

**Intertek**

**PLASTICS**  
TECHNOLOGY  
LABORATORIES

May 18, 2010

Mr. Jeff Cook  
Nicor Inc.  
1571 Chablis Road  
Healdsburg, CA 95448  
USA

**IPTL # P20100890**

Dear Mr. Cook:

Enclosed you will find results of the testing you requested.

If you have any questions regarding the data, please do not hesitate to contact me.

Sincerely,




James A. Koehler  
Quality Manager

JAK/jd

Enclosures

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50 Pearl Street, Pittsfield, MA 01201  
Phone: (413) 499-0983 Fax: 499-2339  
<http://www.ptli.com>

Testing	: Standard Practice for Operating Fluorescent Light Apparatus for UV Exposure of Nonmetallic Materials	 <b>ASTM</b> <b>ACCREDITED</b> Cert. No. 0619.01
Test Method	: ASTM G 154 - 06	
Project Number	: P20100890	
Customer	: Nicor Inc.	
Attention	: Jeff Cook	
Operator	: Frank Foy	
Date	: May 14, 2010	

Instrument	: Q-Panel Model QUV/se with Solar Eye UV Irradiance Controller
UV Source Lamps	: Q-Panel UVB-313
Cycle Used	: 4 hr UV uninsulated black panel temp at 60 ± 3°C, 4 hr condensation at 50 ±3°C
Irradiance	: 0.71 W/m <sup>2</sup> at 313 nm

A Solar Eye precision light control system option on the equipment monitors the UV intensity via four sensors at the sample plane to maintain the correct irradiance automatically. This is performed by a four channel feedback loop system that compensates for any variability in irradiance level by adjusting the power to the lamps.

Material ID	: Gray Water Cover
Specimen Type	: 6 ASTM Tensile bars 6 ASTM Flex bars 3 specimens for color measurement
Sample Preparation	: Tested as received
Sample Mounting	: Standard holders

Exposure Time (hrs)	Lamp(s) Were Changed During Exposure Period	Sample Repositioning Schedule
500	No	None
Lamp Age at Test Start (hrs)	Lamp Age at Test End (hrs)	Type of Thermometer
0	250	Black Uninsulated Panel

**Results of any property tests are included as additional reports**

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Testing	: Standard Practice for Computing the Colors of Objects by using the CIE System
Test Method	: ASTM E1347-06, ASTM D2244-07 and CIE System Test per ASTM E 308-08
Project Number	: P20100890
Customer	: Nicor Inc.
Attention	: Jeff Cook
Analyst	: Frank Foy
Date	: May 14, 2010

Spectrophotometer	: BYK Gardner TCS Plus
Reference	: White
Illumination	: CIE D65 10°
Testing Conditions	: 23°C ± 2°C
Exposure	: QUV accelerated weathering per ASTM G154



Gray Water Cover

Exposure	Sample 1				Sample 2				Sample 3			
	CIE L	CIE <sub>a</sub>	CIE <sub>b</sub>	ΔE	CIE L	CIE <sub>a</sub>	CIE <sub>b</sub>	ΔE	CIE L	CIE <sub>a</sub>	CIE <sub>b</sub>	ΔE
Initial	60.93	-0.53	0.19		59.99	-0.52	0.36		60.93	-0.53	0.21	
500 hours	61.37	-0.53	0.23	0.44	61.15	-0.51	0.36	1.16	61.34	-0.51	0.28	0.42


CIE<sub>L</sub> white = 100% T      CIE<sub>a</sub> + red      CIE<sub>b</sub> + yellow  
 CIE<sub>L</sub> black = 0% T      CIE<sub>a</sub> - green      CIE<sub>b</sub> - blue

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Water Absorption Report Page 1 of 1

Testing	: Water Absorption - 24 Hour Method
Test Method	: ASTM D 570-98
Project Number	: P20100890
Customer	: Nicor Inc.
Attention	: Jeff Cook
Analyst	: Laura Jean Howland
Date	: April 28, 2010

  
**ACCREDITED**  
 Cert. No. 0619.01

Sample Preparation	: Tested as received
Sample Conditioning	: Dried in an air circulating oven for 24 hours at 50°C
Immersion Type	: Deionized Water at 23°C
Immersion Length	: 24 hours
Significance	: ASTM D570 specifies that weights be measured to 0.1 mg and change be calculated to the nearest 0.01%

