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AUSTRALIS EXPLORATION PTY LTD

Northern Territory Tenements: Geophysical Data Compilation, Processing and Target Generation.

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Resource Potentials were engaged by Australis Exploration Pty Ltd to carry out geophysical data compilation, processing and target generation for rock phosphate, uranium and base metal mineralisation over their Northern Territory tenements from available government and company open file geophysical datasets. The project covers approximately 25,000sqkm and consists of 15 tenements of which 14 are granted, located in the north east of the Northern Territory, close to the Queensland border.

The tenements cover the central northern region of the Georgina Basin which contains all of the large known phosphate deposits in the north east Northern Territory including Wonarah, Arrawurra, and Highland Plains. The tenements are underlain by Proterozoic sedimentary and volcanic rocks which may also be prospective for base metals and IOCG mineralisation, in addition to phosphate.

The geophysical data coverage is very good over the area with regional to semi-regional government aeromagnetics, radiometrics, gravity, landsat and aster datasets available. The geophysical datasets were compiled, processed and reviewed to determine if a characteristic signature could be detected from known mineralisation, which could then be used as a targeting tool over the tenements. It was found that with the exception of Highland Plains which has a discrete radiometric signature, no other major phosphate occurrences within the central northern region of the Georgina Basin appear to be directly associated a radiometric response. However there are elevated uranium responses within the vicinity (1km) of Alroy.

The tenements have been grouped into 3 sub-projects (North, Central, South) based on their location for the purposes of this exercise.

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The Central project is considered highly prospective for shallow phosphate mineralisation within the western tenements EL26310, EL26702 and EL26309. Wonarah Formation is likely present in the other tenements but at depths not currently considered economic as highlighted in drill hole NTGS01/1. There is some potential for base metals as Phosphate Australia mentioned in their prospectus that Minoil Services Pty Ltd 3m intersected a 3m band of “dark shale” that returned Cu-1500ppm, Pb-8000ppm and Zn-8000ppm and 17% Mn within the Alroy area. As such review of previous explorer’s reports should be undertaken to confirm the potential for SEDEX and manganese mineralisation within the project.

There remains small potential for uranium mineralisation, within the Austral Downs Limestone or palaeochannels, which could be quickly verified through field checking of stronger uranium responses with a spectrometer to determine the grade and extent of mineralisation.

The project tenement is not considered prospective for phosphate mineralisation due to the perceived depth to the phosphatic host sediments indicated by the mapped geology and geophysical responses, which indicate considerable thickness of younger, overlying sediments cover the area.

Target areas have been defined for each project area along with recommendations for follow up work.

It is believed that the compilation, purchase and processing of geophysical datasets has been successful in providing new information and imagery that has been used to generate target areas prospective for rock phosphate, base metals and uranium.

This report presents a summary of the data compilation, processing and target selection over Australis Exploration Pty Ltd, Northern Territory Projects.

2 SCOPE OF STUDY

The scope of the work undertaken for this project incorporated:

- Compilation of the available government geophysical survey data over the project area;
- Windowing, merging and processing of the geophysical and satellite data to highlight mineralogy, geology and controlling structures;
- Generation of a suite of imagery to assist in the delineation of target areas for Phosphate, Uranium and Base Metal mineralisation;
- Compile target areas for above commodities within the tenement areas;
- Provide the processed imagery and targets in suitable digital format for incorporation by Australis Exploration Pty Ltd into their GIS software package for interrogation and statutory reporting requirements.

3 PROJECT AREA

3.1 Location

The project area is located in the north east of the Northern Territory near the Queensland border and covers the central region of the Georgina Basin, figure 1. The project area consists of 15 tenements which cover an approximate area of 25,000 sqkm.

As the project covers a vast area the physiography varies greatly. However, it generally consists of open, grassy, clay rich soil plains, which are flat to gently undulating and are within the range of 200m-240m in elevation. To the south the area is dominated by undulating peneplain/sandplain with dunal systems developed. In the north and north east there are more prominent ridges and deeply incised plateaus where more resistant sandstone lithologies are abundant. tropical savannah grasslands, black soil plains and relatively flat alluvial plains. Some areas have more undulating terrain with low rocky outcrops and hills in others. The annual average rainfall is about 250-350mm, but can vary greatly from year to year, depending on the magnitude of the tropical influence. Stream and drainage channels are typically incised up to 1-2m into the alluvial plains.

3.2 Geology

Geology within the project area has been derived from the published 1:250,000 map sheets, figure 2. A full description of the geology is not provided here, however the project area has good outcrop towards the margins of the Georgina Basin in the north east where it abuts the South Nicholson Basin.

Elsewhere outcrop is variable and large portions of the project area are covered by recent tertiary alluvium and colluvium.

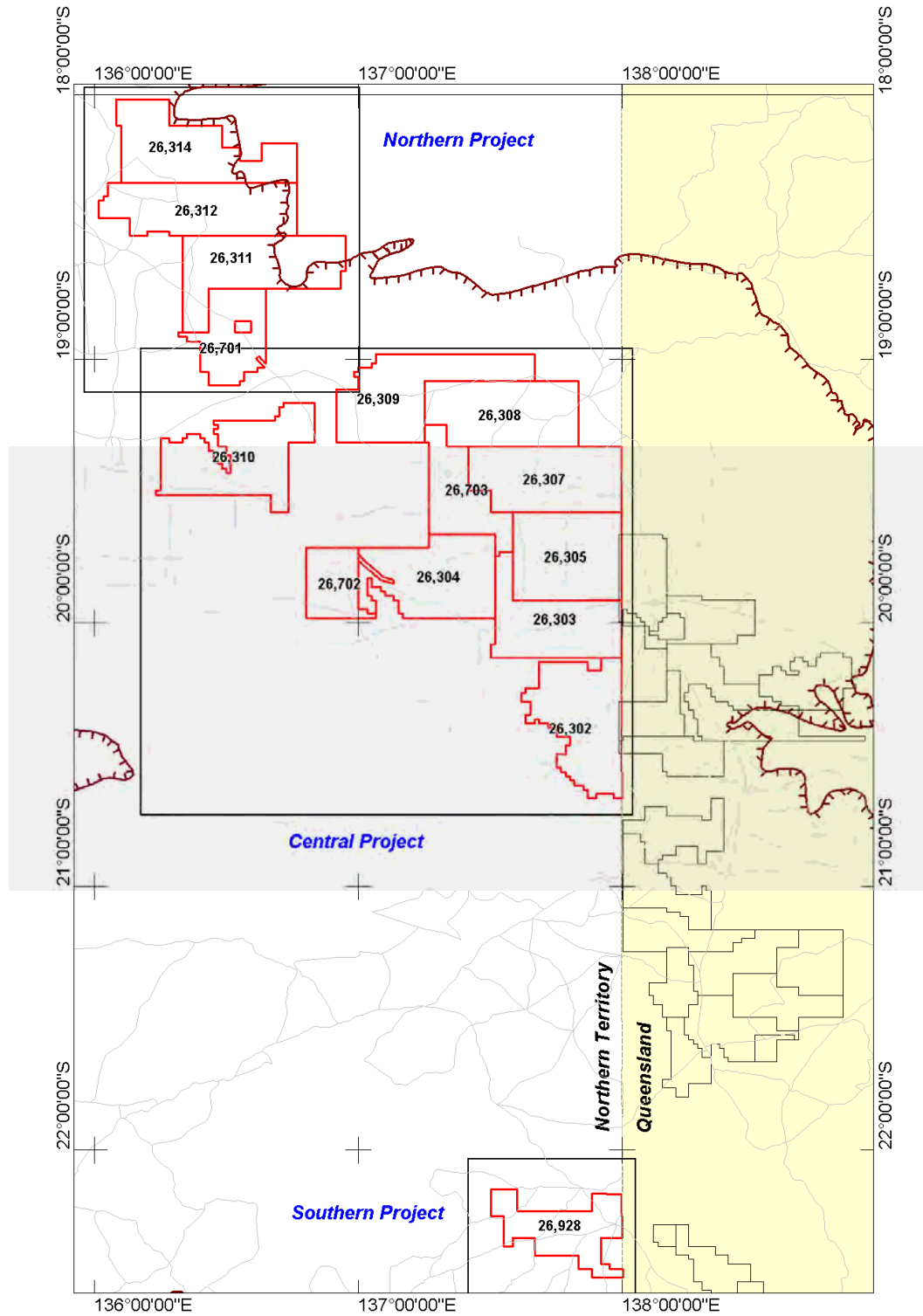


Figure 1: Project Location map. Australis NT Tenement outlines in red, Queensland Tenements in black. Outline of Georgina Basin = Dashed Brown line.

