OMSTAR
ENVIRONMENTAL PRODUCTS DX1
D-1280X

Coca-Cola FEMSA PHILIPPINES

FINAL REPORT

FEMSA COCA-COLA PHILIPPINES
Evaluation of Omstar DX1 Fuel Additive
(Sep 2015 – Feb 2016)
Coca-Cola San Fernando Plant

Report Elaborated by:
Eng. Luis Alejandro Gutierrez, Analyst and Test manager
Eng. Edgar Serrano, Field Operation
BA. Francisco Gutierrez, Analyst

Collaboration:
Angel Tayag, Red Systems manager
Chris Salamat, Red system
Vladimir Gutierrez, Maintenance manager
Jerwin Reyes, Boiler manager
Alex Pino, San Fernando Plant Operations Manager

Approved By:

Luis Alejandro Gutierrez
Engineer, Chief Research and Testing
Omstar Environmental Products DX1 Inc.

OMSTAR
ENVIRONMENTAL PRODUCTS DX1
D-1280X

Coca-Cola FEMSA
PHILIPPINES

PURPOSE:

To evaluate **Omstar DX1®** and **Omstar OpenFlame®** fuel additives in trucks and boilers, in which Omstar claims to:

- reduce fuel consumption by 10%
- reduce toxic emissions by 30%
- increase oil life by 15% and reduce maintenance labor and spare parts cost by protecting the internal parts of the engine with their patented formula that provides upper cylinder & valve lubrication through molecular chemisorption called “iron soap”.

For this test four average trucks were selected, two Mitsubishi’s and two HINO’s, where one truck of each brand was tested without additive (baseline) and the other truck tested with additive.

For the boiler test, data was collected before the additive for one month to evaluate the improvement in fuel efficiency after applying the additive as also a base line of emissions was conducted to show the emission reductions after comparing it to a final emission test with the additive. We also observed the pre-heat times during startup and visually inspected the boilers for reduction in carbon buildup while the boilers were shut down for boiler inspections.

The test engineers also took into consideration all the comments from the boiler operators and drivers of the trucks to incorporate improvements for the test.

RESULTS:

- The Mitsubishi truck fuel economy improved by 17.4% (saving Php 1,303/month), and smoke opacity was reduce by 71.3%.
- Fuel economy for the Hino truck improved by 13.7% (saving Php 1,781/month). Smoke opacity was lowered by 91.2%.
- Boiler performance improved by 10.4% (Saving Php 47,944/month). SO_2 reduction of 28% and NO2 was lowered by 99%

The bottom line is that the additives significantly improved fuel economy and reduced emissions.

OMSTAR
ENVIRONMENTAL PRODUCTS DX1
D-1280X

Coca-Cola FEMSA
PHILIPPINES

PROCEDURE: **OMSTAR DX1 and Omstar OpenFlame (was B15) Additive Application Protocol**

Phase 1 - 4 Weeks	Phase 2 - 1 Week	Phase 3 - 4 weeks
Baseline - No additive	Engine Cleaning phase	Base line – With Additive
No DX1 in fuel	”5X” dosage in test engines 1 liter of additive for 240 liters of fuel	”1X” Regular dosage 1 liter of additive for 1200 liters of fuel
	Oil treatment to lubricate the upper part of the cylinders add 30ml of additive for 1 liter of oil in the crank case (JUST FOR TRUCKS)	Oil treatment is each oil service, 30ml for 1 liter of oil. (JUST FOR TRUCKS)
Record: km/lt. data, Exhaust emissions test data	Performance is *lowered* by engine deposit removal. So do **NOT** compare end Cleaning Phase test data with end Baseline Phase test data	Record: km/lt. data, Exhaust emissions test data at end of the 4 weeks.

PROCEDURE:

Mitsubishi & HINO Trucks

2009 Mitsubishi / FK617 FCAB
Diesel - Non - Turbo
VIN: 132000000239622
Chassis No. PAEFK817H9C000213
Plate No. NJO599
Engine No. 6D16A29600
Driver: Bernardo Manduriao

2010 HINO / FG8JM
Diesel – Non – Turbo
VIN: 138400000272292
Chassis No. FG8J12589
Plate No. PXQ394
Engine No. JO8EUG12129
Driver: Luis Lasprillas

OMSTAR
ENVIRONMENTAL PRODUCTS DX1
D-1280X

Coca-Cola FEMSA PHILIPPINES

RESULTS:

Mitsubishi 2009

NO ADDITIVE

DATE	Kilometers	Fuel Liters	Fuel Yield Km/Lt
9/21/2015	72.1	31.9	2.89
9/22/2015	75	19.3	3.89
9/23/2015	74.6	14.2	5.25
9/25/2015	149.1	30.1	4.95
9/26/2015	149.1	31	4.81
9/28/2015	149.7	29.5	5.07
9/30/2015	122.8	49.5	2.48
10/6/2015	199.4	61.1	3.26
10/7/2015	76.4	17.2	4.44
10/9/2015	227.2	54.1	4.20
10/13/2015	181.3	42.9	4.23
Total	1404.6	348.9	**4.25** ✓

WITH ADDITIVE

DATE	Kilometers	Fuel Liters	Fuel Yield Km/Lt	Omstar DX1 ml	
12/18/2015	152.2	30	5.07	150	Initial Treatment
12/21/2015	226.8	51	4.45	255	
12/22/2015	153	32	4.78	160	
12/23/2015	29	8	3.63	40	
12/24/2015	78	17.8	4.38	89	
12/26/2015	69	17.2	4.01	17	
12/30/2015	305	69.3	4.40	69	
1/4/2016	309	49	6.31	49	
1/5/2016	131	30.9	4.24	31	
1/7/2016	149	29	5.14	29	
1/8/2016	75	15.6	4.81	16	
1/11/2016	200	40.4	4.95	40	
1/13/2016	195	53.5	3.64	54	
1/15/2016	156	36.9	4.23	37	
1/20/2016	365	59.3	6.16	59	
1/22/2016	239	55	4.35	55	
1/23/2016	154	32	4.81	32	
1/25/2016	147	27.8	5.29	28	
1/29/2016	217.8	31.3	6.96	31	
2/6/2016	178.7	32	5.58	32	
Total	2890.5	579.2	**4.99**	579 ml	

