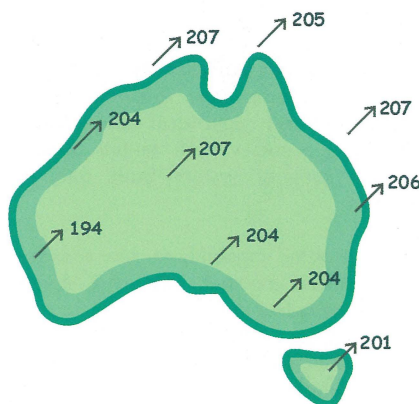


## GDA94 Is Just Days Away

After almost six years of planning the official date for changeover to the Geocentric Datum of Australia 1994 (GDA94) is just days away. Scheduled for 4th December 2000, the GDA94 is being introduced as a result of the recommendation by the Inter-governmental Committee on Surveying and Mapping (ICSM) to adopt a new mapping datum for Australia. The new Australian co-ordinate system will replace the Australian Geodetic Datum 1984 (AGD84) as part of a global co-ordinate reference frame and is directly compatible with the Global Positioning System (GPS).



For the same point on the ground, the GDA coordinates "move" approximately 200 m to the north-east of the equivalent AGD coordinates.

As an island continent, Australia developed a mapping and geodetic co-ordinate system in the 1960's, best suited to the measuring technology of the day, that was centred on Australia and ignored the rest of the world. The Australian Geodetic Datum had two versions, 1966 and 1984 (AGD66 & AGD84) based on different geodetic adjustments. Unfortunately, some states in Australia chose not to adopt the newer AGD84 datum, resulting in fragmented and incompatible coordinate systems between states and nothing in common with the rest of the world.

The shift to GDA will unify all the different mapping datum across Australia into one homogenous datum, and provide a single, consistent reference frame. The new GDA94 co-ordinates will be immediately compatible with co-ordinates adopted in many parts of the world, and positions obtained from GPS. GDA94 overcomes the artificial barriers placed by regional co-ordinate systems and will provide improved opportunities to operate in an international community. The problems experienced in South East Asia, and especially Indonesia, of a multiplicity of datums and confusion between coordinate systems will continue to exist until they also adopt a global geocentric datum.

With the introduction of GDA94 two separate events will occur. The reference ellipsoid will change from the local Australian National Spheroid (ANS) (Australian Centred) with its origin at the Johnston Geodetic Station, to the world geocentric Geodetic Reference System 1980 (GRS80) ellipsoid, with its origin at the centre of the Earth's mass. Also, the Australian Geodetic Network will be upgraded with new, more accurate measurements and the whole network readjusted. This has included the establishment of the Australian Fiducial Network (AFN), connected to the rest of the world by accurate GPS observations and an Australian National Network (ANN).

Responsibility for overseeing the smooth introduction of GDA into Western Australia

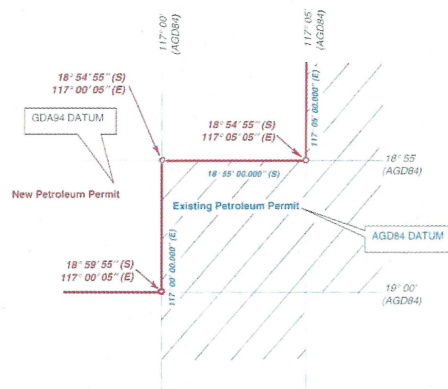
lies with the Western Australian Land Information System (WALIS) Council, with responsibility for dealing with technical issues passed on to the Department of Land Administration (DOLA).

Free software is now available for download from DOLA's website to assist in the changeover to GDA94. The WA Gridfile will accurately transform geographical coordinates from AGD84 to GDA94. Also available is the GDAit NEW Version that can be used to transform coordinates from the current ADG66/84 to the new GDA94.

GDA functionality is now available for TENGGRAPH Enquiry (on all public counters) and TENGGRAPH On-Line for remote users. The functionality in TENGGRAPH includes the ability to view dual grids (AGD grid or the GDA grid or both), the generation of standard prints with either or both grids, and a GDA conversion calculator to convert geographicals or coordinates from AGD to GDA or vice versa.

The change to GDA94 will impact heavily on the oil and gas industry, but the new system has gained widespread acceptance, with many companies changing over in early to mid 2000, well ahead of the 4th December cut off date.

Alex Taylor, Manager of Geomatics, Woodside, commented, "Woodside recognised the need to commence the migration process at the earliest opportunity subject to the proposed new legislation and related regulations. The Geomatics department prepared a GDA Strategy and Implementation plan in September 1989 based on the WALIS guidelines and the migration to GDA commenced early in 1999."



Petroleum permit boundary.

The basic principles for GDA implementation and its effect on Mining and Petroleum tenements have been identified by the DME as follows:

- The boundaries of all existing Mining Leases/Licences that are physically defined on the ground by survey or by applicants pegging will retain their existing positions under GDA. (Their ground position does not alter.) However, the coordinate values of these positions will be altered by approximately 200 metres.
- Existing Graticular based Mining Exploration Licences or Petroleum Permits defined by blocks will retain their existing ground position under GDA.

Graticular Mining Exploration Licences lodged on or after 4th December 2000 will be required to comply with the new GDA Grid, with new GDA co-ordinates. The boundaries of applications for Graticular Exploration Licences existing on 4th December 2000 will be granted under AGD84 infrastructure. Gaps created where GDA Exploration Licence applications about existing AGD grid licences can be applied for as Prospecting Licences or Mining Leases by any party, however normal procedures apply including Native Title. These 'gaps' can be 'applied for' by description and on ground marking will not be required. Overlaps will be created where GDA Licences about existing AGD Licences. On the relinquishment of the AGD Licence the 'overlap' ground will be incorporated into the new GDA licence if it is still in force.

Petroleum Permit applications lodged on or after 4th December 2000 will continue to

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utilise the AGD grid but it will be described in GDA co-ordinates. Petroleum Permits will not be affected by gaps or overlaps as a result of GDA implementation.

As there is substantial legislation regarding the AGD the organisations responsible for the legislation will have the responsibility of

dealing with the change to GDA94 in the manner considered most suitable for their situation. Some of the affected State Acts include the Mining Act 1978, Petroleum Act 1967 and the Petroleum (Submerged Land) Act 1982.

The move to GDA will extensively impact on the Geological Survey Division (GSD). GSD have a wide range of products affected,

including manuscripts, GIS datasets and remote sensing data.

"The migration to GDA94 will be painless for those companies that have prepared themselves," said Taylor. "The major issue is ensuring that your corporate database is in a consistent framework and that this can be correctly related to the requirements of the proposed new legislation."