



## ASX RELEASE

**For Immediate Release – 18 February, 2013**

# Coke Oven Testwork Confirms Ovoot Project Coal as a High Quality Blending Coking Coal

## Highlights

- Initial pilot coke testing completed using coal indicative of what will be produced from the Ovoot Coking Coal Project;
- Coke testwork using various blends was conducted at the ALS Coke Research facility in Riverview Queensland and used various combinations of Ovoot coking coal with:
  - An Australian hard coking coal,
  - An Australian low volatile, low fluidity semi-soft coking coal, and
  - Coke breeze (recycled coke oven residues).
- This testwork programme using various blends has shown that Ovoot coking coal can be used to replace hard coking coal in a batch when using lower quality semi-soft coking coals.
- The testwork has also demonstrated that in batches using up to 15% coke breeze, batch coke strength improved by replacing prime hard coking coal with indicative Ovoot coking coal. Coke yields are noticeably higher with the addition of coke breeze.
- A high value in use has been demonstrated using these blends.
- Hard mechanical coke strengths were obtained, using indicative Ovoot coking coal as a single charge and in blends.

Aspire Mining Limited (ASX: AKM, the “Company” or “Aspire”) is pleased to announce that it has received the results from a comprehensive carbonisation testwork programme using an Indicative Bulk Sample (“Bulk Sample”) taken from the adjacent Mogoin Gol Coal Mine (“MG Mine”). Work conducted to date by Aspire has indicated that the coal currently being mined at Mogoin Gol is an extension of a coal seam that is present at the Ovoot Coking Coal Project (“Ovoot Project”) and has similar quality characteristics. The MG Mine is currently producing unwashed coal in relatively small quantities for local thermal power as well as for export to the Russian steel industry.

The Bulk Sample of unwashed coal was mined in March 2012, sampled and analysed at ALS' laboratories in Ulaanbaatar Mongolia and finally arrived in September 2012 at the ALS Maitland pilot scale washplant in New South Wales. Coal as presented was again sampled and analyzed. Fluidity levels, while remaining high, were not as high as when analysed in Ulaanbaatar indicating that there had been some deterioration of the coal given the long transit time. Further carbonisation tests on a fresh sample could therefore produce somewhat better results. This will be tested with bench scale carbonisation tests in 2013.

At Maitland the coal was washed with a pilot plant configuration modeling the preliminary Ovoot Project washplant design provided by Sedgman Limited. This pilot plant simulation provided useful design information and a quality washed coking coal product with approximately 8% ash at a +80% yield.

The washed coal Bulk Sample used for the carbonisation testwork had the following characteristics:

Moisture	Ash	Volatiles	Sulphur	CSN	Max Fluidity Log	Max Dilation	Gray King	G Caking Index	Y Index mm	RoMax
9%	8.1%	28.5%	1.06%	9	3.30	206%	G11	88	31	1.2

**Table 1: Washed Bulk Sample Coal Analysis**

The coal had 93% vitrinite which is slightly lower than the normal range seen at the Ovoot Project at between 95 – 98% vitrinite. A comparison with an indicative Ovoot coking coal specification in the following table shows the similarities between the Bulk Sample and the current indicative Ovoot coking coal average specification.

Moisture	Ash	Volatiles	Sulphur	CSN	Max Fluidity Log	Max Dilation	Gray King	G Caking Index	Y Index mm	RoMax
9%	9.0%	25-28%	1.20%	9	4.1	+300%	G11	+95	30	1.2

**Table 2: Indicative Ovoot Project Washed Coking Coal Specification**

### Carbonisation Testwork

The washed Bulk Sample was then placed in drums and trucked to ALS's Coke Research Facility in Riverview Queensland for carbonisation testwork.

The indicative washed coking coal Bulk Sample was initially coked in isolation from other coals. The pilot plant was charged with approximately 400 kg of this coal. Figure 1 shows the coke immediately prior to the coke push and quenching process.



**Figure 1** Coke Produced Using 100% Indicative Ovoot Coking Coal Just Prior to Coke Push and Quenching.



**Figure 2:** Coke Produced from the Pilot Oven Before Mechanical Strength (drum index) Tests

Analysis of the hard coke produced by this pilot plant using the washed coking coal Bulk Sample showed a mechanically hard coke is produced with relatively low wall pressures measured.

Ovoot Project coking coal has extremely high vitrinite content, which provides the coal with high fluidity and plastic properties and one of the highest Gray King Coke types (G11) available in the market. These attributes indicate superior blend carrying capacity and when combined with its relatively high rank (RoMax) of 1.2, indicate that coke producers can use Ovoot Project coking coal in blends with hard coking and weakly caking coals to produce a quality coke.

This proposition was tested in lab scale work using a proportion of the washed bulk sample with varying percentages of low caking semi-soft and coke breeze. The latter is the residue of very fine coke left after a batch of coke is produced.

