Cardero Receives Draft Preliminary Economic Assessment For Carbon Creek Metallurgical Coal Deposit, NE BC

12.12.2011 | Marketwired

- Base Case Economic Assessment Returns Base Case $752M Post-Tax NPV8% & 29.3% IRR (75% Interest Basis)
- Increases Measured & Indicated Resources by 46% to 166.7Mt
- Increases Inferred Resource by 87% to 167.1Mt

VANCOUVER, BRITISH COLUMBIA -- (Marketwire) -- 12/12/11 -- Cardero Resource Corp. ('Cardero' or the 'Company') - (TSX: CDU)(NYSE Amex: CDY)(FRANKFURT: CR5) announces it has received results of the Carbon Creek Metallurgical Coal deposit ('Carbon Creek') Preliminary Economic Assessment ('PEA') from Norwest Corporation ('Norwest').

Cardero, through Cardero Coal Ltd., currently has 75% interest in the Carbon Creek Metallurgical Coal deposit, situated in northeast BC, Canada. Results of the preliminary economic assessment indicate that on a 75% basis and using a base case coal sale price of $185/t, the project returns a post-tax $752 million Net Present Value ('NPV') at an 8% discount rate and a 29.3% Internal Rate of Return ('IRR').

These results, together with higher and lower coal sale price assumptions, are outlined in Table 1, which also summarizes sensitivity of the project to operating and capital cost increases. Due to the scale of the project, it is economically robust and not especially sensitive to cost increases.

Table 1: Sensitivity Analysis ($millions)

	IRR	NPV at 8%	NPV at 10%	NPV at 12%
Base Case at $185	29.3%	$752	$551	$408
Coal Sales at $270	46.3%	$1,755	$1,335	$1,033
Coal Sales at $141	16.1%	$229	$142	$79
10% Increase in Direct Mining Costs	28.6%	$696	$510	$377
10% Increase in Capital Costs	28.6%	$753	$551	$407

More detailed economic results are outlined in Table 2, together with all key assumptions used in the economic modelling.

After reviewing the Preliminary Economic Assessment, Cardero President & CEO, Michael Hunter, commented that 'We are very pleased with the results of the Norwest Report. To begin, we have significantly increased our estimated resources and now manage one of the largest metallurgical coal deposits in Northeastern BC. Our 75% interest in the Carbon Creek joint venture has led to a NPV more than 6 times the size of our current market capitalization with a base case IRR of 29% predicated on an annual production rate of 2.9m clean coal tonnes per year. All in all, we have to consider this a tremendous result. I'm very proud of the of the excellent work the Cardero team has accomplished since taking over management of the asset in June 2011 and want to thank Norwest for their diligent work on our behalf.'

Table 2: Carbon Creek Project Summary
Discounted Cash Flow Model based on years 1 to 30 only

Resource Measured & Indicated	Mt	166.7
Resource Inferred	Mt	167.1
Underground Mineable Tonnes	Mt	115.1
Mean Plant Recovery	%	62%
Underground Clean Coal Tonnes Produced	Mt	71.4
Surface Mineable Tonnes	Mt	21.8
Mean Plant Recovery	%	68%
Surface Clean Coal Tonnes Produced	Mt	14.8
Total Clean Coal Tonnes Produced	Mt	86.2
Surface Mining Minimum Seam Thickness	M	0.6
Surface Mining Maximum strip ratio	Ratio	12.5:1
Underground Mining Minimum Seam Thickness	M	1.2
Full Production Rate Clean Coal per Year	Mt/yr	2.9
Pre-Production Capital	M$	301
Sustaining Capital LOM	M$	203
Value of Leased Equipment LOM	M$	151
Surface Mine OPEX ROM Basis	$/t	30.62
Underground Mine OPEX ROM Basis	$/t	31.86
Surface Mine OPEX Clean Coal Basis	$/t	50.77
Underground Mine OPEX Clean Coal Basis	$/t	57.68
Processing OPEX	$/t	3.90
Average direct mine costs (incl. equipment lease)	$/t	60.76
Haul, Rail & Port Costs	$/t	42.42

FOB Price Long-Term Base Case	$/t	185
Gross Revenue LOM	M$	15,952
Operating Costs LOM	M$	6,145
Pre-Tax Operating Cash Flow LOM	M$	6,149
Post-Tax NPV 8 (75% Basis)	M$	752
Internal Rate of Return (75% Basis)	%	29.3
Post-Tax NPV 8 (100% Basis)	M$	1,070
Internal Rate of Return (100% Basis)	%	35.1
PRELIMINARY ECONOMIC ASSESSMENT REPORT		
Undiscounted Post-Tax Cash Flow (75% Basis)	M$	3,113

Norwest Corporation ('Norwest') has prepared a 43-101 Technical Report and Preliminary Economic Assessment on the Carbon Creek Metallurgical Coal Deposit ('Norwest Report'). The effective date of the Preliminary Economic Assessment is December 6, 2011 and for the updated resource estimate is October 1, 2011. The final version of the Norwest Report will be filed on SEDAR and made available through the Company's website within 45 days, and investors are urged to review the Norwest Report in its entirety.

