



Free AEM data over NSW, Australia

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SUMMARY

The Geological Survey of New South Wales (GSNSW) in the Department of Regional NSW, Mining Exploration & Geoscience, has an online application, called MinView, which allows users to view and download geoscientific data, including airborne electromagnetic (AEM) survey data and inversion sections. Much of the AEM data are from surveys acquired in collaboration with Geoscience Australia and other NSW state government departments. Other surveys were acquired by exploration companies. Exploration companies are required to submit geophysical data to the government. After 5 years the data can be made publicly available.

Data is free to download and its use is covered by CC-BY copyright, which gives the users the right to use, distribute, adapt, remix or build upon so long as attribution is given to the author. This abstract provides the reader with instructions on how to access AEM data on MinView.

Key words: AEM, airborne electromagnetic, MinView, NSW.

INTRODUCTION

MinView is a leading, world-class online application that is easy and free to use. It contains more than 500 layers of geoscience-related layers, including geophysical data and images. GSNSW is the custodian of 190 AEM surveys. Open-file AEM data can be accessed through MinView. There are:

- 16 government-acquired surveys (totalling 78 GB) that cover large areas with widely spaced lines, and
- 30 GB of open-file company AEM data, that cover smaller areas with closely spaced lines.

VIEW AEM SURVEY AREAS IN MINVIEW

Navigate to <https://minview.geoscience.nsw.gov.au/>. On the left-hand side of the screen is a blue 'Add layers' panel that has a white right-facing arrow. Click on the white arrow and a new panel will appear with a search bar at the top. Type 'aem' into the search bar and the list of layers will reduce to those that contain AEM data, such as 'Geophysical imagery' and 'Geophysical surveys'. On the 'Geophysical surveys' layer click on the down arrow. Survey data is separated into 'Company geophysics' and 'Government geophysics'. Click on the down arrow on either option to reveal 'Airborne electromagnetic' (Figure 1). Click on the square blue button

with a white plus sign to add the survey areas to MinView map (Figure 2).

DOWNLOAD AEM DATA FROM MINVIEW

Use the steps in the previous section to add AEM survey areas to the map view. Then click on an AEM survey area. A window with survey details will open (Figure 3). If the data is open-file there will be a blue link in the column named 'Data availability'.

Click on the link and a new window will open. The file size is displayed with a download link in blue text (Figure 4). Click on the blue text to start the download. Some of these files are very large so ensure you have a good internet connection before starting a download.

Generally, an AEM download includes a zip file that contains folders with standard names such as grids, images, located data, vectors and reports (these are logistics, acquisition and/or processing reports). The data in open-file exploration company surveys is as it was submitted to the government.

VIEW AEM SECTIONS IN MINVIEW 3D

Recently acquired government AEM surveys have geolocated AEM sections available for viewing in MinView when in 3D mode. 3D sections are called 'curtains' and are not available for download. To view curtains search for 'aem' in the 'Layers' panel and under the 'Geophysical imagery' drop down menu, add a set of AEM curtains to the map (Figure 5). The curtains are displayed above the ground as MinView does not support underground data. Each set of curtains is displayed with vertical exaggeration to best display the curtain, so each section can be seen with minimal overlap (Figure 6). Inversion methods and colour keys are unique to each survey. To view the colour-key move the mouse to the map layers panel, where the name of the survey curtains is displayed. Click on the arrow to the right of the text (it points to the right) to reveal a panel with metadata and the colour-key. The arrow changes direction after it has been clicked on. To remove the new panel from the view, click on the arrow that now points left.

Tip: to tilt the display press 'ctrl' and left mouse button and drag the mouse.

USEFUL LAYERS TO MINVIEW FOR AEM INTERPRETATION

There are over 500 layers available in MinView. Many are useful in AEM interpretation such as those for drill holes, waterbores, NSW Seamless Geology (Figure 7), mineral occurrences, other geophysical imagery, infrastructure layers, watercourses and soil maps.

CONCLUSIONS

The GSNSW has 108 GB of open-file AEM data that is freely available through MinView. MinView is a powerful application for NSW geoscience data, that allows you to view and download AEM data. A 3D function in MinView enables users

to view recent government-acquired AEM sections alongside 500 other layers.

