



DET NORSKE VERITAS

CLIMATE ACTION RESERVE
VERIFICATION REPORT

Report for:
TERRA NITROGEN, LIMITED PARTNERSHIP
CAR 766

DNV report number
2011-9640



VERIFICATION REPORT

Date of first issue: October 10, 2011		Project No.: PRJC-315625-2011-CCS-USA	
Approved by: Miguel Rescalvo Regional Manager Americas		Organizational unit: Sustainability and Innovation Climate Change and Environmental Services	
Client: Terra Nitrogen, Limited Partnership		Client ref.: Jim Schellhorn	
Summary: Det Norske Veritas (U.S.A.), Inc (DNV) has performed the verification of the GHG emission reductions achieved by the “Terra Verdigris # 2” project for the period of 02 March, 2010 - 14 December, 2010. In DNV’s opinion, the GHG emission reductions reported to the Climate Action Reserve (CAR) are fairly stated. The GHG emission reductions were calculated correctly on the basis of the approved CAR “Nitric Acid Production Project Protocol Project Protocol Version 1.0: Reducing Nitrous Oxide from Process Gas Emissions” and the supporting documentation. Det Norske Veritas (U.S.A.), Inc. is able to certify that the emission reductions from the “Terra Verdigris # 2” project during the period 02 March, 2010 - 14 December, 2010 equate to 567 842 tCO₂e.			
Report No.: 2011-9640	Subject group: Environment	Indexing terms:	
Report title:		Key words:	Service:
Climate Action Reserve Verification Report for the Terra Industries Inc., Terra Verdigris # 2 project.		Emission reductions Climate Action Reserve	Verification Market sector: Fertilizer Production
Work carried out by: David DeVooght Shruthi Bachamanda		☐ No distribution without permission from the client or responsible organisational unit ☐ Free distribution within DNV after 3 years ☐ Strictly confidential ☒ Unrestricted distribution	
Work reviewed by: Weidong Yang			
Date of this revision: November 7, 2011	Revision No: 02		
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Table of Contents

ABBREVIATIONS	5
1. Introduction.....	7
1.1 Verification Objective	7
1.2 Verification Scope and Criteria.....	7
1.3 Level of Assurance and Materiality Assessment	8
2. Project Information	8
2.1 Project Background	8
2.2 Project Activities	9
2.3 Project Ownership and Involved Parties	9
3. Verification Activities.....	9
3.1 Desk Review	10
3.2 Site Visit.....	10
4. Verification Findings	10
4.1 Summary	10
4.2 Project Definition	10
4.3 Project Eligibility	11
4.3.1 Eligibility Rule I – Project Location	11
4.3.2 Eligibility Rule II – Project Operation Start Date.....	11
4.3.3 Eligibility Rule III – Project Additionality	11
4.3.4 Eligibility Rule IV – Regulatory Compliance	12
4.4 Monitoring Plan.....	12
4.4.1 Monitoring Data.....	12
4.4.2 The GHG Assessment Boundary	15
4.4.3 GHG Emission Reduction Calculations.....	15
4.4.4 Other Calculations	17
4.5 Data Collection, Aggregation and Calculation	18
5. Verification Opinion Statement.....	20
REFERENCES	21



List of Tables

Table 1: Verification Activities	10
Table 2: Periods of Project Monitoring and HNO ₃ Production	12
Table 3: Monitored Parameters for Project Campaigns.....	13
Table 4: Application of Equation 5.1 with Properly Selected Parameters	15
Table 5: Application of Equation 5.2 with Properly Selected Parameter Values.....	16
Table 6: Application of Equation 5.3 with Properly Selected Parameter Values.....	16
Table 7: Application of Equation 5.4 with Properly Selected Parameter Values.....	16
Table 8: Application of Equation 5.5 with Properly Selected Parameter Values.....	16
Table 9: HNO ₃ MAXSCALED Values for Project Emissions.....	17
Table 10: Descriptive Statistics for Historical Operating Period POCs	17
Table 11: Mean Values of Operating Parameters	18
Table 12: GHG Emission Reductions for the Period of 2 March, 2010 to 14 December, 2010 by Project Campaign.....	19
Table 13: GHG Emission Reductions for the Period of 2 March, 2010 to 14 December, 2010.....	19



