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EL 8705

Boseiver

FINAL REPORT

LICENSEE:
SANTEXCO PTY LTD
A.B.N.002 910 296
(A wholly owned subsidiary of Emmerson Resources Ltd)

08 March 1999 – 07 March 2009

AUTHOR: ADAM WALTERS
JUNE 2009

DISTRIBUTION:		MAP SHEETS:	
Department of Regional Development, Primary Industry, Fisheries & Resources	☐	TENNANT CREEK	SE53-14
Central Land Council	☐		
Emmerson Resources Ltd	☐	TENNANT CREEK	5758
	☐		1:100 000

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1. SUMMARY

This Final Report records exploration work done on EL 8705 between 08 March 1999 and 07 March 2009.

The discovery of the haematite-magnetite Chariot deposit in 1998 has shown the potential for variations on the classic magnetite ironstone hosted gold +/- copper deposits, where lower order magnetic anomalies, plus gravity methods can define new targets. Discoveries by Giants Reef of mineralisation such as at Malbec West, Marathon and Billy Boy further support this.

Emmerson commenced its aggressive exploration programs in April 2008 which included, a detailed ground gravity survey of the Tennant Creek Mineral field and an airborne magnetics surveys. With this newly captured geophysical data providing greater detail of the exploration potential of Emmerson's tenure which includes EL 8705. Emmerson consolidated EL 8705 into SEL 25890 to allow for the analysis and interpretation of this data, and provided with good results drill testing of targets identified.

The first pass analysis, interpretation and modelling of this newly captured data has identified numerous greenfields and brownfields targets within Emmerson Tennant Creek tenements. The more detailed analysis, interpretation and modelling will occur during 2009 and 2010 and will include the area covered by EL 8705 under SEL 25890. Drill testing of targets already identified and further development of the geoscientific models will occur during the 2009 field season, given encouraging results these new models will be applied across SEL 25890 to generate targets for drill testing and any areas requiring further more detailed geophysical surveys.

Therefore with reassessments of previous exploration work and the analysis and interpretation of newly captured data to be conducted during the remainder of 2009 and into 2010 all Emmerson Tenure, including EL 8705 (now SEL 25890) remain 'prospective'.

Automatic cancellation of EL 8705 occurred on 07 March 2009 upon the 10th anniversary date.

2. INTRODUCTION

Exploration Licence 8705 BOSEIVER is located approximately 9 km southeast of the township of Tennant Creek on the 1:100 000 scale Tennant Creek map sheet (5758).

Figure 1 shows the location of EL 8705 and surrounding tenure.

EL 8705 now forms part of Substitute Exploration Licence (SEL) Application 25890.

This Final Report records exploration work done on EL 8705 between 08 March 1999 and 07 March 2009.

3. LOCATION

Exploration Licence 8705 BOSEIVER is located approximately 9 km southeast of the township of Tennant Creek on the 1:100 000 scale Tennant Creek map sheet (5758).

Access to EL 8705 from Tennant Creek town is via the sealed Peko and Juno mine roads. A series of un-sealed minor tracks provides access to the remainder of the tenement. During and immediately after rain the Licence areas are generally inaccessible.

4. TENURE

EL 8705 was applied for in May 1993 and approval to negotiate was given in November 1993. The Licence was originally granted to Anthappi Pty Ltd (Normandy Tennant Creek Pty Ltd) on the 8 March 1999 after the signing of an agreement with the Central Land Council in December 1998 (Area of Interest Deed of Terms & Conditions for Exploration). The Licence covers an area of one graticular block.

The Licence falls within Aboriginal Freehold land held by the Warrumungu Land Trust. An agreement referred to as the Areas of Interest Agreement was signed by the Central Land Council, Traditional Landowners and NTC on 9 December 1998. This agreement established land access for mineral exploration upon Warrumungu Land Trust areas, including EL 8705.

On the 13 June 2001, Giants Reef Exploration Pty Ltd (Giants Reef), a wholly owned subsidiary of Emmerson Resources Ltd, purchased all of the shares in Normandy Tennant Creek Pty Ltd from Normandy Consolidated Gold Holdings Pty Ltd, a wholly owned subsidiary of Normandy Mining Limited.

EL 8705 now forms part of an SEL Application 25890, the application was submitted on 15 January 2008.

5. GEOLOGY

5.1 Regional Geology

The reader is referred to AusIMM Monograph 14 (Geology of the Mineral Deposits of Australia and Papua New Guinea), Volume 1, pp. 829-861, to gain a good introduction to the regional geology and styles of gold-copper mineralisation of the area.

