

31 January 2011

ASX Announcement

Quarterly Report

For the period ended 31st December 2011

HIGHLIGHTS

EXPLORATION

- Commenced major drilling campaign at **Bangaba and Bonsiega** Gold Projects in Burkina Faso with a significant number of **assay results pending**.
- Extended the **Solna** Prospect mineralised system, **Bangaba Project** to a **strike length of 650m**, open to the north-east with **continuing evidence of high grade gold**, intersecting:
 - o **6m at 12.2 g/t Au** from 40m **including 2m at 30.5 g/t Au**.
 - o **1m at 4.6g/t Au** from 49m.
- Bedrock gold assays from about a third of the **Bangaba** bedrock geochemistry grid identified **gold anomalies covering more than 4km of strike**.
- Extended the **Tambiri** gold mineralised system at Bangaba to a **strike length of over 500m**.
- Exploration for the quarter on Burkina Faso gold properties included:
 - o **2,439 power auger** drill holes on the Bangaba Project and the Laterite Hill Grid in the Bonsiega Project, **totalling 11,387m**.
 - o **30 RC** drill holes on the Bangaba Project and Laterite Hill Grid, totalling **3,286m**.
 - o **17 diamond** drill holes on the Bangaba Project, totalling **2,055m**.
 - o 42 km² of geological mapping.
- **RC drilling** in progress at **Bonsiega** Gold Project at the Dave/ Dave East, Laterite Hill and Tamboana Prospects with assays awaited.

PLANNED MARCH QUARTER EXPLORATION PROGRAM

- Continuation of current **18,000m RC drilling** program on the **Bonsiega** and **Bangaba** gold projects.
- Completion of **diamond drilling** on **Laterite Hill Grid** targets at Bonsiega.
- Continuation of **power auger** geochemical drilling programs also on the **Bonsiega** and **Bangaba** Projects.
- In-hole imaging of gold-bearing quartz veins on the Laterite Hill Grid and Bangaba Project.
- Geological **mapping** on the **Bonsiega, Tyekanyebi and Boussouma** Projects

CORPORATE

- Strong cash position of \$6.3M as at 31 December 2011 and no debt.

PDI's major country focus is Burkina Faso, West Africa where it has established a large Burkina-based exploration team and a large regional tenement package primarily located in the north east of the country. Exploration activities in Burkina Faso started to ramp up again in October after the rainy season. Since the beginning of November, the Company has completed approximately 16,000m of drilling and 42 km² of geological mapping. In addition, PDI also completed a 1,768m combined RC and diamond drilling program on the Benmara Project in the Northern Territory of Western Australia.

The Company is in the midst of a very large field program in Burkina Faso, including a major drilling campaign. A large number of results will therefore be released in the coming weeks and months.

PROJECTS

Burkina Faso

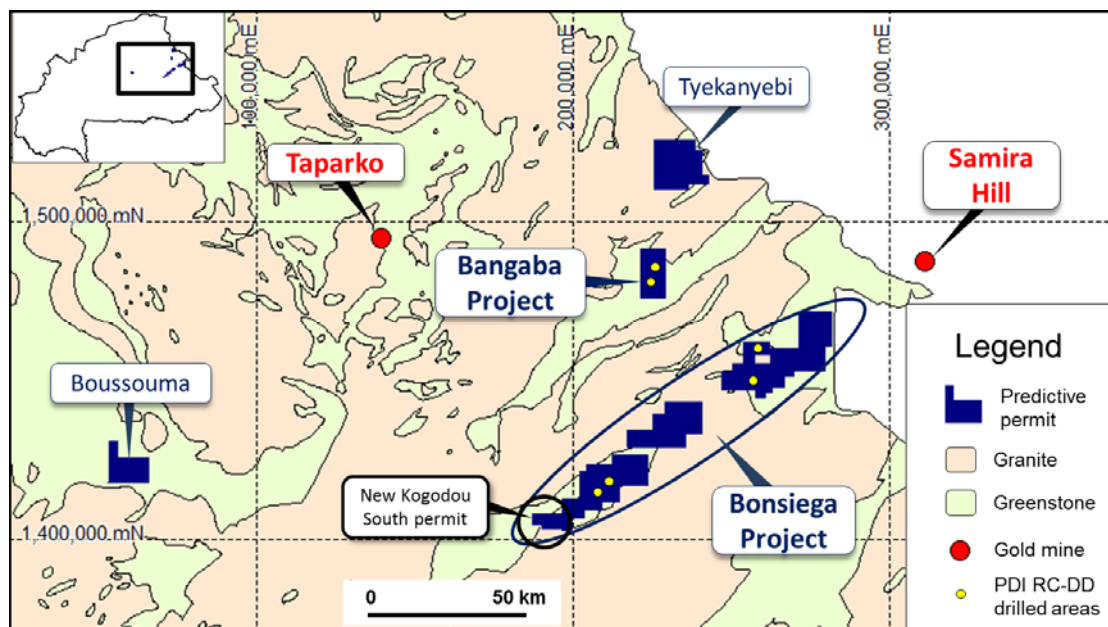


Figure 1: Locality Plan – PDI Projects in Eastern Burkina Faso superimposed on Government geological map.

Bangaba Project (PDI earning 95%)

Bangaba Gold Project Background

The Bangaba Project in Eastern Burkina Faso covers areas of extensive artisanal mining. Significant quantities of gold have been produced at Bangaba for some 27 years and cumulative gold production is estimated to be several tonnes or more. Permit-wide mapping has shown that the known workings are located on two large structures on the north-west and south-east contacts of a diorite-granodiorite body (Figure 2). These contact zones are largely hidden beneath shallow cover and are each over 10km long within the permit. There is considerable potential to discover additional zones of high grade mineralisation

in these areas. PDI is earning a 95% interest in the 128 km² Bangaba exploration permit; the Company's current equity in the project is 51%.

Solna Prospect - RC Drilling Program

The Solna Prospect is one of three major areas of artisanal workings in the Bangaba Project (Figure 2) and covers a 600 metre long zone that contains numerous shafts.

Artisanal workings are focused on gold bearing quartz veins that occur in sheared diorite-granodiorite rocks near a contact with metasediments. Quartz veins in the workings are believed to dip at between 30 and 60 degrees to the south-east.