ABBREVIATIONS

AOR	Ammonia Oxidation Reactor
AIFR	Ammonia to Air Ratio
CAR	Climate Action Reserve
CDM	Clean Development Mechanism
CEMS	Continuous Emissions Monitoring System
CH ₄	Methane
CI	Confidence Interval
COI	Conflict of Interest
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
CRTs	Climate Reserve Tonnes
DNV	Det Norske Veritas
EU	European Union
GHG	Greenhouse Gas(es)
GWP	Global Warming Potential
HNO ₃	Nitric Acid
NH ₃	Ammonia
NAP	Nitric Acid Plant
NAPPP 1.0	Nitric Acid Production Project Protocol Version 1.0



VERIFICATION REPORT

N ₂ O	Nitrous Oxide
OH	Operating Hours
OP	Oxidation Pressure
OT	Oxidation Temperature
POCs	Permitted Operating Conditions
QA/QC	Quality Assurance & Quality Control
t	Metric Tonnes
UAN	Urea Ammonia Nitrate



1. INTRODUCTION

Det Norske Veritas (U.S.A.), Inc. (DNV) has been contracted by Terra Nitrogen, Limited Partnership (Terra) to verify the greenhouse gas (GHG) emission reductions generated by the Terra Verdigris # 2 project (Verdigris Project) for the period 02 March, 2010 - 14 December, 2010. The verification was completed as required in the Climate Action Reserve (CAR) Verification Program Manual, Version 2.0. This report contains the findings from the verification and a statement for the verified GHG emission reductions.

This is the second verification period for the project. The first reporting period was from 22 October, 2008 – 1 March, 2010; the emission reductions for this period were also verified by DNV.

1.1 *Verification Objective*

Verification is the process through which a verification body assesses a project developer's GHG reduction assertions against verification criteria and standards that are defined by the CAR GHG program. The purpose of verification is to provide an independent third-party review of project data and information being submitted to the CAR, to ensure that the project is eligible as defined in the relevant project reporting protocols and that the reported GHG emission reductions meet the appropriate one percent (1%) materiality threshold.

The CAR requires third-party verification of all GHG projects, as specified in each project protocol. Climate Reserve Tonnes (CRTs) are issued for voluntary emission reductions only after a Verification Report and a Verification Opinion attesting to their accuracy have been submitted by the verifier and accepted by the CAR.

The objective of this verification was to verify that the voluntary emission reductions (carbon dioxide equivalent (CO₂e)) reported for the Verdigris Project for the period from 02 March, 2010 - 14 December, 2010 are real, verifiable, permanent and owned unambiguously by Terra Nitrogen Limited Partnership.

1.2 *Verification Scope and Criteria*

The scope of the verification includes:

- Ensuring the project remains eligible according to the specific eligibility rules in the CAR's Nitric Acid Production Project Protocol Version 1.0 (NAPPP 1.0).¹
- Ensuring that the project boundary has been clearly defined and that the project emission sources in the project activity have been identified and monitored as per the NAPPP 1.0.



- Reviewing GHG management systems and estimation methodologies.
- Verifying the emission estimates through a site visit and an in-depth review of source data and recalculation of a sample of GHG emission reduction estimates to ensure that the reported GHG reductions are within the 1% materiality threshold and calculated in line with the CAR's NAPPP 1.0 protocol.

According to the CAR, the criteria to be applied during this verification include those contained in the following documents:

- CAR Nitric Acid Production Project Protocol Project Protocol Version 1.0: Reducing Nitrous Oxide from Process Gas Emissions.¹
- CAR Nitric Acid Production Project Protocol Errata and Clarifications.²
- CAR Program Manual.³
- CAR Verification Program Manual.⁴
- ISO 14064-3:2006.⁵

1.3 Level of Assurance and Materiality Assessment

During the verification, DNV has focused on providing a reasonable level of assurance that:

- The GHG emission reduction calculation methodology used is appropriate and correctly applied.
- The GHG emission reductions have been monitored, calculated and reported within the 1% materiality criteria.

2. PROJECT INFORMATION

2.1 Project Background

The Verdigris Project is located in Claremore, OK and is contained within Terra's Verdigris operating facility. Terra's Verdigris facility consists of two identical operating areas, Area #1 and Area #2, both of which produce anhydrous ammonia and urea ammonia nitrate (UAN). The Area #1 UAN and ammonia plants were constructed in 1975 and the Area #2 UAN and ammonia plants were constructed in 1978. These two facilities combined produce 3 000 tonnes per day of ammonia (NH₃) and 2 000 tonnes per day of nitric acid.

