"JSC HALOPOLIMER PERM"

DETERMINATION PROTOCOL ON THE REVISED MONITORING PLAN

"HFC-23 DESTRUCTION AT JSC HALOGEN, PERM"

BUREAU VERITAS CERTIFICATION

REPORT NO. RUSSIA-VER/0139/2011

REVISION NO. 01

Report No: RUSSIA-ver/0139/2011 rev.01

DETERMINATION PROTOCOL

"HFC-23 destruction at JSC Halogen, Perm "

Date of first issue: 21/06/2011	Organizational unit: Bureau Veritas Certification Holding SAS
Client: "JSC "HaloPolymer Perm"	Client ref.: Mr. P. Boyko

Summary:

Bureau Veritas Certification has made determination of the revised Monitoring Plan of "HFC-23 destruction at JSC Halogen, Perm" (sectoral scope 11), project of JSC "HaloPolymer Perm" located in Perm, Perm Krai, Russian Federation, 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 determination scope is defined as a independent review and ex post determination by the Accredited Entity of the revised Monitoring Plan and consisted of the following three phases: i) desk review of revised Monitoring Plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final Determination Protocol and Opinion. The overall determination, from Contract Review to Determination Protocol and Opinion, was conducted using Bureau Veritas Certification internal procedures.

The output of the determination process is a list of 8 Corrective Actions Requests (CAR), 2 Clarification Request (CL) and 2 Forward Action Request (FAR) presented in Determination Protocol. The requests were closed based on appropriate actions carried out by PP.

In summary and as an Opinion, Bureau Veritas Certification confirms that the proposed revisions of the Monitoring Plan improve applicability of information collected, compared to the original monitoring plan without changing conformity with the relevant rules and regulations for the establishments of monitoring plans as per paragraph 40 of the Guidance on criteria for baseline setting and monitoring, Version 02.

Report No.: RUSSIA/0138/2011	Subject Group: JI	
Project title: "HFC-23 destruction at JSC Halogen, Perm"		
Work carried out by: Vera Skitina – Team Leader, Lead verifier Dmitriy Moldavskiy – JI specialist		
Work reviewed by: Leonid Yaskin – Internal Technical Reviewer Igor Maslennikov – JI specialist		
Work approved by: Leonid Yaskin – Operational Manager		
Date of this revision: 21/06/2011	Rev. No.: 01	Number of pages: 23

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DETERMINATION PROTOCOL O THE COMPANY REVISED MONITORING PLAN

Table 1
Check list for determination, according JOINT IMPLEMENTATION DETERMINATION AND VERIFICATION MANUAL (Version 01)

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
Monitoring plan				
35	Does the PDD explicitly indicate which of the following approaches is used? - JI specific approach - Approved CDM methodology approach	The Revised section D JI0115 PDD "HFC-23 destruction at JSC Halogen, Perm". Version 2.0 Dated 02 February 2009 explicitly indicates that a JI specific approach with CDM AM0001/Version 05.2 "Incineration of HFC23 waste streams" regarding monitoring was used. **CAR 01.** Please provide the Revised Section D of JI0115 PDD "HFC-23 destruction at JSC Halogen, Perm". Version 2.0 Dated 02 February 2009in the official format with project owner's validation evidence.	CAR 01	OK
JI specific approach only				
36 (a)	Does the monitoring plan describe: - All relevant factors and key characteristics that will be monitored? - The period in which they will be monitored? - All decisive factors for the control and reporting of project performance?	The revised monitoring plan includes deviations from JI0115 PDD "HFC-23 destruction at JSC Halogen, Perm". Version 2.0 Dated 02 February 2009 that were fully addressed and justified in the Revised Section D of the PDD. These revisions were fully justified by the verifier and found appropriate for the GHG emission reduction	Pending	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		calculation and meet the requirements of the paragraph 40 of the "Guidance on criteria for baseline setting and monitoring, Version 02": "the project participants are encouraged to improve the monitoring process and its results. Revisions, if any, to the monitoring plan to improve the accuracy and/or applicability of information collected shall be justified by the project participants and shall be submitted for the determination referred to in paragraph 37 of the JI guidelines by the AIE. In this case the AIE shall determine whether the proposed revisions improve accuracy and/or applicability of information collected, compared to the original monitoring plan without changing conformity with the relevant rules and regulations for the establishments of monitoring plans and in case of a positive determination, shall proceed with the determination referred to in paragraph 37 of the JI guidelines. The justifications are subject of PP response to the CARs issued within the Protocol (refer to CAR 02-CAR 09). The revised monitoring plan describes the relevant factors that will be monitored The relevant monitoring points are defined in Section D.1.1.1, D.1.1.3 and D.1.3.1 and include parameters: 1. The quantity of technological emissions of HFC23 from HCFC22 production line (measured continuously		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		by a mass flow meter installed on the outlet pipeline from the emission source (column K-94)); 2. Content of HFC23 (measured by laboratory chromatographs daily); 3. The quantity of HFC23 technological emissions fed to the thermal destruction unit (measured continuously by two down-the-line flow meters installed on the waste feeding line); 4. Content of HFC23 (measured by laboratory chromatographs daily); 5. The volume of effluent gases from the unit (measured by a volumetric flow-meter. HFC23 content in the gases is measured by a laboratory chromatograph once a week); 6. In case HFC23 is recovered for sale, its quantity is determined on a monthly basis as a sum of the amount of the product loaded into cylinders and containers (measured by scales) and finished product left in the collector (measured by the level meter of the finished product collector); 7. Electricity consumption (measured on the basis of electricity consumption standards which are approved		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		annually); 8. Steam consumption (measured by heat meter); 9. Natural gas consumption (measured by flow meter); 10. The amount of liquid effluents and their parameters (pH, COD BOD, suspended solids, fluorides and metals) are measured in the established order. Note 1: The quantity of gaseous emissions (CO, HCl, HF, Cl2, organic carbon, dioxins and NOx) is measured in compliance with the current environmental standards of Russia. Note 2: The amount of liquid effluents and its parameters (pH, COD BOD, suspended solids, fluorides and metals) are not measured as only utilizable wastes are generated in the production process. All the measuring equipment meets up-to-date standards and is subject to regular calibration. The equipment is calibrated by the special organization which is entitled to perform this type of activities. The procedures for monitoring equipment control, maintenance and repair are subject of internal plant instructions.		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		All the measuring equipment meets up-to-date standards and is subject to regular calibration. The equipment is calibrated by the special organization which is entitled to perform this type of activities. The procedures for monitoring equipment control, maintenance and repair are subject of internal plant instructions. - the periods in which they will be monitored: continuously; - all decisive factors for the control and reporting of project performance: ecological reporting, quality control (QC) and quality assurance (QA) procedures; the operational and management structure is applied in the revised monitoring plan without changing the conformity with the original Section B of the PDD.		
36 (b)	Does the monitoring plan specify the indicators, constants and variables used that are reliable, valid and provide transparent picture of the emission reductions or enhancements of net removals to be monitored?	The revised monitoring plan specifies the indicators, constants and variables indicated in Section D. Conclusion is pending a response to CAR 02.	OK	OK
36 (b)	If default values are used: – Are accuracy and reasonableness carefully balanced in their selection? – Do the default values originate from	The used default values were presented in Section D.1.1.2, D.1.1.4 and D.1.3.2. **CAR 02.** Please justify what technical reliable	CAR 02 CAR 03 CAR 04 CAR 05	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	recognized sources? – Are the default values supported by statistical analyses providing reasonable confidence levels? – Are the default values presented in a transparent manner?	information is not available to made a conclusion of non-applicability the cut-off conditions set by the PDD for the baseline GHG emission calculation (refer to the Section Justification of revisions to the monitoring plan of the project design document "HFC23 destruction at JSC Halogen, Perm" , page 1, paragraph 2). **CAR 03.** No sufficient foundation of evidence for the justification made to spring to the conclusion that Data provided in the table B1-1 of PDD, on the base of which the minimum value of the fraction of HFC23 per unit of HCFC-22 produced at the plant, are incorrect (refer to Table B.1.1). The Data in Table B.1.1 PDD and estimated ones given in the Section "Justification of inapplicability of the maximum annual amount of HCFC22 produced at the plant during the historical period 2002-2004" are approximately similar; no comparable analysis done to prove the above mentioned conclusion. **CAR 04.** No information provided in the Revised Section D (MP) about, how the Data in Table 1.1 PDD were obtained to prove the wording: "It should be noted that JSC "HaloPolimer-Perm" has not the results of direct measurements of HCFC22 output in the period of 2000-2007, on the base of which one can confirm the reliability of HCFC22 output values presented in the	CAR 06 CL 01 CL 02 FAR 01 FAR 02	

