crusader

ASX RELEASE **22 Dec 2016**

UPDATED JURUENA RESOURCES DELIVER SPECTACULAR GRADE INCREASE

Highlights

- High-grade resources at the Querosene and Dona Maria prospects total **436kt at 14.7 g/t for 206koz** of gold, comprising:
  - **Querosene** prospect **220kt at 16.7 g/t for 118koz** of gold; and
  - **Dona Maria** prospect **216kt at 12.7 g/t for 88koz** of gold
- Overall **grade increase of 36%** for Querosene to 16.7 g/t (from 12.3 g/t)
- Updated JORC compliant mineral resource estimates for Querosene and Dona Maria include **100,000t @ 18.3 g/t for 58,300oz in the Indicated category**
- Both Querosene and Dona Maria are open at depth and along strike
- Preliminary Metallurgical testwork for both Querosene and Dona Maria have returned excellent (>90%) recoveries, additional testing is underway
- Scoping study work can now continue with optimisation work on the updated resources to consider both open pit and underground development options.
- Resource estimate dose not include the new mineralised zone at Tatu and Tatu NE with recently reported intercepts of broad and shallow high-grade mineralisation. Crusader will evaluate potential additional resources from this area in the new year

Brazil-focused gold development company Crusader Resources (ASX:CAS) ("Crusader" or "The Company") is pleased to announce an updated JORC-compliant mineral resource estimate for its wholly-owned Juruena Gold Project has delivered a significant increase in grade at the Querosene and Dona Maria prospects.

Total combined JORC compliant indicated and inferred resources for Querosene, Dona Maria and Crentes are now estimated at 1.28 million tonnes at 6.3 grams per tonne gold for 260,900 ounces. The updated mineral resource estimates for Querosene and Dona Maria include **100,000t @ 18.3 g/t for 58,300oz** in the Indicated category.

Crusader's Managing Director Rob Smakman commented: "*Drilling in 2016 was focused on increasing our confidence in the resource estimate and we are delighted to have converted a significant portion of the near-surface, high-grade resources at both Querosene and Dona Maria into the indicated category. The significant increase in grade across the deposits was a pleasant surprise and results from the spectacular drilling we reported during 2016. What is also important to note is that there is still significant upside at both Querosene and Dona Maria as they are both open at depth and along strike. We have no doubt that the project has been significantly enhanced by the work completed during 2016 and we look forward to completing the Scoping Study on the project, expected in early 2017.*"

Crusader's second drilling program at Juruena has successfully increased confidence, contained gold grades and overall ounces at both the Querosene and Dona Maria prospects. A full table of the updated resources is given below.

Prospect Name	Resource Category	Lower cut-off applied	Metric Tonnes	Resource Gold Grade (g/t)	Ounces of Gold
Dona Maria	Indicated	2.5gt cutoff	67,800	13.7	29,800
	Inferred		148,500	12.2	58,200
	sub-total		**216,300**	**12.7**	**88,000**
Querosene	Indicated	2.5gt cutoff	31,200	28.4	28,500
	Inferred		188,700	14.7	89,300
	sub-total		**219,900**	**16.7**	**117,800**
Total Indicated			**99,000**	**18.3**	**58,300**
Total Inferred			**337,200**	**13.6**	**147,500**
Total high grade ounces			**436,200**	**14.7**	**205,800**
Crentes	Inferred	1.0gt cutoff	846,450	2.0	55,100
Total Combined			**1,282,650**	**6.3**	**260,900**

Note: Appropriate rounding applied. Table includes updated mineral resource estimates for Querosene and Dona Maria, Crentes remains the same as per the 2015 resource estimate. For further information, please see the section below: Summary of Resource Estimate and Reporting Criteria.

The Juruena Project (> 400km^2 of contiguous tenements, 100% Crusader owned) is located in Central Brazil on the southern fringe of the Amazon basin. Situated on the western end of the prospective Juruena-Alta Floresta Gold Belt (estimated to have produced ~7Moz), Juruena has been worked extensively by artisanal miners (garimpeiros) since the 1980s, producing an estimated 500koz (see Figure 1).

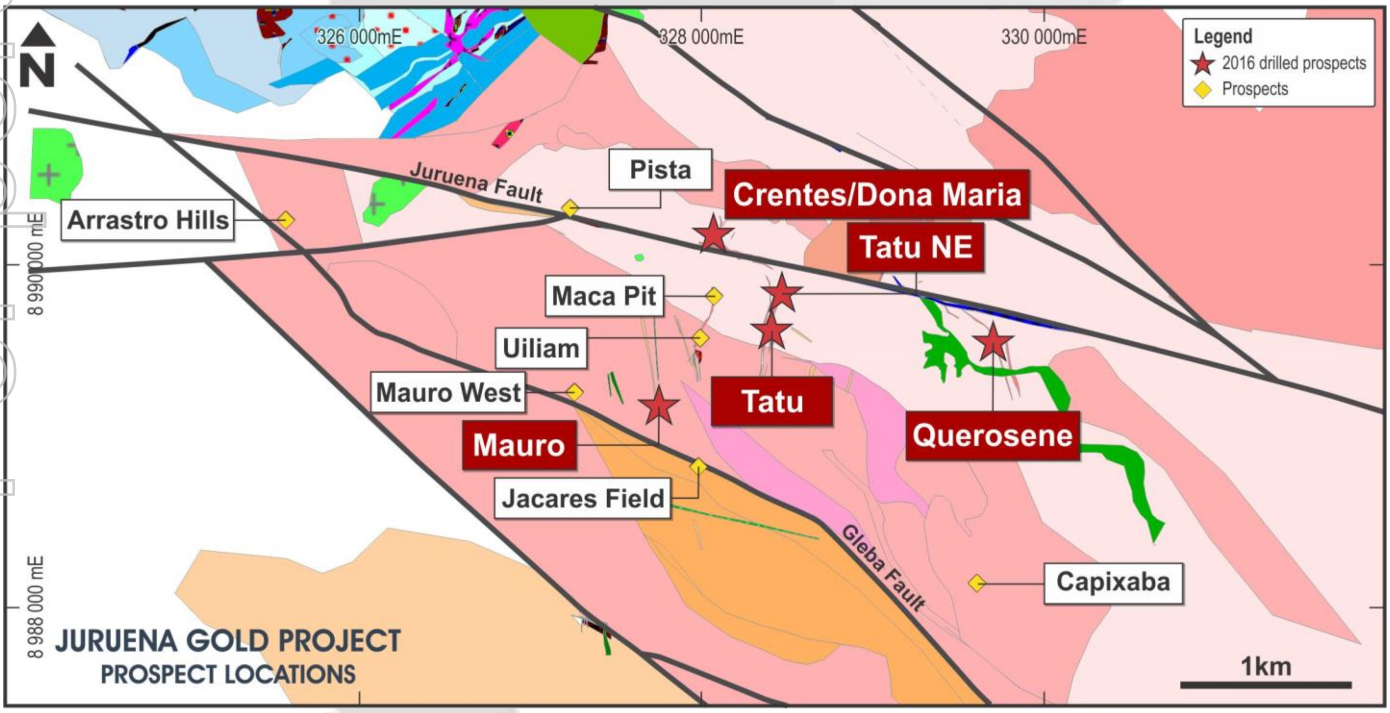

Figure 1: Crusader's Juruena Gold Project with Querosene and Dona Maria prospects

Querosene Prospect

The Querosene prospect is located on the eastern end of the Juruena project area and was the first prospect targeted in the Crusader drilling program due to consistent high-grade drilling results from previous explorers.

The updated mineral resource estimate for the Querosene prospect was completed following successful drilling during 2016, targeting infill and resource extension. A significant portion of the resource main zone was able to be converted into indicated resources, estimated at **31kt @ 28.4 g/t for 28,500oz.** Inferred resources at Querosene total **189kt @ 14.7 g/t for 89,300oz**. The total (indicated plus inferred) resource at Querosene was estimated at **219kt @ 16.7g/t for 117,800oz** at a 2.5g/t cut-off, reflecting a grade increase of 36% versus the 2015 estimate (from 12.3 g/t).

Mineralisation is divided into four main zones (see figures 2&3), with the majority of the higher grades and ounces contained in the Main Zone. The Main Zone also contains all of the Indicated resources. Mineralisation at Querosene is open at depth, with several areas on the Main Zone and SE Zone presenting obvious drilling targets which could have immediate and significant impact.

The mineralisation is associated with alteration along narrow shear zones, quartz veins and minor sulphides. Mineralisation intercepts (downhole) normally vary between 1-4m in width, with narrow, non-magnetic dolerite dykes often associated. The interpretation of the mineralisation at Querosene was little changed from the original modelling completed in 2015.

