VERIFICATION REPORT
VEMA S.A.

VERIFICATION OF THE JI PROJECT

RECONSTRUCTION OF WATER SUPPLY AND DRAINAGE SYSTEM "LUGANSKVODA LTD."

4TH PERIODIC
FOR THE PERIOD OF 01/05/2011 – 31/07/2011

REPORT NO. UKRAINE-ver/0353/2011

REVISION NO. 02

BUREAU VERITAS CERTIFICATION

Report No: UKRAINE-ver/0353/2011

VERIFICATION REPORT

Date of first issue:	Organizational unit:
16/08/2011	Bureau Veritas Certification Holding SAS
Client:	**Client ref.:**
VEMA S.A.	Fabian Knodel

Summary:

Bureau Veritas Certification has made the 4th periodic verification of the JI project "Reconstruction of water supply and drainage system "Luganskvoda Ltd.", project registration reference number UA1000195, project of VEMA S.A. located in Lugansk region, Ukraine, and applying the 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 (but for the crediting period) 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 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 according to determined changes. Installed equipment that is essential for generating emission reductions runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions. The GHG emission reduction is calculated without material errors, and the ERUs issued totalize 80 064 tons of CO_2eq for the monitoring period of 01/05/2011 - 31/07/2011.

Our opinion relates to the project's GHG emissions and resulting GHG emission reductions reported and related to the approved project baseline and monitoring plan, and its associated documents.

Report No.:	Subject Group:	
UKRAINE-ver/0353/2011	JI	
Project title: "Reconstruction of water supply and drainage system "Luganskvoda Ltd."		
Work carried out by: Team leader : Oleg Skoblyk Team member : Kateryna Zinevych		
Work reviewed by: Ivan Sokolov – Internal technical reviewer		
Work approved by: Flavio Gomes – Climate Change Operational Manager		
Date of this revision: 23/08/2011	Rev. No.: 02	Number of pages: 36

Bureau Veritas Certification Holding SAS

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1 INTRODUCTION

VEMA S.A. has commissioned Bureau Veritas Certification to verify the emissions reductions of its JI project “Reconstruction of water supply and drainage system ”Luganskvoda Ltd.” (hereafter called “the project”) in Lugansk city, 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, as well as the host country criteria.

The verification covers the period from May 1, 2011 to July 31, 2011.

1.1 Objective

Verification is the periodic independent review and ex post determination by the Accredited Independent Entity (AIE) 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, corrective and/or forward 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:

Oleg Skoblyk

Bureau Veritas Certification Team Leader, Climate Change Verifier

Kateryna Zinevych

Bureau Veritas Certification Climate Change Verifier

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 verification protocol is enclosed in Appendix A to this report.

2.1 Review of Documents

The Monitoring Report (MR) submitted by VEMA S.A. and additional background documents related to the project design, baseline, i.e. country Law, Project Design Document (PDD), Determination Report of the project issued by Bureau Veritas Certification Holding SAS No. UKRAINE/0138/2010, version 01 dated 04/10/2010, Guidance on criteria for baseline setting and monitoring, Host party criteria, the 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 for the period from 01/05/2011 to 31/07/2011, version 01 as of August 15, 2011 and version 02 as of August 22, 2011 and the project as described in the determined PDD.

2.2 Follow-up Interviews

On 17/08/2011 Bureau Veritas Certification verification team visited the project implementation site (pumping plants of "Luganskvoda Ltd.") and performed on-site interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of "Luganskvoda Ltd." and VEMA S.A. were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
"Luganskvoda Ltd."	➢ Organizational structure ➢ Responsibilities and authorities ➢ Roles and responsibilities for data collection and processing ➢ Installation of equipment ➢ Data logging, archiving and reporting ➢ Metering equipment control ➢ Record keeping system, database ➢ IT management ➢ Training of personnel ➢ Quality management procedures and technologies ➢ Internal audits and check-ups
Consultant: VEMA S.A.	➢ Baseline methodology ➢ Monitoring plan ➢ Monitoring report ➢ Deviations from the PDD

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 and forward actions as well as clarification requests and any other outstanding issues that needed to be clarified for Bureau Veritas

Certification positive conclusion on the GHG emission reductions 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, and are further documented in the Verification Protocol in Appendix A. The verification of the Project resulted in 9 Corrective Action Requests, and 3 Clarification Requests.

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

3.1 Remaining issues and FARs from previous verifications

There are no any remaining CLs, CARs and FARs from previous verifications.

3.2 Project approval by Parties involved (90-91)

The project obtained approval by the Host party (Ukraine) - Letter of Approval # 1808/23/7 issued by the National Environmental Investment Agency of Ukraine dated 09/11/2010, and written project approval by the party – buyer of the emission reduction units (Switzerland) - Letter of Approval # J294-0485 issued by the Federal Office for the Environment (FOEN) of Switzerland dated 26/10/2010.
The project was registered under the reference number UA1000195.
The abovementioned written approvals are unconditional.
The identified areas of concern as to the project approval by the parties involved, project participants responses and BV Certification's conclusions are described in Appendix A to this report (refer to CAR 01).

