ANNUAL MONITORING PLAN

Report № 2008-01 **Date of issue: 2008-03-10**

Report № 2008-01	JI Project – Nitric Oxide Reduction at Agropolychim JSC

Date of issue:	Rev. №	Number of pages:
2008-03-10	**01**	**77**

Report name:

Annual Monitoring Plan for the Nitrous Oxide Reduction in the Project of the Fertilizers Plant Agropolychim, Devnia, Bulgaria

Name of plant:

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Time period for monitoring:

01.01.07 – 31.12.07

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INTRODUCTION

Agropolychim JSC is located in Devnia, near the city of Varna, in Northeast Bulgaria.
Agropolychim was founded in 1974 and was privatized in November 1999. Acid & Fertilizers, USA acquired 63% of the company from the Bulgaria Privatization Agency.
Acid & Fertilizers LLC, USA is a joint venture between DAVENPORT INDUSTRIES – 99% and CUMERIO – 1%.
A major restructuring program was implemented. Currently Acid & Fertilizers controls 97% of Agropolychim JSC. Board members are Vassil Alexandrov (CEO), Hristo Petrov (CEO), Philippe Rombaut (CEO), Krassimir Berbenkov (Vice CEO), Georgy Nakov (CFO), Martin Martinov (Chief Legal Advisor), Tom Beamish (CEO Cumerio).

1. NITRIC ACID PRODUCTION IN GENERAL

The crucial step in the nitric acid production, the catalytic combustion of ammonia, was developed by Ostwald around the beginning of this century. The first production facility employing the Ostwald process came on stream in 1906 at Gerthe, Germany.

All plants for the production of weak nitric acid (concentrations ranging from 30 to 70 percent nitric acid) are based on the Ostwald process and use the same basic chemical operations:

a) oxidation of ammonia (NH_3) with air into nitric oxide (NO)

b) oxidation of nitric oxide (NO) into nitrogen dioxide (NO_2)

c) absorption of nitrogen dioxide (NO_2) in water to produce nitric acid (HNO_3)

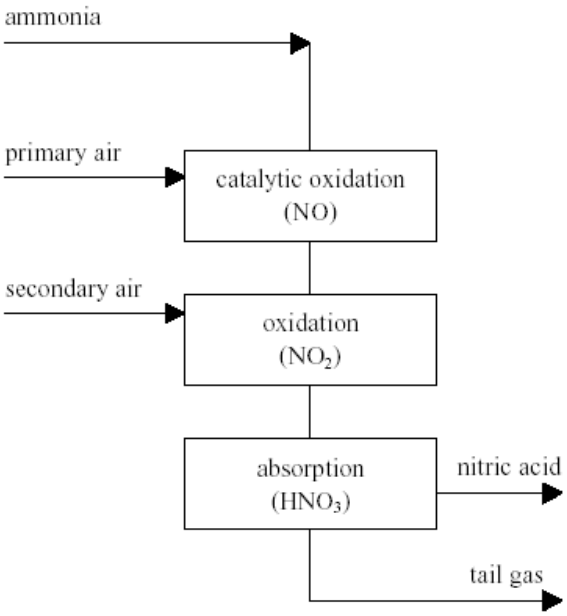

Figure 1 The Ostwald process

1.1. Raw material preparation

The liquid ammonia (NH_3) is evaporated and filtered. Air is purified by using two or three stage filtration and is pressurized. Both the ammonia filter and the air filter should remove all particles as good as possible. The air is split in two streams: one stream is led to the catalytic reactor, while the other stream is led to (the bleaching section of) the absorption column.

1.2. Oxidation of ammonia

The evaporated ammonia (NH_3) is mixed with the purified air in a ratio of approx. 1:10 and (optionally) filtered. This ammonia/air mixture is led across a catalyst. The mixture reacts according to the following equation:

$4\ NH_3 + 5\ O_2 \leftrightarrow 4\ NO + 6\ H_2O$

Simultaneously nitrous oxide (N_2O), nitrogen (N_2) and water (H_2O) are formed as well, in accordance with the following equations:

$4\ NH_3 + 3\ O2 \leftrightarrow 4\ N_2 + 6\ H_2O$

$4\ NH_3 + 4\ O_2 \leftrightarrow 2\ N_2O + 6\ H_2O$ Note: forming of laughing gas

Both reactions are undesirable, because they influence the yield of nitric oxide disadvantageously and they have great impact on the environment. The yield (percentage of ammonia that is converted to NO) depends on pressure and temperature as indicated in the following figure:

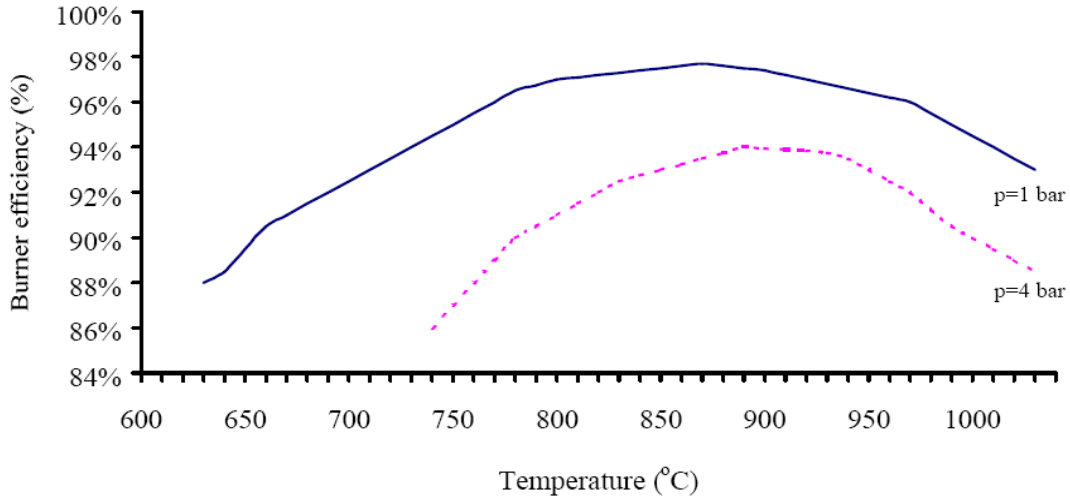

Figure 2 Possible conversion of NH_3 to NO on Platinum gauze as a function of temperature

The most universally preferred catalyst consists of platinum wire that is knitted into mesh gauze. Five to ten percent rhodium normally is added to the platinum to increase its strength and to reduce platinum costs, and up to 5% palladium is used to reduce cost. Catalyst poisoning (by air pollution or contamination from the ammonia) and unfavorable conditions (like poor ammonia/air mixing and poor gas distribution across the catalyst) may reduce the NO-yield.

During the reaction process, some of the platinum and rhodium from the catalyst vaporises. In most cases a platinum recovery system is installed below the catalyst, known as a "getter" or catchment. This system consists of a palladium alloy. A "getter" allows a 60 to 80% recovery of the total catalyst loss.

Due to loss of the platinum the efficiency of the catalyst drops over time. This leads to an increasing generation of N_2O over the campaign (time between change of platinum gauze). In general in the start of the campaign the generation of N_2O is approx. 20% below the average, while the generation is approx. 20% above the average at the end of a campaign. The generation of N_2O is shown in the following figure:

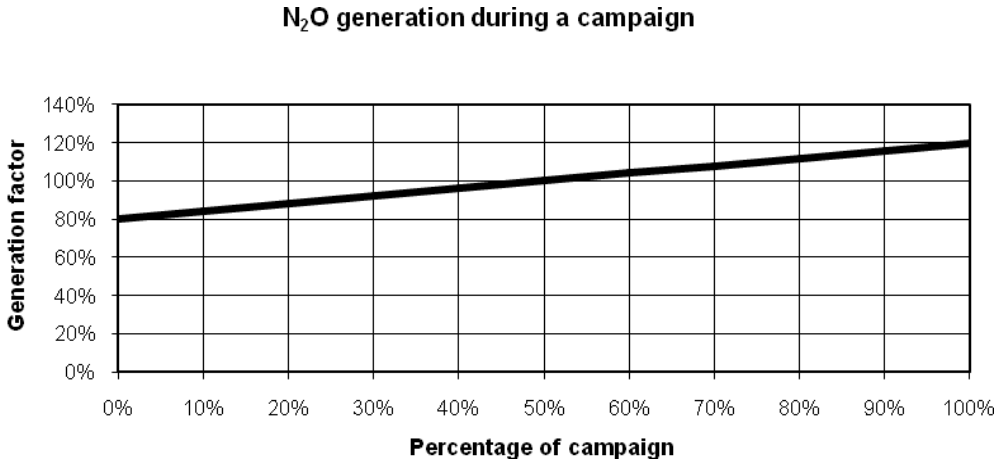

Figure 3 Typical N_2O generation as a function of time

The oxidation of ammonia (NH_3) is a strongly exothermic process. Transferring heat to a steam system cools down the gases from the catalytic reactor. Further cooling is obtained by transferring heat to the tail gas that leaves the absorbing column. The rest of the process heat is transferred to the cooling water circuit.

1.3. Oxidation of nitric oxide

After the catalytic formation of nitric oxide, the gases are cooled down in a cooler condenser and in some cases also compressed. This enhances the oxidation of nitric oxide to nitrogen dioxide. Due to the condensation of water, weak acid solution is formed. This solution is separated and led to the absorption tower. The nitrous gas from the cooler condenser is mixed with NOx-bearing secondary air from the bleaching section, which is sometimes housed within the absorption column.

In the absorption section of the absorption column, the remaining nitric oxide (NO) reacts non-catalytically with oxygen (O2) to form nitrogen dioxide (NO2):

$2\ NO + O_2 \leftrightarrow 2\ NO_2$

1.4. Absorption of nitrogen dioxide

Demineralised water or steam condensate is added at the top of the absorption column. The weak acid solution (approx. 43%) produced in the cooler condenser is also added to the absorption column. The nitrogen dioxide (NO_2) in the absorption column is led in counter-current flow with the water (H_2O), reacting to nitric acid (HNO_3) and nitric oxide (NO):

$3\ NO_2 + H_2O \leftrightarrow 2\ HNO_3 + NO$

Both the reactions are favored by a higher pressure and lower temperature. Besides that, both reactions are exothermic so continuous cooling is necessary. The nitric acid produced is rich in dissolved nitrogen oxides and is passed to a bleaching tower (or bleaching section within the absorption tower) where it is contacted with a counter current flow of air. The air and the nitrogen oxides that have been stripped out are used as secondary air, mixed with the gases leaving the cooler condenser and recycled to the absorption section.

An aqueous solution of nitric acid is withdrawn from the bottom of the absorption tower. The acid concentration can vary depending on the temperature, pressure, number of absorption stages and the concentration of nitrogen oxides entering the absorber. The gases that were not absorbed in the nitric acid solution leave the absorption column at the top, at a temperature of approx. 20-30 °C.

This gas mixture is commonly referred to as tail gas and is heated in the heat recovery section. The hot tail gas is in certain cases led through a NO_x abatement system and through a tail gas expander for energy recovery. The resulting expanded tail gas is vented through the stack.

1.5. Plant types in general

In general, two types of nitric acid plants can be distinguished: mono pressure and dual pressure plants. In mono pressure (single pressure) processes, ammonia oxidation and NO_2 absorption take place at the same pressure. In the past, nitric acid plants worked at atmospheric pressure or low pressure (mono pressure below 1,7 bar).

Nowadays, mono pressure/low pressure plants hardly exist anymore. Mono pressure/medium pressure plants (pressure between 1,7 bar and 6,5 bar) and mono pressure/high pressure plants (pressure between 6,5 bar and 13 bar) are commonly present. Most plants operate with dual pressure due to a higher yield and less environmental impact.

Older plants operate with low pressure/medium pressure, while more modern plants operate with medium pressure/high pressure. To make a higher pressure in the absorption section possible, a compressor is installed between the cooler condenser and the absorption column. The heat of

compression is removed by heat exchange with the tail gas and/or by heat recovery in a steam boiler. A second cooler condenser reduces the temperature to 50 °C by cooling with water

The next figure gives a simplified scheme of a typical dual pressure plant.

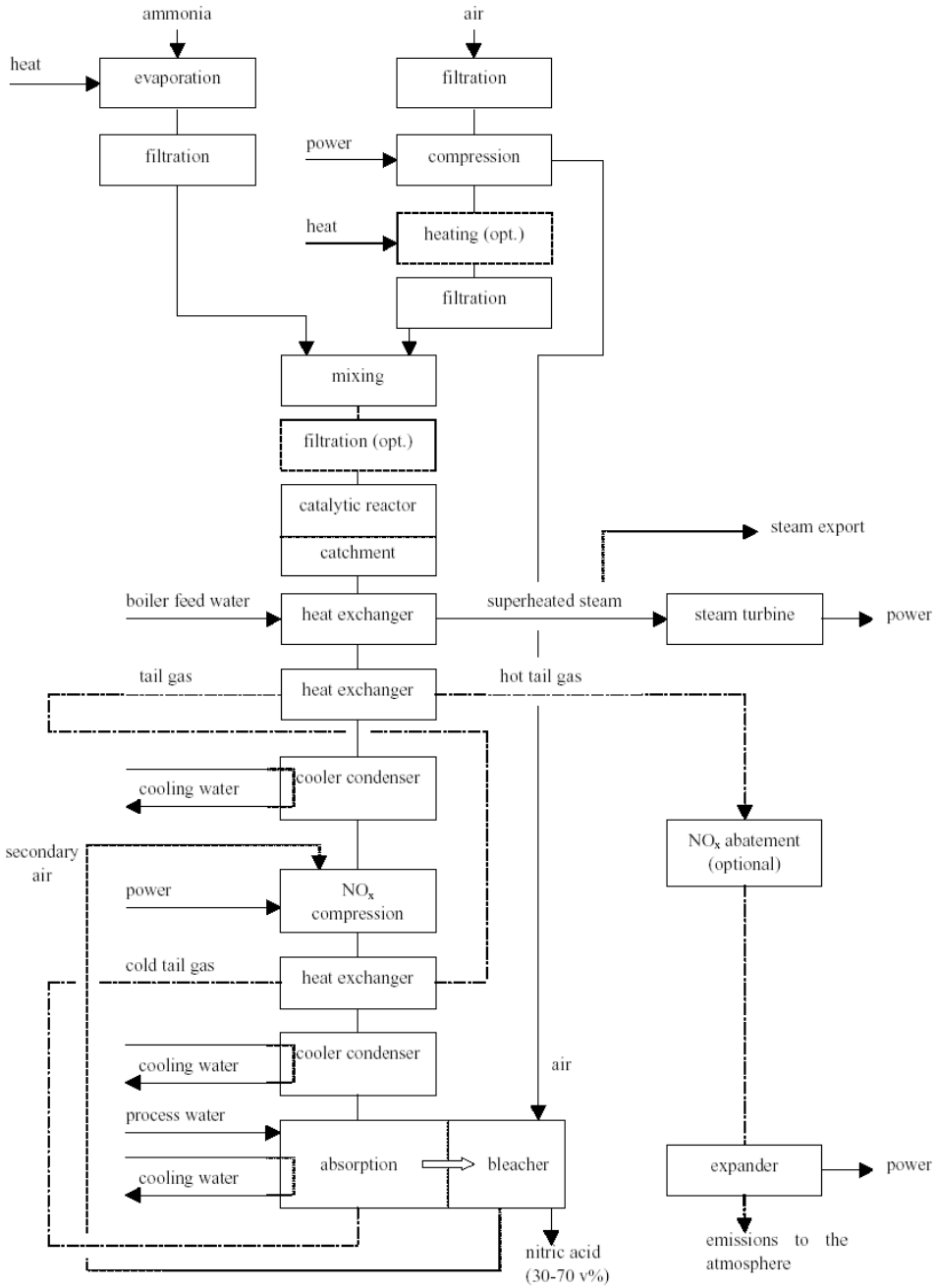

Figure 4 Dual pressure nitric acid plant

1.6. Agropolychim's nitric acid plant

The nitric acid plant at Agropolychim is a French made dual pressure plant commissioned in 1974. Basic key information of the plant is summarized in the following table:

Parameter	Grand Paroisse plant
Production in 2007	341,604.58 tons of nitric acid 100 v%
Production in 2006	226,357 tons of nitric acid 100 v%
Production in 2005	311,265 tons of nitric acid 100 v%
Production in 2004	324,835 tons of nitric acid 100 v%
Production in 2003	223,815 tons of nitric acid 100 v%
Production in 2002	250,312 tons of nitric acid 100 v%
Capacity	1,100 tons of nitric acid per day 100 v%
Oxidation	4 burners Pressure for catalytic oxidation is 3,5 bara Oxidation temperature is 835 ℃ Gauzes are knitted Burner diameter is 4,254 m Basket diameter is 4,254 m
Absorption	Pressure in absorption column is 12,8 bara Absorption temperature is 20-40 ℃
Abatement Technologies	None
Tail gas	NOx concentration is around 170-200 ppm_{vol} N_2O concentration is 895 ppmv (average) The temperature is 20 ℃ The flow is 148.500 Nm^3/h

Table 1 Key information for the plant (Grande Paroisse)

Figure 5 Photo of two of the four reactors (NH_3 burners)

1.7. N_2O Emissions

N_2O emissions vary significantly from one nitric acid plant to another. The emissions depend very much on site-specific factors such as plant design, process conditions and abatement technologies employed.