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		table above. Moreover these values do not correspond with the Plant's data of HCFC22 production accounting, which made for that period the following figures*". **CAR 05.** The is no credible analysis done to justify the inapplicability of minimum average annual value of fraction of HFC23 per unit of HCFC-22 produced at the plant (w_h) with regard to the actual data of "HaloPolimer Perm" JSC. during the period 2002-2007 (refer to the PDD Table B.1-1, line w_h). Please take into account the CL 02 response also and statement in the PDD: "for w_h we assume its minimum average value according to actual data of JSC HaloPolimer Perm over the period 2002-2004" (w_h = 1.3% as per PDD Section D.1.1.4, page 34). **CAR 06.** The reference to the findings obtained under the 8 research runs of HCFC22 synthesis reaction which were published in the article Kinetics of chloroform fluorination by HF catalyzed by antimony pentacloride† do not applicable for the justifications of the HFC23 generation rate per unit production of		

* Reference data. Production of fluoroplastics and HCFC22 in 2000-2010 at JSC "Halogen"

† Journal of Fluorine Chemistry, 44 (1989). Kinetics of chloroform fluorination by HF catalyzed by antimony pentacloride, table 1. Compositions obtained by chemical analysis at the outlet of the continuous reactor in the chloroform fluorination.

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		HFCAC22 (refer to PDD Section D.1.1.4 w_h = 1.3%, page 34). **CL 01.** Please clarify the term "synthesis-gas fed to destruction" "raw gas", "acid gas" and their applicability to the annual value of fraction of HFC23 per unit of HCFC-22 produced at the plant (w_h) calculation. The PDD does not contain the terms. **CL 02.** Please clarify whether the monitoring points for direct measuring, set at the pipelines offtaking after the rectification column to the destruction unit, are the same ones, which are set in the MP of the PDD. **FAR 01.** Please provide in the MR an Annex with an independent technical expert Conclusion on the Revised Monitoring Plan and make it available to the AIE for the review. **FAR 02.** Please ensure the updating the existed version of Corporate Standard СТП 47-40-2010 "Regulation for destruction process of HFC23 waste generated".		
36 (b) (i)	For those values that are to be provided by the project participants, does the monitoring plan clearly indicate how the values are to be selected and justified?	Emission factors, including default emission factors, used for calculating the emission reductions, selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice: - **EF** (refer to Formulae (D.1-1) in MR Section	CAR 07	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		D.1.1.2) is the emissions factor that determines the amount of CO2 generated per 1 tone of destroyed HFC23. According to CDM methodology AM0001, EF =0,62857 t CO2-e/t.; - $EF_{CO2,grid,y}$ is the C02 emissions factor for grid electricity during the year *y*, kg CO2/MWh. According to Operational Guidelines for Project Design Documents of Joint Implementation Projects. Volume 1. General guidelines. Version 2.3. Ministry of Economic Affairs of the Netherlands. May 2004. GHG emission factor for grid electricity consumed in Russia varies for different years of the crediting period (2008-2012) as follows: 2010 = 550 kg CO2/MWh,; (refer to Formulae D.1-17 in the MR Section D.1.3.2). - EF_{st} is the C02 emission factor for steam consumption, t C02/GJ. According to the determined PDD: = 0,07 t C02e/GJ. GWP _ HFC 23 is the Global Warming Potential (GWP) that converts 1 tonne of HFC23 to tonnes of CO2 equivalent, t CO2-e/t. The approved GWP value for HFC23 is 11 700 t CO2-e/t for the first commitment period under the Kyoto		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		Protocol; **CAR 07.** Please provide tables names and their numbering in the Annex of the MR to ensure traceability		
36 (b) (ii)	For other values, – Does the monitoring plan clearly indicate the precise references from which these values are taken? – Is the conservativeness of the values provided justified?	Refer to 36 (b). Conclusion is pending a response to CAR 07.		OK
36 (b) (iii)	For all data sources, does the monitoring plan specify the procedures to be followed if expected data are unavailable?	The procedures are described in the PDD Section D.2.		OK
36 (b) (iv)	Are International System Unit (SI units) used?	Yes, SI units are used.		OK
36 (b) (v)	Does the monitoring plan note any parameters, coefficients, variables, etc. that are used to calculate baseline emissions or net removals but are obtained through monitoring?	Refer to PDD Section D.1.1.3.		OK
36 (b) (v)	Is the use of parameters, coefficients, variables, etc. consistent between the baseline and monitoring plan?	Yes, they are consistent.		OK
36 (c)	Does the monitoring plan draw on the list	Yes.		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	of standard variables contained in appendix B of "Guidance on criteria for baseline setting and monitoring"?			
36 (d)	Does the monitoring plan explicitly and clearly distinguish: (i) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), and that are available already at the stage of determination? (ii) Data and parameters that are not monitored throughout the crediting period, but are determined only once (and thus remain fixed throughout the crediting period), but that are not already available at the stage of determination? (iii) Data and parameters that are monitored throughout the crediting period?	Description of the revised Section D (refer to Section D.1) explicitly and clearly distinguishes: (i) Refer to 36 (b). (ii) N/A. (iii) Refer to 36 (a): parameters marked (1) - (10).		OK
36 (e)	Does the monitoring plan describe the methods employed for data monitoring (including its frequency) and recording?	The monitoring plan describes the methods employed for data monitoring: - For calculating are used computational techniques. The technique and instructions developed and approved in the established		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