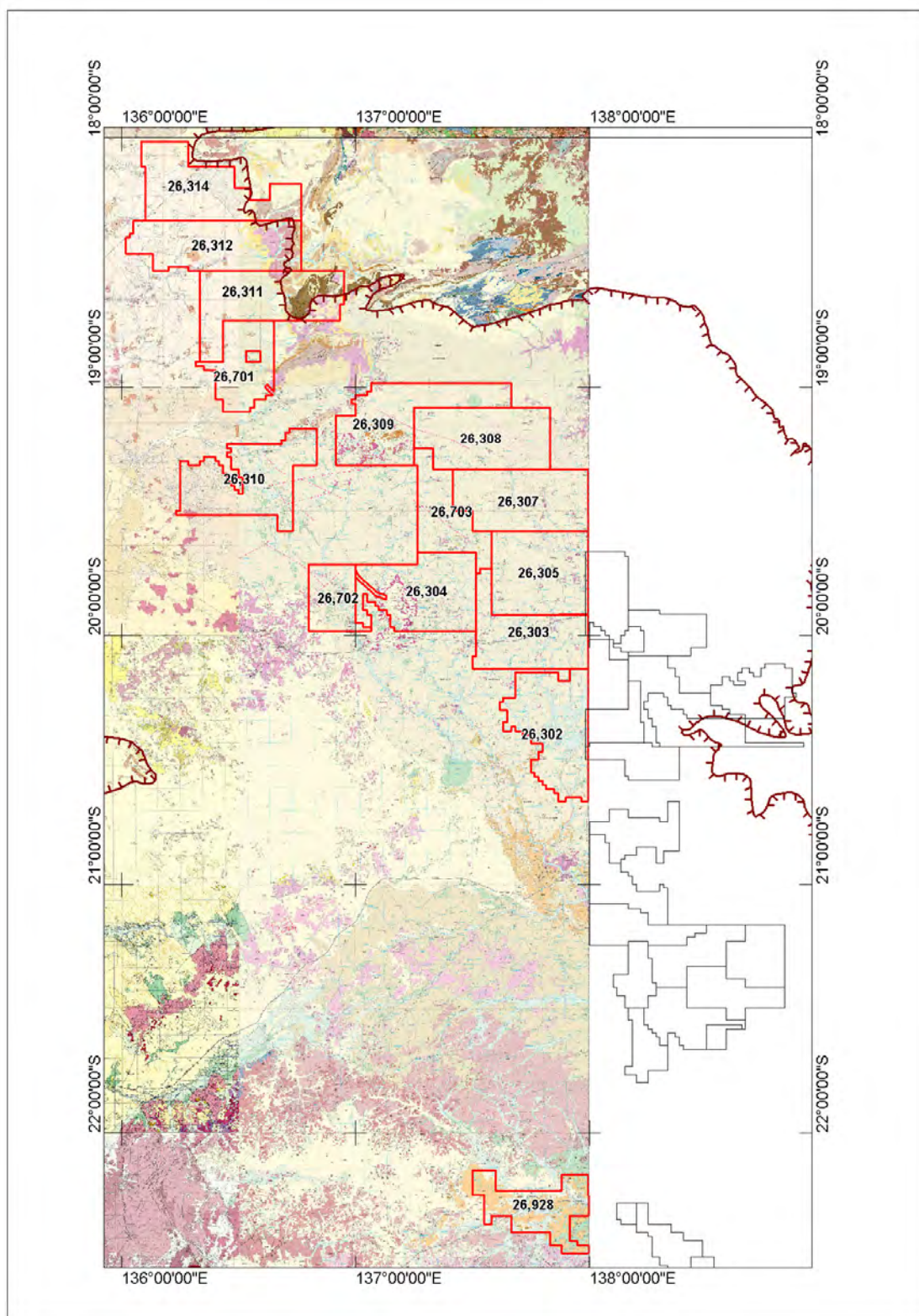


Figure 2: Project Geology map. Australis NT Tenement outlines in red, Queensland Tenements in black. Outline of Georgina Basin = Dashed Brown line.

4.1 Airborne Magnetic and Radiometric Data

The project area has been covered by good quality regional aeromagnetic surveys flown by Geoscience Australia (GA) and the Northern Territory Geological Survey (NTGS) generally with a 400m-500m line spacing. The aeromagnetic data was obtained from Geoscience Australia's Data Delivery System (GADDs) and the NTGS. The aeromagnetic survey coverage is shown as figure 3.

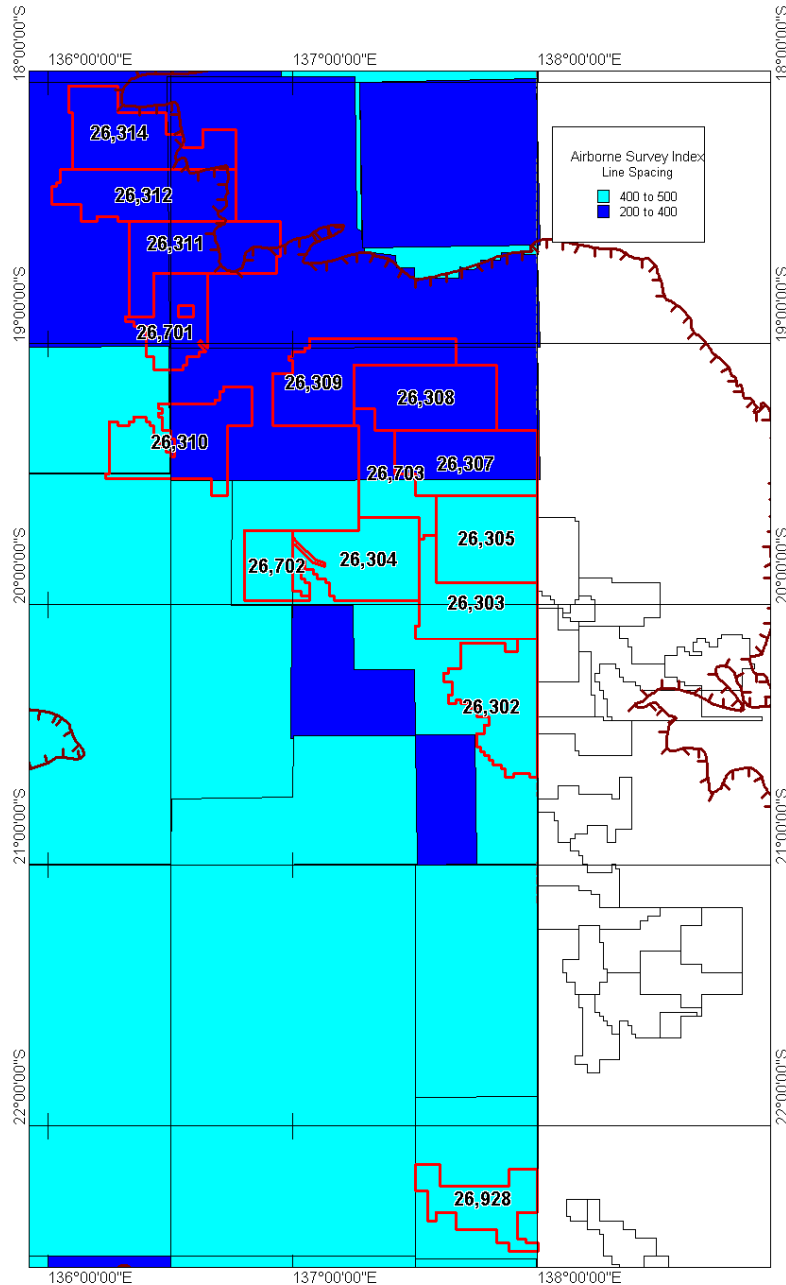


Figure 3: Aeromagnetic Survey Coverage Map.

4.2 Gravity Data

Gravity data consisted of regional surveys from GA and the NTGS. The data was collected on variable station spacings ranging from approximately 10km x 10km to 4km x 4km centres. The data was obtained from Geoscience Australia's Data Delivery System (GADDs) and supplied corrected to a bouguer density of 2.67g/cc.

Figure 4: Gravity Survey Coverage Map.

4.3 Satellite Data

Landsat 7 ETM+ data were obtained over the entire project area. The Landsat data was obtained from the NTGS and GA. The Landsat consisted of two images showing and aerial photo equivalent and a two composite false colour images. Aster data is available from the NTGS, however it does not provide full coverage. Due to the estimated time it would take to fully compile and process the available scenes over the project area, and considering that no discrete response was found attributable to phosphate mineralisation over the known Queensland occurrences examined within report RP-100315-1, the Aster data has not been used here.

