

RECORD OF WATER PRESSURE TEST

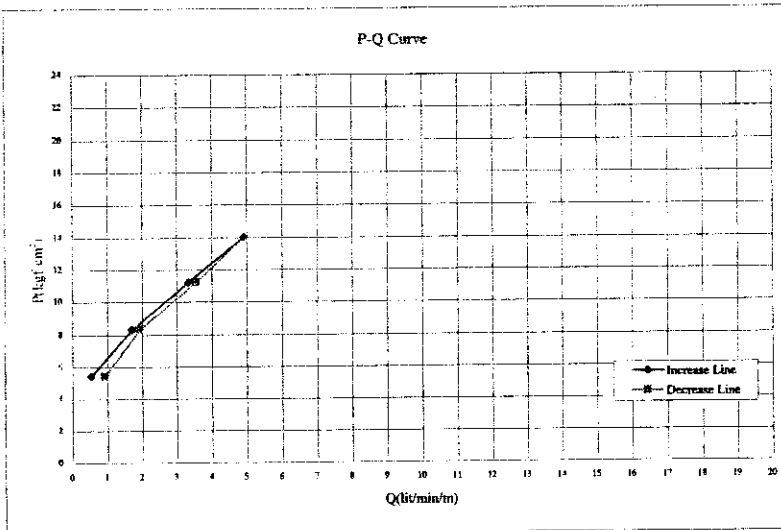
RD TD-4, 100-1100

Project	WRDMM	Bore Hole No.	BH TD-4	Date	9/28/2002
Depth (m)	( 100.00 - 110.00 )	Test Length (m)	5.00	Hole Radius (cm)	3.50
G.W.L. before day's work (m)	55.10	Pressure gauge height (m) : C/100	0.50		
G.W.L. before testing (m) : B/100	43.60	Packer NQ size (cm)	7.00	NQ	
Length (m) and Diameter (cm) of Rod	107.00 m	2.54	cm ( $\phi$ )		
Length (m) and Diameter (cm) of Hose	15.00 m	2.54	cm ( $\phi$ )		

Pressure gauge Reading : A/1000 (kgf/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm)			Effective Pressure : P (kgf/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	2	3	3	2	3	2.63	0.53	5410	5410	0	5.41
4.0	8	9	9	8	9	8.50	1.70	8310	8410	100	8.31
7.0	16	17	17	16	17	16.63	3.33	11200	11410	210	11.20
10.0	24	25	25	24	25	24.63	4.93	14030	14410	380	14.03
7.0	17	18	18	17	18	17.75	3.55	11200	11410	210	11.20
4.0	9	10	10	9	10	9.63	1.93	8310	8410	100	8.31
1.0	4	5	5	4	5	4.63	0.93	5410	5410	0	5.41

Lu= - Pc= 8.10  
Lu= 2.3



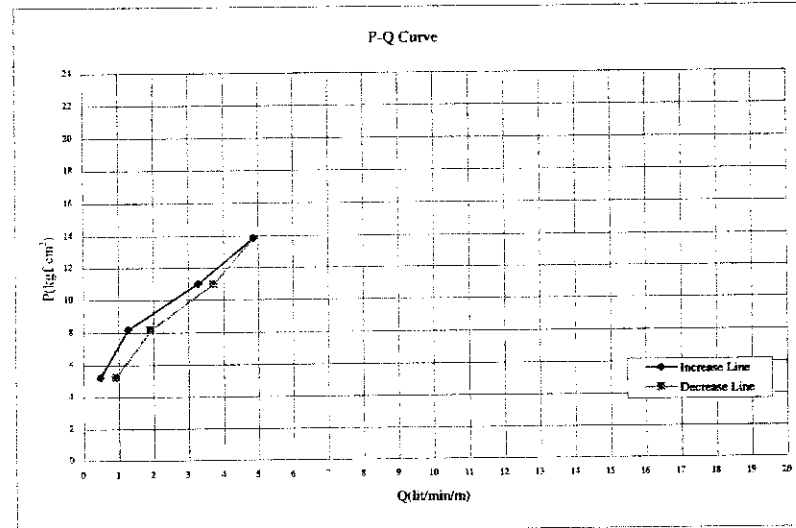
RD TD-4, 100-1150

Project	WRDMM	Bore Hole No.	BH TD-4	Date	9/28/2002
Depth (m)	( 110.00 - 115.00 )	Test Length (m)	5.00	Hole Radius (cm)	3.50
G.W.L. before day's work (m)	55.20	Pressure gauge height (m) : C/100	0.50		
G.W.L. before testing (m) : B/100	41.80	Packer NQ size (cm)	7.00	NQ	
Length (m) and Diameter (cm) of Rod	112.00 m	2.54	cm ( $\phi$ )		
Length (m) and Diameter (cm) of Hose	15.00 m	2.54	cm ( $\phi$ )		

Pressure gauge Reading : A/1000 (kgf/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm)			Effective Pressure : P (kgf/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	3	2	2	3	2	3.38	0.48	5230	5230	0	5.23
4.0	7	6	6	7	6	6.38	1.28	8170	8230	60	8.17
7.0	17	16	16	17	16	16.38	3.28	11000	11230	230	11.00
10.0	25	24	24	25	24	24.38	4.88	13850	14230	380	13.85
7.0	18	19	19	18	19	18.63	3.73	10970	11230	260	10.97
4.0	9	10	10	9	10	9.63	1.93	8150	8230	80	8.15
1.0	4	5	5	4	5	4.63	0.93	5230	5230	0	5.23

Lu= - Pc= 8.10  
Lu= 1.7



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RECORD OF WATER PRESSURE TEST

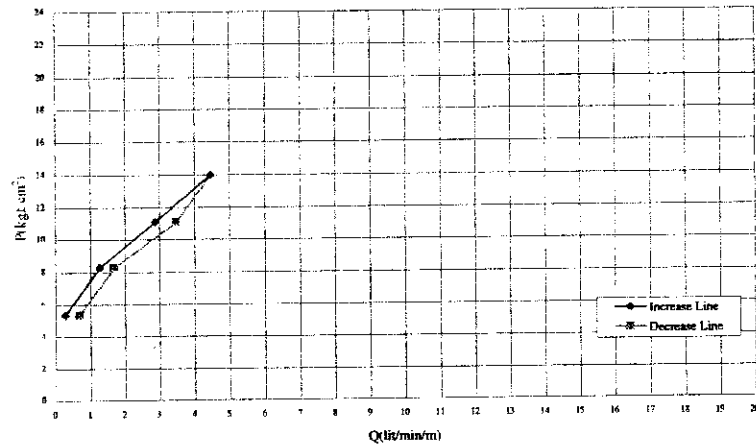
WRD TD-4, 125-125

Project	WRDMM	Bore Hole No.	BH TD-4	Date	9/28/2002
Depth (m)	( 115.00 - 125.00 )	Test Length (m)	5.00	Hole Radius (cm)	3.50
G.W.L. before day's work (m)	55.10	Pressure gauge height (m) : C/100	0.50		
G.W.L. before testing (m) : B/100	42.80	Packer NQ size (cm)	7.00	NQ	
Length (m) and Diameter (cm) of Rod	116.00 m	2.54	cm ( φ )		
Length (m) and Diameter (cm) of Hose	15.00 m	2.54	cm ( φ )		

Pressure gauge Reading : A/1000 (kgf/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm)			Effective Pressure : P (kgf/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	2	1	1	2	1	1.38	0.28	5330	5330	0	5.33
4.0	7	6	6	7	6	6.38	1.28	8270	8330	60	8.27
7.0	15	14	14	15	14	14.38	2.88	11110	11330	220	11.11
10.0	22	22	22	23	22	22.38	4.48	13970	14330	360	13.97
7.0	18	17	17	18	17	17.38	3.48	11070	11330	260	11.07
4.0	9	8	8	9	8	8.38	1.68	8250	8330	80	8.25
1.0	4	3	3	4	3	3.38	0.68	5330	5330	0	5.33

Lu=	-	Pc=	8.10
Lu=	1.8		

P-Q Curve



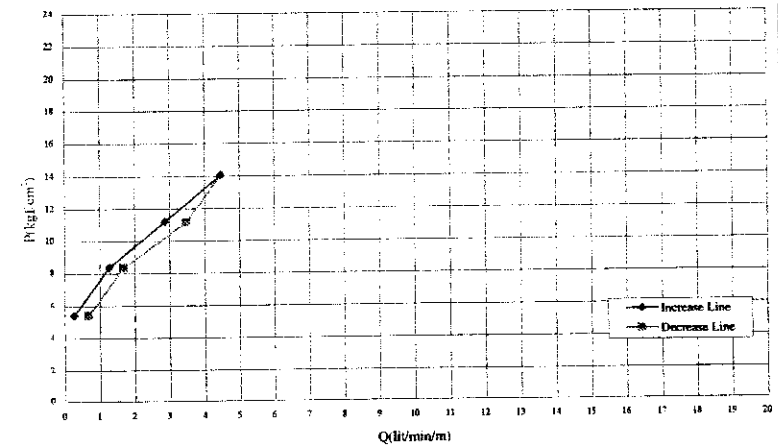
WRD TD-4, 125-125

Project	WRDMM	Bore Hole No.	BH TD-4	Date	9/29/2002
Depth (m)	( 124.00 - 125.00 )	Test Length (m)	5.00	Hole Radius (cm)	3.50
G.W.L. before day's work (m)	55.10	Pressure gauge height (m) : C/100	0.50		
G.W.L. before testing (m) : B/100	43.60	Packer NQ size (cm)	7.00	NQ	
Length (m) and Diameter (cm) of Rod	122.00 m	2.54	cm ( φ )		
Length (m) and Diameter (cm) of Hose	15.00 m	2.54	cm ( φ )		

Pressure gauge Reading : A/1000 (kgf/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm)			Effective Pressure : P (kgf/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	2	1	1	2	1	1.38	0.28	5410	5410	0	5.41
4.0	7	6	6	7	6	6.38	1.28	8350	8410	60	8.35
7.0	15	14	14	15	14	14.38	2.88	11210	11410	200	11.21
10.0	23	22	22	23	22	22.38	4.48	14040	14410	370	14.04
7.0	18	17	17	18	17	17.38	3.48	11150	11410	260	11.15
4.0	9	8	8	9	8	8.38	1.68	8330	8410	80	8.33
1.0	4	3	3	4	3	3.38	0.68	5410	5410	0	5.41

Lu=	-	Pc=	8.10
Lu=	1.8		

P-Q Curve



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RECORD OF WATER PRESSURE TEST

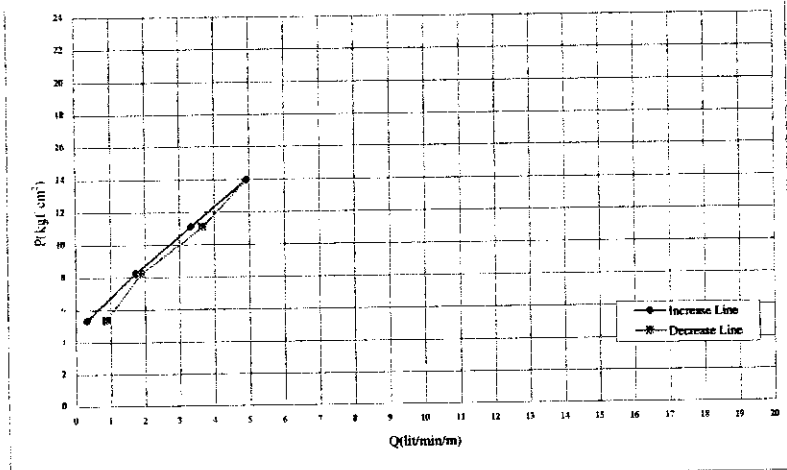
BH TD-4 125-1700

Project	WRDMM	Bore Hole No.	BH TD-4	Date	9/29/2002
Depth (m)	( 122.00 - 126.00 )	Test Length (m)	5.00	Hole Radius (cm)	2.50
G.W.L. before day's work (m)	55.00	Pressure gauge height (m) : C/100	0.50		
G.W.L. before testing (m) : B/100	42.80	Packer NQ size (cm)	7.00	NQ	
Length (m) and Diameter (cm) of Rod	127.00 m	2.54	cm (φ)		
Length (m) and Diameter (cm) of Hose	15.00 m	2.54	cm (φ)		

Pressure gauge Reading : A/1000 (kg/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm) H=A+B+C-Hf			Effective Pressure : P (kg/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	1	2	2	1	2	1.63	0.33	5330	5330	0	5.33
	2	1	2	2	1						
4.0	8	9	9	8	9	8.63	1.73	8260	8330	70	8.26
	9	8	9	9	8						
7.0	16	17	17	16	17	16.63	3.33	11100	11330	230	11.10
	17	16	17	17	16						
10.0	24	25	25	24	25	24.63	4.93	13960	14330	370	13.96
	25	24	25	25	24						
7.0	19	18	18	19	18	18.38	3.68	11070	11330	260	11.07
	18	19	18	18	19						
4.0	10	9	9	10	9	9.38	1.88	8210	8330	120	8.21
	9	10	9	9	10						
1.0	5	4	4	5	4	4.38	0.88	5330	5330	0	5.33
	4	5	4	4	5						