PDI completed a six hole RC drilling program totalling 620m in November 2011. This was following up on a series of encouraging RC drill results obtained there previously by the Company including:

- 2m at 56g/t Au from 65m
- 7m at 13g/t Au from 117m
- 2m at 10g/t Au from 134m

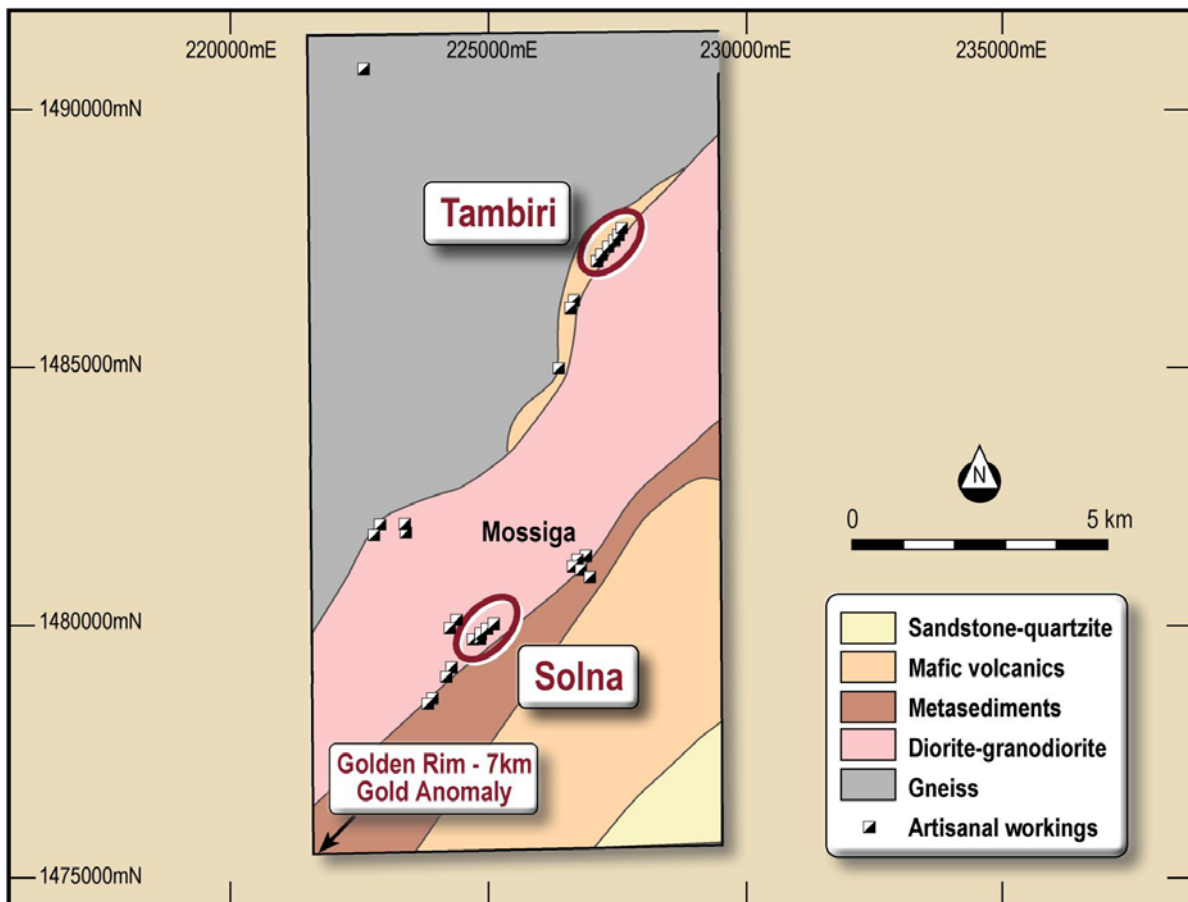


Figure 2: Bangaba Project geological map showing location of Solna and Tambiri Prospects.

RC drilling was aimed at identifying along strike extensions to the known mineralisation. The holes were drilled at inclinations of between 45 and 60 degrees on sections 80 metres apart. Holes were gyroscopically

surveyed to measure their exact trajectories. Analytical standards and blanks were inserted at regular intervals for quality control. Gold analysis by fire assay was carried out by the SGS laboratory in Ouagadougou.

A plan view of the drill holes is shown in Figure 3. Fire assay gold results from all six holes have now been received. Table 1 provides the ore intercepts. These indicate that the zone is open to the north-east but cut off or off-set at the south-western end. Diamond drill core logging indicates that the geology is complex at the south-western end, possibly indicating one or more off-setting structures.

Table 1 – Solna RC drill highlights

Hole No.	UTM East	UTM North	Azimuth (degrees)	Inclination (degrees)	From (m)	Interval (m)	Au (g/t)	Comments
SOLRC010	225,208	1,479,920	310	-60	49	10	0.9	Includes 1m at 4.6g/t Au
SOLRC011	224,712	1,479,505	310	-60	40	6	12.2	Includes 2m at 30.5g/t Au