3.3 Project implementation (92-93)

The main objective of the project that is being implemented at "Luganskvoda Ltd." is reduction of electric energy consumption by the centralized water supply system in Lugansk region due to reconstruction thereof, which includes replacement and reconstruction of pumping equipment and water distribution systems, installation of frequency regulators and optimization of the technological process of water pumping. The reduction of consumption of the electric energy, which is produced in the power system of Ukraine, will lead to the decrease of fossil fuel combustion for electricity production, and as a result to the greenhouse gas emission reductions.

The reconstruction measures under the project include:

- Replacement of energy intensive pumps by new highly energy efficient ones;
- Optimization of the technological process of water pumping;
- Introduction of automatic air valves on water mains for pressure decrease and improvement of discharge capacity;
- Replacement of water-supply networks;
- Installation of a new group of metering devices;
- Introduction of new devices for concealed leakage detection;
- Installation of frequency regulators.

The project operation was started in May 2007 with the first measures on optimization of the technological process of water pumping. Because of the fact that implementation of measures under the project commenced in 2007, which was determined as a baseline year, in view of conservative

approach the emission reductions generated due to these measures were not accounted in the project.
Measures, that were implemented in the period of May 1, 2011 – July 31, 2011, are following:

Table 2 Project implementation progress status in the period of 01/05/2011 – 31/07/2011

№	Project measures	Number of units of works performed	Starting date of project measures implementation	Expected date of completion of project implementation measures
1	Replacement of pumping equipment	7 units	01/05/2011	31/07/2011
2	Installation of frequency regulators	5 units	01/05/2011	31/07/2011

The project measures are mainly being implemented according to the implementation schedule presented in the determined PDD ver.02.

Detailed information about implemented measures and installed equipment during the reporting period of May 1, 2011 – July 31, 2011 by departments and divisions is provided in Annex 4 to the Monitoring report.

The starting date of the crediting period did not change and remains the date of the first generated emission reduction units, namely: January 01, 2008.

The Monitoring System is in place and operational.

The monitoring equipment such as electricity meters, water meters are in place and comply with the industrial standards of Ukraine. All monitoring equipment is covered by the detailed verification (calibration) plan and is verified with periodicity, established by its manufacturer.

The project implementation doesn't provide for any negative impacts on environment. The only impact on the environment is dismantled equipment, which will be further used as secondary material.

"Luganskvoda Ltd." has all necessary reports, permissions, limits and licenses required by Ukrainian legislation, including:

- permit for “Special water use”;
- Form 2-TP (water industry), Report on water use;
- Form 11 MTP, Report on the results of fuel, heat energy and electric energy use.

Implementation of this project allows for improvement of servicing of water consumers. Experience of “Luganskvoda Ltd.” employees and adherence to the norms “On drinking water and drinking water supply” allow for minimization of occurrence of emergency situations in the course of this project implementation.

The identified areas of concern as to project implementation, project participants responses and BV Certification’s conclusions are described in Appendix A to this report (refer to CAR 02 and CAR 03).

3.4 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 such as increased demand for water amount to be supplied to the customers, applicable tariffs for water supply and drainage, state policies in potable water and potable water supply sector, experience in implementation of measures provided for by the project, existing practice in Ukraine in this sphere, financial costs and experience as well as sectoral reforms policy in the water supply sphere and legislation influencing the baseline emissions and the activity level under the project and the project emissions as well as risks associated with the project were taken into account, as appropriate.

Data sources used for calculating emission reductions such as appropriately calibrated metering equipment, the study of standardized emission factors for the Ukrainian power grid are clearly identified, reliable and transparent.
Emission factors used for emission reductions calculations were selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice.
Carbon dioxide emission factors (EF) for electricity consumption were set in accordance with Decree # 75 of the National Environmental Investment Agency of Ukraine "On approval of specific carbon dioxide emission factors in 2011" dated 12/05/2011.

The calculation of emission reductions is based on conservative assumptions and the most plausible scenarios in a transparent manner.
The monitoring periods per component of the project are clearly specified in the monitoring report and do not overlap with those for which verifications were already deemed final in the past.

The identified areas of concern as to the compliance of the monitoring plan with the monitoring methodology, project participants responses and BV Certification's conclusions are described in Appendix A to this report (refer to CAR 04, CAR 05, CL 01, CL 02).

3.5 Revision of monitoring plan (99-100)

The project participants provided an appropriate justification for the proposed revision.

The proposed revision improves the accuracy and applicability of information collected compared to the original monitoring plan without changing conformity with the relevant rules and regulations for the establishment of monitoring plans.