Both facilities rely upon the catalytic oxidation of ammonia to produce nitric acid (HNO₃) as an intermediary product. Subsequently, the potent GHG nitrous oxide (N₂O) is directly released to the atmosphere as a waste by-product. The Verdigris Project is designed to reduce the release of N₂O during the HNO₃ production process in a nitric



acid plant (NAP) through the installation of a secondary catalyst within the ammonia oxidization reactor (AOR) contained in Area #2.

2.2 Project Activities

In 2008, Terra successfully installed a continuous emissions monitoring system (CEMS) to monitor N₂O concentration and flow of the flue gas exiting the Area #2 Plant.⁶ Subsequent to installation of the CEMS, Terra implemented and completed a baseline monitoring campaign between 30 June, 2008 and 20 October, 2008. On 21 October, 2008, Terra installed a secondary catalyst system below the gauze section of the AOR of the Area #2 plant.⁷ The following day, Terra began operating and monitoring the Verdigris project. .

2.3 Project Ownership and Involved Parties

The Verdigris Project is operated by Terra Nitrogen, Limited Partnership, which is a wholly owned subsidiary of Terra Industries, Inc. Ownership of the Verdigris Project and any emission reductions generated are retained by Terra Nitrogen, Limited Partnership.

DNV reviewed multiple regulatory related documents (water and air permits) filed with the State of Oklahoma and receipts for project-related equipment and services, which confirm that the Terra Verdigris Plant is operated by Terra Nitrogen, Limited Partnership and that Terra Nitrogen, Limited Partnership is legally responsible for the facility.^{8,9,16,17} DNV subsequently confirmed that all documents submitted to the CAR contain the Terra Nitrogen, Limited Partnership name, including the Attestation of Title for credit ownership.¹⁰ Based upon these documents, it is DNV's opinion that emission reductions generated by the Verdigris project are unambiguously owned by Terra Nitrogen, Limited Partnership.

3. VERIFICATION ACTIVITIES

DNV has undertaken verification activities and compiled the verification team and tasks based on the complexity of Terra's GHG emission reductions and the underlying data supporting them. The verification team and process are summarized below and in Table 1.

Verification Team	
David DeVooght	Lead Verifier
Weidong Yang	Senior Internal Reviewer
Shruthi Bachamanda	Project Manager

**Table 1: Verification Activities**

Task	Activities	Completion Data
1	Conflict of Interest form approved by CAR.	26 July, 2011.
2	Verification kick-off meeting.	24 June, 2011
3	Desk review.	18 – 29 July, 2011.
4	Site visit.	2 August, 2011.
5	Senior internal review.	22 September, 2011.
6	Submission of verification report to Project Developer.	11 October, 2011.
8	Verification opinion uploaded to CAR project site.	17 October, 2011.

3.1 Desk Review

DNV assessed the documents provided by the project developer, including the project Monitoring Plan, GHG emission reductions spreadsheets, site design documentation and legal documents.^{11,12,13,14,15,16,17,18,19,20} Initial risk areas related to the GHG emission reduction estimates were identified through the document review. The on-site visit agenda was prepared according to items noted during the desk review.

3.2 Site Visit

On 2 August, 2011, DNV performed a site visit at Terra's Verdigris Plant in Claremore, OK. During the site visit, DNV reviewed records and interviewed staff members, and was able to verify the project facility operation, including the monitoring practices related to the GHG emission reduction estimates. DNV conducted a walk-through survey of the Verdigris Area Plant #2 and was able to confirm that the continued implementation of the project is in accordance with the initial project Monitoring Plan²¹.

4. VERIFICATION FINDINGS

4.1 Summary

DNV was able to verify that the GHG emission reductions reported for the Verdigris Project are fairly stated. Some clarification requests were identified during the verification. Responses were provided by Terra to the satisfaction of DNV.

4.2 Project Definition

Chapter 2.2 of the NAPPP 1.0 defines a GHG reduction project as the installation of a N₂O abatement technology at a single NAP that results in the reduction of N₂O emissions that otherwise would have been vented to the atmosphere. Additionally, Chapter 2.2 of the NAPPP 1.0 establishes four criteria for the disqualification of projects that operate N₂O abatement projects. DNV verified that these four criteria do not apply to the



Verdigris Project and therefore, the project meets the project definition defined in the NAPPP 1.0 for the period of 02 March, 2010 - 14 December, 2010.

