



21st September 2016

ASX Announcement

Predictive Discovery Limited is a gold exploration company with strong technical capabilities focused on its advanced gold exploration projects in West Africa.

ASX: PDI

Issued Capital: 1.37B shares

Share Price: 1.0 cents

Market Capitalisation: \$13.7M

Directors

Phillip Jackson
Non-Exec Chairman

Paul Roberts
Managing Director

David Kelly
Non-Executive Director

New soil anomalies and high grade rock chip samples, Cote D'Ivoire

Predictive Discovery Limited (ASX: PDI) is pleased to report initial exploration results from soil and rock chip sampling completed by Toro Gold Limited (Toro) on the Beriaboukro permit in Cote D'Ivoire:

- **High gold grades in rock chip samples** including **726g/t Au, 13.1g/t Au** and **6.4 g/t Au** from the Ndinguinan gold artisanal mine site.
- Three areas of new gold-in-soil geochemical anomalies with peak values of 0.9g/t Au and 0.8g/t Au from reconnaissance soil sampling on an 800m x 200m spaced sample grid.

Mr Paul Roberts, Predictive's Managing Director said: "Beriaboukro is one of six granted permits in our Cote D'Ivoire joint venture with Toro. It lies directly south of our Kokoumbo permit where recent diamond drilling has intersected **7.5m at 16 g/t Au** (ASX release dated 13/5/16). We regard Kokoumbo and Beriaboukro, covering 800km², as a single project area with potential for one or more large gold discoveries.

We are encouraged by the discovery of multiple gold-in-soil anomalies on a very wide spaced soil grid (800x200m) along with evidence of exceptionally high rock chip gold grades in the permit area."

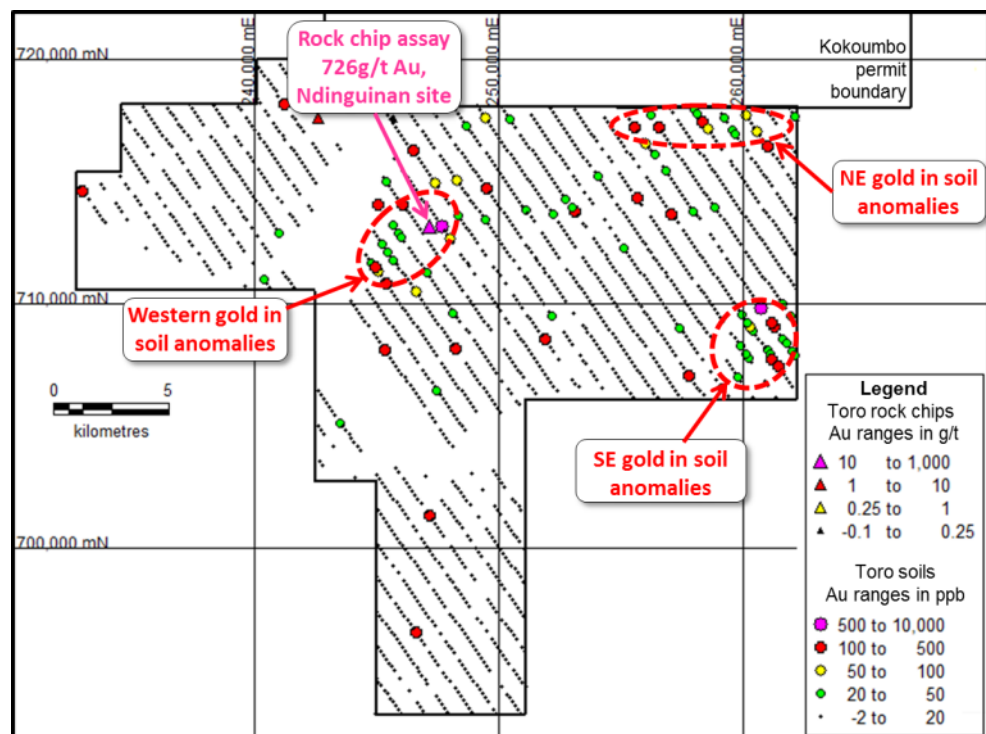


Figure 1: Location of soil samples and gold-in-soil anomalous values, Beriaboukro permit