Lu= - Pc= 8.10  
Lu'= 2.5

P-Q Curve



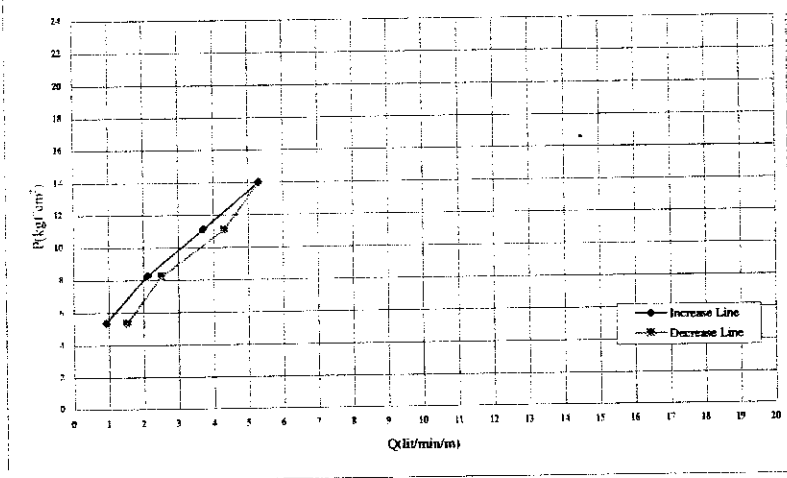
BH TD-4 125-1700

Project	WRDMM	Bore Hole No.	BH TD-4	Date	9/30/2002
Depth (m)	( 120.00 - 125.00 )	Test Length (m)	5.00	Hole Radius (cm)	3.50
G.W.L. before day's work (m)	54.90	Pressure gauge height (m) : C/100	0.50		
G.W.L. before testing (m) : B/100	43.60	Packer NQ size (cm)	7.00	NQ	
Length (m) and Diameter (cm) of Rod	132.00 m	2.54	cm (φ)		
Length (m) and Diameter (cm) of Hose	15.00 m	2.54	cm (φ)		

Pressure gauge Reading : A/1000 (kg/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm) H=A+B+C-Hf			Effective Pressure : P (kg/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	4	5	5	4	5	4.63	0.93	5350	5410	60	5.35
	5	4	5	5	4						
4.0	10	11	11	10	11	10.63	2.13	8270	8410	140	8.27
	11	10	11	11	10						
7.0	18	19	19	18	19	18.63	3.73	11130	11410	280	11.13
	19	18	19	19	18						
10.0	26	27	27	26	27	26.63	5.33	14030	14410	380	14.03
	27	26	27	27	26						
7.0	21	22	22	21	22	21.63	4.33	11110	11410	300	11.11
	22	21	22	22	21						
4.0	12	13	13	12	13	12.63	2.53	8250	8410	160	8.25
	13	12	13	13	12						
1.0	7	8	8	7	8	7.63	1.53	5330	5410	80	5.33
	8	7	8	8	7						

Lu= - Pc= 8.10  
Lu'= 2.8

P-Q Curve



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RECORD OF WATER PRESSURE TEST

MS TD-4 17-1400

Project	WRDMM	Bore Hole No.	BH TD-4	Date	10/3/2002
Depth (m)	( 138.00 - 140.00 )	Test Length (m)	5.00	Hole Radius (cm)	3.50
G.W.L. before day's work (m)	54.80	Pressure gauge height (m) : C/100	0.50		
G.W.L. before testing (m) : B/100	42.70	Packer NQ size (cm)	7.00	NQ	
Length (m) and Diameter (cm) of Rod	137.00 m	2.54	cm ( $\phi$ )		
Length (m) and Diameter (cm) of Hose	15.00 m	2.54	cm ( $\phi$ )		

Pressure gauge Reading : A/1000 (kgf/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm)			Effective Pressure : P (kgf/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	5	6	6	5	6	5.63	1.13	5360	5320	60	5.26
4.0	11	12	12	11	12	11.63	2.33	8200	8320	120	8.20
7.0	19	20	20	19	20	19.63	3.93	11040	11320	280	11.04
10.0	27	28	28	27	28	27.63	5.53	13870	14320	450	13.87
7.0	22	23	23	22	23	22.63	4.53	11010	11320	310	11.01
4.0	13	14	14	13	14	13.63	2.73	8160	8320	160	8.16
1.0	8	9	9	8	9	8.63	1.73	5240	5320	80	5.24

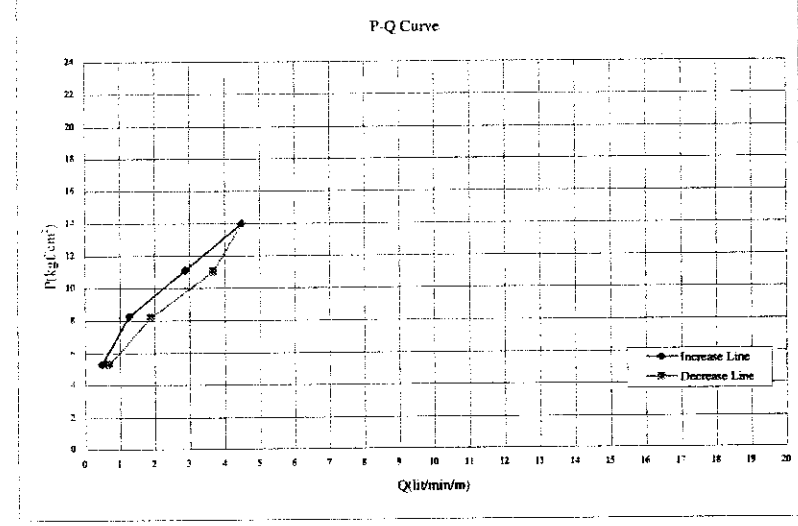
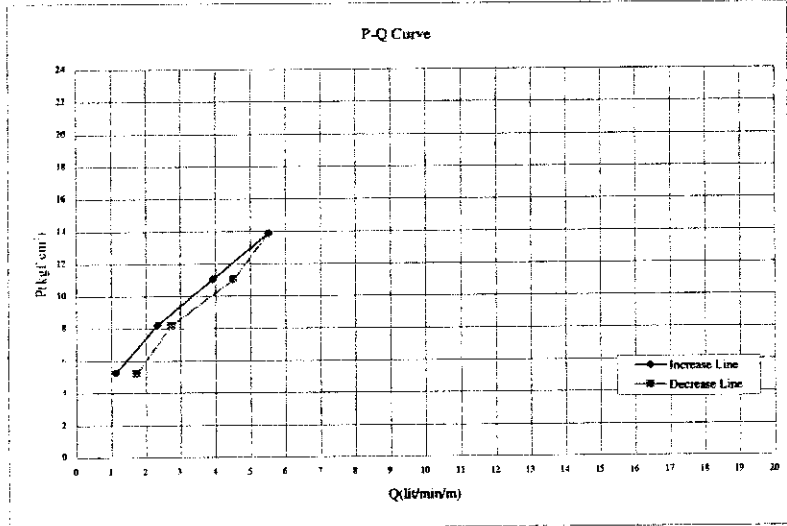
L<sub>up</sub> = - P<sub>ca</sub> = 8.10  
L<sub>down</sub> = 3.0

MS TD-4 140-1400

Project	WRDMM	Bore Hole No.	BH TD-4	Date	10/3/2002
Depth (m)	( 140.00 - 145.00 )	Test Length (m)	5.00	Hole Radius (cm)	3.50
G.W.L. before day's work (m)	54.90	Pressure gauge height (m) : C/100	0.50		
G.W.L. before testing (m) : B/100	42.60	Packer NQ size (cm)	7.00	NQ	
Length (m) and Diameter (cm) of Rod	142.00 m	2.54	cm ( $\phi$ )		
Length (m) and Diameter (cm) of Hose	15.00 m	2.54	cm ( $\phi$ )		

Pressure gauge Reading : A/1000 (kgf/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm)			Effective Pressure : P (kgf/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	3	2	2	3	2	2.38	0.48	5210	5310	0	5.31
4.0	7	6	6	7	6	6.38	1.28	8250	8310	60	8.25
7.0	15	14	14	15	14	14.38	2.88	11130	11310	200	11.11
10.0	22	23	23	22	23	22.50	4.50	13980	14310	330	13.98
7.0	19	18	18	19	18	18.28	3.68	11030	11310	280	11.03
4.0	9	10	10	9	10	9.50	1.90	8190	8310	120	8.19
1.0	4	3	3	4	3	3.38	0.68	5210	5310	0	5.31

L<sub>up</sub> = - P<sub>ca</sub> = 8.10  
L<sub>down</sub> = 1.8



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RECORD OF WATER PRESSURE TEST

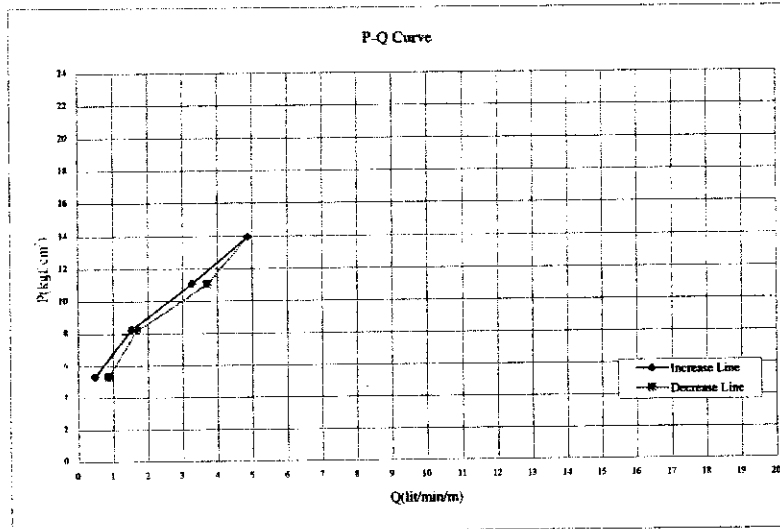
BH 33-4, 145-156m

Project	WRDMM	Bore Hole No.	BH TD-4	Date	10/3/2002
Depth (m)	( 145.00 - 156.00 )	Test Length (m)	5.00	Hole Radius (cm)	3.50
G.W.L. before day's work (m)	55.00	Pressure gauge height (m) : C/100	0.50		
G.W.L. before testing (m) : B/100	42.65	Packer NQ size (cm)	7.00	NQ	
Length (m) and Diameter (cm) of Rod	147.00 m	2.54	cm ( $\phi$ )		
Length (m) and Diameter (cm) of Hose	15.00 m	2.54	cm ( $\phi$ )		

Pressure gauge Reading : A/1000 (kg/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm)			Effective Pressure : P (kg/cm <sup>2</sup> )
	1	2	3	4	5			H H=A+B+C-Hf	A+B+C	Hf	
1.0	6	7	8	9	10	2.38	0.48	5315	5315	0	5.32
4.0	3	2	2	3	2	7.63	1.53	8245	8315	70	8.25
7.0	2	3	2	2	3	16.38	3.28	11065	11315	250	11.07
10.0	7	8	8	7	8	24.38	4.88	13935	14315	380	13.94
7.0	17	16	16	17	16	18.63	3.73	11035	11315	280	11.04
4.0	16	17	16	16	17	8.38	1.68	8185	8315	130	8.19
1.0	25	24	24	25	25	4.38	0.88	5315	5315	0	5.32
	24	24	25	24	24						
	18	19	19	18	19						
	19	18	19	19	18						
	9	8	8	9	8						
	8	9	8	8	9						
	5	4	4	5	4						
	4	5	4	4	5						

L <sub>u</sub> =	-	P <sub>0</sub> =	8.10
L <sub>u</sub> '=	2.2		

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RECORD OF WATER PRESSURE TEST

WH TD-5, 5.8-10.0m

Project	WRDMM	Bore Hole No.	BH TD-5	Date	9/8/2002
Depth (m)	( 5.00 - 10.00 )	Test Length (m)	5.00	Hole Radius (cm)	3.50
G.W.L. before day's work (m)	8.20	Pressure gauge height (m) : C/100	0.50		
G.W.L. before testing (m) : B/100	3.80	Packer NQ size (cm)	7.00		
Length (m) and Diameter (cm) of Rod	6.00 m	2.54 cm (φ)			
Length (m) and Diameter (cm) of Hose	10.00 m	2.54 cm (φ)			

Pressure gauge Reading : A/1000 (kgf/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm)			Effective Pressure : P (kgf/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	1	1	0	1	1	0.75	0.15	1430	1430	0	1.43
4.0	3	4	4	3	4	3.63	0.73	4430	4430	0	4.43
7.0	5	6	6	5	6	5.63	1.13	7430	7430	0	7.43
4.0	4	4	5	5	4	4.50	0.90	4430	4430	0	4.43
1.0	2	3	3	2	3	2.63	0.53	1430	1430	0	1.43

Lu= - Pc= -  
Lu= 1.8

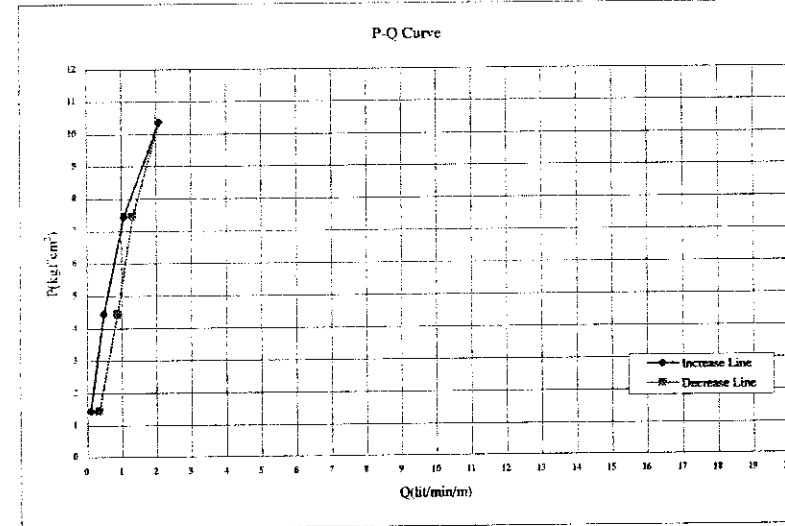
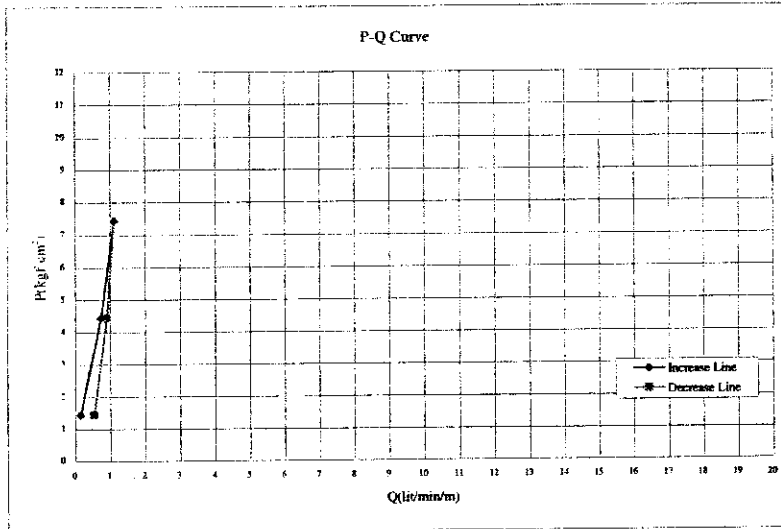
WH TD-5, 14.4-15.0m

