

PRESS RELEASE 9 August 2017 TSX, ASX: CDV 2017-48

# NAMDINI DRILLING INTERSECTS 184m at 2.0g/t Au

**Cardinal Resources Limited** (ASX/TSX: CDV) **("Cardinal"** or **"the Company"**) is pleased to report five infill drill holes for the Namdini deposit which confirm continuity of gold mineralisation within the current Mineral Resource. In addition, 10 extensional drill holes have increased the current strike length of the deposit by a further 150 meters to the south (Figure 1).

# Cardinal's CEO/MD, Archie Koimtsidis said:

"The infill results confirm mineralised consistency within the deposit whilst the southern extension drilling demonstrates that the mineralised corridor extends along strike a further 150m to the south.

"Our Maiden Mineral Resource was initially estimated to a depth of 350m and our recently reported down dip step-out holes have confirmed mineralisation down to 600m. All of these extensions will be captured in our Mineral Resource upgrade expected in late Q3 2017.

"We have nine drill rigs on site with the main objective to accelerate the infill and extension drilling programmes which are expected to convert the current Inferred Mineral Resources into higher categories and increase the overall size of the current resource."

#### **INFILL DRILLING PROGRAMME RESULTS**

# **Section L Highlights:**

#### NMDD081

- 184m at 2.0 g/t Au (LWAG¹)
  - o Includes:
    - 19m at 2.6 g/t Au
    - 12m at 1.6 g/t Au
    - 33m at 1.8 g/t Au
    - 25m at 4.6 g/t Au

#### NMDD083

- 121m at 2.1 g/t Au (LWAG¹)
  - o Includes:
    - 21m at 2.3 g/t Au
    - 30m at 3.9 g/t Au
    - 17m at 1.5 g/t Au

# <u>NMRC129</u>

- 208m at 1.6 g/t Au (LWAG¹)
- Includes:
  - 67m at 1.7 g/t Au
  - 34m at 1.8 g/t Au
  - 32m at 2.1 g/t Au









#### EXTENSIONAL DRILLING PROGRAMME RESULTS

#### **Section A-100 Highlights:**

### NMDD068

- 65m at 1.2 g/t Au (LWAG¹)
  - o Includes:
    - 32m at 1.3 g/t Au

#### NMDD069

- 72m at 1.2 g/t Au (LWAG¹)
  - o Includes:
    - 55m at 1.3 g/t Au

#### NMDD071

- 28m at 1.2 g/t Au (LWAG¹)
  - o Includes:
    - 10m at 1.2 g/t Au
    - 15m at 1.2 g/t Au

### **Section A-150 Highlights:**

#### NMDD070

- 45m at 1.9 g/t Au (LWAG¹)
  - Includes:
    - 17m at 1.2 g/t Au
    - 11m at 2.6 g/t Au

#### NMDD075

- 17m at 2.4 g/t Au (LWAG¹)
  - o Includes:
    - 14m at 2.7 g/t Au

#### NMDD074

- 54m at 1.6 g/t Au (LWAG¹)
  - o Includes:
    - 24m at 1.6 g/t Au
    - 14m at 1.6 g/t Au

1. Length Weighted Average Grade (LWAG)

#### **Discussion of Results**

The Company is encouraged with these early results which show strong continuity of mineralised zones within the defined resource.

Extensional drilling to the south indicate that the Namdini mineralised corridor continues.

Cardinal will explore the continuation of the Namdini shear as mineralisation may extend to the south.

The Company is anticipating a steady stream of drill results to continue from the infill and extensional drilling programs. These results will form the basis for a Mineral Resource upgrade in size and category towards the end of Q3 2017.