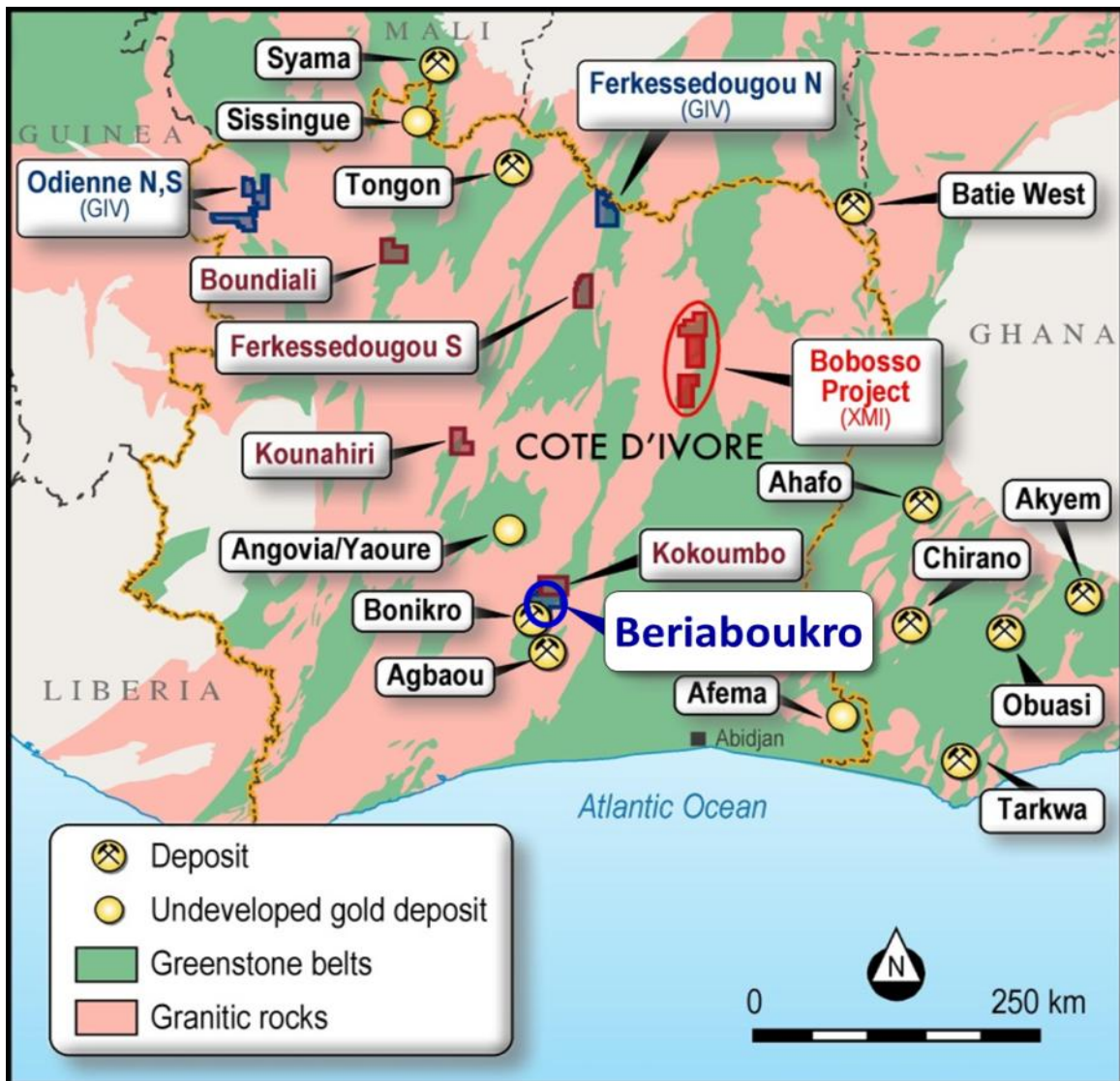


Figure 2: Locality map showing the initial Toro Joint Venture permits (in brown) including Beriaboukro (highlighted), the GIV Joint Venture permits and permit applications (in blue), and the permits covered by PDI's agreement with XMI SARL over the Bobosso Project (red).

BERIABOUKRO GEOCHEMICAL SAMPLING PROGRAM

Toro Gold carried out a soil sampling program covering most of Beriaboukro permit on 800m spaced lines. Samples were collected 100m apart on each line but only every other sample was submitted for analysis, resulting in a reported station spacing of 800m x 200m. Nine rock chip samples were also collected.

1,787 soil samples were analysed for gold by fire assay at the ALS laboratory at Loughrea in Ireland. Additional details of the sampling methods are provided in Table 1.