Due to the fact that the original monitoring plan provided for calculation of project and baseline emissions as well as emission reductions on an annual basis, it has been reviewed to allow for the monitoring process on a monthly basis. Formulae to calculate emissions have been adapted to the monitoring period of 1 month instead of 1-year period, which was established in the original monitoring plan specified in the PDD. This allowed for making calculations for 3 months (from May 2011 to July 2011). To improve the accuracy of calculations of emission reductions, and to consider the fact that the volume of water supply to some extent depends on the season, the calculation of value of baseline parameter PPER (specific consumption of electricity per unit of water) for each month of 2007 was made, and these historical monthly values were used to determine baseline emissions for each month of the reporting period. New formulae are provided in the Monitoring Report, version 02 as of 25/08/2011.
One more deviation from the original monitoring plan consists in the use of carbon dioxide emission factor EF in calculations that was set in accordance with Decree # 75 of the National Environmental Investment Agency of Ukraine "On approval of specific carbon dioxide emission factors in 2011" dated 12/05/2011.

Changes that have been implemented do not affect conservativeness of the approach to the emission reductions calculations and procedures of data collection and archiving.

The Management and Operational Systems are eligible for reliable project monitoring according to the proposed revision.

3.6 Data management (101)

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 PDD and the revised monitoring plan, including the quality control and quality assurance procedures.

The function of the monitoring of equipment, including its calibration status, is in order.

According to the existing legislation "On metrology and metrological activity" all metering equipment in Ukraine shall conform to stated requirements of corresponding standards and is subject to periodic calibration. Flow meters were calibrated by Lugansk Center of Meters Standardization, Metrology and Certification. Verification of commercial electric meters of “Luganskvoda Ltd.” was executed by Luganskstandardmetrology. The project complies with legal requirements to the calibration and verification.

The actual data and records used for the monitoring are maintained in a traceable manner.
The data collection and management system for the project is in accordance with the PDD and the revised monitoring plan.

The project and baseline emissions subject to monitoring relate to the electricity consumption by the pumping equipment used for water transportation as this is the only emission source related to the current project. The baseline emissions are determined based on historical value of specific electricity consumption per water unit for each month of 2007 (considered as a baseline year) and actual monitored value of water amount supplied to consumers in the reporting period.

The monitoring procedure provides for:

1) Metering of water transferred by “Luganskvoda Ltd.” water facilities;
2) Metering of electricity consumption by all “Luganskvoda Ltd.” pumping plants;

Parameters which are subject to monitoring are metered for each separate water supply system (19 separate sub departments are united into 13 independent water supply systems).

Based on the obtained data that are subject to metering and control “Luganskvoda Ltd.” prepares the following documents:

- Electricity consumption report under the form 11-MTP, that is signed by "Luganskvoda Ltd." director and submitted to Lugansk regional state administration;
- Report 2-TP (water industry) is made on the basis of monthly statements and is submitted every three, six and twelve months to the Lugansk Administration of Water Resources. Payment for water transferred to consumers is made according to such report.

"Luganskvoda Ltd." collects and keeps the data relating to electric energy consumed and acquired water for water-supply in the forms of electric energy and acquired water bills.
Monitoring data collection at "Luganskvoda Ltd." is carried out as follows:

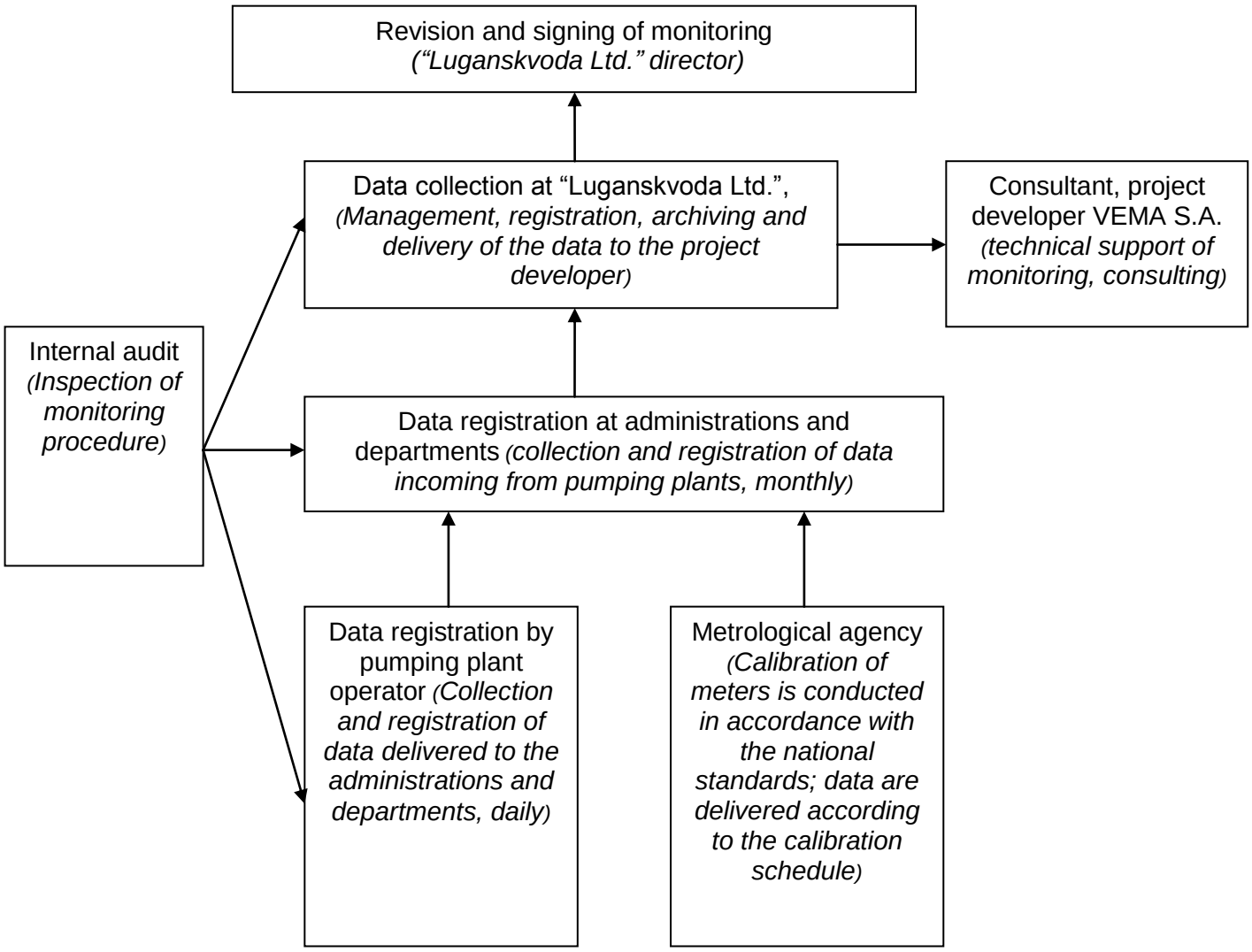

Figure 1 Structure of monitoring data collection

All necessary information for monitoring of GHGs emission reductions is stored in paper or/and electronic formats and will be saved till the end of the crediting period and for two years after the last operation with ERUs from the project.

The Monitoring Report version 02 provides sufficient information on the assigned roles, responsibilities and authorities for implementation and maintenance of monitoring procedures including data management. The verification team confirms effectiveness of the existing management and operational systems and found them eligible for reliable project monitoring.

The identified areas of concern as to Data management, project participants responses and BV Certification's conclusions are described in Appendix A to this report (refer to CAR 06, CAR 07, CAR 08, CAR 09, CL 03).

3.7 Verification regarding programmes of activities (102-110)

Not applicable.

4 VERIFICATION OPINION

Bureau Veritas Certification has performed the 4th periodic verification for the period of May 1 – July 31, 2011 of the "Reconstruction of water supply and drainage system "Luganskvoda Ltd." project 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 monitoring reports, 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 VEMA S.A. 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 version 02 and the revised monitoring plan. The development and maintenance of records and reporting procedures are 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, version 02, for the reporting period of May 1 – July 31, 2011 as indicated below. Bureau Veritas Certification confirms that the project is implemented as per determined changes. 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 01/05/2011 to 31/07/2011

Baseline emissions	:149 889	t CO_2 equivalent;
Project emissions	: 69 825	t CO_2 equivalent;
Emission Reductions	: 80 064	t CO_2 equivalent.

5 REFERENCES

Category 1 Documents:
Documents provided by project participants that relate directly to the GHG components of the project.

/1/ Monitoring Report for the period from 01/05/2011 to 31/07/2011, version 01, dated August 15, 2011

/2/ Monitoring Report for the period from 01/05/2011 to 31/07/2011, version 02, dated August 22, 2011

/3/ Annex 2 to Monitoring Report “Project and monitoring equipment” (Excel file)

/4/ Annex 3 to Monitoring Report “Calculation of GHG emission reductions due to electric energy saving in the water supply and drainage system of “Luganskvoda Ltd.” (Excel file)

/5/ Annex 4 “Measures that were implemented under the project” (Excel file)

/6/ Annex 5 to Monitoring Report “Monitoring values of the parameters used for GHG emissions calculation” (Excel file)

/7/ PDD “Reconstruction of water supply and drainage system ”Luganskvoda Ltd.”, version 02 dated 04/10/2010

/8/ Determination Report issued by Bureau Veritas Certification Holding SAS No. UKRAINE/0138/2010 “Reconstruction of water supply and drainage system ”Luganskvoda Ltd.”, version 01 dated 04/10/2010

/9/ Letter of Approval of the joint implementation project “Reconstruction of water supply and drainage system ”Luganskvoda Ltd.” #1808/23/7 issued by the National Environmental Investment Agency of Ukraine dated 09/11/2010.

