

ASX ANNOUNCEMENT

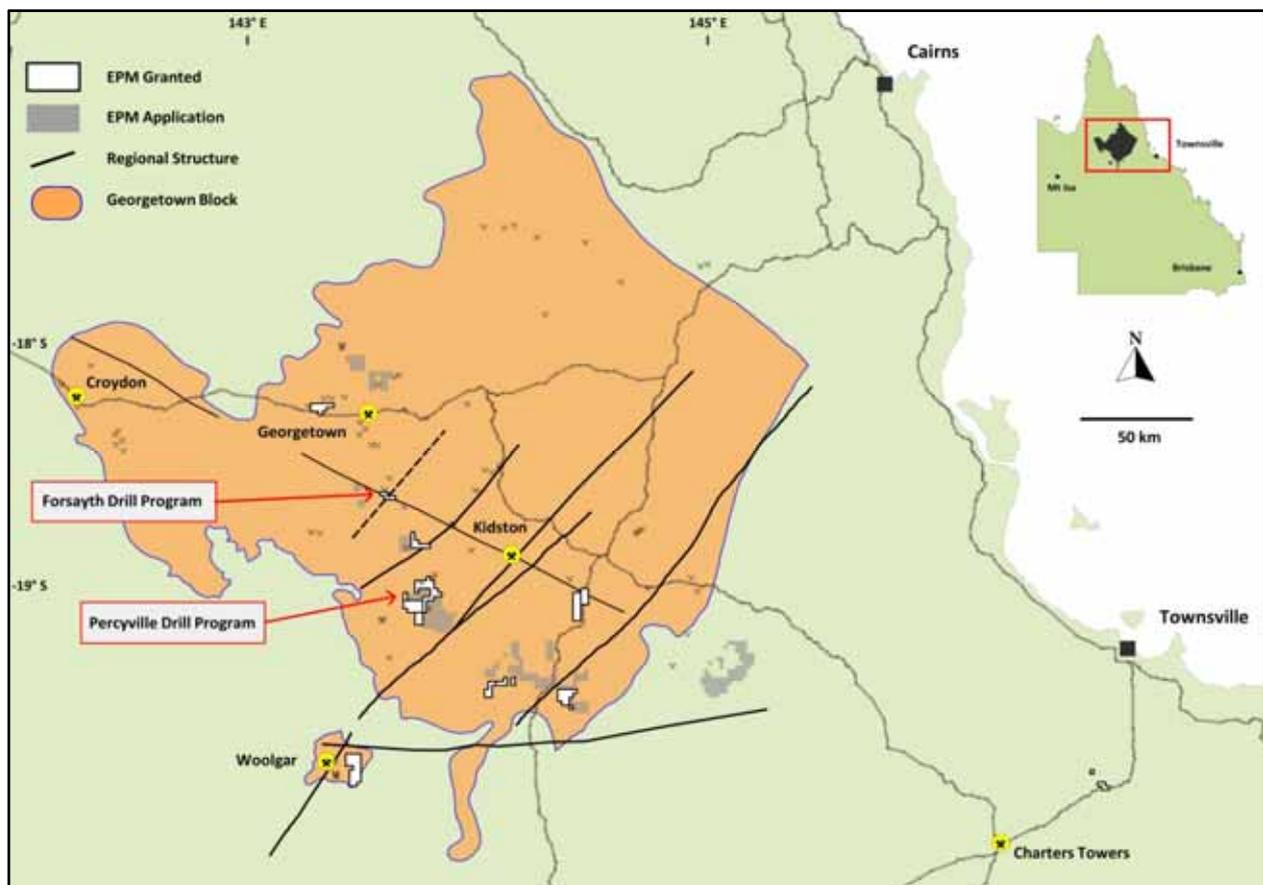
31st August, 2010

Drilling commences to investigate high grade gold and copper targets in Queensland