4.3 Project Eligibility

Chapter 3 of the NAPPP 1.0 establishes that a project must satisfy four eligibility rules to meet the definition of a GHG emission reduction project. DNV verified that the Verdigris project is in conformance with these four eligibility requirements for the reporting period of 02 March, 2010 - 14 December, 2010.

4.3.1 Eligibility Rule I – Project Location

On 2 August, 2011, a qualified DNV lead verifier conducted a site visit at the Terra Verdigris facility in Claremore, OK. DNV verified that the Verdigris Project for the verification period remained in operation at Plant #2 of the Terra Verdigris facility.

4.3.2 Eligibility Rule II – Project Operation Start Date

During the first verification period, 22 October, 2008 – 1 March, 2010, DNV verified the Verdigris project's conformance with this eligibility rule by confirming installation of the secondary catalyst on 21 October, 2008 and confirming that the project was submitted to the CAR on 09 February, 2010.²²

The submittal of the project on 09 February, 2010 complies with the CAR requirement that projects operating before the adoption of the NAPPP 1.0 submit within 12 months of the effective date (02 December, 2009). Installation of the secondary catalyst on 21 October, 2008 demonstrates that the project began operations within the 24 months before the effective date of the NAPPP 1.0 (02 December, 2007).

4.3.3 Eligibility Rule III – Project Additionality

The Performance Standard Test

During the first verification period, 22 October, 2008 – 1 March, 2010, DNV confirmed that on 21 October, 2008, Terra installed a secondary N₂O abatement catalyst within the AOR of Plant #2 in the Verdigris facility. Installation of the secondary catalyst within the AOR demonstrates compliance with the performance standard test.

The Legal Requirement Test

DNV verified the project's conformance with this eligibility rule as detailed below.

- Verified the Verdigris Project's conformance with this eligibility rule by confirming through an on-site discussion with the Environmental Health and Safety Director that Terra had implemented the procedures described in the Monitoring Plan to ensure compliance with the Legal Requirement Test.^{11,23}



- Confirmed that for the verification period Terra submitted an Attestation of Voluntary Implementation to the CAR, which further demonstrates conformance with the requirement.²⁴
- DNV monitors regulatory issues related to the implementation of emission reduction projects on a regional and national level. DNV is not aware of any regional or national regulatory requirements mandating the implementation of N₂O emission reduction projects at nitric acid facilities. Therefore, DNV can confirm that the Verdigris Project is not mandated to install N₂O reduction technology.

4.3.4 Eligibility Rule IV – Regulatory Compliance

DNV verified the Verdigris Project's conformance with this eligibility rule by confirming Terra's submission to the CAR of a signed Attestation of Regulatory Compliance.^{25,26} Additionally, DNV reviewed Terra's operating permits and safety permits relevant to the project and confirmed that the Verdigris facility met all applicable state and local regulations.^{27,28,29,30} DNV also confirmed with Terra staff that monitoring mechanisms are instituted within the plant to manage continued compliance.²³

4.4 Monitoring Plan

The Verdigris Project Monitoring Plan is in accordance with the NAPPP 1.0 and allows for the accurate measurement of actual GHG emissions reductions.¹¹

4.4.1 Monitoring Data

DNV can confirm the necessary data needed to estimate GHG emission reductions are included in the Monitoring Plan. GHG emission sources, HNO₃ production and operating parameters were measured for two project campaign periods. DNV confirms that the monitoring mechanisms and the monitoring frequency of these parameters are in accordance with the requirements of the NAPPP 1.0.

It must be noted that the Verdigris facility's reporting periods have an overlap in reporting. Campaign 4 ended at 6:00 a.m. on the 13 July, 2010 and campaign 5 began at 5 p.m. on the same day. These data are shown in Tables 3 and 4.

