

1 1.0079  
**A**  
ACCELERATION

14 28.086  
**N**  
NOTIFICATION

1 1.0079  
**A**  
APPLICATION

12 24.305  
**L**  
LUBRICATION

23 50.942  
**Y**  
YIELDISATION

19 39.098  
**S**  
SIMULATION

5 10.811  
**E**  
EVALUATION

4 9.0122  
**D**  
DEDICATION

# [ANALYTICAL REPORT]

## [WATER ANALYSIS]

[MULTIPLE PARAMETER ANALYSIS / ENV-LHR / Q-30/2015]

PREPARED FOR:

**[LEAN & GREEN PRIVATE LIMITED]**

### CLIENT DETAILS

### LABORATORY DETAILS

Client	Lean & Green Private Limited	Manager	Rashid Maqbool
Address	2 <sup>nd</sup> Floor, 79-CCA, Sector DD, Phase IV, DHA, Lahore	Laboratory Address	Chemical, Environmental & Microbiological Laboratory Plot No. 07, Din Muhammad Town, 19-KM Off Multan Road, Lahore.
Contact	Mr. Farhan Daud Qazi (Head of Operations)	Telephone	+92 42 37515415-18
Telephone	+92 303 6660130	Fax	+92 42 37515420
Fax	-	Email	rashid.maqbool@sgs.com
Email	operations.landg@gmail.com	SGS Reference	Env-Lhr-61/2015
Project	(not specified)	Sample Collected	29-01-2015 & 12-02-2015
Order Number	(not specified)	Report Number	585286
Samples	Water Samples	Date Reported	23-02-2015

### COMMENTS

This report is not valid for any negotiation.  
 The remaining portion of the sample (s) will be disposed off after one week unless otherwise instructed. (Conditions Apply)  
 Uncertainty of the test can be provided upon request.

### SIGNATORIES

Muhammad Ikraam  
 Laboratory In-Charge QA/QC

Rashid Maqbool  
 Deputy Manager

Sample No.			Env-Lhr-61/2015-01	Env-Lhr-61/2015-02	Env-Lhr-61/2015-03	Env-Lhr-61/2015-04
Client ID			CGW # 02	CSW # 02	CSW # 01	CSW # 04
Sample Matrix			Ground Water	Surface Water	Surface Water	Surface Water
Sample Date / Time			29-01-15 12:00	29-01-15 12:25	29-01-15 12:45	29-01-15 13:00
Sample Receipt Date / Time			30-01-15 10:40	30-01-15 10:40	30-01-15 10:40	30-01-15 10:40
Sampled By			SGS	SGS	SGS	SGS
Parameters	Units	LOR	Results	Results	Results	Results

**Temperature Thermometer**

Temperature	°C	-	18.1	18.4	18.6	18.3
-------------	----	---	------	------	------	------

**pH APHA 4500H\* B 22nd Edition**

*pH @ 25 °C	pH unit	0.1	7.23	7.24	7.19	7.60
-------------	---------	-----	------	------	------	------

**Total Suspended Solid APHA 2540 D 22nd Edition**

*Solids, Total Suspended (TSS)	mg/L	5.0	7.0	61.0	34.0	29.0
--------------------------------	------	-----	-----	------	------	------

**Chemical Oxygen Demand(COD) APHA-5220 D 22nd Edition**

*COD	mg/L	5.0	6.0	255.0	276.0	15.0
------	------	-----	-----	-------	-------	------

**Turbidity APHA 2130 B B 22nd Edition**

Turbidity	NTU	0.20	13.0	93.0	85.0	11.0
-----------	-----	------	------	------	------	------

**Conductivity, Electrical APHA-2510 B 22nd Edition**

Conductivity, Electrical	µS/cm	2.0	1806.0	2140.0	2080.0	548.0
--------------------------	-------	-----	--------	--------	--------	-------

**Phosphorous, Total APHA 4500P C**

Phosphorous, Total	mg/L	0.05	<0.05	0.67	0.56	<0.05
--------------------	------	------	-------	------	------	-------

**Biochemical Oxygen Demand (BOD<sub>5</sub>) APHA-5210 B 22nd Edition**

*(BOD <sub>5</sub> ) @ 20 °C	mg/L	3.0	<3.0	79.0	83.0	4.0
------------------------------	------	-----	------	------	------	-----