/10/ Letter of Approval of the project under article 6 of the Kyoto protocol (JI) “Reconstruction of water supply and drainage system “Luganskvoda Ltd.” # J294-0485 issued by the Federal Office for the Environment of Switzerland dated 26/10/2010

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

/1/ Report on electric energy consumption by the Sverdlovsk Department of “Luganskvoda Ltd." for the period of 05/2011-07/2011

/2/ Report on electric energy consumption by Pivdennyi administration of “Luganskvoda Ltd." for the period of 05/2011- 07/2011

/3/ Report on energy consumption by “Svetlychansk administration” separate sub department of “Luganskvoda Ltd." for the period of

05/2011- 07/2011

/4/ Report on electric energy consumption by "Pervomaysk Department" separate sub department of "Luganskvoda Ltd." for the period of 05/2011- 07/2011

/5/ Report on electric energy consumption by Krasnoluzhskyi Department of "Luganskvoda Ltd." for the period of 05/2011- 07/2011

/6/ Report on electric energy consumption and volume of water lifted by the Antratsitovskyi Department of "Luganskvoda Ltd." for the period of 05/2011- 07/2011

/7/ Report on electric energy consumption by Luganskyi separate sub department of "Luganskvoda Ltd." for the period of 05/2011- 07/2011

/8/ Report on electric energy consumption by ACU Western Filtration Plant "Luganskvoda Ltd." for the period of 05/2011- 07/2011

/9/ Report on electric energy consumption by Alchevsk administration of "Luganskvoda Ltd." for the period of 05/2011- 07/2011

/10/ Report on electric energy consumption by Slavianoserbskyi Department of "Luganskvoda Ltd." for the period of 05/2011- 07/2011

/11/ Report on electric energy consumption by "Luganskvoda Ltd." for the period of 05/2011- 07/2011

/12/ Report on fuel, heat power and electric power consumption for January-December 2007 of the Administration "Western filtration plant" of "RUE Company "Luganskvoda Ltd." (Form #11-MTP)

/13/ Report on fuel, heat power and electric power consumption for January-December 2007 of the Lutuginskyi division of "RUE Company "Luganskvoda Ltd." (Form #11-MTP)

/14/ Report on fuel, heat power and electric power consumption for January-December 2007 of "RUE Company "Luganskvoda Ltd.". (Form #11-MTP)

/15/ Report on fuel, heat power and electric power consumption for January-December 2007 of the Pivdennyi RVU of "RUE Company "Luganskvoda Ltd." (Form #11-MTP)

/16/ Certificate on Facility Readiness for Commissioning "Replacement of submerged pumping equipment with imported equipment (5 units). Derkulskyi water intake" at "Luganskvoda Ltd."

/17/ Permit № 4424883502-4 for pollutant emissions into the atmosphere from stationary sources dated 30/09/09 № 5/279

/18/ Annex to the special water use permit # Ukr. 335 "Luganskvoda Ltd." "Svitlichanskyi administration" separate sub department (valid from 01/01/2011 to 01/04/2012)

/19/ Permit for special water use # Ukr. 335 Lug issued by the Ministry of Environment in the Luhansk region

/20/ Permit for special water use # Ukr. 335 “Luganskvoda Ltd.” “Svitlichanskyi administration” separate sub department, id. code. # 35936896

/21/ Annex 1 to the special water use permit # Ukr. 335 Lug. Permitted discharge of pollutants with return waters of Svitlichanskyi Administration

/22/ Information about issuance of permits for special water use and intakes at "Luganskvoda Ltd." for 2011

/23/ Report on electric energy consumption of “Slovianoserbskyi Department" separate sub department of "Luganskvoda Ltd." for the period of 05/2011- 07/2011

/24/ Report on electric energy consumption of "Stakhanov Department" of "Luganskvoda Ltd." for the period of 05/2011- 07/2011

/25/ Certificate on Facility Readiness for Commissioning # 63, dated 01/03/2011, Installation of a cascade pumping plant consisting of 2 pumps with frequency converters for water supply to Kirovsk city, pumping plant Svetlychanska of 2nd lift

/26/ Certificate on Facility Readiness for Commissioning # 64, dated 01/03/2011, Installation of a cascade pumping plant consisting of 2 pumps with frequency converters for water supply to Bryanka city, 600m^3/125m WFS of 4th lift

/27/ Certificate on Facility Readiness for Commissioning # 65, dated 01/04/2011, Reconstruction of Yanovska pumping plant of 3rd lift with installation of a cascade pumping plant with frequency converter

