VERIFICATION REPORT JSC "IVANO-FRANKIVSK CEMENT"

VERIFICATION OF THE IVANO-FRANKIVSK CEMENT SWITCH FROM WET-TO-DRY CEMENT AND FUEL SAVINGS FOR COAL DRYING

(FOR THE PERIOD 01/01/2010 – 31/12/2010)

REPORT NO. UKRAINE-VER/0203/2010

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Client:	**Client ref.:**
JSC "Ivano-Frankivsk Cement"	Mykola Makoviychuk

Summary:

Bureau Veritas Certification has made the verification of the "Ivano-Frankivsk Cement switch from wet-to-dry cement and fuel savings for coal drying", JI Registration Reference Number UA1000100, project of JSC "Ivano-Frankivsk Cement" located in village Yamnitsa, Tysmenytsya district, Ivano-Frankivsk Region, Ukraine, and applying a JI specific approach, on the basis of UNFCCC criteria for the JI, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

The verification scope is defined as a periodic independent review and ex post determination by the Accredited Independent Entity of the monitored reductions in GHG emissions during defined verification period, and consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion. The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The first output of the verification process is a list of Clarification, Corrective Actions Requests, Forward Actions Requests (CR, CAR and FAR), presented in Appendix A.

In summary, Bureau Veritas Certification confirms that the project is implemented as planned and described in the determined and registered project design documents. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is ready to generate GHG emission reductions. The GHG emission reduction is calculated accurately and without material errors, omissions, or misstatements, and the ERUs issued totalize 129522 tons of CO_2eq for the monitoring period from 01/01/2010 to 31/12/2010.
Our opinion relates to the project's GHG emissions and resulting GHG emission reductions reported and related to the approved project baseline and monitoring, and its associated documents.

Report No.:	Subject Group:
UKRAINE-ver/0203/2010	JI
Project title:	
Ivano-Frankivsk Cement switch from wet-to-dry cement and fuel savings for coal drying	
Work carried out by:	
Igor Kachan – team leader, lead verifier Oleg Skoblyk – team member, lead verifier Vyacheslav Yeriomin – verifier trainee	
Work reviewed by:	
Ivan Sokolov - Internal Technical Reviewer	
Work approved by:	
Flavio Gomes – Operational Manager	
Date of this revision: / **Rev. No.:** / **Number of pages:**	
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1 INTRODUCTION

JSC "Ivano-Frankivsk Cement" has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project "Ivano-Frankivsk Cement switch from wet-to-dry cement and fuel savings for coal drying" (hereafter called "the project") at Yamnitsa village, Tysmenytsa District, Ivano-Frankivsk Region, Ukraine.

This report summarizes the findings of the verification of the project, performed on the basis of UNFCCC criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1 Objective

Verification is the periodic independent review and ex post determination by the Accredited Independent Entity of the monitored reductions in GHG emissions during defined verification period.

The objective of verification can be divided in Initial Verification and Periodic Verification.

UNFCCC criteria refer to Article 6 of the Kyoto Protocol, the JI rules and modalities and the subsequent decisions by the JI Supervisory Committee, as well as the host country criteria.

1.2 Scope

The verification scope is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

The verification is not meant to provide any consulting towards the Client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project monitoring towards reductions in the GHG emissions.

1.3 Verification Team

The verification team consists of the following personnel:

Igor Kachan
Bureau Veritas Certification, Team Leader, Climate Change Lead Verifier

Oleg Skoblyk
Bureau Veritas Certification, Team Member, Climate Change Lead Verifier

Vyacheslav Yeriomin
Bureau Veritas Certification, verifier trainee

This verification report was reviewed by:

Ivan Sokolov
Bureau Veritas Certification, Internal Technical Reviewer

2 METHODOLOGY

The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

In order to ensure transparency, a verification protocol was customized for the project, according to the version 01 of the Joint Implementation Determination and Verification Manual, issued by the Joint Implementation Supervisory Committee at its 19 meeting on 04/12/2009. The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from verifying the identified criteria. The verification protocol serves the following purposes:

- It organizes, details and clarifies the requirements a JI project is expected to meet;
- It ensures a transparent verification process where the verifier will document how a particular requirement has been verified and the result of the verification.

The completed determination protocol is enclosed in Appendix A to this report.

2.1 Review of Documents

The Monitoring Report (MR) submitted by JSC "Ivano-Frankivsk Cement" and additional background documents related to the project design and baseline, i.e. country Law, Project Design Document (PDD), and/or Guidance on criteria for baseline setting and monitoring, Host party criteria, Kyoto Protocol, Clarifications on Verification Requirements to be Checked by an Accredited Independent Entity were reviewed.

The verification findings presented in this report relate to the Monitoring Report version(s) 1.0, 2.0 and project as described in the determined PDD.

2.2 Follow-up Interviews

On 26/01/2011 Bureau Veritas Certification performed on-site interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of JSC "Ivano-Frankivsk Cement" and project developer were interviewed (see References). The main topics of the interviews are summarized in the Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
JSC "Ivano-Frankivsk Cement"	Organizational structure Responsibilities and authorities Roles and responsibilities for data collection and processing Installation of equipment Data logging, archiving and reporting Metering equipment control Metering record keeping system, database IT management Training of personnel Quality management procedures and technology Internal audits and check-ups
Consultant: GreenStream Network	Monitoring plan Monitoring report Deviations from PDD ERUs calculation model

2.3 Resolution of Clarification, Corrective and Forward Action Requests

The objective of this phase of the verification is to raise the requests for corrective actions and clarification and any other outstanding issues that needed to be clarified for Bureau Veritas Certification positive conclusion on the GHG emission reduction calculation.