In 1995 the Northern Territory Geological Survey released a geological map and explanatory notes for the Flynn 1:100,000 sheet, which covers the area of the licenses.

The rocks of the Warramunga Formation host most of the orebodies in the region and underlie most of the Exploration Licenses.

5.2 Local Geology

The Licence is located in the south eastern region of the Tennant Creek Province. The geology of EL 8705 includes minor outcrops of weathered siltstone and greywacke of the Palaeoproterozoic Warramunga Formation and these are restricted to the eastern boundary of the Licence. The steeply dipping bedding in the outcrops generally strikes west-northwest and displays sub-vertical cleavage. The western region of EL 8705 is covered by Cainozoic colluvium in the form of sheet wash and fanning topographic ridges. Airborne and ground magnetic data and field mapping suggest that metasediments of the Palaeoproterozoic Warramunga Formation underlie the Licence area.

The Licence lies between two significant deposits and include Nobles Nob and Juno. The Nobles Nob mine produced 1,219 774 oz Au @ 17.0g/t and Juno produced 921,709 oz Au @ 57.0g/t, 97,074 oz Ag @ 7.0g/t, 1,429t Cu @ 0.4% and 2,293t Bi @ 0.6%. The Nobles Nob deposit comprises an elongate lens coinciding with S_1 cleavage and hematitic shale units and mineralisation occurs as brecciated, banded sericitic hematite and quartz-hematite. The Juno deposit comprises an elongate lens in an anticline and hematitic shale units, exhibits Au-Bi-Cu zonation and mineralisation occurs as pods in a magnetite-chlorite zone and stringer zone.

6. EXPLORATION

6.1 Targets and Concepts

Exploration for large base metal deposits possibly associated with a regional gravity anomaly centred in the southern part of the area covered by the adjoining Licences, with additional targets including Tennant Creek-type ironstone hosted Au-Cu-Bi ore bodies.

Proterozoic Inliers world-wide, and particularly in Australia, are renowned for their iron-rich mineralisation and world class base metal deposits. For many years prominent geologists and researchers in the industry have pointed out the geological similarities that the broader Proterozoic Tennant Creek Inlier shares with the Gawler Craton, host to the Olympic dam deposit, and to the Eastern Succession of the Mt Isa Inlier that hosts the Ernest Henry and Selwyn deposits. These similarities, though recognised, had not been widely acted upon by the industry.

Exploration was aimed at discovering large deposits of base metals along with substantial gold and/or silver, probably accompanied or hosted by large volumes of iron oxide minerals.

Giants Reef's target model iron oxide-rich lithologies and are therefore likely to be associated with regional or district-scale gravity anomalies, and potentially coincident with a magnetic anomaly.

The discovery of the haematite-magnetite Chariot deposit in 1998 has shown the potential for variations on the classic magnetite ironstone hosted gold +/- copper deposits, where lower order magnetic anomalies, plus gravity methods can define new targets. Discoveries by Giants Reef of mineralisation such as at Malbec West, Marathon and Billy Boy further support this. Giants Reef considers the potential for the discovery of mineralisation in hematite dominant ironstones in the relinquished group is limited.

6.2 Exploration Undertaken – 08 March 1999 to 07 March 2009

In 1982, Peko-Wallsend Operations held the ground under EL 2535. Low level aeromagnetic survey revealed two parallel WNW-ESE trending features. Magnetic anomalies were identified and evaluated over ironstones at Juno East and other areas.

PosGold explored the area between 1986 and 1992 under EL 4929. An airborne survey flown in 1990 and this defined two magnetic features west of Nobles Nob. RC drilling of these returned significant gold grades at Anomaly 2 while Anomaly 3 failed to return any significant results. A further 11 RC holes were drilled at other prospects, however results were disappointing.

Between 1992 and 1994, Roebuck Resources and Normandy NFM held this area under EL 7650. Regional gravity data from a 1992 Aerodata multiclient survey outlined a gravity ridge trending across EL 7650. A weak aeromagnetic anomaly was delineated and tested

by RAB drilling. Results from this produced a 400m by 100m copper anomaly (max 28ppm), however gold values were low.

Exploration Licence 8705 was originally applied for in May 1993 by Poseidon Gold Limited (later NTC) to cover a regionally interesting geological and geophysical area. Poseidon's exploration model was based on locating a non-magnetic gold or gold-copper deposit by geochemistry, rather than by the more established method of drilling magnetic anomalies. In 1998 Normandy carried out a detailed airborne magnetic survey (Nob Line Survey), which included EL 8705. In 1999 a Normandy proprietary airborne Time Domain Electro Magnetics (TDEM) system was flown over the Nobles Nob and Peko areas including EL 8750.

