



INCOLAB SERVICES SOUTH AFRICA
COMMODITY SAMPLERS AND ANALYTICAL CHEMISTS
OPERATED BY ACME MARINE

HEAD OFFICE AND LABORATORY:

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 3915 KwaZulu Natal
 South Africa

TO WHOM IT MAY CONCERN

Certificate of Quality

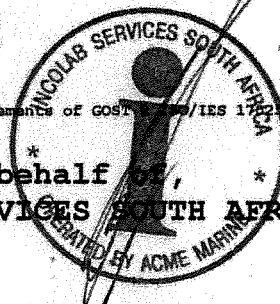
We have examined the sample(s) of
 and report the following to be the result:

Date : 15 October 2014
 Our ref. : 1409488R
 Material : Coal in bulk
 Vessel : mv "Bottiglieri Challenger"
 Lot : Average
 Weight : 84'938.000 mt
 Port : Richards Bay, South Africa
 Sampling date : 29 September - 10 October 2014
 B/L date : 10 October 2014

TOTAL MOISTURE (AS RECEIVED BASIS)	:	6.65 %	ISO 589
INHERENT MOISTURE	:	1.68 %	ISO 11722
ASH (DRY BASIS)	:	28.01 %	ISO 1171
ASH (IN AIR DRY)	:	27.54 %	
ASH (AS RECEIVED BASIS)	:	26.15 %	
VOLATILE MATTER (DRY ASH FREE BASIS)	:	14.61 %	ISO 562
VOLATILE MATTER (DRY BASIS)	:	10.52 %	
VOLATILE MATTER (IN AIR DRY)	:	10.34 %	
VOLATILE MATTER (AS RECEIVED BASIS)	:	9.82 %	
GROSS CALORIFIC VALUE (DRY BASIS)	:	5797 kcal/kg	ISO 1928
GROSS CALORIFIC VALUE (IN AIR DRY)	:	5700 kcal/kg	
GROSS CALORIFIC VALUE (AS RECEIVED BASIS)	:	5411 kcal/kg	
NET CALORIFIC VALUE (DRY BASIS)	:	5665 kcal/kg	
NET CALORIFIC VALUE (IN AIR DRY)	:	5561 kcal/kg	
NET CALORIFIC VALUE (AS RECEIVED BASIS)	:	5252 kcal/kg	
SULPHUR (DRY BASIS)	:	1.57 %	
SULPHUR (IN AIR DRY)	:	1.54 %	
SULPHUR (AS RECEIVED BASIS)	:	1.47 %	
H.G.I.	:	51	ASTM D 409
ASH FUSION TEMPERATURE IN REDUCING ATMOSPHERE			ISO 540
DEFORMATION	:	1300 °C	
SPHERE	:	1340 °C	
HEMISPHERE	:	1390 °C	
FLOW	:	1430 °C	

Incolab Services Latvia laboratory has accreditation N POCC LV.0001.514971 that corresponds to requirements of GOST R 50701-2001/ISO 17025

For and on behalf of
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We hereby declare that we have attended to the survey on board the mv "BOTTIGLIERI CHALLENGER" berthed at the port of Richards Bay, South Africa.

All weight on board and all draft mark readings have been measured with vessel's staff and in accordance with data supplied by them, prior to commencement of loading and again on completion of loading.

DRAFT SURVEY WEIGHT: **84'938.000 mt**

For and on behalf of
INCOLAB SERVICES SOUTH AFRICA



УКРАЇНСЬКА ПРАВДА