If the Verification Team, in assessing the monitoring report and supporting documents, identifies issues that need to be corrected, clarified or improved with regard to the monitoring requirements, it should raise these issues and inform the project participants of these issues in the form of:

(a) Corrective action request (CAR), requesting the project participants to correct a mistake that is not in accordance with the monitoring plan;

(b) Clarification request (CL), requesting the project participants to provide additional information for the AIE to assess compliance with the monitoring plan;

(c) Forward action request (FAR), informing the project participants of an issue, relating to the monitoring that needs to be reviewed during the next verification period.

To guarantee the transparency of the verification process, the concerns raised are documented in more detail in the verification protocol in Appendix A.

3 VERIFICATION CONCLUSIONS

In the following sections, the conclusions of the verification are stated.

The findings from the desk review of the original monitoring documents and the findings from interviews during the follow up visit are described in the Verification Protocol in Appendix A.

The Clarification, Corrective and Forward Action Requests are stated, where applicable, in the following sections and are further documented in the Verification Protocol in Appendix A. The verification of the Project resulted in 9 Corrective Action Requests, 3 Clarification Requests, and 1 Forward Action Requests.

The number between brackets at the end of each section corresponds to the DVM paragraph.

3.1 Project approval by Parties involved (90-91)

The project was approved by the Host Party (Ukraine) and the sponsor Party (The Netherlands). The letters of approval has been issued by National Environmental Investment Agency of Ukraine (#1220/23/7, dated 14th October 2009), the Ministry of Economic Affairs of The Netherlands (#2009JI15, dated 10th December 2009), and the Ministry of Environment Rural and Marine of Spain (#106/1359, dated 2nd December 2009) when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines, at the latest. The abovementioned written approvals are unconditional.

3.2 Project implementation (92-93)

Before the project implementation cement manufacturing on JSC "Ivano-Frankivsk Cement" was based on three wet kilns.
The old wet kiln, with a 160 000 tonne clinker capacity, was decommissioned as part of the project activity while other two kilns are remained in operation while their production levels are gradually reduced as the dry kiln replaces their capacity. In addition to the wet-to-dry switch, this component of the project also results in a capacity expansion of more than 500 000 tonnes of clinker.
The new kiln affects the whole production process, especially a) crushing, storage, grinding and drying of raw materials, b) raw meal silo and kiln feed system c) the preheater, calciner and clinker cooler. The project implementation results in energy consumption (and carbon emissions from fuel combustion per tonne of clinker) reduction compared with the wet

process. Process changes in coal drying utilize waste heat from the new dry kiln to eliminate the need to use natural gas for the purpose of drying. The dry kiln was put in operation in July of 2008 and the process of utilization of waste heat for drying coal that is used as fuel source in the kiln started in December of 2008. In 2010 the project continued to reduce the emissions resulting from the manufacturing at the Ivano-Frankivsk Cement location. The project improved efficiency of use of natural gas and electricity at the enterprise and thus leaded to decrease of harmful emissions.
The dry kiln was in exploitation during the whole monitoring period excluding the time needed for equipment maintenance. It was evidenced by the production-technological reports provided onsite (see the List of the Documents checked).

3.3 Compliance of the monitoring plan with the monitoring methodology (94-98)

The monitoring occurred in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website.

For calculating the emission reductions key factors, influencing the baseline emissions and the activity level of the project and the emissions as well as risks associated with the project were taken into account.
Key monitoring activities for each subproject are sufficiently described in the MR and no deviations from the monitoring algorithm were detected. The monitoring points, including parameter monitored, monitoring equipment and information concerning its calibration interval are clearly described in the section D 1.2 of the MR and completely correspond to the ones prospected in the determined PDD.

The data sources used for calculating emission reductions are clearly identified, reliable and transparent. Emission factors, including default emission factors, are selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice.

The calculation of emission reductions is based on conservative assumptions and the most plausible scenarios in a transparent manner.

3.4 Revision of monitoring plan (99-100) "Not applicable"

3.5 Data management (101)

A detailed records management system has been established at Ivano-Frankivsk Cement to record and document all required data. The monitoring information flow for each parameter to be monitored is sufficiently described in the section C of the MR. The records management system includes paper records maintained by staff of the

laboratory and production staff as well as electronic records maintained by the departments.

Data collection and manipulation for the monitoring plan are the responsibility of four departments within the enterprise (Power and Electrical Department, Engineering and Metrologist Department, Laboratory, Shift man, shop economist and superintendant). The reporting procedures reflect the monitoring plan completely. The complete data is stored electronically and documented. The necessary procedures have been defined in the internal procedures.

The data and their sources, provided in the monitoring report, are clearly identified, reliable and transparent. The implementation of data collection procedures is in accordance with the monitoring plan, including the quality control and quality assurance procedures. The function of the monitoring equipment, including its calibration status, is in order. The evidence and records used for the monitoring are maintained in a traceable manner.

