THOMSON AVIATION

Airborne Geophysical Survey

Fowler, SA (GA#1285 – R4B)

Geophysical Survey Operations & Processing Report

May 2018

1. Survey Details

Traverse Line Direction	090°
Traverse Line Spacing	200 meters
Tie Line Direction	180°
Tie Line Spacing	2000 meters
Survey Total Traverse Line Kilometres	86,302 km's
Survey Total Tie Line Kilometres	8,709 km's
Survey Total Line Kilometres	95,011 km's
Main Terrain Clearance	60 meters above ground level
Time Base – Magnetics	20 Hz
Time Base – Radiometrics	1 Hz

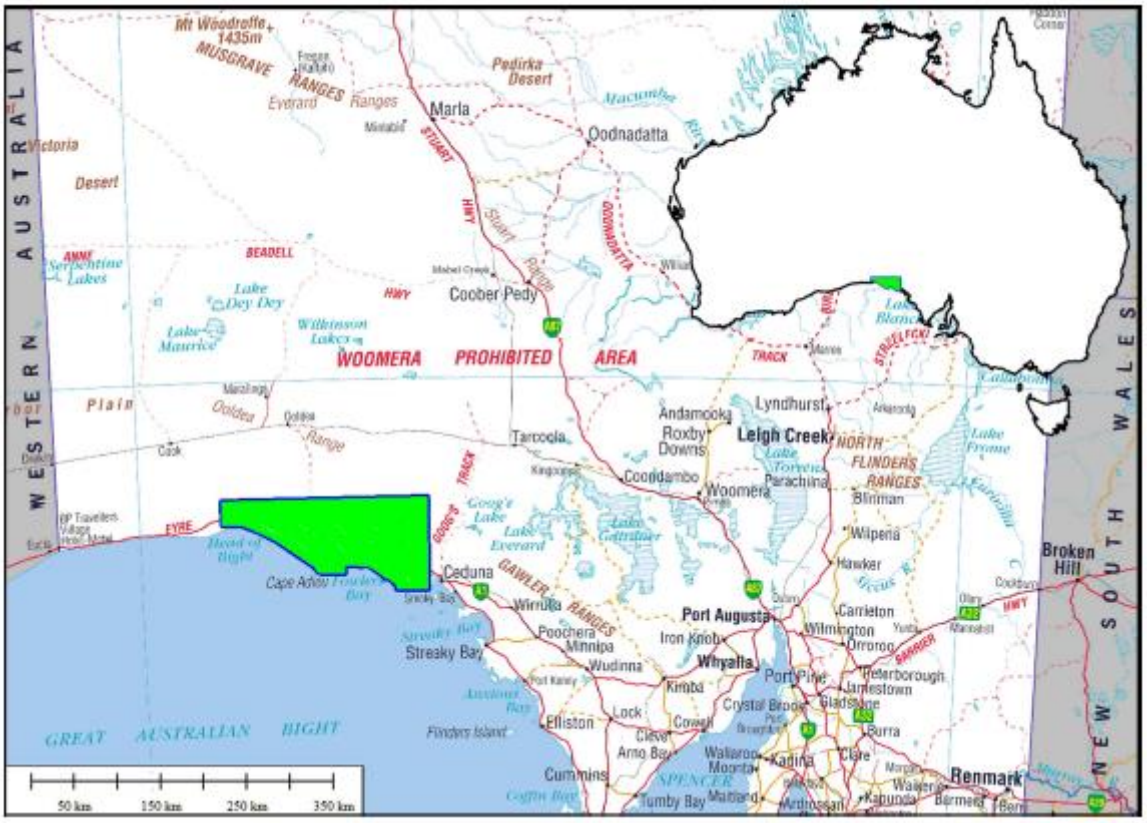


Figure 1. Survey Location Map.

1.1 Survey Summary

Survey Acquisition Mobilisation Date	16th February 2017
Survey Acquisition Demobilisation Date	3rd June 2017
Processing Start Date	20th February 2017
Processing End Date	22nd December 2017

Survey Base 1	Nullarbor Roadhouse Airstrip (Lat: -31.450029 Lon: 130.896583)
Crew Accommodation 1	Nullarbor Roadhouse Motel
Survey Base 2	Ceduna Airport (Lat: -32.125095 Lon: 133.699747)
Crew Accommodation 2	Ceduna Motor Inn

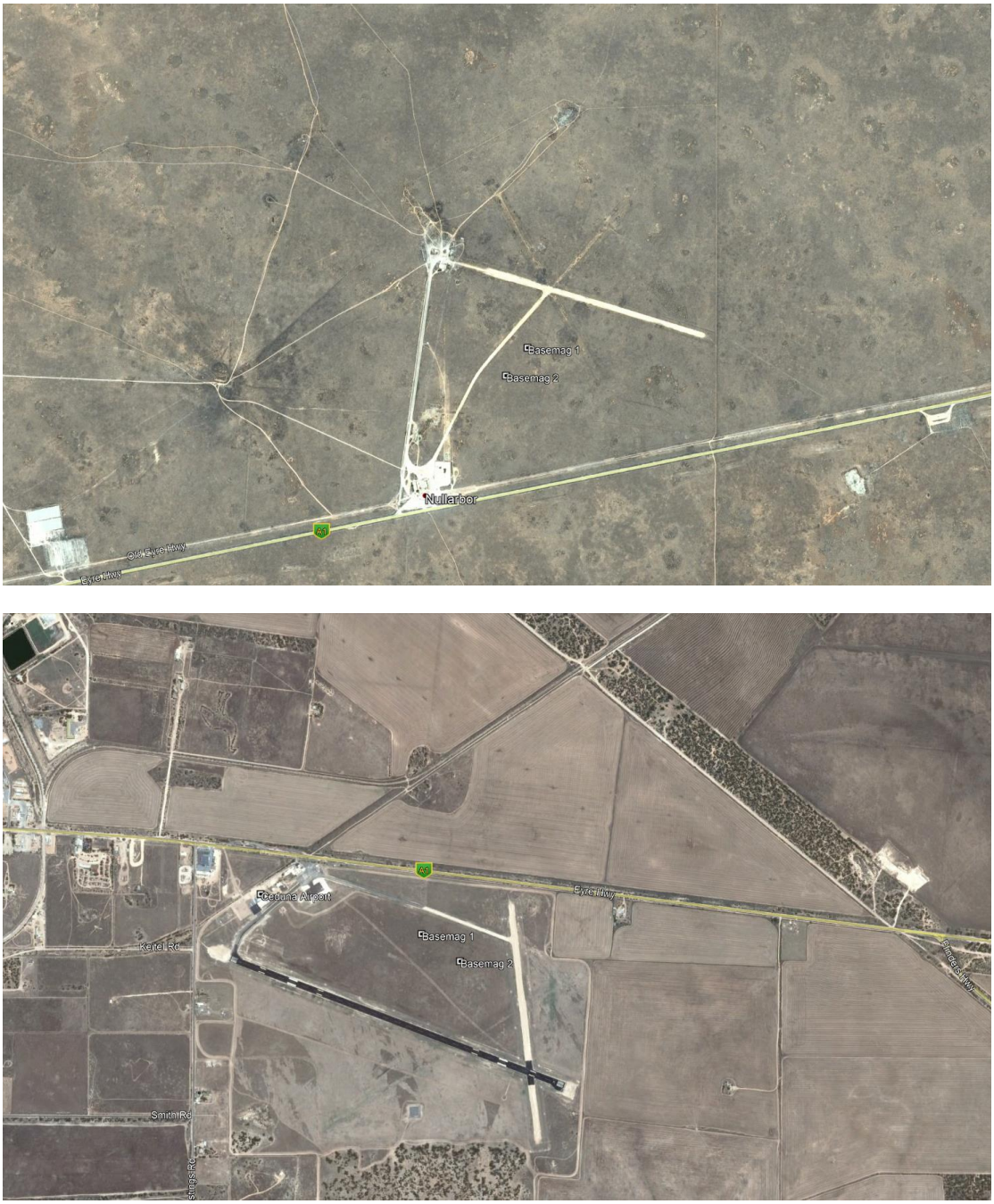


Figure 2. Survey Base Map.

1.2 Survey Aircraft

Survey Aircraft	Cessna 210L (VH-THS)	S/N: 21060031
Engine	Continental IO-550	
Fuel Type	Avgas	
Fuel Burn	65 Litres per hour	
Typical Survey Speed	130 Knots	
Stall Speed	65 Knots	

Figure 3. Survey Aircraft VH-THS.

1.3 Survey Equipment Specifications

Total Field Magnetometer	G823 Optically pumped caesium Vapour
Sensitivity	0.0009 nT @ 20 Hz
Absolute Accuracy	<3 nT throughout entire range
Noise Envelope	0.0009 nT @ 20 Hz
Ambient Range	20,000 nT – 100,000 nT
Sampling Rate	20 Hz
Fiducial Precision	20 Hz

Fluxgate Magnetometer	Billingsley TFM100G2 triaxle fluxgate magnetometer
Sensitivity	100 µV/nT
Absolute Accuracy	± 0.75% of full scale (0.5% typical)
Noise Envelope	20 picoTesla RMS/ Hz @1 Hz

Acquisition System	GeoResults ZDAS
Fiducial Precision	20 hz

Navigation	Novatel OEM-V1 (Internal of ZDAS)
DGPS	L1 Omnistar VBS
Base GPS	Not required when using L1 Omnistar VBS
Horizontal Position	Typical < 1 meter
Vertical Position	Typical <3 meters
Sampling Rate	2 Hz
Fiducial Precision	0.05 s

Airborne Spectrometer	Radiation Solutions RSX-4 (x2)
Channels	1024
Downward detector volume	33 L in Total
Dead time	Effectively zero @ 1hz
Peak Resolution (208TI 2615 keV	4% - 5%
NASVD Compatible	Yes
Sampling rate	1 Hz
Recorded Live/Dead time	0.001 sec

Radar Altimeter	Honeywell KRA405B
Operating Range	0 – 2500 feet
Accuracy	3% <500 feet, 5% >500feet
Laser Altimeter	TruSense S200
Operating Range	0 – 2500 feet
Accuracy	0.01 feet

Barometric Altimeter	Setra 296
Accuracy	0.25% Full Scale

Temperature & Humidity Sensor	Vaisala HMD50Y
Temperature Accuracy	0.2^{o}
Humidity Accuracy	2% Relative Humidity

1.4 Survey equipment Log & Serial Numbers

Total Field Magnetometer	Geometrics G823	S/N: 823247
Magnetometer Counter	Kroum Kmag4	S/N: 114
Fluxgate Magnetometer	Billingsley TFM1000G2	S/N: 904
Acquisition System	GeoResults ZDAS	S/N: Z101
Navigation	Novatel OEM-V1	S/N: 784822
Airborne Spectrometer #1	Radiation Solutions RSX-4	S/N: 5414
Airborne Spectrometer #2	Radiation Solutions RSX-4	S/N: 5431
Radar Altimeter	Honeywell KRA405B	S/N: 07651
Laser Altimeter	TruSense S200	S/N: 107476
Barometric Altimeter	Setra 296	S/N: 632722
Temperature & Humidity Sensor	Vaisala HMD50Y	S/N: C4232055
Base station diurnal monitor	Geometrics G823 GeoResults Diurnal Recorder	S/N: 823240 S/N: G101

- There was no equipment replaced or repairs carried out during the survey acquisition.

1.5 Data Acquisition recording parameters

GPS 3D Position	2 Hz
Fiducial Precision	20 Hz
Magnetometer Sampling rate	20 Hz
Radiometrics Sample rate	1 Hz

1.6 Survey Personnel

Paul Rogerson	Director, Survey Operations Manager
Billy Batjargal	Offsite data processor
John Zampieri	Offsite data processor
Timothy Hetherington	Technical, Offsite crew leader
Lachlan Bell	Field Operator
Michael Anderson	Field Operator
Andrew Langmead	Survey Pilot
David Sims	Survey Pilot
Des McAtamney	Survey Pilot
Hamish Johns	Survey Pilot
Terry Miller	Survey Pilot
Anthony Nixon	Survey Pilot

1.7 Base station Diurnal Monitoring

Geometrics 823 Total Field Magnetometer	Primary diurnal recorder used for all data processing.
GeoResults Diurnal recorder with GPS sync	
Sampling Rate	1 Hz
Location	Lat: -32.126848 Lon: 133.707887

Geometrics 857 Total Field Magnetometer	Secondary diurnal recorder used for monitoring conditions.
Sampling Rate	0.2 Hz
Location	Lat: -32.128046 Lon: 133.709922

1.8 GPS Base Station Information

No GPS Base station is required when using L1 Omnistar VBS.

1.9 GPS System Accuracy

Ground calibrations are performed prior to all survey flights. The survey aircraft is parked in the same position and that position is recorded as per Schedule 3 S1.5 (e) (iii).

- Individual positions are tabulated in the Ground calibration table later this document.

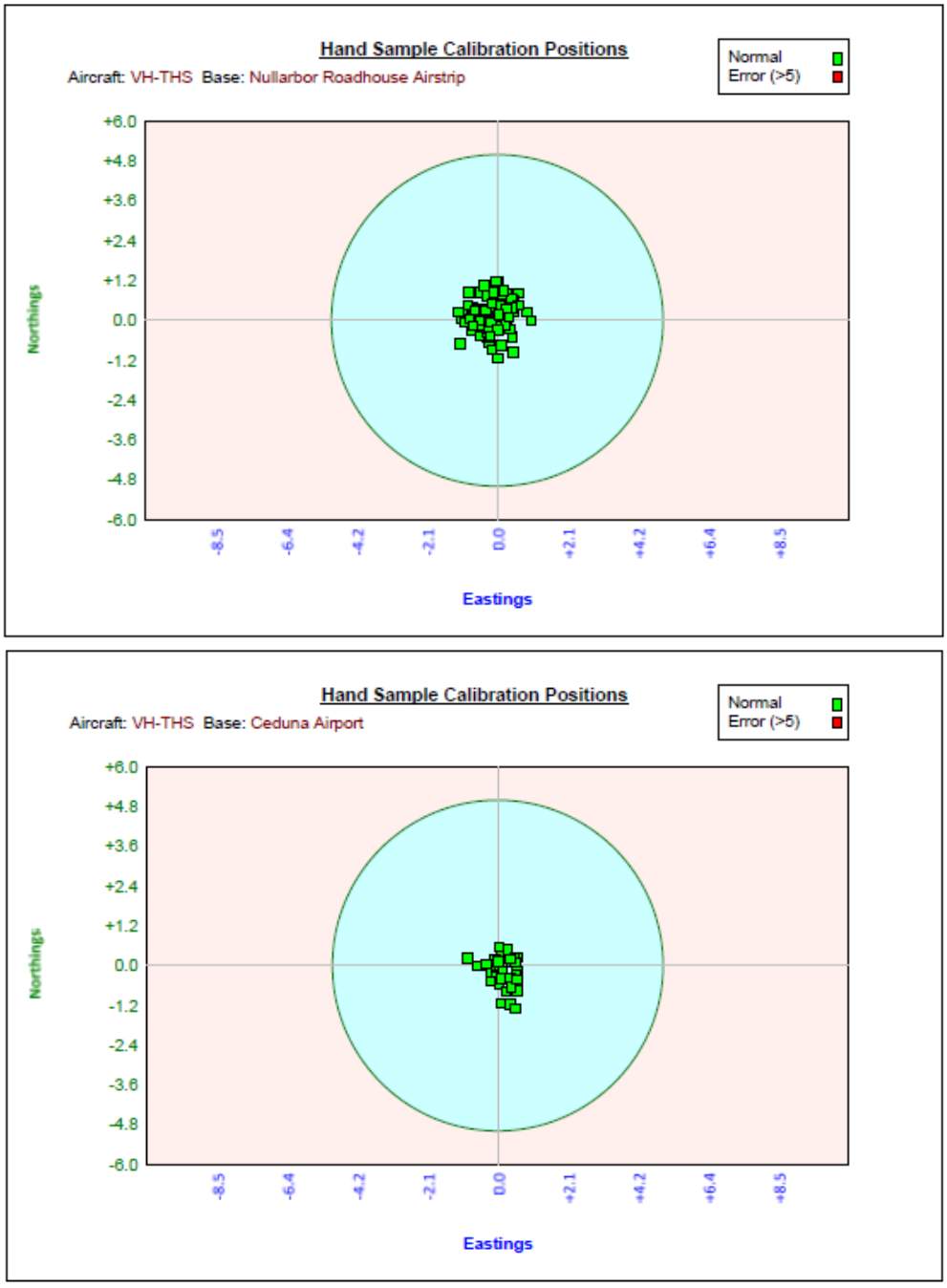


Figure 4. Daily GPS position.

2. Pre Survey Calibrations

2.1 Altimeter linearity test results

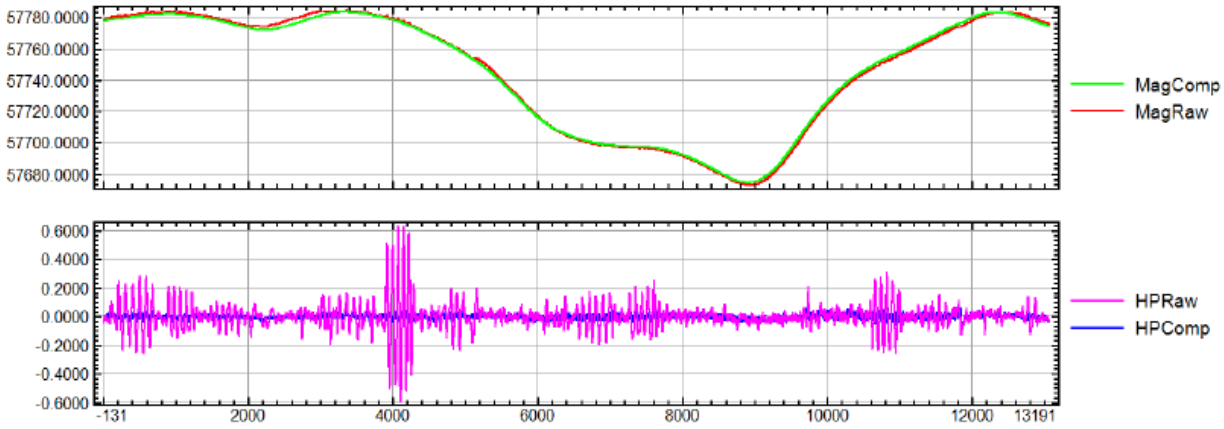
Altimeter linearity tests were carried out at Whyalla Airport on 15th February 2017. This involved a series of stacked survey lines beside the Whyalla runway. The results are tabled below as per Schedule 3 S1.6 (b)

GPSHt	Press	RadAlt	RadAlt adj to GPS	LasAlt
46.62	999.09	32.09	33.22	38.61
74.93	995.85	59.86	60.99	66.24
100.26	992.59	86.18	87.31	91.99
132.98	990.12	119.61	120.74	125.00
210.33	981.99	198.52	199.65	202.53
232.23	979.08	220.42	221.55	224.13
249.55	977.95	238.92	240.05	242.86
271.46	975.51	260.74	261.87	263.61
311.49	970.34	301.50	302.63	304.41
506.11	949.62	499.95	501.08	-
707.94	929.51	702.22	703.35	-

Figure 5. Whyalla Airport map.

2.2 Magnetometer Manoeuvre Noise Tests

Magnetometer Manoeuvre Noise Tests are were carried out at Nullarbor Airport on 26th February 2017. This involved flying a series of survey lines at 10,000 feet on magnetic cardinal headings. The aircraft performed pitch, roll and yaw manoeuvres which are recorded and used to calculate a magnetic compensation solution. The results are tabled and graphed below as per Schedule 3 S1.9 (k)



Direction	Pitch	Roll	Yaw	FOM
090	0.0772	0.0671	0.0473	
000	0.0766	0.0865	0.0736	
270	0.0759	0.0734	0.0551	
180	0.0807	0.1111	0.0779	
				0.9024

Figure 6. Magnetometer Manoeuvre Noise Test results.

2.3 Magnetometer Heading Error Test

Magnetometer Heading Error Tests are were carried out at Nullarbor Airport on 10th May 2017. This involved flying a series of bi-directional survey lines at 10,000 feet on magnetic cardinal headings and in between magnetic cardinal headings. The results are tabled below as per Schedule 3 S1.9 (l)

Dir	X	Y	nT raw	nT comp	nT comp base	Heading error
000	682718.1	6524824.8	58312.0123	58307.2115	58308.1961	
180	682714.9	6524823.0	58306.4831	58309.2866	58309.1526	-0.9565
090	682714.7	6524824.3	58310.9493	58308.8377	58309.5034	
270	682714.9	6524825.1	58307.2505	58308.7840	58307.6430	1.8604
045	682718.5	6524824.2	58314.6661	58309.7873	58308.9338	
225	682717.2	6524823.8	58304.8777	58308.0794	58308.8684	0.0654
135	682717.1	6524823.2	58310.1334	58311.2028	58310.3518	
315	682718.4	6524826.4	58310.0854	58308.0777	58308.4836	1.8682

Figure 7. Magnetometer Heading Error Test results.

