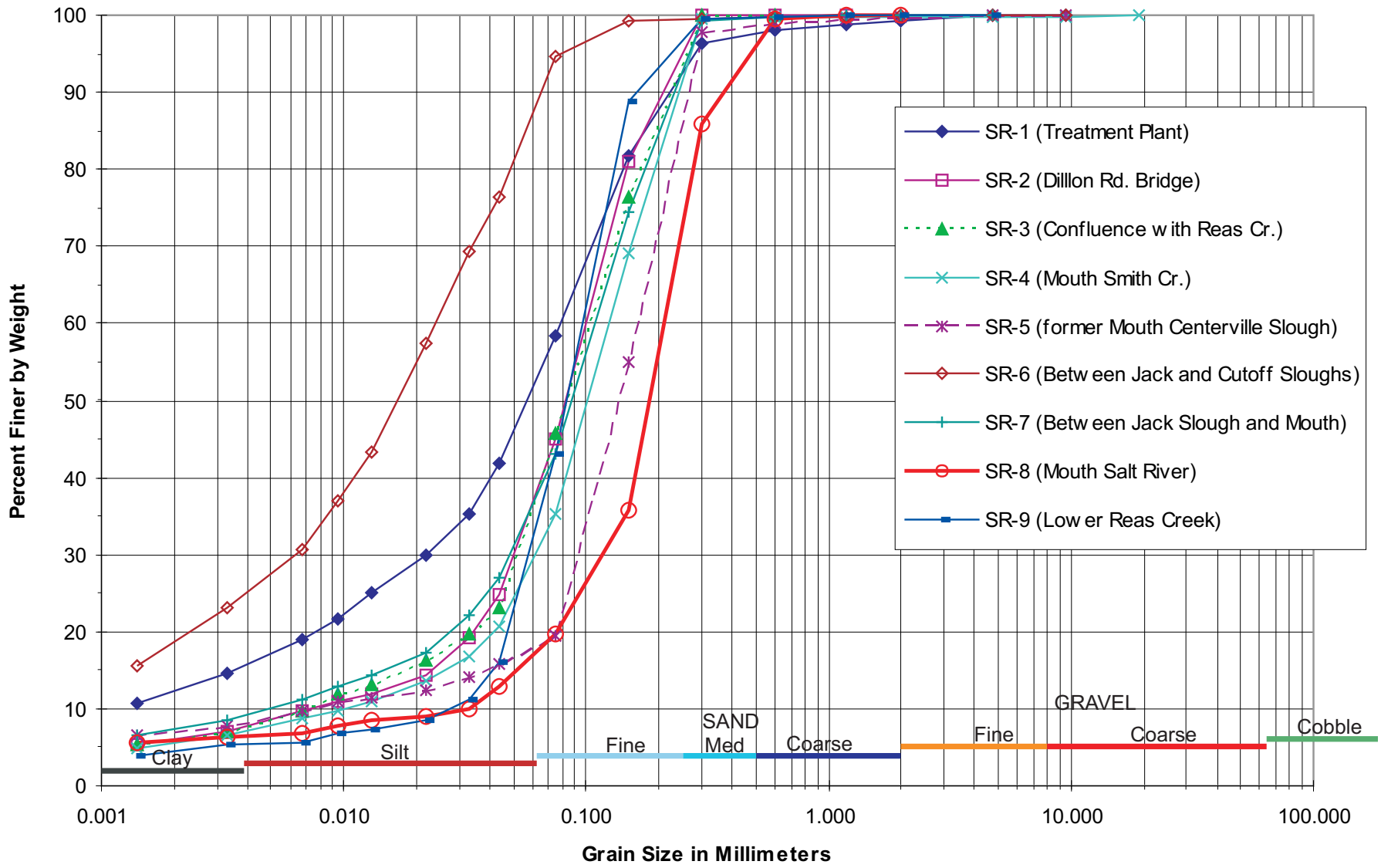
KAMMAN HYDROLOGY & ENGINEERING, INC.

