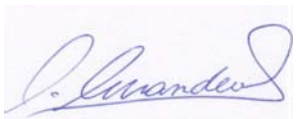
CLEAN DEVELOPMENT MECHANISM

LOMA LOS COLORADOS LANDFILL GAS PROJECT

MONITORING REPORT N° 1 Version 2

PERIOD: 17/03/2007 - 17/06/2007

DATE: 07/10/2007

		
Preparared by: Camilo Silva M. Landfill Gas System Supervisor	Revised by: Sergio Garcia D. Loma Los Colorados Landfill Chief Enginer	Approved by: Sergio Durandeau S. KDM Landfill Manager

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SECTION A. GENERAL PROJECT ACTIVITY INFORMATION

A.1 Title of the project activity

Loma Los Colorados Landfill Gas Project

A.2 CDM registration number:

Registration project N° UNFCCC 00000822 CDMP

A.3 Short description of the project activity

The Loma Los Colorados Landfill Gas Project aims to develop and operate a landfill gas collection and flaring system (SCAB[1]). Landfill gas flaring destroys the methane present on the gas, in order to reduce green house gas (GHG) emissions. Part of the collected landfill gas will be used, in the future, on energy generation for the landfill activities supply. Additional GHG emissions reductions could be claimed by fosil fuel replacement within the context of this CDM project.

Loma Los Colorados is a Municipal Solid Waste (MSW) landfill located in the community of Til-Til, 63,5 km north of Santiago, Chile, near the village of Montenegro. Site operations are handled by KDM. Because of the technology used and the operational procedures, the landfill operation is considered one of the most moderns in Chile.

Currently,105 landfill gas wells are installed over a 48,5 hectares area; of which 103 are connected to the flare station, through an active gas extraction system.

According to the registered CDM project, the predicted LFG recovery rate for the Landfill, within 2007 is about 7.100 m^3/h (assuming 50% capture of LFG generated). The overall predicted recovery rate will continue to increase until the landfill closes, which is anticipated to occur in 2045, after which the rate will decrease as the organic fraction is degraded.

A.4 Monitoring period

From: 17-03-2007 To: 17-06-2007.

[1] SCAB: by the initials in Spanish: Sistema de Captación y Abatimiento de Biogás (Biogas capture and flaring system)

The official start up and data registration was 17-03-2007. before this date, the plant was in commissioning.

A.5 Methodology applied to the project activity

A.5.1 Baseline methodology

Approved consolidated baseline methodology ACM0001, version 4, 28 July 2006: "Consolidated baseline methodology for landfill gas project activities".

For emissions reduction associated with electricity generation using landfill gas ACM0001 also incorporates ACM0002 "Consolidated Baseline Methodology for Grid-Connected Power Generation from Renewable Sources." and, for power generation below 15 MW, small-scale CDM methodology AMS I.D. For this PDD, was used the ACM0002, version 6.

A.5.2 Monitoring methodology

Approved Consolidated monitoring methodology ACM0001: "Consolidated monitoring methodology for landfill gas project activities", version 4, 28 July 2006. Since the project involves possible energy use of landfill gas collected. The ACM0002 "Consolidated Methodology for Grid-Connected Power Generation from Renewable" has also being used.

A.6 Implementation status

To include: Complete schedule, commission date, major revisions and changes, etc.

Event	System size	Date
Construction (wells drilling, pipeline construction)	105 wells	01-09-2006
Facilities construction and equipment installation	----------	01-12-2006
Control system design and implementation	----------	01-12-2006
Initial verification	----------	26/27-02-2007
System startup	5.097 m^3/h	17-03-2007
Internal audit	----------	11/12-06-2007
Operating wells	109	25-07-2007

A.7 Intended deviations or revisions to the registred PDD:

There are no intended deviations or revisions to the registred PDD

A.10 Person(s) responsible for the submission of the monitoring report

The persons responsible for the submission of the monitoring report are:

- Prepared by: Camilo Silva M. – Landfill Gas System Supervisor
- Revised by: Sergio Garcia D. – Loma Los Colorados Landfill Chief Engineer
- Approved by: Sergio Durandeau S. - KDM Landfill Manager

SECTION B. KEY MONITORING ACTIVITIES

B.1 Monitoring equipment

A detailed description of all the monitoring equipment is provided in ANNEX 2.