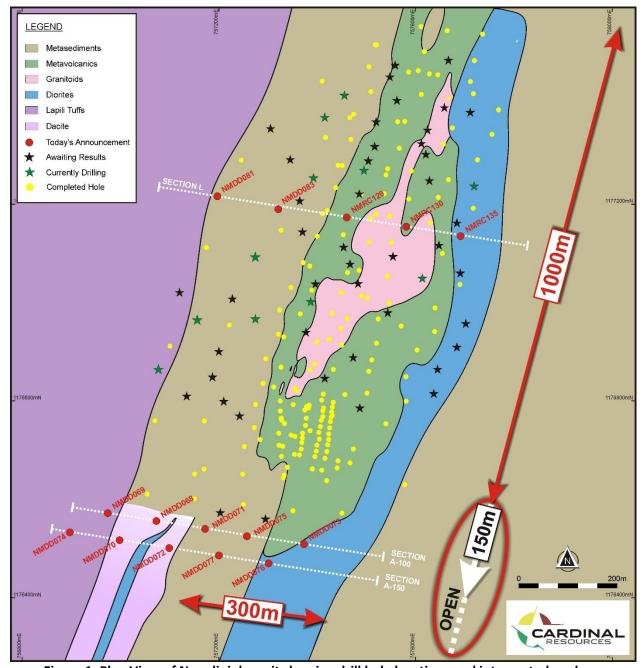


Figure 1: Plan View of Namdini deposit showing drill hole locations and interpreted geology