Sample Name	Specimen Number	Length (in)	Width (in)	Thickness (in)	Initial Weight (g)	Final Weight (g)	Change (g)	Change (%)
Gray Water Cover	1	3.314	1.184	0.148	7.8078	7.8096	0.0018	0.02
	2	3.309	1.233	0.144	7.2919	7.2959	0.0040	0.05
	3	3.317	1.177	0.140	7.7803	7.7817	0.0014	0.02
Average							0.0024	0.03

$$\% \text{ Change} = [ ( \text{Final Weight} - \text{Initial Weight} ) / \text{Initial Weight} ] \times 100$$

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Testing : **Flexural Properties Of Plastics**  
 Test Method : ASTM D790-07 Procedure A  
 Project Number : P20100890  
 Customer : Nicor Inc.  
 Attention : Jeff Cook  
 Analyst : D.Loehr  
 Date : May 17, 2010



Material : **Gray Water Cover**  
 Sample Preparation : Customer supplied molded samples  
 Sample Dimensions : 0.519" x 0.252" x 6.00" (Average)  
 Sample Type : ASTM Flex Bar  
 Span Length (in) : 4.032  
 Cross-Head Speed (in/min) : 0.108  
 Span-To- Depth Ratio : 16±1:1  
 Radius Of Supports (in) : 0.197  
 Radius Of Loading Nose (in) : 0.197  
 Conditioning : 40+ hours at 23°C ± 2°C / 50% ± 5% RH-Controls only  
 Conditioning : 500 hours in QUV per ASTM G154 Cycle 2 (exposed)  
 Test Conditions : 23°C ± 2°C / 50% ± 5% RH  
 Significance : ASTM D 790 specifies modulus and strength be reported to 3 significant figures

Sample Identification	Test Number	Flexural Stress At 5%	Flexural Modulus
		Strain (PSI)	(tangent * ) (PSI)
<b>Controls</b>	1	4580	166000
	2	5030	190000
	3	4680	178000
	4	5110	193000
	5	4870	193000
	Average	<b>4850</b>	<b>184000</b>
	Std. Dev.	225	11800
<b>500 Hours QUV per ASTM G154 Cycle 2</b>	1	5070	191000
	2	5030	201000
	3	5070	205000
	4	5180	196000
	5	5010	184000
	Average	<b>5070</b>	<b>195000</b>
	Std. Dev.	66	8260

**Note: Exposed specimens tested with exposed side face down**

\* = computer generated curve fit

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Testing	:	<b>Tensile Properties</b>	
Test Method	:	ASTM D 638-08	
Project Number	:	P20100890	
Customer	:	Nicor Inc.	
Attention	:	Jeff Cook	Attachments : 2 graphs
Analyst	:	D.Loehr	
Date	:	May 17, 2010	

Material	:	<b>Gray Water Cover</b>
Sample Preparation	:	Customer supplied molded samples
Sample Type	:	ASTM Type IV Tensile Bar
Sample Dimensions	:	0.248" x 0.131" (Average)
Cross-Head Speed	:	2.0 in/min
Extensometer	:	320% based on 25mm gage length. Meets minimum requirements for Practice E 83: Modulus (Class B-2) / Elongation (Class C).
Conditioning	:	40+ Hours At 23°C ± 2°C / 50% ± 5% RH (control)
Conditioning	:	500 hours in QUV per ASTM G154 Cycle 2 (exposed)
Test Conditions	:	23°C ± 2°C / 50% ± 5% RH
Significance	:	ASTM D 638 specifies that strength and modulus be reported to 3 significant figures and elongation be reported to 2 significant figures