The Company cautions that this PEA is preliminary in nature, and is based on technical and economic assumptions which will be evaluated in further studies. The PEA is based on the current (as at October 1, 2011) Carbon Creek estimated resource model, which consists of material in both the measured/indicated and inferred classifications. Inferred mineral resources are considered too speculative geologically to have technical and economic considerations applied to them. The current basis of project information is not sufficient to convert the mineral resources to mineral reserves, and mineral resources that are not mineral reserves do not have demonstrated economic viability. Accordingly, there can be no certainty that the results estimated in the PEA will be realized.

Carbon Creek Updated Mineral Resource

The key assumptions used to calculate the previous resource estimate (published 3 June 2011) were modified to reflect the increased detail of the PEA level of study. As a result, a new re-calculated resource estimate is included in the PEA, effective as at October 1, 2011. Results are summarized in Table 3.

Table 3: Classification of Resources

Deposit Type	ASTM Coal Rank	Measured (Mt)	Indicated (Mt)	Inferred (Mt)
Surface	mvB	33.1	20.1	19.6
Underground	mvB	42.4	71.1	147.5
Total	mvB	166.7		167.1

The mineralized zones encountered on the property are predominantly medium volatile bituminous coal seams, with minor increase or decrease in rank depending on structural or stratigraphic variations and depth of burial. Historic coal quality reports indicate that the coals will, with beneficiation (washing) to remove impurities, produce a product with coking properties suitable for metallurgic applications. Thermal coal suitable for electric power generation could be produced with or without further processing in addition to, or as an alternative to, a coking coal product.

Over thirty coal seams occur in the middle and upper portions of the Gething Formation. Sixteen seams are present through the northern half of the Carbon Creek property. Coal deposition is typical of the Gething Formation, consisting of abundant coal seams, some showing favorable metallurgical properties. The twelve seams listed in Table 4 are developed sufficiently to be of economic significance. These seams range from 1.14m to 2.17m in average thickness. Raw coal qualities are presented for each of these seams. Values shown represent coal without outside dilution (OSD). Processing coal mixed with OSD using size specific density and froth flotation separating processes (coal washing) is widely used to improve coal quality by reducing ash content and raising its calorific value. Coking properties such as free swelling index (FSI) and dilation are typically improved as well, through washing.

Raw coal qualities indicate good coking coal potential in seams 31, 40 and 52 based on average FSI values. In-place raw ash contents are generally low and all seams will be improved with washing which would reduce ash content further and typically increase the FSI by a few points. With careful blending, the other seams would likely be saleable in the coking coal market.

Table 4: Raw Coal Quality

		Coal Quality (air dried basis)					
Seam	Average Thickness (m)	Moisture (%)	Ash (%)	Sulphur (%)	Volatile Matter (%)	Fixed Carbon %	Calorific Value Btu/lb	FSI
58	1.14	2.60	12.56	0.92	28.92	55.93	12,663	2.0
55	1.57	2.74	12.42	0.68	28.59	56.26	12,893	2.5
54	1.39	2.78	5.66	0.83	27.36	64.20	13,926	1.5
52	1.63	2.18	17.14	1.88	28.33	52.35	12,178	4.0
51A	1.29	2.74	6.25	0.80	28.01	63.00	13,902	2.0
51	1.51	2.73	9.63	0.73	26.42	61.23	13,228	2.0
47	1.14	2.53	15.49	0.91	24.00	57.98	12,441	1.5
46	1.70	2.60	6.50	0.83	26.92	63.99	13,907	2.0
40	1.95	2.02	13.99	1.17	27.16	56.83	12,892	5.5
31	1.99	1.50	25.74	1.42	24.33	48.43	10,906	6.0
15	2.17	1.08	17.11	0.57	21.14	60.67	12,602	2.5
14	1.91	0.95	19.03	0.57	19.20	60.83	12,362	3.0

Mineable Coal

Based on the existing geological model, a general mining layout was prepared for both surface and underground mining areas. Applying mining parameters, a mineable tonnage estimate was developed for each mining method as shown in Table 5.