Channel Bed Soil Sampling Locations

Salt River Ecosystem Restoration Project

FIGURE 1



KAMMAN HYDROLOGY & ENGINEERING, INC.

Grain Size Analysis Results for Channel Bed Soil Samples

Salt River Ecosystem Restoration Project

FIGURE 2

R G H

CONSULTANTS, INC.

Geotechnical
Geological
Environmental
And Laboratory Services

ORGANIC CONTENT

November 9, 2005

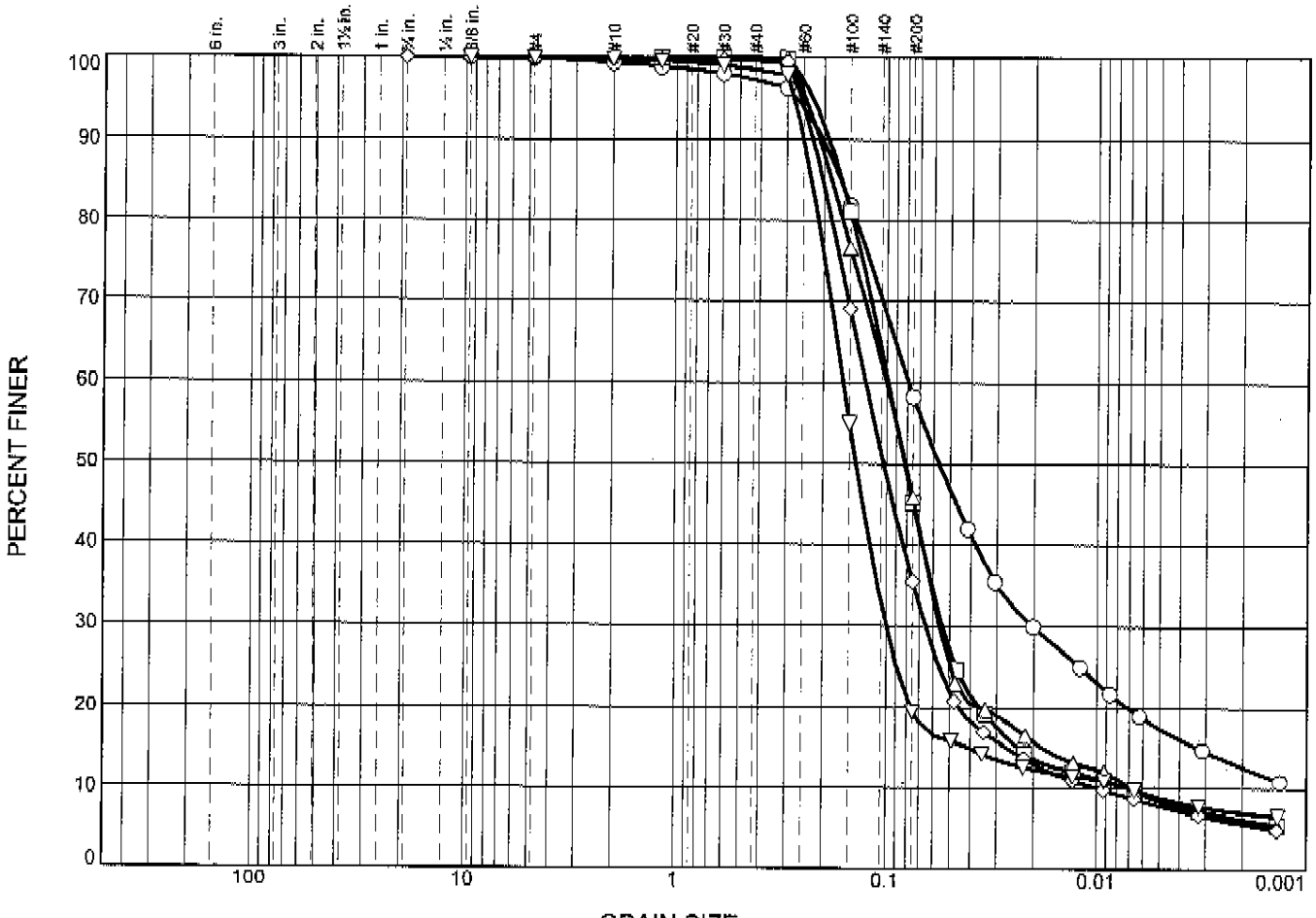
Project: Salt River
Job No: 3042

Testing Program

The testing program included Organic Content. The testing was performed in accordance with ASTM D-2974. The results are presented below.