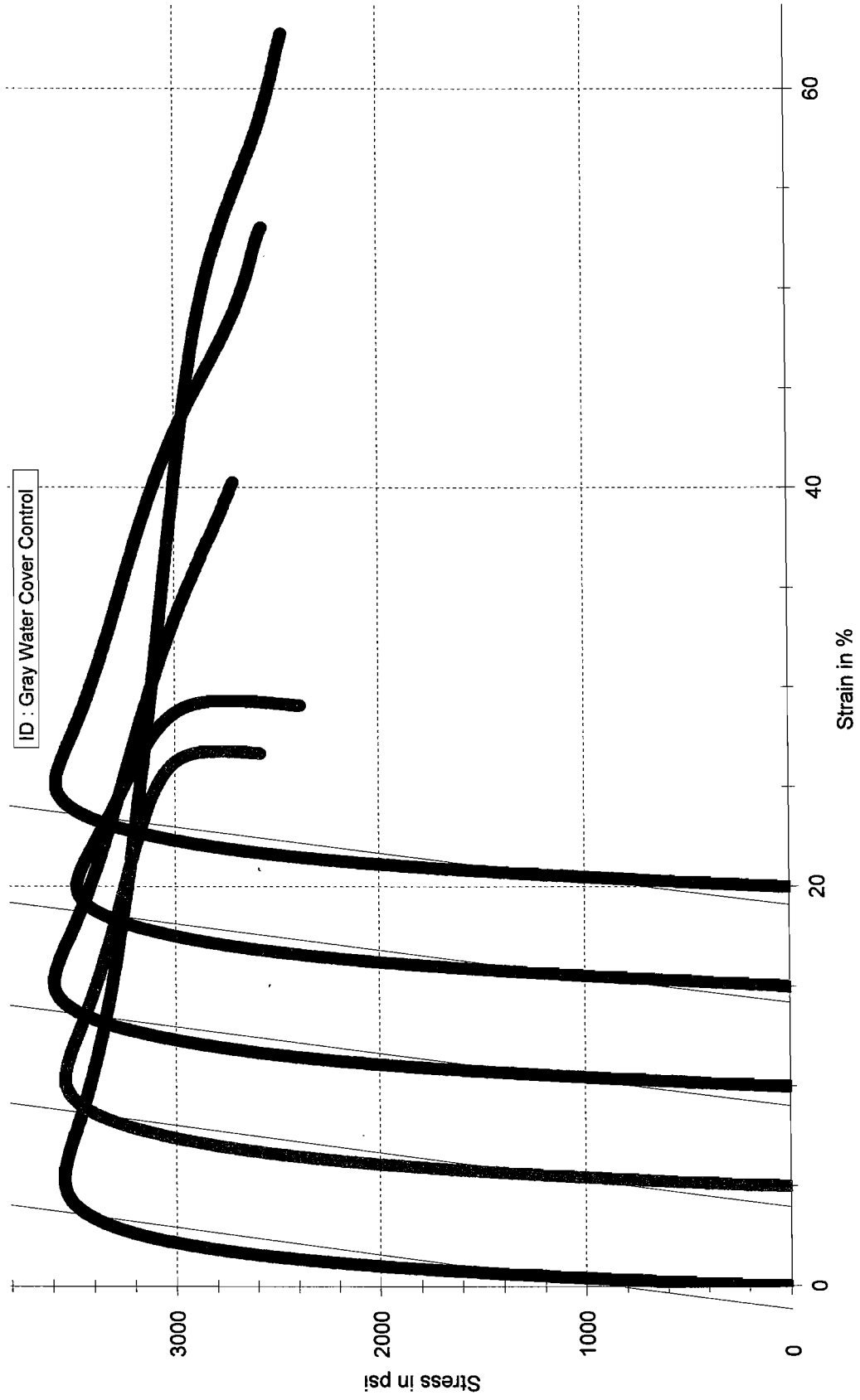
Sample Identification	Test Number	Tensile Strength At Yield (PSI)	Elongation At Yield (%)	Tensile Stress At Break (PSI)	Elongation At Break (%)	
<b>Control</b>	1	3550	5.3	2470	63	
	2	3540	5.3	2580	22	
	3	3600	5.3	2710	30	
	4	3480	5.1	2390	14	
	5	3590	5.2	2570	33	
	Average		<b>3550</b>	<b>5.2</b>	<b>2540</b>	<b>32</b>
	Std. Dev.		48	0.1	121	19
<b>500 hours QUV per ASTM G154 Cycle 2</b>	1	3540	5.9	2590	73	
	2	3530	5.7	2610	70	
	3	3570	5.3	2660	43	
	4	3460	4.8	2560	13	
	5	3490	5.1	2840	22	
	Average		<b>3520</b>	<b>5.4</b>	<b>2650</b>	<b>44</b>
	Std. Dev.		43	0.4	111	27