/28/ Certificate on Facility Readiness for Commissioning # 74, dated 01/08/2011, Replacement of pumping equipment at Slovianoserbska pumping plant of 2nd lift

/29/ Certificate on Facility Readiness for Commissioning # 75, dated 01/08/2011, Replacement of pumping equipment at Krasnolymanska pumping plant of 2nd lift

Persons interviewed:

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

/1/ Anchishkin A.G. – Head of energy and mechanical services

/2/ Tsygoev A.M. – Main power engineering specialist

/3/ Tkachenko O.M. – Deputy of main power engineering specialist

/4/ Pavlenko E.M. – Engineer

/5/ Movchan S.V. – Head of Production and Technical Department

/6/ Shyngareva I.I. – Hydro geologist

/7/ Slyeta U.N. – Lead engineer

/8/ Ivanova G.V. – Lead engineer

/9/ Pryadko V.B. – Head of Slavyanoserbsk division

/10/ Vandin A.I. – Operator of Slavyanoserbsk pumping plant

/11/ Mozhnyakov D.N. – Chief Engineer of Lutuginskyi division

/12/ Pryadko V.B. – Head of Krasnolimanskaya pumping plant

/13/ Kashyntsev A.V. – Operator of Krasnolimanskaya pumping plant

/14/ Didenko A.P. – Head of Slavyanoserbsk pumping plant of the third lift

/15/ Bashlakova S.L. – Operator of Slavyanoserbsk pumping plant

/16/ Artsev A.V. – Head of Slavyanoserbsk lift pumping plant of the fourth lift

/17/ Shchetinina I.V. – Operator of Slavyanoserbsk pumping plant

/18/ Apostolaka S.B. – JI Consultant of VEMA S.A.

/19/ Vorobyov Ye.V. – JI Consultant of VEMA S.A.