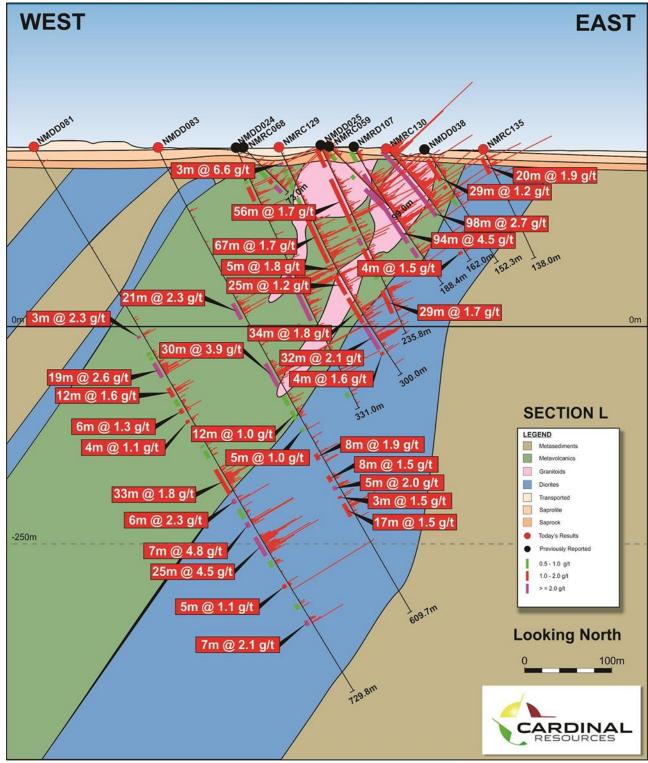


Figure 2: Cross Section L showing downhole mineralised intersections









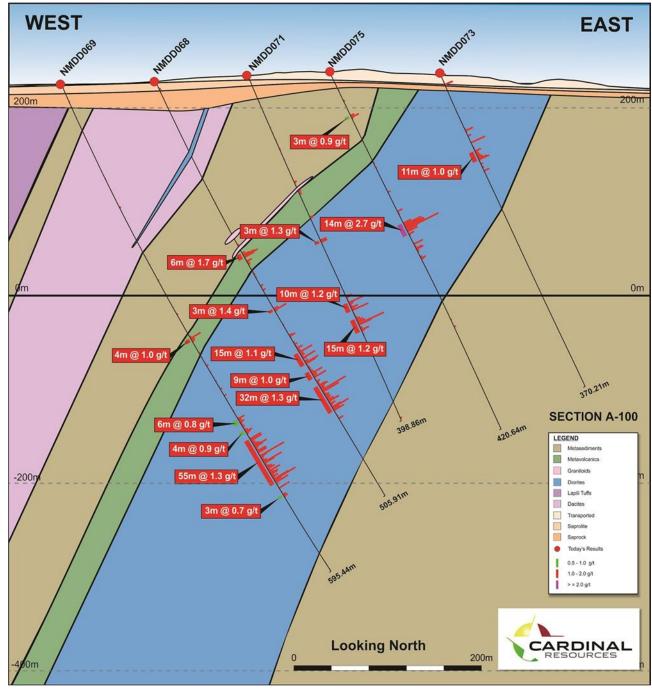


Figure 3: Cross Section A-100 showing downhole mineralised intersections









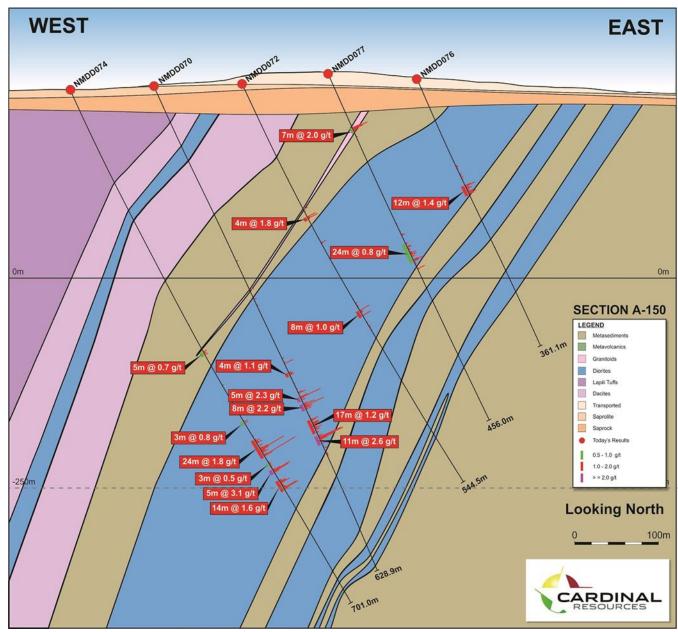


Figure 4: Cross Section A-150 showing downhole mineralised intersections

For full details of lithologies and assay results of the reported drill holes please refer to Cardinal's website <a href="http://www.cardinalresources.com.au/technical-reports/">http://www.cardinalresources.com.au/technical-reports/</a>.

Metadata for the significant intercepts are tabulated below in Tables 1 to Table 4.









#### **About Cardinal**

Cardinal Resources Limited (ASX / TSX: CDV) is an African gold-focused exploration and development Company which holds interests in tenements within Ghana, West Africa.

The Company's Namdini Project has a declared gold Mineral Resource of 23.86Mt @ 1.21 g/t for 931,000 oz Indicated and 100.15Mt @ 1.13 g/t for 3.63Moz Inferred (Refer to Cardinal "Technical Report on Namdini" dated 5 April 2017). The Company is focused on the development of the Namdini Project through a resource expansion drilling programme, pre-feasibility studies, detailed metallurgical testwork and process flowsheet studies. Exploration activity is also underway at the Company's Bolgatanga (Northern Ghana) and Subranum (Southern Ghana) Projects.

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Cardinal technical staff maintain a set of standard procedures for both diamond drilling and reverse circulation drilling. For diamond drilling (which is completed using HQ core collection), the key aspects are that the holes are electronically surveyed every 30 metres down hole, all core runs are routinely oriented using a Reflex digital orientation instrument, core recovery is measured and geotechnical logging is completed as the core is recovered at the rig site. Back at the Bolgatanga office the core is photographed wet and dry and after logging onto digital data recorders, the core is cut such that a half HQ core is retained for reference. The same sector of core, relative to the core orientation mark is routinely sampled for assaying.

For RC drilling, samples are collected on a one metre interval using a multi-tier riffle splitter, duplicate field samples are routinely collected (one in 20), the cyclone is thoroughly cleaned on each rod change and the splitter is cleaned after each metre sample. The sample bag weights for each metre interval are routinely weighed, as are the split samples for submission to the assay laboratory and approximately 2.5 to 3 kilogram chip samples are dispatched to the laboratory. Amongst the samples, a suite of internationally accredited and certified reference material along with blanks are included in the sample submission sequence. The standards cover the gold grade range expected at Namdini. The individual sample bags for both core and drill chips are sealed at the Bolgatanga site office and are grouped into tens for placement in a large plastic bag, which is, in turn, sealed. The assay laboratory provides sample transport from Bolgatanga such that the chain of custody passes from Cardinal to the assay laboratory at the Bolgatanga sample logging facility.

Once sample bags and pulps are returned from the assay laboratory to Cardinal's Bolgatanga facility, a representative suite of pulps, covering the entire range of both sample batches and gold grades are chosen for 'referee' analysis at an accredited independent laboratory. As with the routine sample submission, a suite of international certified standards and blanks are inserted into the referee assaying pulp sequence.









Cardinal technical staff carry out routine analysis of the quality control data on receipt of assay results from the laboratory in order to determine if the batch of samples has passed industry standard levels for control samples. If the batch 'fails', the batch of assays is rejected and a re-assay request for the batch of samples is made to the laboratory.