The following specification of N_2O emission from the plant is based on actual measured emissions and stated productions of 100 % nitric acid.

Subject	Production of Nitric Acid (tons/year)	Emission of N_2O (tons/year)	GWP factor	Annual emission of CO_2-equivalent (tons/year)
JI – Project	325.000	1.800	310	558.000

Table 2 Specifications of present N_2O emissions

The plant operate around the clock with planned shut down normally during the period June-August.

The N_2O generation at Agropolychim is 5,54 kg N_2O per ton 100% nitric acid, based on measurements.

The following figures show the N_2O generation from European nitric acid plants /9/:

European designed dual pressure plants: 2-10 kg N_2O / ton 100% HNO_3

Older plants pre 1975 without NSCR: 10-19 kg N_2O / ton 100% HNO_3

2. OBJECTIVE

2.1. Project Stakeholders

The following key stakeholders are identified for the project:

- Agropolychim JSC
- Government of Bulgaria (Ministry of Environment and Water)
- Government of Denmark (Ministry of the Environment, Danish Environmental Protection Agency)

2.2. The Nitrous Oxide Reduction in the Project of Agropolychim

The objective for the project is to reduce the N_2O emission by utilizing new developed technology (i.e. a catalyst) that converts the Nitrous Oxide into Oxygen and Nitrogen, which have zero Global Warming Potentials.

The new technology is applied by introducing a new catalyst bed, which is installed directly under the Platinum Gauze in the reactors. This new catalyst does not have any effects on the present production (no yield loss).

The technology is owned and patented by Heraeus. The technology has been installed in a few plants and operated without problems. The supplier guarantees the performance of the catalyst technology. The pressure drop over the catalyst is not significant and is normally about 15 mbar. The lifetime of the catalyst is expected to be maximum 3 years. In case the performance throughout this period is not satisfactory it will be replaced at the next possible shutdown.

The formation of N_2O is unavoidable, since the NO yield is limited. From an environmental point of view, emissions of N_2O need to be prevented. N_2O has a global Warming Potential (GWP) of 310 times greater than CO_2.

Only N_2O emissions from the nitric acid plant are determined, as only these emissions of Agropolychim are affected by the project. The project does not have any impact related to the energy consumption or generation, waste, raw material consumption and emissions other than N_2O.

A baseline N_2O emission factor (5.54 kg N_2O per tonne of nitric acid) was determined based on N_2O concentration measurements, tail gas flow rate, temperature and pressure and nitric acid production. The N_2O concentration of 860 ppmv measured in 2004 is comparable to the N_2O concentration measurements carried out at other plants *(see Annex I "Data calculations for emission baseline" – JI PDD, DEPA file M124/000-0043t, April 2004)*.

The catalyst for converting N_2O was supplied by Heraeus. This product was installed and operated without problems and great success in the Nitric Acid Plant.

The design and the installation of the catalyst were ready on September 15^{-th} 2005. The reductions of N_2O emissions started immediately following the installation of the new technology.


7 9 2005


7 9 2005

Figure 6 Installing of the catalyst for converting N_2O

2.3. GHG Emission Accounting

The catalyst provided reduction of N_2O concentration in the tail gas from 860 ppmv to 120-180 ppmv and is expected to reduce Agropolychim's emissions by 11000 tonnes N_2O (i.e. about 3 410 000 tonnes CO_2eq.) within the period 2005-2012.

2.4. Project sustainability

The plant is functional and running and is well maintained. Many investments are under way. The sustainability of the project is related to future maintenance of the plant and the situation of the fertilizer market.

There are no significant risks related to the project in technical terms, but it is essential that the plant keeps on producing nitric acid in the future. The risks are more related to the prediction of the market situation for fertilisers in the future and the company's investment plans for rehabilitation of the plant.

3. DESCRIPTION OF PLANT PERFORMANCE

3.1. Production and Key figures

Within the period 01.01.2007 - 31.12.2007 were produced 341,604.6 t 100% HNO_3 under the conditions described below:

Subject	Value
Produced of HNO_3	341,604.6 tons of nitric acid 100 v%
Hour production of HNO_3	46.571 tons of nitric acid 100 v%/hour
Real time operation period	7335 h
Idle time of installation	1425 h
O_2 in tail gas (average)	2.59 v.%
NO_x in tail gas (average concentration)	180.5 ppm_{vol}
N_2O in tail gas (average concentration)	291.9 ppm_{vol}
Tail gas temperature (average)	16,6 ^oC
Tail gas flow (average)	148,569.4 Nm^3/h

Table 3 Operation conditions in Nitric Acid Plant for the period 01.01.2007 - 31.12.2007

3.2. Results

The monitoring results give information about the GHG emission reductions and GHG emissions, generated for the period 01.01.2007 - 31.12.2007.

The baseline N_2O generation at Agropolychim is accepted to be 5,54 kg/N_2O per ton 100 % nitric acid.

The monitoring results are presented according to the requirements (Annex IV from PDD) shown in ***Annex I and Annex II*** *(Monitoring Data for the period 01.01.2007 - 31.12.2007 and N_2O Emission Reduction for the period 01.01.2007 - 31.12.2007).*

3.3. Environmental impact

Since the project does not affect the production and near surroundings, no environmental impacts are expected from the project.

The Nitric Acid Plant in Agropolychim JCS at Devnia complies with the relevant environmental legislation in Bulgaria.

4. MONITORING PLAN

4.1. Objective of the Monitoring Plan

The objective of the Monitor Plan (MP) is to provide a practical framework for collection and management of performance data, in order to monitor and verify the GHG emission reduction generated by the JI-project. The project comprises reduction of nitrous oxide by means of a new catalyst introduced to the reactors of the nitric acid plant.

The MP has been developed in accordance with the French standard BP X 30-331 “Protocol for quantification for nitrous oxide emissions in the manufacture of nitric acid”.

This MP provides monitoring methodologies for monitoring and estimation of GHG emission reduction referring to the emission baseline.

The monitoring results are filled in the forms, according to requirement in Annex IV from PDD (Monitoring Plan) for the entire monitoring period.

The monitoring plan is based on an on-line measurement of the tail gas and the production flow. Emission factors are calculated in the baseline and measured on-line continuously. The on-line data are filed on a PC and two hard disk and monthly recording on a CD do a back up.

The proposed monitoring methodology, data collection, data management and guidelines can only be changed after agreement with the Bulgarian Government, the Danish Government and the Verifier.

4.2. Requirements for the Monitoring Activities

1. Monitoring of the GHG emission reduction generated by the project shall be performed by data collection at Agropolychim’s nitric acid plant.
2. Monitoring reports include the actual GHG emission reduction and GHG emission generated by the project and should be issued annually during the entire crediting period.
3. Based on monitoring results the GHG emission reductions and GHG emissions shall be calculated and submitted for verification as approved ERUs.
4. Persons trained in the monitoring procedure shall conduct the monitoring.
5. QA system shall be implemented to secure accurate and transparent monitoring.
6. The governing language is English in monitoring reports.
7. The outcome of the MP shall enable a legacy entity to accrediting the ERUs generated by the project according to requirements of the Executive Board/JI Supervisory Committee, the Bulgarian government and the Danish government.
8. The monitoring procedures shall follow the guidelines in the Marrakech Accords.

9. Draft versions of the annual monitoring reports shall be submitted to the Bulgarian government and the Danish Government or their representatives before issuing the final version. The annual monitoring reports shall be issued to:

Receiver of annual reports	Draft version monitoring report	Final version monitoring report
Bulgarian Government	2 copies	2 copies
Danish Government	2 copies	2 copies
Verifier	none	2 copies

Table 4 Monitoring reports

4.3. General information

The monitoring plan is based on an on-line measurement of the tail gas and the production flow. Emission factors are calculated in the baseline and measured on-line continuously. The on-line data are filed on a PC and two hard disk and monthly recording on a CD do a back up.

The emission reduction is calculated as the difference between the emission factor (baseline: 5,54 kg/N_2O per ton 100 % nitric acid) and the actual emission factor multiplied by the actual production.

The monitoring methodology reflects good practice and is in line with the approved monitoring methodologies for the Clean Development Mechanism.

4.4. Monitoring equipment

N_2O emissions are continuously measured after the installation of the catalyst. The monitoring methodology was built upon the on-line measurements of:

i) N_2O concentration (IR measuring technology - Infrared Analyzer Module, manufactured by Hartmann & Braun, Frankfurt, Germany);

ii) Tail gas flow (system for measuring of tail gas flow – Durag system D-FL 100, with transmitters for temperature and pressure);

iii) Temperature of tail gas;

iv) Absolute pressure of tail gas;

v) Concentration of O_2 in tail gas;

vi) Nitric acid production */as 100 % HNO_3/* (mass-flow meter, manufactured by Yokogava).

4.5. Methodology

4.5.1. Emission baseline

The baseline is based on the assumptions of an annual production of 325.000 tons of 100% HNO_3 and an average concentration of N_2O of 250 ppm in the tail gas, after implementation.

A baseline N_2O emission factor (5.54 kg N_2O per tonne of nitric acid) was determined based on N_2O concentration measurements, tail gas flow rate, temperature and pressure and nitric acid production. The N_2O concentration of 860 ppmv measured in 2004 is comparable to the N_2O concentration

measurements carried out at other plants *(see Annex I "Data calculations for emission baseline" – JI PDD, DEPA file M124/000-0043t, April 2004)*.

4.5.2. Emission factors

The GWP used for N_2O is 310 times greater than CO_2.

The following conversion factors from ppm to mg/Nm³ (Nm³: 1 m³ air at 273 K, 101.3 kPa, dry) for various emissions to air:

Emission	Conversion factor
N_2O	1,96

Table 7 Conversion factors

4.5.3. Actual emission reduction

The emission reduction is calculated as the difference between the emission factor (baseline: 5,54 kg/N_2O per ton 100 % nitric acid) and the actual emission factor multiplied by the actual production.

The actual emission reduction (over a period of monitoring) is obtained by the following equations:
The *emission factors* are calculated as follows (both before and after the project):

$$F_{N2O} = \frac{1}{t} x \sum_{0}^{t} \frac{C_{N2O} x Q_S \ x\ 44}{P_{N2O} x V_M} x 10^{-6} \ \Delta t$$

Where

F_{N2O}	kg/T	N_2O emission in kg per ton of 100% HNO_3 produced
t	hours	Period of time
C_{N2O}	ppm	N_2O concentration in tail gas
Q_S	Nm³/h	Output air flow (tail gas)
V_M	22,4 l/mol	Molar volume N_2O (normal conditions)
P_{N2O}	T/h	Production of 100% HNO_3

The actual *emission reduction* is calculated as follows:

$$ERU = \frac{GWP}{1.000} x \sum_{0}^{t} \left(F_{N2O\ baseline} - F_{N2O\ actual}\right) x\ P_{N2O} \ \Delta t$$

Where

ERU	$CO_{2\ eq.}$	Emission Reduction Units
GWP	310	Global Warming Potential for N_2O
$F_{N2O\ baseline}$	5,54 kg/T	N_2O emission in kg per ton of 100% HNO_3 produced (baseline)
$F_{N2O\ actual}$	kg/T	N_2O emission in kg per ton of 100% HNO_3 produced (actual)
t	hours	Period of time
P_{N2O}	T/h	Production of 100% HNO_3 (actual)

The actual monitoring results are filled in the forms, according to requirement in Annex IV from PDD (Monitoring Plan) for the entire monitoring period (01.01.2007 - 31.12.2007) – **see Annex II**.

4.6. Responsibility

Agropolychim is responsible for the monitoring and reporting in accordance with the guidelines of the monitoring plan. The authority and the responsibility for the project management, operation, maintenance, monitoring and reporting are clearly defined.

The technology supplier (Heraeus) was responsible for ensuring the appropriate installation, operation and maintenance of the catalyst, including the necessary renewal of the catalyst.

The supplier of the monitoring equipment (ABB Automation Products, Germany) was responsible for the installation, test and check for compliance of the monitoring devices and whether the reporting of the emissions reductions were carried out according to the monitoring plan.

4.7. Quality Assurance System

The quality assurance system secures that monitoring procedures and requirements are followed. The QA system is not according to any ISO 9000 or similar standards. The QA system comprises inspection of the monitoring procedure by an independent third party. The management of Agropolychim is responsible for QA system.

The QA system can be changed according to request from the verifier. After discussions with verifier it was agreed to propose change in the calibration period of meters from one to two years. This has been also recommended by equipment supplier and the independent third party.

QA – Procedure		Time for Inspection	Inspection
1.0	Calibration of meters and transmitters All flow meters and transmitters have to calibrated and checked at least ones every year during planned shut down. Calibration reports must be obtained, including name, official company registration number, address, phone and fax number.	Annual	Independent third party
2.0	Control of meters and transmitters	Weekly	Operational staff
3.0	Control of monitoring data The data and the calculations have to be controlled every day, to secure minimum errors	Daily	Operational staff
4.0	Observations, comments, control of calibration reports and measurements of N_2O concentration.	Annual	Independent third party
5.0	Training of staff members	Before commissioning of project and hereafter annually	Management

Table 6 Quality Assurance System

4.8. Training and instruction of operational staff

Training of operational staff members was conducted before commissioning of project. Training shall be replicated, when needed, in order to secure full understanding of the monitoring procedures and to secure the highest possible reliability of the monitoring results.

The management is responsible for training and instruction of operational staff.

4.9. Summary - Management of the monitoring plan

The summary aims to highlight the key elements and responsibilities of the management of the MP.

Obligations	**Utility**	**Independent third party**	**Verifier**
Monitoring Plan	Review of the MP and comments. Review management of monitoring plan Preparation of monitoring procedures Training of staff members performing monitoring procedures Updating of MP if necessary Preparation for data collection, data handling and data storing	Elaboration of inspection reports every 6 months	Review of MP and comments Review of management system
Data collection	Review of methods and system for data collection system including updating of these if necessary		Review of methods and system for data collection including comments
Data handling	Appointment of person(s) responsible for data handling		Review of data handling systems
Data storing	Establishment of data storing system for written and digital data Establishment of back-up system for data storing		Review of data storing system including backup systems
Monitoring	Timetable for monitoring activities		Review and assist elaborating timetables, monitoring sheets etc.
Reporting	Establish framework for reporting which fulfil requirements in MP		Review of framework for reporting
Instruction	Instruction of staff members		Assist during performance of the training

Table 7 Management of Monitoring Plan

Annex I

Monitoring Data for the period 01.01.2007 - 31.12.2007

№	дата / час date / hour	N_2O	N_2O	$O_{2\ (газ)}$ $O_{2\ (gas)}$	Температура Temperature	Разход Flow	Налягане Pressure
		изм. meas.	изм. meas.				
		mg/Nm^3	ppmv.	об.% Vol.%	°C	Nm^3/h	hPa
1	2	6	7	10	11	12	13
1	01.01.2007 00:00	495.7	252.9	2.42	16	150494	1067
2	02.01.2007 00:00	483.1	246.5	2.31	17.3	148713	1059
3	03.01.2007 00:00	517.1	263.8	2.17	16	148956	1053
4	04.01.2007 00:00	518.6	264.6	2.07	15.4	150099	1061
5	05.01.2007 00:00	515.1	262.8	2.02	15.8	149997	1059
6	06.01.2007 00:00	526.4	268.6	1.94	15.9	149820	1062
7	07.01.2007 00:00	528.2	269.5	1.94	16.2	149712	1063
8	08.01.2007 00:00	527.3	269	2.05	16.2	149531	1062
9	09.01.2007 00:00	532	271.4	2.14	16.6	149639	1062
10	10.01.2007 00:00	546.7	278.9	2.2	16.3	150269	1066
11	11.01.2007 00:00	528.3	269.5	2.34	16.3	150156	1063
12	12.01.2007 00:00	517.9	264.2	2.39	16.4	149608	1057
13	13.01.2007 00:00	519.1	264.8	2.36	15.8	150549	1062
14	14.01.2007 00:00	529.1	269.9	2.41	16.3	150545	1063
15	15.01.2007 00:00	541.8	276.4	2.45	15.6	151067	1067

16	16.01.2007 00:00	531	270.9	2.77	13.8	151888	1066
17	17.01.2007 00:00	495.6	252.9	2.99	14.1	150877	1064
18	18.01.2007 00:00	510.8	260.6	2.94	15.1	149981	1062
19	19.01.2007 00:00	510.1	260.3	2.27	16.4	148619	1052
20	20.01.2007 00:00	542.7	276.9	2.21	15.2	150363	1058
21	21.01.2007 00:00	544.2	277.7	2.19	16	149965	1059
22	22.01.2007 00:00	561	286.2	2.27	16.2	150268	1062
23	23.01.2007 00:00	558.3	284.8	2.13	17	149454	1059
24	24.01.2007 00:00	551.4	281.3	2.05	17.7	148277	1053
25	25.01.2007 00:00	563	287.2	2.09	17.4	148933	1056
26	26.01.2007 00:00	576.6	294.2	2.22	16.1	150427	1060
27	27.01.2007 00:00	557.7	284.5	2.3	15.5	149906	1055
28	28.01.2007 00:00	553	282.1	2.29	14.7	151129	1058
29	29.01.2007 00:00	545.1	278.1	2.16	15.5	149620	1052
30	30.01.2007 00:00	560.4	285.9	2.28	14.4	151037	1055
31	31.01.2007 00:00	572.9	292.3	2.31	14.4	151557	1061
32	01.02.2007 00:00	571.6	291.6	2.21	14.2	150173	1055
33	02.02.2007 00:00	581.3	296.6	2.36	13.4	151339	1060
34	03.02.2007 00:00	580.5	296.2	2.42	12.9	151895	1059
35	04.02.2007 00:00	563.5	287.5	2.22	14.4	150560	1055
36	05.02.2007 00:00	580.2	296	2.31	13.3	151375	1058
37	06.02.2007 00:00	574.4	293.1	2.23	14.1	150501	1053
38	07.02.2007 00:00	586.3	299.1	2.19	14.3	150350	1054