B.1.2. Equipment used

Equipment	Serial Number	Last calibration	Next calibration
Gas analyzer SIEMENS	U6-477	15-03-2007	15-03-2008
Thermal Mass Flow Meter 1 (i)	268935	18-07-2006	18-01-2008
Thermal Mass Flow Meter 2 (back up) (i)	278712	16-05-2007	16-11-2008
Gas analyzer GEM 2000 Plus (ii)	GM08685	17-04-2007	17-10-2007
Gas analyzer GEM 2000 Plus (ii)	GM08587	13-06-2007	13-12-2007
Flare Stack Thermocouple	ETCA20W241K	----------	----------
Blower 1	PMP -110A	----------	----------
Blower 2	PMP -110B	----------	----------
VDF 1	SIC-110A	----------	----------
VDF 2	SIC-110B	----------	----------
Manifold Thermocouple	8303A704254	----------	----------

Pressure sensor	JEJABA064	----------	----------
Energy recorder 1	02B0629	----------	----------
Energy recorder 2	02B0637	----------	----------

(i) Thermal mass flow meter measurements don't use pressure and temperature data from others instruments to calculate the standard flow, according clarification ACM0001 version 2.

(ii) GEM 2000 plus is a portable gas analyzer, used to analyze the biogas quality in gas wells.

B.1.3. Calibration procedures

Calibrations are performed by independent, external accredited laboratories, or by the instruments manufactures, if applies.

Gas analyzers (GEM and Siemens) are periodically adjusted by trained KDM employees, with a certificated patron gas, if necessary.

Calibration procedures and schedules are described on the Integrated Management System document SGI-GRL-P-009, M-007 SCAB, M-008 SCAB and M-009 SCAB.

B.1.4 Involvement of third Parties:

SCAB has two third parties involved:

a) Specialized company on gas analysis AIRON, which is certified by national authorities. AIRON made the analysis of the concentrations of methane in exhaust gas

b) Tunning is a software development company, in charge of the automatic control system development and implementation.

B.2. Data collection

B.2.1. Default fixed values

Density of methane:	0,000716 (i) t/m^3
Methane Global Warming Potential	21 ton CO_{2e}/t CH_4
Electricity Emission Factor	0,608 (i) tCO_{2e}/MWh

Fuel Oil Consumption Emission Factor	74,1(ii) tCO_{2e}/TJ
Fuel Oil density	0,85 kg/l
Fuel Oil calorific power	45.891,5 kj/kg
Gas Consumption Emission Factor	63,1 (ii) tCO_{2e}/TJ
GLP calorific power	47.720 kj/kg
Base line	245 tCH_4/year

(i) Loma los Colorados Landfill Gas PDD considers a density for Methane of 0,0007168 t/m^3. AMC0001 states a lower density (0,000716 t/m^3). In order to keep a conservative approach, calculations were made using the Methodology value..

(ii) According to 2006 IPCC Guidelines for National Greenhouse Gas Inventories

B.2.2. Variables and units

Landfill Gas Flow	SCMH
Methane	%
Flare Temperature	°C
Flare efficiency	%
Electricity consumption	MW
Fuel oil consumption	TJ
Pilot gas consumption	TJ

B.2.3 Data concerning GHG emissions by sources of the project activity referring to paragraph (53 a)):

See item D.3.1.

B.2.4 Data concerning GHG emissions by sources of the baseline (referring to paragraph (53b)):

Table of dates.

Time Stamp	LFG Collected (N,m3)	Methane (%)	Methane Collected (N.m3)	LFG Sent To Flares (N.m3)	Methane Exhaust Gas (ppm)	Methane Sent To Flares (N.m3)	Temperature Process (ºC)	Flare Efficiency (%)	Methane Destroyed (N.m3)	Biogas to electricity (N.m3)	Methane sent To electricity (N.m3/day)	Electricity Exported (MWh)
17-03-2007	32541	46,3	15066	32541	6,06	15066	827	99,9797	15062	0	0	0
18-03-2007	49082	46,5	22823	49082	6,06	22823	845	99,9797	22818	0	0	0
19-03-2007	48137	45,1	21709	48137	6,06	21709	844	99,9797	21704	0	0	0
20-03-2007	47905	44,9	21509	47905	6,06	21509	847	99,9797	21504	0	0	0
21-03-2007	35338	45,5	16078	35338	6,06	16078	842	99,9797	16074	0	0	0
22-03-2007	47879	45,9	21976	47879	6,06	21976	843	99,9797	21971	0	0	0
23-03-2007	49559	52,6	26068	49559	6,06	26068	841	99,9797	26062	0	0	0
24-03-2007	53503	49,7	26590	53503	6,06	26590	846	99,9797	26584	0	0	0
25-03-2007	53389	49,8	26587	53389	6,06	26587	846	99,9797	26581	0	0	0
26-03-2007	52998	50,2	26604	52998	6,06	26604	846	99,9797	26598	0	0	0
27-03-2007	53356	50,2	26784	53356	6,06	26784	846	99,9797	26778	0	0	0
28-03-2007	52311	50,4	26364	52311	6,06	26364	846	99,9797	26358	0	0	0
29-03-2007	50585	51	25798	50585	6,06	25798	836	99,9797	25792	0	0	0
30-03-2007	53487	50,3	26903	53487	6,06	26903	825	99,9797	26897	0	0	0
31-03-2007	51898	51,3	26623	51898	6,06	26623	828	99,9797	26617	0	0	0
01-04-2007	53257	51,5	27427	53257	6,06	27427	828	99,9797	27421	0	0	0
02-04-2007	54113	51,8	28030	54113	6,06	28030	840	99,9797	28024	0	0	0
03-04-2007	54812	51,8	28392	54812	6,06	28392	869	99,9797	28386	0	0	0
04-04-2007	56312	51,9	29225	56312	6,06	29225	866	99,9797	29219	0	0	0
05-04-2007	57459	52	29878	57459	6,06	29878	869	99,9797	29871	0	0	0
06-04-2007	58176	51,9	30193	58176	6,06	30193	869	99,9797	30186	0	0	0
07-04-2007	57962	51,9	30082	57962	6,06	30082	869	99,9797	30075	0	0	0
08-04-2007	55179	52,1	28748	55179	6,06	28748	869	99,9797	28742	0	0	0
09-04-2007	55878	52,2	29168	55878	6,06	29168	840	99,9797	29162	0	0	0