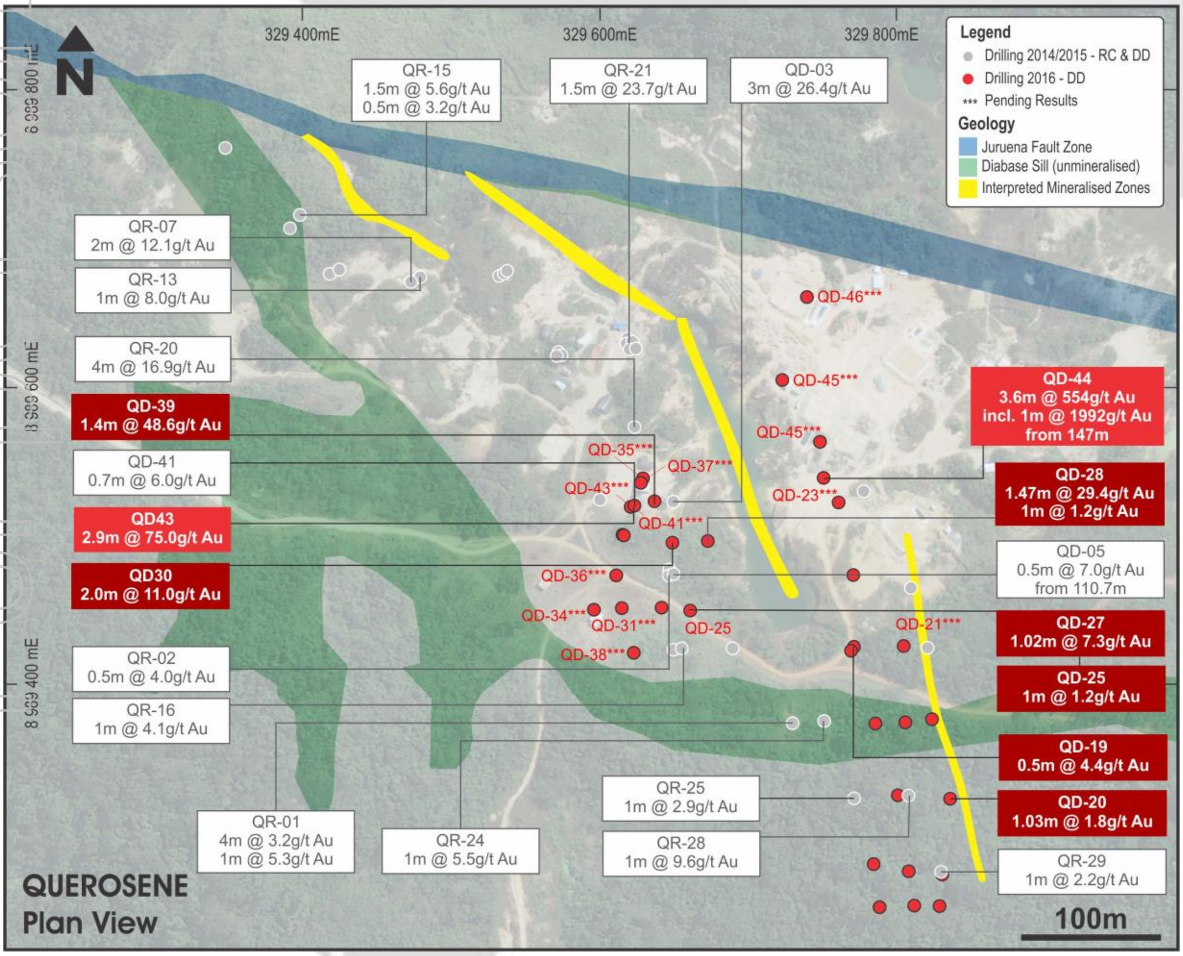

Figure 2: Querosene drill plan with interpreted mineralised zones.

Results for metallurgical testing on samples from the Querosene prospect indicate recoveries of > 90% for both gold and silver using standard leaching (see ASX release 1 July 2015). Results also indicate the gold and silver are free milling and well distributed within the ore. Additional composite samples from the 2016 drilling campaign have recently been submitted for more extensive metallurgical testing.

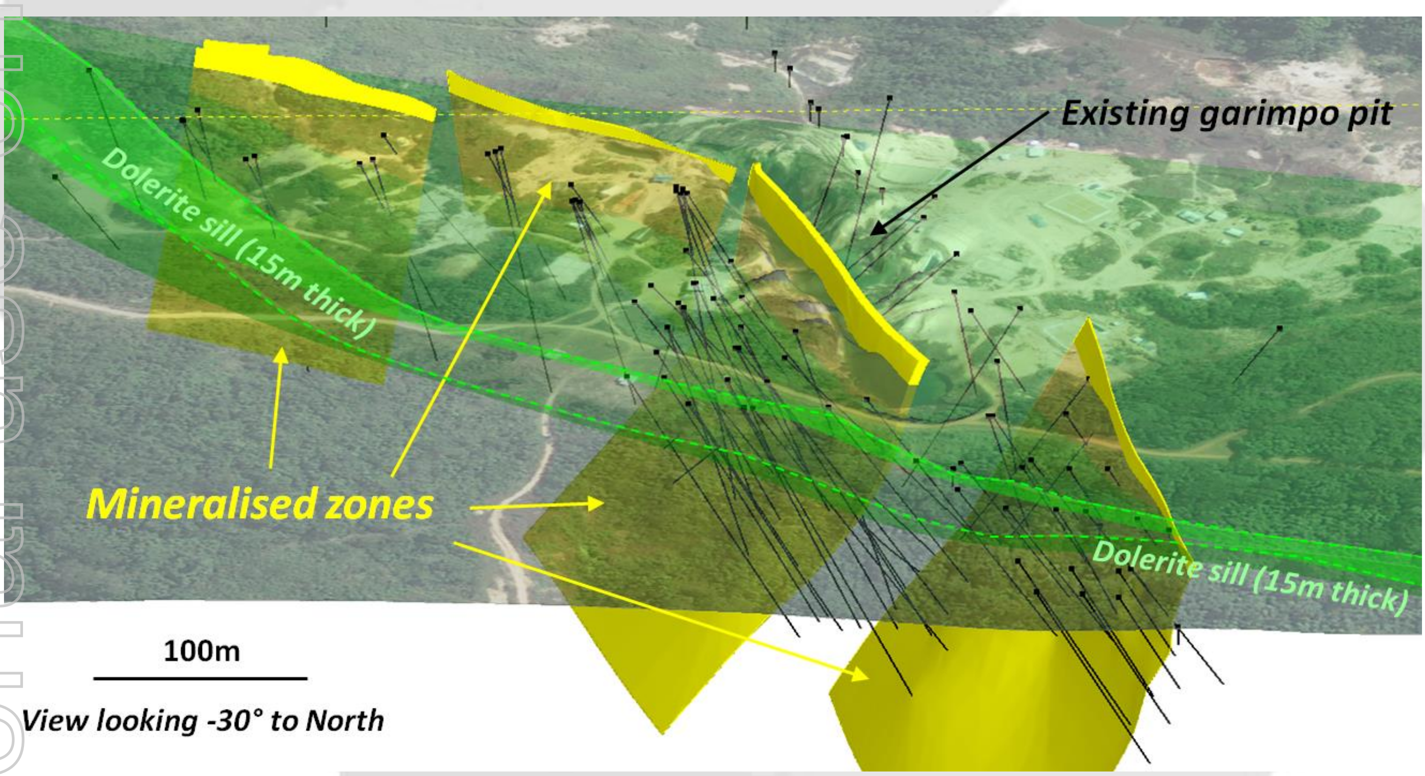

Figure 3: Querosene 3D model showing the interpreted ore zones and drilling.

Dona Maria Prospect

Dona Maria is located adjacent to the Crentes prospect, approximately 1 kilometre along the Juruena fault zone from Querosene (see Figure 1).

A significant portion of the Dona Maria resource was able to be converted into indicated resources, estimated at **68kt @ 13.7 g/t for 29,800oz**. Inferred resources at Dona Maria totalled **149kt @ 12.2 g/t for 58,200oz**. The total (indicated plus inferred) resource at Dona Maria was estimated at **216kt @ 12.7g/t for 88,000oz** at a 2.5g/t cut-off.

Mineralisation at Dona Maria appears to 'splay away' from the main Crentes trend (WNW) toward the NNW (see figures 4&5). There is a broad, relatively shallow garimpo working over the mineralised trend and historical intercepts indicate both very high-grade narrower intercepts and broad, moderate grade disseminated intervals.

Drilling in 2016 has allowed a clearer definition of the mineralised zones at Dona Maria, resulting in a significantly different interpretation to the previous estimate completed in 2015. The main difference is the interpretation of multiple sub-parallel zones forming a stacked sequence of ore zones extending along the NNW trend (see figures 4&5). Also interpreted is a single, short cross cutting zone which may represent a fault or cross cutting shear zone. This zone is sub-parallel to the Crentes trend (~60m to the south). This zone includes ~3 % of the overall Dona Maria resource.

