VLF4	X_22.2kHz		-9999.999	f10.3
64	X_Geofact	X_Geometric factor		-9999.999	f10.3
65	EMZ_nonhprg[1]	Raw (non-HPRG) EMZ01 Window	(fT)	-999.999999	f12.6
66	EMZ_nonhprg[2]	Raw (non-HPRG) EMZ02 Window	(fT)	-999.999999	f12.6
67	EMZ_nonhprg[3]	Raw (non-HPRG) EMZ03 Window	(fT)	-999.999999	f12.6
68	EMZ_nonhprg[4]	Raw (non-HPRG) EMZ04 Window	(fT)	-999.999999	f12.6
69	EMZ_nonhprg[5]	Raw (non-HPRG) EMZ05 Window	(fT)	-999.999999	f12.6
70	EMZ_nonhprg[6]	Raw (non-HPRG) EMZ06 Window	(fT)	-999.999999	f12.6

71	EMZ_nonhprg[7]	Raw (non-HPRG) EMZ07 Window	(fT)	-999.999999	f12.6
72	EMZ_nonhprg[8]	Raw (non-HPRG) EMZ08 Window	(fT)	-999.999999	f12.6
73	EMZ_nonhprg[9]	Raw (non-HPRG) EMZ09 Window	(fT)	-999.999999	f12.6
74	EMZ_nonhprg[10]	Raw (non-HPRG) EMZ10 Window	(fT)	-999.999999	f12.6
75	EMZ_nonhprg[11]	Raw (non-HPRG) EMZ11 Window	(fT)	-999.999999	f12.6
76	EMZ_nonhprg[12]	Raw (non-HPRG) EMZ12 Window	(fT)	-999.999999	f12.6
77	EMZ_nonhprg[13]	Raw (non-HPRG) EMZ13 Window	(fT)	-999.999999	f12.6
78	EMZ_nonhprg[14]	Raw (non-HPRG) EMZ14 Window	(fT)	-999.999999	f12.6
79	EMZ_nonhprg[15]	Raw (non-HPRG) EMZ15 Window	(fT)	-999.999999	f12.6
80	EMZ_hprg[1]	Final HPRG EMZ01 Window	(fT)	-999.999999	f12.6
81	EMZ_hprg[2]	Final HPRG EMZ02 Window	(fT)	-999.999999	f12.6
82	EMZ_hprg[3]	Final HPRG EMZ03 Window	(fT)	-999.999999	f12.6
83	EMZ_hprg[4]	Final HPRG EMZ04 Window	(fT)	-999.999999	f12.6
84	EMZ_hprg[5]	Final HPRG EMZ05 Window	(fT)	-999.999999	f12.6
85	EMZ_hprg[6]	Final HPRG EMZ06 Window	(fT)	-999.999999	f12.6
86	EMZ_hprg[7]	Final HPRG EMZ07 Window	(fT)	-999.999999	f12.6
87	EMZ_hprg[8]	Final HPRG EMZ08 Window	(fT)	-999.999999	f12.6
88	EMZ_hprg[9]	Final HPRG EMZ09 Window	(fT)	-999.999999	f12.6
89	EMZ_hprg[10]	Final HPRG EMZ10 Window	(fT)	-999.999999	f12.6
90	EMZ_hprg[11]	Final HPRG EMZ11 Window	(fT)	-999.999999	f12.6
91	EMZ_hprg[12]	Final HPRG EMZ12 Window	(fT)	-999.999999	f12.6
92	EMZ_hprg[13]	Final HPRG EMZ13 Window	(fT)	-999.999999	f12.6
93	EMZ_hprg[14]	Final HPRG EMZ14 Window	(fT)	-999.999999	f12.6
94	EMZ_hprg[15]	Final HPRG EMZ15 Window	(fT)	-999.999999	f12.6
95	Z_Sferics	Z_Sferics		-9999.999	f10.3
96	Z_Lowfreq	Z_Lowfreq		-9999.999	f10.3
97	Z_Powerline	Z_Powerline		-9999.999	f10.3
98	Z_VLF1	Z_18.2kHz		-9999.999	f10.3
99	Z_VLF2	Z_19.8kHz		-9999.999	f10.3
100	Z_VLF3	Z_21.4kHz		-9999.999	f10.3
101	Z_VLF4	Z_22.2kHz		-9999.999	f10.3
102	Z_Geofact	Z_Geometric factor		-9999.999	f10.3

Line Number	X-minimum	X-maximum	Y-minimum	Y-maximum	# of points	Total distance
L1001:26	717054.491	811546.298	8528905.981	8528959.518	7563	94506.47032941
L1002:26	716984.965	814850.006	8523899.121	8523982.425	7598	97890.27165981
L1003:26	716972.559	818121.656	8518909.152	8518962.106	8303	101160.7638316
L1004.1:26	706574.446	821375.203	8513907.501	8513977.996	8978	114824.8105083
L1005:24	705629.312	824639.828	8508912.102	8508965.665	9773	119025.9570798
L1006:25	702166.015	827898.153	8503907.329	8504118.420	10045	125770.3323884
L1007:25	730973.491	829853.319	8498881.756	8498960.758	8078	98905.90245379
L1008:23	730984.531	830515.216	8493903.486	8493971.461	7483	99547.15337167
L1009:19	730981.205	831196.371	8488932.009	8488944.329	8594	100217.3040429
L1010:19	730990.115	831863.395	8483931.793	8483950.090	7726	100875.8643737
L1011:16	730995.350	832533.553	8478929.880	8478947.466	7999	101541.7416906
L1012.1:13	730998.137	833189.704	8473932.551	8473946.661	8204	102195.1771027
L1013:13	731002.460	833893.134	8468928.161	8468948.346	8576	102893.5857707
L1014:12	731002.844	834526.009	8463930.875	8463945.255	8427	103525.6344121
L1015:12	731016.192	835207.830	8458933.581	8458943.931	8259	104193.678759
L1016:11	731016.912	835867.707	8453931.350	8453946.151	8488	104853.5055678
L1017:11	731021.015	836531.555	8448931.321	8448945.918	8269	105512.5575
L1018:7	731026.891	837198.797	8443918.885	8443985.029	8573	106196.1165784
L1019:7	731032.225	837869.018	8438920.779	8438955.696	8436	106849.3985994
L1020:7	731036.029	838512.259	8433928.268	8433965.824	8619	107485.7810041
L1021:7	731038.180	839197.539	8428927.135	8428951.281	8746	108164.7401211
L1022:6	731039.131	839841.084	8423923.079	8423959.511	8412	108813.4725488
L1023:6	731035.090	854355.925	8418922.222	8419040.502	9866	123349.0689783
L1024:4	731033.834	863419.538	8413915.536	8413997.106	10282	132418.5787375
L1025:4	731030.301	849264.298	8408304.743	8409012.268	9613	118418.1561764
L1026:3	731027.983	849366.731	8403916.448	8403979.053	10144	118363.6651373
L1027.1:3	731026.861	849438.932	8398833.636	8398963.234	9434	118453.2972336
L1028:3	731026.903	849521.448	8393821.028	8394070.307	10281	118593.7656567
L1033:8	844129.830	852270.484	8414602.601	8414610.281	634	8140.943586654
L1034:8	844119.381	852267.355	8414270.291	8414277.645	664	8148.257946082
L1036:8	844139.777	852244.798	8413601.001	8413610.400	660	8105.407112669
L1037:8	844149.372	852256.192	8413270.586	8413278.628	642	8107.023640238
L1038:8	844158.933	853099.111	8412935.179	8412942.852	715	8940.483502523
L1039:8	844163.383	861548.113	8412601.939	8412611.984	1370	17385.22593279
L1040:8	844176.936	861550.795	8412266.389	8412277.170	1405	17374.64290845
L1041:8	844179.925	861546.921	8411933.021	8411944.985	1376	17367.50904917
L1042:8	844228.349	861554.523	8411599.396	8411611.201	1407	17326.95020998
L1043:8	844458.628	861557.683	8411269.017	8411277.642	1347	17099.57046158
L1044:8	850579.749	861556.200	8410932.412	8410942.635	859	10976.70606342
L1045:8	850602.648	861551.059	8410600.539	8410610.453	868	10948.76416913
L1046:8	850614.573	861559.796	8410266.605	8410282.146	879	10945.65016395
L1047:8	850634.962	861556.183	8409933.981	8409943.931	852	10921.4548112
L1048:8	850656.892	861556.921	8409600.218	8409613.185	866	10900.34383386

L1049:8	850674.373	861562.744	8409267.744	8409277.845	858	10888.58194254
L1055:9	749876.548	764368.420	8428669.780	8438406.254	1463	17459.30862065
L1056.1:9	749729.570	764225.342	8428475.016	8438204.272	1343	17458.35023562
L1057:9	744461.111	764084.333	8428267.888	8441439.226	1947	23634.07324208
L1058:9	744303.119	763944.591	8428065.102	8441242.307	1826	23652.49643681
L1059:9	744145.729	763799.260	8427853.274	8441055.020	1927	23676.34268387
L1060:9	743985.431	763656.833	8427645.696	8440852.821	1863	23694.23277905
L1061:9	743834.414	763514.154	8427438.477	8440656.164	1889	23707.40629321
L1062:9	743671.481	763380.612	8427232.031	8440463.515	1875	23739.12168172
L1063:9	743512.844	763234.919	8427030.041	8440269.215	1903	23754.33731976
L1064:10	743357.054	763095.232	8426824.625	8440071.010	1886	23771.51161534
L1065:10	743207.427	762950.809	8426614.500	8439872.608	1907	23782.43314499
L1066:10	743043.580	762816.900	8426411.808	8439678.704	1883	23812.18194091
L1067:10	742888.221	762671.835	8426206.474	8439482.685	1901	23825.8670155
L1068:10	742735.228	762527.881	8426003.108	8439284.446	1882	23836.22934965
L1069:10	742579.711	762393.562	8425791.982	8439089.954	1898	23863.11574596
L1070:10	742412.863	762247.215	8425585.808	8438897.761	1885	23888.04745013
L1071:10	742262.092	757004.047	8428802.154	8438697.625	1404	17755.47444746
L1072:10	742100.019	756855.286	8428604.008	8438505.679	1417	17770.35781927
L1077:18	777632.873	785987.207	8491156.302	8491164.773	688	8354.552548163
L1079.1:18	777617.294	786754.699	8490045.910	8490052.432	756	9137.527473584
L1080.1:18	777605.310	789539.245	8489489.372	8489502.002	919	11934.32986217
L1082.1:18	777576.268	792184.931	8488378.954	8488388.627	1115	14609.05642825
L1083.1:18	777556.806	792188.071	8487823.261	8487834.501	1222	14631.60824082
L1085.2:46	777576.822	792144.333	8486702.638	8486726.272	1224	14568.67811904
L1086:17	777595.809	792152.101	8486155.742	8486166.416	1152	14556.9666841
L1088:17	777563.646	792164.107	8485046.473	8485055.291	1151	14600.79308823
L1089:17	777567.458	792185.878	8484489.948	8484498.787	1183	14618.7083865
L1091:17	777518.360	792065.727	8483377.581	8483386.025	1187	14547.68454788
L1092:17	777512.877	792071.104	8482823.599	8482831.584	1165	14558.44745053
L1094:17	777494.986	792133.235	8481711.714	8481721.147	1181	14638.55592404
L1095:17	777487.387	792133.633	8481155.374	8481165.172	1183	14646.57957258
L1097:17	777515.098	792136.523	8480043.892	8480053.914	1179	14621.65221817
L1098:17	777727.614	792133.124	8479489.664	8479501.872	1153	14405.90319359
L1100:17	778255.199	792045.846	8478379.774	8478392.410	1089	13790.99619338
L1101:17	778455.899	792053.177	8477825.368	8477831.908	1131	13597.46997755
L1103:17	778965.888	792133.856	8476714.538	8476719.714	1078	13168.08687861
L1104:17	779210.053	792139.025	8476158.188	8476171.621	1011	12929.48347743
L1106:14	777450.161	792054.680	8475041.713	8475059.728	1156	14605.82506319
L1107:17	777473.374	792074.010	8474488.842	8474496.825	1163	14600.96003386
L1109:14	777422.302	791986.658	8473377.813	8473387.648	1165	14564.90754487
L1110:14	777446.915	792010.011	8472823.805	8472836.490	1168	14563.84182877
L1112:14	777428.722	791967.549	8471712.931	8471722.210	1146	14539.44602746
L1113:14	777395.902	791959.204	8471156.636	8471166.159	1155	14564.05352639
L1115:14	777431.302	791952.920	8470043.645	8470056.520	1150	14522.20383703
L1116:14	777401.989	791968.435	8469489.928	8469499.549	1167	14567.02826116
L1118:14	777409.320	791938.471	8468378.771	8468388.599	1174	14529.81292969
L1119:14	777373.014	791962.664	8467821.107	8467832.793	1193	14590.19871129
L1121:14	776976.029	785095.718	8466711.547	8466720.272	637	8119.900628213
L1122:13	776981.019	785114.797	8466157.017	8466167.215	686	8134.35704622
L1124:13	776972.844	785092.165	8465045.591	8465053.012	658	8119.759164813
L1125:13	776981.772	785090.775	8464484.498	8464498.905	637	8109.679156007
L1127:13	776896.622	785040.868	8463378.776	8463387.230	631	8144.569827117
L1128:13	776888.727	785046.261	8462824.519	8462831.824	661	8157.975217764
L1129:11	776888.350	785031.694	8462269.106	8462275.284	639	8143.618582333
L1130:11	776894.292	785031.810	8461710.007	8461723.565	659	8138.141952908
L1131.1:13	776888.525	785032.126	8461157.093	8461163.315	638	8143.982664051
L1132:11	776889.598	785029.076	8460601.434	8460611.329	647	8139.932327092
L1133:11	776895.038	785021.269	8460044.818	8460055.464	630	8126.567698657
L1134:11	776895.408	785014.202	8459490.524	8459499.058	633	8119.00557901
L1136.1:13	776895.936	785047.740	8458375.979	8458386.408	667	8152.200759553
L1142:37	752058.855	760268.121	8504592.845	8504632.358	694	8212.378908161
L1143:37	752035.151	760272.633	8504271.314	8504294.892	663	8238.148610014
L1145:37	752043.791	760298.671	8503601.422	8503648.826	658	8256.581628456
L1146:37	752039.250	760311.623	8503262.913	8503292.178	662	8273.906622016
L1147:36	752043.159	760306.915	8502916.392	8502965.628	627	8266.458589981
L1148:36	752040.696	760307.089	8502589.942	8502635.856	618	8269.727547073
L1150:36	752037.884	760312.821	8501930.895	8501956.850	633	8276.138182521
L1151:36	752032.567	760322.815	8501597.854	8501622.676	616	8290.870789667
L1152:36	752030.123	760317.620	8501261.672	8501288.938	634	8288.247010235
L1153:36	752028.930	760312.317	8500929.113	8500947.292	637	8283.749928362
L1155:36	752054.486	760325.361	8500266.494	8500280.014	644	8271.16011211
L1156:36	752048.654	760322.730	8499934.405	8499945.540	623	8274.282040113
L1162:36	767562.139	777899.528	8502597.205	8502620.037	778	10338.56899944
L1164:36	767561.341	777870.537	8501935.352	8501953.841	767	10309.50521396
L1165:36	767575.894	777867.673	8501604.505	8501625.576	823	10292.471407
L1166:36	767592.148	777875.425	8501257.106	8501286.963	775	10284.51834435
L1167:36	767604.271	777873.091	8500932.968	8500961.485	797	10270.63800471
L1169:36	767600.054	777828.097	8500268.210	8500284.966	794	10228.60475142
L1170:36	767598.614	777842.052	8499912.874	8499951.853	764	10245.14744375
L1171:36	767607.591	777848.783	8499598.565	8499616.870	805	10241.69583329
L1172:36	767616.960	777853.485	8499265.977	8499286.299	801	10236.93812092
L1174:36	763188.187	771347.493	8498599.392	8498618.362	641	8159.842381658
L1175:36	763205.287	771354.964	8498263.292	8498294.293	623	8150.313552839
L1176:36	763211.249	771350.759	8497933.906	8497947.032	623	8139.702795865

L1177.1:36	763230.754	771360.451	8497596.606	8497620.554	627	8131.096227131
L1184:35	819984.426	828280.493	8501271.877	8501314.253	704	8299.105290463
L1185:35	819976.657	828282.270	8500929.146	8500957.970	648	8307.704477525
L1186:34	819976.678	828277.934	8500581.942	8500624.389	666	8303.12749912
L1187:35	819988.622	828272.796	8500255.525	8500282.385	691	8285.507520777
L1188:34	819989.683	828275.686	8499926.180	8499960.081	703	8288.805973634
L1189:34	819983.212	828270.534	8499576.419	8499619.890	645	8290.091799058
L1190:34	819986.187	828274.958	8499267.931	8499294.879	655	8290.559869482
L1192:35	819984.590	828236.984	8498596.498	8498623.134	669	8253.346438738
L1193:31	819992.229	828237.894	8498251.789	8498286.524	714	8247.023715049
L1194:31	819990.393	828234.574	8497925.856	8497946.985	619	8245.013572139
L1195:35	819996.097	828239.156	8497592.198	8497625.315	684	8244.464680762
L1196:31	819988.986	828232.744	8497257.343	8497297.974	609	8247.484331398
L1197:31	819989.919	828234.350	8496923.748	8496958.048	699	8247.203529654
L1198:31	820004.507	828230.142	8496588.004	8496621.104	619	8226.931648498
L1204.1:46	766175.203	774295.662	8526266.387	8526279.983	659	8121.030566066
L1205:45	766190.862	774330.541	8525931.259	8525944.915	657	8139.974999173
L1207:45	766146.142	774302.268	8525266.816	8525278.087	656	8156.391086075
L1208:45	766150.032	774317.002	8524932.805	8524952.248	682	8167.871104316
L1209:45	766157.425	774326.506	8524600.913	8524611.627	669	8169.38872975
L1210.1:46	766171.999	774342.608	8524269.640	8524280.050	666	8170.885641295
L1212:45	766143.180	774333.880	8523601.562	8523610.063	678	8191.018851164
L1213:45	766147.529	774338.546	8523266.786	8523277.295	675	8191.424988987
L1214:44	766157.497	774343.558	8522934.509	8522946.120	670	8186.419348457
L1215:44	766164.690	774352.061	8522604.155	8522616.924	680	8187.703638544
L1217.1:44	766110.241	774350.027	8521934.195	8521968.370	684	8241.123723154
L1218:44	766117.702	774340.162	8521600.809	8521608.824	683	8222.787276091
L1224:40	782983.893	791105.683	8521080.125	8521094.682	652	8122.242129274
L1225.1:42	782983.894	791100.686	8520841.285	8520854.170	727	8117.415480605
L1227:40	782954.981	791059.597	8520353.219	8520373.841	663	8105.287930903
L1228:40	782959.430	791057.172	8520122.352	8520137.979	633	8098.538182952
L1229:40	782962.982	791063.863	8519885.985	8519898.175	666	8101.38116959
L1230:40	782958.722	791072.506	8519645.320	8519665.306	646	8114.508680883
L1231:40	782964.823	791071.832	8519404.298	8519422.740	662	8107.529906843
L1232:40	782969.165	791076.825	8519172.797	8519186.292	635	8108.021077162
L1234:40	782923.845	791078.762	8518700.723	8518710.724	639	8155.153767697
L1235.2:42	782929.151	791079.898	8518459.534	8518470.380	710	8151.132253814
L1236:40	782932.629	791072.195	8518225.202	8518233.405	639	8139.875943517
L1237:40	782927.689	791080.848	8517982.175	8517990.647	660	8153.45624522
L1238:40	782933.641	791084.138	8517743.831	8517756.807	645	8150.882214869
L1239:40	782933.683	791084.079	8517506.700	8517529.638	663	8151.100022044
L1241:40	782935.267	791056.955	8517019.002	8517044.370	688	8123.049907249
L1242:40	782936.850	791059.291	8516790.603	8516803.296	647	8122.711194865
L1243:40	782932.238	791064.976	8516552.572	8516561.233	677	8132.988578554
L1244:40	782935.993	791062.281	8516314.160	8516328.924	665	8126.693123519
L1245:40	782945.004	791056.484	8516072.628	8516086.292	686	8111.832311851
L1246.1:40	782950.772	791061.666	8515839.359	8515864.146	666	8111.442395611
L1248:40	782932.779	791035.228	8515369.743	8515379.976	664	8102.715122491
L1249:40	782925.953	791030.326	8515124.832	8515139.088	697	8104.752714875
L1250:40	782929.111	791026.716	8514888.192	8514909.503	658	8098.040178007
L1251:40	782930.457	791017.035	8514648.174	8514662.315	685	8086.778509595
L1252:40	782928.070	791012.117	8514408.927	8514426.036	641	8084.518827585
L1253:40	782923.297	791010.293	8514172.854	8514183.541	684	8087.269365055
L1255:40	782907.031	791028.580	8513695.057	8513708.430	683	8121.958188269
L1256.1:40	782903.994	791027.743	8513459.787	8513475.447	656	8124.16917963
L1257.1:40	782893.243	791019.716	8513218.945	8513230.222	680	8126.96522843
L1263.1:44	743482.355	811458.426	8527264.256	8527289.690	5455	67979.66737707
L1264.1:44	743436.132	811468.540	8525594.827	8525625.120	5553	68037.33289941
L1266.2:46	743413.573	811408.947	8522261.823	8522282.708	5699	67998.75060631
L1267.1:42	743431.000	811388.524	8520591.145	8520635.648	5480	67963.33208637
L1269:38	743374.687	811335.141	8517250.756	8517304.075	5263	67972.2063792
L1270.2:44	743373.504	811312.481	8515594.390	8515618.522	5552	67941.68284151
L1272:38	743261.028	811266.098	8512246.509	8512304.275	5463	68011.48598071
L1273.1:38	743294.627	811272.244	8510581.861	8510632.843	5094	67985.98218654
L1275.1:38	743228.820	811216.190	8507251.010	8507305.733	4953	67994.51584324
L1276.1:38	743229.451	811222.553	8505580.835	8505632.269	5605	68004.81939954
L1278.2:38	743110.255	811165.527	8502249.170	8502299.845	5464	68064.29302883
L1279:35	743177.462	811094.213	8500585.583	8500626.132	5441	67922.61145172
L1281:32	743114.110	811047.513	8497247.322	8497287.297	5315	67941.69599333
L1282:35	743064.859	811044.347	8495587.843	8495623.279	5145	67985.12082843
L1284.1:24	743011.430	811226.341	8492246.242	8492305.935	5488	68237.61646479
L1285:22	742975.826	811085.417	8490590.655	8490623.102	5438	68117.66087436
L1287:22	742890.685	810954.353	8487257.593	8487288.508	5316	68070.30187329
L1288:32	742900.260	811024.999	8485593.419	8485629.630	5596	68131.06992057
L1290:21	742869.878	810958.767	8482264.465	8482278.475	5741	68091.19456868
L1291.1:25	742894.998	810885.379	8480580.466	8480641.219	5098	67998.5222283
L1293:21	742784.747	810890.260	8477264.649	8477279.657	5319	68108.02689833
L1294.1:19	742770.207	810947.341	8475599.645	8475611.677	5580	68178.96439432
L1296:18	742743.056	810949.634	8472267.443	8472277.510	5510	68208.20157177
L1297.1:46	742733.486	810687.761	8470582.142	8470637.271	5494	67964.29055243
L1299:12	742595.213	810687.418	8467263.406	8467278.770	5533	68096.060559
L1300:12	742593.315	810814.953	8465595.899	8465615.796	5469	68224.28158998
L1001601:55	625935.788	682412.685	8558924.554	8558953.669	4628	56487.52541903
L1001704:53	707123.949	789219.007	8558679.849	8558976.277	6448	82156.1982028
L1001801:55	625774.400	682114.921	8553928.914	8553964.172	4498	56352.99921561

L1001902:51	707366.497	789550.465	8553928.702	8553976.913	6779	82190.3780246
L1002001:55	625609.076	681798.163	8548908.723	8548977.416	4593	56208.32484876
L1002101:53	705961.886	789955.051	8548925.813	8548957.442	6422	84004.55282099
L1002201:55	626108.679	681108.362	8543881.092	8544009.004	4324	55046.96846941
L1002301:53	703712.376	790353.863	8543922.115	8543957.322	7087	86651.50902606
L1002401:56	629275.124	682983.057	8538882.527	8538971.090	4264	53720.59966247
L1002501:54	707020.945	790710.862	8538917.587	8538967.485	6685	83707.27299509
L1002601:56	632633.770	684781.662	8533921.984	8533973.665	4202	52156.91002273
L1002801:54	726300.481	791091.483	8533923.467	8533960.271	5374	64804.30344044
L1002901:56	635591.990	688492.917	8528918.729	8528957.770	4124	52906.61797798
L1003001:56	638753.429	690173.754	8523920.663	8523962.560	4100	51424.53219618
L1003101:56	641909.953	691304.207	8518923.358	8518952.151	3867	49399.30490184
L1003201:56	645074.710	694046.289	8513931.041	8513955.685	3853	48975.44299967
L1003301:56	645068.325	696161.593	8508922.337	8508956.728	4054	51100.58638343
L1003401:56	635660.957	699240.934	8503879.164	8503962.731	5145	63594.0179016
L1003502:61	621133.967	730981.338	8498916.335	8498962.813	8056	109861.8443489
L1003601:57	607465.609	730988.573	8493931.165	8493966.236	10740	123532.2392966
L1003701:63	606710.137	730991.520	8488898.170	8488959.733	8933	124302.8288111
L1003801:61	605928.652	731003.833	8483900.977	8483968.222	11018	125108.4736118
L1003902:84	605194.705	731014.355	8478933.545	8478945.565	9720	125821.2981644
L1004001:63	604446.591	731023.614	8473890.262	8473961.329	11656	126608.0761067
L1004101:72	603685.780	731020.904	8468933.292	8468947.532	9568	127340.8107917
L1004201:72	602932.569	731038.050	8463930.169	8463946.361	11088	128111.4797631
L1004301:72	602187.325	731037.280	8458932.918	8458953.047	9523	128853.8711124
L1004401:75	601438.717	731039.867	8453933.604	8453946.043	10574	129604.5214729
L1004501:75	600689.872	731042.401	8448932.135	8448946.583	10073	130356.3404202
L1004601:78	599937.436	731047.518	8443931.844	8443951.598	11229	131114.9549179
L1004701:75	599183.785	731040.421	8438933.303	8438947.996	10357	131859.828282
L1004801:80	598415.350	731045.287	8433931.433	8433948.139	11014	132634.8263767
L1004901:78	597705.664	731044.472	8428931.441	8428946.933	9966	133342.0571579
L1005001:81	596940.562	731040.381	8423933.979	8423944.836	12141	134103.0992267
L1005101:79	596218.719	731044.080	8418930.391	8418946.399	10014	134828.9377815
L1005201:81	595442.380	731039.730	8413931.504	8413948.691	12185	135603.5050089
L1005301:81	594690.025	731039.278	8408932.143	8408945.095	9979	136351.9837181
L1005401:83	593930.006	731038.250	8403932.450	8403944.765	12459	137111.2558487
L1005501:83	593171.022	731035.386	8398933.238	8398945.579	9797	137865.9644754
L1005601:83	592457.509	731037.306	8393932.156	8393946.483	12377	138584.2635425
L1102202:51	707971.408	736834.426	8557273.931	8557293.322	2389	28864.45543144
L1102302:51	707962.255	736842.146	8555605.747	8555630.586	2239	28881.8977173
L1102501:53	707935.949	736800.230	8552273.551	8552345.137	2209	28872.29266132
L1102601:53	707998.403	736754.512	8550598.779	8550726.364	2315	28771.50843187
L1102801:53	707895.327	736721.207	8547270.128	8547577.462	2365	28884.59924808
L1102901:53	707876.631	736717.739	8545612.314	8545635.847	2232	28843.78660797
L1103101:54	707877.758	736707.567	8542273.803	8542304.752	2277	28833.41652577
L1103201:54	707931.523	721475.191	8540611.285	8540641.817	1124	13547.5224602
L1103202:54	723285.874	736652.715	8540604.549	8540648.329	1083	13374.31363724
L1103401:54	726486.646	736648.113	8537263.753	8537310.259	859	10165.15906128
L1200103:84	662258.170	709206.118	8500600.491	8500611.164	3866	46948.78980439
L1200301:57	662244.691	709171.920	8497254.440	8497289.440	3979	46931.18580737
L1200401:57	662245.836	709160.722	8495588.862	8495626.763	3617	46919.53803491
L1200601:60	662210.582	709126.905	8492259.954	8492287.409	3499	46923.24226697
L1200701:60	662200.452	709091.079	8490575.457	8490622.279	4284	46904.64047399
L1200901:62	662166.019	709170.583	8487235.895	8487313.256	4356	47022.14321663
L1201003:62	662173.288	709171.834	8485576.855	8485631.831	3401	47011.08960282
L1201201:65	662131.058	709137.247	8482251.360	8482292.044	3466	47022.11924255
L1201301:65	662130.128	709110.017	8480579.920	8480638.023	4254	46995.45624035
L1201501:66	662098.769	709060.261	8477255.468	8477286.550	4160	46969.53700926
L1201601:66	662124.023	709039.778	8475593.871	8475633.526	3508	46921.02121881
L1201801:66	662046.343	709031.394	8472262.200	8472308.915	3540	46990.99825024
L1201901:66	662083.381	709034.393	8470589.339	8470622.247	4166	46955.76242178
L1202101:67	662060.119	708996.918	8467256.649	8467284.369	4003	46942.23367863
L1202202:82	662033.678	709037.951	8465596.758	8465610.326	3593	47006.01795588
L1202403:79	662019.205	709016.739	8462260.161	8462275.751	3579	46998.83918852
L1202501:70	661985.457	709072.061	8460594.820	8460618.156	4008	47090.68952397
L1202701:70	661965.443	708948.739	8457250.239	8457285.143	3962	46987.01389795
L1202801:70	661960.991	708865.278	8455591.848	8455613.911	3519	46906.16928944
L1203001:73	661956.217	708871.181	8452264.029	8452279.670	3590	46917.03060225
L1203101:73	661949.416	708860.182	8450599.494	8450610.940	4252	46913.73320532
L1203301:73	661918.051	708827.636	8447265.919	8447279.191	4214	46912.92663939
L1203402:80	661921.115	708831.970	8445601.277	8445612.266	3445	46912.08009348
L1203601:74	661875.960	708812.346	8442266.194	8442280.431	3581	46939.11894467
L1203701:74	661859.940	708774.218	8440592.827	8440618.695	4119	46917.84434007
L1203902:79	661872.497	708743.361	8437267.251	8437277.110	4159	46872.20209072
L1204002:79	661851.313	708725.190	8435599.320	8435631.082	3470	46875.29542853
L1204202:81	661823.228	723147.726	8432264.362	8432278.801	4637	61327.53619466
L1204301:74	661827.059	723091.277	8430599.840	8430612.075	5383	61268.08204198
L1204501:74	661763.102	723092.621	8427261.844	8427282.180	5250	61333.25700378
L1204601:74	661790.414	723079.898	8425599.018	8425613.258	4675	61292.33491134
L1204802:80	661749.793	723044.911	8422266.018	8422293.465	4714	61297.09843353
L1204901:78	661757.994	723026.156	8420599.811	8420613.029	5113	61270.49737035
L1205101:80	661704.868	723011.619	8417267.470	8417279.128	5153	61308.54154232
L1205201:77	661711.320	722985.312	8415598.040	8415611.878	4627	61275.97406115
L1205401:78	661669.073	722967.876	8412266.483	8412277.467	4667	61300.97606794
L1205501:82	661696.942	722943.751	8410595.117	8410611.647	5034	61249.49381462
L2400101:56	690761.681	709192.244	8501147.581	8501167.364	1458	18432.37558344

