



13th October 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: 1.63B shares

Share Price: 1.4 cents

Market Capitalisation: \$22.8M

Directors

Phillip Jackson
Non-Exec Chairman

Paul Roberts
Managing Director

David Kelly
Non-Executive Director

More drill results from Boundiali, Cote D'Ivoire

Predictive Discovery Limited (ASX: PDI) reports the last of the gold assay results from the RC drilling program completed by Toro Gold Limited (Toro) on the Nyangboue Prospect in Predictive's Boundiali Project in Cote D'Ivoire.

- Best new drill intercept in hole BRC010 of **4m at 5.4g/t Au** from 4m, including **1m at 15.2g/t Au, 320m along strike** from previously reported gold intercepts.
- Multiple gold mineralised zones have now been recognised over a strike length of at least 1.2km from very widely spaced drilling:
 - The main (eastern) mineralised zone (Figure 1) with best intercepts of **20m at 10.5g/t Au** and **28m at 4.0g/t Au** (ASX releases 23/6/16 and 8/8/16).
 - Several mineralised zones located to the west of the main mineralised zone. The BRC010 drill result suggests that at least one of these zones could extend over a strike length of 500m or more.
 - Clear line to line correlation on the 1.2km long main zone, suggesting a single mineralised shear zone.
- Assay results for all drill holes from the recent drill program have now been received.
- Follow-up work in the new field season will consist of ground geophysics and diamond drilling.

Mr Paul Roberts, Predictive's Managing Director, said: *"With the receipt of all the reconnaissance RC results, we now know that a significant new gold discovery has been made. Our next task is to understand the geological structure of the Nyangboue Prospect so that we can infill drill the mineralisation efficiently. We will use ground geophysical methods to map structures followed by a program of diamond drilling to map the orientation of individual gold mineralised zones. Armed with this new knowledge, we hope to be in a position to design an infill RC drilling program that will lead us efficiently towards resource estimation."*

The Nyangboue Prospect has a number of positive characteristics including (1) gold intercepts from surface, (2) individual high grades in many intercepts, suggesting that a plus 2g/t Au bulk grade is a strong possibility, (3) abundant visible gold in higher grade intervals suggesting simple metallurgy and (4) initial indications of good continuity in the controlling structure(s). There are also several other very good prospects on the permit which are, as yet, untested by drilling."