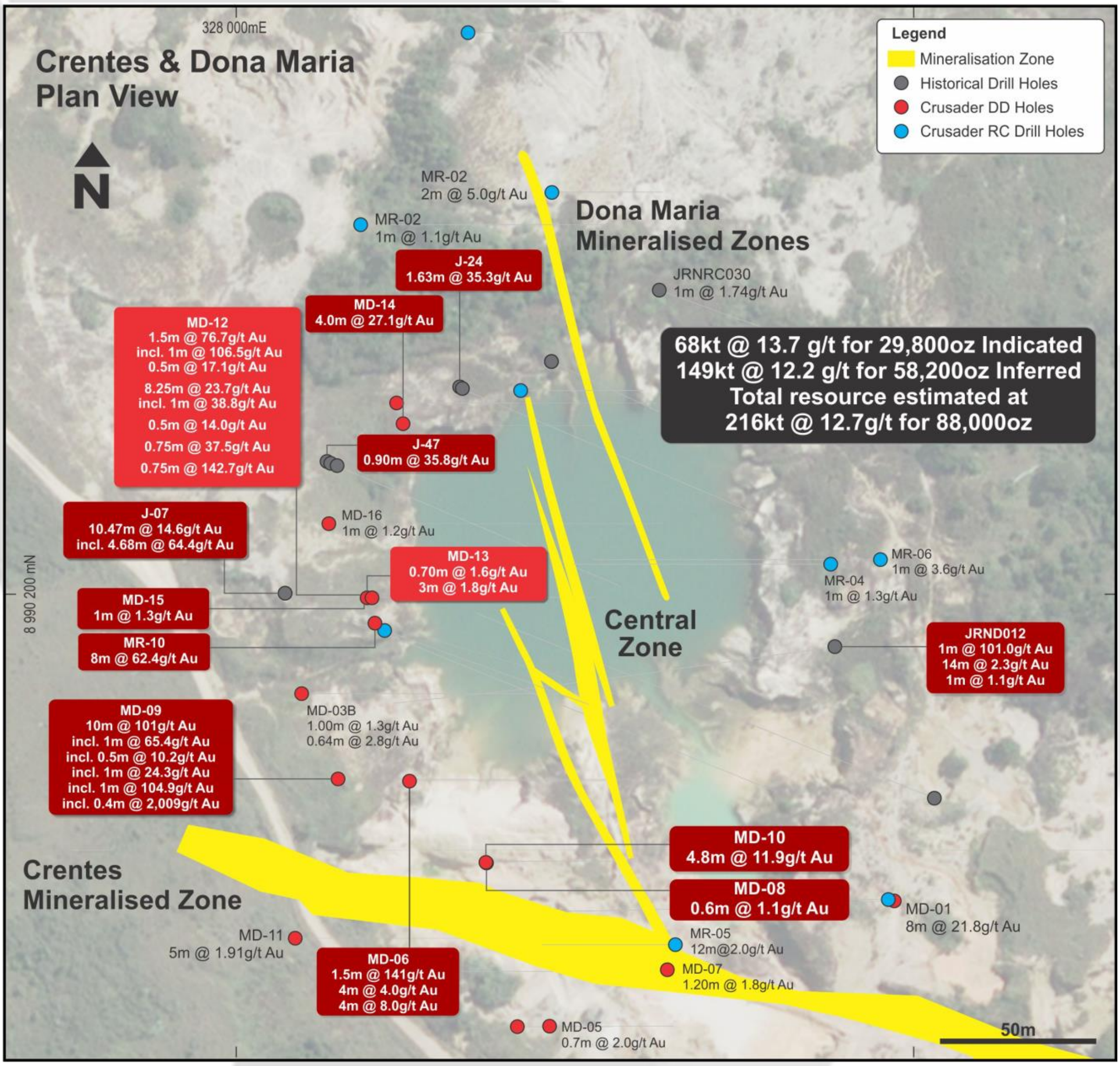

Figure 4: Dona Maria drill plan with interpreted mineralised zones.

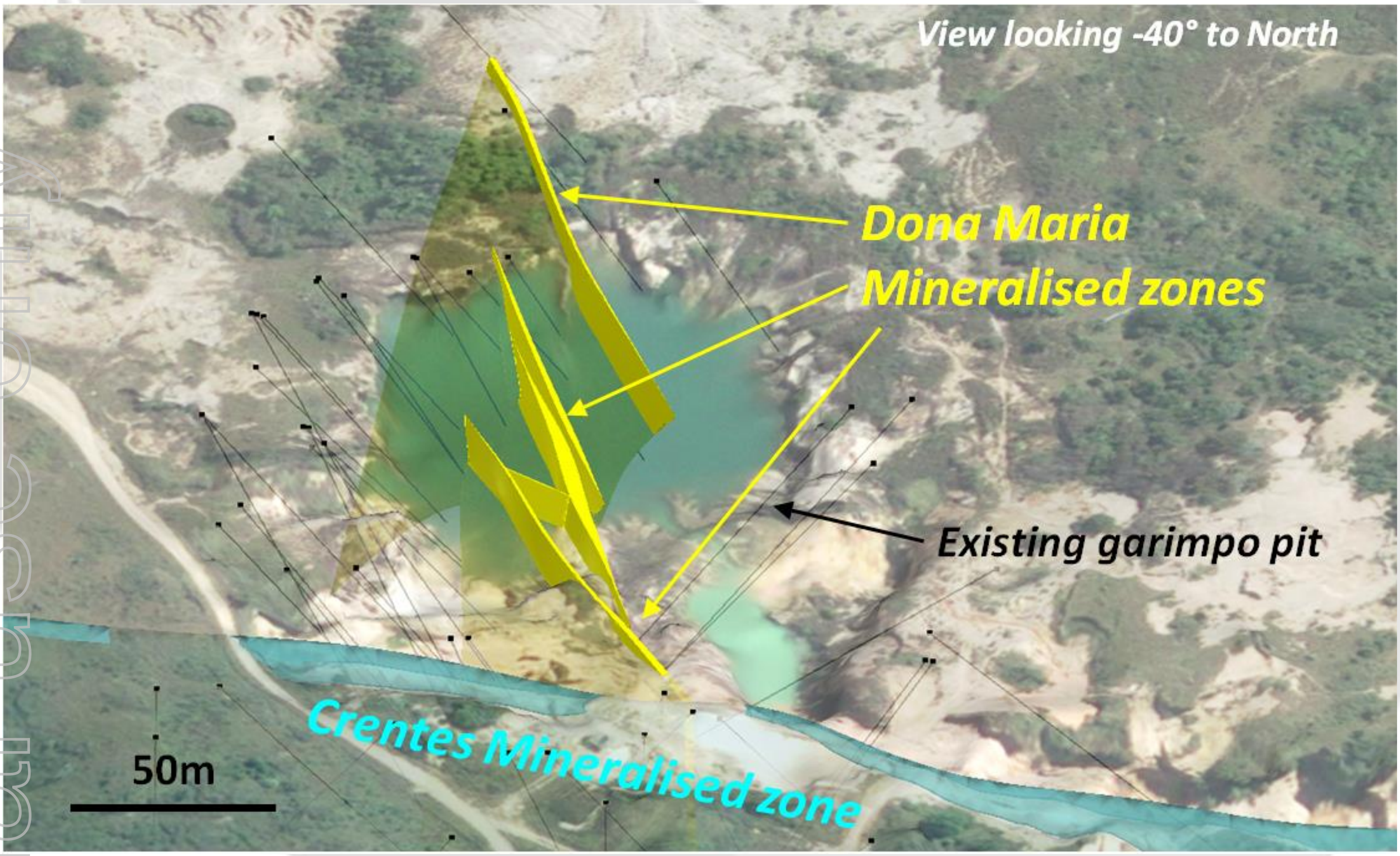

Figure 4: Dona Maria 3D model showing the interpreted ore zones and drilling.

Further Work

Crusader has been working closely with experienced mining consultancy Global Resource Engineering (GRE) to assist with conceptual mine and project planning. With the new resource model now updated, GRE will work with Crusader to prepare a scoping study into the overall project development. Both open-pit and underground development scenarios will be considered as well as a standalone carbon-in-leach processing plant. GRE have extensive experience in Brazil and bring a low overhead approach to the project team.

Crusader will also consider the recent results from the Tatu and Tatu NE zones which have not been included in this updated estimate. The mineralised zones at Tatu NE, recently reported (see announcent 23rd November 2016) intercepts of broad and shallow mineralisation including;

- **37[1]m @ 3.71 g/t Au** from 132m in hole TD-06**,** including **2m @ 47.67 g/t Au** from 138m and **2m @ 15.44 g/t Au** from 166m downhole

Tatu is favourably located between the Dona Maria and Querosene prospects and provides potential additional high-grade feed to Juruena mining scenario. Crusader will look to evaluate potential additional resources that may be included in the current estimate early in the new year

[1] Not true width. Tatu NE mineralisation is interpreted to be dipping sub-parallel to the drill hole TD-06. True width is estimated at ~15m.

SUMMARY OF RESOURCE ESTIMATE AND REPORTING CRITERIA

As per ASX Listing Rule 5.8 and the 2012 JORC reporting guidelines, a summary of the material information used to estimate the Mineral Resource is detailed below (for more detail please refer to Appendix 1 and Sections 1 to 3 included below in Appendix 2).