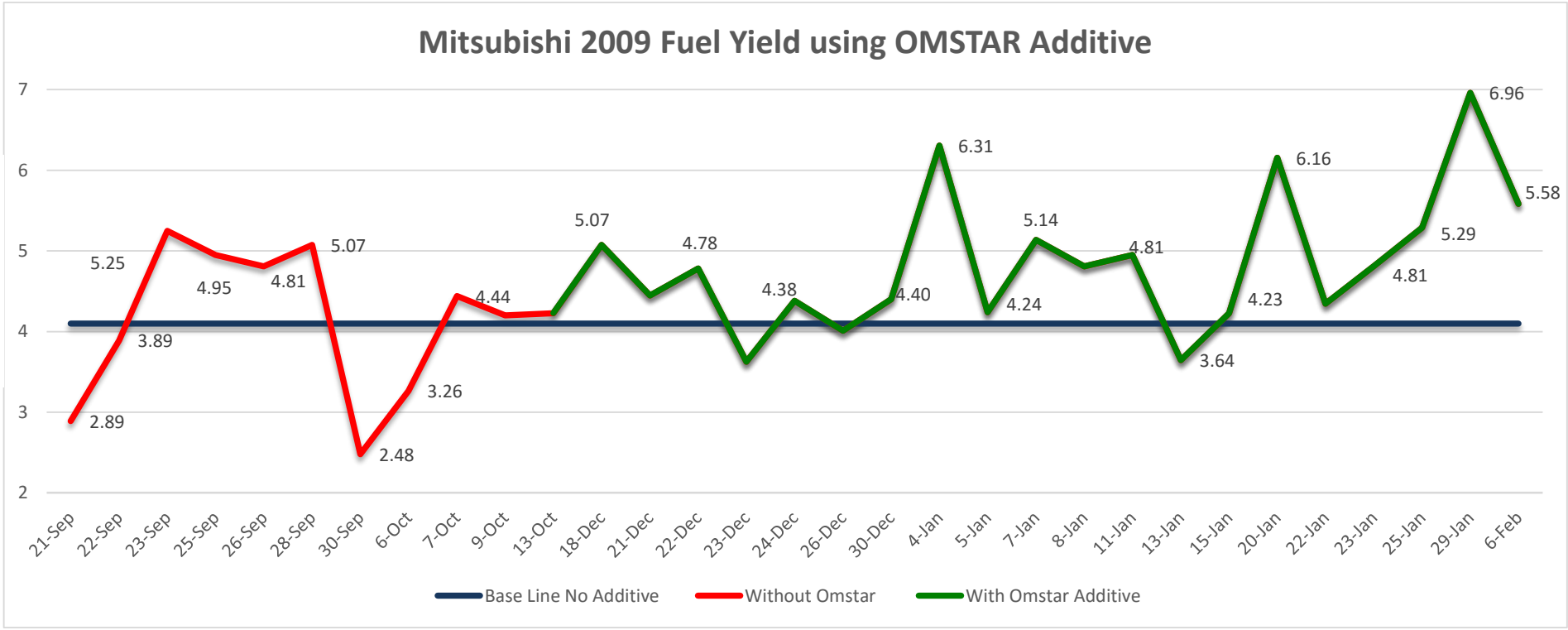
	Kilometers	Liters	Fuel Yield Km/Lt
Without OMSTAR 23 days	1404.6	348.9	4.25 Km/Lt
With OMSTAR 41 days	2890.5	579.2	4.99 Km/Lt
			17.4%✓

OMSTAR
ENVIRONMENTAL PRODUCTS DX1
D-1280X

Coca-Cola FEMSA PHILIPPINES

RESULTS:

Mitsubishi 2009



- The engine cleaning or shock treatment was from December 15th to December 24th

OMSTAR
ENVIRONMENTAL PRODUCTS DX1
D-1280X

Coca-Cola FEMSA PHILIPPINES

RESULTS:

HINO 2010

ADDITIVE			
Date	Kilometers	Fuel Liters	Fuel Eff Km/Lt
9/22/2015	214	68.8	3.11
9/24/2015	105	28.5	3.68
9/25/2015	110	33.2	3.31
9/26/2015	173	50	3.46
9/28/2015	156	37.5	4.16
10/1/2015	183	53.7	3.41
10/2/2015	118	34.4	3.43
10/6/2015	242	58	4.17
10/7/2015	118	31.2	3.78
10/8/2015	144	56.7	2.54
10/9/2015	117	41.2	2.84
10/14/2015	471	119.6	3.94
10/15/2015	198	52.7	3.76
TOTAL	2349	665.5	**3.51** ✓

	Kilometers	Liters	Fuel Yield Km/Lt
Without OMSTAR 23 days	2349	665.5	3.51 Km/Lt
With OMSTAR 52 days	5565	1416.2	3.99 Km/Lt
			13.67% ✓