3.6 Verification regarding programmes of activities (102-110) Not applicable

4 VERIFICATION OPINION

Bureau Veritas Certification has performed a verification of the JI project "Ivano-Frankivsk Cement switch from wet-to-dry cement and fuel savings for coal drying" in Ukraine, which applies JI specific approach. The verification was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

The verification consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion.

The management of JSC "Ivano-Frankivsk Cement" is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions of the project on the basis set out within the project Monitoring and Verification Plan indicated in the final PDD. The development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of GHG emission reductions from the project, is the responsibility of the management of the project.

Bureau Veritas Certification verified the Project Monitoring Report versions 01 and 02 for the reporting period as indicated below. Bureau

Veritas Certification confirms that the project is implemented as planned and described in approved project design documents. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions.

Bureau Veritas Certification can confirm that the GHG emission reduction is accurately calculated and is free of material errors, omissions, or misstatements. Our opinion relates to the project's GHG emissions and resulting GHG emissions reductions reported and related to the approved project baseline and monitoring, and its associated documents. Based on the information we have seen and evaluated, we confirm, with a reasonable level of assurance, the following statement:

Reporting period: From 01/01/2010 to 31/12/2010

Baseline emissions	: 356 610	t CO_2 equivalents.
Project emissions	: 227 087	t CO_2 equivalents.
Emission Reductions	: 129 522*	t CO2 equivalents.

* All numbers are rounded to the nearest full tonne of CO_2. For detailed calculation refer to Excel calculation model "2010 IFC Data - calculations 21FEB2011"

5 REFERENCES

Category 1 Documents:
Documents provided by JSC "Ivano-Frankivsk Cement" that relate directly to the GHG components of the project.

/1/ Project Design Document "Ivano-Frankivsk Cement switch from wet-to-dry cement and fuel savings for coal drying", version 1.4 dated 26/04/2009
/2/ Monitoring Report "Ivano-Frankivsk Cement switch from wet-to-dry cement and fuel savings for coal drying" version 01, dated 14/01/2011
/3/ Monitoring Report "Ivano-Frankivsk Cement switch from wet-to-dry cement and fuel savings for coal drying" version 02, dated 21/02/2011
/4/ ERUs calculation model Excel file "2010_IFC_Data_-_calculations_17JAN2011"
/5/ ERUs calculation model Excel file "2010 IFC Data - calculations 21FEB2011"
/6/ Letter of Approval issued by National Environmental Investment Agency of Ukraine #1220/23/7, dated 14th October 2009
/7/ Letter of Approval issued by the Ministry of Economic Affairs of The Netherlands #2009JI15, dated 10th December 2009
/8/ Letter of Approval issued by the Ministry of Environment Rural and Marine of Spain #106/1359, dated 2nd December 2009

Category 2 Documents:
Background documents related to the design and/or methodologies employed in the design or other reference documents.

/1/ Main and alternative fuel consumption for June 2010, furnace # 3
/2/ Main and alternative fuel consumption for June 2010, furnace # 2
/3/ Main and alternative fuel consumption for June 2010, furnace # 1
/4/ Main and alternative fuel consumption for May 2010, furnace # 1
/5/ Main and alternative fuel consumption for May 2010, furnace # 3
/6/ Main and alternative fuel consumption for November 2010, furnace # 1
/7/ Main and alternative fuel consumption for November 2010, furnace # 2
/8/ Main and alternative fuel consumption for November 2010, furnace # 3
/9/ Main and alternative fuel consumption for October 2010, furnace # 1
/10/ Main and alternative fuel consumption for October 2010, furnace # 2
/11/ Main and alternative fuel consumption for October 2010, furnace # 3
/12/ Program of training of ETP and workers on operation and technical maintenance of cement production
/13/ Protocol # 1 of commission meeting for examination on issues of operation and technical maintenance of cement production of 14.04.2010
/14/ Protocol # 1 of commission meeting for examination on issues of

operation and technical maintenance of cement production of 15.04.2010

/15/ Certificate on raising the level of skills Kovalska N.P.

/16/ Certificate of state metrological attestation # 163 of 24.11.2010. Valid till 24.11.2014. Automated system for commercial counting of electric energy OJSC ''Ivano-Frankivskcement'', # ІФЕ 390.29.05.07 ТП.

/17/ Certificate of state metrological attestation # 199 of 10.12.2007. Valid till 10.12.2011. Automated system for commercial counting of electric energy OJSC ''Ivano-Frankivskcement'', # ІФЕ 390.29.05.07 ТП.

/18/ Passport for electrical energy meter electronic multifunctional Landis&Gyr, type ZxD400/300 CR

/19/ List of meter verification ZMD410CR44.4407.c2-3x58/100 V 5(10) A, № 94977013. Verification date is april 2008.

/20/ Passport for electrical energy meter electronic multifunctional Landis&Gyr, type ZxD400/300 CR

/21/ List of meter verification ZMD410CR44.4407.c2-3x58/100 V 5(10) A, № 94977026. Verification date is April 2008.

/22/ Automated system of commercial counting of electrical energy at OJSC ''Ivano-Frankivskcement''. Technical project ІФЕ 390.29.05.07 ТП.

