



## **GR308 ANNUAL REPORT**

### ***EL29362 and EL29521 – Pine Creek Two Project***

### **For Period Ending 30<sup>th</sup> June 2015**

Target commodity: Gold  
NT 1:250,000 map series – Pine Creek SD52-8  
NT 1:100,000 map series – Pine Creek 5270 &

#### **Distribution:-**

1. DOR Darwin NT
2. Primary Gold Ltd

**Ben Cairns  
August 2015**

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## 1 EXECUTIVE SUMMARY

Tenements of GR308 lie approximately 190km SSE of Darwin along the Stuart Highway, approximately 35km NNW of the town of Pine Creek. Access is via good sealed roads from Darwin to Pine Creek and from thence via gravel roads built to service the various local mining centres; Brocks Creek, Mount Bonnie, Fountain Head and Port Darwin Camp and also station tracks. The tenements surround areas of extensive gold mineralisation associated with the north western extent of the Pine Creek Shear Zone.

The tenements are dominated by metasediments of the South Alligator Group and the Prices Springs Granite of the Cullen Supersuite.

Due to depressed market conditions and the company's focus on the completion of an Environmental Impact Statement at the flagship project at Tom's Gully, there has been no field work completed on tenements within GR308 in the current reporting year. Work for the reporting period has been restricted to a review of the publicly available regional geological and geophysical data and the compilation and review of historic data. The Toms Gully Project is an integral part of the company's exploration strategy, a return to production of this asset is proposed to aid funding of future regional exploration programs.

During the 2015-2016 reporting year it is proposed that regional reconnaissance and hammer prospecting will, be undertaken in conjunction with follow up geological mapping and sampling around catchments identified by previous explorers which returned anomalous gold in stream sediment assay results.

## **2 COPYRIGHT**

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Any information included in the report that originates from historical reports or other sources is listed in the "References" section at the end of the document.

This report may be released to open file as per Regulation 125(3)(a).