		order; - Graphic scheme of monitoring points is provided; Data are collected on a three-tier scheme: - Recorded daily meter readings (or electronic) and recorded in data registers; - Data registers are processed monthly and the data are recorded in the monthly form; - Annual data (or cumulative for certain monitoring period) are formed by summing the data of monthly reporting forms. Recording of data is electronically and paper.		
36 (f)	Does the monitoring plan elaborate all algorithms and formulae used for the estimation/calculation of baseline emissions/removals and project emissions/removals or direct monitoring of emission reductions from the project, leakage, as appropriate?	Formulae are indicated and numbered in Sections D.1.1.2, and D.1.1.4.	OK	OK
36 (f) (i)	Is the underlying rationale for the algorithms/formulae explained?	Conclusion is pending a response to CAR 03 –CAR 06.	Pending	OK
36 (f) (ii)	Are consistent variables, equation formats, subscripts etc. used?	Please refer to 36 (f).		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
36 (f) (iii)	Are all equations numbered?	Yes	OK	OK
36 (f) (iv)	Are all variables, with units indicated defined?	Conclusion is pending a response to CAR 02 –CAR 06.	Pending	OK
36 (f) (v)	Is the conservativeness of the algorithms/procedures justified?	N/A		OK
36 (f) (v)	To the extent possible, are methods to quantitatively account for uncertainty in key parameters included?	N/A		OK
36 (f) (vi)	Is consistency between the elaboration of the baseline scenario and the procedure for calculating the emissions or net removals of the baseline ensured?	Conclusion is pending a response to CAR 02 –CAR 06.	Pending	OK
36 (f) (vii)	Are any parts of the algorithms or formulae that are not self-evident explained?	Conclusion is pending a response to CAR 02 –CAR 06.		
36 (f) (vii)	Is it justified that the procedure is consistent with standard technical procedures in the relevant sector?	Conclusion is pending a response to CAR 02 –CAR 06.		
36 (f) (vii)	Are references provided as necessary?	Conclusion is pending a response to CAR 07.	Pending	OK
36 (f) (vii)	Are implicit and explicit key assumptions explained in a transparent manner?	Conclusion is pending a response to CAR 02 –CAR 06.	Pending	OK
36 (f) (vii)	Is it clearly stated which assumptions and procedures have significant uncertainty	N/A		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	associated with them, and how such uncertainty is to be addressed?			
36 (f) (vii)	Is the uncertainty of key parameters described and, where possible, is an uncertainty range at 95% confidence level for key parameters for the calculation of emission reductions or enhancements of net removals provided?	The uncertainty level of measured parameters is provided; please refer to D.2. It is in the range at 95% confidence level.		OK
36 (g)	Does the monitoring plan identify a national or international monitoring standard if such standard has to be and/or is applied to certain aspects of the project? Does the monitoring plan provide a reference as to where a detailed description of the standard can be found?	N/A		OK
36 (h)	Does the monitoring plan document statistical techniques, if used for monitoring, and that they are used in a conservative manner?	N/A		OK
36 (i)	Does the monitoring plan present the quality assurance and control procedures for the monitoring process, including, as appropriate, information on calibration and on how records on data and/or method validity and accuracy are kept and made	QC/QA procedures are specified in PDD Section D.2. They include basic information about the calibration procedures for gas metering unit (flow meter), gas analyzer (chromatograph), and electric meters.		OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	available upon request?			
36 (j)	Does the monitoring plan clearly identify the responsibilities and the authority regarding the monitoring activities?	The operational and management structure that the project participant(s) will implement in order to monitor emission reduction generated by the project is described in the revised Section D.3 . Responsibilities and the authority regarding the monitoring activities are indicated.		OK
36 (k)	Does the monitoring plan, on the whole, reflect good monitoring practices appropriate to the project type? If it is a JI LULUCF project, is the good practice guidance developed by IPCC applied?	Monitoring techniques are in line with current operation routines.		OK
36 (l)	Does the monitoring plan provide, in tabular form, a complete compilation of the data that need to be collected for its application, including data that are measured or sampled and data that are collected from other sources but not including data that are calculated with equations?	The monitoring plan provides, in tabular form, a complete compilation of the data that need to be collected.		OK
36 (m)	Does the monitoring plan indicate that the data monitored and required for verification are to be kept for two years after the last	**CAR 08.** Please explicitly indicate that the data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the	CAR 08	OK

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	transfer of ERUs for the project?	project.		
37	If selected elements or combinations of approved CDM methodologies or methodological tools are used for establishing the monitoring plan, are the selected elements or combination, together with elements supplementary developed by the project participants in line with 36 above?	N/A		N/A
Approved CDM methodology approach only_Paragraphs 38(a) – 38(d)_Not applicable Applicable to both JI specific approach and approved CDM methodology approach				
39	If the monitoring plan indicates overlapping monitoring periods during the crediting period: (a) Is the underlying project composed of clearly identifiable components for which emission reductions or enhancements of removals can be calculated independently? (b) Can monitoring be performed independently for each of these components (i.e. the data/parameters monitored for one component are not dependent on/effect data/parameters to be monitored for another component)?	N/A		N/A