**Nitrogen, Total Kjeldahl (TKN) Macro APHA-4500org B 22<sup>nd</sup> Edition**

Nitrogen, Total Kjeldahl (TKN)	mg/L	0.1	0.59	18.4	36.2	1.78
--------------------------------	------	-----	------	------	------	------

**Chloride APHA-4500Cl- B**

*Chloride	mg/L	0.5	145.78	230.29	228.18	8.45
-----------	------	-----	--------	--------	--------	------

**Metals by Atomic Absorption Spectroscopy / ICP-OES APHA 3111D/3120 B 22<sup>nd</sup> Edition**

*Arsenic (As)	mg/L	0.005	<0.005	<0.005	0.005	<0.005
*Cadmium (Cd)	mg/L	0.002	<0.002	<0.002	<0.002	<0.002
*Chromium (Cr)	mg/L	0.02	<0.02	<0.02	<0.02	<0.02
*Lead (Pb)	mg/L	0.05	<0.05	<0.05	<0.05	<0.05
*Selenium (Se)	mg/L	0.005	0.021	0.012	0.017	0.009

**Mercury by ICP-OES APHA 3112 B 22<sup>nd</sup> Edition**

*Mercury (Hg)	mg/L	0.001	<0.001	<0.001	<0.001	<0.001
---------------	------	-------	--------	--------	--------	--------

Sample No.			Env-Lhr-61/2015-05	Env-Lhr-61/2015-06	Env-Lhr-61/2015-07	Env-Lhr-61/2015-08
Client ID			CGW # 05	CSW # 05	CSW # 03	CGW # 04
Sample Matrix			Ground Water	Surface Water	Surface Water	Ground Water
Sample Date / Time			29-01-15 13:20	29-01-15 13:40	29-01-15 13:45	29-01-15 14:00
Sample Receipt Date / Time			30-01-15 10:40	30-01-15 10:40	30-01-15 10:40	30-01-15 10:40
Sampled By			SGS	SGS	SGS	SGS
Parameters	Units	LOR	Results	Results	Results	Results

**Temperature Thermometer**

Temperature	°C	-	18.2	18.1	18.2	18.4
-------------	----	---	------	------	------	------

**pH APHA 4500H\* B 22nd Edition**

*pH @ 25 °C	pH unit	0.1	8.02	8.47	7.91	7.63
-------------	---------	-----	------	------	------	------

**Total Suspended Solid APHA 2540 D 22nd Edition**

*Solids, Total Suspended (TSS)	mg/L	5.0	<5.0	7.0	121.0	<5.0
--------------------------------	------	-----	------	-----	-------	------

**Chemical Oxygen Demand(COD) APHA-5220 D 22nd Edition**

*COD	mg/L	5.0	<5.0	11.0	257.0	<5.0
------	------	-----	------	------	-------	------

**Turbidity APHA 2130 B B 22nd Edition**

Turbidity	NTU	0.20	2.9	10.0	243.0	2.0
-----------	-----	------	-----	------	-------	-----

**Conductivity, Electrical APHA-2510 B 22nd Edition**

Conductivity, Electrical	µS/cm	2.0	304.0	492.0	180.0	851.0
--------------------------	-------	-----	-------	-------	-------	-------

**Phosphorous, Total APHA 4500P C**

Phosphorous, Total	mg/L	0.05	<0.05	<0.05	<0.05	<0.05
--------------------	------	------	-------	-------	-------	-------

**Biochemical Oxygen Demand (BOD<sub>5</sub>) APHA-5210 B 22nd Edition**

*(BOD <sub>5</sub> ) @ 20 °C	mg/L	3.0	<3.0	5.0	112.0	<3.0
------------------------------	------	-----	------	-----	-------	------

**Nitrogen, Total Kjeldahl (TKN) Macro APHA-4500org B 22<sup>nd</sup> Edition**

Nitrogen, Total Kjeldahl (TKN)	mg/L	0.1	0.89	0.29	15.13	0.59
--------------------------------	------	-----	------	------	-------	------

**Chloride APHA-4500Cl- B**

*Chloride	mg/L	0.5	6.33	8.45	179.58	21.12
-----------	------	-----	------	------	--------	-------