Project	WRDMM	Bore Hole No.	BH TD-5	Date	9/8/2002
Depth (m)	( 10.00 - 15.00 )	Test Length (m)	5.00	Hole Radius (cm)	3.50
G.W.L. before day's work (m)	12.10	Pressure gauge height (m) : C/100	0.30		
G.W.L. before testing (m) : B/100	4.20	Packer NQ size (cm)	7.00		
Length (m) and Diameter (cm) of Rod	11.00 m	2.54 cm (φ)			
Length (m) and Diameter (cm) of Hose	10.00 m	2.54 cm (φ)			

Pressure gauge Reading : A/1000 (kgf/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm)			Effective Pressure : P (kgf/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	1	0	1	1	0	0.50	0.10	1450	1450	0	1.45
4.0	3	2	2	3	2	2.38	0.48	4450	4450	0	4.45
7.0	5	6	5	6	5	5.38	1.08	7450	7450	0	7.45
10.0	10	11	10	10	11	10.50	2.10	10370	10450	80	10.37
7.0	6	7	7	6	7	6.63	1.33	7450	7450	0	7.45
4.0	4	5	4	4	5	4.38	0.88	4450	4450	0	4.45
1.0	1	2	2	2	1	1.75	0.35	1450	1450	0	1.45

Lu= - Pc= 6.30  
Lu= 1.2

G2-99



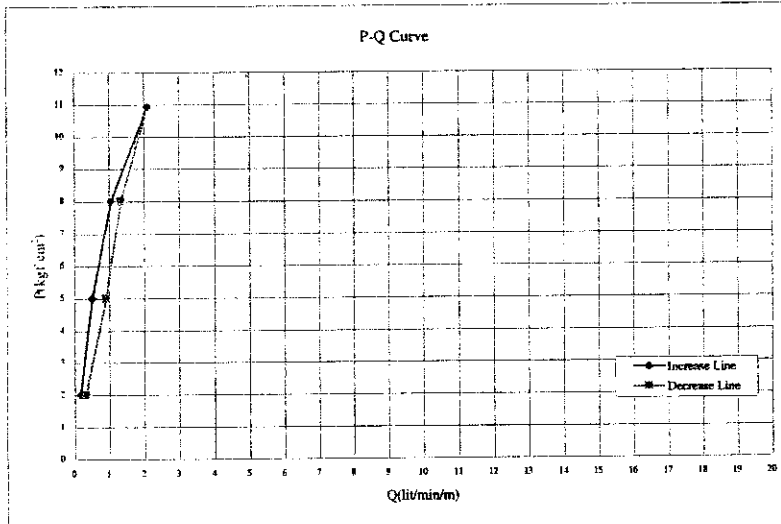
RECORD OF WATER PRESSURE TEST

Project	WRDMM	Bore Hole No.	BH TD-5	Date	9/9/2002
Depth (m)	( 15.00 - 20.00 )	Test Length (m)	5.00	Hole Radius (cm)	3.50
G.W.L. before day's work (m)	16.30	Pressure gauge height (m) : C/100	0.40		
G.W.L. before testing (m) : B/100	9.60	Packet NQ size (cm)	7.00		
Length (m) and Diameter (cm) of Rod	16.00 m	2.54 cm (φ)			
Length (m) and Diameter (cm) of Hose	10.00 m	2.54 cm (φ)			

Pressure gauge Reading : A/1000 (kgf/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm)			Effective Pressure : P (kgf/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	1	0	1	1	1	0.88	0.18	2000	2000	0	2.00
4.0	3	2	3	3	2	2.50	0.50	5000	5000	0	5.00
7.0	5	6	6	5	5	5.25	1.05	8000	8000	0	8.00
10.0	10	11	11	10	11	10.50	2.10	10920	11000	80	10.92
7.0	6	7	7	8	7	6.63	1.33	8000	8000	0	8.00
4.0	5	4	4	5	4	4.50	0.90	5000	5000	0	5.00
1.0	2	1	2	2	2	1.63	0.33	2000	2000	0	2.00

L<sub>u</sub>= - P<sub>e</sub>= 7.10  
L<sub>u</sub>= 1.1

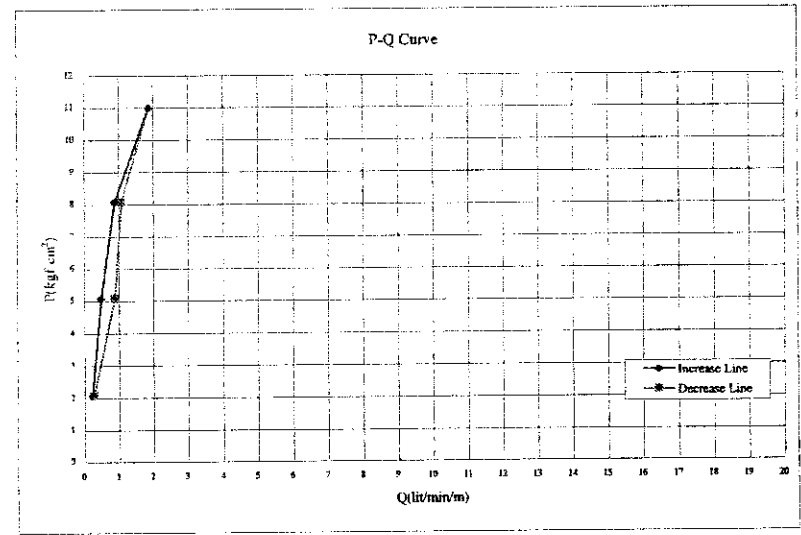


Project	WRDMM	Bore Hole No.	BH TD-5	Date	9/13/2002
Depth (m)	( 20.00 - 25.00 )	Test Length (m)	5.00	Hole Radius (cm)	3.50
G.W.L. before day's work (m)	18.65	Pressure gauge height (m) : C/100	0.50		
G.W.L. before testing (m) : B/100	10.20	Packet NQ size (cm)	7.00		
Length (m) and Diameter (cm) of Rod	21.00 m	2.54 cm (φ)			
Length (m) and Diameter (cm) of Hose	10.00 m	2.54 cm (φ)			

Pressure gauge Reading : A/1000 (kgf/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm)			Effective Pressure : P (kgf/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	1	1	0	2	1	1.13	0.23	2070	2070	0	2.07
4.0	3	2	2	3	2	2.38	0.48	5070	5070	0	5.07
7.0	5	4	4	5	4	4.38	0.88	8070	8070	0	8.07
10.0	10	9	9	10	9	9.38	1.88	10990	11070	80	10.99
7.0	6	5	5	6	5	5.38	1.08	8070	8070	0	8.07
4.0	5	4	4	5	4	4.38	0.88	5070	5070	0	5.07
1.0	2	1	1	2	1	1.38	0.28	2070	2070	0	2.07

L<sub>u</sub>= - P<sub>e</sub>= 5.00  
L<sub>u</sub>= 0.9



G2-100

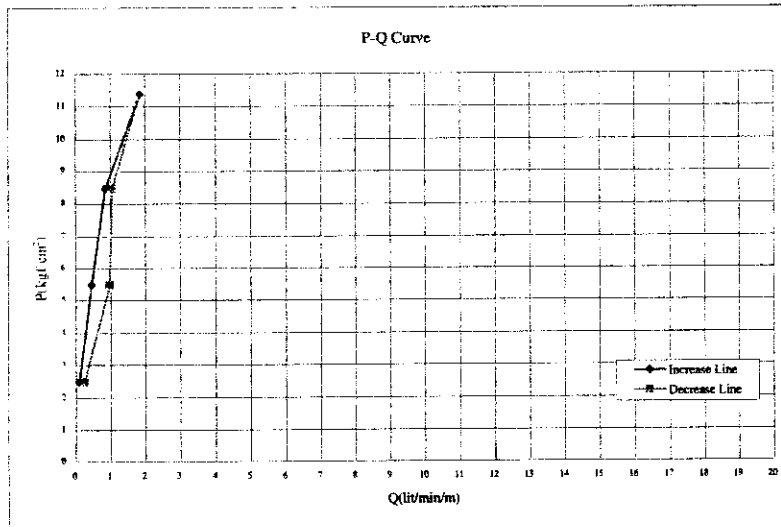
RECORD OF WATER PRESSURE TEST

Project	WRDMM	Bore Hole No.	BH TD-5	Date	9/13/2002
Depth (m)	( 25.00 - 30.00 )	Test Length (m)	5.00	Hole Radius (cm)	3.50
G.W.L. before day's work (m)	24.40	Pressure gauge height (m) : C/100	0.50		
G.W.L. before testing (m) : B/100	14.20	Packer NQ size (cm)	7.00		
Length (m) and Diameter (cm) of Rod	26.00 m	2.54 cm (φ)			
Length (m) and Diameter (cm) of Hose	10.00 m	2.54 cm (φ)			

Pressure gauge Reading : A/1000 (kg/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm)			Effective Pressure : P (kg/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	1	0	0	1	0	0.50	0.10	2470	2470	0	2.47
4.0	3	2	2	2	3	2.25	0.45	5470	5470	0	5.47
7.0	5	4	4	4	5	4.25	0.85	8470	8470	0	8.47
10.0	9	9	9	10	9	9.25	1.85	11380	11470	90	11.38
7.0	6	5	5	5	6	5.25	1.05	8470	8470	0	8.47
4.0	5	5	5	4	5	4.88	0.98	5470	5470	0	5.47
1.0	3	1	1	1	2	1.25	0.25	2470	2470	0	2.47

L<sub>10</sub>= - P<sub>10</sub>= 8.50  
L<sub>10</sub>= 1.1

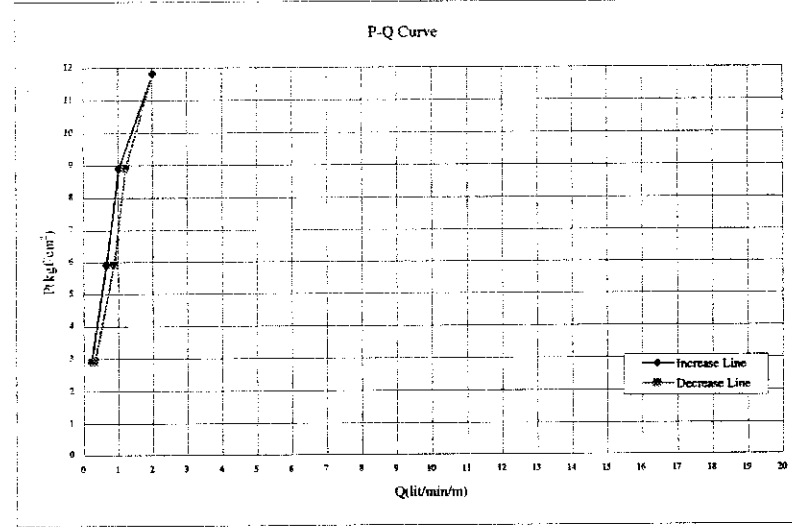


Project	WRDMM	Bore Hole No.	BH TD-5	Date	9/17/2002
Depth (m)	( 30.00 - 35.00 )	Test Length (m)	5.00	Hole Radius (cm)	3.50
G.W.L. before day's work (m)	28.70	Pressure gauge height (m) : C/100	0.40		
G.W.L. before testing (m) : B/100	18.60	Packer NQ size (cm)	7.00		
Length (m) and Diameter (cm) of Rod	33.00 m	2.54 cm (φ)			
Length (m) and Diameter (cm) of Hose	10.00 m	2.54 cm (φ)			

Pressure gauge Reading : A/1000 (kg/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm)			Effective Pressure : P (kg/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	1	1	1	2	1	1.13	0.23	2900	2900	0	2.90
4.0	3	3	4	3	3	3.25	0.65	5900	5900	0	5.90
7.0	5	5	5	6	5	5.13	1.03	8900	8900	0	8.90
10.0	10	10	10	11	10	10.13	2.03	11810	11900	90	11.81
7.0	6	6	6	7	6	6.13	1.23	8900	8900	0	8.90
4.0	5	4	4	5	4	4.38	0.88	5900	5900	0	5.90
1.0	2	2	2	1	2	1.63	0.33	2900	2900	0	2.90