# **Competent Person's Statement**

The information in this press release has been compiled and reviewed by Mr. Richard Bray, a Registered Professional Geologist with the Australian Institute of Geoscientists and Mr. Ekow Taylor, a Chartered Professional Geologist with the Australasian Institute of Mining and Metallurgy. Mr. Bray and Mr. Taylor have more than five years' experience relevant to the styles of mineralisation and type of deposits under consideration and to the activity which is 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" and as a Qualified Person as defined by the NI43-101 instrument. Mr. Bray and Mr. Taylor are full-time employees of Cardinal and hold equity securities in the Company. Mr. Bray and Mr. Taylor have consented to the inclusion of the matters in this report based on the information in the form and context in which it appears.

#### **Disclaimer**

This ASX / TSX press release has been prepared by Cardinal Resources Limited (ABN: 56 147 325 620) ("Cardinal" or "the Company"). Neither the ASX or the TSX, nor their regulation service providers accept responsibility for the adequacy or accuracy of this press release.

This press release contains summary information about Cardinal, its subsidiaries and their activities, which is current as at the date of this press release. The information in this press release is of a general nature and does not purport to be complete nor does it contain all the information, which a prospective investor may require in evaluating a possible investment in Cardinal.

By its very nature exploration for minerals is a high-risk business and is not suitable for certain investors. Cardinal's securities are speculative. Potential investors should consult their stockbroker or financial advisor. There are a number of risks, both specific to Cardinal and of a general nature which may affect the future operating and financial performance of Cardinal and the value of an investment in Cardinal including but not limited to economic conditions, stock market fluctuations, gold price movements, regional infrastructure constraints, timing of approvals from relevant authorities, regulatory risks, operational risks and reliance on key personnel and foreign currency fluctuations.

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# **Forward-looking statements**

Certain statements contained in this press release, including information as to the future financial or operating performance of Cardinal and its projects may also include statements which are 'forward-looking statements' that may include, amongst 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. These 'forward – looking statements' are necessarily based upon a number of estimates and assumptions that, while considered reasonable by Cardinal, 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 disclaims any intent or obligation to update publicly or release any revisions to any forward-looking statements, whether as a result of new information, future events, circumstances or results or otherwise after today's date or to reflect the occurrence of unanticipated events, other than required by the Corporations Act and ASX and TSX Listing Rules. 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 press release 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.









# SCHEDULE 1 DRILL ASSAY RESULTS

Hole_ID	mFrom	mTo	mWidth	Au g/t
NMDD068	205	211	6	1.7
NMDD068	273	276	3	1.4
NMDD068	327	342	15	1.1
NMDD068	350	359	9	1.0
NMDD068	368	400	32	1.3
NMDD069	304	308	4	1.0
NMDD069	404	410	6	0.8
NMDD069	418	422	4	0.8
NMDD069	429	484	55	1.3
NMDD069	498	501	3	0.7
NMDD071	187	190	3	1.3
NMDD071	260	270	10	1.2
NMDD071	279	294	15	1.2
NMDD073	90	101	11	1.0
NMDD075	49	52	3	0.9
NMDD075	177	191	14	2.7

Table 1: Significant Drill Hole Downhole Mineralised Intervals for Section A-100

Hole_ID	mFrom	mTo	mWidth	Aug/t
NMDD070	370	374	4	1.05
NMDD070	402	407	5	2.27
NMDD070	411	419	8	2.23
NMDD070	432	449	17	1.24
NMDD070	453	464	11	2.63
NMDD072	176	180	4	1.8
NMDD072	304	312	8	1.0
NMDD074	349	354	5	0.7
NMDD074	446	449	3	0.8
NMDD074	471	495	24	1.7
NMDD074	504	507	3	0.5
NMDD074	513	518	5	3.1
NMDD074	528	542	14	1.6
NMDD076	149	161	12	1.4
NMDD077	71	78	7	2.0
NMDD077	223	247	24	0.8

Table 2: Significant Drill Hole Downhole Mineralised Intervals for Section A-150









Hole_ID	mFrom	mTo	mWidth	Au g/t
NMDD081	249	252	3	2.3
NMDD081	271	275	4	0.6
NMDD081	277	281	4	0.6
NMDD081	285	304	19	2.6
NMDD081	318	330	12	1.6
NMDD081	334	342	8	0.7
NMDD081	346	352	6	1.3
NMDD081	361	365	4	1.1
NMDD081	395	398	3	0.9
NMDD081	402	412	10	0.6
NMDD081	427	460	33	1.8
NMDD081	467	473	6	2.3
NMDD081	480	493	13	0.6
NMDD081	498	505	7	4.8
NMDD081	518	543	25	4.5
NMDD081	550	558	8	0.8
NMDD081	582	587	5	1.1
NMDD081	609	616	7	0.7
NMDD081	631	638	7	2.1
NMDD083	199	220	21	2.3
NMDD083	278	308	30	3.9
NMDD083	321	333	12	0.9
NMDD083	340	352	12	1.0
NMDD083	363	368	5	1.0
NMDD083	397	405	8	1.9
NMDD083	426	434	8	1.5
NMDD083	440	445	5	2.0
NMDD083	453	456	3	1.5
NMDD083	463	480	17	1.5