Sample	Depth	Organic Content	Moisture Content
SR-1	---	2.56 %	36.1 %
SR-2	---	1.50 %	31.6 %
SR-3	---	1.33 %	32.4 %
SR-4	---	1.75 %	17.9 %
SR-5	---	1.83 %	33.6 %
SR-6	---	2.84 %	23.2 %
SR-7	---	1.96 %	41.7 %
SR-8	---	1.42 %	52.2 %
SR-9	---	1.41 %	47.5%

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.1	0.6	2.0	39.0	40.9	17.4
□	0.0	0.0	0.0	0.0	0.0	54.9	36.4	8.7
△	0.0	0.0	0.0	0.0	0.0	54.2	37.4	8.4
◇	0.0	0.0	0.2	0.0	0.2	64.2	27.6	7.8
▽	0.0	0.0	0.1	0.1	1.3	79.0	10.7	8.8

SOIL DATA

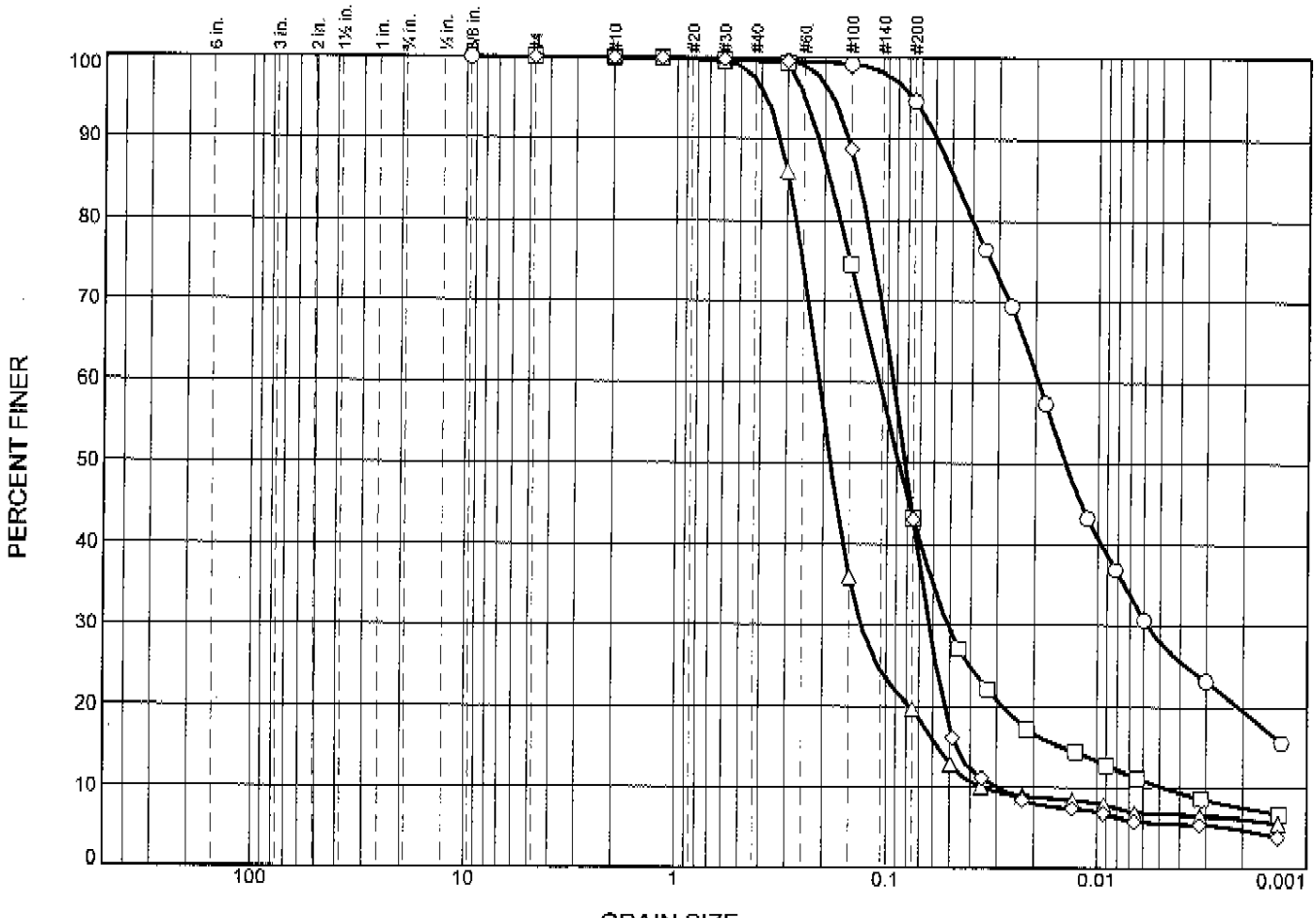
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	SR-1			Brown Sandy Silt (ML)	ML
□	SR-2			Grey Silty Sand (SM)	SM
△	SR-3			Brown Silty Sand (SM)	SM
◇	SR-4			Dark Grey Silty Sand (SM)	SM
▽	SR-5			Dark Grey Silty Sand (SM)	SM