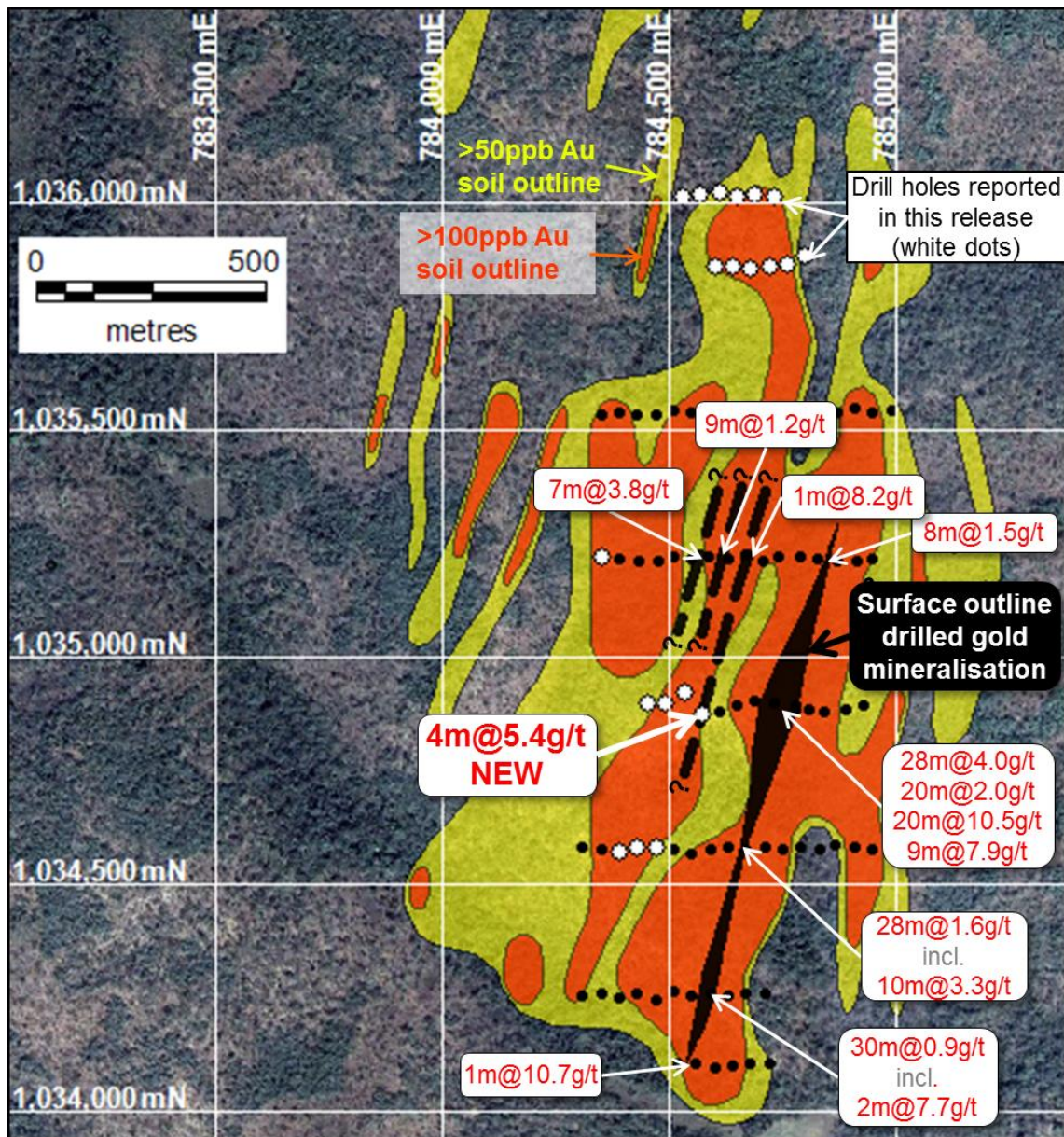


Figure 1: RC drill hole collar locations on a gold-in-soil geochemical contour plan (reported to the ASX on 23/2/16) in the southern 2km portion of the Nyangboue Prospect. Gold-in-soil geochemical contours are superimposed on satellite imagery. The interpreted surface outline of the eastern “main” zone gold mineralisation is shown in black and the inferred locations of the western mineralised zones are shown as dashed black lines. Assays for the holes shown as black dots were reported to the ASX on 23/6/16, 25/7/16, 8/8/16 and 12/9/16. Results reported today are from holes shown as white dots.

BOUNDIALI DRILLING PROGRAM (NYANGBOUE PROSPECT)

The RC drilling program on the Boundiali permit consisted of a total of 92 RC holes and 5,496m drilled. The program was designed to test a 2km long zone of strong and coherent gold-in-soil anomalies (Figure 1). These lie at the southern end of the Nyangboue Prospect, a 6km long gold-in-soil anomaly (Figure 2) first reported to the ASX on 20/10/15.

The RC holes were drilled:

- on eight east-west oriented lines, of which six are spaced 320m apart. The northernmost and southernmost lines are 160m from their neighbours (Figure 1). Hole collars are approximately 40m apart,
- mostly to depths of 50-60m, with the exceptions of a few holes which were extended or re-drilled to depths of up to 130m,
- towards the west and angled at 50 degrees.

Additional details of the drill and assay methodologies employed in this program are reported in Table 1.

The first four sets of drill results (ASX releases dated included the following drill intercepts:

- BRC003 - **28m at 4.04g/t Au** from 3m, including **1m at 49.7g/t Au**
- BRC004 - **20m at 1.97g/t Au** from 0m
- BRC004 - **14m at 5.51g/t Au** from 32m, including **1m at 31.6g/t Au**
- BRC004BIS (twin hole) – **20m at 10.45g/t Au** from 38m including **1m at 145.5g/t Au**
- BRC006 – **9m at 7.9 g/t Au** from 99m including **1m at 44.7g/t Au**
- BRC023 – **7m at 3.8g/t Au** from 33m including **1m at 11.3g/t Au**
- BRC048 – **28m at 1.55g/t Au** from 1m including **1m at 27.4g/t Au**
- BRC010 – **30m at 0.92g/t Au** from 14m including **2m at 7.68g/t Au**
- BRC085 – **1m at 10.65g/t Au** from 37m.

Results from the 20 remaining drill holes are released here (Table 1). As reported on 12th September, 2016, receipt of these last results was delayed by an equipment breakdown at Toro Gold's Mako sample preparation facility.