Time Stamp	LFG Collected (N,m3)	Methane (%)	Methane Collected (N.m3)	LFG Sent To Flares (N.m3)	Methane Exhaust Gas (ppm)	Methane Sent To Flares (N.m3)	Temperature Process (ºC)	Flare Efficiency (%)	Methane Destroyed (N.m3)	Biogas to electricity (N.m3)	Methane sent To electricity (N.m3/day)	Electricity Exported (MWh)
10-04-2007	60526	51,9	31412	60526	6,06	31412	795	99,9797	31405	0	0	0
11-04-2007	61395	51	31311	61395	6,06	31311	794	99,9797	31304	0	0	0
12-04-2007	63929	50,2	32092	63929	6,06	32092	795	99,9797	32085	0	0	0
13-04-2007	61746	51,8	31984	61746	6,06	31984	792	99,9797	31977	0	0	0
14-04-2007	63210	52,1	32932	63210	6,06	32932	788	99,9797	32925	0	0	0
15-04-2007	63137	52	32831	63137	6,06	32831	788	99,9797	32824	0	0	0
16-04-2007	62887	52,3	32889	62887	6,06	32889	781	99,9797	32882	0	0	0
17-04-2007	63780	51,7	32974	63780	6,06	32974	763	99,9797	32967	0	0	0
18-04-2007	63676	51,7	32920	63676	6,06	32920	763	99,9797	32913	0	0	0
19-04-2007	64827	52,2	33839	64827	6,06	33839	763	99,9797	33832	0	0	0
20-04-2007	63928	52,5	33562	63928	6,06	33562	760	99,9797	33555	0	0	0
21-04-2007	64379	52,6	33863	64379	6,06	33863	760	99,9797	33856	0	0	0
22-04-2007	57587	52,9	30463	57587	6,06	30463	766	99,9797	30456	0	0	0
23-04-2007	64258	52,1	33478	64258	6,06	33478	769	99,9797	33471	0	0	0
24-04-2007	66280	51,7	34266	66280	6,06	34266	739	99,9797	34259	0	0	0
25-04-2007	59143	50,9	30103	59143	6,06	30103	745	99,9797	30096	0	0	0
26-04-2007	67251	50	33625	67251	6,06	33625	745	99,9797	33618	0	0	0
27-04-2007	66066	50,3	33231	66066	6,06	33231	745	99,9797	33224	0	0	0
28-04-2007	65362	50,5	33007	65362	6,06	33007	745	99,9797	33000	0	0	0
29-04-2007	65312	50,2	32786	65312	6,06	32786	745	99,9797	32779	0	0	0
30-04-2007	64408	50,6	32590	64408	6,06	32590	745	99,9797	32583	0	0	0
01-05-2007	64865	50,8	32951	64865	6,06	32951	745	99,9797	32944	0	0	0
02-05-2007	64689	50,4	32603	64689	6,06	32603	745	99,9797	32596	0	0	0
03-05-2007	63595	51	32433	63595	6,06	32433	745	99,9797	32426	0	0	0