Table 5: Mineable Coal Tonnes

Mining Method	Mineable Tonnes (millions)	Resource Tonnes (Measured & Indicated)
Surface	21.8	53.2
Underground	115.2	113.5
Combined Total	137.0	166.7

The ROM surface mineable tonnes are significantly lower than the surface resource identified above. This difference is explained by the fact that much of this resource is higher strip ratio and higher extraction cost

relative to underground mining methods. The ROM underground tonnes exceed the geological resource estimate because the mining layout includes a small amount (1.7Mt) of Inferred tonnes.

Coal Processing

ROM coal will be crushed and sent to a coal washery where ash will be removed through heavy media separation of the coarse fractions and floatation for the fines fractions. Wash plant yields have been estimated on average at 68% for surface mined coal and 62% for underground mined coal. The clean coal will be dried in a fluidized bed dryer to approximately 6% moisture and stored in covered storage to keep it dry until shipment.

Production Volume and Schedule

Annual production is based on the proposed mining plans developed by Norwest. The surface mine will begin operations first, with the underground mine beginning operations two years after the surface mine. This allows time to develop an area to access the underground mineable coal seams. The combined mining operation is planned for 30 years excluding pre-production development and construction time.

The surface mine is projected to begin production at 3.1M ROM tonnes per annum (tpa) and maintain this level for 7 years. The expected wash plant yield of 68% results in 2.1Mtpa saleable coal from the surface mine. This production from surface mining is expected to yield 14.8Mt saleable over the seven year period (years 1 - 7).

The underground mine is expected to begin production in the third year of mine operations at .59Mtpa ROM increasing to the steady state level of 4.7Mtpa ROM by the beginning of the eighth year of mining operations. The expected wash plant yield of 62% results in 2.9Mtpa saleable from the underground mine. The underground mine is assumed to operate 28 years producing 115.2M ROM tonnes and 71.4M saleable tonnes. This production schedule depletes the measured and indicated underground mineable coal tonnes shown above in Table 5.

Transportation

Clean coal will be loaded into highway type coal haulers operated by a trucking contractor and hauled approximately 69km to a rail loadout on the CN railway. The coal will be offloaded into a bottom-dump hopper and conveyed to a twin dome covered storage structure. Clean coal will be drawn from beneath the storage piles onto a reclaim conveyor and loaded through a batch weighing system into unit trains. The coal will be transported to the ports of Vancouver and/or Prince Rupert for loading onto ships for transport to the Pacific Rim markets. The clean coal will be exposed to the elements during train transport and while stockpiled temporarily at the port and is expected to increase in moisture content to about 8%m, which is the preferred maximum for ocean shipping.

Capital Costs

Pre-production capital requirements total $301M and include coal handling, coal preparation, train loadout facilities, surface facilities, site access and power, and mine development and contingency. All major surface and underground mining equipment is assumed to be leased with a seven year lease term at 4.5% and a 20% residual. The total value of the mining equipment being leased is $151M. Annual lease payments at full production for surface mining total $12.3M and $9.6M for underground.

Total capital excluding leased equipment is $504M over the LOM. Lease payments for mining equipment total $321M over the LOM.

Operating Costs

Operating costs have been estimated for the surface and underground mines based on required equipment hours, labour hours and materials and supplies. These costs are shown in Table 6 on a unit basis for each mine and the coal handling and preparation plant (CHPP).

Table 6: Cash Operating Costs

Cost Area	$/ROM tonne	$/Clean tonne
Surface Mining	30.62	50.77
Underground Mining	31.86	57.68
Coal Handling & Prep	3.90	
Sub-Total (Includes equipment lease payments)		60.76
Indirect Costs		10.51
Total Cash Costs		71.27

Economic Results

Norwest prepared an economic model that captures direct costs, including labor, equipment, materials, production taxes and royalties. Indirect costs including corporate overhead, mineral tax and property tax were added to the model along with depreciation of purchased equipment and facilities. A cash flow calculation was prepared on an after tax basis using an average FOB price of $185 per saleable tonne and an average clean coal production of 2.9Mtpa. Clean coal production increases from 2.1Mtpa to 3.2Mtpa over the first seven years of production and then averages 2.9Mtpa for the remaining mine life of 23 years. The first seven years includes surface mine production and the ramp up of underground mining. After seven years, the property is mined by underground methods only.