/23/ Calculation of fixed fuel consumption for January 2010

/24/ Calculation of fixed electrical energy consumption for January 2010

/25/ Regulation on metrological service of OJSC ''Ivano-Frankivskcement''

/26/ List of means of measuring units, which are in operation and submitted to verification at OJSC ''Ivano-Frankivskcement'' 17.12.09

/27/ List of means of measuring units, which are in operation and submitted to verification at OJSC ''Ivano-Frankivskcement'' 20.01.10

/28/ List of means of measuring units, which are in operation and submitted to verification at OJSC ''Ivano-Frankivskcement''

/29/ Schedule of periodic verification of measuring units at OJSC ''Ivano-Frankivskcement'' for 2010

/30/ Gas meter ЛГ-К-Ех-200-1600-16, Passport Ф62.784.008-01 ПС

/31/ Pressure sensor, type МИДА-13П-01Ех, Passport МДВГ.406233.033 ПС, N07207241

/32/ Certificate on acceptance of 23.05.07, pressure sensor # 07207241

/33/ Certificate on packing of 24.05.07, pressure sensor # 07207241

/34/ Certificate for verification pressure sensor # 07207241

/35/ Pressure sensor, type МИДА-13П-01Ех, Passport МДВГ.406233.033 ПС, N04416215

/36/ Certificate on packing of 28.10.04, pressure sensor # 04416315

/37/ Certificate on acceptance of 28.10.04, pressure sensor # 04416315

/38/ Certificate for verification pressure sensor # 04416315

/39/ Certificate for verification of working measuring unit # 1525/м, Valid till 12.08.2011, pressure transmitter of type МИДА-ДА, № 04416315

/40/ Certificate for verification of working measuring unit # 691/т, Valid till 22.04.2011, temperature transmitter of type ТСМУ-0289 № 001

/41/ Gas volume counter, Universal, Passport ГРЭМ 020000.001-02 ПС

/42/ List on verification of gas volume counter of 09.06.2010
/43/ Gas rotor meters DELTA 2050/25A, DELTA 2050/40A, DELTA 2050/65A, DELTA 2050/100 A, DELTA 2050/160A, Passport, Actaris Metering Systems
/44/ List on periodic verification. Last verification date 29.12.2009
/45/ Pressure sensor of type МИДА-13П ДА 01Ex, Passport МДВГ.406233.033 ПС, # 06421331
/46/ Certificate on packing of 06.11.06, pressure sensor # 06421331
/47/ Certificate on acceptance of 06.11.06, pressure sensor # 06421331
/48/ Certificate for verification pressure sensor # 06421331, valid till 10.12.10
/49/ Pressure sensor of type МИДА-13П ДА 01Ex, Passport МДВГ.406233.033 ПС, # 07419082
/50/ Certificate on packing of 25.10.07, pressure sensor # 07419082
/51/ Certificate on acceptance of 26.10.07, pressure sensor # 07419082
/52/ Certificate for verification pressure sensor # 07419082, valid till 10.12.10
/53/ Certificate on verification of working mean of measuring units № 2814/Т. Valid till 30.12.2011 resistance thermotransmitter, type ТСМУ-0289, № 112697
/54/ Gas volume counter, Universal, Passport ГРЭМ 020000.001-02 ПС
/55/ List on verification. Last verification date 12.09.2008,
/56/ Certificate on verification of working mean of measuring units № 177/Т. Valid till 10.12.2012 gas volume counter. Type Universal-02, # 1324
/57/ Technical passport, Scales ВПП ПС-100, № 0203
/58/ Technical passport, Scales ВЦ ПС-150, № 0205
/59/ Technical passport, Scales ВЦ ПС-150, № 0204
/60/ Conclusion on commissioning into operation. Tensometric automobile scales ТВА 60-15(4)-Кф-10 (КС3) #81 of 02.10.2009
/61/ Results of state periodic verification. Verification date 12.10.2010
/62/ Conclusion on commissioning into operation. Tensometric automobile scales ТВА 60-15(4)-Кф-10 (КС3) #59 of 26.07.2006
/63/ Results of periodic verification. Verification date 12.10.2010
/64/ Conclusion on commissioning into operation. Tensometric automobile scales ТВА 60-15(4)-Кф-10 (КС3) #271 of 18.04.2009
/65/ Results of state periodic verification. Verification date 28.04.2010
/66/ Certificate on attestation of measurement laboratory for control on sanitary and ecological norms № ІФ 442 of 25.08.2010. Valid till 25.08.2013
/67/ Attestation scope of measurement laboratory for control on sanitary and ecological norms at OJSC ''Ivano-Frankivskcement''
/68/ Annex to certificate on attestation
/69/ Protocol # 307-313 of analysis the verification of built-up areas of 05.08.2010
/70/ Certificate # 20 of natural gas quality of 24.01.10
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/124/ Technical passport LOW, Control system of batcher # 80008984
/125/ List of calibration Control system of batcher LOW # 80008984
/126/ Technical passport, breeze dosimeter, MULTICOR K 40, № 043029 B15 29-2008
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/138/ Gas-counter ЛГ-К-Ex-200-1600-16
/139/ Gas volume counter Universal # 4668
/140/ Raw mill, entrance to silo tower 26.01.11
/141/ Raw mill, entrance to silo tower 25/26.01.11
/142/ Raw mill, entrance to silo tower 25.01.11
/143/ Certificate of the chemical composition of clinker 25.01.11
/144/ Certificate of the chemical composition of clinker 26.01.11
/145/ Accreditation certificate of testing laboratory on production of binding materials at OJSC ''Ivano-Frankivskcement'' # 2T062 of 16.06.2010.