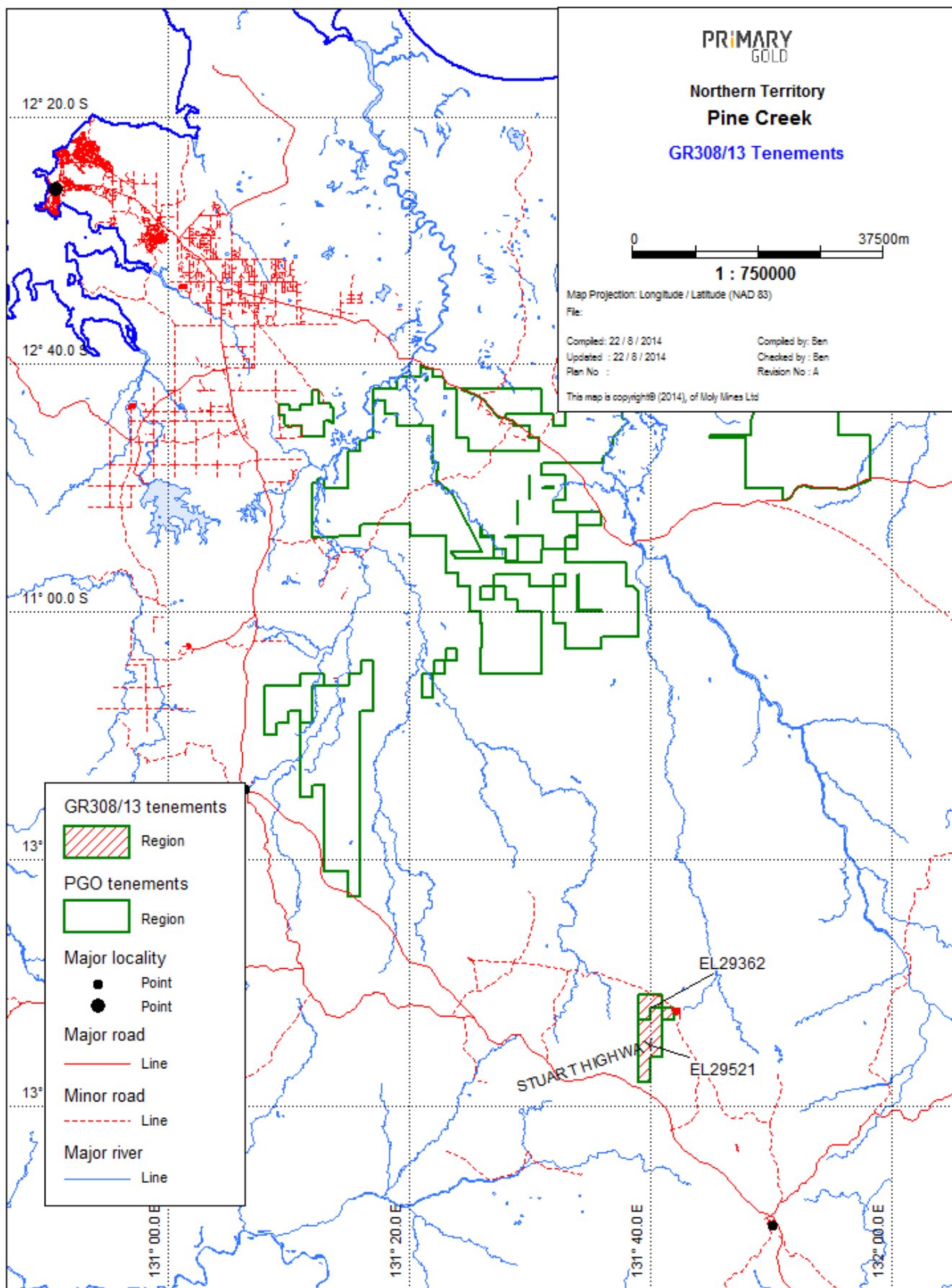


Figure 1- Tenement location plan

### 3 INTRODUCTION

Group reporting status was granted to the Pine Creek Two project, GR308, on the 31<sup>st</sup> May 2013 for tenements EL29521, EL29361 and EL29362 and the reporting period for the title group is 1<sup>st</sup> July to 30<sup>th</sup> June. Following a review of the tenements in 2013, EL29362 was relinquished on 26<sup>th</sup> September 2013. A relinquishment report has been submitted to the NT DME for this license. The grant dates for the remaining titles within the reporting group are:

- EL29521 – 15<sup>th</sup> January 2013
- EL29362 – 23<sup>rd</sup> October 2012

This report documents the exploration activities conducted from the date of grant of the tenements until 30<sup>th</sup> June 2014.

The tenements lie on the north western end of the Pine Creek Shear Zone in a structurally complex area of tightly folded units of the highly prospective South Alligator Group. These units already play host to numerous significant mines and mining centres located within 25km of the project area including, Fountain Head Howleys, Mt Bonnie and Brocks Creek.

### 4 LOCATION AND ACCESS

The tenements of GR308 lie approximately 190km SSE of Darwin along the Stuart Highway (Figure 1) toward Adelaide River. Access is via good sealed roads from Darwin to approximately 48km south of the small township of Adelaide River and from thence via gravel mine roads and station tracks. These tracks provide good access for 4WD vehicles during the dry season, however many of the minor tracks will become impassable after heavy rain, and therefore access is restricted during the wet season which extends from November to March.

The tenements surround areas of extensive gold mineralisation associated with the Pine Creek Shear Zone at Adelaide River.

Figure 1 shows the location of GR308 tenements.

### 5 TENEMENT DETAILS

Lease	Area (blocks)	Sq. Km	Applied Date	Grant Date	Expiry Date
EL29362	4	13.39	1-Feb-12	23-Oct-12	22-Oct-18
EL29521	8	26.78	14-Jun-12	15-Jan-13	14-Jan-19

The tenements are held in the name of Primary Minerals NL, in late February 2013 Hydrotech International purchased 100% of the shares in Primary Minerals NL and changed its name to Primary Gold Ltd (PGO). All tenements were granted in the name of Primary Minerals NL which is now a wholly owned subsidiary of Primary Gold Ltd.

The tenements are located on Pastoral leases 815 and 903 for EL29521. Tenement EL29362 partially overlies a number of leases; Pastoral Lease 903, Perpetual Pastoral Lease 1111, Crown Lease Term 1904 and Crown Lease in Perpetuity 900. All licenses fall within the Pine Creek 1:250,000 map sheet and on the Pine Creek 1:100,000 map sheet.

