



SANDFIRE RESOURCES NL

MINERAL EXPLORATION PARTIAL SURRENDER REPORT BORROLOOLA PROJECT EL26555 Year 3

Tenement Holder: SANDFIRE RESOURCES NL
Operator: SANDFIRE RESOURCES NL
**Reporting Period: 11 September 2008 to 10
September 2011**

1:250,000: HODGSON DOWNS (SD5314) MT YOUNG (SD5315)
URAPUNGA (SD5310) ROPER RIVER (SD5311)

1:100,000: ST VIDGEON (5867) URAPUNGA (5868) TOWNS
(5967) ROPER (5968)

Commodities: Mn, Cu, Pb, Zn

Distribution: DoR Geoscience – Digital (EL26555_2011P)
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Sandfire Resources Report: NTX0061

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Author(s): Wynne, A.

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TITLE PAGE AND BIBLIOGRAPHIC DATA SHEET

Project Name	Borrooloola Project
Combined Reporting Number	121/09
Tenement Numbers	EL26555
Tenement Operator	Sandfire Resources NL
Tenement Holder	Sandfire Resources NL
Report Type	Partial Surrender
Report Title	Mineral Exploration Partial Surrender Report Borrooloola Project EL26555 Year 3
Report Period	11 September 2008 to 10 September 2011
Author	Wynne, A.
Date of report	9 December 2011
1:250,000 map sheet	HODGSON DOWNS (SD5314) MT YOUNG (SD5315) URAPUNGA (SD5310) ROPER RIVER (SD5311)
1:100,000 map sheet	ST VIDGEON (5867) URAPUNGA (5868) TOWNS (5967) ROPER (5968)
Map Projection	MGA94 Zone 53
Target Commodity	Mn, Cu, Pb, Zn
Keywords	Airborne Magnetics-Radiometric, Airborne EM, Stream Sediments Geochemistry, Drilling, Orthophotography
Prospects drilled	
List of Assays	
Contact - Technical	A. V. Wynne Compliance Officer aw@sandfire.com.au
Contact - Expenditure	A. V. Wynne Compliance Officer aw@sandfire.com.au
Location	Borrooloola, NT
Geology	Middle Proterozoic sediments of the Tawallah, McArthur and Roper Groups of the McArthur Basin, the Scrutton Volcanics, and Cretaceous and Tertiary cover sediments.
Work done	Collation and review of historical exploration, including surface geochemistry and drilling datasets. Review of re-processed open-file Airborne Magnetics-Radiometric Survey, and of open-file Airborne QUESTEM Geophysical Survey datasets and images. Air Photographs and orthophotography.



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1. SUMMARY

This partial surrender report details mineral exploration conducted on 209 graticule blocks surrendered from Borroloola Project Exploration Licence EL26555 at the third anniversary 10th September 2011. Sandfire Resources NL applied for the tenement on 11th December 2007, and considered the geology of the area within the Batten Trough to have been prospective for base metals (copper, lead and zinc), and manganese. EL26555 was granted on 11th September 2008 over 312 graticule blocks. During the period of tenure up to the date of partial surrender of 209 blocks, exploration activities included the collation and review of historical surface geochemistry and drilling datasets, and use of historical airborne magnetics – radiometrics and EM surveys (Table 1).

Exploration Activity on EL26555	Year	Activity Period
Review of historical surface geochemistry and drilling datasets, and re-processed airborne geophysics survey datasets utilising GIS	1 - 3	2008 - 2011

Table 1 Exploration Activities



2. LOCATION

The Borroloola Project is centred about 660 km southeast of Darwin in the “Gulf Country” of the Northern Territory, Australia. On the eastern boundary are the township of Borroloola and the McArthur River (HYC) Mine. To the south is Cape Crawford and to the northwest is Roper Bar. Figure 1 shows the project location and tenement status as at 5th August 2011.

Access is good to some parts via bitumen and unsealed roads. From Darwin access can be gained by travelling about 590 km southwards along the Stuart Highway to Daly Waters and then eastwards along Carpentaria Highway to Cape Crawford (270 km). The unsealed Nathan River Road and Ryan’s Bend road cross some tenements. Access deteriorates significantly in the northern parts of the project area.

