Soundness Test

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-TCU-17881
LOCATION		DATE TESTED	SEPT. 18, 2002

SOUNDNESS TEST

TEST PIT NO.	ATP-4	SAMPLE NO.	S-1 & S-2	DEPTH (H)	0.00-3.00
DESCRIPTION	Poorly graded GRAVEL				

NUMBER OF CYCLES 5 CHARACTER OF SOLUTION Na_2SO_4

PASSING SIEVE SIZE NUMBER	RETAINED ON SIEVE SIZE NUMBER	PERCENT GRADING OF ORIGINAL SAMPLE	WEIGHT OF TEST FRACTIONS		WEIGHT LOSS (gm.)	ACTUAL PERCENTAGE LOSS % PASSING FINER SIEVE	CORRECTED PERCENTAGE LOSS WEIGHT AVERAGE
			BEFORE (gm.)	AFTER (gm.)			
SOUNDNESS TEST OF COARSE AGGREGATE							
2 1/2 in	1 1/2"	18	3186	3172	14.0	0.44	0.79
1 1/2"	3/4"	12	1567	1543	24.0	1.53	0.18
3/4"	3/8"	28	1102	1074	28.0	2.54	0.71
3/8"	4	42	307	300.2	6.8	2.21	0.93
TOTAL		100					2.61
SOUNDNESS TEST OF FINE AGGREGATE							
3/8"	4	15	100	98.40	1.60	1.60	0.24
4	8	16	100	98.10	1.90	1.90	0.30
8	16	30	100	97.40	2.60	2.60	0.78
16	30	18	100	96.90	3.10	3.10	0.56
30	50	15	100	96.20	3.80	3.80	0.57
50	100	6	100	95.40	4.60	4.60	0.28
100							
TOTAL		100					2.73

Remarks:

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-TCU-17882
LOCATION		DATE TESTED	SEPT. 18, 2002

SOUNDNESS TEST

TEST PIT NO.	ATP-5	SAMPLE NO.	S-1 & S-2	DEPTH (H)	0.00-3.00
DESCRIPTION	Poorly graded GRAVEL				

NUMBER OF CYCLES 5 CHARACTER OF SOLUTION Na_2SO_4

PASSING SIEVE SIZE NUMBER	RETAINED ON SIEVE SIZE NUMBER	PERCENT GRADING OF ORIGINAL SAMPLE	WEIGHT OF TEST FRACTIONS		WEIGHT LOSS (gm.)	ACTUAL PERCENTAGE LOSS % PASSING FINER SIEVE	CORRECTED PERCENTAGE LOSS WEIGHT AVERAGE
			BEFORE (gm.)	AFTER (gm.)			
SOUNDNESS TEST OF COARSE AGGREGATE							
2 1/2 in	1 1/2"	52	3148	3138	10.0	0.32	0.17
1 1/2"	3/4"	9	1638	1624	14.0	0.85	0.08
3/4"	3/8"	14	1089	1067	22.0	2.02	0.28
3/8"	4	25	311	306.4	4.6	1.48	0.37
TOTAL		100					0.90
SOUNDNESS TEST OF FINE AGGREGATE							
3/8"	4	34	100	99.10	0.90	0.90	0.31
4	8	36	100	98.70	1.30	1.30	0.47
8	16	16	100	98.10	1.90	1.90	0.30
16	30	9	100	97.60	2.40	2.40	0.22
30	50	3	100	97.00	3.00	3.00	0.09
50	100	2	100	96.20	3.80	3.80	0.08
100							
TOTAL		100					1.47

Remarks:

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-TCU-17883
LOCATION		DATE TESTED	SEPT. 18, 2002

SOUNDNESS TEST

TEST PIT NO.	ATP-6	SAMPLE NO.	S-1	DEPTH (M)	0.00-3.00
DESCRIPTION	Poorly graded GRAVEL				

NUMBER OF CYCLES: 5 CHARACTER OF SOLUTION: Na_2SO_4

PASSING SIEVE SIZE NUMBER	RETAINED ON SIEVE SIZE NUMBER	PERCENT GRADING OF ORIGINAL SAMPLE	WEIGHT OF TEST FRACTIONS		WEIGHT LOSS (gm.)	ACTUAL PERCENTAGE LOSS % PASSING FINER SIEVE	CORRECTED PERCENTAGE LOSS WEIGHT AVERAGE
			BEFORE (gm.)	AFTER (gm.)			
SOUNDNESS TEST OF COARSE AGGREGATE							
2 1/2 in	1 1/2"	17	3148	3134	14.0	0.44	0.07
1 1/2"	3/4"	53	1612	1584	28.0	1.74	0.92
3/4"	3/8"	15	1096	1075	21.0	1.92	0.29
3/8"	4	15	312	304.7	7.3	2.34	0.35
TOTAL		100					1.63
SOUNDNESS TEST OF FINE AGGREGATE							
3/8"	4	22	100	98.30	1.70	1.70	0.37
4	8	31	100	98.00	2.00	2.00	0.62
8	16	17	100	97.30	2.70	2.70	0.46
16	30	15	100	96.90	3.10	3.10	0.47
30	50	11	100	96.40	3.60	3.60	0.40
50	100	4	100	95.70	4.30	4.30	0.17
100							
TOTAL		100					2.49

Remarks:

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-TCU-17884
LOCATION		DATE TESTED	SEPT. 19, 2002

SOUNDNESS TEST

TEST PIT NO.	ATP-9	SAMPLE NO.	S-1 & S-2	DEPTH (M)	0.00-3.00
DESCRIPTION	Poorly graded GRAVEL				

NUMBER OF CYCLES: 5 CHARACTER OF SOLUTION: Na_2SO_4

PASSING SIEVE SIZE NUMBER	RETAINED ON SIEVE SIZE NUMBER	PERCENT GRADING OF ORIGINAL SAMPLE	WEIGHT OF TEST FRACTIONS		WEIGHT LOSS (gm.)	ACTUAL PERCENTAGE LOSS % PASSING FINER SIEVE	CORRECTED PERCENTAGE LOSS WEIGHT AVERAGE
			BEFORE (gm.)	AFTER (gm.)			
SOUNDNESS TEST OF COARSE AGGREGATE							
2 1/2 in	1 1/2"	10	3214	3206	8.0	0.25	0.03
1 1/2"	3/4"	54	1661	1645	16.0	0.96	0.52
3/4"	3/8"	18	1068	1049	19.0	1.78	0.32
3/8"	4	18	322	317.2	4.8	1.49	0.27
TOTAL		100					1.14
SOUNDNESS TEST OF FINE AGGREGATE							
3/8"	4	18	100	99.20	0.80	0.80	0.14
4	8	19	100	98.60	1.40	1.40	0.27
8	16	13	100	97.90	2.10	2.10	0.27
16	30	7	100	97.20	2.80	2.80	0.20
30	50	23	100	96.40	3.60	3.60	0.83
50	100	20	100	95.70	4.30	4.30	0.86
100							
TOTAL		100					2.57

Remarks:

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-TCU-17885
LOCATION		DATE TESTED	SEPT. 20, 2002

SOUNDNESS TEST

TEST PIT NO.	KTP-1	SAMPLE NO.	S-1	DEPTH (M)	0.00-3.00
DESCRIPTION	Poorly graded GRAVEL				

NUMBER OF CYCLES: 5 CHARACTER OF SOLUTION: Na_2SO_4

PASSING SIEVE SIZE NUMBER	RETAINED ON SIEVE SIZE NUMBER	PERCENT GRADING OF ORIGINAL SAMPLE	WEIGHT OF TEST FRACTIONS		WEIGHT LOSS (gm.)	ACTUAL PERCENTAGE LOSS % PASSING FINER SIEVE	CORRECTED PERCENTAGE LOSS WEIGHT AVERAGE
			BEFORE (gm.)	AFTER (gm.)			
SOUNDNESS TEST OF COARSE AGGREGATE							
2 1/2 in	1 1/2"	26	3088	3072	16.0	0.52	0.14
1 1/2"	3/4"	7	1541	1521	20.0	1.30	0.09
3/4"	3/8"	18	1084	1054	30.0	2.77	0.49
3/8"	4	49	306	300	6.0	1.96	0.96
TOTAL		100					1.68
SOUNDNESS TEST OF FINE AGGREGATE							
3/8"	4	22	100	98.00	2.00	2.00	0.44
4	8	19	100	97.30	2.70	2.00	0.51
8	16	9	100	96.80	3.20	2.00	0.29
16	30	29	100	96.10	3.90	2.00	1.13
30	50	10	100	95.50	4.50	2.00	0.45
50	100	11	100	94.80	5.20	2.00	0.57
100							
TOTAL		100					3.39

Remarks:

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-TCU-17886
LOCATION		DATE TESTED	SEPT. 22, 2002

SOUNDNESS TEST

TEST PIT NO.	KTP-3	SAMPLE NO.	S-1	DEPTH (M)	0.00-3.00
DESCRIPTION	Poorly graded SAND				

NUMBER OF CYCLES: 5 CHARACTER OF SOLUTION: Na_2SO_4

PASSING SIEVE SIZE NUMBER	RETAINED ON SIEVE SIZE NUMBER	PERCENT GRADING OF ORIGINAL SAMPLE	WEIGHT OF TEST FRACTIONS		WEIGHT LOSS (gm.)	ACTUAL PERCENTAGE LOSS % PASSING FINER SIEVE	CORRECTED PERCENTAGE LOSS WEIGHT AVERAGE
			BEFORE (gm.)	AFTER (gm.)			
SOUNDNESS TEST OF COARSE AGGREGATE							
2 1/2 in	1 1/2"		3048	3032	16.0	0.52	
1 1/2"	3/4"		1612	1590	22.0	1.36	
3/4"	3/8"		1082	1051	31.0	2.87	
3/8"	4		312	305.6	6.4	2.05	
TOTAL						6.80	
SOUNDNESS TEST OF FINE AGGREGATE							
3/8"	4		100	97.90	2.10	2.10	
4	8		100	97.20	2.80	2.80	
8	16		100	96.60	3.40	3.40	
16	30		100	96.00	4.00	4.00	
30	50		100	95.40	4.60	4.60	
50	100		100	94.70	5.30	5.30	
100							
TOTAL							

Remarks:

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-ST-17972
LOCATION		DATE TESTED	SEPT. 20, 2002

SOUNDNESS TEST

TEST PIT NO	AQ-1	SAMPLE NO.	-	DEPTH (M)	-
SOURCE	AGOS QUARRY SITE		DESCRIPTION	Sand Stone	

NUMBER OF CYCLES 5 CHARACTER OF SOLUTION Na_2SO_4

PASSING SIEVE SIZE NUMBER	RETAINED ON SIEVE SIZE NUMBER	PERCENT GRADING OF ORIGINAL SAMPLE	WEIGHT OF TEST FRACTIONS		WEIGHT LOSS (gm.)	ACTUAL PERCENTAGE LOSS % PASSING FINER SIEVE	CORRECTED PERCENTAGE LOSS WEIGHT AVERAGE
			BEFORE (gm.)	AFTER (gm.)			
SOUNDNESS TEST OF COARSE AGGREGATE							
2 1/2 in	1 1/2"		3195	3192	3.0	0.09	
1 1/2"	3/4"		1540	1534	6.0	0.39	
3/4"	3/8"		1013	1007	6.0	0.59	
3/8"	4		300	296	4.0	1.33	
TOTAL						2.40	
SOUNDNESS TEST OF FINE AGGREGATE							
3/8"	4						
4	8						
8	16						
16	30						
30	50						
50	100						
100							
TOTAL							

Remarks: _____

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-ST-17973
LOCATION		DATE TESTED	SEPT. 20, 2002