Geology and geological interpretation

The Juruena mineralisation is considered to have resulted from magmatic activity (intrusions and fluids) which could be sourced from a gold porphyry system or intrusive-related gold system, whilst still containing characteristics commonly associated with epithermal systems. The mineralisation is hosted by Paleoproterozoic volcanic and granitoid rocks of varying composition. The host rocks are found within the Juruena-Rondonia block of the Amazon Craton.

The Querosene and Dona Maria resources are constrained with discrete, narrow, steeply dipping high grade gold mineralised zones associated with alteration and mafic dykes. True thickness for these is typically between 1m to 3m. The Crentes resource forms a broader (5m to 35m wide), typically lower grade zone over a 600m strike length trending west-north-west. All veins have been modelled using Leapfrog™ software's vein modelling tools.

Drilling techniques and hole spacing

Primarily targeting the Querosene, Dona Maria and Crentes zones, Crusader completed 71 RC drill-holes in 2014 and 2015 (7,452m) using a nominal 5 ½ inch face sampling hammer. In early 2015 Crusader also completed 11 diamond drill-holes (1,863.81m) of NQ2 diameter with HQ pre-collars and 2 trenches for 17m.

In 2016, Crusader drilled 64 diamond drill-holes (7,873m) of mainly HQ diameter (with some NQ2) at the Querosene, Dona Maria, Mauro and Tatu prospects.

Historically, over the wider Juruena project area, Lago Dourado Minerals Ltd ("Lago") completed 90 RC drill-holes (6,618m) and 70 diamond drill-holes (22,497.81m) between 2010 and 2013. Between 1996 and 1997 by Consolidated Madison Holdings Ltd ("Madison") completed 91 diamond drill-holes (15,821.89m).

Sections are generally spaced 25m to 50m with hole directions varying depending on the orientation of the targeted mineralised zone.

Sampling and sub-sampling techniques

Sample information used in resource estimation was derived from both RC and diamond core drilling. The drill samples and core have been geologically logged in detail and sampled for lab analysis in line with industry standards.

Sample analysis method

SGS were used by Crusader for all analyses. Acme in Santiago, Chile were used for fire assays for the Lago samples, whilst Acme in Vancouver, Canada were used for multi-elemental analyses. The samples were assayed for Au by Fire Assay of 50g aliquots followed by Atomic Absorption Spectroscopy (AAS), a technique designed to report total gold. In addition, all Lago samples were analysed for a suite of 34 elements with an aqua regia digest and ICP-MS finish. Quality Control procedures were adopted by both Lago and Crusader including field duplicates, blanks and standards. No geophysical tools were used to determine any element concentrations used in the resource estimate.

Cut-off grades

For Dona Maria and Querosene, hard boundary envelopes have been wireframed to geological (mafic dyke) and structural/alteration boundaries which also typically coincide with high gold grade. For Crentes, the zone has been wireframed to a broad, low grade, approximately 0.2 ppm Au mineralised zone for use for a Multiple Indicator Kriging (MIK) modelling method.

Estimation Methodology

For Querosene and Dona Maria, grade estimation for gold was completed primarily by accumulation methods (Inverse Distance Squared - ID^2) using Geovia Surpac™ software with gold grades back calculated from true thickness and grade thickness estimations. For comparison, Inverse Distance Squared (ID^2) and Ordinary Kriging (OK) models were also created for gold, but the accumulation method is preferred for reporting. For Crentes, Multiple Indicator Kriging (MIK) was used. At Dona Maria and Querosene, the block models were constructed with parent blocks of 4m (E) by 10m (N) by 10m (RL) and at Crentes, with parent blocks of 10m (E) by 10m (N) by 10m (RL). Both have been sub-celled at the domain boundaries for accurate domain volume representation. Estimation parameters were based on the variogram models, data geometry and kriging estimation statistics. Top-cuts were decided by completing an outlier analysis using a combination of methods including grade histograms, log probability plots and other statistical tools. Based on this statistical analysis of the data population, grade-thickness top-cuts of 85 and 100 were applied to Querosene and Dona Maria respectively (accumulation models) and 15ppm to Crentes (note – MIK model).

Classification criteria

The Mineral Resource has been classified on the basis of confidence in the geological model, continuity of mineralised zones, drilling density, confidence in the underlying database and the available bulk density information. The Juruena Mineral Resource has been classified partly as Indicated Resources and the remainder as Inferred Resources according to JORC 2012.

Mining and metallurgical methods and parameters

Dona Maria and Querosene have been identified as potential underground mining zones with their narrow, steeply dipping and high grade natures. Crentes has been identified as a potential open-pit zone with broad lower grade mineralisation close to surface.

A representative composite mineralised sample from both Querosene and Dona Maria have been tested by an independent laboratory and gold recovered using a variety of techniques, including cyanide leaching. Composite samples from mineralisation at both Crentes and Dona Maria have been submitted for testwork, however results are not yet available.

-ENDS-

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About Crusader

Crusader Resources Limited (ASX:CAS) is a minerals exploration and mining company listed on the Australian Securities Exchange. Its major focus is Brazil; a country Crusader believes is vastly underexplored and which offers high potential for the discovery of world class mineral deposits. Crusader has three key assets:

Posse Iron Ore

The Posse Iron Ore Mine is located 30km from Belo Horizonte, a city acknowledged as the mining capital of Brazil and the capital of Minas Gerais state. The project had an indicated and inferred Mineral Resource estimate of 36Mt @ 43.5% Fe when mining began in March 2013. Posse is currently selling DSO into the domestic market. With an experienced mining workforce amongst a population of over 2.5 million people, the infrastructure and access to the domestic steel market around the Posse Project is excellent.

Borborema Gold

The Borborema Gold Project is in the Seridó area of the Borborema province in north-eastern Brazil. It is 100% owned by Crusader and consists of three mining leases covering a total area of 29 km² including freehold title over the main prospect area.

The Borborema Gold Project benefits from a favourable taxation regime, existing on-site facilities and excellent infrastructure such as buildings, grid power, water, sealed roads and is close to major cities and regional centres. The project's Ore Reserve includes Proven and Probable Ore Reserves of 1.61Moz of mineable gold from 42.4Mt @ 1.18g/t (0.4 & 0.5g/t cut-offs for oxide & fresh). The measured, indicated and inferred Mineral Resource Estimate of 2.43Moz @ 1.10g/t gold, remains open in all directions.

Juruena Gold

The Juruena Gold Project is located in the highly prospective Juruena-Alta Floresta Gold Belt, which stretches east-west for >400km and has historically produced more than 7Moz of gold from 40 known gold deposits.
The Juruena Project has been worked extensively by artisanal miners (garimpeiros) since the 1980s, producing ~500koz in that time. Historically there is a database of more than 30,000 meters of drilling and extensive geological data.

Competent Person Statement

The information in this report that relates to Juruena Gold Project Exploration Results and Mineral Resources, Posse Iron Ore Project Exploration Results and Borborema Gold Project Exploration Results released after 1 December 2013, is based on information compiled or reviewed by Mr.. Robert Smakman who is a full time employee of the company and is a Fellow of the Australasian Institute of Mining and Metallurgy. The information in this report that relates to Mineral Resources at the Juruena Gold Project is based on information compiled or reviewed by Mr. Lauritz Barnes and Mr. Aidan Platel who are independent consultants to the company and Members of the Australasian Institute of Mining and Metallurgy. Each of Mr. Smakman, Mr. Barnes and Mr. Platel have sufficient experience that is relevant to the type of mineralisation and type of deposits under consideration 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. Smakman, Mr. Barnes and Mr. Platel consent to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to:

a) Borborema Gold Project and Posse Iron Ore Project Exploration Results released prior to 1 December 2013 is based on information compiled or reviewed by Mr. Robert Smakman who is a full time employee of the company;
b) Borborema Gold Mineral Resources is based on information compiled by Mr. Lauritz Barnes and Mr. Brett Gossage, independent consultants to the company;
c) Borborema Gold Ore Reserves is based on information compiled by Mr. Linton Kirk, independent consultant to the company;
d) Posse Fe Mineral Resources is based on and accurately reflects, information compiled by Mr. Bernardo Viana who was a full time employee of Coffey Mining Pty Ltd,

and who are all Members of the Australasian Institute of Mining and Metallurgy (Rob Smakman and Linton Kirk being Fellows), and who all have sufficient experience that is relevant to the type of mineralisation and type of deposit under consideration, and to the activity which they are undertaking to qualify as a Competent Person as defined in the 2004 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Each of Mr. Smakman, Mr. Barnes, Mr. Kirk, Mr. Viana, and Mr. Brett Gossage consent to the inclusion in the report of the matters based on their information in the form and context in which it appears.
The information was prepared and disclosed under the JORC Code 2004. It has not been updated since to comply with JORC Code 2012 on the basis that the information has not materially changed since it was last reported.

