

### 21 March 2014

### MAIDEN DRILLING PROGRAM COMMENCES AT NDONGO PROSPECT, GHANA

### **HIGHLIGHTS**

- Reverse Circulation (RC) drilling has started within the Ndongo Prospect of the Bolgatanga Project
- 4,000m maiden drill program planned within Bolgatanga Project area
- Ndongo Prospect Aerial survey, geological and soil geochemistry data indicate multiple N-NNE mineralised structures with a combined strike length of ~50 km
- Ndongo Prospect Dipole-Dipole IP (DDIP) & ground magnetics have further defined drill targets

Cardinal Resources Limited (ASX: CDV) ("Cardinal" or "the Company"), is pleased to announce that the initial 4,000m combined RC and diamond drill program has commenced at Ndongo Prospect - Central Zone within the Bolgatanga Project, Ghana.

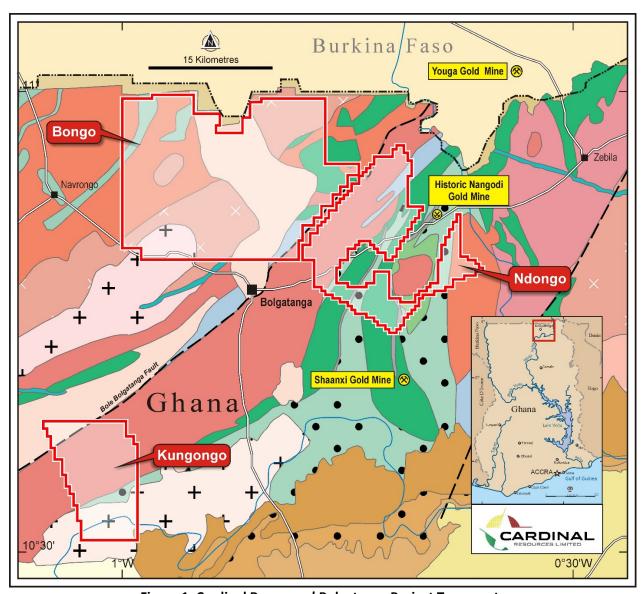


Figure 1: Cardinal Resources' Bolgatanga Project Tenements



Analysis of the soil geochemical and aeromagnetic surveys over the Bolgatanga project area were combined with dipole-dipole IP (DDIP) and ground magnetics surveys over the gold-in-soil anomalous central zone within the Ndongo Prospect area to delineate and finalise initial drill targets.

## From Bolgatanga, Ghana, Managing Director Archie Koimtsidis said;

The combination RC / diamond drill rig has now been commissioned by the drill manufacturer's engineer with commissioning and testing of the rig completed to manufacturers satisfaction.

"We expect the planned initial 4,000m maiden drill program to be completed by the end of Q2 2014, with samples to be delivered on a weekly basis to the SGS Laboratory in Ouagadougou, Burkina Faso. The assay turn-around time is expected to be approximately 2 weeks, which will assist with quick analysis and reporting.

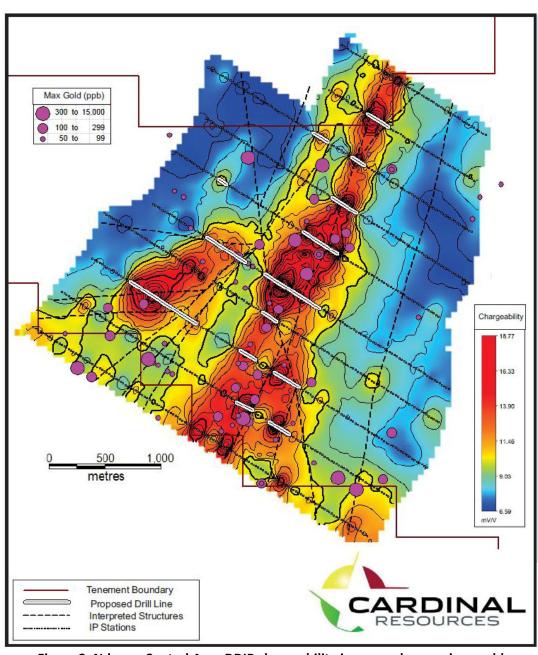


Figure 2: Ndongo Central Area DDIP chargeability image and anomalous gold in soil values with proposed drill lines

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"Ground DDIP and magnetics surveys over the Ndongo Central area have delineated a prominent high chargeability zone which coincides with anomalous soil values (>100 ppb Au) and comprises the initial drill target areas (Figure 2).

RC drilling will be undertaken along the DDIP lines (Figure 2) inclined at -45°, at 25 -50m spacing and 30 - 50m inclined depths, where fresh rock is anticipated."