L<sub>10</sub>= - P<sub>10</sub>= 8.90  
L<sub>10</sub>= 1.2



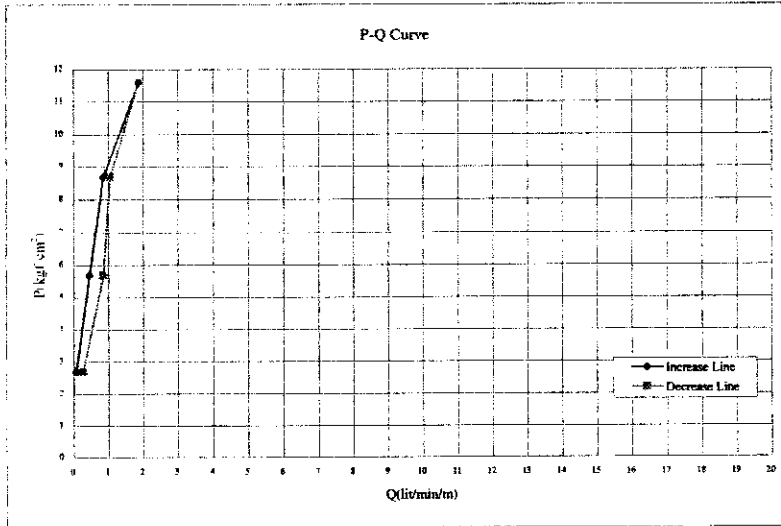
G2-101



RECORD OF WATER PRESSURE TEST

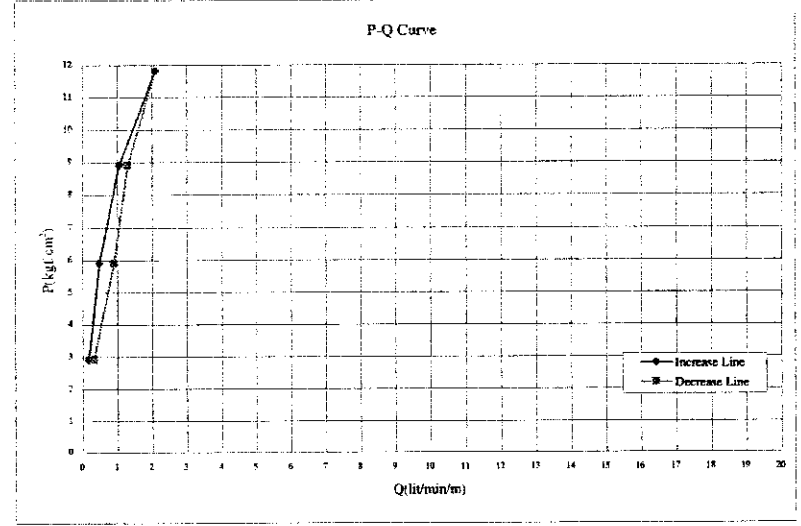
Project	WRDMM	Bore Hole No.	BH TD-5	Date	9/18/2002						
Depth (m)	( 32.00 - 40.00 )	Test Length (m)	5.00	Hole Radius (cm)	3.50						
G.W.L. before day's work (m)	32.00	Pressure gauge height (m) : C/100	0.50								
G.W.L. before testing (m) : B/100	16.30	Packer NQ size (cm)	7.00								
Length (m) and Diameter (cm) of Rod	36.00 m	2.54 cm (φ)									
Length (m) and Diameter (cm) of Hose	10.00 m	2.54 cm (φ)									
Pressure gauge Reading : A/1000 (kg/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm)			Effective Pressure : P (kg/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	0	0	0	1	0	0.38	0.08	2680	2680	0	2.68
4.0	3	2	2	2	3	2.25	0.45	5680	5680	0	5.68
	2	2	2	3	2						
7.0	5	4	4	4	5	4.25	0.85	8680	8680	0	8.68
	4	4	4	5	4						
10.0	10	9	9	10	9	9.38	1.88	11590	11680	90	11.59
	9	10	9	9	10						
7.0	6	5	5	5	6	5.25	1.05	8680	8680	0	8.68
	5	5	5	6	5						
4.0	5	4	4	4	5	4.25	0.85	5680	5680	0	5.68
	4	4	4	5	4						
1.0	2	1	1	1	2	1.38	0.28	2680	2680	0	2.68
	1	1	2	2	1						

L <sub>10</sub> =	-	P <sub>10</sub> =	8.70
L <sub>1</sub> =	1.0		



Project	WRDMM	Bore Hole No.	BH TD-5	Date	9/18/2002						
Depth (m)	( 40.00 - 45.00 )	Test Length (m)	5.00	Hole Radius (cm)	3.50						
G.W.L. before day's work (m)	35.10	Pressure gauge height (m) : C/100	0.50								
G.W.L. before testing (m) : B/100	18.60	Packer NQ size (cm)	7.00								
Length (m) and Diameter (cm) of Rod	41.00 m	2.54 cm (φ)									
Length (m) and Diameter (cm) of Hose	10.00 m	2.54 cm (φ)									
Pressure gauge Reading : A/1000 (kg/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm)			Effective Pressure : P (kg/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	1	1	0	1	1	0.88	0.18	2910	2910	0	2.91
4.0	3	3	2	1	2	2.38	0.48	5910	5910	0	5.91
	2	3	2	3	2						
7.0	5	6	6	5	5	5.25	1.05	8910	8910	0	8.91
	5	6	4	5	5						
10.0	11	10	11	11	10	10.50	2.10	11820	11910	90	11.82
	10	9	11	11	10						
7.0	6	7	7	6	7	6.50	1.30	8910	8910	0	8.91
	7	6	6	7	6						
4.0	5	4	4	5	4	4.50	0.90	5910	5910	0	5.91
	6	5	4	4	5						
1.0	2	1	2	2	2	1.63	0.33	2910	2910	0	2.91
	1	2	1	2	1						

L <sub>10</sub> =	-	P <sub>10</sub> =	5.96
L <sub>1</sub> =	0.9		



G2-102

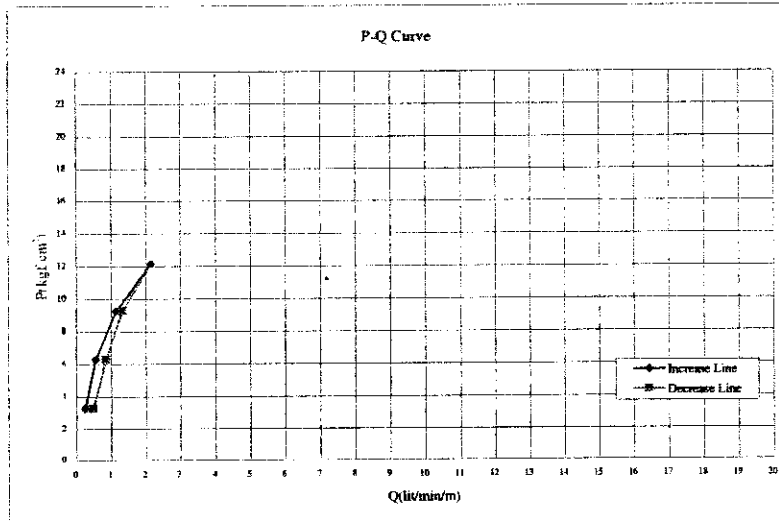
RECORD OF WATER PRESSURE TEST

Project	WRDMM	Bore Hole No.	BH TD-5	Date	9/20/2002
Depth (m)	( 45.00 - 50.00 )	Test Length (m)	5.00	Hole Radius (cm)	3.50
G.W.L. before day's work (m)	35.40	Pressure gauge height (m) : C/100	0.50		
G.W.L. before testing (m) : B/100	22.10	Packer NQ size (cm)	7.00		
Length (m) and Diameter (cm) of Rod	46.00 m	2.54 cm (φ)			
Length (m) and Diameter (cm) of Hose	10.00 m	2.54 cm (φ)			

Pressure gauge Reading : A/1000 (kgf/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm)			Effective Pressure : P (kgf/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	1	1	2	1	1	1.25	0.25	3260	3260	0	3.26
4.0	2	3	3	2	3	2.75	0.55	6260	6260	0	6.26
7.0	5	6	6	6	5	5.75	1.15	9260	9260	0	9.26
10.0	11	11	11	10	11	10.75	2.15	12165	12260	95	12.17
7.0	6	7	7	6	6	6.63	1.33	9260	9260	0	9.26
4.0	5	4	4	4	5	4.25	0.85	6260	6260	0	6.26
1.0	2	3	2	2	2	2.38	0.48	3260	3260	0	3.26

Lu= - Pc= 8.00  
Lu= 0.9

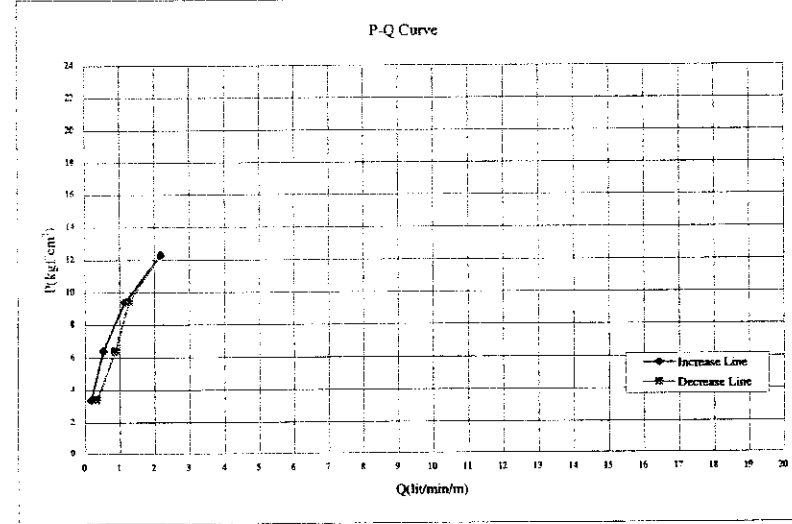


Project	WRDMM	Bore Hole No.	BH TD-5	Date	9/22/2002
Depth (m)	( 50.00 - 55.00 )	Test Length (m)	5.00	Hole Radius (cm)	3.50
G.W.L. before day's work (m)	35.80	Pressure gauge height (m) : C/100	0.50		
G.W.L. before testing (m) : B/100	23.40	Packer NQ size (cm)	7.00		
Length (m) and Diameter (cm) of Rod	51.00 m	2.54 cm (φ)			
Length (m) and Diameter (cm) of Hose	10.00 m	2.54 cm (φ)			

Pressure gauge Reading : A/1000 (kgf/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm)			Effective Pressure : P (kgf/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	1	1	1	0	1	0.88	0.18	3390	3390	0	3.39
4.0	3	3	2	2	3	2.63	0.53	6390	6390	0	6.39
7.0	5	6	6	6	5	5.75	1.15	9390	9390	0	9.39
10.0	11	11	11	10	11	10.88	2.18	12395	12390	95	12.30
7.0	7	6	7	6	6	6.38	1.28	9390	9390	0	9.39
4.0	5	4	4	5	4	4.38	0.88	6390	6390	0	6.39
1.0	2	1	2	2	2	1.75	0.35	3390	3390	0	3.39

Lu= - Pc= 8.10  
Lu= 1.0



G2-103

RECORD OF WATER PRESSURE TEST

Project	WRDMM	Bore Hole No.	BH TD-5	Date	9/23/2002
Depth (m)	( 55.00 - 60.00 )	Test Length (m)	5.00	Hole Radius (cm)	3.50
G.W.L. before day's work (m)	36.00	Pressure gauge height (m) : C/100	0.50		
G.W.L. before testing (m) : B/100	20.80	Packer NQ size (cm)	7.00		
Length (m) and Diameter (cm) of Rod	56.00 m	2.54 cm (φ)			
Length (m) and Diameter (cm) of Hose	10.00 m	2.54 cm (φ)			

Pressure gauge Reading : A/1000 (kgf/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm) H=A+B+C-Hf			Effective Pressure : P (kgf/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	1	2	2	1	1	1.50	0.30	3130	3130	0	3.13
4.0	3	4	4	3	4	3.63	0.73	6130	6130	0	6.13
7.0	5	6	6	5	6	5.63	1.13	9130	9130	0	9.13
10.0	11	11	11	10	11	10.75	2.15	12050	12130	80	12.05
7.0	6	7	7	7	6	6.75	1.35	9130	9130	0	9.13
4.0	5	4	4	4	5	4.25	0.85	6130	6130	0	6.13
1.0	3	3	3	2	3	2.50	0.50	3130	3130	0	3.13

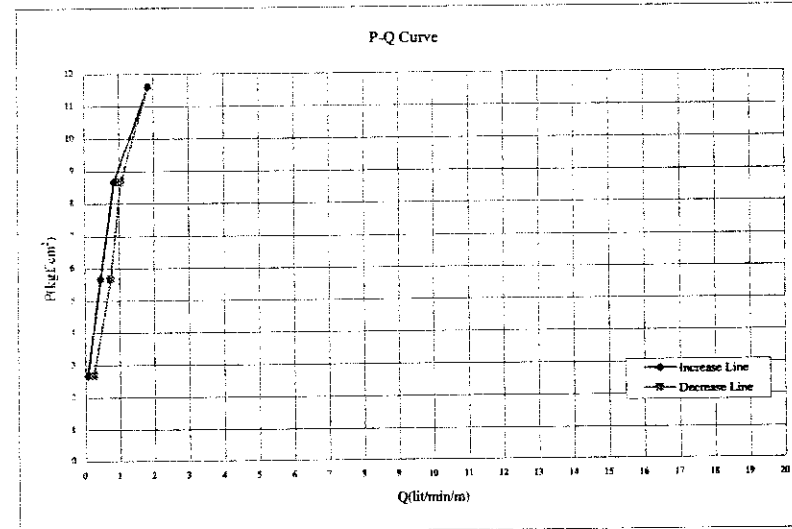
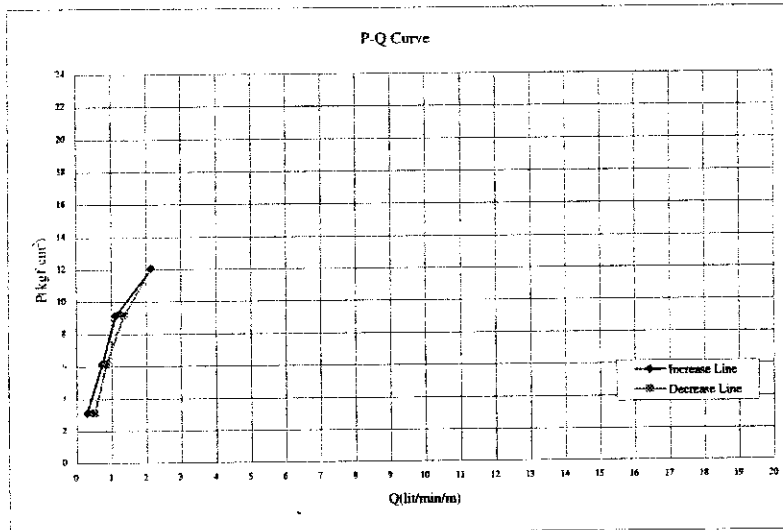
L <sub>10</sub> =	-	Pc=	8.60
L <sub>10</sub> '=	1.2		