39	08.02.2007 00:00	594.2	303.2	2.3	14.7	150063	1056
40	09.02.2007 00:00	592	302	2.37	14.7	149989	1057
41	10.02.2007 00:00	595.2	303.7	2.49	14.5	150463	1057
42	11.02.2007 00:00	582.6	297.2	2.36	15.5	149684	1057
43	12.02.2007 00:00	592.8	302.4	2.5	15.1	149745	1055
44	13.02.2007 00:00	586.8	299.4	2.39	16.3	149319	1051
45	14.02.2007 00:00	594.1	303.1	2.67	15.6	149640	1051
46	15.02.2007 00:00	597.7	304.9	2.43	16.2	150044	1058
47	16.02.2007 00:00	612.9	312.7	2.4	16.1	150702	1062
48	17.02.2007 00:00	613.3	312.9	2.52	14	152154	1065
49	18.02.2007 00:00	602.4	307.3	2.5	14.6	151961	1067
50	19.02.2007 00:00	603.9	308.1	2.44	15.1	150855	1060
51	20.02.2007 00:00	607.1	309.7	2.35	15.9	149957	1059
52	21.02.2007 00:00	617.7	315.2	2.36	15.8	150288	1060
53	22.02.2007 00:00	614.6	313.6	2.33	16.2	150112	1060
54	23.02.2007 00:00	613.8	313.2	2.36	14.7	150819	1056
55	24.02.2007 00:00	607.2	309.8	2.45	14.4	152042	1064
56	25.02.2007 00:00	618	315.3	2.42	14.7	151705	1063
57	26.02.2007 00:00	611.1	311.8	2.46	15.5	150769	1060
58	27.02.2007 00:00	617.4	315	2.38	15.7	150102	1055
59	28.02.2007 00:00	616.3	314.4	2.33	15.5	150053	1054
60	01.03.2007 00:00	628	320.4	2.35	15.6	150075	1055
61	02.03.2007 00:00	644.2	328.7	2.35	16.5	149323	1054

62	03.03.2007 00:00	636.1	324.5	2.33	15.6	149765	1056
63	04.03.2007 00:00	630	321.4	2.28	15.9	149660	1056
64	05.03.2007 00:00	661	337.2	2.55	14.2	151730	1065
65	06.03.2007 00:00	670.2	341.9	2.56	15.3	151997	1069
66	07.03.2007 00:00	663.6	338.6	2.48	15.4	151343	1064
67	08.03.2007 00:00	661.8	337.7	2.47	15.3	151123	1062
68	09.03.2007 00:00	672.9	343.3	2.53	14.6	151695	1066
69	10.03.2007 00:00	666.9	340.3	2.54	14.6	151892	1066
70	11.03.2007 00:00	674.8	344.3	2.57	14.2	152094	1067
71	12.03.2007 00:00	664.3	338.9	2.53	14.5	151520	1067
72	13.03.2007 00:00	675	344.4	2.54	14	151866	1065
73	14.03.2007 00:00	675.4	344.6	2.56	14.1	151966	1064
74	15.03.2007 00:00	664.5	339	2.52	14.3	151600	1064
75	16.03.2007 00:00	674.5	344.1	2.53	14.7	151450	1064
76	17.03.2007 00:00	660	336.7	2.44	15	150589	1059
77	18.03.2007 00:00	659	336.2	2.38	15.3	149867	1056
78	19.03.2007 00:00	642.7	327.9	2.28	16.9	148581	1050
79	20.03.2007 00:00	668.7	341.2	2.23	16.6	148593	1050
80	21.03.2007 00:00	660.7	337.1	2.31	16.7	148609	1050
81	22.03.2007 00:00	694.8	354.5	2.36	15.8	149661	1053
82	23.03.2007 00:00	671.8	342.8	2.38	16.6	148750	1046
83	24.03.2007 00:00	701	357.7	2.47	15.9	150037	1054
84	25.03.2007 00:00	709.7	362.1	2.52	14.9	151204	1061

85	26.03.2007 00:00	701.8	358.1	2.56	14.9	151590	1064
86	27.03.2007 00:00	705.3	359.8	2.64	14.5	152091	1065
87	28.03.2007 00:00	705.4	359.9	2.58	14.4	152042	1066
88	29.03.2007 00:00	716	365.3	2.6	14	152098	1066
89	30.03.2007 00:00	712.2	363.4	2.52	15.2	151317	1062
90	31.03.2007 00:00	712.8	363.7	2.52	15.1	151081	1060
91	01.04.2007 00:00	721.6	368.2	2.62	14.1	151851	1066
92	02.04.2007 00:00	706.6	360.5	2.59	14.8	151588	1066
93	03.04.2007 00:00	711.3	362.9	2.55	15.7	150577	1058
94	04.04.2007 00:00	704	359.2	2.5	16.3	149253	1054
95	05.04.2007 00:00	738.1	376.6	2.51	15.6	150476	1057
96	06.04.2007 00:00	723.3	369	2.58	15.3	150688	1060
97	07.04.2007 00:00	733.5	374.2	2.54	15.3	150782	1060
98	08.04.2007 00:00	742.3	378.7	2.5	15.5	150816	1060
99	09.04.2007 00:00	752.5	383.9	2.56	15.1	151291	1061
100	10.04.2007 00:00	734	374.5	2.54	15.2	150494	1060
101	11.04.2007 00:00	745.5	380.4	2.45	15.2	150693	1059
102	12.04.2007 00:00	765.9	390.8	2.63	15.1	151288	1065
103	13.04.2007 00:00	753.7	384.5	2.59	15.5	151048	1066
104	14.04.2007 00:00	758.7	387.1	2.65	14.9	151428	1065
105	15.04.2007 00:00	778.7	397.3	2.67	14.2	151646	1063
106	16.04.2007 00:00	764.7	390.2	2.73	14.3	152185	1065
107	17.04.2007 00:00	737.3	376.2	2.63	14.7	151637	1063

108	18.04.2007 00:00	761.9	388.7	2.58	14.5	151396	1058
109	19.04.2007 00:00	761.2	388.4	2.64	14.6	150984	1057
110	20.04.2007 00:00	763.9	389.7	2.63	14.4	151438	1061
111	21.04.2007 00:00	733.6	374.3	2.58	15.1	150406	1061
112	22.04.2007 00:00	796.3	406.3	2.66	14.5	151826	1065
113	23.04.2007 00:00	786.6	401.3	2.79	14.2	152136	1067
114	24.04.2007 00:00	773.4	394.6	2.66	14.4	151457	1063
115	25.04.2007 00:00	651.5	332.4	4.34	10.2	150514	1063
116	26.04.2007 00:00	581.2	296.5	5.26	7.7	149555	1066
117	27.04.2007 00:00	573.9	292.8	5.16	8	148667	1067
118	28.04.2007 00:00	568.2	289.9	5.16	7.8	148438	1064
119	29.04.2007 00:00	560.1	285.8	5.03	8.8	147318	1058
120	30.04.2007 00:00	581.7	296.8	5.1	9	147554	1057
121	01.05.2007 00:00	589.7	300.9	5.01	9.1	148195	1056
122	02.05.2007 00:00	589.1	300.6	5.1	7.7	149424	1060
123	03.05.2007 00:00	619.5	316.1	4.51	10.5	149281	1061
124	04.05.2007 00:00	635.4	324.2	4.42	10.9	150099	1061
125	05.05.2007 00:00	627.1	319.9	4.35	10.9	149241	1060
126	06.05.2007 00:00	644.9	329	4.42	11	149283	1061
127	07.05.2007 00:00	696.8	355.5	3.56	13.6	149280	1057
128	08.05.2007 00:00	739.3	377.2	2.77	17.6	148349	1057
129	09.05.2007 00:00	706.9	360.7	2.68	18.7	147668	1060
130	10.05.2007 00:00	755.3	385.4	2.88	16.6	149482	1062

131	11.05.2007 00:00	730.5	372.7	2.73	17.6	149081	1063
132	12.05.2007 00:00	757.2	386.3	2.87	16.8	149403	1060
133	13.05.2007 00:00	740.2	377.7	2.81	18.3	148760	1062
134	14.05.2007 00:00	740.9	378	2.81	17.7	149251	1065
135	15.05.2007 00:00	761.2	388.4	2.82	18	149108	1063
136	16.05.2007 00:00	778.6	397.2	2.74	18.3	148642	1059
137	17.05.2007 00:00	721.6	368.2	3.74	15.2	148617	1055
138	18.05.2007 00:00	656.8	335.1	4.31	13.8	148588	1055
139	19.05.2007 00:00	665.8	339.7	4.47	14.3	148652	1059
140	20.05.2007 00:00	690.8	352.4	4.52	13.4	149392	1060
141	21.05.2007 00:00	686.5	350.3	4.53	14	148865	1057
142	22.05.2007 00:00	685.7	349.8	4.47	13.7	149175	1059
143	23.05.2007 00:00	664.8	339.2	4.33	15.3	147777	1058
144	24.05.2007 00:00	668.7	341.2	4.24	16.5	147177	1060
145	25.05.2007 00:00	677.5	345.7	4.32	16.2	147420	1060
146	26.05.2007 00:00	674.3	344	4.17	16.2	147441	1058
147	27.05.2007 00:00	699	356.6	4.2	17.1	146937	1057
148	28.05.2007 00:00	664.8	339.2	4.19	17.4	145885	1055
149	29.05.2007 00:00	672.4	343.1	4.25	16.5	146476	1055
150	30.05.2007 00:00	751.7	383.5	3.43	18.9	147205	1057
151	31.05.2007 00:00	853.3	435.4	2.85	19	148849	1059
152	01.06.2007 00:00	833.5	425.3	2.88	18.4	148994	1062
153	02.06.2007 00:00	814.5	415.6	2.87	19.7	148483	1062

154	03.06.2007 00:00	812.3	414.4	2.99	19.9	148348	1064
155	04.06.2007 00:00	789.8	403	2.94	20.1	148159	1064
156	05.06.2007 00:00	879.5	448.7	2.96	20.4	148404	1063
157	06.06.2007 00:00	853.4	435.4	2.81	19.9	148614	1061
158	07.06.2007 00:00	743.5	379.3	3.52	17.5	143180	1061
159	08.06.2007 00:00	752.5	383.9	3.29	17.6	145574	1063
160	09.06.2007 00:00	850.1	433.7	2.94	18	149321	1063
161	10.06.2007 00:00	821.2	419	2.82	19.2	148219	1062
162	11.06.2007 00:00	832.4	424.7	2.83	19.3	148240	1060
163	12.06.2007 00:00	318.3	162.4	14.61	30.5	96219	1056
164	13.06.2007 00:00	0	0	21.97	24.2	66838	1056
165	14.06.2007 00:00	0	0	21.89	26.2	66322	1058
166	15.06.2007 00:00	0	0	22.39	25.4	66677	1058
167	16.06.2007 00:00	0	0	22.45	24.6	66438	1057
168	17.06.2007 00:00	0	0	22.66	25.9	65412	1057
169	18.06.2007 00:00	0	0	21.61	25.9	65322	1059
170	19.06.2007 00:00	0	0	21.14	27	64585	1059
171	20.06.2007 00:00	0	0	21.3	27.2	65196	1060
172	21.06.2007 00:00	0	0	21.31	25.8	66225	1061
173	22.06.2007 00:00	0	0	21.52	26	65500	1060
174	23.06.2007 00:00	0	0	21.43	27.7	64347	1059
175	24.06.2007 00:00	0	0	21.31	29.1	64680	1061
176	25.06.2007 00:00	0	0	20.94	26.6	65777	1061

177	26.06.2007 00:00	0	0	20.55	30.4	63486	1056
178	27.06.2007 00:00	0	0	20.1	31.2	63307	1054
179	28.06.2007 00:00	0	0	20.23	26.8	67430	1054
180	29.06.2007 00:00	0	0	20.59	23.5	68723	1060
181	30.06.2007 00:00	0	0	20.48	22.2	69301	1062
182	01.07.2007 00:00	0	0	20.41	22.7	69059	1062
183	02.07.2007 00:00	0	0	20.77	24	68879	1061
184	03.07.2007 00:00	0	0	20.92	24.9	68823	1060
185	04.07.2007 00:00	0	0	20.87	24.2	69007	1056
186	05.07.2007 00:00	0	0	20.54	25.4	68710	1052
187	06.07.2007 00:00	0	0	20.83	24	69301	1057
188	07.07.2007 00:00	0	0	20.79	25.3	67930	1061
189	08.07.2007 00:00	0	0	20.78	26	67442	1063
190	09.07.2007 00:00	0	0	20.88	24.9	69145	1061
191	10.07.2007 00:00	0	0	20.88	24.6	69283	1057
192	11.07.2007 00:00	0	0	20.09	25.2	69372	1055
193	12.07.2007 00:00	0	0	19.4	22	71130	1056
194	13.07.2007 00:00	0	0	20.65	22.1	70869	1061
195	14.07.2007 00:00	0	0	20.66	21.8	70788	1063
196	15.07.2007 00:00	0	0	20.64	23.4	69724	1065
197	16.07.2007 00:00	0	0	20.81	25.5	69164	1066
198	17.07.2007 00:00	0	0	19.98	26.2	68185	1065
199	18.07.2007 00:00	0	0	19.95	27.8	66943	1065

200	19.07.2007 00:00	0	0	11.57	28.2	66631	1064
201	20.07.2007 00:00	0	0	11.41	26.3	67897	1062
202	21.07.2007 00:00	0	0	20.14	25.8	67895	1061
203	22.07.2007 00:00	0	0	20	27.6	66674	1060
204	23.07.2007 00:00	0	0	20.39	29.3	65758	1059
205	24.07.2007 00:00	0	0	20.53	29.7	65699	1058
206	25.07.2007 00:00	0	0	20.51	31	65442	1056
207	26.07.2007 00:00	0	0	20.51	29.6	67698	1061
208	27.07.2007 00:00	0	0	20.59	25.1	69426	1061
209	28.07.2007 00:00	0	0	20.83	24.6	69375	1060
210	29.07.2007 00:00	0	0	20.79	25.5	68766	1059
211	30.07.2007 00:00	0	0	20.8	25.2	69052	1056
212	31.07.2007 00:00	0	0	20.79	25.5	69169	1057
213	01.08.2007 00:00	0	0	20.94	22.5	71518	1058
214	02.08.2007 00:00	0	0	21.27	20.6	71926	1061
215	03.08.2007 00:00	0	0	21.11	21.7	71119	1061
216	04.08.2007 00:00	0	0	21.32	23.1	70735	1059
217	05.08.2007 00:00	0	0	21.38	23.5	70624	1056
218	06.08.2007 00:00	0	0	21.19	24.3	84607	1053
219	07.08.2007 00:00	0	0	21.23	23.7	149258	1052
220	08.08.2007 00:00	282	143.9	9.22	26.7	148114	1058
221	09.08.2007 00:00	410.1	209.2	2.9	22.4	147683	1058
222	10.08.2007 00:00	343	175	3.71	20.9	146476	1059

223	11.08.2007 00:00	335.8	171.3	3.44	21.5	146097	1059
224	12.08.2007 00:00	309.9	158.1	3.81	19.5	146859	1058
225	13.08.2007 00:00	353.6	180.4	3.04	21.3	146910	1058
226	14.08.2007 00:00	379.5	193.6	2.48	23.4	146015	1060
227	15.08.2007 00:00	403.6	205.9	2.44	23.3	146529	1061
228	16.08.2007 00:00	387.8	197.9	2.53	23.3	145670	1062
229	17.08.2007 00:00	401.5	204.8	2.34	24.5	144881	1063
230	18.08.2007 00:00	406.6	207.4	2.48	24	145363	1062
231	19.08.2007 00:00	405.7	207	2.48	24.5	144541	1060
232	20.08.2007 00:00	413.3	210.9	2.63	24.5	145139	1059
233	21.08.2007 00:00	433.6	221.2	2.44	26.4	144980	1061
234	22.08.2007 00:00	435.6	222.2	2.52	26.8	144920	1064
235	23.08.2007 00:00	427.4	218.1	2.46	25.7	145328	1067
236	24.08.2007 00:00	434.5	221.7	2.5	24.4	145938	1069
237	25.08.2007 00:00	430.6	219.7	2.59	23	146911	1069
238	26.08.2007 00:00	460.1	234.7	2.57	21.7	147991	1066
239	27.08.2007 00:00	464	236.7	2.64	21.6	148474	1064
240	28.08.2007 00:00	452.9	231.1	2.57	22.1	147840	1064
241	29.08.2007 00:00	457.9	233.6	2.62	22.9	147369	1064
242	30.08.2007 00:00	454.7	232	2.58	24.8	145600	1062
243	31.08.2007 00:00	471.3	240.5	2.55	25.2	145216	1061
244	01.09.2007 00:00	481.4	245.6	2.5	22.4	147607	1062
245	02.09.2007 00:00	483.6	246.7	2.84	19.7	151122	1062