Pre-production cash outflows total $301M over the estimated three year development and construction period. Cash flow is positive once production begins and payback occurs by the end of the third year of production or six years after the initial cash outflow. After payback and providing for the net profits interest, cash flow averages $115M per year for a total net cash flow of $3.1B over the life of the mine for Cardero's 75% interest.

The internal rate of return for Cardero's 75% interest in the Carbon Creek Joint Venture is approximately 29%. Net present values at 8%, 10% and 12% are shown in the Table 7.

Table 7: NPV Results Cardero's 75% Interest ($millions)

Interest Rate	8%	10%	12%
NPV	$752	$551	$408

The internal rate of return for the entire property is approximately 35.1%. Net present values at 8%, 10% and 12% are shown in Table 8.

Table 8: NPV Results 100% Interest ($ Millions)

Interest Rate	8%	10%	12%
NPV	$1,070	$800	$605

Qualified Persons and Quality Control/Quality Assurance

Gary M. Stubblefield, P.E., of Norwest Corporation, is a professional engineer (Colorado, Montana and Utah) and, as such, is acting as the Qualified Person, as defined in NI 43-101 for certain portions of the Norwest Report. Mr. Stubblefield has a B.Sc. in Mining Engineering and more than 40 years of relevant experience in engineering and mine supervision and operations, including 18 years in surface coal mining. Both Mr. Stubblefield and Norwest are independent of the Company under NI 43-101.

Lawrence D. Henchel, SME, of Norwest Corporation, is a Registered Member of the Society for Mining, Metallurgy and Exploration, Inc (SME) and, as such is acting as the Qualified Person, as defined in NI 43-101 for certain portions of the Norwest Report, including the October 1, 2011 resource modeling for the Carbon Creek deposit. Mr. Henchel has a B.Sc. in Geology and 28 years of relevant experience as a geologist specializing in coal and industrial minerals in both exploration and mining. Both Mr. Henchel and Norwest are independent of the Company under NI 43-101.

About Cardero Resource Corp.

The common shares of the Company are currently listed on the Toronto Stock Exchange (symbol CDU), the NYSE-Amex (symbol CDY) and the Frankfurt Stock Exchange (symbol CR5). For further details on the Company readers are referred to the Company's web site (www.cardero.com), Canadian regulatory filings on SEDAR at www.sedar.com and United States regulatory filings on EDGAR at www.sec.gov.

On Behalf of the Board of Directors of

CARDERO RESOURCE CORP.

Michael Hunter, CEO

Cautionary Note Regarding Forward-Looking Statements

This press release contains forward-looking statements and forward-looking information (collectively, 'forward-looking statements') within the meaning of applicable Canadian and US securities legislation. All statements regarding the anticipated content, commencement and cost of exploration programs, anticipated exploration program results, the discovery and delineation of mineral deposits/resources/reserves, the potential for any production from the Carbon Creek deposit, the potential for a production decision to be made, the potential commencement of any development of a mine at the Carbon Creek deposit following a production decision, the economic analysis of a production scenario at Carbon Creek and the results thereof, business and financing plans and business trends, are forward-looking statements. Information concerning mineral resource estimates and the preliminary economic analysis thereof may also be deemed to be forward-looking statements in that it reflects a prediction of the mineralization that would be encountered, and the results of mining it, if a mineral deposit were developed and mined. Although the Company believes that such statements are reasonable, it can give no assurance that such expectations will prove to be correct. Forward-looking statements are typically identified by words such as: believe, expect, anticipate, intend, estimate, postulate and similar expressions, or are those, which, by their nature, refer to future events.

The Company cautions investors that any forward-looking statements by the Company are not guarantees of future results or performance, and that actual results may differ materially from those in forward looking statements as a result of various factors, including, but not limited to, variations in the nature, quality and quantity of any mineral deposits that may be located, variations in the market for, and pricing of, any mineral products the Company may produce or plan to produce, significant increases in any of the machinery, equipment or supplies required to develop and operate a mine at Carbon Creek, a significant change in the availability or cost of the labor force required to operate a mine at Carbon Creek, significant increases in the cost of transportation for the Company's products, the Company's inability to obtain any necessary permits, consents or authorizations required for its activities, the Company's inability to produce minerals from its properties successfully or profitably, to continue its projected growth, to raise the necessary capital or to be fully able to implement its business strategies, and other risks and uncertainties disclosed in the Company's 2011 Annual Information Form filed with certain securities commissions in Canada and the Company's annual report on Form 40-F filed with the United States Securities and Exchange Commission (the 'SEC'), and other information released by the Company and filed with the appropriate regulatory agencies. All of the Company's Canadian public disclosure filings may be accessed via www.sedar.com and its United States public disclosure filings may be accessed via www.sec.gov, and readers are urged to review these materials, including the technical reports filed with respect to the Company's mineral properties.