Valid till 15.06.2013

/146/ Annex to accreditation certificate # 2T062 of 16.06.2010/ Accreditation scope, Testing laboratory on production of binding materials

/147/ Journal # 16 of chemical analyses of incoming raw materials.

/148/ Letter # 122/400 of 04.06.2010 on duration of validity term of standard sample of calcium carbonate composition ГСЗУ 203.3-99

/149/ Certificate on standard sample of calcium carbonate composition

/150/ Certificate on verification of working mean of measuring units # 1638T. Valid till 27.08.2011. Automated burning calorimeter, type RL-12Mn № 066

/151/ Protocol # 2T062.019.ПВ.10 of 09.12.2010 of tests of presented fuel types on calorific value

/152/ Journal # 27 of coal grinding

/153/ Journal # 25 of inspection coal control

/154/ Journal of inspection peat control

/155/ Results of burned coal for November 2010

/156/ Note of performance of inspection peat control, which supplied to OJSC ''Ivano-Frankivskcement'' for December 2010

/157/ Note of performance of inspection peat control, which supplied to OJSC ''Ivano-Frankivskcement''

/158/ Note of performance of inspection peat control, which supplied to OJSC ''Ivano-Frankivskcement'' for November 2010

/159/ Note of performance of inspection peat control, which supplied to OJSC ''Ivano-Frankivskcement''

/160/ Journal of determination of coal calorie content

/161/ Technical passport, breeze dosimeter, MULTICOR K40 №Z953103 37 04 2007

/162/ List of calibration breeze dosimeter, 2nd kiln torch

/163/ Technical passport, breeze dosimeter, MULTICOR K40 №V035031 B15 03-2007, burner of furnace # 1

/164/ List of calibration breeze dosimeter, 1nd kiln torch

/165/ Technical passport, breeze dosimeter, MULTICOR K40 №Z953103 37 04 2007, burner of furnace # 3

/166/ List of calibration breeze dosimeter, 3nd kiln torch

/167/ Technical passport, breeze dosimeter, MULTICOR K40 №V035031 B15 29-2007, decarbonifier of furnace # 3.

/168/ List of calibration breeze dosimeter, 3rd kiln decarbonifier

/169/ Technical passport on conveyor scales of lump coal MULTIBELT

/170/ List of calibration conveyor scales of lump coal

Persons interviewed:

List persons interviewed during the verification or persons that contributed with other information that are not included in the documents listed above.

/1/ Zayats Bogdan – Head of the Board

/2/ Mykola Makoviychuk – Head Engineer
/3/ Oleg Yarema – Head of the technological department
/4/ Kovalska Nadiya – Head of Field Laboratory
/5/ Lesya Ivantsiv – Engineer-Technologist
/6/ Iryna Gevyuk – Head of the Laboratory
/7/ Olexandr Gornyshko – Head of Quality Department
/8/ Petro Kardash – Chief Power Engineer
/9/ Vasyl Kalyn – Head Metrologist
/10/ Andriy Demkiv – Head of the cement production

APPENDIX A: COMPANY PROJECT VERIFICATION PROTOCOL
BUREAU VERITAS CERTIFICATION HOLDING SAS

VERIFICATION PROTOCOL
Check list for verification, according to the JOINT IMPLEMENTATION DETERMINATION AND VERIFICATION MANUAL (Version 01)

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
Project approvals by Parties involved				
90	Has the DFPs of at least one Party involved, other than the host Party, issued a written project approval when submitting the first verification report to the secretariat for publication in accordance with paragraph 38 of the JI guidelines, at the latest?	The project was approved by the Host Party (Ukraine) and the sponsor Party (The Netherlands). The letters of approval were issued by the National Environmental Investment Agency of Ukraine (#1220/23/7, dated 14th October 2009) and the Ministry of Economic Affairs of The Netherlands (#2009JI15, dated 10th December 2009). **CAR01** The information concerning Project approval is missing in the Monitoring Report. Please, add the relevant information to the Monitoring Report.	**CAR01**	OK
91	Are all the written project approvals by Parties involved unconditional?	Yes, all the written project approvals by the Parties involved are unconditional.	OK	OK
Project implementation				