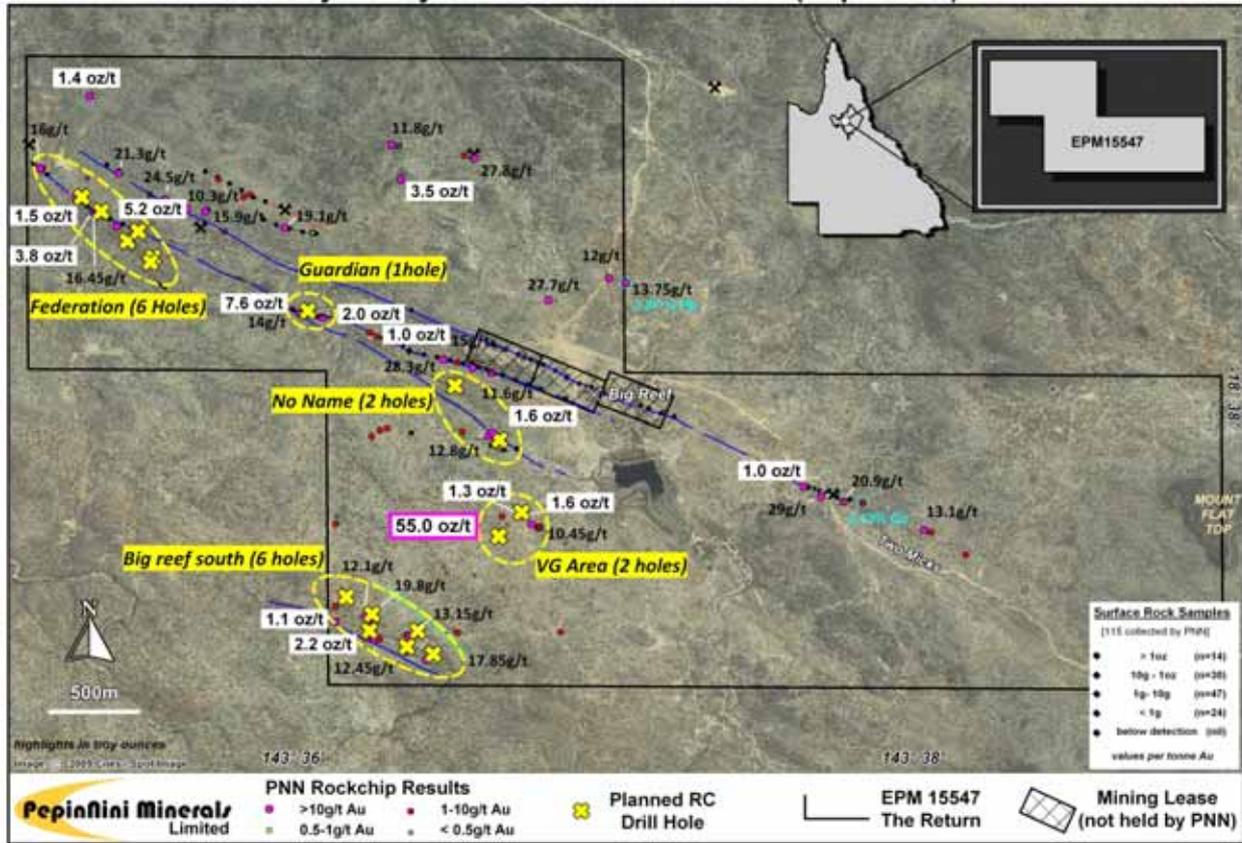
PepinNini Minerals Limited has commenced a reverse circulation (RC) drilling program at its Forsayth and Percyville Projects in north Queensland. Twenty eight boreholes are planned to investigate high grade gold and copper mineralisation identified in surface samples from EPM15547 'The Return' and over portions of EPM15440 'Percyville'.

The drilling program is estimated to take one month to complete and the Company will make further announcements when drilling results become available.

Location of Proposed Drilling Program North Queensland.



Forsayth Project - Planned Drill Holes (Sept. 2010)

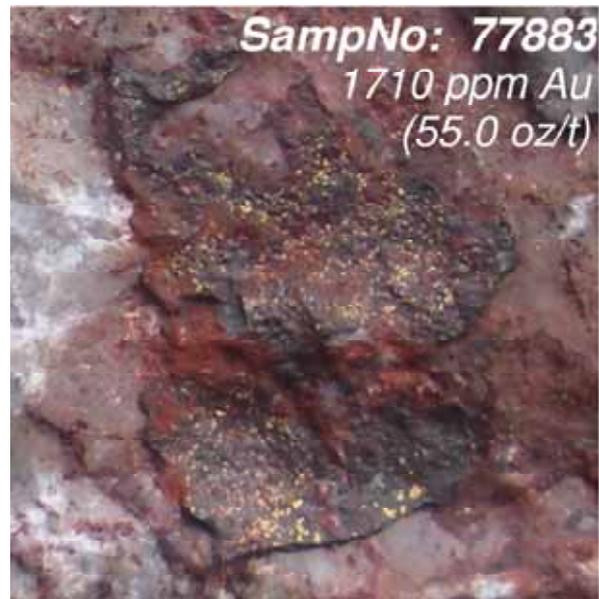


EPM 15547 – The Return (Forsayth Project)

Seventeen RC bore holes are planned to test five target areas within the Forsayth Project.