L2400301:57	690737.421	709214.392	8499995.868	8500064.923	1444	18486.94823769
L2400401:57	690714.943	709215.894	8499486.374	8499500.238	1574	18502.09331581
L2400602:60	690714.464	709170.670	8498346.503	8498391.323	1697	18463.04182235
L2400701:58	690707.804	709167.446	8497810.896	8497832.350	1375	18461.8823685
L2400901:59	690736.109	709167.387	8496700.299	8496727.392	1385	18435.37978274
L2401001:60	690729.630	709160.475	8496145.275	8496167.495	1658	18434.55364636
L2401201:62	690708.348	709156.889	8495020.607	8495068.017	1711	18456.49334507
L2401301:59	690686.689	709153.549	8494480.277	8494503.068	1392	18469.64453341
L2401501:60	690703.965	709144.101	8493367.869	8493390.115	1402	18443.26777962
L2401601:62	690688.542	709131.417	8492811.230	8492847.301	1639	18447.40274721
L2401801:62	690682.181	709116.334	8491701.412	8491725.099	1682	18437.50091097
L2401901:62	690680.590	709108.278	8491133.583	8491171.150	1342	18431.72635607
L2402102:76	690672.216	709084.733	8490042.931	8490052.084	1461	18413.01916238
L2402201:62	690663.002	709069.069	8489479.346	8489500.210	1634	18408.61700335
L2402401:64	690679.806	707553.259	8488358.112	8488388.576	1559	16884.32185528
L2402503:65	690686.309	703261.315	8487800.321	8487841.760	962	12581.28248851
L2402702:82	690646.335	703296.663	8486699.293	8486717.756	971	12650.99825251
L2402801:64	690638.155	703306.037	8486145.124	8486166.214	1166	12672.48349984
L2403001:64	690641.761	703271.789	8485035.029	8485056.498	1143	12633.20629835
L2403101:64	690655.563	703292.876	8484480.803	8484502.176	964	12639.03600944
L2403301:65	690634.042	703237.205	8483331.150	8483385.745	957	12605.25176982
L2403401:65	690618.807	703228.997	8482802.015	8482850.078	1121	12617.46072952
L2403601:65	690599.890	703240.658	8481704.627	8481726.829	1091	12644.47641785
L2403701:65	690604.547	703244.982	8481129.276	8481167.484	992	12645.26174896
L2403901:65	690631.935	703230.944	8480026.727	8480061.792	949	12602.80231181
L2404001:65	690617.536	703215.761	8479472.290	8479523.643	1107	12604.58353247
L2404201:65	690591.817	703199.170	8478371.690	8478391.508	1124	12610.5166009
L2404301:65	690569.494	703190.895	8477808.559	8477851.597	934	12624.91292709
L2500101:67	681997.259	694591.624	8470045.482	8470060.811	971	12595.379167
L2500201:67	681987.144	694609.487	8469488.540	8469508.283	1129	12624.35865104
L2500401:76	682002.890	694608.371	8468380.896	8468387.618	1090	12605.83828762
L2500501:71	681985.177	694600.640	8467816.350	8467843.505	932	12617.77857013
L2500701:71	681960.118	694452.348	8466706.350	8466729.326	937	12493.48320669
L2500801:71	681980.811	694539.026	8466150.712	8466170.457	1108	12559.57138518
L2501001:71	681941.148	694578.641	8465038.489	8465057.595	1156	12639.61818078
L2501101:71	681925.600	694591.467	8464488.705	8464515.191	968	12667.22367635
L2501301:71	681946.650	694541.899	8463376.422	8463404.646	946	12597.40160201
L2501401:71	681927.010	694545.597	8462820.948	8462835.335	1140	12620.44053533
L2501601:71	681948.774	694558.693	8461713.613	8461731.236	1143	12611.56428975
L2501701:76	681951.621	694547.921	8461152.687	8461166.476	940	12596.6439694
L2501901:76	681907.099	694542.679	8460047.085	8460053.554	956	12635.82935239
L2502002:79	681899.155	694534.824	8459489.459	8459499.951	1105	12636.292942
L2502202:76	681905.238	694528.072	8458373.244	8458389.622	1101	12623.55741682
L2502302:79	681904.073	694526.886	8457824.522	8457839.378	988	12623.67414046
L2502501:76	681897.569	694526.693	8456713.392	8456721.800	981	12629.57045642
L2502601:76	681899.182	694522.436	8456158.394	8456169.084	1096	12623.80265872
L2502801:76	681900.189	694517.821	8455046.026	8455056.047	1141	12618.24675653
L2502901:76	681880.964	694522.349	8454490.221	8454499.644	983	12641.8039144
L2503101:76	681873.615	694521.815	8453381.668	8453388.730	975	12648.42355266
L2503201:76	681865.407	694546.098	8452825.084	8452833.697	1123	12681.12125673
L2503401:76	681884.028	694463.896	8451715.407	8451721.477	1100	12580.22683441
L2503501:76	681867.610	694439.660	8451159.251	8451167.487	966	12572.40655638
L2503701:76	681860.059	694462.481	8450043.287	8450058.696	956	12603.07150414
L2503801:76	681857.005	694475.544	8449493.255	8449503.136	1123	12619.17110633
L2504001:76	681811.772	694541.816	8448381.607	8448390.067	1092	12730.74084399
L2504101:76	681802.893	694553.082	8447824.627	8447835.724	987	12750.96032027
L2504301:76	681808.302	694631.827	8446713.027	8446722.934	978	12824.12654665
L2504401:76	681815.147	694633.694	8446157.691	8446181.373	1092	12819.62491459
L2504601:76	681799.333	694538.124	8445044.757	8445056.785	1069	12739.73333341
L2504701:76	681767.183	694527.765	8444491.536	8444500.652	958	12760.91316702
L2504901:76	681777.464	694674.900	8443375.815	8443391.758	996	12898.35575003
L2505001:76	681763.576	694670.992	8442825.454	8442839.280	1073	12908.33832697
L2505201:76	681791.944	694407.793	8441704.371	8441724.141	1024	12616.86081687
L2505301:76	681790.948	694406.220	8441158.371	8441167.587	970	12615.74604072
L2600101:66	699126.695	699158.153	8486713.375	8502165.553	1231	15457.62560991
L2600201:66	704122.955	704168.824	8486565.804	8505023.633	1589	18464.99100679
L2600301:66	709105.293	709151.528	8486437.941	8516498.450	2405	30068.27925234
L2600401:84	684133.001	684143.448	8420601.541	8470281.458	4145	49680.71799533
L2600501:84	689130.403	689155.302	8411270.176	8470130.627	4540	58861.90622729
L2600602:84	694131.954	694143.264	8411244.788	8505125.445	7822	93882.10722874
L2600701:79	699131.523	699142.539	8411212.414	8435599.862	1894	24388.14554015
L3200201:54	715125.189	723188.404	8553597.963	8553649.427	598	8069.531142168
L3200301:54	715127.978	723217.749	8553279.415	8553293.572	718	8090.495355723
L3200401:54	715141.971	723228.838	8552948.175	8552961.476	603	8087.427090022
L3200501:54	715141.838	723256.232	8552609.194	8552633.740	745	8115.91180749
L3200701:54	715215.696	723261.333	8551938.607	8551968.811	727	8048.679337678
L3200801:54	716043.570	724127.459	8551611.229	8551624.578	591	8084.402275409
L3200901:54	716257.427	724302.053	8551277.494	8551291.154	710	8045.093391183
L3201001:54	716272.157	724337.492	8550941.990	8550962.176	600	8066.776468672
L3201201:54	716315.692	724371.235	8550272.424	8550308.211	616	8058.606993173
L3201301:54	716321.965	724393.313	8549946.648	8549963.013	727	8072.128197677
L3201401:54	716343.202	724410.488	8549605.780	8549634.002	622	8068.711523083
L3201501:54	716356.109	724436.928	8549276.676	8549292.651	707	8082.025446876
L3400101:51	779805.809	788911.330	8561599.290	8561610.325	715	9106.162816259
L3400201:51	779802.184	788924.578	8561269.503	8561280.124	757	9122.777933413

L3400301:51	779801.042	788928.112	8560919.401	8560953.967	729	9128.358601187
L3400401:51	779797.259	788931.651	8560601.115	8560614.733	786	9135.032738892
L3400501:51	779807.026	788930.909	8560263.494	8560284.995	714	9124.940205479
L3400601:51	779801.171	788932.307	8559935.786	8559949.344	770	9131.721086524
L3400701:51	779802.963	788939.491	8559593.214	8559612.604	708	9137.311151525
L3400801:51	779805.330	788946.558	8559267.497	8559281.299	773	9142.430805932
L3401001:52	779781.285	788972.636	8558598.138	8558637.783	790	9193.33745131
L3401101:52	779782.182	788964.276	8558261.731	8558280.899	679	9183.339996133
L3401201:52	779779.922	788961.154	8557932.111	8557946.822	804	9182.536291397
L3401301:52	779778.186	788962.973	8557598.882	8557619.336	686	9185.884920373
L3401401:52	779782.733	788950.884	8557267.304	8557280.639	793	9169.031193641
L3401501:52	779779.200	788950.400	8556927.581	8556948.446	669	9172.699150494
ALL	592457.509	863419.538	8393821.028	8561610.325	1140188	14135986.91871

EM Window data – overlap survey lines

```
COMM GA PROJECT NUMBER                                                  1196
COMM FAS PROJECT NUMBER                                                 2017
COMM AREA NUMBER:                                                          1
COMM SURVEY COMPANY:                                  Fugro Airborne Surveys
COMM CLIENT:                                            Geoscience Australia
COMM SURVEY TYPE:                                      25Hz TEMPEST Survey
COMM AREA NAME:                                                 Rum Jungle
COMM STATE:                                                             NT
COMM COUNTRY:                                                      Australia
COMM SURVEY FLOWN:                                 October 2008 to May 2009
COMM LOCATED DATA CREATED:                                        July 2009
COMM
COMM DATUM:                                                           GDA94
COMM PROJECTION:                                                        MGA
COMM ZONE:                                                               52
COMM
COMM SURVEY SPECIFICATIONS
COMM
COMM TRAVERSE LINE SPACING:                                  250 - 5000 m
COMM TRAVERSE LINE DIRECTION:
COMM                     ALL AREAS EXCEPT DALY RIVER AND RJ6:   090-270 deg
COMM                                             DALY RIVER:   124-304 deg
COMM                                                    RJ6:   000-180 deg
COMM NOMINAL TERRAIN CLEARANCE:                                      120 m
COMM FINAL LINE KILOMETRES:                                        14182 km
COMM
COMM LINE NUMBERING
COMM
COMM TRAVERSE LINE NUMBERS:
COMM    Lines flown with PDAS Acquisition System:              10010 - 13000
COMM    Lines flown with FASDAS Acquisition System:        1001601 - 1005601
COMM                                                       1102202 - 1103401
COMM                                                       1200103 - 1205501
COMM                                                       2400101 - 2404301
COMM                                                       2500201 - 2505301
COMM                                                       3200201 - 3201501
COMM                                                       3400101 - 3401501
COMM
COMM SURVEY EQUIPMENT
COMM
COMM AIRCRAFT:                                 Shorts Skyvan SC3-200, VH-WGT
COMM
COMM MAGNETOMETER:                               Scintrex Cs-2 Cesium Vapour
COMM INSTALLATION:                                             stinger mount
COMM RESOLUTION:                                                  0.001 nT
COMM RECORDING INTERVAL:                                             0.2 s
COMM
COMM ELECTROMAGNETIC SYSTEM:                                     25Hz TEMPEST
COMM INSTALLATION:              Transmitter loop mounted on the aircraft
COMM                                      Receiver coils in a towed bird
COMM COIL ORIENTATION:                                                 X,Z
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COMM RECORDING INTERVAL:                                              0.2 s
COMM SYSTEM GEOMETRY:
COMM RECEIVER DISTANCE BEHIND THE TRANSMITTER:                       -120 m
COMM RECEIVER DISTANCE BELOW THE TRANSMITTER:                         -35 m
COMM
COMM RADAR ALTIMETER:                                        Sperry RT-220
COMM RECORDING INTERVAL:                                              0.2 s
COMM
COMM LASER ALTIMETER:                                         Optech 501SB
COMM RECORDING INTERVAL:                                              0.2 s
COMM
COMM NAVIGATION:                              real-time differential GPS
COMM RECORDING INTERVAL:                                              1.0 s
COMM
COMM ACQUISITION SYSTEM:                                PDAS-1000 / FASDAS
COMM
COMM DATA PROCESSING
COMM
COMM MAGNETIC DATA
COMM DIURNAL BASE VALUE APPLIED                                     47444 nT
COMM PARALLAX CORRECTION APPLIED
COMM                 PDAS LINES:                                      0.4 s
COMM               FASDAS LINES:                                      0.0 s
COMM IGRF BASE VALUE APPLIED                                        46836 nT
COMM IGRF MODEL 2005 EXTRAPOLATED TO                                  2008.8
COMM DATA HAVE BEEN MICROLEVELLED
COMM
COMM ELECTROMAGNETIC DATA
COMM SYSTEM PARALLAX REMOVED, AS FOLLOWS
COMM PDAS LINES:
COMM      X-COMPONENT EM DATA                                         0.2 s
COMM      Z-COMPONENT EM DATA                                         1.4 s
COMM FASDAS LINES:
COMM      X-COMPONENT EM DATA                                         1.6 s
COMM      Z-COMPONENT EM DATA                                         0.2 s
COMM DATA CORRECTED FOR TRANSMITTER HEIGHT, PITCH AND ROLL
COMM DATA CORRECTED FOR TRANSMITTER-RECEIVER GEOMETRY VARIATIONS
COMM DATA HAVE BEEN MICROLEVELLED
COMM CONDUCTIVITY DEPTH INVERSION CALCULATED                  EMFlow V5.10
COMM CONDUCTIVITIES CALCULATED USING HPRG CORRECTED EMX & EMZ DATA
COMM
COMM DIGITAL TERRAIN DATA
COMM PARALLAX CORRECTION APPLIED TO LIDAR ALIMETER DATA               0.0 s
COMM PARALLAX CORRECTION APPLIED TO GPS ALIMETER DATA                 0.0 s
COMM DTM CALCULATED [DTM = GPS ALTITUDE - LIDAR ALTITUDE - GPS/LIDAR DIST]
COMM N-VALUE APPLIED TO CORRECT DTM TO AUSTRALIAN HEIGHT DATUM (AHD)
COMM DATA HAVE BEEN MICROLEVELLED
COMM
COMM ------------------------------------------------------------------------
COMM DISCLAIMER
COMM ------------------------------------------------------------------------
COMM It is Fugro Airborne Survey’s understanding that the data provided to
COMM the client is to be used for the purpose agreed between the parties.
COMM That purpose was a significant factor in determining the scope and
COMM level of the Services being offered to the Client. Should the purpose
COMM for which the data is used change, the data may no longer be valid or
COMM appropriate and any further use of, or reliance upon, the data in
COMM those circumstances by the Client without Fugro Airborne Survey's
COMM review and advice shall be at the Client's own or sole risk.
COMM
COMM The Services were performed by Fugro Airborne Survey exclusively for
COMM the purposes of the Client. Should the data be made available in whole
COMM or part to any third party, and such party relies thereon, that party
COMM does so wholly at its own and sole risk and Fugro Airborne Survey
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COMM disclaims any liability to such party.
COMM
COMM Where the Services have involved Fugro Airborne Survey's use of any
COMM information provided by the Client or third parties, upon which
COMM Fugro Airborne Survey was reasonably entitled to rely, then the
COMM Services are limited by the accuracy of such information. Fugro
COMM Airborne Survey is not liable for any inaccuracies (including any
COMM incompleteness) in the said information, save as otherwise provided
COMM in the terms of the contract between the Client and Fugro Airborne
COMM Survey.
COMM
COMM With regard to DIGITAL TERRAIN DATA, the accuracy of the elevation
COMM calculation is directly dependent on the accuracy of the two input
COMM parameters lidar altitude and GPS altitude. The radar altitude value may
COMM be erroneous in areas of heavy tree cover, where the altimeter reflects
COMM the distance to the tree canopy rather than the ground. The GPS altitude
COMM value is primarily dependent on the number of available satellites.
COMM Although post-processing of GPS data will yield X and Y accuracies in
COMM the order of 1-2 metres, the accuracy of the altitude value is usually
COMM much less, sometimes in the ±5 metre range.  Further inaccuracies
COMM may be introduced during the interpolation and gridding process.
COMM Because of the inherent inaccuracies of this method, no guarantee is
COMM made or implied that the information displayed is a true
COMM representation of the height above sea level.  Although this product
COMM may be of some use as a general reference,
COMM THIS PRODUCT MUST NOT BE USED FOR NAVIGATION PURPOSES.
COMM ---------------------------------------------------------------------
COMM
COMM ELECTROMAGNETIC SYSTEM
COMM
COMM TEMPEST IS A TIME-DOMAIN SQUARE-WAVE SYSTEM,
COMM TRANSMITTING AT A BASE FREQUENCY OF 25Hz,
COMM WITH 2 ORTHOGONAL-AXIS RECEIVER COILS IN A TOWED BIRD.
COMM FINAL EM OUTPUT IS RECORDED 5 TIMES PER SECOND.
COMM THE TIMES (IN MILLISECONDS) FOR THE 15 WINDOWS ARE:
COMM
COMM WINDOW      START       END      CENTRE
COMM    1        0.007      0.020      0.013
COMM    2        0.033      0.047      0.040
COMM    3        0.060      0.073      0.067
COMM    4        0.087      0.127      0.107
COMM    5        0.140      0.207      0.173
COMM    6        0.220      0.340      0.280
COMM    7        0.353      0.553      0.453
COMM    8        0.567      0.873      0.720
COMM    9        0.887      1.353      1.120
COMM   10        1.367      2.100      1.733
COMM   11        2.113      3.273      2.693
COMM   12        3.287      5.113      4.200
COMM   13        5.127      7.993      6.560
COMM   14        8.007     12.393     10.200
COMM   15       12.407     19.993     16.200
COMM
COMM PULSE WIDTH: 10 ms
COMM
COMM TEMPEST EM data are transformed to the response that would be
COMM obtained with a B-field sensor for a 100% duty cycle square
COMM waveform at the base frequency, involving a 1A change in
COMM current (from -0.5A to +0.5A to -0.5A) in a 1sq.m transmitter.
COMM It is this configuration, rather than the actual acquisition
COMM configuration, which must be specified when modelling TEMPEST data.
COMM
COMM
COMM
```

LOCATED DATA FORMAT

Output field format : DOS - Flat ascii
Number of fields : 102

Field	Channel	Description	Units	Undefined	Format
1	LINE	Line		-99999999	i10
2	FLIGHT	Flight		-99	i4
3	FID	Fiducial	(s)	-999999.9	f8.1
4	PROJECT_FAS	FAS Project Number		-9999	i6
5	PROJECT_GA	GA Project Number		-9999	i6
6	AIRCRAFT	System Number		-9	i3
7	DATE	Date	ddmmyyyy	-9999999	i9
8	TIME	Time - local midnight	(s)	-9999.9	f8.1
9	BEARING	Line Bearing	(deg)	-99	i4
10	LATITUDE	Latitude GDA94	(deg)	-99.9999999	f12.7
11	LONGITUDE	Longitude GDA94	(deg)	-999.9999999	f13.7
12	EASTING	Easting MGA51	(m)	-99999.99	f10.2
13	NORTHING	Northing MGA51	(m)	-999999.99	f11.2
14	LIDAR	Final Lidar altimeter	(m)	-999.99	f8.2
15	RADALT	Final Radar altimeter	(m)	-999.99	f8.2
16	TX_ELEVATION	Final Transmitter Elevation - AHD	(m)	-999.99	f8.2
17	DTM	Final Ground Elevation - AHD	(m)	-999.99	f8.2
18	MAG	Final TMI	(nT)	-99999.999	f11.3
19	TX_PITCH	Transmitter loop pitch	(deg)	-999.99	f8.2
20	TX_ROLL	Transmitter loop roll	(deg)	-999.99	f8.2
21	TX_HEIGHT	Transmitter terrain clearance	(m)	-999.99	f8.2
22	HSep_Raw	Tx-Rx horizontal separation	(m)	-999.99	f8.2
23	VSep_Raw	Tx-Rx vertical separation	(m)	-999.99	f8.2
24	TX_HEIGHT_std	Tx HPRG terrain clearance	(m)	-999.99	f8.2
25	HSep_std	Tx-Rx HPRG horizontal separation	(m)	-999.99	f8.2
26	VSep_std	Tx-Rx HPRG vertical separation	(m)	-999.99	f8.2
27	EMX_nonhprg[1]	Raw (non-HPRG) EMX01 Window	(fT)	-999.999999	f12.6
28	EMX_nonhprg[2]	Raw (non-HPRG) EMX02 Window	(fT)	-999.999999	f12.6
29	EMX_nonhprg[3]	Raw (non-HPRG) EMX03 Window	(fT)	-999.999999	f12.6
30	EMX_nonhprg[4]	Raw (non-HPRG) EMX04 Window	(fT)	-999.999999	f12.6
31	EMX_nonhprg[5]	Raw (non-HPRG) EMX05 Window	(fT)	-999.999999	f12.6
32	EMX_nonhprg[6]	Raw (non-HPRG) EMX06 Window	(fT)	-999.999999	f12.6
33	EMX_nonhprg[7]	Raw (non-HPRG) EMX07 Window	(fT)	-999.999999	f12.6
34	EMX_nonhprg[8]	Raw (non-HPRG) EMX08 Window	(fT)	-999.999999	f12.6
35	EMX_nonhprg[9]	Raw (non-HPRG) EMX09 Window	(fT)	-999.999999	f12.6
36	EMX_nonhprg[10]	Raw (non-HPRG) EMX10 Window	(fT)	-999.999999	f12.6
37	EMX_nonhprg[11]	Raw (non-HPRG) EMX11 Window	(fT)	-999.999999	f12.6
38	EMX_nonhprg[12]	Raw (non-HPRG) EMX12 Window	(fT)	-999.999999	f12.6
39	EMX_nonhprg[13]	Raw (non-HPRG) EMX13 Window	(fT)	-999.999999	f12.6
40	EMX_nonhprg[14]	Raw (non-HPRG) EMX14 Window	(fT)	-999.999999	f12.6
41	EMX_nonhprg[15]	Raw (non-HPRG) EMX15 Window	(fT)	-999.999999	f12.6
42	EMX_hprg[1]	Final HPRG EMX01 Window	(fT)	-999.999999	f12.6
43	EMX_hprg[2]	Final HPRG EMX02 Window	(fT)	-999.999999	f12.6
44	EMX_hprg[3]	Final HPRG EMX03 Window	(fT)	-999.999999	f12.6
45	EMX_hprg[4]	Final HPRG EMX04 Window	(fT)	-999.999999	f12.6
46	EMX_hprg[5]	Final HPRG EMX05 Window	(fT)	-999.999999	f12.6
47	EMX_hprg[6]	Final HPRG EMX06 Window	(fT)	-999.999999	f12.6
48	EMX_hprg[7]	Final HPRG EMX07 Window	(fT)	-999.999999	f12.6
49	EMX_hprg[8]	Final HPRG EMX08 Window	(fT)	-999.999999	f12.6
50	EMX_hprg[9]	Final HPRG EMX09 Window	(fT)	-999.999999	f12.6
51	EMX_hprg[10]	Final HPRG EMX10 Window	(fT)	-999.999999	f12.6
52	EMX_hprg[11]	Final HPRG EMX11 Window	(fT)	-999.999999	f12.6
53	EMX_hprg[12]	Final HPRG EMX12 Window	(fT)	-999.999999	f12.6
54	EMX_hprg[13]	Final HPRG EMX13 Window	(fT)	-999.999999	f12.6
55	EMX_hprg[14]	Final HPRG EMX14 Window	(fT)	-999.999999	f12.6
56	EMX_hprg[15]	Final HPRG EMX15 Window	(fT)	-999.999999	f12.6
57	X_Sferics	X_Sferics		-9999.999	f10.3
58	X_Lowfreq	X_Lowfreq		-9999.999	f10.3
59	X_Powerline	X_Powerline		-9999.999	f10.3
60	X_VLF1	X_18.2kHz		-9999.999	f10.3
61	X_VLF2	X_19.8kHz		-9999.999	f10.3
62	X_VLF3	X_21.4kHz		-9999.999	f10.3

63	X_VLF4	X_22.2kHz		-9999.999	f10.3
64	X_Geofact	X_Geometric factor		-9999.999	f10.3
65	EMZ_nonhprg[1]	Raw (non-HPRG) EMZ01 Window	(fT)	-999.999999	f12.6
66	EMZ_nonhprg[2]	Raw (non-HPRG) EMZ02 Window	(fT)	-999.999999	f12.6
67	EMZ_nonhprg[3]	Raw (non-HPRG) EMZ03 Window	(fT)	-999.999999	f12.6
68	EMZ_nonhprg[4]	Raw (non-HPRG) EMZ04 Window	(fT)	-999.999999	f12.6
69	EMZ_nonhprg[5]	Raw (non-HPRG) EMZ05 Window	(fT)	-999.999999	f12.6
70	EMZ_nonhprg[6]	Raw (non-HPRG) EMZ06 Window	(fT)	-999.999999	f12.6
71	EMZ_nonhprg[7]	Raw (non-HPRG) EMZ07 Window	(fT)	-999.999999	f12.6
72	EMZ_nonhprg[8]	Raw (non-HPRG) EMZ08 Window	(fT)	-999.999999	f12.6
73	EMZ_nonhprg[9]	Raw (non-HPRG) EMZ09 Window	(fT)	-999.999999	f12.6
74	EMZ_nonhprg[10]	Raw (non-HPRG) EMZ10 Window	(fT)	-999.999999	f12.6
75	EMZ_nonhprg[11]	Raw (non-HPRG) EMZ11 Window	(fT)	-999.999999	f12.6
76	EMZ_nonhprg[12]	Raw (non-HPRG) EMZ12 Window	(fT)	-999.999999	f12.6
77	EMZ_nonhprg[13]	Raw (non-HPRG) EMZ13 Window	(fT)	-999.999999	f12.6
78	EMZ_nonhprg[14]	Raw (non-HPRG) EMZ14 Window	(fT)	-999.999999	f12.6
79	EMZ_nonhprg[15]	Raw (non-HPRG) EMZ15 Window	(fT)	-999.999999	f12.6
80	EMZ_hprg[1]	Final HPRG EMZ01 Window	(fT)	-999.999999	f12.6
81	EMZ_hprg[2]	Final HPRG EMZ02 Window	(fT)	-999.999999	f12.6
82	EMZ_hprg[3]	Final HPRG EMZ03 Window	(fT)	-999.999999	f12.6
83	EMZ_hprg[4]	Final HPRG EMZ04 Window	(fT)	-999.999999	f12.6
84	EMZ_hprg[5]	Final HPRG EMZ05 Window	(fT)	-999.999999	f12.6
85	EMZ_hprg[6]	Final HPRG EMZ06 Window	(fT)	-999.999999	f12.6
86	EMZ_hprg[7]	Final HPRG EMZ07 Window	(fT)	-999.999999	f12.6
87	EMZ_hprg[8]	Final HPRG EMZ08 Window	(fT)	-999.999999	f12.6
88	EMZ_hprg[9]	Final HPRG EMZ09 Window	(fT)	-999.999999	f12.6
89	EMZ_hprg[10]	Final HPRG EMZ10 Window	(fT)	-999.999999	f12.6
90	EMZ_hprg[11]	Final HPRG EMZ11 Window	(fT)	-999.999999	f12.6
91	EMZ_hprg[12]	Final HPRG EMZ12 Window	(fT)	-999.999999	f12.6
92	EMZ_hprg[13]	Final HPRG EMZ13 Window	(fT)	-999.999999	f12.6
93	EMZ_hprg[14]	Final HPRG EMZ14 Window	(fT)	-999.999999	f12.6
94	EMZ_hprg[15]	Final HPRG EMZ15 Window	(fT)	-999.999999	f12.6
95	Z_Sferics	Z_Sferics		-9999.999	f10.3
96	Z_Lowfreq	Z_Lowfreq		-9999.999	f10.3
97	Z_Powerline	Z_Powerline		-9999.999	f10.3
98	Z_VLF1	Z_18.2kHz		-9999.999	f10.3
99	Z_VLF2	Z_19.8kHz		-9999.999	f10.3
100	Z_VLF3	Z_21.4kHz		-9999.999	f10.3
101	Z_VLF4	Z_22.2kHz		-9999.999	f10.3
102	Z_Geofact	Z_Geometric factor		-9999.999	f10.3

Line Number	X-minimum	X-maximum	Y-minimum	Y-maximum	# of points	Total distance
L1001:26	717054.491	811546.298	8528905.981	8528959.518	7563	94506.47032941
L1002:26	716984.965	814850.006	8523899.121	8523982.425	7598	97890.27165981
L1003:26	716972.559	818121.656	8518909.152	8518962.106	8303	101160.7638316
L1004.1:26	706574.446	821375.203	8513907.501	8513977.996	8978	114824.8105083
L1005:24	705629.312	824639.828	8508912.102	8508965.665	9773	119025.9570798
L1006:25	702166.015	827898.153	8503907.329	8504118.420	10045	125770.3323884
L1007:25	728946.549	829853.319	8498881.756	8498960.758	8250	100933.5798615
L1008:23	728955.626	830515.216	8493903.486	8493971.461	7639	101576.6743775
L1009:19	728942.897	831196.371	8488932.009	8488944.329	8767	102255.6320103
L1010:19	728951.902	831863.395	8483931.793	8483950.090	7878	102914.084352
L1011:16	728950.151	832533.553	8478929.880	8478947.466	8157	103586.9853873
L1012.1:13	728948.037	833189.704	8473932.551	8473946.661	8371	104245.3141497
L1013:13	728938.725	833893.134	8468928.161	8468948.346	8744	104957.3603164
L1014:12	728939.350	834526.009	8463930.875	8463945.255	8600	105589.1355209
L1015:12	728939.818	835207.830	8458933.581	8458943.931	8426	106270.0599607
L1016:11	728933.811	835867.707	8453931.350	8453946.151	8654	106936.6725811
L1017:11	728935.457	836531.555	8448931.321	8448945.918	8435	107598.1337928
L1018:7	728931.323	837198.797	8443918.885	8443985.029	8730	108291.7403221
L1019:7	728931.538	837869.018	8438920.779	8438955.696	8609	108950.1958865
L1020:7	728932.181	838512.259	8433928.268	8433965.824	8787	109589.6624928
L1021:7	728935.539	839197.539	8428927.135	8428951.281	8914	110267.4684845
L1022:6	728934.676	839841.084	8423923.079	8423959.511	8571	110918.0042179
L1023:6	728939.386	854355.925	8418922.222	8419040.502	10037	125444.947605
L1024:4	728950.653	863419.538	8413915.536	8413997.106	10435	134502.0676225
L1025:4	728944.997	849264.298	8408304.743	8409012.268	9782	120503.7923987
L1026:3	728950.035	849366.731	8403916.448	8403979.053	10328	120442.4240581
L1027.1:3	728961.064	849438.932	8398833.636	8398963.234	9596	120519.3168359
L1028:3	728951.725	849521.448	8393821.028	8394070.307	10469	120669.2782258
L1033:8	844129.830	852270.484	8414602.601	8414610.281	634	8140.943586654
L1034:8	844119.381	852267.355	8414270.291	8414277.645	664	8148.257946082
L1036:8	844139.777	852244.798	8413601.001	8413610.400	660	8105.407112669
L1037:8	844149.372	852256.192	8413270.586	8413278.628	642	8107.023640238
L1038:8	844158.933	853099.111	8412935.179	8412942.852	715	8940.483502523
L1039:8	844163.383	861548.113	8412601.939	8412611.984	1370	17385.22593279