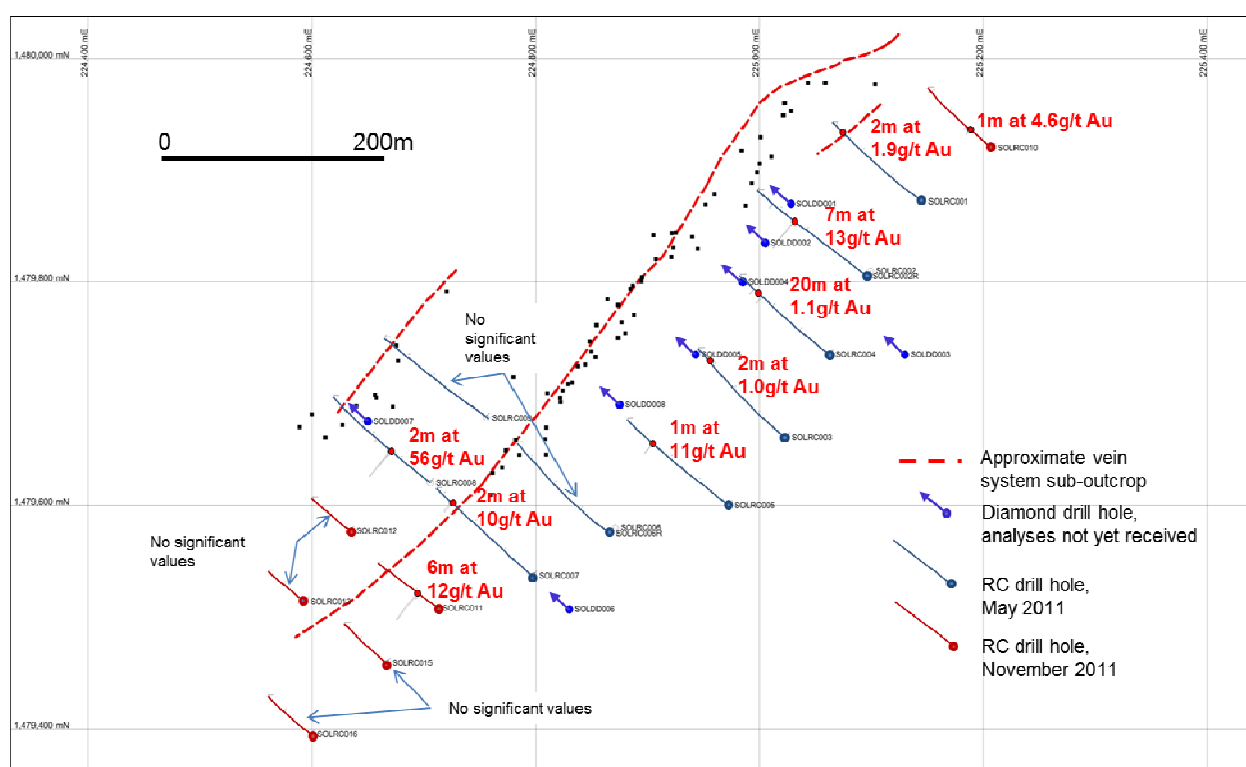


Figure 3: Plan view of RC drill results and diamond drill collar locations, Solna Prospect. Small black squares denote the locations of artisanal shafts.

Solna Prospect - Power Auger Drilling

PDI drilled 1,712 power auger holes, totalling 6,656m, on the Bangaba Project in November 2011 (Figure 4). The holes were designed to test structures interpreted from PDI's recently acquired aeromagnetic data beneath and along strike from the Tambiri and Solna Prospects.

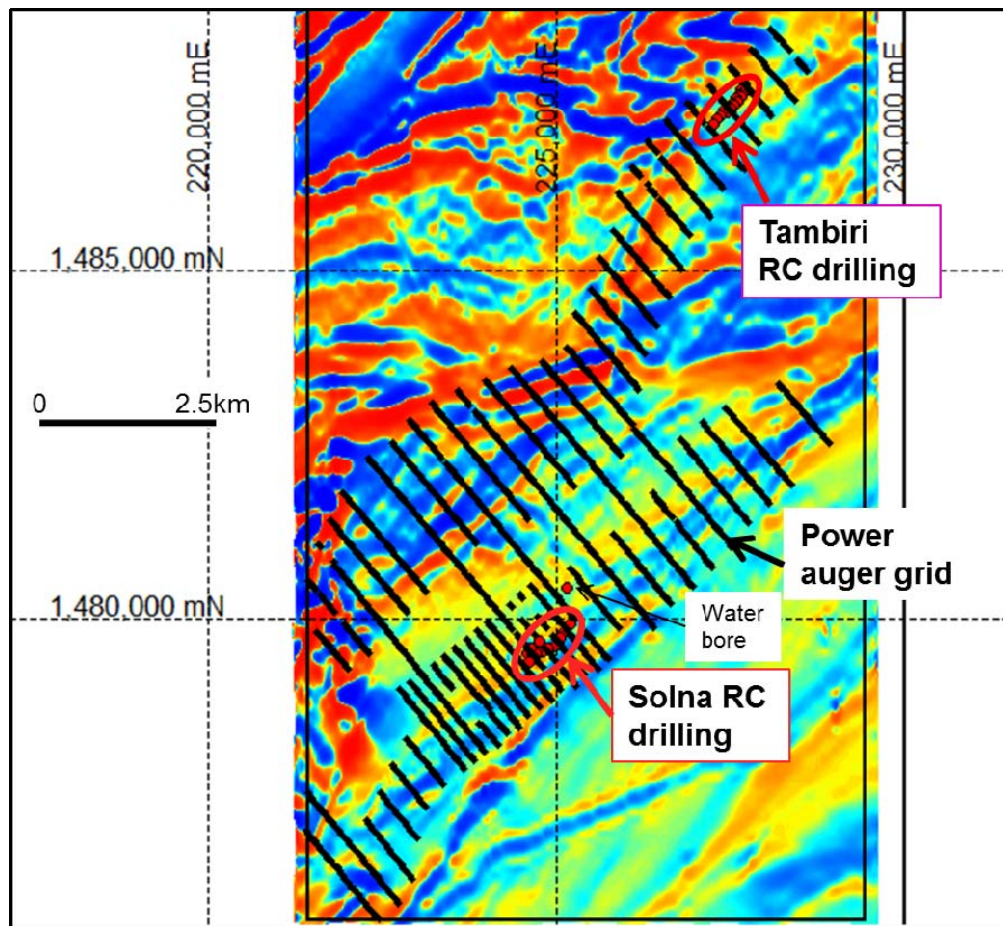


Figure 4: Power auger drill hole locality plan, Bangaba Project. Drill hole locations are superimposed on a map of aerial magnetic data collected by PDI in July, 2011.

Holes were drilled on reconnaissance lines 400m apart with a set of 200m spaced lines in the vicinity of Solna. Wherever possible, samples were collected at the interface between surficial materials (laterite or alluvium) and weathered bedrock and from the weathered bedrock itself. If the holes did not penetrate through to weathered bedrock, samples were taken at the bottom of hole. Gold analysis by AAS was carried out by the SGS laboratory in Ouagadougou.

Assay results from only 600 holes of the 1,712 power auger holes have been received to date. Figure 5 shows results from interface sampling for the area in the vicinity of the Solna Prospect and to the south-west. It demonstrates that there is a **2.6km long anomalous gold zone** including Solna, which strikes at a small angle to the contact between the mapped granodiorite and metasedimentary rocks. The power auger sample line immediately to the south-west of the RC drilled zone indicates a small gap in the gold

anomalous zone which is consistent with the results of the south-western RC holes. These results suggest that there are a series of north-east trending gold-bearing zones arranged in an echelon arrangement along the Solna structural trend, opening up the possibility of new zones being discovered to the south-west of Solna.

An additional 1.7km long gold anomalous zone was identified further to the south-west approximately along strike from a 7km long gold in soil anomaly identified by Golden Rim Resources Limited (ASX:GMR) on the adjacent exploration permit to the south-west.