Landsat 7 ETM+ is a thematic mapping instrument that records 7 bands of spectral radiation from visible to short wave infrared (SWIR) and thermal infrared (TIR). Spectral responses from different band can be processed to determine lithological and mineral assemblages and assist in geological mapping and area assessment. Landsat 7 ETM+ data resolution ranges from 15m for the panchromatic band to 90m for the SWIR band 7. Aster data measures the same spectral radiation as Landsat, but with higher discrimination achieved through recording over 14 spectral bands as shown in figure 5 below. Aster has a spatial resolution similar to Landsat with 15m for the VNIR out to 90m for the TIR.

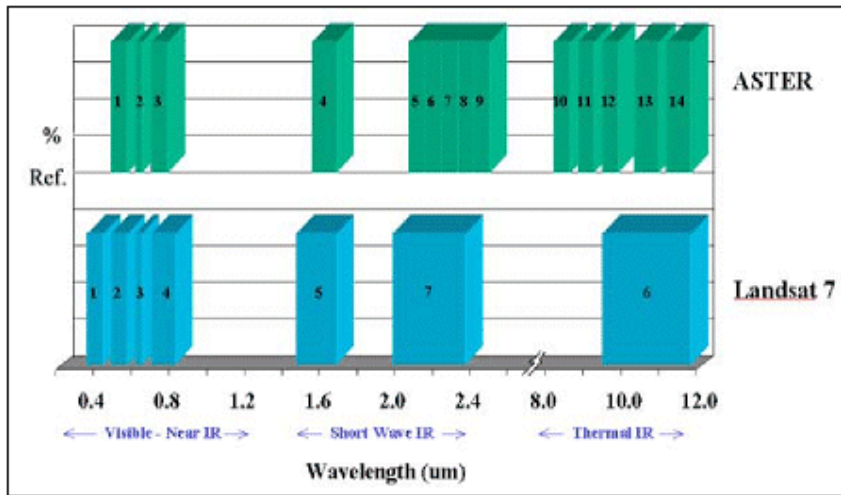


Figure 5: Spectral window comparison for Landsat and Aster.

Shuttle Radar Topography Mission (SRTM) data was obtained over the entire project area and surrounds. SRTM provides high resolution elevation data of the entire globe and is accurate to approximately 10m vertically and 90m horizontally.

5 DATA PROCESSING AND IMAGE GENERATION

5.1 Airborne Magnetic and Radiometric Data

All airborne magnetic and radiometric data were provided or obtained as levelled or finally corrected gridded datasets. The gridded datasets were re-merged at the optimal resolution to provide higher quality final image products. The merged datasets were processed to highlight and better define controlling structures, local lithological variations and anomalous features. Data processing of the magnetic data included calculation of the first vertical and second vertical derivatives, automatic gain control filtering, analytic signal and reduction to the pole and are explained further below;

The first vertical derivative (1VD) is theoretically the rate of change of the magnetic field with increasing height. In practice it has two desirable effects. Firstly it tends to sharpen and separate magnetic anomalies. Secondly it makes the mean background level of the data equal to zero. The second vertical derivative (2VD) is essentially completing the first vertical derivative on the data twice, and is the rate of change of the rate of change of the magnetic field with increasing height. It sharpens and separates anomalies even further and is also symmetric about zero.

Automatic gain control (AGC) was performed on the vertical derivatives in order to enhance magnetic features within the dataset. It is a process whereby magnetic anomalies or features within a dataset are all reduced to similar amplitudes. This is very useful for extracting fine detail from datasets that are otherwise dominated by one or two high amplitude features, as is sometimes the case where magnetite bodies are present.

Analytic signal (AS) processing converts negative portions of magnetic response to be positive, which can be helpful where remnant magnetization is present. Mathematically it is the square root of the sum of the square of each derivative of the magnetic field in its three principal directions (X,Y,Z).

Reduction to the pole (RTP) is the correcting of the magnetic field for the inclination of the earth's magnetising field in the survey area. It theoretically removes dipolar lows in strongly magnetic bodies and places the positive highs directly over the magnetic bodies. In practice it can result in artifacts, particularly if remanent magnetization is present, however it is recommended that it is always performed on all datasets as it assists in more accurately locating drill targets.

The radiometric data highlights signatures that can be related to surficial cover, regolith and outcrop. The merged radiometric grids were separated into individual radioelement Potassium (K), Thorium (Th) and Uranium (U). Apart from highlighting abundances of the specific radioelements, composites and ratios can delineate lithological variability and further refine anomalous responses. The best image for making geological assessment and interpretation is the Ternary Image which displays Potassium in Red, Thorium in green and Uranium in blue. High responses within individual radio-elements are displayed in their primary colour, and different concentrations of radio-elements are displayed as a combination of the primary colour.

Black or very dark areas occur where there is no radioactive response and can occur over silica rich rock or sands, or water bodies.

The subsequent processed magnetic and radiometric grid files were then imported into ERMMapper to generate final georeferenced imagery including sun shaded, grey scale, composite and ratioed imagery. In addition to the imagery, contours files of the magnetic and radiometric data were generated to refine the extents of responses and provide actual magnetic and radiometric values. A full list of the generated imagery and vector products have been included in the appendices.

5.2 Gravity Data

Gravity data was obtained as point located data and were imported into the Geosoft geophysical processing software to generate processed grids in geodetic coordinates with GDA94 datum. Data and

image processing of the gravity data included generation of derivatives and utilisation of various sun angle shading in order to highlight basement geology and regional controlling structures.

5.3 Satellite Data

Landsat 7 ETM+ data was obtained as colour balanced, ortho-corrected imagery consisting of a 741,742 and 321RGB ratio image. The 321 RGB represents visible light and provide an “aerial photo” type of image, and the 741 RGB shows Fe rich rocks in red, vegetation green, quartz rich rocks in blue.

The wavelengths measured by the Landsat 7 showing some of the absorption features (which can also be applied to Aster and HYMAP) are displayed in figure 10.

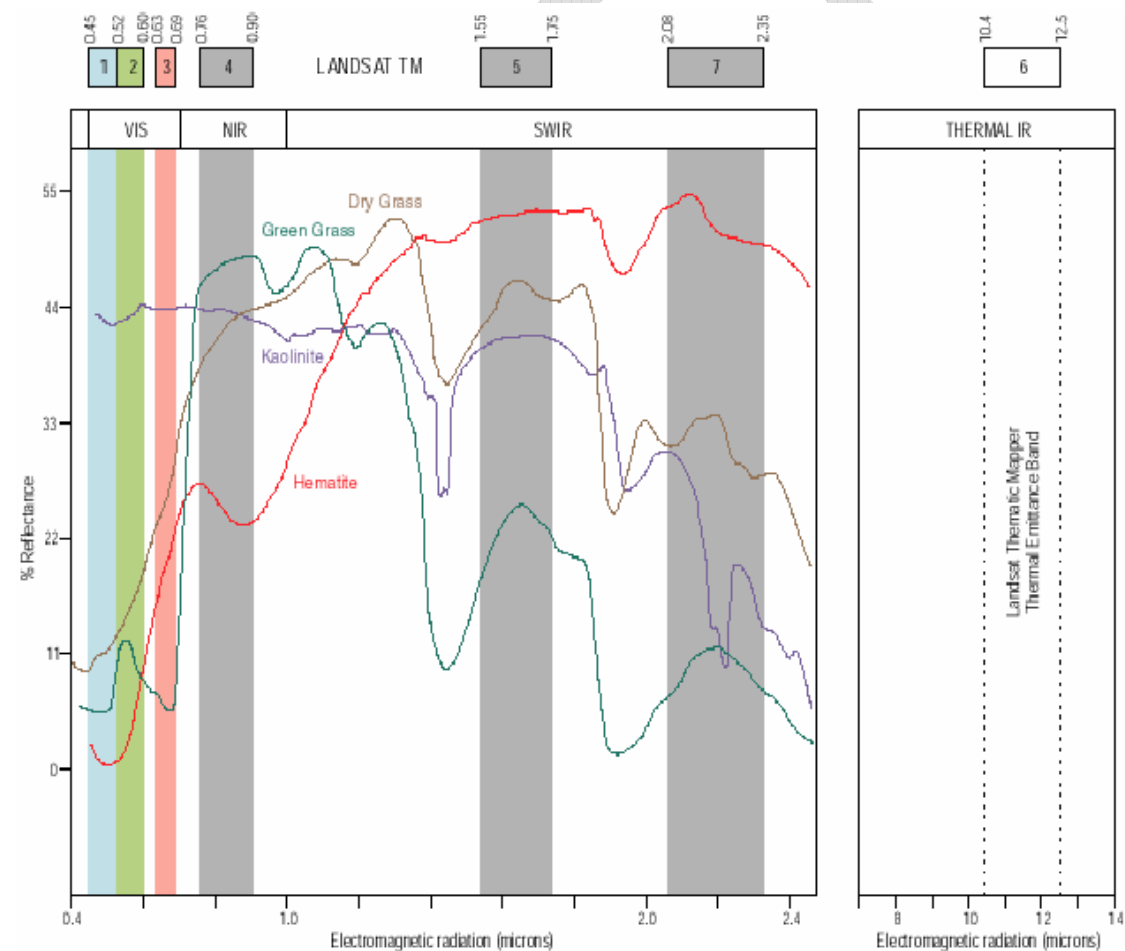


Figure 6: Landsat 7 ETM+ wavelength positions and spectra of selected surface materials (from Wilford and Creasey, 2002).

