Performed for:	AE Com			Location:	KoOlina
Project:	Waimanalo Gulch			Job No.: 239-011	
Sample:	LCRS-06			Constant Head Test	
Performed by:	BT			Date of test:	8.18.10
wt of mold =	10.60	lbs.			
wt of mold+soil =	12.95	lbs.			
diameter =	4	inches -->	10.16	cm	
area =	81.07	sq. cm			
length =	4.563	inches -->	11.59	cm	
volume =	939.64	cu. cm			
mass soil =	2.35	lbs. -->	1065.94	g	
		sq. cm			
% Void	35.00	Dry Density -->	1.13	g/cu. cm	
% over 3/4" removed	0.00				

Trial Number	1	2	3	4	5	6
elapsed time (sec)	5	10	20	30	45	60
Water Volume (mL)	105	173	333	476	699	890
Δh of water (cm)	96.52	96.52	96.52	96.52	96.52	96.52
temp (deg C)	25	25	25	25	25	25
unit wt. of water	0.9970	0.9970	0.9970	0.9970	0.9970	0.9970
viscosity of water	9.045	9.045	9.045	9.045	9.045	9.045
coefficient of permeability	1.866E+00	1.537E+00	1.480E+00	1.410E+00	1.380E+00	1.318E+00

average	**1.50E+00**	**cm/s**

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PERMEABILITY CONSTANT HEAD

Performed for:	AE Com			Location:	KoOlina
Project:	Waimanalo Gulch			Job No.: 239-011	
Sample:	LCRS-08			Constant Head Test	
Performed by:	BT			Date of test:	8.18.10
wt of mold =	10.60	lbs.			
wt of mold+soil =	13.30	lbs.			
diameter =	4	inches -->	10.16	cm	
area =	81.07	sq. cm			
length =	4.563	inches -->	11.59	cm	
volume =	939.64	cu. cm			
mass soil =	2.70	lbs. -->	1224.70	g	
		sq. cm			
% Void	35.00	Dry Density -->	1.30	g/cu. cm	
% over 3/4" removed	0.00				

Trial Number	1	2	3	4	5	6
elapsed time (sec)	5	10	20	30	45	60
Water Volume (mL)	111	196	386	572	822	1027
Δh of water (cm)	96.52	96.52	96.52	96.52	96.52	96.52
temp (deg C)	25	25	25	25	25	25
unit wt. of water	0.9970	0.9970	0.9970	0.9970	0.9970	0.9970
viscosity of water	9.045	9.045	9.045	9.045	9.045	9.045
coefficient of permeability	1.973E+00	1.742E+00	1.715E+00	1.694E+00	1.623E+00	1.521E+00

average	**1.71E+00**	**cm/s**

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PERMEABILITY CONSTANT HEAD

MASA FUJIOKA AND ASSOCIATES
SIEVE TEST ANALYSIS

SAMPLE #: LCRS-06

Project: Waimanalo Gulch
Location: Ko Olina
Soil Desc.: Poorly graded gravel
USCS: GP

Job #: 10239-011
Depth: n/a
Tested By: BT
Test Date: 8.17.10

Weight of Sample+Tare (g): 1219.4
Weight Tare (g): 14.2
Weight of Water (g): 0
Percent Water: 0%
Total Dry Sample Weight (g): 1219.4

Screen Size #	2	1 1/2	3/4	4	10			200
in mm	50	37.5	19	4.75	2	0.25	0.15	0.075
Sieve Weight (g)	540.5	508	497.8	471.6	426.6	320.7	351.5	297.1
Wt. Sieve + Soil (g)	540.5	576.9	1337.3	728.9	427.6	320.7	351.5	317
Soil on Sieve (g)	0	68.9	839.5	257.3	1	0	0	19.9
% Stopped at Filter	0	5.71689	69.6565	21.3492	0.08297	0	0	1.65118
% Passing Filter	**100**	**94.2831**	**24.6266**	**3.27746**	**3.19449**	**3.19449**	**3.194491**	**1.54331**