Appendix 1: Relevant Drill Intercepts for Querosene and Dona Maria Resource Estimates

DEPOSIT	HOLEID	EAST	NORTH	RL	FINAL DEPTH	DIP	AZIMUTH	DOMAIN	FROM	TO	DOWHOLE INTERSECTION	TRUE THICKNESS	Au (ppm)
Dona Maria	CR-04/2015	328111.1	8990049.7	232.0	125.00	-55	0	1	110	114	4	1.7	0.2
Dona Maria	CR-04/2015	328111.1	8990049.7	232.0	125.00	-55	0	2	122	125	3	0.6	0.2
Dona Maria	CR-14/2015	328120.7	8990077.0	230.2	68.00	-55	0	1	42.5	45	2.5	0.8	0.3
Dona Maria	J-05	328206.2	8990139.8	229.1	205.98	-45	292	4	158.18	159.59	1.41	0.8	0.9
Dona Maria	J-05	328206.2	8990139.8	229.1	205.98	-45	292	2	166.79	169.93	3.14	1.6	2.1
Dona Maria	J-07	328014.9	8990200.2	227.8	220.90	-45	112	1	108.66	109.62	0.96	0.5	7.9
Dona Maria	J-07	328014.9	8990200.2	227.8	220.90	-45	112	6	112.5	119.12	6.62	1.1	22.7
Dona Maria	J-07	328014.9	8990200.2	227.8	220.90	-45	112	2	124.72	129.4	4.68	2.9	186.6
Dona Maria	J-21	328014.9	8990200.2	227.8	210.30	-62	112	1	142.37	142.8	0.43	0.2	0.3
Dona Maria	J-21	328014.9	8990200.2	227.8	210.30	-62	112	6	166.35	167.45	1.1	0.2	0.1
Dona Maria	J-21	328014.9	8990200.2	227.8	210.30	-62	112	2	183.34	184.48	1.14	0.5	0.6
Dona Maria	J-24	328066.3	8990260.7	225.7	202.80	-62	113	5	76.37	78	1.63	0.8	28.3
Dona Maria	J-40	328035.1	8990024.5	230.4	204.25	-45	54	1	152.72	156.2	3.48	3.2	44.5
Dona Maria	J-42	328035.1	8990024.5	230.4	207.65	-62	54	1	198.5	200.5	2	1.2	7.1
Dona Maria	J-47	328027.1	8990239.0	226.9	200.15	-62	113	4	155.75	159.54	3.79	1.6	13.9
Dona Maria	J-61	328018.3	8990157.6	229.2	193.85	-45	111	1	128.24	129.16	0.92	0.5	12.2
Dona Maria	J-61	328018.3	8990157.6	229.2	193.85	-45	111	2	139.55	140.44	0.89	0.6	0.6
Dona Maria	JRND012	328176.8	8990184.5	224.8	204.40	-49	262	4	105	109	4	2.2	8.1
Dona Maria	JRND012	328176.8	8990184.5	224.8	204.40	-49	262	2	113	119	6	4.0	9.8
Dona Maria	JRND012	328176.8	8990184.5	224.8	204.40	-49	262	6	140	141	1	0.4	0.5
Dona Maria	JRND012	328176.8	8990184.5	224.8	204.40	-49	262	1	152	154	2	1.0	0.6
Dona Maria	JRNRC068	328089.3	8990260.7	225.4	63.00	-55	115	5	23	24	1	0.4	0.1
Dona Maria	MD-01/2015	328190.6	8990104.9	229.3	199.78	-60	270	1	179	187	8	2.2	47.9
Dona Maria	MD-02/2015	328042.7	8990251.6	226.1	167.13	-55	105	4	84	87	3	1.4	1.3
Dona Maria	MD-03/2016	328024.3	8990167.0	227.3	143.70	-57	90	1	110	111	1	0.6	0.2
Dona Maria	MD-03/2016	328024.3	8990167.0	227.3	143.70	-57	90	6	129	130	1	0.5	0.3
Dona Maria	MD-03/2016	328024.3	8990167.0	227.3	143.70	-57	90	2	135.9	138	2.1	1.3	6.4
Dona Maria	MD-03B/2016	328023.7	8990167.1	227.2	173.00	-57	90	1	112	114	2	1.1	1.2

DEPOSIT	HOLEID	EAST	NORTH	RL	FINAL DEPTH	DIP	AZIMUTH	DOMAIN	FROM	TO	DOWHOLE INTERSECTION	TRUE THICKNESS	Au (ppm)
Dona Maria	MD-03B/2016	328023.7	8990167.1	227.2	173.00	-57	90	2	136	137.16	1.16	0.7	1.3
Dona Maria	MD-06/2016	328051.5	8990144.9	226.0	109.40	-55	90	1	77	81	4	2.0	8.0
Dona Maria	MD-06/2016	328051.5	8990144.9	226.0	109.40	-55	90	2	96	100	4	2.5	20.0
Dona Maria	MD-08/2016	328078.4	8990117.8	226.7	80.00	-61	90	1	72	73	1	0.5	0.4
Dona Maria	MD-09/2016	328034.8	8990141.6	228.4	170.00	-58	90	1	125	128	3	1.7	41.2
Dona Maria	MD-09/2016	328034.8	8990141.6	228.4	170.00	-58	90	2	131	135	4	2.1	492.6
Dona Maria	MD-10/2016	328074.1	8990117.8	226.6	141.00	-71	90	1	101	104	3	1.2	22.2
Dona Maria	MD-11/2016	328018.1	8990095.1	231.0	160.00	-52	90	1	145	148.5	3.5	2.1	9.1
Dona Maria	MD-12/2016	328041.4	8990187.9	227.5	110.00	-45	106	6	78	79.5	1.5	0.4	26.8
Dona Maria	MD-12/2016	328041.4	8990187.9	227.5	110.00	-45	106	2	89	95	6	3.8	122.6
Dona Maria	MD-13/2016	328039.2	8990195.5	227.7	108.80	-49	90	2	82	84	2	1.2	1.1
Dona Maria	MD-13/2016	328039.2	8990195.5	227.7	108.80	-49	90	4	95	98	3	1.8	3.1
Dona Maria	MD-14/2016	328049.4	8990246.2	225.9	130.00	-62	90	4	84	88	4	1.7	46.1
Dona Maria	MD-15/2016	328040.5	8990195.4	227.6	200.00	-71	90	2	148	150	2	0.8	0.7
Dona Maria	MD-16/2016	328027.8	8990217.2	228.2	156.00	-51	90	4	107	109	2	1.2	0.9
Dona Maria	MR-01/2015	328079.8	8990255.6	225.1	63.00	-55	90	5	41	41.5	0.5	0.3	0.3
Dona Maria	MR-02/2015	328088.9	8990314.0	226.6	66.00	-60	90	5	2	4	2	1.3	6.5
Dona Maria	MR-04/2015	328171.6	8990204.5	225.3	132.00	-55	270	4	122	125	3	1.6	1.2
Dona Maria	MR-08/2015	328032.4	8990304.3	226.5	128.50	-55	90	5	76	77	1	0.7	0.7
Dona Maria	MR-10/2015	328044.2	8990189.3	227.7	112.00	-55	110	1	75	76	1	0.4	0.1
Dona Maria	MR-10/2015	328044.2	8990189.3	227.7	112.00	-55	110	6	80	81	1	0.3	0.1
Dona Maria	MR-10/2015	328044.2	8990189.3	227.7	112.00	-55	110	2	101	109	8	6.0	374.4
Querosene	JRNAD-062	329850.0	8989306.1	246.9	10.00	-90	0	9	2	4	2	0.3	1.2
Querosene	JRND018	329671.4	8989470.2	245.5	170.00	-49	78	8	65	69	4	3.5	113.6
Querosene	JRND018	329671.4	8989470.2	245.5	170.00	-49	78	9	136	139	3	1.6	20.3
Querosene	JRND020	329624.6	8989514.0	247.0	400.00	-50	24	8	122	123	1	0.8	49.8
Querosene	JRND022	329572.2	8989638.0	242.0	340.00	-49	25	8	69	71	2	1.8	84.8
Querosene	JRND028	329609.8	8989541.2	243.4	301.40	-50	82	8	104	105	1	1.0	4.3
Querosene	JRNRC037	329786.1	8989376.7	243.9	60.00	-55	45	9	53	55	2	0.8	0.3
Querosene	QD-02/2015	329621.4	8989629.3	243.5	185.34	-72	90	8	84	85	1	0.8	4.2
Querosene	QD-05/2015	329650.0	8989476.7	246.7	200.45	-55	90	8	88.46	89.49	1.03	0.9	52.4