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	(c) Does the monitoring plan ensure that monitoring is performed for all components and that in these cases all the requirements of the JI guidelines and further guidance by the JISC regarding monitoring are met? (d) Does the monitoring plan explicitly provide for overlapping monitoring periods of clearly defined project components, justify its need and state how the conditions mentioned in (a)-(c) are met?			
Leakage **JI specific approach only**				
40 (a)	Does the PDD appropriately describe an assessment of the potential leakage of the project and appropriately explain which sources of leakage are to be calculated and which can be neglected?	Ye, it does.	OK	OK
40 (b)	Does the PDD provide a procedure for an ex ante estimate of leakage?	N/A	OK	OK
Approved CDM methodology approach only_Paragraph 41_Not applicable **Estimation of emission reductions or enhancements of net removals**				
42	Does the PDD indicate which of the following approaches it chooses?	N/A		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	(a) Assessment of emissions or net removals in the baseline scenario and in the project scenario (b) Direct assessment of emission reductions			
43	If the approach (a) in 42 is chosen, does the PDD provide ex ante estimates of: (a) Emissions or net removals for the project scenario (within the project boundary)? (b) Leakage, as applicable? (c) Emissions or net removals for the baseline scenario (within the project boundary)? (d) Emission reductions or enhancements of net removals adjusted by leakage?	N/A		
44	If the approach (b) in 42 is chosen, does the PDD provide ex ante estimates of: (a) Emission reductions or enhancements of net removals (within the project boundary)? (b) Leakage, as applicable? (c) Emission reductions or enhancements of net removals adjusted by leakage?	N/A N/A		
45	For both approaches in 42	N/A		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	(a) Are the estimates in 43 or 44 given: (i) On a periodic basis? (ii) At least from the beginning until the end of the crediting period? (iii) On a source-by-source/sink-by-sink basis? (iv) For each GHG? (v) In tones of CO2 equivalent, using global warming potentials defined by decision 2/CP.3 or as subsequently revised in accordance with Article 5 of the Kyoto Protocol? (b) Are the formula used for calculating the estimates in 43 or 44 consistent throughout the PDD? (c) For calculating estimates in 43 or 44, are key factors influencing the baseline emissions or removals and the activity level of the project and the emissions or net removals as well as risks associated with the project taken into account, as appropriate? (d) Are data sources used for calculating the estimates in 43 or 44 clearly identified, reliable and transparent?			

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	(e) Are emission factors (including default emission factors) if used for calculating the estimates in 43 or 44 selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice? (f) Is the estimation in 43 or 44 based on conservative assumptions and the most plausible scenarios in a transparent manner? (g) Are the estimates in 43 or 44 consistent throughout the PDD? (h) Is the annual average of estimated emission reductions or enhancements of net removals calculated by dividing the total estimated emission reductions or enhancements of net removals over the crediting period by the total months of the crediting period and multiplying by twelve?			
46	If the calculation of the baseline emissions or net removals is to be performed ex post, does the PDD include an illustrative ex ante emissions or net removals calculation?	N/A		
Approved CDM methodology approach only_Paragraphs 47(a) – 47(b)_Not applicable				

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
Environmental impacts				
48 (a)	Does the PDD list and attach documentation on the analysis of the environmental impacts of the project, including transboundary impacts, in accordance with procedures as determined by the host Party?	N/A		
48 (b)	If the analysis in 48 (a) indicates that the environmental impacts are considered significant by the project participants or the host Party, does the PDD provide conclusion and all references to supporting documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party?	N/A		
49	If stakeholder consultation was undertaken in accordance with the procedure as required by the host Party, does the PDD provide: (a) A list of stakeholders from whom comments on the projects have been received, if any? (b) The nature of the comments?	N/A		

DVM Paragraph	Check Item	Initial finding	Draft Conclusion	Final Conclusion
	(c) A description on whether and how the comments have been addressed?			
Determination regarding small-scale projects (additional elements for assessment)_Paragraphs 50 - 57_Not applicable				
Determination regarding land use, land-use change and forestry projects _Paragraphs 58 – 64(d)_Not applicable				
Determination regarding programmes of activities_Paragraphs 66 – 73_Not applicable				

Table 2 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by determination team	Ref. to checklist question in table 1	Summary of project owner response	Determination team conclusion
CAR 01. Please provide the Revised Section D of JI0115 PDD "HFC-23 destruction at JSC Halogen, Perm". Version 2.0 Dated 02 February 2009in the official format with project owner's validation evidence.	35	Response 1 The official format of the Revised Section D with the project's owner's validation evidence is provided.	Conclusion on Response 1 CAR 01 is closed due to appropriate evidence to AIE.

CAR 02. Please justify what technical reliable information is not available to made a conclusion of non-applicability the cut-off conditions set by the PDD for the baseline GHG emission calculation (refer to the Section Justification of revisions to the monitoring plan of the project design document "HFC23 destruction at JSC Halogen, Perm" , page 1, paragraph 2).	36 (b)	Response 1 This initial part of justification is a preamble of what is unfolded below in a greater detail. Further in Justification the accuracy and representativeness of the cut-off conditions are questioned leading to the conclusion of their elimination of the monitoring. Therefore the righter terms would be not "reliable" but "accurate and representative". Therefore the paragraph will be as follows: «Revisions introduced in the monitoring plan of the project design document (PDD) of the above project represent elimination of such factors as the cut-off conditions and baseline quantity of HFC23 destroyed, which are, in first case, inapplicable due the absence of accurate and representative information, and, in the second case, are inapplicable due to erroneous use of the maximum permissible emissions as a measure of the state regulation of emissions of such a gas and due to the absence of information that HFC23 was historically destroyed". The appropriate correction was made in the Justification.	Conclusion on Response 1 The explanations are accepted. CAR is closed.
CAR 03. No sufficient foundation of evidence for the justification made to spring to the conclusion that Data provided in the table B1-1 of PDD, on the base of which the minimum value of the fraction of HFC23 per unit of HCFC-22 produced at the plant, are incorrect (refer to Table B.1.1). The Data in Table	36 (b)	Response 1 The values of the fraction of HFC23 per unit of HCFC-22 produced in 2002-2004 were provided in PDD cannot be justified by the Plant's official documents. Besides it is quite unclear what the point was (or the points were) which data were taken from for defining the wh. The	Conclusion on Response 1 The correction is accepted. CAR is closed.