* #200 seive wet seived

GRAIN SIZE ANALYSIS

Project: AE Com-Waimanalo Gulch Landfill
Sample: LCRS-06
Job No.: 10239-011
Depth: n/a
Location:n/a

Soil Classification: Poorly graded gravel

UCSC: GP

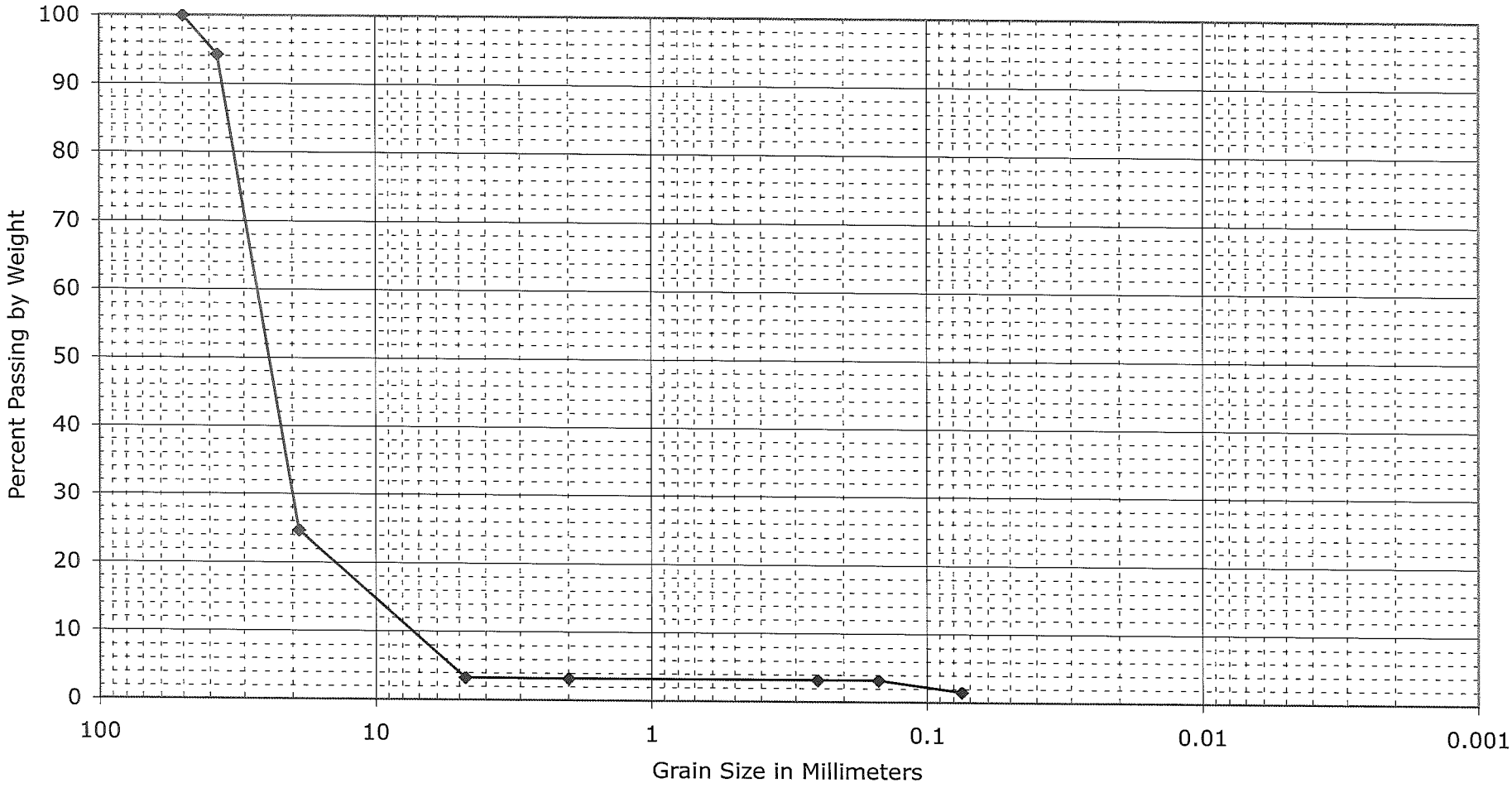

Figure:

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WMH00178

MASA FUJIOKA AND ASSOCIATES
SIEVE TEST ANALYSIS

SAMPLE #: LCRS-07

Project: Waimanalo Gulch
Location: Ko Olina
Soil Desc.: Poorly graded gravel
USCS: GP

Job #: 10239-011
Depth: n/a
Tested By: BT
Test Date: 8.17.10

Weight of Sample+Tare (g): 1441.9
Weight Tare (g): 14.3
Weight of Water (g): 0
Percent Water: 0%
Total Dry Sample Weight (g): 1441.9

Screen Size #	2	1 1/2	3/4	4	10			200
in mm	50	37.5	19	4.75	2	0.25	0.15	0.075
Sieve Weight (g)	540.5	508	497.8	471.6	426.6	320.7	351.5	297.1
Wt. Sieve + Soil (g)	540.5	591	1515.5	761.7	427	320.7	351.5	315
Soil on Sieve (g)	0	83	1017.7	290.1	0.4	0	0	17.9
% Stopped at Filter	0	5.81395	71.2875	20.3208	0.02802	0	0	1.25385
% Passing Filter	100	94.186	22.8986	2.57775	2.54973	2.54973	2.549734	1.29588

* #200 seive wet seived

GRAIN SIZE ANALYSIS

Project: AE Com-Waimanalo Gulch Landfill
Sample: LCRS-07
Job No.: 10239-011
Depth: n/a
Location:n/a