SRTM products including colour and sun shaded images were generated in ERMapper.

As part of this report a brief review of the geophysical responses from major phosphate, uranium and base metal deposits within the vicinity of the Project area was undertaken to determine if a characteristic response or signature could be detected that could then be applied to the Australis tenements.

The findings are summarized below:

Phosphate Deposits : (Wonarah, Arrawurra, Alroy, Buchanan Dam, Alexandria and Highland Plains)

Nearly all of the current Northern Territory sedimentary phosphate deposits are located distally from the margin of the Georgina Basin with the exception of the Highland Plains deposit, which like the major deposits in Queensland are located close to the Basin margin. All of the deposits are hosted within Middle Cambrian sediments. Highland Plains is locally hosted within the Water Hole Formation, and all the other Northern Territory sedimentary deposits are hosted within the Wonarah Formation, which is equivalent to the Beetle Creek Formation in Queensland.. A simplified stratigraphic sequence is provided in table 1. In contrast to the Queensland deposits and with the exception of Highland Plains, there is no strong surficial uranium response associated with any of the deposits. This finding was also highlighted in Khan et al 2007, where it was found during hand held logging that the high grade core from the Wonarah deposit induced only a marginal increase in the scintillometer count. There are also no direct magnetic or gravity signatures associated to the deposits, but they do indicate relative basement depths and both Alroy and Buchanan Dam are located close to magnetic and gravity features.

There does not appear to be a characteristic spectral response for phosphatic horizons in the Landsat imagery obtained, as it has likely been affected by recent processes including weathering, laterisation or erosion that may distort or mask the spectral response. However it is a useful surface mapping tool and appears to have greatly assisted in the NTGS regional mapping compilations.

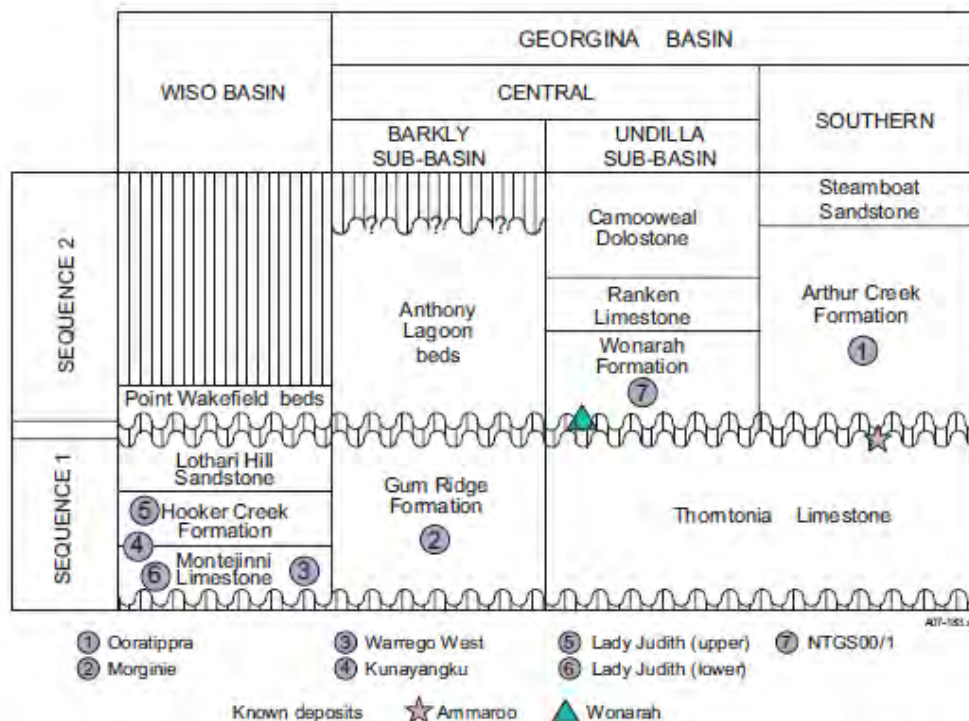


Figure 7: Schematic West to East stratigraphic transect across Wiso and Georgina Basins showing stratigraphic locations of phosphate occurrences. Extracted from NTGS Geological Survey Record 2007-003.

Uranium Deposits: (None)

There are no significant Uranium deposits or occurrences that have been discovered within the Georgina Basin in the Northern Territory. Elevated uranium responses can be attributed to enrichment from recent process and drainage systems. Below is a summary of the styles of Uranium deposits that may be located within the project area, however the prospectivity for discovery of a uranium mineral deposit is considered to be low.

The different styles are summarised in part below from Australia's uranium resources, geology and development of deposits by McKay, A.D., and Mieizitis, Y., 2001. Geophysical methods can provide a major role in detecting and delineating these styles of mineralisation.

Unconformity related deposits occur immediately below and above major unconformities that separate crystalline basement from overlying clastic sandstones of either Proterozoic or to a lesser extent Phanerozoic age. High grade deposits (1-14% U₃O₈) occur in clay altered and faulted sandstones immediately above the unconformity. Deposits immediately below the unconformity are usually medium to high grade deposits (0.3-1% U₃O₈), with mineralisation occurring in fault and

fracture zones of altered metasediments that often contain graphitic. Ranger and Kintyre are examples of unconformity deposits.

Sandstone uranium are usually contained in fluvial or marine margin sandstone. The host rocks are medium to coarse grained, poorly sorted and contain pyritic and organic matter. In this environment uranium is mobile under oxidising conditions and precipitates under reducing conditions. Sandstone uranium deposits can be subdivided into three main types: tabular, roll-front and tectonic-lithologic.

Tabular deposits consist of tabular or elongate lenticular zones of uranium mineralisation within selectively reduced sediments and are orientated parallel to groundwater flow.

Roll-Front deposits are crescent-shaped in cross section and mineralisation cross cuts bedding and extends from the overlying to the underlying impervious mudstone/siltstone layers. Mineralisation usually has a diffuse boundary with reduced sandstone on the down gradient side and sharp contacts with the oxidised sands on the up-gradient side.

Tectonic-Lithologic deposits occur along permeable fault zones which cut the sandstone-mudstone sequence. Mineralisation forms tongue shaped ore zones along the permeable sandstone layers adjacent to the fault, and may form vertically stacked mineralised zones.

Surficial uranium deposits are broadly defined as young (Tertiary to Recent) near surface uranium concentrations in sediment or soils. They usually have secondary cementing minerals including calcite, gypsum, dolomite, ferric oxide and halite. Uranium deposits in calcrete are the largest of the surficial deposits e.g. Yeelirrie and the main mineral is carnotite (hydrated potassium uranium vanadium oxide).

Base Metal Deposits: (MacArthur River, Mt Isa, Cannington, Century, Ernest Henry)

There are only a small number of known base metal occurrences within the Georgina Basin. In general these can be usually grouped into either Iron Oxide Copper Gold (IOCG) or Broken Hill Type (SEDEX) Lead-Zinc-Silver style deposits. Both styles of deposit generally display coincident magnetic and gravity anomalies and may have associated electromagnetic and electrical signatures. A number of papers exist on the geophysical signatures of some of the major deposits which go into further detail about the geophysical responses, and limitations. Of these the following are suggested for further reading (Anderson 1992 Osborne, Brescianini 1992 - Eloise, Fallon 1992 - Mt Isa, Webb 1995 - Ernest Henry, Christensen 2001- Cannington and Thomas 1992 - Century).