The best new result was from drill hole BRC010 – **4m at 5.38g/t Au** from 4m including **1m at 15.15g/t Au**. Most of the new results were from the northernmost two lines in which the best result was 2m at 1.55g/t Au. The gold mineralisation appears to be closed off in the immediate area to the north however it remains open to the south and 4km of gold-anomalous soil values further to the north remain untested by drilling.

While the eastern “main zone” gold mineralised trend is a straight NNE striking zone, the orientation of the mineralisation in individual gold intercepts is not yet clear. It is possible that there are some cross structures controlling higher grade shoot development. A program of surface geophysics followed by diamond drilling is planned to resolve this question.

As noted in earlier ASX releases, initial observations from logging these drill holes and mapping the limited rock exposures at surface are as follows:

- The mineralised zone appears to lie within a large and complex ductile shear zone containing:

- Quartz-sericite schists which are interpreted to be derived from volcano-sedimentary rocks,
 - granitic intrusives,
 - sediments,
 - felsic volcanics with quartz phenocrysts,
 - possible mylonites (extremely strongly sheared rocks) and
 - possible mafic volcanics.
- Sparse rock outcrops indicate that shearing dips steeply to the east, which is why holes were drilled towards the west.
 - Gold values are generally associated with zones of quartz veining (1-2cm veinlets - both smoky grey quartz and white quartz.
 - Visible gold has been panned from some of the RC drill chips and fines. Follow-up screen fire assays on intervals with high gold grades and/or visible gold are therefore planned.
 - The dip and dip direction of the mineralisation is not yet well understood.
 - The sheared rock sequence contains minor sulphides, including pyrite, pyrrhotite and arsenopyrite.

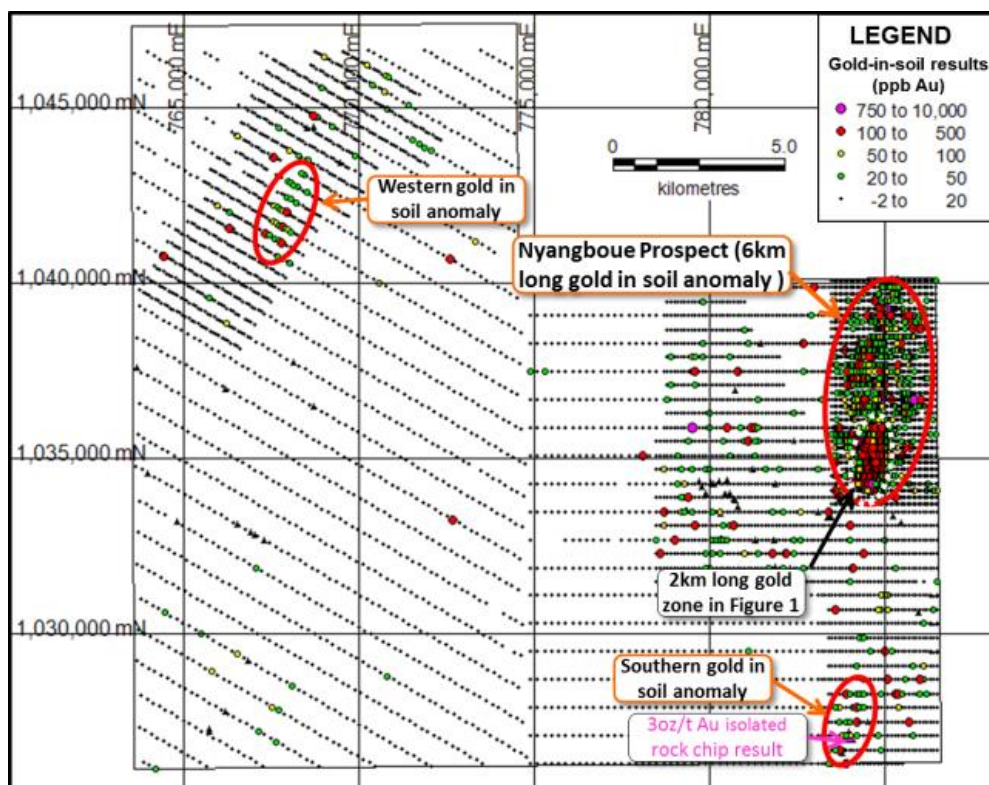


Figure 2: Toro Gold soil sampling grid covering the entire Boundiali exploration permit (results reported to the ASX on 20/10/15 and 23/3/16). Results in grade intervals are shown for all of Toro soil results to date. The large Nyangbou Prospect gold anomaly and two other coherent gold anomalies are highlighted on this map. Rock chip sample locations are shown as small black triangles.