Soil Classification: Poorly graded gravel

UCSC: GP

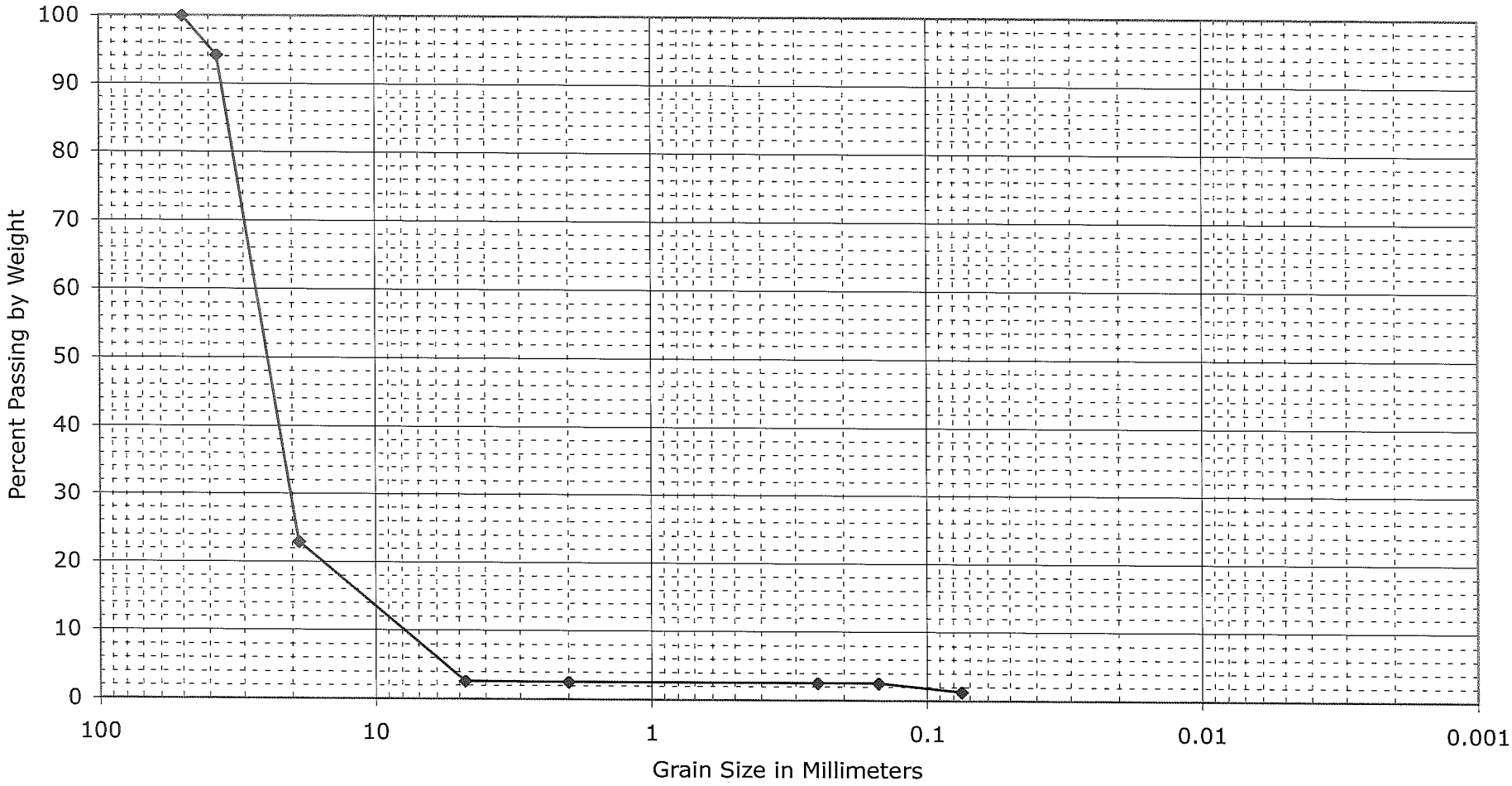

Figure:

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WMH001180

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SIEVE TEST ANALYSIS

SAMPLE #: LCRS-08

Project: Waimanalo Gulch
Location: Ko Olina
Soil Desc.: Poorly graded gravel
USCS: GP

Job #: 10239-011
Depth: n/a
Tested By: BT
Test Date: 8.17.10

Weight of Sample+Tare (g): 1400.8
Weight Tare (g): 14.2
Weight of Water (g): 0
Percent Water: 0%
Total Dry Sample Weight (g): 1400.8

Screen Size #	2	1 1/2	3/4	4	10			200
in mm	50	37.5	19	4.75	2	0.25	0.15	0.075
Sieve Weight (g)	540.5	508	497.8	471.6	426.6	320.7	351.5	297.1
Wt. Sieve + Soil (g)	540.5	583.2	1626	628.7	427	320.7	351.5	309.8
Soil on Sieve (g)	0	75.2	1128.2	157.1	0.4	0	0	12.7
% Stopped at Filter	0	5.42334	81.3645	11.3299	0.02885	0	0	0.91591
% Passing Filter	100	94.5767	13.2122	1.8823	1.85345	1.85345	1.853454	0.93755

* #200 seive wet seived

GRAIN SIZE ANALYSIS

Project: AE Com-Waimanalo Gulch Landfill
Sample: LCRS-08
Job No.: 10239-011
Depth: n/a
Location:n/a