R G H CONSULTANTS, INC.

Client: Kamman Hydrology and Engineering
Project: Salt River
Project No.: 3042
Plate

Tested By: SW **Checked By:** TMc

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.1	0.0	0.3	5.0	66.7	27.9
□	0.0	0.0	0.0	0.1	0.4	56.4	33.0	10.1
△	0.0	0.0	0.0	0.0	2.6	77.8	12.9	6.7
◇	0.0	0.0	0.0	0.0	0.3	56.6	37.6	5.5

SOIL DATA

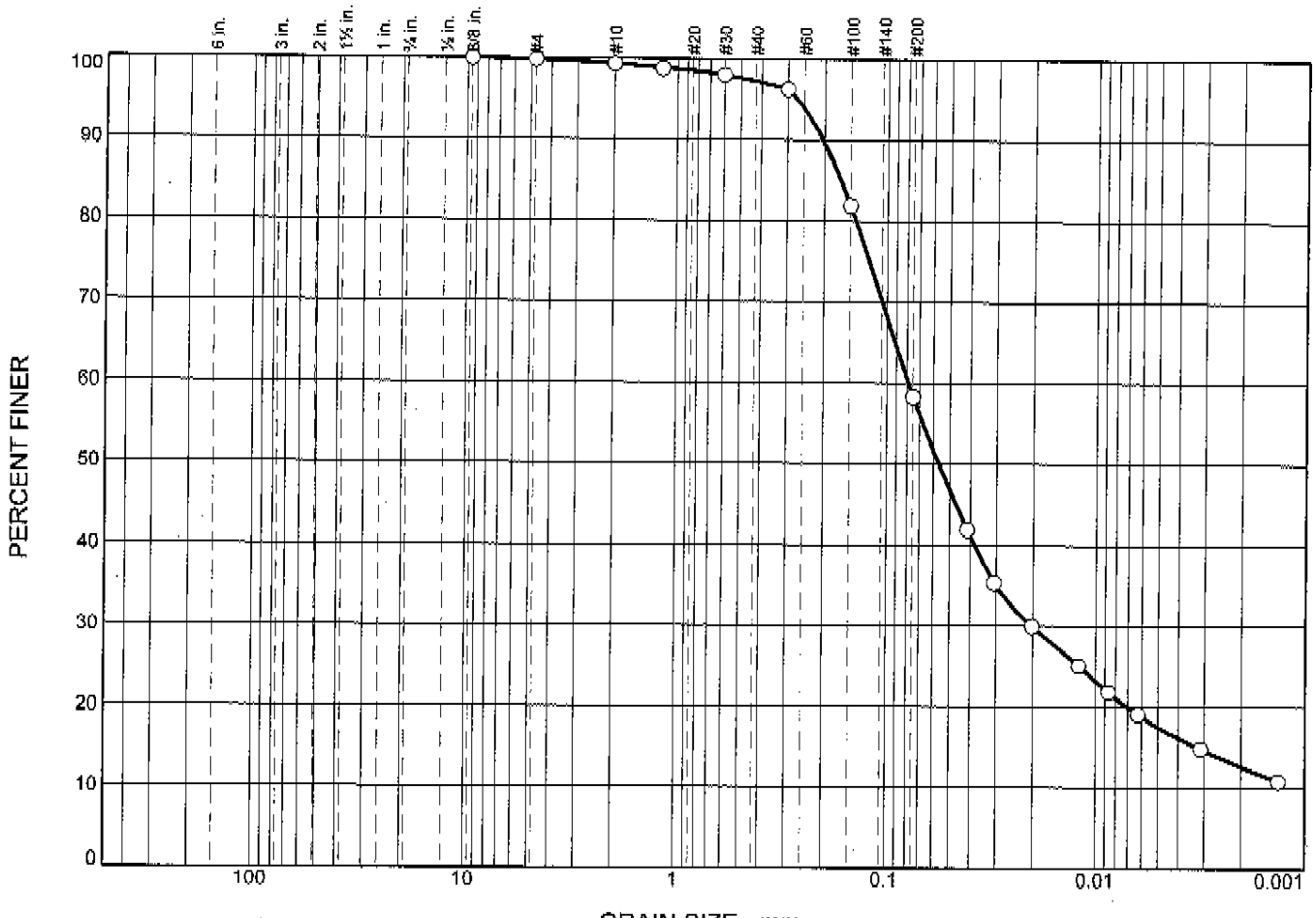
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	SR-6			Grey Elastic Silt (MH)	MH
□	SR-7			Dark Grey Silty Sand (SM)	SM
△	SR-8			Dark Grey Silty Sand (SM)	SM
◇	SR-9			Grey Silty Sand (SM)	SM

R G H CONSULTANTS, INC.

Client: Kamman Hydrology and Engineering
Project: Salt River
Project No.: 3042
Plate

Tested By: SW **Checked By:** TMc

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.1	0.6	2.0	39.0	40.9	17.4

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	SR-1			Brown Sandy Silt (ML)	ML

R G H CONSULTANTS, INC.

Client: Kamman Hydrology and Engineering
Project: Salt River
Project No.: 3042
Plate

Tested By: SW **Checked By:** TMc

GRAIN SIZE DISTRIBUTION TEST DATA

11/9/2005

Client: Kamman Hydrology and Engineering
Project: Salt River
Project Number: 3042
Location: SR-1
Material Description: Brown Sandy Silt (ML)
USCS: ML
Tested by: SW **Checked by:** TMc

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 41.70
Tare Wt. = 0.00
Minus #200 from wash = 88.4%

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
358.90	0.00	0.00	1.5		
			.75		
			.375	0.00	100.0
			#4	0.50	99.9
			#10	2.40	99.3
			#16	4.20	98.8
			#30	7.10	98.0
			#50	13.40	96.3
			#100	65.20	81.8
			#200	149.80	58.3