Since the acquisition of the Licence by Centralian Minerals in 2001, exploration has been aimed at the discovery of IOCG deposits hosted in Warramunga Formation units within the Eldorado – Juno - Juno trend and re-modelling of magnetic data. This work has identified a number of prominent and discrete low amplitude magnetic highs which warrant further investigation. Other work completed by Centralian Minerals Limited includes data compilation, validation and integration of historical hard copy and digital data into the Company's exploration GIS database. Various ground reconnaissance mapping surveys have also been undertaken.

Other exploration work completed by Centralian Minerals/Giants Reef Exploration included contracted work by Vector Research Pty Ltd to process Giants Reef's magnetic survey data using their proprietary MAGSURF® (magnetic surface filter). This data processing uses an algorithm which detects high-frequency magnetic noise associated with surface occurrences of weakly magnetic iron-oxide minerals and is aimed at mapping the high-frequency "textural noise" associated with the surface geology. The application also attempts to resolve detail in the overburden and delineate the noisy surface magnetic responses of sub-surface features such as structures and rock formations. Increasing the magnetic surface filter resolution increases the resolution of high frequencies, or smaller features. High frequencies are associated with features in the surface geology, while low frequencies are associated with large and deeper features. Filter resolution (N) for this study used 2, 4, 6 and 8 and resolution smoothing (nn) used levels 5, 11 and 25 (This is the number of data points averaged by applying a low-pass Hanning filter to the final MAGSURF response).

The Magsurf filter was applied to an area comprising some 20 km2 and covers EL 8705. Geophysical signatures were compared over 9 prospects within the corridor, including Juno and Nobles Nob deposit with those within the Licence. Interpretation of geophysical signatures over the Nobles Nob deposit was made difficult by the presence of both strongly magnetic and non-magnetic waste dumps and the open cut. Giants Reef's Nobline RTP 1VD magnetic data highlights some 27 discrete magnetic anomalies in the corridor ranging from large (Juno, Nobles Nob) to small (Kimberly Kids). Of these, 5 smaller magnetic are located within Giants Reef's Exploration Licences. Previous mapping in the corridor has defined some 21 outcropping mineralised and non-mineralised ironstones.

The Nobline RTP 1VD magnetic data shows strong magnetic anomalies over the Juno and Nobles Nob deposits and a more subtle magnetic ridge extending west northwest through EL 8705, however only very minor magnetic peaks occur along this trend. Interesting the Nobline RTP 1VD magnetic data and Magsurf filters do not highlight many of the mapped ironstones in the survey area.

Neither the Nobline RTP 1VD magnetic data nor Magsurf filters provide a good correlation between any of the anomalies directly over the Nobles Nob deposit, however this is most likely due to the effects of the open cut and irregular, artificial anomalies resulting from magnetite in waste dumps. Probably the best correlation with the deposit is the Nobline RTP 1vd data, which at least covers the eastern end of the pit. The waste dumps surrounding the Nobles Nob deposit is probably best mirrored by the Nobline RTP 1vd anomalies, however there is also some correlation with 400 series Magsurf filters. Interestingly all anomalies extend well beyond the waste dumps, suggesting that deeper source bodies exist or there are perhaps broader haloes of disseminated magnetite surrounding the main ironstone bodies. Another possibility is that the responses result from aerial dispersion of magnetite from the waste dumps and mine haulage activities. Not all of the waste dumps have a magnetic signature, suggesting that they comprise mullock material derived from the barren magnetite ironstone and non-magnetic Warramunga.

The Juno deposit is located centrally within the main Nobline RTP 1vd anomaly and correlates reasonably well with the 200 series Magsurf filters. The 400 series Magsurf filters appear to provide the best correlation to the Juno ironstone and defines a western anomaly which may represent a separate ironstone body. Unfortunately Exploration Licence 8705 does not include any significant 400 series Magsurf filter anomalies of interest. Further filtering (600 and 800 series) appears to only break the responses up into a myriad of anomalies that do not appear to correlate with any particular geological, regolith or topographical features.

The 200 series Magsurf filters defined the prominent north east trending fault structure at Nobles Nob which is also readily observed in the Nobline RTP 1vd magnetic data. This fault structure extends south west through the southern region of EL 8430, however no additional structures were observed elsewhere in the Exploration Licences. Interestingly none of the Magsurf filters reflected the prominent north west structure at Juno which is so clearly defined in the Nobline RTP 1vd magnetic data.