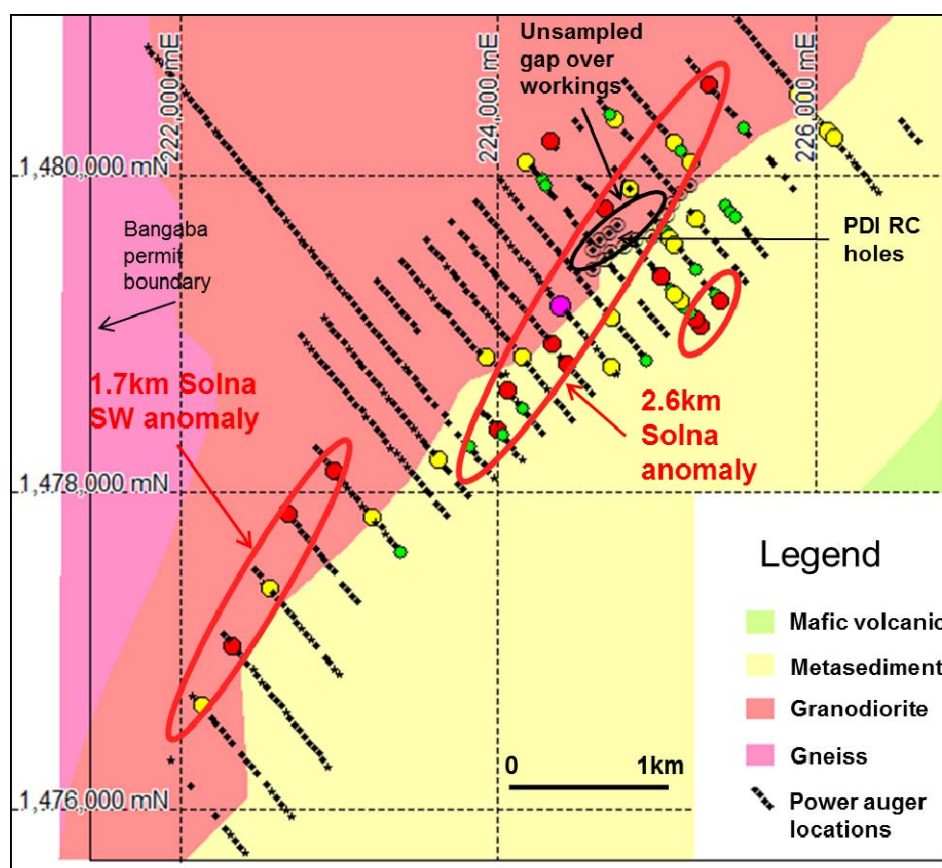


Figure 5: Extent of power auger sampling for which assays are available, Bangaba Project superimposed on a new geological interpretation of the prospect area. Colour coded dots signify samples containing 20-50ppb Au (green), 50-100ppb Au (yellow), 100-1,000ppb Au (red) and more than 1,000ppb Au (magenta)

Solna Prospect - Diamond Drilling

Eight diamond drill holes, totalling 1,083m, were completed at Solna in November and December 2011. The holes were largely designed to test the known mineralised zones at Solna at shallower levels than the previously drilled RC holes. The diamond drilling method was selected in order to obviate any drilling problems associated with pre-existing voids and to obtain oriented core of the structures within the main mineralised zone. None of the holes intersected artisanal workings, however, which suggests that the extent of gold ore removal is likely to have been less than was previously anticipated. Assays are awaited.

Tambiri Prospect - RC Drilling

The Tambiri Prospect is another major area of artisanal workings in the Bangaba Project (Figure 2). Artisanal workings are focused on gold bearing quartz veins that occur in sheared volcanics and metasediments. The Tambiri quartz vein complex, which is 10-20m wide, dips at between 70 and 80 degrees to the south-east.

PDI completed a seven hole RC drilling program totalling 982m in November 2011. This was following up on a series of encouraging RC and diamond drill results obtained there previously by the Company and former explorer, High River Gold, including:

- **16m at 10.6g/t Au from 56m** (High River Gold, 1996)
- **2m at 56g/t Au from 54m** (High River Gold, 1996)
- **5m at 17.1 g/t Au from 96m** (PDI, 2011)
- **5m at 16.4g/t Au from 61m** (High River Gold, 1996)
- **12m at 2.4g/t Au from 155m** (PDI, 2011)
- **9m at 2.6g/t Au from 90m** (PDI, 2011)

RC drilling was aimed at identifying along strike extensions to the known mineralisation. The holes were drilled at inclinations of 60 degrees on sections 80 metres apart. Holes were gyroscopically surveyed to measure their exact trajectories. Down hole trajectories were surveyed using a gyroscopic instrument. Analytical standards and blanks were inserted at regular intervals for quality control. Gold analysis by fire assay was carried out by the SGS laboratory in Ouagadougou.

A plan view of the drill holes is shown in Figure 6. Gold assays from all seven holes have now been received. Table 2 provides the drill hole intercepts. These indicate that gold mineralisation persists to the south-west, albeit at a lower average grade, with mineable widths and grades extending over at least 500m of strike.

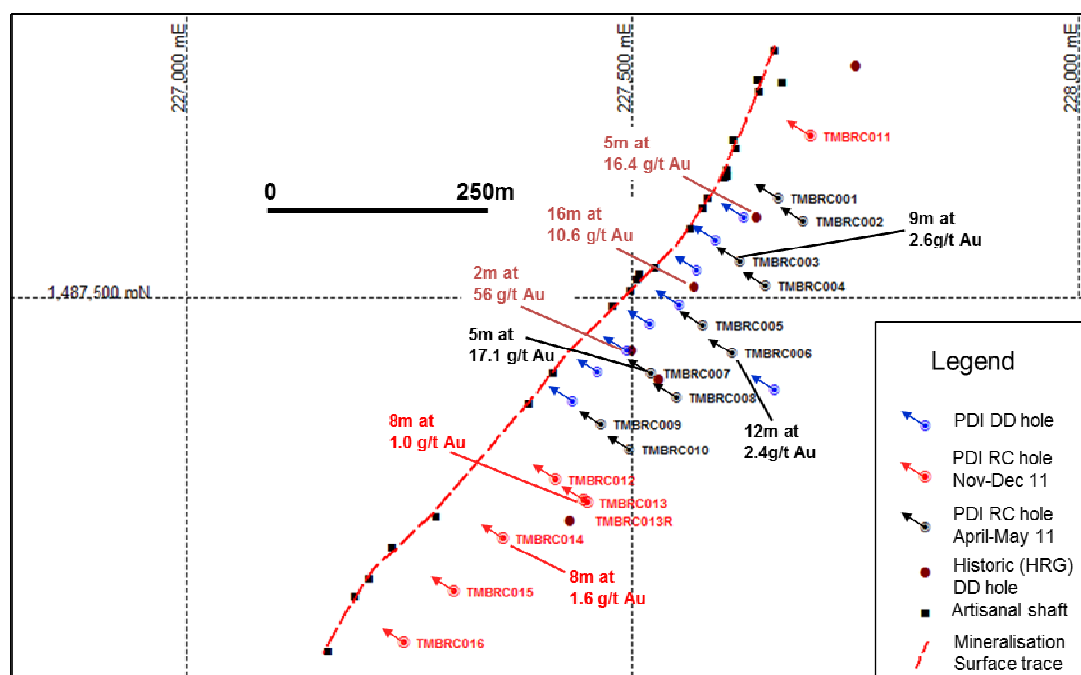


Figure 6: Plan view of RC and diamond drill collar locations, Tambiri Prospect. Small black squares denote the locations of artisanal shafts. Only the better intercepts from each phase of drilling are highlighted. Assay results for the diamond drill holes have not yet been received.