2.4 Gamma-ray Spectrometer Calibrations

Details of Cosmic and Aircraft background calibration

The survey aircraft was flown over the ocean off the Great Australian Bight on 25th May 2017. Stacked survey lines were flown at various heights between 197 feet and 10,000 feet above sea level. The results are tabled and graphed below as per Schedule 3 S1.12 (g)

Line	Cosmic	TC	K	U	Th
4020	167.152	310.355	32.667	12.848	9.406
4030	196.059	352.853	34.801	14.794	11.250
4040	269.938	398.201	38.639	16.417	15.715
4050	383.203	510.696	43.275	20.717	23.094
4060	487.979	628.938	50.724	26.117	28.917
	Aircraft background	152.07	24.92	5.68	0.00
	Cosmic background	0.959	0.051	0.041	0.061

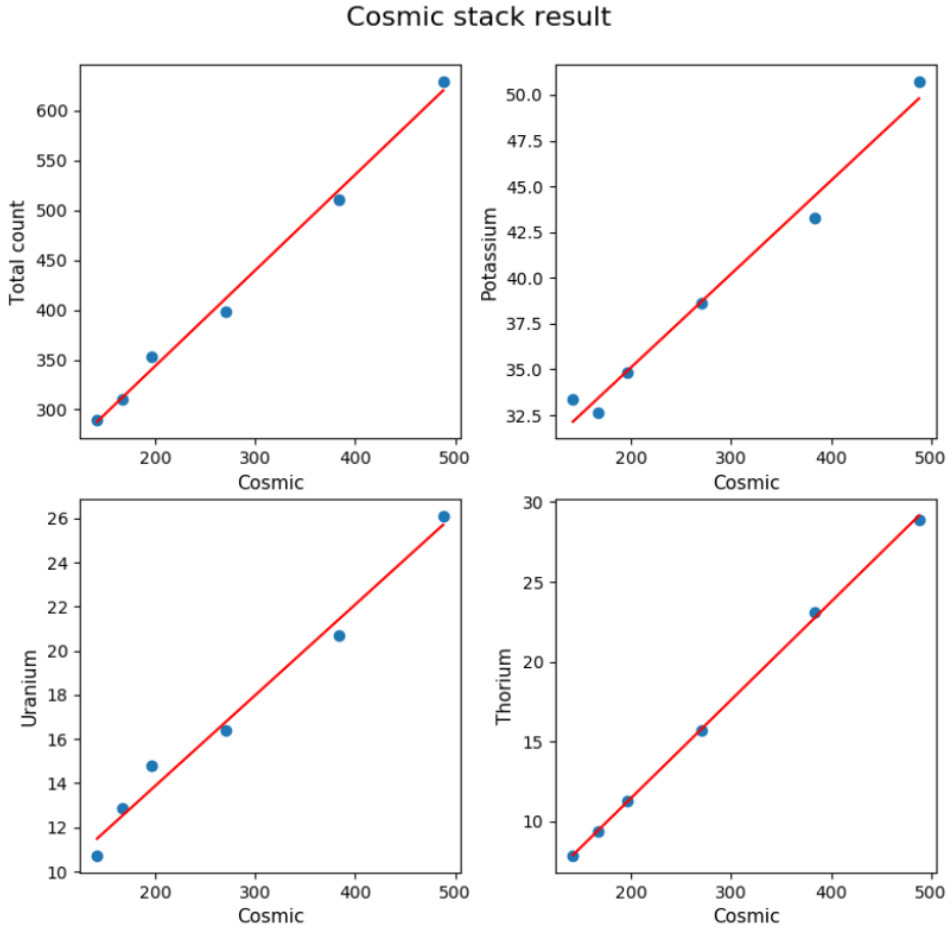


Figure 8. Gamma-ray Spectrometer Calibration results.

2.5 Stripping ratios from calibration pads

On 9th June 2017, the survey aircraft was parked in an undisturbed level position at Northam airport. The survey equipment was powered on and left for 120 minutes to temperature stabilise. Radiometric calibration pads were placed centred under each airborne spectrometer installed into the survey aircraft. Data was recorded and the following values were calculated and used as stripping ratios for the processing of the acquired radiometric survey data. The results are tabled below as per Schedule 3 S1.12 (l)

Aircraft	Detector #	Alpha	Beta	Gamma	a
SUX	5414	0.292	0.448	0.786	0.0382
	5431	0.297	0.448	0.781	0.0412
	Average	0.295	0.448	0.783	0.0397

Figure 9. Gamma-ray Spectrometer stripping ratio results.

- The reverse stripping ratios were adopted from theoretical physical constants. Note that the reverse stripping ratios 'b' and 'g' are not used in the processing.

2.6 System sensitivities & Height attenuation co-efficient

On June 10th 2017, the survey aircraft flew a series of stacked survey lines over the Carnamah Radiometric test range. An Exploranium GR320 handheld spectrometer was used to collect required samples at each point along the test range on the same day the survey aircraft flew.

- The Aircraft and Cosmic Background values are for the windows only. During processing the equivalent 256 channel aircraft and cosmic backgrounds are removed.

The Height attenuation coefficients were determined from communication with Dr. Jens Hovgaard. These values are based on his testing and IAEA values. These ratios are determined by the natural laws of radiometric attenuation, so one set of ratios was used for the survey. The results are tabled below as per Schedule 3 S1.12 (n)

Aircraft	Background	Total Count	Potassium	Uranium	Thorium
VH-THS	Aircraft	152.065	24.919	5.678	0.0
	Cosmic	0.959	0.051	0.041	0.061
	Height Attn	0.0074	0.0094	0.0084	0.0074

Figure 10. Gamma-ray Spectrometer sensitivity results.

2.7 Results of Thorium tests before & after Calibrations

- Thorium source tests were carried out before & after each calibration. The results are tabled below as per Schedule 3 S1.12 (p)

	Position			Hand Sample				Background				Normalized				Th Cal Results	
Date	Easting	Northing	GPS Ht	TC	Pot	Ura	Tho	TC	Pot	Ura	Tho	TC	Pot	Ura	Th	ThPeak	%FWHM
09/06/2017	470668.28	6500570.23	152.23	15048.6	851.6	459.2	760.0	8992.3	671.6	314.0	348.2	6056.3	180.0	145.2	411.80	217.66	4.24
09/06/2017	470668.47	6500569.70	152.78	14870.2	839.8	447.7	761.9	8860.1	663.3	304.4	351.6	6009.9	176.5	143.3	410.3	217.76	4.20

Figure 11. Th source test carried out at Northam Airport before & after radiometric pad calibration.

	Position			Hand Sample				Background				Normalized				Th Cal Results	
Date	Easting	Northing	GPS Ht	TC	Pot	Ura	Tho	TC	Pot	Ura	Tho	TC	Pot	Ura	Th	ThPeak	%FWHM
10/06/2017	470661.30	6500575.80	152.96	13488.2	792.4	396.3	674.0	7089.6	593.4	235.6	255.6	6398.6	199.0	160.7	418.40	217.60	4.23
10/06/2017	470661.45	6500577.30	153.48	12729.2	764.4	347.3	666.7	6564.4	578.6	199.3	249.5	6164.8	185.8	148.0	417.2	217.56	4.21

Figure 12. Th source test carried out at Northam Airport before & after Carnamah test range.

- A thorium source test was carried out before conducting the first survey flight at the project base location. The result is tabled below as per Schedule 3 S1.12 (q)

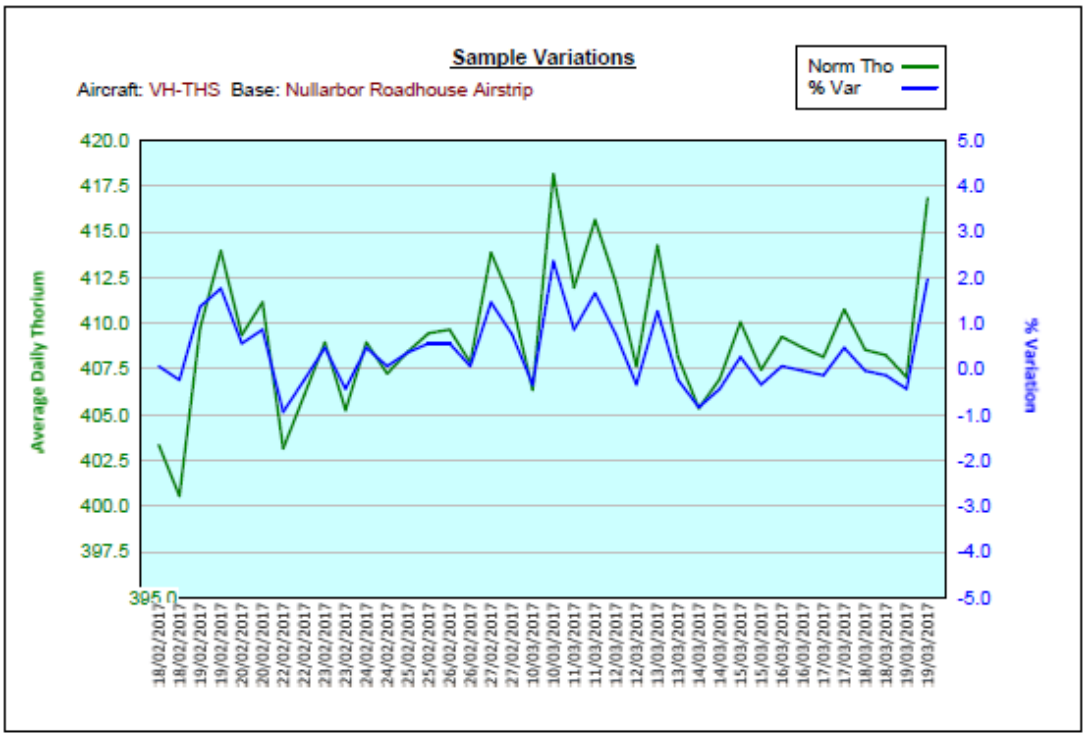
	Position			Hand Sample				Background				Normalized				Th Cal Results	
Date	Easting	Northing	GPS Ht	TC	Pot	Ura	Tho	TC	Pot	Ura	Tho	TC	Pot	Ura	Th	ThPeak	%FWHM
18/02/2017	680230.77	6519093.60	62.6	7308.4	317.2	178.8	446.4	1368.2	136.7	39.1	43.2	5940.2	180.5	139.7	403.2	217.44	4.18

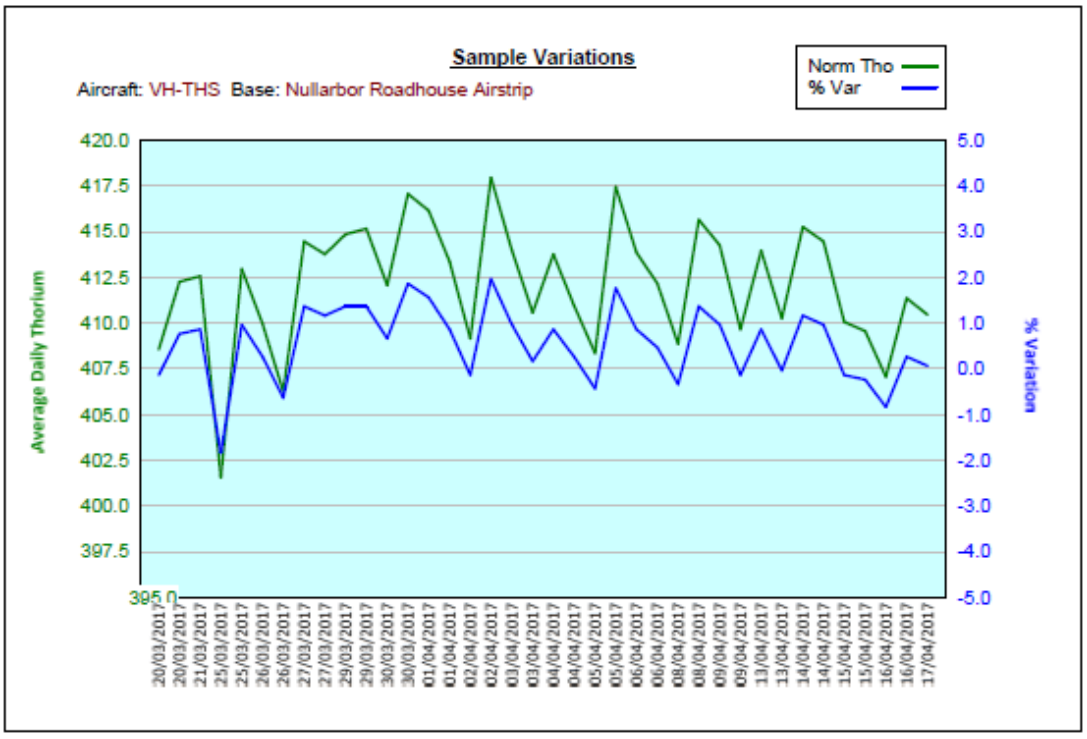
Figure 13. Th source test carried out at Nullarbor Airport prior to Survey commencement.

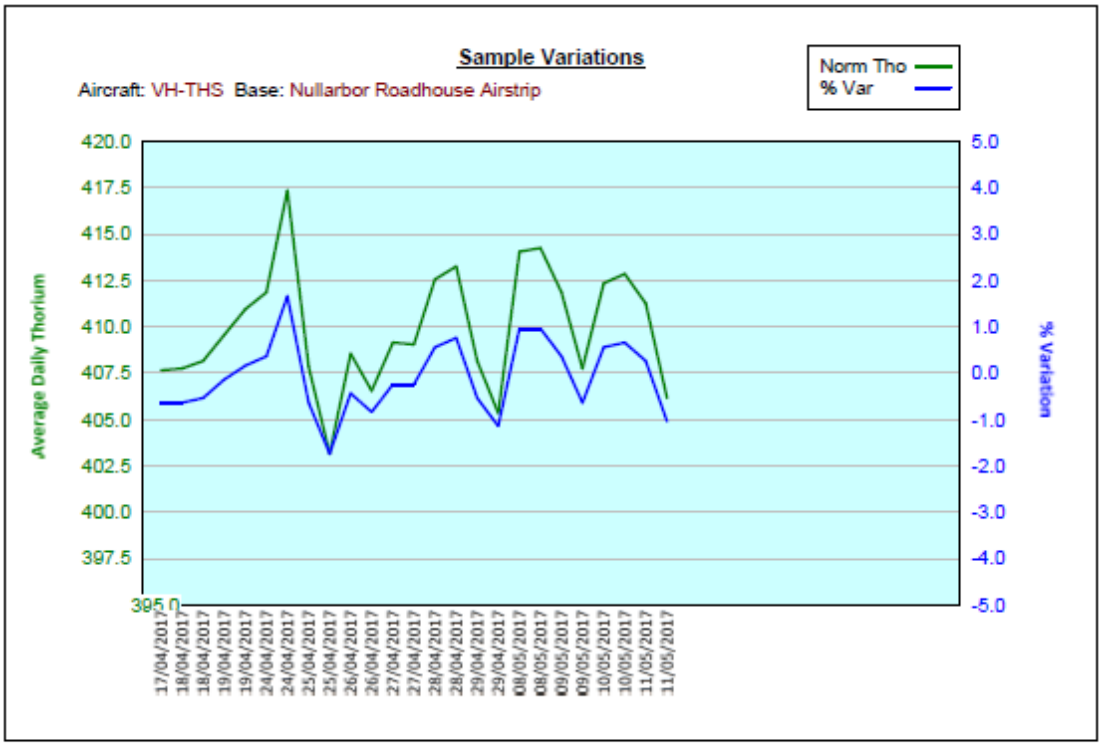
3. In-Field data quality control

3.1 Daily Gamma ray spectrometer tests

Thorium source tests were carried out before the day's first survey flight and after the day's last survey flight. The results are graphed and tabled below as per Schedule 3 S1.12 (r) & Schedule 3 S1.12 (s)






Sample Variations
Aircraft: VH-THS Base: Nullarbor Roadhouse Airstrip
Norm Tho
% Var
Average Daily Thorium
% Variation
420.0
417.5
415.0
412.5
410.0
407.5
405.0
402.5
400.0
397.5
395.0
5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
17/04/2017
18/04/2017
18/04/2017
19/04/2017
19/04/2017
24/04/2017
24/04/2017
25/04/2017
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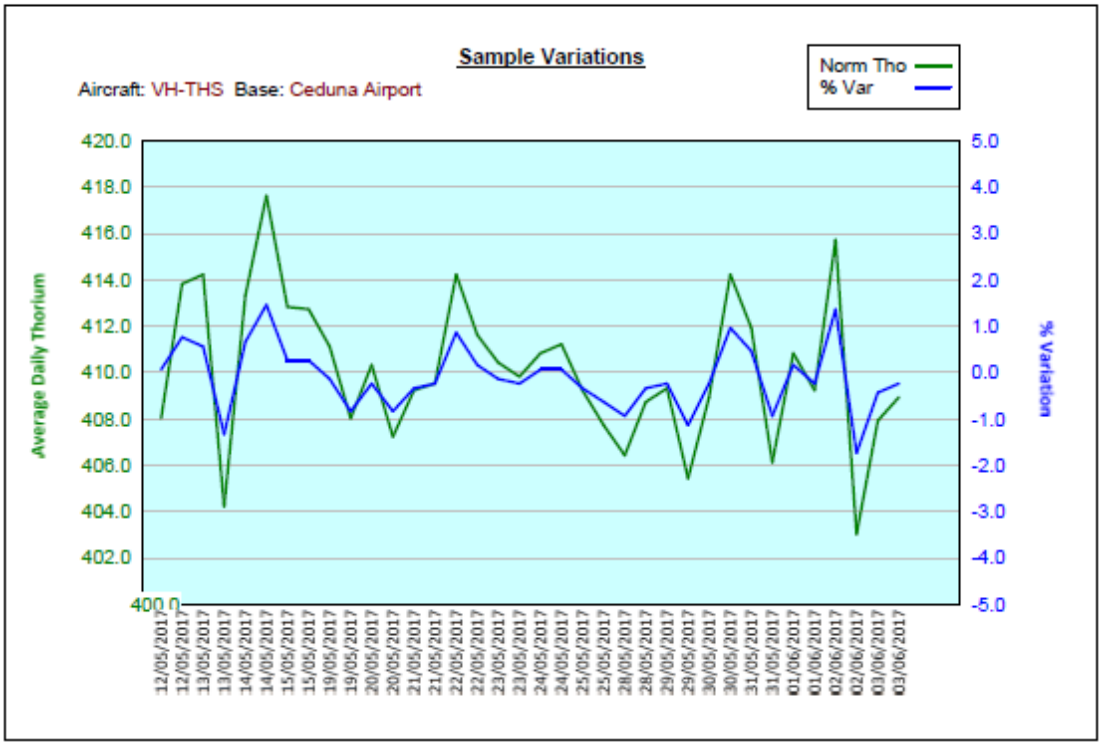
11/05/2017
11/05/2017


Sample Variations
Aircraft: VH-THS Base: Ceduna Airport
Norm Tho
% Var
Average Daily Thorium
% Variation
420.0
418.0
416.0
414.0
412.0
410.0
408.0
406.0
404.0
402.0
400.0
5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
12/05/2017
12/05/2017
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31/05/2017
31/05/2017
01/06/2017
01/06/2017
02/06/2017
02/06/2017
03/06/2017
03/06/2017

Av Normalized Th: 410.3 Min TH: 400.4 Max TH: 418.0 Standard Deviation: 3.7

Ground Cals - VH-THS - Nullarbor Roadhouse Airstrip																				
		Position			Hand Sample				Background				Normalized				Th Cal Results		TH Chg	Diff
Date	Flt	East	North	GPS Ht	TC	Pot	Ura	Tho	TC	Pot	Ura	Tho	TC	Pot	Ura	Tho	ThPeak	% FWHM	+/- 5%	5 max
18/02/2017	502	680230.77	6519093.60	62.6	7308.4	317.2	178.8	446.4	1368.2	136.7	39.1	43.2	5940.2	180.5	139.7	403.2	217.44	4.18	0.0	0.0
18/02/2017	503	680231.27	6519094.39	62.6	7310.7	314.2	178.9	442.0	1354.0	137.3	37.9	41.6	5956.7	176.9	141.0	400.4	217.70	4.20	-0.3	0.9
19/02/2017	504	680230.77	6519093.79	63.5	7405.9	317.3	179.3	451.6	1365.6	136.4	38.5	42.0	6040.3	180.9	140.8	409.6	217.57	4.12	1.3	0.2
19/02/2017	505	680230.49	6519092.97	62.8	7471.6	324.6	181.2	456.8	1400.9	141.5	39.8	43.0	6070.7	183.1	141.4	413.8	217.77	4.14	1.7	0.7
20/02/2017	506	680230.75	6519092.49	62.9	7459.5	323.4	184.2	453.4	1453.2	144.7	43.1	44.2	6006.3	178.7	141.1	409.2	217.49	4.20	0.5	1.1
20/02/2017	507	680230.64	6519093.81	62.9	7470.3	319.3	184.6	453.7	1437.9	142.3	41.8	42.7	6032.4	177.0	142.8	411.0	217.73	4.09	0.8	0.2
22/02/2017	508	680230.45	6519093.10	61.3	7352.8	318.7	177.4	445.4	1392.0	139.4	39.0	42.4	5960.8	179.3	138.4	403.0	217.56	4.09	-1.0	0.6
22/02/2017	508	680230.60	6519094.09	63.6	7388.0	315.8	179.0	448.3	1378.6	136.7	39.7	42.4	6009.4	179.1	139.3	405.9	217.56	4.09	-0.3	0.5
23/02/2017	509	680230.60	6519094.38	63.1	7405.6	319.7	181.8	450.7	1390.9	136.8	39.9	41.9	6014.7	182.9	141.9	408.8	217.50	4.09	0.4	0.8
23/02/2017	510	680229.97	6519093.30	62.3	7386.0	316.1	182.6	447.4	1384.6	140.1	38.8	42.3	6001.4	176.0	143.8	405.1	217.78	4.27	-0.5	0.9
24/02/2017	511	680230.09	6519093.46	61.4	7414.8	317.8	181.1	451.9	1387.0	137.8	38.7	43.1	6027.8	180.0	142.4	408.8	217.56	4.15	0.4	0.7
24/02/2017	511	680231.23	6519092.67	62.2	7457.4	323.2	183.3	450.8	1411.0	144.3	38.6	43.7	6046.4	178.9	144.7	407.1	217.56	4.15	0.0	1.0
25/02/2017	512	680231.21	6519093.12	61.9	7430.1	324.7	182.6	450.2	1415.7	143.0	39.5	41.9	6014.4	181.7	143.1	408.3	217.62	4.15	0.3	0.7
25/02/2017	512	680230.40	6519093.52	62.3	7413.1	323.4	182.1	451.3	1393.7	139.1	40.4	42.0	6019.4	184.3	141.7	409.3	217.62	4.15	0.5	0.4
26/02/2017	513	680231.00	6519094.37	61.5	7446.6	320.3	184.4	452.3	1451.3	140.5	43.2	42.8	5995.3	179.8	141.2	409.5	217.56	4.15	0.5	0.8
26/02/2017	514	680230.69	6519094.33	62.9	7489.3	322.4	185.7	449.5	1432.5	141.6	42.6	41.8	6056.8	180.8	143.1	407.7	217.76	4.22	0.0	0.7
27/02/2017	515	680230.81	6519094.82	61.8	7450.4	320.4	179.8	455.0	1395.7	137.6	40.6	41.3	6054.7	182.8	139.2	413.7	217.54	4.14	1.4	1.2
27/02/2017	516	680229.62	6519092.91	62.5	7437.6	325.0	180.4	453.5	1453.8	144.9	44.2	42.5	5983.8	180.1	136.2	411.0	217.54	4.15	0.7	1.3
10/03/2017	517	680230.65	6519093.53	61.1	7422.8	322.0	181.6	449.5	1445.4	146.3	41.9	43.3	5977.4	175.7	139.7	406.2	217.55	4.12	-0.4	0.1
10/03/2017	519	680230.04	6519093.98	63.5	7595.9	330.6	191.9	460.5	1511.6	147.4	47.5	42.5	6084.3	183.2	144.4	418.0	217.80	4.10	2.3	0.8
11/03/2017	520	680230.80	6519093.35	61.3	7476.2	326.6	182.3	455.8	1453.0	143.9	42.0	44.0	6023.2	182.7	140.3	411.8	217.50	4.17	0.8	0.3
11/03/2017	521	680229.89	6519094.48	62.9	7483.2	320.9	183.0	458.7	1416.3	140.3	41.0	43.2	6066.9	180.6	142.0	415.5	217.65	4.21	1.6	1.2
12/03/2017	522	680229.77	6519093.84	60.4	7439.3	317.7	181.6	453.1	1362.5	136.2	38.5	41.0	6076.8	181.5	143.1	412.1	217.54	4.14	0.7	1.0
12/03/2017	523	680229.85	6519094.07	61.8	7437.2	320.5	182.1	451.4	1400.8	139.9	40.5	43.9	6036.4	180.6	141.6	407.5	217.79	4.21	-0.4	1.0
13/03/2017	524	680231.39	6519094.45	62.9	7504.0	326.9	181.3	457.0	1431.9	144.3	42.4	42.9	6072.1	182.6	138.9	414.1	217.48	4.23	1.2	1.1
13/03/2017	525	680229.99	6519094.00	62.4	7497.3	323.3	184.4	452.0	1434.1	141.9	42.1	44.0	6063.2	181.4	142.3	408.0	217.71	4.21	-0.3	0.9
14/03/2017	526	680230.23	6519094.47	62.6	7453.8	324.3	185.0	448.7	1448.9	142.5	43.5	43.5	6004.9	181.8	141.5	405.2	217.46	4.21	-0.9	1.0
14/03/2017	527	680229.65	6519093.67	63.0	7524.5	327.5	188.5	451.3	1504.1	143.9	45.8	44.5	6020.4	183.6	142.7	406.8	217.73	4.18	-0.5	1.1
15/03/2017	528	680231.19	6519094.08	63.8	7618.6	330.2	192.4	454.9	1549.5	151.2	48.5	45.0	6069.1	179.0	143.9	409.9	217.53	4.16	0.2	0.6
15/03/2017	528	680230.52	6519093.53	62.6	7475.5	322.6	182.3	451.1	1437.8	145.0	39.3	43.8	6037.7	177.6	143.0	407.3	217.53	4.16	-0.4	0.3
16/03/2017	529	680230.86	6519093.96	63.5	7471.4	326.3	182.1	453.2	1424.2	142.4	39.8	44.1	6047.2	183.9	142.3	409.1	217.44	4.09	0.0	0.4
16/03/2017	530	680230.05	6519093.99	63.1	7418.1	324.3	181.5	451.2	1390.0	141.5	38.4	42.7	6028.1	182.8	143.1	408.5	217.76	4.24	-0.1	0.8
17/03/2017	531	680231.22	6519094.25	62.7	7392.9	323.7	177.2	451.9	1427.6	142.6	40.4	43.9	5965.3	181.1	136.8	408.0	217.50	4.28	-0.2	0.8
17/03/2017	532	680230.23	6519093.16	61.7	7512.6	327.8	184.6	455.5	1475.9	148.0	42.3	44.9	6036.7	179.8	142.3	410.6	217.72	4.24	0.4	0.7