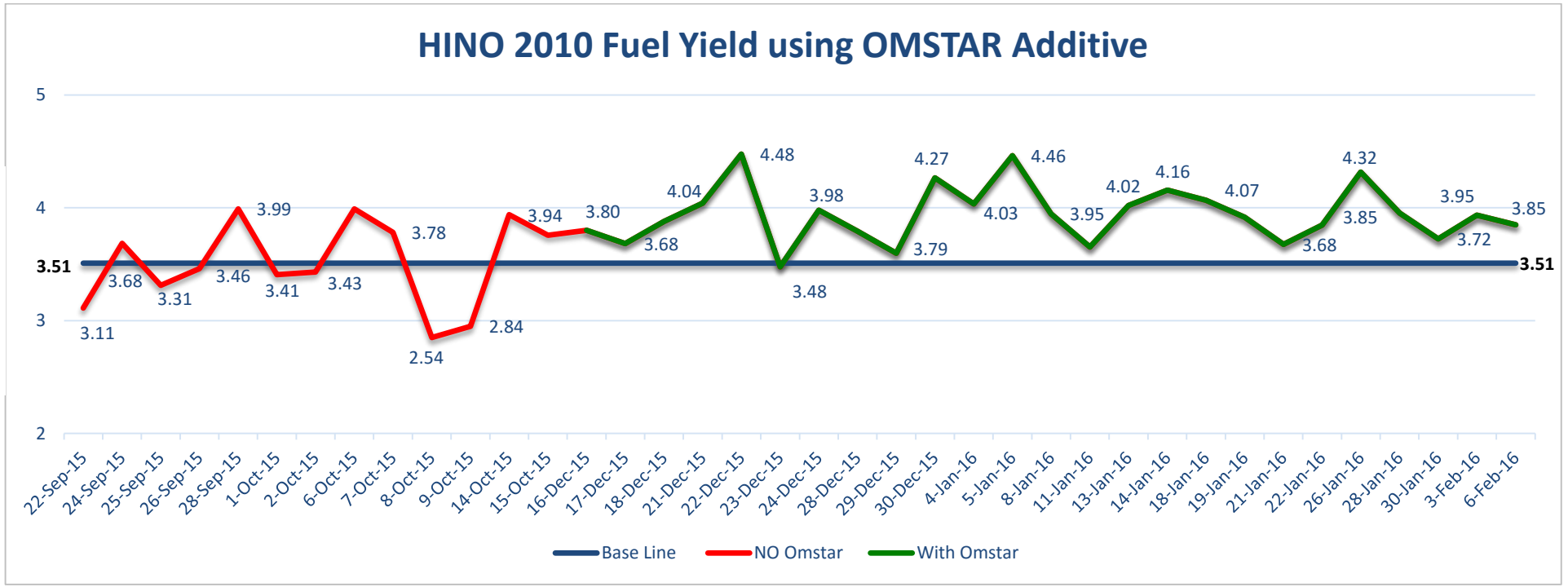
WITH OMSTAR ADDITIVE					
Date	Kms	Fuel Liters	Fuel Eff Km/Lt	OMSTAR ml	
12/16/2015	122	32.1	3.80	160.5	Initial treatment
12/17/2015	116	31.5	3.68	157.5	
12/18/2015	109	28.1	3.88	140.5	
12/21/2015	364	90.1	4.04	450.5	
12/22/2015	188	42	4.48	42	
12/23/2015	129	37.1	3.48	37.1	
12/24/2015	78	19.6	3.98	19.6	
12/28/2015	303	79.9	3.79	79.9	
12/29/2015	177	49.2	3.60	49.2	
12/30/2015	186	43.6	4.27	43.6	
1/4/2016	288	71.4	4.03	71.4	
1/5/2016	216	48.4	4.46	48.4	
1/8/2016	253	64.1	3.95	64.1	
1/11/2016	297	81.3	3.65	81.3	
1/13/2016	316	78.6	4.02	78.6	
1/14/2016	155	37.3	4.16	37.3	
1/18/2016	174	42.8	4.07	42.8	
1/19/2016	260	66.4	3.92	66.4	
1/21/2016	250	68	3.68	68	
1/22/2016	150	39	3.85	39	
1/26/2016	164	38	4.32	38	
1/28/2016	351	88.8	3.95	88.8	
1/30/2016	191	51.3	3.72	51.3	
2/3/2016	273	69.4	3.93	69.4	
2/6/2016	455	118.2	3.85	118.2	
TOTAL	5565	1416.2	**3.99**	1234.4	

OMSTAR
ENVIRONMENTAL PRODUCTS DX1
D-1280X

Coca-Cola FEMSA
PHILIPPINES

RESULTS:

HINO 2010



OMSTAR
ENVIRONMENTAL PRODUCTS DX1
D-1280X

Coca-Cola FEMSA PHILIPPINES

RESULTS OF EMISSIONS FOR THE HINO AND MITSUBISHI TRUCKS

On October 9th the Emission base line with no Additive was conducted, we could not analyze the 5 main gases (CO, NOx, CO2, SO, O2) due to Philippines system of emissions regulations. In the Smoke check Verification Company LTO (Land Transportation Office) who was certify by the government to extend the certificates of emission did not have a 5 gas analyzer for diesel engines because is not require by the government. So this results are the average % of Opacity out of 8 reading which is stablish by the protocol in LTO.

The Results are as Follows:

Vehicle Unite	October 9th Test (Base Line With No Omstar Additive) Light Absorption Coefficient %	February 12th Test (Base line With Omstar Additive DX1) Light Absorption Coefficient %	Improvement %
Mitsubishi 2009 **Plate No.** NJO599	0.870 % Avg.	0.25 % Avg.	**71.26** % ✓ Opacity Reduction
HINO 2010 **Plate No.** PXQ394	0.519 % Avg.	0.068 % Avg.	**90.20** % ✓ Opacity Reduction

OMSTAR
ENVIRONMENTAL PRODUCTS DX1
D-1280X

Coca-Cola FEMSA
PHILIPPINES

EMISSION'S RESULTS FROM LTO FOR HINO & MITSUBISHI

Republic of the Philippines
Department of Transportation and Communications
Land Transportation Office