Phosphate Australia have noted in their prospectus that Minoil Services Pty Ltd explored for both phosphate and sedimentary base metal mineralisation in the Alroy area and noted that one hole

contained a 3m intersection of “dark shale” that returned Cu-1500ppm, Pb-8000ppm and Zn-8000ppm. This interval also contained 17%Mn and may suggest that the region could also be prospective for Mn mineralisation.

Other Occurrences

Clinton Style Oolitic Iron Ore

Iron Ore occurrences of the Clinton Oolitic Style are located within the South Nicholson Basin which abuts the Georgina Basin in the north east of the Northern Territory. They are Proterozoic to Cretaceous in age and formed in shallow marine environments and accumulated along passive continental margins during times of quiescence, extension and global sea level change (Ferenczi, 2001). Several ironstone beds up to 20m thick within the Mullera Formation containing hematite and goethite have been reported by Sweet 1984. The largest occurrence of this type is located in the Constance Ranges area in Queensland containing approximately 360Mt of 51% iron ore (Harms 1965). The occurrences are associated with narrow, strike extensive weak to moderate magnetic responses, and also have a discrete uranium signature.

Manganese

The major manganese occurrences and deposits of the Northern Territory have been summarized by Ferenczi NTGS Report 13, 2001. The main styles are sedimentary (Grooyte Eylandt), hydrothermal (Bootu Creek) and surficial. A number of manganese occurrences have been reported by the NTGS to be located within or close to the margins of the Georgina Basin e.g. Camp No 1 and Lucy Creek. In addition there may be further manganese mineralisation discovered through review of previous explorers open file reports as highlighted in the previous sections. Geophysics can be an important tool in detecting manganese mineralisation, with particular success shown by the application of both high resolution gravity, electrical methods and airborne electromagnetics. The airborne electromagnetic techniques has proven particularly successful at both the Bootu Creek and Grooyte Eylandt manganese deposits (OMH 2008 and Irvine 2001 respectively) in detecting mineralisation or the marker beds immediately adjacent to mineralisation.

7.2 Central Project

Tenements EL26302-26305, 26307-26310, 26702 and 26703.

Geophysical data coverage includes full magnetics, radiometrics, gravity and Landsat.

Located south and south east from the Northern block the project consists of 10 granted tenements, of which the eastern margin are located along the Northern Territory/Queensland border. The centre of the project area lies approximately 100km from the northern mapped boundary of the Georgina Basin and is approximately 25km away at its closest. The area is primarily covered by recent colluviums, alluvium and drainages, with small areas of Wonarah Formation outcrop located within the project as indicated by 1:250,000 NTGS mapping, figure 15.

No phosphate occurrences are located within the project, but the Alroy, Buchanan and Alexandria occurrences are located close (within 10km) to the north western tenement boundaries. The Wonarah phosphate deposit is located approximately 30km west of EL26701 within a large region of mapped Wonarah Formation. The mapped Wonarah Formation at Wonarah extends east into the western margin of EL26701 and likely extends further into the tenement under cover. As such the project is considered highly prospective for phosphate mineralisation, especially the west-north west and south west tenements.

In addition to the available 1:250,000 mapped geology, NTGS report 2008-001 shows stratigraphic drilling within the Georgina Basin. Three holes NTGS00/1, NTGS01/1 and GRG16 are located within or close to EL26304 and EL26702. NTGS00/1 intersected 192m of Wonarah Formation from surface and NTGS01/1, 146m from 174m depth, figure 16. The report indicates that some petrology were acquired for various intervals from the Wonarah Formation, but are not contained within the NTGS report. Further investigation has failed to locate these results to date.

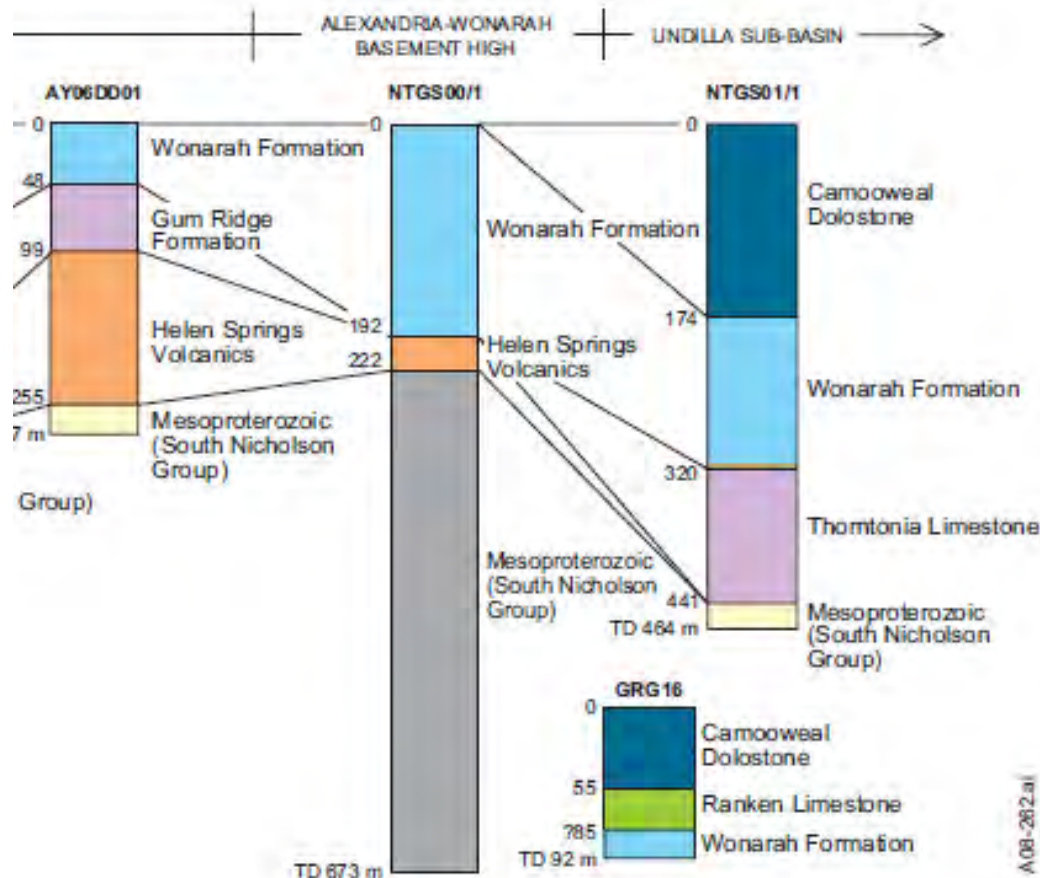


Figure 16: Stratigraphic correlation of Georgina Basin drill holes. Extract from Kruse 2008.

The radiometric responses are dominated by recent processes and features including drainages, sand dunes, colluvium and alluvium, figure 17. Elevated radioelement responses are generally weak to moderate and highly localised. The most elevated uranium responses correlate to drainage systems and clay pans, but it is believed these are only localised enrichments and do not represent significant uranium mineralisation or phosphate.

Of particular note the radiometrics along with the Landsat imagery highlight a distinct north west trending geomorphological break or boundary which divides the north of the central Georgina Basin from the south, figure 18. It is likely that this represents a change in surface processes but it can also be seen to correlate closely to the mapped margin of Wonarah Formation. In an exploration context, this boundary may indicate where the depth to the Wonarah Formation may increase to the north and remain relatively shallow to the south.

Volcanic and strongly magnetic basement rocks are generally highlighted in the magnetic imagery within the project as thin dyke like bodies mainly trending north east through the western half of the project, figure 19. Other strongly magnetic responses are also evident from near surface magnetic drainages which have narrow widths and are sinuous along their length, and potentially volcanic flows. The amplitude and wavelength of the magnetic responses indicate the relative depth of the magnetic sources, and suggest that the magnetic basement depth increases significantly to the east. The depth to the top of shallowest portions as derived from inspection of the magnetic responses are likely in the order of 50-100m , which deepens to greater than 500m to the east. Western tenements EL26310 and EL 26702 are interpreted to have the shallowest basement, or thinnest cover of basin sediments and contain mapped outcrops of Wonarah Formation. Interpreted trendlines of magnetic bodies along with a limit of shallow basement marker have been highlighted in figure 19.

The gravity data displays relatively broad weak to moderate responses which reflect volcanic basement rocks under variable thicknesses of basin sediment, figure 20. Discrete lows can be interpreted to have substantially thicker basin sediment piles and may be local depocentres. As mentioned previously within this report, the Buchanan and Alroy phosphate occurrences are located along or close to the margin of a local gravity anomaly. This gravity feature extends through the north western margin of EL26310 and is recommended for follow up investigation. In addition there is a gravity feature in the centre of EL26702 which likely represents a local basement high, and has associated mapped Wonarah Formation along its margins.