246	03.09.2007 00:00	481.3	245.6	2.88	20.2	150884	1061
247	04.09.2007 00:00	477.1	243.4	2.7	21.2	150546	1060
248	05.09.2007 00:00	482.3	246.1	2.51	23.4	149766	1058
249	06.09.2007 00:00	335.1	171	9.63	26.2	148893	1059
250	07.09.2007 00:00	483.9	246.9	2.78	18	151328	1059
251	08.09.2007 00:00	498.4	254.3	2.67	17.8	150726	1055
252	09.09.2007 00:00	504.4	257.3	2.66	17.4	148533	1058
253	10.09.2007 00:00	506.1	258.2	2.88	18.5	150316	1061
254	11.09.2007 00:00	504.2	257.2	2.63	20.5	147308	1061
255	12.09.2007 00:00	516.8	263.7	2.63	18.2	150928	1060
256	13.09.2007 00:00	522.5	266.6	2.64	18.1	146540	1062
257	14.09.2007 00:00	530.1	270.5	2.74	18.2	147344	1066
258	15.09.2007 00:00	525	267.9	2.64	17.4	149192	1063
259	16.09.2007 00:00	535.2	273.1	2.6	15.7	150678	1066
260	17.09.2007 00:00	533.4	272.1	2.6	18	146727	1066
261	18.09.2007 00:00	543.9	277.5	2.52	20.9	147611	1063
262	19.09.2007 00:00	548.1	279.6	2.62	22.2	150405	1061
263	20.09.2007 00:00	569.9	290.8	2.66	17.5	151805	1064
264	21.09.2007 00:00	562.3	286.9	2.91	15.4	152611	1068
265	22.09.2007 00:00	546.3	278.7	2.87	16.2	152407	1068
266	23.09.2007 00:00	542.6	276.8	2.83	16.4	152281	1067
267	24.09.2007 00:00	556.1	283.7	2.73	17.7	151840	1065
268	25.09.2007 00:00	558.3	284.8	2.72	18.1	151549	1063

269	26.09.2007 00:00	571.2	291.4	2.69	20.2	150960	1062
270	27.09.2007 00:00	586.1	299	2.53	20.5	150888	1062
271	28.09.2007 00:00	587.1	299.5	2.56	21.1	150851	1064
272	29.09.2007 00:00	598.4	305.3	2.58	21.3	150917	1066
273	30.09.2007 00:00	587.2	299.6	2.78	19.5	150019	1067
274	01.10.2007 00:00	585.4	298.7	2.75	18	145854	1067
275	02.10.2007 00:00	587.8	299.9	2.62	18	146936	1067
276	03.10.2007 00:00	604.2	308.3	2.51	17.9	139677	1065
277	04.10.2007 00:00	601.8	307	2.57	18.5	148571	1066
278	05.10.2007 00:00	601.2	306.7	2.57	18.5	151590	1065
279	06.10.2007 00:00	606.6	309.5	2.58	18.9	151281	1062
280	07.10.2007 00:00	633.5	323.2	2.61	17	151851	1063
281	08.10.2007 00:00	631.8	322.3	2.63	17.9	151799	1065
282	09.10.2007 00:00	639.1	326.1	2.69	18.4	151727	1067
283	10.10.2007 00:00	631.2	322	2.73	16.6	150441	1067
284	11.10.2007 00:00	148	75.5	18.08	26	54306	1064
285	12.10.2007 00:00	336.1	171.5	12.69	26.5	91063	1063
286	13.10.2007 00:00	641.9	327.5	3.18	17.2	147428	1058
287	14.10.2007 00:00	633.3	323.1	2.82	14.9	148804	1062
288	15.10.2007 00:00	638.6	325.8	3	14.3	149534	1067
289	16.10.2007 00:00	631.9	322.4	2.74	13.9	149189	1068
290	17.10.2007 00:00	640.3	326.7	2.8	15.7	148411	1066
291	18.10.2007 00:00	647.1	330.2	2.63	17.4	147588	1062

292	19.10.2007 00:00	430	219.4	10.32	27.2	103994	1058
293	20.10.2007 00:00	652.7	333	2.72	16.1	148243	1062
294	21.10.2007 00:00	675.6	344.7	2.74	16.4	148047	1060
295	22.10.2007 00:00	674.8	344.3	2.54	17.5	147194	1057
296	23.10.2007 00:00	660	336.7	2.69	18.6	146577	1057
297	24.10.2007 00:00	673.9	343.8	2.53	16.5	147923	1060
298	25.10.2007 00:00	676.4	345.1	2.69	16	148600	1065
299	26.10.2007 00:00	685.9	349.9	2.66	16	149278	1070
300	27.10.2007 00:00	685.2	349.6	2.76	16.1	149302	1070
301	28.10.2007 00:00	684.9	349.4	2.64	16.6	148742	1068
302	29.10.2007 00:00	680.2	347	2.66	17	147982	1062
303	30.10.2007 00:00	649.4	331.3	2.68	15.5	149080	1063
304	31.10.2007 00:00	639.1	326.1	2.52	17	148943	1065
305	01.11.2007 00:00	660.9	337.2	2.62	17.8	148681	1066
306	02.11.2007 00:00	634.5	323.7	2.43	16.6	149007	1066
307	03.11.2007 00:00	649.1	331.2	2.57	16.1	149444	1066
308	04.11.2007 00:00	635.7	324.3	2.35	16.9	148267	1060
309	05.11.2007 00:00	646.1	329.6	2.51	16.1	148874	1060
310	06.11.2007 00:00	619.7	316.2	2.46	15.5	149572	1065
311	07.11.2007 00:00	627	319.9	2.59	15.6	149119	1061
312	08.11.2007 00:00	647	330.1	2.55	15.7	148700	1058
313	09.11.2007 00:00	647.6	330.4	2.5	15.3	148639	1057
314	10.11.2007 00:00	626.7	319.7	2.35	17.3	146699	1046

315	11.11.2007 00:00	638.2	325.6	2.6	16.1	147994	1051
316	12.11.2007 00:00	430.4	219.6	1.67	16.6	148036	1053
317	13.11.2007 00:00	380.6	194.2	3.24	15.8	148838	1058
318	14.11.2007 00:00	581.1	296.5	4.33	16.1	148592	1056
319	15.11.2007 00:00	614.5	313.5	3.26	18.3	147077	1053
320	16.11.2007 00:00	594.2	303.2	2.98	16.4	148413	1061
321	17.11.2007 00:00	620.3	316.5	3.09	16	148758	1062
322	18.11.2007 00:00	620.9	316.8	2.76	15.7	148209	1058
323	19.11.2007 00:00	609.1	310.8	3.09	15.1	148492	1058
324	20.11.2007 00:00	581.7	296.8	3.31	14	149126	1062
325	21.11.2007 00:00	617.2	314.9	2.82	15.3	149094	1065
326	22.11.2007 00:00	645.2	329.2	2.78	17.2	148486	1065
327	23.11.2007 00:00	660.8	337.1	2.88	17.1	148661	1066
328	24.11.2007 00:00	656.4	334.9	2.65	16.4	148678	1064
329	25.11.2007 00:00	654	333.7	2.65	16.2	148509	1062
330	26.11.2007 00:00	680.1	347	2.38	16.7	147955	1057
331	27.11.2007 00:00	676.3	345.1	2.44	14.7	149340	1059
332	28.11.2007 00:00	690.2	352.1	2.55	14.4	149873	1062
333	29.11.2007 00:00	696.4	355.3	2.56	15.1	150003	1065
334	30.11.2007 00:00	682.2	348.1	2.43	16.1	148510	1056
335	01.12.2007 00:00	689.9	352	2.39	15.4	149045	1059
336	02.12.2007 00:00	705	359.7	2.48	15.4	149382	1060
337	03.12.2007 00:00	697.4	355.8	2.33	16.4	148131	1054

338	04.12.2007 00:00	686	350	2.29	17	147193	1050
339	05.12.2007 00:00	689.8	351.9	2.34	15.2	148214	1051
340	06.12.2007 00:00	707.9	361.2	2.54	15.1	148582	1055
341	07.12.2007 00:00	694	354.1	2.3	15.9	148687	1057
342	08.12.2007 00:00	698.7	356.5	2.35	16.7	148094	1056
343	09.12.2007 00:00	718.2	366.4	2.33	16.4	148297	1055
344	10.12.2007 00:00	717	365.8	2.49	16.5	147846	1051
345	11.12.2007 00:00	725.2	370	2.42	15.5	148613	1055
346	12.12.2007 00:00	695.5	354.8	2.99	13	150184	1060
347	13.12.2007 00:00	452.1	230.7	9.59	21.8	102289	1058
348	14.12.2007 00:00	692.1	353.1	2.59	14	149664	1062
349	15.12.2007 00:00	694.3	354.2	2.38	15.3	149698	1067
350	16.12.2007 00:00	707.2	360.8	2.48	14.7	150477	1070
351	17.12.2007 00:00	710.9	362.7	2.57	13.8	151293	1075
352	18.12.2007 00:00	695.1	354.6	2.61	15.3	150587	1074
353	19.12.2007 00:00	700.2	357.2	2.57	14.4	150797	1073
354	20.12.2007 00:00	709.2	361.8	2.48	13.8	150983	1072
355	21.12.2007 00:00	724.4	369.6	2.65	13.9	150984	1071
356	22.12.2007 00:00	735	375	2.57	14.3	150897	1069
357	23.12.2007 00:00	742.9	379	2.68	14.2	150752	1067
358	24.12.2007 00:00	741.3	378.2	2.54	15.1	150265	1066
359	25.12.2007 00:00	755.8	385.6	2.65	15.2	150448	1067
360	26.12.2007 00:00	760	387.8	2.5	14.9	150706	1070

361	27.12.2007 00:00	746.3	380.8	2.55	13.7	151347	1074
362	28.12.2007 00:00	749.8	382.6	2.54	14.2	151373	1075
363	29.12.2007 00:00	732.3	373.6	2.53	14.7	150703	1070
364	30.12.2007 00:00	730.8	372.9	2.43	15.5	149882	1066
365	31.12.2007 00:00	741.4	378.3	2.46	15.3	150002	1066

Note: The above data is based on average daily values. Specific cases like shut-downs and start-ups are evaluated case by case and where needed recalculations are made.

Annex II

N_2O Emission Reduction for the period 01.01.2007 - 31.12.2007

MONITORING PLAN - EMISSION OF N2O
AGROPOLYCHIM JSC, BULGARIA
Nitric Acid Plant

DATE:
2007y,

Period	Production of 100 % HNO3 [ton]	N2O emission [kg]	Emission factor actual [kg/ton]	Emission factor baseline [kg/ton]	Emission reduction N2O [kg]	Emission reduction CO2 [eq, ton]	corrections reduction CO2 [eq, ton]
-1	-2	-3	-4	-5	-6	-7	
01,01,2007 - 07,01,2007	7987,47	12875,92	1,612014818	**5,54**	31374,66	9726,15	
08,01,2007 - 14,01,2007	8043,93	13325,63	1,656606907	**5,54**	31237,74	9683,7	
15,01,2007 - 21,01,2007	7919,08	13269,12	1,675588578	**5,54**	30602,58	9486,8	
22,01,2007 - 28,01,2007	8024,17	14094,18	1,756465778	**5,54**	30359,72	9411,51	
29,01,2007 - 31,01,2007	3444,62	6072,11	1,7627808	**5,54**	13011,08	4033,44	
01,02,2007 - 04,02,2007	4590,43	8323,79	1,813292001	**5,54**	17107,19	5303,23	
05,02,2007 - 11,02,2007	7982,6	14812,05	1,855542054	**5,54**	29411,55	9117,58	

12,02,2007 - 18,02,2007	7956,31	15171,76	1,90688397	**5,54**	28906,2	8960,92	
19,02,2007 - 25,02,2007	7990,45	15501,06	1,939948313	**5,54**	28766,03	8917,47	
26,02,2007 - 28,02,2007	3414,84	6654,43	1,94867988	**5,54**	12263,78	3801,77	
01,03,2007 - 04,03,2007	4540,77	9119,81	2,008428086	**5,54**	16036,06	4971,18	
05,03,2007 - 11,03,2007	8026,11	17006,46	2,118891966	**5,54**	27458,19	8512,04	
12,03,2007 - 18,03,2007	7998,5	16963,92	2,120887666	**5,54**	27347,77	8477,81	
19,03,2007 - 25,03,2007	7903,56	17023,64	2,153920512	**5,54**	26762,08	8296,25	
26,03,2007 - 31,03,2007	6869,66	15486,67	2,254357566	**5,54**	22571,25	6997,09	
01,04,2007 - 01,04,2007	1144,31	2629,9	2,298240861	**5,54**	3709,58	1149,97	
02,04,2007 - 08,04,2007	7948,26	18288,45	2,300937564	**5,54**	25744,91	7980,92	
09,04,2007 - 15,04,2007	7976,77	19183,43	2,404912013	**5,54**	25007,88	7752,44	
16,04,2007 - 22,04,2007	7981,88	19328,21	2,421510972	**5,54**	24891,41	7716,34	
23,04,2007 - 29,04,2007	7107,19	16152,14	2,27264784	**5,54**	23221,69	7198,72	
30,04,2007 - 30,04,2007	946,07	2059,82	2,177238471	**5,54**	3181,41	986,24	
01,05,2007 - 06,05,2007	5933,08	13274,25	2,237328672	**5,54**	19595,01	6074,45	
07,05,2007 - 13,05,2007	7672,36	18314,25	2,387042579	**5,54**	24190,62	7499,09	
14,05,2007 - 20,05,2007	7381,77	17923,58	2,428087031	**5,54**	22971,43	7121,14	
21,05,2007 - 27,05,2007	7025,6	16875,27	2,401968515	**5,54**	22046,55	6834,43	
28,05,2007 - 31,05,2007	4143,69	10387,18	2,506746402	**5,54**	12568,86	3896,35	
01,06,2007 - 03,06,2007	3303,61	8774,93	2,656164015	**5,54**	9527,07	2953,39	
04,06,2007 - 10,06,2007	7523,69	20122,51	2,674553311	**5,54**	21558,73	6683,21	
11,06,2007 - 17,06,2007	1577,83	2272,94	1,440548095	**5,54**	6468,24	2005,15	-100,28
18,06,2007 - 24,06,2007	0	0	0	**5,54**	0	0	
25,06,2007 - 30,06,2007	0	0	0	**5,54**	0	0	
01,07,2007 - 01,07,2007	0	0	0	**5,54**	0	0	
02,07,2007 - 08,07,2007	0	0	0	**5,54**	0	0	
09,07,2007 - 15,07,2007	0	0	0	**5,54**	0	0	
16,07,2007 - 22,07,2007	0	0	0	**5,54**	0	0	
23,07,2007 - 29,07,2007	0	0	0	**5,54**	0	0	

30,07,2007 - 31,07,2007	0	0	0	**5,54**	0	0	
01,08,2007 - 05,08,2007	0	0	0	**5,54**	0	0	
06,08,2007 - 12,08,2007	4918,27	5564,31	1,131355131	**5,54**	21682,91	6721,7	-95,18
13,08,2007 - 19,08,2007	7513,38	9575,38	1,274443726	**5,54**	32048,75	9935,11	
20,08,2007 - 26,08,2007	7593,13	10626,76	1,39952299	**5,54**	31439,18	9746,15	
27,08,2007 - 31,08,2007	5457,78	8112,29	1,486371748	**5,54**	22123,81	6858,38	
01,09,2007 - 02,09,2007	2195,5	3459,37	1,575663858	**5,54**	8703,7	2698,15	
03,09,2007 - 09,09,2007	7391,88	11752,21	1,589881059	**5,54**	29198,81	9051,63	-42,95
10,09,2007 - 16,09,2007	7891,18	13007,5	1,648359307	**5,54**	30709,64	9519,99	
17,09,2007 - 23,09,2007	7907,51	13898,26	1,757602583	**5,54**	29909,35	9271,9	
24,09,2007 - 30,09,2007	7814,03	14656,88	1,8757133	**5,54**	28632,85	8876,18	
01,10,2007 - 07,10,2007	7877,73	14987,48	1,902512526	**5,54**	28655,14	8883,09	
08,10,2007 - 14,10,2007	6394,79	11242,14	1,75801551	**5,54**	24185	7497,35	-72,46
15,10,2007 - 21,10,2007	7607,76	14724,14	1,935410686	**5,54**	27422,85	8501,08	-97,5
22,10,2007 - 28,10,2007	8037,87	16866,99	2,098440258	**5,54**	27662,81	8575,47	
29,10,2007 - 31,10,2007	3468,82	7024,45	2,025025801	**5,54**	12192,81	3779,77	
01,11,2007 - 04,11,2007	4653,81	9217,1	1,98054927	**5,54**	16565,01	5135,15	
05,11,2007 - 11,11,2007	8159,81	15869,43	1,944828372	**5,54**	29335,92	9094,13	
12,11,2007 - 18,11,2007	7999,03	13672,1	1,709219743	**5,54**	30642,53	9499,18	-485,15
19,11,2007 - 25,11,2007	7979,26	15792,36	1,979176014	**5,54**	28412,74	8807,95	
26,11,2007 - 30,11,2007	5814,37	12259,38	2,10846231	**5,54**	19952,23	6185,19	
01,12,2007 - 02,12,2007	2329,57	4995,4	2,144344235	**5,54**	7910,42	2452,23	
03,12,2007 - 09,12,2007	8103,36	17396,31	2,146802067	**5,54**	27496,3	8523,85	
10,12,2007 - 16,12,2007	7682,39	16037,82	2,087608153	**5,54**	26522,62	8222,01	-71,43
17,12,2007 - 23,12,2007	8284,09	18172,13	2,193618128	**5,54**	27721,73	8593,74	
24,12,2007 - 30,12,2007	8267,5	18862,64	2,281540974	**5,54**	26939,31	8351,19	
31,12,2007 - 31,12,2007	1176,72	2668,93	2,268109661	**5,54**	3850,1	1193,53	
Corrections						**-964,95**	
TOTAL after recalculation	**342878,2**	**681729,2**	**1,988254924**	**5,54**	**1217815,8**	**377522,9**	