Anomalous gold values (>20ppb Au) were found in numerous locations throughout the grid (Figure 1). Three clusters of anomalous gold-in-soil results are highlighted on Figure 1. Peak gold-in-soil values of 879ppb Au (0.9g/t) and 811 ppb Au (0.8g/t Au) were recorded from the Western

and SE gold anomalous zones (Figure 1) respectively. Given the 800 x 200m assayed sample spacing, these are very encouraging soil results. A 1 km long gold ore deposit could be represented by a single value anomaly on such a wide spaced grid.

Rock chip sampling at the Ndinguinan artisanal gold mining site obtained a cluster of encouraging values including an **exceptionally high 726g/t gold assay** (Figure 1). Other high grade rock chip values from the same location included 13.15g/t Au and 6.40g/t Au. A tabulation of all the results is as follows and further details are provided in Table 1.

Sample Number	UTM East (WGS 84 30N)	UTM North (WGS 84 30N)	Sampling Notes	Au g/t
15040	245,644	717,602	Sheared Felsic rock with 1% oxidized sulphides and quartz veinlets from Agbahanou gold artisanal mine site.	0.09
15041	245,641	717,601	Fresh granodiorite? With 1% coarse cubic pyrite from Agbahanou gold artisanal mine site.	0.05
15042	242,632	717,614	Float. More than 10 cm of a block of quartz tourmaline vein from Agbahanou gold artisanal mine site.	3.45
15044	245,645	717,601	Strongly sheared metasedimentary rock with sheared and broken quartz tourmaline veins along the shear N140 from Agbahanou gold artisanal mine site.	0.01
15045	245,698	717,552	Felsic rock with quartz tourmaline veins and disseminated tourmaline in the groundmass from Agbahanou gold artisanal mine site	0.02
15046	245,695	717,560	Strongly sheared metasedimentary rock from Agbahanou gold artisanal mine site	0.00
15074	247,156	713,161	Outcrop, more than 1 m of quartz vein with 2 fine visible gold grains, quartz tourmaline centimetric injections in the host rock, from Ndinguinan gold artisanal mine site.	726
15075	247,156	713,180	About 1m of quartz tourmaline vein? N010/50 E Within a sheared metasedimentary rock with trace pyrite, the quartz tourmaline vein is concordant with the host rock, smoky in colour and fractured.	6.40
15076	247,156	713,180	Brown metasedimentary rock shear with 1% of disseminated oxidised pyrite	13.15

This Ndinguinan locality lies 500m west of the peak soil value on the grid of 879ppb Au. These two high gold values may relate to one another.

Next Steps

100m infill samples from the original 80 x 100m grid adjacent to gold anomalous results will be submitted for gold analysis. Once those results are received, an infill soil sampling program on 400m or 200m line spacings will be planned.

BERIABOUKRO PERMIT BACKGROUND

Beriaboukro lies directly north of Bonikro and south of Predictive's Kokoumbo permit (Figure 2), where recent diamond drilling by the Toro JV has obtained best intercepts of:

- **7.5m at 16.1g/t Au** from 0m, including **1.5m at 74g/t Au**, and
- **1.5m at 14.9g/t Au**.

The addition of the Beriaboukro permit to the Kokoumbo ground in March this year has resulted in a contiguous 800km² strategic land package in one of the most strongly gold-mineralised belts in Cote D'Ivoire. Two gold mines are already operating in this belt (Figure 2) - Bonikro (Newcrest) and Agbaou (Endeavour).

TORO JOINT VENTURE BACKGROUND

Predictive is in joint venture with Toro Gold Limited (**Toro**), a UK-based company, on six granted permits and two permit applications in Cote D'Ivoire (Figure 2). The Toro Joint Venture operates through Predictive Discovery Limited's subsidiary, Predictive Cote D'Ivoire SARL (**Predictive CI**) of which Predictive now holds 49%. Toro is earning a further 14% of Predictive CI by spending US\$2.5 million, which will lift its equity to 65%. Predictive plans to contribute 35% of the ongoing expenditure once Toro achieves its 65% equity.

GIV AGREEMENT BACKGROUND

Predictive CI entered into a joint venture with a local Ivoirian Company, Gold Ivoire Minerals SARL (**GIV**) over 1,600 km² of ground, consisting of two permits and two permit applications (Figure 2). Of these, the two granted permits, Beriaboukro (also known as Toumodi) and Ferkessedougou North, are of most exploration interest, and are both located on known gold-mineralised greenstone belts.