Table 3: Drill Hole Downhole Mineralised Intervals for Section L









Hole ID	Depth(m)	Dip	Azimuth	Grid_ID	mEast	mNorth	mRL
NMDD068	506	-65	96	WGS84_30N	757073	1176556	228
NMDD069	595	-67	95	WGS84_30N	756974	1176572	225
NMDD070	629	-66	95	WGS84_30N	756998	1176519	224
NMDD071	399	-67	95	WGS84_30N	757170	1176540	235
NMDD072	545	-65	96	WGS84_30N	757098	1176502	231
NMDD073	370	-67	95	WGS84_30N	757370	1176513	235
NMDD074	701	-66	95	WGS84_30N	756898	1176531	224
NMDD075	421	-64	94	WGS84_30N	757257	1176524	239
NMDD076	361	-66	94	WGS84_30N	757298	1176469	246
NMDD077	456	-66	96	WGS84_30N	757204	1176487	244
NMDD081	730	-65	99	WGS84_30N	757182	1177220	206
NMDD083	610	-66	99	WGS84_30N	757322	1177191	205
NMRC129	300	-66	100	WGS84_30N	757460	1177173	206
NMRC130	162	-46	101	WGS84_30N	757581	1177154	204
NMRC135	138	-64	95	WGS84_30N	757691	1177135	203

**Table 4: Metadata Listing Drill Holes** 

#### Notes:

- Grid coordinates are in WWGS84 Zone 30 North
- Intervals are HQ diamond core or RC which are sampled every 1m
- Cut-off grade for reporting of intercepts is ≥ 0.5 g/t Au with a maximum of 3m consecutive internal dilution included within the intercept; only intercepts ≥ 3m are reported
- No top cut of individual assays prior to length weighted intersection calculation of the reported intercept has been applied
- Samples are analysed for Au (FAA505 method) which is a 50g fire assay fusion with AAS instrument finish









# SCHEDULE 2 JORC CODE 2012 EDITION – TABLE 1

Section 1 – Sampling Technique and Data

Criteria	JORC Code Explanation	Commentary
Sampling	Nature and quality of sampling (e.g.	Sampling is by a combination of diamond
techniques	cut channels, random chips, or	drill and reverse circulation holes.
	specific specialised industry	
	standard measurement tools	Diamond sampling include both half-core
	appropriate to the minerals under	and quarter-core samples of HQ core size
	investigation, such as down hole	and RC samples are collected by a three-tier
	gamma sondes, or handheld XRF	riffle splitter using downhole sampling
	instruments, etc.). These examples	hammers with nominal 127 to 140mm
	should not be taken as limiting the	holes.
	broad meaning of sampling.	
	Include reference to measures	Sampling is guided by Cardinal Namdini
	taken to ensure sample	protocols and Quality Control procedures
	representivity and the appropriate calibration of any measurement	as per industry standard.
	tools or systems used.	
	Aspects of the determination of	Diamond drill samples are firstly crushed
	mineralisation that are Material to	using a Jaw Crusher and thereafter crushed
	the Public Report.	to -2mm using a RSD Boyd crusher. A less
		than 1kg split sample is then pulverised via
	In cases where 'industry standard'	LM2 to a nominal 85% passing -75µm.
	work has been done this would be	
	relatively simple (e.g. 'reverse	Reverse circulation drill samples are only
	circulation drilling was used to	crushed through a RSD Boyd crusher to -
	obtain 1 m samples from which 3 kg	2mm and pulverised via LM2 to a nominal
	was pulverised to produce a 30 g	85% passing-75μm.
	charge for fire assay'). In other	
	cases, more explanation may be	A 200g sub-sample is taken for analysis. A
	required, such as where there is	50g charge weight is fused with litharge
	coarse gold that has inherent sampling problems. Unusual	based flux, cupelled and the prill dissolved
	sampling problems. Unusual commodities or mineralisation	in aqua regia and gold is determined by AAS.
	types (e.g. submarine nodules) may	1,40.
	warrant disclosure of detailed	
	information.	
Drilling	Drill type (e.g. core, reverse	Diamond core drilling is completed with
techniques	circulation, open-hole hammer,	core size of HQ with a standard tube. Triple
	rotary air blast, auger, Bangka,	tube is used in saprolite at the tops of the
	sonic, etc.) and details (e.g. core	hole. Core is orientated using digital Reflex
	diameter, triple or standard tube,	ACT II RD orientation tool.
	depth of diamond tails, face-	
	sampling bit or other type, whether	Reverse circulation drilling uses a sampling