Av Normalized Th: 410.3 Min TH: 400.4 Max TH: 418.0 Standard Deviation: 3.7

Ground Cals - VH-THS - Nullarbor Roadhouse Airstrip																				
		Position			Hand Sample				Background				Normalized				Th Cal Results		TH Chg	Diff
Date	Flt	East	North	GPS Ht	TC	Pot	Ura	Tho	TC	Pot	Ura	Tho	TC	Pot	Ura	Tho	ThPeak	% FWHM	+/- 5%	5 max
18/03/2017	533	680230.38	6519093.65	62.8	7461.7	324.2	184.6	453.2	1479.3	146.4	42.6	44.8	5982.4	177.8	142.0	408.4	217.45	4.13	-0.1	0.4
18/03/2017	534	680229.77	6519093.57	62.3	7543.2	327.6	188.7	453.6	1526.2	148.8	47.5	45.5	6017.0	178.8	141.2	408.1	217.67	4.22	-0.2	1.0
19/03/2017	535	680230.54	6519093.63	63.1	7575.3	330.7	189.9	451.9	1563.8	150.5	48.0	45.0	6011.5	180.2	141.9	406.9	217.72	4.17	-0.5	0.2
19/03/2017	535	680230.45	6519093.24	62.9	7708.8	337.3	198.3	460.9	1629.3	157.4	52.4	44.2	6079.5	179.9	145.9	416.7	217.72	4.17	1.9	0.5
20/03/2017	536	680230.54	6519093.71	62.8	7431.5	322.2	182.0	451.5	1431.0	144.7	39.4	43.1	6000.5	177.5	142.6	408.4	217.88	4.17	-0.2	0.3
20/03/2017	536	680231.00	6519093.94	63.2	7543.5	330.5	185.1	456.6	1448.8	146.9	40.5	44.5	6094.7	183.6	144.6	412.1	217.88	4.17	0.7	0.4
21/03/2017	537	680231.03	6519093.44	63.0	7506.8	325.8	186.8	456.1	1456.3	143.8	42.0	43.7	6050.5	182.0	144.8	412.4	217.45	4.14	0.8	0.3
25/03/2017	538	680231.03	6519094.43	62.9	7357.8	318.0	180.3	441.0	1384.7	141.4	40.8	39.6	5973.1	176.6	139.5	401.4	217.71	4.25	-1.9	0.9
25/03/2017	540	680230.46	6519093.78	62.9	7511.2	327.5	186.8	453.7	1436.6	147.3	42.5	40.9	6074.6	180.2	144.3	412.8	217.78	4.17	0.9	0.4
26/03/2017	541	680230.84	6519093.57	63.1	7560.4	330.2	187.8	452.1	1488.0	147.0	46.5	42.3	6072.4	183.2	141.3	409.8	217.62	4.06	0.2	0.1
26/03/2017	541	680230.33	6519093.73	62.4	7608.6	335.1	194.8	448.8	1596.5	154.0	53.9	42.7	6012.1	181.1	140.9	406.1	217.62	4.06	-0.7	0.5
27/03/2017	542	680230.56	6519093.76	62.1	7472.4	323.5	182.2	456.4	1380.9	141.3	39.0	42.1	6091.5	182.2	143.2	414.3	217.63	4.08	1.3	0.3
27/03/2017	542	680229.57	6519093.87	62.1	7483.5	325.7	181.2	454.4	1355.3	142.3	37.2	40.8	6128.2	183.4	144.0	413.6	217.63	4.08	1.1	1.2
29/03/2017	543	680231.12	6519093.35	63.4	7546.9	331.1	185.1	456.5	1443.6	145.4	42.9	41.8	6103.3	185.7	142.2	414.7	217.61	4.12	1.3	0.4
29/03/2017	543	680230.79	6519093.62	61.9	7489.9	328.4	186.3	454.8	1395.8	142.6	40.9	39.8	6094.1	185.8	145.4	415.0	217.61	4.12	1.3	0.0
30/03/2017	544	680230.96	6519093.78	62.8	7469.9	326.0	183.8	453.7	1379.5	140.0	38.3	41.8	6090.4	186.0	145.5	411.9	217.70	4.29	0.6	0.3
30/03/2017	545	680230.45	6519093.36	63.0	7476.8	323.5	183.5	456.9	1381.6	143.6	39.1	40.0	6095.2	179.9	144.4	416.9	217.80	4.14	1.8	0.4
01/04/2017	546	680230.50	6519093.90	62.6	7472.3	324.4	182.9	455.3	1364.2	141.4	38.2	39.3	6108.1	183.0	144.7	416.0	217.70	4.19	1.5	0.4
01/04/2017	547	680230.59	6519092.74	63.7	7442.2	327.8	181.5	455.5	1394.3	143.7	39.0	42.3	6047.9	184.1	142.5	413.2	217.64	4.09	0.8	0.9
02/04/2017	548	680230.73	6519093.62	62.1	7464.4	328.0	184.3	450.3	1378.8	142.4	39.0	41.3	6085.6	185.6	145.3	409.0	217.72	4.25	-0.2	0.0
02/04/2017	549	680230.43	6519094.36	61.8	7477.7	324.8	182.4	458.2	1367.0	142.0	38.8	40.4	6110.7	182.8	143.6	417.8	217.64	4.18	1.9	0.8
03/04/2017	550	680230.64	6519093.96	61.7	7489.3	329.0	183.7	453.7	1393.0	143.3	40.2	39.9	6096.3	185.7	143.5	413.8	217.71	4.15	0.9	0.4
03/04/2017	551	680230.63	6519093.61	62.6	7498.6	325.2	184.0	452.5	1432.8	146.2	40.9	42.1	6065.8	179.0	143.1	410.4	217.71	4.23	0.1	0.1
04/04/2017	552	680230.77	6519094.02	62.8	7520.2	331.8	184.6	456.1	1453.3	144.5	43.5	42.5	6066.9	187.3	141.1	413.6	217.64	4.05	0.8	0.4
04/04/2017	553	680230.85	6519094.07	62.5	7492.1	323.7	186.2	451.2	1425.1	143.4	41.6	40.4	6067.0	180.3	144.6	410.8	217.80	4.24	0.2	0.5
05/04/2017	554	680231.25	6519093.90	61.7	7478.7	324.9	186.3	449.7	1444.9	144.2	43.8	41.5	6033.8	180.7	142.5	408.2	217.59	4.25	-0.5	0.6
05/04/2017	555	680230.45	6519093.87	62.6	7509.2	326.6	186.4	458.9	1427.3	145.0	41.4	41.6	6081.9	181.6	145.0	417.3	217.82	4.11	1.7	0.4
06/04/2017	556	680230.81	6519094.82	61.8	7450.4	320.4	179.8	455.0	1395.7	137.6	40.6	41.3	6054.7	182.8	139.2	413.7	217.54	4.14	0.8	1.2
06/04/2017	557	680230.59	6519093.51	62.4	7580.8	332.5	190.9	454.9	1505.4	151.6	46.0	42.9	6075.4	180.9	144.9	412.0	217.80	4.15	0.4	0.2
08/04/2017	558	680230.78	6519093.71	62.4	7442.9	326.6	183.5	449.2	1379.6	143.9	39.1	40.5	6063.3	182.7	144.4	408.7	217.76	4.22	-0.4	0.1
08/04/2017	559	680230.81	6519093.68	62.7	7465.9	326.1	183.3	455.8	1391.4	142.9	39.9	40.3	6074.5	183.2	143.4	415.5	217.79	4.17	1.3	0.1
09/04/2017	560	680230.64	6519094.48	62.7	7451.1	325.9	180.9	455.3	1369.4	143.9	38.1	41.2	6081.7	182.0	142.8	414.1	217.72	4.16	0.9	0.9
09/04/2017	561	680230.05	6519093.64	62.7	7445.4	321.3	180.8	451.1	1367.9	140.2	38.4	41.6	6077.5	181.1	142.4	409.5	217.80	4.24	-0.2	0.7
13/04/2017	562	680230.40	6519093.95	61.8	7488.1	325.4	184.8	454.0	1415.8	142.7	43.0	40.2	6072.3	182.7	141.8	413.8	217.71	4.21	0.8	0.5
13/04/2017	564	680230.72	6519094.81	63.1	7536.6	328.3	188.7	453.3	1491.5	144.9	48.2	43.2	6045.1	183.4	140.5	410.1	217.73	4.21	-0.1	1.2

Av Normalized Th: 410.3 Min TH: 400.4 Max TH: 418.0 Standard Deviation: 3.7

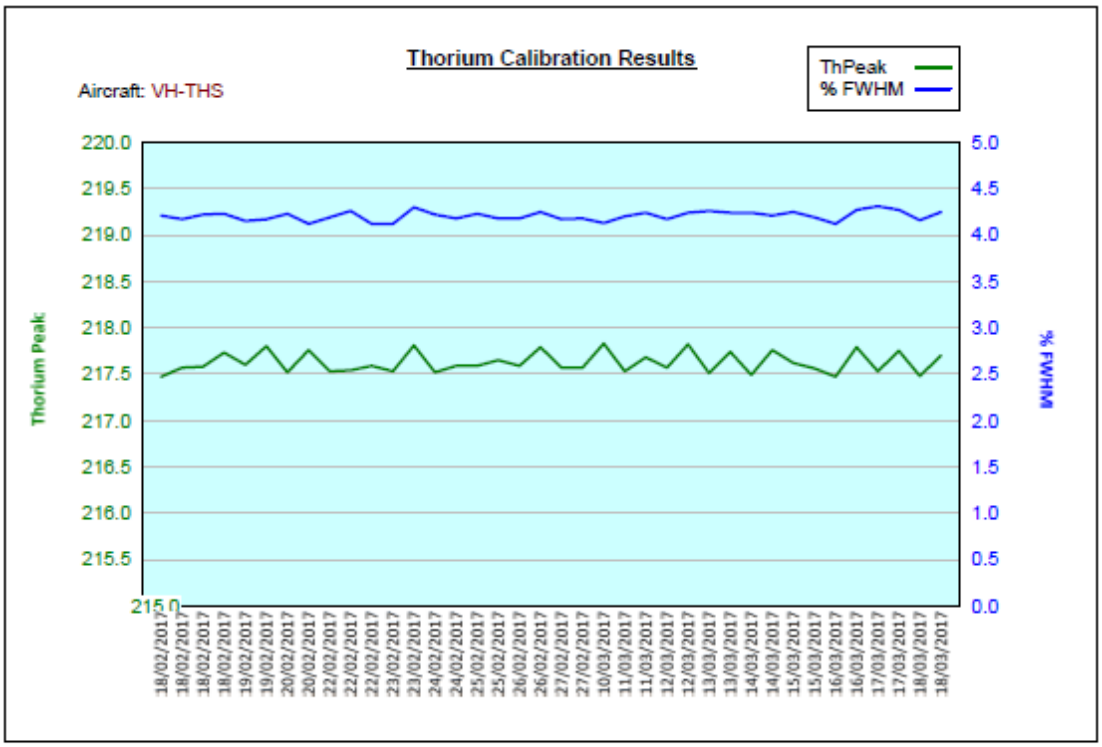
Ground Cals - VH-THS - Nullarbor Roadhouse Airstrip																				
		Position			Hand Sample				Background				Normalized				Th Cal Results		TH Chg	Diff
Date	Flt	East	North	GPS Ht	TC	Pot	Ura	Tho	TC	Pot	Ura	Tho	TC	Pot	Ura	Tho	ThPeak	% FWHM	+/- 5%	5 max
14/04/2017	565	680230.35	6519094.67	61.3	7451.3	319.4	183.2	454.5	1393.7	141.7	40.2	39.4	6057.6	177.7	143.0	415.1	217.72	4.18	1.1	1.1
14/04/2017	567	680230.89	6519093.60	63.0	7544.2	332.8	185.6	457.5	1453.1	147.9	42.7	43.2	6091.1	184.9	142.9	414.3	217.75	4.12	0.9	0.1
15/04/2017	568	680230.65	6519093.94	62.7	7524.9	332.6	184.0	452.8	1448.3	147.2	43.3	42.9	6076.6	185.4	140.7	409.9	217.62	4.28	-0.2	0.4
15/04/2017	569	680230.93	6519094.43	62.4	7535.4	329.6	188.0	453.8	1509.4	149.1	45.7	44.4	6026.0	180.5	142.3	409.4	217.73	4.15	-0.3	0.8
16/04/2017	570	680231.17	6519094.26	61.8	7468.7	326.0	184.5	449.6	1452.1	143.5	43.6	42.7	6016.6	182.5	140.9	406.9	217.51	4.15	-0.9	0.8
16/04/2017	571	680230.39	6519093.93	63.0	7563.1	330.5	189.3	453.2	1523.9	150.7	47.9	42.0	6039.2	179.8	141.4	411.2	217.82	4.18	0.2	0.5
17/04/2017	572	680230.25	6519093.48	61.2	7541.0	332.5	187.4	453.3	1493.8	148.5	45.2	43.0	6047.2	184.0	142.2	410.3	217.79	4.21	0.0	0.5
17/04/2017	572	680229.85	6519094.07	61.8	7437.2	320.5	182.1	451.4	1400.8	139.9	40.5	43.9	6036.4	180.6	141.6	407.5	217.79	4.21	-0.7	1.0
18/04/2017	573	680230.47	6519093.43	61.0	7457.3	328.0	182.6	449.7	1439.5	143.8	42.5	42.1	6017.8	184.2	140.1	407.6	217.75	4.15	-0.7	0.3
18/04/2017	573	680231.63	6519093.89	63.2	7552.2	331.5	190.0	452.5	1549.4	151.7	49.3	44.5	6002.8	179.8	140.7	408.0	217.75	4.15	-0.6	0.9
19/04/2017	574	680231.76	6519093.63	61.2	7512.6	331.7	188.8	450.7	1497.4	147.9	46.0	41.3	6015.2	183.8	142.8	409.4	217.51	4.20	-0.2	1.0
19/04/2017	575	680230.85	6519094.07	62.5	7492.1	323.7	186.2	451.2	1425.1	143.4	41.6	40.4	6067.0	180.3	144.6	410.8	217.80	4.24	0.1	0.5
24/04/2017	576	680230.77	6519093.75	63.2	7485.2	323.4	185.0	452.1	1420.5	142.9	41.8	40.4	6064.7	180.5	143.2	411.7	217.76	4.22	0.3	0.2
24/04/2017	577	680230.88	6519092.87	63.7	7604.1	331.3	187.0	459.4	1457.9	147.7	42.2	42.2	6146.2	183.6	144.8	417.2	217.82	4.13	1.6	0.7
25/04/2017	578	680230.80	6519093.47	62.0	7476.9	327.0	183.0	451.7	1428.4	144.8	40.6	44.0	6048.5	182.2	142.4	407.7	217.46	4.10	-0.7	0.1
25/04/2017	579	680230.17	6519093.66	62.9	7464.8	326.0	184.7	447.8	1440.8	143.2	41.6	44.8	6024.0	182.8	143.1	403.0	217.75	4.17	-1.8	0.6
26/04/2017	580	680230.21	6519093.63	62.5	7358.2	318.9	177.8	449.3	1344.4	138.4	37.9	40.9	6013.8	180.5	139.9	408.4	217.56	4.22	-0.5	0.6
26/04/2017	581	680230.55	6519093.57	62.5	7344.6	319.3	178.4	447.8	1368.7	140.2	38.0	41.4	5975.9	179.1	140.4	406.4	217.80	4.13	-0.9	0.2
27/04/2017	582	680230.59	6519094.13	62.6	7404.2	325.0	181.0	449.7	1366.6	142.4	39.3	40.7	6037.6	182.6	141.7	409.0	217.39	4.17	-0.3	0.6
27/04/2017	583	680231.40	6519094.07	62.6	7382.0	322.3	181.0	452.5	1390.4	140.9	40.0	43.6	5991.6	181.4	141.0	408.9	217.82	4.16	-0.3	0.8
28/04/2017	584	680231.20	6519094.00	62.9	7466.7	327.6	181.0	455.8	1410.3	142.8	40.7	43.4	6056.4	184.8	140.3	412.4	217.63	4.18	0.5	0.6
28/04/2017	585	680231.02	6519093.98	62.9	7488.0	322.6	184.2	454.8	1364.7	140.3	38.9	41.7	6123.3	182.3	145.3	413.1	217.87	4.15	0.7	0.5
29/04/2017	586	680230.96	6519094.53	62.3	7461.2	326.3	183.5	451.0	1451.9	146.5	43.1	43.0	6009.3	179.8	140.4	408.0	217.73	4.33	-0.6	0.9
29/04/2017	586	680231.00	6519093.49	62.5	7421.9	325.8	185.4	449.1	1503.2	149.5	47.0	43.9	5918.7	176.3	138.4	405.2	217.73	4.33	-1.2	0.3
08/05/2017	588	680230.75	6519093.35	63.0	7551.9	329.0	185.7	458.1	1457.1	146.3	41.6	44.2	6094.8	182.7	144.1	413.9	217.39	4.17	0.9	0.3
08/05/2017	589	680230.80	6519093.80	61.9	7581.9	333.5	186.3	457.4	1445.1	148.8	43.9	43.3	6136.8	184.7	142.4	414.1	217.77	4.12	0.9	0.2
09/05/2017	590	680230.75	6519093.34	61.8	7552.3	329.6	186.7	454.8	1464.2	147.3	43.7	43.1	6088.1	182.3	143.0	411.7	217.47	4.20	0.3	0.3
09/05/2017	591	680230.06	6519093.94	62.0	7543.4	333.4	192.1	451.5	1563.4	152.5	51.4	43.9	5980.0	180.9	140.7	407.6	217.81	4.19	-0.7	0.8
10/05/2017	592	680229.91	6519093.67	62.6	7627.8	332.0	193.0	458.7	1583.8	150.9	50.7	46.5	6044.0	181.1	142.3	412.2	217.54	4.21	0.5	0.9
10/05/2017	594	680230.54	6519093.15	62.4	7684.2	339.0	196.5	457.3	1595.3	156.4	52.6	44.6	6088.9	182.6	143.9	412.7	217.80	4.21	0.6	0.5
11/05/2017	595	680231.10	6519093.72	62.9	7591.6	333.9	191.1	456.3	1544.1	149.9	47.4	45.2	6047.5	184.0	143.7	411.1	217.79	4.24	0.2	0.4
11/05/2017	595	680230.02	6519093.45	63.0	7663.0	339.7	194.9	451.5	1623.5	155.1	54.6	45.5	6039.5	184.6	140.3	406.0	217.79	4.24	-1.1	0.8