B.1.1 PDD and estimated ones given in the Section "Justification of inapplicability of the maximum annual amount of HCFC22 produced at the plant during the historical period 2002-2004" are approximately similar; no comparable analysis done to prove the above mentioned conclusion.		matter is that this factor can be calculated given the results of composition analysis of the HCFC-22 production as after synthesis reactor so in the other HCFC22 production line points. In opinion of JSC HaloPolymer Perm specialist above figures were defined not for some point but on the ground of one-shot analyses which were not duly monitored. Depending on a sampling position point the result of analysis will be different as the target product (HCFC22) is sequentially rectified from impurities. Therefore the above figures are not representative. To make a sufficient foundation the practice of collection and process of information on HCFC-22 composition was presented further. Annual average figures on HFC-23 fraction per unit of HCFC-22 can only be obtained from averaging the actual results of chromatographic analysis of HCFC-22 sampling. The chromatographic analysis is implemented on-shift basis under the permanent technological regulation of HFCF-22 production. Data on composition of HCFC-22 on a base of sampling at certain points of the reactor are registered with Chromatographic control log and are input in the electronic data base. In the end of each month the processed results of analysis (including HFC-23 fraction) in terms of minimal, maximal and and average values are submitted to the technologist of the shop. Further on the average values are registered with the monthly technical reports. According to the results of the chromatographic analysis the actual values of fractions of HFC-23 per unit	

of HCFC produced at the plant in 2002-2006 were as follows:

Table 8. Actual annual average values of HFC-23 fraction per unit of HCFC-22

Designation	Unit	2002	2003	2004
HCFC-22 production	t	6928,4	7245	9524
HFC-23 formation	t	118,2	184,7	212,1
w_h actual*	%	1,79	2,26	2,09
w_h in PDD	%	1,3	1,5	1,4
Divergence	%	30%	99%	59%

As can be seen the divergence between wh values in PDD and values based on data of chromatographic analysis is considerable. Therefore wh values in PDD are not representative.

As per inapplicability of the maximum annual amount of HCFC22 produced at the plant during the historical period 2002-2004.

* EXCEL file_calculations based on data provided by the technologists of the shop of JSC HaloPolymer

The appropriate corrections were made in Justification.
The following correction in Justification was done:
The values of annual amounts of HCFC22 produced in 2002-2004 were provided in the table B.1-1 "Data needed for calculation of GHG emission reductions" of PDD:
Table 1. Annual amounts of HCFC22 produced in 2002-2004 provided in the PDD

Designation	Unit	2002	2003	2004
HCFC-22 production	t	6928,4	7245	9524
HFC-23 formation	t	118,2	184,7	212,1
w_{fi} actual*	%	1,79	2,26	2,09
w_{fi} in PDD	%	1,3	1,5	1,4
Divergence	%	30%	99%	59%

However, these figures are inaccurate. The matter is that they are defined through calculations with the use of old consumption norms that are less accurate than those of nowadays. The old consumption norms were determined

* EXCEL file_calculations based on data provided by the technologists of the shop of JSC HaloPolymer

		on the base of parameters measured during HCFC-22 production process with the use of metering equipment of lower accuracy class. In 2004 there was adoption at the Plant of more accurate metering devices, such as radar level gages that allowed introducing more accurate consumption norms on raw materials (hydrogen fluoride, chloroform) and on HCFC-22 for monomer M-4 production. According to the chief mythologist's information, the radioactive level meters UR-8 installed at HCFC-22 tanks (accuracy class 0.4; relative error +/- 0,8%) were replaced with the radar level gages VEGAFLEX 61 (accuracy class 0.1) and module MAC-D-04 (accuracy class 0.25, relative error +/- 0.3%). The old weigher RP-3Sh at HCFC-22 shipping line (absolute error +/- 5 kg) was replaced with a new automated shipping system (absolute error +/- 2,5 kg). Thus, the accuracy of calculations of HCFC-22 production was improved (by 4 times in accuracy class terms) from 2005 onwards. Below is the table showing the old consumption norms on HCFC-22 production that were before 2005 and the new norms that were introduced after 2005 (Refer to Table 2. Consumption norms on HCFC-22 production at JSC "HaloPolymer-Perm", Justification of revisions to the monitoring plan of the project design document "HFC23 destruction at JSC Halogen, Perm", ver.2, dated 16.06.11). As can be seen from the table 2 consumption norms associated with HCFC-22 production were finally changed	

in 2005 and further on remain constant until present time. The recalculation of HCFC-22 production during 2002-2004 with the use of more accurate norms of 2010 gives divergence from the values of HCFC produced in 2002-2004 provided in the PDD.

Table 3. Divergence in values HCFC-22 production in 2002-2004

Designation	Unit	2002	2003	2004
HCFC-22 production recalculated according to PDD	t	6 928 ,4	7 245 ,0	9 524,0
HCFC-22 production recalculated according to 2010 norms	t	6 601 ,7	8 174 ,1	10 146,8
Absolute divergence	т	-326,7	929,1	622,8
Relative divergence	%	*-4,7*	*12,8*	*6,5*

The divergence in values of HCFC-22 production in 2002-2004 is considerable ranging within -4,7% till 12,8%. Therefore the values of HCFC-22 production in 2002-2004 in PDD are inaccurate and, hence, cannot be applicable

		for setting the cut-off condition for the baseline GHG emissions calculation.	
CAR 04. No information provided in the Revised Section D (MP) about, how the Data in Table 1.1 PDD were obtained to prove the wording: "It should be noted that JSC "HaloPolimer-Perm" has not the results of direct measurements of HCFC22 output in the period of 2000-2007, on the base of which one can confirm the reliability of HCFC22 output values presented in the table above. Moreover these values do not correspond with the Plant's data of HCFC22 production accounting, which made for that period the following figures*".	36 (b)	Response 1 This argumentation was withdrawn from the Justification. The more correct argumentation is about inaccuracy of values of HCFC-22 produced in 2002-2004 as per PDD. In response to CAR 02 above the argumentation is provided in the greater detail. See also Version 2 of the Justification of revisions.	Conclusion on Response 1 The response is accepted. CAR is closed.
CAR 05. The is no credible analysis done to justify the inapplicability of minimum average annual value of fraction of HFC23 per unit of HCFC-22 produced at the plant (w_h) with regard to the actual data of "HaloPolimer Perm" JSC. during the period 2002-2007 (refer to the PDD Table B.1-1, line w_h). Please take into account the CL 02 response	36 (b)	Response 1 The minimum average annual value of fraction of HFC23 per unit of HCFC-22 produced at the plant (wh) is found on the base of inaccurate values of average annual value of fraction of HFC23 per unit of HCFC-22 produced at the Plant during 2002-2004. The values of the fraction of HFC23 per unit of HCFC-22 produced in 2002-2004 were provided in PDD cannot be justified by the Plant's official	Conclusion on Response 1 The response is accepted. CAR is closed.