Table 2 – Tambiri RC drill results

Hole No.	UTM East	UTM North	Azimuth (degrees)	Inclination (degrees)	From (m)	Interval (m)	Au (g/t - 0.5g/t Au cut-off)
TMBRC011	227700	1487681	310°	-45°			nil
TMBRC012	227414	1487295	310°	-45°	99	6	0.7
TMBRC013R	227446	1487272	310°	-45°	144	8	1.0
TMBRC014	227356	1487230	310°	-45°	88	8	1.6
TMBRC015	227300	1487170	310°	-45°	89	4	1.0
TMBRC016	227245	1487112	310°	-45°	73	4	0.8

Tambiri Prospect – Diamond Drilling

Nine diamond drill holes, totalling 972m, were completed at Tambiri in December 2011. The holes were largely designed to test the known mineralised zones at Tambiri at shallower levels than the earlier RC drilling. The diamond drilling method was selected in order to obviate any drilling problems associated with pre-existing voids and to obtain oriented core of the structures within the main mineralised zone. Only one of the holes intersected artisanal workings, which, as at Solna, suggests that the extent of gold ore removal is likely to have been less than was previously anticipated. Assays are awaited.

Bonsiega Gold Project

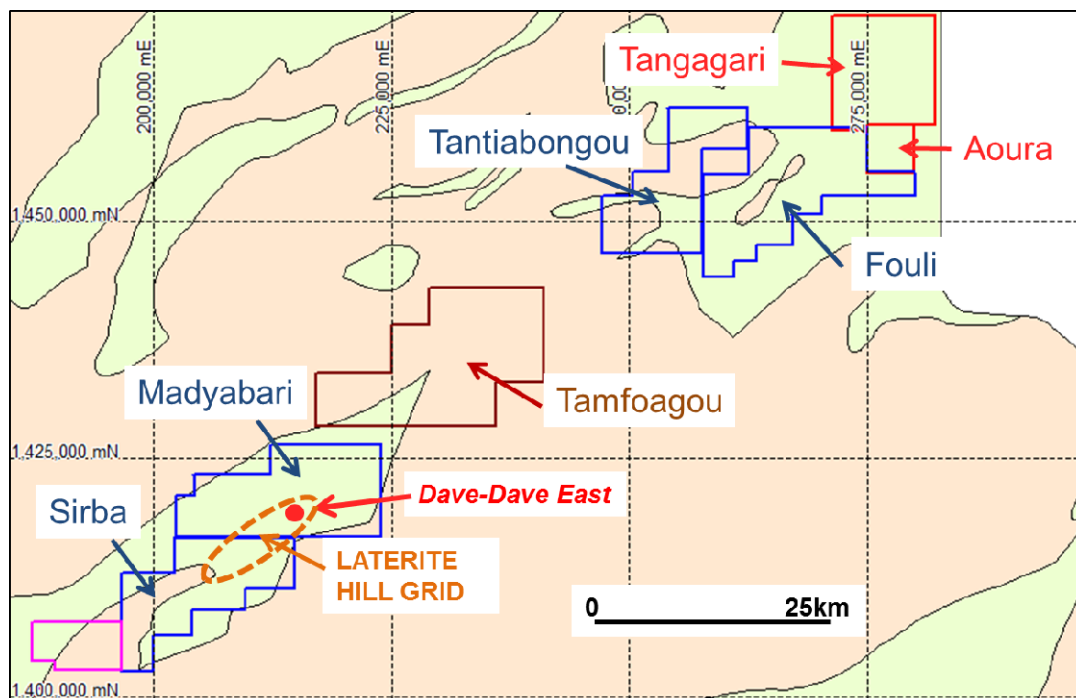


Figure 7: Bonsiega Project locality plan superimposed on Government geological map (pink is granite, green is greenstone). The Eldore Joint Venture (PDI 60%) permits are outlined in blue, two 95% earn-in option agreements are in red, a 100% option agreement is in magenta and PDI's wholly owned Tamfoagou permit is in brown.

Eldore Joint Venture (PDI - 60%)

RC Drilling – Laterite Hill Grid (Sirba and Madyabari Permits)

RC drilling commenced on the Laterite Hill Grid in December. The program started with infill and twin hole drilling on the **Dave and Dave East Prospects**. Sixteen holes were drilled, totalling 724m, with the aims of either:

- providing short dry holes to enable imaging of gold-bearing quartz veins using the SEMMLogging system that had been used to good effect on the Fouli Prospect in early 2011 to identify quartz vein orientations and therefore guide resource drill planning; and/or
- infilling between the initial 40m spaced holes in order to improve the understanding of continuity of mineralisation between holes.

The drill rig then moved to the Laterite Hill and Tamboana Prospects to test bedrock geochemical anomalies outlined on the Laterite Hill Grid. 12 RC holes, totalling 960m had been completed by the end of December.

All RC holes were drilled along the pre-existing grid lines towards the north-west at an inclination of -50 degrees. Down hole trajectories were surveyed using a gyroscopic instrument. Analytical standards and blanks were inserted at regular intervals for quality control, and samples were submitted for fire assay to the SGS Laboratory in Ouagadougou. Assay results are awaited.