NEXT STEPS

Programs of ground geophysics (magnetics and high resolution induced polarisation surveys) and diamond drilling are currently being planned. The geophysics is now expected to commence in November.

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 3). 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 can earn a further 14% of Predictive CI by spending US\$2.5 million, which would then lift its equity to 65%. At this stage, Predictive plans to contribute 35% of the ongoing expenditure once Toro achieves its 65% equity.

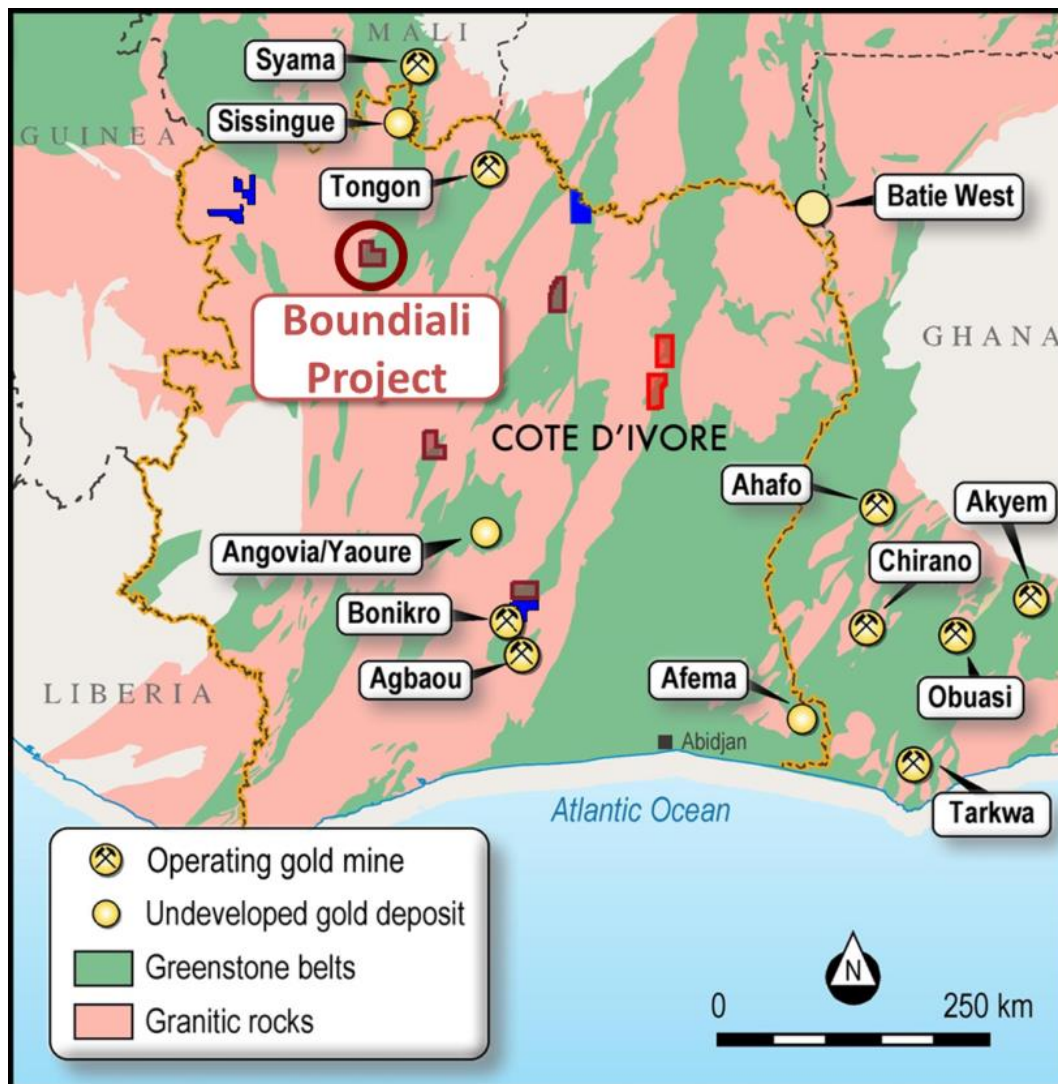


Figure 3: Locality map showing the initial Toro Joint Venture permits (in brown) including Boundiali (highlighted), the GIV Joint Venture permits and permit applications (in blue), and the permits covered by PDI's agreement with XMI SARL over the Bobosso Project (red).