* Reference data. Production of fluoroplastics and HCFC22 in 2000-2010 at JSC "Halogen"

also and statement in the PDD: "for w_h we assume its minimum average value according to actual data of JSC HaloPolimer Perm over the period 2002-2004" (w_h = 1.3% as per PDD Section D.1.1.4, page 34).		documents. Besides it is quite unclear what the point was (or the points were) which data were taken from for defining the wh. The matter is that this factor can be calculated given the results of composition analysis of the HCFC-22 production as after synthesis reactor so in the other HCFC22 production line points. In opinion of JSC HaloPolymer Perm specialist above figures were defined not for some point but on the ground of one-shot analyses which were not duly monitored. Depending on a sampling position point the result of analysis will be different as the target product (HCFC22) is sequentially rectified from impurities. Therefore the above figures are not representative. To make a sufficient foundation the practice of collection and process of information on HCFC-22 composition was presented further. Annual average figures on HFC-23 fraction per unit of HCFC-22 can only be obtained from averaging the actual results of chromatographic analysis of HCFC-22 sampling. The chromatographic analysis is implemented on-shift basis under the permanent technological regulation of HFCF-22 production. Data on composition of HCFC-22 on a base of sampling at certain points of the reactor are registered with Chromatographic control log and are input in the electronic data base. In the end of each month the processed results of analysis (including HFC-23 fraction) in terms of minimal, maximal and and average values are submitted to the technologist of the shop. Further on the	

average values are registered with the monthly technical reports. According to the results of the chromatographic analysis the actual values of fractions of HFC-23 per unit of HCFC produced at the plant in 2002-2006 were as follows:

Table 8. Actual annual average values of HFC-23 fraction per unit of HCFC-22

Designation	Unit	2002	2003	2004
HCFC-22 production	t	6928,4	7245	9524
HFC-23 formation	t	118,2	184,7	212,1
w_h actual*	%	1,79	2,26	2,09
w_h in PDD	%	1,3	1,5	1,4
Divergence	%	30%	99%	59%

As can be seen the divergence between wh values in PDD and values based on data of chromatographic analysis is considerable. Therefore wh values in PDD are not representative.

* EXCEL file calculations based on data provided by the technologists of the shop of JSC HaloPolymer

		As per inapplicability of the maximum annual amount of HCFC22 produced at the plant during the historical period 2002-2004. The appropriate corrections were made in "Justification".	
CAR 06. The reference to the findings obtained under the 8 research runs of HCFC22 synthesis reaction which were published in the article Kinetics of chloroform fluorination by HF catalyzed by antimony pentacloride* do not applicable for the justifications of the HFC23 generation rate per unit production of HFCAC22 (refer to PDD Section D.1.1.4 wh = 1.3%, page 34).	36 (b)	Response 1 This argumentation was removed from the Justification. Please see the Version 2.	Conclusion on Response 1 The response is accepted. CAR is closed.
CAR 07. Please provide tables names and their numbering in the Annex of the MR to ensure traceability.	36 (b) (i)	Response 1 Done. Please see Version 2 of the Justification.	Conclusion on Response 1 The response is accepted. CAR is closed.
CAR 08. Please explicitly indicate that the data monitored and required for verification are to be kept for two years after the last transfer of ERUs for the project.	36 (m)	Response 1 This statement is provided in the Revised Monitoring Plan.	Conclusion on Response 1 The response is accepted. CAR is closed.

* Journal of Fluorine Chemistry, 44 (1989). Kinetics of chloroform fluorination by HF catalyzed by antimony pentacloride, table 1. Compositions obtained by chemical analysis at the outlet of the continuous reactor in the chloroform fluorination.

CL 01. Please clarify the term "synthesis-gas fed to destruction" "raw gas", "acid gas" and their applicability to the annual value of fraction of HFC23 per unit of HCFC-22 produced at the plant (w_h) calculation. The PDD does not contain the terms.	36 (b)	Response 1 The terms "synthesis gas fed to destruction", "raw gas" and "acid gas" were removed from the Justification to provide consistency with the PDD.	Conclusion on Response 1 The response is accepted. CL is closed.
CL 02. Please clarify whether the monitoring points for direct measuring, set at the pipelines offtaking after the rectification column to the destruction unit, are the same ones, which are set in the MP of the PDD.	36 (b)	Response 1 Yes. All monitoring points remain the same as set in the MP of the PDD. No changes were made in the Revised MP in the positions of the monitoring points.	Conclusion on Response 1 The response is accepted. CL is closed.
FAR 01. Please provide in the MR an Annex with an independent technical expert Conclusion on the Revised Monitoring Plan and make it available to the AIE for the review.	36 (b)	Response 1 Conclusion of the independent expert (Mr. Moldavsliy D.D.) is attached as Appendix 5 to the Revised Monitoring Report for 2010 dd. 22.06.2011.	Conclusion on Response 1 The response is accepted. FAR is closed.
FAR 02. Please ensure the updating the existed version of Corporate Standard СТП 47-40-2010 "Regulation for destruction process of HFC23 waste generated".	36 (b)	Response 1 The appropriate update was introduced in the Corporate Standard СТП 47-40-2010 "Regulation for destruction process of HFC23 waste generated" by the Order # 84 dd. 24.06.2011 "On introduction of deviation # 4 to STP 47-40-2010 "Quality Management System" "Regulation for destruction process of HFC23 waste generated". ". This Order is attached.	Conclusion on Response 1 The response is accepted. FAR is closed.

Bureau Veritas Certification, 21/06/2011

Vera Skitina – Lead Verifier
Dmitriy Moldavskiy – JI specialist, Professor

REFERENCES

Category 1 Documents:
Documents provided by Type the name of the company that relates directly to the GHG components of the project.

/1/ Monitoring Report (Versions 2 dated 22.06.11 and 2.1 (English) 24.06.11) "HFC-23 destruction at JSC Halogen, Perm". Monitoring period 01.01.2010 – 30.09.2010.
Excel spreadsheet with calculation of emission reduction. Provided by PDD Developer.

/2/ Monitoring Report for 2009 Version 1 (English) dated 01/04/2010 "HFC-23 destruction at JSC Halogen, Perm". Monitoring period 01.01.2009 – 31.12.2009.
Appendix 4 to Monitoring Report, "GHG Calculation".

/3/ Arrangement #372/1 dated 17.12.07 "About the acceptance committee for acceptance of technological scheme of transfer of HFC 23 to the thermal destruction process in workshop #27"

/4/ State certification of process

/5/ Technical passport "Receiver Tank (E-5), registration #70854", dated 02.04.09" valid for the date of verification

/6/ Technical Data for calculation of GHG in 2008, 2009, 2010 JSC "HaloPolymer Perm"

/7/ JD's for the personnel, involved in the monitoring of GHG process, JSC "Halogen"

/8/ Certificate to measuring complex for natural gas consumption #2691, workshop #26, valid for the date of verification, JSC "HaloPolymer Perm", valid for the date of the verification.