Table 2: Periods of Project Monitoring and HNO₃ Production

Project Period	Dates	HNO ₃ Production (tonnes)
Project Campaign 4	02 March, 2010 – 13 July, 2010 (6:00 a.m.)	119 533
Project Campaign 5	13 July, 2010 (5:00 p.m.) – 14 December, 2010	129 853

**Table 3: Monitored Parameters for Project Campaigns**

Parameter	Metering Device	Calibration and QA/QC Procedures
HNO ₃	Micro – motion flow meter	1. Checked for proper operation quarterly.³¹ 2. Successfully verified for proper operation 10 February, 2010.³² 3. Successfully verified for proper operation 22 June, 2010.³³ 4. Successfully verified for proper operation 30 September, 2010.³⁴ 5. Successfully verified for proper operation 14 December, 2010.³⁵
OH	Honeywell DCS	1. N/A – Plant operating system does not require calibration.
OT	Thermocouple	1. Replaced during each gauze change.^{36,37,38}
OP	Converter Pressure Transmitter – ABB Kent Taylor	1. Correct functioning of instrument is continuously monitored and verified during plant operation. 2. Transmitter was not calibrated during verification period. 3. Successfully calibrated 14 March, 2011.³⁹
AIFR	Air Flow Transmitter – Honeywell SMV3000 NH ₃ Flow Transmitter – Honeywell SMV 3000	1. Weekly laboratory tests are conducted to determine if the NH₃ flow transmitter is functioning correctly.⁴⁰ 2. Adjusting transmitters during operation of the plant is not feasible. Therefore, calibration work is not completed at set intervals. If it is determined that the transmitters are malfunctioning, they are adjusted during a plant shutdown. 3. Field verification was conducted on 3 March, 2010, confirming that calibration was not required.⁴¹
NC _{SG}	ABB Gas Analyzer AO2000 Series	1. Conducted weekly calibration in accordance with EN 14181 QAL 3 requirements.⁴² 2. In accordance with the CAR Variance granted for the CEMS QA/QC procedures, an annual Relative Accuracy Audit Test (RATA) was conducted to ensure that the CEMS system was operating and recording correctly.^{43,44}
V _{SG}		3. Stack flow meter successfully calibrated 31 March, 2010.⁴⁵

***Continuous Emissions Monitoring System (CEMS) Quality Assurance and Control (QA/QC)***

In 2008, and prior to the adoption of the NAPPP 1.0, the Verdigris Project installed and began operating an ABB Gas Analyzer AO2000 Series CEMS. At this time, installation and QA/QC requirements for N₂O abatement projects within NAPs had not been established by the CAR. Therefore, the Verdigris Project installed and operated the CEMS in accordance with European Norm (EN) 14181 requirements, which were the generally accepted industry practice for monitoring Clean Development Mechanism (CDM) N₂O abatement projects.

Chapter 6 of the NAPPP 1.0 requires CEMS monitoring N₂O concentration and flow in the flue gas to operate QA/QC provisions and activities in accordance with the United States Code of Federal Regulations Title 40 (40 CFR), Part 60 and Part 75. On 28 May, 2010, Terra filed a Request for Project Variance,⁴⁶ petitioning the CAR to allow the Verdigris Project to substitute EN 14181 CEMS QA/QC provisions and activities for these requirements. The CAR granted a Variance Approval allowing the Verdigris facility to operate the CEMS in accordance with EN 14181 requirements for the period of 22 October, 2008 to 15 December, 2010. Additionally, the CAR approval allows for the Verdigris facility to employ a third party to conduct annual emission stack testing using the EN14181 norm requirements or the standard relative accuracy test audit (RATA) requirements of 40 CFR Part 60.⁴⁷

The CAR Variance Approval requires that the verifier:

- Confirm that a sound installation, monitoring and QA/QC process was followed and was in conformance with the requirements of EN 14181.
- Confirm that the party conducting the RATA has the appropriate accreditation/certification and that the RATA was performed in accordance with the applicable standard.