Criteria	JORC Code Explanation	Commentary
	core is oriented and if so, by what method, etc.).	hammer of nominal 127 to 140mm holes. All holes are inclined at varying angles for optimal zone intersection.
		All drill collars are surveyed using RTK GPS with downhole surveying every 30m.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Diamond core recovery is logged and captured into the database. Overall recoveries are excellent with a weighted average recovery greater than 98%.
		Reverse circulation sampling is good. Chips are logged and weighed and captured to the database.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Measures taken include the use of bigger HQ core size diamond drilling to maximise recovery, having a geologist onsite to examine core and core metres marked and orientated to check against the driller's blocks and ensuring that all core loss is taken into account.
		At the reverse circulation rig, sampling systems are routinely cleaned to minimise the opportunity for contamination and drilling methods are focused on sample quality.
		Most of the reverse circulation rigs have auxiliary compressors and boosters to help maintain dry samples. Where wet samples are encountered, the reverse circulation drilling is discontinued and is progressed with diamond core drilling.
	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 known sample recovery issues have impacted on potential sample bias.
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.	All drill holes are fully logged. The lithology, alteration and geotechnical characteristics of core are logged directly to a digital format on a Field Toughbook laptop logging system following procedures and using Cardinal geologic codes. Data is imported into Cardinal's central database after









Criteria	JORC Code Explanation	Commentary
Citteria		validation in LogChief™.
		Validation in LogCiner .
		All geological logging is to a level of detail to support appropriate future Mineral Resource estimations.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Logging is both qualitative and quantitative depending on field being logged.  All core is photographed.
	The total length and percentage of the relevant intersections logged.	All holes are fully logged.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	Core orientation is completed for all diamond holes and all are marked prior to sampling. Longitudinally cut half core samples are produced using a Core Saw. Samples are weighed and recorded.
		Some quarter core samples have been used and statistical testwork has shown them to be representative.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	RC samples are split using a three-tier riffle splitter. The majority of RC samples are dry. On occasions when wet samples are encountered, they are dried prior to splitting with a riffle splitter.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Drill core samples are sorted, dried at 105°C for 4 hours and weighed. Samples are firstly Jaw Crushed and a second stage crushing is through a RSD Jaques crusher to a nominal -2mm and then split to <1.0kg. The reject sample is retained in the original bag and stored. The split is pulverised in a LM2 to a nominal 85% passing 75%µm and approximately 200g sub-sample of the pulverised material is used for assay.
		Chip samples are sorted and dried in an oven for 8 hours and weighed. They are then crushed to -2mm using a RSD Boyd crusher and a <1.0kg split is taken. The reject sample is retained in the original bag and stored. The split is pulverised in a LM2 to a nominal 85% passing 75µm and a 200g sub-sample is used for analysis.