Av Normalized Th: 410.0 Min TH: 402.9 Max TH: 417.5 Standard Deviation: 3.2

Ground Cals - VH-THS - Ceduna Airport																				
		Position			Hand Sample				Background				Normalized				Th Cal Results		TH Chg	Diff
Date	Flt	East	North	GPS Ht	TC	Pot	Ura	Tho	TC	Pot	Ura	Tho	TC	Pot	Ura	Tho	ThPeak	% FWHM	+/- 5%	5 max
12/05/2017	596	943824.16	6436034.56	19.8	7156.0	277.0	185.3	436.2	1121.0	95.1	43.5	28.3	6035.0	181.9	141.8	407.9	217.71	4.19	0.0	0.0
12/05/2017	596	943824.58	6436034.68	20.0	7350.4	283.7	197.9	444.5	1274.3	104.6	52.6	30.8	6076.1	179.1	145.3	413.7	217.71	4.19	0.7	0.4
13/05/2017	597	943824.75	6436034.83	19.7	7252.3	279.1	188.8	441.9	1178.0	97.2	47.7	27.8	6074.3	181.9	141.1	414.1	217.79	4.30	0.5	0.6
13/05/2017	598	943824.23	6436034.96	19.6	7310.8	286.1	194.0	439.4	1358.3	107.6	54.9	35.3	5952.5	178.5	139.1	404.1	217.82	4.21	-1.4	0.4
14/05/2017	599	943824.20	6436035.14	19.5	7332.3	286.3	192.4	440.4	1237.6	103.0	51.6	27.2	6094.7	183.3	140.8	413.2	217.48	4.23	0.6	0.6
14/05/2017	600	943823.79	6436034.61	19.5	7370.1	286.3	197.1	446.0	1261.8	104.3	54.3	28.5	6108.3	182.0	142.8	417.5	217.73	4.23	1.4	0.4
15/05/2017	601	943823.94	6436034.38	18.9	7313.0	284.4	188.4	441.1	1187.4	99.0	48.3	28.4	6125.6	185.4	140.1	412.7	217.64	4.26	0.2	0.3
15/05/2017	602	943824.08	6436034.70	20.2	7346.2	287.3	197.0	441.8	1266.0	105.8	53.3	29.2	6080.2	181.5	143.7	412.6	217.76	4.19	0.2	0.2
19/05/2017	603	943824.11	6436034.59	20.0	7180.9	274.8	186.8	439.3	1099.5	92.5	41.5	28.3	6081.4	182.3	145.3	411.0	217.68	4.21	-0.2	0.1
19/05/2017	603	943824.08	6436034.26	19.9	7152.2	277.6	187.0	438.0	1139.5	95.2	44.4	30.1	6012.7	182.4	142.6	407.9	217.68	4.21	-0.9	0.3
20/05/2017	604	943824.20	6436034.02	21.1	7095.0	271.3	180.8	437.6	1067.2	91.0	40.4	27.4	6027.8	180.3	140.4	410.2	217.87	4.25	-0.3	0.5
20/05/2017	604	943824.17	6436034.60	19.4	7198.8	279.1	189.7	437.9	1173.7	97.4	47.3	30.8	6025.1	181.7	142.4	407.1	217.87	4.25	-0.9	0.0
21/05/2017	605	943824.30	6436034.40	20.5	7188.9	277.2	184.8	439.7	1150.9	96.1	42.4	30.6	6038.0	181.1	142.4	409.1	217.39	4.20	-0.4	0.2
21/05/2017	606	943824.44	6436035.06	19.4	7222.5	282.4	188.4	442.3	1234.8	101.2	48.3	32.9	5987.7	181.2	140.1	409.4	217.76	4.20	-0.3	0.6
22/05/2017	607	943824.66	6436034.83	19.5	7243.7	279.9	189.5	442.7	1134.5	95.0	44.9	28.6	6109.2	184.9	144.6	414.1	217.75	4.21	0.8	0.6
22/05/2017	607	943824.25	6436034.19	19.9	7151.2	276.8	183.5	441.1	1102.8	94.3	42.6	29.6	6048.4	182.5	140.9	411.5	217.75	4.21	0.1	0.4
23/05/2017	608	943824.51	6436033.41	19.0	7133.6	276.7	181.0	439.4	1065.6	92.8	39.1	29.1	6068.0	183.9	141.9	410.3	217.46	4.23	-0.2	1.2
23/05/2017	609	943824.05	6436034.79	20.0	7197.6	276.3	185.7	445.1	1189.5	96.4	44.9	35.4	6008.1	179.9	140.8	409.7	217.84	4.17	-0.3	0.3
24/05/2017	610	943823.79	6436034.62	19.5	7110.0	276.7	181.8	438.6	1083.1	92.9	40.0	27.9	6026.9	183.8	141.8	410.7	217.45	4.13	0.0	0.4
24/05/2017	611	943823.23	6436034.82	19.8	7179.5	278.2	187.4	440.1	1079.2	95.1	39.6	29.0	6100.3	183.1	147.8	411.1	217.82	4.09	0.0	1.0
25/05/2017	612	943823.50	6436034.58	19.7	7108.9	273.0	180.8	437.5	1076.0	92.2	39.0	28.4	6032.9	180.8	141.8	409.1	217.64	4.20	-0.4	0.7
25/05/2017	612	943824.15	6436034.72	20.2	7135.8	275.6	184.0	437.5	1119.4	95.0	42.6	29.9	6016.4	180.6	141.4	407.6	217.64	4.20	-0.7	0.2
28/05/2017	613	943824.67	6436033.28	16.1	7061.7	270.7	177.6	436.6	1053.0	91.1	38.2	30.3	6008.7	179.6	139.4	406.3	217.80	4.22	-1.0	1.4
28/05/2017	613	943824.68	6436034.67	19.9	7069.8	273.3	182.6	438.8	1083.0	92.5	39.5	30.2	5986.8	180.8	143.1	408.6	217.80	4.22	-0.4	0.5
29/05/2017	614	943824.23	6436033.42	18.7	7101.0	275.1	180.4	440.3	1097.8	93.0	39.9	31.1	6003.2	182.1	140.5	409.2	217.75	4.19	-0.3	1.1
29/05/2017	614	943824.73	6436034.38	20.0	7080.8	271.7	181.7	433.6	1074.0	91.2	41.5	28.3	6006.8	180.5	140.2	405.3	217.75	4.19	-1.2	0.6
30/05/2017	615	943824.72	6436034.26	19.9	7055.5	272.0	177.9	436.1	1025.4	88.1	38.4	27.3	6030.1	183.9	139.5	408.8	217.54	4.19	-0.3	0.6
30/05/2017	615	943824.53	6436034.19	19.9	7140.7	273.8	182.0	441.8	1040.9	91.2	37.4	27.7	6099.8	182.6	144.6	414.1	217.54	4.19	0.9	0.5
31/05/2017	616	943824.70	6436034.32	20.2	7138.9	274.8	181.3	438.8	1062.2	90.3	39.5	27.0	6076.7	184.5	141.8	411.8	217.41	4.32	0.4	0.6
31/05/2017	617	943824.39	6436033.79	19.9	7084.3	272.0	184.7	434.7	1072.1	92.9	39.3	28.7	6012.2	179.1	145.4	406.0	217.71	4.25	-1.0	0.8
01/06/2017	618	943824.72	6436033.82	19.7	7146.6	279.7	181.2	438.4	1067.6	92.0	40.8	27.7	6079.0	187.7	140.4	410.7	217.39	4.23	0.1	0.9
01/06/2017	619	943824.51	6436034.21	19.9	7231.9	279.2	189.3	442.8	1215.1	99.3	47.0	33.7	6016.8	179.9	142.3	409.1	217.74	4.19	-0.3	0.5
02/06/2017	620	943824.55	6436033.92	20.0	7220.0	277.0	185.2	444.7	1122.5	94.4	42.9	29.1	6097.5	182.6	142.3	415.6	217.50	4.28	1.3	0.7
02/06/2017	621	943824.51	6436034.77	20.0	7226.3	281.4	190.4	437.7	1284.8	102.6	51.5	34.8	5941.5	178.8	138.9	402.9	217.71	4.16	-1.8	0.4

Av Normalized Th: 410.0 Min TH: 402.9 Max TH: 417.5 Standard Deviation: 3.2

Ground Cals - VH-THS - Ceduna Airport																				
		Position			Hand Sample				Background				Normalized				Th Cal Results		TH Chg	Diff
Date	Flt	East	North	GPS Ht	TC	Pot	Ura	Tho	TC	Pot	Ura	Tho	TC	Pot	Ura	Tho	ThPeak	% FWHM	+/- 5%	5 max
03/06/2017	622	943824.71	6436034.16	19.5	7152.8	281.8	182.9	436.2	1128.8	95.3	45.6	28.4	6024.0	186.5	137.3	407.8	217.40	4.28	-0.5	0.7
03/06/2017	623	943823.91	6436034.11	20.2	7241.9	281.7	191.9	438.2	1215.2	101.4	49.6	29.4	6026.7	180.3	142.3	408.8	217.74	4.24	-0.3	0.5


Thorium Calibration Results
Aircraft: VH-THS
ThPeak
% FWHM
Thorium Peak
% FWHM
220.0
219.5
219.0
218.5
218.0
217.5
217.0
216.5
216.0
215.5
215.0
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
18/02/2017
18/02/2017
18/02/2017
18/02/2017
19/02/2017
20/02/2017
20/02/2017
22/02/2017
22/02/2017
22/02/2017
23/02/2017
23/02/2017
24/02/2017
24/02/2017
25/02/2017
25/02/2017
26/02/2017
26/02/2017
27/02/2017
27/02/2017
10/03/2017
11/03/2017
11/03/2017
12/03/2017
12/03/2017
13/03/2017
13/03/2017
14/03/2017
14/03/2017
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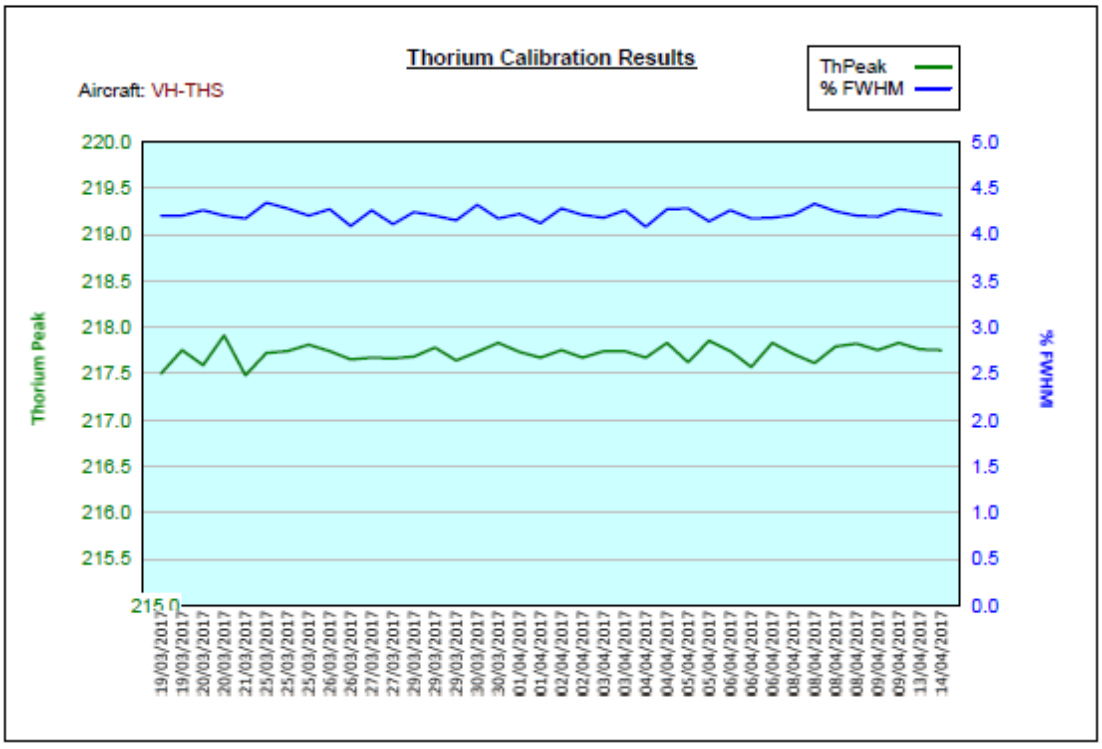
15/03/2017
16/03/2017
16/03/2017
17/03/2017
17/03/2017
18/03/2017
18/03/2017


Thorium Calibration Results
Aircraft: VH-THS
ThPeak
% FWHM
Thorium Peak
% FWHM
220.0
219.5
219.0
218.5
218.0
217.5
217.0
216.5
216.0
215.5
215.0
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
19/03/2017
19/03/2017
20/03/2017
20/03/2017
21/03/2017
25/03/2017
25/03/2017
25/03/2017
26/03/2017
26/03/2017
27/03/2017
27/03/2017
29/03/2017
29/03/2017
29/03/2017
30/03/2017
30/03/2017
01/04/2017
01/04/2017
02/04/2017
02/04/2017
03/04/2017
03/04/2017
04/04/2017
04/04/2017
05/04/2017
05/04/2017
06/04/2017
06/04/2017
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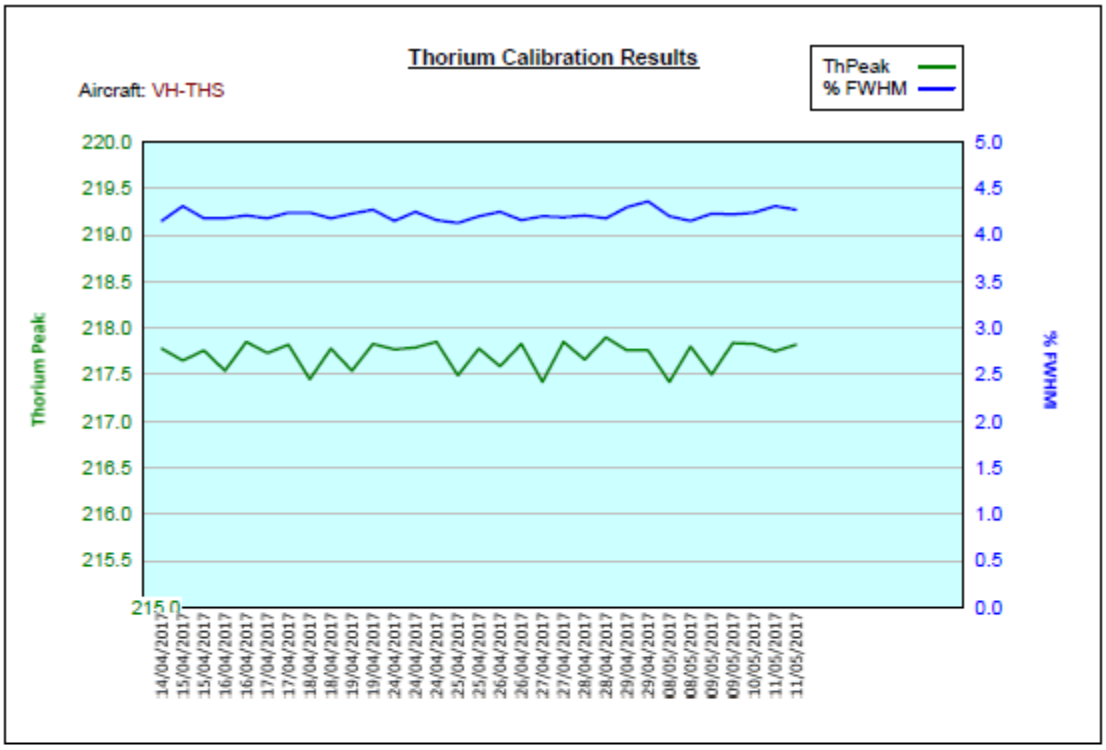
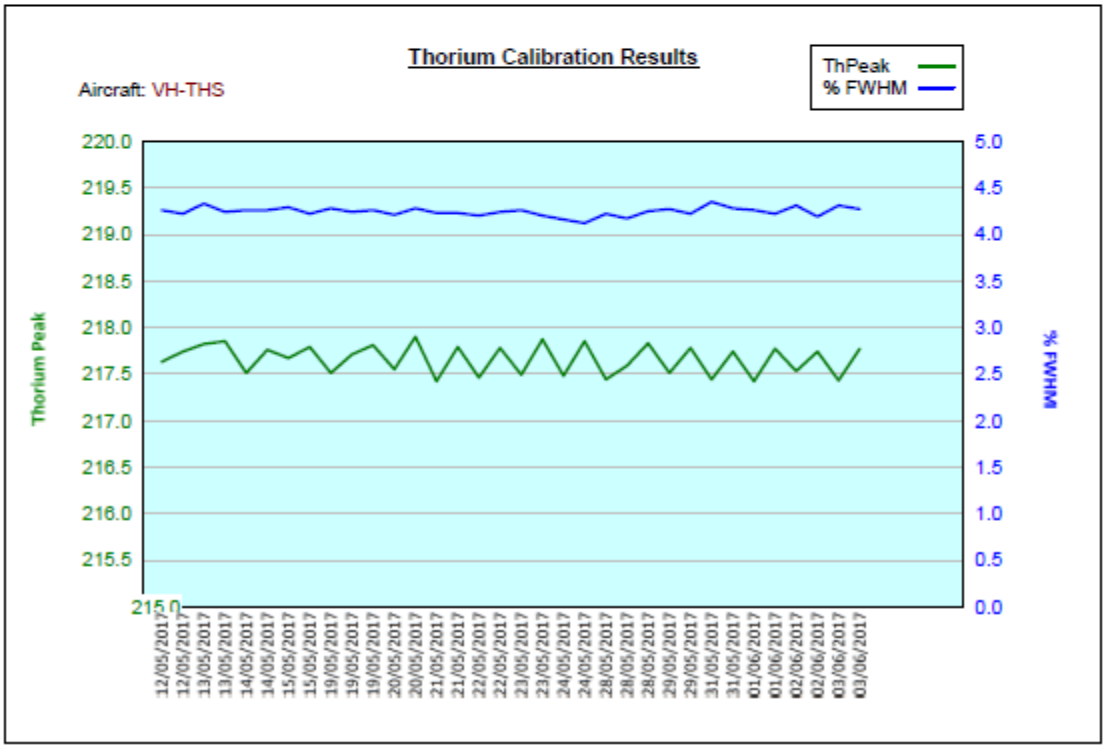
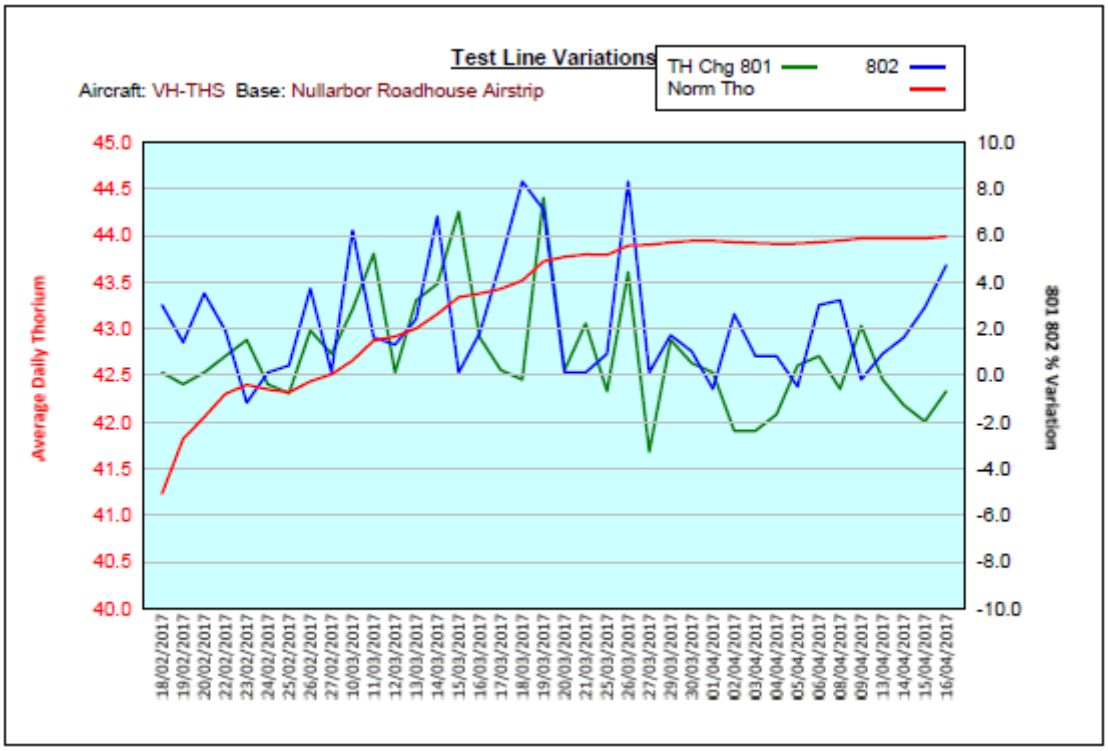
09/04/2017
09/04/2017
13/04/2017
14/04/2017