Figure 21 shows the priority target areas for phosphate mineralisation as well as outcropping Wonarah Formation.

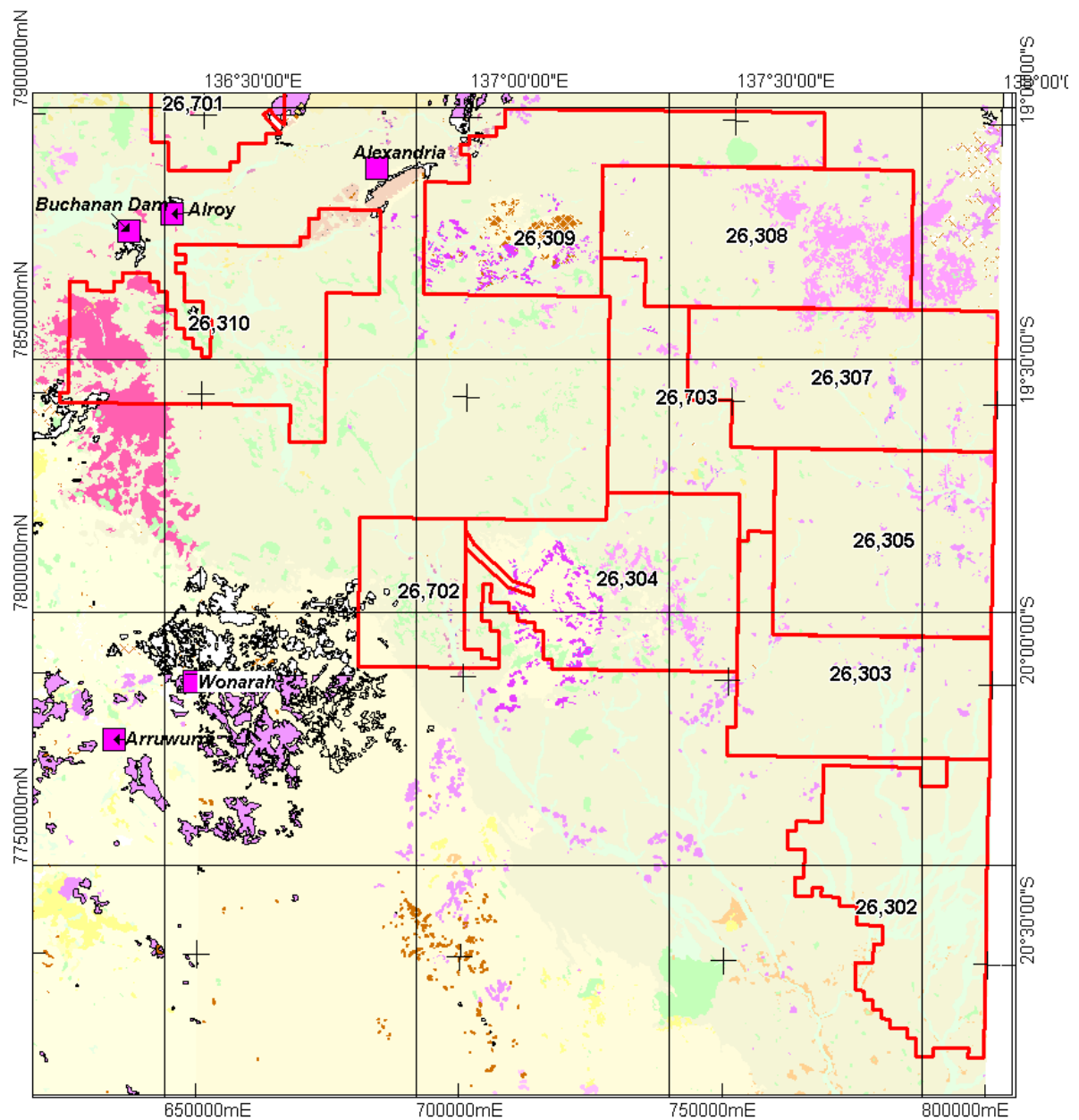


Figure 15: Central Project Geology and Phosphate Occurrences.

Wonarah Formation highlighted with black outline.

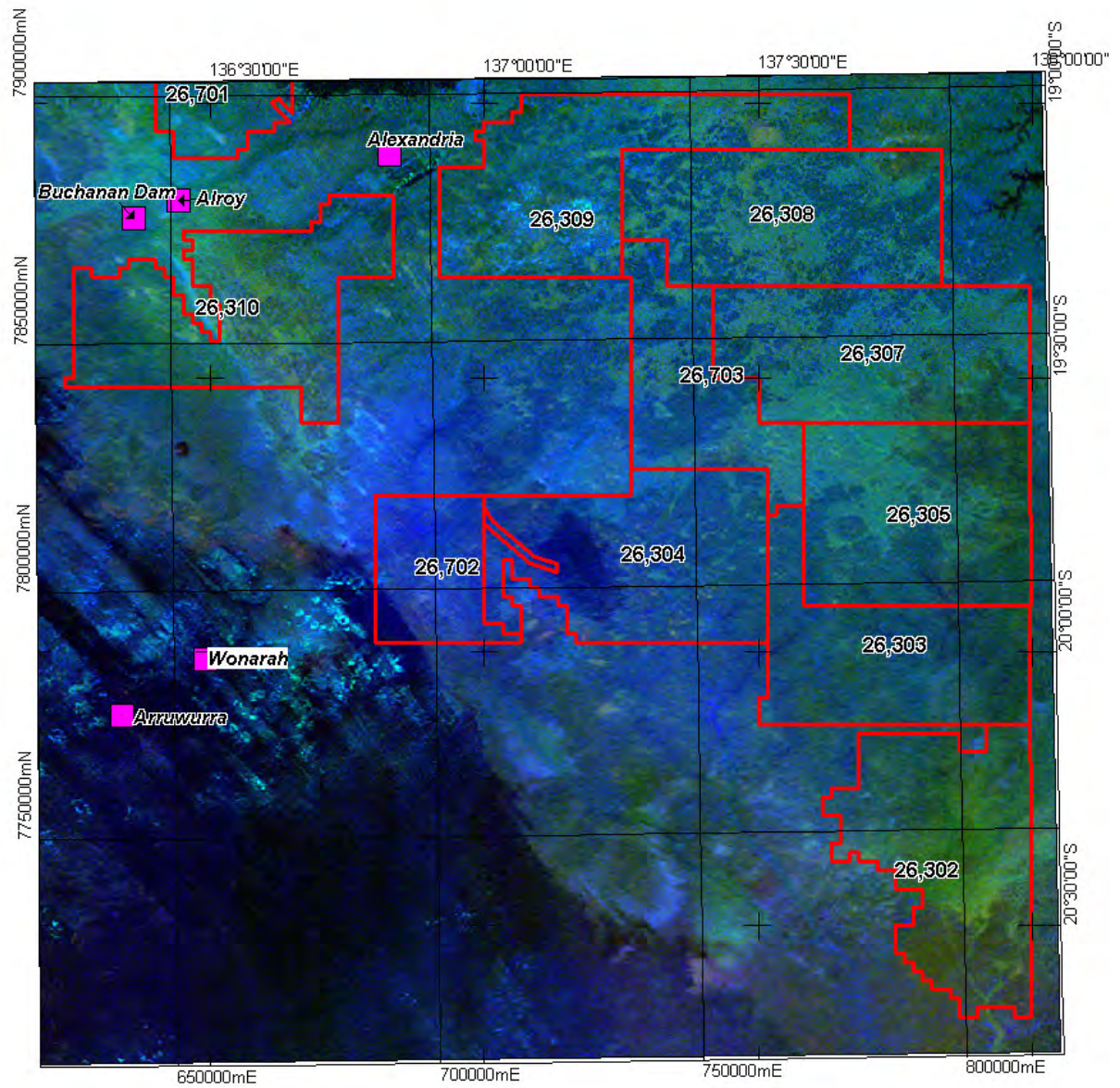


Figure 17: Central Project Radiometric Ternary Image.