TOTAL after corrections						**376557,9**	

Verified By:
K. Berbenkov

Notes:

1. In order to ensure the necessary authenticity of the monitoring data and elimination of the abnormal emission levels detected at a start-up and a shut-down of the Nitric Acid Plant in the monitoring system was integrated a filter, based on the indicative for the operation of the plant index “flow rate of the effluent gasses”. At a limit value of the flow rate < 90 000 Nm^3/h these abnormal emissions are excluded/ filtered (made equal to zero) and the same participate when making the calculations.
2. All data has been manually recalculated to ensure compliance with data management procedures
3. During the period 12.6.2007(9:00h) -8.8.2006 (4:00h) the pant was in annual planned shut-down. The data were corrected and described in protocols No. 01/2007 and No. 02/2007, attached in Annex III.
4. The plant was stopped for repair. The stops and the data corrections are described as follow:
   - 5.09.2007 (23:30h) – 6.09.2007 (8:30h) and described in protocol No.03/2007 (see Annex III)
   - 11.10.2007 (5:30h) – 12.10.2007 (12:00) and described in protocol No.04/2007 (see Annex III)
   - 19.10.2007 (9:00h) – 19.10.2007 (18:00h) and described in protocol No.04/2007 (see Annex III)
   - 13.12.2007 (10:00h) – 13.12.2007 (20:00h) and described in protocol No.06/2007 (see Annex III)
5. The data were not recorded because of the error of the continuous monitoring system for NOx emissions. The data were replaced according to the procedure for the correcting of false-recorded data from the continuous monitoring system for NOx emissions from the nitric acid plant (attached in Annex III):
   - 12.11.2007 (16:00h) – 13.11.2007 (8:00h) and described in protocol No.05/2007 (see Annex III)

Annex III
Protocols for the data corrections

AGROPOLYCHIM
Member of the Acid & Fertilizers Group

Industrial zone, Devnya 9160, tel.: 052/ 661 526, fax: 052/ 661 594, www.agropolychim.bg

Confirmed:

Vice CEO .....
(eng. Kr. Berbenkov)

PROCEDURE
for the correcting of false-recorded data from the continuous monitoring system for NOx emissions from the nitric acid plant

1. This procedure applies for that cases in that the values of some of the data required for the report preparing for the emission reduction of nitrous oxide on DEPA are not correct recorded by technical causes.
2. The data that differ more than 3% from the mean data for the corresponding parameter from the last 6 hours are checked, under condition that the productivity of the plant was not changed. By the check obligatory all the data are taking into account, archived in the continuous monitoring system.
3. The correction of the data was calculated by the expression:
   $X = \Delta \cdot t$,
   where:
   X – correction of the data for period t. It is added or subtracted in dependence of the deviation
   Δ – the deviation of the parameter from the mean value for the last 6 hours
   t – the time of the recorded deviation, h
4. A protocol was composed for the deviation documentation.

drafted by:

Eng. G. Boshov – Manager nitric acid plant .....

Eng. R. Gavrilov – Chemichal engineer ecoprograms .....

5.10.2007

AGROPOLYCHIM
Member of the Acid & Fertilizers Group
Industrial zone, Devnya 9160, tel.: 0519/97526, fax: 0519/97594, www.agropolychim.bg

Confirmed:
Vice CEO.....
(eng. Kr. Berbenkov)

Protocol No.01/2007

The production of nitric acid was stopped for a repair of the plant on the 12th of June 2007 recorded at 9:00. The starting of the plant was on the 8th of August 2007. A reduction of nitrous oxide was recorded on the 12th, 13th, 14th and 15th of June although the plant did not work due to the cleaning of the installation.

Registered for this time reduction of the N2O emission registered at 9:00 was corrected from 87.8 kg N2O to 0 kg N2O, at 9:30 – from 213.9 kg N2O to 0 kg N2O etc. The procedure was repeated with the correcting of the carbon dioxide emissions.

The data are presented in table 1 for the 12th of June 2007.

The data are presented in table 2 for the 13th of June 2007.

The data are presented in table 3 for the 14th of June 2007.

The data are presented in table 4 for the 15th of June 2007.

Eng. G. Boshov – Manager nitric acid plant .....

Eng. R. Gavrilov – Chemichal engineer ecoprograms .....

Table 1

Day	Production of	N2O	Emission factor	Emission factor	Emission	Emission	Corrected emission	Corrected emission

	100 % HNO3	emission	actual	baseline	reduction N2O [kg]	reduction CO2 [eq. ton]	reduction N2O [kg]	reduction CO2 [eq. ton]
	[ton]	[kg]	[kg/ton]	[kg/ton]				
6/12/2007 0:00	46.03	129.73	2.82	5.54	125.28	38.84	125.28	38.84
6/12/2007 0:30	46.08	130.64	2.84	5.54	124.64	38.64	124.64	38.64
6/12/2007 1:00	46.11	131.01	2.84	5.54	124.44	38.58	124.44	38.58
6/12/2007 1:30	46.12	130.96	2.84	5.54	124.54	38.61	124.54	38.61
6/12/2007 2:00	46.24	130.51	2.82	5.54	125.66	38.95	125.66	38.95
6/12/2007 2:30	46.41	130.46	2.81	5.54	126.65	39.26	126.65	39.26
6/12/2007 3:00	46.25	131.66	2.85	5.54	124.57	38.62	124.57	38.62
6/12/2007 3:30	46.45	129.58	2.79	5.54	127.75	39.6	127.75	39.6
6/12/2007 4:00	46.08	129.98	2.82	5.54	125.3	38.84	125.3	38.84
6/12/2007 4:30	46.27	129.28	2.79	5.54	127.06	39.39	127.06	39.39
6/12/2007 5:00	46.36	126.34	2.73	5.54	130.49	40.45	130.49	40.45
6/12/2007 5:30	46.46	125.28	2.7	5.54	132.11	40.95	132.11	40.95
6/12/2007 6:00	46.28	125.25	2.71	5.54	131.14	40.65	131.14	40.65
6/12/2007 6:30	46.44	123.18	2.65	5.54	134.1	41.57	134.1	41.57
6/12/2007 7:00	46.34	119.76	2.58	5.54	136.96	42.46	136.96	42.46
6/12/2007 7:30	46.01	119.76	2.6	5.54	135.14	41.89	135.14	41.89
6/12/2007 8:00	46.17	117.88	2.55	5.54	137.9	42.75	137.9	42.75
6/12/2007 8:30	45.76	112.8	2.47	5.54	140.71	43.62	140.71	43.62
6/12/2007 9:00	15.85	0	0	5.54	87.81	27.22	0	0
6/12/2007 9:30	38.61	0	0	5.54	213.9	66.31	0	0
6/12/2007	36.49	0	0	5.54	202.15	62.67	0	0

10:00								
6/12/2007 10:30	10.29	0	0	5.54	57.01	17.67	0	0
6/12/2007 11:00	0.1	0	0	5.54	0.55	0.17	0	0
6/12/2007 11:30	0.12	0	0	5.54	0.66	0.21	0	0
6/12/2007 12:00	0.14	0	0	5.54	0.78	0.24	0	0
6/12/2007 12:30	0.17	0	0	5.54	0.94	0.29	0	0
6/12/2007 13:00	0.18	0	0	5.54	1	0.31	0	0
6/12/2007 13:30	0.18	0	0	5.54	1	0.31	0	0
6/12/2007 14:00	0.16	0	0	5.54	0.89	0.27	0	0
6/12/2007 14:30	0.17	0	0	5.54	0.94	0.29	0	0
6/12/2007 15:00	0.15	0	0	5.54	0.83	0.26	0	0
6/12/2007 15:30	0.15	0	0	5.54	0.83	0.26	0	0
6/12/2007 16:00	0.15	0	0	5.54	0.83	0.26	0	0
6/12/2007 16:30	0.13	0	0	5.54	0.72	0.22	0	0
6/12/2007 17:00	0.13	0	0	5.54	0.72	0.22	0	0
6/12/2007 17:30	0.14	0	0	5.54	0.78	0.24	0	0
6/12/2007 18:00	0.15	0	0	5.54	0.83	0.26	0	0
6/12/2007 18:30	0.15	0	0	5.54	0.83	0.26	0	0
6/12/2007 19:00	0.15	0	0	5.54	0.83	0.26	0	0
6/12/2007 19:30	0.14	0	0	5.54	0.78	0.24	0	0
6/12/2007 20:00	0.15	0	0	5.54	0.83	0.26	0	0
6/12/2007 20:30	0.16	0	0	5.54	0.89	0.27	0	0
6/12/2007 21:00	0.16	0	0	5.54	0.89	0.27	0	0
6/12/2007	0.16	0	0	5.54	0.89	0.27	0	0

21:30								
6/12/2007 22:00	0.14	0	0	5.54	0.78	0.24	0	0
6/12/2007 22:30	0.16	0	0	5.54	0.89	0.27	0	0
6/12/2007 23:00	0.15	0	0	5.54	0.83	0.26	0	0
6/12/2007 23:30	0.16	0	0	5.54	0.89	0.27	0	0
TOTAL:	**468.5**	**1137.03**	**24.605**	**5.54**	**1458.47**	**452.11**	**1167.22**	**361.835**

Table 2

Day	Production of 100 % HNO3 [ton]	N2O emission [kg]	Emission factor actual [kg/ton]	Emission factor baseline [kg/ton]	Emission reduction N2O [kg]	Emission reduction CO2 [eq. ton]	Corrected emission reduction N2O [kg]	Corrected emission reduction CO2 [eq. ton]
6/13/2007 0:00	0.16	0	0	5.54	0.89	0.27	0	0
6/13/2007 0:30	0.16	0	0	5.54	0.89	0.27	0	0
6/13/2007 1:00	0.14	0	0	5.54	0.78	0.24	0	0
6/13/2007 1:30	0.16	0	0	5.54	0.89	0.27	0	0
6/13/2007 2:00	0.16	0	0	5.54	0.89	0.27	0	0
6/13/2007 2:30	0.16	0	0	5.54	0.89	0.27	0	0
6/13/2007 3:00	0.16	0	0	5.54	0.89	0.27	0	0
6/13/2007 3:30	0.14	0	0	5.54	0.78	0.24	0	0
6/13/2007 4:00	0.16	0	0	5.54	0.89	0.27	0	0
6/13/2007 4:30	0.17	0	0	5.54	0.94	0.29	0	0
6/13/2007 5:00	0.14	0	0	5.54	0.78	0.24	0	0
6/13/2007 5:30	0.16	0	0	5.54	0.89	0.27	0	0
6/13/2007 6:00	0.15	0	0	5.54	0.83	0.26	0	0

6/13/2007 6:30	0.15	0	0	5.54	0.83	0.26	0	0
6/13/2007 7:00	0.13	0	0	5.54	0.72	0.22	0	0
6/13/2007 7:30	0.15	0	0	5.54	0.83	0.26	0	0
6/13/2007 8:00	0.14	0	0	5.54	0.78	0.24	0	0
6/13/2007 8:30	0.15	0	0	5.54	0.83	0.26	0	0
6/13/2007 9:00	0.14	0	0	5.54	0.78	0.24	0	0
6/13/2007 9:30	0.14	0	0	5.54	0.78	0.24	0	0
6/13/2007 10:00	0.13	0	0	5.54	0.72	0.22	0	0
6/13/2007 10:30	0.12	0	0	5.54	0.66	0.21	0	0
6/13/2007 11:00	0.12	0	0	5.54	0.66	0.21	0	0
6/13/2007 11:30	0.11	0	0	5.54	0.61	0.19	0	0
6/13/2007 12:00	0.11	0	0	5.54	0.61	0.19	0	0
6/13/2007 12:30	0.11	0	0	5.54	0.61	0.19	0	0
6/13/2007 13:00	0.11	0	0	5.54	0.61	0.19	0	0
6/13/2007 13:30	0.12	0	0	5.54	0.66	0.21	0	0
6/13/2007 14:00	0.11	0	0	5.54	0.61	0.19	0	0
6/13/2007 14:30	0.11	0	0	5.54	0.61	0.19	0	0
6/13/2007 15:00	0.13	0	0	5.54	0.72	0.22	0	0
6/13/2007 15:30	0.14	0	0	5.54	0.78	0.24	0	0
6/13/2007 16:00	0.14	0	0	5.54	0.78	0.24	0	0
6/13/2007 16:30	0.15	0	0	5.54	0.83	0.26	0	0
6/13/2007 17:00	0.14	0	0	5.54	0.78	0.24	0	0
6/13/2007 17:30	0.14	0	0	5.54	0.78	0.24	0	0

6/13/2007 18:00	0.12	0	0	5.54	0.66	0.21	0	0
6/13/2007 18:30	0.14	0	0	5.54	0.78	0.24	0	0
6/13/2007 19:00	0.14	0	0	5.54	0.78	0.24	0	0
6/13/2007 19:30	0.15	0	0	5.54	0.83	0.26	0	0
6/13/2007 20:00	0.13	0	0	5.54	0.72	0.22	0	0
6/13/2007 20:30	0.13	0	0	5.54	0.72	0.22	0	0
6/13/2007 21:00	0.13	0	0	5.54	0.72	0.22	0	0
6/13/2007 21:30	0.14	0	0	5.54	0.78	0.24	0	0
6/13/2007 22:00	0.14	0	0	5.54	0.78	0.24	0	0
6/13/2007 22:30	0.15	0	0	5.54	0.83	0.26	0	0
6/13/2007 23:00	0.15	0	0	5.54	0.83	0.26	0	0
6/13/2007 23:30	0.14	0	0	5.54	0.78	0.24	0	0
TOTAL:	**3.3**	**0**	**0**	**5.54**	**18.3**	**5.7**	**0**	**0**

Table 3

Day	Production of 100 % HNO3 [ton]	N2O emission [kg]	Emission factor actual [kg/ton]	Emission factor baseline [kg/ton]	Emission reduction N2O [kg]	Emission reduction CO2 [eq. ton]	Corrected emission reduction N2O [kg]	Corrected emission reduction CO2 [eq. ton]
6/14/2007 0:00	0.13	0	0	5.54	0.72	0.22	0	0
6/14/2007 0:30	0.11	0	0	5.54	0.61	0.19	0	0
6/14/2007 1:00	0.09	0	0	5.54	0.5	0.15	0	0
6/14/2007 1:30	0.11	0	0	5.54	0.61	0.19	0	0
6/14/2007 2:00	0.12	0	0	5.54	0.66	0.21	0	0
6/14/2007	0.12	0	0	5.54	0.66	0.21	0	0

2:30								
6/14/2007 3:00	0.12	0	0	5.54	0.66	0.21	0	0
6/14/2007 3:30	0.12	0	0	5.54	0.66	0.21	0	0
6/14/2007 4:00	0.13	0	0	5.54	0.72	0.22	0	0
6/14/2007 4:30	0.13	0	0	5.54	0.72	0.22	0	0
6/14/2007 5:00	0.13	0	0	5.54	0.72	0.22	0	0
6/14/2007 5:30	0.12	0	0	5.54	0.66	0.21	0	0
6/14/2007 6:00	0.13	0	0	5.54	0.72	0.22	0	0
6/14/2007 6:30	0.13	0	0	5.54	0.72	0.22	0	0
6/14/2007 7:00	0.14	0	0	5.54	0.78	0.24	0	0
6/14/2007 7:30	0.14	0	0	5.54	0.78	0.24	0	0
6/14/2007 8:00	0.14	0	0	5.54	0.78	0.24	0	0
6/14/2007 8:30	0.12	0	0	5.54	0.66	0.21	0	0
6/14/2007 9:00	0.09	0	0	5.54	0.5	0.15	0	0
6/14/2007 9:30	0.09	0	0	5.54	0.5	0.15	0	0
6/14/2007 10:00	0.09	0	0	5.54	0.5	0.15	0	0
6/14/2007 10:30	0.08	0	0	5.54	0.44	0.14	0	0
6/14/2007 11:00	0.13	0	0	5.54	0.72	0.22	0	0
6/14/2007 11:30	0	0	0	5.54	0	0	0	0
6/14/2007 12:00	0.13	0	0	5.54	0.72	0.22	0	0
6/14/2007 12:30	0.16	0	0	5.54	0.89	0.27	0	0
6/14/2007 13:00	0.15	0	0	5.54	0.83	0.26	0	0
6/14/2007 13:30	0.14	0	0	5.54	0.78	0.24	0	0
6/14/2007	0.15	0	0	5.54	0.83	0.26	0	0