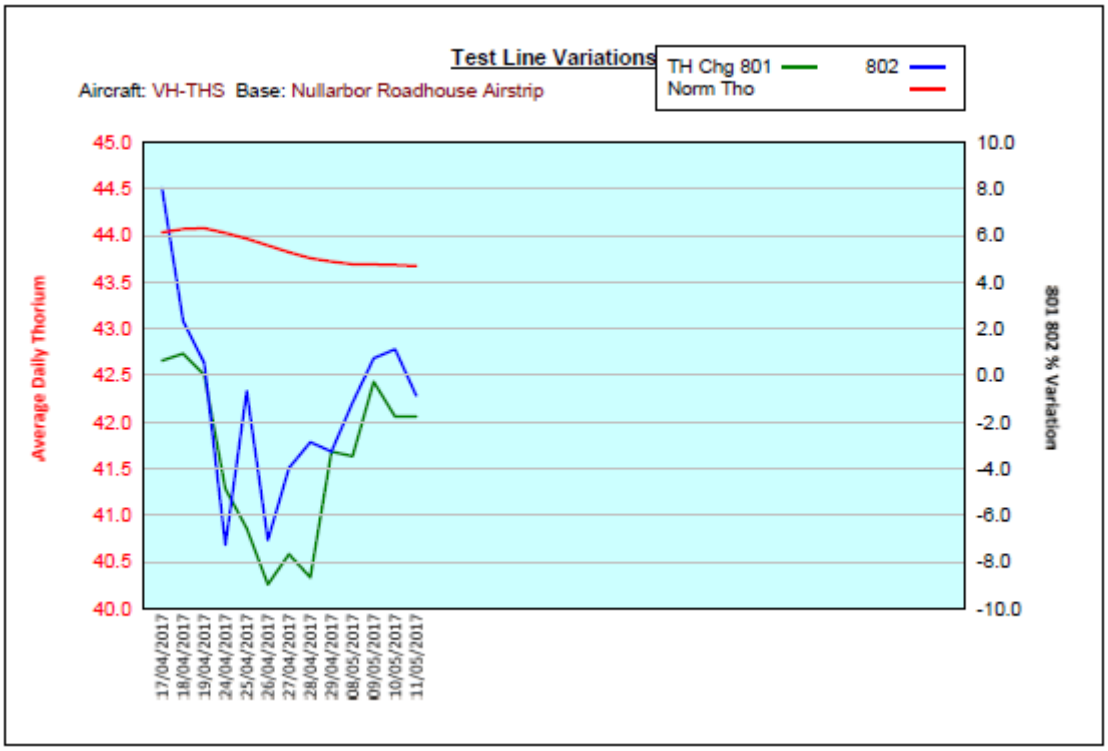

Thorium Calibration Results
Aircraft: VH-THS
ThPeak
% FWHM
Thorium Peak
% FWHM
220.0
219.5
219.0
218.5
218.0
217.5
217.0
216.5
216.0
215.5
215.0
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
14/04/2017
15/04/2017
15/04/2017
16/04/2017
17/04/2017
17/04/2017
18/04/2017
18/04/2017
19/04/2017
19/04/2017
24/04/2017
24/04/2017
24/04/2017
25/04/2017
25/04/2017
26/04/2017
27/04/2017
27/04/2017
28/04/2017
28/04/2017
29/04/2017
29/04/2017
08/05/2017
08/05/2017
09/05/2017
09/05/2017
10/05/2017
11/05/2017
11/05/2017

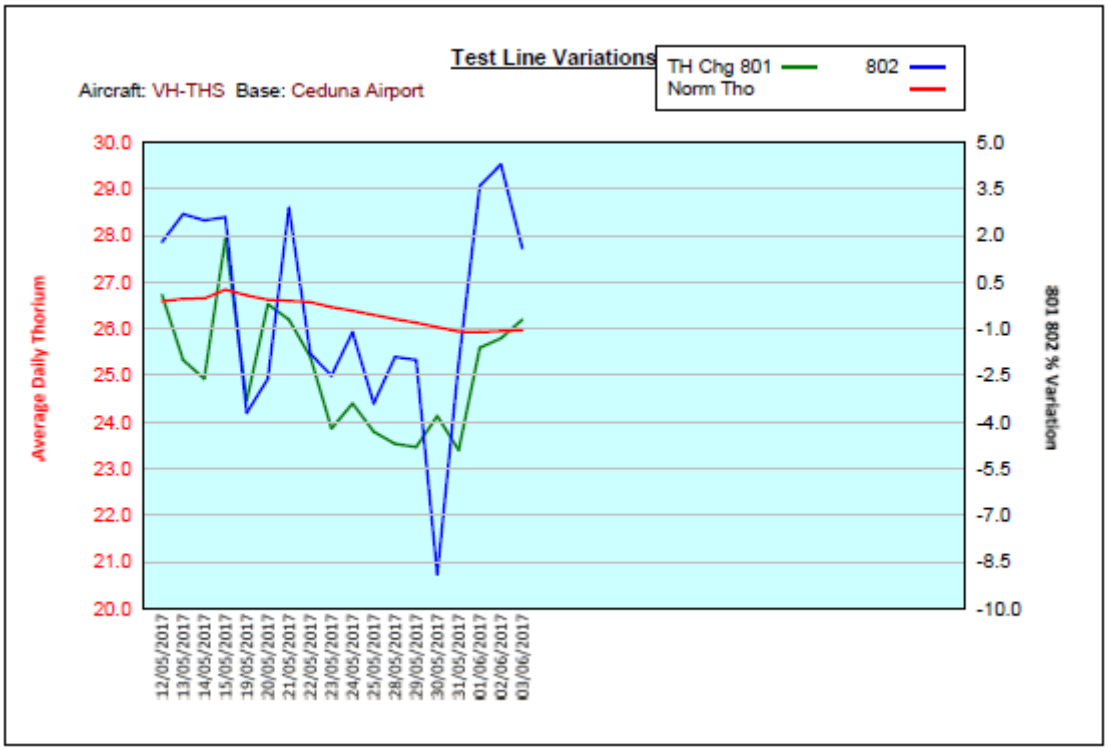

Thorium Calibration Results
Aircraft: VH-THS
ThPeak
% FWHM
Thorium Peak
% FWHM
220.0
219.5
219.0
218.5
218.0
217.5
217.0
216.5
216.0
215.5
215.0
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
12/05/2017
12/05/2017
13/05/2017
13/05/2017
14/05/2017
14/05/2017
15/05/2017
15/05/2017
19/05/2017
19/05/2017
19/05/2017
20/05/2017
20/05/2017
21/05/2017
21/05/2017
22/05/2017
22/05/2017
23/05/2017
23/05/2017
24/05/2017
24/05/2017
28/05/2017
28/05/2017
28/05/2017
29/05/2017
29/05/2017
31/05/2017
31/05/2017
01/06/2017
01/06/2017
02/06/2017
02/06/2017
03/06/2017
03/06/2017

3.2 Daily radiometric test line checks

A survey test line was defined and flown before the day's first survey flight and after the day's last survey flight. The results are graphed and tabled below as per Schedule 3 S1.12 (u) & Schedule 3 S1.12 (x)






Test Line Variations
Aircraft: VH-THS Base: Ceduna Airport
TH Chg 801
802
Norm Tho
Average Daily Thorium
801 802 % Variation
30.0
29.0
28.0
27.0
26.0
25.0
24.0
23.0
22.0
21.0
20.0
5.0
3.5
2.0
0.5
-1.0
-2.5
-4.0
-5.5
-7.0
-8.5
-10.0
12/05/2017
13/05/2017
14/05/2017
15/05/2017
19/05/2017
20/05/2017
21/05/2017
22/05/2017
23/05/2017
24/05/2017
25/05/2017
28/05/2017
29/05/2017
30/05/2017
31/05/2017
01/06/2017
02/06/2017
03/06/2017

Av Normalized Th: 43.6 Min TH: 39.9 Max TH: 47.5 Standard Deviation: 1.6

Test Lines - VH-THS - Nullarbor Roadhouse Airstrip												
		801				TH Chg		802				TH Chg
Date	Flt	TC	Pot	Ura	Tho	+/- 10%	Flt	TC	Pot	Ura	Tho	+/- 10%
18/02/2017	502	1320.8	149.0	30.9	40.6	0.0	503	1339.5	150.9	31.1	43.0	2.9
19/02/2017	504	1326.2	147.9	31.3	41.5	-0.5	505	1327.6	148.5	31.2	42.4	1.3
20/02/2017	506	1353.2	149.9	33.2	41.9	0.0	507	1397.1	154.7	34.6	43.6	3.4
22/02/2017	508	1378.0	153.3	32.6	42.5	0.7	508	1369.5	153.0	32.1	43.1	1.8
23/02/2017	509	1393.5	155.3	35.6	43.0	1.4	510	1335.8	148.3	31.9	41.8	-1.3
24/02/2017	511	1348.4	150.1	31.7	42.1	-0.5						
25/02/2017	512	1361.6	152.3	32.3	41.9	-0.9	512	1374.0	154.2	34.0	42.4	0.3
26/02/2017	513	1428.9	152.0	36.5	43.1	1.8	514	1461.0	161.2	38.2	44.0	3.6
27/02/2017	515	1434.2	156.6	37.1	42.8	0.8						
10/03/2017	517	1414.4	156.1	34.8	43.7	2.7	519	1557.0	168.6	42.3	45.3	6.1
11/03/2017	520	1408.9	155.2	33.5	45.0	5.1	521	1452.1	160.1	35.8	43.5	1.5
12/03/2017							522	1385.6	153.3	32.8	43.4	1.2
13/03/2017	524	1417.9	156.5	34.7	44.3	3.1	525	1450.4	161.3	36.4	44.0	2.3
14/03/2017	526	1490.7	159.3	38.6	44.7	3.8	527	1543.8	168.8	40.5	46.1	6.7
15/03/2017	528	1571.8	170.2	41.9	46.3	6.9						
16/03/2017	529	1379.4	156.0	32.6	44.0	1.5	530	1416.0	158.6	33.5	44.1	1.7
17/03/2017	531	1427.4	157.7	34.6	43.4	0.1	532	1473.1	162.8	36.6	45.5	4.8
18/03/2017	533	1451.7	157.1	36.3	43.3	-0.3	534	1574.5	171.3	43.6	47.1	8.2
19/03/2017	535	1652.3	175.6	47.4	46.9	7.5	535	1627.1	174.3	46.1	46.8	7.0
20/03/2017	536	1414.3	157.5	34.1	43.8	0.1						
21/03/2017	537	1436.9	158.7	36.4	44.7	2.1						
25/03/2017	538	1430.9	157.9	35.8	43.4	-0.8	540	1509.6	165.1	39.0	44.1	0.8
26/03/2017	541	1600.6	168.9	44.0	45.7	4.3	541	1733.4	179.9	52.7	47.5	8.2
27/03/2017	542	1385.4	154.0	32.6	42.4	-3.4						
29/03/2017	543	1465.4	158.3	36.9	44.5	1.4	543	1445.9	161.2	35.8	44.6	1.6
30/03/2017	544	1390.0	154.8	31.8	44.1	0.4	545	1395.4	156.8	34.2	44.3	0.9
01/04/2017	546	1400.2	157.9	33.6	43.9	0.0	547	1398.9	158.0	32.7	43.6	-0.7
02/04/2017	548	1382.5	153.4	33.0	42.8	-2.5	549	1449.4	161.1	35.4	45.0	2.5
03/04/2017	550	1442.9	157.0	36.6	42.8	-2.5	551	1446.5	158.6	35.8	44.2	0.7
04/04/2017	552	1457.8	160.3	37.1	43.1	-1.8	553	1475.6	163.4	37.8	44.2	0.7
05/04/2017	554	1450.1	159.6	36.7	44.0	0.3	555	1460.6	161.6	36.4	43.6	-0.6
06/04/2017	556	1475.5	159.8	38.1	44.2	0.7	557	1544.8	167.1	42.1	45.2	2.9
08/04/2017	558	1413.8	158.1	34.0	43.6	-0.7	559	1436.5	161.4	34.1	45.3	3.1
09/04/2017	560	1388.3	153.8	33.1	44.8	2.0	561	1402.7	158.2	32.7	43.8	-0.3

Av Normalized Th: 43.6 Min TH: 39.9 Max TH: 47.5 Standard Deviation: 1.6

Test Lines - VH-THS - Nullarbor Roadhouse Airstrip												
		801				TH Chg		802				TH Chg
Date	Flt	TC	Pot	Ura	Tho	+/- 10%	Flt	TC	Pot	Ura	Tho	+/- 10%
13/04/2017	562	1468.7	161.3	38.1	43.8	-0.3	564	1540.9	164.5	42.5	44.3	0.8
14/04/2017	565	1449.4	155.9	37.0	43.3	-1.4	567	1462.1	161.7	36.5	44.6	1.5
15/04/2017	568	1461.4	159.4	36.8	43.0	-2.1	569	1510.5	163.6	40.3	45.2	2.8
16/04/2017	570	1462.5	157.7	39.1	43.6	-0.8	571	1603.7	172.0	45.5	46.0	4.6
17/04/2017	572	1540.8	161.9	42.9	44.2	0.5	572	1733.4	179.9	52.7	47.5	7.9
18/04/2017	573	1475.2	159.0	38.0	44.4	0.8	573	1573.0	165.2	44.3	45.0	2.2
19/04/2017	574	1575.1	163.2	45.3	44.0	-0.1	575	1475.6	163.4	37.8	44.2	0.4
24/04/2017	576	1378.2	151.5	34.9	41.8	-5.0	577	1372.5	147.5	36.1	40.7	-7.4
25/04/2017	578	1322.8	143.5	32.5	41.0	-6.7	579	1398.9	158.0	32.7	43.6	-0.8
26/04/2017	580	1286.8	141.8	31.2	39.9	-9.1	581	1275.3	142.1	30.6	40.7	-7.2
27/04/2017	582	1310.6	143.6	32.8	40.4	-7.8	583	1334.7	147.7	31.6	42.0	-4.1
28/04/2017	584	1300.7	144.0	32.5	39.9	-8.8	585	1351.3	150.3	33.6	42.4	-3.0
29/04/2017	586	1362.1	147.4	35.5	42.2	-3.4	586	1428.4	153.3	39.3	42.2	-3.4
08/05/2017	588	1394.7	150.6	34.5	42.1	-3.6	589	1425.4	153.4	36.9	43.1	-1.3
09/05/2017	590	1466.1	155.0	40.5	43.5	-0.4	591	1550.5	162.6	44.7	43.9	0.6
10/05/2017	592	1434.2	156.6	37.1	42.8	-1.9	594	1577.7	164.0	47.1	44.1	1.0
11/05/2017	595	1499.0	156.6	42.4	42.8	-1.9	595	1604.6	166.9	49.5	43.2	-1.0

Av Normalized Th: 25.9 Min TH: 24.6 Max TH: 27.5 Standard Deviation: 0.9

Test Lines - VH-THS - Ceduna Airport												
		801				TH Chg		802				TH Chg
Date	Flt	TC	Pot	Ura	Tho	+/- 10%	Flt	TC	Pot	Ura	Tho	+/- 10%
12/05/2017	596	883.4	86.1	29.4	26.3	0.0	596	981.5	92.4	35.5	27.2	1.7
13/05/2017	597	934.3	89.4	32.6	25.9	-2.1	598	1014.2	92.2	40.0	27.4	2.6
14/05/2017	599	948.5	87.0	34.4	25.8	-2.7	600	1016.7	91.6	39.4	27.3	2.4
15/05/2017	601	987.7	87.7	35.8	27.2	1.8	602	1015.7	92.9	39.2	27.5	2.5
19/05/2017	603	771.3	77.0	22.2	25.8	-3.4	603	862.7	83.8	28.9	25.6	-3.8
20/05/2017	604	794.0	78.8	23.4	26.5	-0.3	604	875.5	84.4	30.0	25.8	-2.7
21/05/2017	605	873.4	83.4	28.9	26.3	-0.8	606	926.3	87.3	32.2	27.3	2.8
22/05/2017	607	796.1	79.9	23.4	26.0	-2.0	607	810.8	81.0	25.2	26.0	-1.9
23/05/2017	608	747.0	74.6	21.4	25.3	-4.3	609	806.0	80.6	24.3	25.7	-2.6
24/05/2017	610	765.9	75.6	21.7	25.4	-3.5	611	801.2	79.5	24.9	26.0	-1.2
25/05/2017	612	779.3	80.0	22.8	25.1	-4.4	612	791.5	79.9	23.4	25.3	-3.5
28/05/2017	613	716.2	71.9	19.5	24.9	-4.8	613	862.7	83.8	28.9	25.6	-2.0
29/05/2017	614	750.7	75.8	21.5	24.8	-4.9	614	769.4	77.1	22.3	25.5	-2.1
30/05/2017	615	730.3	76.7	20.0	25.0	-3.9	615	728.2	75.4	19.7	23.6	-9.0
31/05/2017	616	738.4	75.0	21.1	24.6	-5.0	617	768.5	76.6	23.0	25.3	-2.2
01/06/2017	618	795.4	76.9	24.8	25.4	-1.7	619	879.5	84.5	30.3	26.8	3.5
02/06/2017	620	845.3	80.0	29.0	25.5	-1.4	621	946.7	87.7	34.3	27.0	4.2
03/06/2017	622	895.1	86.5	31.0	25.7	-0.8	623	943.1	89.5	34.1	26.3	1.5

4. Comprehensive Processing

4.1 Equipment and Software used in Data Processing

The following equipment and Software is used in Data processing

Custom Built Personal Computer
Geometrics MagComp
Geosoft Oasis Montaj
Intrepid Geophysics software package
Geoid Interpolation Software V1.03

4.2 Datum Specification

The output survey coordinates are based on the Geocentric Datum of Australia 1994 (GDA94), zone 53.

It has the following parameters:

Projection name:	Map Grid of Australia
Datum:	Geocentric Datum of Australia (GDA94)
Reference Frame:	ITRF92 (International Terrestrial Reference 1992)
Epoch:	1994.0
Ellipsoid:	GRS80
Semi-major axis:	6,378,137.0 metres
Inverse flattening:	298.257222101
False Northing:	10,000,000 m N
False Easting:	500,000 m E
Scale Factor:	0.9996

4.3 Parallax Correction

Parallax corrections were applied as follows:

- -2.7 fiducials for magnetic data.
- 0.0 fiducials for elevation data.
- 0.6 fiducials for radiometric data

5. Magnetic Processing

The processing steps for magnetic data were as follows:

- The diurnal base station data was checked for spikes and steps, and suitably filtered prior to the removal of diurnal variations from the aircraft magnetic data.
- The diurnal data was filtered with a 3 point wide Naudy filter to identify and remove noise below 0.05nT.
- The filtered diurnal is then applied to the survey data by synchronising the diurnal data time with the aircraft survey time. The average diurnal base station value was added to the survey data.
- The aircraft data was subject to field QC during the acquisition phase, and then additional QC during the final processing.
- Parallax correction of 2.7 fiducials was applied to the coordinates to match with the magnetic sensor location.
- A fourth difference filter was run on the raw magnetic survey data to identify any remaining spikes in the data, which were manually edited from the data.
- The X and Y positioning of the data was then checked for spikes before applying the IGRF correction. Any spikes in the positions were manually edited.
- The IGRF 2015 (Geosoft) correction was calculated at each data point taking into account the height above sea level using the GPS altitude. Individual flight date was used for this calculation. This regional magnetic gradient was subtracted from the survey data points. Average of IGRF was added back to the data.
- The data was then tie-line levelled and micro-levelled.

5.1 Magnetic Compensation

The data was compensated post flight using a 16-terms model based on the work done by C.D. Hardwick.

Magnetic compensation sequences were flown before acquisition commenced and after routine maintenance was performed, as required. The resulting coefficients were used for post flight magnetic compensation.

5.2 Magnetic Model

IGRF was calculated using the GPS altitude.

- The magnetic model for the centre of the area is detailed below:

Model	IGRF 2015 with secular variation calculated to individual flight date
Declination	5.0 degrees
Inclination	-64.3 degrees
Field strength	57908.60nT
Grid zone	53

5.3 Diurnal Base Value

- The average diurnal base value was 58544.49nT.

5.4 Tie Line levelling method

- Tie line levelling was applied to the data by least squares minimisation, using a polynomial fit of order 1, of the differences in magnetic values at the crossover points of the survey traverse and tie line data.
- The least squares tie line levelling process employs a two pass Gauss-Seidel iterative scheme. The essential steps in this process are:
- In the first pass the tie lines were first adjusted to minimise, in the least squares sense, the crossover values with the traverse line values being held constant.
- The second pass held the levelled tied line values constant, and minimised in the least squares sense, the crossover values with traverses.
- The DC correction values to be applied to the traverse lines and tie lines were then applied to the data.

5.5 Polynomial Levelling method

To remove any residual long wavelength variations in the tie line levelled data along the traverse lines, least squares polynomial levelling was applied. A polynomial order of 0 followed by order of 1 was used for both traverses and ties.

- Polynomial levelling was used in the magnetic levelling process.

5.6 Micro Levelling method

- Micro-levelling was applied to the Polynomial levelled data to remove any residual levelling artefacts using Intrepid Data Processing software. The software uses a twostep process involving de-corrugation and micro-levelling.
- De-corrugation is first applied to the Polynomial levelled gridded data, which detects residual features parallel to the acquisition line direction and produces a grid of the corrections required to remove the levelling artefacts.
- Micro-levelling is then applied, which extrapolates the correction values from the de-corrugation grid to an appropriate value for each point in the traverse lines. It then applies the corrections to the point data to remove the residual levelling artefacts.

This micro-levelling process is based on a paper by Minty, 1991.

5.7 Gridding method

The interpolation used is a minimum curvature algorithm. The algorithm is based on the worked published by Briggs, 1974. The algorithm has been modified to include a tension parameter based on the work published by Smith and Wessel.

- A tension factor of 0 was used to interpolate the magnetic data.
- The mesh size for data interpolation was 40m or 0.000417deg.

6. Radiometric Processing

The processing steps for radiometric data were as follows:

- A parallax correction of 0.6 sec was applied to the coordinates to match with the geophysical sensor location on the aircraft.
- Checked radar and laser altimeter, pressure and temperature data for spikes. No filter was applied. Analog data channels were edited for spikes.
- NASVD spectral smoothing done
- Examine the output to determine the number of components required.
- Select 8 components for spectral reconstruction.

Standard 256 channel radiometric corrections done:

- Dead-time correction performed on 256 channel data.
- Check if energy recalibration required
- Remove 256 channel aircraft and cosmic backgrounds from the data
- Remove background radon from window data using Minty's method (1996)
- Perform STP height corrected spectral stripping
- Perform STP height correction of window data to specified survey height (60m).
- Micro-levelling

- Spectral smoothing was applied using the NASVD process, and spectral reconstruction was employed using 8 spectral components. NASVD processing was done per block after consulting with Dr. Brian Minty and Geoscience Australia.
- Micro-levelling was applied.