None of the filters appeared to correlate with drainage systems either emanating from known deposits or in the Exploration Licences which comprise sheet wash colluvium and minor drainages systems. Likewise areas of topographic relief, including low ridges of outcropping Warramunga Formation were not reflected in any of the Magsurf filtering.

Under the management of Emmerson exploration has been limited due to the initial purchase period and the period required to list the company on the Australian Stock Exchange (ASX), which occurred on 12 December 2007. Emmerson has now built a highly capable and skilled staff including an excellent team of Geoscientists to exploit Emmerson’s strong prospective tenement holding in the Tennant Creek Region.

During the final tenure year Emmerson successfully built a team of highly qualified and skilled, staff and Geoscientists. Work commenced on the analysis of all historic drilling data, which included the validation and assessment of all Historical drilling over Emmerson Tenure, including EL 8705 and then the compilation into a database. This work occurred over the entire reporting term and will continue into the next tenure term.

A Detailed Ground Gravity Survey, conducted by Fugro Ground Geophysics commenced 27 March 2008. This ground gravity survey was conducted over Emmerson's entire Tennant Creek tenure package and included EL 8705. The survey was conducted by three teams, each team consisted of a quad bike and rider equipped with a station meter. The three teams were supported by a Toyota Landcruiser 4WD Ute. The readings were taken on a 500m station spacing's, on lines 500m apart oriented North – South. Readings in areas requiring more detail were taken on 50 station spacing's on 100m spaced lines oriented North - South. The survey was completed during October 2008. 607 station readings were taken in EL 8705 and consisted of 0 Regional and 607 Detailed readings, and is displayed in Figure 2.

7. REHABILITATION

Exploration within EL 8705 during the term of tenure was limited to non-invasive reassessment and revaluation of previous exploration work and geophysical surveys, data integration of all previous data into Emmerson Resources Database, and as such, no further rehabilitation was required.

8. CONCLUSIONS

Emmerson's review of the exploration work conducted over EL 8705, revealed that further exploration work and reassessments of previous exploration needed to be conducted in order to fully assess the potential for economic discoveries.

The discovery of the haematite-magnetite Chariot deposit in 1998 has shown the potential for variations on the classic magnetite ironstone hosted gold +/- copper deposits, where lower order magnetic anomalies, plus gravity methods can define new targets. Discoveries by Giants Reef of mineralisation such as at Malbec West, Marathon and Billy Boy further support this.

Emmerson commenced its aggressive exploration programs in April 2008 which included, a detailed ground gravity survey of the Tennant Creek Mineral field and an airborne magnetics surveys. With this newly captured geophysical data providing greater detail of the exploration potential of Emmerson's tenure which includes EL 8705. Emmerson consolidated EL 8705 into SEL 25890 to allow for the analysis and interpretation of this data, and provided with good results drill testing of targets identified.

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Therefore with reassessments of previous exploration work and the analysis and interpretation of newly captured data to be conducted during the remainder of 2009 and into 2010 all Emmerson Tenure, including EL 8705 (now SEL 25890) remain ‘prospective’.

9. EXPENDITURE

Expenditure for the term of the tenure for EL 8705 is as follows:

ITEM	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	TOTAL
Geology				$605	$4,735.30	$6,138	$10,883.02	$418			
Geophysics				$131							
Geochemistry											
Surveying					$40.05		$251.15				
Data Integration				$35	$295						
Drafting							$423.75	$209			
Analytical											
Drilling											
Tenure Admin				$762	$123.62		$151.38	$418			
Administration and Overheads				$271	$50	$3,599	$331.70	$110			
Rehabilitation											
TOTAL	**$3,608**	**$15,497**	**$1,000**	**$1,804**	**$5,243.97**	**$9,737**	**$12,040.98**	**$1,155**	**$6,308.60**	**$15,414.13**	**$71,808.68**