14:00								
6/14/2007 14:30	0.14	0	0	5.54	0.78	0.24	0	0
6/14/2007 15:00	0.15	0	0	5.54	0.83	0.26	0	0
6/14/2007 15:30	0.14	0	0	5.54	0.78	0.24	0	0
6/14/2007 16:00	0.14	0	0	5.54	0.78	0.24	0	0
6/14/2007 16:30	0.13	0	0	5.54	0.72	0.22	0	0
6/14/2007 17:00	0.14	0	0	5.54	0.78	0.24	0	0
6/14/2007 17:30	0.14	0	0	5.54	0.78	0.24	0	0
6/14/2007 18:00	0.15	0	0	5.54	0.83	0.26	0	0
6/14/2007 18:30	0.15	0	0	5.54	0.83	0.26	0	0
6/14/2007 19:00	0.15	0	0	5.54	0.83	0.26	0	0
6/14/2007 19:30	0.16	0	0	5.54	0.89	0.27	0	0
6/14/2007 20:00	0.17	0	0	5.54	0.94	0.29	0	0
6/14/2007 20:30	0.18	0	0	5.54	1	0.31	0	0
6/14/2007 21:00	0.18	0	0	5.54	1	0.31	0	0
6/14/2007 21:30	0.18	0	0	5.54	1	0.31	0	0
6/14/2007 22:00	0.19	0	0	5.54	1.05	0.33	0	0
6/14/2007 22:30	0.2	0	0	5.54	1.11	0.34	0	0
6/14/2007 23:00	0.21	0	0	5.54	1.16	0.36	0	0
6/14/2007 23:30	0.23	0	0	5.54	1.27	0.4	0	0
TOTAL:	**3.3**	**0**	**0**	**5.54**	**18.3**	**5.7**	**0**	**0**

Table 4

AGROPOLYCHIM

ANNUAL MONITORING PLAN

Report № 2008-01 **Date of issue: 2008-03-10**

Day	Production of 100 % HNO3 [ton]	N2O emission [kg]	Emission factor actual [kg/ton]	Emission factor baseline [kg/ton]	Emission reduction N2O [kg]	Emission reduction CO2 [eq. ton]	Corrected emission reduction N2O [kg]	Corrected emission reduction CO2 [eq. ton]
6/15/2007 0:00	0.23	0	0	5.54	1.27	0.4	0	0
6/15/2007 0:30	0.25	0	0	5.54	1.39	0.43	0	0
6/15/2007 1:00	0.26	0	0	5.54	1.44	0.45	0	0
6/15/2007 1:30	0.25	0	0	5.54	1.39	0.43	0	0
6/15/2007 2:00	0.26	0	0	5.54	1.44	0.45	0	0
6/15/2007 2:30	0.27	0	0	5.54	1.5	0.46	0	0
6/15/2007 3:00	0.27	0	0	5.54	1.5	0.46	0	0
6/15/2007 3:30	0.27	0	0	5.54	1.5	0.46	0	0
6/15/2007 4:00	0.27	0	0	5.54	1.5	0.46	0	0
6/15/2007 4:30	0.29	0	0	5.54	1.61	0.5	0	0
6/15/2007 5:00	0.31	0	0	5.54	1.72	0.53	0	0
6/15/2007 5:30	0.32	0	0	5.54	1.77	0.55	0	0
6/15/2007 6:00	0.31	0	0	5.54	1.72	0.53	0	0
6/15/2007 6:30	0.32	0	0	5.54	1.77	0.55	0	0
6/15/2007 7:00	0.32	0	0	5.54	1.77	0.55	0	0
6/15/2007 7:30	0.32	0	0	5.54	1.77	0.55	0	0
6/15/2007 8:00	0.33	0	0	5.54	1.83	0.57	0	0
6/15/2007 8:30	0.25	0	0	5.54	1.39	0.43	0	0
6/15/2007 9:00	0	0	0	5.54	0	0	0	0
6/15/2007	0	0	0	5.54	0	0	0	0

9:30								
6/15/2007 10:00	0	0	0	5.54	0	0	0	0
6/15/2007 10:30	0	0	0	5.54	0	0	0	0
6/15/2007 11:00	0	0	0	5.54	0	0	0	0
6/15/2007 11:30	0	0	0	5.54	0	0	0	0
6/15/2007 12:00	0	0	0	5.54	0	0	0	0
6/15/2007 12:30	0	0	0	5.54	0	0	0	0
6/15/2007 13:00	0	0	0	5.54	0	0	0	0
6/15/2007 13:30	0	0	0	5.54	0	0	0	0
6/15/2007 14:00	0	0	0	5.54	0	0	0	0
6/15/2007 14:30	0	0	0	5.54	0	0	0	0
6/15/2007 15:00	0	0	0	5.54	0	0	0	0
6/15/2007 15:30	0	0	0	5.54	0	0	0	0
6/15/2007 16:00	0	0	0	5.54	0	0	0	0
6/15/2007 16:30	0	0	0	5.54	0	0	0	0
6/15/2007 17:00	0	0	0	5.54	0	0	0	0
6/15/2007 17:30	0	0	0	5.54	0	0	0	0
6/15/2007 18:00	0	0	0	5.54	0	0	0	0
6/15/2007 18:30	0	0	0	5.54	0	0	0	0
6/15/2007 19:00	0	0	0	5.54	0	0	0	0
6/15/2007 19:30	0	0	0	5.54	0	0	0	0
6/15/2007 20:00	0	0	0	5.54	0	0	0	0
6/15/2007 20:30	0	0	0	5.54	0	0	0	0
6/15/2007	0	0	0	5.54	0	0	0	0

21:00								
6/15/2007 21:30	0	0	0	5.54	0	0	0	0
6/15/2007 22:00	0	0	0	5.54	0	0	0	0
6/15/2007 22:30	0	0	0	5.54	0	0	0	0
6/15/2007 23:00	0	0	0	5.54	0	0	0	0
6/15/2007 23:30	0	0	0	5.54	0	0	0	0
TOTAL:	**2.5**	**0**	**0**	**5.54**	**13.9**	**4.3**	**0**	**0**

AGROPOLYCHIM
Member of the Acid & Fertilizers Group
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Confirmed:
Vice CEO .....
(eng. Kr. Berbenkov)

Protocol No.02/2007

The production of nitric acid was started up after a repair of the plant on the 8th of August 2007 recorded at 4:00. The gas analyzer did not work till the restart of the computer that controls the continuous monitoring system for NOx emissions. The first N_2O detection was occurred between 9:00 and 9:30 and recorded at 9:30. The data between 4:00 and 9:30 were replaced with the data from the next 5 h 30 min steady work of the plant.

The reduction of the N_2O emission registered at 4:00 was corrected from 40.55 kg N_2O to 220.65 kg N_2O, at 4:30 – from 190.8 kg N_2O to 162.42 kg N_2O etc. The procedure was repeated with the correcting of the carbon dioxide emissions.

The data are presented in table 1 for the 8th of August 2007.

Eng. G. Boshov – Manager nitric acid plant .....

Eng. R. Gavrilov – Chemichal engineer ecoprograms .....

AGROPOLYCHIM

ANNUAL MONITORING PLAN

Report № 2008-01 **Date of issue: 2008-03-10**

Table 1

Day	Production of 100 % HNO3 [ton]	N2O emission [kg]	Emission factor actual [kg/ton]	Emission factor baseline [kg/ton]	Emission reduction N2O [kg]	Emission reduction CO2 [eq. ton]	Corrected emission reduction N2O [kg]	Corrected emission reduction CO2 [eq. ton]
8/8/2007 0:00	0	0	0	5.54	0	0	0	0
8/8/2007 0:30	0	0	0	5.54	0	0	0	0
8/8/2007 1:00	0	0	0	5.54	0	0	0	0
8/8/2007 1:30	0	0	0	5.54	0	0	0	0
8/8/2007 2:00	0	0	0	5.54	0	0	0	0
8/8/2007 2:30	0	0	0	5.54	0	0	0	0
8/8/2007 3:00	0	0	0	5.54	0	0	0	0
8/8/2007 3:30	0	0	0	5.54	0	0	0	0
8/8/2007 4:00	7.32	0	0	5.54	40.55	12.57	220.65	68.4
8/8/2007 4:30	34.44	0	0	5.54	190.8	59.15	162.42	50.35
8/8/2007 5:00	44.86	0	0	5.54	248.52	77.04	141.01	43.71
8/8/2007 5:30	44.88	0	0	5.54	248.64	77.08	168.33	52.18
8/8/2007 6:00	43.64	0	0	5.54	241.77	74.95	149.65	46.39
8/8/2007 6:30	41.5	0	0	5.54	229.91	71.27	156.46	48.5
8/8/2007 7:00	42.65	0	0	5.54	236.28	73.25	143.91	44.61
8/8/2007 7:30	43.05	0	0	5.54	238.5	73.93	153.47	47.57
8/8/2007 8:00	43.2	0	0	5.54	239.33	74.19	140.57	43.58
8/8/2007 8:30	43.16	0	0	5.54	239.11	74.12	181.69	56.32
8/8/2007 9:00	43.08	0	0	5.54	238.66	73.99	159.8	49.54

8/8/2007 9:30	43.11	18.18	0.42	5.54	220.65	68.4	220.65	68.4
8/8/2007 10:00	42.88	75.14	1.75	5.54	162.42	50.35	162.42	50.35
8/8/2007 10:30	38.64	73.06	1.89	5.54	141.01	43.71	141.01	43.71
8/8/2007 11:00	43.25	71.28	1.65	5.54	168.33	52.18	168.33	52.18
8/8/2007 11:30	39.46	68.96	1.75	5.54	149.65	46.39	149.65	46.39
8/8/2007 12:00	40.65	68.74	1.69	5.54	156.46	48.5	156.46	48.5
8/8/2007 12:30	38.5	69.38	1.8	5.54	143.91	44.61	143.91	44.61
8/8/2007 13:00	40.29	69.74	1.73	5.54	153.47	47.57	153.47	47.57
8/8/2007 13:30	37.76	68.62	1.82	5.54	140.57	43.58	140.57	43.58
8/8/2007 14:00	44.87	66.89	1.49	5.54	181.69	56.32	181.69	56.32
8/8/2007 14:30	40.86	66.56	1.63	5.54	159.8	49.54	159.8	49.54
8/8/2007 15:00	44.17	68.83	1.56	5.54	175.87	54.52	175.87	54.52
8/8/2007 15:30	45.93	69.1	1.5	5.54	185.35	57.46	185.35	57.46
8/8/2007 16:00	45.72	69.91	1.53	5.54	183.38	56.85	183.38	56.85
8/8/2007 16:30	45.13	70.72	1.57	5.54	179.3	55.58	179.3	55.58
8/8/2007 17:00	44.96	68.41	1.52	5.54	180.67	56.01	180.67	56.01
8/8/2007 17:30	44.69	67.27	1.51	5.54	180.31	55.9	180.31	55.9
8/8/2007 18:00	44.42	67.58	1.52	5.54	178.51	55.34	178.51	55.34
8/8/2007 18:30	44.5	67.88	1.53	5.54	178.65	55.38	178.65	55.38
8/8/2007 19:00	44.49	68.8	1.55	5.54	177.67	55.08	177.67	55.08
8/8/2007 19:30	44.42	68.27	1.54	5.54	177.82	55.12	177.82	55.12
8/8/2007 20:00	45.74	70.27	1.54	5.54	183.13	56.77	183.13	56.77
8/8/2007 20:30	44.83	75.52	1.68	5.54	172.84	53.58	172.84	53.58

8/8/2007 21:00	44.91	76.5	1.7	5.54	172.3	53.41	172.3	53.41
8/8/2007 21:30	45.06	70.59	1.57	5.54	179.04	55.5	179.04	55.5
8/8/2007 22:00	44.8	73.07	1.63	5.54	175.12	54.29	175.12	54.29
8/8/2007 22:30	44.27	72	1.63	5.54	173.26	53.71	173.26	53.71
8/8/2007 23:00	44.2	70.94	1.6	5.54	173.93	53.92	173.93	53.92
8/8/2007 23:30	43.87	71.28	1.62	5.54	171.76	53.25	171.76	53.25
TOTAL:	**844.08**	**991.745**	**22.96**	**5.54**	**3684.47**	**1142.18**	**3377.415**	**1046.985**

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(eng. Kr. Berbenkov)

Protocol No.03/2007

The production of nitric acid was stopped on the 5th of September 2007 between 23:30 and 24:00 for a repair of the plant and registered from the continuous monitoring system for NOx emissions from the nitric acid plant at 0:00 on the 6th of September 2007. After the starting of the plant, normal working conditions were established at 8:30 and registered at 9:00. Registered for this time reduction of the N_2O emission registered at 0:00 on the 6th September 2007 was corrected from 249.13 kg N_2O to 0 kg N_2O etc. till the value registered at 8:30 where the value was corrected from 83.56 kg N_2O to 0 kg N_2O. The procedure was repeated with the correcting of the carbon dioxide emissions.
The data are presented in table 1 for the 6th of September 2007.

Eng. G. Boshov – Manager nitric acid plant .....
Eng. R. Gavrilov – Chemichal engineer ecoprograms .....

Table 1

Day	Production of	N2O	Emission factor	Emission factor	Emission	Emission	Correted emission	Corrected emission

	100 % HNO3	emission	actual	baseline	reduction N2O	reduction CO2	reduction N2O	reduction CO2
	[ton]	[kg]	[kg/ton]	[kg/ton]	[kg]	[eq. ton]	[kg]	[eq. ton]
9/6/2007 0:00	44.97	0	0	5.54	249.13	77.23	0	0
9/6/2007 0:30	0.27	0	0	5.54	1.5	0.46	0	0
9/6/2007 1:00	0.33	0	0	5.54	1.83	0.57	0	0
9/6/2007 1:30	19.61	0	0	5.54	108.64	33.68	0	0
9/6/2007 2:00	3.81	0	0	5.54	21.11	6.54	0	0
9/6/2007 2:30	0.07	0	0	5.54	0.39	0.12	0	0
9/6/2007 3:00	0.08	0	0	5.54	0.44	0.14	0	0
9/6/2007 3:30	0.08	0	0	5.54	0.44	0.14	0	0
9/6/2007 4:00	0.08	0	0	5.54	0.44	0.14	0	0
9/6/2007 4:30	0.08	0	0	5.54	0.44	0.14	0	0
9/6/2007 5:00	0.09	0	86.44	5.54	-7.28	-2.26	0	0
9/6/2007 5:30	0.07	0	46.57	5.54	-2.87	-0.89	0	0
9/6/2007 6:00	0.14	0	0	5.54	0.78	0.24	0	0
9/6/2007 6:30	0.35	0	0	5.54	1.94	0.6	0	0
9/6/2007 7:00	1.15	0	0	5.54	6.37	1.98	0	0
9/6/2007 7:30	0.11	0	0	5.54	0.61	0.19	0	0
9/6/2007 8:00	0.22	0	111.36	5.54	-23.28	-7.22	0	0
9/6/2007 8:30	0.07	0	1199.29	5.54	-83.56	-25.9	0	0
9/6/2007 9:00	19.23	77.51	4.03	5.54	29.02	9	29.02	9
9/6/2007 9:30	46.08	84.39	1.83	5.54	170.89	52.98	170.89	52.98
9/6/2007 10:00	33.65	83.2	2.47	5.54	103.22	32	103.22	32
9/6/2007	54.16	82.03	1.51	5.54	218.02	67.59	218.02	67.59

10:30								
9/6/2007 11:00	50.06	77.08	1.54	5.54	200.25	62.08	200.25	62.08
9/6/2007 11:30	47.63	75.69	1.59	5.54	188.18	58.34	188.18	58.34
9/6/2007 12:00	46.89	76.98	1.64	5.54	182.79	56.67	182.79	56.67
9/6/2007 12:30	47.45	79.63	1.68	5.54	183.24	56.81	183.24	56.81
9/6/2007 13:00	47.63	77.02	1.62	5.54	186.85	57.92	186.85	57.92
9/6/2007 13:30	47.37	74.84	1.58	5.54	187.59	58.15	187.59	58.15
9/6/2007 14:00	47.13	76.51	1.62	5.54	184.59	57.22	184.59	57.22
9/6/2007 14:30	47.24	76.55	1.62	5.54	185.16	57.4	185.16	57.4
9/6/2007 15:00	46.99	77.1	1.64	5.54	183.22	56.8	183.22	56.8
9/6/2007 15:30	47.26	76.15	1.61	5.54	185.67	57.56	185.67	57.56
9/6/2007 16:00	47.26	74.03	1.57	5.54	187.79	58.22	187.79	58.22
9/6/2007 16:30	46.86	73.75	1.57	5.54	185.85	57.61	185.85	57.61
9/6/2007 17:00	46.82	73.7	1.57	5.54	185.68	57.56	185.68	57.56
9/6/2007 17:30	46.82	73.83	1.58	5.54	185.55	57.52	185.55	57.52
9/6/2007 18:00	46.88	74.8	1.6	5.54	184.92	57.32	184.92	57.32
9/6/2007 18:30	47.04	76.54	1.63	5.54	184.06	57.06	184.06	57.06
9/6/2007 19:00	47.06	78.48	1.67	5.54	182.23	56.49	182.23	56.49
9/6/2007 19:30	47.24	80.18	1.7	5.54	181.53	56.27	181.53	56.27
9/6/2007 20:00	47.36	78.42	1.66	5.54	183.95	57.03	183.95	57.03
9/6/2007 20:30	47.19	78.56	1.66	5.54	182.87	56.69	182.87	56.69
9/6/2007 21:00	47.01	76.81	1.63	5.54	183.63	56.92	183.63	56.92
9/6/2007 21:30	47.22	77.46	1.64	5.54	184.14	57.08	184.14	57.08
9/6/2007	46.99	78.15	1.66	5.54	182.17	56.47	182.17	56.47

22:00								
9/6/2007 22:30	47.39	77.52	1.64	5.54	185.02	57.36	185.02	57.36
9/6/2007 23:00	47.31	76.87	1.62	5.54	185.23	57.42	185.23	57.42
9/6/2007 23:30	47.23	75.24	1.59	5.54	186.41	57.79	186.41	57.79
TOTAL:	**727.02**	**1159.51**			**2808.40**	**870.62**	**2669.86**	**827.67**

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Protocol No.04/2007

The production of nitric acid was stopped between 5:00 and 5:30 for a repair of the plant and registered from the continuous monitoring system for NOx emissions from the nitric acid plant at 5:30 on the 11th of October 2007 until 12:00 on the 12th of October, as well on the 19th of October 2007 from 9:00 to 18:00.