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**Parameter table:**

Project Number : F20100890  
Sample ID : Gray Water Cover Control  
Test Temp : 23 °C

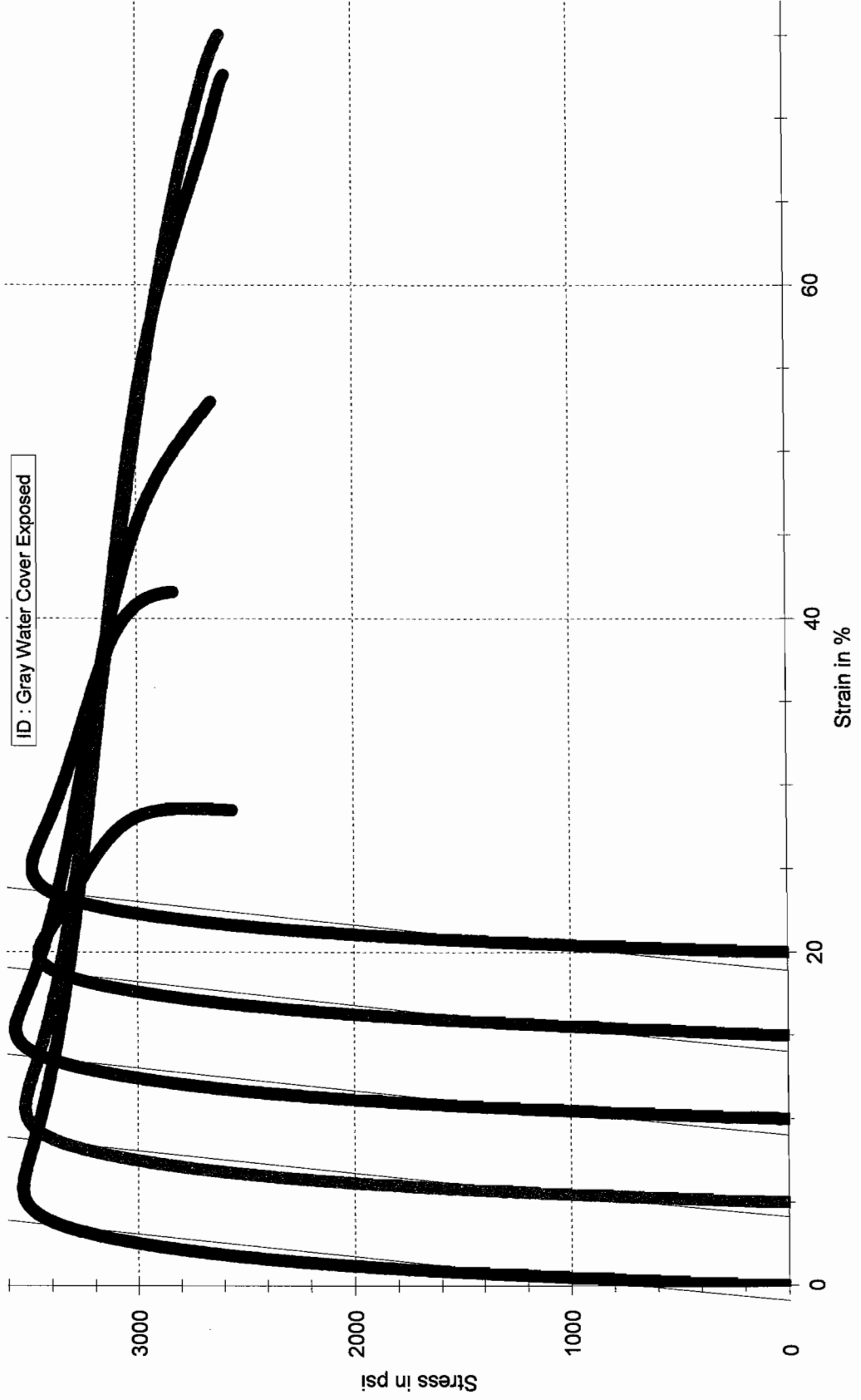
**Series graphics:**



**Parameter table:**

Project Number : P20100890  
Sample ID : Gray Water Cover Exposed  
Test Temp : 23 °C

**Series graphics:**





## Report of Static Coefficient of Friction

**Client:** Nicor, Inc.  
**Project:** B30 Plastic Lid  
**Project No.:** 0814947

**Report No.:** 903317  
**Date of Service:** 04/03/09

**Material:** B30 Plastic Lid  
**Test Method:** ASTM C 1028, Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method

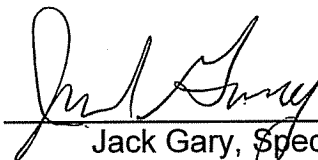
Static coefficient of friction testing was performed on one B30 plastic meter box lid. The lid was tested in a dry surface condition followed by a wet surface condition. The results given below are an average of four tests performed under each type of surface condition on the sample lid.