The major terms of the GIV joint venture agreement are as follows:

- Predictive CI can earn an initial 51% in the four GIV permits by expenditure of \$US1 million in two years or less. This amount may be reduced if Predictive CI hands back any permits or if the two permit applications (Odiene North and Odiene South) are not granted in the next two years.
- Predictive CI may then, at its sole discretion, increase its equity to 85% of the (remaining) GIV permits in two stages by completion of a Definitive Feasibility Study (DFS).
- On completion of the DFS, the original owners of GIV (GIV Owners) may convert all or part of their 15% interest to an NSR royalty at the rate of 1% NSR for 10% of equity. The GIV Owners may then also choose to fund all or part of their equity ownership in a subsequent mine development.
- Predictive CI will pay US\$30,000 in the event that Odiene North and Odiene South permits are granted. In the event that a decision is made to develop a mine on the permits, the GIV

Owners will receive an exploration success bonus of US\$1 per reserve ounce. Reserve ounces will be calculated independently in accordance with the JORC or 43-101 standards.

The exploration expenditure and cash payments in the GIV Agreement are being incurred by Predictive CI in conformity with the terms of the underlying Toro JV Agreement.

TABLE 1 – SOIL AND ROCK CHIP SAMPLING RESULTS

Sample numbers	Northing (WGS84-30N)	Easting (WGS84 – 30N)	RL	Hole dips	Azimuth	Hole Depth	From	Interval	Au (ppb)
Toro soil sample numbers in the ranges 32134-32298, 32,502-32600, 35269-35999, 45001-47750. Every second sample was submitted for gold analysis. Rock chip sample numbers were 15040-2, 15044-6, 15074-6.	Refer to Figure 1 for map locations of all samples	Refer to Figure 1 for map locations of all samples	See notes	Not relevant to the samples described in this report	Not relevant to the samples described in this report	Soil samples were collected from 10-50cm depth	Not relevant to the samples described in this report	Not relevant to the samples described in this report	See notes and Figure 1
Notes: Soil sampling is a reconnaissance exploration technique. In the sampling and sample preparation method used by Toro, soil samples were collected from shallow holes and then dried and sieved at 80# at a local field camp. The prepared samples were then sent to the ALS laboratory in Loughrea in Ireland for fire assay analysis. RL ranges for the Beriaboukro permit are not known but range upwards from approximately 360m. Individual RLs are not reported in this announcement because they are not relevant to interpreting geochemical data of this type. The nine rock chip samples reported here were mostly collected from in the vicinity of several, gold artisanal mine sites.									

Section 1: Sampling Techniques and Data		
Criteria	JORC Code Explanation	Commentary
Sampling Technique	<p>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as downhole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. Aspects of the determination of mineralisation that are Material to the Public Report.</p> <p>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from</p>	<p>The sampling described in this report refers samples obtained from the Beriaboukro exploration permit in Cote D'Ivoire.</p> <p>The soil samples were collected from shallow holes with depths between 10 and 50cm.</p> <p>The rock samples were collected from outcrops and float material.</p>

	<p>which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</p>	
Drilling	<p>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</p>	<p>This is not relevant to a soil or rock sampling program.</p>
Drill Sample Recovery	<p>Method of recording and assessing core and chip sample recoveries and results assessed. Measures taken to maximise sample recovery and ensure representative nature of the samples.</p> <p>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</p>	<p>This is not relevant to a soil or rock sampling program.</p>
Logging	<p>Whether core and chip samples have been geologically and geotechnical logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</p> <p>Whether logging is qualitative or quantitative in nature. Core (or costean/Trench, channel, etc) photography. The total length and percentage of the relevant intersections logged.</p>	<p>Soil samples are described in terms of soil type, regolith and landscape classification and colour. Descriptions are largely qualitative.</p> <p>Rock sample descriptions and contextual information are provided in the text of this release.</p>
Sub-Sampling Technique and Sample Preparation	<p>If core, whether cut or sawn and whether quarter, half or all core taken. If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. For all sample types, the nature, quality and appropriateness of the sample preparation technique. Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</p> <p>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. Whether sample sizes are appropriate to the grain size of the material being sampled.</p>	<p>The sample preparation method is appropriate and standard for soil samples of this type.</p> <p>All of the rock samples were submitted for analysis and were crushed, pulverised and sub-sampled in accordance with standard laboratory procedures.</p>