L1040:8	844176.936	861550.795	8412266.389	8412277.170	1405	17374.64290845
L1041:8	844179.925	861546.921	8411933.021	8411944.985	1376	17367.50904917
L1042:8	844228.349	861554.523	8411599.396	8411611.201	1407	17326.95020998
L1043:8	844458.628	861557.683	8411269.017	8411277.642	1347	17099.57046158
L1044:8	850579.749	861556.200	8410932.412	8410942.635	859	10976.70606342
L1045:8	850602.648	861551.059	8410600.539	8410610.453	868	10948.76416913
L1046:8	850614.573	861559.796	8410266.605	8410282.146	879	10945.65016395
L1047:8	850634.962	861556.183	8409933.981	8409943.931	852	10921.4548112
L1048:8	850656.892	861556.921	8409600.218	8409613.185	866	10900.34383386
L1049:8	850674.373	861562.744	8409267.744	8409277.845	858	10888.58194254
L1055:9	749876.548	764368.420	8428669.780	8438406.254	1463	17459.30862065
L1056.1:9	749729.570	764225.342	8428475.016	8438204.272	1343	17458.35023562
L1057:9	744461.111	764084.333	8428267.888	8441439.226	1947	23634.07324208
L1058:9	744303.119	763944.591	8428065.102	8441242.307	1826	23652.49643681
L1059:9	744145.729	763799.260	8427853.274	8441055.020	1927	23676.34268387
L1060:9	743985.431	763656.833	8427645.696	8440852.821	1863	23694.23277905
L1061:9	743834.414	763514.154	8427438.477	8440656.164	1889	23707.40629321
L1062:9	743671.481	763380.612	8427232.031	8440463.515	1875	23739.12168172
L1063:9	743512.844	763234.919	8427030.041	8440269.215	1903	23754.33731976
L1064:10	743357.054	763095.232	8426824.625	8440071.010	1886	23771.51161534
L1065:10	743207.427	762950.809	8426614.500	8439872.608	1907	23782.43314499
L1066:10	743043.580	762816.900	8426411.808	8439678.704	1883	23812.18194091
L1067:10	742888.221	762671.835	8426206.474	8439482.685	1901	23825.8670155
L1068:10	742735.228	762527.881	8426003.108	8439284.446	1882	23836.22934965
L1069:10	742579.711	762393.562	8425791.982	8439089.954	1898	23863.11574596
L1070:10	742412.863	762247.215	8425585.808	8438897.761	1885	23888.04745013
L1071:10	742262.092	757004.047	8428802.154	8438697.625	1404	17755.47444746
L1072:10	742100.019	756855.286	8428604.008	8438505.679	1417	17770.35781927
L1077:18	777632.873	785987.207	8491156.302	8491164.773	688	8354.552548163
L1079.1:18	777617.294	786754.699	8490045.910	8490052.432	756	9137.527473584
L1080.1:18	777605.310	789539.245	8489489.372	8489502.002	919	11934.32986217
L1082.1:18	777576.268	792184.931	8488378.954	8488388.627	1115	14609.05642825
L1083.1:18	777556.806	792188.071	8487823.261	8487834.501	1222	14631.60824082
L1085.2:46	777576.822	792144.333	8486702.638	8486726.272	1224	14568.67811904
L1086:17	777595.809	792152.101	8486155.742	8486166.416	1152	14556.9666841
L1088:17	777563.646	792164.107	8485046.473	8485055.291	1151	14600.79308823
L1089:17	777567.458	792185.878	8484489.948	8484498.787	1183	14618.7083865
L1091:17	777518.360	792065.727	8483377.581	8483386.025	1187	14547.68454788
L1092:17	777512.877	792071.104	8482823.599	8482831.584	1165	14558.44745053
L1094:17	777494.986	792133.235	8481711.714	8481721.147	1181	14638.55592404
L1095:17	777487.387	792133.633	8481155.374	8481165.172	1183	14646.57957258
L1097:17	777515.098	792136.523	8480043.892	8480053.914	1179	14621.65221817
L1098:17	777727.614	792133.124	8479489.664	8479501.872	1153	14405.90319359
L1100:17	778255.199	792045.846	8478379.774	8478392.410	1089	13790.99619338
L1101:17	778455.899	792053.177	8477825.368	8477831.908	1131	13597.46997755
L1103:17	778965.888	792133.856	8476714.538	8476719.714	1078	13168.08687861
L1104:17	779210.053	792139.025	8476158.188	8476171.621	1011	12929.48347743
L1106:14	777450.161	792054.680	8475041.713	8475059.728	1156	14605.82506319
L1107:17	777473.374	792074.010	8474488.842	8474496.825	1163	14600.96003386
L1109:14	777422.302	791986.658	8473377.813	8473387.648	1165	14564.90754487
L1110:14	777446.915	792010.011	8472823.805	8472836.490	1168	14563.84182877
L1112:14	777428.722	791967.549	8471712.931	8471722.210	1146	14539.44602746
L1113:14	777395.902	791959.204	8471156.636	8471166.159	1155	14564.05352639
L1115:14	777431.302	791952.920	8470043.645	8470056.520	1150	14522.20383703
L1116:14	777401.989	791968.435	8469489.928	8469499.549	1167	14567.02826116
L1118:14	777409.320	791938.471	8468378.771	8468388.599	1174	14529.81292969
L1119:14	777373.014	791962.664	8467821.107	8467832.793	1193	14590.19871129
L1121:14	776976.029	785095.718	8466711.547	8466720.272	637	8119.900628213
L1122:13	776981.019	785114.797	8466157.017	8466167.215	686	8134.35704622
L1124:13	776972.844	785092.165	8465045.591	8465053.012	658	8119.759164813
L1125:13	776981.772	785090.775	8464484.498	8464498.905	637	8109.679156007
L1127:13	776896.622	785040.868	8463378.776	8463387.230	631	8144.569827117
L1128:13	776888.727	785046.261	8462824.519	8462831.824	661	8157.975217764
L1129:11	776888.350	785031.694	8462269.106	8462275.284	639	8143.618582333
L1130:11	776894.292	785031.810	8461710.007	8461723.565	659	8138.141952908
L1131.1:13	776888.525	785032.126	8461157.093	8461163.315	638	8143.982664051
L1132:11	776889.598	785029.076	8460601.434	8460611.329	647	8139.932327092
L1133:11	776895.038	785021.269	8460044.818	8460055.464	630	8126.567698657
L1134:11	776895.408	785014.202	8459490.524	8459499.058	633	8119.00557901
L1136.1:13	776895.936	785047.740	8458375.979	8458386.408	667	8152.200759553
L1142:37	752058.855	760268.121	8504592.845	8504632.358	694	8212.378908161
L1143:37	752035.151	760272.633	8504271.314	8504294.892	663	8238.148610014
L1145:37	752043.791	760298.671	8503601.422	8503648.826	658	8256.581628456
L1146:37	752039.250	760311.623	8503262.913	8503292.178	662	8273.906622016
L1147:36	752043.159	760306.915	8502916.392	8502965.628	627	8266.458589981
L1148:36	752040.696	760307.089	8502589.942	8502635.856	618	8269.727547073
L1150:36	752037.884	760312.821	8501930.895	8501956.850	633	8276.138182521
L1151:36	752032.567	760322.815	8501597.854	8501622.676	616	8290.870789667
L1152:36	752030.123	760317.620	8501261.672	8501288.938	634	8288.247010235
L1153:36	752028.930	760312.317	8500929.113	8500947.292	637	8283.749928362
L1155:36	752054.486	760325.361	8500266.494	8500280.014	644	8271.16011211
L1156:36	752048.654	760322.730	8499934.405	8499945.540	623	8274.282040113
L1162:36	767562.139	777899.528	8502597.205	8502620.037	778	10338.56899944
L1164:36	767561.341	777870.537	8501935.352	8501953.841	767	10309.50521396
L1165:36	767575.894	777867.673	8501604.505	8501625.576	823	10292.471407

L1166:36	767592.148	777875.425	8501257.106	8501286.963	775	10284.51834435
L1167:36	767604.271	777873.091	8500932.968	8500961.485	797	10270.63800471
L1169:36	767600.054	777828.097	8500268.210	8500284.966	794	10228.60475142
L1170:36	767598.614	777842.052	8499912.874	8499951.853	764	10245.14744375
L1171:36	767607.591	777848.783	8499598.565	8499616.870	805	10241.69583329
L1172:36	767616.960	777853.485	8499265.977	8499286.299	801	10236.93812092
L1174:36	763188.187	771347.493	8498599.392	8498618.362	641	8159.842381658
L1175:36	763205.287	771354.964	8498263.292	8498294.293	623	8150.313552839
L1176:36	763211.249	771350.759	8497933.906	8497947.032	623	8139.702795865
L1177.1:36	763230.754	771360.451	8497596.606	8497620.554	627	8131.096227131
L1184:35	819984.426	828280.493	8501271.877	8501314.253	704	8299.105290463
L1185:35	819976.657	828282.270	8500929.146	8500957.970	648	8307.704477525
L1186:34	819976.678	828277.934	8500581.942	8500624.389	666	8303.12749912
L1187:35	819988.622	828272.796	8500255.525	8500282.385	691	8285.507520777
L1188:34	819989.683	828275.686	8499926.180	8499960.081	703	8288.805973634
L1189:34	819983.212	828270.534	8499576.419	8499619.890	645	8290.091799058
L1190:34	819986.187	828274.958	8499267.931	8499294.879	655	8290.559869482
L1192:35	819984.590	828236.984	8498596.498	8498623.134	669	8253.346438738
L1193:31	819992.229	828237.894	8498251.789	8498286.524	714	8247.023715049
L1194:31	819990.393	828234.574	8497925.856	8497946.985	619	8245.013572139
L1195:35	819996.097	828239.156	8497592.198	8497625.315	684	8244.464680762
L1196:31	819988.986	828232.744	8497257.343	8497297.974	609	8247.484331398
L1197:31	819989.919	828234.350	8496923.748	8496958.048	699	8247.203529654
L1198:31	820004.507	828230.142	8496588.004	8496621.104	619	8226.931648498
L1204.1:46	766175.203	774295.662	8526266.387	8526279.983	659	8121.030566066
L1205:45	766190.862	774330.541	8525931.259	8525944.915	657	8139.974999173
L1207:45	766146.142	774302.268	8525266.816	8525278.087	656	8156.391086075
L1208:45	766150.032	774317.002	8524932.805	8524952.248	682	8167.871104316
L1209:45	766157.425	774326.506	8524600.913	8524611.627	669	8169.38872975
L1210.1:46	766171.999	774342.608	8524269.640	8524280.050	666	8170.885641295
L1212:45	766143.180	774333.880	8523601.562	8523610.063	678	8191.018851164
L1213:45	766147.529	774338.546	8523266.786	8523277.295	675	8191.424988987
L1214:44	766157.497	774343.558	8522934.509	8522946.120	670	8186.419348457
L1215:44	766164.690	774352.061	8522604.155	8522616.924	680	8187.703638544
L1217.1:44	766110.241	774350.027	8521934.195	8521968.370	684	8241.123723154
L1218:44	766117.702	774340.162	8521600.809	8521608.824	683	8222.787276091
L1224:40	782983.893	791105.683	8521080.125	8521094.682	652	8122.242129274
L1225.1:42	782983.894	791100.686	8520841.285	8520854.170	727	8117.415480605
L1227:40	782954.981	791059.597	8520353.219	8520373.841	663	8105.287930903
L1228:40	782959.430	791057.172	8520122.352	8520137.979	633	8098.538182952
L1229:40	782962.982	791063.863	8519885.985	8519898.175	666	8101.38116959
L1230:40	782958.722	791072.506	8519645.320	8519665.306	646	8114.508680883
L1231:40	782964.823	791071.832	8519404.298	8519422.740	662	8107.529906843
L1232:40	782969.165	791076.825	8519172.797	8519186.292	635	8108.021077162
L1234:40	782923.845	791078.762	8518700.723	8518710.724	639	8155.153767697
L1235.2:42	782929.151	791079.898	8518459.534	8518470.380	710	8151.132253814
L1236:40	782932.629	791072.195	8518225.202	8518233.405	639	8139.875943517
L1237:40	782927.689	791080.848	8517982.175	8517990.647	660	8153.45624522
L1238:40	782933.641	791084.138	8517743.831	8517756.807	645	8150.882214869
L1239:40	782933.683	791084.079	8517506.700	8517529.638	663	8151.100022044
L1241:40	782935.267	791056.955	8517019.002	8517044.370	688	8123.049907249
L1242:40	782936.850	791059.291	8516790.603	8516803.296	647	8122.711194865
L1243:40	782932.238	791064.976	8516552.572	8516561.233	677	8132.988578554
L1244:40	782935.993	791062.281	8516314.160	8516328.924	665	8126.693123519
L1245:40	782945.004	791056.484	8516072.628	8516086.292	686	8111.832311851
L1246.1:40	782950.772	791061.666	8515839.359	8515864.146	666	8111.442395611
L1248:40	782932.779	791035.228	8515369.743	8515379.976	664	8102.715122491
L1249:40	782925.953	791030.326	8515124.832	8515139.088	697	8104.752714875
L1250:40	782929.111	791026.716	8514888.192	8514909.503	658	8098.040178007
L1251:40	782930.457	791017.035	8514648.174	8514662.315	685	8086.778509595
L1252:40	782928.070	791012.117	8514408.927	8514426.036	641	8084.518827585
L1253:40	782923.297	791010.293	8514172.854	8514183.541	684	8087.269365055
L1255:40	782907.031	791028.580	8513695.057	8513708.430	683	8121.958188269
L1256.1:40	782903.994	791027.743	8513459.787	8513475.447	656	8124.16917963
L1257.1:40	782893.243	791019.716	8513218.945	8513230.222	680	8126.96522843
L1263.1:44	743482.355	811458.426	8527264.256	8527289.690	5455	67979.66737707
L1264.1:44	743436.132	811468.540	8525594.827	8525625.120	5553	68037.33289941
L1266.2:46	743413.573	811408.947	8522261.823	8522282.708	5699	67998.75060631
L1267.1:42	743431.000	811388.524	8520591.145	8520635.648	5480	67963.33208637
L1269:38	743374.687	811335.141	8517250.756	8517304.075	5263	67972.2063792
L1270.2:44	743373.504	811312.481	8515594.390	8515618.522	5552	67941.68284151
L1272:38	743261.028	811266.098	8512246.509	8512304.275	5463	68011.48598071
L1273.1:38	743294.627	811272.244	8510581.861	8510632.843	5094	67985.98218654
L1275.1:38	743228.820	811216.190	8507251.010	8507305.733	4953	67994.51584324
L1276.1:38	743229.451	811222.553	8505580.835	8505632.269	5605	68004.81939954
L1278.2:38	743110.255	811165.527	8502249.170	8502299.845	5464	68064.29302883
L1279:35	743177.462	811094.213	8500585.583	8500626.132	5441	67922.61145172
L1281:32	743114.110	811047.513	8497247.322	8497287.297	5315	67941.69599333
L1282:35	743064.859	811044.347	8495587.843	8495623.279	5145	67985.12082843
L1284.1:24	743011.430	811226.341	8492246.242	8492305.935	5488	68237.61646479
L1285:22	742975.826	811085.417	8490590.655	8490623.102	5438	68117.66087436
L1287:22	742890.685	810954.353	8487257.593	8487288.508	5316	68070.30187329
L1288:32	742900.260	811024.999	8485593.419	8485629.630	5596	68131.06992057
L1290:21	742869.878	810958.767	8482264.465	8482278.475	5741	68091.19456868
L1291.1:25	742894.998	810885.379	8480580.466	8480641.219	5098	67998.5222283

L1293:21	742784.747	810890.260	8477264.649	8477279.657	5319	68108.02689833
L1294.1:19	742770.207	810947.341	8475599.645	8475611.677	5580	68178.96439432
L1296:18	742743.056	810949.634	8472267.443	8472277.510	5510	68208.20157177
L1297.1:46	742733.486	810687.761	8470582.142	8470637.271	5494	67964.29055243
L1299:12	742595.213	810687.418	8467263.406	8467278.770	5533	68096.060559
L1300:12	742593.315	810814.953	8465595.899	8465615.796	5469	68224.28158998
L1001601:55	625935.788	682412.685	8558924.554	8558953.669	4628	56487.52541903
L1001704:53	707123.949	789219.007	8558679.849	8558976.277	6448	82156.1982028
L1001801:55	625774.400	682114.921	8553928.914	8553964.172	4498	56352.99921561
L1001902:51	707366.497	789550.465	8553928.702	8553976.913	6779	82190.3780246
L1002001:55	625609.076	681798.163	8548908.723	8548977.416	4593	56208.32484876
L1002101:53	705961.886	789955.051	8548925.813	8548957.442	6422	84004.55282099
L1002201:55	626108.679	681108.362	8543881.092	8544009.004	4324	55046.96846941
L1002301:53	703712.376	790353.863	8543922.115	8543957.322	7087	86651.50902606
L1002401:56	629275.124	682983.057	8538882.527	8538971.090	4264	53720.59966247
L1002501:54	707020.945	790710.862	8538917.587	8538967.485	6685	83707.27299509
L1002601:56	632633.770	684781.662	8533921.984	8533973.665	4202	52156.91002273
L1002801:54	726300.481	791091.483	8533923.467	8533960.271	5374	64804.30344044
L1002901:56	635591.990	688492.917	8528918.729	8528957.770	4124	52906.61797798
L1003001:56	638753.429	690173.754	8523920.663	8523962.560	4100	51424.53219618
L1003101:56	641909.953	691304.207	8518923.358	8518952.151	3867	49399.30490184
L1003201:56	645074.710	694046.289	8513931.041	8513955.685	3853	48975.44299967
L1003301:56	645068.325	696161.593	8508922.337	8508956.728	4054	51100.58638343
L1003401:56	635660.957	699240.934	8503879.164	8503962.731	5145	63594.0179016
L1003502:61	621133.967	730981.338	8498916.335	8498962.813	8056	109861.8443489
L1003601:57	607465.609	730988.573	8493931.165	8493966.236	10740	123532.2392966
L1003701:63	606710.137	730991.520	8488898.170	8488959.733	8933	124302.8288111
L1003801:61	605928.652	731003.833	8483900.977	8483968.222	11018	125108.4736118
L1003902:84	605194.705	731014.355	8478933.545	8478945.565	9720	125821.2981644
L1004001:63	604446.591	731023.614	8473890.262	8473961.329	11656	126608.0761067
L1004101:72	603685.780	731020.904	8468933.292	8468947.532	9568	127340.8107917
L1004201:72	602932.569	731038.050	8463930.169	8463946.361	11088	128111.4797631
L1004301:72	602187.325	731037.280	8458932.918	8458953.047	9523	128853.8711124
L1004401:75	601438.717	731039.867	8453933.604	8453946.043	10574	129604.5214729
L1004501:75	600689.872	731042.401	8448932.135	8448946.583	10073	130356.3404202
L1004601:78	599937.436	731047.518	8443931.844	8443951.598	11229	131114.9549179
L1004701:75	599183.785	731040.421	8438933.303	8438947.996	10357	131859.828282
L1004801:80	598415.350	731045.287	8433931.433	8433948.139	11014	132634.8263767
L1004901:78	597705.664	731044.472	8428931.441	8428946.933	9966	133342.0571579
L1005001:81	596940.562	731040.381	8423933.979	8423944.836	12141	134103.0992267
L1005101:79	596218.719	731044.080	8418930.391	8418946.399	10014	134828.9377815
L1005201:81	595442.380	731039.730	8413931.504	8413948.691	12185	135603.5050089
L1005301:81	594690.025	731039.278	8408932.143	8408945.095	9979	136351.9837181
L1005401:83	593930.006	731038.250	8403932.450	8403944.765	12459	137111.2558487
L1005501:83	593171.022	731035.386	8398933.238	8398945.579	9797	137865.9644754
L1005601:83	592457.509	731037.306	8393932.156	8393946.483	12377	138584.2635425
L1102202:51	707971.408	736834.426	8557273.931	8557293.322	2389	28864.45543144
L1102302:51	707962.255	736842.146	8555605.747	8555630.586	2239	28881.8977173
L1102501:53	707935.949	736800.230	8552273.551	8552345.137	2209	28872.29266132
L1102601:53	707998.403	736754.512	8550598.779	8550726.364	2315	28771.50843187
L1102801:53	707895.327	736721.207	8547270.128	8547577.462	2365	28884.59924808
L1102901:53	707876.631	736717.739	8545612.314	8545635.847	2232	28843.78660797
L1103101:54	707877.758	736707.567	8542273.803	8542304.752	2277	28833.41652577
L1103201:54	707931.523	721475.191	8540611.285	8540641.817	1124	13547.5224602
L1103202:54	723285.874	736652.715	8540604.549	8540648.329	1083	13374.31363724
L1103401:54	726486.646	736648.113	8537263.753	8537310.259	859	10165.15906128
L1200103:84	662258.170	709206.118	8500600.491	8500611.164	3866	46948.78980439
L1200301:57	662244.691	709171.920	8497254.440	8497289.440	3979	46931.18580737
L1200401:57	662245.836	709160.722	8495588.862	8495626.763	3617	46919.53803491
L1200601:60	662210.582	709126.905	8492259.954	8492287.409	3499	46923.24226697
L1200701:60	662200.452	709091.079	8490575.457	8490622.279	4284	46904.64047399
L1200901:62	662166.019	709170.583	8487235.895	8487313.256	4356	47022.14321663
L1201003:62	662173.288	709171.834	8485576.855	8485631.831	3401	47011.08960282
L1201201:65	662131.058	709137.247	8482251.360	8482292.044	3466	47022.11924255
L1201301:65	662130.128	709110.017	8480579.920	8480638.023	4254	46995.45624035
L1201501:66	662098.769	709060.261	8477255.468	8477286.550	4160	46969.53700926
L1201601:66	662124.023	709039.778	8475593.871	8475633.526	3508	46921.02121881
L1201801:66	662046.343	709031.394	8472262.200	8472308.915	3540	46990.99825024
L1201901:66	662083.381	709034.393	8470589.339	8470622.247	4166	46955.76242178
L1202101:67	662060.119	708996.918	8467256.649	8467284.369	4003	46942.23367863
L1202202:82	662033.678	709037.951	8465596.758	8465610.326	3593	47006.01795588
L1202403:79	662019.205	709016.739	8462260.161	8462275.751	3579	46998.83918852
L1202501:70	661985.457	709072.061	8460594.820	8460618.156	4008	47090.68952397
L1202701:70	661965.443	708948.739	8457250.239	8457285.143	3962	46987.01389795
L1202801:70	661960.991	708865.278	8455591.848	8455613.911	3519	46906.16928944
L1203001:73	661956.217	708871.181	8452264.029	8452279.670	3590	46917.03060225
L1203101:73	661949.416	708860.182	8450599.494	8450610.940	4252	46913.73320532
L1203301:73	661918.051	708827.636	8447265.919	8447279.191	4214	46912.92663939
L1203402:80	661921.115	708831.970	8445601.277	8445612.266	3445	46912.08009348
L1203601:74	661875.960	708812.346	8442266.194	8442280.431	3581	46939.11894467
L1203701:74	661859.940	708774.218	8440592.827	8440618.695	4119	46917.84434007
L1203902:79	661872.497	708743.361	8437267.251	8437277.110	4159	46872.20209072
L1204002:79	661851.313	708725.190	8435599.320	8435631.082	3470	46875.29542853
L1204202:81	661823.228	723147.726	8432264.362	8432278.801	4637	61327.53619466
L1204301:74	661827.059	723091.277	8430599.840	8430612.075	5383	61268.08204198

L1204501:74	661763.102	723092.621	8427261.844	8427282.180	5250	61333.25700378
L1204601:74	661790.414	723079.898	8425599.018	8425613.258	4675	61292.33491134
L1204802:80	661749.793	723044.911	8422266.018	8422293.465	4714	61297.09843353
L1204901:78	661757.994	723026.156	8420599.811	8420613.029	5113	61270.49737035
L1205101:80	661704.868	723011.619	8417267.470	8417279.128	5153	61308.54154232
L1205201:77	661711.320	722985.312	8415598.040	8415611.878	4627	61275.97406115
L1205401:78	661669.073	722967.876	8412266.483	8412277.467	4667	61300.97606794
L1205501:82	661696.942	722943.751	8410595.117	8410611.647	5034	61249.49381462
L2400101:56	690761.681	709192.244	8501147.581	8501167.364	1458	18432.37558344
L2400301:57	690737.421	709214.392	8499995.868	8500064.923	1444	18486.94823769
L2400401:57	690714.943	709215.894	8499486.374	8499500.238	1574	18502.09331581
L2400602:60	690714.464	709170.670	8498346.503	8498391.323	1697	18463.04182235
L2400701:58	690707.804	709167.446	8497810.896	8497832.350	1375	18461.8823685
L2400901:59	690736.109	709167.387	8496700.299	8496727.392	1385	18435.37978274
L2401001:60	690729.630	709160.475	8496145.275	8496167.495	1658	18434.55364636
L2401201:62	690708.348	709156.889	8495020.607	8495068.017	1711	18456.49334507
L2401301:59	690686.689	709153.549	8494480.277	8494503.068	1392	18469.64453341
L2401501:60	690703.965	709144.101	8493367.869	8493390.115	1402	18443.26777962
L2401601:62	690688.542	709131.417	8492811.230	8492847.301	1639	18447.40274721
L2401801:62	690682.181	709116.334	8491701.412	8491725.099	1682	18437.50091097
L2401901:62	690680.590	709108.278	8491133.583	8491171.150	1342	18431.72635607
L2402102:76	690672.216	709084.733	8490042.931	8490052.084	1461	18413.01916238
L2402201:62	690663.002	709069.069	8489479.346	8489500.210	1634	18408.61700335
L2402401:64	690679.806	707553.259	8488358.112	8488388.576	1559	16884.32185528
L2402503:65	690686.309	703261.315	8487800.321	8487841.760	962	12581.28248851
L2402702:82	690646.335	703296.663	8486699.293	8486717.756	971	12650.99825251
L2402801:64	690638.155	703306.037	8486145.124	8486166.214	1166	12672.48349984
L2403001:64	690641.761	703271.789	8485035.029	8485056.498	1143	12633.20629835
L2403101:64	690655.563	703292.876	8484480.803	8484502.176	964	12639.03600944
L2403301:65	690634.042	703237.205	8483331.150	8483385.745	957	12605.25176982
L2403401:65	690618.807	703228.997	8482802.015	8482850.078	1121	12617.46072952
L2403601:65	690599.890	703240.658	8481704.627	8481726.829	1091	12644.47641785
L2403701:65	690604.547	703244.982	8481129.276	8481167.484	992	12645.26174896
L2403901:65	690631.935	703230.944	8480026.727	8480061.792	949	12602.80231181
L2404001:65	690617.536	703215.761	8479472.290	8479523.643	1107	12604.58353247
L2404201:65	690591.817	703199.170	8478371.690	8478391.508	1124	12610.5166009
L2404301:65	690569.494	703190.895	8477808.559	8477851.597	934	12624.91292709
L2500101:67	681997.259	694591.624	8470045.482	8470060.811	971	12595.379167
L2500201:67	681987.144	694609.487	8469488.540	8469508.283	1129	12624.35865104
L2500401:76	682002.890	694608.371	8468380.896	8468387.618	1090	12605.83828762
L2500501:71	681985.177	694600.640	8467816.350	8467843.505	932	12617.77857013
L2500701:71	681960.118	694452.348	8466706.350	8466729.326	937	12493.48320669
L2500801:71	681980.811	694539.026	8466150.712	8466170.457	1108	12559.57138518
L2501001:71	681941.148	694578.641	8465038.489	8465057.595	1156	12639.61818078
L2501101:71	681925.600	694591.467	8464488.705	8464515.191	968	12667.22367635
L2501301:71	681946.650	694541.899	8463376.422	8463404.646	946	12597.40160201
L2501401:71	681927.010	694545.597	8462820.948	8462835.335	1140	12620.44053533
L2501601:71	681948.774	694558.693	8461713.613	8461731.236	1143	12611.56428975
L2501701:76	681951.621	694547.921	8461152.687	8461166.476	940	12596.6439694
L2501901:76	681907.099	694542.679	8460047.085	8460053.554	956	12635.82935239
L2502002:79	681899.155	694534.824	8459489.459	8459499.951	1105	12636.292942
L2502202:76	681905.238	694528.072	8458373.244	8458389.622	1101	12623.55741682
L2502302:79	681904.073	694526.886	8457824.522	8457839.378	988	12623.67414046
L2502501:76	681897.569	694526.693	8456713.392	8456721.800	981	12629.57045642
L2502601:76	681899.182	694522.436	8456158.394	8456169.084	1096	12623.80265872
L2502801:76	681900.189	694517.821	8455046.026	8455056.047	1141	12618.24675653
L2502901:76	681880.964	694522.349	8454490.221	8454499.644	983	12641.8039144
L2503101:76	681873.615	694521.815	8453381.668	8453388.730	975	12648.42355266
L2503201:76	681865.407	694546.098	8452825.084	8452833.697	1123	12681.12125673
L2503401:76	681884.028	694463.896	8451715.407	8451721.477	1100	12580.22683441
L2503501:76	681867.610	694439.660	8451159.251	8451167.487	966	12572.40655638
L2503701:76	681860.059	694462.481	8450043.287	8450058.696	956	12603.07150414
L2503801:76	681857.005	694475.544	8449493.255	8449503.136	1123	12619.17110633
L2504001:76	681811.772	694541.816	8448381.607	8448390.067	1092	12730.74084399
L2504101:76	681802.893	694553.082	8447824.627	8447835.724	987	12750.96032027
L2504301:76	681808.302	694631.827	8446713.027	8446722.934	978	12824.12654665
L2504401:76	681815.147	694633.694	8446157.691	8446181.373	1092	12819.62491459
L2504601:76	681799.333	694538.124	8445044.757	8445056.785	1069	12739.73333341
L2504701:76	681767.183	694527.765	8444491.536	8444500.652	958	12760.91316702
L2504901:76	681777.464	694674.900	8443375.815	8443391.758	996	12898.35575003
L2505001:76	681763.576	694670.992	8442825.454	8442839.280	1073	12908.33832697
L2505201:76	681791.944	694407.793	8441704.371	8441724.141	1024	12616.86081687
L2505301:76	681790.948	694406.220	8441158.371	8441167.587	970	12615.74604072
L2600101:66	699126.695	699158.153	8486713.375	8502165.553	1231	15457.62560991
L2600201:66	704122.955	704168.824	8486565.804	8505023.633	1589	18464.99100679
L2600301:66	709105.293	709151.528	8486437.941	8516498.450	2405	30068.27925234
L2600401:84	684133.001	684143.448	8420601.541	8470281.458	4145	49680.71799533
L2600501:84	689130.403	689155.302	8411270.176	8470130.627	4540	58861.90622729
L2600602:84	694131.954	694143.264	8411244.788	8505125.445	7822	93882.10722874
L2600701:79	699131.523	699142.539	8411212.414	8435599.862	1894	24388.14554015
L3200201:54	715125.189	723188.404	8553597.963	8553649.427	598	8069.531142168
L3200301:54	715127.978	723217.749	8553279.415	8553293.572	718	8090.495355723
L3200401:54	715141.971	723228.838	8552948.175	8552961.476	603	8087.427090022
L3200501:54	715141.838	723256.232	8552609.194	8552633.740	745	8115.91180749
L3200701:54	715215.696	723261.333	8551938.607	8551968.811	727	8048.679337678

L3200801:54	716043.570	724127.459	8551611.229	8551624.578	591	8084.402275409
L3200901:54	716257.427	724302.053	8551277.494	8551291.154	710	8045.093391183
L3201001:54	716272.157	724337.492	8550941.990	8550962.176	600	8066.776468672
L3201201:54	716315.692	724371.235	8550272.424	8550308.211	616	8058.606993173
L3201301:54	716321.965	724393.313	8549946.648	8549963.013	727	8072.128197677
L3201401:54	716343.202	724410.488	8549605.780	8549634.002	622	8068.711523083
L3201501:54	716356.109	724436.928	8549276.676	8549292.651	707	8082.025446876
L3400101:51	779805.809	788911.330	8561599.290	8561610.325	715	9106.162816259
L3400201:51	779802.184	788924.578	8561269.503	8561280.124	757	9122.777933413
L3400301:51	779801.042	788928.112	8560919.401	8560953.967	729	9128.358601187
L3400401:51	779797.259	788931.651	8560601.115	8560614.733	786	9135.032738892
L3400501:51	779807.026	788930.909	8560263.494	8560284.995	714	9124.940205479
L3400601:51	779801.171	788932.307	8559935.786	8559949.344	770	9131.721086524
L3400701:51	779802.963	788939.491	8559593.214	8559612.604	708	9137.311151525
L3400801:51	779805.330	788946.558	8559267.497	8559281.299	773	9142.430805932
L3401001:52	779781.285	788972.636	8558598.138	8558637.783	790	9193.33745131
L3401101:52	779782.182	788964.276	8558261.731	8558280.899	679	9183.339996133
L3401201:52	779779.922	788961.154	8557932.111	8557946.822	804	9182.536291397
L3401301:52	779778.186	788962.973	8557598.882	8557619.336	686	9185.884920373
L3401401:52	779782.733	788950.884	8557267.304	8557280.639	793	9169.031193641
L3401501:52	779779.200	788950.400	8556927.581	8556948.446	669	9172.699150494
ALL	592457.509	863419.538	8393821.028	8561610.325	1143858	14181581.30336