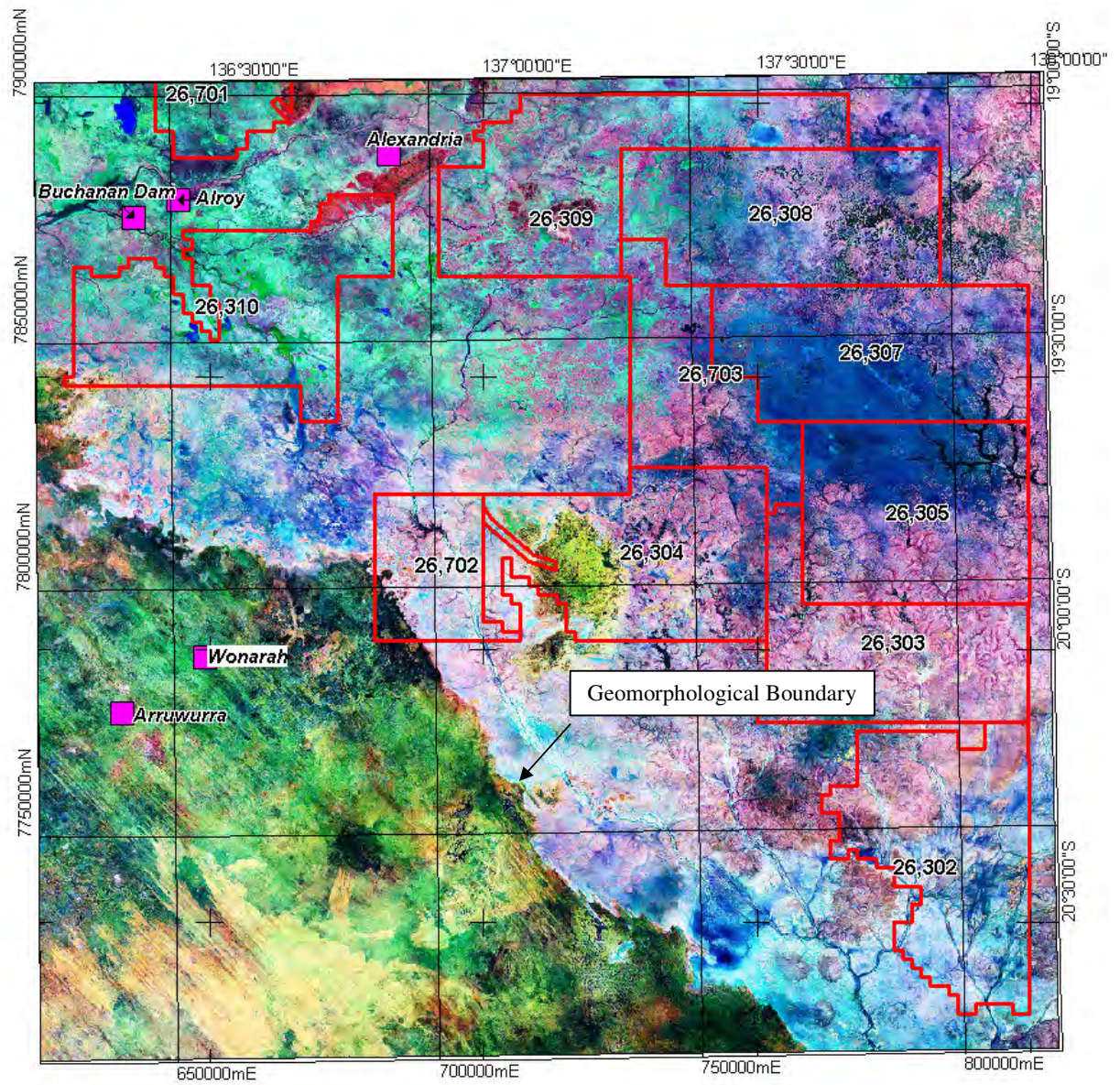


Figure 18: Central Project Landsat 742 Image.

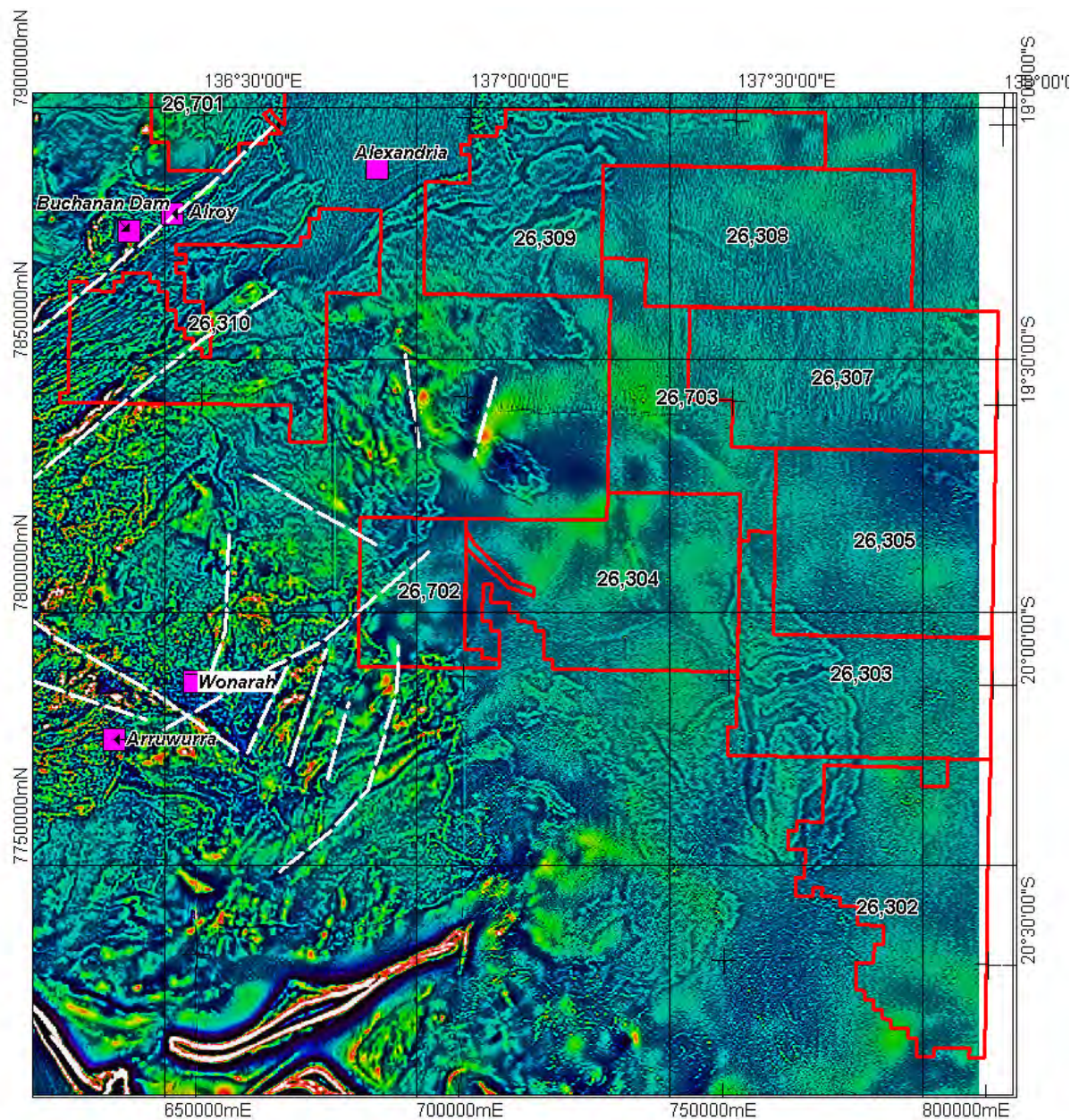


Figure 19: Central Project Magnetic 1VD (colour) over 2VD (grey) Image, with interpreted major structures and phosphate occurrences.