The testwork showed that in coke batches including coke breeze, the addition of the indicative Ovoot coking coal can be used to replace premium hard coking coal and improve overall coke quality. It is expected that Ovoot coking coal can be used in up to 15% of the batch.

In particular, a significant improvement in overall coke performance was achieved with blending semi-soft coking coal with relatively smaller proportions of indicative Ovoot coking coal. This provides the potential for Ovoot coking coal to be used in blends to upgrade similar rank thermal and low caking semi-soft coals from Mongolia's South Gobi region to improve the overall quality of Mongolia's coking coal exports.

In the Chinese coking coal market, the world's largest, Ovoot coking coal falls within the classification of the fat coal specification "FM" due to its high "G Caking Index" of +95 and "Sapoznikov Y Index" of 30 mm. Fat coking coals trade at similar prices to hard coking coals in China. Ovoot coking coal is also categorised as a "Fat Coking Coal" ("Zh" and "KZh") under the Russian coal classification system.

The Company has registered the brand name "Vitrocoal" in all of the major coking coal markets to reflect the presence of nearly pure vitrinite in Ovoot coking coal.

## **Conclusion**

This initial blend testwork has confirmed the value in use of Ovoot Project coking coal. In particular, the ability to carry coke breeze (coke oven residues) in a batch and turn this into quality coke at higher coke yields is an important value addition for the coke industry.

Aspire will now commence initial customer discussions and testing to further future sales negotiations.

"We are pleased with the initial coal quality indications for our Ovoot coking coal. This work has confirmed the attractiveness of adding Ovoot coking coal into coke blends. This is an important step which will now allow Aspire to progress commercialisation negotiations for future sales and funding," said Aspire's Managing Director, Mr David Paull.

**--Ends--**

## **About Aspire Mining Limited**

Aspire is listed on the ASX (Code: AKM) and owns 100% of the Ovoot Coking Coal Project in northern Mongolia. Aspire completed a Pre-Feasibility Study for the Ovoot Project in May 2012 and a PFS Revision in December 2012, targeting a large scale open pit mining operation, with production of up to 12 Mtpa of saleable coking coal at full capacity over a 20 year life of mine. Aspire is targeting first

production at the Ovoot Project in 2016 subject to funding, approvals and licenses. The Ovoot Project ranks as the second largest coking coal Reserve in Mongolia, with JORC Code compliant Probable Coal Reserves of 219 Mt. Aspire received a Mining License in August 2012, and is considering a smaller scale starter pit road based operation whilst continuing to progress access to rail infrastructure and other regulatory approvals to support a larger operation.

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**Competent Persons Statement**

*In accordance with the Australian Securities Exchange requirements, the technical information contained in this announcement in relation to the JORC Compliant Coal Reserves and JORC Compliant Coal Resource for the Ovoot Coking Coal Project in Mongolia has been reviewed by Mr Ian De Klerk and Mr Kevin John Irving of Xstract Mining Consultants Pty Ltd.*

*The Coal Resources documented in this release are stated in accordance with the guidelines set out in the JORC Code, 2004. They are based on information compiled and reviewed by Mr. Ian de Klerk who is a Member of the Australasian Institute of Mining and Metallurgy (Member #301019) and is a full time employee of Xstract Mining Consultants Pty Ltd. He has more than 20 years' experience in the evaluation of coal deposits and the estimation of coal resources. Mr. de Klerk has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration to qualify him as a Competent Person as defined in the JORC Code, 2004. Neither Mr. de Klerk nor Xstract have any material interest or entitlement, direct or indirect, in the securities of Aspire Mining Limited or any companies associated with Aspire Mining Limited. Fees for work undertaken are on a time and materials basis. Mr. de Klerk consents to the inclusion of the Coal Resources based on his information in the form and context in which it appears.*

*The Coal Reserves documented in this release are stated in accordance with the guidelines set out in the JORC Code, 2004. They are based on information compiled and reviewed by Mr. Kevin Irving who is a Fellow of the Australasian Institute of Mining and Metallurgy (Member #223116) and is a full time employee of Xstract Mining Consultants Pty Ltd. He has more than 35 years' experience in the mining of coal deposits and the estimation of Coal Reserves and the assessment of Modifying Factors. Mr. Irving has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration to qualify him as a Competent Person as defined in the JORC Code, 2004. Neither Mr. Irving nor Xstract have any material interest or entitlement, direct or indirect, in the securities of Aspire Mining Limited or any companies associated with Aspire Mining Limited. Fees for work undertaken are on a time and materials basis. Mr. Irving consents to the inclusion of the Coal Reserves based on his information in the form and context in which it appears.*

*The technical information contained in this announcement in relation to the Ovoot Coking Coal Project in Mongolia has been reviewed by Mr Neil Lithgow – Non Executive Director for Aspire Mining Limited. Mr Lithgow is a Member of the Australian Institute of Geoscientists and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves." Mr Lithgow consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.*