The targets have been defined using extensive rock chip sampling, geological mapping and detailed helicopter magnetics undertaken by the Company since 2008. Several new vein systems and potentially significant structural environments were identified as a consequence of this work. Rock chip sampling returned a range of gold value from 0.1 g/t (country rock) up to 1710 g/t (55 oz/t). The majority (~80%) of the samples returned anomalous gold (> 1g/t) with almost half of those samples containing significant gold values in excess of 10g/t. Significant silver grades of up to 642 g/t (20 oz/t) were also identified.

The detailed heli-magnetic survey flown across the tenement area during 2009 has assisted the recognition of structural targets favourable to mineralisation. The magnetic data greatly augmented detailed field mapping of the structures associated with the high grade gold occurrences. The mapping, which was completed in 2009, has accurately located corridors of well defined mineralised lodes and has identified several zones of stock work veining which may have potential for an open pit resource.

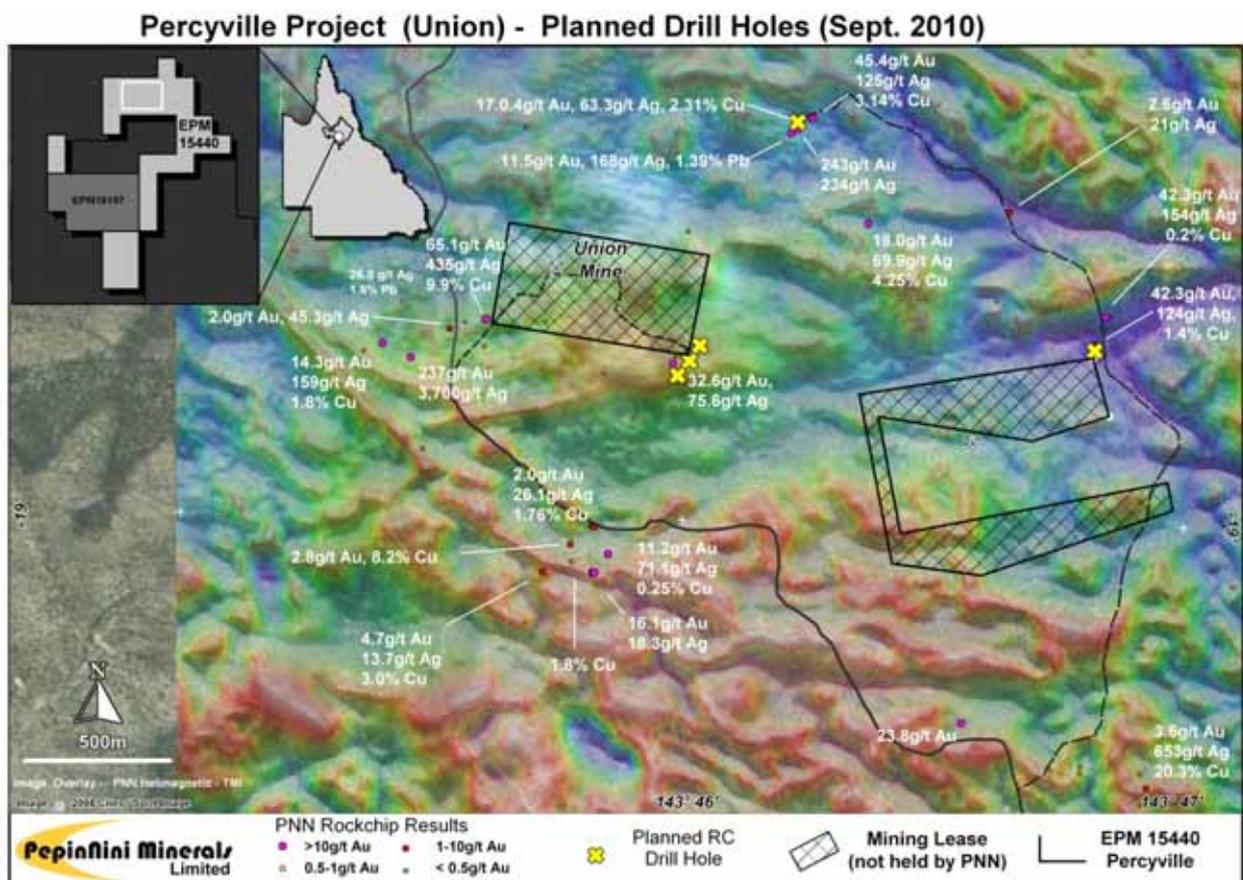


EPM 15440 – Percyville (Percyville Project)