The registered value for the N_2O emission recorded at 5:30 was corrected from 230.46 kg N_2O to 0 kg N_2O etc. till 12:00 on the 12th of October 2007, where the value was corrected from 77.46 kg N_2O to 0 kg N_2O. The procedure was repeated with the correcting of the carbon dioxide emissions. The values were corrected on the same manner for the values registered on the 19th of October.

In table 1, the data are presented for the 11th of October 2007. In table 2, the data are presented for the 12th of October 2007. In table 3, the data are presented for the 19th of October 2007.

Eng. G. Boshov – Manager nitric acid plant .....
Eng. R. Gavrilov – Chemichal engineer ecoprograms .....

Table 1

Day	Production of 100 % HNO3 [ton]	N2O emission [kg]	Emission factor actual [kg/ton]	Emission factor baseline [kg/ton]	Emission reduction N2O [kg]	Emission reduction CO2 [eq. ton]	Correted emission reduction N2O [kg]	Corrected emission reduction CO2 [eq. ton]
10/11/2007 0:00	46.79	98.32	2.1	5.54	160.9	49.88	160.9	49.88
10/11/2007 0:30	46.69	98.05	2.1	5.54	160.61	49.79	160.61	49.79
10/11/2007 1:00	46.78	98.11	2.1	5.54	161.05	49.93	161.05	49.93
10/11/2007 1:30	46.68	99.17	2.12	5.54	159.44	49.43	159.44	49.43
10/11/2007 2:00	46.76	99.73	2.13	5.54	159.32	49.39	159.32	49.39
10/11/2007 2:30	46.87	99	2.11	5.54	160.66	49.8	160.66	49.8
10/11/2007 3:00	46.72	98.28	2.1	5.54	160.55	49.77	160.55	49.77
10/11/2007 3:30	46.52	97.77	2.1	5.54	159.95	49.58	159.95	49.58
10/11/2007 4:00	46.68	97.66	2.09	5.54	160.95	49.89	160.95	49.89
10/11/2007 4:30	46.57	97.53	2.09	5.54	160.47	49.75	160.47	49.75
10/11/2007 5:00	46.7	97.69	2.09	5.54	161.03	49.92	161.03	49.92
10/11/2007 5:30	41.6	0	0	5.54	230.46	71.44	0	0
10/11/2007 6:00	0.18	0	0	5.54	1	0.31	0	0
10/11/2007 6:30	0.32	0	0	5.54	1.77	0.55	0	0
10/11/2007 7:00	1.66	0	0	5.54	9.2	2.85	0	0
10/11/2007 7:30	0.6	0	0	5.54	3.32	1.03	0	0
10/11/2007 8:00	0.51	0	0	5.54	2.83	0.88	0	0
10/11/2007 8:30	0.54	0	0	5.54	2.99	0.93	0	0
10/11/2007 9:00	0.55	0	0	5.54	3.05	0.94	0	0
10/11/2007 9:30	0.38	0	0	5.54	2.11	0.65	0	0
10/11/2007	0.2	0	0	5.54	1.11	0.34	0	0

10:00								
10/11/2007 10:30	0.45	0	0	5.54	2.49	0.77	0	0
10/11/2007 11:00	0.4	0	0	5.54	2.22	0.69	0	0
10/11/2007 11:30	0.39	0	0	5.54	2.16	0.67	0	0
10/11/2007 12:00	0.39	0	0	5.54	2.16	0.67	0	0
10/11/2007 12:30	0.4	0	0	5.54	2.22	0.69	0	0
10/11/2007 13:00	0.4	0	0	5.54	2.22	0.69	0	0
10/11/2007 13:30	0.37	0	0	5.54	2.05	0.64	0	0
10/11/2007 14:00	0.35	0	0	5.54	1.94	0.6	0	0
10/11/2007 14:30	0.39	0	0	5.54	2.16	0.67	0	0
10/11/2007 15:00	0.44	0	0	5.54	2.44	0.76	0	0
10/11/2007 15:30	0.45	0	0	5.54	2.49	0.77	0	0
10/11/2007 16:00	0.45	0	0	5.54	2.49	0.77	0	0
10/11/2007 16:30	0.46	0	0	5.54	2.55	0.79	0	0
10/11/2007 17:00	0.48	0	0	5.54	2.66	0.82	0	0
10/11/2007 17:30	0.45	0	0	5.54	2.49	0.77	0	0
10/11/2007 18:00	0.35	0	0	5.54	1.94	0.6	0	0
10/11/2007 18:30	0.29	0	0	5.54	1.61	0.5	0	0
10/11/2007 19:00	0.3	0	0	5.54	1.66	0.52	0	0
10/11/2007 19:30	0.32	0	0	5.54	1.77	0.55	0	0
10/11/2007 20:00	0.33	0	0	5.54	1.83	0.57	0	0
10/11/2007 20:30	0.36	0	0	5.54	1.99	0.62	0	0
10/11/2007 21:00	0.38	0	0	5.54	2.11	0.65	0	0
10/11/2007	0.39	0	0	5.54	2.16	0.67	0	0

21:30								
10/11/2007 22:00	0.42	0	0	5.54	2.33	0.72	0	0
10/11/2007 22:30	0.49	0	0	5.54	2.71	0.84	0	0
10/11/2007 23:00	0.5	0	0	5.54	2.77	0.86	0	0
10/11/2007 23:30	0.5	0	0	5.54	2.77	0.86	0	0
TOTAL:	**285.35**	**540.66**	**0.70**	**5.54**	**1041.58**	**322.89**	**882.47**	**273.57**

Table 2

Day	Production of 100 % HNO3	N2O emission	Emission factor actual	Emission factor baseline	Emission reduction N2O	Emission reduction CO2	Corrected emission reduction N2O	Corrected emission reduction CO2
	[ton]	[kg]	[kg/ton]	[kg/ton]	[kg]	[eq. ton]	[kg]	[eq. ton]
10/12/2007 0:00	0.5	0	0	5.54	2.77	0.86	0	0
10/12/2007 0:30	0.49	0	0	5.54	2.71	0.84	0	0
10/12/2007 1:00	0.47	0	0	5.54	2.6	0.81	0	0
10/12/2007 1:30	0.46	0	0	5.54	2.55	0.79	0	0
10/12/2007 2:00	0.44	0	0	5.54	2.44	0.76	0	0
10/12/2007 2:30	0.43	0	0	5.54	2.38	0.74	0	0
10/12/2007 3:00	0.42	0	0	5.54	2.33	0.72	0	0
10/12/2007 3:30	0.44	0	0	5.54	2.44	0.76	0	0
10/12/2007 4:00	0.52	0	0	5.54	2.88	0.89	0	0
10/12/2007 4:30	0.4	0	0	5.54	2.22	0.69	0	0
10/12/2007 5:00	0.07	0	0	5.54	0.39	0.12	0	0
10/12/2007 5:30	1.61	0	0	5.54	8.92	2.77	0	0
10/12/2007 6:00	1.47	0	0	5.54	8.14	2.52	0	0
10/12/2007 6:30	0	0	0	5.54	0	0	0	0

10/12/2007 7:00	0	0	0	5.54	0	0	0	0
10/12/2007 7:30	18.86	0	0	5.54	104.48	32.39	0	0
10/12/2007 8:00	12.26	0	0	5.54	67.92	21.06	0	0
10/12/2007 8:30	0.02	0	0	5.54	0.11	0.03	0	0
10/12/2007 9:00	0.03	0	0	5.54	0.17	0.05	0	0
10/12/2007 9:30	0.12	0	0	5.54	0.66	0.21	0	0
10/12/2007 10:00	0.25	0	0	5.54	1.39	0.43	0	0
10/12/2007 10:30	1.65	0	0	5.54	9.14	2.83	0	0
10/12/2007 11:00	0.11	0.57	5.18	5.54	0.04	0.01	0	0
10/12/2007 11:30	0	106.94	106.94	5.54	0	0	0	0
10/12/2007 12:00	2.54	91.53	36.04	5.54	-77.46	-24.01	0	0
10/12/2007 12:30	41.62	88.92	2.14	5.54	141.65	43.91	141.65	43.91
10/12/2007 13:00	47.6	83.07	1.75	5.54	180.63	56	180.63	56
10/12/2007 13:30	44.79	83.52	1.86	5.54	164.62	51.03	164.62	51.03
10/12/2007 14:00	44.65	86.92	1.95	5.54	160.44	49.74	160.44	49.74
10/12/2007 14:30	46.96	90.55	1.93	5.54	169.61	52.58	169.61	52.58
10/12/2007 15:00	46.49	88.42	1.9	5.54	169.13	52.43	169.13	52.43
10/12/2007 15:30	46.4	88.65	1.91	5.54	168.41	52.21	168.41	52.21
10/12/2007 16:00	46.4	91.34	1.97	5.54	165.72	51.37	165.72	51.37
10/12/2007 16:30	46.57	94	2.02	5.54	164	50.84	164	50.84
10/12/2007 17:00	46.67	95.68	2.05	5.54	162.87	50.49	162.87	50.49
10/12/2007 17:30	46.57	96.42	2.07	5.54	161.58	50.09	161.58	50.09
10/12/2007 18:00	46.69	90.66	1.94	5.54	168	52.08	168	52.08

10/12/2007 18:30	46.48	92.17	1.98	5.54	165.33	51.25	165.33	51.25
10/12/2007 19:00	46.62	93.76	2.01	5.54	164.51	51	164.51	51
10/12/2007 19:30	46.91	94.22	2.01	5.54	165.66	51.36	165.66	51.36
10/12/2007 20:00	46.8	94.08	2.01	5.54	165.19	51.21	165.19	51.21
10/12/2007 20:30	46.8	94.12	2.01	5.54	165.15	51.2	165.15	51.2
10/12/2007 21:00	47.02	94.91	2.02	5.54	165.58	51.33	165.58	51.33
10/12/2007 21:30	46.79	95.67	2.04	5.54	163.55	50.7	163.55	50.7
10/12/2007 22:00	46.75	96.02	2.05	5.54	162.98	50.52	162.98	50.52
10/12/2007 22:30	46.63	96.06	2.06	5.54	162.27	50.3	162.27	50.3
10/12/2007 23:00	46.87	95.4	2.04	5.54	164.26	50.92	164.26	50.92
10/12/2007 23:30	46.83	95.31	2.04	5.54	164.13	50.88	164.13	50.88
TOTAL:	**554.74**	**1159.46**	**1.30**	**5.54**	**1967.25**	**609.86**	**1892.64**	**586.72**

Table 3

Day	Production of 100 % HNO3 [ton]	N2O emission [kg]	Emission factor actual [kg/ton]	Emission factor baseline [kg/ton]	Emission reduction N2O [kg]	Emission reduction CO2 [eq. ton]	Corrected emission reduction N2O [kg]	Corrected emission reduction CO2 [eq. ton]
10/19/2007 0:00	47.42	102.7	2.17	5.54	160.01	49.6	160.01	49.6
10/19/2007 0:30	47.45	102.37	2.16	5.54	160.5	49.76	160.5	49.76
10/19/2007 1:00	47.54	102	2.15	5.54	161.37	50.03	161.37	50.03
10/19/2007 1:30	47.68	102.22	2.14	5.54	161.93	50.2	161.93	50.2
10/19/2007 2:00	47.81	102.52	2.14	5.54	162.35	50.33	162.35	50.33
10/19/2007 2:30	47.79	103.11	2.16	5.54	161.65	50.11	161.65	50.11
10/19/2007 3:00	47.79	103.43	2.16	5.54	161.33	50.01	161.33	50.01

10/19/2007 3:30	47.8	103.64	2.17	5.54	161.17	49.96	161.17	49.96
10/19/2007 4:00	47.93	104.14	2.17	5.54	161.39	50.03	161.39	50.03
10/19/2007 4:30	47.98	104.59	2.18	5.54	161.22	49.98	161.22	49.98
10/19/2007 5:00	47.88	104.74	2.19	5.54	160.52	49.76	160.52	49.76
10/19/2007 5:30	47.99	103.28	2.15	5.54	162.58	50.4	162.58	50.4
10/19/2007 6:00	47.83	101.82	2.13	5.54	163.16	50.58	163.16	50.58
10/19/2007 6:30	47.63	102.76	2.16	5.54	161.11	49.94	161.11	49.94
10/19/2007 7:00	47.86	102.51	2.14	5.54	162.63	50.42	162.63	50.42
10/19/2007 7:30	47.68	101.19	2.12	5.54	162.96	50.52	162.96	50.52
10/19/2007 8:00	47.85	98.29	2.05	5.54	166.8	51.71	166.8	51.71
10/19/2007 8:30	47.64	97.32	2.04	5.54	166.61	51.65	166.61	51.65
10/19/2007 9:00	32.16	0	0	5.54	178.17	55.23	0	0
10/19/2007 9:30	0.06	0	0	5.54	0.33	0.1	0	0
10/19/2007 10:00	12.69	0	0	5.54	70.3	21.79	0	0
10/19/2007 10:30	28.66	0	0	5.54	158.78	49.22	0	0
10/19/2007 11:00	36.89	0	0	5.54	204.37	63.35	0	0
10/19/2007 11:30	10.07	0	0	5.54	55.79	17.29	0	0
10/19/2007 12:00	0	0	0	5.54	0	0	0	0
10/19/2007 12:30	0	0	0	5.54	0	0	0	0
10/19/2007 13:00	0	0	0	5.54	0	0	0	0
10/19/2007 13:30	0	0	0	5.54	0	0	0	0
10/19/2007 14:00	0.01	0	0	5.54	0.06	0.02	0	0
10/19/2007 14:30	0.83	0	0	5.54	4.6	1.43	0	0

10/19/2007 15:00	2.68	0	0	5.54	14.85	4.6	0	0
10/19/2007 15:30	0.88	0	0	5.54	4.88	1.51	0	0
10/19/2007 16:00	0	0	0	5.54	0	0	0	0
10/19/2007 16:30	0	0	0	5.54	0	0	0	0
10/19/2007 17:00	0.34	0	0	5.54	1.88	0.58	0	0
10/19/2007 17:30	0.14	0	0	5.54	0.78	0.24	0	0
10/19/2007 18:00	0	78.47	78.47	5.54	0	0	0	0
10/19/2007 18:30	10.82	125.62	11.61	5.54	-65.68	-20.36	0	0
10/19/2007 19:00	33.58	91.55	2.73	5.54	94.48	29.29	94.48	29.29
10/19/2007 19:30	51.1	95.5	1.87	5.54	187.59	58.15	187.59	58.15
10/19/2007 20:00	51.18	92.96	1.82	5.54	190.58	59.08	190.58	59.08
10/19/2007 20:30	51.18	94.09	1.84	5.54	189.45	58.73	189.45	58.73
10/19/2007 21:00	50.43	97.03	1.92	5.54	182.35	56.53	182.35	56.53
10/19/2007 21:30	49.71	96.06	1.93	5.54	179.33	55.59	179.33	55.59
10/19/2007 22:00	49.09	96.38	1.96	5.54	175.58	54.43	175.58	54.43
10/19/2007 22:30	48.37	97.12	2.01	5.54	170.85	52.96	170.85	52.96
10/19/2007 23:00	47.99	97.81	2.04	5.54	168.05	52.1	168.05	52.1
10/19/2007 23:30	48.19	96.3	2	5.54	170.67	52.91	170.67	52.91
TOTAL:	**738.3**	**1500.76**	**1.5**	**5.54**	**2628.665**	**814.88**	**2314.11**	**717.38**

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(eng. Kr. Berbenkov)

Protocol No.05/2007

Because of the error of the continuous monitoring system for NOx emissions from the nitric acid plant, the emissions were not recorded on the 12th of November 2007 from 16:00 to 8:00 on the 13th of November. During the period the plant worked under the normal working conditions and a change of the NOx emission is not expected. The data were corrected in accordance with the procedure for correcting of false-recorded data from the continuous monitoring system for NOx emissions from the nitric acid plant using the data from the previous hours normal work of the plant. In this case, the data for the previous 14 hours normal work of the plant were used.

In table 1, the data for the 12th of November 2007 are presented.

In table 2, the data for the 13th of November 2007 are presented.

Eng. G. Boshov – Manager nitric acid plant .....

Eng. R. Gavrilov – Chemichal engineer ecoprograms .....