CERTIFICATE OF EMISSION COMPLIANCE

EYE N SEE EMISSION TESTING CENTER
GUSALING MARIKIT KM 84, MCARTHUR HIGHWAY, ANGELES CITY, PAMPANGA
AUTHORITY R3-2014-07-1543
DATE OF EXPIRATION Oct-16-2016
CEC NO. 163156490
FBA5C416B0EBB5
20150001631564900

LTO COPY

M.V. OWNER THE RED SYSTEM COMPANY INC
COMPLETE ADDRESS SAMPALOC MANILA

VEHICLE DETAILS

PLATE NO.	PXQ394	FUEL TYPE	DIESEL - NON-TURBO
MV FILE NO.	138400000272292	YEAR MODEL	2010
ENGINE NO.	J08EUG12129	MAKE/SERIES	HINO / FG8JM
CHASSIS NO.	FG8J12589	MV TYPE	TRUCKS
DATE/TIME TESTED	10/9/2015 2:59:24 PM	COLOR	-
		CLASSIFICATION	PRIVATE

GIVEN THIS Oct-09-2015
VALID UNTIL Dec-08-2015
P.E.T.C. I.T. PROVIDER ETCIT Inc.

TESTING RESULT

SUMMARY

CO %	HC %
CO2 %	O2 %
AVERAGE Light absorption coefficient	STANDARD
0.519 Lambda	2.20 NOx

RESULT

PASSED

RHOBBIE F. LUMBANG
ENCODER'S NAME
TESTED AND CERTIFIED BY RAY-ANN MANGALINO
MVCET TESDA CERTIFICATE 403030000316

TESTING PURPOSE
FOR REGISTRATION

Republic of the Philippines
Department of Transportation and Communications
Land Transportation Office

CERTIFICATE OF EMISSION COMPLIANCE

AJM EMISSION TESTING CENTER
149 MAC ARTHUR HIGHWAY, ANGELES CITY, PAMPANGA
R3-2014-09-1373 DATE OF EXPIRATION
09/16/2016
20160019292848l
CEC NO. 192928481
A0AAFA1E97BCDD

LTO COPY

M.V. OWNER THE RED SYSTEMS COMPANY INC
COMPLETE ADDRESS SAMPALOC MANILA NCR
OR No :

VEHICLE DETAILS

PLATE NO.	PXQ394	FUEL TYPE	DIESEL
MV FILE NO.	138400000272292	YEAR MODEL	2010
ENGINE NO.	J08EUG12129	MAKE/SERIES	HINO - 2010
CHASSIS NO.	FG8J12589	MV TYPE	FG8JM - PALLETIZED
DATE/TIME TESTED	02/12/2016 8:32:30 AM	COLOR	RED WHITE
		CLASSIFICATION	PRIVATE

GIVEN THIS Friday,Feb 12 2016
VALID UNTIL Tuesday,Apr 12 2016
P.E.T.C. I.T. PROVIDER THE NEW CYBERLINKTECH, INC.

TESTING RESULT

SUMMARY

CO %	HC %
0 CO2 %	0 O2 %
AVERAGE Light absorption coefficient	STANDARD
0.06 Lambda	2.20 NOx

RESULT

PASSED

MIKEY TORRES
ENCODER'S NAME
TESTED AND CERTIFIED BY ARNOLD B. ABORDO
MVCET TESDA CERTIFICATE 150314000038[illegible]

TESTING PURPOSE
FOR REGISTRATION ONLY

Republic of the Philippines
Department of Transportation and Communications
Land Transportation Office

CERTIFICATE OF EMISSION COMPLIANCE

EYE N SEE EMISSION TESTING CENTER
GUSALING MARIKIT KM 84, MCARTHUR HIGHWAY, ANGELES CITY, PAMPANGA
AUTH: R3-2014-07-1343
DATE OF EXPIRATION: Jul-16-2016
CEC NO. 163156475
F4809937B70A3D
2015000163156475

LTO COPY

M.V. OWNER: THE RED SYSTEMS COMPANY INC
COMPLETE ADDRESS: SAMPALOC MANILA

VEHICLE DETAILS

PLATE NO.	NJO599	FUEL TYPE	DIESEL - NON-TURBO
MV FILE NO.	132000000239622	YEAR MODEL	2009
ENGINE NO.	6D16A29600	MAKE/SERIES	MITSUBISHI / FK617 FCAB CHASS
CHASSIS NO.	PAEFK817H9C000213	MV TYPE	TRUCKS
DATE/TIME TESTED	10/9/2015 2:44:22 PM	COLOR	WHITE/RED
		CLASSIFICATION	PRIVATE

GIVEN THIS: Oct-09-2015
VALID UNTIL: Dec-08-2015
P.E.T.C. I.T. PROVIDER: ETCIT Inc.