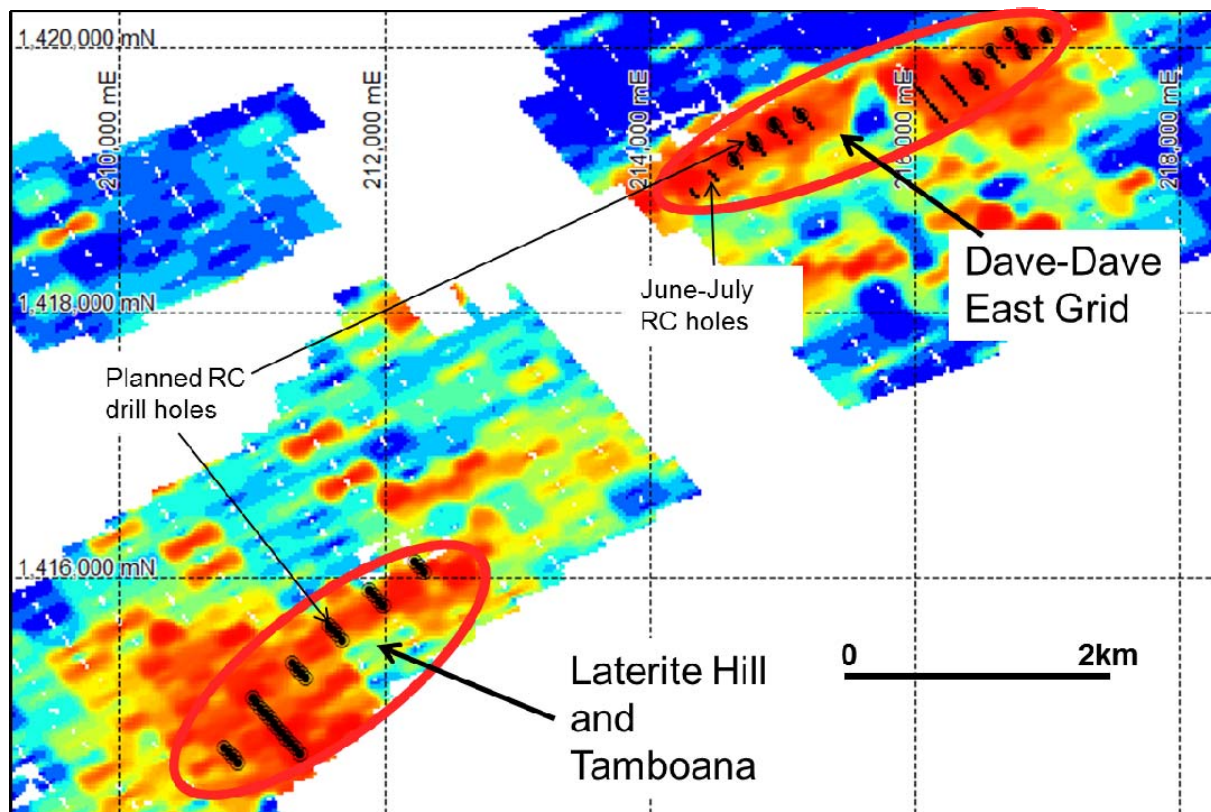


Figure 8: Dave-Dave East and Laterite Hill Grid planned RC drill hole locations, superimposed on a colour map of power auger gold geochemistry (red colours signify gold anomalous areas).

Laterite Hill Grid Western Extension - Power Auger Drilling

Drilling of a 906 hole power auger grid (Figure 9) commenced in late November. It was designed to cover the western extensions of the Laterite Hill Grid where earlier sampling has already identified more than 16km of plus 50ppb Au gold anomalies. By the end of December, 727 holes had been drilled totalling 4,728m.

Auger holes were drilled on reconnaissance lines either 400m or 800m apart. Wherever possible, samples were collected at the interface between surficial materials and weathered bedrock and from the weathered bedrock itself. If the holes did not penetrate through to weathered bedrock, samples were taken at the bottom of hole. Samples were submitted for analysis by AAS at the SGS laboratory in Ouagadougou. Assay results are awaited.

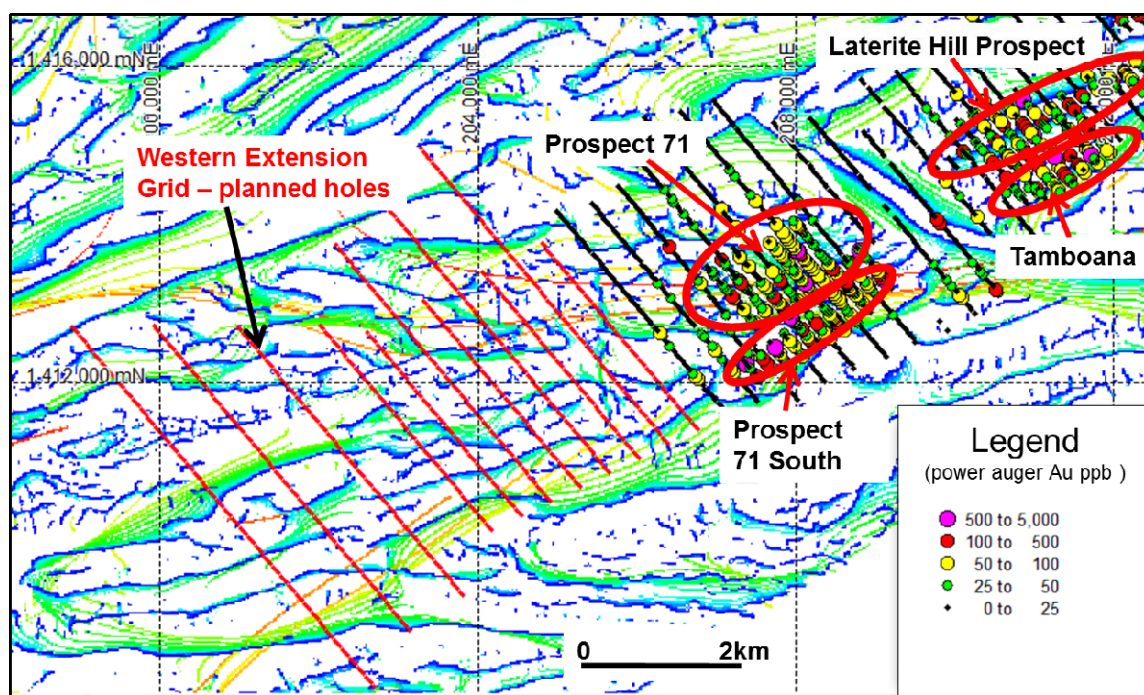


Figure 9: Planned power auger grid - western extension of the Laterite Hill Grid. Gold assay results are from power auger sampling on the western portion of the original grid. These assays were obtained from samples of the interface between superficial cover and weathered bedrock or, where drilling failed to reach weathered bedrock, regolith material taken from the bottom of the hole. The coloured lines are derived from wavelet analysis of aeromagnetic data and are interpreted to represent fault or shear zones.

Geological Mapping

PDI geologists completed 42 sq km of geological mapping on the Bonsiega Project, the majority of which was completed on the **Tangagari permit** (Figure 7).

Kogodou South (PDI earning 100%)

The Kogodou South exploration permit covers an area of 44.6km² and lies south west of, and directly adjacent to, PDI's Sirba permit (Figure 10). It was granted on 4th October 2011.

As far as PDI is aware, no significant exploration has been carried out over this area apart from an aerial magnetic survey in the late 1990's.