EM Window data – repeat lines

COMM GA PROJECT NUMBER 1196
COMM FAS PROJECT NUMBER 2017
COMM AREA NUMBER: 1
COMM SURVEY COMPANY: Fugro Airborne Surveys
COMM CLIENT: Geoscience Australia
COMM SURVEY TYPE: 25Hz TEMPEST Survey
COMM AREA NAME: Rum Jungle
COMM STATE: NT
COMM COUNTRY: Australia
COMM SURVEY FLOWN: October 2008 to May 2009
COMM LOCATED DATA CREATED: July 2009
COMM
COMM DATUM: GDA94
COMM PROJECTION: MGA
COMM ZONE: 52
COMM
COMM SURVEY SPECIFICATIONS
COMM
COMM NOMINAL TERRAIN CLEARANCE: 120 m
COMM FINAL REPEAT LINE KILOMETRES: 309 km
COMM
COMM LINE NUMBERING
COMM
COMM REPEAT LINE NUMBERS:
COMM Lines flown with PDAS Acquisition System: 8203 - 8342
COMM Lines flown with FASDAS Acquisition System: 911005101 - 912008201
COMM
COMM SURVEY EQUIPMENT
COMM
COMM AIRCRAFT: Shorts Skyvan SC3-200, VH-WGT
COMM
COMM MAGNETOMETER: Scintrex Cs-2 Cesium Vapour
COMM INSTALLATION: stinger mount
COMM RESOLUTION: 0.001 nT
COMM RECORDING INTERVAL: 0.2 s
COMM
COMM ELECTROMAGNETIC SYSTEM: 25Hz TEMPEST
COMM INSTALLATION: Transmitter loop mounted on the aircraft
COMM Receiver coils in a towed bird
COMM COIL ORIENTATION: X,Z
COMM RECORDING INTERVAL: 0.2 s
COMM SYSTEM GEOMETRY:
COMM RECEIVER DISTANCE BEHIND THE TRANSMITTER: -120 m
COMM RECEIVER DISTANCE BELOW THE TRANSMITTER: -35 m

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COMM
COMM RADAR ALTIMETER:                                        Sperry RT-220
COMM RECORDING INTERVAL:                                             0.2 s
COMM
COMM LASER ALTIMETER:                                         Optech 501SB
COMM RECORDING INTERVAL:                                             0.2 s
COMM
COMM NAVIGATION:                                 real-time differential GPS
COMM RECORDING INTERVAL:                                             1.0 s
COMM
COMM ACQUISITION SYSTEM:                                 PDAS-1000 / FASDAS
COMM
COMM DATA PROCESSING
COMM
COMM MAGNETIC DATA
COMM DIURNAL BASE VALUE APPLIED                                    47444 nT
COMM PARALLAX CORRECTION APPLIED
COMM                PDAS LINES:                                      0.4 s
COMM              FASDAS LINES:                                      0.0 s
COMM IGRF BASE VALUE APPLIED                                       46836 nT
COMM IGRF MODEL 2005 EXTRAPOLATED TO                                 2008.8
COMM
COMM ELECTROMAGNETIC DATA
COMM SYSTEM PARALLAX REMOVED, AS FOLLOWS
COMM PDAS LINES:
COMM      X-COMPONENT EM DATA                                        0.2 s
COMM      Z-COMPONENT EM DATA                                        1.4 s
COMM FASDAS LINES:
COMM      X-COMPONENT EM DATA                                        1.6 s
COMM      Z-COMPONENT EM DATA                                        0.2 s
COMM DATA CORRECTED FOR TRANSMITTER HEIGHT, PITCH AND ROLL
COMM DATA CORRECTED FOR TRANSMITTER-RECEIVER GEOMETRY VARIATIONS
COMM CONDUCTIVITY DEPTH INVERSION CALCULATED                   EMFlow V5.10
COMM CONDUCTIVITIES CALCULATED USING HPRG CORRECTED EMX & EMZ DATA
COMM
COMM DIGITAL TERRAIN DATA
COMM PARALLAX CORRECTION APPLIED TO LIDAR ALIMETER DATA              0.0 s
COMM PARALLAX CORRECTION APPLIED TO GPS ALIMETER DATA                0.0 s
COMM DTM CALCULATED [DTM = GPS ALTITUDE - LIDAR ALTITUDE - GPS/LIDAR DIST]
COMM N-VALUE APPLIED TO CORRECT DTM TO AUSTRALIAN HEIGHT DATUM (AHD)
COMM DATA HAVE BEEN MICROLEVELLED
COMM
COMM ------------------------------------------------------------------------
COMM DISCLAIMER
COMM ------------------------------------------------------------------------
COMM It is Fugro Airborne Survey's understanding that the data provided to
COMM the client is to be used for the purpose agreed between the parties.
COMM That purpose was a significant factor in determining the scope and
COMM level of the Services being offered to the Client. Should the purpose
COMM for which the data is used change, the data may no longer be valid or
COMM appropriate and any further use of, or reliance upon, the data in
COMM those circumstances by the Client without Fugro Airborne Survey's
COMM review and advice shall be at the Client's own or sole risk.
COMM
COMM The Services were performed by Fugro Airborne Survey exclusively for
COMM the purposes of the Client. Should the data be made available in whole
COMM or part to any third party, and such party relies thereon, that party
COMM does so wholly at its own and sole risk and Fugro Airborne Survey
COMM disclaims any liability to such party.
COMM
COMM Where the Services have involved Fugro Airborne Survey's use of any
COMM information provided by the Client or third parties, upon which
COMM Fugro Airborne Survey was reasonably entitled to rely, then the
COMM Services are limited by the accuracy of such information. Fugro
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COMM Airborne Survey is not liable for any inaccuracies (including any
COMM incompleteness) in the said information, save as otherwise provided
COMM in the terms of the contract between the Client and Fugro Airborne
COMM Survey.
COMM
COMM With regard to DIGITAL TERRAIN DATA, the accuracy of the elevation
COMM calculation is directly dependent on the accuracy of the two input
COMM parameters lidar altitude and GPS altitude. The radar altitude value may
COMM be erroneous in areas of heavy tree cover, where the altimeter reflects
COMM the distance to the tree canopy rather than the ground. The GPS altitude
COMM value is primarily dependent on the number of available satellites.
COMM Although post-processing of GPS data will yield X and Y accuracies in
COMM the order of 1-2 metres, the accuracy of the altitude value is usually
COMM much less, sometimes in the ±5 metre range.  Further inaccuracies
COMM may be introduced during the interpolation and gridding process.
COMM Because of the inherent inaccuracies of this method, no guarantee is
COMM made or implied that the information displayed is a true
COMM representation of the height above sea level.  Although this product
COMM may be of some use as a general reference,
COMM THIS PRODUCT MUST NOT BE USED FOR NAVIGATION PURPOSES.
COMM ----------------------------------------------------------------------
COMM
COMM ELECTROMAGNETIC SYSTEM
COMM
COMM TEMPEST IS A TIME-DOMAIN SQUARE-WAVE SYSTEM,
COMM TRANSMITTING AT A BASE FREQUENCY OF 25Hz,
COMM WITH 2 ORTHOGONAL-AXIS RECEIVER COILS IN A TOWED BIRD.
COMM FINAL EM OUTPUT IS RECORDED 5 TIMES PER SECOND.
COMM THE TIMES (IN MILLISECONDS) FOR THE 15 WINDOWS ARE:
COMM
COMM WINDOW      START       END      CENTRE
COMM    1        0.007      0.020      0.013
COMM    2        0.033      0.047      0.040
COMM    3        0.060      0.073      0.067
COMM    4        0.087      0.127      0.107
COMM    5        0.140      0.207      0.173
COMM    6        0.220      0.340      0.280
COMM    7        0.353      0.553      0.453
COMM    8        0.567      0.873      0.720
COMM    9        0.887      1.353      1.120
COMM   10        1.367      2.100      1.733
COMM   11        2.113      3.273      2.693
COMM   12        3.287      5.113      4.200
COMM   13        5.127      7.993      6.560
COMM   14        8.007     12.393     10.200
COMM   15       12.407     19.993     16.200
COMM
COMM PULSE WIDTH: 10 ms
COMM
COMM TEMPEST EM data are transformed to the response that would be
COMM obtained with a B-field sensor for a 100% duty cycle square
COMM waveform at the base frequency, involving a 1A change in
COMM current (from -0.5A to +0.5A to -0.5A) in a 1sq.m transmitter.
COMM It is this configuration, rather than the actual acquisition
COMM configuration, which must be specified when modelling TEMPEST data.
COMM
LOCATED DATA FORMAT

 Output field format : DOS  - Flat ascii
 Number of fields    : 102

Field  Channel         Description                      Units  Undefined    Format
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1	LINE	Line		-99999999	i10
2	FLIGHT	Flight		-99	i4
3	FID	Fiducial	(s)	-999999.9	f8.1
4	PROJECT_FAS	FAS Project Number		-9999	i6
5	PROJECT_GA	GA Project Number		-9999	i6
6	AIRCRAFT	System Number		-9	i3
7	DATE	Date	ddmmyyyy	-9999999	i9
8	TIME	Time - local midnight	(s)	-9999.9	f8.1
9	BEARING	Line Bearing	(deg)	-99	i4
10	LATITUDE	Latitude GDA94	(deg)	-99.9999999	f12.7
11	LONGITUDE	Longitude GDA94	(deg)	-999.9999999	f13.7
12	EASTING	Easting MGA51	(m)	-99999.99	f10.2
13	NORTHING	Northing MGA51	(m)	-999999.99	f11.2
14	LIDAR	Final Lidar altimeter	(m)	-999.99	f8.2
15	RADALT	Final Radar altimeter	(m)	-999.99	f8.2
16	TX_ELEVATION	Final Transmitter Elevation - AHD	(m)	-999.99	f8.2
17	DTM	Final Ground Elevation - AHD	(m)	-999.99	f8.2
18	MAG	Final TMI	(nT)	-99999.999	f11.3
19	TX_PITCH	Transmitter loop pitch	(deg)	-999.99	f8.2
20	TX_ROLL	Transmitter loop roll	(deg)	-999.99	f8.2
21	TX_HEIGHT	Transmitter terrain clearance	(m)	-999.99	f8.2
22	HSep_Raw	Tx-Rx horizontal separation	(m)	-999.99	f8.2
23	VSep_Raw	Tx-Rx vertical separation	(m)	-999.99	f8.2
24	TX_HEIGHT_std	Tx HPRG terrain clearance	(m)	-999.99	f8.2
25	HSep_std	Tx-Rx HPRG horizontal separation	(m)	-999.99	f8.2
26	VSep_std	Tx-Rx HPRG vertical separation	(m)	-999.99	f8.2
27	EMX_nonhprg[1]	Raw (non-HPRG) EMX01 Window	(fT)	-999.999999	f12.6
28	EMX_nonhprg[2]	Raw (non-HPRG) EMX02 Window	(fT)	-999.999999	f12.6
29	EMX_nonhprg[3]	Raw (non-HPRG) EMX03 Window	(fT)	-999.999999	f12.6
30	EMX_nonhprg[4]	Raw (non-HPRG) EMX04 Window	(fT)	-999.999999	f12.6
31	EMX_nonhprg[5]	Raw (non-HPRG) EMX05 Window	(fT)	-999.999999	f12.6
32	EMX_nonhprg[6]	Raw (non-HPRG) EMX06 Window	(fT)	-999.999999	f12.6
33	EMX_nonhprg[7]	Raw (non-HPRG) EMX07 Window	(fT)	-999.999999	f12.6
34	EMX_nonhprg[8]	Raw (non-HPRG) EMX08 Window	(fT)	-999.999999	f12.6
35	EMX_nonhprg[9]	Raw (non-HPRG) EMX09 Window	(fT)	-999.999999	f12.6
36	EMX_nonhprg[10]	Raw (non-HPRG) EMX10 Window	(fT)	-999.999999	f12.6
37	EMX_nonhprg[11]	Raw (non-HPRG) EMX11 Window	(fT)	-999.999999	f12.6
38	EMX_nonhprg[12]	Raw (non-HPRG) EMX12 Window	(fT)	-999.999999	f12.6
39	EMX_nonhprg[13]	Raw (non-HPRG) EMX13 Window	(fT)	-999.999999	f12.6
40	EMX_nonhprg[14]	Raw (non-HPRG) EMX14 Window	(fT)	-999.999999	f12.6
41	EMX_nonhprg[15]	Raw (non-HPRG) EMX15 Window	(fT)	-999.999999	f12.6
42	EMX_hprg[1]	HPRG Corrected EMX01 Window	(fT)	-999.999999	f12.6
43	EMX_hprg[2]	HPRG Corrected EMX02 Window	(fT)	-999.999999	f12.6
44	EMX_hprg[3]	HPRG Corrected EMX03 Window	(fT)	-999.999999	f12.6
45	EMX_hprg[4]	HPRG Corrected EMX04 Window	(fT)	-999.999999	f12.6
46	EMX_hprg[5]	HPRG Corrected EMX05 Window	(fT)	-999.999999	f12.6
47	EMX_hprg[6]	HPRG Corrected EMX06 Window	(fT)	-999.999999	f12.6
48	EMX_hprg[7]	HPRG Corrected EMX07 Window	(fT)	-999.999999	f12.6
49	EMX_hprg[8]	HPRG Corrected EMX08 Window	(fT)	-999.999999	f12.6
50	EMX_hprg[9]	HPRG Corrected EMX09 Window	(fT)	-999.999999	f12.6
51	EMX_hprg[10]	HPRG Corrected EMX10 Window	(fT)	-999.999999	f12.6
52	EMX_hprg[11]	HPRG Corrected EMX11 Window	(fT)	-999.999999	f12.6
53	EMX_hprg[12]	HPRG Corrected EMX12 Window	(fT)	-999.999999	f12.6
54	EMX_hprg[13]	HPRG Corrected EMX13 Window	(fT)	-999.999999	f12.6
55	EMX_hprg[14]	HPRG Corrected EMX14 Window	(fT)	-999.999999	f12.6
56	EMX_hprg[15]	HPRG Corrected EMX15 Window	(fT)	-999.999999	f12.6
57	X_Sferics	X_Sferics		-9999.999	f10.3
58	X_Lowfreq	X_Lowfreq		-9999.999	f10.3
59	X_Powerline	X_Powerline		-9999.999	f10.3
60	X_VLF1	X_18.2kHz		-9999.999	f10.3
61	X_VLF2	X_19.8kHz		-9999.999	f10.3
62	X_VLF3	X_21.4kHz		-9999.999	f10.3
63	X_VLF4	X_22.2kHz		-9999.999	f10.3
64	X_Geofact	X_Geometric factor		-9999.999	f10.3
65	EMZ_nonhprg[1]	Raw (non-HPRG) EMZ01 Window	(fT)	-999.999999	f12.6
66	EMZ_nonhprg[2]	Raw (non-HPRG) EMZ02 Window	(fT)	-999.999999	f12.6
67	EMZ_nonhprg[3]	Raw (non-HPRG) EMZ03 Window	(fT)	-999.999999	f12.6
68	EMZ_nonhprg[4]	Raw (non-HPRG) EMZ04 Window	(fT)	-999.999999	f12.6
69	EMZ_nonhprg[5]	Raw (non-HPRG) EMZ05 Window	(fT)	-999.999999	f12.6
70	EMZ_nonhprg[6]	Raw (non-HPRG) EMZ06 Window	(fT)	-999.999999	f12.6
71	EMZ_nonhprg[7]	Raw (non-HPRG) EMZ07 Window	(fT)	-999.999999	f12.6

72	EMZ_nonhprg[8]	Raw (non-HPRG) EMZ08 Window	(fT)	-999.999999	f12.6
73	EMZ_nonhprg[9]	Raw (non-HPRG) EMZ09 Window	(fT)	-999.999999	f12.6
74	EMZ_nonhprg[10]	Raw (non-HPRG) EMZ10 Window	(fT)	-999.999999	f12.6
75	EMZ_nonhprg[11]	Raw (non-HPRG) EMZ11 Window	(fT)	-999.999999	f12.6
76	EMZ_nonhprg[12]	Raw (non-HPRG) EMZ12 Window	(fT)	-999.999999	f12.6
77	EMZ_nonhprg[13]	Raw (non-HPRG) EMZ13 Window	(fT)	-999.999999	f12.6
78	EMZ_nonhprg[14]	Raw (non-HPRG) EMZ14 Window	(fT)	-999.999999	f12.6
79	EMZ_nonhprg[15]	Raw (non-HPRG) EMZ15 Window	(fT)	-999.999999	f12.6
80	EMZ_hprg[1]	HPRG Corrected EMZ01 Window	(fT)	-999.999999	f12.6
81	EMZ_hprg[2]	HPRG Corrected EMZ02 Window	(fT)	-999.999999	f12.6
82	EMZ_hprg[3]	HPRG Corrected EMZ03 Window	(fT)	-999.999999	f12.6
83	EMZ_hprg[4]	HPRG Corrected EMZ04 Window	(fT)	-999.999999	f12.6
84	EMZ_hprg[5]	HPRG Corrected EMZ05 Window	(fT)	-999.999999	f12.6
85	EMZ_hprg[6]	HPRG Corrected EMZ06 Window	(fT)	-999.999999	f12.6
86	EMZ_hprg[7]	HPRG Corrected EMZ07 Window	(fT)	-999.999999	f12.6
87	EMZ_hprg[8]	HPRG Corrected EMZ08 Window	(fT)	-999.999999	f12.6
88	EMZ_hprg[9]	HPRG Corrected EMZ09 Window	(fT)	-999.999999	f12.6
89	EMZ_hprg[10]	HPRG Corrected EMZ10 Window	(fT)	-999.999999	f12.6
90	EMZ_hprg[11]	HPRG Corrected EMZ11 Window	(fT)	-999.999999	f12.6
91	EMZ_hprg[12]	HPRG Corrected EMZ12 Window	(fT)	-999.999999	f12.6
92	EMZ_hprg[13]	HPRG Corrected EMZ13 Window	(fT)	-999.999999	f12.6
93	EMZ_hprg[14]	HPRG Corrected EMZ14 Window	(fT)	-999.999999	f12.6
94	EMZ_hprg[15]	HPRG Corrected EMZ15 Window	(fT)	-999.999999	f12.6
95	Z_Sferics	Z_Sferics		-9999.999	f10.3
96	Z_Lowfreq	Z_Lowfreq		-9999.999	f10.3
97	Z_Powerline	Z_Powerline		-9999.999	f10.3
98	Z_VLF1	Z_18.2kHz		-9999.999	f10.3
99	Z_VLF2	Z_19.8kHz		-9999.999	f10.3
100	Z_VLF3	Z_21.4kHz		-9999.999	f10.3
101	Z_VLF4	Z_22.2kHz		-9999.999	f10.3
102	Z_Geofact	Z_Geometric factor		-9999.999	f10.3

Line Number	X-minimum	X-maximum	Y-minimum	Y-maximum	# pts	Total distance
D8203:3	769998.895	779997.390	8453918.016	8453941.987	786	9999.317868268
D8204:4	769996.686	779999.410	8453925.771	8453949.502	839	10003.89939654
D8206:6	769996.060	780002.592	8453929.855	8453949.066	825	10007.31966854
D8207:7	770003.914	780008.141	8453929.077	8453944.299	799	10004.77783949
D8210:10	769998.606	780006.888	8453935.222	8453941.851	808	10008.44103184
D8213:13	770001.495	780008.300	8453935.539	8453943.910	785	10007.1538037
D8214:14	770004.388	780002.367	8453934.368	8453941.369	818	9998.156193559
D8218:18	769996.499	780003.170	8453936.793	8453941.868	855	10006.77381691
D8222:22	769996.671	779998.554	8453930.977	8453948.722	828	10002.31816022
D8225:25	769997.777	779999.675	8453926.416	8453953.299	818	10002.91186478
D8231:31	820018.953	829997.902	8453914.606	8453961.793	808	9983.541939165
D8232:32	820010.397	830001.699	8453932.172	8453948.642	806	9991.724593715
D8234:34	820011.093	829999.862	8453921.290	8453962.524	792	9991.10750729
D8235:35	820014.875	829996.539	8453922.490	8453958.702	734	9982.821197941
D8236:36	820021.229	829995.247	8453926.757	8453949.752	790	9974.764100218
D8238:38	820018.009	829996.262	8453920.773	8453951.496	823	9979.685216572
D8241:41	820008.804	829992.074	8453937.109	8453949.826	815	9983.988868289
D8242:42	820021.083	829999.480	8453934.860	8453946.414	804	9978.635347247
D8246:46	820018.042	829874.073	8453930.027	8453981.102	808	9861.532374152
D8342:42	750003.206	759996.423	8568936.067	8568945.655	787	9993.66181424
D911005101:51	750000.237	759990.412	8568932.106	8568945.888	819	9990.801325204
D911005201:52	749995.433	759991.529	8568925.754	8568944.443	847	9996.897136335
D911005301:53	749999.168	759995.039	8568930.597	8568949.727	820	9996.941148666
D911005501:55	750004.004	759991.305	8568901.892	8568961.052	802	9992.963785624
D911005801:58	749997.343	759992.807	8568929.555	8568949.257	908	9996.696223607
D911006101:61	750005.747	759998.981	8568925.240	8568970.596	817	9996.321588419
D911006401:64	749999.517	759991.330	8568933.184	8568944.309	879	9992.188258229
D912006801:68	721085.568	730991.303	8473932.688	8473954.975	735	9906.380616615
D912007301:73	721082.764	730991.569	8473936.805	8473941.518	731	9908.991612613
D912007801:78	721091.343	730994.212	8473936.858	8473947.835	783	9903.210717086
D912008201:82	721079.964	730984.294	8473934.941	8473942.893	741	9904.714168131
ALL	721079.964	830001.699	8453914.606	8568970.596	25010	309348.6391832

Conductivity data – clipped survey lines

COMM GA PROJECT NUMBER 1196
COMM FAS PROJECT NUMBER 2017
COMM AREA NUMBER: 1
COMM SURVEY COMPANY: Fugro Airborne Surveys
COMM CLIENT: Geoscience Australia

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COMM SURVEY TYPE:                                          25Hz TEMPEST Survey
COMM AREA NAME:                                                  Rum Jungle
COMM STATE:                                                              NT
COMM COUNTRY:                                                     Australia
COMM SURVEY FLOWN:                                 October 2008 to May 2009
COMM LOCATED DATA CREATED:                                        July 2009
COMM
COMM DATUM:                                                           GDA94
COMM PROJECTION:                                                        MGA
COMM ZONE:                                                               52
COMM
COMM SURVEY SPECIFICATIONS
COMM
COMM TRAVERSE LINE SPACING:                                   250 - 5000 m
COMM TRAVERSE LINE DIRECTION:
COMM                    ALL AREAS EXCEPT DALY RIVER AND RJ6:   090-270 deg
COMM                                            DALY RIVER:   124-304 deg
COMM                                                   RJ6:   000-180 deg
COMM NOMINAL TERRAIN CLEARANCE:                                     120 m
COMM FINAL LINE KILOMETRES:                                       14136 km
COMM
COMM LINE NUMBERING
COMM
COMM TRAVERSE LINE NUMBERS:
COMM    Lines flown with PDAS Acquisition System:              10010 - 13000
COMM    Lines flown with FASDAS Acquisition System:        1001601 - 1005601
COMM                                                       1102202 - 1103401
COMM                                                       1200103 - 1205501
COMM                                                       2400101 - 2404301
COMM                                                       2500201 - 2505301
COMM                                                       3200201 - 3201501
COMM                                                       3400101 - 3401501
COMM
COMM SURVEY EQUIPMENT
COMM
COMM AIRCRAFT:                                 Shorts Skyvan SC3-200, VH-WGT
COMM
COMM MAGNETOMETER:                               Scintrex Cs-2 Cesium Vapour
COMM INSTALLATION:                                            stinger mount
COMM RESOLUTION:                                                0.001 nT
COMM RECORDING INTERVAL:                                           0.2 s
COMM
COMM ELECTROMAGNETIC SYSTEM:                                    25Hz TEMPEST
COMM INSTALLATION:               Transmitter loop mounted on the aircraft
COMM                                        Receiver coils in a towed bird
COMM COIL ORIENTATION:                                                X,Z
COMM RECORDING INTERVAL:                                           0.2 s
COMM SYSTEM GEOMETRY:
COMM RECEIVER DISTANCE BEHIND THE TRANSMITTER:                     -120 m
COMM RECEIVER DISTANCE BELOW THE TRANSMITTER:                       -35 m
COMM
COMM RADAR ALTIMETER:                                         Sperry RT-220
COMM RECORDING INTERVAL:                                           0.2 s
COMM
COMM LASER ALTIMETER:                                          Optech 501SB
COMM RECORDING INTERVAL:                                           0.2 s
COMM
COMM NAVIGATION:                               real-time differential GPS
COMM RECORDING INTERVAL:                                           1.0 s
COMM
COMM ACQUISITION SYSTEM:                                  PDAS-1000 / FASDAS
COMM
COMM DATA PROCESSING
COMM
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COMM MAGNETIC DATA
COMM DIURNAL BASE VALUE APPLIED                                    47444 nT
COMM PARALLAX CORRECTION APPLIED
COMM                PDAS LINES:                                      0.4 s
COMM              FASDAS LINES:                                      0.0 s
COMM IGRF BASE VALUE APPLIED                                       46836 nT
COMM IGRF MODEL 2005 EXTRAPOLATED TO                                2008.8
COMM DATA HAVE BEEN MICROLEVELLED
COMM
COMM ELECTROMAGNETIC DATA
COMM SYSTEM PARALLAX REMOVED, AS FOLLOWS
COMM PDAS LINES:
COMM      X-COMPONENT EM DATA                                       0.2 s
COMM      Z-COMPONENT EM DATA                                       1.4 s
COMM FASDAS LINES:
COMM      X-COMPONENT EM DATA                                       1.6 s
COMM      Z-COMPONENT EM DATA                                       0.2 s
COMM DATA CORRECTED FOR TRANSMITTER HEIGHT, PITCH AND ROLL
COMM DATA CORRECTED FOR TRANSMITTER-RECEIVER GEOMETRY VARIATIONS
COMM DATA HAVE BEEN MICROLEVELLED
COMM CONDUCTIVITY DEPTH INVERSION CALCULATED                   EMFlow V5.10
COMM CONDUCTIVITIES CALCULATED USING HPRG CORRECTED EMX & EMZ DATA
COMM
COMM DIGITAL TERRAIN DATA
COMM PARALLAX CORRECTION APPLIED TO LIDAR ALIMETER DATA               0.0 s
COMM PARALLAX CORRECTION APPLIED TO GPS ALIMETER DATA                 0.0 s
COMM DTM CALCULATED [DTM = GPS ALTITUDE - LIDAR ALTITUDE - GPS/LIDAR DIST]
COMM N-VALUE APPLIED TO CORRECT DTM TO AUSTRALIAN HEIGHT DATUM (AHD)
COMM DATA HAVE BEEN MICROLEVELLED
COMM
COMM ------------------------------------------------------------------------
COMM DISCLAIMER
COMM ------------------------------------------------------------------------
COMM It is Fugro Airborne Survey’s understanding that the data provided to
COMM the client is to be used for the purpose agreed between the parties.
COMM That purpose was a significant factor in determining the scope and
COMM level of the Services being offered to the Client. Should the purpose
COMM for which the data is used change, the data may no longer be valid or
COMM appropriate and any further use of, or reliance upon, the data in
COMM those circumstances by the Client without Fugro Airborne Survey's
COMM review and advice shall be at the Client's own or sole risk.
COMM
COMM The Services were performed by Fugro Airborne Survey exclusively for
COMM the purposes of the Client. Should the data be made available in whole
COMM or part to any third party, and such party relies thereon, that party
COMM does so wholly at its own and sole risk and Fugro Airborne Survey
COMM disclaims any liability to such party.
COMM
COMM Where the Services have involved Fugro Airborne Survey's use of any
COMM information provided by the Client or third parties, upon which
COMM Fugro Airborne Survey was reasonably entitled to rely, then the
COMM Services are limited by the accuracy of such information. Fugro
COMM Airborne Survey is not liable for any inaccuracies (including any
COMM incompleteness) in the said information, save as otherwise provided
COMM in the terms of the contract between the Client and Fugro Airborne
COMM Survey.
COMM
COMM With regard to DIGITAL TERRAIN DATA, the accuracy of the elevation
COMM calculation is directly dependent on the accuracy of the two input
COMM parameters lidar altitude and GPS altitude. The radar altitude value may
COMM be erroneous in areas of heavy tree cover, where the altimeter reflects
COMM the distance to the tree canopy rather than the ground. The GPS altitude
COMM value is primarily dependent on the number of available satellites.
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COMM Although post-processing of GPS data will yield X and Y accuracies in
COMM the order of 1-2 metres, the accuracy of the altitude value is usually
COMM much less, sometimes in the ±5 metre range.  Further inaccuracies
COMM may be introduced during the interpolation and gridding process.
COMM Because of the inherent inaccuracies of this method, no guarantee is
COMM made or implied that the information displayed is a true
COMM representation of the height above sea level.  Although this product
COMM may be of some use as a general reference,
COMM THIS PRODUCT MUST NOT BE USED FOR NAVIGATION PURPOSES.
COMM ----------------------------------------------------------------------
COMM
COMM ELECTROMAGNETIC SYSTEM
COMM
COMM TEMPEST IS A TIME-DOMAIN SQUARE-WAVE SYSTEM,
COMM TRANSMITTING AT A BASE FREQUENCY OF 25Hz,
COMM WITH 2 ORTHOGONAL-AXIS RECEIVER COILS IN A TOWED BIRD.
COMM FINAL EM OUTPUT IS RECORDED 5 TIMES PER SECOND.
COMM THE TIMES (IN MILLISECONDS) FOR THE 15 WINDOWS ARE:
COMM
COMM WINDOW      START       END      CENTRE
COMM    1        0.007      0.020      0.013
COMM    2        0.033      0.047      0.040
COMM    3        0.060      0.073      0.067
COMM    4        0.087      0.127      0.107
COMM    5        0.140      0.207      0.173
COMM    6        0.220      0.340      0.280
COMM    7        0.353      0.553      0.453
COMM    8        0.567      0.873      0.720
COMM    9        0.887      1.353      1.120
COMM   10        1.367      2.100      1.733
COMM   11        2.113      3.273      2.693
COMM   12        3.287      5.113      4.200
COMM   13        5.127      7.993      6.560
COMM   14        8.007     12.393     10.200
COMM   15       12.407     19.993     16.200
COMM
COMM PULSE WIDTH: 10 ms
COMM
COMM TEMPEST EM data are transformed to the response that would be
COMM obtained with a B-field sensor for a 100% duty cycle square
COMM waveform at the base frequency, involving a 1A change in
COMM current (from -0.5A to +0.5A to -0.5A) in a 1sq.m transmitter.
COMM It is this configuration, rather than the actual acquisition
COMM configuration, which must be specified when modelling TEMPEST data.
COMM
COMM
COMM
COMM LOCATED DATA FORMAT
COMM
COMM  Output field format : DOS  - Flat ascii
COMM  Number of fields    : 68
COMM
Field  Channel         Description                      Units  Undefined    Format
-----  -------         -----------                      -----  ---------    ------