Project	WRDMM	Bore Hole No.	BH TD-5	Date	9/23/2002
Depth (m)	( 58.00 - 65.00 )	Test Length (m)	5.00	Hole Radius (cm)	3.50
G.W.L. before day's work (m)	36.10	Pressure gauge height (m) : C/100	0.50		
G.W.L. before testing (m) : B/100	16.20	Packer NQ size (cm)	7.00		
Length (m) and Diameter (cm) of Rod	61.00 m	2.54 cm (φ)			
Length (m) and Diameter (cm) of Hose	10.00 m	2.54 cm (φ)			

Pressure gauge Reading : A/1000 (kgf/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm) H=A+B+C-Hf			Effective Pressure : P (kgf/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	1	0	0	1	0	0.38	0.08	2670	2670	0	2.67
4.0	3	2	2	2	3	2.25	0.45	5670	5670	0	5.67
7.0	5	4	4	4	5	4.25	0.85	8670	8670	0	8.67
10.0	10	9	9	9	10	9.25	1.85	11590	11670	80	11.59
7.0	6	5	5	5	6	5.25	1.05	8670	8670	0	8.67
4.0	3	4	4	4	3	3.75	0.75	5670	5670	0	5.67
1.0	2	1	1	1	2	1.25	0.25	2670	2670	0	2.67

L <sub>10</sub> =	-	Pc=	8.70
L <sub>10</sub> '=	1.0		

G2-104



RECORD OF WATER PRESSURE TEST

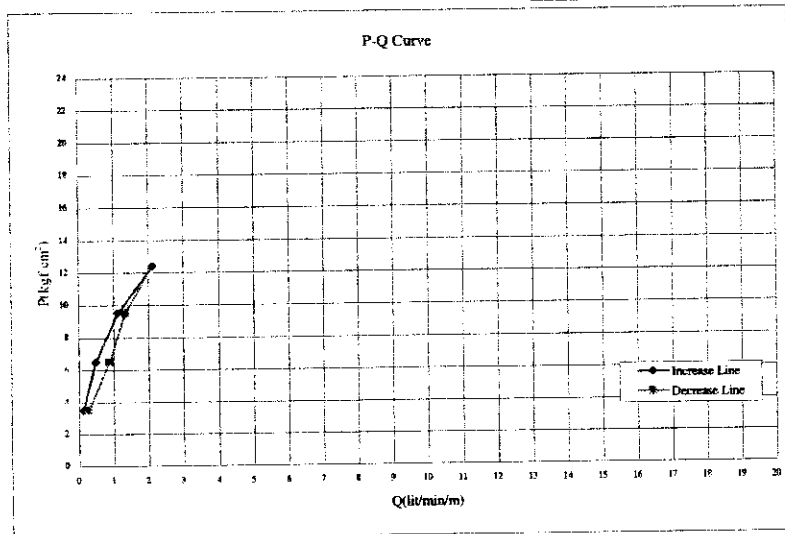
BH TD-5 04-776

Project	WRDMM	Bore Hole No.	BH TD-5	Date	9/24/2002
Depth (m)	( 65.00 - 70.00 )	Test Length (m)	5.00	Hole Radius (cm)	3.50
G.W.L. before day's work (m)	35.90	Pressure gauge height (m) : C/100	0.50		
G.W.L. before testing (m) : B/100	24.60	Packer NQ size (cm)	7.00		
Length (m) and Diameter (cm) of Rod	66.00 m	2.54 cm (φ)			
Length (m) and Diameter (cm) of Hose	10.00 m	2.54 cm (φ)			

Pressure gauge Reading : A/1000 (kg/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm)			Effective Pressure : P (kg/cm <sup>2</sup> )
	1	2	3	4	5			H	H=A+B+C-Hf	Hf	
1.0	1	0	1	1	0	0.63	0.13	3510	3510	0	3.51
4.0	2	2	2	2	3	2.38	0.48	6510	6510	0	6.51
7.0	5	6	6	5	6	5.63	1.13	9510	9510	0	9.51
10.0	10	11	11	10	11	10.63	2.13	12410	12510	100	12.41
7.0	6	7	7	6	7	6.63	1.33	9510	9510	0	9.51
4.0	4	4	5	4	5	4.38	0.88	6510	6510	0	6.51
1.0	2	1	1	2	1	1.38	0.28	3510	3510	0	3.51

L <sub>10</sub> =	-	P <sub>0</sub> =	6.20
L <sub>50</sub> =	0.8		

G2-105



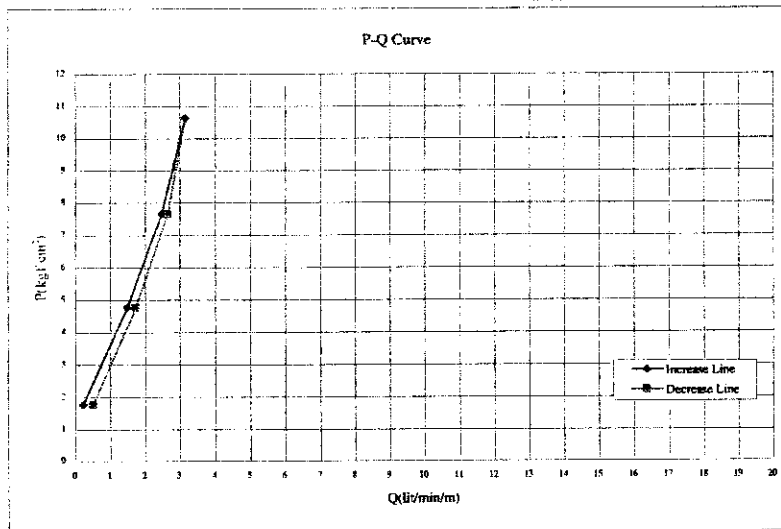
RECORD OF WATER PRESSURE TEST

Project	WRDMM	Bore Hole No.	BH TD-6	Date	6/25/2002
Depth (m)	( 8.00 - 13.00 )	Test Length (m)	5.00	Hole Radius (cm)	3.50
G.W.L. before day's work (m)	5.60	Pressure gauge height (m) : C/100	0.50		
G.W.L. before testing (m) : B/100	7.20	Packer NQ size (cm)	7.00		
Length (m) and Diameter (cm) of Rod	9.00 m	3.20 cm (φ)			
Length (m) and Diameter (cm) of Hose	12.00 m	3.20 cm (φ)			

Pressure gauge Reading : A/1000 (kgf/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm)			Effective Pressure : P (kgf/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	0	2	0	1	2	1.13	0.23	1770	1770	0	1.77
4.0	7	8	7	7	8	7.38	1.48	4770	4770	0	4.77
7.0	12	13	12	12	13	12.38	2.48	7662	7770	108	7.66
10.0	16	16	15	16	16	15.75	3.15	10620	10770	150	10.62
7.0	12	12	13	14	13	13.25	2.65	7650	7770	120	7.65
4.0	8	9	9	8	9	8.63	1.73	4770	4770	0	4.77
1.0	3	2	3	3	2	2.50	0.50	1770	1770	0	1.77

Lo= - Pc= -  
Lu= 3.7

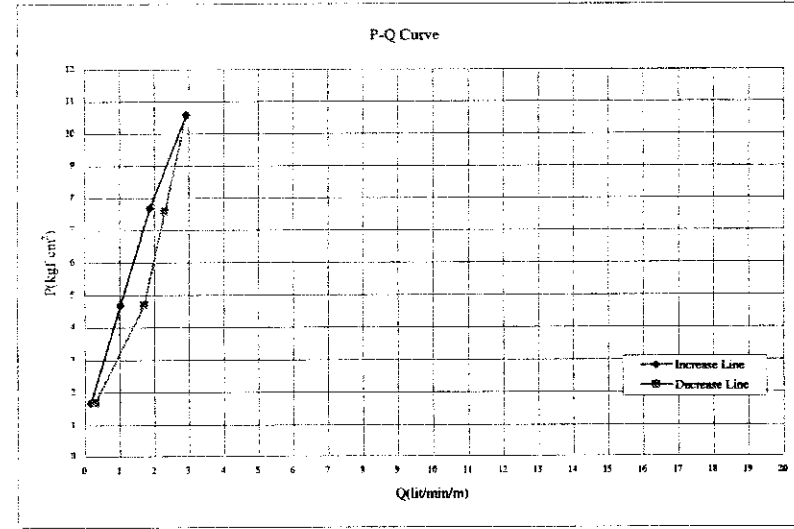


Project	WRDMM	Bore Hole No.	BH TD-6	Date	6/26/2002
Depth (m)	( 13.00 - 18.00 )	Test Length (m)	5.00	Hole Radius (cm)	3.50
G.W.L. before day's work (m)	7.25	Pressure gauge height (m) : C/100	0.50		
G.W.L. before testing (m) : B/100	6.30	Packer NQ size (cm)	7.00		
Length (m) and Diameter (cm) of Rod	14.00 m	3.20 cm (φ)			
Length (m) and Diameter (cm) of Hose	12.00 m	3.20 cm (φ)			

Pressure gauge Reading : A/1000 (kgf/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm)			Effective Pressure : P (kgf/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	0	2	1	2	0	0.88	0.18	1680	1680	0	1.68
4.0	6	5	4	5	5	5.13	1.03	4680	4680	0	4.68
7.0	10	9	10	9	9	9.38	1.88	7680	7680	0	7.68
10.0	14	15	14	14	15	14.63	2.93	10570	10680	110	10.57
7.0	12	11	11	12	11	11.50	2.30	7582	7680	98	7.58
4.0	9	8	8	9	8	8.50	1.70	4680	4680	0	4.68
1.0	2	1	2	1	1	1.50	0.30	1680	1680	0	1.68

Lo= - Pc= 7.70  
Lu= 2.5



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RECORD OF WATER PRESSURE TEST

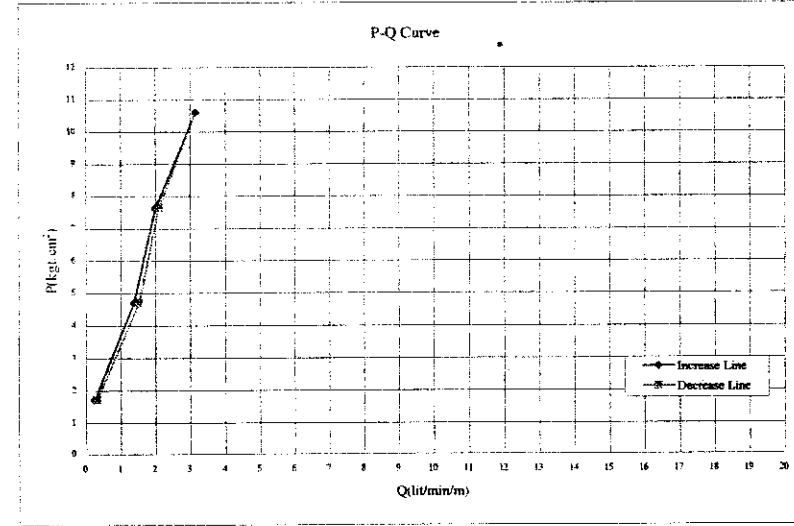
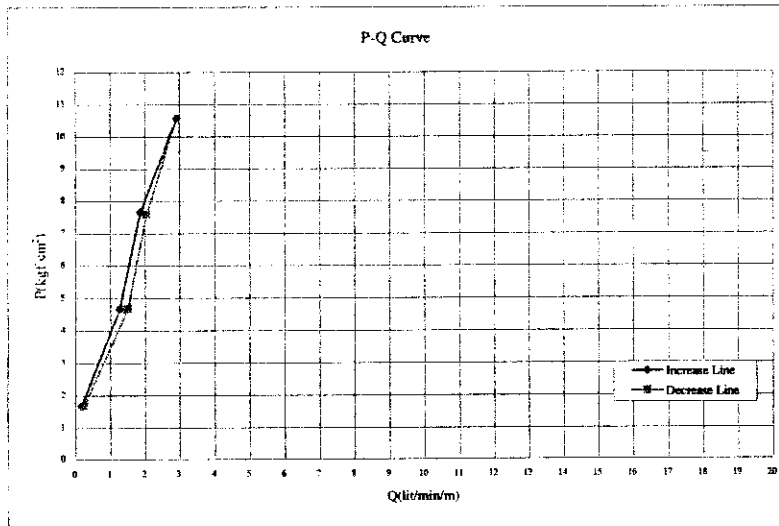
Project		Bore Hole No.		Date							
WRDMM		BH TD-6		6/27/2002							
Depth (m)		Test Length (m)		Hole Radius (cm)							
( 18.00 - 23.00 )		5.00		3.50							
G.W.L. before day's work (m)		Pressure gauge height (m) : C/100		0.50							
7.10		Packer NQ size (cm)		7.00							
6.20		Length (m) and Diameter (cm) of Rod		19.00 m 3.20 cm (φ)							
Length (m) and Diameter (cm) of Hose		12.00 m 3.20 cm (φ)									
Pressure gauge Reading : A/1000 (kg/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm)			Effective Pressure : P (kg/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	1	1	0	1	1	0.88	0.18	1670	1670	0	1.67
4.0	7	6	6	7	6	6.38	1.28	4670	4670	0	4.67
7.0	9	10	9	10	10	9.38	1.88	7670	7670	0	7.67
10.0	15	15	14	15	15	14.63	2.93	10662	10670	108	10.56
7.0	10	9	10	10	10	10.25	2.05	7580	7670	90	7.58
4.0	7	6	7	8	8	7.50	1.50	4670	4670	0	4.67
1.0	2	1	1	1	2	1.25	0.25	1670	1670	0	1.67

Lu= - Pc= -  
Lu= 3.2

Project		Bore Hole No.		Date							
WRDMM		BH TD-6		6/27/2002							
Depth (m)		Test Length (m)		Hole Radius (cm)							
( 23.00 - 28.00 )		5.00		3.50							
G.W.L. before day's work (m)		Pressure gauge height (m) : C/100		0.50							
7.10		Packer NQ size (cm)		7.00							
6.60		Length (m) and Diameter (cm) of Rod		24.00 m 3.20 cm (φ)							
Length (m) and Diameter (cm) of Hose		12.00 m 3.20 cm (φ)									
Pressure gauge Reading : A/1000 (kg/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm)			Effective Pressure : P (kg/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	2	1	1	2	1	1.25	0.25	1710	1710	0	1.71
4.0	7	7	7	6	7	6.88	1.38	4710	4710	0	4.71
7.0	9	10	10	9	10	10.00	2.00	7630	7710	80	7.63
10.0	10	11	10	10	11	15.75	3.15	10590	10710	120	10.59
7.0	11	10	10	11	11	10.50	2.10	7628	7710	82	7.63
4.0	7	7	8	7	8	7.63	1.53	4710	4710	0	4.71
1.0	2	1	2	2	1	1.63	0.33	1710	1710	0	1.71