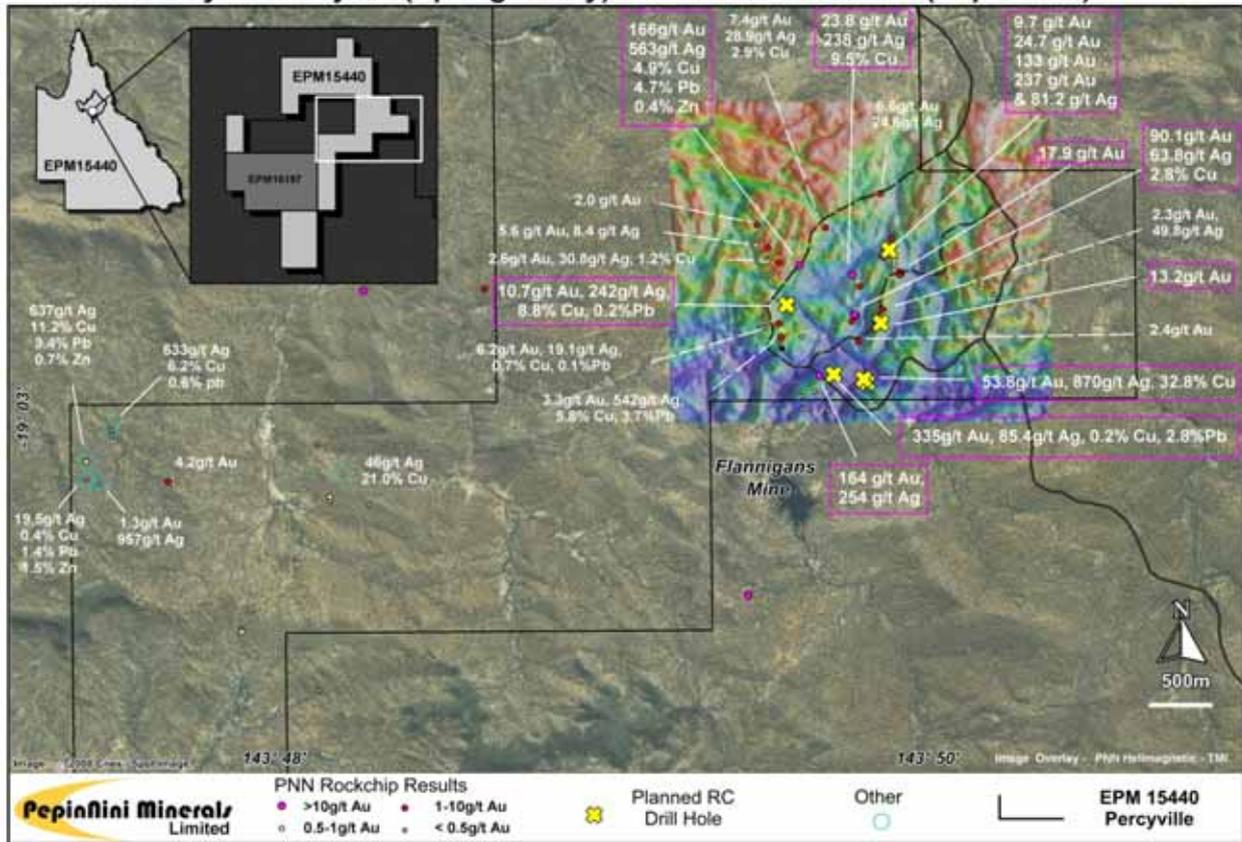
Two priority gold-copper prospect areas (Union & Spring Valley) have been identified within the Percyville Project (EPM15440) from rock chip and soil sampling programs undertaken by the Company during 2008 and 2009. Gold grades of up to 65g/t and copper grades of up to 20.3% have previously been reported for The Union Prospect. At the Spring Valley Prospects gold grades of up to 335 g/t and copper grades of up to 32.8% have been reported.

Detailed heli-magnetic surveying and geological field mapping across each of these areas during 2009 has also been used to locate and refine drill targets.

Five RC boreholes will be drilled to test three targets within the Union Area and six boreholes will be drilled to test five targets within the Spring Valley Area.



Percyville Project (Spring Valley) - Planned Drill Holes (Sept. 2010)



The information in this report that relates to Exploration Results is based on information compiled by Norman Kennedy BSc MAusIMM. Norman Kennedy is the Chairman and Managing Director of PepinNini Minerals Limited and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration to qualify as a Competent Person as defined in the 2004 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Norman Kennedy consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

For further information please contact:

Mr Norman Kennedy
Chairman and Managing Director, PepinNini Minerals Limited
Phone: +61 (0)8 8218 5005

Note: Additional information on PepinNini Minerals Limited can be found on the website:

www.pepinnini.com.au