    1  LINE            Line                                    -99999999      i10
    2  FLIGHT          Flight                                  -99             i4
    3  FID             Fiducial                           (s)  -999999.9     f8.1
    4  PROJECT_FAS     FAS Project Number                      -9999           i6
    5  PROJECT_GA      GA Project Number                       -9999           i6
    6  AIRCRAFT        System Number                           -9              i3
    7  DATE            Date                           ddmmyyyy  -9999999       i9
    8  TIME            Time - local midnight               (s)  -9999.9       f8.1
    9  BEARING         Line Bearing                      (deg)  -99             i4
   10  LATITUDE        Latitude  GDA94                   (deg)  -99.9999999  f12.7
```

11	LONGITUDE	Longitude GDA94	(deg)	-999.9999999	f13.7
12	EASTING	Easting MGA51	(m)	-99999.99	f10.2
13	NORTHING	Northing MGA51	(m)	-999999.99	f11.2
14	LIDAR	Final Lidar altimeter	(m)	-999.99	f8.2
15	RADALT	Final Radar altimeter	(m)	-999.99	f8.2
16	TX_ELEVATION	Final Transmitter Elevation - AHD	(m)	-999.99	f8.2
17	DTM	Final Ground Elevation - AHD	(m)	-999.99	f8.2
18	MAG	Final TMI	(nT)	-99999.999	f11.3
19	CND_DS01	CDI_depth_slice_01 0- 5 m	(mS/m)	-9999.999	f10.3
20	CND_DS02	CDI_depth_slice_02 5- 10 m	(mS/m)	-9999.999	f10.3
21	CND_DS03	CDI_depth_slice_03 10- 15 m	(mS/m)	-9999.999	f10.3
22	CND_DS04	CDI_depth_slice_04 15- 20 m	(mS/m)	-9999.999	f10.3
23	CND_DS05	CDI_depth_slice_05 20- 30 m	(mS/m)	-9999.999	f10.3
24	CND_DS06	CDI_depth_slice_06 30- 40 m	(mS/m)	-9999.999	f10.3
25	CND_DS07	CDI_depth_slice_07 40- 60 m	(mS/m)	-9999.999	f10.3
26	CND_DS08	CDI_depth_slice_08 60- 100 m	(mS/m)	-9999.999	f10.3
27	CND_DS09	CDI_depth_slice_09 100-150 m	(mS/m)	-9999.999	f10.3
28	CND_DS10	CDI_depth_slice_10 150-200 m	(mS/m)	-9999.999	f10.3
29	CND[1]	Conductivity_001 0- 5 m	(mS/m)	-9999.999	f10.3
30	CND[2]	Conductivity_002 5- 10 m	(mS/m)	-9999.999	f10.3
31	CND[3]	Conductivity_003 10- 15 m	(mS/m)	-9999.999	f10.3
32	CND[4]	Conductivity_004 15- 20 m	(mS/m)	-9999.999	f10.3
33	CND[5]	Conductivity_005 20- 25 m	(mS/m)	-9999.999	f10.3
34	CND[6]	Conductivity_006 25- 30 m	(mS/m)	-9999.999	f10.3
35	CND[7]	Conductivity_007 30- 35 m	(mS/m)	-9999.999	f10.3
36	CND[8]	Conductivity_008 35- 40 m	(mS/m)	-9999.999	f10.3
37	CND[9]	Conductivity_009 40- 45 m	(mS/m)	-9999.999	f10.3
38	CND[10]	Conductivity_010 45- 50 m	(mS/m)	-9999.999	f10.3
39	CND[11]	Conductivity_011 50- 55 m	(mS/m)	-9999.999	f10.3
40	CND[12]	Conductivity_012 55- 60 m	(mS/m)	-9999.999	f10.3
41	CND[13]	Conductivity_013 60- 65 m	(mS/m)	-9999.999	f10.3
42	CND[14]	Conductivity_014 65- 70 m	(mS/m)	-9999.999	f10.3
43	CND[15]	Conductivity_015 70- 75 m	(mS/m)	-9999.999	f10.3
44	CND[16]	Conductivity_016 75- 80 m	(mS/m)	-9999.999	f10.3
45	CND[17]	Conductivity_017 80- 85 m	(mS/m)	-9999.999	f10.3
46	CND[18]	Conductivity_018 85- 90 m	(mS/m)	-9999.999	f10.3
47	CND[19]	Conductivity_019 90- 95 m	(mS/m)	-9999.999	f10.3
48	CND[20]	Conductivity_020 95-100 m	(mS/m)	-9999.999	f10.3
49	CND[21]	Conductivity_021 100-105 m	(mS/m)	-9999.999	f10.3
50	CND[22]	Conductivity_022 105-110 m	(mS/m)	-9999.999	f10.3
51	CND[23]	Conductivity_023 110-115 m	(mS/m)	-9999.999	f10.3
52	CND[24]	Conductivity_024 115-120 m	(mS/m)	-9999.999	f10.3
53	CND[25]	Conductivity_025 120-125 m	(mS/m)	-9999.999	f10.3
54	CND[26]	Conductivity_026 125-130 m	(mS/m)	-9999.999	f10.3
55	CND[27]	Conductivity_027 130-135 m	(mS/m)	-9999.999	f10.3
56	CND[28]	Conductivity_028 135-140 m	(mS/m)	-9999.999	f10.3
57	CND[29]	Conductivity_029 140-145 m	(mS/m)	-9999.999	f10.3
58	CND[30]	Conductivity_030 145-150 m	(mS/m)	-9999.999	f10.3
59	CND[31]	Conductivity_031 150-155 m	(mS/m)	-9999.999	f10.3
60	CND[32]	Conductivity_032 155-160 m	(mS/m)	-9999.999	f10.3
61	CND[33]	Conductivity_033 160-165 m	(mS/m)	-9999.999	f10.3
62	CND[34]	Conductivity_034 165-170 m	(mS/m)	-9999.999	f10.3
63	CND[35]	Conductivity_035 170-175 m	(mS/m)	-9999.999	f10.3
64	CND[36]	Conductivity_036 175-180 m	(mS/m)	-9999.999	f10.3
65	CND[37]	Conductivity_037 180-185 m	(mS/m)	-9999.999	f10.3
66	CND[38]	Conductivity_038 185-190 m	(mS/m)	-9999.999	f10.3
67	CND[39]	Conductivity_039 190-195 m	(mS/m)	-9999.999	f10.3
68	CND[40]	Conductivity_040 195-200 m	(mS/m)	-9999.999	f10.3

Line Number	X-minimum	X-maximum	Y-minimum	Y-maximum	# of points	Total distance
L1001:26	717054.491	811546.298	8528905.981	8528959.518	7563	94506.47032941
L1002:26	716984.965	814850.006	8523899.121	8523982.425	7598	97890.27165981
L1003:26	716972.559	818121.656	8518909.152	8518962.106	8303	101160.7638316
L1004.1:26	706574.446	821375.203	8513907.501	8513977.996	8978	114824.8105083
L1005:24	705629.312	824639.828	8508912.102	8508965.665	9773	119025.9570798
L1006:25	702166.015	827898.153	8503907.329	8504118.420	10045	125770.3323884
L1007:25	730973.491	829853.319	8498881.756	8498960.758	8078	98905.90245379
L1008:23	730984.531	830515.216	8493903.486	8493971.461	7483	99547.15337167
L1009:19	730981.205	831196.371	8488932.009	8488944.329	8594	100217.3040429
L1010:19	730990.115	831863.395	8483931.793	8483950.090	7726	100875.8643737
L1011:16	730995.350	832533.553	8478929.880	8478947.466	7999	101541.7416906
L1012.1:13	730998.137	833189.704	8473932.551	8473946.661	8204	102195.1771027

L1013:13	731002.460	833893.134	8468928.161	8468948.346	8576	102893.5857707
L1014:12	731002.844	834526.009	8463930.875	8463945.255	8427	103525.6344121
L1015:12	731016.192	835207.830	8458933.581	8458943.931	8259	104193.678759
L1016:11	731016.912	835867.707	8453931.350	8453946.151	8488	104853.5055678
L1017:11	731021.015	836531.555	8448931.321	8448945.918	8269	105512.5575
L1018:7	731026.891	837198.797	8443918.885	8443985.029	8573	106196.1165784
L1019:7	731032.225	837869.018	8438920.779	8438955.696	8436	106849.3985994
L1020:7	731036.029	838512.259	8433928.268	8433965.824	8619	107485.7810041
L1021:7	731038.180	839197.539	8428927.135	8428951.281	8746	108164.7401211
L1022:6	731039.131	839841.084	8423923.079	8423959.511	8412	108813.4725488
L1023:6	731035.090	854355.925	8418922.222	8419040.502	9866	123349.0689783
L1024:4	731033.834	863419.538	8413915.536	8413997.106	10282	132418.5787375
L1025:4	731030.301	849264.298	8408304.743	8409012.268	9613	118418.1561764
L1026:3	731027.983	849366.731	8403916.448	8403979.053	10144	118363.6651373
L1027.1:3	731026.861	849438.932	8398833.636	8398963.234	9434	118453.2972336
L1028:3	731026.903	849521.448	8393821.028	8394070.307	10281	118593.7656567
L1033:8	844129.830	852270.484	8414602.601	8414610.281	634	8140.943586654
L1034:8	844119.381	852267.355	8414270.291	8414277.645	664	8148.257946082
L1036:8	844139.777	852244.798	8413601.001	8413610.400	660	8105.407112669
L1037:8	844149.372	852256.192	8413270.586	8413278.628	642	8107.023640238
L1038:8	844158.933	853099.111	8412935.179	8412942.852	715	8940.483502523
L1039:8	844163.383	861548.113	8412601.939	8412611.984	1370	17385.22593279
L1040:8	844176.936	861550.795	8412266.389	8412277.170	1405	17374.64290845
L1041:8	844179.925	861546.921	8411933.021	8411944.985	1376	17367.50904917
L1042:8	844228.349	861554.523	8411599.396	8411611.201	1407	17326.95020998
L1043:8	844458.628	861557.683	8411269.017	8411277.642	1347	17099.57046158
L1044:8	850579.749	861556.200	8410932.412	8410942.635	859	10976.70606342
L1045:8	850602.648	861551.059	8410600.539	8410610.453	868	10948.76416913
L1046:8	850614.573	861559.796	8410266.605	8410282.146	879	10945.65016395
L1047:8	850634.962	861556.183	8409933.981	8409943.931	852	10921.4548112
L1048:8	850656.892	861556.921	8409600.218	8409613.185	866	10900.34383386
L1049:8	850674.373	861562.744	8409267.744	8409277.845	858	10888.58194254
L1055:9	749876.548	764368.420	8428669.780	8438406.254	1463	17459.30862065
L1056.1:9	749729.570	764225.342	8428475.016	8438204.272	1343	17458.35023562
L1057:9	744461.111	764084.333	8428267.888	8441439.226	1947	23634.07324208
L1058:9	744303.119	763944.591	8428065.102	8441242.307	1826	23652.49643681
L1059:9	744145.729	763799.260	8427853.274	8441055.020	1927	23676.34268387
L1060:9	743985.431	763656.833	8427645.696	8440852.821	1863	23694.23277905
L1061:9	743834.414	763514.154	8427438.477	8440656.164	1889	23707.40629321
L1062:9	743671.481	763380.612	8427232.031	8440463.515	1875	23739.12168172
L1063:9	743512.844	763234.919	8427030.041	8440269.215	1903	23754.33731976
L1064:10	743357.054	763095.232	8426824.625	8440071.010	1886	23771.51161534
L1065:10	743207.427	762950.809	8426614.500	8439872.608	1907	23782.43314499
L1066:10	743043.580	762816.900	8426411.808	8439678.704	1883	23812.18194091
L1067:10	742888.221	762671.835	8426206.474	8439482.685	1901	23825.8670155
L1068:10	742735.228	762527.881	8426003.108	8439284.446	1882	23836.22934965
L1069:10	742579.711	762393.562	8425791.982	8439089.954	1898	23863.11574596
L1070:10	742412.863	762247.215	8425585.808	8438897.761	1885	23888.04745013
L1071:10	742262.092	757004.047	8428802.154	8438697.625	1404	17755.47444746
L1072:10	742100.019	756855.286	8428604.008	8438505.679	1417	17770.35781927
L1077:18	777632.873	785987.207	8491156.302	8491164.773	688	8354.552548163
L1079.1:18	777617.294	786754.699	8490045.910	8490052.432	756	9137.527473584
L1080.1:18	777605.310	789539.245	8489489.372	8489502.002	919	11934.32986217
L1082.1:18	777576.268	792184.931	8488378.954	8488388.627	1115	14609.05642825
L1083.1:18	777556.806	792188.071	8487823.261	8487834.501	1222	14631.60824082
L1085.2:46	777576.822	792144.333	8486702.638	8486726.272	1224	14568.67811904
L1086:17	777595.809	792152.101	8486155.742	8486166.416	1152	14556.9666841
L1088:17	777563.646	792164.107	8485046.473	8485055.291	1151	14600.79308823
L1089:17	777567.458	792185.878	8484489.948	8484498.787	1183	14618.7083865
L1091:17	777518.360	792065.727	8483377.581	8483386.025	1187	14547.68454788
L1092:17	777512.877	792071.104	8482823.599	8482831.584	1165	14558.44745053
L1094:17	777494.986	792133.235	8481711.714	8481721.147	1181	14638.55592404
L1095:17	777487.387	792133.633	8481155.374	8481165.172	1183	14646.57957258
L1097:17	777515.098	792136.523	8480043.892	8480053.914	1179	14621.65221817
L1098:17	777727.614	792133.124	8479489.664	8479501.872	1153	14405.90319359
L1100:17	778255.199	792045.846	8478379.774	8478392.410	1089	13790.99619338
L1101:17	778455.899	792053.177	8477825.368	8477831.908	1131	13597.46997755
L1103:17	778965.888	792133.856	8476714.538	8476719.714	1078	13168.08687861
L1104:17	779210.053	792139.025	8476158.188	8476171.621	1011	12929.48347743
L1106:14	777450.161	792054.680	8475041.713	8475059.728	1156	14605.82506319
L1107:17	777473.374	792074.010	8474488.842	8474496.825	1163	14600.96003386
L1109:14	777422.302	791986.658	8473377.813	8473387.648	1165	14564.90754487
L1110:14	777446.915	792010.011	8472823.805	8472836.490	1168	14563.84182877
L1112:14	777428.722	791967.549	8471712.931	8471722.210	1146	14539.44602746
L1113:14	777395.902	791959.204	8471156.636	8471166.159	1155	14564.05352639
L1115:14	777431.302	791952.920	8470043.645	8470056.520	1150	14522.20383703
L1116:14	777401.989	791968.435	8469489.928	8469499.549	1167	14567.02826116
L1118:14	777409.320	791938.471	8468378.771	8468388.599	1174	14529.81292969
L1119:14	777373.014	791962.664	8467821.107	8467832.793	1193	14590.19871129
L1121:14	776976.029	785095.718	8466711.547	8466720.272	637	8119.900628213
L1122:13	776981.019	785114.797	8466157.017	8466167.215	686	8134.35704622
L1124:13	776972.844	785092.165	8465045.591	8465053.012	658	8119.759164813
L1125:13	776981.772	785090.775	8464484.498	8464498.905	637	8109.679156007
L1127:13	776896.622	785040.868	8463378.776	8463387.230	631	8144.569827117
L1128:13	776888.727	785046.261	8462824.519	8462831.824	661	8157.975217764

L1129:11	776888.350	785031.694	8462269.106	8462275.284	639	8143.618582333
L1130:11	776894.292	785031.810	8461710.007	8461723.565	659	8138.141952908
L1131.1:13	776888.525	785032.126	8461157.093	8461163.315	638	8143.982664051
L1132:11	776889.598	785029.076	8460601.434	8460611.329	647	8139.932327092
L1133:11	776895.038	785021.269	8460044.818	8460055.464	630	8126.567698657
L1134:11	776895.408	785014.202	8459490.524	8459499.058	633	8119.00557901
L1136.1:13	776895.936	785047.740	8458375.979	8458386.408	667	8152.200759553
L1142:37	752058.855	760268.121	8504592.845	8504632.358	694	8212.378908161
L1143:37	752035.151	760272.633	8504271.314	8504294.892	663	8238.148610014
L1145:37	752043.791	760298.671	8503601.422	8503648.826	658	8256.581628456
L1146:37	752039.250	760311.623	8503262.913	8503292.178	662	8273.906622016
L1147:36	752043.159	760306.915	8502916.392	8502965.628	627	8266.458589981
L1148:36	752040.696	760307.089	8502589.942	8502635.856	618	8269.727547073
L1150:36	752037.884	760312.821	8501930.895	8501956.850	633	8276.138182521
L1151:36	752032.567	760322.815	8501597.854	8501622.676	616	8290.870789667
L1152:36	752030.123	760317.620	8501261.672	8501288.938	634	8288.247010235
L1153:36	752028.930	760312.317	8500929.113	8500947.292	637	8283.749928362
L1155:36	752054.486	760325.361	8500266.494	8500280.014	644	8271.16011211
L1156:36	752048.654	760322.730	8499934.405	8499945.540	623	8274.282040113
L1162:36	767562.139	777899.528	8502597.205	8502620.037	778	10338.56899944
L1164:36	767561.341	777870.537	8501935.352	8501953.841	767	10309.50521396
L1165:36	767575.894	777867.673	8501604.505	8501625.576	823	10292.471407
L1166:36	767592.148	777875.425	8501257.106	8501286.963	775	10284.51834435
L1167:36	767604.271	777873.091	8500932.968	8500961.485	797	10270.63800471
L1169:36	767600.054	777828.097	8500268.210	8500284.966	794	10228.60475142
L1170:36	767598.614	777842.052	8499912.874	8499951.853	764	10245.14744375
L1171:36	767607.591	777848.783	8499598.565	8499616.870	805	10241.69583329
L1172:36	767616.960	777853.485	8499265.977	8499286.299	801	10236.93812092
L1174:36	763188.187	771347.493	8498599.392	8498618.362	641	8159.842381658
L1175:36	763205.287	771354.964	8498263.292	8498294.293	623	8150.313552839
L1176:36	763211.249	771350.759	8497933.906	8497947.032	623	8139.702795865
L1177.1:36	763230.754	771360.451	8497596.606	8497620.554	627	8131.096227131
L1184:35	819984.426	828280.493	8501271.877	8501314.253	704	8299.105290463
L1185:35	819976.657	828282.270	8500929.146	8500957.970	648	8307.704477525
L1186:34	819976.678	828277.934	8500581.942	8500624.389	666	8303.12749912
L1187:35	819988.622	828272.796	8500255.525	8500282.385	691	8285.507520777
L1188:34	819989.683	828275.686	8499926.180	8499960.081	703	8288.805973634
L1189:34	819983.212	828270.534	8499576.419	8499619.890	645	8290.091799058
L1190:34	819986.187	828274.958	8499267.931	8499294.879	655	8290.559869482
L1192:35	819984.590	828236.984	8498596.498	8498623.134	669	8253.346438738
L1193:31	819992.229	828237.894	8498251.789	8498286.524	714	8247.023715049
L1194:31	819990.393	828234.574	8497925.856	8497946.985	619	8245.013572139
L1195:35	819996.097	828239.156	8497592.198	8497625.315	684	8244.464680762
L1196:31	819988.986	828232.744	8497257.343	8497297.974	609	8247.484331398
L1197:31	819989.919	828234.350	8496923.748	8496958.048	699	8247.203529654
L1198:31	820004.507	828230.142	8496588.004	8496621.104	619	8226.931648498
L1204.1:46	766175.203	774295.662	8526266.387	8526279.983	659	8121.030566066
L1205:45	766190.862	774330.541	8525931.259	8525944.915	657	8139.974999173
L1207:45	766146.142	774302.268	8525266.816	8525278.087	656	8156.391086075
L1208:45	766150.032	774317.002	8524932.805	8524952.248	682	8167.871104316
L1209:45	766157.425	774326.506	8524600.913	8524611.627	669	8169.38872975
L1210.1:46	766171.999	774342.608	8524269.640	8524280.050	666	8170.885641295
L1212:45	766143.180	774333.880	8523601.562	8523610.063	678	8191.018851164
L1213:45	766147.529	774338.546	8523266.786	8523277.295	675	8191.424988987
L1214:44	766157.497	774343.558	8522934.509	8522946.120	670	8186.419348457
L1215:44	766164.690	774352.061	8522604.155	8522616.924	680	8187.703638544
L1217.1:44	766110.241	774350.027	8521934.195	8521968.370	684	8241.123723154
L1218:44	766117.702	774340.162	8521600.809	8521608.824	683	8222.787276091
L1224:40	782983.893	791105.683	8521080.125	8521094.682	652	8122.242129274
L1225.1:42	782983.894	791100.686	8520841.285	8520854.170	727	8117.415480605
L1227:40	782954.981	791059.597	8520353.219	8520373.841	663	8105.287930903
L1228:40	782959.430	791057.172	8520122.352	8520137.979	633	8098.538182952
L1229:40	782962.982	791063.863	8519885.985	8519898.175	666	8101.38116959
L1230:40	782958.722	791072.506	8519645.320	8519665.306	646	8114.508680883
L1231:40	782964.823	791071.832	8519404.298	8519422.740	662	8107.529906843
L1232:40	782969.165	791076.825	8519172.797	8519186.292	635	8108.021077162
L1234:40	782923.845	791078.762	8518700.723	8518710.724	639	8155.153767697
L1235.2:42	782929.151	791079.898	8518459.534	8518470.380	710	8151.132253814
L1236:40	782932.629	791072.195	8518225.202	8518233.405	639	8139.875943517
L1237:40	782927.689	791080.848	8517982.175	8517990.647	660	8153.45624522
L1238:40	782933.641	791084.138	8517743.831	8517756.807	645	8150.882214869
L1239:40	782933.683	791084.079	8517506.700	8517529.638	663	8151.100022044
L1241:40	782935.267	791056.955	8517019.002	8517044.370	688	8123.049907249
L1242:40	782936.850	791059.291	8516790.603	8516803.296	647	8122.711194865
L1243:40	782932.238	791064.976	8516552.572	8516561.233	677	8132.988578554
L1244:40	782935.993	791062.281	8516314.160	8516328.924	665	8126.693123519
L1245:40	782945.004	791056.484	8516072.628	8516086.292	686	8111.832311851
L1246.1:40	782950.772	791061.666	8515839.359	8515864.146	666	8111.442395611
L1248:40	782932.779	791035.228	8515369.743	8515379.976	664	8102.715122491
L1249:40	782925.953	791030.326	8515124.832	8515139.088	697	8104.752714875
L1250:40	782929.111	791026.716	8514888.192	8514909.503	658	8098.040178007
L1251:40	782930.457	791017.035	8514648.174	8514662.315	685	8086.778509595
L1252:40	782928.070	791012.117	8514408.927	8514426.036	641	8084.518827585
L1253:40	782923.297	791010.293	8514172.854	8514183.541	684	8087.269365055
L1255:40	782907.031	791028.580	8513695.057	8513708.430	683	8121.958188269

L1256.1:40	782903.994	791027.743	8513459.787	8513475.447	656	8124.16917963
L1257.1:40	782893.243	791019.716	8513218.945	8513230.222	680	8126.96522843
L1263.1:44	743482.355	811458.426	8527264.256	8527289.690	5455	67979.66737707
L1264.1:44	743436.132	811468.540	8525594.827	8525625.120	5553	68037.33289941
L1266.2:46	743413.573	811408.947	8522261.823	8522282.708	5699	67998.75060631
L1267.1:42	743431.000	811388.524	8520591.145	8520635.648	5480	67963.33208637
L1269:38	743374.687	811335.141	8517250.756	8517304.075	5263	67972.2063792
L1270.2:44	743373.504	811312.481	8515594.390	8515618.522	5552	67941.68284151
L1272:38	743261.028	811266.098	8512246.509	8512304.275	5463	68011.48598071
L1273.1:38	743294.627	811272.244	8510581.861	8510632.843	5094	67985.98218654
L1275.1:38	743228.820	811216.190	8507251.010	8507305.733	4953	67994.51584324
L1276.1:38	743229.451	811222.553	8505580.835	8505632.269	5605	68004.81939954
L1278.2:38	743110.255	811165.527	8502249.170	8502299.845	5464	68064.29302883
L1279:35	743177.462	811094.213	8500585.583	8500626.132	5441	67922.61145172
L1281:32	743114.110	811047.513	8497247.322	8497287.297	5315	67941.69599333
L1282:35	743064.859	811044.347	8495587.843	8495623.279	5145	67985.12082843
L1284.1:24	743011.430	811226.341	8492246.242	8492305.935	5488	68237.61646479
L1285:22	742975.826	811085.417	8490590.655	8490623.102	5438	68117.66087436
L1287:22	742890.685	810954.353	8487257.593	8487288.508	5316	68070.30187329
L1288:32	742900.260	811024.999	8485593.419	8485629.630	5596	68131.06992057
L1290:21	742869.878	810958.767	8482264.465	8482278.475	5741	68091.19456868
L1291.1:25	742894.998	810885.379	8480580.466	8480641.219	5098	67998.5222283
L1293:21	742784.747	810890.260	8477264.649	8477279.657	5319	68108.02689833
L1294.1:19	742770.207	810947.341	8475599.645	8475611.677	5580	68178.96439432
L1296:18	742743.056	810949.634	8472267.443	8472277.510	5510	68208.20157177
L1297.1:46	742733.486	810687.761	8470582.142	8470637.271	5494	67964.29055243
L1299:12	742595.213	810687.418	8467263.406	8467278.770	5533	68096.060559
L1300:12	742593.315	810814.953	8465595.899	8465615.796	5469	68224.28158998
L1001601:55	625935.788	682412.685	8558924.554	8558953.669	4628	56487.52541903
L1001704:53	707123.949	789219.007	8558679.849	8558976.277	6448	82156.1982028
L1001801:55	625774.400	682114.921	8553928.914	8553964.172	4498	56352.99921561
L1001902:51	707366.497	789550.465	8553928.702	8553976.913	6779	82190.3780246
L1002001:55	625609.076	681798.163	8548908.723	8548977.416	4593	56208.32484876
L1002101:53	705961.886	789955.051	8548925.813	8548957.442	6422	84004.55282099
L1002201:55	626108.679	681108.362	8543881.092	8544009.004	4324	55046.96846941
L1002301:53	703712.376	790353.863	8543922.115	8543957.322	7087	86651.50902606
L1002401:56	629275.124	682983.057	8538882.527	8538971.090	4264	53720.59966247
L1002501:54	707020.945	790710.862	8538917.587	8538967.485	6685	83707.27299509
L1002601:56	632633.770	684781.662	8533921.984	8533973.665	4202	52156.91002273
L1002801:54	726300.481	791091.483	8533923.467	8533960.271	5374	64804.30344044
L1002901:56	635591.990	688492.917	8528918.729	8528957.770	4124	52906.61797798
L1003001:56	638753.429	690173.754	8523920.663	8523962.560	4100	51424.53219618
L1003101:56	641909.953	691304.207	8518923.358	8518952.151	3867	49399.30490184
L1003201:56	645074.710	694046.289	8513931.041	8513955.685	3853	48975.44299967
L1003301:56	645068.325	696161.593	8508922.337	8508956.728	4054	51100.58638343
L1003401:56	635660.957	699240.934	8503879.164	8503962.731	5145	63594.0179016
L1003502:61	621133.967	730981.338	8498916.335	8498962.813	8056	109861.8443489
L1003601:57	607465.609	730988.573	8493931.165	8493966.236	10740	123532.2392966
L1003701:63	606710.137	730991.520	8488898.170	8488959.733	8933	124302.8288111
L1003801:61	605928.652	731003.833	8483900.977	8483968.222	11018	125108.4736118
L1003902:84	605194.705	731014.355	8478933.545	8478945.565	9720	125821.2981644
L1004001:63	604446.591	731023.614	8473890.262	8473961.329	11656	126608.0761067
L1004101:72	603685.780	731020.904	8468933.292	8468947.532	9568	127340.8107917
L1004201:72	602932.569	731038.050	8463930.169	8463946.361	11088	128111.4797631
L1004301:72	602187.325	731037.280	8458932.918	8458953.047	9523	128853.8711124
L1004401:75	601438.717	731039.867	8453933.604	8453946.043	10574	129604.5214729
L1004501:75	600689.872	731042.401	8448932.135	8448946.583	10073	130356.3404202
L1004601:78	599937.436	731047.518	8443931.844	8443951.598	11229	131114.9549179
L1004701:75	599183.785	731040.421	8438933.303	8438947.996	10357	131859.828282
L1004801:80	598415.350	731045.287	8433931.433	8433948.139	11014	132634.8263767
L1004901:78	597705.664	731044.472	8428931.441	8428946.933	9966	133342.0571579
L1005001:81	596940.562	731040.381	8423933.979	8423944.836	12141	134103.0992267
L1005101:79	596218.719	731044.080	8418930.391	8418946.399	10014	134828.9377815
L1005201:81	595442.380	731039.730	8413931.504	8413948.691	12185	135603.5050089
L1005301:81	594690.025	731039.278	8408932.143	8408945.095	9979	136351.9837181
L1005401:83	593930.006	731038.250	8403932.450	8403944.765	12459	137111.2558487
L1005501:83	593171.022	731035.386	8398933.238	8398945.579	9797	137865.9644754
L1005601:83	592457.509	731037.306	8393932.156	8393946.483	12377	138584.2635425
L1102202:51	707971.408	736834.426	8557273.931	8557293.322	2389	28864.45543144
L1102302:51	707962.255	736842.146	8555605.747	8555630.586	2239	28881.8977173
L1102501:53	707935.949	736800.230	8552273.551	8552345.137	2209	28872.29266132
L1102601:53	707998.403	736754.512	8550598.779	8550726.364	2315	28771.50843187
L1102801:53	707895.327	736721.207	8547270.128	8547577.462	2365	28884.59924808
L1102901:53	707876.631	736717.739	8545612.314	8545635.847	2232	28843.78660797
L1103101:54	707877.758	736707.567	8542273.803	8542304.752	2277	28833.41652577
L1103201:54	707931.523	721475.191	8540611.285	8540641.817	1124	13547.5224602
L1103202:54	723285.874	736652.715	8540604.549	8540648.329	1083	13374.31363724
L1103401:54	726486.646	736648.113	8537263.753	8537310.259	859	10165.15906128
L1200103:84	662258.170	709206.118	8500600.491	8500611.164	3866	46948.78980439
L1200301:57	662244.691	709171.920	8497254.440	8497289.440	3979	46931.18580737
L1200401:57	662245.836	709160.722	8495588.862	8495626.763	3617	46919.53803491
L1200601:60	662210.582	709126.905	8492259.954	8492287.409	3499	46923.24226697
L1200701:60	662200.452	709091.079	8490575.457	8490622.279	4284	46904.64047399
L1200901:62	662166.019	709170.583	8487235.895	8487313.256	4356	47022.14321663
L1201003:62	662173.288	709171.834	8485576.855	8485631.831	3401	47011.08960282

L1201201:65	662131.058	709137.247	8482251.360	8482292.044	3466	47022.11924255
L1201301:65	662130.128	709110.017	8480579.920	8480638.023	4254	46995.45624035
L1201501:66	662098.769	709060.261	8477255.468	8477286.550	4160	46969.53700926
L1201601:66	662124.023	709039.778	8475593.871	8475633.526	3508	46921.02121881
L1201801:66	662046.343	709031.394	8472262.200	8472308.915	3540	46990.99825024
L1201901:66	662083.381	709034.393	8470589.339	8470622.247	4166	46955.76242178
L1202101:67	662060.119	708996.918	8467256.649	8467284.369	4003	46942.23367863
L1202202:82	662033.678	709037.951	8465596.758	8465610.326	3593	47006.01795588
L1202403:79	662019.205	709016.739	8462260.161	8462275.751	3579	46998.83918852
L1202501:70	661985.457	709072.061	8460594.820	8460618.156	4008	47090.68952397
L1202701:70	661965.443	708948.739	8457250.239	8457285.143	3962	46987.01389795
L1202801:70	661960.991	708865.278	8455591.848	8455613.911	3519	46906.16928944
L1203001:73	661956.217	708871.181	8452264.029	8452279.670	3590	46917.03060225
L1203101:73	661949.416	708860.182	8450599.494	8450610.940	4252	46913.73320532
L1203301:73	661918.051	708827.636	8447265.919	8447279.191	4214	46912.92663939
L1203402:80	661921.115	708831.970	8445601.277	8445612.266	3445	46912.08009348
L1203601:74	661875.960	708812.346	8442266.194	8442280.431	3581	46939.11894467
L1203701:74	661859.940	708774.218	8440592.827	8440618.695	4119	46917.84434007
L1203902:79	661872.497	708743.361	8437267.251	8437277.110	4159	46872.20209072
L1204002:79	661851.313	708725.190	8435599.320	8435631.082	3470	46875.29542853
L1204202:81	661823.228	723147.726	8432264.362	8432278.801	4637	61327.53619466
L1204301:74	661827.059	723091.277	8430599.840	8430612.075	5383	61268.08204198
L1204501:74	661763.102	723092.621	8427261.844	8427282.180	5250	61333.25700378
L1204601:74	661790.414	723079.898	8425599.018	8425613.258	4675	61292.33491134
L1204802:80	661749.793	723044.911	8422266.018	8422293.465	4714	61297.09843353
L1204901:78	661757.994	723026.156	8420599.811	8420613.029	5113	61270.49737035
L1205101:80	661704.868	723011.619	8417267.470	8417279.128	5153	61308.54154232
L1205201:77	661711.320	722985.312	8415598.040	8415611.878	4627	61275.97406115
L1205401:78	661669.073	722967.876	8412266.483	8412277.467	4667	61300.97606794
L1205501:82	661696.942	722943.751	8410595.117	8410611.647	5034	61249.49381462
L2400101:56	690761.681	709192.244	8501147.581	8501167.364	1458	18432.37558344
L2400301:57	690737.421	709214.392	8499995.868	8500064.923	1444	18486.94823769
L2400401:57	690714.943	709215.894	8499486.374	8499500.238	1574	18502.09331581
L2400602:60	690714.464	709170.670	8498346.503	8498391.323	1697	18463.04182235
L2400701:58	690707.804	709167.446	8497810.896	8497832.350	1375	18461.8823685
L2400901:59	690736.109	709167.387	8496700.299	8496727.392	1385	18435.37978274
L2401001:60	690729.630	709160.475	8496145.275	8496167.495	1658	18434.55364636
L2401201:62	690708.348	709156.889	8495020.607	8495068.017	1711	18456.49334507
L2401301:59	690686.689	709153.549	8494480.277	8494503.068	1392	18469.64453341
L2401501:60	690703.965	709144.101	8493367.869	8493390.115	1402	18443.26777962
L2401601:62	690688.542	709131.417	8492811.230	8492847.301	1639	18447.40274721
L2401801:62	690682.181	709116.334	8491701.412	8491725.099	1682	18437.50091097
L2401901:62	690680.590	709108.278	8491133.583	8491171.150	1342	18431.72635607
L2402102:76	690672.216	709084.733	8490042.931	8490052.084	1461	18413.01916238
L2402201:62	690663.002	709069.069	8489479.346	8489500.210	1634	18408.61700335
L2402401:64	690679.806	707553.259	8488358.112	8488388.576	1559	16884.32185528
L2402503:65	690686.309	703261.315	8487800.321	8487841.760	962	12581.28248851
L2402702:82	690646.335	703296.663	8486699.293	8486717.756	971	12650.99825251
L2402801:64	690638.155	703306.037	8486145.124	8486166.214	1166	12672.48349984
L2403001:64	690641.761	703271.789	8485035.029	8485056.498	1143	12633.20629835
L2403101:64	690655.563	703292.876	8484480.803	8484502.176	964	12639.03600944
L2403301:65	690634.042	703237.205	8483331.150	8483385.745	957	12605.25176982
L2403401:65	690618.807	703228.997	8482802.015	8482850.078	1121	12617.46072952
L2403601:65	690599.890	703240.658	8481704.627	8481726.829	1091	12644.47641785
L2403701:65	690604.547	703244.982	8481129.276	8481167.484	992	12645.26174896
L2403901:65	690631.935	703230.944	8480026.727	8480061.792	949	12602.80231181
L2404001:65	690617.536	703215.761	8479472.290	8479523.643	1107	12604.58353247
L2404201:65	690591.817	703199.170	8478371.690	8478391.508	1124	12610.5166009
L2404301:65	690569.494	703190.895	8477808.559	8477851.597	934	12624.91292709
L2500101:67	681997.259	694591.624	8470045.482	8470060.811	971	12595.379167
L2500201:67	681987.144	694609.487	8469488.540	8469508.283	1129	12624.35865104
L2500401:76	682002.890	694608.371	8468380.896	8468387.618	1090	12605.83828762
L2500501:71	681985.177	694600.640	8467816.350	8467843.505	932	12617.77857013
L2500701:71	681960.118	694452.348	8466706.350	8466729.326	937	12493.48320669
L2500801:71	681980.811	694539.026	8466150.712	8466170.457	1108	12559.57138518
L2501001:71	681941.148	694578.641	8465038.489	8465057.595	1156	12639.61818078
L2501101:71	681925.600	694591.467	8464488.705	8464515.191	968	12667.22367635
L2501301:71	681946.650	694541.899	8463376.422	8463404.646	946	12597.40160201
L2501401:71	681927.010	694545.597	8462820.948	8462835.335	1140	12620.44053533
L2501601:71	681948.774	694558.693	8461713.613	8461731.236	1143	12611.56428975
L2501701:76	681951.621	694547.921	8461152.687	8461166.476	940	12596.6439694
L2501901:76	681907.099	694542.679	8460047.085	8460053.554	956	12635.82935239
L2502002:79	681899.155	694534.824	8459489.459	8459499.951	1105	12636.292942
L2502202:76	681905.238	694528.072	8458373.244	8458389.622	1101	12623.55741682
L2502302:79	681904.073	694526.886	8457824.522	8457839.378	988	12623.67414046
L2502501:76	681897.569	694526.693	8456713.392	8456721.800	981	12629.57045642
L2502601:76	681899.182	694522.436	8456158.394	8456169.084	1096	12623.80265872
L2502801:76	681900.189	694517.821	8455046.026	8455056.047	1141	12618.24675653
L2502901:76	681880.964	694522.349	8454490.221	8454499.644	983	12641.8039144
L2503101:76	681873.615	694521.815	8453381.668	8453388.730	975	12648.42355266
L2503201:76	681865.407	694546.098	8452825.084	8452833.697	1123	12681.12125673
L2503401:76	681884.028	694463.896	8451715.407	8451721.477	1100	12580.22683441
L2503501:76	681867.610	694439.660	8451159.251	8451167.487	966	12572.40655638
L2503701:76	681860.059	694462.481	8450043.287	8450058.696	956	12603.07150414
L2503801:76	681857.005	694475.544	8449493.255	8449503.136	1123	12619.17110633

L2504001:76	681811.772	694541.816	8448381.607	8448390.067	1092	12730.74084399
L2504101:76	681802.893	694553.082	8447824.627	8447835.724	987	12750.96032027
L2504301:76	681808.302	694631.827	8446713.027	8446722.934	978	12824.12654665
L2504401:76	681815.147	694633.694	8446157.691	8446181.373	1092	12819.62491459
L2504601:76	681799.333	694538.124	8445044.757	8445056.785	1069	12739.73333341
L2504701:76	681767.183	694527.765	8444491.536	8444500.652	958	12760.91316702
L2504901:76	681777.464	694674.900	8443375.815	8443391.758	996	12898.35575003
L2505001:76	681763.576	694670.992	8442825.454	8442839.280	1073	12908.33832697
L2505201:76	681791.944	694407.793	8441704.371	8441724.141	1024	12616.86081687
L2505301:76	681790.948	694406.220	8441158.371	8441167.587	970	12615.74604072
L2600101:66	699126.695	699158.153	8486713.375	8502165.553	1231	15457.62560991
L2600201:66	704122.955	704168.824	8486565.804	8505023.633	1589	18464.99100679
L2600301:66	709105.293	709151.528	8486437.941	8516498.450	2405	30068.27925234
L2600401:84	684133.001	684143.448	8420601.541	8470281.458	4145	49680.71799533
L2600501:84	689130.403	689155.302	8411270.176	8470130.627	4540	58861.90622729
L2600602:84	694131.954	694143.264	8411244.788	8505125.445	7822	93882.10722874
L2600701:79	699131.523	699142.539	8411212.414	8435599.862	1894	24388.14554015
L3200201:54	715125.189	723188.404	8553597.963	8553649.427	598	8069.531142168
L3200301:54	715127.978	723217.749	8553279.415	8553293.572	718	8090.495355723
L3200401:54	715141.971	723228.838	8552948.175	8552961.476	603	8087.427090022
L3200501:54	715141.838	723256.232	8552609.194	8552633.740	745	8115.91180749
L3200701:54	715215.696	723261.333	8551938.607	8551968.811	727	8048.679337678
L3200801:54	716043.570	724127.459	8551611.229	8551624.578	591	8084.402275409
L3200901:54	716257.427	724302.053	8551277.494	8551291.154	710	8045.093391183
L3201001:54	716272.157	724337.492	8550941.990	8550962.176	600	8066.776468672
L3201201:54	716315.692	724371.235	8550272.424	8550308.211	616	8058.606993173
L3201301:54	716321.965	724393.313	8549946.648	8549963.013	727	8072.128197677
L3201401:54	716343.202	724410.488	8549605.780	8549634.002	622	8068.711523083
L3201501:54	716356.109	724436.928	8549276.676	8549292.651	707	8082.025446876
L3400101:51	779805.809	788911.330	8561599.290	8561610.325	715	9106.162816259
L3400201:51	779802.184	788924.578	8561269.503	8561280.124	757	9122.777933413
L3400301:51	779801.042	788928.112	8560919.401	8560953.967	729	9128.358601187
L3400401:51	779797.259	788931.651	8560601.115	8560614.733	786	9135.032738892
L3400501:51	779807.026	788930.909	8560263.494	8560284.995	714	9124.940205479
L3400601:51	779801.171	788932.307	8559935.786	8559949.344	770	9131.721086524
L3400701:51	779802.963	788939.491	8559593.214	8559612.604	708	9137.311151525
L3400801:51	779805.330	788946.558	8559267.497	8559281.299	773	9142.430805932
L3401001:52	779781.285	788972.636	8558598.138	8558637.783	790	9193.33745131
L3401101:52	779782.182	788964.276	8558261.731	8558280.899	679	9183.339996133
L3401201:52	779779.922	788961.154	8557932.111	8557946.822	804	9182.536291397
L3401301:52	779778.186	788962.973	8557598.882	8557619.336	686	9185.884920373
L3401401:52	779782.733	788950.884	8557267.304	8557280.639	793	9169.031193641
L3401501:52	779779.200	788950.400	8556927.581	8556948.446	669	9172.699150494
ALL	592457.509	863419.538	8393821.028	8561610.325	1140188	14135986.91871

Conductivity data – overlap survey lines