DEPOSIT	HOLEID	EAST	NORTH	RL	FINAL DEPTH	DIP	AZIMUTH	DOMAIN	FROM	TO	DOWHOLE INTERSECTION	TRUE THICKNESS	Au (ppm)
Querosene	QD-06/2015	329537.3	8989678.3	236.7	177.70	-68	25	8	70.99	72.09	1.1	0.9	1.3
Querosene	QD-07/2015	329648.9	8989477.3	246.7	191.30	-63	90	8	97.41	98.71	1.3	1.0	0.9
Querosene	QD-12/2016	329803.7	8989370.1	243.0	69.85	-60	90	9	29.35	30	0.65	0.5	0.5
Querosene	QD-15/2016	329782.0	8989370.0	244.0	76.20	-60	90	9	57.8	58.8	1	0.8	0.9
Querosene	QD-16/2016	329804.6	8989270.1	247.0	77.70	-60	90	9	71	71.34	0.34	0.3	1.4
Querosene	QD-17/2016	329826.5	8989270.3	245.8	53.00	-60	90	9	47	47.75	0.75	0.6	0.2
Querosene	QD-18/2016	329797.9	8989322.3	248.9	77.60	-60	90	9	61	62.55	1.55	1.2	0.2
Querosene	QD-19/2016	329768.0	8989419.5	243.4	72.40	-60	90	9	52	53	1	0.8	2.3
Querosene	QD-20/2016	329835.5	8989319.8	245.3	35.05	-60	90	9	16.1	18.15	2.05	1.5	1.0
Querosene	QD-22/2016	329766.2	8989419.5	243.4	90.23	-73	90	9	62.55	63	0.45	0.3	0.8
Querosene	QD-25/2016	329663.6	8989446.8	246.0	161.02	-56	90	9	147	149	2	1.5	0.7
Querosene	QD-27/2016	329663.6	8989446.8	246.0	164.60	-60	90	8	109.4	110	0.6	0.5	0.1
Querosene	QD-27/2016	329663.6	8989446.8	246.0	164.60	-60	90	9	155.12	157.1	1.98	1.5	4.0
Querosene	QD-28/2016	329676.5	8989494.2	245.5	169.90	-72	90	8	57.18	58.65	1.47	1.0	29.4
Querosene	QD-28/2016	329676.5	8989494.2	245.5	169.90	-72	90	9	154.4	155.95	1.55	1.2	1.0
Querosene	QD-29/2016	329644.9	8989446.7	247.0	145.65	-64	94	8	137.2	138.2	1	0.9	0.4
Querosene	QD-30/2016	329651.1	8989495.1	247.6	111.60	-67	92	8	86.1	87.1	1	0.7	0.1
Querosene	QD-32/2016	329617.2	8989496.4	246.6	140.00	-62	91	8	113.9	115.9	2	1.6	17.7
Querosene	QD-33/2016	329617.2	8989496.4	246.6	160.00	-73	93	8	125.7	126.3	0.6	0.5	0.0
Querosene	QD-35/2016	329630.5	8989537.1	247.0	130.00	-69	93	8	99.75	100.55	0.8	0.7	0.0
Querosene	QD-36/2016	329612.3	8989472.0	247.0	170.00	-60	91	8	130	131	1	0.9	0.1
Querosene	QD-37/2016	329629.4	8989536.8	247.0	145.00	-80	89	8	117.1	117.5	0.4	0.3	0.0
Querosene	QD-39/2016	329638.8	8989523.0	247.0	185.00	-60	91	8	84	85.4	1.4	1.3	63.2
Querosene	QD-41/2016	329622.3	8989518.3	247.0	135.00	-62	91	8	102	102.7	0.7	0.7	3.9
Querosene	QD-43/2016	329622.3	8989518.3	247.0	146.70	-72	95	8	112.8	115.7	2.9	2.4	184.0
Querosene	QD-44/2016	329751.1	8989573.0	242.0	182.05	-45	270	8	147	154	7	1.6	456.3
Querosene	QD-45/2016	329736.1	8989602.2	245.1	176.45	-47	270	8	157	170	13	1.7	0.4
Querosene	QD-46/2016	329741.1	8989623.2	244.2	181.90	-45	270	8	180	181.9	1.9	1.2	3.2
Querosene	QR-01/2014	329732.8	8989373.9	244.9	120.00	-55	90	9	113	114	1	0.8	5.3
Querosene	QR-03/2014	329651.9	8989523.5	247.0	100.00	-55	90	8	73	76	3	2.5	65.9
Querosene	QR-16/2014	329656.8	8989424.7	244.4	160.00	-55	90	9	157	158	1	0.8	4.1

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DEPOSIT	HOLEID	EAST	NORTH	RL	FINAL DEPTH	DIP	AZIMUTH	DOMAIN	FROM	TO	DOWHOLE INTERSECTION	TRUE THICKNESS	Au (ppm)
Querosene	QR-20/2015	329625.7	8989574.0	243.6	120.00	-55	90	8	82	84	2	1.6	52.7
Querosene	QR-21/2015	329624.2	8989628.6	243.8	107.00	-72	90	8	84	85.5	1.5	0.9	21.3
Querosene	QR-22/2015	329624.2	8989631.5	243.7	122.50	-76	25	8	76	80	4	1.2	0.1
Querosene	QR-24/2015	329753.6	8989374.5	244.0	96.00	-55	90	9	87	88	1	0.8	5.5
Querosene	QR-25/2015	329774.3	8989322.8	249.5	90.00	-55	90	9	86	87	1	0.8	2.8
Querosene	QR-26/2015	329813.1	8989464.3	237.4	105.00	-55	270	9	4	8	4	1.2	0.1
Querosene	QR-27/2015	329824.3	8989423.8	245.0	84.00	-55	270	9	18	22	4	1.2	1.2
Querosene	QR-28/2015	329811.4	8989323.7	247.0	54.00	-55	90	9	48.5	50	1.5	1.1	12.4
Querosene	QR-29/2015	329832.2	8989273.3	245.0	75.00	-55	90	9	30	31	1	0.8	2.3

JORC Code, 2012 Edition

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 (e.g. 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.*	• Reverse circulation (RC) drill sample: samples were collected at one metre intervals and locally, in the proximity of the main target zone, at 0.5m intervals. In zones of little apparent interest, samples were composited in 4m intervals for submission to the laboratory and 3 - 4kg duplicates of the individual 1m samples retained for future analysis, if required. The sample material passed through a 3 stage Jones riffle splitter. Samples were kept relatively dry through the use of a booster compressor to maintain a high level of air pressure. Diamond drill samples: Diamond drilling of gold prospects using an industry standard wireline drill rig. Core size was typically HQ, although some areas were drilled at NQ size.
	• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*	• Diamond drill sample: diamond core was split in half lengthways and sampled typically at 1m intervals, although sampling was to geological boundaries and hence sample length ranged from 0.3 - 1.4m. Samples were placed in high density plastic sample bags and immediately sealed shut with cable ties. Half core was retained on site in Juruena for future reference.
	• *Aspects of the determination of mineralisation that are Material to the Public Report.*	• Sample mass varied according to the sample length, typically mass varied between 1-6kg. Samples were sent for analysis at an independent lab and gold was determined via 50g fire assay. All efforts were made to ensure sample contamination was minimised and that all samples could be deemed representative of the interval that they originated from. Based on statistical analysis of field duplicates, there is no evidence to suggest samples are not representative.
	• *In cases where 'industry standard' work has been done this would be relatively simple (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.*	• Crusader's current procedures are in line with industry standards, however samples in excess of 100g/t gold were re-assayed using a different lower detection limit (10ppb vs 5ppb). Screen fire assays were performed on select samples previously reported and the samples were sourced directly from the laboratory. Samples were the coarse rejects of the original samples.

Criteria	JORC Code Explanation	Commentary
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. 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.).*	• Diamond drill-holes of HQ and NQ diameter. Down-hole surveys were routinely completed for the diamond drill-holes, with approximately half of the drillholes oriented using a modern core orienting apparatus. Drilling was standard tube (not triple tube). Crusader completed 73 RC drill-holes in 2014 and 2015 (7,749.50m) using a nominal 5 ½ inch face sampling hammer. Hole conditions were mostly dry, with sufficient air pressure available to keep water from entering the drill-hole. Where high water inflows potentially threatened sample integrity, the drill-hole was abandoned and subsequently re-drilled with a diamond rig. • Drill-hole inclinations ranged from -50 degrees to -80 degrees and oriented on various azimuths depending on the geological formation. Down-hole surveys were completed for the diamond drill-holes, but the core was not oriented. Crusader's resource drill-hole database includes 90 RC drill-holes (6,618m) and 70 diamond drill-holes (22,497.81m) completed between 2010 and 2013 by Lago Dourado Minerals Ltd ("Lago"). The RC drill-holes were drilled with a nominal 5 inch face sampling hammer, and the diamond drill-holes were of NQ2 diameter with HQ pre-collars. All diamond core was oriented, initially with a spear and subsequently with a Reflex ACT II instrument. Drill-hole inclinations ranged from -50 degrees to vertical. Crusader's resource drill-hole database also includes 91 diamond drill-holes (15,821.89m) completed between 1994 and 1998 by Madison Minerals Ltd ("Madison"). The diamond drill-holes were of NQ2 diameter with HQ pre-collars. Drill-hole inclinations ranged from -45 to -62 degrees.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.*	• RC drill sample recoveries were verified by weighing every sample. Diamond core recovery by measuring the length of core recovered compared to the length drill run. Drill recoveries were considered as good with over 90% of the drill runs > 90% recovery.
	• *Measures taken to maximise sample recovery and ensure representative nature of the samples.*	• Care when drilling broken ground, dispensing with the core into the trays and working closely with the contractors to ensure sample recoveries remained consistent. For both Crusader and Lago drill-holes, recovery data has been recorded.
	• *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.*	• Gold mineralisation does not apparently correlate to zones of low sample recovery; sample bias due to poor sample recovery is therefore not believed to be an issue.