Figure 3: Drilling underway at Ndongo prospect, Bolgatanga Project, Ghana

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### **Competent Person's Statement**

The information in this report that relates to geophysical results and Interpretation is based on information compiled by Mr William Peters, a Consulting Geophysicist (Crosmin Pty Ltd) at Southern Geoscience Consultants. Mr Peters is a Fellow of the Australasian Institute of Mining and Metallurgy and Chartered Professional (Geology), and has sufficient experience which is relevant to the type of activity being undertaken to qualify as a Competent Person as defined in the 2012 edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Peters consents to the inclusion in this report of the matters reviewed by him in the form and context in which they appear.

Information in this report that relates to the Bolgatanga Project is based on information compiled by Mr Paul Abbott, a full time employee of Cardinal Resources Limited, who is a Fellow of the Australasian Institute of Mining and Metallurgy and a Member of the Geological Society of South Africa. Mr Abbott has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person, as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Abbott consents to the inclusion in this report of the statements based on his information in the form and context in which it appears.

#### Disclaimer

Certain statements contained in this announcement, including information as to the future financial or operating performance of Cardinal Resources and its projects, are forward-looking statements that:

- may include, among other things, statements regarding targets, estimates and assumptions in respect of mineral reserves and mineral resources and anticipated grades and recovery rates, production and prices, recovery costs and results, capital expenditures, and are or may be based on assumptions and estimates related to future technical, economic, market, political, social and other conditions;
- are necessarily based upon a number of estimates and assumptions that, while considered reasonable by Cardinal Resources, are inherently subject to significant technical, business, economic, competitive, political and social uncertainties and contingencies; and,
- involve known and unknown risks and uncertainties that could cause actual events or results to differ materially from estimated or anticipated events or results reflected in such forward-looking statements.

Cardinal Resources disclaims any intent or obligation to update publicly any forward-looking statements, whether as a result of new information, future events or results or otherwise. The words 'believe', 'expect', 'anticipate', 'indicate', 'contemplate', 'target', 'plan', 'intends', 'continue', 'budget', 'estimate', 'may', 'will', 'schedule' and similar expressions identify forward-looking statements.

All forward looking statements made in this announcement are qualified by the foregoing cautionary statements. Investors are cautioned that forward-looking statements are not guarantees of future performance and accordingly investors are cautioned not to put undue reliance on forward-looking statements due to the inherent uncertainty therein.



# JORC Code, 2012 Edition – Table 1 MAIDEN RC DRILLING PROGRAM COMMENCES AT NDONGO PROSPECT Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	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 down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.	The Ndongo, Bongo and Kungongo Prospects, collectively known as the Bolgatanga Project area, are or will be sampled using hollow window sample tubes vertically hammered into the ground to collect undisturbed soil samples from the saprolite horizons on a grid, with baseline at 302° True North, of 200m x 50m, closing to 100m x 50m in anomalous areas Samples are placed in metal core trays, photographed, logged and sampled, with samples taken at varying intervals, depending on visual differences and compositions within the saprolite horizons Onsite XRF analysis of both the overburden and saprolite horizons is conducted using a hand-held Niton XL3t Analyser. The overburden is analysed with two readings taken every 0.5m; two readings are taken for each saprolite sample. These results are only used for onsite interpretation and the analyses are not reported Sampling is carried out under QAQC procedures as per industry standards
trenching	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Certified sample standards and in-house blanks are alternatively added in a ratio of 1 sample per every 15 samples Hole collars are located using a Garmin 62S hand held GPS, which has an accuracy of +/- 3m
	Aspects of the determination of mineralisation that are Material to the Public Report.	Sample intervals of the saprolite horizon vary from 0.4 – 1.5m maximum, and are selected on the basis of colour and textural differences. Separate samples are taken of saprock horizons
	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)	Samples are of variable weights, with a maximum of 3kgs, and are sent to SGS Laboratories, Ouagadougou, Burkina Faso, where they are dried, crushed and pulverised. A 250 gram split is retained as a reference, with the remainder, to a maximum of 2.5 kg, subjected to a BLEG bottle roll technique over 24 hours, with an AAS finish