In accordance with the Variance Approval, DNV reviewed ongoing QA/QC procedures to determine if the CEMS was monitored and maintained in accordance with EN 14181 requirements. Based upon this review, DNV can verify for the period of 02 March, 2010 to 14 December, 2010, the CEMS installed to monitor N₂O at the Verdigris Project followed the QA/QC process requirements of EN 14181. Specifically, this included weekly calibration and span checks of the calibration gas, which are referred as QAL 3 procedures under the EN 14181 requirements.⁴²

The CAR Variance Approval allowed Terra during the verification period to either employ a third party to conduct a stack gas accuracy audit using the procedures of EN



14181 (QAL 2) or the RATA procedures of 40 CFR Part 60. For the verification period, Terra elected to use the RATA procedures of 40 CFR Part 60. DNV can verify that on 20 May, 2010 Cetcon, a third-party stack gas testing company, conducted a RATA in accordance with the procedures of 40 CFR Part 60. The State of Oklahoma does not require accreditation of third party stack gas testing companies. However, DNV was able to confirm that Cetcon is accredited by the State of Louisiana⁴⁸. Additionally, DNV confirmed the lead Cetcon contractor is accredited by the Source Evaluation Society, a stack testing industry group that certifies individuals.⁴⁹

DNV reviewed the RATA results and can confirm that the results indicate the CEMS operates within the allowable limits of 40 CFR Part 60 for stack gas flow and N₂O concentration.^{43,44}

QA/QC for non-CEMS Related Equipment

All of the necessary QA/QC procedures to ensure the correct measurement, calculation and reporting of emissions reductions are properly defined for each parameter and have been clearly documented in the Monitoring Plan. These include:

- Organization and responsibility.
- Data management and record keeping.
- Operations and maintenance.
- Regulatory compliance and violation.

4.4.2 The GHG Assessment Boundary

The GHG assessment boundary for the Verdigris Project is limited to N₂O released as a reaction by-product. DNV confirms N₂O released as a by-product in the baseline campaign and the project campaigns has been fully accounted for.

4.4.3 GHG Emission Reduction Calculations

Emission Reduction Calculation Equation

Equation 5.1 of the NAPPP 1.0 is properly applied for the GHG emission reduction calculations of the Verdigris Project as shown in Table 4 below.^{14,15}

Table 4: Application of Equation 5.1 with Properly Selected Parameters

Parameter	Project Campaign		Unit
	4	5	
ER	276 803	291 039	t CO ₂ e
EF _{BL}	0.00960	0.00960	t N ₂ O/t HNO ₃
EF _p	0.00213	0.00237	t N ₂ O/t HNO ₃
HNO _{3ER}	119 533	129 853	t HNO ₃

VERIFICATION REPORT

GWP _{N₂O}	310	310	t CO ₂ e/tN ₂ O
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Baseline Equations

Equations 5.2 and 5.3 of the NAPPP 1.0 are properly applied for the GHG emission reduction calculations of the Verdigris Project, as shown in Tables 5 and 6 below.⁵⁰

Table 5: Application of Equation 5.2 with Properly Selected Parameter Values

Parameter	Value	Unit
EF _{BL}	0.00960	t N ₂ O/t HNO ₃
BE _{BC}	1 099	t N ₂ O
HNO _{3BC}	114 427	t HNO ₃

Table 6: Application of Equation 5.3 with Properly Selected Parameter Values

Parameter	Value	Unit
BE _{BC}	1 099	t N ₂ O
V _{SG BC}	118 503	m ³ /hour
NC _{SG BC}	3 092	mgN ₂ O/ m ³
OH _{BC}	2 999	Hours

Campaign Equations

Equations 5.4 and 5.5 of the NAPPP 1.0 are properly applied for the GHG emission reduction calculations of the Verdigris Project, as shown in Tables 7 and 8 below.^{14,15}

Table 7: Application of Equation 5.4 with Properly Selected Parameter Values

Parameter	Project Campaign		Unit
	4	5	
PE _n	254.81	307.93	t N ₂ O
V _{SGn}	125 563	120 688	m ³ /hour
NC _{SGn}	644	697	mgN ₂ O/ m ³
OH _n	3 150	3 659	hours

Table 8: Application of Equation 5.5 with Properly Selected Parameter Values

Parameter	Project Campaign		Unit
	4	5	
EF _n	0.00213	0.00237	t N ₂ O/t HNO ₃
PE _n	254.81	307.93	t N ₂ O
HNO _{3n}	119 533	129 853	t HNO ₃



4.4.4 Other Calculations

HNO₃MAX and HNO₃MAXSCALED

For calculating *HNO₃MAX* and *HNO₃MAXSCALED*, the Verdigris Project has calculated and properly applied the requirements of the Nitric Acid Production Project Protocol Errata and Clarifications, specifically Clarification 3.² These data are shown in Table 9.