Soil Classification: Poorly graded gravel

UCSC: GP

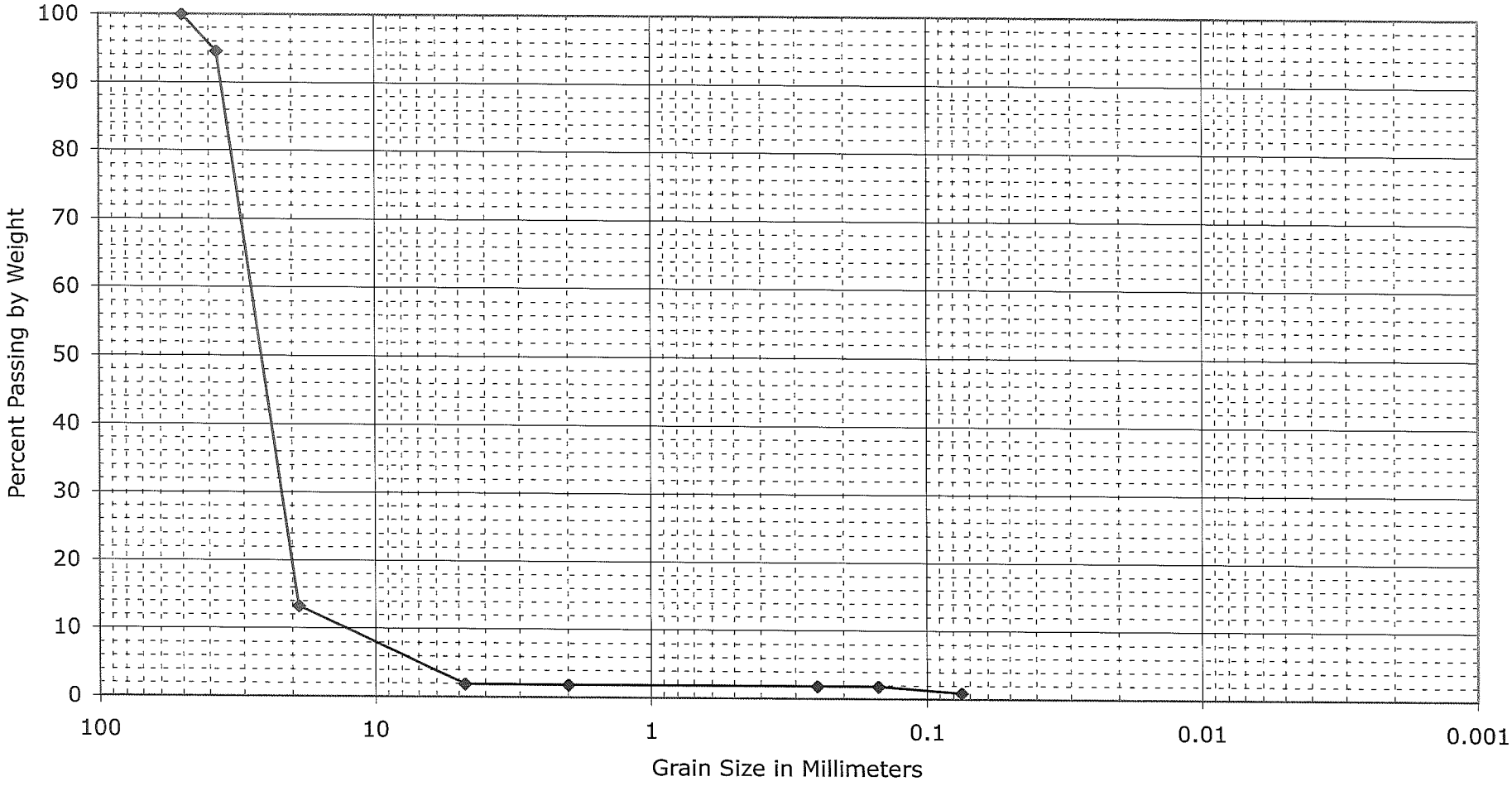

Figure:

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MASA FUJIOKA AND ASSOCIATES
SIEVE TEST ANALYSIS

SAMPLE #: LCRS-09

Project: Waimanalo Gulch
Location: Ko Olina
Soil Desc.: Poorly graded gravel
USCS: GP

Job #: 10239-011
Depth: n/a
Tested By: BT
Test Date: 8.17.10

Weight of Sample+Tare (g): 1395.9
Weight Tare (g): 14.2
Weight of Water (g): 0
Percent Water: 0%
Total Dry Sample Weight (g): 1395.9

Screen Size #	2	1 1/2	3/4	4	10			200
in mm	50	37.5	19	4.75	2	0.25	0.15	0.075
Sieve Weight (g)	540.5	508	497.8	471.6	426.6	320.7	351.5	297.1
Wt. Sieve + Soil (g)	540.5	798.1	1391.7	633.9	427.6	320.7	351.5	313.9
Soil on Sieve (g)	0	290.1	893.9	162.3	1	0	0	16.8
% Stopped at Filter	0	20.9959	64.6957	11.7464	0.07237	0	0	1.21589
% Passing Filter	100	79.0041	14.3085	2.56206	2.48969	2.48969	2.489687	1.27379