SOUNDNESS TEST

TEST PIT NO	AQ-2	SAMPLE NO.	-	DEPTH (M)	-
SOURCE	AGOS QUARRY SITE		DESCRIPTION	Sand Stone	

NUMBER OF CYCLES 5 CHARACTER OF SOLUTION Na_2SO_4

PASSING SIEVE SIZE NUMBER	RETAINED ON SIEVE SIZE NUMBER	PERCENT GRADING OF ORIGINAL SAMPLE	WEIGHT OF TEST FRACTIONS		WEIGHT LOSS (gm.)	ACTUAL PERCENTAGE LOSS % PASSING FINER SIEVE	CORRECTED PERCENTAGE LOSS WEIGHT AVERAGE
			BEFORE (gm.)	AFTER (gm.)			
SOUNDNESS TEST OF COARSE AGGREGATE							
2 1/2 in	1 1/2"		3009	3004	5.0	0.17	
1 1/2"	3/4"		1503	1499	4.0	0.27	
3/4"	3/8"		1005	995	10.0	1.00	
3/8"	4		302	298	4.0	1.32	
TOTAL						2.76	
SOUNDNESS TEST OF FINE AGGREGATE							
3/8"	4						
4	8						
8	16						
16	30						
30	50						
50	100						
100							
TOTAL							

Remarks: _____

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-ST-17974
LOCATION		DATE TESTED	SEPT. 20, 2002

SOUNDNESS TEST

TEST PIT NO.	AQ-3	SAMPLE NO.	-	DEPTH (M)	-
SOURCE	AGOS QUARRY SITE		DESCRIPTION	Sand Stone	

NUMBER OF CYCLES 5 CHARACTER OF SOLUTION Na_2SO_4

PASSING SIEVE SIZE NUMBER	RETAINED ON SIEVE SIZE NUMBER	PERCENT GRADING OF ORIGINAL SAMPLE	WEIGHT OF TEST FRACTIONS		WEIGHT LOSS (gm.)	ACTUAL PERCENTAGE LOSS % PASSING FINER SIEVE	CORRECTED PERCENTAGE LOSS WEIGHT AVERAGE
			BEFORE (gm.)	AFTER (gm.)			
SOUNDNESS TEST OF COARSE AGGREGATE							
2 1/2 in	1 1/2"		3013	3009	4.0	0.13	
1 1/2"	3/4"		1526	1520	6.0	0.39	
3/4"	3/8"		1007	1002	5.0	0.50	
3/8"	4		308	304	4.0	1.30	
TOTAL						2.32	
SOUNDNESS TEST OF FINE AGGREGATE							
3/8"	4						
4	8						
8	16						
16	30						
30	50						
50	100						
100							
TOTAL							

Remarks: _____

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-ST-17975
LOCATION		DATE TESTED	SEPT. 21, 2002

SOUNDNESS TEST

TEST PIT NO.	KQ-1	SAMPLE NO.	-	DEPTH (M)	-
SOURCE	KALIWA QUARRY SITE		DESCRIPTION	Sand Stone	

NUMBER OF CYCLES: 5 CHARACTER OF SOLUTION: Na_2SO_4

PASSING SIEVE SIZE NUMBER	RETAINED ON SIEVE SIZE NUMBER	PERCENT GRADING OF ORIGINAL SAMPLE	WEIGHT OF TEST FRACTIONS		WEIGHT LOSS (gm.)	ACTUAL PERCENTAGE LOSS % PASSING FINER SIEVE	CORRECTED PERCENTAGE LOSS WEIGHT AVERAGE
			BEFORE (gm.)	AFTER (gm.)			
SOUNDNESS TEST OF COARSE AGGREGATE							
2 1/2 in	1 1/2"		3016	3009	7.0	0.23	
1 1/2"	3/4"		1513	1508	5.0	0.33	
3/4"	3/8"		1007	999	8.0	0.79	
3/8"	4		301	296	5.0	1.66	
TOTAL						3.01	
SOUNDNESS TEST OF FINE AGGREGATE							
3/8"	4						
4	8						
8	16						
16	30						
30	50						
50	100						
100							
TOTAL							

Remarks: _____

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-ST-17976
LOCATION		DATE TESTED	SEPT. 21, 2002

SOUNDNESS TEST

TEST PIT NO.	KQ-2	SAMPLE NO.	-	DEPTH (M)	-
SOURCE	KALIWA QUARRY SITE		DESCRIPTION	Sand Stone	

NUMBER OF CYCLES: 5 CHARACTER OF SOLUTION: Na_2SO_4

PASSING SIEVE SIZE NUMBER	RETAINED ON SIEVE SIZE NUMBER	PERCENT GRADING OF ORIGINAL SAMPLE	WEIGHT OF TEST FRACTIONS		WEIGHT LOSS (gm.)	ACTUAL PERCENTAGE LOSS % PASSING FINER SIEVE	CORRECTED PERCENTAGE LOSS WEIGHT AVERAGE
			BEFORE (gm.)	AFTER (gm.)			
SOUNDNESS TEST OF COARSE AGGREGATE							
2 1/2 in	1 1/2"		3009	3006	3.0	0.10	
1 1/2"	3/4"		1507	1501	6.0	0.40	
3/4"	3/8"		1015	1011	4.0	0.39	
3/8"	4		309	303	6.0	1.94	
TOTAL						2.83	
SOUNDNESS TEST OF FINE AGGREGATE							
3/8"	4						
4	8						
8	16						
16	30						
30	50						
50	100						
100							
TOTAL							

Remarks: _____

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-ST-17977
LOCATION		DATE TESTED	SEPT. 21, 2002

SOUNDNESS TEST

TEST PIT NO.	KQ-3	SAMPLE NO.	-	DEPTH (m)	-
SOURCE	KALIWA QUARRY SITE		DESCRIPTION	GRAVEL	

NUMBER OF CYCLES: 5 CHARACTER OF SOLUTION Na_2SO_4

PASSING SIEVE SIZE NUMBER	RETAINED ON SIEVE SIZE NUMBER	PERCENT GRADING OF ORIGINAL SAMPLE	WEIGHT OF TEST FRACTIONS		WEIGHT LOSS (gm.)	ACTUAL PERCENTAGE LOSS % PASSING FINER SIEVE	CORRECTED PERCENTAGE LOSS WEIGHT AVERAGE
			BEFORE (gm.)	AFTER (gm.)			
SOUNDNESS TEST OF COARSE AGGREGATE							
2 1/2 in	1 1/2"		3018	3013	5.0	0.17	
1 1/2"	3/4"		1532	1528	4.0	0.26	
3/4"	3/8"		1003	994	9.0	0.90	
3/8"	4		302	296	6.0	1.99	
TOTAL						3.32	
SOUNDNESS TEST OF FINE AGGREGATE							
3/8"	4						
4	8						
8	16						
16	30						
30	50						
50	100						
100							
TOTAL							

Remarks: _____

Abrasion Test

by

Los Angeles Machine

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANIL	CONTROL NO	ADL02-TCU-17850
LOCATION		DATE TESTED	SEPT. 13, 2002

RESISTANCE TO ABRASION OF SMALL AGGREGATES BY THE USE OF LOS ANGELES MACHINE
(ASTM-C535)

TEST PIT NO.	ATP-4	SAMPLE NO.	S-1 & S-2	DEPTH (M)	0.00-3.00
DESCRIPTION	Poorly graded GRAVEL				

Sieve Size				Mass of Indicated Sizes, grams Grading			
Passing		Retained On		(A)	B	C	D
38.1 mm	1 1/2 in	25,0 mm.	1 in,	1250 ± 25	-	-	-
25	1"	19	3/4	1250 ± 25	-	-	-
19	3/4"	12.5	1/2	1250 ± 10	2500 ± 10	-	-
12.5	1/2"	9.5	3/8	1250 ± 10	2500 ± 10	-	-
9.5	3/8	6.3	1/4	-	-	2500 ± 10	-
6.3	1/4	4.75	No.4	-	-	2500 ± 10	-
4.75	No.4	2.36	No.8	-	-	-	5000 ± 10
TOTAL				5000 ± 10	5000 ± 10	5000 ± 10	5000 ± 10

Grading	No. of Spheres	Mass of Charge, grams
A	12	5000 ± 25
B	11	4584 ± 25
C	8	3300 ± 20
D	6	2500 ± 15

Weight of Sample before test, A : 5087 grams
Weight of Sample after test (Retained on No.12 Sieve), B : 3845 grams
Abrasion Loss (Percentage of Wear) = {[(A-B/A] X 100} = 0.2442 X 100 = 24.42 %

Spec's Max. Loss :

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANIL	CONTROL NO	ADL02-TCU-17851
LOCATION		DATE TESTED	SEPT. 13, 2002

RESISTANCE TO ABRASION OF SMALL AGGREGATES BY THE USE OF LOS ANGELES MACHINE
(ASTM-C535)

TEST PIT NO.	ATP-5	SAMPLE NO.	S-1 & S-2	DEPTH (M)	0.00-3.00
DESCRIPTION	Poorly graded GRAVEL				

Sieve Size				Mass of Indicated Sizes, grams Grading			
Passing		Retained On		(A)	B	C	D
38.1 mm	1 1/2 in	25,0 mm.	1 in,	1250 ± 25	-	-	-
25	1"	19	3/4	1250 ± 25	-	-	-
19	3/4"	12.5	1/2	1250 ± 10	2500 ± 10	-	-
12.5	1/2"	9.5	3/8	1250 ± 10	2500 ± 10	-	-
9.5	3/8	6.3	1/4	-	-	2500 ± 10	-
6.3	1/4	4.75	No.4	-	-	2500 ± 10	-
4.75	No.4	2.36	No.8	-	-	-	5000 ± 10
TOTAL				5000 ± 10	5000 ± 10	5000 ± 10	5000 ± 10

Grading	No. of Spheres	Mass of Charge, grams
A	12	5000 ± 25
B	11	4584 ± 25
C	8	3300 ± 20
D	6	2500 ± 15

Weight of Sample before test, A : 5148 grams
Weight of Sample after test (Retained on No.12 Sieve), B : 3997 grams
Abrasion Loss (Percentage of Wear) = {[(A-B/A] X 100} = 0.2236 X 100 = 22.36 %

Spec's Max. Loss :

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANIL	CONTROL NO	ADL02-TCU-17852
LOCATION		DATE TESTED	SEPT. 13, 2002

RESISTANCE TO ABRASION OF SMALL AGGREGATES BY THE USE OF LOS ANGELES MACHINE
(ASTM-C535)

TEST PIT NO.	ATP-6	SAMPLE NO.	S-1	DEPTH (M)	0.00-3.00
DESCRIPTION	Poorly graded GRAVEL				

Sieve Size				Mass of Indicated Sizes, grams Grading			
Passing		Retained On		(A)	B	C	D
38.1 mm	1 1/2 in	25,0 mm.	1 in,	1250 ± 25	-	-	-
25	1"	19	3/4	1250 ± 25	-	-	-
19	3/4"	12.5	1/2	1250 ± 10	2500 ± 10	-	-
12.5	1/2"	9.5	3/8	1250 ± 10	2500 ± 10	-	-
9.5	3/8	6.3	1/4	-	-	2500 ± 10	-
6.3	1/4	4.75	No.4	-	-	2500 ± 10	-
4.75	No.4	2.36	No.8	-	-	-	5000 ± 10
TOTAL				5000 ± 10	5000 ± 10	5000 ± 10	5000 ± 10

Grading	No. of Spheres	Mass of Charge, grams
A	12	5000 ± 25
B	11	4584 ± 25
C	8	3300 ± 20
D	6	2500 ± 15

Weight of Sample before test, A : **5138** grams
Weight of Sample after test (Retained on No.12 Sieve), B : **3861** grams
Abrasion Loss (Percentage of Wear) = {[(A-B/A] X 100} = **0.2485** X 100 = **24.85** %

Spec's Max. Loss :

G6-93

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-TCU-17852
LOCATION		DATE TESTED	SEPT. 14, 2002

RESISTANCE TO ABRASION OF SMALL AGGREGATES BY THE USE OF LOS ANGELES MACHINE
(ASTM-C535)

TEST PIT NO.	ATP-7	SAMPLE NO.	S-1	DEPTH (M)	0.00-0.70
DESCRIPTION	Silty SAND				

Sieve Size				Mass of Indicated Sizes, grams Grading			
Passing		Retained On		(A)	B	C	D
38.1 mm	1 1/2 in	25,0 mm.	1 in,	1250 ± 25	-	-	-
25	1"	19	3/4	1250 ± 25	-	-	-
19	3/4"	12.5	1/2	1250 ± 10	2500 ± 10	-	-
12.5	1/2"	9.5	3/8	1250 ± 10	2500 ± 10	-	-
9.5	3/8	6.3	1/4	-	-	2500 ± 10	-
6.3	1/4	4.75	No.4	-	-	2500 ± 10	-
4.75	No.4	2.36	No.8	-	-	-	5000 ± 10
TOTAL				5000 ± 10	5000 ± 10	5000 ± 10	5000 ± 10