Kogodou South lies along strike from the Laterite Hill Grid gold mineralised system on the adjacent Sirba and Madyabari permits to the north-east. The latter is localised between two major ENE trending structures which have been identified from processing of aeromagnetic data (Figure 10). Those two structures track south-westwards into the Kogodou South permit.

The Government geological map indicates that the permit is underlain by both granite and volcano-sedimentary rocks. The distribution of those rocks is not well known because the area is largely covered by alluvium associated with the Sirba River as it is on the Laterite Hill Grid. The Laterite Hill gold mineralised system was defined by Predictive Discovery by a large program of power auger drilling through alluvial and laterite cover. Therefore, the opportunity also exists on Kogodou South to discover similar thinly concealed gold mineralisation.

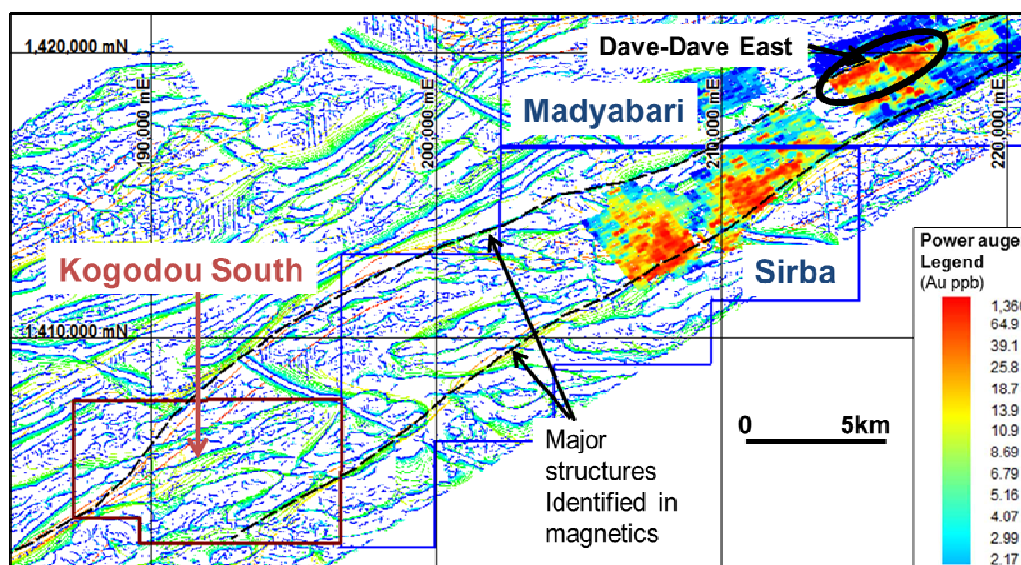


Figure 10: Location of Kogodou South Permit overlain on wavelet processed historic aerial magnetic data and a gridded colour image of power auger gold geochemistry on the Laterite Hill Grid.

Agreement Terms

PDI signed an option agreement on this permit on 3rd November, 2011 with the following key terms:

- Payments of:
 - o USD15,000 on signature.
 - o USD30,000 on the first year anniversary.
 - o USD60,000 on the second year anniversary.
 - o USD100,000 on the third year anniversary (final payment).

- Acquisition of 100% of the permit on the final payment.
- Original holder receives a right to a 1% NSR royalty on production, which can be purchased for USD1 million by PDI at any time at PDI's election.
- PDI may withdraw from the agreement at any time as long as the minimum expenditure commitment has been maintained. The expenditure commitment for this permit is approximately AUD25,000 per annum.

Planned Work Program

PDI will follow the same approach in exploring this permit as in the other areas of the Bonsiega Project. Geological mapping will be combined with interpretation of the existing aerial magnetic data and application of Predictore™ to identify targets for power auger geochemical sampling. The latter is expected to commence in the first half of 2012.

Boussouma Project (PDI earning 95%)

Limited reconnaissance geological mapping was carried out during the Quarter.

Planned March Quarter Exploration – Burkina Faso

Planned exploration activities for the March Quarter include the following:

- Ongoing drilling programs:
 - o Continuation of the contracted **18,000m RC drill program** focused mainly on the **Laterite Hill Grid**. There will be a limited reconnaissance drilling program on the **Aoura Permit** (Figure 7) at the eastern end of the Bonsiega Project where artisanal mining activity is focused on a quartz vein mineralised system associated with a plus 2km long historic gold soil anomaly.
 - o Continuation of PDI's **large power auger** program. Drilling commenced on the Predictore™ target on the **Fouli permit** in early January. Following its completion, the rig will move east to test Predictore™ and other targets on the **Aoura and Tangagari Permits** before returning to **Bangaba** to infill all gold anomalous zones identified on the initial grid.
 - o Completion of the **3,000m diamond** drilling program on selected targets on the **Laterite Hill Grid**.
- **In-hole photo-imaging** of RC holes on the Laterite Hill Grid and Bangaba to identify quartz vein orientations and therefore guide resource drill planning.
- Ongoing **geological mapping** programs on the **Boussouma, Tyekanyebi and Bonsiega** Projects.