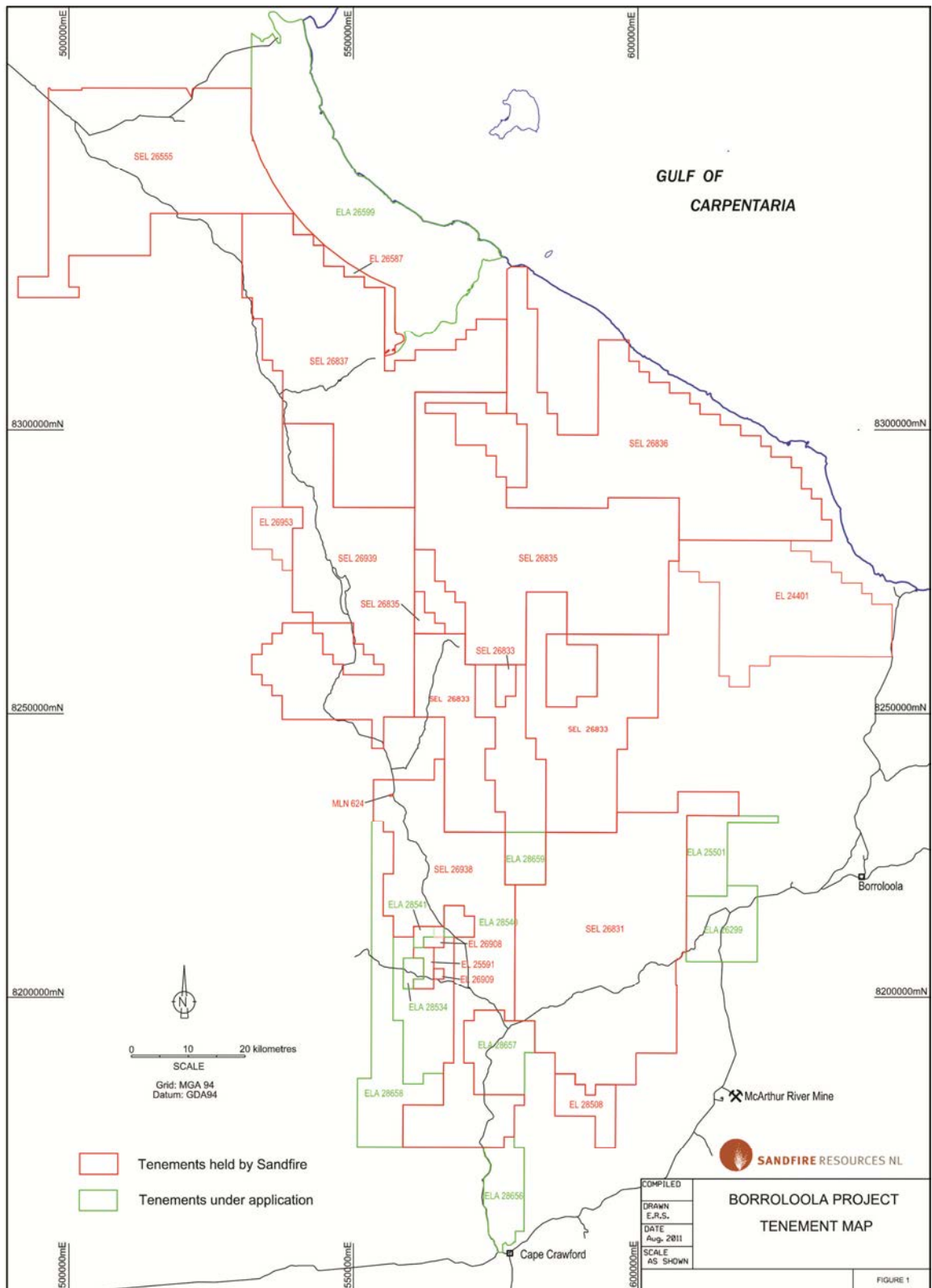


Figure 1 Borroloola Project Tenements and Location Plan



3. STAKEHOLDERS AND NATIVE TITLE

The Borroloola project tenements lie across several pastoral leases and the proposed Limmen Bight National Park area, and several Native Title Claims have been scheduled and registered with the Federal Court. The distribution and extent of these is shown in Figures 2 and 2A.