Grading	No. of Spheres	Mass of Charge, grams
A	12	5000 ± 25
B	11	4584 ± 25
C	8	3300 ± 20
D	6	2500 ± 15

Weight of Sample before test, A : 5064 grams
Weight of Sample after test (Retained on No.12 Sieve), B : 3630 grams
Abrasion Loss (Percentage of Wear) = {[(A-B/A] X 100} = 0.2832 X 100 = 28.32 %

Spec's Max. Loss :

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-TCU-17853
LOCATION		DATE TESTED	SEPT. 14, 2002

RESISTANCE TO ABRASION OF SMALL AGGREGATES BY THE USE OF LOS ANGELES MACHINE
(ASTM-C535)

TEST PIT NO.	ATP-7	SAMPLE NO.	S-2	DEPTH (M)	0.70-3.00
DESCRIPTION	Poorly graded GRAVEL				

Sieve Size				Mass of Indicated Sizes, grams Grading			
Passing		Retained On		(A)	B	C	D
38.1 mm	1 1/2 in	25,0 mm.	1 in,	1250 ± 25	-	-	-
25	1"	19	3/4	1250 ± 25	-	-	-
19	3/4"	12.5	1/2	1250 ± 10	2500 ± 10	-	-
12.5	1/2"	9.5	3/8	1250 ± 10	2500 ± 10	-	-
9.5	3/8	6.3	1/4	-	-	2500 ± 10	-
6.3	1/4	4.75	No.4	-	-	2500 ± 10	-
4.75	No.4	2.36	No.8	-	-	-	5000 ± 10
TOTAL				5000 ± 10	5000 ± 10	5000 ± 10	5000 ± 10

Grading	No. of Spheres	Mass of Charge, grams
A	12	5000 ± 25
B	11	4584 ± 25
C	8	3300 ± 20
D	6	2500 ± 15

Weight of Sample before test, A : 5167 grams
Weight of Sample after test (Retained on No.12 Sieve), B : 3856 grams
Abrasion Loss (Percentage of Wear) = {[(A-B/A] X 100} = 0.2537 X 100 = 25.37 %

Spec's Max. Loss :

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANIL	CONTROL NO	ADL02-TCU-17854
LOCATION		DATE TESTED	SEPT. 15, 2002

RESISTANCE TO ABRASION OF SMALL AGGREGATES BY THE USE OF LOS ANGELES MACHINE
(ASTM-C535)

TEST PIT NO.	ATP-9	SAMPLE NO.	S-1 & S-2	DEPTH (M)	0.00-3.00
DESCRIPTION	Poorly graded GRAVEL				

Sieve Size				Mass of Indicated Sizes, grams Grading			
Passing		Retained On		(A)	B	C	D
38.1 mm	1 1/2 in	25,0 mm.	1 in,	1250 ± 25	-	-	-
25	1"	19	3/4	1250 ± 25	-	-	-
19	3/4"	12.5	1/2	1250 ± 10	2500 ± 10	-	-
12.5	1/2"	9.5	3/8	1250 ± 10	2500 ± 10	-	-
9.5	3/8	6.3	1/4	-	-	2500 ± 10	-
6.3	1/4	4.75	No.4	-	-	2500 ± 10	-
4.75	No.4	2.36	No.8	-	-	-	5000 ± 10
TOTAL				5000 ± 10	5000 ± 10	5000 ± 10	5000 ± 10

Grading	No. of Spheres	Mass of Charge, grams
A	12	5000 ± 25
B	11	4584 ± 25
C	8	3300 ± 20
D	6	2500 ± 15

Weight of Sample before test, A : 5234 grams
Weight of Sample after test (Retained on No.12 Sieve), B : 4163 grams
Abrasion Loss (Percentage of Wear) = {[(A-B/A] X 100} = 0.2046 X 100 = 20.46 %

Spec's Max. Loss :

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANIL	CONTROL NO	ADL02-TCU-17855
LOCATION		DATE TESTED	SEPT. 15, 2002

RESISTANCE TO ABRASION OF SMALL AGGREGATES BY THE USE OF LOS ANGELES MACHINE
(ASTM-C535)

TEST PIT NO.	ATP-10	SAMPLE NO.	S-1	DEPTH (M)	0.00-3.00
DESCRIPTION	Poorly graded GRAVEL				

Sieve Size				Mass of Indicated Sizes, grams Grading			
Passing		Retained On		(A)	B	C	D
38.1 mm	1 1/2 in	25,0 mm.	1 in,	1250 ± 25	-	-	-
25	1"	19	3/4	1250 ± 25	-	-	-
19	3/4"	12.5	1/2	1250 ± 10	2500 ± 10	-	-
12.5	1/2"	9.5	3/8	1250 ± 10	2500 ± 10	-	-
9.5	3/8	6.3	1/4	-	-	2500 ± 10	-
6.3	1/4	4.75	No.4	-	-	2500 ± 10	-
4.75	No.4	2.36	No.8	-	-	-	5000 ± 10
TOTAL				5000 ± 10	5000 ± 10	5000 ± 10	5000 ± 10

Grading	No. of Spheres	Mass of Charge, grams
A	12	5000 ± 25
B	11	4584 ± 25
C	8	3300 ± 20
D	6	2500 ± 15

Weight of Sample before test, A : 5116 grams
Weight of Sample after test (Retained on No.12 Sieve), B : 3779 grams
Abrasion Loss (Percentage of Wear) = {[(A-B/A] X 100} = 0.2613 X 100 = 26.13 %

Spec's Max. Loss :

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANIL	CONTROL NO	ADL02-TCU-17856
LOCATION		DATE TESTED	SEPT. 16, 2002

RESISTANCE TO ABRASION OF SMALL AGGREGATES BY THE USE OF LOS ANGELES MACHINE
(ASTM-C535)

TEST PIT NO.	KTP-1	SAMPLE NO.	S-1	DEPTH (M)	0.00-3.00
DESCRIPTION	Poorly graded GRAVEL				

Sieve Size				Mass of Indicated Sizes, grams			
				Grading			
Passing		Retained On		(A)	B	C	D
38.1 mm	1 1/2 in	25,0 mm.	1 in,	1250 ± 25	-	-	-
25	1"	19	3/4	1250 ± 25	-	-	-
19	3/4"	12.5	1/2	1250 ± 10	2500 ± 10	-	-
12.5	1/2"	9.5	3/8	1250 ± 10	2500 ± 10	-	-
9.5	3/8	6.3	1/4	-	-	2500 ± 10	-
6.3	1/4	4.75	No.4	-	-	2500 ± 10	-
4.75	No.4	2.36	No.8	-	-	-	5000 ± 10
TOTAL				5000 ± 10	5000 ± 10	5000 ± 10	5000 ± 10

Grading	No. of Spheres	Mass of Charge, grams
A	12	5000 ± 25
B	11	4584 ± 25
C	8	3300 ± 20
D	6	2500 ± 15

Weight of Sample before test, A : 5067 grams
Weight of Sample after test (Retained on No.12 Sieve), B : 3615 grams
Abrasion Loss (Percentage of Wear) = {[(A-B/A] X 100} = 0.2866 X 100 = 28.66 %

Spec's Max. Loss :

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANIL	CONTROL NO	ADL02-TCU-17857
LOCATION		DATE TESTED	SEPT. 17, 2002

RESISTANCE TO ABRASION OF SMALL AGGREGATES BY THE USE OF LOS ANGELES MACHINE
(ASTM-C535)

TEST PIT NO.	KTP-3	SAMPLE NO.	S-1	DEPTH (M)	0.00-3.00
DESCRIPTION	Poorly graded SAND				

Sieve Size				Mass of Indicated Sizes, grams			
				Grading			
Passing		Retained On		(A)	B	C	D
38.1 mm	1 1/2 in	25,0 mm.	1 in,	1250 ± 25	-	-	-
25	1"	19	3/4	1250 ± 25	-	-	-
19	3/4"	12.5	1/2	1250 ± 10	2500 ± 10	-	-
12.5	1/2"	9.5	3/8	1250 ± 10	2500 ± 10	-	-
9.5	3/8	6.3	1/4	-	-	2500 ± 10	-
6.3	1/4	4.75	No.4	-	-	2500 ± 10	-
4.75	No.4	2.36	No.8	-	-	-	5000 ± 10
TOTAL				5000 ± 10	5000 ± 10	5000 ± 10	5000 ± 10

Grading	No. of Spheres	Mass of Charge, grams
A	12	5000 ± 25
B	11	4584 ± 25
C	8	3300 ± 20
D	6	2500 ± 15

Weight of Sample before test, A : 5132 grams
Weight of Sample after test (Retained on No.12 Sieve), B : 3523 grams
Abrasion Loss (Percentage of Wear) = {[(A-B/A] X 100} = 0.3135 X 100 = 31.35 %

Spec's Max. Loss :

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-TCU-17858
LOCATION		DATE TESTED	SEPT. 17, 2002

RESISTANCE TO ABRASION OF SMALL AGGREGATES BY THE USE OF LOS ANGELES MACHINE
(ASTM-C535)

TEST PIT NO.	KTP-5	SAMPLE NO.	S-1	DEPTH (M)	0.00-3.00
DESCRIPTION	Poorly graded GRAVEL				

Sieve Size				Mass of Indicated Sizes, grams Grading			
Passing		Retained On		(A)	B	C	D
38.1 mm	1 1/2 in	25,0 mm.	1 in,	1250 ± 25	-	-	-
25	1"	19	3/4	1250 ± 25	-	-	-
19	3/4"	12.5	1/2	1250 ± 10	2500 ± 10	-	-
12.5	1/2"	9.5	3/8	1250 ± 10	2500 ± 10	-	-
9.5	3/8	6.3	1/4	-	-	2500 ± 10	-
6.3	1/4	4.75	No.4	-	-	2500 ± 10	-
4.75	No.4	2.36	No.8	-	-	-	5000 ± 10
TOTAL				5000 ± 10	5000 ± 10	5000 ± 10	5000 ± 10

Grading	No. of Spheres	Mass of Charge, grams
A	12	5000 ± 25
B	11	4584 ± 25
C	8	3300 ± 20
D	6	2500 ± 15

Weight of Sample before test, A : 5047 grams

Weight of Sample after test (Retained on No.12 Sieve), B : 3440 grams

Abrasion Loss (Percentage of Wear) = {[(A-B/A] X 100} = 0.3184 X 100 = 31.84 %

Spec's Max. Loss :

G6-97

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANIL	CONTROL NO	ADL02-LAA-17960
LOCATION		DATE TESTED	SEPT. 18, 2002

RESISTANCE TO ABRASION OF SMALL AGGREGATES BY THE USE OF LOS ANGELES MACHINE
(ASTM-C535)

TEST PIT NO.	AQ-1	SAMPLE NO.	-	DEPTH (M)	-
SOURCE	AGOS QUARRY SITE		DESCRIPTION	Sand Stone	

Sieve Size				Mass of Indicated Sizes, grams Grading			
Passing		Retained On		(A)	B	C	D
38.1 mm	1 1/2 in	25,0 mm.	1 in,	1250 ± 25	-	-	-
25	1"	19	3/4	1250 ± 25	-	-	-
19	3/4"	12.5	1/2	1250 ± 10	2500 ± 10	-	-
12.5	1/2"	9.5	3/8	1250 ± 10	2500 ± 10	-	-
9.5	3/8	6.3	1/4	-	-	2500 ± 10	-
6.3	1/4	4.75	No.4	-	-	2500 ± 10	-
4.75	No.4	2.36	No.8	-	-	-	5000 ± 10
TOTAL				5000 ± 10	5000 ± 10	5000 ± 10	5000 ± 10