6.1 Principal Component Spectral Vectors

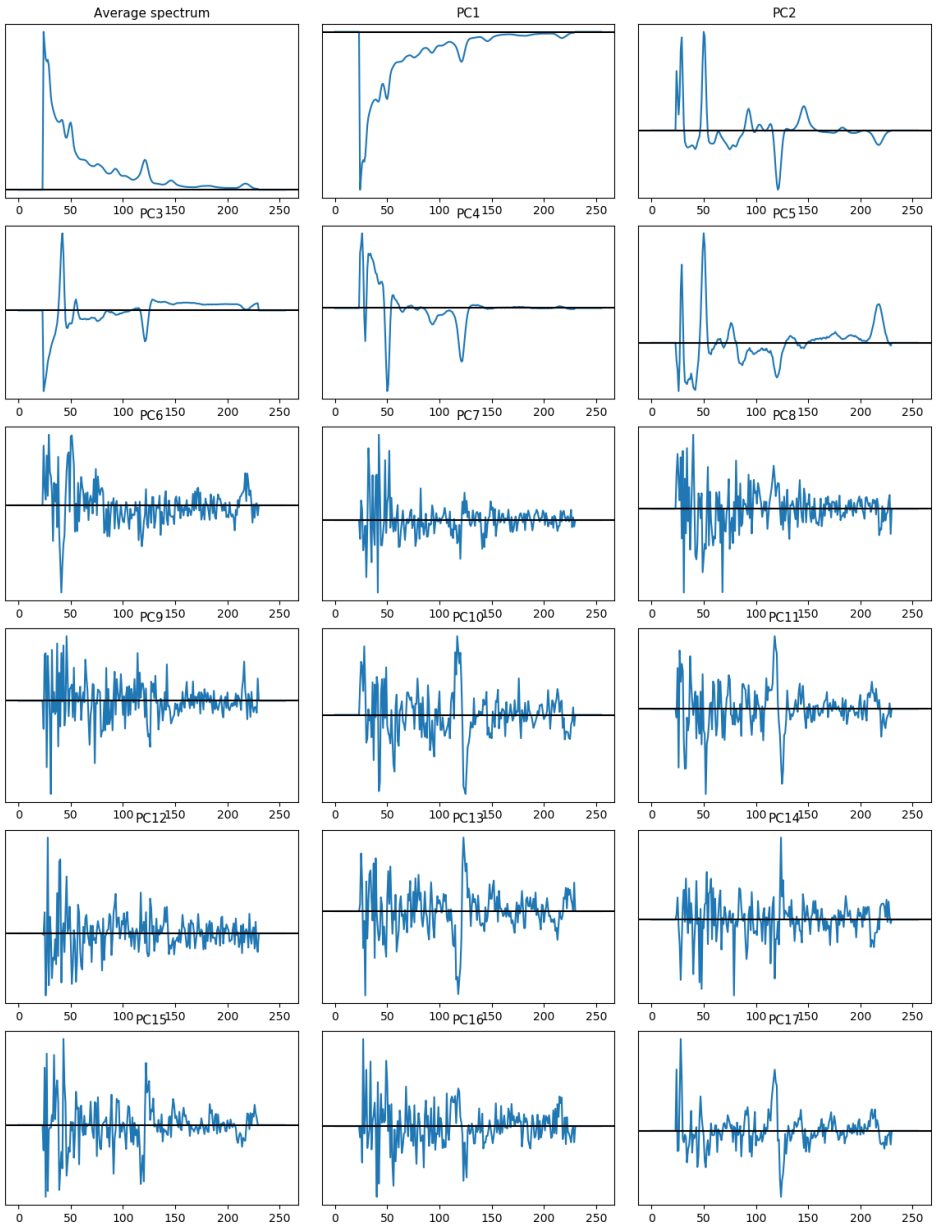


Figure 14. NASVD Principal Components.

6.2 Conversion to Ground concentrations

	Total Count Cps to Dose rate	Potassium Cps to Percent	Uranium Cps to PPM	Thorium Cps to PPM
Conversion Factor	31.27	100.08	9.60	5.85

- Above coefficients were derived from a flight over the test range in WA performed on June 2017.

6.3 Micro Levelling method

- Micro-levelling was applied to the processed data to remove any residual artifacts using Intrepid Data Processing software. The software uses a two-step process involving de-corrugation and micro-levelling.
- De-corrugation is first applied to the Polynomial levelled gridded data, which detects residual features parallel to the acquisition line direction and produces a grid of the corrections required to remove the levelling artefacts.
- Micro-levelling is then applied, which extrapolates the correction values from the de-corrugation grid to an appropriate value for each point in the traverse lines. It then applies the corrections to the point data to remove the residual levelling artefacts.

This micro-levelling process is based on a paper by Minty, 1991.

6.4 Gridding method

The interpolation used is a minimum curvature algorithm. The algorithm is based on the worked published by Briggs, 1974.

- The algorithm has been modified to include a tension parameter based on the work published by Smith and Wessel, 1990.
- A tension factor of 0 was used to interpolate the data
- The mesh size for data interpolation was 40m or 0.000417deg.

7. Elevation Processing

The processing steps for digital elevation data were as follows:

- Parallax check. No parallax correction is required for the GPS data.
- Calculation of raw digital elevation data by subtracting the radar altimeter from the GPS altitude. Height difference between GPS antenna and radar altimeter (1.60m) were also included.
- Tie line levelling
- Micro-levelling
- Aircraft elevation
- Adjusting to AHD

7.1 Tie Line levelling

- Tie line levelling was applied to the data by least squares minimization, using a polynomial fit of order 1, of the differences in data values at the crossover points of the survey traverse and tie line data.
- The least squares tie line levelling process employs a two pass Gauss-Seidel iterative scheme. The essential steps in this process are:
- In the first pass the tie lines were first adjusted to minimize, in the least squares sense, the crossover values with the traverse line values being held constant.
- The second pass held the levelled tied line values constant, and minimized in the least squares sense, the crossover values with traverses.
- The DC correction values to be applied to the traverse lines and tie lines were then applied to the elevation data.

7.2 Polynomial levelling

To remove any residual long wavelength variations in the tie line levelled data along the traverse lines, least squares polynomial levelling was applied. A polynomial order of 1 was used for both traverses and ties.
Polynomial levelling was used in the elevation levelling process.

7.3 Micro levelling

- Micro-levelling was applied to the Polynomial levelled data to remove any residual levelling artifacts using Intrepid Data Processing software. The software uses a two-step process involving decorrugation and micro-levelling.
- Decorrugation is first applied to the Polynomial levelled gridded data, which detects residual features parallel to the acquisition line direction and produces a grid of the corrections required to remove the levelling artifacts.
- Micro-levelling is then applied, which extrapolates the correction values from the de-corrugation grid to an appropriate value for each point in the traverse lines. It then applies the corrections to the point data to remove the residual levelling artifacts.

This micro-levelling process is based on a paper by Minty, 1991.

7.4 Aircraft elevation

Sensor elevation channel was calculated by subtracting calibrated radar altimeter channel from final processed elevation channel.

7.5 Adjusting to AHD

N value correction to AHD was acquired from AusGeoid09 grid version 1.01. Data interpolation was done using Geoid Interpolation software version 1.03 (Inter-government Committee on Surveying & Mapping, 2011) based on Long, Lat coordinates. N value was then subtracted from the levelled elevation data.

7.6 Gridding method

The interpolation used is a minimum curvature algorithm. The algorithm is based on the worked published by Briggs, 1974.

- The algorithm has been modified to include a tension parameter based on the work published by Smith and Wessel, 1990.
- A tension factor of 0 was used to interpolate the data
- The mesh size for data interpolation was 40m or 0.000417deg.

8. Deliverable Items

The deliverable items included all digital data. The located data conformed to ASEG-GDF II format and the gridded data was supplied in ERMapper format. All grids were supplied in metres and degrees. The description of the located data is below:

8.1 Located data supplied in ASEG GDF2 format

File name	Definition
P1285_RawEdited_Mag	Raw magnetic data
P1285_RawEdited_Elev	Raw elevation data
P1285_RawEdited_Rad	Raw 256 channel and window radiometric data
P1285_Final_Mag	Final magnetic data
P1285_Final_Elev	Final elevation data
P1285_Final_Rad	Final Radiometric Data

8.2 Gridded data supplied in ER Mapper format

File name	Definition	Units
P1285_TMI	Final magnetic gridded data	nT
P1285_RTP	Final RTP magnetic gridded data	nT
P1285_RTP_fft1vd	Final 1st Vertical derivative of RTP	nT/m
P1285_DEMradar	Final elevation (derived from radar altimeter) gridded data	m
P1285_DEMlaser	Final elevation (derived from laser altimeter) gridded data	m
P1285_doserate_nasvd	Final smooth radiometric dose rate gridded data	nGy/hr
P1285_k_percent_nasvd	Final smooth radiometric potassium gridded data	percent
P1285_th_ppm_nasvd	Final smooth radiometric thorium gridded data	ppm
P1285_u_ppm_nasvd	Final smooth radiometric uranium gridded data	ppm
P1285_doserate_no_nasvd	Final radiometric dose rate gridded data	nGy/hr
P1285_k_percent_no_nasvd	Final radiometric potassium gridded data	percent
P1285_th_ppm_no_nasvd.ers	Final radiometric thorium gridded data	ppm
P1285_u_ppm_no_nasvd	Final radiometric uranium gridded data	ppm

9. ASEG-GDF II description files

9.1 Raw elevation data

CLIENT DETAILS

Company Flown by : Thomson Aviation Pty. Ltd
Company Processed: Thomson Aviation Pty. Ltd
Client : Geoscience Australia
Company Job : Thomson 16054 / GA 1285

AIRBORNE SURVEY EQUIPMENT:

Aircraft : Cessna 210 VH-THS
Magnetometer : Geometrics G823A
Magnetometer Resolution : 0.001nT
Magnetometer Compensation : Post Flight
Magnetometer Sample Interval : 20 Hz, Approx 3.5m sample distance
Data Acquisition : GeOZ Model 2013
Spectrometer : Radiation Solutions RS 500
Crystal Size : 33l downward array
Spectrometer Sample Interval : 1.0 Seconds
GPS Navigation System : Novatel OEMV-1VBS GPS Receiver
GPS Sample Interval : 2 Hz

AIRBORNE SURVEY SPECIFICATIONS

Area: 4B Fowler, SA

Flight Line Direction : 090 - 270 degrees
Flight Line Separation : 200 metres
Tie Line Direction : 000 - 180 degrees
Tie Line Separation : 2000 metres
Terrain Clearance : 60 metres (MTC)
Survey flown : Feb - Jun 2017

DATUM and PROJECTION

Datum : Geodetic Datum of Australia 94. GDA94
Projection : Map Grid of Australia. MGA
Zone : Zone 53
COMM
COMM
Laser Altimeter Parallax

0.0 fiducial parallax correction was applied to coordinates

DATA FORMAT

Line number	F10.1	-	-	Line number. Generated by Oasis montaj
survey	F5.0	-99	-	GA survey number
flight	F4.0	-9	-	Flight number
LINE	F8.0	-99999	-	Line number
FID	F8.0	-99999	-	Fiducial
dateCode	F9.0	-999999	YYYYMMDD	Date
gps_time	F9.2	-9999.99	s	GPS time in reference to UTC. Seconds since midnight
local_time	F9.2	-9999.99	s	GPS time in reference to ACST (UTC +9.5). Seconds since midnight
Bearing	F4.0	-9	deg	Bearing
longitude_gda94	F11.6	-99.999999	dega	Longitude. GDA94. Parallax corrected
latitude_gda94	F11.6	-99.999999	dega	Latitude. GDA94. Parallax corrected
easting_gda94	F11.2	-999999.99	m	Easting. GDA94/MGA53. Parallax corrected
northing_gda94	F11.2	-999999.99	m	Northing. GDA94/MGA53. Parallax corrected
gps_height_raw	F8.2	-999.99	m	Raw GPS height. No interpolation
gps_height_edit_raw	F8.2	-999.99	m	Edited GPS height. Spike removed and interpolated
zone	F3.0	-	-	GDA94 zone number
SV_number	F4.0	-9	-	GPS Satellite number
HDOP	F4.0	-9	-	HDOP
PDOP	F4.0	-9	-	PDOP
radar_alt_raw	F8.2	-999.99	m	Raw radar altimeter. Parallax corrected
radar_alt_raw_edited	F8.2	-999.99	m	Spike removed and interpolated radar altimeter
laser_alt_raw	F8.2	-999.99	m	Raw laser altimeter.
laser_alt_raw_edited	F8.2	-999.99	m	Spike removed and interpolated laser altimeter

9.2 Raw magnetic data

CLIENT DETAILS

Company Flown by : Thomson Aviation Pty. Ltd
Company Processed: Thomson Aviation Pty. Ltd
Client : Geoscience Australia
Company Job : Thomson 16054 / GA 1285

AIRBORNE SURVEY EQUIPMENT:

Aircraft : Cessna 210 VH-THS
Magnetometer : Geometrics G823A
Magnetometer Resolution : 0.001nT
Magnetometer Compensation : Post Flight
Magnetometer Sample Interval : 20 Hz, Approx 3.5m sample distance
Data Acquisition : GeOZ Model 2013
Spectrometer : Radiation Solutions RS 500
Crystal Size : 33l downward array
Spectrometer Sample Interval : 1.0 Seconds
GPS Navigation System : Novatel OEMV-1VBS GPS Receiver
GPS Sample Interval : 2 Hz

AIRBORNE SURVEY SPECIFICATIONS

Area: 4B Fowler, SA

Flight Line Direction : 090 - 270 degrees
Flight Line Separation : 200 metres
Tie Line Direction : 000 - 180 degrees
Tie Line Separation : 2000 metres
Terrain Clearance : 60 metres (MTC)
Survey flown : Feb - Jun 2017

DATUM and PROJECTION

Datum : Geodetic Datum of Australia 94. GDA94
Projection : Map Grid of Australia. MGA
Zone : Zone 53

Diurnal Base Station Magnetometer

Base Station Magnetometer : Geometrics 823
Base Station Sampling Rate : 1 Hz
Base Station Location (GDA94) : -31.443985, 130.901938 (decimal, GDA94)
Base Station Location (MGA) : 472898.09, 6788028.72, Zone 53 (MGA94)

Magnetic Sensor Parallax

2.7 fiducial parallax correction was applied to coordinates

DATA FORMAT

Line number	F10.1	-	-	Line number. Generated by Oasis montaj
survey	F5.0	-99	-	GA survey number
flight	F4.0	-9	-	Flight number
LINE	F8.0	-99999	-	Line number
FID	F8.0	-99999	-	Fiducial
dateCode	F9.0	-999999	YYYYMMDD	Date
gps_time	F9.2	-9999.99	s	GPS time in reference to UTC. Seconds since midnight
local_time	F9.2	-9999.99	s	GPS time in reference to ACST (UTC +9.5). Seconds since midnight
Bearing	F4.0	-9	deg	Bearing
longitude_gda94	F11.6	-99.999999	dega	Longitude. GDA94. Parallax corrected
latitude_gda94	F11.6	-99.999999	dega	Latitude. GDA94. Parallax corrected
easting_gda94	F11.2	-999999.99	m	Easting. GDA94/MGA53. Parallax corrected
northing_gda94	F11.2	-999999.99	m	Northing. GDA94/MGA53. Parallax corrected
gps_height	F8.2	-999.99	m	GPS height. Parallax corrected. Despikes and interpolated
zone	F3.0	-	-	MGA zone number
radar_alt	F8.2	-999.99	m	Radar altimeter. Calibrated. Parallax corrected
laser_alt	F8.2	-999.99	m	Laser altimeter. Calibrated. Parallax corrected
fluxgate_x	F11.3	-99999.999	nT	Fluxgate. X component
fluxgate_y	F11.3	-99999.999	nT	Fluxgate. Y component
fluxgate_z	F11.3	-99999.999	nT	Fluxgate. Z component
magnetics_raw _uncompensated	F10.3	-9999.999	nT	Uncompensated magnetics
magnetics_raw _compensated	F10.3	-9999.999	nT	Raw compensated magnetics
magnetics_raw_edited _compensated	F10.3	-9999.999	nT	Spike removed, interpolated raw compensated magnetics
magnetic_diurnal	F9.2	-9999.99	nT	Magnetic diurnal

9.3 Raw radiometric data

CLIENT DETAILS

Company Flown by : Thomson Aviation Pty. Ltd
Company Processed: Thomson Aviation Pty. Ltd
Client : Geoscience Australia
Company Job : Thomson 16054 / GA 1285

AIRBORNE SURVEY EQUIPMENT:

Aircraft : Cessna 210 VH-THS
Magnetometer : Geometrics G823A
Magnetometer Resolution : 0.001nT
Magnetometer Compensation : Post Flight
Magnetometer Sample Interval : 20 Hz, Approx 3.5m sample distance
Data Acquisition : GeOZ Model 2013
Spectrometer : Radiation Solutions RS 500
Crystal Size : 33l downward array
Spectrometer Sample Interval : 1.0 Seconds
GPS Navigation System : Novatel OEMV-1VBS GPS Receiver
GPS Sample Interval : 2 Hz

AIRBORNE SURVEY SPECIFICATIONS

Area: 4B Fowler, SA

Flight Line Direction : 090 - 270 degrees
Flight Line Separation : 200 metres
Tie Line Direction : 000 - 180 degrees
Tie Line Separation : 2000 metres
Terrain Clearance : 60 metres (MTC)
Survey flown : Feb - Jun 2017

DATUM and PROJECTION

Datum : Geodetic Datum of Australia 94. GDA94
Projection : Map Grid of Australia. MGA
Zone : Zone 53

VH-THS Corrections Summary:

AIRCRAFT BACKGROUND
Total Count 152.065
Potassium 24.919
Uranium 5.678
Thorium 0.000
COSMIC STRIPPING RATIOS

Total Count	0.959
Potassium	0.051
Uranium	0.041
Thorium	0.061

COMPTON STRIPPING RATIOS

alpha	0.271
beta	0.406
gamma	0.782
a	0.049

HEIGHT ATTENUATION COEFFICIENT

Total Count	-0.00743
Potassium	-0.00943
Uranium	-0.00842
Thorium	-0.00751

SENSITIVITY CONSTANTS

Total Count	32.71
Potassium	102.78
Uranium	15.62
Thorium	6.07

WINDOW ENERGY LEVELS	Low Energy	High Energy	
Total Count	400.0	2810.0	keV
Potassium	1370.0	1570.0	keV
Uranium	1660.0	1860.0	keV
Thorium	2410.0	2810.0	keV
Cosmic	3000.0	<	keV

DATA FORMAT

Line number	F10.1	-	-	Line number. Generated by Oasis montaj
survey	F5.0	-99	-	GA survey number
flight	F4.0	-9	-	Flight number
LINE	F8.0	-99999	-	Line number
FID	F8.0	-99999	-	Fiducial
dateCode	F9.0	-999999	YYYYMMDD	Date
gps_time	F9.2	-9999.99	s	GPS time in reference to UTC. Seconds since midnight
local_time	F9.2	-9999.99	s	GPS time in reference to ACST (UTC +9.5). Seconds since midnight
Bearing	F4.0	-9	deg	Bearing
longitude_gda94	F11.6	-99.999999	dega	Longitude. GDA94. Parallax corrected
latitude_gda94	F11.6	-99.999999	dega	Latitude. GDA94. Parallax corrected
easting_gda94	F11.2	-999999.99	m	Easting. GDA94/MGA53. Parallax corrected
northing_gda94	F11.2	-999999.99	m	Northing. GDA94/MGA53. Parallax corrected
radar_alt	F8.2	-999.99	m	Radar altimeter. Calibrated. Parallax corrected. Spikes removed and interpolated
laser_alt	F8.2	-999.99	m	Laser altimeter. Calibrated. Parallax corrected. Spikes removed and interpolated
pressure	F8.2	-999.99	mbar	Air pressure
temperature	F7.2	-99.99	degC	Air temperature

raw_k	F5.0	-99	cps	Raw Potassium window
raw_u	F5.0	-99	cps	Raw Uranium window
raw_th	F5.0	-99	cps	Raw Thorium window
raw_tc	F6.0	-999	cps	Raw Total counts
cosmic	F5.0	-99	cps	Raw Cosmic window
sample	F4.1	-0.9	s	Sample integration time
live_time	F6.3	-0.999	s	Livetime for spectrum
resolution	F5.2	-0.99	perc	Spectrum resolution
Spectrum	256F5	-99	cps	Raw Channel 1-256

9.4 Final elevation data

Survey area : Fowler (R4B)
Located data type : Final Radiometric Data
Dates of acquisition : 18/02/2017 - 03/06/2017

CLIENT DETAILS

Company Flown by : Thomson Aviation Airborne Geophysical Survey
Company Processed : Thomson Aviation Airborne Geophysical Survey
Client : Geoscience Australia
Client Project Number : 1285
Company Project Number : 16054

AIRBORNE SURVEY EQUIPMENT:

Aircraft : Cessna 210 VH-THS
Magnetometer : Geometrics 823A
Magnetometer Resolution : 0.001nT
Magnetometer Sample Interval : 20 Hz
Data Acquisition : GeOZ Model 2013
Spectrometer : Radiation Solutions RSX 500
Crystal Size : 33l downward array
Spectrometer Sample Interval : 1 Hz
GPS Navigation System : Novatel OEMV-1VBS with satellite DGPS correction
GPS Sample Interval : 2 Hz

Survey Design

Flight Line Direction : 090 - 270 degrees
Flight Line Separation : 200 metres
Tie Line Direction : 000 - 180 degrees
Tie Line Separation : 2000 metres
Terrain Clearance : 60 metres (MTC)
Survey flown : 18/02/2017 - 03/06/2017
Survey Line Nomenclature : 4500010 - 4505830
Tie Line Nomenclature : 4590010 - 4591210

DATUMS and PROJECTION

Datum : Geodetic Datum of Australia 94. GDA94

Projection : Map Grid of Australia. MGA

Zone : Zone 53

Local Time Zone

Time Zone (LOCAL_TIME) : Australian Central Standard Time (UTC +9.5)