Sample Number	Coefficient of Friction (Dry)	Coefficient of Friction (Wet)
1	0.73	0.54

### Results / Conclusions

Based on the results shown, the static coefficient of friction meets the Americans with Disabilities Act (ADA) minimum requirements of 0.50 for slip resistance.

Technician: C. Snyder



Jack Gary, Special Testing Manager  
Construction Materials Engineering Division

DATE: August 18, 2005

CUSTOMER: Nicor Inc.  
1083 Vine St.  
Healdsburg, CA 95448

PURCHASE ORDER: 522578

JOB NO.: TTL-05-1211

REQUESTED BY: Mr. Jeff Cook

DESCRIPTION: Two H-20 rated plastic meter box lids arbitrarily Grey #1 and Grey #2.  
(Reference Figures: 1 through 4)

SUBJECT: Perform proof load testing of the above-described samples.

PROCEDURE: Proof load testing was performed in accordance with customer instructions and applicable Tri-State Testing Laboratories, Inc. procedures. Proof load test set-up and a representative test in progress were documented photographically.  
(Reference Figures: 5 and 6)

RESULTS:

The meter pit lids were loaded at a rate of 0.375 inches per minute utilizing a 3/4" thick black rubber pad and a 1-1/4" thick steel plate both approximately 10" square. A 13" O.D. and 12-1/4" I.D. modified cast iron riser supported the meter pit lids during testing. (Reference Figure: 6)

Nicor Grey #1 meter pit lid obtained a peak load of 25,050 lbf with no damage apparent visually. (Reference Figures: 7, 9 and Load Vs. Position Graph)

Nicor Grey #2 meter pit lid obtained a peak load of 25,084 lbf with no damage apparent visually. (Reference Figures: 8, 10, and Load Vs. Position Graph)

Both meter pit lids contained no visible damage and exceeded the 25,000 lbf proof load requirement for one minute.

Submitted By: \_\_\_\_\_  
Shawn M. Geckeler  
Mechanical Engineering

Reviewed By: \_\_\_\_\_  
John R. Morris  
Mgr. Laboratory Services

Concurred By: \_\_\_\_\_  
Steven L. Fogle  
Director Materials Testing

# Rone Engineering

8908 Ambassador Row, Dallas, TX 75247  
4221 Freidrich Ln., Ste 195, Austin, TX 78744  
7701 W. Little York, Ste 600, Houston, TX 77040  
Corporate Phone: (214) 630-9745

Client: Nicor Inc.

Report No.: 903115

Project No.: 0814947

Date of Service: 11/10/08

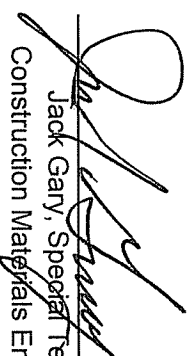
Project: 12" Plastic Meter Box Lid

## 12" PLASTIC METER BOX LID

Test No.	Test Condition (Degrees F)	Bearing Plate Size (inches)	Specification Utilized	Total Load (Pounds)	Results
1	160	6 x 6	DWU	6,500	No failure, no permanent deformation
2	72	9 x 9	CFRR RR-F-621E	25,000	No failure, no permanent deformation

Note: The same lid was utilized in both tests.

Technician: C. Snyder

  
Jack Gary, Special Testing Manager  
Construction Materials Engineering Division

LIMITATIONS: The test results presented herein were prepared based upon the specific samples provided for testing. We assume no responsibility for variation in quality (composition, appearance, performance, etc.) or any other feature of similar subject matter provided by persons or conditions over which we have no control. Our letters and reports are for the exclusiveness of the clients to whom they are addressed and shall not be reproduced except in full without the written approval of Rone Engineering Services, Ltd.