Lu= - Pc= -  
Lu= 3.3

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RECORD OF WATER PRESSURE TEST

Project	WRDMM	Bore Hole No.	BH WD-8	Date	7/23/2002
Depth (m)	( 10.00 - 15.00 )	Test Length (m)	5.00	Hole Radius (cm)	3.50
G.W.L. before day's work (m)	7.30	Pressure gauge height (m) : C/100	0.70		
G.W.L. before testing (m) : B/100	6.50	Packer NQ size (cm)	7.00		
Length (m) and Diameter (cm) of Rod	10.50 m	3.20 cm ( $\phi$ )			
Length (m) and Diameter (cm) of Hose	12.00 m	3.20 cm ( $\phi$ )			

Pressure gauge Reading : A/1000 (kgf/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm)			Effective Pressure : P (kgf/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	3	4	3	4	3	3.50	0.70	1720	1720	0	1.72
4.0	13	12	13	13	13	12.63	2.53	4600	4720	120	4.60
7.0	17	18	17	17	18	17.00	3.40	7560	7720	160	7.56
10.0	21	20	20	21	22	20.75	4.15	10540	10720	180	10.54
7.0	15	14	15	14	14	14.38	2.88	7580	7720	140	7.58
4.0	10	11	11	11	10	10.63	2.13	4630	4720	90	4.63
1.0	5	4	4	6	4	4.63	0.93	1720	1720	0	1.72

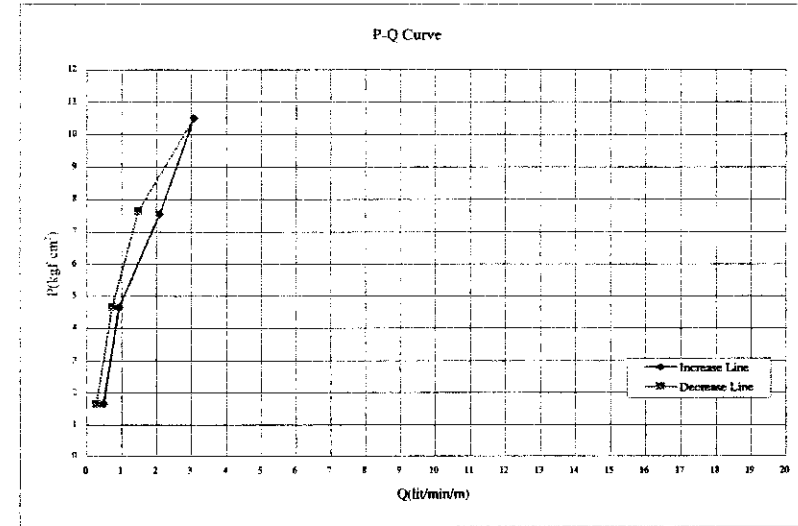
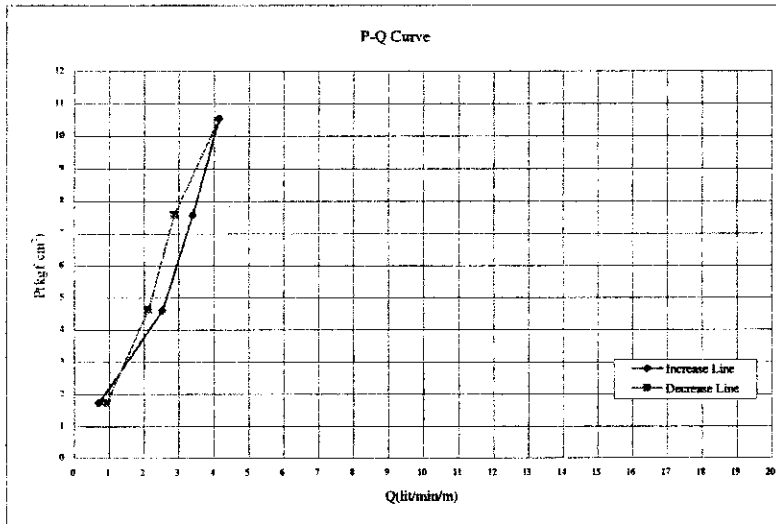
L <sub>av</sub>	-	P <sub>av</sub>	-
L <sub>av</sub>	5.9		

Project	WRDMM	Bore Hole No.	BH WD-8	Date	7/24/2002
Depth (m)	( 15.00 - 20.00 )	Test Length (m)	5.00	Hole Radius (cm)	3.50
G.W.L. before day's work (m)	7.20	Pressure gauge height (m) : C/100	0.65		
G.W.L. before testing (m) : B/100	5.80	Packer NQ size (cm)	7.00		
Length (m) and Diameter (cm) of Rod	15.50 m	3.20 cm ( $\phi$ )			
Length (m) and Diameter (cm) of Hose	12.00 m	3.20 cm ( $\phi$ )			

Pressure gauge Reading : A/1000 (kgf/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm)			Effective Pressure : P (kgf/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	2	3	2	2	3	2.38	0.48	1645	1645	0	1.65
4.0	5	4	5	4	5	4.63	0.93	4645	4645	0	4.65
7.0	10	11	11	10	10	10.50	2.10	7555	7645	90	7.56
10.0	15	15	16	15	16	15.38	3.08	10495	10645	150	10.50
7.0	8	7	7	8	7	7.38	1.48	7645	7645	0	7.65
4.0	3	4	4	4	3	3.63	0.73	4645	4645	0	4.65
1.0	1	2	2	1	1	1.38	0.28	1645	1645	0	1.65

L <sub>av</sub>	-	P <sub>av</sub>	4.70
L <sub>av</sub>	1.8		

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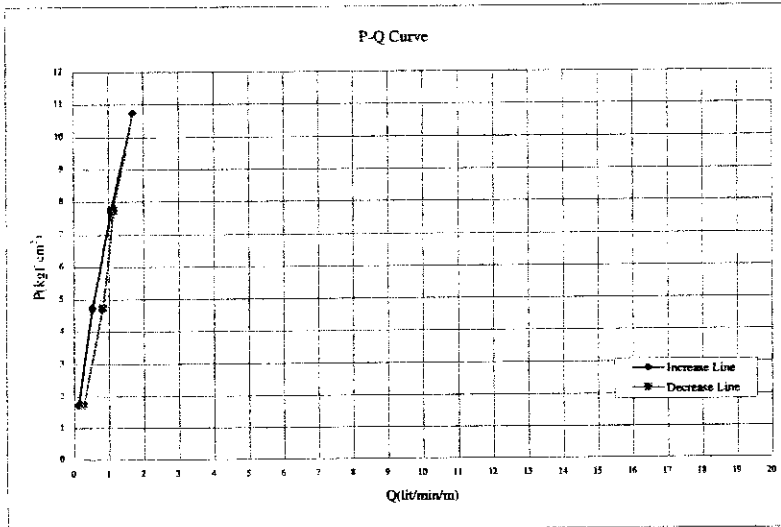
RECORD OF WATER PRESSURE TEST

Project		Bore Hole No.		Date	
WRDMM		BH WD-8		7/25/2002	
Depth (m)	( 20.00 - 25.00 )	Test Length (m)	5.00	Hole Radius (cm)	3.50
G.W.L. before day's work (m)	7.30	Pressure gauge height (m) : C/100	0.50		
G.W.L. before testing (m) : B/100	6.80	Packer NQ size (cm)	7.00		
Length (m) and Diameter (cm) of Rod	21.00 m	3.20 cm (φ)			
Length (m) and Diameter (cm) of Hose	12.00 m	3.20 cm (φ)			

Pressure gauge Reading : A/1000 (kgf/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm)			Effective Pressure : P (kgf/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	1	0	1	1	0	0.63	0.13	1730	1730	0	1.73
	1	1	0	1	0						
4.0	3	2	3	2	3	2.63	0.53	4730	4730	0	4.73
	3	3	2	3	2						
7.0	5	6	5	5	6	5.38	1.08	7730	7730	0	7.73
	6	5	5	5	6						
10.0	9	8	8	8	9	8.50	1.70	10730	10730	0	10.73
	8	9	8	9	9						
7.0	6	6	7	6	5	5.75	1.15	7730	7730	0	7.73
	5	6	6	5	6						
4.0	4	4	5	4	4	4.13	0.83	4730	4730	0	4.73
	4	5	4	4	4						
1.0	1	2	2	1	1	1.38	0.28	1730	1730	0	1.73
	2	1	2	1	1						

L<sub>q</sub>= - P<sub>c</sub>= 4.80  
L<sub>u</sub>= 1.3

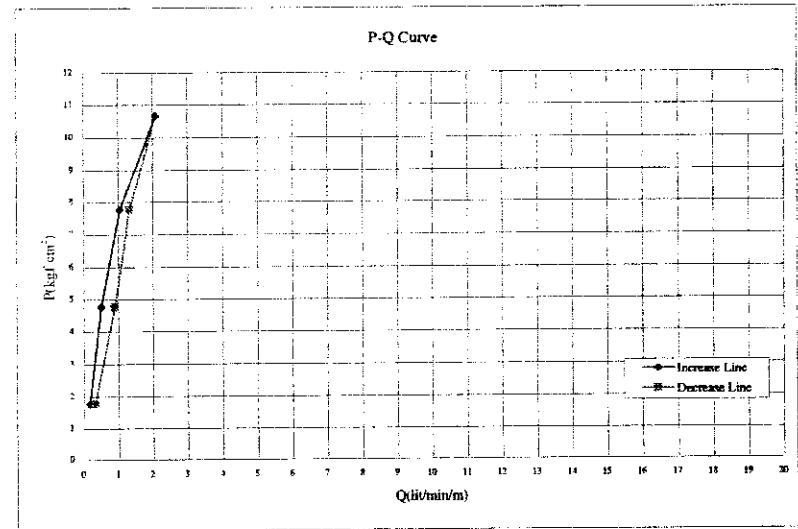


Project		Bore Hole No.		Date	
WRDMM		BH WD-8		7/26/2002	
Depth (m)	( 25.00 - 30.00 )	Test Length (m)	5.00	Hole Radius (cm)	3.50
G.W.L. before day's work (m)	7.30	Pressure gauge height (m) : C/100	0.50		
G.W.L. before testing (m) : B/100	7.10	Packer NQ size (cm)	7.00		
Length (m) and Diameter (cm) of Rod	25.50 m	3.20 cm (φ)			
Length (m) and Diameter (cm) of Hose	12.00 m	3.20 cm (φ)			

Pressure gauge Reading : A/1000 (kgf/cm <sup>2</sup> )	Water Injection (l/min)					Average of Water Injection : q (l/min)	Water Injection for 1 m : Q (l/min/m)	Water Pressure in Head (cm)			Effective Pressure : P (kgf/cm <sup>2</sup> )
	1	2	3	4	5			H	A+B+C	Hf	
1.0	1	1	0	1	1	0.88	0.18	1760	1760	0	1.76
	2	1	0	1	1						
4.0	3	3	2	1	2	2.50	0.50	4760	4760	0	4.76
	3	2	3	3	2						
7.0	5	6	6	5	5	5.25	1.05	7760	7760	0	7.76
	5	6	4	5	5						
10.0	10	11	11	10	11	10.50	2.10	10864	10760	96	10.66
	10	9	11	11	10						
7.0	6	7	7	8	7	6.63	1.33	7760	7760	0	7.76
	6	7	6	7	6						
4.0	5	4	4	5	4	4.50	0.90	4760	4760	0	4.76
	5	4	4	5	4						
1.0	2	1	2	2	2	1.63	0.33	1760	1760	0	1.76
	1	2	1	2	1						

L<sub>q</sub>= - P<sub>c</sub>= 6.80  
L<sub>u</sub>= 1.1



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## ***Constant Head Test***

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: AGOS DAM AXIS, LEFT BANK  
 Bore Hole Number: BH-AD-1 Hole Depth: 5 m.  
 Depth of Casing below ground surface: 0 cm.  
 Height of casing above ground surface: 20 cm.  
 Internal diameter of borehole: 7.0 cm.  
 Depth of Groundwater level below ground surface: 480 cm.  
 Height of constant water level above ground surface: 20 cm.  
 DATE: 03 Jun 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	8000	8000			
1	7000	7000			
1	8000	8000			
1	6000	6000			
1	6000	6000			
1	5000	5000			
1	6000	6000			
1	6000	6000			
1	6000	6000			
1	5000	5000			

$$K=3.59 \times 10^{-4} \text{ cm/sec.}$$

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: AGOS DAM AXIS, LEFT BANK  
 Bore Hole Number: BH-AD-1 Hole Depth: 10 m.  
 Depth of Casing below ground surface: 500 cm.  
 Height of casing above ground surface: 20 cm.  
 Internal diameter of borehole: 7.0 cm.  
 Depth of Groundwater level below ground surface: 480 cm.  
 Height of constant water level above ground surface: 20 cm.  
 DATE: 06 Jun 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	6000	6000			
1	5000	5000			
1	6000	6000			
1	4000	4000			
1	4000	4000			
1	3000	3000			
1	4000	4000			
1	4000	4000			
1	4000	4000			
1	3000	3000			

$$K=2.39 \times 10^{-4} \text{ cm/sec.}$$

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: AGOS DAM AXIS, RIGHT BANK  
 Bore Hole Number: BH-AD-3 Hole Depth: 5 m.  
 Depth of Casing below ground surface: 0 cm.  
 Height of casing above ground surface: 25 cm.  
 Internal diameter of borehole: 7.0 cm.  
 Depth of Groundwater level below ground surface: 135 cm.  
 Height of constant water level above ground surface: 25 cm.  
 DATE: 26 Mar 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	3000	3000	1	2000	2000
1	2000	2000	1	2000	2000
1	3000	3000	1	1000	1000
1	3000	3000	1	3000	3000
1	2000	2000	1	2000	2000
1	2000	2000	1	2000	2000
1	1000	1000	1	2000	2000
1	2000	2000			
1	2000	2000			
1	3000	3000			
1	1000	1000			
1	2000	2000			
1	1000	1000			

$K=3.74 \times 10^{-4}$  cm/sec.