## **6 GEOLOGICAL SETTING**

### **6.1 REGIONAL GEOLOGY**

Tenements of GR308 are located within the Archean to Palaeoproterozoic Pine Creek Orogen, one of the major mineral provinces of Australia, Figure 2. The Pine Creek Orogen is a deformed and metamorphosed sedimentary basin up to 14 km maximum thickness covering an area of approximately 66,000 km<sup>2</sup> and extending from Katherine in the south to Darwin in the north. It hosts significant resources of gold, uranium and platinum group metals ("PGMs"), as well as substantial base metals, silver, iron and tin-tantalum mineralization.

The Pine Creek Orogen comprises series of late Archean granite-gneiss basement domes, which are overlain by a fluvial to marine sedimentary sequence. Several highly reactive rock units are included within this sedimentary sequence including carbonaceous shale, iron stones, evaporite, carbonate and mafic to felsic volcanic units of the South Alligator and Finnis River Groups. This sequence has been subjected to regional greenschist facies metamorphism and multiphase deformation, which has resulted in the development of a northwest trending fabric. Subsequent widespread felsic volcanism and the intrusion of granitoids caused contact metamorphism, in aureoles between 500 m and 2 km wide that overprint the earlier regional metamorphism. After the granitoid intrusions an extensive array of northeast and northwest trending dolerite dykes intruded the metasedimentary sequence during regional extensional deformation.

strata of the South Alligator Group and lower parts of the Finnis River Group along anticlines, strike-slip shear zones and duplex thrusts located in proximity to the Cullen Granite Batholith. Of particular stratigraphic importance are the Wildman Siltstone, the Koolpin Formation, Gerowie Tuff, Mount Bonnie Formation and the Burrell Creek Formation.

### **6.2 LOCAL GEOLOGY**

EL29362 (Figure 3) is dominated by unconsolidated Cainozoic sands and Quaternary alluvium in the north and east overlaying granites of the Cullen Supersuite, in particular the Prices Springs Granite is a pink to green or grey coarse grained, equigranular to porphyritic granite. In the south west section of the tenement limited outcrop of Koolpin Formation and Zamu Dolerite have been mapped.

EL29521 (Figure 3) is dominantly underlain by a folded succession of South Alligator Group sediments including the Koolpin Formation, Gerowie Tuff and Mount Bonnie Formation with interlayered Zamu Dolerite (or equivalent). The Koolpin Formation is thought to represent a shallow marine transgressive sequence described by the NTGS as ferruginous and carbonaceous phyllite with chert bands, lenses and nodules; minor massive and limonitic ironstone, silicified dolomite, marl, pyritic and graphic hornfels, marble, para-amphibolite and muscovite-quartz schists. Overlying the Koolpin Formation is the Gerowie Tuff representing a period of subaerial volcanism with glassy black tuffaceous chert, crystal tuff, vitric tuff, siltstone, phyllite and argillite. Minor shale, mudstone, phyllite, siltstone and greywacke of the Mount Bonnie Formation is noted in synformal cores on the south east and north east tenement boundaries.