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
92	Has the project been implemented in accordance with the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	**CAR02** Please, provide an explanation regarding the difference between emission reductions achieved during the 3-rd monitoring period and the emission reductions specified in the determined PDD.	**CAR02**	OK
93	What is the status of operation of the project during the monitoring period?	**CAR03** Please, clarify in the Monitoring Report if any facility or equipment related to the project were installed and operated during the monitoring period. **CL01** It is stated in the report about fuel consumption by the kiln #3 for 2010 that the consumption of all the fuel types was equal to 0. Please, clarify this fact.	**CAR03** **CL01**	OK OK
Compliance with monitoring plan				
94	Did the monitoring occur in accordance with the monitoring plan included in the PDD regarding which the determination has been deemed final and is so listed on the UNFCCC JI website?	The monitoring plan (included in the PDD) got a positive determination conclusion. This plan together with the initial, 1st and 2nd periodic verification reports are available on the UNFCCC JI website. The algorithm for monitoring is in line with the monitoring plan included in the determined and registered PDD.	OK	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
95 (a)	For calculating the emission reductions or enhancements of net removals, were key factors, e.g. those listed in 23 (b) (i)-(vii) of the DVM, influencing the baseline emissions or net removals and the activity level of the project and the emissions or removals as well as risks associated with the project taken into account, as appropriate?	Yes. The key factors, e.g. those listed in 23 (b) (i)-(vii) of the DVM check list, influencing the baseline emissions and the activity level of the project and the emissions as well as risks associated with the project were taken into account for calculating the emission reductions.	OK	OK
95 (b)	Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?	**CAR04** The information concerning number and type of the dust coal weight scales Multicor K40, provided in the Monitoring Report, does not correspond to the situation observed onsite. Please, correct.	**CAR04**	OK
95 (c)	Are emission factors, including default emission factors, if used for calculating the emission reductions or enhancements of net removals, selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice?	**CAR05** Please, provide correct and traceable references (in the sections 6.1-6.2 of the Monitoring Report) for the emission factors used: - the emission factor of Ukraine electricity grid in year y (tCO_2/MWh); - the emission factor for the fuel (tCO_2/GJ).	**CAR05**	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
95 (d)	Is the calculation of emission reductions or enhancements of net removals based on conservative assumptions and the most plausible scenarios in a transparent manner?	**CL02** The following types of fuel are indicated in the report about fuel consumption for 2010: gas, coal, tires, sawdust, woodchips, peat and oil-lime. However, it is stated in the Monitoring Report that sawdust and woodchips are excluded from the calculations of ERUs. The same approach is applied in the Excel calculation model "2010_IFC_Data_-_calculations_17JAN2011". Please, justify the exclusion of the fuels mentioned. **CL03** As per approach proposed (please, see final version of PDD) the emissions from calcination are to be calculated. Please, clarify why these emissions are not considered in the Monitoring Report for 2010. **CAR06** The reduction of emissions form the capacity expansion is stipulated in the PDD for 2010. However, it is stated in the section 6.3 of the Monitoring Report that no ERUs are achieved in the present monitoring period. Please, provide clear explanation of this fact in the Monitoring	**CL02** **CL03** **CAR06** **CAR07**	OK OK OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		Report. **CAR07** Please, include in the Monitoring Report a summary table containing baseline, project emissions and emission reductions of GHG for each source.		
Applicable to JI SSC projects only				
96	Is the relevant threshold to be classified as JI SSC project not exceeded during the monitoring period on an annual average basis? If the threshold is exceeded, is the maximum emission reduction level estimated in the PDD for the JI SSC project or the bundle for the monitoring period determined?	N/a	N/a	N/a
Applicable to bundled JI SSC projects only				
97 (a)	Has the composition of the bundle not changed from that is stated in F-JI-SSCBUNDLE?	N/a	N/a	N/a
97 (b)	If the determination was conducted on the basis of an overall monitoring plan, have the project participants	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	submitted a common monitoring report?			
98	If the monitoring is based on a monitoring plan that provides for overlapping monitoring periods, are the monitoring periods per component of the project clearly specified in the monitoring report? Do the monitoring periods not overlap with those for which verifications were already deemed final in the past?	N/a	N/a	N/a
Revision of monitoring plan				
Applicable only if monitoring plan is revised by project participant				
99 (a)	Did the project participants provide an appropriate justification for the proposed revision?	N/a	N/a	N/a
99 (b)	Does the proposed revision improve the accuracy and/or applicability of information collected compared to the original monitoring plan without changing conformity with the relevant rules and regulations	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	for the establishment of monitoring plans?			
Data management				
101 (a)	Is the implementation of data collection procedures in accordance with the monitoring plan, including the quality control and quality assurance procedures?	The implementation of data collection procedures are in accordance with the monitoring plan included in the determined PDD. The verification team confirms effectiveness of existing management and operational systems and found them eligible for reliable project monitoring.	OK	OK
101 (b)	Is the function of the monitoring equipment, including its calibration status, is in order?	All the equipment involved in the monitoring is regularly calibrated by a service of metrology. The procedure of calibration was found satisfactory. Each meter is been calibrated in accordance with the Ukrainian national standards.	OK	OK
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	**FAR01** Please, submit any documented instruction which indicates that the data monitored and required for ERUs calculation (including historical data for baseline emissions estimation) are to be kept for two years after the crediting period.	**FAR01**	The issue must be checked during the verify cation.
101 (d)	Is the data collection and management system for the project in accordance with the	**CAR08** Please, highlight in the Monitoring Report information/process flow (for all the	**CAR08** **CAR09**	OK OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	monitoring plan?	variables monitored during the monitoring period) from the raw data (obtained at the laboratory, master console etc.) to the reported totals (developer of the project). **CAR09** Please, provide in the Monitoring Report the appropriate information related to the monitoring of natural gas NCV.		
Verification regarding programs of activities (additional elements for assessment)				
102	Is any JPA that has not been added to the JI PoA not verified?	N/a	N/a	N/a
103	Is the verification based on the monitoring reports of all JPAs to be verified?	N/a	N/a	N/a
103	Does the verification ensure the accuracy and conservativeness of the emission reductions or enhancements of removals generated by each JPA?	N/a	N/a	N/a
104	Does the monitoring period not overlap with previous monitoring periods?	N/a	N/a	N/a
105	If the AIE learns of an erroneously included JPA, has the AIE informed the JISC of its	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	findings in writing?			
Applicable to sample-based approach only				
106	Does the sampling plan prepared by the AIE: (a) Describe its sample selection, taking into account that: (i) For each verification that uses a sample-based approach, the sample selection shall be sufficiently representative of the JPAs in the JI PoA such extrapolation to all JPAs identified for that verification is reasonable, taking into account differences among the characteristics of JPAs, such as: − The types of JPAs; − The complexity of the applicable technologies and/or measures used; − The geographical location of each JPA; − The amounts of expected emission reductions of the JPAs being verified;	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	− The number of JPAs for which emission reductions are being verified; − The length of monitoring periods of the JPAs being verified; and − The samples selected for prior verifications, if any?			
107	Is the sampling plan ready for publication through the secretariat along with the verification report and supporting documentation?	N/a	N/a	N/a
108	Has the AIE made site inspections of at least the square root of the number of total JPAs, rounded to the upper whole number? If the AIE makes no site inspections or fewer site inspections than the square root of the number of total JPAs, rounded to the upper whole number, then does the AIE provide a reasonable explanation and justification?	N/a	N/a	N/a
109	Is the sampling plan available	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	for submission to the secretariat for the JISC.s ex ante assessment? (Optional)			
110	If the AIE learns of a fraudulently included JPA, a fraudulently monitored JPA or an inflated number of emission reductions claimed in a JI PoA, has the AIE informed the JISC of the fraud in writing?	N/a	N/a	N/a