Time Stamp	LFG Collected (N,m3)	Methane (%)	Methane Collected (N.m3)	LFG Sent To Flares (N.m3)	Methane Exhaust Gas (ppm)	Methane Sent To Flares (N.m3)	Temperature Process (ºC)	Flare Efficiency (%)	Methane Destroyed (N.m3)	Biogas to electricity (N.m3)	Methane sent To electricity (N.m3/day)	Electricity Exported (MWh)
04-05-2007	61670	51,9	32006	61670	6,06	32006	740	99,9797	31999	0	0	0
05-05-2007	63114	51,5	32503	63114	6,06	32503	725	99,9797	32496	0	0	0
06-05-2007	65382	50,3	32887	65382	6,06	32887	725	99,9797	32880	0	0	0
07-05-2007	65084	50,2	32672	65084	6,06	32672	725	99,9797	32665	0	0	0
08-05-2007	64401	50,4	32458	64401	6,06	32458	725	99,9797	32451	0	0	0
09-05-2007	63325	51,1	32359	63325	6,06	32359	743	99,9797	32352	0	0	0
10-05-2007	62595	51,2	32048	62595	6,06	32048	771	99,9797	32041	0	0	0
11-05-2007	63122	50,5	31876	63122	6,06	31876	769	99,9797	31869	0	0	0
12-05-2007	61348	51,1	31348	61348	6,06	31348	769	99,9797	31341	0	0	0
13-05-2007	63211	51,2	32364	63211	6,06	32364	769	99,9797	32357	0	0	0
14-05-2007	62802	51	32029	62802	6,06	32029	769	99,9797	32022	0	0	0
15-05-2007	63163	50,8	32086	63163	6,06	32086	769	99,9797	32079	0	0	0
16-05-2007	64069	51,1	32739	64069	6,06	32739	769	99,9797	32732	0	0	0
17-05-2007	64346	51	32816	64346	6,06	32816	769	99,9797	32809	0	0	0
18-05-2007	65149	51,1	33291	65149	6,06	33291	769	99,9797	33284	0	0	0
19-05-2007	65758	50,5	33207	65758	6,06	33207	769	99,9797	33200	0	0	0
20-05-2007	65804	50	32902	65804	6,06	32902	769	99,9797	32895	0	0	0
21-05-2007	65821	50	32910	65821	6,06	32910	769	99,9797	32903	0	0	0
22-05-2007	66252	50,4	33391	66252	6,06	33391	769	99,9797	33384	0	0	0
23-05-2007	66725	50,7	33829	66725	6,06	33829	769	99,9797	33822	0	0	0
24-05-2007	66770	50,7	33852	66770	6,06	33852	769	99,9797	33845	0	0	0
25-05-2007	67650	51,2	34636	67650	6,06	34636	769	99,9797	34628	0	0	0
26-05-2007	70315	51,3	36071	70315	6,06	36071	769	99,9797	36063	0	0	0
27-05-2007	70173	51,3	35998	70173	6,06	35998	769	99,9797	35990	0	0	0

Time Stamp	LFG Collected (N,m3)	Methane (%)	Methane Collected (N.m3)	LFG Sent To Flares (N.m3)	Methane Exhaust Gas (ppm)	Methane Sent To Flares (N.m3)	Temperature Process (ºC)	Flare Efficiency (%)	Methane Destroyed (N.m3)	Biogas to electricity (N.m3)	Methane sent To electricity (N.m3/day)	Electricity Exported (MWh)
28-05-2007	69315	50,6	35073	69315	6,06	35073	769	99,9797	35065	0	0	0
29-05-2007	71980	51,3	36925	71980	6,06	36925	769	99,9797	36917	0	0	0
30-05-2007	72711	51,3	37300	72711	6,06	37300	769	99,9797	37292	0	0	0
31-05-2007	73529	51,1	37573	73529	6,06	37573	769	99,9797	37565	0	0	0
01-06-2007	73441	51,3	37675	73441	6,06	37675	828	99,9797	37667	0	0	0
02-06-2007	71627	51	36529	71627	6,06	36529	840	99,9797	36521	0	0	0
03-06-2007	72285	50,7	36648	72285	6,06	36648	869	99,9797	36640	0	0	0
04-06-2007	73213	51	37338	73213	6,06	37338	866	99,9797	37330	0	0	0
05-06-2007	75831	51,5	39052	75831	6,06	39052	869	99,9797	39044	0	0	0
06-06-2007	68664	51,5	35361	68664	6,06	35361	869	99,9797	35353	0	0	0
07-06-2007	47752	52,3	24974	47752	6,06	24974	869	99,9797	24968	0	0	0
08-06-2007	76658	50,6	38788	76658	6,06	38788	869	99,9797	38780	0	0	0
09-06-2007	75205	51	38354	75205	6,06	38354	837	99,9797	38346	0	0	0
10-06-2007	76139	52	39592	76139	6,06	39592	795	99,9797	39583	0	0	0
11-06-2007	75710	53	40126	75710	6,06	40126	795	99,9797	40117	0	0	0
12-06-2007	74516	53,1	39567	74516	6,06	39567	795	99,9797	39558	0	0	0
13-06-2007	68149	54,5	37141	68149	6,06	37141	792	99,9797	37133	0	0	0
14-06-2007	76420	54,6	41725	76420	6,06	41725	788	99,9797	41716	0	0	0
15-06-2007	74374	52,8	39269	74374	6,06	39269	788	99,9797	39261	0	0	0
16-06-2007	74652	52	38819	74652	6,06	38819	763	99,9797	38811	0	0	0
17-06-2007	72936	51,9	37853	72936	6,06	37853	781	99,9797	37845	0	0	0

B.2.5 Data concerning leakage (referring to paragraph (53 c)):

According with ACM0001- version 04 and the registered PDD, no leakage needs to be considered.

