Australian Government
Geoscience Australia

Certificate of Verification of a Reference Standard of a Position-Measurement in Accordance with Regulation 13 of the National Measurement Regulations 1999 in Accordance with the National Measurement Act 1960.

Name of verifying authority:

Geoscience Australia – National Geospatial Reference Systems
Corner Jerrabomberra Ave and Hindmarsh Drive
Symonston ACT 2609 Australia
Telephone: (02) 6249 9111 Facsimile: (02) 6249 9969 Email: geodesy@ga.gov.au

Client detail:

Name: Mr Ryan Ruddick
Organisation: National Geospatial Reference Systems, Geoscience Australia
Address: Symonston ACT 2609 Australia
Telephone: (02) 6249 9111 Facsimile: (02) 6249 9969 Email: ryan.ruddick@ga.gov.au
Date of request: 10 April 2010

Description and denomination of standard of measurement:

Position of a steel plate and centred threaded spigot mounted on a 2.0 metre tall and 3.0 metre deep pillar attached to bedrock, Australian Telescope National Facility (4 character ID: PARK). Measurement of this mark's position was undertaken using an Ashtech Dorne Margolin Element L1/L2 GNSS Antenna (International GNSS Service Antenna description ASH701945C_M) Serial No.CR620011902. This antenna is attached to the centred threaded spigot and 0.0000m above the mark's position

Permanent distinguishing marks:

Exempt under Regulation 16 (4)

Date of verification:

31 May 2010

Date of expiry of certificate:

30 May 2015

Value of standard of measurement:

South Latitude and its uncertainty of value:

32° 59' 55.58176" ± 0.032 m

East Longitude and its uncertainty of value:

148° 15' 52.58910" ± 0.032 m

Elevation above Ellipsoid and its uncertainty of value:

397.441 m ± 0.054 m

Geocentric Datum of Australia (GDA94) coordinates referred to the GRS80 ellipsoid being in the ITRF92 reference frame at the epoch 1994. The uncertainties are calculated in accordance with the principles of the ISO Guide to the Expression of Uncertainty in Measurement (1995), with an interval estimated to have a confidence level of 95% at the time of verification. The combined standard uncertainty was converted to an expanded uncertainty using a coverage factor, *k*, of 2.

Details of any relevant environmental or other influence factor(s) at the time of verification:

Uncertainty of the coordinates of the recognized-value standard of measurement of position (i.e. GDA94); and Uncertainty due to instability of the GPS antenna mounting and modelling of the antenna phase centre variations.

	NATA approved signatory		**Geoscience Australia approved signatory**
Signature:		**Signature:**	G Johnston
Date:	8/7/2010	**Date:**	8/7/2010
Name of signatory:	John Dawson	**Name of signatory:**	Gary Johnston
Position held:	Research Scientist, National Geospatial Reference Systems	**Position held:**	Project Leader, National Geospatial Reference Systems

Being a person, or a person representing a body, appointed as a verifying authority under Regulations 71 and 73 of the National Measurement Regulations 1999 in accordance with the National Measurement Act 1960, I hereby certify that the above standard is verified as a reference standard of measurement in accordance with the Regulations, by the above-named authority