APPENDIX A: VERIFICATION PROTOCOL

BUREAU VERITAS CERTIFICATION HOLDING SAS

JI PROJECT VERIFICATION PROTOCOL

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

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
Project approvals by Parties involved					
90	Has the NFPs 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 has been approved by both Host Party (Ukraine) and the party – buyer of the emission reduction units (Switzerland). The Letter of Approval 1808/23/7 issued by the National Environmental Investment Agency dated 09/11/2010 and the Letter of Approval J294-0485 issued by the Federal Office for the Environment (FOEN) of Switzerland dated 26/10/2010 were presented to the	**CAR 01**. Please provide information about project registration in the MR.	The project was registered under the registration number UA1000195. Required information was included to the MR version 02.	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
		verification team. However, no information on project registration was included in MR ver.1.			
91	Are all the written project approvals by Parties involved unconditional?	See cl.90 above	See cl.90 above	See cl.90 above	OK
Project implementation					
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?	The project is being implemented in accordance with the determined PDD. There were some insignificant deviations from the PDD in respect of capacity of the installed pumping equipment caused by the change in demand for water volume to be supplied to the customers.	N/a	N/a	OK
93	What is the status of operation of the project during the monitoring period?	Mainly the project measures are being implemented according to the implementation schedule presented in the determined PDD ver.02. as of 04/10/2010. The first reconstruction measures under the project started at the end of 2007. During the monitoring period of	**CAR 02**. Please provide in the MR the information regarding implementation status of all project measures envisaged in the PDD. **CAR 03.** Please	During the monitoring period of 01/05/2011 - 31/7/2011 7 units of pumping equipment and 5 frequency regulators were installed. Other measures were not carried out. Certificates of brining	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
		May-July 2011 the project was operational and generated emission reduction units, although full completion of installation of all project measures is planned for the end of 2011.	provide documents confirming implementation of equipment to be installed under the project.	into service of pumping equipment, Certificates of bringing into service of frequency regulators and other supporting documents were submitted to the verification team.	
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?	There are a few deviations from the monitoring plan included in the determined PDD. Due to the fact that the original monitoring plan provided for calculation of project and baseline emissions as well as emission reductions on an annual basis, it has been reviewed to allow for the monitoring process of 3 months (May – July, 2011). Formulae to calculate emissions have been adapted to the monitoring period of 1 month instead of 1-year period, which was established	**CAR 04.** A specific approach based on the methodology AM0020 "Baseline methodology for water pumping efficiency improvements", Version 02, approved by Executive Committee of Clean Development Mechanism was used in the project in the course of determining the	An appropriate reference to the Methodology was provided in the Monitoring report version 02.	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
		in the original monitoring plan specified in the PDD. This allowed for making calculations for 3 months. To improve the accuracy of calculations of emission reductions, and to consider the fact that the volume of water supply to some extent depends on the season, the calculation of value of baseline parameter PPER - specific consumption of electricity per unit of water in 2007 - for each month of 2007 was made, and these historical monthly values were used to determine baseline emissions for each month of the reporting period. New formulae are provided in the Monitoring Report, version 02 as of August 22, 2011.	baseline. Please provide a reference to the Methodology in the MR.		
95 (a)	For calculating the emission reductions or enhancements of net removals, were key factors, e.g. those listed in 23 (b) (i)-(vii) above, influencing the baseline emissions or net removals and the	For calculating the emission reductions, key factors such as increased demand for water amount to be supplied to the customers, applicable tariffs	N/a	N/a	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
	activity level of the project and the emissions or removals as well as risks associated with the project taken into account, as appropriate?	for water supply and drainage, state policies in potable water and potable water supply sector, experience in implementation of measures provided for by the project, existing practice in Ukraine in this sphere, financial costs and experience as well as sectoral policies of reforms in the water supply sphere and legislation 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, as appropriate.			
95 (b)	Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?	Yes, data sources used for calculating emission reductions or enhancements of net removals are clearly identified, reliable and transparent.	**CAR 05.** Please specify baseline, project GHG emissions and emission reductions in tCO2 equivalent. **CL 01.** Section D.1.5. states that	Corrections were provided in the MR version 02. Baseline, project emissions and GHG emission reductions were presented in Table 14 of the Monitoring Peport	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
			emission reductions under the project are calculated as the difference between baseline and project emissions Please specify this data for reporting period in Table 14 in the MR.	version 02.	
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?	Yes, emission factors, including default emission factors, if used for calculating the emission reductions or enhancements of net removals, are selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice. In calculations carbon dioxide emission factor for electricity consumption in accordance with Decree # 75 of the National Environmental Investment Agency of Ukraine	**CL 02.** In the Table 5 Section B.2.1. of the MR it is stated that EF factor was determined in accordance with Decrees # 43 and # 75 NEIA. Please delete unnecessary information.	In calculations carbon dioxide emission factor for electricity consumption in accordance with Decree # 75 of the National Environmental Investment Agency of Ukraine "On approval of specific carbon dioxide emission factors in 2011" dated 12/05/2011 was used. Reference to the Decree # 43 is removed.	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
		"On approval of specific carbon dioxide emission factors in 2011" dated 12/05/2011 was used.			
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?	Calculation of emission reductions is based on conservative assumptions and the most plausible scenarios in a transparent manner.	N/a	N/a	OK
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	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	N/a
97 (b)	If the determination was conducted on the basis of an overall monitoring plan, have the project participants submitted a common monitoring report?	N/a	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
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	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?	In the course of the 4th monitoring period (01/05/2011 – 31/07/2011) the original monitoring plan described in the registered PDD version 02 was changed by the project participants. The deviations relate to the periodicity of the emission reduction calculation which was changed from a year to a month in order to allow for the three-month-monitoring process (from May to July 2011). Relevant justification has been provided in Section A.8 of the	N/a	N/a	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
		Monitoring Report.			
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 for the establishment of monitoring plans?	The proposed revision improves the accuracy and applicability of information collected compared to the original monitoring plan without changing conformity with the relevant rules and regulations for the establishment of monitoring plans.	N/a	N/a	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
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 is in accordance with the monitoring plan, including the quality control and quality assurance procedures.	**CAR 06.** Please provide data quality control procedures description. **CAR 07**. Please provide information on the frequency/ periodicity of recording of parameters that are to be monitored.	Provided in the MR version 02.	Issue ia closed based on the information presented in the MR version 02.
101 (b)	Is the function of the monitoring equipment, including its calibration status, is in order?	Yes, The function of the monitoring equipment, including its calibration status, is in order. According to the effective legislation "On metrology and metrological activity" all metering devices in Ukraine shall conform to stated requirements of corresponding standards and be calibrated periodically. Flow meters were calibrated by Lugansk Centre of Meters Standardization,	**CAR 08.** Dates of the last calibrations /verifications are not stated for all meters. Please add information to Annex 2 to the MR.	Information regarding the date of the last meters calibration was provided in Annex 2.	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
		Metrology and Certification. Verification of commercial electrical meters of «Luganskvoda Ltd.» was executed by Luganskstandardmetrology. The project complies with legal requirements to the calibration and verification. However, some dates of the last calibrations/verifications stated in the Annex 2 (Excel file) to the MR are missing.			
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	The evidence and records used for the monitoring are maintained in a traceable manner. «Luganskvoda Ltd.» collects and keeps the data relating to electric energy and acquired water for water-supply in the forms of electric energy and acquired water bills. All necessary information for monitoring of GHGs emission reductions are stored in paper or/and electronic formats and will be kept till the	**CAR 09.** Please provide justification documents regarding the data and records used for the monitoring.	Electric energy logbooks, lifted water logbooks, reports on electricity consumption by departments, reports of water lifted in May-July 2011 were provided to the verification team.	OK