B.3 Data processing and archiving (incl. software used).

Data processing and archiving is done by an automatic control system..

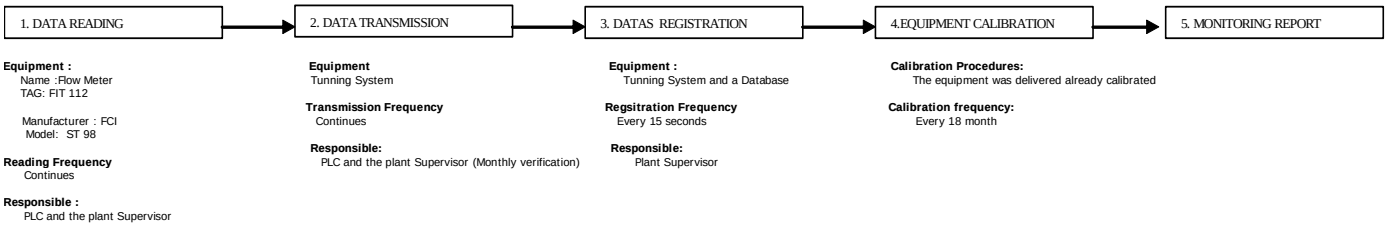
B.4 Special event log:

All the flare shoot downs are registered by the automatic control system, as required by the quality assurance system.

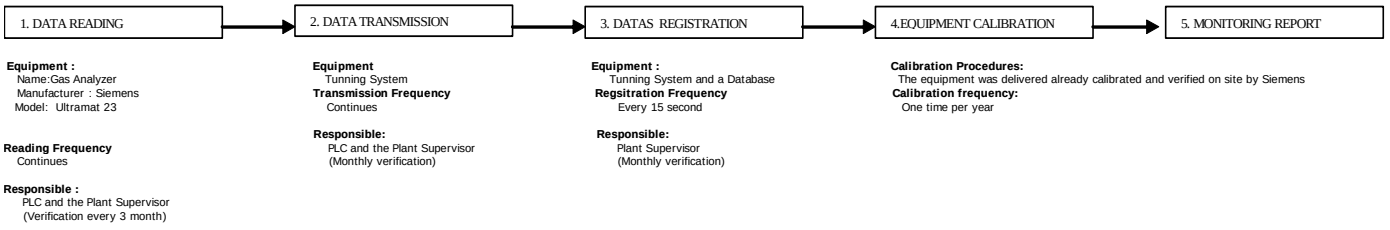
SECTION C. QUALITY ASSURANCE AND QUALITY CONTROL MEASURES.

C.1.1 Roles and responsibilities

Total Flow



Methane Concentration



C.1.2 Trainings

All training was supplied before project start up. The company has a training plan for the current year.

C.3 Internal audits and control measures:

This information is on A.6

SECTION D. CALCULATION OF GHG EMISSION REDUCTIONS

D.1. Table providing the used formulas

Methane

The GHG emission reduction associated with methane destruction achieved by the project activity during a given year "*y*" (ERM_y) is defined as: .

$$ERM_y = (MD_{project,y} - MD_{reg,y}) \cdot GWP_{CH_4} \quad (1)$$

Where:

ERM_y is measured in tones of CO_2 equivalent (tCO_{2e})

$MD_{project,y}$ and $MD_{reg,y}$ are measured in tones of methane (tCH_4)

GWP_{CH_4} = 21 tCO_{2e}/tCH_4

Since there are no legal requirements to capture and flare landfill gas in Chile, in recent years a small amount of landfill gas has been collected and flared at the project site. In order to be conservative, the three-year average (2002-2004) mass of methane captured and flared has being considered as baseline (245 tones methane per year)

The methane destroyed by the project activity ($MD_{project,y}$) during a year is determined by monitoring the quantity of methane actually flared or otherwise combusted for electricity generation:

$$MD_{project,y} = MD_{flared,y} + MD_{electricity,y} + MD_{sold,y} \quad (3)$$

MD electricity = 0

This project hasn't electricity generation during this period

MD sold = 0

This Project don't sell biogas for others uses or clients during this period.

$$MD_{flared,y} = LFG_{flare,y} \cdot w_{CH_4,y} \cdot D_{CH_4} \cdot FE \quad (4)$$

Where:

$MD_{flared,y}$ is the quantity of methane destroyed by flaring during the year, measured in cubic meters (m^3)

$LFG_{flared,y}$ is the quantity of landfill gas flared or during the year measured in cubic meters (m^3)

$w_{CH_4,y}$ is the average methane fraction of the landfill gas as measured during the year and expressed as a fraction (in m^3CH_4/m^3LFG)

FE is the flare efficiency (the fraction of the methane destroyed).

D_{CH_4} is the methane density expressed in tones of methane per cubic meter of methane (tCH_4/m^3CH_4).