Grading	No. of Spheres	Mass of Charge, grams
A	12	5000 ± 25
B	11	4584 ± 25
C	8	3300 ± 20
D	6	2500 ± 15

Weight of Sample before test, A : 5013 grams
Weight of Sample after test (Retained on No.12 Sieve), B : 3840 grams
Abrasion Loss (Percentage of Wear) = {[(A-B/A] X 100} = 0.2340 X 100 = 23.40 %

Spec's Max. Loss :

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANIL	CONTROL NO	ADL02-LAA-17961
LOCATION		DATE TESTED	SEPT. 18, 2002

RESISTANCE TO ABRASION OF SMALL AGGREGATES BY THE USE OF LOS ANGELES MACHINE
(ASTM-C535)

TEST PIT NO.	AQ-2	SAMPLE NO.	-	DEPTH (M)	-
SOURCE	AGOS QUARRY SITE		DESCRIPTION	Sand Stone	

Sieve Size				Mass of Indicated Sizes, grams Grading			
Passing		Retained On		(A)	B	C	D
38.1 mm	1 1/2 in	25,0 mm.	1 in,	1250 ± 25	-	-	-
25	1"	19	3/4	1250 ± 25	-	-	-
19	3/4"	12.5	1/2	1250 ± 10	2500 ± 10	-	-
12.5	1/2"	9.5	3/8	1250 ± 10	2500 ± 10	-	-
9.5	3/8	6.3	1/4	-	-	2500 ± 10	-
6.3	1/4	4.75	No.4	-	-	2500 ± 10	-
4.75	No.4	2.36	No.8	-	-	-	5000 ± 10
TOTAL				5000 ± 10	5000 ± 10	5000 ± 10	5000 ± 10

Grading	No. of Spheres	Mass of Charge, grams
A	12	5000 ± 25
B	11	4584 ± 25
C	8	3300 ± 20
D	6	2500 ± 15

Weight of Sample before test, A : 5022 grams
Weight of Sample after test (Retained on No.12 Sieve), B : 3816 grams
Abrasion Loss (Percentage of Wear) = {[(A-B/A] X 100} = 0.2401 X 100 = 24.01 %

Spec's Max. Loss :

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANIL	CONTROL NO	ADL02-LAA-17962
LOCATION		DATE TESTED	SEPT. 19, 2002

RESISTANCE TO ABRASION OF SMALL AGGREGATES BY THE USE OF LOS ANGELES MACHINE
(ASTM-C535)

TEST PIT NO.	AQ-3	SAMPLE NO.	-	DEPTH (M)	-
SOURCE	AGOS QUARRY SITE		DESCRIPTION	Sand Stone	

Sieve Size				Mass of Indicated Sizes, grams Grading			
Passing		Retained On		(A)	B	C	D
38.1 mm	1 1/2 in	25,0 mm.	1 in,	1250 ± 25	-	-	-
25	1"	19	3/4	1250 ± 25	-	-	-
19	3/4"	12.5	1/2	1250 ± 10	2500 ± 10	-	-
12.5	1/2"	9.5	3/8	1250 ± 10	2500 ± 10	-	-
9.5	3/8	6.3	1/4	-	-	2500 ± 10	-
6.3	1/4	4.75	No.4	-	-	2500 ± 10	-
4.75	No.4	2.36	No.8	-	-	-	5000 ± 10
TOTAL				5000 ± 10	5000 ± 10	5000 ± 10	5000 ± 10

Grading	No. of Spheres	Mass of Charge, grams
A	12	5000 ± 25
B	11	4584 ± 25
C	8	3300 ± 20
D	6	2500 ± 15

Weight of Sample before test, A : **5039** grams

Weight of Sample after test (Retained on No.12 Sieve), B : **3895** grams

Abrasion Loss (Percentage of Wear) = {[(A-B/A] X 100} = **0.2270** X 100 = **22.70** %

Spec's Max. Loss :

G6-99

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANIL	CONTROL NO	ADL02-LAA-17965
LOCATION		DATE TESTED	SEPT. 19, 2002

RESISTANCE TO ABRASION OF SMALL AGGREGATES BY THE USE OF LOS ANGELES MACHINE
(ASTM-C535)

TEST PIT NO.	KQ-1	SAMPLE NO.	-	DEPTH (M)	-
SOURCE	KALIWA QUARRY SITE		DESCRIPTION	Sand Stone	

Sieve Size				Mass of Indicated Sizes, grams Grading			
Passing		Retained On		(A)	B	C	D
38.1 mm	1 1/2 in	25,0 mm.	1 in,	1250 ± 25	-	-	-
25	1"	19	3/4	1250 ± 25	-	-	-
19	3/4"	12.5	1/2	1250 ± 10	2500 ± 10	-	-
12.5	1/2"	9.5	3/8	1250 ± 10	2500 ± 10	-	-
9.5	3/8	6.3	1/4	-	-	2500 ± 10	-
6.3	1/4	4.75	No.4	-	-	2500 ± 10	-
4.75	No.4	2.36	No.8	-	-	-	5000 ± 10
TOTAL				5000 ± 10	5000 ± 10	5000 ± 10	5000 ± 10

Grading	No. of Spheres	Mass of Charge, grams
A	12	5000 ± 25
B	11	4584 ± 25
C	8	3300 ± 20
D	6	2500 ± 15

Weight of Sample before test, A : 5003 grams
Weight of Sample after test (Retained on No.12 Sieve), B : 3719 grams
Abrasion Loss (Percentage of Wear) = {[(A-B/A] X 100} = 0.2566 X 100 = 25.66 %

Spec's Max. Loss :

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANIL	CONTROL NO	ADL02-LAA-17964
LOCATION		DATE TESTED	SEPT. 19, 2002

RESISTANCE TO ABRASION OF SMALL AGGREGATES BY THE USE OF LOS ANGELES MACHINE
(ASTM-C535)

TEST PIT NO.	KQ-2	SAMPLE NO.	-	DEPTH (M)	-
SOURCE	KALIWA QUARRY SITE		DESCRIPTION	Sand Stone	

Sieve Size				Mass of Indicated Sizes, grams Grading			
Passing		Retained On		(A)	B	C	D
38.1 mm	1 1/2 in	25,0 mm.	1 in,	1250 ± 25	-	-	-
25	1"	19	3/4	1250 ± 25	-	-	-
19	3/4"	12.5	1/2	1250 ± 10	2500 ± 10	-	-
12.5	1/2"	9.5	3/8	1250 ± 10	2500 ± 10	-	-
9.5	3/8	6.3	1/4	-	-	2500 ± 10	-
6.3	1/4	4.75	No.4	-	-	2500 ± 10	-
4.75	No.4	2.36	No.8	-	-	-	5000 ± 10
TOTAL				5000 ± 10	5000 ± 10	5000 ± 10	5000 ± 10

Grading	No. of Spheres	Mass of Charge, grams
A	12	5000 ± 25
B	11	4584 ± 25
C	8	3300 ± 20
D	6	2500 ± 15

Weight of Sample before test, A : 5022 grams
Weight of Sample after test (Retained on No.12 Sieve), B : 3816 grams
Abrasion Loss (Percentage of Wear) = {[(A-B/A] X 100} = 0.2401 X 100 = 24.01 %

Spec's Max. Loss :

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANIL	CONTROL NO	ADL02-LAA-17963
LOCATION		DATE TESTED	SEPT. 19, 2002

RESISTANCE TO ABRASION OF SMALL AGGREGATES BY THE USE OF LOS ANGELES MACHINE
(ASTM-C535)

TEST PIT NO.	KQ-3	SAMPLE NO.	-	DEPTH (M)	-
SOURCE	KALIWA QUARRY SITE		DESCRIPTION	Sand Stone	

Sieve Size				Mass of Indicated Sizes, grams Grading			
Passing		Retained On		(A)	B	C	D
38.1 mm	1 1/2 in	25,0 mm.	1 in,	1250 ± 25	-	-	-
25	1"	19	3/4	1250 ± 25	-	-	-
19	3/4"	12.5	1/2	1250 ± 10	2500 ± 10	-	-
12.5	1/2"	9.5	3/8	1250 ± 10	2500 ± 10	-	-
9.5	3/8	6.3	1/4	-	-	2500 ± 10	-
6.3	1/4	4.75	No.4	-	-	2500 ± 10	-
4.75	No.4	2.36	No.8	-	-	-	5000 ± 10
TOTAL				5000 ± 10	5000 ± 10	5000 ± 10	5000 ± 10

Grading	No. of Spheres	Mass of Charge, grams
A	12	5000 ± 25
B	11	4584 ± 25
C	8	3300 ± 20
D	6	2500 ± 15

Weight of Sample before test, A : **5036** grams

Weight of Sample after test (Retained on No.12 Sieve), B : **3756** grams

Abrasion Loss (Percentage of Wear) = {[(A-B/A] X 100} = **0.2542** X 100 = **25.42** %

Spec's Max. Loss :

Chemical (Alkali)

Reactivity Test

CHEMICAL (ALKALI) REACTIVITY TEST RESULTS

Client: CMA Geoservices & Cons. Corp.
Attn: Cheryl M. Avila

Client's Project: N/S

Date Sampled: 07-Oct-02
Date Received: 07-Oct-02
Date Analyzed: 09-Oct-02
Matrix, Units: Soil, mg/Kg
Analysis: EGM

Lab No.	Sample I.D.	Analysis	Results	MDL	DLR
5032-001	AQ - 2	Titrimetry (Reactive alkali as Bicarbonate, HCO_3^-)	237	1.0	1.0
5032-002	ATP - 2	Titrimetry (Reactive alkali as Bicarbonate, HCO_3^-)	331	1.0	1.0
5032-003	ATP - 7	Titrimetry (Reactive alkali as Bicarbonate, HCO_3^-)	705	1.0	1.0
5032-004	ATP - 10	Titrimetry (Reactive alkali as Bicarbonate, HCO_3^-)	871	1.0	1.0

N/S = Not Supplied
MDL = Method Detection Limit
DLR = Detection Limit for Reporting (MDL x Dilution Factor)

Reviewed By: _____ Date: _____
Chas C. Arroyo
Laboratory Supervisor
PRC License No.: 6701

Approved By: _____ Date: _____
Maria Carmela Q. Capule
Laboratory Head
PRC License No.: 7663

Unconfined Compression Test

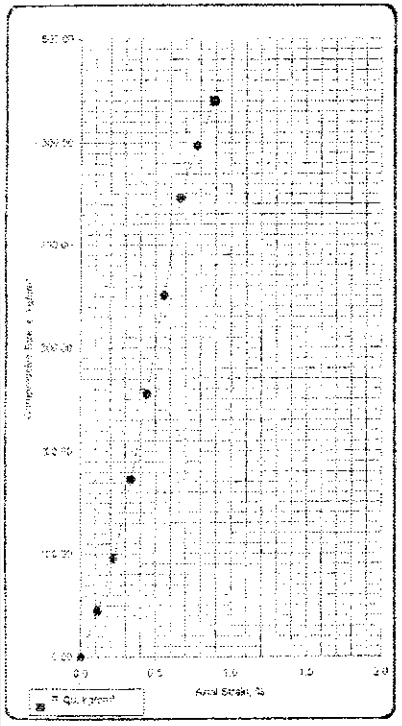
PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO.	ADL02-UCT-18011
LOCATION		DATE TESTED	OCT.3-4, 2002

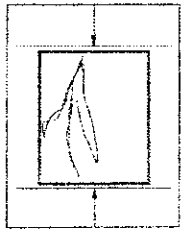
UNCONFINED COMPRESSION TEST

(ASTM D2938)

BOREHOLE NO.	AD-1	SAMPLE NO.	S		42.60-42.80
DESCRIPTION	SANDSTONE; dark gray				

MODE OF FAILURE





MAXIMUM COMPRESSIVE STRESS,		
q_u	(kg/cm²)	540.36
WET UNIT WEIGHT	(g/cc)	2.74
SAMPLE CONDITION		
DIAMETER	(cm)	4.50
LENGTH	(cm)	9.00
L/D		2.00
AREA	(cm²)	15.90
VOLUME	(cm3)	143.14
Wo	(%)	1.81
WEIGHT OF SAMPLE	(g)	392.00
TYPE OF SAMPLE		Core
SHAPE		Cylindrical
STRAIN @ FAILURE	(%)	0.89
STRAIN RATE	(mm/min)	0.40