Table 2 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. to check list question in table 1	Summary of project participant response	Verification team conclusion
CAR01 The information concerning Project approval is missing in the Monitoring Report. Please, add the relevant information to the Monitoring Report.	DVM 90	Letters of approval were obtained from Ukraine and the Netherlands. The information regarding project approval has been added to section A.6 of the Monitoring Report.	The issue is closed based on appropriate information and corrections provided.

CAR02 Please, provide an explanation regarding the difference between emission reductions achieved during the 3-rd monitoring period and the emission reductions specified in the determined PDD.	DVM 92	Compared with the emission reductions estimated in the registered PDD, project emission reductions have decreased by 49,458 tCO_2e. The key difference between the estimates and the actual values is that the average energy consumption per tonne of clinker is much higher than anticipated. In 2010 the value was 4.05 GJ per tonne of clinker compared to 3.10 GJ per tonne of clinker that were estimated at the time of PDD completion. This is the case because IF Cement continues to operate two wet kilns so that the average energy efficiency is not as high as anticipated. It also falls just short of the sector-wide baseline, so that no emission reductions from capacity expansion could be realized in 2010. The explanation has been included in section E.6 of the Monitoring Report.	The required information was presented in the revised MR. It was reviewed and found to be sufficient. The issue is closed.
CAR03 Please, clarify in the Monitoring Report if any facility or equipment related to the project were installed and operated during the monitoring period.	DVM 93	No other facility or equipment relating to the project were installed and operated during the monitoring period. This information has been added to section B.1 of the Monitoring Report.	The MR has been checked. Issue is closed.

CAR04 The information concerning number and type of the dust coal weight scales Multicor K40, provided in the Monitoring Report, does not correspond to the situation observed onsite. Please, correct.	DVM 95 (b)	The table in section D.2.1 of the Monitoring Report has been corrected accordingly.	The updated MR was reviewed and found appropriate with regards to the required corrections. The issue is closed.
CAR05 Please, provide correct and traceable references (in the sections 6.1-6.2 of the Monitoring Report) for the emission factors used: - the emission factor of Ukraine electricity grid in year y (tCO_2/MWh); - the emission factor for the fuel (tCO_2/GJ).	DVM 95 (d)	The emission factor for grid-based electricity is taken from the JI PDD 0018 «Energy saving programme at "Istil" mini steel mill, Ukraine». The reference in section D.4 of the Monitoring Report has been provided accordingly. The emission factors for the kiln fuels are taken from the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories. The references in section D.4 of the Monitoring Report have been provided accordingly.	The issue is closed.