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.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• All drill-holes have been geologically and geotechnically logged in detail, and the data stored in a digital database. Information collected in logging is considered appropriate for future studies • Logging of diamond drill-core and RC samples is a combination of qualitative and quantitative and recorded lithology, mineralogy, mineralisation, structure, weathering and colour. Core photographs also exist for all drill-holes. • logged data exists for 100% of the holes drilled.
Sub-sampling techniques 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.*	• RC samples were collected using a 3-stage Jones riffle splitter, a high density plastic bag was placed directly over the sample chute on the rifle splitter. The sample size was 3-4 kilograms and the size of the chips was predominantly 0.4-0.8 centimetres with a few chips greater than this. The comportment of gold is fine and evenly distributed normally associated with fine disseminated sulphides. Sampling was generally conducted on dry samples. Diamond drill-core was cut in half lengthways on site using a diamond saw; for duplicate samples quarter-core was used. • Sample preparation was undertaken by SGS-Geosol Laboratories ("SGS") in Brazil. Acme Analytical Laboratories ("Acme") in Brazil for Lago samples. Madison used SGS in Brazil for sample preparation and analysis with check assaying performed at X-RAL labs in Toronto. SGS used industry standard methods (dry – crush – split – pulverise) which are considered appropriate for the style of mineralisation intersected in the drill-holes. The sample preparation method used by SGS-Geosol laboratories is presented in the following section. • Standards (certified reference material), blanks and duplicates were inserted into the sample stream at the rate of 1:25, 1:25 and 1:40 samples, respectively for the sample batches of generally 50 samples. • The same side from each sample cut were routinely sampled. Field duplicates were completed using quarter core. • Sample lengths varied as determined by geological factors- this is considered appropriate for the grain size of the mineralisation.

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.*	• SGS were used by Crusader for all analyses. Acme in Santiago, Chile were used for fire assays for the Lago samples, whilst Acme in Vancouver, Canada were used for mult-elemental analyses. • The samples were assayed for Au by Fire Assay of 50g aliquots followed by Atomic Absorption Spectroscopy (AAS), a technique designed to report total gold. This technique has a lower detection limit of 5ppb. samples reporting above 100,000ppb were re-assayed from pulps using a Fire Assay 50 g charge and AAS finish with a 10ppb lower detection limit. Screen fire assays were performed as a check on an interval covering a high grade (+2,000ppm sample) as coarse gold is better detected using this method. The sample rejects are milled to and then screened to 150 mesh (106um). These are then fused separately and total gold is weighed from each fraction. The weight average of these fractions are then calculated to report total 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.*	• NA
	• *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.*	• The coarse and pulp sample rejects from the preparation and analytical laboratories were retained and stored at the laboratory, allowing for re-assaying in the future if required. All pulps and coarse rejects will be returned to Crusader and stored indefinitely. • Standard Quality Control procedures were adopted by Crusader including field duplicates (1 every 40 samples), blanks (1 every 25 samples) and standards (1 every 25 samples). Field duplicates are defined as a second sample split via the riffle splitter at the drill rig for RC samples and quarter core samples for the diamond core. • Routine analysis of the results of the Blanks, Standards and Duplicates are carried out and any variation away from pre-determined limits are discussed with the lab. Any issues not resolved to Crusaders satisfaction are re-analysed on a batch basis. No external check laboratory assays have been completed on these samples.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.*	• Significant intercepts were generated by Crusader personnel and verified by Rob Smakman, the qualified person for this release.

	• *The use of twinned holes.*	• A number of RC drill-holes were partially twinned by diamond drill-holes; the drill-holes compare well visually, but it was not possible to compare assay results due to lack of sampling within the mineralised areas.
	• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*	• All drill-hole data are recorded in Microsoft Excel spreadsheets and then stored in a digital database (Microsoft Access). Only Crusader's database administrator has the capacity to enter or change data. Standardised geological codes and checks have been employed to ensure standardised geological logging and required observations performed. The database is stored on a central server which is backed up weekly. Work procedures exist for all actions concerning data management. All historical (Lago) drill-hole data were sourced from Lago data files; Crusader is in possession of the original electronic laboratory files. Original text files for assay, collar and survey were received for the Madison drilling. Original maps and reports and digital data were received from Lago Dourado.
	• *Discuss any adjustment to assay data.*	• No adjustments or calibrations were made to any assay data.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	• Collar surveys were initially performed using handheld GPS with accuracy to ~10m. Once all drilling was complete a licensed surveyor using a total station, referenced to a government survey point was used to pick up the collar locations. All drill-holes have been checked spatially in 3D and all obvious errors addressed.
	• *Specification of the grid system used.*	• The grid system used for all data types, was in a UTM projection, Zone 21 Southern Hemisphere and datum South American 1969. No local grids are used.
	• *Quality and adequacy of topographic control.*	• Topographic control was made by a licensed surveyor using a total station, referenced to a government survey point.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.*	• The drilling carried out is on a variable grid, depending on the targeting stage of the drilling. Grid spacing varies from 25m x 25m to approximate 50m x 50m grid, both horizontally and vertically (in the plane of the mineralised structure, which is sub-vertical).
	• *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.*	• The density of information is considered sufficient for conducting a mineral resource estimate to the standards required by the JORC 2012 mineral resource code.
	• *Whether sample compositing has been applied.*	• 4 metre sample compositing was carried out in portions of the RC drill holes outside the interpreted principal zone of interest. Original single metre samples will be re-assayed on composite samples >0.5g/t Au.

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.*	• Mineralised structures were targeted and planned to be intersected so that minimal sample bias would occur. All structures were planned to be intersected as perpendicular as possible and to pass through the entire structure. Mineralised structures had relatively sharp contacts and all material was sampled together i.e. the structure and the hangingwall / footwall. • Wherever possible, all drill holes were oriented to intersect the intended structure perpendicular to the strike and approximately 40 degrees to the dip of the mineralised zone. The mineralised structures are visible from within the artisanal miners' workings which allowed drill holes to be oriented to minimise introducing a sample bias. Several holes were drilled sub-parallel to the mineralised structure and are therefore not considered to be true width. True width was estimated for these holes and reported with their respective drill results. None of the reported significant intersections are a result of intentional sample bias.
Sample security	• *The measures taken to ensure sample security.*	• No sample security issues were raised or noted by Crusader during the transportation of the samples from the project site to the preparatory laboratory. All samples were sealed with double cable ties in strong high density plastic bags, two sample ID tags were placed in different locations inside the sample bags, all sample bags were clearly marked on the outside with permanent marker pen. All sample bags were checked off the dispatch list before being placed into a heavy duty and highly durable sacks for transportation to the laboratory. A packing list (confirming the number of sacks for transport) was received from the freight company transporting the sample bags to their destination. Upon receipt at the laboratory, samples were checked in and the list of received samples immediately sent back to the company´s database administrator as a security check that all samples were received and all were fully intact and not opened.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• No external audits were commissioned by Crusader. The sampling techniques and data were reviewed by the Competent Persons as part of previous Mineral Resource estimation processes and were found to be of industry standard.

Section 2. Reporting of Exploration Results

Criteria	JORC Code Explanation	Commentary
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.*	• Results are from two exploration tenements, 866.633/2006 and 866.080/2009, both 100% owned by a wholly owned subsidiaries of Crusader. There is an existing 1% net smelter return payable to a previous owner. There are two garimpo mining licences within the tenement package, allowing the garimpeiros to legally work under certain restrictions. The tenements are not subject to any native title interests, no known historical sites, wilderness or national park, but is located within the border zone around a national park. Within this border zone further conditions may be required to gain an operating licence. Cattle grazing and legal timber felling are the two primary industries and land uses for the area. • The tenement is in good standing and there are no material impediments to operating in the area.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Garimpeiros first discovered the mineralised areas around Juruena in the 1970's. Garimpeiros have been active in the region since, recovering gold from alluvial, colluvial and some oxidised rock. The area has been explored on and off from the mid 1990's through to the present, with the majority of drilling taking place over the last four to five years. Madison Minerals Ltd first explored and carried out some drilling evaluation of the Juruena core area in 1995/1996. The drill information of Madison would not be useable in a JORC compliant mineral resource estimate, however Crusader considers the information relevant from an exploration perspective and will use these results to guide future exploration work. Lago Dourado Minerals drill tested several anomalies and zones from 2010 to 2013. All work undertaken by Lago Dourado Minerals was performed to a JORC compliant standard and the data generated is considered sufficient to be used for a JORC compliant mineral resource estimate, should further results confirm continuity, grade and geological interpretation in the future.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Juruena mineralisation is considered to have resulted from magmatic activity (intrusions and fluids) which could be sourced from a gold rich source rock and concentrated along structural zones. The mineralisation is hosted by Paleoproterozoic volcanic and granitoid rocks of varying composition. The host rocks are found within the Juruena-Rondonia block of the Amazon Craton.