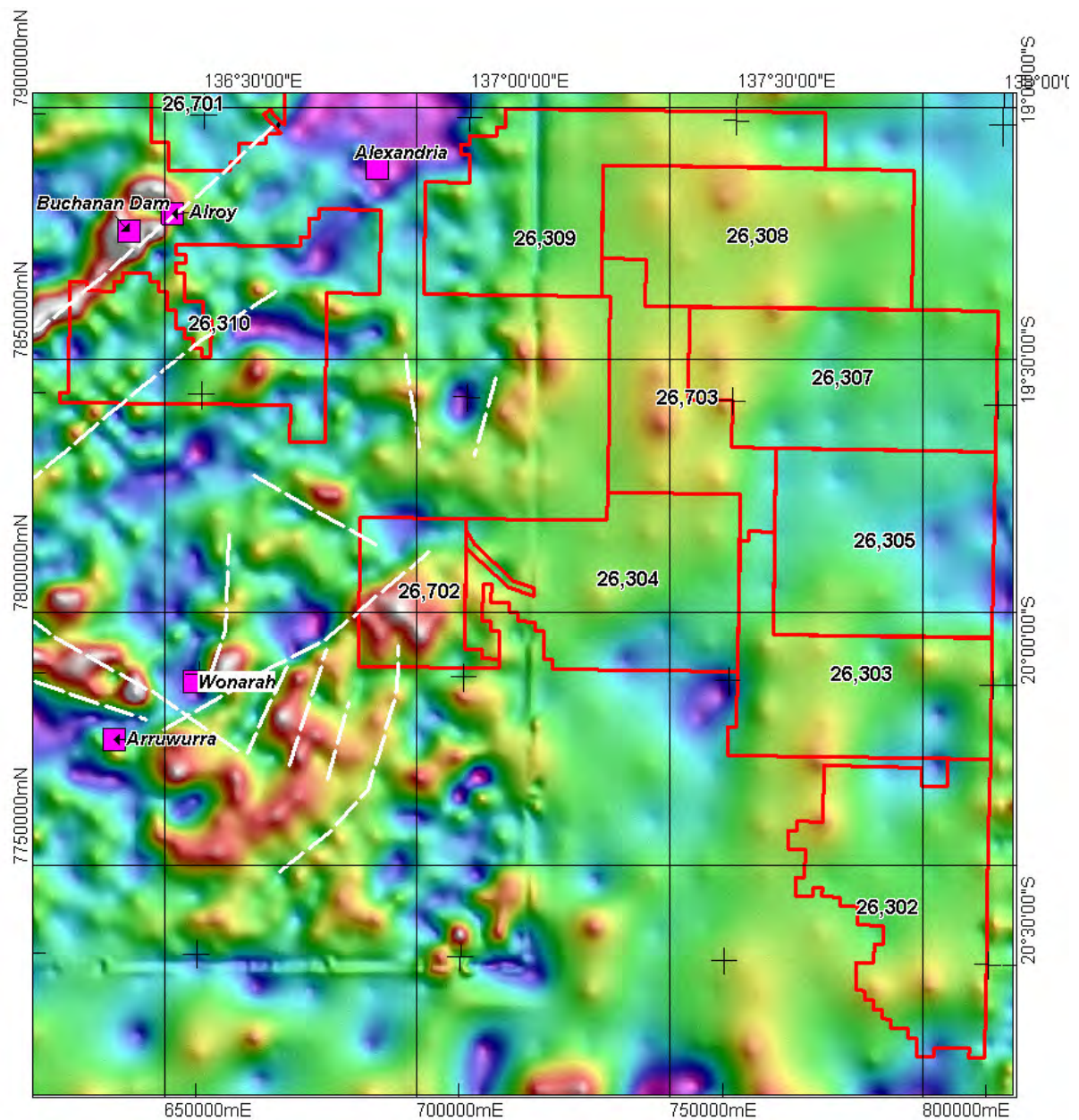


Figure 20: Central Project Gravity Image with interpreted major structures and phosphate occurrences.

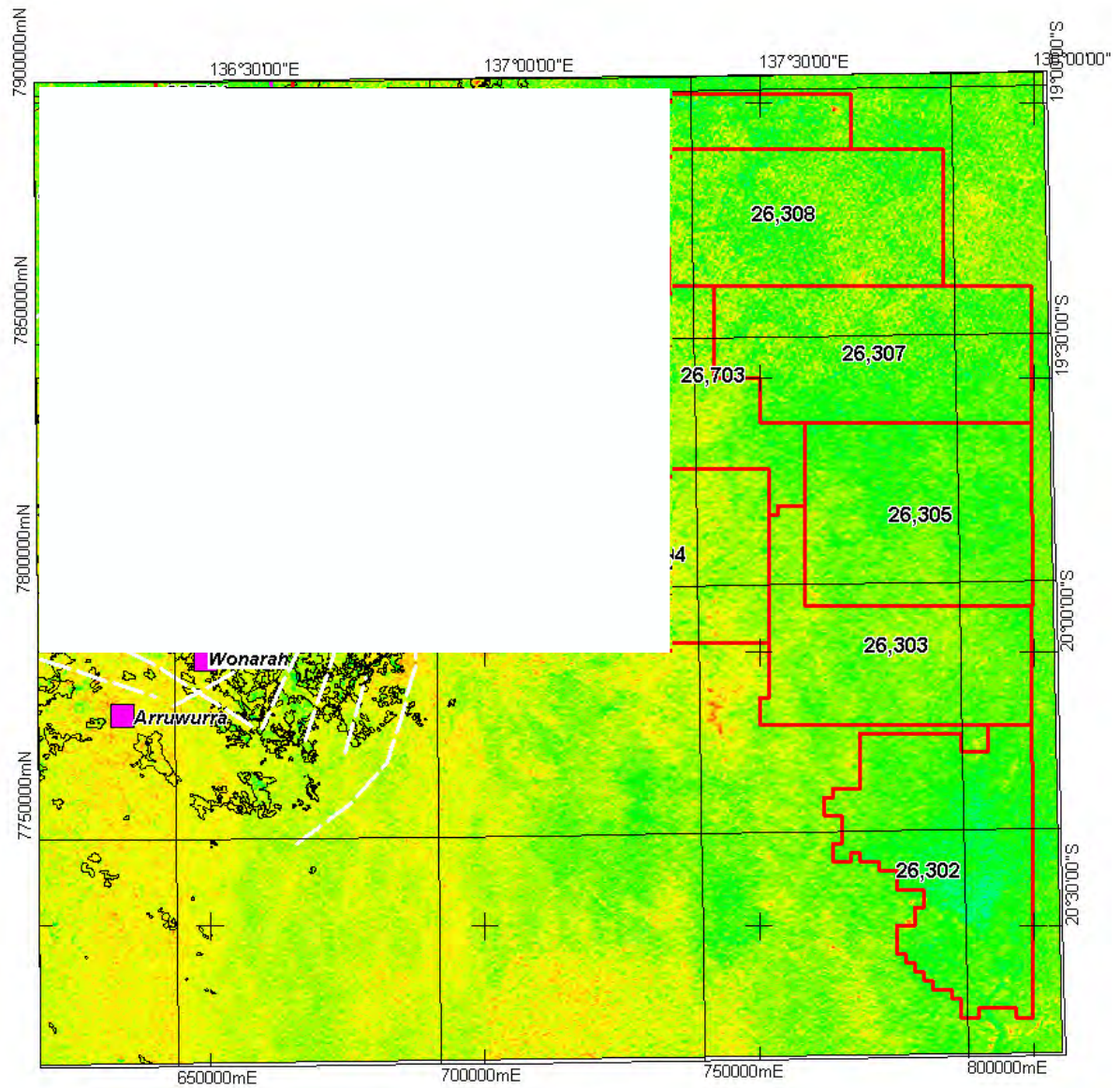


Figure 21: Central Project Gravity Image with interpreted features.

Black lines = basement faults/contacts

Dashed Pink Lines = basement magnetic trends

Red Filled Polygons = Discrete Targets.

8.2 Central Project

The project is considered highly prospective for shallow phosphate mineralisation within the western tenements EL26310, EL26702 and EL26309. Wonarah Formation is likely present in the other tenements but at depths not currently considered economic as highlighted in drill hole NTGS01/1. Review of previous explorers reports should be undertaken to confirm the potential for SEDEX and manganese mineralisation within the project.

Figure 21 shows the high priority target areas for phosphate mineralisation and highlights mapped outcrop of the Wonarah Formation.

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The compilation, purchase and processing of geophysical datasets has been successful in providing new information and imagery that has been used to generate target areas prospective for phosphate, base metals and uranium. The Northern and Central Projects are considered highly prospective for phosphate mineralisation, as the projects contain considerable outcrop of Wonarah Formation which host most of the major phosphate deposits within the central Georgina Basin. There exists some prospectivity for Clinton Style Oolitic iron in the northern Project and base metal minerals within all projects.

The base metal targets are all expected to be located under variably deep cover. Further work is necessary to estimate this depth, so that it can be determined if they represent economically viable targets prior to committing to potentially expensive exploration programs.

Recommendations for future work include:

- Completion of a full literature search and compilation of results from previous exploration activities.
- Complete depth to basement modeling over all areas prospective for base metals.
- Based on these results propose further geophysical programs to better define/model the depth to basement or potentially directly target mineralisation (IP /EM techniques).
- Field reconnaissance, mapping and sampling of all elevated uranium anomalies to determine their source and concentration, taking spectrometer readings as a precursor to potential drilling programs.
- Systematic geochemical sampling of target areas and known outcrops of Wonarah Formation, in conjunction with field mapping and drilling where appropriate.

This information should be used as an adjunct to any other information from the area that may be available to Australis Exploration to provide further indications of the mineral potential.

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