

Six things that you need to know about geoscience information and delivery in 2016–17

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There are six areas where changes and improvements in the delivery of information to industry have been made in 2016 and early 2017:

1. A century of mineral exploration reports online
2. New exploration drilling and geochemical data
3. Updates to online systems
4. Australian Geoscience Information Network (AusGIN)
5. nt.gov.au and Department of Primary Industry and Resources (DPIR) websites
6. New Northern Territory Geological Survey products.

February 2017 saw the culmination of a major information delivery project with the upload of the remaining legacy mineral exploration reports to GEMIS (the Geoscience, Exploration and Mining Information System). Although the bulk of the reports in MEX, the Mineral Exploration Reports collection, are from the 1970s onward, all open file reports and data going back to 1901 can now be downloaded. Each MEX record has at least one report or data file to download, and the total collection currently consists of nearly 23 000 reports.

Incoming geochemistry and drilling data is now undergoing tighter validation and loading into the Geobank database. At the same time, a project to capture all the submitted data from current mineral titles from the time of grant is well underway. While much of this data is currently closed file, once the project is completed the data will be released when the relevant reports are made open file, thereby ensuring continuous growth of the open file database. Planning for capture of legacy data on expired titles in specific areas is also in progress.

During 2016, changes were made to the layer configuration of STRIKE and several new layers were added. To provide easier navigation, the layer menu was reconfigured to bring several geoscientific layers to the first level of the menu and some layers were renamed and moved to another category. Aerial photography imagery was added and the Aster imagery layers were restored. The spatial indices to the industry reports are in the progress of being renamed and moved into a new category on the STRIKE menu.

The development of two new collections for GEMIS is in progress. The Core Sampling Reports and PEX Geophysics (Petroleum Exploration geophysical reports) collections will be significant additions to the GEMIS platform.

Hyperspectral data and imagery generated by the HyLogger™ are available for download through the National Virtual Core Library (NVCL). The technology supporting the NVCL now forms the platform for the redeveloped national Geoscience Portal which is part of the Australian Geoscience Information Network or AusGIN website (**Figure 1**). AusGIN and the Portal are a collaborative effort

of the Australian geological surveys to provide access to data and publications from multiple Commonwealth, State and Territory government agencies, including the NVCL, as well as access to geoscience standards and the Australia Minerals website for investment information.

Another major change affecting access and delivery of information was the launch of the nt.gov.au website and associated department sites. The NT Government now has a single website, nt.gov.au, as the main source of information on all government services with some specialist content and corporate information still available on department sites. All content on the new websites is organised by function and topic, and the websites are compatible with mobile devices. Information on NTGS projects is found on the department site and regulatory information on nt.gov.au.

New or updated Northern Territory Geological Survey (NTGS) products released since March 2016 include seven new records, four NT wide maps, five Digital Information Packages, six new GIS datasets and one gravity survey. Two GIS datasets were also re-released with a major revision.

1. A century of mineral exploration reports online

Since late 1998, several major projects have been undertaken with the aim of making all mineral exploration reports easily accessible in digital form. Initially the legacy reports were scanned and made available in multi-page TIFF format. These files were large and somewhat awkward to read. As the Portable Document Format (PDF) developed and the format became open, scanning direct to PDF was instituted from late 2007. From 2000, submission of statutory reports and data in digital formats was encouraged and although initially some reports were only partially in digital form, by 2008 it became rare to receive reports in hard copy, reducing the need to scan reports. However, while most reports were submitted in PDF, associated data formats varied. Digital reporting became mandatory with the introduction of the *Mineral Titles Act* in 2011; all reports and associated data must now comply with the reporting guidelines with regard to format and content.

Between 1999 and early 2014, clients could access reports by searching the metadata records in the online MEX database and then request copies of digital reports to be sent via CD, DVD, email or FTP. This process changed in March 2014 with the launch of GEMIS, the Geoscience, Exploration and Mining Information System. MEX was the first collection available on the new platform; at the GEMIS launch, MEX contained 18 093 report records of which 8897 from 1995 to 2014 contained downloadable report and data files. A project to prepare and upload all the remaining open file reports was recently completed. As at February 2017, there are nearly 23 000 reports and over 35 000 files to download. The reports span the period 1901 to the present and their availability online signifies a major achievement in delivering geoscience information to our clients.

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The project aimed at releasing all closed file reports under the five year 'sunset clause' introduced in the *Mineral Titles Act* (MTA) continues: In the last 12 months, reports from 2002 to 2005 have been open filed and added to GEMIS.