/9/ Production procedures for FOC Thermal Destruction Installation

/10/ "Provisions about the Main Metrologist Service. П-1СГ-СГМетр", dated 21.09.10

/11/ "Provisions about the Technical Department of JSC "Halogen". Revision #1 to П-1-ТО, dated 15.01.08

/12/ "Provisions about the Quality Department of JSC "Halogen", dated 21.10.09
Standard Provisions about manufacturing workshop of JSC ТП-1-ТО, JSC"Halogen", dated 01.09.07

/13/ Orders #78/1 and #90.1 dated 16.04.09 and 20.05.2010 "About Corporate Standard implementation"

/14/ Corporate Standard СТП 47-40-2010 "Regulation for destruction process of HFC23 waste generated"

/15/ Revision #4 to Corporate Standard СТП 47-40-2010 "Regulation for destruction

process of HFC23 waste generated" dated 24.06.11

/16/ "Provisions about the Air Service Laboratory", valid for the date of the verification.

/17/ Projections of maximum permissible emissions of polluting substances in atmospheric air (MPE) of HFC 23 from the source #148. Dated 2008.

/18/ Attestation on Methodology metering #223.1.02.11.35/2010, valid till 19.04.15

/19/ Provision to Attestation on Methodology metering #223.1.02.11.35/2010 (МВИ № 468-00-2007

/20/ Methodology metering № 458-00-2007, 2007

/21/ Methodology metering № 468-00-2007, 2007

/22/ Schedule for instrument calibration scale of measuring equipment involved in monitoring of GHG emission at JSC "Halogen for 2010. Workshop #26

/23/ Inventory of measuring devices involved in monitoring of GHG emission at JSC "Halogen, actual for 17.05.10, Data of calibrations status.

/24/ Register of the measuring equipment for GHG monitoring.

/25/ Records of testing, calibration #16/8421 valid till 2011 of gas chromatograph CRISTALLUX-4000M сПИД and ЛУМ-80 сПИД , valid YTD

/26/ Records of testing, calibration of level meter E101a, valid YTD

/27/ Calibration certificate Mass flow meter Promass 83F15. Valid for the verification stage.

/28/ Calibration Certificate for Chromatograph Cristallux-4000M. Valid for the verification stage.

/29/ Calibration Certificate for Chromatograph LKhM-80. Valid for the verification stage.

/30/ Calibration Certificate for Chromatograph Tsvet-800. Valid for the verification stage.

/31/ Calibration Certificate for Flow meter Testo №08.2514. Valid till 2012.

/32/ Calibration Certificate for gas corrector №15-27-2010. Valid till 2014.

/33/ Technical Passports «П-542», «П-548» for calibrating laboratory mixtures, valid for the date of verification

/34/ List of Records for the workshop #26 for 2010

/35/ Register of the equipment installed in frame of JI project for 2010

/36/ Schedule of preventive protective maintenance for air emission monitoring laboratory for 2010

/37/ Schedule of preventive protective maintenance in works #26 building 203 for 2010

/38/ Schedule of preventive protective maintenance in works #26 building 256 for 2010

/39/ Provision for attestation process of managers and specialists of JSC "Halogen", СТП-18-57-2009

/40/ Training records for the personnel, responsible for monitoring of GHG emission at JSC "Halogen

/41/ Order #7/1, dated 15.01.10 "About responsibility of A.Birt as a coordinator and responsible for preparation of the Monitoring Report for GHG emission in frame of Corporate Standard СТП 47-40-2009 "Regulation for destruction process of HFC23 waste generated"

/42/ Order #404, dated 29.12.07 "About responsibilities of personnel for preparation of the initial data for Monitoring Report for GHG emission in frame of Corporate Standard СТП 47-40-2009 "Regulation for destruction process of HFC23 waste generated"

/43/ Technical Passport of measuring device for natural gas consumption

/44/ Technical data of HFC23 waste quantity supplied to destruction process. Monthly Technical Reports for 2010

/45/ Cumulative ttechnical data of energy resources consumption by the FOC thermal destruction installation, 2010. Monthly data

/46/ Technical data of volume of effluent gases emitted from K-94 for 2010. Monthly data

/47/ Technical data for mass contents in the outlet pipeline emission for 2010

/48/ Technical data of HFC23 mass contents in HFC23 waste generated and supplied for destruction for 2010. Monthly data

/49/ Technical Protocol of natural gas testing #21-06 dated 21.06.10

/50/ Working hours accounting records of the FOC thermal destruction installation, 2010. Monthly data

/51/ Arrangement #403 dated 29.12.07 "About GHG Data base of JSC "Halogen" record-keeping" as per Corporate Standard СТП 47-40-2009 "Regulation for destruction process of HFC23 waste generated"

/52/ JSC "HaloPolymer Perm"_Order # 84 dd 24.06.2011_On introduction of deviation to STP 47-40-2010

/53/ STP 47-40-2010 updated with revision 4. 19.05.10.

/54/ Certificate to QMS of JSC "Halogen" issued by TUW TURINGEN, valid till 29/11/12

/55/ QMS Standard "Control of Records" СТП 07-56-2009

/56/ Internal audits reports, 2009-2010

/57/ Register of personnel involved in the project GHG monitoring. 2010

/58/ Technical data for Synthetic Gas (ele-gas) concentration 1998-2010.

/59/ Technical Records for measuring equipment replacement since 2004 (signed by Chief Mythologist O.Aphanasyev).

/60/ Basic raw materials consumption rate JSC "HaloPolymer Perm" sinse 2000 till 2010, verified by Chief Engineer JSC "HaloPolymer Perm" V.Andreychatenko.

/61/ Recalculation of Gross HFC22 output production with the formal raw materials consumption rate JSC "HaloPolymer Perm" valid for 2010. Verified by Chief Economic Department JSC "HaloPolymer Perm" N.Kustova.

/62/ Technical justification of Gross HFC22 output production monitoring. Verified by Chief Engineer JSC "HaloPolymer Perm" V.Andreychatenko.

/63/ Technical justification of HFC23 output production direct monitoring. Verified by Chief of Technical Department JSC "HaloPolymer Perm" A.Birt.

/64/ Provision for HFC 22 calculation at JSC "HaloPolymer Perm". Verified by Chief Engineer JSC "HaloPolymer Perm" V.Andreychatenko.

/65/ FOV and Gross HFC22 output production; 2000-2010.

/66/ Gross HFC22 output production 2000-2007,2011. JSC "HaloPolymer Perm"Technical data.

/67/ Analytical Record of HFC23 mass content in HFC23 waste generated: 2000-2010 at JSC "HaloPolymer Perm". Verified by Chief Engineer JSC "HaloPolymer Perm" V.Andreychatenko.