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Criteria	JORC Code explanation	Commentary
	may warrant disclosure of detailed information.	
Drilling techniques	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).	Vertical holes are drilled with HQ (0-1m), NQ (1-3m) and BQ (3-5m) sizes, using hollow window sample tubes. The entire soil sample is placed in a metal core tray
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	No sample losses occur as each metre drilled is recovered in the hollow tube
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	As drilling is from surface to a maximum depth of 5m, sample recovery is 100%. Drilling into the saprolite horizons ensures that representative samples are taken
	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.	No sample bias occurs as there is no loss/gain of any material, and once the sample interval has been determined, the entire sample is taken for analysis.
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	Geological logging is carried out with soil colour, texture, consistency, grain size, quartz veins & foliations. Where saprock is encountered the rock type is noted
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	Logging is quantitative. Samples are photographed in the dry form
	The total length and percentage of the relevant intersections logged.	All holes are logged in full
Sub-sampling techniques	If core, whether cut or sawn and whether quarter, half or all core taken.	No core has been drilled
and sample preparation	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	Hollow window tubes are used. Samples are sampled dry
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Sample preparation is completed at SGS Laboratories, Ouagadougou, Burkina Faso. All preparation equipment is flushed with barren material prior to the commencement of sample preparation. The entire sample is dried, crushed to a nominal 2mm using a Jaw Crusher, and pulverised (85-90% passing 75 micron size fraction) using LM5 grinding mills. A 250 gram split is retained in a geochemical packet as a reference, with the remainder, to a maximum of 2.5 kgs, subjected to a BLEG bottle roll technique over 24

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Criteria	JORC Code explanation	Commentary
		hrs, with an AAS finish to 1 ppb Au detection limit
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Field QC procedures involve the use of commercial certified reference material (CRM) for assay standards and in house blanks. The insertion rate is 1:15
	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.	No duplicates are taken. 250g pulps are retained from each sample and stored on the company's premises for possible re-assay
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The sample sizes are considered appropriate to give an accurate indication of gold mineralisation contained within the saprolite horizons
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.	The analytical technique uses BLEG bottle roll over 24 hrs, with an AAS finish. The prepared samples (1.5-2.5 kgs) are bottle rolled with sodium cyanide and lime in a plastic bottle for 24 hrs. The bottle is removed from the rollers and allowed to settle. An aliquot of the clear solution is taken and DBIK/1% Aliquot 336 is added and shaken. The solution is aspirated into a Flame AAS, aerosolised, and mixed with the combustible gas, acetylene and air. The mixture is ignited in a flame whose temperature ranges from 2,100-2,800°C. Results have a lower gold detection limit of 1ppb. The AAS equipment is calibrated with each job This technique is considered to approach a total digest of gold
	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.	Onsite XRF analysis of both the overburden and saprolite horizons is conducted using a hand-held Niton XL3t Analyser. The overburden is analysed with two readings, each of 30 seconds, taken at the beginning and end of every 0.5m. Two readings, each of 30 seconds, are taken for each saprolite sample once the samples have been placed in transparent bags. These results are only used for onsite interpretation and the analyses are not reported  The instrument is serviced and calibrated once a year
	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.	Sample preparation checks for fineness are carried out by the laboratory as part of their internal procedures to ensure the grind size of 85-90% passing 75 micron is being attained. Each batch of 100 samples has 5 checks (20%),

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Criteria	JORC Code explanation	Commentary
		with the grind size varying between 87-99% passing 75 micron, which is acceptable. Laboratory QAQC involves the use of internal lab standards using certified reference material and blanks  Certified reference materials, having a range of values, are inserted in the ratio of 1:30  External laboratory checks are done on a three monthly basis through Laboratories Quality Services International (LQSI). Recent LQSI checks of CN Leach analyses on Low Grade Oxide Material produced acceptable levels of accuracy and precision
Verification of	The verification of significant intersections by either independent or	No verification of anomalous geochemical results has been done by either
sampling and	alternative company personnel.	independent or alternative company personnel
assaying	The use of twinned holes.	No twinned holes have been drilled
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Primary data was collected on a hand held Motion F5te Tablet PC using a set of standard templates supplied by Maxwell Geoservices, Perth (Maxwell). Daily data was synchronised and digitally captured by Maxwell for validation and compilation into Excel and Access spreadsheets and stored on the Cardinal servers located in Bolgatanga, Ghana, West Africa
	Discuss any adjustment to assay data.	No adjustments were made to any assay data
holesLocation 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.	Hand held Garmin GPSmap 62s GPS's were used to locate collar positions, with an accuracy of +/-3m  No down hole surveys were completed as holes were a maximum of 5m deep
	Specification of the grid system used.	WGS84 Sector 30N, with local grid baseline at 032° True North and lines at 200m intervals and stations at 50m along lines.
	Quality and adequacy of topographic control.	No topographic controls were required as this was a geochemical programme
Data spacing and	Data spacing for reporting of Exploration Results.	The nominal drill hole spacing was 200m (northing) and 50m (easting), closing to 100m (northing) and 25-50m (easting) in anomalous areas
distribution	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral	The data spacing and distribution is considered to be adequate to establish a degree of geological continuity for this geochemical program