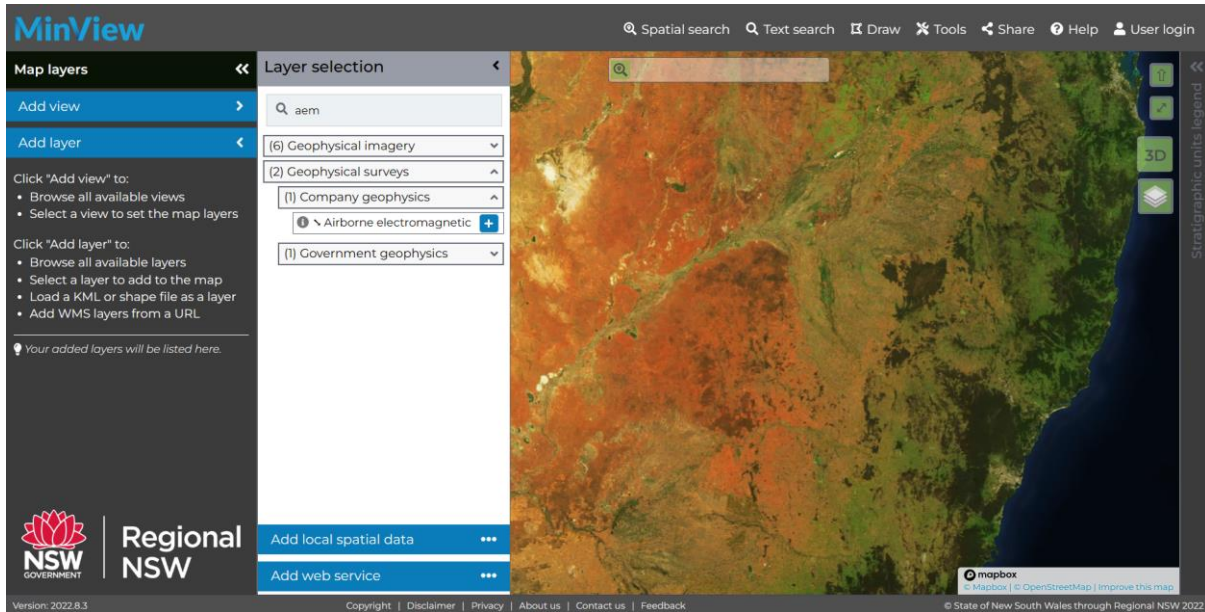


Figure 1 Screen capture of MinView showing AEM layer selection.

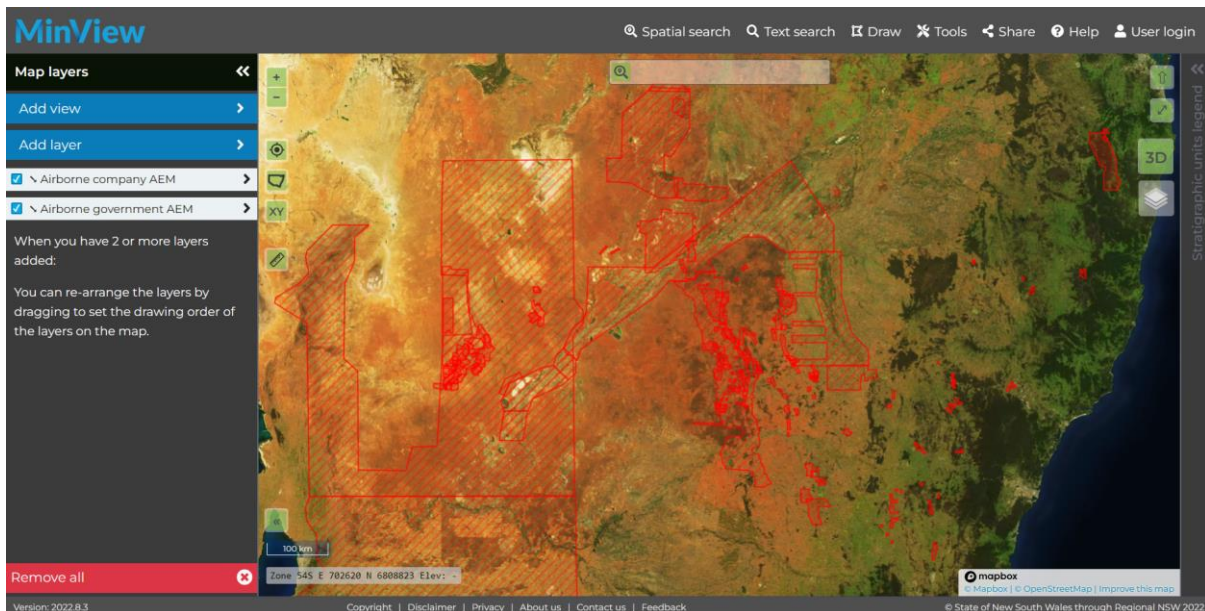


Figure 2 Screen capture showing company and government acquired AEM surveys.

Actions	survey_name	acquisition_year	air_svy_id	data_availability	download	line_spacing	sensor_height	line_direction
	Endeavor Project	Airborne Electro	2013	AIR0124	-	400.0	63	90.0
	CSA Mine	Airborne Electro	2001	AIR0354	-	100.0	30	90.0
	Mt Drysdale	Airborne Electro	1997	AIR0425	AIR0425	200.0	62	90.0
	Boona Gindoono	Airborne Electro	2010	AIR0240	AIR0240	200.0	62	90.0
	Wilgaroon	Airborne Electro	2014	AIR0114	AIR0114	200.0	48	90.0
	Furneys	Airborne Electro	2014	AIR0110	AIR0110	200.0	48	90.0

Figure 3 MinView window showing available AEM surveys and their details.

Download geophysical survey data

Survey Boona Gindoono Block 13

Survey no. AIR0240

Survey year 2010

Acquired for Oz Minerals Ltd

File name	Description	Size
AIR_2010_Boona_Gindoono_Block13_AEM_Mag_0240.zip	Survey data	172.45 MiB

Close

Figure 4 Download window with download link in blue text.