TESTING RESULT

SUMMARY

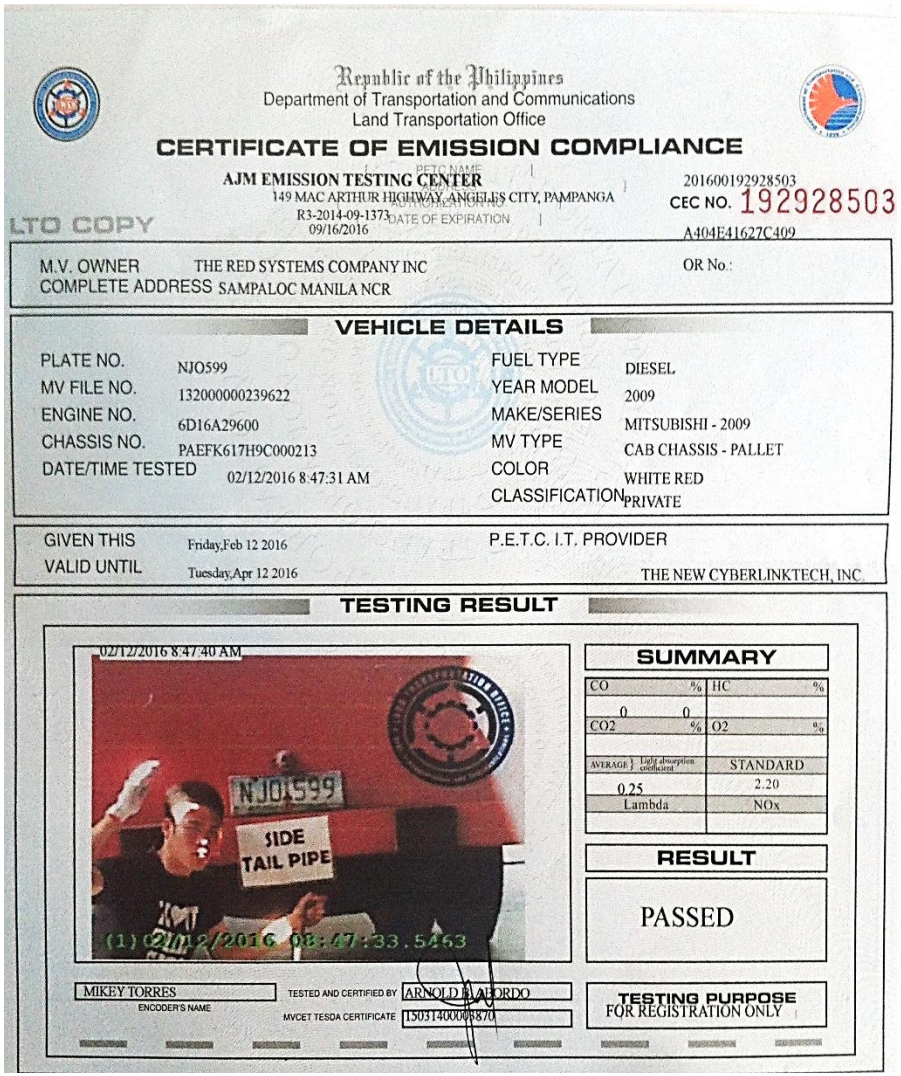
CO %	HC %
CO2 %	O2 %
AVERAGE Light absorption coefficient	STANDARD
0.870 Lambda	2.20 NOx

RESULT

PASSED

RHOBBIE F. LUMBANG — ENCODER'S NAME
TESTED AND CERTIFIED BY: RAY-ANN I. MANGALINO
MVCET TESDA CERTIFICATE: 03030000316

TESTING PURPOSE
FOR REGISTRATION



Republic of the Philippines
Department of Transportation and Communications
Land Transportation Office

CERTIFICATE OF EMISSION COMPLIANCE

AJM EMISSION TESTING CENTER
149 MAC ARTHUR HIGHWAY, ANGELES CITY, PAMPANGA
AUTHORIZATION: R3-2014-09-1373
DATE OF EXPIRATION: 09/16/2016
CEC NO. 192928503
201600192928503
A404E41627C409

LTO COPY

M.V. OWNER: THE RED SYSTEMS COMPANY INC
COMPLETE ADDRESS: SAMPALOC MANILA NCR
OR No.:

VEHICLE DETAILS

PLATE NO.	NJO599	FUEL TYPE	DIESEL
MV FILE NO.	132000000239622	YEAR MODEL	2009
ENGINE NO.	6D16A29600	MAKE/SERIES	MITSUBISHI - 2009
CHASSIS NO.	PAEFK617H9C000213	MV TYPE	CAB CHASSIS - PALLET
DATE/TIME TESTED	02/12/2016 8:47:31 AM	COLOR	WHITE RED
		CLASSIFICATION	PRIVATE

GIVEN THIS: Friday,Feb 12 2016
VALID UNTIL: Tuesday,Apr 12 2016
P.E.T.C. I.T. PROVIDER: THE NEW CYBERLINKTECH, INC.

TESTING RESULT

SUMMARY

CO %	HC %
0 CO2 %	0 O2 %
AVERAGE Light absorption coefficient	STANDARD
0.25 Lambda	2.20 NOx

RESULT

PASSED

MIKEY TORRES — ENCODER'S NAME
TESTED AND CERTIFIED BY: ARNOLD B. ABORDO
MVCET TESDA CERTIFICATE: 15031400008870

TESTING PURPOSE
FOR REGISTRATION ONLY

OMSTAR
ENVIRONMENTAL PRODUCTS DX1
D-1280X

Coca-Cola FEMSA PHILIPPINES

FINANCIAL ANALYSIS:

	Kilometers with Additive	Fuel Consumed Base line with no additive Liters	Fuel Consumed With Omstar Additive Liters	Fuel Savings Liters	Omstar Fuel Additive Used
HINO Plate No. PXQ394	5565 km	1585.47 Lt	1416.2 Lt	169.27	1230 ml
Mitsubishi Plate No. NJO599	2890.5 km	680.11 Lt	579.25 Lt	100.86	580 ml

	Fuel yield	Php Saved on Fuel Diesel Php 22.00	Cost Of Additive	Overall Php Savings (including cost of additive)
HINO Plate No. PXQ394	13.67%	Php 3,724.00	Php 1,943.00	Php **1,781** / month ✓
Mitsubishi Plate No. NJO599	17.4%	Php 2,219.00	Php 916.40	Php **1,303** / month ✓
The savings per month and Year 1000 Trucks projection			Php **1,781,000** / month ✓	
			Php **21,372,000** / year ✓	
			$ **454,723 USD** / year ✓	

OMSTAR
ENVIRONMENTAL PRODUCTS DX1
D-1280X

Coca-Cola FEMSA PHILIPPINES

BOILER TEST

Objective:

The objective of the test is to evaluate Omstar's fuel additive "OpenFlame-B15" on FEMSA's Philippines boilers on their San Fernando plant in Pampanga. The test consisted in evaluate Fuel consumption, Emission reduction and reducing maintenance labor and parts as the additive treatment protected the internal parts of the combustion chamber and treated the heavy diesel for a cleaner and more efficient combustion.