2. New drilling and geochemistry data

Drilling and geochemistry data is now being captured from all current titles and added to the database in Geobank. Loading the new incoming company data into the database requires that the data conforms to the Mineral Reporting Template to ensure more rigorous validation on submission. A project to capture data from all the previously submitted reports on all current titles commenced in October; all reports from the date of grant of each of the current titles are being reviewed and all relevant data captured. Older reports are in hard copy and data capture is consequently slow and more complex. As at February 2017, 1736 titles from a total of 2205 have had all suitable data captured; 3295 reports out of a total of 5037 have been processed (although not all reports have relevant data). Once the project is completed, the data will be released when the corresponding reports are made open file. This means new data is going to be released on a regular basis.

3. Updates to online systems

Reconfiguration of the layer menu and the addition of aerial photography with a transparency slider were the main functional changes to STRIKE in 2016. The hierarchical menu structure has been flattened and geoscientific categories such as geology, geochemistry and drilling, and the Reference category from the Titles Registry, were brought up to the first level of the menu. Together with the renaming and moving of some layers to new categories, these changes provide better navigation and identification of layers.

The higher resolution of the aerial photography makes orientation and location of boundaries and features easier.

The Petroleum Wells layer now includes a link to the well reports in the PEX Wells collection on GEMIS. Changes to the Historical Titles layers are in development and are due to be available shortly. The layers enable searching of open file company reports and are to be renamed and moved from the Titles Register into a new category at the top level of the menu.

Two new GEMIS collections are in development. The Core Sampling Reports (CSR) and Petroleum Exploration geophysical reports (PEX Geophysics) collections are due to be made available on GEMIS by April. The CSR collection is an index to open file reports provided by NTGS staff and clients on sampling and analysis of core held in the NTGS core libraries; all CSR reports and data will be downloadable. PEX Geophysics provides metadata records and attached reports and data for seismic and other geophysical surveys on petroleum tenure. These often have large amounts of data; as with the MEX collection, files over 1GB in size will be available by request. The availability of both collections on GEMIS will significantly enhance discovery and access to NT geoscience information.

4. AusGIN: Australian Geoscience Information Network

The Australian Geoscience Information Network (AusGIN) was officially launched in Adelaide at the Australian Earth Sciences Conference in June 2016. AusGIN is a collaborative effort of the Australian geological surveys through the Government Geoscience Information Committee (GGIC) and the Geoscience Working Group of the COAG Energy Council using the technology developed under AuScope.

AusGIN provides access to:

- geoscience maps and data including the NVCL
- the national Geophysical Archive Data Delivery System (GADDS) to download geophysical data
- the Australia Minerals website to find information for investors and mineral explorers including exploration reporting guidelines, investment opportunities and events
- geoscience data standards.