Criteria	JORC Code Explanation	Commentary
Ciriciia		All preparation equipment is flushed with
		barren material prior to commencement
		of the job.
	Quality control procedures adopted	1:50 sample is screened to confirm
	for all sub-sampling stages to	percentage passing 2mm (crushed) and
	maximise representivity of samples.	75µm (pulverised).
	maximise representivity of samples.	7 3μπ (βαίνετίσεα).
		Crusher and pulveriser are flushed with
		barren material at the start of every batch.
	Measures taken to ensure that the	Sampling is carried out in accordance with
	sampling is representative of the in-	Cardinal protocols as per industry best
	situ material collected, including for	practice.
	instance results for field	practice.
	duplicate/second-half sampling.	Field duplicates have been taken and
	duplicate/second-half sampling.	analysis of results have shown the
		sampling to be representative.
	Whether sample sizes are	The sample sizes are considered
	appropriate to the grain size of the	appropriate for the mineralisation type.
		appropriate for the mineralisation type.
Quality of Assess	material being sampled.	Computer and applying the Av. by land
Quality of Assay	The nature, quality and	Samples are analysed for Au by lead
data and	appropriateness of the assaying and	collection fire assay of a 50g charge with
laboratory tests	laboratory procedures used and	ASS finish; the assay charge is fused with
	whether the technique is	the litharge based flux, cupelled and prill
	considered partial or total.	dissolved in aqua regia and gold
		determined by flame AAS.
		The analytical method is considered
		appropriate for this mineralisation style.
	For geophysical tools,	No hand held geophysical tools are used.
	spectrometers, handheld XRF	No hand held geophysical tools are used.
	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	Sample preparation checks for pulp
	procedures adopted (e.g. standards,	fineness are carried out by the laboratory
	blanks, duplicates, external	as part of their internal procedures to
	laboratory checks) and whether	ensure the grind size of 85% passing 75µm
	acceptable levels of accuracy (i.e.	is being attained. Laboratory QAQC
	lack of bias) and precision have	involves the use of internal lab standards
	been established.	using certified reference material and
		blanks.
	l .	









Criteria	JORC Code Explanation	Commentary
		Cardinal's QAQC protocol is considered industry standard with standard reference material (SRM) submitted on a regular basis with routine samples. The SRMs having a range of values and blanks are inserted in the ratio of 1:22. Duplicates are taken at the riffle splitter with a ratio of 1:20 samples. No duplicate samples are taken from core samples.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	Significant intersections have been verified by alternative company personnel.
	The use of twinned holes.	None of the drill holes in this report are twinned.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Primary data are captured on field tough book laptops using LogChief™ Software. The software has validation routines and data is then imported onto a secure central database.
	Discuss any adjustment to assay data.	The primary data is always kept and is never replaced by adjusted or interpreted data.
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.	Planned drill hole collar coordinates are surveyed using handheld Garmin GPSmap 62s GPS within ±3m accuracy.  All drill collars are accurately surveyed using a Tremble R8 RTK GPS system within
		±10mm of accuracy (X, Y, Z).  Coordinates are based on 12 control stations established on the Namdini site by Sahara Mining Services.  Downhole surveys are completed by using a Reflex Ez-Shot survey instrument at regular intervals.
	Specification of the grid system used.	Coordinate and azimuth are reported in UTM WGS84 Zone 30 North.
	Quality and adequacy of topographic control.	Topographic control was established from aerial photography using a series of 12 surveyed control points. A 1m ground resolution DTM was produced by Sahara Mining Services from the survey completed in 24 flights using the DJI Inspire 1 UAV at









Criteria	JORC Code Explanation	Commentary
		an altitude of 100m with an overlap of 70%.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Drill spacing is at 50m x 100m line spacing with infill to 50m x 50m and 10m x 15m in areas to upgrade the Mineral Resource.
	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.	Drill data spacing and distribution are sufficient to establish geological and grade continuity. This latest drilling has not been included in the Mineral Resources.
Orientation of	Whether sample compositing has	No sample compositing has been applied.
data in relation	been applied.	
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.	The majority of the drill holes are orientated to achieve intersection angles as close to perpendicular to the mineralisation as practicable.
	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 significant orientation based sampling bias is known at this time.
Sample security	The measures taken to ensure sample security.	An independent Ghanaian security contractor is used to ensure sample security.
		The drilling contractor is accountable for drill core and RC chips production at the drill site. Final delivery from the drill site to the laydown within the core yard is managed by Cardinal. The core yard technicians, field technicians and Geologists ensure the core and chips are logged, prepared and stored under security until collected by SGS for delivery to the laboratories.
		At the time of sample collection, a sign-off process between Cardinal and the SGS delivery truck driver ensures the samples and paperwork corresponds. The samples









Criteria	JORC Code Explanation	Commentary
		are then transported to the SGS Tarkwa (Ghana) or Ouagadougou (Burkina Faso) laboratory where they are receipted against the dispatch documents. The assay laboratories are responsible for the samples from the time of collection from Namdini Project site until final results are returned and checked by Cardinal Geologists.
		Sample pulps and coarse rejects are retained by the laboratories and are shipped back to Namdini after final results are returned where they are stored under security.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No external audits or reviews of the sampling techniques and data have been completed.









