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 and the National Measurement Act 1960

Name of Verifying Authority:

Name: Geodesy Section
Organisation: Geoscience Australia
Address: Corner Jerrabomberra Ave and Hindmarsh Drive, Symonston ACT 2609 Australia
Telephone: (02) 6249 9111
Email: geodesy@ga.gov.au

Client detail:

Name: Ryan Ruddick
Organisation: Geodesy Section, Geoscience Australia
Address: Symonston ACT 2609 Australia
Telephone: (02) 6249 9426
Email: Ryan.Ruddick@ga.gov.au
Date of request: 24 October 2017

Description and denomination of standard of measurement:

The measurement was undertaken using an antenna `TRM59800.00 NONE` (International GNSS Service antenna naming convention) with the serial number 5220354497 and refers to a point located 0.0000 m below the antenna reference point. This antenna is attached to a stainless steel plate on concrete pillar via a spigot thread. The station (4 character ID: MTEM) is located at Mount Emuin in Victoria. The certificate was determined using data from 03 September 2017 to 09 September 2017 inclusive. Analysis was undertaken following the procedures detailed in Geoscience Australia's GPS Analysis Manual for the Verification of Position issue 2.1. The reference number of this certificate is MTEM11122017.

Permanent distinguishing marks:

Exempt under Regulation 16 (4)

Date of verification: 11 December 2017

Date of expiry of certificate: 11 December 2022

NATA Accredited for compliance with ISO/IEC 17025. Accreditation No. 15002.

Value of standard of measurement:

Station (4 character ID): MTEM

South Latitude and its uncertainty of value:

37° 35' 15.41747" ± 0.00029" (0.009 m)

East Longitude and its uncertainty of value:

143° 26' 56.06782" ± 0.00026" (0.008 m)

Elevation above Ellipsoid and its uncertainty of value:

517.967 ± 0.023 m

Geocentric Datum of Australia (GDA2020) coordinates referred to the GRS80 ellipsoid being in the ITRF2014 reference frame at the epoch 2020. 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. GDA2020); and Uncertainty due to instability of the GPS antenna mounting and modelling of the antenna phase centre variations.

Signature: 

11 December 2017

Dr John Dawson
NATA approved signatory

Section Leader
Geodesy and Seismic Monitoring Branch
Geoscience Australia

Signature: 

11 December 2017

Mr Gary Johnston
Geoscience Australia approved signatory

Branch Head
Geodesy and Seismic Monitoring Branch
Geoscience Australia

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.