Brand: Donlee Boiler
Capacity: 200 HP 3,000 Kg/Hr

Boiler #1

Boiler #2

RESULTS OF EMISSIONS FOR THE DONLEE BOILER

OMSTAR
ENVIRONMENTAL PRODUCTS DX1
D-1280X

Coca-Cola FEMSA
PHILIPPINES

On September 1st and 2nd the Emission base line with no Additive was conducted for the boiler by a third party company CRL Calabarquez Corporation hired by FEMSA, and on December 21st the base line with additive readings of emissions was taken by PETRON company.

The Results are as Follows:

Vehicle Unite	September Test (Base Line With No Omstar Additive)	December 21st Test (Base line With Omstar Additive DX1)	Improvement %
Carbon Monoxide (CO) mg/Nm^3	4	4.4	**Satisfactory ✓**
Nitrogen Dioxide (NO_2) mg/Nm^3	180	0.9	**99.5 % ✓ NO_2 Reduction**
Sulfur Dioxide (SO_2) mg/Nm^3	961	691.6	**28 % ✓ SO_2 Reduction**

CRL Calabarquez Corporation

EMISSION TEST RESULTS*

Customer	**Coca-Cola FEMSA Philippines, Inc.**
Address	City of San Fernando, Pampanga
Attention	Mr. Allen S. Paduhilao
Source Tested	**Donlee Boiler**
Date of Sampling	August 27, 2015
Time of Sampling	Run 1: **1522H** | Run 2: **1703H** | Run 3: **1833H** |
Date of Analysis	August 30 and September 1 & 2, 2015

Parameter	Unit	Results			Average Results	NESSAP	Methodology		
		Run 1	Run 2	Run 3			Reference	Sampling	Analysis
PM	mg/Nm^3	150	129	137	**139**	**150**	USEPA Method 5	Isokinetic	Gravimetric
SO_2	mg/Nm^3	971	911	1,001	**961**	**1,500**	USEPA Method 6/8	Isokinetic	Barium-Thorin Titration Method
CO	mg/Nm^3	1	11	1	**4**	**500**	USEPA Method 10	Grab / Integrated	Non-Dispersive Infra-Red

Parameter	Unit	Results									Average Results	NESSAP	Methodology		
		Run 1			Run 2			Run 3					Reference	Sampling	Analysis
		T1	T2	T3	T1	T2	T3	T1	T2	T3					
NO_2	mg/Nm^3	163	180	171	179	201	193	174	181	179	**180**	**1,500**	USEPA Method 7	Grab	Phenoldisul-fonic Acid Colorimetric Method

>>> End of results for Donlee Boiler <<<

NESSAP - National Emission Standards for Source Specific Air Pollutants
ND - Not Detected or below reporting limit
*These emission test results are for initial reference only. Final results, which will be reflected in the full report, may vary from these initial results.

Reviewed by:

Kristin Anne C. Castillo
QA/QC Officer

Certified by:

Walter G. Fiesta
QA/QC Manager

Office: Laguna International Industrial Park (LIIP) Administration Bldg., Mamplasan, Biñan, Laguna Philippines 4024
Tel.: (632) 552-5020 • (6349) 539-0205 • Fax: (632) 552-5020 • E-mail:crl@crllabs.com • www.crllabs.com

OMSTAR
ENVIRONMENTAL PRODUCTS DX1
D-1280X

Coca-Cola FEMSA PHILIPPINES

PETRON

December 21, 2015

Coca-Cola FEMSA Phils, Inc. - San Fernando Plant
Brgy. Saguin, McArthur Highway
City of San Fernando, Pampanga 2000

Attention: Mr. Vladimir Gutierrez
Engineering Manager

Gentlemen:

We are pleased to inform you the results of the combustion efficiency and emission testing conducted on your 200 BoHp Donlee boiler by our Field Technical Services Engineer, Benny Bryle H. Sagun last December 17. The results are as follows.

Parameters		200 BoHp Donlee	DENR Limits
Fuel		SFO 60	
Oxygen (O_2)	%	5.45	
Carbon Dioxide (CO_2)	%	12.68	
Combustion Efficiency	%	91.9	
Flue Gas Temperature	°C	169.3	
Carbon Monoxide (CO)	mg/Ncm	4.4	500
Nitrogen Dioxide (NO_2)	mg/Ncm	<1	1,500
Sulfur Dioxide (SO_2)	mg/Ncm	691.6	1,500

Combustion Efficiency:

The combustion efficiency of your boiler was found to be at optimum level. Please sustain the present boiler operating parameters to maintain its efficient operation. Efficient boilers would translate into fuel savings.

Emission:

Levels of pollutants such as carbon monoxide, nitrogen dioxide and sulfur dioxide were within the limit set by DENR Clean Air Act of 1999 for old installations.

We hope that this undertaking was able to provide you with sufficient information in the operation of your boiler. Should you have further queries, please do not hesitate to call us.

Thank you for giving us the opportunity to be of service.

Very truly yours,

BBHS:

Ramon V. Cruz
Luzon FTS Supervisor
Industrial Trade

cc: Mr. Jerwin Reyes
Auxiliary Supervisor

OMSTAR
ENVIRONMENTAL PRODUCTS DX1
D-1280X

Coca-Cola FEMSA PHILIPPINES

Boiler Test

Boiler Performance:

Due to the fact that on November '15, after a long time of just running with one boiler, the maintenance department started up a secondary boiler for back up and also as an initiative of running a smaller boiler when demand of steam drops due to production volume lowering fuel consumption. It was a challenge to evaluate performance of the fuel consumption due to a miss on the daily log while changing from boiler 1 to boiler 2 and vice versa. Also, to evaluate the fuel consumption we have to stablish a base line with No Additive to compare it with a base line With Additive and both base lines have to have the same conditions for a proper analysis. Herein is an example of the logged information with the complexity of determining how much fuel consumed each boiler/day.