**Metals by Atomic Absorption Spectroscopy / ICP-OES APHA 3111D/3120 B 22<sup>nd</sup> Edition**

*Arsenic (As)	mg/L	0.005	<0.005	<0.005	<0.005	0.005
*Cadmium (Cd)	mg/L	0.002	<0.002	<0.002	<0.002	<0.002
*Chromium (Cr)	mg/L	0.02	<0.02	<0.02	<0.02	<0.02
*Lead (Pb)	mg/L	0.05	<0.05	<0.05	<0.05	<0.05
*Selenium (Se)	mg/L	0.005	0.015	0.008	0.010	0.017

**Mercury by ICP-OES APHA 3112 B 22<sup>nd</sup> Edition**

*Mercury (Hg)	mg/L	0.001	<0.001	<0.001	<0.001	<0.001
---------------	------	-------	--------	--------	--------	--------

Sample No.			Env-Lhr-61/2015-11	Env-Lhr-61/2015-12	Env-Lhr-61/2015-13	Env-Lhr-61/2015-14
Client ID			GSW # 02	GGW # 06	GGW # 02	GGW # 03
Sample Matrix			Surface Water	Ground Water	Ground Water	Ground Water
Sample Date / Time			29-01-15 15:25	29-01-15 15:45	29-01-15 16:00	29-01-15 16:10
Sample Receipt Date / Time			30-01-15 10:40	30-01-15 10:40	30-01-15 10:40	30-01-15 10:40
Sampled By			SGS	SGS	SGS	SGS
Parameters	Units	LOR	Results	Results	Results	Results

**Temperature Thermometer**

Temperature	°C	-	18.1	18.5	18.4	18.1
-------------	----	---	------	------	------	------

**pH APHA 4500H<sup>+</sup> B 22nd Edition**

*pH @ 25 °C	pH unit	0.1	7.89	7.65	7.51	7.67
-------------	---------	-----	------	------	------	------

**Total Suspended Solid APHA 2540 D 22nd Edition**

*Solids, Total Suspended (TSS)	mg/L	5.0	39.0	7.0	7.0	<5.0
--------------------------------	------	-----	------	-----	-----	------

**Chemical Oxygen Demand(COD) APHA-5220 D 22nd Edition**

*COD	mg/L	5.0	139.0	8.0	9.0	<5.0
------	------	-----	-------	-----	-----	------

**Turbidity APHA 2130 B B 22nd Edition**

Turbidity	NTU	0.20	71.0	15.0	11.2	7.0
-----------	-----	------	------	------	------	-----

**Conductivity, Electrical APHA-2510 B 22nd Edition**

Conductivity, Electrical	µS/cm	2.0	1919.0	1128.0	1745.0	1336.0
--------------------------	-------	-----	--------	--------	--------	--------

**Phosphorous, Total APHA 4500P C**

Phosphorous, Total	mg/L	0.05	3.82	<0.05	<0.05	<0.05
--------------------	------	------	------	-------	-------	-------

**Biochemical Oxygen Demand (BOD<sub>5</sub>) APHA-5210 B 22nd Edition**

*(BOD <sub>5</sub> ) @ 20 °C	mg/L	3.0	37.0	<3.0	3.0	<3.0
------------------------------	------	-----	------	------	-----	------

**Nitrogen, Total Kjeldahl (TKN) Macro APHA-4500org B 22<sup>nd</sup> Edition**

Nitrogen, Total Kjeldahl (TKN)	mg/L	0.1	41.55	0.59	0.59	0.59
--------------------------------	------	-----	-------	------	------	------

**Chloride APHA-4500Cl- B**

*Chloride	mg/L	0.5	130.99	82.39	109.86	80.28
-----------	------	-----	--------	-------	--------	-------

**Metals by Atomic Absorption Spectroscopy / ICP-OES APHA 3111D/3120 B 22<sup>nd</sup> Edition**

*Arsenic (As)	mg/L	0.005	0.006	<0.005	<0.005	<0.005
*Cadmium (Cd)	mg/L	0.002	<0.002	<0.002	<0.002	<0.002
*Chromium (Cr)	mg/L	0.02	<0.02	<0.02	<0.02	<0.02
*Lead (Pb)	mg/L	0.05	<0.05	<0.05	<0.05	<0.05
*Selenium (Se)	mg/L	0.005	0.009	<0.005	0.022	0.010