BOUNDIALI BACKGROUND

The Boundiali permit is located within a very well mineralised greenstone belt which contains the large operating Tongon and Syama gold mines in Cote D'Ivoire and Mali respectively (Figure 3). The southern part of this belt has had little exploration to date and represents a first class opportunity to make new large gold discoveries.

Predictive was granted the Boundiali permit in January 2014. The Company's first exploration program on the permit was a BLEG stream sediment survey (ASX release dated 4/8/14) which discovered a series of strong stream sediment anomalies, the best of which, a 24ppb Au anomaly, lies downstream of the gold mineralised zone described in this release.

TABLE 1 – DRILL RESULTS – TORO JV BOUNDIALI RC DRILL PROGRAM (NYANGBOUE PROSPECT)

Hole No.	UTM 29N Easting	UTM 29N Northing	RL (m)	Hole depth (m)	Hole dip (°)	Azimuth (°)	Depth from (m)	Down-hole interval (m) ¹	Au (g/t) at 0.5g/t Au cut-off grade ²	Comments
BRC010	784571	1034879	419	50	-50	270	4	4	5.38	Includes 1m at 15.15g/t Au
BRC011	784532	1034926	430	57	-50	270	no significant result			
BRC012	784491	1034902	430	57	-50	270	no significant result			
BRC013	784450	1034901	430	54	-50	270	no significant result			
BRC029	784352	1035223	416	53	-50	270	no significant result			
BRC066	784600	1035862	416	50	-50	270	no significant result			
BRC067	784640	1035862	418	50	-50	270	no significant result			
BRC068	784680	1035857	416	50	-50	270	no significant result			
BRC069	784720	1035863	419	50	-50	270	no significant result			
BRC070	784760	1035867	417	55	-50	270	48	2	1.55	
BRC073	784390	1034572	405	50	-50	270	no significant result			
BRC074	784430	1034585	406	50	-50	270	no significant result			
BRC075	784470	1034583	406	50	-50	270	no significant result			Includes gold anomalous zone of 13m at 0.24g/t Au from 3m
BRC086	784800	1035886	417	50	-50	270	no significant result			
BRC087	784530	1036019	409	50	-50	270	no significant result			
BRC088	784570	1036021	410	50	-50	270	no significant result			
BRC089	784610	1036024	410	50	-50	270	no significant result			
BRC090	784650	1036019	411	50	-50	270	no significant result			Includes gold anomalous zone of 18m at 0.21g/t Au from 14m
BRC091	784690	1036023	412	50	-50	270	no significant result			
BRC092	784730	1036017	413	50	-50	270	no significant result			

1 No true widths reported because the orientation of the gold mineralisation is not yet properly understood.
2 Minimum grade x width interval reported of 1 g/t x m. Maximum down-hole interval waste of 4m. All assayed in 1m intervals.

Section 1: Sampling Techniques and Data

Criteria	JORC Code Explanation	Commentary
Sampling Technique	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. 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 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.	All of the sampling described in Table 1 refers to RC drill holes. A representative subsample of the RC drill chips was obtained using an on-rig riffle splitter. A second reference sample was obtained using a spear. The assayed drill samples are judged to be representative of the rock being drilled because representative sub-sampling of the RC drill samples was achieved.
Drilling	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).	The drilling was largely carried out by reverse circulation with a face sampling hammer. The holes were collared using a blade bit, which was used to refusal (towards base of saprolite/saprock).
Drill Sample Recovery	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. 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.	RC recovery was assessed by weighing the sample bags and calculating recoveries using an estimate of rock density. The Toro site geologists report that recoveries are consistently good.