For example:

Boiler 1 and 2 running the same day but the reading of fuel consumption by day is not identifying how much fuel consumes each boiler during change over.

I added the last two columns to measure the fuel consumption by Production Line Efficiency %

Period	Date	**Total Fuel Consumption/Day**	Boiler 1 Operating hours	Boiler 2 Operating hours	Line 1 Operating hours	Line 2 Operating hours	Line 3 Operating hours	Total lines (1,2&3) run time	Based on 72 hours as a100% production line Efficiency
Per 10	26-Oct	1,903	2	19	13		17	30	42%
Per 10	27-Oct	2,842		24	24	14	22	60	83%
Per 10	28-Oct	2,498		24	21		18	39	54%
Per 10	29-Oct	2,659	8	16	18	16	19	53	74%
Per 10	30-Oct	1,892	12	12	24	15		39	54%
Per 11	31-Oct	329	5		5			5	7%
Per 11	2-Nov	2,593		23	11	14	10	35	49%
Per 11	3-Nov	3,447	1	23	24	22	21	67	93%
Per 11	4-Nov	2,377	12	12	24	10	14	48	67%
Per 11	5-Nov	3,232	1	23	24	21	24	69	96%
Per 11	6-Nov	2,141	24		24	17	1	42	58%

OMSTAR
ENVIRONMENTAL PRODUCTS DX1
D-1280X

Coca-Cola FEMSA PHILIPPINES

Boiler #2 Test

- **The data only shows days that boiler #2 run 24 hrs.**

Base Line With NO Additive				
Date	Fuel/Day	Hrs./Day	% Prod. Ln Eff	Pro. Ln Run T.
19-Sep	2,155	24	33	46%
21-Sep	2,880	24	32	44%
22-Sep	2,630	24	24	33%
23-Sep	2,596	24	22	31%
24-Sep	2,737	24	29	40%
25-Sep	2,534	24	38	53%
26-Sep	2,306	24	38	53%
29-Sep	3,347	24	72	100%
1-Oct	2,759	24	64	89%
2-Oct	2,842	24	48	67%
6-Oct	2,856	24	60	83%
7-Oct	2,339	24	38	53%
8-Oct	2,899	24	60	83%
15-Oct	2,938	24	51	71%
16-Oct	3,107	24	48	67%

Base Line With NO Additive				
Date	Fuel/Day	Hrs./Day	Pro. Ln Run T.	% Prod. Ln Eff.
17-Oct	3,034	24	52	72%
20-Oct	3,074	24	65	90%
21-Oct	2,213	24	46	64%
22-Oct	3,353	24	55	76%
23-Oct	2,261	24	35	49%
27-Oct	2,842	24	60	83%
28-Oct	2,498	24	39	54%
8-Dec	3,281	24	60	83%
TOTAL	63,481	552	1,069	64%
		Avg. Prod. Line	64%	
		Daily Avg. Fuel	2,760 Lt/day	
		Prorated at 74% Avg. Prod. Line	3,192 Lt/day	

Base line With Omstar Additive					
Date	Fuel/Day	Hrs./Day	Pro. Ln Run T.	% Prod. Ln Eff.	OMSTAR LITERS
18-Dec	2,885	24	57	79%	2.8
19-Dec	2,084	24	20	28%	2
22-Dec	3,133	24	72	100%	3
30-Dec	2,956	24	45	63%	2.5
31-Dec	3,133	24	72	100%	3.1
7-Jan	2,936	24	59	82%	2
23-Jan	3519	24	64	89%	3.1
28-Jan	2919	24	54	75%	2.1
2-Feb	3108	24	50	69%	3
TOTAL	26,617	240	535	74%	23.6
		Avg. Prod Line	74%		
		Daily Avg. Fuel	2,906 Lt/day		
		Prorated at 64% Avg. Prod. Line	2,513 Lt/day		

	Liters	% Prod. Ln Eff.	Daily Avg. Fuel	Prorated Avg. Prod. Line at 74%	Avg. Fuel Savings / day
NO Omstar	63,481 Lt	64%	2,760 Lt / day	3,192 Lt	
With Omstar	26,673 Lt	74%	2,906 Lt / day		**286 Lt /day**
					10.4 %

OMSTAR
ENVIRONMENTAL PRODUCTS DX1
D-1280X

Coca-Cola FEMSA PHILIPPINES

Boiler #1 Test

- **The data only shows days that boiler #1 run 24 hrs. Boiler #1 Started running on November 2015**

WITHOUT OMSTAR				
DATE	WITHOUT OMSTAR	Boiler 1 Hours Run Time	Pro. Ln Run T.	Plant Eff% 3 lines Running
10-Oct	2520	24	38	53%
6-Nov	2141	24	42	58%
12-Nov	2206	24	35	49%
18-Nov	2895	24	61	61%
26-Nov	3433	24	59	82%
1-Dec	2783	24	44	61%
4-Dec	2436	24	28	39%
TOTAL	18,414	168	290	58%

Avg. Prod. Line 58%

Daily Avg. Fuel 2,631 Lt / day

Prorated at 54% Avg. Prod. Line 2,450 Lt / day

WITH OMSTAR					
DATE	WITH OMSTAR	Boiler 1 Hours Run Time	Pro. Ln Run T.	Plant Eff% 3 lines Running	OMSTAR LITERS
16-Dec	2385	24	37	51%	2
23-Dec	3388	24	60	83%	3.1
9-Jan	2294	24	39	54%	2
16-Jan	1419	24	24	33%	1.1
26-Jan	3115	24	68	94%	3
30-Jan	1257	24	24	33%	1
10-Feb	1755	24	18	25%	1.7
TOTAL	15,613	168	270	54%	13.9