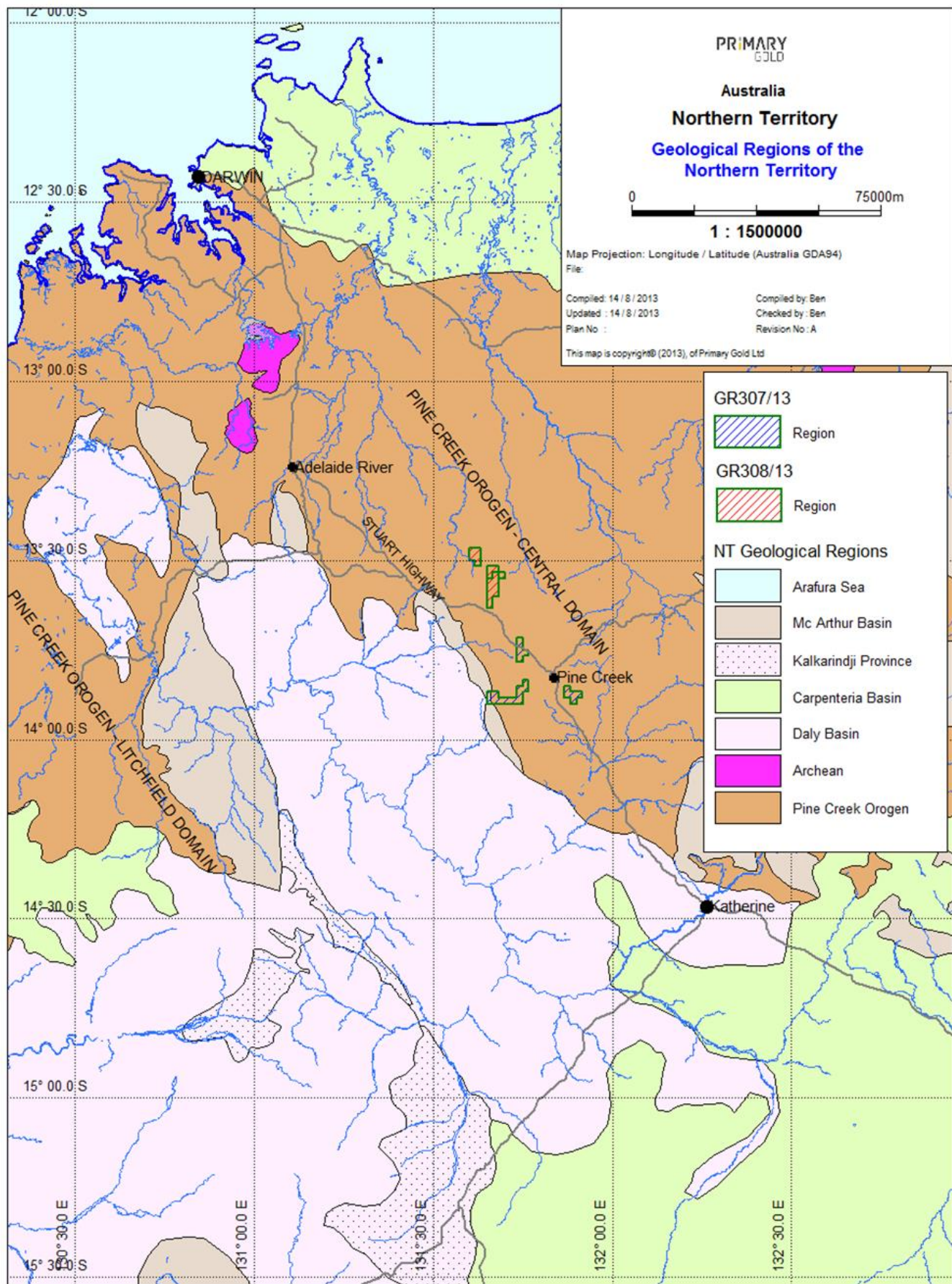


Figure 2 – Regional geology of the project area.





## **7 EXPLORATION ACTIVITY YEAR ENDING 30<sup>TH</sup> JUNE 2015**

There has been no on ground exploration activity completed on any of the tenements in GR308 in the current reporting period. Financial and staff resources have been focussed on the completion of an Environmental Impact Statement at Toms Gully Mine some 75km to the north of tenements within GR308 and as such the allocation of resources to GR308 has been limited. Work has been limited to desktop reviews and data compilation using available NTGS data sets. These data sets have proved invaluable in the first pass evaluation of the tenements and have highlighted a number of gold in stream sediment sample results which appear to be shedding from favourable structural settings. The historic samples require validation and follow-up.

## **8 RECOMMENDATIONS AND CONCLUSIONS**

During the 2015 -2016 exploration year, activities will include an ongoing review of historic geochemical and geophysical data, with reconnaissance field visits and geological mapping. Rock chip and soil sampling may be conducted if targets are identified with further work planned reflective of results. Favourable structural positions in anticlinal hinge zones are noted in the north of EL2952 and appear to extend under cover in EL29362. These zones are coincident with anomalous gold in stream sediment samples results identified by previous workers. Validation of these results should be the first order of work on the project.

A combined minimum budget of \$23,200 is proposed for EL29521 and EL29362 for the next reporting period.

## **9 REFERENCES**

- Ahmad M, Wygralak AS and Firenczi PA, 2009. *Gold Deposits of the Northern Territory (Second Edition)*. Northern Territory Geological Survey Report 11 (Second Edition Update by Wygralak AS and Scrimgeour IR)
- Stuart-Smith PG, Needham RS, Wallace DA, O'Donnell IC & Bagas L, 1987, *Pine Creek 1:100,000 Map Series Explanatory Notes*, 5270. Bureau of Mineral Resources, Canberra, Australia.
- Hollis, JA and Glass, LM. 2011. *Pine Creek, Northern Territory (Second Edition)*. 1:250,000 geological map series, SD52-08. Northern Territory Geological Survey, Darwin.