Laser Altimeter Parallax

X value added to GPS (right is positive) : 0.0

Y value added to GPS (forward is positive) : 0.0

Z value added to GPS (up is positive) : 0.0

DATA FORMAT

Name	Format	Dummy	Unit	Comment
RT	A4	-	-	
survey	I6	-9999	-	Project Number
flight	I5	-999	-	Flight number
LINE	I9	-999999	-	Line number
FID	I9	-999999	-	Fiducial number
dateCode	I10	-9999999	YYYYMMDD	Date
bearing	I5	-99	deg	Bearing
longitude_gda94	F13.7	-999.9999999	deg	GDA94 Longitude
latitude_gda94	F13.7	-999.9999999	deg	GDA94 Latitude
easting_gda94	F11.2	-999999.99	m	GDA94 MGA53 Easting
northing_gda94	F12.2	-9999999.99	m	GDA94 MGA53 Northing
GeoidN	F7.2	-99.99	m	Geoid height
gps_height	F8.2	-999.99	m	GDA94 (ellipsoidal) Edited GPS Height (spike removal and interpolated if/where required)
zone	I4	-99	-	MGA Zone Number
radar_alt	F8.2	-999.99	m	Radar altimeter. Parallax corrected, calibrated, edited

laser_alt	F8.2	-999.99	m	Laser altimeter. Parallax corrected, calibrated, edited
laser_height	F8.2	-999.99	m	Final laser sensor height
dem_laser	F8.2	-999.99	m	Final DEM from laser altimeter
dem_radar	F8.2	-999.99	m	Final DEM from radar altimeter

from radar altimeter

9.5 Final magnetic data

Survey area : Fowler (R4B)
Located data type : Final Radiometric Data
Dates of acquisition : 18/02/2017 - 03/06/2017

CLIENT DETAILS

Company Flown by : Thomson Aviation Airborne Geophysical Survey
Company Processed : Thomson Aviation Airborne Geophysical Survey
Client : Geoscience Australia
Client Project Number : 1285
Company Project Number : 16054

AIRBORNE SURVEY EQUIPMENT:

Aircraft : Cessna 210 VH-THS
Magnetometer : Geometrics 823A
Magnetometer Resolution : 0.001nT
Magnetometer Sample Interval : 20 Hz
Data Acquisition : GeOZ Model 2013
Spectrometer : Radiation Solutions RSX 500
Crystal Size : 33l downward array
Spectrometer Sample Interval : 1 Hz
GPS Navigation System : Novatel OEMV-1VBS with satellite DGPS correction
GPS Sample Interval : 2 Hz

Survey Design

Flight Line Direction : 090 - 270 degrees
Flight Line Separation : 200 metres
Tie Line Direction : 000 - 180 degrees
Tie Line Separation : 2000 metres
Terrain Clearance : 60 metres (MTC)
Survey flown : 18/02/2017 - 03/06/2017
Survey Line Nomenclature : 4500010 - 4505830
Tie Line Nomenclature : 4590010 - 4591210

DATUMS and PROJECTION

Datum : Geodetic Datum of Australia 94. GDA94
Projection : Map Grid of Australia. MGA
Zone : Zone 53

Local Time Zone

Time Zone (LOCAL_TIME) : Australian Central Standard Time (UTC +9.5)

Diurnal Base Station Magnetometer

Base Station Magnetometer : Geometrics 823
Base Station Sampling Rate : 1 Hz
Base Station Location (GDA94) : -31.443985, 130.901938 (decimal, GDA94)

Base Station Location (MGA) : 472898.09, 6788028.72, Zone 53 (MGA94)
Base Station Average Value : 58544.49nT

Magnetic Sensor Parallax

-2.7 fiducial parallax correction was applied to X,Y and Z coordinates

DATA FORMAT

Column	Format	Dummy	Unit	Comment
RT	A4	-	-	Generated by Geosoft
survey	I6	-9999	-	Project Number
flight	I5	-999	-	Flight number
LINE	I9	-999999	-	Line number
FID	I9	-999999	-	Fiducial number
dateCode	I10	-9999999	YYYYMMDD	Date
bearing	I5	-99	deg	Bearing
longitude_gda94	F13.7	-999.9999999	dega	GDA94 Longitude (parallax corrected to location of Mag sensor)
latitude_gda94	F13.7	-999.9999999	dega	GDA94 Latitude (parallax corrected to location of Mag sensor)
easting_gda94	F11.2	-999999.99	m	GDA94 MGA53 Easting (parallax corrected to location of Mag sensor)
northing_gda94	F12.2	-9999999.99	m	GDA94 MGA53 Northing (parallax corrected to location of Mag sensor)
gps_height	F8.2	-999.99	m	GDA94 (ellipsoidal) GPS Height (parallax corrected to location of Mag sensor)
zone	I4	-99	-	MGA Zone Number
radar_alt	F8.2	-999.99	m	Radar Altimeter (edited & interpolated if required, calibrated & parallax corrected to location of mag sensor)
laser_alt	F8.2	-999.99	m	Laser Altimeter (edited & interpolated if required, calibrated & parallax corrected to location of mag sensor)
dem_laser	F8.2	-999.99	m	Final DEM from laser altimeter
dem_radar	F8.2	-999.99	m	Final DEM from radar altimeter
magnetics_final_tielevelled	F10.2	-99999.99	nT	Final magnetics - tie line levelled
magnetics_final_microlevelled	F10.2	-99999.99	nT	Final magnetics - micro-levelled
magnetics_final_microlevelled_1vd	F10.2	-99999.99	nTm	First vertical derivative of micro-levelled final magnetics
magnetic_diurnal	F10.2	-99999.99	nT	Magnetic Diurnal
magnetic_igrf	F10.2	-99999.99	nT	IGRF

9.6 Final radiometric data

Survey area : Fowler (R4B)
Located data type : Final Radiometric Data
Dates of acquisition : 18/02/2017 - 03/06/2017

CLIENT DETAILS

Company Flown by : Thomson Aviation Airborne Geophysical Survey
Company Processed : Thomson Aviation Airborne Geophysical Survey
Client : Geoscience Australia
Client Project Number : 1285
Company Project Number : 16054

AIRBORNE SURVEY EQUIPMENT:

Aircraft : Cessna 210 VH-THS
Magnetometer : Geometrics 823A
Magnetometer Resolution : 0.001nT
Magnetometer Sample Interval : 20 Hz
Data Acquisition : GeOZ Model 2013
Spectrometer : Radiation Solutions RSX 500
Crystal Size : 33l downward array
Spectrometer Sample Interval : 1 Hz
GPS Navigation System : Novatel OEMV-1VBS with satellite DGPS correction
GPS Sample Interval : 2 Hz

Survey Design

Flight Line Direction : 090 - 270 degrees
Flight Line Separation : 200 metres
Tie Line Direction : 000 - 180 degrees
Tie Line Separation : 2000 metres
Terrain Clearance : 60 metres (MTC)
Survey flown : 18/02/2017 - 03/06/2017
Survey Line Nomenclature : 4500010 - 4505830
Tie Line Nomenclature : 4590010 - 4591210

DATUMS and PROJECTION

Datum : Geodetic Datum of Australia 94. GDA94
Projection : Map Grid of Australia. MGA
Zone : Zone 53

Local Time Zone

Time Zone (LOCAL_TIME) : Australian Central Standard Time (UTC +9.5)

Spectrometer Parallax

0.6 fiducial parallax correction was applied to coordinates

System Corrections Summary:

AIRCRAFT BACKGROUND

Total Count	152.065
Potassium	24.919
Uranium	5.678
Thorium	0.000

COSMIC STRIPPING RATIOS

Total Count	0.959
Potassium	0.051
Uranium	0.041
Thorium	0.061

COMPTON STRIPPING RATIOS

alpha	0.295
beta	0.448
gamma	0.783
a	0.040

HEIGHT ATTENUATION COEFFICIENT

Total Count	0.0074
Potassium	0.0094
Uranium	0.0084
Thorium	0.0074

SENSITIVITY CONSTANTS

Total Count	31.27
Potassium	100.08
Uranium	9.60
Thorium	5.85

WINDOW ENERGY LEVELS (keV)

Total Count	400 - 2810
Potassium	1370 - 1570
Uranium	1660 - 1860
Thorium	2410 - 2810
Cosmic	3000 - 6000

DATA FORMAT

Column	Format	Dummy	Unit	Comment
RT	A4	-	-	
survey	I6	-9999	-	Project Number
flight	I5	-99	-	Flight number
LINE	I9	-999999	-	Line number
FID	I9	-999999	-	Fiducial number
dateCode	I10	-9999999	YYYYMMDD	Date
bearing	I5	-99	deg	Bearing
longitude_gda94	F13.7	-999.9999999	deg	GDA94 Longitude (parallax corrected for spectrometer reading mid-point)
latitude_gda94	F13.7	-999.9999999	deg	GDA94 Latitude (parallax corrected for spectrometer reading mid-point)
easting_gda94	F11.2	-999999.99	m	GDA94 MGA53 Easting (parallax corrected for spectrometer reading mid-point)
northing_gda94	F12.2	-9999999.99	m	GDA94 MGA53 Northing (parallax corrected for spectrometer reading mid-point)
gps_height	F8.2	-999.99	m	GPS Height (parallax corrected for spectrometer reading mid-point)

zone	I4	-9	-	Zone
radar_alt	F8.2	-999.99	m	Parallax corrected & calibrated radar altimeter
laser_alt	F8.2	-999.99	m	Parallax corrected & calibrated laser altimeter
dem_laser	F8.2	-999.99	m	Digital elevation model based on laser altimeter
dem_radar	F8.2	-999.99	m	Digital elevation model based on raser altimeter
pressure	F8.2	-999.99	mbar	Barometric pressure
temperature	F7.2	-99.99	degC	C Temperature
doserate_no_nasvd	F10.2	-99999.99	nGy/hr	Final Doserate without nasvd spectral smoothing
k_percent_no_nasvd	F9.2	-9999.99	perc	Final K without nasvd spectral smoothing
u_ppm_no_nasvd	F9.2	-9999.99	ppm	Final U without nasvd spectral smoothing
th_ppm_no_nasvd	F9.2	-9999.99	ppm	Final Th without nasvd spectral smoothing
doserate_nasvd	F10.2	-99999.99	nGy/hr	Final Doserate with nasvd spectral smoothing
k_percent_nasvd	F9.2	-9999.99	perc	Final K with nasvd spectral smoothing
u_ppm_nasvd	F9.2	-9999.99	ppm	Final U with nasvd spectral smoothing
th_ppm_nasvd	F9.2	-9999.99	ppm	Final Th with nasvd spectral smoothing

10. References

- Briggs I. C., 1974: Machine contouring using minimum curvature. Geophysics. Vol. 39, No. 1. February 1974. pp. 39-48.
- Geoscience Australia, 2010. 1 Second SRTM Derived DSM and DEM User Guide, 2010. (Distributed by Geoscience Australia with the 1 second DEM products.)
- Minty, B.R.S., 1991. Simple Micro-Levelling for Aeromagnetic Data, Exploration Geophysics (1991), 22, 591-592.
- Smith, W. H. F, and P. Wessel, 1990, Gridding with continuous curvature splines in tension, Geophysics 55, 293-305
- IAEA, 2003, Guidelines for radioelement mapping using gamma ray spectrometry data

11. Flight Logs

Daily Log								
Date	Flt Num	Block(s)	Operator(s)	Aircraft	SBY	MNT	SUS	Comments
16/02/2017		GA_4B_Fowler		VH-THS				Ferry survey aircraft Whyalla to Nullarbor.
16/02/2017	501	GA_4B_Fowler	L Bell	VH-THS				Carry out Compbox overhead Nullarbor Roadhouse.
18/02/2017	502	GA_4B_Fowler	L Bell	VH-THS				Flew Trav lines 216 and 441 and flew Tie lines 001, 121 and 500. All lines accepted. Those lines were flown so as to allow the pilots to view the block.
18/02/2017	503	GA_4B_Fowler	L Bell	VH-THS				Flew Trav lines 572-573 and flew Tie lines 119-120. All lines accepted.
19/02/2017	504	GA_4B_Fowler	L Bell	VH-THS				Flew Trav lines 580-583 and flew Tie lines 117-118. All lines accepted. Height bust in Tie line 118 due to urban area (Koonibu).
19/02/2017	505	GA_4B_Fowler	L Bell	VH-THS				Flew Trav lines 437-440 and flew Tie lines 013-021. All lines accepted.
20/02/2017	506	GA_4B_Fowler	L Bell	VH-THS				Flew Trav lines 433-436 and flew Tie lines 022-027. All lines accepted. Note, Height bust in Trav line 436 due to a house.
20/02/2017	507	GA_4B_Fowler	L Bell	VH-THS				Flew Trav lines 568-571 and flew Tie lines 115-116. All lines accepted.
21/02/2017		GA_4B_Fowler			1.0			Full day standby due to unsuitable survey weather.
22/02/2017		GA_4B_Fowler			0.5			Half day standby due to unsuitable survey weather in the morning.
22/02/2017	508	GA_4B_Fowler	L Bell	VH-THS				Flew Trav lines 564-567 and flew Tie lines 113-114. All lines accepted. Note, height busts in Tie lines due to houses.
23/02/2017	509	GA_4B_Fowler	L Bell	VH-THS				Flew Trav lines 576-579 and flew Tie lines 111-112. All lines accepted. Note, Height busts due to buildings.
23/02/2017	510	GA_4B_Fowler	L Bell	VH-THS				Flew Trav lines 429-432 and flew Tie lines 028-032. All lines accepted.
24/02/2017	511	GA_4B_Fowler	L Bell	VH-THS				Flew Trav 425-428 and flew Tie lines 012 and 033-035. All lines accepted. End of day test line not flown due to the afternoon flight being cancelled. Tie line 035 has a height bust and will be reflown.
24/02/2017		GA_4B_Fowler			0.5			Half day standby due to unsuitable diurnal data in the afternoon.
25/02/2017	512	GA_4B_Fowler	L Bell	VH-THS				Flew Trav lines 562-563 and 574-575. All lines accepted.
25/02/2017		GA_4B_Fowler			0.5			Half day standby due to unsuitable survey weather.

Daily Log								
Date	Flt Num	Block(s)	Operator(s)	Aircraft	SBY	MNT	SUS	Comments
26/02/2017	513	GA_4B_Fowler	L Bell	VH-THS				Flew Trav lines 421-424. All lines accepted.
26/02/2017	514	GA_4B_Fowler	L Bell	VH-THS				Flew Trav line 558-561. All lines accepted.
27/02/2017	515	GA_4B_Fowler	L Bell	VH-THS				Flew Trav lines 554-557 and flew Tie lines 109-110. All lines accepted.
27/02/2017	516	GA_4B_Fowler	L Bell	VH-THS				Flew Trav lines 418-420. Trav Line 418 cut short due to severe turbulence, pilot returned to base. Data in Trav Lines 419-420 accepted, end section of Trav Line 418 rejected. Trav Line 418 will be patched and completed at a later date. Turbulence prevented end of day test line from being flown.
28/02/2017		GA_4B_Fowler		VH-THS				Ferry Flight from Nullarbor to Adelaide for scheduled maintenance.
28/02/2017		GA_4B_Fowler				0.5		Half day of scheduled maintenance in Adelaide.
01/03/2017		GA_4B_Fowler				1.0		Full day of scheduled maintenance in Adelaide.
02/03/2017		GA_4B_Fowler				1.0		Full day of scheduled maintenance in Adelaide.
03/03/2017		GA_4B_Fowler				1.0		Full day of scheduled maintenance in Adelaide.
04/03/2017		GA_4B_Fowler				1.0		Full day of scheduled maintenance in Adelaide.
05/03/2017		GA_4B_Fowler				1.0		Full day of scheduled maintenance in Adelaide.
06/03/2017		GA_4B_Fowler				1.0		Full day of scheduled maintenance in Adelaide.
07/03/2017		GA_4B_Fowler				1.0		Full day of scheduled maintenance in Adelaide.
08/03/2017		GA_4B_Fowler				1.0		Full day of scheduled maintenance in Adelaide.
09/03/2017		GA_4B_Fowler				0.5		Half day of scheduled maintenance in Adelaide.
09/03/2017		GA_4B_Fowler		VH-THS				Ferry flight from Adelaide to the Nullarbor.
10/03/2017	517	GA_4B_Fowler	L Bell	VH-THS				Carried out Compbox 10,000ft above Nullarbor Roadhouse.
10/03/2017	518	GA_4B_Fowler	L Bell	VH-THS				Flew Trav line 318-321. All lines accepted.
10/03/2017	519	GA_4B_Fowler	L Bell	VH-THS				Flew Trav lines 442-445 and Tie lines 107-108. All lines accepted. Height bust in Line 445 due to town (Yalata), however there was also out of spec mag data at the same time. Line 445 will be patched at a later date.
11/03/2017	520	GA_4B_Fowler	L Bell	VH-THS				Flew Trav line 446-449. All lines accepted.
11/03/2017	521	GA_4B_Fowler	L Bell	VH-THS				Flew Trav line 322. Line accepted. Flight abandoned after one line due to high winds being unsuitable for further flight.
12/03/2017	522	GA_4B_Fowler	L Bell	VH-THS				Flew Trav lines 323-328 and Tie line 035. All lines accepted.

Daily Log								
Date	Flt Num	Block(s)	Operator(s)	Aircraft	SBY	MNT	SUS	Comments
12/03/2017	523	GA_4B_Fowler	L Bell	VH-THS				Flew Trav line 450 and Line Patches 418 and 445. All lines accepted. Flight started late due to high winds.
13/03/2017	524	GA_4B_Fowler	L Bell	VH-THS				Flew Trav lines 451-454 and flew Tie lines 105-106. All lines accepted. Height bust in Trav lines 452, 453 and 454 due to a town (Yalata).
13/03/2017	525	GA_4B_Fowler	L Bell	VH-THS				Flew Trav lines 329-334. All lines accepted. Mag drop in Trav line 332 will be patched at a later date.
14/03/2017	526	GA_4B_Fowler	L Bell	VH-THS				Flew Trav lines 335-340. All lines accepted.
14/03/2017	527	GA_4B_Fowler	L Bell	VH-THS				Flew Trav lines 455-458 and flew Tie lines 002-008 and 103-104. All lines accepted Height bust in line 455 due to buildings.
15/03/2017	528	GA_4B_Fowler	L Bell	VH-THS				Flew Trav lines 259-262. All lines accepted. Line 460 has a height bust due to buildings.
15/03/2017		GA_4B_Fowler			0.5			Half day standby due to unsuitable survey weather. This also prevented end of day test line.
16/03/2017	529	GA_4B_Fowler	L Bell	VH-THS				Flew Trav line 341-346. All lines accepted.
16/03/2017	530	GA_4B_Fowler	L Bell	VH-THS				Flew Trav lines 463-466 and Tie lines 101-102. All lines accepted.
17/03/2017	531	GA_4B_Fowler	L Bell	VH-THS				Flew Trav lines 467-470 and flew Tie lines 099-100. All lines accepted. Height busts in Tie line 591000 due to buildings.
17/03/2017	532	GA_4B_Fowler	L Bell	VH-THS				Flew Trav lines 414-417 and flew Tie lines 009-011. All lines accepted.
18/03/2017	533	GA_4B_Fowler	L Bell	VH-THS				Flew Trav lines 410-413 and flew Tie lines 036-039. All line accepted. Line 413 was split due to low clouds and will need to be patched.
18/03/2017	534	GA_4B_Fowler	L Bell	VH-THS				Flew Trav lines 471-474 and flew Tie lines 097-098. All lines accepted. Tie line 097-098 have height busts due to buildings/houses.
19/03/2017	535	GA_4B_Fowler	L Bell	VH-THS				Flew Trav lines 475-478 and Trav patch 413. All lines accepted.
20/03/2017	536	GA_4B_Fowler	L Bell	VH-THS				Flew Trav lines 479-482. All lines accepted.
20/03/2017		GA_4B_Fowler			0.5			Half day standby due to high winds preventing afternoon flight.
21/03/2017	537	GA_4B_Fowler	M Anderson	VH-THS				Flew Trav lines 347-351 and Trav patch 332. All lines accepted. Trav line 351 abandoned due to mechanical issues. Will be patched.

Daily Log								
Date	Flt Num	Block(s)	Operator(s)	Aircraft	SBY	MNT	SUS	Comments
21/03/2017		GA_4B_Fowler		VH-THS				Ferry flight from the Nullarbor to Adelaide for maintenance.
22/03/2017		GA_4B_Fowler				1.0		Full day standby due to aircraft being in Adelaide for scheduled maintenance.
23/03/2017		GA_4B_Fowler				1.0		Full day standby due to aircraft being in Adelaide for scheduled maintenance.
24/03/2017		GA_4B_Fowler				1.0		Full day standby due to aircraft being in Adelaide for scheduled maintenance.
24/03/2017		GA_4B_Fowler		VH-THS				Ferry flight from Adelaide to Nullarbor after maintenance carried out.
25/03/2017	538	GA_4B_Fowler	M Anderson	VH-THS				3 Travs flown today. all data accepted. Patches for lines 503482,500 and 501 also completed. All data accepted.
25/03/2017	539	GA_4B_Fowler	M Anderson	VH-THS				Compbox carried out and accepted.
25/03/2017	540	GA_4B_Fowler	M Anderson	VH-THS				2 Trav lines 504830 and 504840 flown. 2 Tie lines 590950 and 590960 flown. All data accepted.
26/03/2017	541	GA_4B_Fowler	M Anderson	VH-THS				Flew trav lines 50485-488. All data accepted.
26/03/2017		GA_4B_Fowler			0.5			Half day standby due to strong wind.
27/03/2017	542	GA_4B_Fowler	M Anderson	VH-THS				2 full travs flown.One part line due to strong winds preventing completion. Will be patched and compketed at next opportunity.
27/03/2017		GA_4B_Fowler			0.5			Half day standby due to strong wind.
28/03/2017		GA_4B_Fowler			1.0			Full day standby due to out of spec diurnal.
29/03/2017	543	GA_4B_Fowler	M Anderson	VH-THS				Flew trav lines 50358-360. Also flew patch 503571. All data accepted.
29/03/2017		GA_4B_Fowler			0.5			Half day standby allocated due to fog in the morning and strong wind in the afternoon.
30/03/2017	544	GA_4B_Fowler	M Anderson	VH-THS				4 trav lines flown. All data accepted.
30/03/2017	545	GA_4B_Fowler	M Anderson	VH-THS				5 Trav lines flown. All data accepted.
31/03/2017		GA_4B_Fowler			1.0			Full day standy due to unsettled diurnal.
01/04/2017	546	GA_4B_Fowler	M Anderson	VH-THS				Four trav lines flown. small patch to be made at the end of 504390 due to out of spec diurnal.
01/04/2017	547	GA_4B_Fowler	M Anderson	VH-THS				4 Travs flown. All data accepted.
02/04/2017	548	GA_4B_Fowler	M Anderson	VH-THS				6 Travs flown today. All data accepted.
02/04/2017	549	GA_4B_Fowler	M Anderson	VH-THS				4 travs flown all data accepted.
03/04/2017	550	GA_4B_Fowler	M Anderson	VH-THS				4 Travs flown all data accpeted. Also completed line 504931 which was a patch from a previous flight.