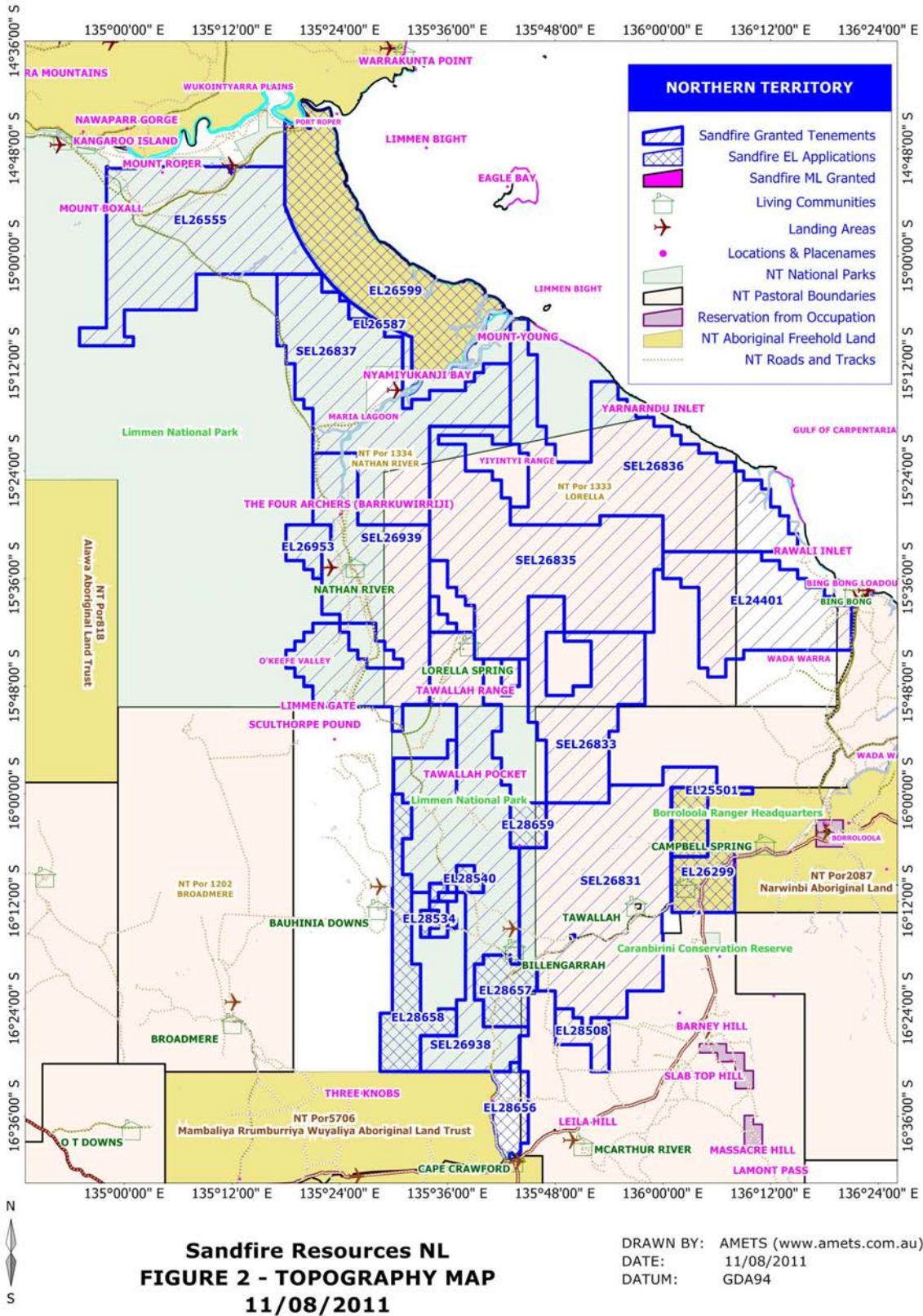


Figure 2 Borroloola Project Stakeholders

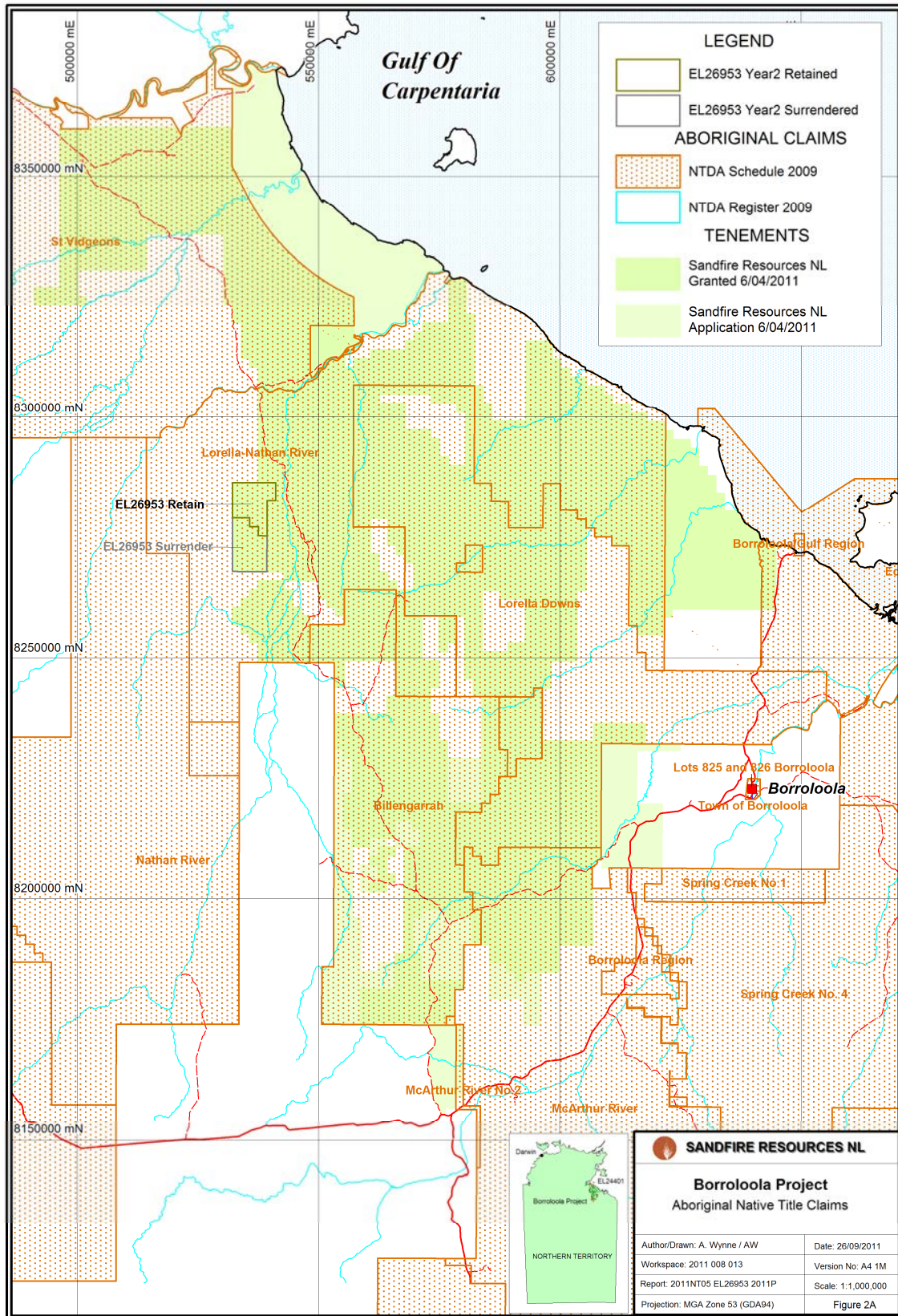


Figure2A Borroloola Project Native Title

4. TENEMENTS

EL26555 was applied for over 312 graticule blocks on 10th December 2007 along the northern boundary of EL24402 and granted on 11th September 2008 for a period of six years.

Seven Substitution Exploration Licenses SEL26831, SEL26833, SEL26835, SEL26836, SEL26837, SEL26938, and SEL26939 were granted on 9th June 2009 in lieu of twenty-eight Exploration Licenses, including EL24402, which was replaced with SEL26937. For reporting, these 28 contiguous Exploration Licenses, and EL24401, EL25591, EL26555 and EL26587, were previously incorporated into the Borroloola Project Reporting Group 068/09. Following the grant of the seven Substitution Exploration Licenses, and Exploration Licenses EL26908 and EL26909 on 9th June, and EL26953 on 12th June 2009, the Borroloola Project Combined Reporting Group 121/09 was created to include these tenements from 15th July 2009.

At the third anniversary of EL26555, 10th September 2011, the partial surrender of 209 graticule blocks was submitted, as indicated on Figure 3. Table 2 summarises the current status of EL26555, and Appendix A contains details of the blocks surrendered and retained at the anniversary.