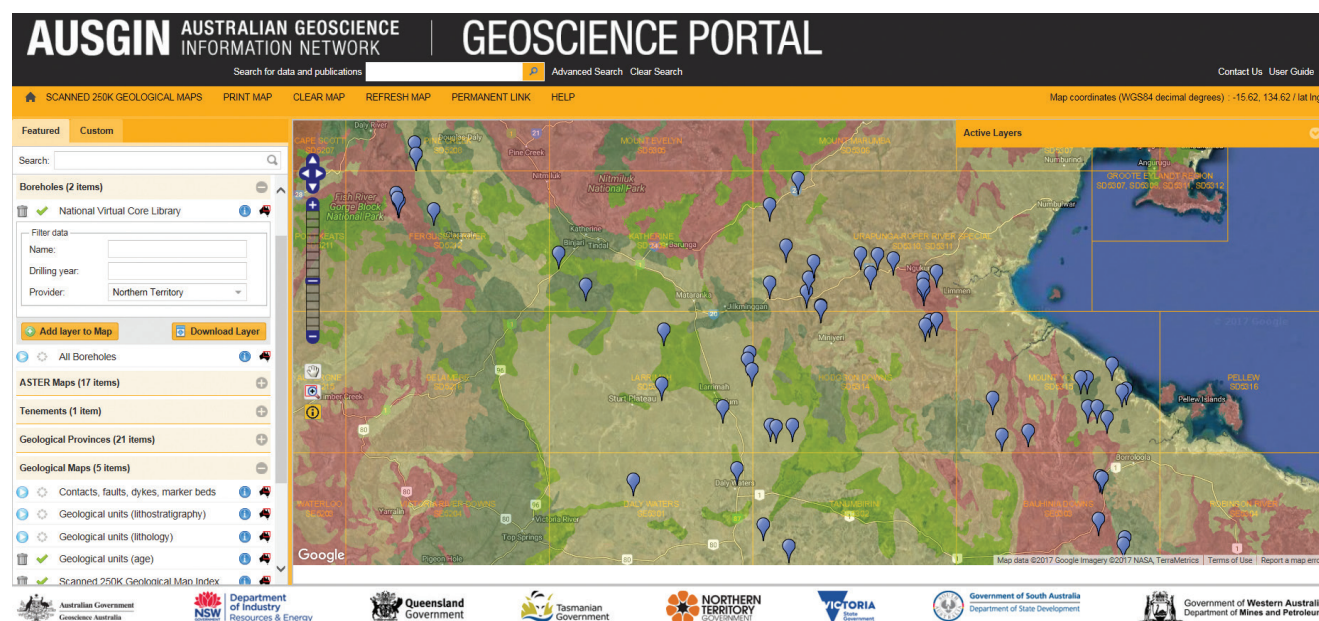


Figure 1. Australian Geoscience Information Network (AusGIN) portal (<http://portal.geoscience.gov.au/gmap.html>).

The Geoscience Portal is a web mapping application that enables you to:

- discover data and publications from multiple Commonwealth, State and Territory government agencies
- view, query, and analyse maps and data
- discover web services to use in your own mapping applications
- download data in standard formats from web services.

Some of the Portal's featured datasets include:

- boreholes, including the NVCL
- mines and mineral occurrences
- current mineral tenements
- national and 1:250 000 scale geological maps
- national scale geophysical grids and petrophysical data
- ASTER mineral maps

The primary access for the NVCL should be through AusGIN rather than the AuScope Portal, which now acts as the demonstrator environment for the NVCL.

5. nt.gov.au and DPIR websites

In 2015, it was mandated that all information on NT government services is to be available from a single website organised by subject so users do not need to understand how government is structured to find what they need. The nt.gov.au website launched in April 2016 and is compatible with mobile devices, conforms to web accessibility guidelines for the visually impaired and uses plain English and minimal images. The emphasis for discovery is on searching but you can navigate the hierarchical structure and use the 'breadcrumbs' showing the path at the top of each page. The various department websites contain corporate and specialist material but have the same look and feel as the main website.

During 2016, the majority of the information on the old Department of Mines and Energy website was rewritten and restructured in preparation for the launch of a new section of the nt.gov.au website covering the minerals and petroleum industries. Only corporate and specialist information was to stay on the department website. Furthermore, all documents accessed via the websites had to be converted into a new generalised NT Government template.

All content on the new websites is written in a standardised plain English style for the 'person in the street' and is organised by function and topic. This presents some challenges for the minerals and energy units within the department as our clients include large

companies and are often located interstate or overseas. We acknowledge that there are issues for our clients in finding the necessary content on our new websites but we encourage and welcome any feedback so we can improve your experience. However, updates to the websites are overseen and managed by a central unit within the NT Government to ensure adherence to the style guide; as a consequence, changes cannot always be made as fast as we may wish.

In summary, you need to access the Mining and Petroleum sub-category of the Business and Industry section of nt.gov.au (nt.gov.au/industry/mining-and-petroleum) if you are looking for the following information:

- mineral, petroleum and geothermal regulatory information
- guides, forms and templates for land access, titles, mining authorisations, mine management plans, petroleum operational approvals and reporting requirements
- contacts including emergency contacts
- basic information on the geological regions and commodities of the Northern Territory
- resources for accessing geoscience information.

If you are looking for information on NTGS projects, AGES, the Legacy Mines Unit, mining and petroleum statistics, access to public environmental reports, mining notices, and petroleum acreage release information, you will find it on the Department of Primary Industry and Resources site (dpir.nt.gov.au/mining-and-energy).

6. New NTGS products

At AGES 2016, we released new editions of two NT wide maps, one new and five updated Digital Information Packages and the first volume of the new AGES Proceedings series. During the year, new GIS datasets were released for the Simpson Desert South, Simpson Desert North, Tanami, McDills and Wessell Islands and Truant Island 1:250 000 outcrop geology maps, and the Abner Range special 1:100 000 outcrop geology map. Other releases include fully revised GIS datasets for the Petermann Ranges and Mt Doreen 1:250 000 outcrop geology maps and a minor revision of the Barrow Creek 1:250 000 outcrop geology dataset. Data and images from the Delamere-Spirit Hills airborne magnetic and radiometric survey and the Daly Basin gravity survey, and updates to the magnetic and radiometric NT wide maps were also released in the last twelve months. In addition, seven new records, one revised and four new HyLogger Data Packages and several updates of *Shale resource data from the greater McArthur Basin* (DIP 014) have been published since late March 2016.