**Mercury by ICP-OES APHA 3112 B 22<sup>nd</sup> Edition**

*Mercury (Hg)	mg/L	0.001	<0.001	<0.001	<0.001	<0.001
---------------	------	-------	--------	--------	--------	--------

Sample No.			Env-Lhr-61/2015-15	Env-Lhr-61/2015-16	Env-Lhr-61/2015-17	Env-Lhr-61/2015-18
Client ID			GGW # 01	GSW # 01	GSW # 03	GGW # 04
Sample Matrix			Ground Water	Surface Water	Surface Water	Ground Water
Sample Date / Time			29-01-15 16:25	29-01-15 16:40	29-01-15 16:45	29-01-15 17:00
Sample Receipt Date / Time			30-01-15 10:40	30-01-15 10:40	30-01-15 10:40	30-01-15 10:40
Sampled By			SGS	SGS	SGS	SGS
Parameters	Units	LOR	Results	Results	Results	Results

**Temperature Thermometer**

Temperature	°C	-	18.3	18.1	17.9	18.5
-------------	----	---	------	------	------	------

**pH APHA 4500H\* B 22nd Edition**

*pH @ 25 °C	pH unit	0.1	7.43	7.84	7.25	7.43
-------------	---------	-----	------	------	------	------

**Total Suspended Solid APHA 2540 D 22nd Edition**

*Solids, Total Suspended (TSS)	mg/L	5.0	7.0	93.0	64.0	<5.0
--------------------------------	------	-----	-----	------	------	------

**Chemical Oxygen Demand(COD) APHA-5220 D 22nd Edition**

*COD	mg/L	5.0	<5.0	361.0	149.0	<5.0
------	------	-----	------	-------	-------	------

**Turbidity APHA 2130 B B 22nd Edition**

Turbidity	NTU	0.20	13.0	202.0	108.0	7.0
-----------	-----	------	------	-------	-------	-----

**Conductivity, Electrical APHA-2510 B 22nd Edition**

Conductivity, Electrical	µS/cm	2.0	1302.0	4440.0	380.0	1655.0
--------------------------	-------	-----	--------	--------	-------	--------

**Phosphorous, Total APHA 4500P C**

Phosphorous, Total	mg/L	0.05	<0.05	4.30	<0.05	<0.05
--------------------	------	------	-------	------	-------	-------

**Biochemical Oxygen Demand (BOD<sub>5</sub>) APHA-5210 B 22nd Edition**

*(BOD <sub>5</sub> ) @ 20 °C	mg/L	3.0	<3.0	129.0	44.0	<3.0
------------------------------	------	-----	------	-------	------	------

**Nitrogen, Total Kjeldahl (TKN) Macro APHA-4500org B 22<sup>nd</sup> Edition**

Nitrogen, Total Kjeldahl (TKN)	mg/L	0.1	0.29	91.11	1.78	0.89
--------------------------------	------	-----	------	-------	------	------

**Chloride APHA-4500Cl- B**

*Chloride	mg/L	0.5	82.39	428.9	23.24	139.02
-----------	------	-----	-------	-------	-------	--------

**Metals by Atomic Absorption Spectroscopy / ICP-OES APHA 3111D/3120 B 22<sup>nd</sup> Edition**

*Arsenic (As)	mg/L	0.005	<0.005	0.012	<0.005	0.006
*Cadmium (Cd)	mg/L	0.002	<0.002	<0.002	<0.002	<0.002
*Chromium (Cr)	mg/L	0.02	<0.02	<0.02	<0.02	<0.02
*Lead (Pb)	mg/L	0.05	<0.05	<0.05	<0.05	<0.05
*Selenium (Se)	mg/L	0.005	0.008	0.008	0.012	<0.005

**Mercury by ICP-OES APHA 3112 B 22<sup>nd</sup> Edition**

*Mercury (Hg)	mg/L	0.001	<0.001	<0.001	<0.001	<0.001
---------------	------	-------	--------	--------	--------	--------