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 99.3
Weight of hydrometer sample =90.0
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -4
Meniscus correction only = -0.5
Specific gravity of solids = 2.70
Hydrometer type = 152H
Hydrometer effective depth equation: L = 16.294964 - 0.164 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
1.00	19.8	42.5	38.4	0.0135	42.0	9.4	0.0413	41.9
2.00	19.8	36.5	32.4	0.0135	36.0	10.4	0.0307	35.4
5.00	19.8	31.5	27.4	0.0135	31.0	11.2	0.0202	29.9
15.00	19.8	27.0	22.9	0.0135	26.5	11.9	0.0120	25.0
30.00	19.7	24.0	19.9	0.0135	23.5	12.4	0.0087	21.7
60.00	19.6	21.5	17.4	0.0135	21.0	12.9	0.0063	19.0
250.00	20.1	17.5	13.5	0.0134	17.0	13.5	0.0031	14.7
1440.00	19.7	14.0	9.9	0.0135	13.5	14.1	0.0013	10.8

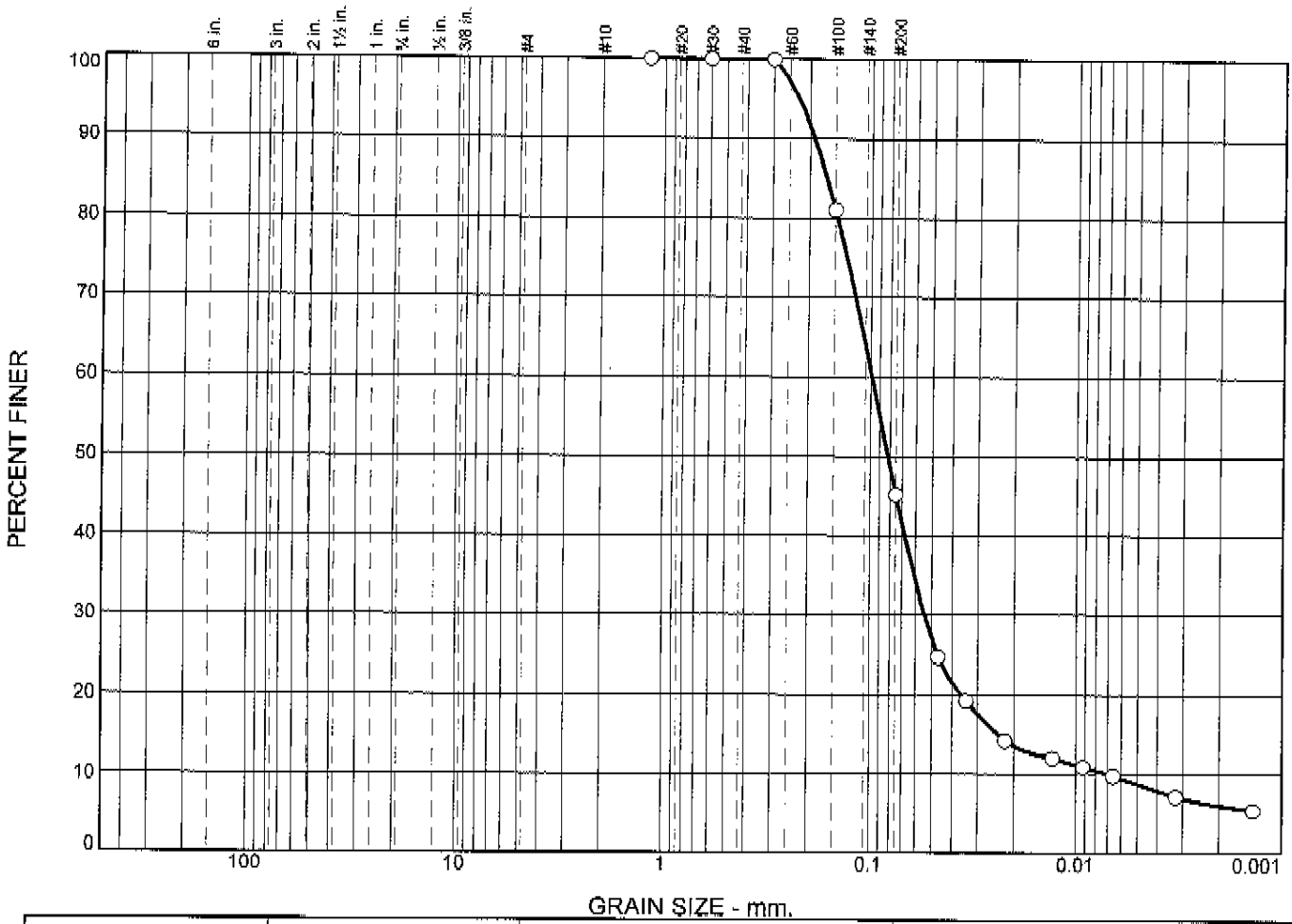
Fraction Contained

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.1	0.1	0.6	2.0	39.0	41.6	40.9	17.4	58.3

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
	0.0033	0.0071	0.0203	0.0567	0.0791	0.1415	0.1671	0.2040	0.2693

Fineness Modulus
0.26

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.0	54.9	36.4	8.7

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	SR-2			Grey Silty Sand (SM)	SM

R G H CONSULTANTS, INC.

Client: Kamman Hydrology and Engineering
Project: Salt River
Project No.: 3042
Plate

Tested By: SW **Checked By:** TMc

GRAIN SIZE DISTRIBUTION TEST DATA

11/9/2005

Client: Kamman Hydrology and Engineering
Project: Salt River
Project Number: 3042
Location: SR-2
Material Description: Grey Silty Sand (SM)
USCS: SM
Tested by: SW **Checked by:** TMc

Sieve Results

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 54.90
Tare Wt. = 0.00
Minus #200 from wash = 88.1%

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
461.80	0.00	0.00	1.5		
			.75		
			.375		
			#4		
			#10		
			#16	0.00	100.0
			#30	0.10	100.0
			#50	0.30	99.9
			#100	87.70	81.0
			#200	253.30	45.1

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =90
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -4
Meniscus correction only = -0.5
Specific gravity of solids = 2.70
Hydrometer type = 152H
Hydrometer effective depth equation: L = 16.294964 - 0.164 x Rm