Tenement	EL26555
Application Date	10/12/2007
Date Granted	11/09/2008
Blocks Granted	312
Blocks Surrendered at Year 3 Anniversary 10/09/2011	209
Blocks Retained Year 4	103

Table 2 Tenement Status

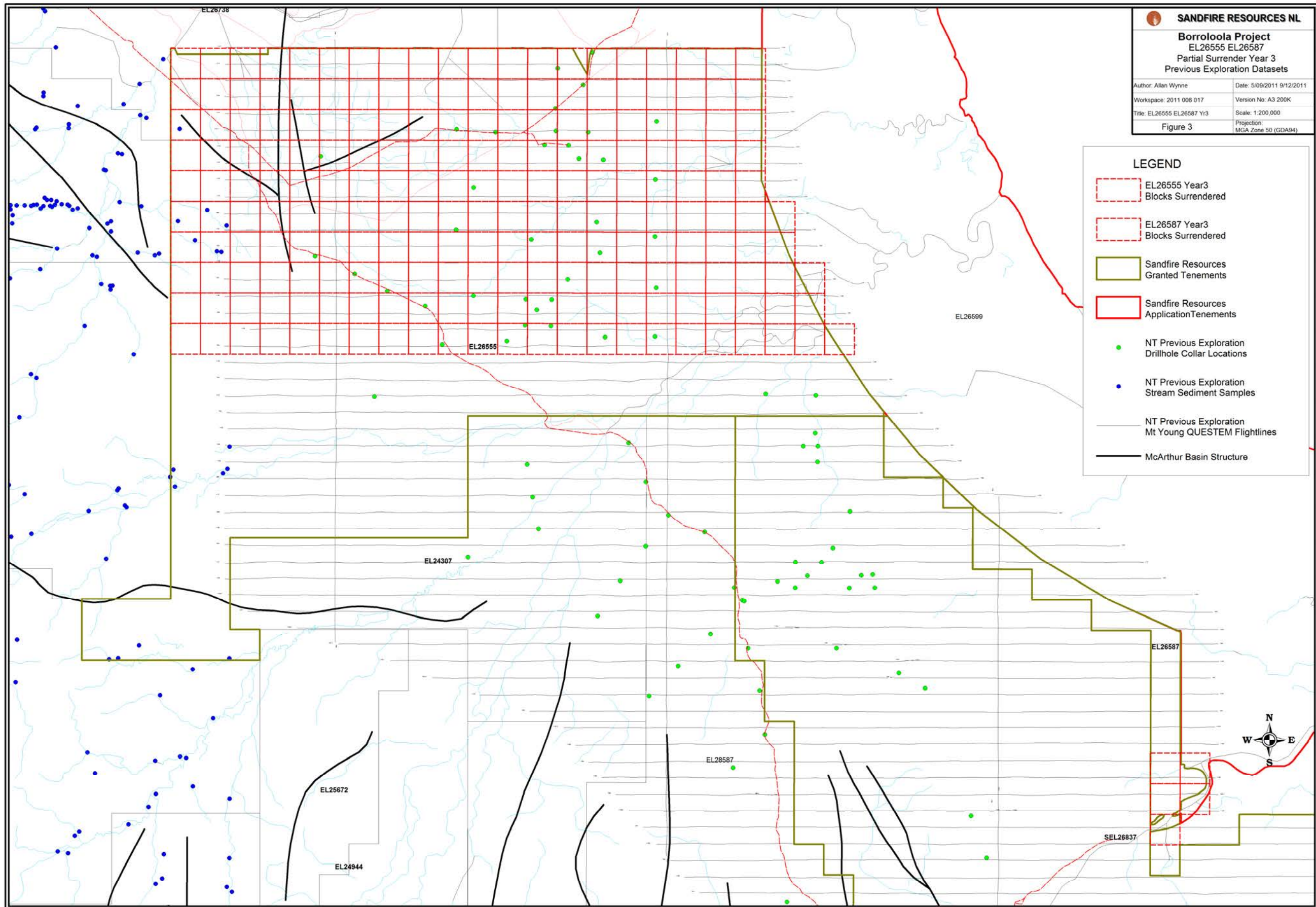


Figure 3 EL26555 EL26587 Year3 Partial Surrender Blocks Previous Exploration Datasets

5. REGIONAL GEOLOGY

The McArthur Basin is a large sedimentary basin with an exposed area of about 180,000 km². Most of it lies within the northeastern Northern Territory, and it extends over the border into the state of Queensland. Thick marine and non-marine sedimentary rocks were deposited from the late Palaeoproterozoic to the early Mesoproterozoic (1800-1430 Ma). The basin also contains volcanic rocks and related intrusive igneous rocks and is a prime target area for SEDEX type economic sulphide deposits. This type of deposit hold 50% of the world's zinc and lead reserves, and make up around 25% of world zinc and lead production. In particular the McArthur Basin hosts the world-class McArthur River (HYC) zinc-lead-silver deposits.