Sample No.	Env-Lhr-61/2015-09	Env-Lhr-61/2015-10	Env-Lhr-61/2015-19	Env-Lhr-61/2015-20
Client ID	CGW # 01	CGW # 03	GGW # 05	GGW # 07
Sample Matrix	Ground Water	Ground Water	Ground Water	Ground Water
Sample Date / Time	12-02-15 15:05	12-02-15 15:20	12-02-15 12:35	12-02-15 12:45
Sample Receipt Date / Time	12-02-15 17:15	12-02-15 17:15	12-02-15 17:15	12-02-15 17:15
Sampled By	SGS	SGS	SGS	SGS
Parameters	Units	LOR	Results	Results

**Temperature Thermometer**

Temperature	°C	-	18.9	19.1	19.3	18.8
-------------	----	---	------	------	------	------

**pH APHA 4500H\* B 22nd Edition**

*pH @ 25 °C	pH unit	0.1	7.89	8.10	7.47	7.51
-------------	---------	-----	------	------	------	------

**Total Suspended Solid APHA 2540 D 22nd Edition**

*Solids, Total Suspended (TSS)	mg/L	5.0	<5.0	<5.0	<5.0	<5.0
--------------------------------	------	-----	------	------	------	------

**Chemical Oxygen Demand(COD) APHA-5220 D 22nd Edition**

*COD	mg/L	5.0	<5.0	<5.0	<5.0	<5.0
------	------	-----	------	------	------	------

**Turbidity APHA 2130 B B 22nd Edition**

Turbidity	NTU	0.20	3.3	1.7	1.9	2.1
-----------	-----	------	-----	-----	-----	-----

**Conductivity, Electrical APHA-2510 B 22nd Edition**

Conductivity, Electrical	µS/cm	2.0	573.0	317.0	1436.0	1098.0
--------------------------	-------	-----	-------	-------	--------	--------

**Phosphorous, Total APHA 4500P C**

Phosphorous, Total	mg/L	0.05	<0.05	<0.05	<0.05	<0.05
--------------------	------	------	-------	-------	-------	-------

**Biochemical Oxygen Demand (BOD<sub>5</sub>) APHA-5210 B 22nd Edition**

*(BOD <sub>5</sub> ) @ 20 °C	mg/L	3.0	<3.0	<3.0	<3.0	<3.0
------------------------------	------	-----	------	------	------	------

**Nitrogen, Total Kjeldahl (TKN) Macro APHA-4500org B 22<sup>nd</sup> Edition**

Nitrogen, Total Kjeldahl (TKN)	mg/L	0.1	<0.1	<0.1	<0.1	<0.1
--------------------------------	------	-----	------	------	------	------

**Chloride APHA-4500Cl- B**

*Chloride	mg/L	0.5	9.57	3.82	95.71	68.91
-----------	------	-----	------	------	-------	-------

**Metals by Atomic Absorption Spectroscopy / ICP-OES APHA 3111D/3120 B 22<sup>nd</sup> Edition**

*Arsenic (As)	mg/L	0.005	0.024	<0.005	<0.005	0.011
*Cadmium (Cd)	mg/L	0.002	<0.002	<0.002	<0.002	<0.002
*Chromium (Cr)	mg/L	0.02	<0.02	<0.02	<0.02	<0.02
*Lead (Pb)	mg/L	0.05	<0.05	<0.05	<0.05	<0.05
*Selenium (Se)	mg/L	0.005	<0.005	<0.005	<0.005	<0.005

**Mercury by ICP-OES APHA 3112 B 22<sup>nd</sup> Edition**

*Mercury (Hg)	mg/L	0.001	<0.001	<0.001	<0.001	<0.001
---------------	------	-------	--------	--------	--------	--------

## FOOTNOTE

- \* This analysis is covered by the scope of accreditation.
- ^ Test conducted at sub contracted lab SGS Karachi.
- LOR Limits Of Reporting

Sample analyzed as received.

This document is issued, on the client's behalf, by the company under its general conditions of service available on request and accessible at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). The client's attention is drawn to the limitation of indemnification and jurisdiction issues defined therein.

Any other holder of this document is advised that information contained hereon reflects the company's findings at the time of its intervention only and within the limits of client's instructions, if any. The company's sole responsibility is to its client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.

This report must not be reproduced, except in full.



## Pictorial Record (Ground Water Sampling)



**SGS PAKISTAN (PVT) LTD**

**E(QA)**

**SH**

## Pictorial Record (Surface Water Sampling)



**SGS PAKISTAN (PVT) LTD**

**E(QA)**

**SH**