For calculate the flare efficiency we propose the next formula based in a mass balance between methane inlet and methane in the exhaust gases.

(1)

$$FE = 1 - \frac{M_{nd,kg/h}}{MD_{flared,kg/h}}$$ This formula is according to EB 28 Annex13.

Where:

$MD_{flared,kg/h}$ is quantity of methane sent to flare in kg/hour (2)

$M_{nd,kg/h}$ is the quantity of methane non destroyed in kg/hour (3)

Flare efficiency

$$MD_{flared,kg/h} = LFG_{flared,m^3/h} \cdot w_{CH\,4,day\_average} \cdot D_{CH_4} \cdot 1000 \frac{kg}{ton} \quad (2)$$

$MD_{flared,kg/h}$	$LFG_{flared,m^3/h}$	$w_{CH_4,day\_average}$	D_{CH_4}
934,523 kg/h	2.600 n,m^3/h	50, 2 %	0,000716 t/m^3

(3)

$M_{nd,kg/h}$
0,19 kg/h

Considering the above mentioned, flare efficiency is: (1)

FE
0,999797

D.2. Uncertainties and error propagation

Key variables are constantly measured by a flowmeter and a gas analyzer. Data is recorded every 15 seconds on the PLC and every 1 minute on the Data Recorder. Specifications for the measurement instruments are:

Variable	Instrument	Manufacturer	Model	Error (%)	
Methane concentration	Gas analyzer	Siemens	Ultramat 23	±1,0 %	α
Flow	Flow meter	FCI	ST-98-23CTO2BAOFA	± 1% reading+0,5% full scale	β

System uncertainty

System uncertainty (ε) is defined by the expression:

$$\varepsilon = \sqrt{(\alpha)^2 + (\beta)^2}\ (\%)$$

Where $\alpha = 1{,}0$ (%) and $\beta = \frac{(0{,}01 \times \overline{Q} + 0{,}005 \times Q_{MAX})}{\overline{Q}} \bullet 100$ (%).

$\overline{Q}$ is the average recorded flow, calculated with the records of the report period, and Q_{MAX} is the maximum flow reading for the instrument. In this case, Q_{MAX} = 5.097 m^3/h.

Instruments accuracies are provided by the SCAB supervisor, as inputs to the automatic control system, before the generation of each CO_{2e} report. When the accuracy is an absolute value (Gas Analyzer) the figure is kept on the system and is checked on the generation of every new report. When the accuracy is a

relative value (Flowmeter), the figure is tipped by the SCAB supervisor for every report generation, considering the average flow of the period.

Flow meter error

Period	Hours	Flow m3	Average Flow m3/h	error %	deviation
March	344,24	731.968,00	2.126,5	2,20	46,748
April	708,24	1.836.235,00	2.592,68	1,98	51,412
May	741,75	2.038.733,00	2.748,53	1,93	52,970
June	391,44	1.227.572,00	3.136,06	1,81	56,846

Average Flow of this period: 2.669,44 m^3/h

Average deviation of this period: 52,18 m^3/h

Flow meter error of this period: 1,95%

System error: $\varepsilon = \sqrt{(1)^2 + (1.95)^2}\,(\%) = 2.19\%$

Significant figures

Significant figures correspond to each instrument precision.

Gas Analyzer significant figures are 3

Flow meter significant figures are 4

D.3. GHG emission reductions

D.3.1. Project emissions

The fuel oil consumed in the verification period is 1.950 liters or 1.657,5 kg.

The Pilot gas consumed in the verification period is 90 kg.

The net MWh consumed in the verification period is 56,584 MWh

The project emissions during this period are:

Fuel or Energy	Emission Factor	Quantity	Calorific power kj/kg	Energy Tj	Tons of CO_{2e}
Fuel oil	74,1 tCO_{2e}/TJ	1.657,5 kg	45.891	0,0761	5,6390
Liquefied Petroleum Gases	63,1 tCO_{2e}/TJ	90 kg	47.720	0,0043	0,2710
Electricity	0,608 tCO_{2e}/MWh	56,584 MWh	----------	----------	34,4031
Total Project emission tCO_2e					**40,3131**

D.3.2. Baseline emissions

According to PDD the base line is 245 tCH_4 per year. This is equivalent to 14,0959 tCO_{2e} per day, over a 365 days year basis.

Total tCO_{2e} of this monitoring period: 1310,9178 tCO_{2e}.