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
		end of the crediting period and for two years after the last transaction with ERUs from the project.			
101 (d)	Is the data collection and management system for the project in accordance with the monitoring plan?	The data collection and management system for the project is in accordance with the monitoring plan. The verification team confirms effectiveness of the existing management and operational systems and found them eligible for reliable project monitoring.	**CL 03.** Please check the numbering of the Tables and Figures in the MR	Appropriate corrections were made in the MR, version 02.	OK
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	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	N/a
104	Does the monitoring period not overlap with previous monitoring periods?	N/a	N/a	N/a	N/a
105	If the AIE learns of an erroneously included JPA, has the AIE informed the JISC of its findings in writing?	N/a	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
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; − 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?	N/a	N/a	N/a	N/a
107	Is the sampling plan ready for publication	N/a	N/a	N/a	N/a

DVM Paragraph	Check Item	Initial finding	Action requested to project participants	Review of project Participants' action	Conclusion
	through the secretariat along with the verification report and supporting documentation?				
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	N/a
109	Is the sampling plan available for submission to the secretariat for the JISC.s ex ante assessment? (Optional)	N/a	N/a	N/a	N/a
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	N/a

TABLE 2 RESOLUTION OF CLARIFICATION AND CORRECTIVE ACTION REQUESTS

Clarification and corrective action requests issued by the verification team	Ref to checklist question in Table 1	Summary of project participant's response	Verification team conclusion
CAR 01. Please provide information about project registration in the MR.	90	The project was registered under the registration number UA1000195. Required information was included to the MR version 02.	CAR is closed based on information, provided in the MR version 02.
CAR 02. Please provide in the MR the information regarding implementation status of all project measures envisaged in the PDD.	93	During the monitoring period of 01/05/2011-31/7/2011 7 units of pumping equipment and 5 frequency regulators were installed. Other measures were not carried out.	CAR 02 is closed based on appropriate clarifications in the MR version 02.
CAR 03. Please provide documents confirming implementation of equipment to be installed under the project.	93	Certificates of brining into service of pumping equipment, Certificates of bringing into service of frequency regulators and other supporting documents were submitted to verification team.	The relevant documents are provided, CAR is closed.

CAR 04. A specific approach based on the methodology AM0020 "Baseline methodology for water pumping efficiency improvements", Version 02, approved by Executive Committee of Clean Development Mechanism was used in the project in the course of determining the baseline. Please provide a reference to the Methodology in the MR.	94	An appropriate reference to the Methodology was presented in the Monitoring report version 02.	Corrections were made, the issue closed.
CAR 05. Please specify baseline, project GHG emissions and emission reductions in tCO2 equivalent.	95(b)	Corrections were made in the MR version 02.	The issue is closed based on the necessary changes.
CAR 06. Please provide data quality control procedures description.	101 (a)	Description of data quality control procedures was provided in the MR version 02.	The issue is closed based on the necessary changes.
CAR 07. Please provide information on the frequency/periodicity of recording parameters that are to be monitored.	101 (a)	Information on the frequency/periodicity of recording parameters that are to be monitored was provided in the MR version 02.	The issue is closed based on information provided in Annex 2 in the MR version 02.
CAR 08. Dates of the last calibrations/verifications are not indicated for all meters. Please add information to Annex 2 of the MR.	101 (b)	Information regarding the date of the last meters calibration was provided in Annex 2. “Project and monitoring equipment” to the MR.	The issue is closed based on information provided in Annex 2 in the MR version 02.
CAR 09. Please provide justification documents regarding the data and records used for the monitoring.	101 (c)	Electric energy logbooks, lifted water logbooks, reports on electricity consumption by departments, reports of water lifted in May-July 2011 were provided to the verification team.	The issue is closed based on provision of supporting documents.

CL 01. Section D.1.5. states that emission reductions under the project are calculated as the difference between baseline and project emissions Please specify this data for reporting period in Table 14 in the MR.	95 (b)	Baseline, project emissions and GHG emission reductions are presented in Table 14 of the Monitoring Peport version 02.	The issue is closed based on provided information.
CL 02. In the Table 5 Section B.2.1. of the MR it is stated that EF factor was determined in accordance with Decrees # 43 and # 75 NEIA. Please delete unnecessary information.	95 (c)	In calculations carbon dioxide emission factor for electricity consumption in accordance with Decree # 75 of the National Environmental Investment Agency of Ukraine "On approval of specific carbon dioxide emission factors in 2011" dated 12/05/2011 was used. Reference to the Decree # 43 is removed.	The issue is closed based on the necessary changes.
CL 03. Please check the numbering of the Tables and Figures in the MR.	101 (d)	Appropriate corrections were made in the MR version 02.	Corrections were made, the issue is closed.