Logging	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. 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.	Logging of RC holes records lithology, mineralogy, mineralisation, alteration, structure, weathering and other features of the samples. Logging of sulphide mineralization and veining is quantitative. All holes were logged in full. No judgement has yet been made by independent qualified consultants on whether the geological and geotechnical logging has been sufficient to support Mineral Resource estimation, mining and metallurgical studies.
Sub-Sampling Technique and Sample Preparation	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. 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.	The RC samples submitted for assay were all sub-sampled by an on-rig 3-tier/multi stage riffle splitter (producing a 1/8th split). The sampled material is considered to be representative of the samples as a whole.
Quality of Assay Data and Laboratory Tests	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. 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. 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.	All samples reported in this release were assayed for gold by 50g fire assay at the ALS laboratory in Loughrea in Ireland. High grade samples were checked at the laboratory by gravimetric means. At the lab, regular assay repeats, lab standards, checks and blanks were inserted and analysed. Unlabelled standards (Certified Reference Materials), blanks and duplicate samples were also inserted by Toro personnel on site at Boundiali. Samples are prepared at Toro's sample preparation laboratory at Mako in Senegal.

Verification of Sampling and Assaying	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	One hole has been twinned (BRC004BIS) and the results of the repeat hole was reported on 8/8/16. Field data collection was undertaken by Toro Gold geologists and supervised by Toro Gold management.
Location of Data points	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. Specification of the grid system used Quality and adequacy of topographic control	Collar positions were located using a hand held GPS with a location error of +/- 3m. Collar coordinates listed in the table are for the WGS84 datum, Zone 29 North.
Data Spacing and Distribution	Data spacing for reporting of Exploration Results 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. Whether sample compositing has been applied	The holes reported here were drilled on two lines spaced either 160m or 320m apart with hole collars approximately 40m apart. No judgement has yet been made by an independent qualified consultant on whether the drill density is sufficient to calculate a Mineral Resource. The samples were not composited.
Orientation of Data in Relation to Geological Structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. 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.	All drill holes reported here were drilled approximately at right angles to the anticipated strike of the target geochemical anomaly (Figure 1).
Sample Security	The measures taken to ensure sample security	The drill samples are currently stored securely at Toro Gold's compound in the town of Boundiali.
Audits or Reviews	The results of any audits or reviews of sampling techniques and data	No audits or reviews of sampling techniques and data have been carried out given the reconnaissance nature of this drill program.
Section 2 Reporting of Exploration Results		
Mineral Tenement and Land Tenure Status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. 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.	The Boundiali exploration permit was granted to PDI Cote D'Ivoire SARL in January 2014. Toro Gold Limited has earned a 51% interest in PDI Cote D'Ivoire SARL by spending US\$1 million. It is currently spending a further US\$2.5 million to increase its equity to 65%.

Exploration Done by Other Parties	Acknowledgment and appraisal of exploration by other parties.	PDI is not aware of any effective gold exploration over the Boundiali permit prior to PDI's initial work, however historic records are incomplete at the Cote D'Ivoire government geological agency.
Geology	Deposit type, geological setting and style of mineralisation.	The geology of the Boundiali permit consists of granite, metasediments, mafic volcanics and intrusives, and conglomerates.
Drill Hole Information	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: • 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.	All of the required data is provided in Table 1 (above).
Data Aggregation Methods	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. 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. The assumptions used for any reporting of metal equivalent values should be clearly stated.	All RC samples were collected and assayed in 1m intervals. No top cuts have been applied to the drill results. Up to 4m (down-hole) of internal waste is included. Mineralised intervals are reported on a weighted average basis.
Relationship Between Mineralisation Widths and Intercept Lengths	These relationships are particularly important in the reporting of Exploration Results 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').	True widths have not been estimated as the geological controls on mineralisation in these initial drill holes into the prospect are not yet well understood. The holes were drilled from east to west to test a steeply east dipping foliation in the limited rock exposures seen in the area. The mineralisation lies within what Toro interprets to be a ductile shear zone which would suggest that mineralisation should lie parallel to foliation. Nevertheless, the gold intercepts are actually suggestive of a west-dipping mineralised envelope. The most mineralised holes have been extended; assays of the deepened holes should provide some additional information on this question along with careful re-logging and XRF readings on the RC chip samples in the coming months. True widths may only be understood properly after a diamond drilling program is carried out, possibly later in 2016.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery	An appropriate plan showing the location of the drill holes is included in the text of this document.

	being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	
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.	All intercepts containing grades above 0.5g/t Au and at least 1g/t x m with a maximum thickness of internal waste of 4m are reported in this release.
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 exploration data is either reported in this release or has been reported previously and is referred to in the release.
Further Work	The nature and scale of planned further work (eg tests for lateral extensions or large scale step out drilling. Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	A follow-up program of ground geophysics and diamond drilling is planned.

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-pit 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