Quality of Assay Data and Laboratory Tests	<p>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</p> <p>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</p> <p>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</p>	<p>The analytical method used for soil sampling has a very low (1ppb Au) detection limit which is appropriate for samples of this type.</p> <p>A standard gold fire assay method was used for the rock chip samples.</p>
Verification of Sampling and Assaying	<p>The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes The verification of significant intersections by either independent or alternative company personnel. Discuss any adjustment to assay data</p>	<p>This is not relevant to a soil or rock sampling program.</p>
Location of Data points	<p>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</p> <p>Specification of the grid system used Quality and adequacy of topographic control</p>	<p>Coordinates shown on the locality maps (Figures 1-3) are for Universal Transverse Mercator (UTM), Datum WGS 84, Zone 30 - Northern Hemisphere.</p>
Data Spacing and Distribution	<p>Data spacing for reporting of Exploration Results</p> <p>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</p> <p>Whether sample compositing has been applied</p>	<p>The soil sampling grid was 800 x 200m and is considered appropriate for a reconnaissance exploration grid of this type.</p> <p>Rock chip samples were not taken on a regular grid but were collected in the vicinity of artisanal mine sites.</p> <p>No Mineral Resource can be estimated from these data.</p>
Orientation of Data in Relation to Geological Structure	<p>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</p> <p>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</p>	<p>The soil samples were collected along lines which were designed to cross cut the interpreted bedding and foliation strike orientations in permit.</p>
Sample Security	<p>The measures taken to ensure sample security</p>	<p>Samples are stored securely at Toro Gold's field office in Yamoussoukro.</p>
Section 2 Reporting of Exploration Results		
Mineral Tenement and Land Tenure Status	<p>Type, reference name/number, location and ownership including agreements or material issues with third parties such</p>	<p>The Beriaboukro exploration permit was granted to GIV Minerals SARL in 2015. Predictive Discovery Cote D'Ivoire</p>

	<p>as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</p> <p>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</p>	SARL may earn a 51% interest by spending US\$1 million and 85% by completing a DFS.
Exploration Done by Other Parties	Acknowledgment and appraisal of exploration by other parties.	Gold exploration was conducted over a small part of the Beriaboukro permit by Equigold.
Geology	Deposit type, geological setting and style of mineralisation.	The geology of the Beriaboukro permit consists of granite, metasediments, mafic volcanics and intrusives.
Drill Hole Information	<p>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</p> <ul style="list-style-type: none"> • easting and northing of the drill hole collar • elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar • dip and azimuth of the hole • down hole length and interception depth • hole length • If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case. 	This is not relevant to a soil or rock sampling program.. Sample coordinate information is provided in Table 1 and on the maps included in this release.
Data Aggregation Methods	<p>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</p> <p>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</p> <p>The assumptions used for any reporting of metal equivalent values should be clearly stated.</p>	This is not relevant to a soil or rock sampling program.
Relationship Between Mineralisation Widths and Intercept Lengths	<p>These relationships are particularly important in the reporting of Exploration Results</p> <p>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</p>	This is not relevant to a soil or rock sampling program.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	An appropriate plan showing the locations of the soil and rock samples, classified by results, are shown in this release.

Balanced Reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	Results from all assayed soil and rock chip samples have been reported.
Other Substantive Exploration Data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	All relevant, new exploration data is reported in this release.
Further Work	<p>The nature and scale of planned further work (eg tests for lateral extensions or large scale step out drilling).</p> <p>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</p>	Follow-up infill soil sampling is planned on the permit as outlined in this release.

Predictive Discovery Limited (PDI) was established in late 2007 and listed on the ASX in December 2010. The Company is focused on exploration for gold in West Africa. The Company operates in Burkina Faso, West Africa where it has assembled a substantial regional ground position covering 1,500km² and is exploring for large, open-pittable gold deposits. Exploration in eastern Burkina Faso has yielded a large portfolio of exciting gold prospects, including the high grade Bongou gold deposit on which a resource estimate was calculated in September 2014. PDI also has substantial interests in a large portfolio of tenements in Côte D'Ivoire covering a total area of 3,937 km².

Competent Persons Statement

The exploration results and the Exploration Target 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 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. 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.

For further details please contact:

Paul Roberts
Managing Director
Tel: +61 402 857 249
Email:
paul.roberts@predictivediscovery.com

Ric Moore
Company Secretary
Tel: +61 8 6143 1840
Email:
rmoore@auroraminerals.com