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:* o *easting and northing of the drill hole collar* o *elevation or RL (Reduced Level - elevation above sea level in metres) of the drill hole collar* o *dip and azimuth of the hole* o *down hole length and interception depth* o *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.*	• No new results reported • NA
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.* • *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.*	• Significant intercepts were calculated using a 1ppm lower cut-off, no upper cut, and up to 2m of consecutive dilution. Sample intervals which were not equal to 1m were weight averaged. • No metal equivalent values considered.
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.*	• As far as practically possible and with the geological interpretation available, the drill targets were tested with the aim of intersecting the interpreted mineralised structure as perpendicular as possible to the strike. All positive holes to date intersected the mineralisation at approximately 40 degrees to the dip, which will cause a slight overstatement of the actual intercept width. All results are reported as downhole widths. Several holes were drilled sub-parallel to the interpreted mineralised zone and are therefore not true width, these have been reported separately. • Results are reported as downhole widths, in most cases, true width is approximately 80% of down-hole length.

	• *If it is not known and only the downhole lengths are reported, there should be a clear statement to this effect (e.g. 'downhole length, true width 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 plan view of drill hole collar locations and appropriate sectional views.*	• See included Figure(s)
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 holes in the current program for which assays have been received are reported. Holes without significant intercepts were included in previous drill results tables.
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.*	• Historical exploration data has been presented previously and includes soil sampling, auger drilling, geophysical surveys, geological mapping and interpretation. Metallurgical testing is preliminary at this stage, however the recoveries have been ~90% from both Querosene and Dona Maria.
Further work	• *The nature and scale of planned further work (eg, tests for lateral extensions or depth 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.*	• Future exploration will continue to target the already identified mineralised areas. A scoping study considering the economic development options is being undertaken. The results of this study will drive future work. • See attached figures

Section 3. Estimation of Reporting of Mineral Resources

Criteria	JORC Code Explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	• The data has been imported into a Microsoft Access relational database. • Normal data validation checks were completed on import to the database. All logs are supplied as Excel spreadsheets and any discrepancies checked and corrected by field personnel. • All historical Lago Dourado drill-hole data were sourced from Lago data files; Crusader is in possession of the original electronic laboratory files. • All historical Madison drill-hole data were sourced from Lago Dourado data files; Crusader is in possession of hardcopy reports and electronic data files.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits. If no site visits have been undertaken indicate why this is the case.*	• Aidan Platel (Independent Consultant Geologist from Platel Consulting Pty Ltd and Competent Person) visited the site in June 2015. Rob Smakman (Managing Director of Crusader and Competent Person) initially visited the site in April 2014 and multiple times in 2014 - 2016
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.*	• Geological interpretation of mineral deposit utilised downhole geological and structural logging, assays combined with surface geological and pit mapping plus sampling. The interpretation is considered reasonable for the available data but will require further drilling to increase confidence. All veins have been modelled using Leapfrog™ software's vein modelling tools. • All holes used in the estimation were either RC or diamond drilled and sampled by CAS or historic entities to industry standard. • No alternative interpretations have been considered at this stage. The analysis of the available drillholes and surface geological and structural information adequately supports the interpretation utilised for this resource. • Mineralised high grade domains were determined at Querosene and Dona Maria using a combination of surface and pit mapping and sampling plus logged sub-vertical altered and mineralised shear zones and dolerites in drillholes.

Criteria	JORC Code Explanation	Commentary
	• *The factors affecting continuity both of grade and geology.*	• Grade is affected by the presence or not of the altered and mineralised shear zones and dolerites. A late, barren sub-horizontal approx. 15m thick dolerite "sill" cross-cuts and stopes out the mineralised zone.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• At Querosene, the resource extends for 750m in strike length, from surface to 180m below surface, and averages approximately 1.3m true thickness, with a 60° dip to the south-west. • At Dona Maria, the resource extends for 250m in strike length, from surface to 240m below surface, varies between 0.7m to 9m true thickness (averages approximately 2.5m), with a 70-75° dip to the west-south-west. •
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).*	• For Querosene and Dona Maria, grade estimation for gold was completed by accumulation method (Inverse Distance Squared - ID^2) using Geovia Surpac™ software. For comparison, Inverse Distance Squared and Ordinary Kriging (OK) models were also created. For Crentes, Multiple Indicator Kriging (MIK) was used. At Dona Maria and Querosene, the block models were constructed with parent blocks of 4m (E) by 10m (N) by 10m (RL) sub-blocked to 0.5m (E) by 1.25m (N) by 1.25m (RL). At Crentes, the block model was constructed with parent blocks of 10m (E) by 10m (N) by 10m (RL) and sub-blocked to 1.25m (E) by 1.25m (N) by 2.5m (RL). All estimation was completed to the parent cell size. Discretisation was set to 5 by 5 by 2 for all domains. • Three estimation passes were used. The first pass had a limit of 37.5m, the second pass 75m and the third pass searching a large distance to fill the blocks within the wireframed zones. • For the accumulation models for both Dona Maria and Querosene, each pass used a maximum of 6 samples, a minimum of 3 samples and maximum per hole of 1 sample (as each hole had a single true thickness and grade by thickness data point). For the OK models, each pass used a maximum of 12 samples, a minimum of 5 samples and maximum per hole of 3 samples. • Directional variograms were attempted by domain using traditional variograms. Nugget values are moderate to high (between 40 and 50%) and structure ranges up to 110m. Domains with more limited samples used variography of geologically similar, adjacent domains.

Criteria	JORC Code Explanation	Commentary
	• *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	• Previous estimates for Dona Maria, Crentes and Querosene were reported by Crusader in September 2015, with Dona Maria at 196kt @ 11.8g/t for 74,700oz, Querosene at 263kt @ 12.3g/t for 104,000oz and Querosene at 846kt @ 2.0g/t for 55,000oz. There are no mine production records. • No assumptions have been made for any potential recovery of by-products. • No assumptions have been made about correlation between variables. • Search ellipse sizes were based primarily on a combination of the variography and the trends of the wireframed mineralized zones. Hard boundaries were applied between all estimation domains. • Influences of extreme sample distribution outliers were reduced by top-cutting on a domain basis. Top-cuts were decided by using a combination of methods including grade histograms, log probability plots and statistical tools. Based on this statistical analysis of the data population, grade-thickness top-cuts of 85 and 100 were applied to Querosene and Dona Maria respectively (accumulation models) and 15ppm to Crentes (MIK model). • Validation of the block model included a volumetric comparison of the resource wireframes to the block model volumes. Validation of the grade estimate included comparison of block model grades to the input composite grades plus swath plot comparison by easting, northing and elevation. Visual comparisons of input composite grades vs. block model grades were also completed.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnes have been estimated on a dry basis.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• A lower cut-off of 2.5 ppm Au has been applied to Dona Maria and Querosene as potential underground mining zones.

Criteria	JORC Code Explanation	Commentary
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• No dilution is yet included during the resource estimation process for any of the deposits. Dona Maria and Querosene have been identified as potential underground mining zones with narrow, high grade steeply dipping natures and as such, a minimum mining width model is to be created for future reserve work. Appropriate, narrow vein underground mining techniques such as cut and fill or shrink stoping have been considered for both Querosene and Dona Maria and appropriate dilution will need to be applied during the underground mine planning process. Querosene and Dona Maria will also be tested for their potential to be open-pittable. Appropriate open pit mining dilution will need to be applied during the pit optimisation process which has not yet been completed.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• Preliminary metallurgical testwork (a single 50kg composite sample) at Querosene has been processed at an independent laboratory and returned >90% gold recoveries using industry standard leaching processes. A single composite sample from Dona Maria has also been submitted to an independent laboratory and returned >90% gold recoveries using an industry standard leaching process. Both of these deposits have been previously mined by local artisanal miners (garimpeiros) at surface and gold recovered by both gravity and leaching techniques.
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	• Appropriate environmental studies and sterilisation drilling would be completed prior to determination of the location of any potential waste rock dump (WRD) facility.
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.*	• Crusader and previous company Lago Dourado completed specific gravity testwork on 1,758 samples across the Juruena Project using both Hydrostatic Weighing (uncoated) on drill core.

Criteria	JORC Code Explanation	Commentary
	• *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• Of the abovementioned samples, 17 were from within the Querosene veins and 32 from the Crentes & Dona Maria veins. These samples were statistically and spatially analysed to consider their appropriateness for use for determining the bulk density for resource tonnage reporting. • The bulk density factors applied to the current resource estimate are 2.7 g/cm^3 in sap-rock and fresh material. The existing garimpo pits at both Dona Maria and Querosene have stripped off all completely oxidised material.
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• The Mineral Resource has been classified on the basis of confidence in the geological model, continuity of mineralized zones, drilling density, confidence in the underlying database and the available bulk density information. • All factors considered; the resource estimate has in partly been assigned to Indicated and Inferred categories.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• Whilst Mr. Barnes (Competent Person) is considered Independent of Crusader, no third party review has been conducted.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• The relative accuracy of the Mineral Resource estimate is reflected in the reporting of the Mineral Resource as per the guidelines of the 2012 JORC Code. The statement relates to global estimates of tonnes and grade.