Table 1

Day	Production of 100 % HNO3 [ton]	N2O emission [kg]	Emission factor actual [kg/ton]	Emission factor baseline [kg/ton]	Emission reduction N2O [kg]	Emission reduction CO2 [eq. ton]	Corrected emission reduction N2O [kg]	Corrected emission reduction CO2 [eq. ton]
11/12/2007 0:00	48.04	96.76	2.01	5.54	169.38	52.51	96.76	52.51
11/12/2007 0:30	48.34	96.16	1.99	5.54	171.64	53.21	96.16	53.21
11/12/2007 1:00	48.25	96.36	2	5.54	170.95	52.99	96.36	52.99
11/12/2007 1:30	48.28	96.74	2	5.54	170.73	52.93	96.74	52.93
11/12/2007 2:00	48.2	96.45	2	5.54	170.58	52.88	96.45	52.88
11/12/2007 2:30	48.09	96.84	2.01	5.54	169.58	52.57	96.84	52.57
11/12/2007 3:00	48.14	96.69	2.01	5.54	170.01	52.7	96.69	52.7
11/12/2007 3:30	48.1	96.71	2.01	5.54	169.76	52.63	96.71	52.63
11/12/2007 4:00	48.08	96.7	2.01	5.54	169.66	52.6	96.7	52.6
11/12/2007 4:30	48.04	96.91	2.02	5.54	169.23	52.46	96.91	52.46
11/12/2007 5:00	48.09	96.88	2.01	5.54	169.54	52.56	96.88	52.56
11/12/2007 5:30	48.01	96.6	2.01	5.54	169.38	52.51	96.6	52.51
11/12/2007 6:00	48.13	96.56	2.01	5.54	170.08	52.72	96.56	52.72
11/12/2007 6:30	48.12	96.77	2.01	5.54	169.81	52.64	96.77	52.64
11/12/2007 7:00	48.13	95.62	1.99	5.54	171.02	53.02	95.62	53.02
11/12/2007 7:30	48.04	93.69	1.95	5.54	172.45	53.46	93.69	53.46
11/12/2007 8:00	48.07	94.21	1.96	5.54	172.1	53.35	94.21	53.35
11/12/2007 8:30	47.91	87.75	1.83	5.54	177.67	55.08	87.75	55.08
11/12/2007 9:00	48.09	94.44	1.96	5.54	171.98	53.31	94.44	53.31
11/12/2007 9:30	47.89	94.47	1.97	5.54	170.84	52.96	94.47	52.96
11/12/2007	48.03	94.69	1.97	5.54	171.4	53.13	94.69	53.13

10:00								
11/12/2007 10:30	48.07	95.01	1.98	5.54	171.3	53.1	95.01	53.1
11/12/2007 11:00	48.22	95.38	1.98	5.54	171.76	53.25	95.38	53.25
11/12/2007 11:30	48.3	95.43	1.98	5.54	172.15	53.37	95.43	53.37
11/12/2007 12:00	48.29	95.12	1.97	5.54	172.41	53.45	95.12	53.45
11/12/2007 12:30	48.21	95.75	1.99	5.54	171.33	53.11	95.75	53.11
11/12/2007 13:00	48.22	96.04	1.99	5.54	171.1	53.04	96.04	53.04
11/12/2007 13:30	48.16	95.78	1.99	5.54	171.03	53.02	95.78	53.02
11/12/2007 14:00	48.39	95.42	1.97	5.54	172.66	53.52	95.42	53.52
11/12/2007 14:30	48.33	95.14	1.97	5.54	172.61	53.51	95.14	53.51
11/12/2007 15:00	48.22	95.26	1.98	5.54	171.88	53.28	95.26	53.28
11/12/2007 15:30	48.49	95.06	1.96	5.54	173.57	53.81	95.06	53.81
11/12/2007 16:00	48.27	0	0	5.54	267.42	82.9	96.76	52.51
11/12/2007 16:30	48.23	0	0	5.54	267.19	82.83	96.16	53.21
11/12/2007 17:00	48.32	0	0	5.54	267.69	82.98	96.36	52.99
11/12/2007 17:30	48.57	0	0	5.54	269.08	83.41	96.74	52.93
11/12/2007 18:00	48.19	0	0	5.54	266.97	82.76	96.45	52.88
11/12/2007 18:30	48.17	0	0	5.54	266.86	82.73	96.84	52.57
11/12/2007 19:00	48.2	0	0	5.54	267.03	82.78	96.69	52.7
11/12/2007 19:30	48.34	0	0	5.54	267.8	83.02	96.71	52.63
11/12/2007 20:00	48.37	0	0	5.54	267.97	83.07	96.7	52.6
11/12/2007 20:30	48.49	0	0	5.54	268.63	83.28	96.91	52.46
11/12/2007 21:00	48.58	0	0	5.54	269.13	83.43	96.88	52.56
11/12/2007	48.64	0	0	5.54	269.47	83.53	96.6	52.51

21:30								
11/12/2007 22:00	48.44	0	0	5.54	268.36	83.19	96.56	52.72
11/12/2007 22:30	48.52	0	0	5.54	268.8	83.33	96.77	52.64
11/12/2007 23:00	48.6	0	0	5.54	269.24	83.47	95.62	53.02
11/12/2007 23:30	48.62	0	0	5.54	269.35	83.5	93.69	53.46
TOTAL:	**1157.76**	**1528.70**			**4885.29**	**1514.45**	**2299.92**	**1271.54**

Table 2

Day	Production of 100 % HNO3 [ton]	N2O emission [kg]	Emission factor actual [kg/ton]	Emission factor baseline [kg/ton]	Emission reduction N2O [kg]	Emission reduction CO2 [eq. ton]	Corrected emission reduction N2O [kg]	Corrected emission reduction CO2 [eq. ton]
11/13/2007 0:00	48.79	0	0	5.54	270.3	83.79	94.21	53.35
11/13/2007 0:30	48.91	0	0	5.54	270.96	84	87.75	55.08
11/13/2007 1:00	48.8	0	0	5.54	270.35	83.81	94.44	53.31
11/13/2007 1:30	48.8	0	0	5.54	270.35	83.81	94.47	52.96
11/13/2007 2:00	48.74	0	0	5.54	270.02	83.71	94.69	53.13
11/13/2007 2:30	48.61	0	0	5.54	269.3	83.48	95.01	53.1
11/13/2007 3:00	48.75	0	0	5.54	270.08	83.72	95.38	53.25
11/13/2007 3:30	48.6	0	0	5.54	269.24	83.47	95.43	53.37
11/13/2007 4:00	48.65	0	0	5.54	269.52	83.55	95.12	53.45
11/13/2007 4:30	48.66	0	0	5.54	269.58	83.57	95.75	53.11
11/13/2007 5:00	48.64	0	0	5.54	269.47	83.53	96.04	53.04
11/13/2007 5:30	48.79	0	0	5.54	270.3	83.79	95.78	53.02
11/13/2007 6:00	48.65	0	0	5.54	269.52	83.55	95.42	53.52
11/13/2007	48.73	0	0	5.54	269.96	83.69	95.14	53.51

6:30								
11/13/2007 7:00	48.76	0	0	5.54	270.13	83.74	95.26	53.28
11/13/2007 7:30	48.66	0	0	5.54	269.58	83.57	95.06	53.81
11/13/2007 8:00	48.77	41.77	0.86	5.54	228.42	70.81	41.77	70.81
11/13/2007 8:30	48.72	84.99	1.74	5.54	184.92	57.32	84.99	57.32
11/13/2007 9:00	48.53	86.24	1.78	5.54	182.62	56.61	86.24	56.61
11/13/2007 9:30	48.59	86.32	1.78	5.54	182.87	56.69	86.32	56.69
11/13/2007 10:00	48.44	86.11	1.78	5.54	182.25	56.5	86.11	56.5
11/13/2007 10:30	48.48	85.72	1.77	5.54	182.86	56.69	85.72	56.69
11/13/2007 11:00	48.54	85.77	1.77	5.54	183.14	56.77	85.77	56.77
11/13/2007 11:30	48.47	85.66	1.77	5.54	182.86	56.69	85.66	56.69
11/13/2007 12:00	48.42	85.91	1.77	5.54	182.34	56.52	85.91	56.52
11/13/2007 12:30	48.24	85.87	1.78	5.54	181.38	56.23	85.87	56.23
11/13/2007 13:00	48.28	85.79	1.78	5.54	181.68	56.32	85.79	56.32
11/13/2007 13:30	48.27	85.87	1.78	5.54	181.55	56.28	85.87	56.28
11/13/2007 14:00	48.14	85.93	1.79	5.54	180.77	56.04	85.93	56.04
11/13/2007 14:30	48.29	85.72	1.78	5.54	181.81	56.36	85.72	56.36
11/13/2007 15:00	48.27	85.81	1.78	5.54	181.61	56.3	85.81	56.3
11/13/2007 15:30	48.57	86.03	1.77	5.54	183.05	56.74	86.03	56.74
11/13/2007 16:00	48.18	86.57	1.8	5.54	180.35	55.91	86.57	55.91
11/13/2007 16:30	48.22	86.91	1.8	5.54	180.23	55.87	86.91	55.87
11/13/2007 17:00	48.42	87.23	1.8	5.54	181.02	56.12	87.23	56.12
11/13/2007 17:30	48.33	86.49	1.79	5.54	181.26	56.19	86.49	56.19
11/13/2007	48.41	86.68	1.79	5.54	181.51	56.27	86.68	56.27

18:00								
11/13/2007 18:30	48.44	86.6	1.79	5.54	181.76	56.34	86.6	56.34
11/13/2007 19:00	48.37	86.55	1.79	5.54	181.42	56.24	86.55	56.24
11/13/2007 19:30	48.46	87.21	1.8	5.54	181.26	56.19	87.21	56.19
11/13/2007 20:00	48.37	87.11	1.8	5.54	180.86	56.07	87.11	56.07
11/13/2007 20:30	48.54	86.74	1.79	5.54	182.17	56.47	86.74	56.47
11/13/2007 21:00	48.49	87.25	1.8	5.54	181.38	56.23	87.25	56.23
11/13/2007 21:30	48.61	87.39	1.8	5.54	181.91	56.39	87.39	56.39
11/13/2007 22:00	48.61	87.19	1.79	5.54	182.11	56.45	87.19	56.45
11/13/2007 22:30	48.71	87.3	1.79	5.54	182.55	56.59	87.3	56.59
11/13/2007 23:00	48.76	86.71	1.78	5.54	183.42	56.86	86.71	56.86
11/13/2007 23:30	48.58	87.25	1.8	5.54	181.88	56.38	87.25	56.38
TOTAL:	**1165.03**	**1360.35**			**5093.94**	**1579.11**	**2117.82**	**1336.87**

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Protocol No.06/2007

The production of nitric acid was stopped for a repair of the plant on the 13th of December 2007 recorded at 10:00. After the starting of the plant, normal working conditions were established at 20:00. Registered for this time reduction of the N_2O emission registered at 10:00 was corrected from 228.25 kg N_2O to 0 kg N_2O etc. till the value recorded at 19:30 where the value was corrected from –23.48 kg N_2O to 0 kg N_2O. The procedure was repeated with the correcting of the carbon dioxide emissions.

The data are presented in table 1 for the 12th of December 2007.

Eng. G. Boshov – Manager nitric acid plant .....

Eng. R. Gavrilov – Chemichal engineer ecoprograms .....

Table 1

Day	Production of 100 % HNO3 [ton]	N2O emission [kg]	Emission factor actual [kg/ton]	Emission factor baseline [kg/ton]	Emission reduction N2O [kg]	Emission reduction CO2 [eq. ton]	Corrected emission reduction N2O [kg]	Corrected emission reduction CO2 [eq. ton]
12/13/2007 0:00	48.59	106.09	2.18	5.54	163.1	50.56	163.1	50.56
12/13/2007 0:30	48.56	106.54	2.19	5.54	162.48	50.37	162.48	50.37
12/13/2007 1:00	48.6	106.6	2.19	5.54	162.64	50.42	162.64	50.42
12/13/2007 1:30	48.59	106.3	2.19	5.54	162.89	50.5	162.89	50.5
12/13/2007 2:00	48.61	106.19	2.18	5.54	163.11	50.56	163.11	50.56
12/13/2007 2:30	48.6	106.17	2.18	5.54	163.07	50.55	163.07	50.55
12/13/2007 3:00	48.53	105.96	2.18	5.54	162.9	50.5	162.9	50.5
12/13/2007 3:30	48.54	106.54	2.19	5.54	162.37	50.34	162.37	50.34
12/13/2007 4:00	48.51	105.93	2.18	5.54	162.82	50.47	162.82	50.47
12/13/2007 4:30	48.47	106.09	2.19	5.54	162.43	50.35	162.43	50.35
12/13/2007 5:00	48.55	105.72	2.18	5.54	163.25	50.61	163.25	50.61
12/13/2007 5:30	48.48	105.24	2.17	5.54	163.34	50.64	163.34	50.64
12/13/2007 6:00	48.58	105.96	2.18	5.54	163.17	50.58	163.17	50.58
12/13/2007 6:30	48.5	105.8	2.18	5.54	162.89	50.5	162.89	50.5
12/13/2007 7:00	48.57	106.19	2.19	5.54	162.89	50.5	162.89	50.5
12/13/2007 7:30	48.5	106.27	2.19	5.54	162.42	50.35	162.42	50.35
12/13/2007 8:00	48.39	107.03	2.21	5.54	161.05	49.93	161.05	49.93
12/13/2007 8:30	48.5	106.77	2.2	5.54	161.92	50.2	161.92	50.2
12/13/2007 9:00	48.54	105.95	2.18	5.54	162.96	50.52	162.96	50.52
12/13/2007 9:30	48.58	105.69	2.18	5.54	163.44	50.67	163.44	50.67
12/13/2007	41.2	0	0	5.54	228.25	70.76	0	0

10:00								
12/13/2007 10:30	3.22	0	0	5.54	17.84	5.53	0	0
12/13/2007 11:00	39.02	0	0	5.54	216.17	67.01	0	0
12/13/2007 11:30	1.45	0	0	5.54	8.03	2.49	0	0
12/13/2007 12:00	0.08	0	0	5.54	0.44	0.14	0	0
12/13/2007 12:30	0.07	0	0	5.54	0.39	0.12	0	0
12/13/2007 13:00	0.06	0	0	5.54	0.33	0.1	0	0
12/13/2007 13:30	0.07	0	0	5.54	0.39	0.12	0	0
12/13/2007 14:00	0.01	0	0	5.54	0.06	0.02	0	0
12/13/2007 14:30	0.06	0	0	5.54	0.33	0.1	0	0
12/13/2007 15:00	0.06	0	0	5.54	0.33	0.1	0	0
12/13/2007 15:30	0.06	0	0	5.54	0.33	0.1	0	0
12/13/2007 16:00	0.08	0	0	5.54	0.44	0.14	0	0
12/13/2007 16:30	0.05	0	0	5.54	0.28	0.09	0	0
12/13/2007 17:00	0.02	0	0	5.54	0.11	0.03	0	0
12/13/2007 17:30	0.16	0	0	5.54	0.89	0.27	0	0
12/13/2007 18:00	1.7	0	0	5.54	9.42	2.92	0	0
12/13/2007 18:30	0.05	0	0	5.54	0.28	0.09	0	0
12/13/2007 19:00	0	103.62	103.62	5.54	0	0	0	0
12/13/2007 19:30	13.12	96.16	7.33	5.54	-23.48	-7.28	0	0
12/13/2007 20:00	38.29	95.45	2.49	5.54	116.68	36.17	116.68	36.17
12/13/2007 20:30	34.18	104.61	3.06	5.54	84.75	26.27	84.75	26.27
12/13/2007 21:00	49.33	105.4	2.14	5.54	167.89	52.05	167.89	52.05
12/13/2007	43.11	97.17	2.25	5.54	141.66	43.91	141.66	43.91

21:30								
12/13/2007 22:00	48.84	102.29	2.09	5.54	168.28	52.17	168.28	52.17
12/13/2007 22:30	48.88	102.91	2.11	5.54	167.89	52.04	167.89	52.04
12/13/2007 23:00	48.87	102.18	2.09	5.54	168.56	52.25	168.56	52.25
12/13/2007 23:30	48.54	103.3	2.13	5.54	165.61	51.34	165.61	51.34
TOTAL:	**715.69**	**1568.06**			**2448.65**	**759.09**	**2218.23**	**687.66**

Annex IV
Description of monitoring equipment

№	Index	Devices	Measurement method	Range	Certificate
1	N_2O	IR analyzer module URAS 14	IR spectroscopy	0…5 000 ppmv.	TÜV, for the system Advance Analyzer Module URAS 14
2	O_2	Electrochemical sensor	Electrochemical	0..10/25 Vol.%	TÜV, for the system Advance Analyzer Module URAS 14
3	Gas volumetric flow	System Durag D-FL 100 with a transformer of differential pressure and measuring unit type: D-FL 100-10 Temperature transmiter, differential and static pressure	Calculated on the bases of the cross section of the gas outlet pipe, velocity, pressure and the temperature by means of microprocessor unit type D-FL 100-10	- - -	The system DURAG D-FL 100 tested for functional suitability by TÜV, according to the protocol №128CU11650 / 29.03.1996
4	Temperature	System Durag D-FL 100 Temperature transmitter Pt 100 type – FL 100 TM-H	Thermo-resistant	0 ÷ 50 ^oC	
5	Flow rate	System Durag D-FL 100 a probe cross-fitted to the gas outlet pipe type - FL 100 DS2	Calculated on the basis of the differential pressure through air-speed tube (Pito tube)	> 3,0 m/s	
6	Gas pressure	System Durag D-FL 100 transmitter for differential pressure FL 100 DDM/H; pressure transmitter type: AMD 210	Physical	900–1200 hPa	