Table 9: HNO₃MAXSCALED Values for Project Emissions

Parameter	Project Campaign		Unit
	4	5	
HNO ₃ MAXSCALED	126 493	146 942	t HNO ₃

Statistical Comparison of POCs

In accordance with Section 5.1.2.1 of the NAPPP 1.0 and the Nitric Acid Production Project Protocol Errata and Clarifications, specifically Clarification 4, Terra conducted a statistical comparison of the average historical mean permitted operating conditions (POCs), with the mean values developed from the baseline campaign and project campaigns for the following operating parameters:

- Oxidation temperature (OT)
- Oxidation pressure (OP)
- Ammonia to air ratio (AIFR)

DNV reviewed the statistical comparison and confirmed that the mean values for operating parameters for the project campaigns fall within the upper and lower bound of the 95% confidence interval (CI) for POCs that were developed from the Historical Operating Period data. Additionally, DNV reviewed the emission reduction files and can confirm that the periods that the NAP operated outside of the POCs for both campaigns 4 and 5 were less than 50% of the duration for each campaign.^{14,15}

Table 10 lists the descriptive statistics for POCs in the historical period.

Table 10: Descriptive Statistics for Historical Operating Period POCs

POCs	Statistical Parameters			
	Mean	Standard Deviation	95% CI Upper Bound	95% CI Lower Bound
T (°C)	916	61	1 035	796
P (Bar)	8.6	0.8	10.1	7.1



AIFR (%)	10.5	0.1	10.7	10.2
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Table 11 lists operating parameter means for the project campaigns. DNV confirms that all values listed fall within the upper and lower bounds of the 95% CI for the mean POCs developed from the Historical Operating Period.

Table 11: Mean Values of Operating Parameters

Operating Parameter	Project Campaigns	
	4	5
T (°C)	919	919
P (Bar)	8.4	8.2
AIFR (%)	10.2	10.2

4.5 Data Collection, Aggregation and Calculation

The data collection, aggregation and GHG emission reduction calculations have been planned properly and implemented effectively, as detailed below.

CEMS and Operating Conditions Data

N₂O concentration in the stack gas, stack gas flow rate, operating conditions and HNO₃ production data are continuously monitored and logged within the Verdigris Plant management system. Data is pulled from this system and forwarded to a contractor. The contractor enters the data into the Verdigris Project emission reduction calculation spreadsheet.

GHG Emission Reductions for the Period of 02 March, 2010 to 14 December, 2010

- The emissions reductions were calculated based on Equations 5.1, 5.2, 5.3, 5.4 and 5.5.
- The calculations were checked by a complete review of the project campaigns emission reduction files.^{14,15} The calculations were determined to be accurate and calculated in accordance with the NAPPP 1.0 requirements. Additionally, sampling of a two-month period found no material or immaterial errors.
- The verified GHG emission reductions for each campaign period are shown in Table 12.
- The verified GHG emission reductions for each vintage year are shown in Table 13.



Table 12: GHG Emission Reductions for the Period of 02 March, 2010 to 14 December, 2010 by Project Campaign

Emission Parameters	Project Campaign	
	4	5
Baseline emissions (t CO ₂ e)	355 794	386 497
Project emissions (t CO ₂ e)	78 991	95 458
Emission reductions (t CO ₂ e)	276 803	291 039

Table 13: GHG Emission Reductions for the Period of 02 March, 2010 to 14 December, 2010

Vintage Year	Emission Reductions (t CO ₂ e)
2010	567 842
Total	567 842



5. VERIFICATION OPINION STATEMENT

Det Norske Veritas (U.S.A.), Inc. (DNV) has performed a verification of GHG emission reductions reported for the “Terra Verdigris #2” project managed by Terra Nitrogen, Limited Partnership for the period of 02 March, 2010 - 14 December, 2010.

In DNV’s opinion, the GHG emission reductions reported for the project are fairly stated and the project meets all the verification criteria of the Climate Action Reserve.

The GHG emission reductions were calculated correctly, using methods and data contained in the Nitric Acid Production Project Protocol: Reducing Nitrous Oxide from Process Gas Emissions, Version 1.0 and the Monitoring Plan provided.

DNV was able to verify that the emission reductions from the “Terra Verdigris #2” project managed by Terra Nitrogen, Limited Partnership for the period from 02 March, 2010 - 14 December, 2010 amount to 567 842 t CO_{2e}.

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