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Criteria		JORC Code explanation	Commentary
		Resource and Ore Reserve estimation procedure(s) and classifications applied.	
		Whether sample compositing has been applied.	No sample compositing has been applied
Orientation	of	Whether the orientation of sampling achieves unbiased sampling of	Vertical drill holes into the saprolite horizons achieves unbiased sampling of
data	in	possible structures and the extent to which this is known, considering	possible structures
relation geological	to	the deposit type.	
structure		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.	No orientation based sampling bias has been identified in the data to date
Sample security		The measures taken to ensure sample security.	Sample security is managed by Cardinal. Samples are stored at Cardinal's base camp located at Bolgatanga, Ghana, West Africa under security until collected by SGS Laboratories and transported to their Ouagadougou laboratory in Burkina Faso
Audits reviews	or	The results of any audits or reviews of sampling techniques and data.	Sampling techniques and procedures, as well as data, are regularly reviewed internally. To date, no external audits have been completed

## **Section 2 Reporting of Exploration Results**

(Criteria listed in section 1 will also apply to this section where relevant)

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Criteria	JORC Code explanation	Commentary	
Mineral	Type, name/reference number, location and ownership including	The Ndongo, Bongo and the Kungongo Prospects, collectively known as the	
Tenement	agreements or material issues with third parties including joint	Bolgatanga Project, are located in NE Ghana. Each licence is held by	
and Land	ventures, partnerships, overriding royalties, native title interests,	Cardinal Resources Ghana Limited (Cardinal Ghana), a wholly owned	
Status	historical sites, wilderness or national park and environmental	subsidiary of Cardinal Resources Limited (Cardinal) (ASX: CDV):	
	settings.	Ndongo Prospect – granted Prospecting Licence	
		Bongo Prospect – granted Reconnaissance Licence	
		Kungongo Prospect – granted Reconnaissance Licence	

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Criteria	JORC Code explanation	Commentary
	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.	There are no known impediments to operate within the Bolgatanga Project granted licence area
Exploration  Done by  Other Parties	Acknowledgment and appraisal of exploration by other parties.	No previous systematic exploration has been undertaken.
Geology	Deposit type, geological setting and style of mineralisation	The geological setting is the Paleoproterozoic Nangodi Greenstone Belt comprising Birimian metavolcanics & metasediments, with felsic to intermediate intrusives  The target deposit type is structurally controlled gold deposits, ranging from small-scale, high-grade shear-hosted quartz veins occurring along lithological contacts and within shear zones, to larger tonnage disseminated deposits associated with stock works along contacts, or within, felsic to intermediate intrusives
Drill hole information	A summary of all information material to the understanding of the exploration results including 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 meters) of the drill hole collar  • Dip and azimuth of the hole  • Down hole length and interception depth  • Hole length	All geochemical results for the Ndongo Prospect have been reported in ASX announcements dated: 04.02.2013: Bolgatanga Project Geochemical Results 20.06.2013: Ndongo Geochemical Infill Results 26.09.2013: Bolgatanga Project – Ndongo West Geochemical Results
	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.	There is no exclusion of this information
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.	No weighting averaging techniques nor cutting of high grades have been undertaken
	Where aggregated intercepts incorporate short lengths of high grade	No aggregated intercepts were undertaken

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Criteria	JORC Code explanation	Commentary
	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.	No metal equivalent values are used for any reports
Relationship between mineralisatio	These relationships are particularly important in the reporting of exploration results.	The geometry of the mineralisation is not yet known as no deep drilling has been done in the targeted areas
n widths and intercept lengths	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	The geometry of the mineralisation is not yet known as only geochemical soil drilling has been completed to maximum depths of 5m
	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	Only down hole lengths are reported and true widths of mineralization are not known
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 plane view of drill hole collar locations and appropriate sectional views.	Appropriate maps are included in this announcement
Balanced Reporting	Where comprehensive reporting of all Exploration Results is not practical, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	All geochemical results for the Ndongo Prospect have been reported in ASX announcements dated: 04.02.2013: Bolgatanga Project Geochemical Results 20.06.2013: Ndongo Geochemical Infill Results 26.09.2013: Bolgatanga Project – Ndongo West Geochemical Results
Other substantive exploration	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observation; geophysical survey results; geochemical survey results; bulk samples — size and	Geophysical results are included as images. The interpretation shown is subject to possible change as new information is gathered. Interpretation of geophysical data is by its nature, subject to ambiguity.
data	method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	No bulk sampling, metallurgical, mineralogical or geotechnical assessments have been completed
Further Work	The nature and scale of planned further work (e.g. tests for lateral	A combination of reverse circulation and diamond drilling is planned

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Criteria	JORC Code explanation	Commentary
	extensions or depth extensions or large – scale step – out drilling).	followed by possible additional ground geophysical surveys depending on the results of the 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.	