Remarks

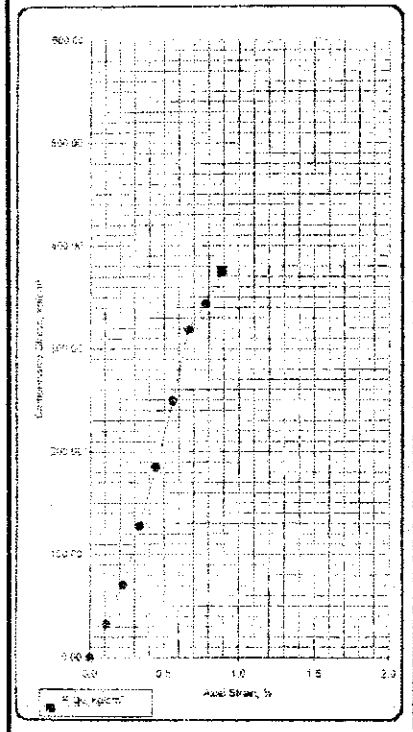
PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO.	ADL02-UCT-18013
LOCATION		DATE TESTED	OCT.3-4, 2002

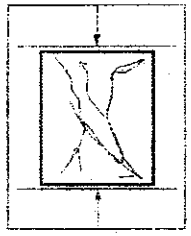
UNCONFINED COMPRESSION TEST

(ASTM D2938)

BOREHOLE NO.	AD-2	SAMPLE NO.	C		37.00-37.80
DESCRIPTION	SANDSTONE				

MODE OF FAILURE





MAXIMUM COMPRESSIVE STRESS,		
q_u	(kg/cm²)	374.88
WET UNIT WEIGHT	(g/cc)	1.52
SAMPLE CONDITION		
DIAMETER	(cm)	4.50
LENGTH	(cm)	9.00
L/D		2.00
AREA	(cm²)	15.90
VOLUME	(cm3)	143.14
Wo	(%)	2.33
WEIGHT OF SAMPLE	(g)	217.30
TYPE OF SAMPLE		Core
SHAPE		Cylindrical
STRAIN @ FAILURE	(%)	0.89
STRAIN RATE	(mm/min)	0.40

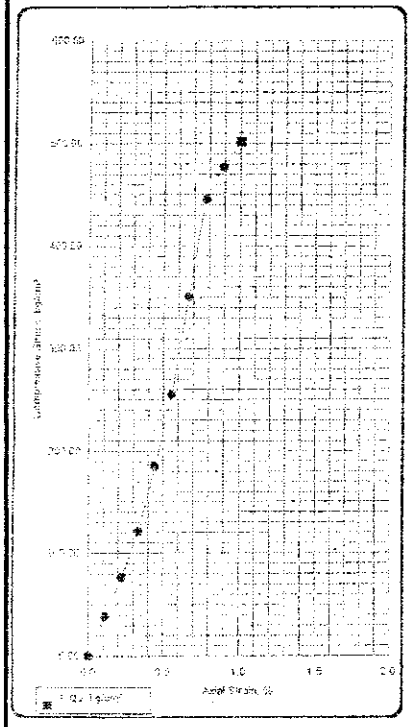
Remarks

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-UCT-18012
LOCATION		DATE TESTED	OCT.3-4, 2002

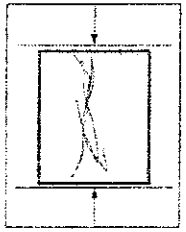
UNCONFINED COMPRESSION TEST

(ASTM-D2938)

BOREHOLE NO.	AD-3	SAMPLE NO.	A		41.20-41.40
DESCRIPTION	SANDSTONE; dark gray				



MODE OF FAILURE



MAXIMUM COMPRESSIVE STRESS,		
q_u	(kg/cm²)	561.39
WET UNIT WEIGHT	(g/cc)	2.78
SAMPLE CONDITION		
DIAMETER	(cm)	4.50
LENGTH	(cm)	9.00
L/D		2.00
AREA	(cm²)	15.90
VOLUME	(cm3)	143.14
Wo	(%)	1.32
WEIGHT OF SAMPLE	(g)	397.39
TYPE OF SAMPLE		Core
SHAPE		Cylindrical
STRAIN @ FAILURE	(%)	1.00
STRAIN RATE	(mm/min)	0.40

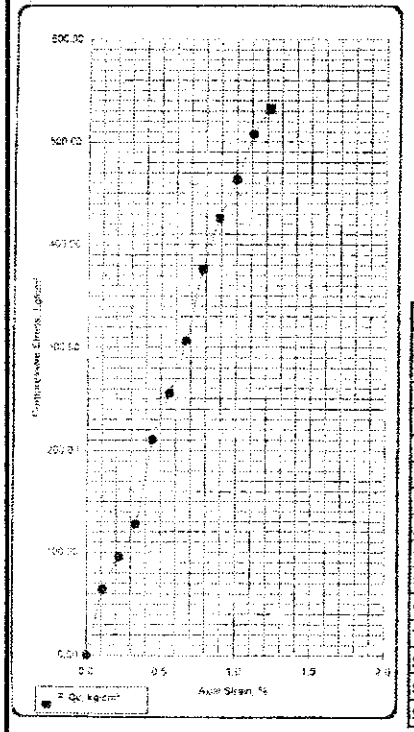
Remarks:

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-UCT-18007
LOCATION		DATE TESTED	OCT.3-4, 2002

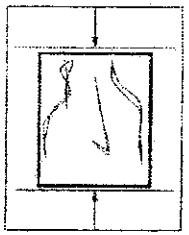
UNCONFINED COMPRESSION TEST

(ASTM-D2938)

BOREHOLE NO.	AD-4	SAMPLE NO.	A		16.40-16.60
DESCRIPTION	SANDSTONE; gray				



MODE OF FAILURE



MAXIMUM COMPRESSIVE STRESS,		
q_u	(kg/cm²)	531.83
WET UNIT WEIGHT	(g/cc)	2.79
SAMPLE CONDITION		
DIAMETER	(cm)	4.50
LENGTH	(cm)	9.00
L/D		2.00
AREA	(cm²)	15.90
VOLUME	(cm3)	143.14
Wo	(%)	1.60
WEIGHT OF SAMPLE	(g)	399.90
TYPE OF SAMPLE		Core
SHAPE		Cylindrical
STRAIN @ FAILURE	(%)	1.22
STRAIN RATE	(mm/min)	0.40

Remarks:

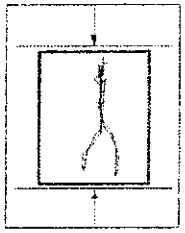
PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-UCT-18014
LOCATION		DATE TESTED	OCT.3-4, 2002

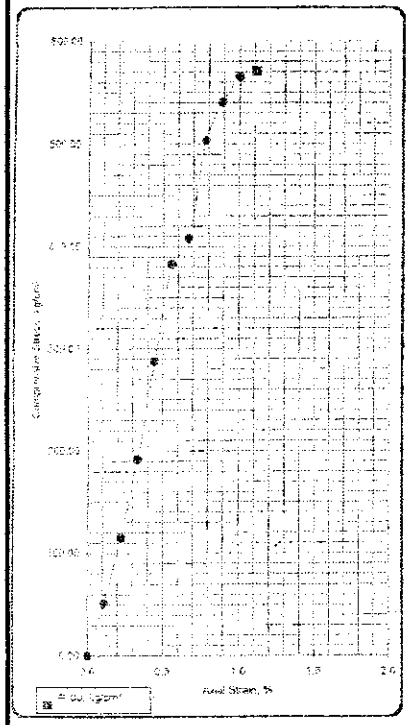
UNCONFINED COMPRESSION TEST

(ASTM D2938)

BOREHOLE NO.	AD-5	SAMPLE NO.	A		35.70-35.85
DESCRIPTION	SANDSTONE				

MODE OF FAILURE





MAXIMUM COMPRESSIVE STRESS,		
q_u	(kg/cm²)	570.56
WET UNIT WEIGHT	(g/cc)	2.76
SAMPLE CONDITION		-
DIAMETER	(cm)	4.50
LENGTH	(cm)	9.00
L/D		2.00
AREA	(cm²)	15.90
VOLUME	(cm3)	143.14
Wp	(%)	1.12
WEIGHT OF SAMPLE	(g)	395.10
TYPE OF SAMPLE		Core
SHAPE		Cylindrical
STRAIN @ FAILURE	(%)	1.11
STRAIN RATE	(mm/min)	0.40

Remarks

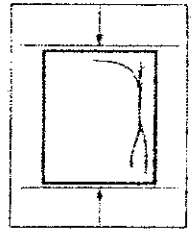
PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-UCT-18015
LOCATION		DATE TESTED	OCT.3-4, 2002

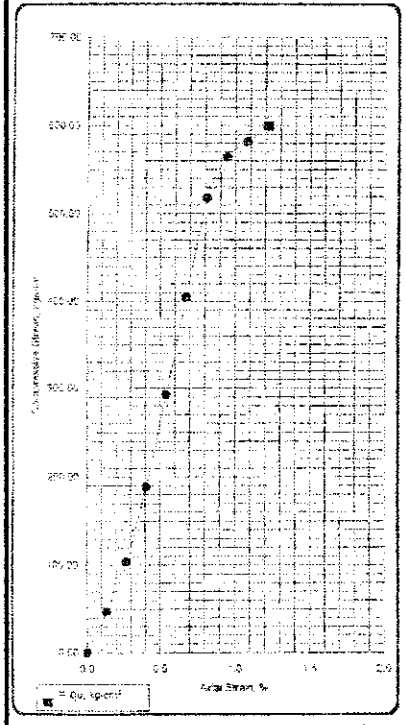
UNCONFINED COMPRESSION TEST

(ASTM D2938)

BOREHOLE NO.	AD-6	SAMPLE NO.	A		59.40-59.55
DESCRIPTION	SANDSTONE				

MODE OF FAILURE





MAXIMUM COMPRESSIVE STRESS,		
q_u	(kg/cm²)	596.52
WET UNIT WEIGHT	(g/cc)	2.77
SAMPLE CONDITION		-
DIAMETER	(cm)	3.70
LENGTH	(cm)	7.40
L/D		2.00
AREA	(cm²)	10.75
VOLUME	(cm3)	79.57
Wo	(%)	1.44
WEIGHT OF SAMPLE	(g)	220.30
TYPE OF SAMPLE		Core
SHAPE		Cylindrical
STRAIN @ FAILURE	(%)	1.22
STRAIN RATE	(mm/min)	0.40

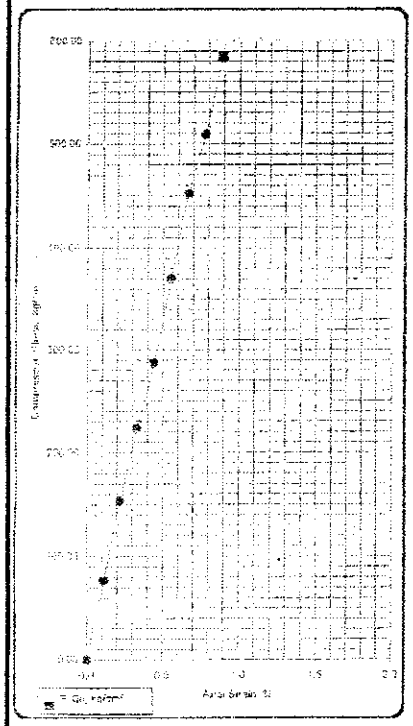
Remarks

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-UCT-18008
LOCATION		DATE TESTED	OCT.3-4, 2002

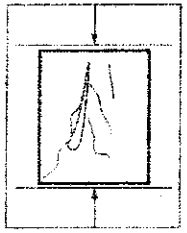
UNCONFINED COMPRESSION TEST

(ASTM-D2938)