```
COMM GA PROJECT NUMBER                                                  1196
COMM FAS PROJECT NUMBER                                                 2017
COMM AREA NUMBER:                                                          1
COMM SURVEY COMPANY:                                  Fugro Airborne Surveys
COMM CLIENT:                                            Geoscience Australia
COMM SURVEY TYPE:                                        25Hz TEMPEST Survey
COMM AREA NAME:                                                  Rum Jungle
COMM STATE:                                                              NT
COMM COUNTRY:                                                       Australia
COMM SURVEY FLOWN:                                 October 2008 to May 2009
COMM LOCATED DATA CREATED:                                        July 2009
COMM
COMM DATUM:                                                            GDA94
COMM PROJECTION:                                                         MGA
COMM ZONE:                                                                52
COMM
COMM SURVEY SPECIFICATIONS
COMM
COMM TRAVERSE LINE SPACING:                                  250 - 5000 m
COMM TRAVERSE LINE DIRECTION:
COMM                    ALL AREAS EXCEPT DALY RIVER AND RJ6:   090-270 deg
COMM                                            DALY RIVER:   124-304 deg
COMM                                                   RJ6:   000-180 deg
COMM NOMINAL TERRAIN CLEARANCE:                                    120 m
COMM FINAL LINE KILOMETRES:                                  14182 km
COMM
COMM LINE NUMBERING
COMM
```

```
COMM TRAVERSE LINE NUMBERS:
COMM    Lines flown with PDAS Acquisition System:            10010 - 13000
COMM    Lines flown with FASDAS Acquisition System:      1001601 - 1005601
COMM                                                     1102202 - 1103401
COMM                                                     1200103 - 1205501
COMM                                                     2400101 - 2404301
COMM                                                     2500201 - 2505301
COMM                                                     3200201 - 3201501
COMM                                                     3400101 - 3401501
COMM
COMM SURVEY EQUIPMENT
COMM
COMM AIRCRAFT:                                 Shorts Skyvan SC3-200, VH-WGT
COMM
COMM MAGNETOMETER:                               Scintrex Cs-2 Cesium Vapour
COMM INSTALLATION:                                           stinger mount
COMM RESOLUTION:                                                  0.001 nT
COMM RECORDING INTERVAL:                                             0.2 s
COMM
COMM ELECTROMAGNETIC SYSTEM:                                     25Hz TEMPEST
COMM INSTALLATION:               Transmitter loop mounted on the aircraft
COMM                                        Receiver coils in a towed bird
COMM COIL ORIENTATION:                                                 X,Z
COMM RECORDING INTERVAL:                                             0.2 s
COMM SYSTEM GEOMETRY:
COMM RECEIVER DISTANCE BEHIND THE TRANSMITTER:                       -120 m
COMM RECEIVER DISTANCE BELOW THE TRANSMITTER:                         -35 m
COMM
COMM RADAR ALTIMETER:                                          Sperry RT-220
COMM RECORDING INTERVAL:                                             0.2 s
COMM
COMM LASER ALTIMETER:                                           Optech 501SB
COMM RECORDING INTERVAL:                                             0.2 s
COMM
COMM NAVIGATION:                                 real-time differential GPS
COMM RECORDING INTERVAL:                                             1.0 s
COMM
COMM ACQUISITION SYSTEM:                                  PDAS-1000 / FASDAS
COMM
COMM DATA PROCESSING
COMM
COMM MAGNETIC DATA
COMM DIURNAL BASE VALUE APPLIED                                     47444 nT
COMM PARALLAX CORRECTION APPLIED
COMM                 PDAS LINES:                                        0.4 s
COMM               FASDAS LINES:                                        0.0 s
COMM IGRF BASE VALUE APPLIED                                        46836 nT
COMM IGRF MODEL 2005 EXTRAPOLATED TO                                  2008.8
COMM DATA HAVE BEEN MICROLEVELLED
COMM
COMM ELECTROMAGNETIC DATA
COMM SYSTEM PARALLAX REMOVED, AS FOLLOWS
COMM PDAS LINES:
COMM      X-COMPONENT EM DATA                                        0.2 s
COMM      Z-COMPONENT EM DATA                                        1.4 s
COMM FASDAS LINES:
COMM      X-COMPONENT EM DATA                                        1.6 s
COMM      Z-COMPONENT EM DATA                                        0.2 s
COMM DATA CORRECTED FOR TRANSMITTER HEIGHT, PITCH AND ROLL
COMM DATA CORRECTED FOR TRANSMITTER-RECEIVER GEOMETRY VARIATIONS
COMM DATA HAVE BEEN MICROLEVELLED
COMM CONDUCTIVITY DEPTH INVERSION CALCULATED                     EMFlow V5.10
COMM CONDUCTIVITIES CALCULATED USING HPRG CORRECTED EMX & EMZ DATA
COMM
```