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

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

Criteria	JORC Code Explanation	Commentary
Mineral Tenement and Land Status	Type, name/reference number, location and ownership including agreements or material issues with third parties including joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Mining Licence covering Cardinal's Namdini Project over an area of approximately 19.54 sq. km is located in the Northeast region of Ghana.  The previous holder of the Mining Licence, Savannah Mining Ghana Limited (Savanah) completed an initial Environmental Impact Statement (EIS) and lodged the EIS with the Environmental Protection Agency of Ghana.  Cardinal and Savannah have both signed the necessary documents to assign the Namdini Mining Licence to Cardinal Namdini Mining Limited (Cardinal
		Namdini), a wholly owned subsidiary of Cardinal Resources, for \$1.00 as per the Savannah agreement. After the completion of the upcoming Preliminary Economic Assessment, Cardinal Namdini will submit to the Minerals Commission an updated EIS and an application for an Operating Permit, bringing all permitting for the Namdini Project on track for development.
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.	All tenements are current and in good standing.
Exploration Done by Other Parties	Acknowledgment and appraisal of exploration by other parties.	Aside from Cardinal there has been no recent systematic exploration undertaken on the Namdini Project.
Geology	Deposit type, geological setting and style of mineralisation	The deposit type comprises gold mineralisation within sheared and highly altered rocks containing sulphides; mainly pyrite with minor arsenopyrite.
		The geological setting is a Paleoproterozoic Greenstone Belt comprising Birimian metavolcanics, volcaniclastics and metasediments located









Criteria	JORC Code Explanation	Commentary
		in close proximity to a major 30 km ~N-S regional shear zone with splays.
		The style of mineralisation is hydrothermal alteration containing disseminated gold-bearing sulphides.
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	A summary of all information material to the understanding of these exploration results is contained within this announcement.
	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 has been no exclusion of 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.	Significant intersections are calculated using a 3m minimum width, 3m contiguous internal waste and 0.5g/t Au minimum grade.  Gold grades used for calculating significant intersections are uncut and the results are length weighted.
	Where aggregated 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	Aggregated intercepts incorporating short lengths of high grade results within the lithological units are calculated to include no more than intervals of 3m below grades of <0.5 g/t Au when assay results are reported.  No metal equivalents are used in the









Criteria	JORC Code Explanation	Commentary
	reporting of metal equivalent	intersection calculation.
	values should be clearly stated.	
Relationship	These relationships are particularly	The relationship between mineralisation
between	important in the reporting of	widths and intercept length is not yet
mineralisation	exploration results.	known.
widths and	If the geometry of the	The geometry of the mineralisation with
intercept lengths	mineralisation with respect to the	respect to the drill hole angle is not yet
	drill hole angle is known, its nature	known.
	should be reported.	
	If it is not known and only the	The geometry of the mineralisation is
	down hole lengths are reported,	unknown; only downhole length is reported
	there should be a clear statement	(no true width of mineralisation is
	to this effect (e.g. 'down hole	reported).
	length, true width not known').	
Diagrams	Appropriate maps and sections	Appropriate maps and cross-sections with
	(with scales) and tabulations of	scale are included within the body of the
	intercepts should be included for	accompanying document.
	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.	
Balanced	Where comprehensive reporting of	The accompanying document is
Reporting	all Exploration Results is not	considered to represent a balanced report.
, ricker time	practical, representative reporting	considered to represent a salameed report.
	of both low and high grades and/or	
	widths should be practiced to avoid	
	misleading reporting of Exploration	
	Results.	
Other	Other exploration data, if	Other exploration data collected is not
substantive	meaningful and material, should be	considered material to this document at
exploration data	reported including (but not limited	this stage.
	to): geological observation;	
	geophysical survey results;	Further data collection will be reviewed
	geochemical survey results; bulk	and reported when considered material.
	samples – size and method of	
	treatment; metallurgical test results; bulk density, groundwater,	
	geotechnical & rock characteristics;	
	potential deleterious or	
	contaminating substances.	
Further Work	The nature and scale of planned	Exploration drilling will continue to target
	further work (e.g. tests for lateral	projected lateral and depth extensions of
	extensions or depth extensions or	the mineralisation and infill drilling to
	large – scale step – out drilling).	increase the confidence in the Mineral









Criteria	JORC Code Explanation	Commentary
		Resource. Results from the drilling will be
	Diagrams clearly highlighting the	included in the next Mineral Resource
	areas of possible extensions,	update.
	including the main geological	
	interpretations and future drilling	
	areas, provided this information is	
	not commercially sensitive.	