Avg. Prod. Line 54%

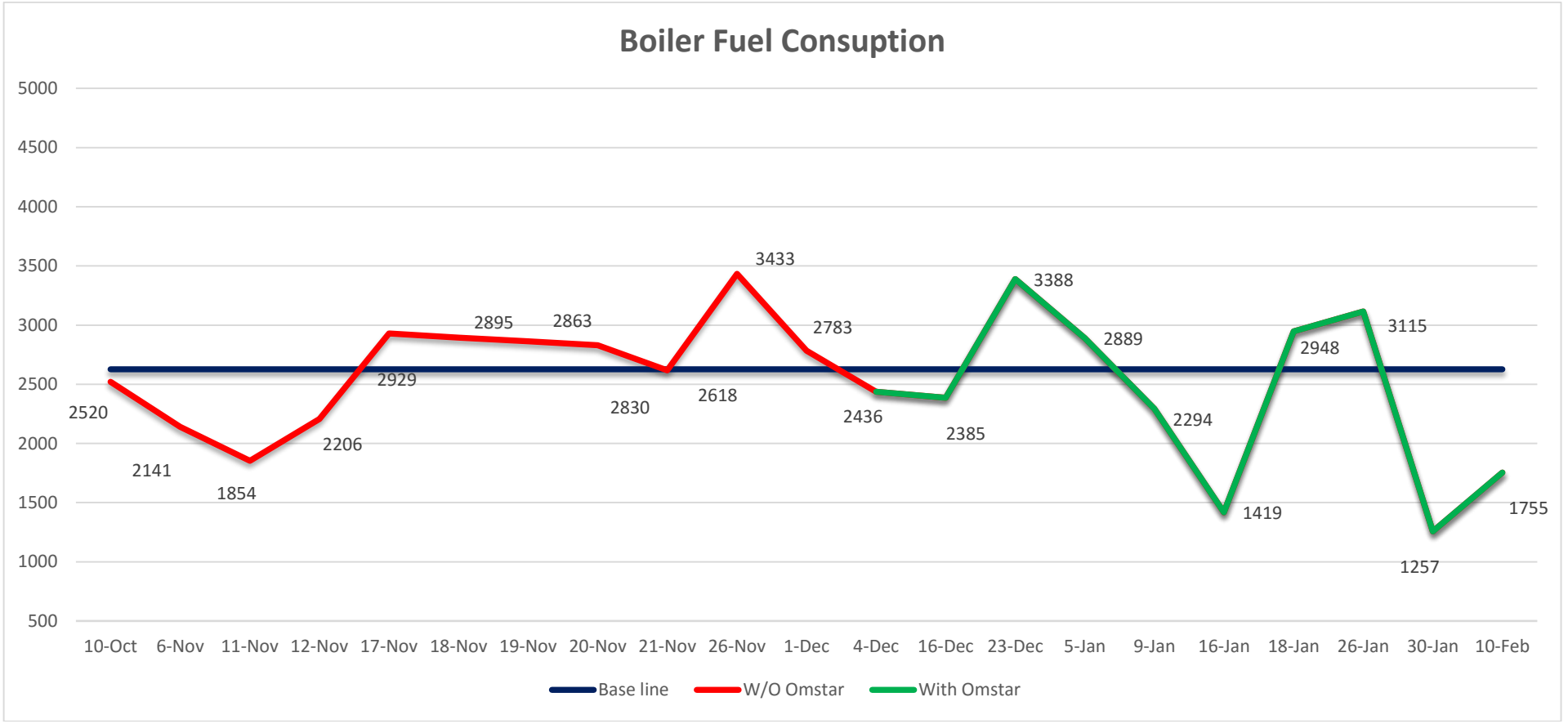
Daily Avg. Fuel 2,230 Lt / day

Prorated at 58% Avg. Prod. Line 2,395 Lt / day

	Liters	% Prod. Ln Eff.	Daily Avg. Fuel	Prorated Avg. Prod. Line at 58%	Avg. Fuel Savings / day
NO Omstar	18,414 Lt	58%	2,631 Lt		
With Omstar	15,613 Lt	54%	2,230 Lt	2,395 Lt day	**236 Lt / Day**
					10.58%

OMSTAR
ENVIRONMENTAL PRODUCTS DX1
D-1280X

Coca-Cola FEMSA
PHILIPPINES



OMSTAR
ENVIRONMENTAL PRODUCTS DX1
D-1280X

Coca-Cola FEMSA PHILIPPINES

FINANCIAL ANALYSIS:

Boiler #1	Hours OF Run Time	Production (3 lines) Hours of Run time	Total Fuel Consumed Liters	Fuel Average Per day Liters	Average Savings Per Day	Omstar Used	Cost Additive	Cost Of Fuel PHP 20.00/Liter	
Without Additive	168 hr.	290 hr.	18,414	2,631	**236 Lt**			236 lt.	**Avg. Savings Per Day**
With Additive	168 hr.	270 hr.	15,613	2,395		1.9 lt.	PHP 2,876	PHP 4,720	**PHP 1,844**

Boiler #2	Hours OF Run Time	Production (3 lines) Hours of Run time	Total Fuel Consumed Liters	Fuel Average Per day Liters	Average Savings Per Day	Omstar Used	Cost Additive	Cost Of Fuel PHP 20.00/Liter	
Without Additive	552	1069	63,481	3,192	**286 Lt**			286 Lt	**Avg. Savings Day**
With Additive	240	535	26,617	2,906		2.6	PHP 3,936	PHP 5,720	**PHP 1,784**

The savings per month and Year 10 Boilers projection	Php **442,560** / month ✓
	Php **5,310,720** / year ✓
	$ **112,994 USD** / year ✓

OMSTAR
ENVIRONMENTAL PRODUCTS DX1
D-1280X