The geology of the Borroloola Project area consists of middle Proterozoic sediments of the Tawallah, McArthur and Roper Groups of the McArthur Basin, within the Batten Trough. On EL26953 these units are mapped on the MT YOUNG 1:250,000 Geological Sheet Area. Further north-east these units are unconformably overlain by Cretaceous arenaceous and argillaceous sediments containing fossils, and undifferentiated Cainozoic alluvial, colluvial and elluvial cover.

During the Cretaceous Period, the coastal areas along the Gulf of Carpentaria were inundated by a shallow sea in which Manganese accumulations were formed a series of episodes of deposition in embayments close to the shoreline. The largest of these is on Groote Eylandt, a large island located within the Gulf of Carpentaria, 130kms northeast of. Smaller occurrences occur on the mainland, e.g., at Rosie Creek Prospect on SEL26835, and the Brumby Prospect on SEL26837. This style of Manganese occurrence is the target of exploration in the northern tenements of the Sandfire Resources' Borroloola Project tenements.

6. Exploration Undertaken on EL26555

As indicated in Table 1, Exploration work was carried out on the Borroloola Project, project-wide during the period 2004 to 2008, which covered the area subsequently applied for and granted as EL26555. This work included collation and interpretation of historical surface geochemistry and drilling datasets, re-processing of the historical airborne magnetics – radiometrics and EM surveys.

Exploration of the Borroloola Project, including EL26555 during the first three years since grant, is also reported in the Combined Tenement Group Reports: C068/09 Annual Mineral Exploration Report (Lewis et.al., 2009), C121/09 2010 Annual Mineral Exploration Report Jones et.al. (2010) and the 2011 Annual Mineral Exploration Report Lauricella et.al. (2011).

6.1 Geology and Previous Exploration Surface Geochemistry and Drilling

EL26555 lies over the Urapunga, Roper River, Hodgson Downs and Mt Young 1:250,000 Geological Sheet areas. Figure 3 indicates the locations for the stream sediment and drillholes derived from the digital open file NTGS Surface Geochemistry and Drillhole datasets from previous company exploration reports.

The drillholes from previous exploration by BHP during 1990s were used to assess the manganese potential of the Cainozoic and Cretaceous stratigraphy in the part of EL26555 surrendered.

6.2 Previous Exploration Airborne Geophysical Surveys

Open file airborne magnetics-radiometrics survey data is available as the Batten Trough Geophysical Survey CD (1989 Grids & Line Data) digital dataset from the NTGS, for which there was minimal coverage on EL26555.

During 2007, Fugro Airborne Surveys undertook re-processing of open file airborne EM survey data QuesTEM and GeoTEM digital data for the Borroloola Project area. The 1992 Mt Young 75Hz QuesTEM survey covers part of EL26555 and EL26587, as indicated on the flight line coverage Figure 3. The relevant re-processed digital data from Fugro Airborne Surveys Job#6000-101 is included with the comprehensive digital datasets as part of the 2009 Annual and Surrender Report, above, in Appendix E 2007-08 Airborne Geophysics \ 2007 FAS Reprocessed AEM \ J6000-101 \ MtYoung \.

6.3 Aerial Photography and Orthophotography

There is no aerial photographic coverage compiled to orthophotographs on EL26555.

7. CONCLUSIONS AND RECOMMENDATIONS

Review of the previous exploration work carried out on EL26555 did not indicate potential for manganese mineralisation on the area of 209 graticule blocks surrendered at the third anniversary 10th September 2011.

8. BIBLIOGRAPHY OF ANNUAL REPORTS

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Lewis, T., Hansen, A. and Wynne, A. 2009 Combined Annual Mineral Exploration Report 068/09 E/L's 24401, 25591, 26555 and 26587 Reporting Period 11 April 2008 to 10 April 2009 Sandfire Resources NL Report No. 2009NT03

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9. DIGITAL DATA

Digital data for Appendix A is attached in .zip file format.

**APPENDIX A:
Details of Tenement Graticule Blocks Surrendered and Retained**