BOREHOLE NO.	AD-7A	SAMPLE NO.	A	16.40-16.60	16.20-16.40
DESCRIPTION	SANDSTONE; gray				



MODE OF FAILURE



MAXIMUM COMPRESSIVE STRESS		
q_u	(kg/cm²)	584.56
WET UNIT WEIGHT	(g/cc)	2.93
SAMPLE CONDITION		
DIAMETER	(cm)	4.50
LENGTH	(cm)	9.00
L/D		2.00
AREA	(cm²)	15.90
VOLUME	(cm3)	143.14
Wc	(%)	1.42
WEIGHT OF SAMPLE	(g)	434.96
TYPE OF SAMPLE		Core
SHAPE		Cylindrical
STRAIN @ FAILURE	(%)	0.89
STRAIN RATE	(mm/min)	0.40

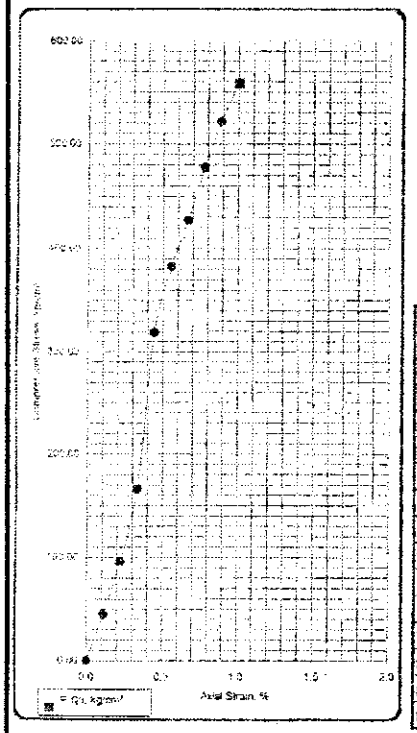
Remarks

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-UCT-18009
LOCATION		DATE TESTED	OCT.3-4, 2002

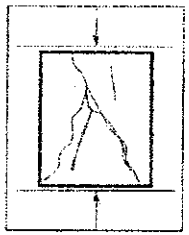
UNCONFINED COMPRESSION TEST

(ASTM-D2938)

BOREHOLE NO.	AD-7B	SAMPLE NO.	B	16.20-16.40
DESCRIPTION	SANDSTONE; light gray			



MODE OF FAILURE



MAXIMUM COMPRESSIVE STRESS		
q_u	(kg/cm²)	558.61
WET UNIT WEIGHT	(g/cc)	2.80
SAMPLE CONDITION		
DIAMETER	(cm)	4.50
LENGTH	(cm)	9.00
L/D		2.00
AREA	(cm²)	15.90
VOLUME	(cm3)	143.14
Wc	(%)	1.53
WEIGHT OF SAMPLE	(g)	401.00
TYPE OF SAMPLE		Core
SHAPE		Cylindrical
STRAIN @ FAILURE	(%)	1.69
STRAIN RATE	(mm/min)	0.40

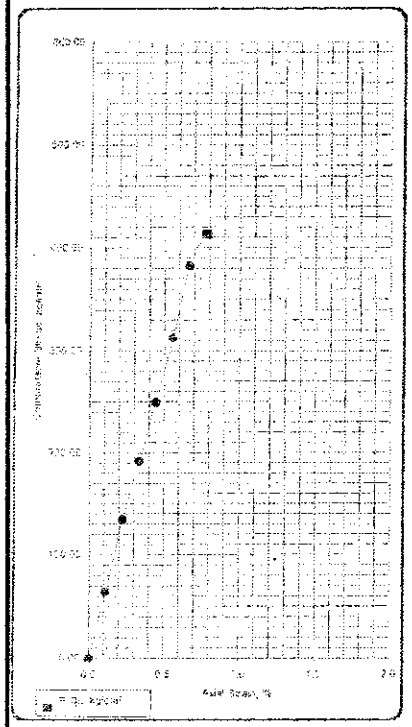
Remarks

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-UCT-18010
LOCATION		DATE TESTED	OCT.3-4, 2002

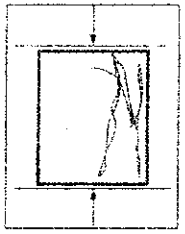
UNCONFINED COMPRESSION TEST

(ASTM-D2938)

BOREHOLE NO.	AD-8m	SAMPLE NO.	A	15.40-15.60	15.25-15.40
DESCRIPTION	SANDSTONE; gray				



MODE OF FAILURE



MAXIMUM COMPRESSIVE STRESS,		
q_u	(kg/cm²)	413.46
WET UNIT WEIGHT	(g/cc)	2.71
SAMPLE CONDITION		
DIAMETER	(cm)	4.50
LENGTH	(cm)	9.00
L/D		2.00
AREA	(cm²)	15.90
VOLUME	(cm3)	143.14
Wo	(%)	2.20
WEIGHT OF SAMPLE	(g)	387.70
TYPE OF SAMPLE		Core
SHAPE		Cylindrical
STRAIN @ FAILURE	(%)	0.78
STRAIN RATE	(mm/min)	0.40

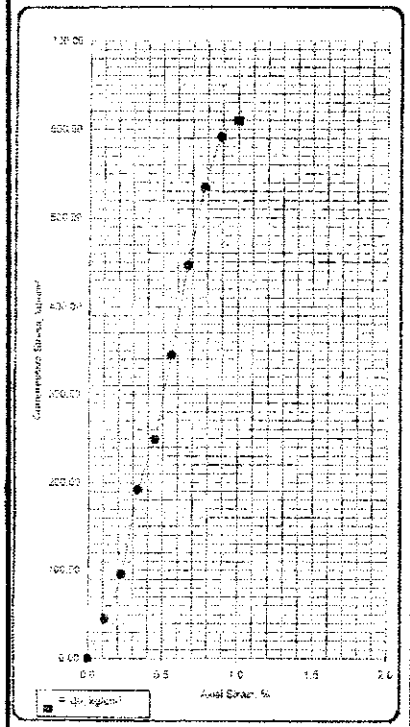
Remarks

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-UCT-18016
LOCATION		DATE TESTED	OCT.3-4, 2002

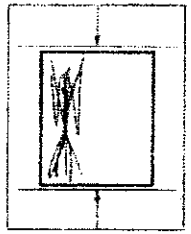
UNCONFINED COMPRESSION TEST

(ASTM-D2938)

BOREHOLE NO.	AD-8L	SAMPLE NO.	B	23.15-23.30	23.15-23.30
DESCRIPTION	SANDSTONE				



MODE OF FAILURE



MAXIMUM COMPRESSIVE STRESS,		
q_u	(kg/cm²)	689.20
WET UNIT WEIGHT	(g/cc)	2.81
SAMPLE CONDITION		
DIAMETER	(cm)	4.50
LENGTH	(cm)	9.00
L/D		2.00
AREA	(cm²)	15.90
VOLUME	(cm3)	143.14
Wo	(%)	1.33
WEIGHT OF SAMPLE	(g)	401.60
TYPE OF SAMPLE		Core
SHAPE		Cylindrical
STRAIN @ FAILURE	(%)	1.00
STRAIN RATE	(mm/min)	0.40

Remarks

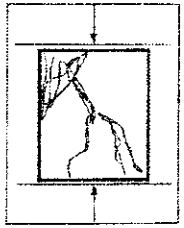
PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-UCT-17992
LOCATION		DATE TESTED	OCT.3-4, 2002

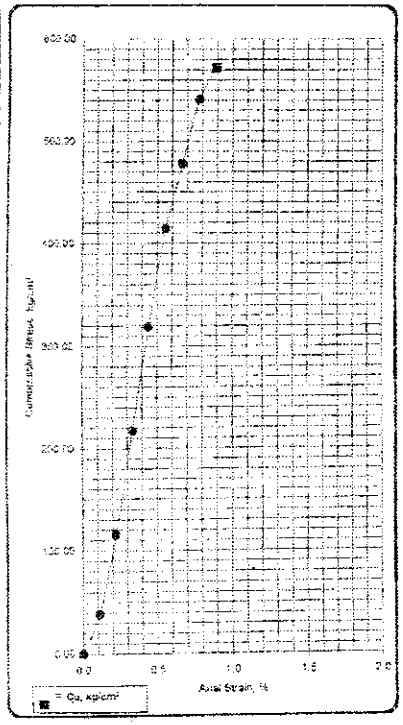
UNCONFINED COMPRESSION TEST

(ASTM D2938)

BOREHOLE NO.	TD-3	SAMPLE NO.	A	DEPTH (M)	100.00-100.20
DESCRIPTION	Conglo Merate				

MODE OF FAILURE





MAXIMUM COMPRESSIVE STRESS,		
q_u	(kg/cm²)	571.25
WET UNIT WEIGHT	(g/cc)	2.77
SAMPLE CONDITION		
DIAMETER	(cm)	4.50
LENGTH	(cm)	9.00
L/D		2.00
AREA	(cm²)	15.90
VOLUME	(cm3)	143.14
Wo	(%)	2.15
WEIGHT OF SAMPLE	(g)	396.50
TYPE OF SAMPLE		Core
SHAPE		Cylindrical
STRAIN @ FAILURE	(%)	0.89
STRAIN RATE	(mm/min)	0.40

Remarks:

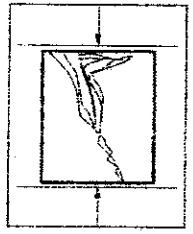
PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-UCT-17991
LOCATION		DATE TESTED	OCT.3-4, 2002

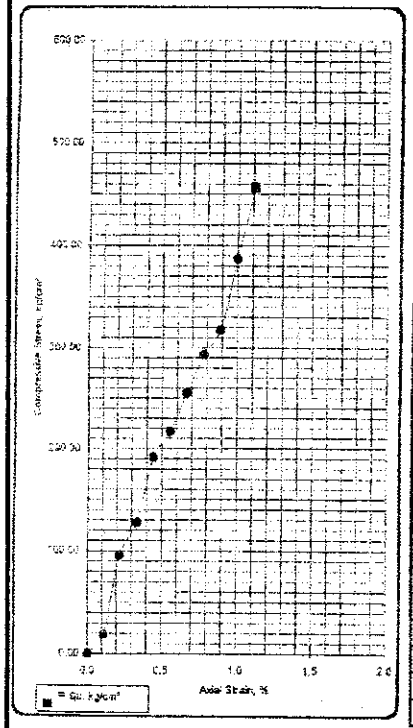
UNCONFINED COMPRESSION TEST

(ASTM-D2938)

BOREHOLE NO.	TD-3	SAMPLE NO.	B	DEPTH (M)	142.70-142.90
DESCRIPTION	Sand Stone				

MODE OF FAILURE





MAXIMUM COMPRESSIVE STRESS,		
q_u	(kg/cm²)	456.45
WET UNIT WEIGHT	(g/cc)	2.75
SAMPLE CONDITION		
DIAMETER	(cm)	4.50
LENGTH	(cm)	9.00
L/D		2.00
AREA	(cm²)	15.90
VOLUME	(cm3)	143.14
Wo	(%)	1.91
WEIGHT OF SAMPLE	(g)	393.50
TYPE OF SAMPLE		Core
SHAPE		Cylindrical
STRAIN @ FAILURE	(%)	1.11
STRAIN RATE	(mm/min)	0.40

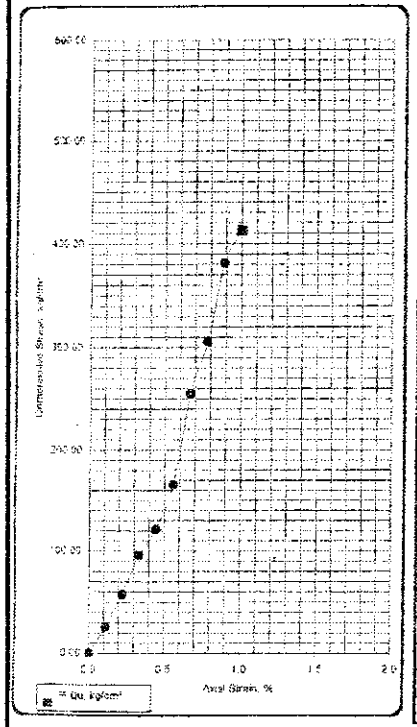
Remarks:

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO.	ADL02-UCT-17990
LOCATION		DATE TESTED	OCT.3-4, 2002

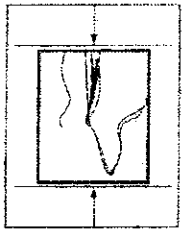
UNCONFINED COMPRESSION TEST

(ASTM D2938)

BOREHOLE NO.	TD-3	SAMPLE NO.	C	DEPTH (M)	154.60-154.80
DESCRIPTION	Shale				



MODE OF FAILURE



MAXIMUM COMPRESSIVE STRESS		
q_u	(kg/cm²)	412.54
WET UNIT WEIGHT	(g/cc)	2.71
SAMPLE CONDITION		-
DIAMETER	(cm)	4.50
LENGTH	(cm)	9.00
L/D		2.00
AREA	(cm²)	15.90
VOLUME	(cm3)	143.14
W_a	(%)	1.88
WEIGHT OF SAMPLE	(g)	387.99
TYPE OF SAMPLE		Core
SHAPE		Cylindrical
STRAIN @ FAILURE	(%)	1.60
STRAIN RATE	(mm/min)	0.40

Remarks:

Triaxial Compression Test

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	AD1/2-TRT-140826
LOCATION		DATE TESTED	OCT 7, 2002

TRIAXIAL ROCK TEST

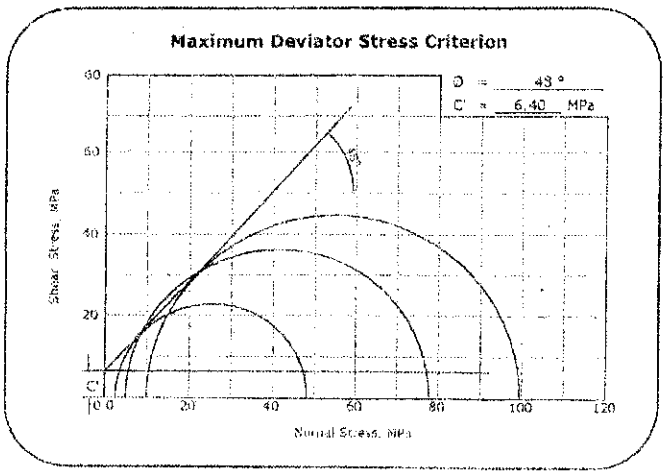
BOREHOLE NO	AD-1	SAMPLE NO	A	DEPTH	29.40-29.60	DESCRIPTION	Sand Stone

TEST NO. 1				TEST NO. 2				TEST NO. 3			
HEIGHT mm	73.00	DENSITY kN/m³	22.10	HEIGHT mm	73.00	DENSITY kN/m³	24.22	HEIGHT mm	24.32	DENSITY kN/m³	25.49
DIAMETER mm	36.50	AREA mm²	1046.30	DIAMETER mm	36.50	AREA mm²	1046.30	DIAMETER mm	36.50	AREA mm²	1046.30
SAMPLE WT. gm	160.00	VOLUME mm³	76.38	SAMPLE WT. gm	160.00	VOLUME mm³	76.38	SAMPLE Wt. gm	160.00	VOLUME mm³	76.38

VDR 0.01	P (Kn)	%STRAIN (%)	UCS q (Mpa)	VDR 0.01	P (Kn)	%STRAIN (%)	UCS q (Mpa)	VDR 0.01	P (Kn)	%STRAIN (%)	UCS q (Mpa)
10	9	0.11	8.61	10	11	0.11	8.20	10	15	0.11	8.46
20	15	0.21	8.46	20	21	0.21	11.84	20	25	0.21	14.10
30	33	0.32	18.61	30	30	0.32	16.91	30	43	0.32	24.25
40	52	0.42	29.33	40	46	0.42	25.96	40	58	0.42	32.71
50	62	0.53	34.97	50	71	0.53	40.04	50	76	0.53	42.86
60	78	0.63	43.99	60	81	0.63	45.68	60	98	0.63	55.27
70	81	0.74	45.68	70	94	0.74	53.01	70	112	0.74	63.17
80	72	0.84	40.61	80	103	0.84	58.12	80	135	0.84	76.14
90				90	129	0.95	72.75	90	150	0.95	84.57
100				100	105	1.05	59.22	100	148	1.05	83.47
120				120				120			
130				130				130			
140				140				140			
150				150				150			
160				160				160			
170				170				170			
180				180				180			
190				190				190			
200				200				200			

....STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA
AD - 1

TEST NUMBER	Q 3	Q 1 - Q 3	Q 1
I	2.50	45.68	48.18
II	5.00	73.25	78.76
III	10.00	89.47	99.47



PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO.	AD-02-INT-18025
LOCATION		DATE TESTED	OCT. 8, 2002

TRIAXIAL ROCK TEST

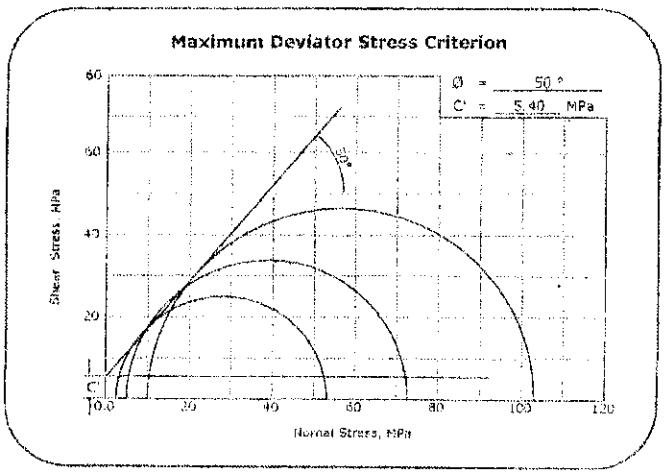
BOREHOLE NO.	AD-2	SAMPLE NO.	A	DEPTH	37.60-38.00	DESCRIPTION	Sand Stone

TEST NO. 1				TEST NO. 2				TEST NO. 3			
HEIGHT mm	73.00	DENSITY kN/m³	22.31	HEIGHT mm	73.00	DENSITY kN/m³	24.23	HEIGHT mm	24.32	DENSITY kN/m	25.51
DIAMETER mm	36.60	AREA mm²	1048.30	DIAMETER mm	36.58	AREA mm²	1048.30	DIAMETER mm	36.60	AREA mm²	1048.30
SAMPLE WT. gm	160.06	VOLUME mm³	76.38	SAMPLE WT. gm	180.00	VOLUME mm³	76.38	SAMPLE WT. gm	180.00	VOLUME mm³	76.38

VDR 0.01	P (Kn)	STRAIN (%)	UCS q (Mpa)	VDR 0.01	P (Kn)	STRAIN (%)	UCS q (Mpa)	VDR 0.01	P (Kn)	STRAIN (%)	UCS q (Mpa)
10	8	0.11	4.51	10	11	0.11	9.20	10	15	0.11	6.46
20	16	0.21	9.02	20	22	0.21	12.41	20	25	0.21	14.18
30	35	0.32	19.74	30	33	0.32	18.81	30	43	0.32	24.25
40	52	0.42	29.33	40	46	0.42	25.94	40	58	0.42	32.71
50	63	0.53	35.53	50	65	0.53	36.65	50	76	0.53	42.86
60	78	0.63	43.99	60	86	0.63	48.50	60	92	0.63	51.89
70	90	0.74	50.76	70	98	0.74	55.27	70	105	0.74	59.22
80	81	0.84	45.68	80	116	0.84	65.42	80	130	0.84	73.37
90				90	120	0.95	67.68	90	165	0.95	93.06
100				100	105	1.05	59.22	100	149	1.05	84.03
120				120				120			
130				130				130			
140				140				140			
150				150				150			
160				160				160			
170				170				170			
180				180				180			
190				190				190			
200				200				200			

....STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA
AD - 2A

TEST NUMBER	Q 3	Q 1 - Q 3	Q 1
I	2.50	50.76	53.26
II	5.00	67.68	72.68
III	10.00	93.06	103.06



PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO.	AD1/02-TRT-16020
LOCATION		DATE TESTED	OCT. 3, 2002

TRIAXIAL ROCK TEST

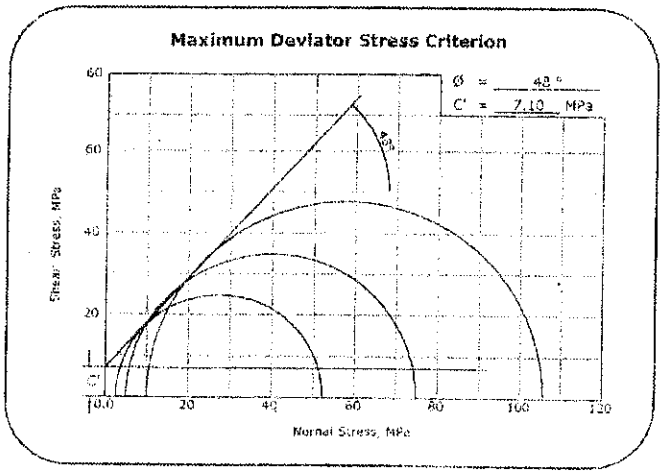
BOREHOLE NO.	AD-2	SAMPLE NO.	8	DEPTH	55.20-55.40	DESCRIPTION	Conglo Herate

TEST NO. 1				TEST NO. 2				TEST NO. 3			
HEIGHT mm	73.00	DENSITY kN/m³	23.19	HEIGHT mm	73.00	DENSITY kN/m³	24.49	HEIGHT mm	73.00	DENSITY kN/m³	25.08
DIAMETER mm	36.50	AREA mm²	1046.30	DIAMETER mm	36.50	AREA mm²	1046.30	DIAMETER mm	36.50	AREA mm²	1046.30
SAMPLE WT. gm	180.00	VOLUME mm³	76.38	SAMPLE WT. gm	180.00	VOLUME mm³	76.38	SAMPLE WT. gm	180.00	VOLUME mm³	76.38

VDR 0.01	P (Kn)	STRAIN (%)	UCS q (Mpa)	VDR 0.01	P (Kn)	STRAIN (%)	UCS q (Mpa)	VDR 0.01	P (Kn)	STRAIN (%)	UCS q (Mpa)
10	8	0.14	7.65	10	8	0.14	7.65	10	10	0.14	5.64
20	16	0.27	15.29	20	16	0.27	15.29	20	22	0.27	21.03
30	24	0.41	22.94	30	20	0.41	19.11	30	30	0.41	28.67
40	36	0.55	30.58	40	40	0.55	38.23	40	42	0.55	40.14
50	44	0.68	42.05	50	54	0.68	51.61	50	52	0.68	49.70
60	52	0.82	49.70	60	64	0.82	61.17	60	60	0.82	57.34
70	40	0.96	38.23	70	72	0.96	69.77	70	72	0.96	68.81
80				80	68	1.10	64.99	80	96	1.10	80.84
90				90				90	100	1.23	95.57
100				100				100	90	1.37	86.01
120				120				120			
130				130				130			
140				140				140			
150				150				150			
160				160				160			
170				170				170			
180				180				180			
190				190				190			
200				200				200			

....STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA
AD - 28

TEST NUMBER	Q 3	Q 1 - Q 3	Q 1
I	2.50	49.78	52.28
II	5.00	69.77	74.77
III	10.00	95.57	105.57



PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO.	ADUG-TRT-18020
LOCATION		DATE TESTED	OCT. 3, 2002