```
COMM DIGITAL TERRAIN DATA
COMM PARALLAX CORRECTION APPLIED TO LIDAR ALIMETER DATA                0.0 s
COMM PARALLAX CORRECTION APPLIED TO GPS ALIMETER DATA                  0.0 s
COMM DTM CALCULATED [DTM = GPS ALTITUDE - LIDAR ALTITUDE - GPS/LIDAR DIST]
COMM N-VALUE APPLIED TO CORRECT DTM TO AUSTRALIAN HEIGHT DATUM (AHD)
COMM DATA HAVE BEEN MICROLEVELLED
COMM
COMM ---------------------------------------------------------------------
COMM DISCLAIMER
COMM ---------------------------------------------------------------------
COMM It is Fugro Airborne Survey's understanding that the data provided to
COMM the client is to be used for the purpose agreed between the parties.
COMM That purpose was a significant factor in determining the scope and
COMM level of the Services being offered to the Client. Should the purpose
COMM for which the data is used change, the data may no longer be valid or
COMM appropriate and any further use of, or reliance upon, the data in
COMM those circumstances by the Client without Fugro Airborne Survey's
COMM review and advice shall be at the Client's own or sole risk.
COMM
COMM The Services were performed by Fugro Airborne Survey exclusively for
COMM the purposes of the Client. Should the data be made available in whole
COMM or part to any third party, and such party relies thereon, that party
COMM does so wholly at its own and sole risk and Fugro Airborne Survey
COMM disclaims any liability to such party.
COMM
COMM Where the Services have involved Fugro Airborne Survey's use of any
COMM information provided by the Client or third parties, upon which
COMM Fugro Airborne Survey was reasonably entitled to rely, then the
COMM Services are limited by the accuracy of such information. Fugro
COMM Airborne Survey is not liable for any inaccuracies (including any
COMM incompleteness) in the said information, save as otherwise provided
COMM in the terms of the contract between the Client and Fugro Airborne
COMM Survey.
COMM
COMM With regard to DIGITAL TERRAIN DATA, the accuracy of the elevation
COMM calculation is directly dependent on the accuracy of the two input
COMM parameters lidar altitude and GPS altitude. The radar altitude value may
COMM be erroneous in areas of heavy tree cover, where the altimeter reflects
COMM the distance to the tree canopy rather than the ground. The GPS altitude
COMM value is primarily dependent on the number of available satellites.
COMM Although post-processing of GPS data will yield X and Y accuracies in
COMM the order of 1-2 metres, the accuracy of the altitude value is usually
COMM much less, sometimes in the ±5 metre range.  Further inaccuracies
COMM may be introduced during the interpolation and gridding process.
COMM Because of the inherent inaccuracies of this method, no guarantee is
COMM made or implied that the information displayed is a true
COMM representation of the height above sea level.  Although this product
COMM may be of some use as a general reference,
COMM THIS PRODUCT MUST NOT BE USED FOR NAVIGATION PURPOSES.
COMM ---------------------------------------------------------------------
COMM
COMM ELECTROMAGNETIC SYSTEM
COMM
COMM TEMPEST IS A TIME-DOMAIN SQUARE-WAVE SYSTEM,
COMM TRANSMITTING AT A BASE FREQUENCY OF 25Hz,
COMM WITH 2 ORTHOGONAL-AXIS RECEIVER COILS IN A TOWED BIRD.
COMM FINAL EM OUTPUT IS RECORDED 5 TIMES PER SECOND.
COMM THE TIMES (IN MILLISECONDS) FOR THE 15 WINDOWS ARE:
COMM
COMM WINDOW      START       END      CENTRE
COMM    1        0.007      0.020      0.013
COMM    2        0.033      0.047      0.040
COMM    3        0.060      0.073      0.067
COMM    4        0.087      0.127      0.107
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COMM    5        0.140      0.207      0.173
COMM    6        0.220      0.340      0.280
COMM    7        0.353      0.553      0.453
COMM    8        0.567      0.873      0.720
COMM    9        0.887      1.353      1.120
COMM   10        1.367      2.100      1.733
COMM   11        2.113      3.273      2.693
COMM   12        3.287      5.113      4.200
COMM   13        5.127      7.993      6.560
COMM   14        8.007     12.393     10.200
COMM   15       12.407     19.993     16.200
COMM
COMM PULSE WIDTH: 10 ms
COMM
COMM TEMPEST EM data are transformed to the response that would be
COMM obtained with a B-field sensor for a 100% duty cycle square
COMM waveform at the base frequency, involving a 1A change in
COMM current (from -0.5A to +0.5A to -0.5A) in a 1sq.m transmitter.
COMM It is this configuration, rather than the actual acquisition
COMM configuration, which must be specified when modelling TEMPEST data.
COMM
COMM
COMM
COMM LOCATED DATA FORMAT
COMM
COMM  Output field format : DOS  - Flat ascii
COMM  Number of fields    : 68
COMM
```

Field	Channel	Description	Units	Undefined	Format
1	LINE	Line		-99999999	i10
2	FLIGHT	Flight		-99	i4
3	FID	Fiducial	(s)	-999999.9	f8.1
4	PROJECT_FAS	FAS Project Number		-9999	i6
5	PROJECT_GA	GA Project Number		-9999	i6
6	AIRCRAFT	System Number		-9	i3
7	DATE	Date	ddmmyyyy	-9999999	i9
8	TIME	Time - local midnight	(s)	-9999.9	f8.1
9	BEARING	Line Bearing	(deg)	-99	i4
10	LATITUDE	Latitude GDA94	(deg)	-99.9999999	f12.7
11	LONGITUDE	Longitude GDA94	(deg)	-999.9999999	f13.7
12	EASTING	Easting MGA51	(m)	-99999.99	f10.2
13	NORTHING	Northing MGA51	(m)	-999999.99	f11.2
14	LIDAR	Final Lidar altimeter	(m)	-999.99	f8.2
15	RADALT	Final Radar altimeter	(m)	-999.99	f8.2
16	TX_ELEVATION	Final Transmitter Elevation - AHD	(m)	-999.99	f8.2
17	DTM	Final Ground Elevation - AHD	(m)	-999.99	f8.2
18	MAG	Final TMI	(nT)	-99999.999	f11.3
19	CND_DS01	CDI_depth_slice_01 0- 5 m	(mS/m)	-9999.999	f10.3
20	CND_DS02	CDI_depth_slice_02 5- 10 m	(mS/m)	-9999.999	f10.3
21	CND_DS03	CDI_depth_slice_03 10- 15 m	(mS/m)	-9999.999	f10.3
22	CND_DS04	CDI_depth_slice_04 15- 20 m	(mS/m)	-9999.999	f10.3
23	CND_DS05	CDI_depth_slice_05 20- 30 m	(mS/m)	-9999.999	f10.3
24	CND_DS06	CDI_depth_slice_06 30- 40 m	(mS/m)	-9999.999	f10.3
25	CND_DS07	CDI_depth_slice_07 40- 60 m	(mS/m)	-9999.999	f10.3
26	CND_DS08	CDI_depth_slice_08 60- 100 m	(mS/m)	-9999.999	f10.3
27	CND_DS09	CDI_depth_slice_09 100-150 m	(mS/m)	-9999.999	f10.3
28	CND_DS10	CDI_depth_slice_10 150-200 m	(mS/m)	-9999.999	f10.3
29	CND[1]	Conductivity_001 0- 5 m	(mS/m)	-9999.999	f10.3
30	CND[2]	Conductivity_002 5- 10 m	(mS/m)	-9999.999	f10.3
31	CND[3]	Conductivity_003 10- 15 m	(mS/m)	-9999.999	f10.3
32	CND[4]	Conductivity_004 15- 20 m	(mS/m)	-9999.999	f10.3
33	CND[5]	Conductivity_005 20- 25 m	(mS/m)	-9999.999	f10.3
34	CND[6]	Conductivity_006 25- 30 m	(mS/m)	-9999.999	f10.3
35	CND[7]	Conductivity_007 30- 35 m	(mS/m)	-9999.999	f10.3
36	CND[8]	Conductivity_008 35- 40 m	(mS/m)	-9999.999	f10.3
37	CND[9]	Conductivity_009 40- 45 m	(mS/m)	-9999.999	f10.3

38	CND[10]	Conductivity_010	45- 50 m	(mS/m)	-9999.999	f10.3
39	CND[11]	Conductivity_011	50- 55 m	(mS/m)	-9999.999	f10.3
40	CND[12]	Conductivity_012	55- 60 m	(mS/m)	-9999.999	f10.3
41	CND[13]	Conductivity_013	60- 65 m	(mS/m)	-9999.999	f10.3
42	CND[14]	Conductivity_014	65- 70 m	(mS/m)	-9999.999	f10.3
43	CND[15]	Conductivity_015	70- 75 m	(mS/m)	-9999.999	f10.3
44	CND[16]	Conductivity_016	75- 80 m	(mS/m)	-9999.999	f10.3
45	CND[17]	Conductivity_017	80- 85 m	(mS/m)	-9999.999	f10.3
46	CND[18]	Conductivity_018	85- 90 m	(mS/m)	-9999.999	f10.3
47	CND[19]	Conductivity_019	90- 95 m	(mS/m)	-9999.999	f10.3
48	CND[20]	Conductivity_020	95-100 m	(mS/m)	-9999.999	f10.3
49	CND[21]	Conductivity_021	100-105 m	(mS/m)	-9999.999	f10.3
50	CND[22]	Conductivity_022	105-110 m	(mS/m)	-9999.999	f10.3
51	CND[23]	Conductivity_023	110-115 m	(mS/m)	-9999.999	f10.3
52	CND[24]	Conductivity_024	115-120 m	(mS/m)	-9999.999	f10.3
53	CND[25]	Conductivity_025	120-125 m	(mS/m)	-9999.999	f10.3
54	CND[26]	Conductivity_026	125-130 m	(mS/m)	-9999.999	f10.3
55	CND[27]	Conductivity_027	130-135 m	(mS/m)	-9999.999	f10.3
56	CND[28]	Conductivity_028	135-140 m	(mS/m)	-9999.999	f10.3
57	CND[29]	Conductivity_029	140-145 m	(mS/m)	-9999.999	f10.3
58	CND[30]	Conductivity_030	145-150 m	(mS/m)	-9999.999	f10.3
59	CND[31]	Conductivity_031	150-155 m	(mS/m)	-9999.999	f10.3
60	CND[32]	Conductivity_032	155-160 m	(mS/m)	-9999.999	f10.3
61	CND[33]	Conductivity_033	160-165 m	(mS/m)	-9999.999	f10.3
62	CND[34]	Conductivity_034	165-170 m	(mS/m)	-9999.999	f10.3
63	CND[35]	Conductivity_035	170-175 m	(mS/m)	-9999.999	f10.3
64	CND[36]	Conductivity_036	175-180 m	(mS/m)	-9999.999	f10.3
65	CND[37]	Conductivity_037	180-185 m	(mS/m)	-9999.999	f10.3
66	CND[38]	Conductivity_038	185-190 m	(mS/m)	-9999.999	f10.3
67	CND[39]	Conductivity_039	190-195 m	(mS/m)	-9999.999	f10.3
68	CND[40]	Conductivity_040	195-200 m	(mS/m)	-9999.999	f10.3

Line Number	X-minimum	X-maximum	Y-minimum	Y-maximum	# of points	Total distance
L1001:26	717054.491	811546.298	8528905.981	8528959.518	7563	94506.47032941
L1002:26	716984.965	814850.006	8523899.121	8523982.425	7598	97890.27165981
L1003:26	716972.559	818121.656	8518909.152	8518962.106	8303	101160.7638316
L1004.1:26	706574.446	821375.203	8513907.501	8513977.996	8978	114824.8105083
L1005:24	705629.312	824639.828	8508912.102	8508965.665	9773	119025.9570798
L1006:25	702166.015	827898.153	8503907.329	8504118.420	10045	125770.3323884
L1007:25	728946.549	829853.319	8498881.756	8498960.758	8250	100933.5798615
L1008:23	728955.626	830515.216	8493903.486	8493971.461	7639	101576.6743775
L1009:19	728942.897	831196.371	8488932.009	8488944.329	8767	102255.6320103
L1010:19	728951.902	831863.395	8483931.793	8483950.090	7878	102914.084352
L1011:16	728950.151	832533.553	8478929.880	8478947.466	8157	103586.9853873
L1012.1:13	728948.037	833189.704	8473932.551	8473946.661	8371	104245.3141497
L1013:13	728938.725	833893.134	8468928.161	8468948.346	8744	104957.3603164
L1014:12	728939.350	834526.009	8463930.875	8463945.255	8600	105589.1355209
L1015:12	728939.818	835207.830	8458933.581	8458943.931	8426	106270.0599607
L1016:11	728933.811	835867.707	8453931.350	8453946.151	8654	106936.6725811
L1017:11	728935.457	836531.555	8448931.321	8448945.918	8435	107598.1337928
L1018:7	728931.323	837198.797	8443918.885	8443985.029	8730	108291.7403221
L1019:7	728931.538	837869.018	8438920.779	8438955.696	8609	108950.1958865
L1020:7	728932.181	838512.259	8433928.268	8433965.824	8787	109589.6624928
L1021:7	728935.539	839197.539	8428927.135	8428951.281	8914	110267.4684845
L1022:6	728934.676	839841.084	8423923.079	8423959.511	8571	110918.0042179
L1023:6	728939.386	854355.925	8418922.222	8419040.502	10037	125444.947605
L1024:4	728950.653	863419.538	8413915.536	8413997.106	10435	134502.0676225
L1025:4	728944.997	849264.298	8408304.743	8409012.268	9782	120503.7923987
L1026:3	728950.035	849366.731	8403916.448	8403979.053	10328	120442.4240581
L1027.1:3	728961.064	849438.932	8398833.636	8398963.234	9596	120519.3168359
L1028:3	728951.725	849521.448	8393821.028	8394070.307	10469	120669.2782258
L1033:8	844129.830	852270.484	8414602.601	8414610.281	634	8140.943586654
L1034:8	844119.381	852267.355	8414270.291	8414277.645	664	8148.257946082
L1036:8	844139.777	852244.798	8413601.001	8413610.400	660	8105.407112669
L1037:8	844149.372	852256.192	8413270.586	8413278.628	642	8107.023640238
L1038:8	844158.933	853099.111	8412935.179	8412942.852	715	8940.483502523
L1039:8	844163.383	861548.113	8412601.939	8412611.984	1370	17385.22593279
L1040:8	844176.936	861550.795	8412266.389	8412277.170	1405	17374.64290845
L1041:8	844179.925	861546.921	8411933.021	8411944.985	1376	17367.50904917
L1042:8	844228.349	861554.523	8411599.396	8411611.201	1407	17326.95020998
L1043:8	844458.628	861557.683	8411269.017	8411277.642	1347	17099.57046158
L1044:8	850579.749	861556.200	8410932.412	8410942.635	859	10976.70606342
L1045:8	850602.648	861551.059	8410600.539	8410610.453	868	10948.76416913
L1046:8	850614.573	861559.796	8410266.605	8410282.146	879	10945.65016395
L1047:8	850634.962	861556.183	8409933.981	8409943.931	852	10921.4548112
L1048:8	850656.892	861556.921	8409600.218	8409613.185	866	10900.34383386
L1049:8	850674.373	861562.744	8409267.744	8409277.845	858	10888.58194254
L1055:9	749876.548	764368.420	8428669.780	8438406.254	1463	17459.30862065

L1056.1:9	749729.570	764225.342	8428475.016	8438204.272	1343	17458.35023562
L1057:9	744461.111	764084.333	8428267.888	8441439.226	1947	23634.07324208
L1058:9	744303.119	763944.591	8428065.102	8441242.307	1826	23652.49643681
L1059:9	744145.729	763799.260	8427853.274	8441055.020	1927	23676.34268387
L1060:9	743985.431	763656.833	8427645.696	8440852.821	1863	23694.23277905
L1061:9	743834.414	763514.154	8427438.477	8440656.164	1889	23707.40629321
L1062:9	743671.481	763380.612	8427232.031	8440463.515	1875	23739.12168172
L1063:9	743512.844	763234.919	8427030.041	8440269.215	1903	23754.33731976
L1064:10	743357.054	763095.232	8426824.625	8440071.010	1886	23771.51161534
L1065:10	743207.427	762950.809	8426614.500	8439872.608	1907	23782.43314499
L1066:10	743043.580	762816.900	8426411.808	8439678.704	1883	23812.18194091
L1067:10	742888.221	762671.835	8426206.474	8439482.685	1901	23825.8670155
L1068:10	742735.228	762527.881	8426003.108	8439284.446	1882	23836.22934965
L1069:10	742579.711	762393.562	8425791.982	8439089.954	1898	23863.11574596
L1070:10	742412.863	762247.215	8425585.808	8438897.761	1885	23888.04745013
L1071:10	742262.092	757004.047	8428802.154	8438697.625	1404	17755.47444746
L1072:10	742100.019	756855.286	8428604.008	8438505.679	1417	17770.35781927
L1077:18	777632.873	785987.207	8491156.302	8491164.773	688	8354.552548163
L1079.1:18	777617.294	786754.699	8490045.910	8490052.432	756	9137.527473584
L1080.1:18	777605.310	789539.245	8489489.372	8489502.002	919	11934.32986217
L1082.1:18	777576.268	792184.931	8488378.954	8488388.627	1115	14609.05642825
L1083.1:18	777556.806	792188.071	8487823.261	8487834.501	1222	14631.60824082
L1085.2:46	777576.822	792144.333	8486702.638	8486726.272	1224	14568.67811904
L1086:17	777595.809	792152.101	8486155.742	8486166.416	1152	14556.9666841
L1088:17	777563.646	792164.107	8485046.473	8485055.291	1151	14600.79308823
L1089:17	777567.458	792185.878	8484489.948	8484498.787	1183	14618.7083865
L1091:17	777518.360	792065.727	8483377.581	8483386.025	1187	14547.68454788
L1092:17	777512.877	792071.104	8482823.599	8482831.584	1165	14558.44745053
L1094:17	777494.986	792133.235	8481711.714	8481721.147	1181	14638.55592404
L1095:17	777487.387	792133.633	8481155.374	8481165.172	1183	14646.57957258
L1097:17	777515.098	792136.523	8480043.892	8480053.914	1179	14621.65221817
L1098:17	777727.614	792133.124	8479489.664	8479501.872	1153	14405.90319359
L1100:17	778255.199	792045.846	8478379.774	8478392.410	1089	13790.99619338
L1101:17	778455.899	792053.177	8477825.368	8477831.908	1131	13597.46997755
L1103:17	778965.888	792133.856	8476714.538	8476719.714	1078	13168.08687861
L1104:17	779210.053	792139.025	8476158.188	8476171.621	1011	12929.48347743
L1106:14	777450.161	792054.680	8475041.713	8475059.728	1156	14605.82506319
L1107:17	777473.374	792074.010	8474488.842	8474496.825	1163	14600.96003386
L1109:14	777422.302	791986.658	8473377.813	8473387.648	1165	14564.90754487
L1110:14	777446.915	792010.011	8472823.805	8472836.490	1168	14563.84182877
L1112:14	777428.722	791967.549	8471712.931	8471722.210	1146	14539.44602746
L1113:14	777395.902	791959.204	8471156.636	8471166.159	1155	14564.05352639
L1115:14	777431.302	791952.920	8470043.645	8470056.520	1150	14522.20383703
L1116:14	777401.989	791968.435	8469489.928	8469499.549	1167	14567.02826116
L1118:14	777409.320	791938.471	8468378.771	8468388.599	1174	14529.81292969
L1119:14	777373.014	791962.664	8467821.107	8467832.793	1193	14590.19871129
L1121:14	776976.029	785095.718	8466711.547	8466720.272	637	8119.900628213
L1122:13	776981.019	785114.797	8466157.017	8466167.215	686	8134.35704622
L1124:13	776972.844	785092.165	8465045.591	8465053.012	658	8119.759164813
L1125:13	776981.772	785090.775	8464484.498	8464498.905	637	8109.679156007
L1127:13	776896.622	785040.868	8463378.776	8463387.230	631	8144.569827117
L1128:13	776888.727	785046.261	8462824.519	8462831.824	661	8157.975217764
L1129:11	776888.350	785031.694	8462269.106	8462275.284	639	8143.618582333
L1130:11	776894.292	785031.810	8461710.007	8461723.565	659	8138.141952908
L1131.1:13	776888.525	785032.126	8461157.093	8461163.315	638	8143.982664051
L1132:11	776889.598	785029.076	8460601.434	8460611.329	647	8139.932327092
L1133:11	776895.038	785021.269	8460044.818	8460055.464	630	8126.567698657
L1134:11	776895.408	785014.202	8459490.524	8459499.058	633	8119.00557901
L1136.1:13	776895.936	785047.740	8458375.979	8458386.408	667	8152.200759553
L1142:37	752058.855	760268.121	8504592.845	8504632.358	694	8212.378908161
L1143:37	752035.151	760272.633	8504271.314	8504294.892	663	8238.148610014
L1145:37	752043.791	760298.671	8503601.422	8503648.826	658	8256.581628456
L1146:37	752039.250	760311.623	8503262.913	8503292.178	662	8273.906622016
L1147:36	752043.159	760306.915	8502916.392	8502965.628	627	8266.458589981
L1148:36	752040.696	760307.089	8502589.942	8502635.856	618	8269.727547073
L1150:36	752037.884	760312.821	8501930.895	8501956.850	633	8276.138182521
L1151:36	752032.567	760322.815	8501597.854	8501622.676	616	8290.870789667
L1152:36	752030.123	760317.620	8501261.672	8501288.938	634	8288.247010235
L1153:36	752028.930	760312.317	8500929.113	8500947.292	637	8283.749928362
L1155:36	752054.486	760325.361	8500266.494	8500280.014	644	8271.16011211
L1156:36	752048.654	760322.730	8499934.405	8499945.540	623	8274.282040113
L1162:36	767562.139	777899.528	8502597.205	8502620.037	778	10338.56899944
L1164:36	767561.341	777870.537	8501935.352	8501953.841	767	10309.50521396
L1165:36	767575.894	777867.673	8501604.505	8501625.576	823	10292.471407
L1166:36	767592.148	777875.425	8501257.106	8501286.963	775	10284.51834435
L1167:36	767604.271	777873.091	8500932.968	8500961.485	797	10270.63800471
L1169:36	767600.054	777828.097	8500268.210	8500284.966	794	10228.60475142
L1170:36	767598.614	777842.052	8499912.874	8499951.853	764	10245.14744375
L1171:36	767607.591	777848.783	8499598.565	8499616.870	805	10241.69583329
L1172:36	767616.960	777853.485	8499265.977	8499286.299	801	10236.93812092
L1174:36	763188.187	771347.493	8498599.392	8498618.362	641	8159.842381658
L1175:36	763205.287	771354.964	8498263.292	8498294.293	623	8150.313552839
L1176:36	763211.249	771350.759	8497933.906	8497947.032	623	8139.702795865
L1177.1:36	763230.754	771360.451	8497596.606	8497620.554	627	8131.096227131
L1184:35	819984.426	828280.493	8501271.877	8501314.253	704	8299.105290463

L1185:35	819976.657	828282.270	8500929.146	8500957.970	648	8307.704477525
L1186:34	819976.678	828277.934	8500581.942	8500624.389	666	8303.12749912
L1187:35	819988.622	828272.796	8500255.525	8500282.385	691	8285.507520777
L1188:34	819989.683	828275.686	8499926.180	8499960.081	703	8288.805973634
L1189:34	819983.212	828270.534	8499576.419	8499619.890	645	8290.091799058
L1190:34	819986.187	828274.958	8499267.931	8499294.879	655	8290.559869482
L1192:35	819984.590	828236.984	8498596.498	8498623.134	669	8253.346438738
L1193:31	819992.229	828237.894	8498251.789	8498286.524	714	8247.023715049
L1194:31	819990.393	828234.574	8497925.856	8497946.985	619	8245.013572139
L1195:35	819996.097	828239.156	8497592.198	8497625.315	684	8244.464680762
L1196:31	819988.986	828232.744	8497257.343	8497297.974	609	8247.484331398
L1197:31	819989.919	828234.350	8496923.748	8496958.048	699	8247.203529654
L1198:31	820004.507	828230.142	8496588.004	8496621.104	619	8226.931648498
L1204.1:46	766175.203	774295.662	8526266.387	8526279.983	659	8121.030566066
L1205:45	766190.862	774330.541	8525931.259	8525944.915	657	8139.974999173
L1207:45	766146.142	774302.268	8525266.816	8525278.087	656	8156.391086075
L1208:45	766150.032	774317.002	8524932.805	8524952.248	682	8167.871104316
L1209:45	766157.425	774326.506	8524600.913	8524611.627	669	8169.38872975
L1210.1:46	766171.999	774342.608	8524269.640	8524280.050	666	8170.885641295
L1212:45	766143.180	774333.880	8523601.562	8523610.063	678	8191.018851164
L1213:45	766147.529	774338.546	8523266.786	8523277.295	675	8191.424988987
L1214:44	766157.497	774343.558	8522934.509	8522946.120	670	8186.419348457
L1215:44	766164.690	774352.061	8522604.155	8522616.924	680	8187.703638544
L1217.1:44	766110.241	774350.027	8521934.195	8521968.370	684	8241.123723154
L1218:44	766117.702	774340.162	8521600.809	8521608.824	683	8222.787276091
L1224:40	782983.893	791105.683	8521080.125	8521094.682	652	8122.242129274
L1225.1:42	782983.894	791100.686	8520841.285	8520854.170	727	8117.415480605
L1227:40	782954.981	791059.597	8520353.219	8520373.841	663	8105.287930903
L1228:40	782959.430	791057.172	8520122.352	8520137.979	633	8098.538182952
L1229:40	782962.982	791063.863	8519885.985	8519898.175	666	8101.38116959
L1230:40	782958.722	791072.506	8519645.320	8519665.306	646	8114.508680883
L1231:40	782964.823	791071.832	8519404.298	8519422.740	662	8107.529906843
L1232:40	782969.165	791076.825	8519172.797	8519186.292	635	8108.021077162
L1234:40	782923.845	791078.762	8518700.723	8518710.724	639	8155.153767697
L1235.2:42	782929.151	791079.898	8518459.534	8518470.380	710	8151.132253814
L1236:40	782932.629	791072.195	8518225.202	8518233.405	639	8139.875943517
L1237:40	782927.689	791080.848	8517982.175	8517990.647	660	8153.45624522
L1238:40	782933.641	791084.138	8517743.831	8517756.807	645	8150.882214869
L1239:40	782933.683	791084.079	8517506.700	8517529.638	663	8151.100022044
L1241:40	782935.267	791056.955	8517019.002	8517044.370	688	8123.049907249
L1242:40	782936.850	791059.291	8516790.603	8516803.296	647	8122.711194865
L1243:40	782932.238	791064.976	8516552.572	8516561.233	677	8132.988578554
L1244:40	782935.993	791062.281	8516314.160	8516328.924	665	8126.693123519
L1245:40	782945.004	791056.484	8516072.628	8516086.292	686	8111.832311851
L1246.1:40	782950.772	791061.666	8515839.359	8515864.146	666	8111.442395611
L1248:40	782932.779	791035.228	8515369.743	8515379.976	664	8102.715122491
L1249:40	782925.953	791030.326	8515124.832	8515139.088	697	8104.752714875
L1250:40	782929.111	791026.716	8514888.192	8514909.503	658	8098.040178007
L1251:40	782930.457	791017.035	8514648.174	8514662.315	685	8086.778509595
L1252:40	782928.070	791012.117	8514408.927	8514426.036	641	8084.518827585
L1253:40	782923.297	791010.293	8514172.854	8514183.541	684	8087.269365055
L1255:40	782907.031	791028.580	8513695.057	8513708.430	683	8121.958188269
L1256.1:40	782903.994	791027.743	8513459.787	8513475.447	656	8124.16917963
L1257.1:40	782893.243	791019.716	8513218.945	8513230.222	680	8126.96522843
L1263.1:44	743482.355	811458.426	8527264.256	8527289.690	5455	67979.66737707
L1264.1:44	743436.132	811468.540	8525594.827	8525625.120	5553	68037.33289941
L1266.2:46	743413.573	811408.947	8522261.823	8522282.708	5699	67998.75060631
L1267.1:42	743431.000	811388.524	8520591.145	8520635.648	5480	67963.33208637
L1269:38	743374.687	811335.141	8517250.756	8517304.075	5263	67972.2063792
L1270.2:44	743373.504	811312.481	8515594.390	8515618.522	5552	67941.68284151
L1272:38	743261.028	811266.098	8512246.509	8512304.275	5463	68011.48598071
L1273.1:38	743294.627	811272.244	8510581.861	8510632.843	5094	67985.98218654
L1275.1:38	743228.820	811216.190	8507251.010	8507305.733	4953	67994.51584324
L1276.1:38	743229.451	811222.553	8505580.835	8505632.269	5605	68004.81939954
L1278.2:38	743110.255	811165.527	8502249.170	8502299.845	5464	68064.29302883
L1279:35	743177.462	811094.213	8500585.583	8500626.132	5441	67922.61145172
L1281:32	743114.110	811047.513	8497247.322	8497287.297	5315	67941.69599333
L1282:35	743064.859	811044.347	8495587.843	8495623.279	5145	67985.12082843
L1284.1:24	743011.430	811226.341	8492246.242	8492305.935	5488	68237.61646479
L1285:22	742975.826	811085.417	8490590.655	8490623.102	5438	68117.66087436
L1287:22	742890.685	810954.353	8487257.593	8487288.508	5316	68070.30187329
L1288:32	742900.260	811024.999	8485593.419	8485629.630	5596	68131.06992057
L1290:21	742869.878	810958.767	8482264.465	8482278.475	5741	68091.19456868
L1291.1:25	742894.998	810885.379	8480580.466	8480641.219	5098	67998.5222283
L1293:21	742784.747	810890.260	8477264.649	8477279.657	5319	68108.02689833
L1294.1:19	742770.207	810947.341	8475599.645	8475611.677	5580	68178.96439432
L1296:18	742743.056	810949.634	8472267.443	8472277.510	5510	68208.20157177
L1297.1:46	742733.486	810687.761	8470582.142	8470637.271	5494	67964.29055243
L1299:12	742595.213	810687.418	8467263.406	8467278.770	5533	68096.060559
L1300:12	742593.315	810814.953	8465595.899	8465615.796	5469	68224.28158998
L1001601:55	625935.788	682412.685	8558924.554	8558953.669	4628	56487.52541903
L1001704:53	707123.949	789219.007	8558679.849	8558976.277	6448	82156.1982028
L1001801:55	625774.400	682114.921	8553928.914	8553964.172	4498	56352.99921561
L1001902:51	707366.497	789550.465	8553928.702	8553976.913	6779	82190.3780246
L1002001:55	625609.076	681798.163	8548908.723	8548977.416	4593	56208.32484876

L1002101:53	705961.886	789955.051	8548925.813	8548957.442	6422	84004.55282099
L1002201:55	626108.679	681108.362	8543881.092	8544009.004	4324	55046.96846941
L1002301:53	703712.376	790353.863	8543922.115	8543957.322	7087	86651.50902606
L1002401:56	629275.124	682983.057	8538882.527	8538971.090	4264	53720.59966247
L1002501:54	707020.945	790710.862	8538917.587	8538967.485	6685	83707.27299509
L1002601:56	632633.770	684781.662	8533921.984	8533973.665	4202	52156.91002273
L1002801:54	726300.481	791091.483	8533923.467	8533960.271	5374	64804.30344044
L1002901:56	635591.990	688492.917	8528918.729	8528957.770	4124	52906.61797798
L1003001:56	638753.429	690173.754	8523920.663	8523962.560	4100	51424.53219618
L1003101:56	641909.953	691304.207	8518923.358	8518952.151	3867	49399.30490184
L1003201:56	645074.710	694046.289	8513931.041	8513955.685	3853	48975.44299967
L1003301:56	645068.325	696161.593	8508922.337	8508956.728	4054	51100.58638343
L1003401:56	635660.957	699240.934	8503879.164	8503962.731	5145	63594.0179016
L1003502:61	621133.967	730981.338	8498916.335	8498962.813	8056	109861.8443489
L1003601:57	607465.609	730988.573	8493931.165	8493966.236	10740	123532.2392966
L1003701:63	606710.137	730991.520	8488898.170	8488959.733	8933	124302.8288111
L1003801:61	605928.652	731003.833	8483900.977	8483968.222	11018	125108.4736118
L1003902:84	605194.705	731014.355	8478933.545	8478945.565	9720	125821.2981644
L1004001:63	604446.591	731023.614	8473890.262	8473961.329	11656	126608.0761067
L1004101:72	603685.780	731020.904	8468933.292	8468947.532	9568	127340.8107917
L1004201:72	602932.569	731038.050	8463930.169	8463946.361	11088	128111.4797631
L1004301:72	602187.325	731037.280	8458932.918	8458953.047	9523	128853.8711124
L1004401:75	601438.717	731039.867	8453933.604	8453946.043	10574	129604.5214729
L1004501:75	600689.872	731042.401	8448932.135	8448946.583	10073	130356.3404202
L1004601:78	599937.436	731047.518	8443931.844	8443951.598	11229	131114.9549179
L1004701:75	599183.785	731040.421	8438933.303	8438947.996	10357	131859.828282
L1004801:80	598415.350	731045.287	8433931.433	8433948.139	11014	132634.8263767
L1004901:78	597705.664	731044.472	8428931.441	8428946.933	9966	133342.0571579
L1005001:81	596940.562	731040.381	8423933.979	8423944.836	12141	134103.0992267
L1005101:79	596218.719	731044.080	8418930.391	8418946.399	10014	134828.9377815
L1005201:81	595442.380	731039.730	8413931.504	8413948.691	12185	135603.5050089
L1005301:81	594690.025	731039.278	8408932.143	8408945.095	9979	136351.9837181
L1005401:83	593930.006	731038.250	8403932.450	8403944.765	12459	137111.2558487
L1005501:83	593171.022	731035.386	8398933.238	8398945.579	9797	137865.9644754
L1005601:83	592457.509	731037.306	8393932.156	8393946.483	12377	138584.2635425
L1102202:51	707971.408	736834.426	8557273.931	8557293.322	2389	28864.45543144
L1102302:51	707962.255	736842.146	8555605.747	8555630.586	2239	28881.8977173
L1102501:53	707935.949	736800.230	8552273.551	8552345.137	2209	28872.29266132
L1102601:53	707998.403	736754.512	8550598.779	8550726.364	2315	28771.50843187
L1102801:53	707895.327	736721.207	8547270.128	8547577.462	2365	28884.59924808
L1102901:53	707876.631	736717.739	8545612.314	8545635.847	2232	28843.78660797
L1103101:54	707877.758	736707.567	8542273.803	8542304.752	2277	28833.41652577
L1103201:54	707931.523	721475.191	8540611.285	8540641.817	1124	13547.5224602
L1103202:54	723285.874	736652.715	8540604.549	8540648.329	1083	13374.31363724
L1103401:54	726486.646	736648.113	8537263.753	8537310.259	859	10165.15906128
L1200103:84	662258.170	709206.118	8500600.491	8500611.164	3866	46948.78980439
L1200301:57	662244.691	709171.920	8497254.440	8497289.440	3979	46931.18580737
L1200401:57	662245.836	709160.722	8495588.862	8495626.763	3617	46919.53803491
L1200601:60	662210.582	709126.905	8492259.954	8492287.409	3499	46923.24226697
L1200701:60	662200.452	709091.079	8490575.457	8490622.279	4284	46904.64047399
L1200901:62	662166.019	709170.583	8487235.895	8487313.256	4356	47022.14321663
L1201003:62	662173.288	709171.834	8485576.855	8485631.831	3401	47011.08960282
L1201201:65	662131.058	709137.247	8482251.360	8482292.044	3466	47022.11924255
L1201301:65	662130.128	709110.017	8480579.920	8480638.023	4254	46995.45624035
L1201501:66	662098.769	709060.261	8477255.468	8477286.550	4160	46969.53700926
L1201601:66	662124.023	709039.778	8475593.871	8475633.526	3508	46921.02121881
L1201801:66	662046.343	709031.394	8472262.200	8472308.915	3540	46990.99825024
L1201901:66	662083.381	709034.393	8470589.339	8470622.247	4166	46955.76242178
L1202101:67	662060.119	708996.918	8467256.649	8467284.369	4003	46942.23367863
L1202202:82	662033.678	709037.951	8465596.758	8465610.326	3593	47006.01795588
L1202403:79	662019.205	709016.739	8462260.161	8462275.751	3579	46998.83918852
L1202501:70	661985.457	709072.061	8460594.820	8460618.156	4008	47090.68952397
L1202701:70	661965.443	708948.739	8457250.239	8457285.143	3962	46987.01389795
L1202801:70	661960.991	708865.278	8455591.848	8455613.911	3519	46906.16928944
L1203001:73	661956.217	708871.181	8452264.029	8452279.670	3590	46917.03060225
L1203101:73	661949.416	708860.182	8450599.494	8450610.940	4252	46913.73320532
L1203301:73	661918.051	708827.636	8447265.919	8447279.191	4214	46912.92663939
L1203402:80	661921.115	708831.970	8445601.277	8445612.266	3445	46912.08009348
L1203601:74	661875.960	708812.346	8442266.194	8442280.431	3581	46939.11894467
L1203701:74	661859.940	708774.218	8440592.827	8440618.695	4119	46917.84434007
L1203902:79	661872.497	708743.361	8437267.251	8437277.110	4159	46872.20209072
L1204002:79	661851.313	708725.190	8435599.320	8435631.082	3470	46875.29542853
L1204202:81	661823.228	723147.726	8432264.362	8432278.801	4637	61327.53619466
L1204301:74	661827.059	723091.277	8430599.840	8430612.075	5383	61268.08204198
L1204501:74	661763.102	723092.621	8427261.844	8427282.180	5250	61333.25700378
L1204601:74	661790.414	723079.898	8425599.018	8425613.258	4675	61292.33491134
L1204802:80	661749.793	723044.911	8422266.018	8422293.465	4714	61297.09843353
L1204901:78	661757.994	723026.156	8420599.811	8420613.029	5113	61270.49737035
L1205101:80	661704.868	723011.619	8417267.470	8417279.128	5153	61308.54154232
L1205201:77	661711.320	722985.312	8415598.040	8415611.878	4627	61275.97406115
L1205401:78	661669.073	722967.876	8412266.483	8412277.467	4667	61300.97606794
L1205501:82	661696.942	722943.751	8410595.117	8410611.647	5034	61249.49381462
L2400101:56	690761.681	709192.244	8501147.581	8501167.364	1458	18432.37558344
L2400301:57	690737.421	709214.392	8499995.868	8500064.923	1444	18486.94823769
L2400401:57	690714.943	709215.894	8499486.374	8499500.238	1574	18502.09331581

L2400602:60	690714.464	709170.670	8498346.503	8498391.323	1697	18463.04182235
L2400701:58	690707.804	709167.446	8497810.896	8497832.350	1375	18461.8823685
L2400901:59	690736.109	709167.387	8496700.299	8496727.392	1385	18435.37978274
L2401001:60	690729.630	709160.475	8496145.275	8496167.495	1658	18434.55364636
L2401201:62	690708.348	709156.889	8495020.607	8495068.017	1711	18456.49334507
L2401301:59	690686.689	709153.549	8494480.277	8494503.068	1392	18469.64453341
L2401501:60	690703.965	709144.101	8493367.869	8493390.115	1402	18443.26777962
L2401601:62	690688.542	709131.417	8492811.230	8492847.301	1639	18447.40274721
L2401801:62	690682.181	709116.334	8491701.412	8491725.099	1682	18437.50091097
L2401901:62	690680.590	709108.278	8491133.583	8491171.150	1342	18431.72635607
L2402102:76	690672.216	709084.733	8490042.931	8490052.084	1461	18413.01916238
L2402201:62	690663.002	709069.069	8489479.346	8489500.210	1634	18408.61700335
L2402401:64	690679.806	707553.259	8488358.112	8488388.576	1559	16884.32185528
L2402503:65	690686.309	703261.315	8487800.321	8487841.760	962	12581.28248851
L2402702:82	690646.335	703296.663	8486699.293	8486717.756	971	12650.99825251
L2402801:64	690638.155	703306.037	8486145.124	8486166.214	1166	12672.48349984
L2403001:64	690641.761	703271.789	8485035.029	8485056.498	1143	12633.20629835
L2403101:64	690655.563	703292.876	8484480.803	8484502.176	964	12639.03600944
L2403301:65	690634.042	703237.205	8483331.150	8483385.745	957	12605.25176982
L2403401:65	690618.807	703228.997	8482802.015	8482850.078	1121	12617.46072952
L2403601:65	690599.890	703240.658	8481704.627	8481726.829	1091	12644.47641785
L2403701:65	690604.547	703244.982	8481129.276	8481167.484	992	12645.26174896
L2403901:65	690631.935	703230.944	8480026.727	8480061.792	949	12602.80231181
L2404001:65	690617.536	703215.761	8479472.290	8479523.643	1107	12604.58353247
L2404201:65	690591.817	703199.170	8478371.690	8478391.508	1124	12610.5166009
L2404301:65	690569.494	703190.895	8477808.559	8477851.597	934	12624.91292709
L2500101:67	681997.259	694591.624	8470045.482	8470060.811	971	12595.379167
L2500201:67	681987.144	694609.487	8469488.540	8469508.283	1129	12624.35865104
L2500401:76	682002.890	694608.371	8468380.896	8468387.618	1090	12605.83828762
L2500501:71	681985.177	694600.640	8467816.350	8467843.505	932	12617.77857013
L2500701:71	681960.118	694452.348	8466706.350	8466729.326	937	12493.48320669
L2500801:71	681980.811	694539.026	8466150.712	8466170.457	1108	12559.57138518
L2501001:71	681941.148	694578.641	8465038.489	8465057.595	1156	12639.61818078
L2501101:71	681925.600	694591.467	8464488.705	8464515.191	968	12667.22367635
L2501301:71	681946.650	694541.899	8463376.422	8463404.646	946	12597.40160201
L2501401:71	681927.010	694545.597	8462820.948	8462835.335	1140	12620.44053533
L2501601:71	681948.774	694558.693	8461713.613	8461731.236	1143	12611.56428975
L2501701:76	681951.621	694547.921	8461152.687	8461166.476	940	12596.6439694
L2501901:76	681907.099	694542.679	8460047.085	8460053.554	956	12635.82935239
L2502002:79	681899.155	694534.824	8459489.459	8459499.951	1105	12636.292942
L2502202:76	681905.238	694528.072	8458373.244	8458389.622	1101	12623.55741682
L2502302:79	681904.073	694526.886	8457824.522	8457839.378	988	12623.67414046
L2502501:76	681897.569	694526.693	8456713.392	8456721.800	981	12629.57045642
L2502601:76	681899.182	694522.436	8456158.394	8456169.084	1096	12623.80265872
L2502801:76	681900.189	694517.821	8455046.026	8455056.047	1141	12618.24675653
L2502901:76	681880.964	694522.349	8454490.221	8454499.644	983	12641.8039144
L2503101:76	681873.615	694521.815	8453381.668	8453388.730	975	12648.42355266
L2503201:76	681865.407	694546.098	8452825.084	8452833.697	1123	12681.12125673
L2503401:76	681884.028	694463.896	8451715.407	8451721.477	1100	12580.22683441
L2503501:76	681867.610	694439.660	8451159.251	8451167.487	966	12572.40655638
L2503701:76	681860.059	694462.481	8450043.287	8450058.696	956	12603.07150414
L2503801:76	681857.005	694475.544	8449493.255	8449503.136	1123	12619.17110633
L2504001:76	681811.772	694541.816	8448381.607	8448390.067	1092	12730.74084399
L2504101:76	681802.893	694553.082	8447824.627	8447835.724	987	12750.96032027
L2504301:76	681808.302	694631.827	8446713.027	8446722.934	978	12824.12654665
L2504401:76	681815.147	694633.694	8446157.691	8446181.373	1092	12819.62491459
L2504601:76	681799.333	694538.124	8445044.757	8445056.785	1069	12739.73333341
L2504701:76	681767.183	694527.765	8444491.536	8444500.652	958	12760.91316702
L2504901:76	681777.464	694674.900	8443375.815	8443391.758	996	12898.35575003
L2505001:76	681763.576	694670.992	8442825.454	8442839.280	1073	12908.33832697
L2505201:76	681791.944	694407.793	8441704.371	8441724.141	1024	12616.86081687
L2505301:76	681790.948	694406.220	8441158.371	8441167.587	970	12615.74604072
L2600101:66	699126.695	699158.153	8486713.375	8502165.553	1231	15457.62560991
L2600201:66	704122.955	704168.824	8486565.804	8505023.633	1589	18464.99100679
L2600301:66	709105.293	709151.528	8486437.941	8516498.450	2405	30068.27925234
L2600401:84	684133.001	684143.448	8420601.541	8470281.458	4145	49680.71799533
L2600501:84	689130.403	689155.302	8411270.176	8470130.627	4540	58861.90622729
L2600602:84	694131.954	694143.264	8411244.788	8505125.445	7822	93882.10722874
L2600701:79	699131.523	699142.539	8411212.414	8435599.862	1894	24388.14554015
L3200201:54	715125.189	723188.404	8553597.963	8553649.427	598	8069.531142168
L3200301:54	715127.978	723217.749	8553279.415	8553293.572	718	8090.495355723
L3200401:54	715141.971	723228.838	8552948.175	8552961.476	603	8087.427090022
L3200501:54	715141.838	723256.232	8552609.194	8552633.740	745	8115.91180749
L3200701:54	715215.696	723261.333	8551938.607	8551968.811	727	8048.679337678
L3200801:54	716043.570	724127.459	8551611.229	8551624.578	591	8084.402275409
L3200901:54	716257.427	724302.053	8551277.494	8551291.154	710	8045.093391183
L3201001:54	716272.157	724337.492	8550941.990	8550962.176	600	8066.776468672
L3201201:54	716315.692	724371.235	8550272.424	8550308.211	616	8058.606993173
L3201301:54	716321.965	724393.313	8549946.648	8549963.013	727	8072.128197677
L3201401:54	716343.202	724410.488	8549605.780	8549634.002	622	8068.711523083
L3201501:54	716356.109	724436.928	8549276.676	8549292.651	707	8082.025446876
L3400101:51	779805.809	788911.330	8561599.290	8561610.325	715	9106.162816259
L3400201:51	779802.184	788924.578	8561269.503	8561280.124	757	9122.777933413
L3400301:51	779801.042	788928.112	8560919.401	8560953.967	729	9128.358601187
L3400401:51	779797.259	788931.651	8560601.115	8560614.733	786	9135.032738892

L3400501:51	779807.026	788930.909	8560263.494	8560284.995	714	9124.940205479
L3400601:51	779801.171	788932.307	8559935.786	8559949.344	770	9131.721086524
L3400701:51	779802.963	788939.491	8559593.214	8559612.604	708	9137.311151525
L3400801:51	779805.330	788946.558	8559267.497	8559281.299	773	9142.430805932
L3401001:52	779781.285	788972.636	8558598.138	8558637.783	790	9193.33745131
L3401101:52	779782.182	788964.276	8558261.731	8558280.899	679	9183.339996133
L3401201:52	779779.922	788961.154	8557932.111	8557946.822	804	9182.536291397
L3401301:52	779778.186	788962.973	8557598.882	8557619.336	686	9185.884920373
L3401401:52	779782.733	788950.884	8557267.304	8557280.639	793	9169.031193641
L3401501:52	779779.200	788950.400	8556927.581	8556948.446	669	9172.699150494
ALL	592457.509	863419.538	8393821.028	8561610.325	1143858	14181581.30336

Conductivity data – repeat lines