CAR06 The reduction of emissions form the capacity expansion is stipulated in the PDD for 2010. However, it is stated in the section 6.3 of the Monitoring Report that no ERUs are achieved in the present monitoring period. Please, provide clear explanation of this fact in the Monitoring Report.	DVM 95 (d)	The project emissions from capacity expansion slightly exceed the baseline emissions. The calculations are shown in tables 8 and 12-17. The explanation why project emissions are higher than anticipated has been included in section E.6 of the Monitoring Report. See also response to CAR02.	The CAR is closed on the basis of required information provided and corrections made to the MR.
CAR07 Please, include in the Monitoring Report a summary table containing baseline, project emissions and emission reductions of GHG for each source.	DVM 101 (c)	A summary table, table 14, has been added to section E.4 of the Monitoring Report.	The issue is closed based on appropriate information and corrections provided.
CAR08 Please, highlight in the Monitoring Report information/process flow (for all the variables monitored during the monitoring period) from the raw data (obtained at the laboratory, master console etc.) to the reported totals (developer of the project).		The raw data is collected, maintained and archived by the relevant departments named in section C.5 of the Monitoring Report. The data is then submitted to Chief Engineer for Cementitious Materials. The Chief Engineer provides them to GreenStream Network for the calculation of emission reductions and the preparation of the Monitoring Report. Figure 3 in section C.5 describes the information flow.	The issue is closed based on appropriate information and corrections provided.

CAR09 Please, provide in the Monitoring Report the appropriate information related to the monitoring of natural gas NCV.		The information has been provided in section D.2.1 of the Monitoring Report. Please refer to the row "NCVfuel_i: Net calorific value for gas (GJ/m3)".	Mr was checked. The issue is closed.
FAR01 Please, submit any documented instruction which indicates that the data monitored and required for ERUs calculation (including historical data for baseline emissions estimation) are to be kept for two years after the crediting period.	DVM 101 (d)	The documented instruction which indicates that the data monitored and required for verification are to be kept for two years after the crediting period will be prepared and will be available during the verification.	This issue must be checked during the next verification.
CL01 It is stated in the report about fuel consumption by the kiln #3 for 2010 that the consumption of all the fuel types was equal to 0. Please, clarify this fact.	DVM 93	Annex 2 of the Monitoring Report has been updated to include the fuel consumption volumes, emission factors and NCVs for all the fuel types.	MR was checked. Issue is closed.

CL02 The following types of fuel are indicated in the report about fuel consumption for 2010: gas, coal, tires, sawdust, woodchips, peat and oil-lime. However, it is stated in the Monitoring Report that sawdust and woodchips are excluded from the calculations of ERUs. The same approach is applied in the Excel calculation model "2010_IFC_Data_-_calculations_17JAN2011". Please, justify the exclusion of the fuels mentioned.	DVM 95 (d)	Saw dust and wood chips consist of biomass and could potentially be considered renewable energy sources. The exclusion of these two fuels is conservative since the fuel mix between project and baseline is assumed identical, as per section D.1 of the PDD. The explanation has been added to sections E.1 and E.2 of the Monitoring Report.	The issue is closed based on due clarification and amendmenst included in the MR.

CL03 As per approach proposed (please, see final version of PDD) the emissions from calcination are to be calculated. Please, clarify why these emissions are not considered in the Monitoring Report for 2010.	DVM 95 (d)	According to pages 44/45 of the PDD "Calcination emissions are only included in the capacity expansion calculations since it is assumed that the mix of raw materials will not change between the project and the baseline and therefore, the calcination emissions will not change for the existing capacity calculation. They are included in the capacity expansion calculations since the Volyn Cement PDD includes these and it is necessary to include them in this calculation to ensure a fair comparison." Project emissions from calcination for the capacity expansion have been calculated in table 16.	The issue is closed.

Appendix B: Verifiers CV's
Work carried out by:

Igor Kachan, Ph.D. (chemistry)
Team Member, Climate Change Lead Verifier
Bureau Veritas Ukraine,
Health, Safety and Environment Department Project Manager
Igor Kachan has graduated from Kyiv National Taras Shevchenko University and defended a PhD thesis in analytical chemistry speciality. He has successfully completed IRCA registered Lead Auditor Training Course for Environment Management Systems and Quality Management Systems. Igor Kachan has undergone a training course on Clean Development Mechanism/Joint Implementation and participated in determination/verification of more then 30 JI projects.

Oleg Skoblyk, Power Management Specialist
Team Member, Climate Change Lead Verifier
Bureau Veritas Ukraine
Health, Safety and Environment Department project manager
Oleg Skoblyk has graduated from the National Technical University of "Kyiv Polytechnic University" with specialty Power Management. He has successfully completed IRCA registered Lead Auditor Training Course for Environment Management Systems and Quality Management Systems. Oleg Skoblyk has undergone intensive training on Clean Development Mechanism/Joint Implementation and he was involved in the determination/verification of 20 JI projects.

The verification report was reviewed by:
Ivan G. Sokolov, Dr. Sci. (biology, microbiology)
Climate Change Lead Verifier, Internal Technical Reviewer, Bureau Veritas Certification Holding SAS Operational Manager, Local Climate Change Manager for Ukraine

Ivan Sokolov has over 25 years of experience in Research Institute in the field of biochemistry, biotechnology, and microbiology. He is a Lead Auditor of Bureau Veritas Certification for Environment Management Systems (IRCA registered), Quality Management Systems (IRCA registered), Occupational Health and Safety Management Systems, and Food Safety Management Systems. Mr. I.Sokolov has performed over 140 audits since 1999. He is a Lead Tutor of IRCA registered ISO 14000 EMS Lead Auditor Training Course, Lead Tutor of IRCA registered ISO 9000 QMS Lead Auditor Training Course. Ivan Sokolov is also a Tutor of Join Implementation/Clean Development Lead Verifier Training Course and has performed determination/verification of more that 50 JI projects.