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: AGOS DAM AXIS, RIGHT BANK  
 Bore Hole Number: BH-AD-3 Hole Depth: 10 m.  
 Depth of Casing below ground surface: 500 cm.  
 Height of casing above ground surface: 25 cm.  
 Internal diameter of borehole: 7.0 cm.  
 Depth of Groundwater level below ground surface: 1000 cm.  
 Height of constant water level above ground surface: 25 cm.  
 DATE: 30 Mar 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	3000	3000			
1	2000	2000			
1	2000	2000			
1	1000	1000			
1	2000	2000			
1	2000	2000			
1	2000	2000			
1	2000	2000			
1	3000	3000			
1	2000	2000			
1	3000	3000			

$K=5.84 \times 10^{-5}$  cm/sec.

## OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: AGOS DAM AXIS, RIGHT BANK  
 Bore Hole Number: BH-AD-3 Hole Depth: 15 m.  
 Depth of Casing below ground surface: 1000 cm.  
 Height of casing above ground surface: 25 cm.  
 Internal diameter of borehole: 7.0 cm.  
 Depth of Groundwater level below ground surface: 300 cm.  
 Height of constant water level above ground surface: 25 cm.  
 DATE: 02 Apr 2002

### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	4000	4000			
1	3000	3000			
1	2000	2000			
1	2000	2000			
1	1000	1000			
1	2000	2000			
1	2000	2000			
1	2000	2000			
1	3000	3000			
1	2000	2000			

**K=1.80 x 10<sup>-4</sup> cm/sec.**

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: AGOS ALTERNATIVE DAM AXIS, LEFT BANK  
 Bore Hole Number: BH-AD-4 Hole Depth: 5 m.  
 Depth of Casing below ground surface: 0 cm.  
 Height of casing above ground surface: 25 cm.  
 Internal diameter of borehole: 7.0 cm.  
 Depth of Groundwater level below ground surface: 25 cm.  
 Height of constant water level above ground surface: 20 cm.  
 DATE: 02 Jun 2002

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: AGOS ALTERNATIVE DAM AXIS, LEFT BANK  
 Bore Hole Number: BH-AD-4 Hole Depth: 10 m.  
 Depth of Casing below ground surface: 500 cm.  
 Height of casing above ground surface: 20 cm.  
 Internal diameter of borehole: 7.0 cm.  
 Depth of Groundwater level below ground surface: 450 cm.  
 Height of constant water level above ground surface: 20 cm.  
 DATE: 03 Jun 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	3000	3000			
1	2000	2000			
1	3000	3000			
1	3000	3000			
1	2000	2000			
1	2000	2000			
1	2000	2000			
1	2000	2000			
1	3000	3000			
1	3000	3000			
1	2000	2000			

$K=1.50 \times 10^{-3}$  cm/sec.

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	2000	2000			
1	1000	1000			
1	2000	2000			
1	2000	2000			
1	1000	1000			
1	1000	1000			
1	1000	1000			
1	1000	1000			
1	2000	2000			
1	2000	2000			
1	1000	1000			

$K=9.57 \times 10^{-5}$  cm/sec.

## OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: AGOS ALTERNATIVE DAM AXIS, LEFT BANK  
 Bore Hole Number: BH-AD-4 Hole Depth: 15 m.  
 Depth of Casing below ground surface: 1000 cm.  
 Height of casing above ground surface: 20 cm.  
 Internal diameter of borehole: 7.0 cm.  
 Depth of Groundwater level below ground surface: 600 cm.  
 Height of constant water level above ground surface: 20 cm.  
 DATE: 04 Jun 2002

### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	6000	6000			
1	5000	5000			
1	2000	2000			
1	2000	2000			
1	3000	3000			
1	2000	2000			
1	2000	2000			
1	2000	2000			
1	3000	3000			
1	3000	3000			

$K=1.21 \times 10^{-4}$  cm/sec.

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### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: AGOS ALTERNATIVE DAM AXIS, RIGHT BANK  
 Bore Hole Number: BH-AD-5 Hole Depth: 5 m.  
 Depth of Casing below ground surface: 0 cm.  
 Height of casing above ground surface: 30 cm.  
 Internal diameter of borehole: 7.0 cm.  
 Depth of Groundwater level below ground surface: 400 cm.  
 Height of constant water level above ground surface: 30 cm.  
 DATE: 22 Apr 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	2000	2000			
1	3000	3000			
1	3000	3000			
1	2000	2000			
1	3000	3000			
1	2000	2000			
1	3000	3000			
1	2000	2000			
1	2000	2000			
1	3000	3000			

$K=1.74 \times 10^{-4}$  cm/sec.

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: AGOS ALTERNATIVE DAM AXIS, RIGHT BANK  
 Bore Hole Number: BH-AD-5 Hole Depth: 10 m.  
 Depth of Casing below ground surface: 500 cm.  
 Height of casing above ground surface: 50 cm.  
 Internal diameter of borehole: 7.0 cm.  
 Depth of Groundwater level below ground surface: 500 cm.  
 Height of constant water level above ground surface: 40 cm.  
 DATE: 04 May 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	2000	2000			
1	3000	3000			
1	2000	2000			
1	1000	1000			
1	2000	2000			
1	2000	2000			
1	1000	1000			
1	2000	2000			
1	2000	2000			
1	1000	1000			

$K=8.18 \times 10^{-5}$  cm/sec.

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: AGOS ALTERNATIVE DAM AXIS, RIGHT BANK  
 Bore Hole Number: BH-AD-5 Hole Depth: 15 m.  
 Depth of Casing below ground surface: 1000 cm.  
 Height of casing above ground surface: 30 cm.  
 Internal diameter of borehole: 7.0 cm.  
 Depth of Groundwater level below ground surface: 960 cm.  
 Height of constant water level above ground surface: 30 cm.  
 DATE: 04 May 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	2000	2000			
1	1000	1000			
1	1000	1000			
1	2000	2000			
1	1000	1000			
1	1000	1000			
1	2000	2000			
1	2000	2000			
1	1000	1000			
1	1000	1000			

$K=4.54 \times 10^{-5}$ cm/sec.

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: AGOS ALTERNATIVE DAM AXIS, RIGHT BANK  
 Bore Hole Number: BH-AD-5 Hole Depth: 20 m.  
 Depth of Casing below ground surface: 1500 cm.  
 Height of casing above ground surface: 25 cm.  
 Internal diameter of borehole: 7.0 cm.  
 Depth of Groundwater level below ground surface: 1200 cm.  
 Height of constant water level above ground surface: 25 cm.  
 DATE: 05 May 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	1000	1000			
1	0	0			
1	1000	1000			
1	0	0			
1	1000	1000			
1	0	0			
1	1000	1000			
1	0	0			
1	1000	1000			
1	1000	1000			

$K=1.23 \times 10^{-5}$ cm/sec.



## OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: AGOS ALTERNATIVE DAM AXIS, RIGHT BANK  
 Bore Hole Number: BH-AD-5 Hole Depth: 25 m.  
 Depth of Casing below ground surface: 2000 cm.  
 Height of casing above ground surface: 30 cm.  
 Internal diameter of borehole: 7.0 cm.  
 Depth of Groundwater level below ground surface: 1620 cm.  
 Height of constant water level above ground surface: 30 cm.  
 DATE: 07 May 2002

### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	0	0			
1	1000	1000			
1	0	0			
1	1000	1000			
1	0	0			
1	1000	1000			
1	0	0			
1	0	0			
1	1000	1000			
1	0	0			

**K=9.16 x 10<sup>-6</sup>cm/sec.**

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: AGOS AFTERBAY WEIR AXIS, RIGHT BANK  
 Bore Hole Number: BH-BD-3 Hole Depth: 5 m.  
 Depth of Casing below ground surface: 0 cm.  
 Height of casing above ground surface: 20 cm.  
 Internal diameter of borehole: 7.0 cm.  
 Depth of Groundwater level below ground surface: 410 cm.  
 Height of constant water level above ground surface: 20 cm.  
 DATE: 04 Jul 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	2000	2000			
1	1000	1000			
1	2000	2000			
1	1000	1000			
1	3000	3000			
1	2000	2000			
1	2000	2000			
1	1000	1000			
1	2000	2000			
1	2000	2000			

$K=1.22 \times 10^{-4}$  cm/sec.

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: AGOS AFTERBAY WEIR AXIS, RIGHT BANK  
 Bore Hole Number: BH-BD-3 Hole Depth: 10 m.  
 Depth of Casing below ground surface: 500 cm.  
 Height of casing above ground surface: 50 cm.  
 Internal diameter of borehole: 7.0 cm.  
 Depth of Groundwater level below ground surface: 325 cm.  
 Height of constant water level above ground surface: 50 cm.  
 DATE: 05 Jul 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	3000	3000			
1	3000	3000			
1	2000	2000			
1	3000	3000			
1	4000	4000			
1	3000	3000			
1	3000	3000			
1	4000	4000			
1	3000	3000			
1	4000	4000			

$K=2.10 \times 10^{-4}$  cm/sec.

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: DARAITAN LIMESTONE AREA  
 Bore Hole Number: LD-2 Hole Depth: 5 m.  
 Depth of Casing below ground surface: 0 cm.  
 Height of casing above ground surface: 15 cm.  
 Internal diameter of borehole: 9.6 cm.  
 Depth of Groundwater level below ground surface: 175 cm.  
 Height of constant water level above ground surface: 15 cm.  
 DATE: 06 Apr 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	} 2600	260	1	} 220	220
1					
1					
1					
1					
1					
1					
1					
1					
1					

$K=3.58 \times 10^{-5}$  cm/sec.

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: DARAITAN LIMESTONE AREA  
 Bore Hole Number: LD-2 Hole Depth: 10 m.  
 Depth of Casing below ground surface: 500 cm.  
 Height of casing above ground surface: 20 cm.  
 Internal diameter of borehole: 9.6 cm.  
 Depth of Groundwater level below ground surface: 175 cm.  
 Height of constant water level above ground surface: 20 cm.  
 DATE: 08 Apr 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	4000	800			
1	4000	800			
1	3000	600			
1	4000	800			
1	4000	800			
1	3000	600			

$K=1.01 \times 10^{-4}$  cm/sec.

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: DARAITAN LIMESTONE AREA  
 Bore Hole Number: LD-2 Hole Depth: 15 m.  
 Depth of Casing below ground surface: 1000 cm.  
 Height of casing above ground surface: 15 cm.  
 Internal diameter of borehole: 9.6 cm.  
 Depth of Groundwater level below ground surface: 495 cm.  
 Height of constant water level above ground surface: 15 cm.  
 DATE: 09 Apr 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	2500	2500	1	2000	2000
1	2000	2000	1	1500	1500
1	2000	2000	1	2000	2000
1	3000	3000	1	2000	2000
1	3000	3000	1	2000	2000
1	2500	2500	1	2000	2000
1	2000	2000	1	1000	1000
1	2000	2000	1	2000	2000
1	2500	2500	1	1000	1000
1	2000	2000	1	1000	1000

$K=8.33 \times 10^{-5}$ cm/sec.

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: DARAITAN LIMESTONE AREA  
 Bore Hole Number: LD-2 Hole Depth: 20 m.  
 Depth of Casing below ground surface: 1500 cm.  
 Height of casing above ground surface: 15 cm.  
 Internal diameter of borehole: 9.6 cm.  
 Depth of Groundwater level below ground surface: 480 cm.  
 Height of constant water level above ground surface: 15 cm.  
 DATE: 09 Apr 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	4000	4000	1	3000	3000
1	3500	3500	1	3000	3000
1	3000	3000	1	2800	2800
1	3000	3000	1	3000	3000
1	4000	4000	1	2500	2500
1	4000	4000	1	2500	2500
1	4000	4000	1	2000	2000
1	3500	3500	1	2000	2000
1	3000	3000	1	2000	2000
1	3500	3500	1	2500	2500

$K=1.28 \times 10^{-4}$ cm/sec.

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: DARAITAN LIMESTONE AREA  
 Bore Hole Number: LD-2 Hole Depth: 25 m.  
 Depth of Casing below ground surface: 2000 cm.  
 Height of casing above ground surface: 20 cm.  
 Internal diameter of borehole: 9.6 cm.  
 Depth of Groundwater level below ground surface: 530 cm.  
 Height of constant water level above ground surface: 20 cm.  
 DATE: 10 Apr 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	4000	4000	1	5000	5000
1	4000	4000	1	5000	5000
1	5000	5000	1	4000	4000
1	4000	4000	1	4000	4000
1	5000	5000	1	3500	3500
1	4000	4000	1	4000	4000
1	4000	4000	1	3000	3000
1	4000	4000	1	3000	3000
1	4500	4500	1	3000	3000
1	4000	4000	1	3000	3000
1	4500	4500	1	2800	2800

$K=1.54 \times 10^{-4}$  cm/sec.

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: DARAITAN LIMESTONE AREA  
 Bore Hole Number: LD-2 Hole Depth: 30 m.  
 Depth of Casing below ground surface: 2500 cm.  
 Height of casing above ground surface: 15 cm.  
 Internal diameter of borehole: 9.6 cm.  
 Depth of Groundwater level below ground surface: 530 cm.  
 Height of constant water level above ground surface: 15 cm.  
 DATE: 10 Apr 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	6000	6000	1	5000	5000
1	6000	6000	1	5000	5000
1	5000	5000	1	4000	4000
1	5500	5500	1	4500	4500
1	5800	5800	1	4000	4000
1	5000	5000	1	4000	4000
1	5000	5000	1	3800	3800
1	4700	4700	1	3500	3500
1	4500	4500	1	4000	4000
1	4800	4800	1	3000	3000

$K=2.07 \times 10^{-4}$  cm/sec.