Figure 5 AEM survey curtains, in 2D mode.

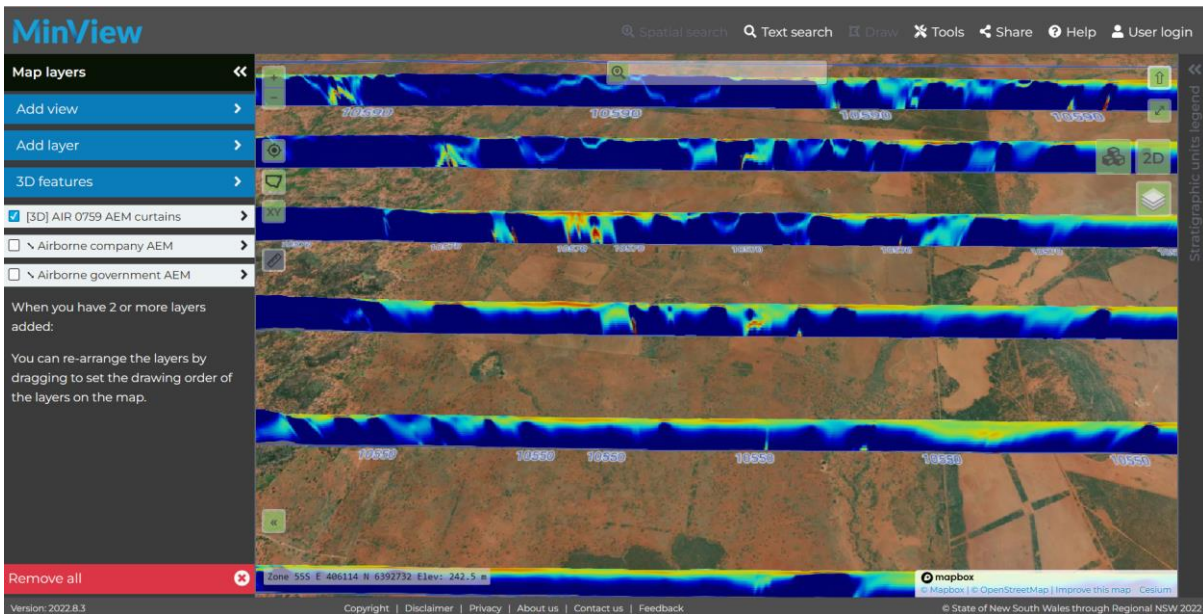


Figure 6 AEM curtains in MinView 3D, zoomed in to an area with a pipeline, with the view tilted.

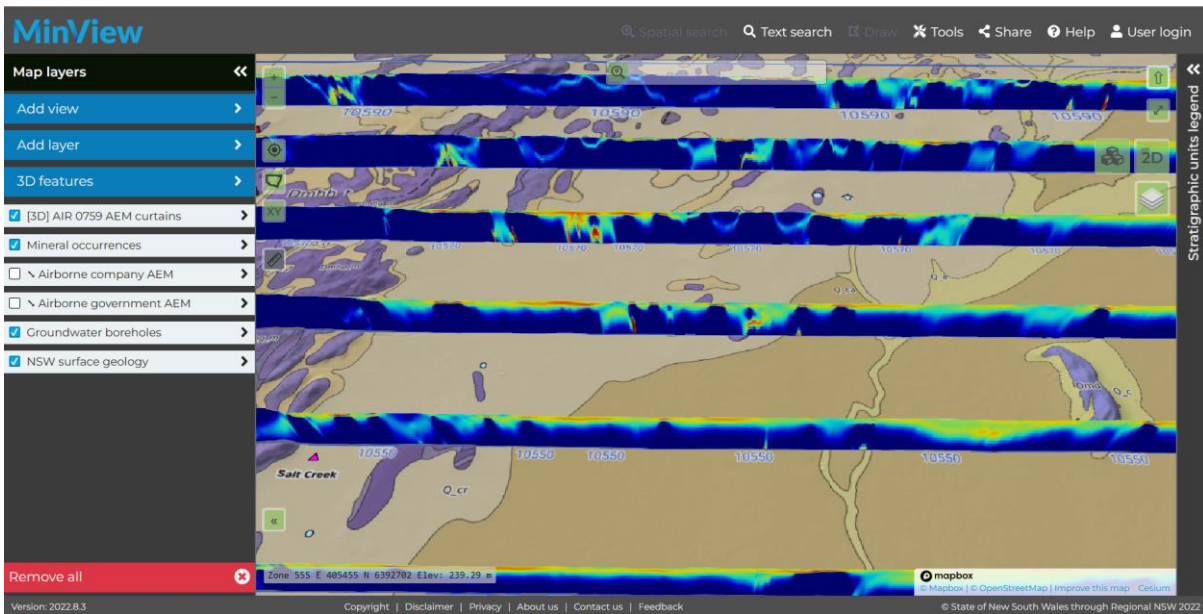


Figure 7 AEM curtains with NSW Seamless Geology.