EMMERSON RESOURCES LTD

HARD COPY REPORT META DATA FORM

REPORT NAME:	EL 8705 BOSEIVER FINAL REPORT 08 MARCH 1999 TO 07 MARCH 2009
PROSPECT NAMES(s):	
GROUP PROSPECT NAME:	
TENEMENT NUMBERS(s):	EL 8705
ANNIVERSARY DATE:	08 MARCH
OWNER/JV PARTNERS:	SANTEXCO PTY LTD
AUTHOR(s):	ADAM WALTERS
COMMODITIES:	GOLD, COPPER, LEAD, ZINC, SILVER, BISMUTH
MAPS 1:250 000:	TENNANT CREEK SE53-14
MAPS 1:100 000:	TENNANT CREEK 5758
MAPS 1:50 000	
TECTONIC UNIT(s):	TENNANT CREEK INLIER,
STRATIGRAPHIC NAME(s)	WARRAMUNGA FORMATION, CAMBRIAN WISO BASIN
AMF GENERAL TERMS:	
AMF TARGET MINERALS:	GOLD, COPPER, LEAD, ZINC.
AMF GEOPHYSICAL:	.
AMF GEOCHEMICAL:	
AMF DRILL SAMPLING:	
HISTORIC MINES:	
DEPOSITS:	
PROSPECTS:	
KEYWORDS:	BOSEIVER, EL 8705, SEL 25890