D.3.3 Leakage (L):

$L_{\text{monitoring period}} = 0$

D.3.4. Summary of the emissions reductions during the monitoring period

Period		Methane sent to flare [m^3]	Methane sent to flare [tons]	Total tCO2e
17-03-2007	31-03-2007	357.482	255,96	5.375,10
01-04-2007	30-04-2007	947.301	678,27	14.243,62
01-05-2007	31-05-2007	1.037.136	742,59	15.594,38
01-06-2007	17-06-2007	638.811	457,39	9.605,16
Total of period		**2.980.730**	**2.134,2027**	**44.818,26**

The total tCO_{2e} claimed is:

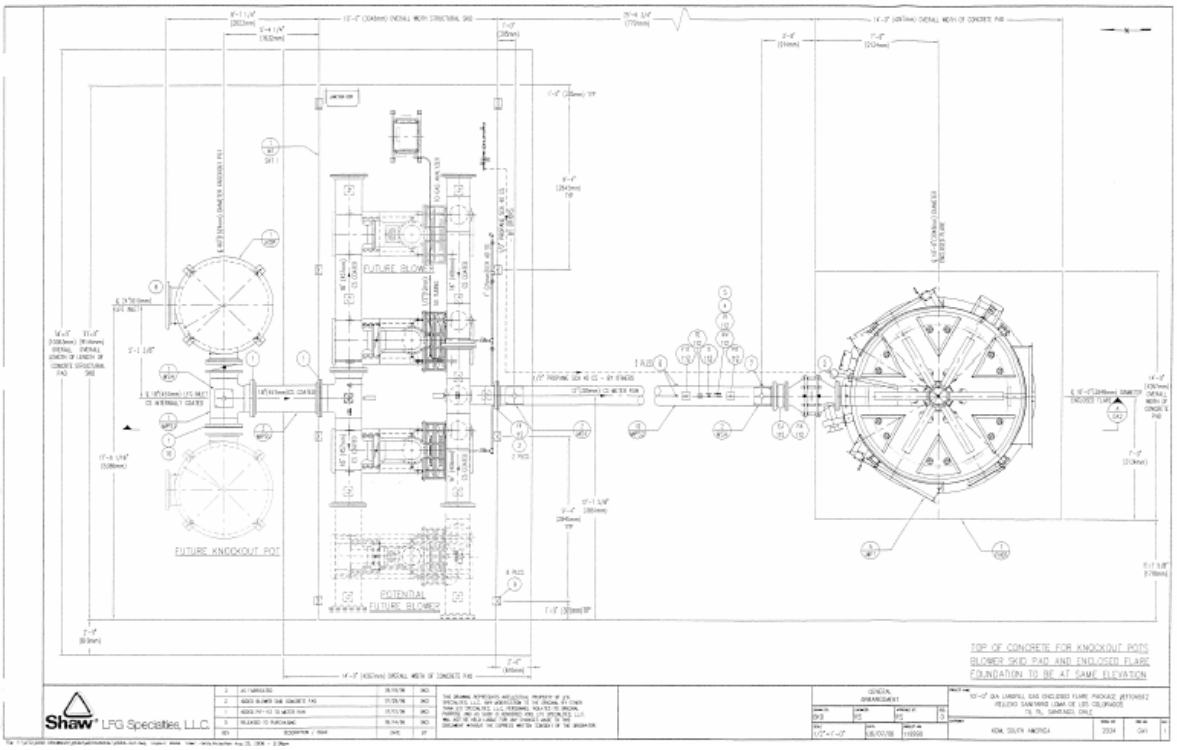
$$Total_{tCO_{2e}claimed} = [Total_{tCO_{2E}} \cdot Flare_{efficiency} \cdot (1 - System_{uncertainty})] - Project_{emission} - Base_{line}$$

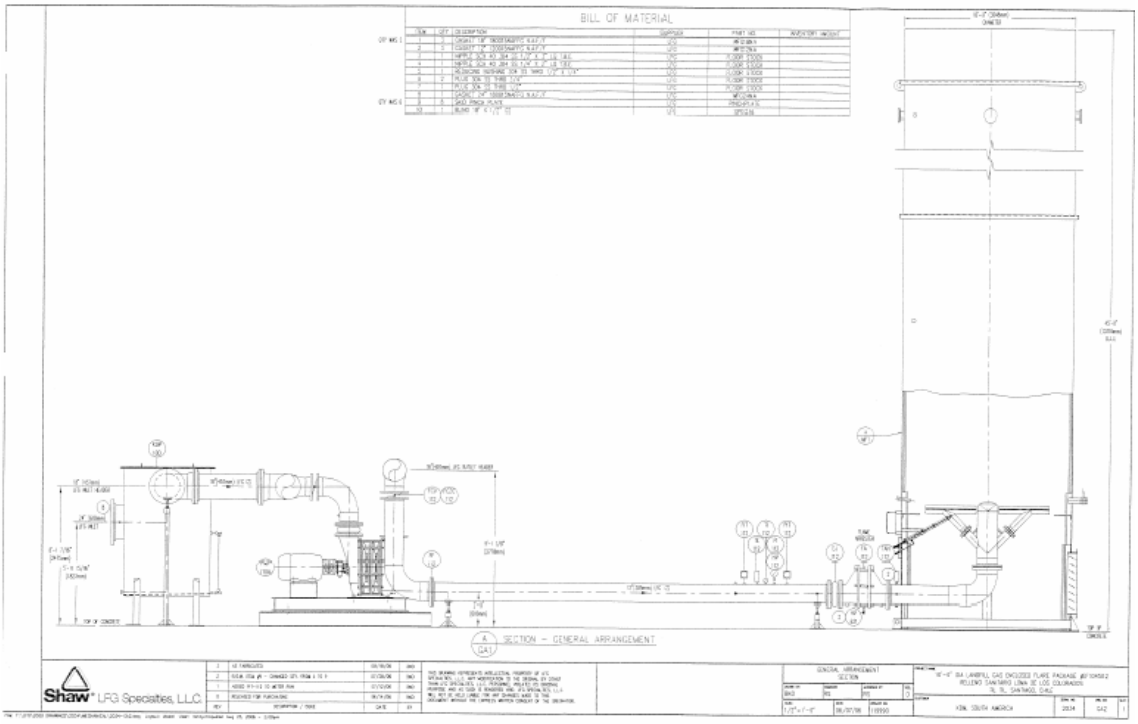
Total tCO_{2e}	Flare efficiency	System uncertainty	Base line (tCO_{2e})	Project emission (tCO_{2e})	Total tCO_{2e} claimed
44.818,26	99,9797%	2,19%	1310,9178	40,3131	42476.6