Australia

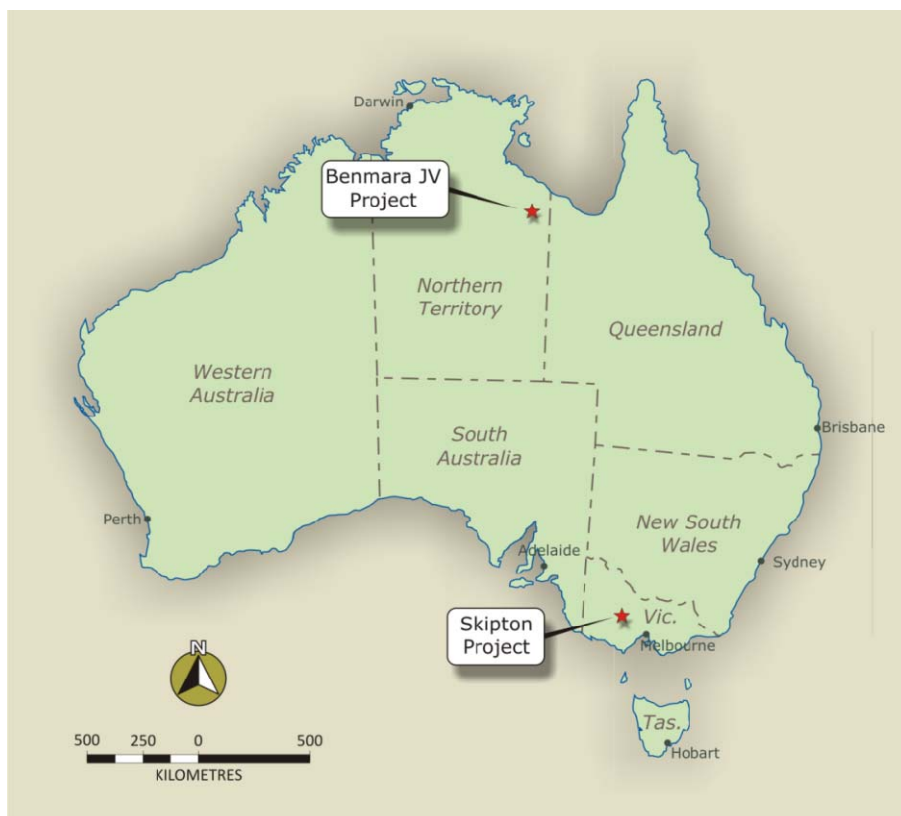


Figure 11: Location of PDI's Australian Projects

Benmara District, Northern Territory - Uranium

Benmara Uranium Joint Venture (PDI earning 51%)

and

Benmara East Joint Venture (PDI Earning up to 85%)

Drilling Program

PDI completed a combined RC and diamond drilling campaign, totalling 11 holes and 1,768m, on the Benmara joint venture properties in October 2011. Four targets were tested (Figure 12). Since then, the Company has assessed the log data and assays, and undertaken some supplementary core sampling and analysis. No ore grade uranium values were obtained. While PDI believes that the area retains potential for a Westmoreland-style ore deposit, these results, derived from wide spaced drilling, indicate that the size of ore deposit that PDI was seeking (>50 million lb U_3O_8) is unlikely to be present in the area.

The Company has therefore withdrawn from its two joint venture commitments in the Northern Territory and is ceasing all uranium exploration in the Northern Territory. This will allow PDI to continue to focus on gold exploration in West Africa.

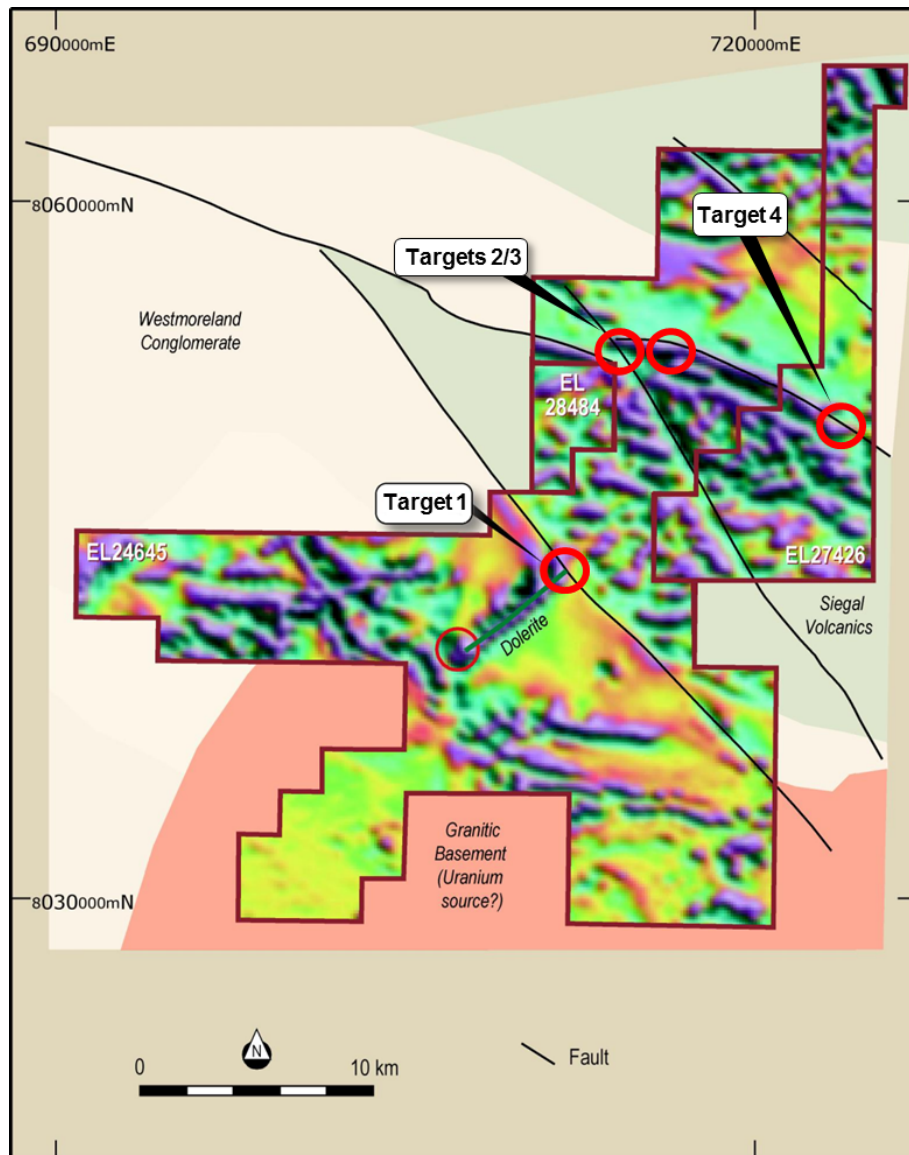


Figure 12: Benmara Project area – drill target locations shown on aeromagnetic background image.

Skipton, Victoria - Gold (PDI 100%)

No work was conducted on the project during the quarter pending ongoing discussions with local landholders on access for ground gravity and magneto-telluric surveys. These surveys are expected to commence in the March Quarter.

CORPORATE

At 31st December 2011, PDI held cash and term deposits of \$6.3 million and no debt.

About Predictive Discovery:

Predictive Discovery Limited (PDI) was established in late 2007 to explore for gold and uranium. The Company is focused principally on exploration for gold in West Africa with one additional gold project in Australia. PDI has a distinctive technological capability, known as Predictore™, which is designed to increase drill targeting efficiency thereby reducing ore discovery cost. The Company's major focus is in Burkina Faso, West Africa where it holds interests in a large regional tenement holding in the north east of the country and is exploring for large open-pittable gold ore deposits.

Competent Persons Statement

The exploration results reported herein, insofar as they relate to mineralisation, are based on information compiled by Mr Paul Roberts (Fellow of the Australian Institute of Geoscientists). Mr Roberts is a full time employee of the company and has sufficient experience relevant to the style of mineralisation and type of deposits being considered to qualify as a Competent Person as defined by the 2004 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code, 2004 Edition). Mr Roberts consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

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