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: DARAITAN LIMESTONE AREA  
 Bore Hole Number: LD-2 Hole Depth: 35 m.  
 Depth of Casing below ground surface: 3000 cm.  
 Height of casing above ground surface: 20 cm.  
 Internal diameter of borehole: 9.6 cm.  
 Depth of Groundwater level below ground surface: 615 cm.  
 Height of constant water level above ground surface: 20 cm.  
 DATE: 11 Apr 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	4000	4000			
1	4500	4500			
1	4000	4000			
1	4500	4500			
1	4500	4500			
1	4000	4000			
1	4500	4500			
1	4000	4000			
1	4500	4500			
1	4000	4000			

$K=1.90 \times 10^{-4}$  cm/sec.

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: DARAITAN LIMESTONE AREA  
 Bore Hole Number: LD-2 Hole Depth: 40 m.  
 Depth of Casing below ground surface: 3500 cm.  
 Height of casing above ground surface: 20 cm.  
 Internal diameter of borehole: 9.6 cm.  
 Depth of Groundwater level below ground surface: 450 cm.  
 Height of constant water level above ground surface: 20 cm.  
 DATE: 11 Apr 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	2500	2500			
1	2000	2000			
1	2000	2000			
1	2500	2500			
1	2000	2000			
1	2500	2500			
1	2000	2000			
1	2500	2500			
1	2000	2000			
1	2500	2500			

$K=1.36 \times 10^{-4}$  cm/sec.

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: DARAITAN LIMESTONE AREA  
 Bore Hole Number: LD-2 Hole Depth: 45 m.  
 Depth of Casing below ground surface: 4000 cm.  
 Height of casing above ground surface: 20 cm.  
 Internal diameter of borehole: 9.6 cm.  
 Depth of Groundwater level below ground surface: 1500 cm.  
 Height of constant water level above ground surface: 20 cm.  
 DATE: 12 Apr 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	2000	2000			
1	1500	1500			
1	1500	1500			
1	2000	2000			
1	1500	1500			
1	1500	1500			
1	2000	2000			
1	1500	1500			
1	1500	1500			
1	2000	2000			

$K=3.26 \times 10^{-5}$  cm/sec.

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: DARAITAN LIMESTONE AREA  
 Bore Hole Number: LD-2 Hole Depth: 50 m.  
 Depth of Casing below ground surface: 4500 cm.  
 Height of casing above ground surface: 20 cm.  
 Internal diameter of borehole: 9.6 cm.  
 Depth of Groundwater level below ground surface: 1500 cm.  
 Height of constant water level above ground surface: 20 cm.  
 DATE: 12 Apr 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	1500	1500			
1	1000	1000			
1	1000	1000			
1	1500	1500			
1	1000	1000			
1	1000	1000			
1	1500	1500			
1	1000	1000			
1	1000	1000			
1	1500	1500			

$K=2.34 \times 10^{-5}$  cm/sec.

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: DARAITAN LIMESTONE AREA  
 Bore Hole Number: LD-2 Hole Depth: 55 m.  
 Depth of Casing below ground surface: 5000 cm.  
 Height of casing above ground surface: 20 cm.  
 Internal diameter of borehole: 9.6 cm.  
 Depth of Groundwater level below ground surface: 2300 cm.  
 Height of constant water level above ground surface: 20 cm.  
 DATE: 13 Apr 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	1000	1000			
1	500	500			
1	1000	1000			
1	500	500			
1	1000	1000			
1	500	500			
1	1000	1000			
1	500	500			
1	1000	1000			
1	500	500			

**K=9.15 x 10<sup>-6</sup>cm/sec.**

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: DARAITAN LIMESTONE AREA  
 Bore Hole Number: LD-2 Hole Depth: 60 m.  
 Depth of Casing below ground surface: 5500 cm.  
 Height of casing above ground surface: 15 cm.  
 Internal diameter of borehole: 9.6 cm.  
 Depth of Groundwater level below ground surface: 2500 cm.  
 Height of constant water level above ground surface: 20 cm.  
 DATE: 15 Apr 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	200	200			
1	200	200			
1	300	300			
1	200	200			
1	300	300			
1	200	200			
1	300	300			
1	200	200			
1	300	300			
1	200	200			

**K=2.84 x 10<sup>-6</sup>cm/sec.**



### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: TRANSFER TUNNEL ROUTE (TUNNEL No.1)  
 Bore Hole Number: TD-4 Hole Depth: 5 m.  
 Depth of Casing below ground surface: 0 cm.  
 Height of casing above ground surface: 20 cm.  
 Internal diameter of borehole: 9.0 cm.  
 Depth of Groundwater level below ground surface: 300 cm.  
 Height of constant water level above ground surface: 20 cm.  
 DATE: 04 Sep 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	1500	1500			
1	1000	1000			
1	1500	1500			
1	1000	1000			
1	1000	1000			
1	1500	1500			
1	1000	1000			
1	1500	1500			
1	1000	1000			
1	1500	1500			
1	1000	1000			
1	1500	1500			

$K=1.12 \times 10^{-4}$ cm/sec.

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: TRANSFER TUNNEL ROUTE (TUNNEL No.1)  
 Bore Hole Number: TD-4 Hole Depth: 10 m.  
 Depth of Casing below ground surface: 500 cm.  
 Height of casing above ground surface: 20 cm.  
 Internal diameter of borehole: 9.0 cm.  
 Depth of Groundwater level below ground surface: 700 cm.  
 Height of constant water level above ground surface: 20 cm.  
 DATE: 04 Sep 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	1500	1500			
1	1500	1500			
1	1000	1000			
1	1500	1500			
1	1000	1000			
1	1500	1500			
1	1000	1000			
1	1500	1500			
1	1000	1000			
1	1500	1500			
1	1000	1000			
1	1500	1500			

$K=5.23 \times 10^{-5}$ cm/sec.

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: TRANSFER TUNNEL ROUTE (TUNNEL No.1)  
 Bore Hole Number: TD-4 Hole Depth: 15 m.  
 Depth of Casing below ground surface: 1000 cm.  
 Height of casing above ground surface: 20 cm.  
 Internal diameter of borehole: 9.0 cm.  
 Depth of Groundwater level below ground surface: 1200 cm.  
 Height of constant water level above ground surface: 20 cm.  
 DATE: 05 Sep 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	2000	2000			
1	2500	2500			
1	2000	2000			
1	2500	2500			
1	2000	2000			
1	2500	2500			
1	2000	2000			
1	2500	2500			
1	2000	2000			
1	2500	2500			
1	2000	2000			
1	2500	2500			

$K=5.28 \times 10^{-5}$  cm/sec.

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: TRANSFER TUNNEL ROUTE (TUNNEL No.1)  
 Bore Hole Number: TD-4 Hole Depth: 20 m.  
 Depth of Casing below ground surface: 1500 cm.  
 Height of casing above ground surface: 20 cm.  
 Internal diameter of borehole: 9.0 cm.  
 Depth of Groundwater level below ground surface: 1600 cm.  
 Height of constant water level above ground surface: 20 cm.  
 DATE: 05 Sep 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	3000	3000			
1	3500	3500			
1	3000	3000			
1	3500	3500			
1	3000	3000			
1	3500	3500			
1	3000	3000			
1	3000	3000			
1	3000	3000			
1	3000	3000			
1	3500	3500			

$K=5.75 \times 10^{-5}$  cm/sec.

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: TRANSFER TUNNEL ROUTE (TUNNEL No.1)  
 Bore Hole Number: TD-4 Hole Depth: 25 m.  
 Depth of Casing below ground surface: 2000 cm.  
 Height of casing above ground surface: 20 cm.  
 Internal diameter of borehole: 9.0 cm.  
 Depth of Groundwater level below ground surface: 2100 cm.  
 Height of constant water level above ground surface: 20 cm.  
 DATE: 06 Sep 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	3000	3000			
1	3500	3500			
1	3000	3000			
1	3000	3000			
1	3000	3000			
1	3500	3500			
1	3000	3000			
1	3500	3500			
1	3000	3000			
1	3500	3500			
1	3000	3000			
1	3500	3500			

$K=4.39 \times 10^{-3}$  cm/sec.

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: TRANSFER TUNNEL ROUTE (TUNNEL No.1)  
 Bore Hole Number: TD-4 Hole Depth: 30 m.  
 Depth of Casing below ground surface: 2500 cm.  
 Height of casing above ground surface: 20 cm.  
 Internal diameter of borehole: 9.0 cm.  
 Depth of Groundwater level below ground surface: 2500 cm.  
 Height of constant water level above ground surface: 20 cm.  
 DATE: 07 Sep 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	1000	1000			
1	1500	1500			
1	1000	1000			
1	1500	1500			
1	1000	1000			
1	1000	1000			
1	1500	1500			
1	1000	1000			
1	1500	1500			
1	1000	1000			
1	1500	1500			
1	1000	1000			

$K=1.43 \times 10^{-5}$  cm/sec.

## OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: TRANSFER TUNNEL ROUTE (TUNNEL No.1)  
 Bore Hole Number: TD-4 Hole Depth: 35 m.  
 Depth of Casing below ground surface: 3000 cm.  
 Height of casing above ground surface: 20 cm.  
 Internal diameter of borehole: 9.0 cm.  
 Depth of Groundwater level below ground surface: 2500 cm.  
 Height of constant water level above ground surface: 20 cm.  
 DATE: 08 Sep 2002

### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	1000	1000			
1	500	500			
1	1000	1000			
1	500	500			
1	1000	1000			
1	500	500			
1	1000	1000			
1	500	500			
1	1000	1000			
1	500	500			

**K=8.53 x 10<sup>-6</sup>cm/sec.**

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: WATER TUNNEL (TUNNEL No.2)  
 Bore Hole Number: BH-WD-7 Hole Depth: 5 m.  
 Depth of Casing below ground surface: 0 cm.  
 Height of casing above ground surface: 25 cm.  
 Internal diameter of borehole: 7.0 cm.  
 Depth of Groundwater level below ground surface: 130 cm.  
 Height of constant water level above ground surface: 25 cm.  
 DATE: 11 Aug 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	8000	8000			
1	7000	7000			
1	6000	6000			
1	7000	7000			
1	5000	5000			
1	6000	6000			
1	6000	6000			
1	6000	6000			
1	6000	6000			
1	6000	6000			
1	5000	5000			

$K=1.16 \times 10^{-3}$  cm/sec.

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: WATER TUNNEL (TUNNEL No.2)  
 Bore Hole Number: BH-WD-7 Hole Depth: 10 m.  
 Depth of Casing below ground surface: 500 cm.  
 Height of casing above ground surface: 50 cm.  
 Internal diameter of borehole: 7.0 cm.  
 Depth of Groundwater level below ground surface: 170 cm.  
 Height of constant water level above ground surface: 50 cm.  
 DATE: 12 Aug 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	6000	6000			
1	5000	5000			
1	5000	5000			
1	5000	5000			
1	5000	5000			
1	5000	5000			
1	5000	5000			
1	4000	4000			
1	5000	5000			
1	5000	5000			
1	5000	5000			

$K=6.81 \times 10^{-4}$  cm/sec.

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: WATER TUNNEL (TUNNEL No.2)  
 Bore Hole Number: BH-WD-7 Hole Depth: 15 m.  
 Depth of Casing below ground surface: 1000 cm.  
 Height of casing above ground surface: 25 cm.  
 Internal diameter of borehole: 7.0 cm.  
 Depth of Groundwater level below ground surface: 140 cm.  
 Height of constant water level above ground surface: 25 cm.  
 DATE: 13 Aug 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	4000	4000			
1	3000	3000			
1	4000	4000			
1	4000	4000			
1	3000	3000			
1	3000	3000			
1	3000	3000			
1	3000	3000			
1	3000	3000			
1	3000	3000			
1	4000	4000			

$K=5.45 \times 10^{-4}$  cm/sec.

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: WATER TUNNEL (TUNNEL No.2)  
 Bore Hole Number: BH-WD-7 Hole Depth: 20 m.  
 Depth of Casing below ground surface: 1500 cm.  
 Height of casing above ground surface: 100 cm.  
 Internal diameter of borehole: 7.0 cm.  
 Depth of Groundwater level below ground surface: 130 cm.  
 Height of constant water level above ground surface: 100 cm.  
 DATE: 13 Aug 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	3000	3000			
1	3000	3000			
1	4000	4000			
1	3000	3000			
1	3000	3000			
1	3000	3000			
1	3000	3000			
1	3000	3000			
1	3000	3000			
1	4000	4000			
1	3000	3000			

$K=3.91 \times 10^{-4}$  cm/sec.

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: WATER TUNNEL (TUNNEL No.2)  
 Bore Hole Number: BH-WD-7 Hole Depth: 25 m.  
 Depth of Casing below ground surface: 2000 cm.  
 Height of casing above ground surface: 50 cm.  
 Internal diameter of borehole: 7.0 cm.  
 Depth of Groundwater level below ground surface: 130 cm.  
 Height of constant water level above ground surface: 50 cm.  
 DATE: 14 Aug 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	2000	2000			
1	2000	2000			
1	1000	1000			
1	1000	1000			
1	2000	2000			
1	2000	2000			
1	1000	1000			
1	2000	2000			
1	2000	2000			
1	1000	1000			

$K=2.50 \times 10^{-4}$ cm/sec.

### OPEN-END CONSTANT HEAD TEST RECORD

Project: STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA  
 Location: WATER TUNNEL (TUNNEL No.2)  
 Bore Hole Number: BH-WD-7 Hole Depth: 30 m.  
 Depth of Casing below ground surface: 2500 cm.  
 Height of casing above ground surface: 50 cm.  
 Internal diameter of borehole: 7.0 cm.  
 Depth of Groundwater level below ground surface: 130 cm.  
 Height of constant water level above ground surface: 50 cm.  
 DATE: 14 Aug 2002

#### TEST RECORD

Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)	Time (min)	Supplied water volume(cm <sup>3</sup> )	Flow rate (cm <sup>3</sup> /min.)
1	1000	1000			
1	500	500			
1	500	500			
1	500	500			
1	1000	1000			
1	500	500			
1	500	500			
1	500	500			
1	1000	1000			
1	500	500			

$K=8.30 \times 10^{-5}$ cm/sec.