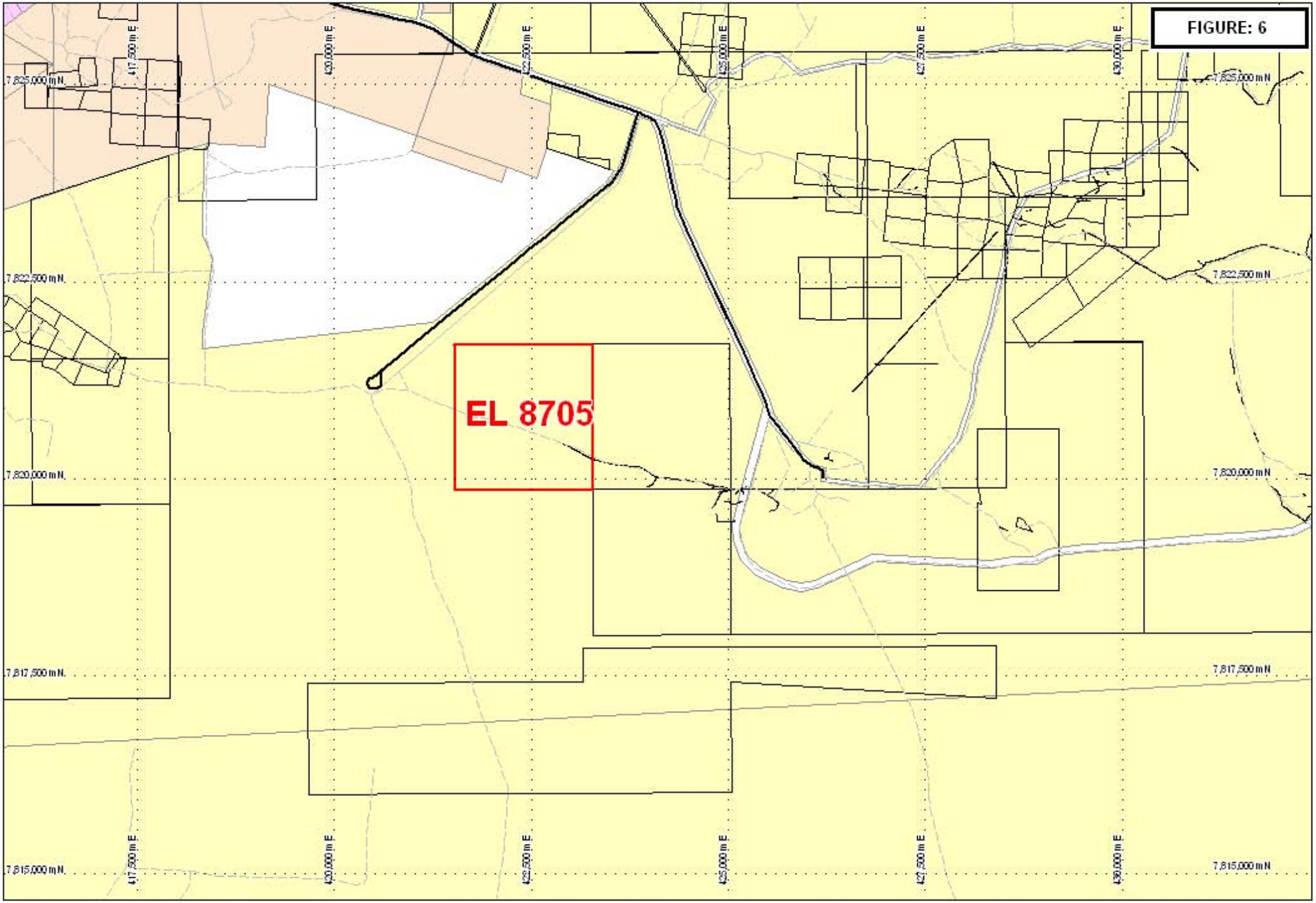
FIGURE: 6
EL 8705
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7,820,000 mN
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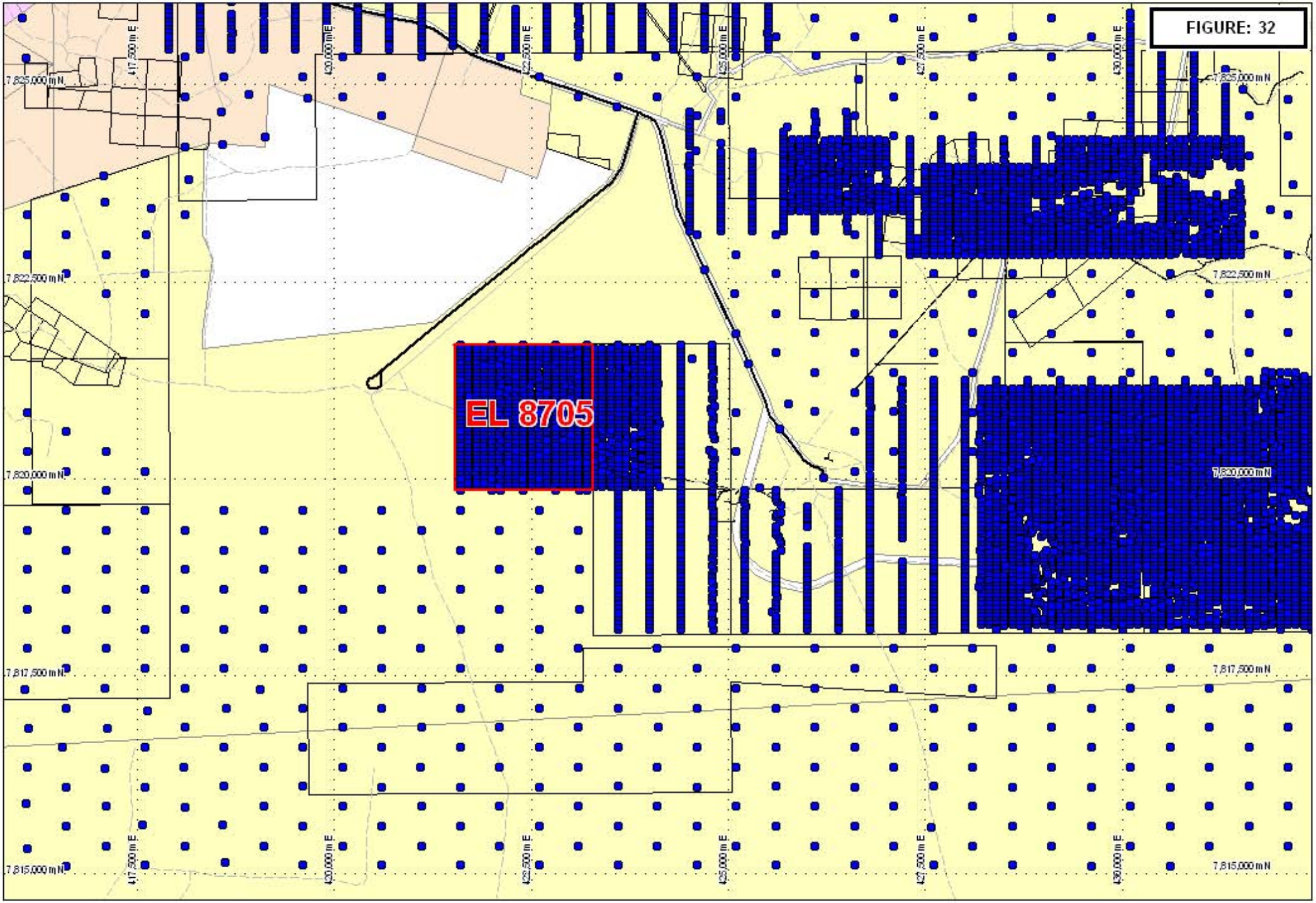
FIGURE: 32
EL 8705
7,825,000 mN
7,822,500 mN
7,820,000 mN
7,817,500 mN
7,815,000 mN
417,500 m E
420,000 m E
422,500 m E
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