```
COMM GA PROJECT NUMBER                                                  1196
COMM FAS PROJECT NUMBER                                                 2017
COMM AREA NUMBER:                                                          1
COMM SURVEY COMPANY:                                  Fugro Airborne Surveys
COMM CLIENT:                                            Geoscience Australia
COMM SURVEY TYPE:                                        25Hz TEMPEST Survey
COMM AREA NAME:                                                  Rum Jungle
COMM STATE:                                                              NT
COMM COUNTRY:                                                       Australia
COMM SURVEY FLOWN:                                 October 2008 to May 2009
COMM LOCATED DATA CREATED:                                         July 2009
COMM
COMM DATUM:                                                            GDA94
COMM PROJECTION:                                                         MGA
COMM ZONE:                                                                52
COMM
COMM SURVEY SPECIFICATIONS
COMM
COMM NOMINAL TERRAIN CLEARANCE:                                       120 m
COMM FINAL REPEAT LINE KILOMETRES:                                   309 km
COMM
COMM LINE NUMBERING
COMM
COMM REPEAT LINE NUMBERS:
COMM    Lines flown with PDAS Acquisition System:                  8203 - 8342
COMM    Lines flown with FASDAS Acquisition System:   911005101 - 912008201
COMM
COMM SURVEY EQUIPMENT
COMM
COMM AIRCRAFT:                                  Shorts Skyvan SC3-200, VH-WGT
COMM
COMM MAGNETOMETER:                                Scintrex Cs-2 Cesium Vapour
COMM INSTALLATION:                                              stinger mount
COMM RESOLUTION:                                                    0.001 nT
COMM RECORDING INTERVAL:                                               0.2 s
COMM
COMM ELECTROMAGNETIC SYSTEM:                                       25Hz TEMPEST
COMM INSTALLATION:                Transmitter loop mounted on the aircraft
COMM                                        Receiver coils in a towed bird
COMM COIL ORIENTATION:                                                   X,Z
COMM RECORDING INTERVAL:                                              0.2 s
COMM SYSTEM GEOMETRY:
COMM RECEIVER DISTANCE BEHIND THE TRANSMITTER:                        -120 m
COMM RECEIVER DISTANCE BELOW THE TRANSMITTER:                          -35 m
COMM
COMM RADAR ALTIMETER:                                           Sperry RT-220
COMM RECORDING INTERVAL:                                              0.2 s
COMM
COMM LASER ALTIMETER:                                            Optech 501SB
COMM RECORDING INTERVAL:                                              0.2 s
COMM
COMM NAVIGATION:                                 real-time differential GPS
COMM RECORDING INTERVAL:                                              1.0 s
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COMM
COMM ACQUISITION SYSTEM:                                    PDAS-1000 / FASDAS
COMM
COMM DATA PROCESSING
COMM
COMM MAGNETIC DATA
COMM DIURNAL BASE VALUE APPLIED                                      47444 nT
COMM PARALLAX CORRECTION APPLIED
COMM                 PDAS LINES:                                       0.4 s
COMM               FASDAS LINES:                                       0.0 s
COMM IGRF BASE VALUE APPLIED                                         46836 nT
COMM IGRF MODEL 2005 EXTRAPOLATED TO                                   2008.8
COMM
COMM ELECTROMAGNETIC DATA
COMM SYSTEM PARALLAX REMOVED, AS FOLLOWS
COMM PDAS LINES:
COMM      X-COMPONENT EM DATA                                         0.2 s
COMM      Z-COMPONENT EM DATA                                         1.4 s
COMM FASDAS LINES:
COMM      X-COMPONENT EM DATA                                         1.6 s
COMM      Z-COMPONENT EM DATA                                         0.2 s
COMM DATA CORRECTED FOR TRANSMITTER HEIGHT, PITCH AND ROLL
COMM DATA CORRECTED FOR TRANSMITTER-RECEIVER GEOMETRY VARIATIONS
COMM CONDUCTIVITY DEPTH INVERSION CALCULATED                    EMFlow V5.10
COMM CONDUCTIVITIES CALCULATED USING HPRG CORRECTED EMX & EMZ DATA
COMM
COMM DIGITAL TERRAIN DATA
COMM PARALLAX CORRECTION APPLIED TO LIDAR ALIMETER DATA              0.0 s
COMM PARALLAX CORRECTION APPLIED TO GPS ALIMETER DATA                0.0 s
COMM DTM CALCULATED [DTM = GPS ALTITUDE - LIDAR ALTITUDE - GPS/LIDAR DIST]
COMM N-VALUE APPLIED TO CORRECT DTM TO AUSTRALIAN HEIGHT DATUM (AHD)
COMM DATA HAVE BEEN MICROLEVELLED
COMM
COMM ------------------------------------------------------------------------
COMM DISCLAIMER
COMM ------------------------------------------------------------------------
COMM It is Fugro Airborne Survey’s understanding that the data provided to
COMM the client is to be used for the purpose agreed between the parties.
COMM That purpose was a significant factor in determining the scope and
COMM level of the Services being offered to the Client. Should the purpose
COMM for which the data is used change, the data may no longer be valid or
COMM appropriate and any further use of, or reliance upon, the data in
COMM those circumstances by the Client without Fugro Airborne Survey's
COMM review and advice shall be at the Client's own or sole risk.
COMM
COMM The Services were performed by Fugro Airborne Survey exclusively for
COMM the purposes of the Client. Should the data be made available in whole
COMM or part to any third party, and such party relies thereon, that party
COMM does so wholly at its own and sole risk and Fugro Airborne Survey
COMM disclaims any liability to such party.
COMM
COMM Where the Services have involved Fugro Airborne Survey's use of any
COMM information provided by the Client or third parties, upon which
COMM Fugro Airborne Survey was reasonably entitled to rely, then the
COMM Services are limited by the accuracy of such information. Fugro
COMM Airborne Survey is not liable for any inaccuracies (including any
COMM incompleteness) in the said information, save as otherwise provided
COMM in the terms of the contract between the Client and Fugro Airborne
COMM Survey.
COMM
COMM With regard to DIGITAL TERRAIN DATA, the accuracy of the elevation
COMM calculation is directly dependent on the accuracy of the two input
COMM parameters lidar altitude and GPS altitude. The radar altitude value may
COMM be erroneous in areas of heavy tree cover, where the altimeter reflects
```

```
COMM the distance to the tree canopy rather than the ground. The GPS altitude
COMM value is primarily dependent on the number of available satellites.
COMM Although post-processing of GPS data will yield X and Y accuracies in
COMM the order of 1-2 metres, the accuracy of the altitude value is usually
COMM much less, sometimes in the ±5 metre range.  Further inaccuracies
COMM may be introduced during the interpolation and gridding process.
COMM Because of the inherent inaccuracies of this method, no guarantee is
COMM made or implied that the information displayed is a true
COMM representation of the height above sea level.  Although this product
COMM may be of some use as a general reference,
COMM THIS PRODUCT MUST NOT BE USED FOR NAVIGATION PURPOSES.
COMM ----------------------------------------------------------------------
COMM
COMM ELECTROMAGNETIC SYSTEM
COMM
COMM TEMPEST IS A TIME-DOMAIN SQUARE-WAVE SYSTEM,
COMM TRANSMITTING AT A BASE FREQUENCY OF 25Hz,
COMM WITH 2 ORTHOGONAL-AXIS RECEIVER COILS IN A TOWED BIRD.
COMM FINAL EM OUTPUT IS RECORDED 5 TIMES PER SECOND.
COMM THE TIMES (IN MILLISECONDS) FOR THE 15 WINDOWS ARE:
COMM
COMM WINDOW      START       END      CENTRE
COMM    1        0.007      0.020      0.013
COMM    2        0.033      0.047      0.040
COMM    3        0.060      0.073      0.067
COMM    4        0.087      0.127      0.107
COMM    5        0.140      0.207      0.173
COMM    6        0.220      0.340      0.280
COMM    7        0.353      0.553      0.453
COMM    8        0.567      0.873      0.720
COMM    9        0.887      1.353      1.120
COMM   10        1.367      2.100      1.733
COMM   11        2.113      3.273      2.693
COMM   12        3.287      5.113      4.200
COMM   13        5.127      7.993      6.560
COMM   14        8.007     12.393     10.200
COMM   15       12.407     19.993     16.200
COMM
COMM PULSE WIDTH: 10 ms
COMM
COMM TEMPEST EM data are transformed to the response that would be
COMM obtained with a B-field sensor for a 100% duty cycle square
COMM waveform at the base frequency, involving a 1A change in
COMM current (from -0.5A to +0.5A to -0.5A) in a 1sq.m transmitter.
COMM It is this configuration, rather than the actual acquisition
COMM configuration, which must be specified when modelling TEMPEST data.
COMM
COMM
COMM LOCATED DATA FORMAT
COMM
COMM  Output field format : DOS  - Flat ascii
COMM  Number of fields    : 68
COMM
Field  Channel         Description                      Units  Undefined    Format
-----  -------         -----------                      -----  ---------    ------

    1  LINE            Line                                    -99999999      i10
    2  FLIGHT          Flight                                  -99             i4
    3  FID             Fiducial                           (s)  -999999.9     f8.1
    4  PROJECT_FAS     FAS Project Number                      -9999           i6
    5  PROJECT_GA      GA Project Number                       -9999           i6
    6  AIRCRAFT        System Number                           -9              i3
    7  DATE            Date                           ddmmyyyy  -9999999       i9
    8  TIME            Time - local midnight               (s)  -9999.9       f8.1
    9  BEARING         Line Bearing                      (deg)  -99             i4
```

10	LATITUDE	Latitude GDA94	(deg)	-99.9999999	f12.7
11	LONGITUDE	Longitude GDA94	(deg)	-999.9999999	f13.7
12	EASTING	Easting MGA51	(m)	-99999.99	f10.2
13	NORTHING	Northing MGA51	(m)	-999999.99	f11.2
14	LIDAR	Final Lidar altimeter	(m)	-999.99	f8.2
15	RADALT	Final Radar altimeter	(m)	-999.99	f8.2
16	TX_ELEVATION	Final Transmitter Elevation - AHD	(m)	-999.99	f8.2
17	DTM	Final Ground Elevation - AHD	(m)	-999.99	f8.2
18	MAG	Final TMI	(nT)	-99999.999	f11.3
19	CND_DS01	CDI_depth_slice_01 0- 5 m	(mS/m)	-9999.999	f10.3
20	CND_DS02	CDI_depth_slice_02 5- 10 m	(mS/m)	-9999.999	f10.3
21	CND_DS03	CDI_depth_slice_03 10- 15 m	(mS/m)	-9999.999	f10.3
22	CND_DS04	CDI_depth_slice_04 15- 20 m	(mS/m)	-9999.999	f10.3
23	CND_DS05	CDI_depth_slice_05 20- 30 m	(mS/m)	-9999.999	f10.3
24	CND_DS06	CDI_depth_slice_06 30- 40 m	(mS/m)	-9999.999	f10.3
25	CND_DS07	CDI_depth_slice_07 40- 60 m	(mS/m)	-9999.999	f10.3
26	CND_DS08	CDI_depth_slice_08 60- 100 m	(mS/m)	-9999.999	f10.3
27	CND_DS09	CDI_depth_slice_09 100-150 m	(mS/m)	-9999.999	f10.3
28	CND_DS10	CDI_depth_slice_10 150-200 m	(mS/m)	-9999.999	f10.3
29	CND[1]	Conductivity_001 0- 5 m	(mS/m)	-9999.999	f10.3
30	CND[2]	Conductivity_002 5- 10 m	(mS/m)	-9999.999	f10.3
31	CND[3]	Conductivity_003 10- 15 m	(mS/m)	-9999.999	f10.3
32	CND[4]	Conductivity_004 15- 20 m	(mS/m)	-9999.999	f10.3
33	CND[5]	Conductivity_005 20- 25 m	(mS/m)	-9999.999	f10.3
34	CND[6]	Conductivity_006 25- 30 m	(mS/m)	-9999.999	f10.3
35	CND[7]	Conductivity_007 30- 35 m	(mS/m)	-9999.999	f10.3
36	CND[8]	Conductivity_008 35- 40 m	(mS/m)	-9999.999	f10.3
37	CND[9]	Conductivity_009 40- 45 m	(mS/m)	-9999.999	f10.3
38	CND[10]	Conductivity_010 45- 50 m	(mS/m)	-9999.999	f10.3
39	CND[11]	Conductivity_011 50- 55 m	(mS/m)	-9999.999	f10.3
40	CND[12]	Conductivity_012 55- 60 m	(mS/m)	-9999.999	f10.3
41	CND[13]	Conductivity_013 60- 65 m	(mS/m)	-9999.999	f10.3
42	CND[14]	Conductivity_014 65- 70 m	(mS/m)	-9999.999	f10.3
43	CND[15]	Conductivity_015 70- 75 m	(mS/m)	-9999.999	f10.3
44	CND[16]	Conductivity_016 75- 80 m	(mS/m)	-9999.999	f10.3
45	CND[17]	Conductivity_017 80- 85 m	(mS/m)	-9999.999	f10.3
46	CND[18]	Conductivity_018 85- 90 m	(mS/m)	-9999.999	f10.3
47	CND[19]	Conductivity_019 90- 95 m	(mS/m)	-9999.999	f10.3
48	CND[20]	Conductivity_020 95-100 m	(mS/m)	-9999.999	f10.3
49	CND[21]	Conductivity_021 100-105 m	(mS/m)	-9999.999	f10.3
50	CND[22]	Conductivity_022 105-110 m	(mS/m)	-9999.999	f10.3
51	CND[23]	Conductivity_023 110-115 m	(mS/m)	-9999.999	f10.3
52	CND[24]	Conductivity_024 115-120 m	(mS/m)	-9999.999	f10.3
53	CND[25]	Conductivity_025 120-125 m	(mS/m)	-9999.999	f10.3
54	CND[26]	Conductivity_026 125-130 m	(mS/m)	-9999.999	f10.3
55	CND[27]	Conductivity_027 130-135 m	(mS/m)	-9999.999	f10.3
56	CND[28]	Conductivity_028 135-140 m	(mS/m)	-9999.999	f10.3
57	CND[29]	Conductivity_029 140-145 m	(mS/m)	-9999.999	f10.3
58	CND[30]	Conductivity_030 145-150 m	(mS/m)	-9999.999	f10.3
59	CND[31]	Conductivity_031 150-155 m	(mS/m)	-9999.999	f10.3
60	CND[32]	Conductivity_032 155-160 m	(mS/m)	-9999.999	f10.3
61	CND[33]	Conductivity_033 160-165 m	(mS/m)	-9999.999	f10.3
62	CND[34]	Conductivity_034 165-170 m	(mS/m)	-9999.999	f10.3
63	CND[35]	Conductivity_035 170-175 m	(mS/m)	-9999.999	f10.3
64	CND[36]	Conductivity_036 175-180 m	(mS/m)	-9999.999	f10.3
65	CND[37]	Conductivity_037 180-185 m	(mS/m)	-9999.999	f10.3
66	CND[38]	Conductivity_038 185-190 m	(mS/m)	-9999.999	f10.3
67	CND[39]	Conductivity_039 190-195 m	(mS/m)	-9999.999	f10.3
68	CND[40]	Conductivity_040 195-200 m	(mS/m)	-9999.999	f10.3

Line Number	X-minimum	X-maximum	Y-minimum	Y-maximum	# pts	Total distance
D8203:3	769998.895	779997.390	8453918.016	8453941.987	786	9999.317868268
D8204:4	769996.686	779999.410	8453925.771	8453949.502	839	10003.89939654
D8206:6	769996.060	780002.592	8453929.855	8453949.066	825	10007.31966854
D8207:7	770003.914	780008.141	8453929.077	8453944.299	799	10004.77783949
D8210:10	769998.606	780006.888	8453935.222	8453941.851	808	10008.44103184
D8213:13	770001.495	780008.300	8453935.539	8453943.910	785	10007.1538037
D8214:14	770004.388	780002.367	8453934.368	8453941.369	818	9998.156193559
D8218:18	769996.499	780003.170	8453936.793	8453941.868	855	10006.77381691
D8222:22	769996.671	779998.554	8453930.977	8453948.722	828	10002.31816022
D8225:25	769997.777	779999.675	8453926.416	8453953.299	818	10002.91186478

D8231:31	820018.953	829997.902	8453914.606	8453961.793	808	9983.541939165
D8232:32	820010.397	830001.699	8453932.172	8453948.642	806	9991.724593715
D8234:34	820011.093	829999.862	8453921.290	8453962.524	792	9991.10750729
D8235:35	820014.875	829996.539	8453922.490	8453958.702	734	9982.821197941
D8236:36	820021.229	829995.247	8453926.757	8453949.752	790	9974.764100218
D8238:38	820018.009	829996.262	8453920.773	8453951.496	823	9979.685216572
D8241:41	820008.804	829992.074	8453937.109	8453949.826	815	9983.988868289
D8242:42	820021.083	829999.480	8453934.860	8453946.414	804	9978.635347247
D8246:46	820018.042	829874.073	8453930.027	8453981.102	808	9861.532374152
D8342:42	750003.206	759996.423	8568936.067	8568945.655	787	9993.66181424
D911005101:51	750000.237	759990.412	8568932.106	8568945.888	819	9990.801325204
D911005201:52	749995.433	759991.529	8568925.754	8568944.443	847	9996.897136335
D911005301:53	749999.168	759995.039	8568930.597	8568949.727	820	9996.941148666
D911005501:55	750004.004	759991.305	8568901.892	8568961.052	802	9992.963785624
D911005801:58	749997.343	759992.807	8568929.555	8568949.257	908	9996.696223607
D911006101:61	750005.747	759998.981	8568925.240	8568970.596	817	9996.321588419
D911006401:64	749999.517	759991.330	8568933.184	8568944.309	879	9992.188258229
D912006801:68	721085.568	730991.303	8473932.688	8473954.975	735	9906.380616615
D912007301:73	721082.764	730991.569	8473936.805	8473941.518	731	9908.991612613
D912007801:78	721091.343	730994.212	8473936.858	8473947.835	783	9903.210717086
D912008201:82	721079.964	730984.294	8473934.941	8473942.893	741	9904.714168131
ALL	721079.964	830001.699	8453914.606	8568970.596	25010	309348.6391832

APPENDIX V – Standby Days

Aircraft: VH-WGT

Date	Days	Description	Kms Flown
10/11/2008	1	High Spherics	0
11/11/2008	1	High Spherics	0
15/11/2008	1	High Spherics	0
16/11/2008	1	High Spherics	33
17/11/2008	1	High Spherics	0
18/11/2008	1	High Spherics	0
21/11/2008	1	High Spherics	33
23/11/2008	1	High Spherics	0
24/11/2008	1	High Spherics	0
25/11/2008	1	High Spherics	0
28/11/2008	1	High Spherics	0
30/11/2008	1	High Spherics	0
3/12/2008	1	High Spherics	0
4/12/2008	1	High Spherics	0
5/12/2008	1	High Spherics	49
17/04/2009	1	High Spherics	0
18/04/2009	1	High Spherics	0
19/04/2009	1	High Spherics	0
21/04/2009	1	High Spherics	54
28/04/2009	1	High Spherics	18
29/04/2009	1	High Spherics	37
30/04/2009	0.5	High Spherics	149
2/05/2009	0.5	High Spherics	185
4/05/2009	1	High Spherics	54
7/05/2009	1	High Spherics	0
10/05/2009	1	High Spherics	72
11/05/2009	1	High Spherics	0
12/05/2009	1	High Spherics	0
13/05/2009	0.5	High Spherics	140
14/05/2009	1	High Spherics	100
16/05/2009	0.5	High Spherics	140

APPENDIX VI – List of all Supplied Data and Products

Streamed EM Data

For each survey flight the raw continuous time series data was delivered as a series of binary (*.b and *.raw for PDAS and FASDAS, respectively) files for each traverse and calibration line (each file being a maximum 1Gb in size). An associated text file linking the traverse line to the file name accompanied the data.

Field Located Data

Following completion of acquisition, located data was delivered for all survey lines.

For the filename below, there are 2 files. Extension '.asc' is the data and '.hdr' is a header describing the data format and survey specifications.

Traverse lines:
Rum_Jungle_WGT_field_data_all
High-Altitude (zero) lines:
Rum_Jungle_WGT_field_zero_line_data
Repeat lines:
Rum_Jungle_WGT_field_repeat_line_data

Final Located Data

For each filename below, there are 2 files. Extension '.asc' is the data and '.hdr' is a header file describing the data format and survey specifications.

Traverse lines:

Rum_Jungle_Final_EM_Overlap:	*data trimmed to include 2km PDAS / FASDAS overlap*
Rum_Jungle_Final_CND_Overlap:	*data trimmed to include 2km PDAS / FASDAS overlap*
Rum_Jungle_Final_EM_Clipped:	*data trimmed to include minimal PDAS / FASDAS overlap*
Rum_Jungle_Final_CND_Clipped:	*data trimmed to include minimal PDAS / FASDAS overlap*

Repeat lines:
Rum_Jungle_Final_EM_RptLines
Rum_Jungle_Final_CND_RptLines

For each of the suffixes EM and CND, the contents are as follows:

- EM – data **with** and **without** geometry correction as defined in Attachment 1, section 3.3 (b) of the contract.
- CND – Conductivity-depth data as defined in Attachment 1, section 3.3(c) of the contract.

Final Gridded Products

The following ERMapper format grids were delivered for each regional and infill area (with National Parks excluded), using the optimal grid cell size (1/5th of the line spacing):

- Total Magnetic Intensity
- Digital Elevation Model
- Interval Conductivity grids for the following depth ranges:
  - 0-5 metres
  - 5-10 metres
  - 10-15 metres
  - 15-20 metres
  - 20-30 metres
  - 30-40 metres
  - 40-60 metres
  - 60-100 metres
  - 100-150 metres
  - 150-200 metres

CDI Multiplots

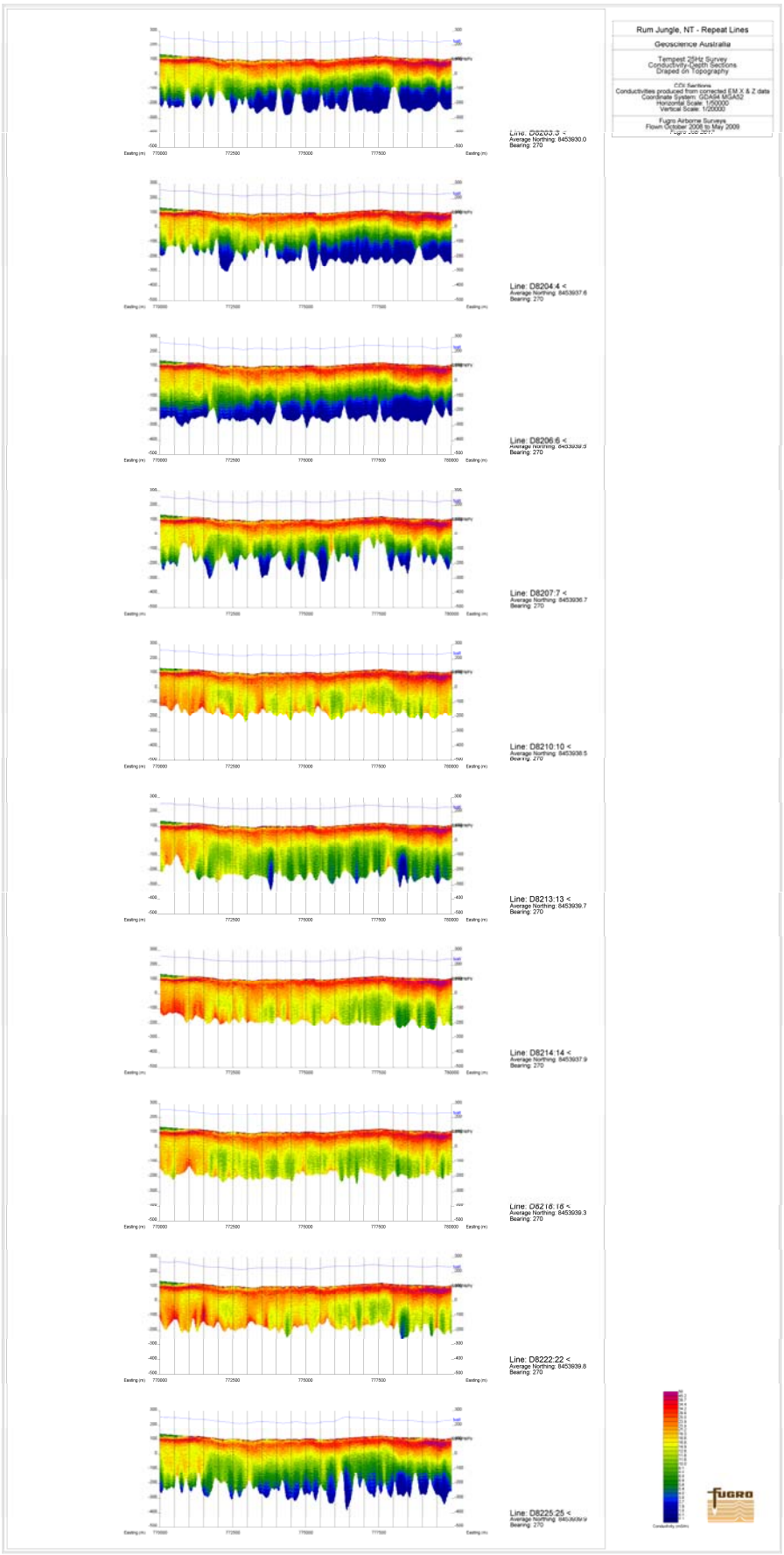
PDF format files of the EM multiplots, derived from the final processed and combined EM X and EM Z component data, were delivered for every survey line at 1:50 000 scale. The multiplots were trimmed to the National Park boundaries.

Final Acquisition and Processing Report

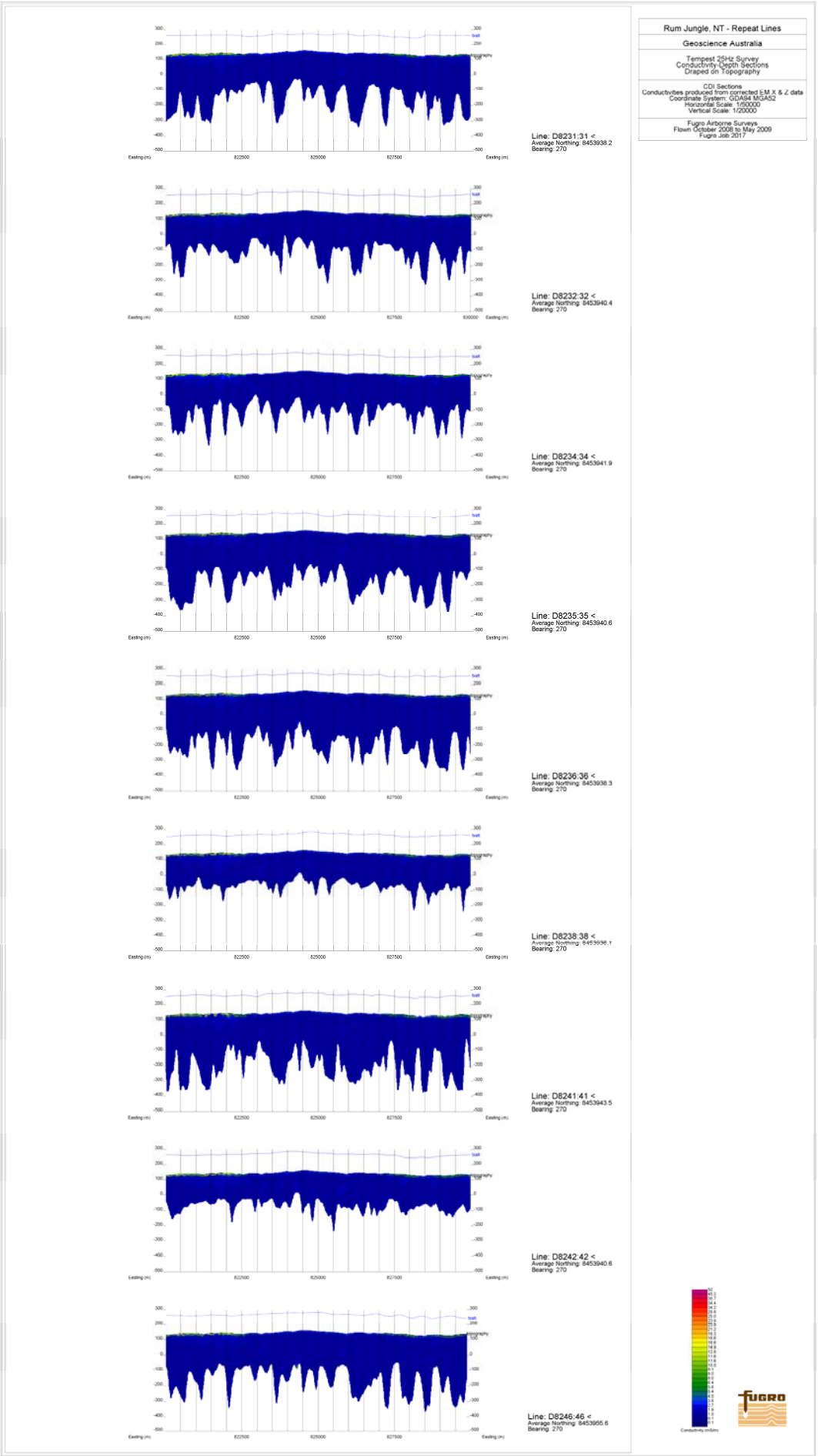
Delivered as hardcopy and digitally (6 copies)

APPENDIX VII – EM Repeat line CDIs

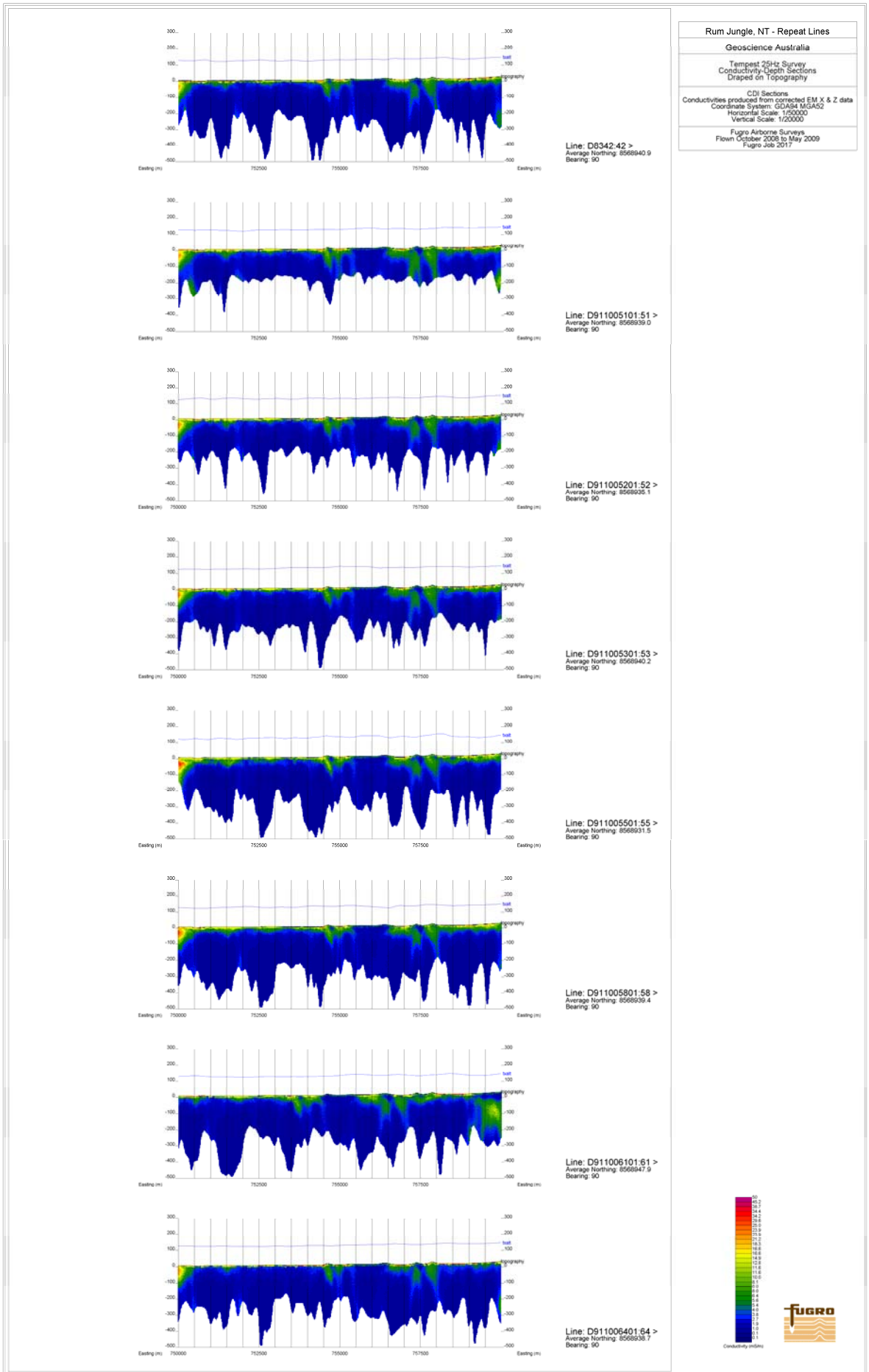
Repeat Line: **Start co-ords:** 770000mE, 8453950mN, **End co-ords**: 780000mE, 8453950mN



Repeat Line: **Start co-ords:** 820000mE, 8453950mN, **End co-ords**: 830000mE, 8453950mN



Repeat Line: **Start co-ords:** 750000mE, 8568955mN, **End co-ords**: 760000mE, 88568955mN



Repeat Line: **Start co-ords:** 721000mE, 8473956mN, **End co-ords**: 731000mE, 8473956mN