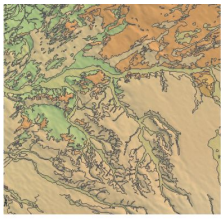
Daily Log								
Date	Flt Num	Block(s)	Operator(s)	Aircraft	SBY	MNT	SUS	Comments
03/04/2017	551	GA_4B_Fowler	M Anderson	VH-THS				6 Trav lines flown. All data accepted.
04/04/2017	552	GA_4B_Fowler	M Anderson	VH-THS				6 Travs flown. All data accepted.
04/04/2017	553	GA_4B_Fowler	M Anderson	VH-THS				4 Travs flown. The end of 50506 and the start of 50507 will need to be patched due to out of spec diurnal. Rest of the data accepted.
05/04/2017	554	GA_4B_Fowler	M Anderson	VH-THS				4 travs flown. one patch for diurnal will need to be made on line 505090.
05/04/2017	555	GA_4B_Fowler	M Anderson	VH-THS				4 travs flown all data accepted.
06/04/2017	556	GA_4B_Fowler	M Anderson	VH-THS				Delayed start due to fog. Flight then abandoned a short distance in to the first line due to strong wind. Line to be reflown in full.
06/04/2017	557	GA_4B_Fowler	M Anderson	VH-THS				7 Lines flown. 4 complete travs and 3 patches caused by out of spec diurnal. All data accepted.
07/04/2017		GA_4B_Fowler			1.0			Full day standby due to strong wind
08/04/2017	558	GA_4B_Fowler	M Anderson	VH-THS				6 Trav lines flown. 3 travs need reflown due to error in laser.
08/04/2017	559	GA_4B_Fowler	M Anderson	VH-THS				4 travs flown, all data accepted.
09/04/2017	560	GA_4B_Fowler	M Anderson	VH-THS				4 Travs flown. Two lines to be patched due to inclement weather at the eastern end of the block. All data accepted.
09/04/2017	561	GA_4B_Fowler	M Anderson	VH-THS				2 Travs flown. All data accepted.
10/04/2017		GA_4B_Fowler				0.5		Half day standby due to THS being in Adelaide for maintenance.
10/04/2017		GA_4B_Fowler		VH-THS				Ferry from Nullarbor to Adelaide for 110 hour maintenance.
11/04/2017		GA_4B_Fowler				1.0		Full day standby due to scheduled maintenance.
12/04/2017		GA_4B_Fowler				0.5		Halfday standby due to THS being in Adelaide for maintenance.
12/04/2017		GA_4B_Fowler		VH-THS				Ferry, THS Adelaide to Nullarbor.
13/04/2017	562	GA_4B_Fowler	M Anderson	VH-THS				Compbox flown and completed.
13/04/2017	563	GA_4B_Fowler	M Anderson	VH-THS				patches 505211 and 505533 flown. Travs 505240 and 505520 flown. Ties 590910-940 flown. All data accepted.
13/04/2017	564	GA_4B_Fowler	M Anderson	VH-THS				Travs 505480-510 flown. All data accepted.
14/04/2017	565	GA_4B_Fowler	M Anderson	VH-THS				Trav lines 505440-47 flown. All data accepted.
14/04/2017	566	GA_4B_Fowler	M Anderson	VH-THS				Compbox flown.
14/04/2017	567	GA_4B_Fowler	M Anderson	VH-THS				14 Tie lines flown. 590400-590540. All data accepted.

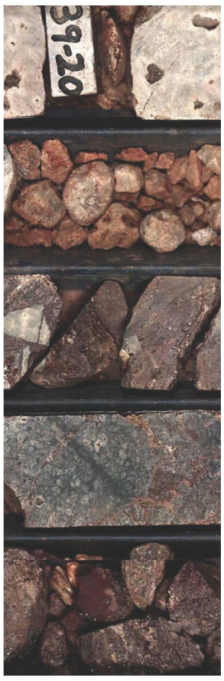
Daily Log								
Date	Flt Num	Block(s)	Operator(s)	Aircraft	SBY	MNT	SUS	Comments
15/04/2017	568	GA_4B_Fowler	M Anderson	VH-THS				11 Tie lines flown 59055-66. All data accepted.
15/04/2017	569	GA_4B_Fowler	M Anderson	VH-THS				2 ties flown 505420-430 all data accepted.
16/04/2017	570	GA_4B_Fowler	M Anderson	VH-THS				505380-505410 flown, all data accepted.
16/04/2017	571	GA_4B_Fowler	M Anderson	VH-THS				590660-590780 flown and accepted.
17/04/2017	572	GA_4B_Fowler	M Anderson	VH-THS				4 travs flown 50534 to 50537. All data accepted.
17/04/2017		GA_4B_Fowler			0.5			Half day standby due to strong wind.
18/04/2017		GA_4B_Fowler			0.5			Half day standby due to morning rain and strong wind.
18/04/2017	573	GA_4B_Fowler	M Anderson	VH-THS				Travs 505300-505330 all data accepted.
19/04/2017	574	GA_4B_Fowler	M Anderson	VH-THS				Trav lines 505260-505290 flown all data accepted.
19/04/2017	575	GA_4B_Fowler	M Anderson	VH-THS				Tie lines 590790 to 590860 flown. All data accepted. Trav 501900 also flown all data accepted.
20/04/2017		GA_4B_Fowler			1.0			Full day standby due to rain and water on runway.
21/04/2017		GA_4B_Fowler			1.0			Full day standby due to water on runway.
22/04/2017		GA_4B_Fowler			1.0			Fullday standby due to out of spec diurnal
23/04/2017		GA_4B_Fowler			1.0			Fullday standby due to out of spec diurnal
24/04/2017	576	GA_4B_Fowler	M Anderson	VH-THS				10 Travs flown 50101 - 12 and 4 ties flown 590870-900. All ties completed. All data accepted.
24/04/2017	577	GA_4B_Fowler	M Anderson	VH-THS				Two travs 50409 and 50525 flown. All data accepted.
25/04/2017	578	GA_4B_Fowler	M Anderson	VH-THS				4 travs flown lines 50405 - 50408. All data accepted.
25/04/2017	579	GA_4B_Fowler	M Anderson	VH-THS				18 Travs flown all data accepted.
26/04/2017	580	GA_4B_Fowler	M Anderson	VH-THS				18 Travs flown. All data accepted.
26/04/2017	581	GA_4B_Fowler	M Anderson	VH-THS				4 travs flown, 50401-04. All data accepted.
27/04/2017	582	GA_4B_Fowler	M Anderson	VH-THS				4 travs flow. 3 travs set to reflown in Flight 558 reflown in this flight. All data accepted.
27/04/2017	583	GA_4B_Fowler	M Anderson	VH-THS				12 Travs flown. All data accepted.
28/04/2017	584	GA_4B_Fowler	M Anderson	VH-THS				6 Travs flown 50312-50317. All data accepted.
28/04/2017	585	GA_4B_Fowler	M Anderson	VH-THS				6 Travs flown. 50195-50200. All data accepted.
29/04/2017	586	GA_4B_Fowler	M Anderson	VH-THS				4 travs flown. All data accepted. 50308-50311
29/04/2017		GA_4B_Fowler		VH-THS				Ferry, Nullarbor to Adelaide for 110 hour maintenance.
30/04/2017		GA_4B_Fowler				1.0		Fullday standby due to VH-THS being in Adelaide for 110 hour maintenance.
01/05/2017		GA_4B_Fowler				1.0		Fullday standby due to scheduled maintenance.
02/05/2017		GA_4B_Fowler				1.0		Full day standby due to THS being in maintenance.
03/05/2017		GA_4B_Fowler				1.0		Full day standby due to THS being in Adelaide for maintenance.

Daily Log								
Date	Flt Num	Block(s)	Operator(s)	Aircraft	SBY	MNT	SUS	Comments
04/05/2017		GA_4B_Fowler				1.0		Full day standby due to THS being in maintenance.
05/05/2017		GA_4B_Fowler				1.0		Full day standby duee to THS being in Adelaide for maintenance.
06/05/2017		GA_4B_Fowler		VH-THS				Ferry from Adelaide to Nullarbor on completion of 110 hour maintenance.
06/05/2017	587	GA_4B_Fowler	M Anderson	VH-THS				Compbox flown.
07/05/2017		GA_4B_Fowler			1.0			Full day standby due to high winds.
08/05/2017	588	GA_4B_Fowler	M Anderson	VH-THS				8 travs flown. 50201-08. All data accepted.
08/05/2017	589	GA_4B_Fowler	M Anderson	VH-THS				4 travs flown. 50304-07 all data accepted.
09/05/2017	590	GA_4B_Fowler	M Anderson	VH-THS				6 travs flown. 502980-503030. Two patches required line 503000 due to mag spikes. All other data accepted.
09/05/2017	591	GA_4B_Fowler	M Anderson	VH-THS				6 Travs flown. All data accepted. 50209-50214.
10/05/2017	592	GA_4B_Fowler	M Anderson	VH-THS				Clover leaf flown.
10/05/2017	593	GA_4B_Fowler	M Anderson	VH-THS				6 travs flown. 502150-502210. All data accepted.
10/05/2017	594	GA_4B_Fowler	M Anderson	VH-THS				2 travs flown. 502960-70. One patch to be flown due to mag spike.
11/05/2017	595	GA_4B_Fowler	M Anderson	VH-THS				6 travs flown. All data accepted. 50290-295.
11/05/2017		GA_4B_Fowler		VH-THS				Ferry from Nullarbor to Ceduna.
12/05/2017	596	GA_4B_Fowler	M Anderson	VH-THS				6 travs flown. Note base has changed to Ceduna Airport.
13/05/2017	597	GA_4B_Fowler	M Anderson	VH-THS				2 Travs flown. All data accepted.
13/05/2017	598	GA_4B_Fowler	M Anderson	VH-THS				4 travs flown all data accepted. 50286-89
14/05/2017	599	GA_4B_Fowler	M Anderson	VH-THS				8 travs flown all data accepted. 502810-85 plus paches 503002 and 05 plus 502962
14/05/2017	600	GA_4B_Fowler	M Anderson	VH-THS				8 travs flown. 502240-310. All data accepted.
15/05/2017	601	GA_4B_Fowler	M Anderson	VH-THS				8 travs flown. all data accepted. 50232 and 50233 need the ends patched due to fog.
15/05/2017	602	GA_4B_Fowler	M Anderson	VH-THS				4 travs flown all data accepted. 502770-502800
16/05/2017		GA_4B_Fowler			1.0			Fullday standby due to rain
17/05/2017		GA_4B_Fowler			1.0			Full day standby due to rain
18/05/2017		GA_4B_Fowler			1.0			Fullday standby due to rain
19/05/2017	603	GA_4B_Fowler	M Anderson	VH-THS				Flown Trav lines 50169, 67, 65 and 63. Travs 50240 and 50241 also flown. Patches 50233 and 50232 flown, all data accepted.
19/05/2017		GA_4B_Fowler			0.5			Half day standby due to fog on the block.
20/05/2017	604	GA_4B_Fowler	M Anderson	VH-THS				Flown Trav lines 50007 to 50028. All data accepted.

Daily Log								
Date	Flt Num	Block(s)	Operator(s)	Aircraft	SBY	MNT	SUS	Comments
20/05/2017		GA_4B_Fowler			0.5			Half day standby due to fog.
21/05/2017	605	GA_4B_Fowler	M Anderson	VH-THS				Flew 8 trav lines. line 50242-249. All data accepted.
21/05/2017	606	GA_4B_Fowler	M Anderson	VH-THS				Flew 4 travs and 1 patch. Trav lines 50273-276. Patch 504192. All data accepted.
22/05/2017		GA_4B_Fowler			0.5			Halfday standby due to strong wind in the morning.
22/05/2017	607	GA_4B_Fowler	M Anderson	VH-THS				Two travs, 50250 and 50251 flown. All data accepted.
23/05/2017	608	GA_4B_Fowler	M Anderson	VH-THS				8 Travs flown. Lines 502520 and 502540-60. All data accepted.
23/05/2017	609	GA_4B_Fowler	M Anderson	VH-THS				Two full Trav lines flown. 50271 and 72. All data accepted. One partline flown. 502700. Flight called off due to suspected out of spec diurnal activity. Diurnal was accepted. Remainder of line will be flown at next opportunity.
24/05/2017	610	GA_4B_Fowler	M Anderson	VH-THS				Flew 4 trav lines 50266-69 and patch 502702. All data accepted.
24/05/2017	611	GA_4B_Fowler	M Anderson	VH-THS				Flew travs 501350,37,39,41,43,45,47,49,51,53,55,57,59 and 61. Xtrack to be patched on 501590.
25/05/2017		GA_4B_Fowler			0.5			Halfday standby due to overnight power outage in Ceduna. No basemags as a result.
25/05/2017	612	GA_4B_Fowler	M Anderson	VH-THS				Cosmic stack flown over Streaky Bay.
25/05/2017		GA_4B_Fowler		VH-THS				Ferry Ceduna to Adelaide for 110 hour maintenance.
26/05/2017		GA_4B_Fowler				1.0		Full day standby due to 110 hour maintenance
27/05/2017		GA_4B_Fowler		VH-THS				Ferry from Adelaide to Ceduna following 110 hour maintenance.
27/05/2017		GA_4B_Fowler			0.5			Halfday standby due to strong wind.
28/05/2017	613	GA_4B_Fowler	M Anderson	VH-THS				6 Travs flown. Lines 502610- 502650 and 502530. Line 502620 needs a patch for out of spec diurnal. All other data accepted.
28/05/2017		GA_4B_Fowler			0.5			Half day standby due to rain on survey block.
29/05/2017		GA_4B_Fowler			0.5			Halfday standby due to rain in the morning.
29/05/2017	614	GA_4B_Fowler	M Anderson	VH-THS				10 Trav lines flown. Lines 501150 170,190,210,230,250,270,290,310 and 330. All data accepted.
30/05/2017		GA_4B_Fowler			0.5			Halfday standby due to wind and rain.
30/05/2017	615	GA_4B_Fowler	M Anderson	VH-THS				Compbox completed.
31/05/2017	616	GA_4B_Fowler	M Anderson	VH-THS				12 Travs flown. Lines 50029 to 50040. All data accepted.

Daily Log								
Date	Flt Num	Block(s)	Operator(s)	Aircraft	SBY	MNT	SUS	Comments
31/05/2017	617	GA_4B_Fowler	M Anderson	VH-THS				10 Travs flown. Lines 50098 to 50113. All data accepted.
01/06/2017	618	GA_4B_Fowler	M Anderson	VH-THS				22 Travs and 1 patch flown. Travs 50076-50097. Patch 50159.2. All data accepted.
01/06/2017	619	GA_4B_Fowler	M Anderson	VH-THS				12 Travs flown and one patch. Travs 50041-50052. Patch 50262.2 All data accepted.
02/06/2017	620	GA_4B_Fowler	M Anderson	VH-THS				20 Travs flown. 50053 to 50072. All data accepted.
02/06/2017	621	GA_4B_Fowler	M Anderson	VH-THS				7 Lines flown. Travs 50073 to 50075. Reflown lines 59101.2, 50493.3, 59054.2, 50325.2 at the request of GA. All data accepted. Two more lines to be reflown on the next flight.
03/06/2017	622	GA_4B_Fowler	M Anderson	VH-THS				1 Trav flown. 504842. Reflown due to out of spec sample separation. All data accepted.
03/06/2017	623	GA_4B_Fowler	M Anderson	VH-THS				2 travs flown. 503272 reflown for out of spec samle separation and patch 501572 (cross track). All data accepted.

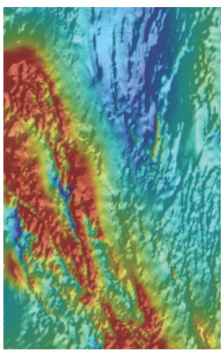




Department of State Development

Metadata: PACE Copper Gawler Craton Airborne Survey, Region 4B, P1285, Fowler, 2017SA007

Date Printed: 01/05/2018



Government of South Australia

Department of State Development

Dataset

Title: PACE Copper Gawler Craton Airborne Survey, Region 4B, P1285, Fowler, 2017SA007

Custodian: Department of the Premier and Cabinet

Jurisdiction: SA

Description

Abstract:

The Gawler Craton Airborne Survey The survey will capture approximately 1,800,000 line kilometres of new geophysical data (magnetic, radiometric and digital elevation data) over an area of approximately 324,000 square kilometres. Magnetic data includes TMI, TMI reduced to pole and 1VD of RTP TMI; elevation data includes models derived from radar altimeter and laser altimeter subtracted from differential GPS heights; spectrometer data includes dose rate, uranium, thorium, potassium and ternary (RGB) radiometrics. Located data, grids and images are available for download as a single 2.7Gb zip file. ERS and TIF images are available separately (all DEM; all TMI; all Radiometrics), downloadable as zip files via SARIG (<1Gb each). Located data is available via SARIG advanced geophysical search.

ANZLIC Search Terms:

GEOSCIENCES Geophysics BOUNDARIES Surveys

GEN Category: GAWLER PROVINCE

GEN Custodial Jurisdiction: South Australia

GEN Name: Barton Map Sheet, Gawler Craton

Geographic Extent Polygon: -31.248, 133.510, -32.213, 130.989

North bounding latitude: -31.248

South bounding latitude: -32.213

East bounding longitude: 133.510

West bounding longitude: 130.989

Data Currency

Beginning Date: 22/01/2017

End Date: 10/05/2017

Dataset Status

Progress: Complete

Maintenance: As required

Version Number: 1

Access

Stored format: DIGITAL data are stored as located data (ascii), ERMapper grids, tif images.

Available format(s): DIGITAL

Access constraint(s): Data is released under Creative Commons CC-BY.

SARIG Layer(s): Gawler Craton Airborne Survey\Region 4B

Data Quality

Lineage: The data was originally collected by government, released as located data and processed into grid and image products.

Positional accuracy: Original data were located using GPS. GPS units are accurate to less than 10 metres.

Attribute accuracy: Not Known

Logical consistency: All data have been quality controlled by the Geological Survey of South Australia.

Completeness: This survey is complete

Contact Information

Contact organisation: Department of the Premier and Cabinet

Contact position: Customer Service Centre

Contact mail address: GPO box 320 Adelaide SA 5001

Contact telephone: 08 8463 3000

Contact email: Resources.CustomerServices@sa.gov.au

Metadata Dates

Add date: 2018-05-01

Change date: 2018-05-01

Responsible Party

Responsible party: Director, Geological Survey of South Australia

Responsible party function: Custodian/Steward

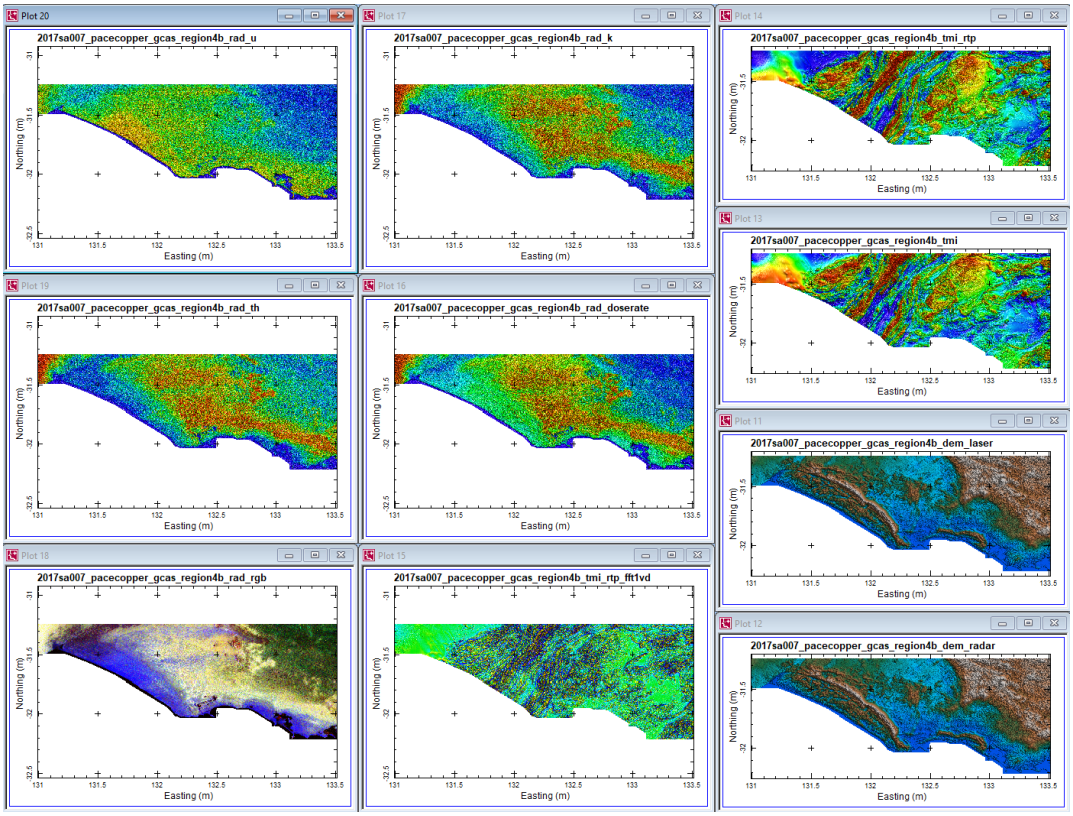
Description

Dataset classification: Principal version

Spatial representation type: Matrix

Dimension: Other

Sample Graphic(s)



Gawler Craton Airborne Survey Region 4B Images

Usage

Purpose: This set of data is designed as an aid to geological exploration.

Use: Used to supply industry, government and the general public with geophysical information, primarily used for mineral exploration.

Usage limitations: Grid data has been gridded at one fifth of line spacing and interpretations should not be made at scales less than this.

Dataset Associations

Dependant datasets: Airborne Magnetic Surveys of South Australia.

Origin

Dataset size: <1Gb

Projection: UTM Zone 53

Datum: GDA94

Dataset Management

Authorised by: Director, Geological Survey of South Australia

Attributes