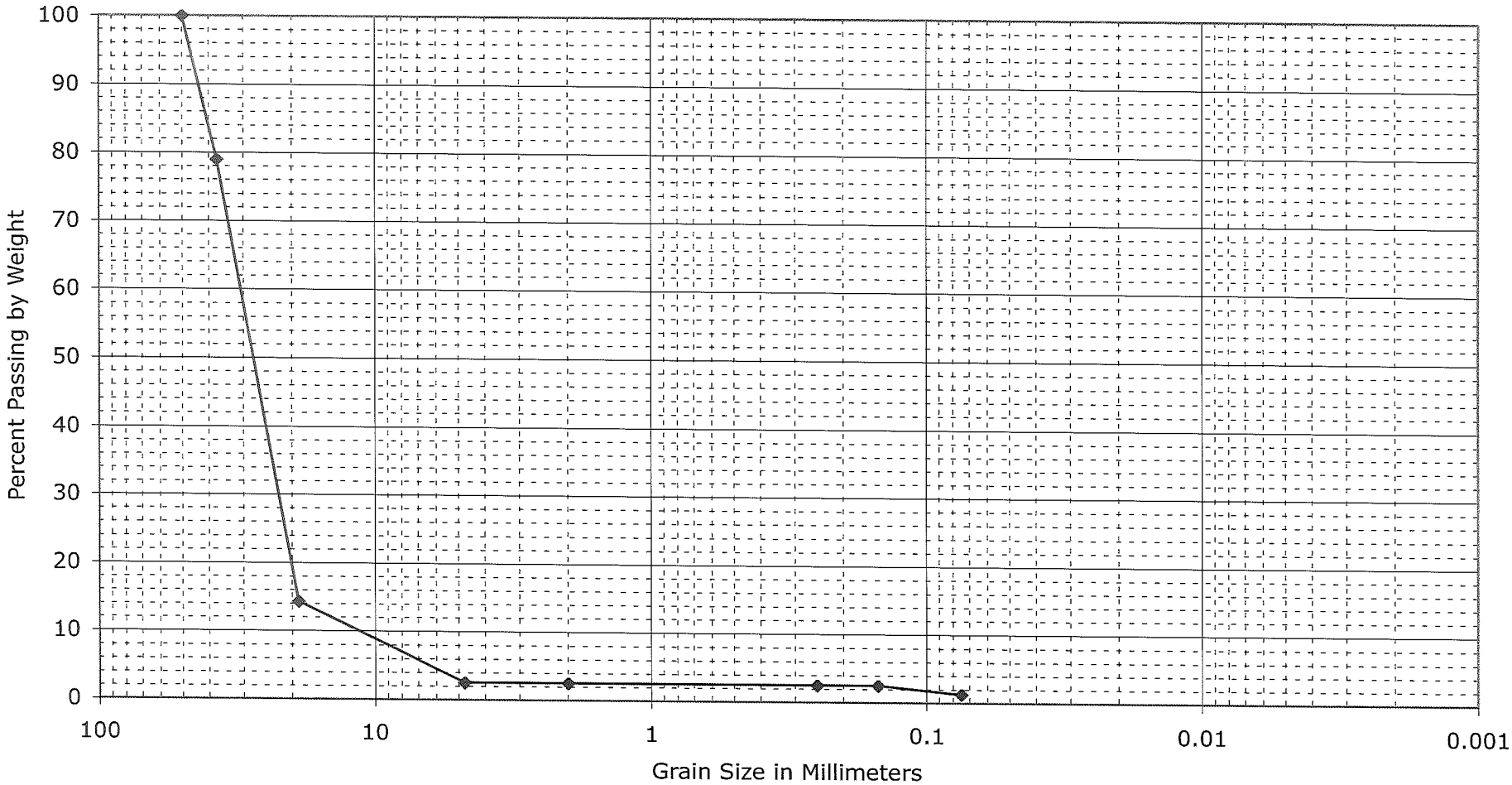
* #200 seive wet seived

GRAIN SIZE ANALYSIS

Project: AE Com-Waimanalo Gulch Landfill
Sample: LCRS-09
Job No.: 10239-011
Depth: n/a
Location:n/a

Soil Classification: Poorly graded gravel

UCSC: GP



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