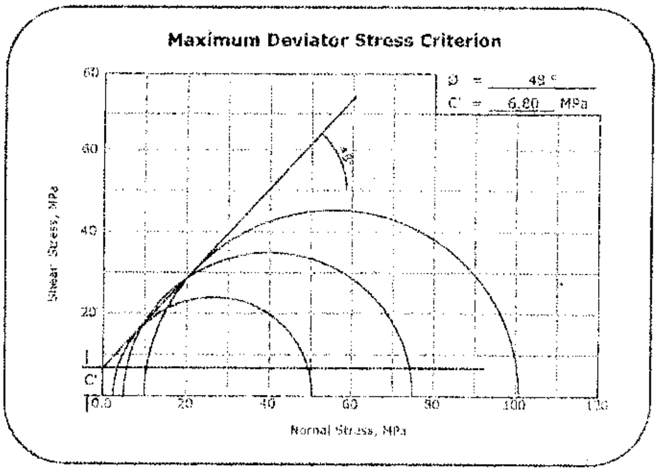
TRIAXIAL ROCK TEST

BOREHOLE NO.	AD-3	SAMPLE NO.	B	DEPTH	42.00-42.20	DESCRIPTION	Sand Stone

TEST NO. 1				TEST NO. 2				TEST NO. 3			
HEIGHT mm	73.00	DENSITY kN/m³	23.90	HEIGHT mm	73.00	DENSITY kN/m³	22.50	HEIGHT mm	73.00	DENSITY kN/m³	25.60
DIAMETER mm	36.50	AREA mm²	1046.30	DIAMETER mm	36.50	AREA mm²	1046.30	DIAMETER mm	36.50	AREA mm²	1046.30
SAMPLE WT. gm	180.00	VOLUME mm³	76.38	SAMPLE WT. gm	180.00	VOLUME mm³	76.38	SAMPLE WT. gm	180.00	VOLUME mm³	76.38
VDR 0.01	P (Kn)	STRAIN (%)	UCS q (Mpa)	VDR 0.01	P (Kn)	STRAIN (%)	UCS q (Mpa)	VDR 0.01	P (Kn)	STRAIN (%)	UCS q (Mpa)
10	8	0.11	4.51	10	10	0.11	5.64	10	15	0.11	8.46
20	20	0.21	11.28	20	22	0.21	12.41	20	34	0.21	18.06
30	45	0.32	25.38	30	34	0.32	19.18	30	48	0.32	27.07
40	60	0.42	33.84	40	46	0.42	25.94	40	60	0.42	33.84
50	72	0.53	40.81	50	58	0.53	32.71	50	74	0.53	41.73
60	80	0.63	45.12	60	70	0.63	39.48	60	86	0.63	48.50
70	85	0.74	47.94	70	80	0.74	45.12	70	100	0.74	56.40
80	75	0.84	42.30	80	90	0.84	50.76	80	124	0.84	69.93
90				90	104	0.95	58.65	90	140	0.95	78.96
100				100	115	1.05	64.86	100	152	1.05	85.73
120				120	106	1.26	60.01	120	161	1.26	90.80
130				130				130	154	1.37	86.85
140				140				140			
150				150				150			
160				160				160			
170				170				170			
180				180				180			
190				190				190			
200				200				200			

....STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA
AD - 3

TEST NUMBER	Q 3	Q 1 - Q 3	Q 1
I	2.50	47.94	50.44
II	5.00	64.86	69.86
III	10.00	90.80	100.80



PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO.	AD1-02-TRT-16024
LOCATION		DATE TESTED	OCT. 5, 2002

TRIAXIAL ROCK TEST

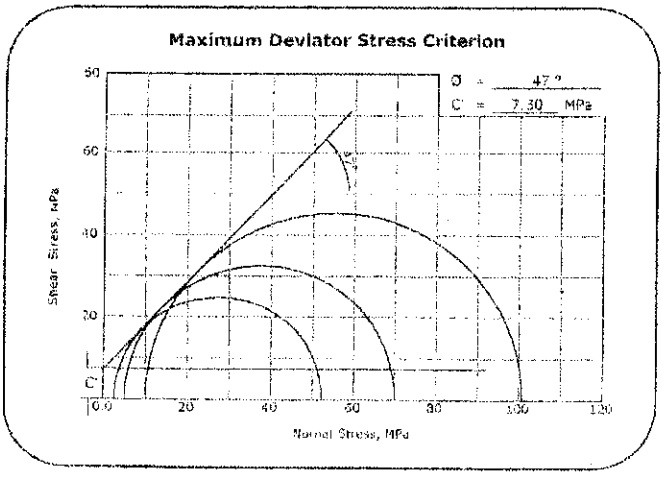
BOREHOLE NO.	AD-4	SAMPLE NO.	B	DEPTH	49.00-49.00	DESCRIPTION	Conglo Nerate

TEST NO. 1				TEST NO. 2				TEST NO. 3			
HEIGHT mm	73.00	DENSITY kN/m³	27.32	HEIGHT mm	73.00	DENSITY kN/m³	24.37	HEIGHT mm	73.00	DENSITY kN/m³	25.50
DIAMETER mm	36.50	AREA mm²	1046.30	DIAMETER mm	36.50	AREA mm²	1046.30	DIAMETER mm	36.50	AREA mm²	1046.30
SAMPLE WT. gm	150.00	VOLUME mm³	76.38	SAMPLE WT. gm	150.00	VOLUME mm³	76.38	SAMPLE WT. gm	150.00	VOLUME mm³	76.38

VDR 0.01	P (Kn)	STRAIN (%)	UCS q (Mpa)	VDR 0.01	P (Kn)	STRAIN (%)	UCS q (Mpa)	VDR 0.01	P (Kn)	STRAIN (%)	UCS q (Mpa)
10	5	0.11	4.51	10	10	0.11	5.84	10	13	0.11	7.33
20	16	0.21	9.02	20	22	0.21	12.41	20	24	0.21	13.94
30	33	0.32	19.74	30	33	0.32	18.81	30	38	0.42	21.43
40	50	0.42	28.20	40	50	0.42	28.20	40	52	0.42	29.33
50	61	0.53	34.40	50	65	0.53	36.66	50	72	0.53	40.61
60	75	0.63	42.30	60	80	0.63	45.12	60	90	0.63	50.76
70	89	0.74	50.19	70	94	0.74	53.01	70	105	0.74	59.22
80	79	0.84	44.56	80	118	0.84	64.86	80	126	0.84	71.06
90				90	100	0.95	56.48	90	161	0.95	90.80
100				100				100	149	1.05	84.03
110				110				110			
120				120				120			
130				130				130			
140				140				140			
150				150				150			
160				160				160			
170				170				170			
180				180				180			
190				190				190			
200				200				200			

....STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA
AD - 4

TEST NUMBER	Q 3	Q 1 - Q 3	Q 1
I	3.90	30.19	52.19
II	5.00	64.86	69.86
III	10.00	90.40	100.40



PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO.	AD1/92-TRT-18072
LOCATION		DATE TESTED	OCT. 4, 2002

TRIAXIAL ROCK TEST

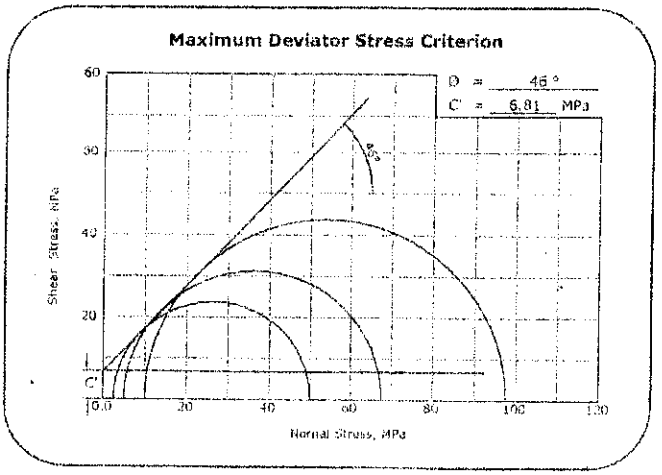
BOREHOLE NO.	AD-5	SAMPLE NO.	B	DEPTH	45.40-45.60	DESCRIPTION	Sand Stone

TEST NO. 1				TEST NO. 2				TEST NO. 3			
HEIGHT mm	73.00	DENSITY kN/m³	23.85	HEIGHT mm	73.00	DENSITY kN/m³	22.50	HEIGHT mm	73.00	DENSITY kN/m³	25.50
DIAMETER mm	36.50	AREA mm²	1046.30	DIAMETER mm	36.50	AREA mm²	1046.30	DIAMETER mm	36.50	AREA mm²	1046.30
SAMPLE WT. gm	180.00	VOLUME mm³	76.38	SAMPLE WT. gm	180.00	VOLUME mm³	76.38	SAMPLE WT. gm	180.00	VOLUME mm³	76.38

VDR 0.01	P (Kn)	STRAIN (%)	UCS q (Mpa)	VDR 0.01	P (Kn)	STRAIN (%)	UCS q (Mpa)	VDR 0.01	P (Kn)	STRAIN (%)	UCS q (Mpa)
10	8	0.11	4.51	10	10	0.11	5.64	10	14	0.11	7.90
20	15	0.21	8.46	20	22	0.21	12.41	20	31	0.21	17.48
30	35	0.32	19.74	30	32	0.32	18.05	30	45	0.32	25.38
40	57	0.42	32.16	40	43	0.42	24.25	40	58	0.42	32.71
50	68	0.53	38.36	50	54	0.53	30.46	50	72	0.53	40.61
60	65	0.61	36.66	60	68	0.61	38.35	60	85	0.61	47.94
70	75	0.74	42.30	70	75	0.74	42.30	70	95	0.74	53.58
80	85	0.84	47.94	80	86	0.84	48.50	80	115	0.84	64.86
90	78	0.95	43.98	90	100	0.95	56.40	90	135	0.95	76.70
100				100	111	1.05	62.60	100	149	1.05	84.03
110				110	102	1.26	57.53	110	152	1.26	85.73
120				120				120	140	1.37	78.98
130				130				130			
140				140				140			
150				150				150			
160				160				160			
170				170				170			
180				180				180			
190				190				190			
200				200				200			

....STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA
AD - 5

TEST NUMBER	Q 3	Q 1 - Q 3	Q 1
I	3.50	47.94	50.44
II	5.00	62.60	67.60
III	10.00	83.73	93.73



PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO.	JOL02-TRD-18023
LOCATION		DATE TESTED	OCT. 4, 2002

TRIAXIAL ROCK TEST

BOREHOLE NO.	AD 6	SAMPLE NO.	B	DEPTH	42.30-42.50	DESCRIPTION	Sand Stone

TEST NO. 1				TEST NO. 2				TEST NO. 3			
HEIGHT mm	73.20	DENSITY kN/m³	22.30	HEIGHT mm	73.00	DENSITY kN/m³	24.30	HEIGHT mm	73.00	DENSITY kN/m³	23.85
DIAMETER mm	36.50	AREA mm²	1046.30	DIAMETER mm	36.50	AREA mm²	1046.30	DIAMETER mm	36.50	AREA mm²	1046.30
SAMPLE WT. gm	180.00	VOLUME mm³	76.38	SAMPLE WT. gm	180.60	VOLUME mm³	76.38	SAMPLE WT. gm	180.00	VOLUME mm³	76.38
VDR 0.01	P (Kn)	STRAIN (%)	UCS q (Mpa)	VDR 0.01	P (Kn)	STRAIN (%)	UCS q (Mpa)	VDR 0.01	P (Kn)	STRAIN (%)	UCS q (Mpa)
10	8	0.11	4.91	10	10	0.11	5.64	10	12	0.11	6.77
20	16	0.21	8.46	20	22	0.21	12.41	20	24	0.21	13.54
30	33	0.32	18.61	30	32	0.32	16.95	30	36	0.32	20.30
40	49	0.42	27.64	40	49	0.42	27.64	40	49	0.42	27.64
50	61	0.53	34.40	50	59	0.53	33.84	50	69	0.53	38.91
60	75	0.63	42.30	60	78	0.63	43.90	60	85	0.63	47.94
70	86	0.74	48.50	70	90	0.74	50.76	70	100	0.74	56.40
80	80	0.84	45.12	80	101	0.84	56.95	80	122	0.84	68.81
90				90	98	0.95	55.55	90	148	0.95	83.47
100				100				100	122	1.05	68.81
120				120				120			
130				130				130			
140				140				140			
150				150				150			
160				160				160			
170				170				170			
180				180				180			
190				190				190			
200				200				200			

....STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA
AD - 6

TEST NUMBER	Q 3	Q 1 - Q 3	Q 1
I	2.50	48.80	51.30
II	8.00	96.96	61.90
III	10.00	83.47	93.47