Cautionary Note Regarding References to Resources and Reserves

National Instrument 43 101 - Standards of Disclosure for Mineral Projects ('NI 43-101') is a rule developed by the Canadian Securities Administrators which establishes standards for all public disclosure an issuer makes of scientific and technical information concerning mineral projects. Unless otherwise indicated, all resource estimates contained in or incorporated by reference in this press release have been prepared in accordance with NI 43-101 and the guidelines set out in the Canadian Institute of Mining, Metallurgy and Petroleum (the 'CIM') Standards on Mineral Resource and Mineral Reserves, adopted by the CIM Council on November 14, 2004 (the 'CIM Standards') as they may be amended from time to time by the CIM, and in the Geological Survey of Canada Paper 88-21 entitled 'A Standardized Coal Resource/Reserve Reporting System for Canada' originally published in 1988.

United States shareholders are cautioned that the requirements and terminology of NI 43-101 and the CIM Standards differ significantly from the requirements and terminology of the SEC set forth in the SEC's Industry Guide 7 ('SEC Industry Guide 7'). Accordingly, the Company's disclosures regarding mineralization may not be comparable to similar information disclosed by companies subject to SEC Industry Guide 7.

Without limiting the foregoing, while the terms 'mineral resources', 'inferred mineral resources', 'indicated mineral resources' and 'measured mineral resources' are recognized and required by NI 43-101 and the CIM Standards, they are not recognized by the SEC and are not permitted to be used in documents filed with the SEC by companies subject to SEC Industry Guide 7. Mineral resources which are not mineral reserves do not have demonstrated economic viability, and US investors are cautioned not to assume that all or any part of a mineral resource will ever be converted into reserves. Further, inferred resources have a great amount of uncertainty as to their existence and as to whether they can be mined legally or economically. It cannot be assumed that all or any part of the inferred resources will ever be upgraded to a higher resource category. Under Canadian rules, estimates of inferred mineral resources may not form the basis of a feasibility study or prefeasibility study, except in rare cases. The SEC normally only permits issuers to report mineralization that does not constitute SEC Industry Guide 7 compliant 'reserves' as in-place tonnage and grade without reference to unit amounts. In addition, the NI 43-101 and CIM Standards definition of a 'reserve' differs from the definition in SEC Industry Guide 7. In SEC Industry Guide 7, a mineral reserve is defined as a part of a mineral deposit which could be economically and legally extracted or produced at the time the mineral reserve determination is made, and a 'final' or 'bankable' feasibility study is required to report reserves, the three-year historical price is used in any reserve or cash flow analysis of designated reserves and the primary environmental analysis or report must be filed with the appropriate governmental authority.

This press release is not, and is not to be construed in any way as, an offer to buy or sell securities in the United States.

Contacts:

Cardero Resource Corp.

Nancy Curry

Manager - Corporate Communications

1-888-770-7488 or (604) 408-7488

(604) 408-7499 (FAX)
info@cardero.com
www.cardero.com

Dieser Artikel stammt von Rohstoff-Welt.de
Die URL für diesen Artikel lautet:
https://www.rohstoff-welt.de/news/116153--Cardero-Receives-Draft-Preliminary-Economic-Assessment-For-Carbon-Creek-Metallurgical-Coal-Deposit-NE-BC.

Für den Inhalt des Beitrages ist allein der Autor verantwortlich bzw. die aufgeführte Quelle. Bild- oder Filmrechte liegen beim Autor/Quelle bzw. bei der vom ihm benannten Quelle. Bei Übersetzungen können Fehler nicht ausgeschlossen werden. Der vertretene Standpunkt eines Autors spiegelt generell nicht die Meinung des Webseiten-Betreibers wieder. Mittels der Veröffentlichung will dieser lediglich ein pluralistisches Meinungsbild darstellen. Direkte oder indirekte Aussagen in einem Beitrag stellen keinerlei Aufforderung zum Kauf-/Verkauf von Wertpapieren dar. Wir wehren uns gegen jede Form von Hass, Diskriminierung und Verletzung der Menschenwürde. Beachten Sie bitte auch unsere AGB/Disclaimer!

Die Reproduktion, Modifikation oder Verwendung der Inhalte ganz oder teilweise ohne schriftliche Genehmigung ist untersagt!
Alle Angaben ohne Gewähr! Copyright © by Rohstoff-Welt.de -1999-2025. Es gelten unsere AGB und Datenschutzrichtlinen.