/68/ An Independent Expert Conclusion issued by JI expert Mr. Moldavsliy D.D

/69/ LoA # DO7-1025. dated 30.07.2010 issued by the Ministry of Economic Development of the Russian Federation

/70/ The Declaration of Approval from Switzerland, acting through the Federal Department of the Environmental, Transport, Energy and Communications DETEC, Federal Office of the Environment FOEN, Climate Division Energy Agency, being the Designated Focal Point for Joint Implementation (JI) in Switzerland has been received for the project on 26th October 2010.

/71/ Official Response of the Ministry of Economic Development of the Russian Federation #Д07-839 dated 10.06.11.

Category 2 Documents:

Background documents related to the design and/or methodologies employed in the design or other reference documents.

/1/ JI0115 PDD "HFC-23 destruction at JSC Halogen, Perm". Version 2.0 Dated 02 February 2009.

/2/ Verification Report of the 2nd Periodic Verification of the "HFC-23 destruction at JSC Halogen, Perm". Report No. Russia/0073-2/2010, Version 1.

/3/ JISC Guidance on criteria for baseline setting and monitoring. Version 02.

/4/ AM0001 / Version 05.2 "Incineration of HFC23 waste streams"

/5/ Operational Guidelines for Project Design Documents of Joint Implementation Projects. Volume 1: General guidelines. Version 2.3. Ministry of Economic Affairs of the Netherlands. 2004.

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/ P. Boyko – JSC "HaloPolymer Perm", General Director

/2/ A.Birt – JSC "HaloPolymer Perm", Head of Technical Department

/3/ A. Zaborskiy – JSC "HaloPolymer", Chief Financial Officer

/4/ I.Kuznetsov – JSC "HaloPolymer", Project Director

/5/ K. Manzyrin – JSC "HaloPolymer Perm", works #26 Head

/6/ G. Nedostup - JSC "HaloPolymer Perm", Chief Power Engineer

/7/ L. Tolstikova - JSC "HaloPolymer Perm", Chief of air emission monitoring laboratory

/8/ A.Babenysheva - JSC "HaloPolymer Perm", Quality Director

/9/ O.Afanasyev - JSC "HaloPolymer Perm", Chief Metrologist

APPENDIX C: VERIFICATION TEAM

The verification team consists of the following personnel:

Mrs. Vera Skitina, PhD (chemistry)

Lead Verifier
Bureau Veritas Certification Russia Certification Director - Lead Auditor, Lead Tutor, Lead Verifier
She has over 15 years of experience in powder metallurgy, aluminium metallurgy, plastic metal working, physical-chemistry processes, gas production at power plant, environmental science. She worked in Irkutsk Aluminium Plant, SUAL powder metallurgy plant, Nadvoitzky aluminium plant, Central Scientific Institute of Metals. She is a Lead auditor of Bureau Veritas Certification for Quality Management Systems (IRCA registered), Environmental Management System (IRCA registered), Occupational Health and Safety Management System (IRCA registered). She performed over 200 audits since 2004. Also she is a Lead Tutor of the IRCA registered ISO 14000 EMS Lead Auditor Training Course, and a Lead Tutor of the IRCA registered ISO 9001 Lead Auditor Training Course. She is an Assuror of Social Reports. She has undergone intensive training on Clean Development Mechanism /Joint Implementation and was/is involved in he was involved in the determination/verification over 50 JI projects.

Mr. D.Moldavsky, Professor (chemistry)

JI Specialist
Professor of the "RSC Applied Chemistry" Federal State Unitary Enterprise. The main disciplines: technology of heavy organic synthesis, organic chemistry, general chemical technology, processes and apparatus of chemical technology.
Specialty: chemistry and technology of heavy organic synthesis (specialty code 051704).
Post-graduate work at State Institute of Applied Chemistry (GIPKh) (1968-1971), currently "RSC Applied Chemistry" Federal State Unitary Enterprise (FGUP).
PhD (Chemistry) (1971), specialty – chemistry and technology of heavy organic synthesis. The theme of candidate thesis: "Interaction of chlorine fluorides and organic fluoro-olefins".
Doctoral studies at RSC Applied Chemistry (1997-2002), currently "RSC Applied Chemistry" Federal State Unitary Enterprise (FGUP).
Doctor of Engineering (2002), specialty – organic substances technology. The theme of doctoral thesis: "Production of perfluorinated organic compounds by direct fluorination".
Scientific tutor of degree works of 4 graduands of St. Petersburg University of plant polymers.

Mr. Leonid Yaskin, PhD (thermal engineering)

Internal Technical Reviewer.
Bureau Veritas Certification Rus General Director, Climate Change Local Manager, Lead Auditor, IRCA Lead Tutor, Climate change Lead Verifier,

He has over 30 years of experience in heat and power R&D, engineering, and management, environmental science and investment analysis of projects. He worked in Krzhizhanovsky Power Engineering Institute, All-Russian Teploelectroproject Institute, JSC Energoperspectiva. He worked for 8 years on behalf of European Commission as a monitor of Technical Assistance Projects. He is a Lead auditor of Bureau Veritas Certification for Quality Management Systems (IRCA registered), Environmental Management System (IRCA registered), Occupational Health and Safety Management System (IRCA registered). He performed over 250 audits since 2002. Also he is a Lead Tutor of the IRCA registered ISO 14000 EMS Lead Auditor Training Course, and a Lead Tutor of the IRCA registered OHSAS 18001 Lead Auditor Training Course. He is an Assuror of Social Reports. He has undergone intensive training on Clean Development Mechanism /Joint Implementation and was/is involved in the determination of over 60 JI/CDM projects.

Mr. Igor Maslennikov, Professor (chemistry)

JI Specialist

Professor of Leningrad Technological Institute im. Lensoveta (now Saint-Petersbur State Technological Institute (Technical University)), assistant, docent, professor.

The main disciplines: technology of heavy organic synthesis, organic chemistry, general chemical technology, processes and apparatus of chemical technology. Organofluoric and Organophosphorus Chemistry
Specialty: chemistry and technology of heavy organic synthesis (specialty code 051704).
Post-graduate work at Leningrad Technological Institute im. Lensoveta (now Saint-Petersbur State Technological Institute (Technical University), assistant, docent, professor (till now) and vice-rektor (2003-2010).

Всего прошито, пронумеровано
и скреплено печатью 44 (Сорок четыре) листов

Представитель
ОАО «ГалоПолимер Пермь»
по доверенности № 516-62 от 18.03.2011 г. Забелинский