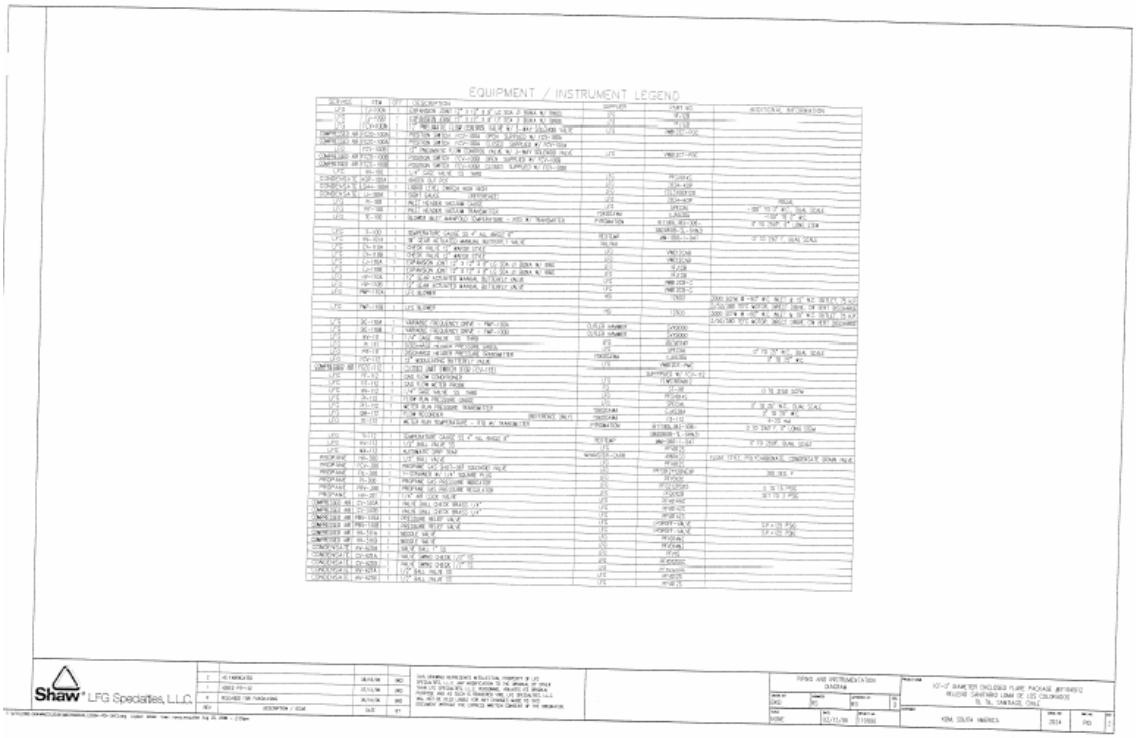
Note: Comparison between PDD CER's estimation and CER's claimed

Estimation of total emission reduction for 2007 according to PDD: 381163 tCO_{2e}

Total emission reductions claimed in this report: 42476.6 tCO_{2e}


FUTURE BLOWER
FUTURE KNOCKOUT POT
POTENTIAL FUTURE BLOWER
TOP OF CONCRETE FOR KNOCKOUT POTS BLOWER SKID PAD AND ENCLOSED FLARE FOUNDATION TO BE AT SAME ELEVATION
Shaw LFG Specialties, LLC


BILL OF MATERIAL
SECTION – GENERAL ARRANGEMENT
Shaw LFG Specialties, LLC


EQUIPMENT / INSTRUMENT LEGEND
Shaw LFG Specialties, LLC