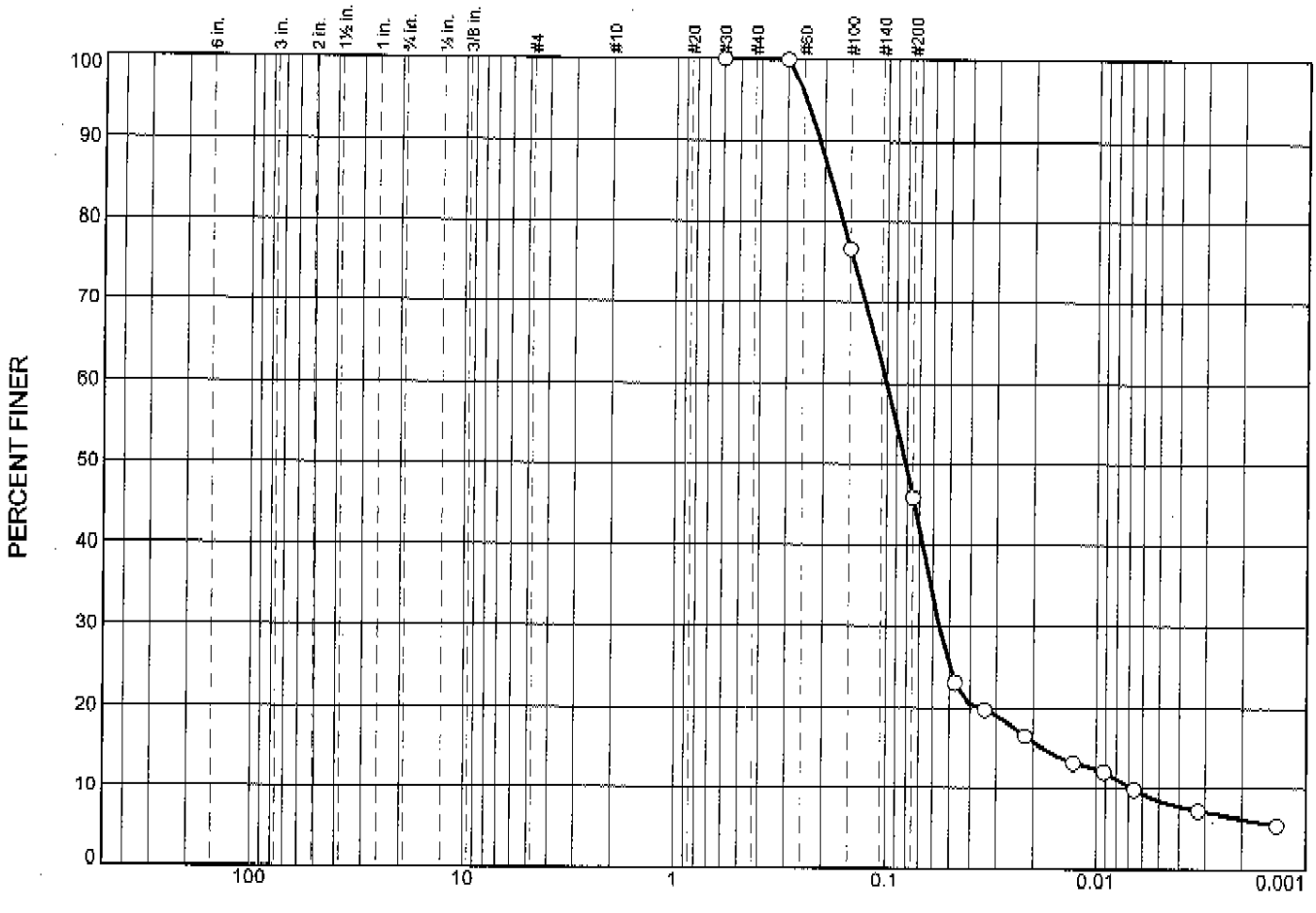
Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
1.00	20.1	26.5	22.5	0.0134	26.0	12.0	0.0466	24.7
2.00	20.1	21.5	17.5	0.0134	21.0	12.9	0.0340	19.2
5.00	20.1	17.0	13.0	0.0134	16.5	13.6	0.0221	14.3
15.00	19.9	15.0	10.9	0.0135	14.5	13.9	0.0130	12.0
30.00	19.8	14.0	9.9	0.0135	13.5	14.1	0.0092	10.9
60.00	19.7	13.0	8.9	0.0135	12.5	14.2	0.0066	9.8
250.00	20.2	10.5	6.5	0.0134	10.0	14.7	0.0032	7.1
1440.00	19.7	9.0	4.9	0.0135	8.5	14.9	0.0014	5.4

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.0	54.9	54.9	36.4	8.7	45.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0070	0.0240	0.0362	0.0545	0.0821	0.0987	0.1466	0.1652	0.1899	0.2262

Fineness Modulus	C_u	C_c
0.19	14.06	4.29

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.0	54.2	37.4	8.4

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	SR-3			Brown Silty Sand (SM)	SM

R G H CONSULTANTS, INC.

Client: Kamman Hydrology and Engineering
Project: Salt River
Project No.: 3042
Plate

Tested By: SW **Checked By:** TMc

GRAIN SIZE DISTRIBUTION TEST DATA

11/9/2005

Client: Kamman Hydrology and Engineering
Project: Salt River
Project Number: 3042
Location: SR-3
Material Description: Brown Silty Sand (SM)
USCS: SM
Tested by: SW **Checked by:** TMc

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 54.20
Tare Wt. = 0.00
Minus #200 from wash = 85.2%

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
365.90	0.00	0.00	1.5		
			.75		
			.375		
			#4		
			#10		
			#16		
			#30	0.00	100.0
			#50	0.20	99.9
			#100	86.00	76.5
			#200	198.40	45.8

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =90
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -4
Meniscus correction only = -0.5
Specific gravity of solids = 2.70
Hydrometer type = 152H
Hydrometer effective depth equation: L = 16.294964 - 0.164 x Rm

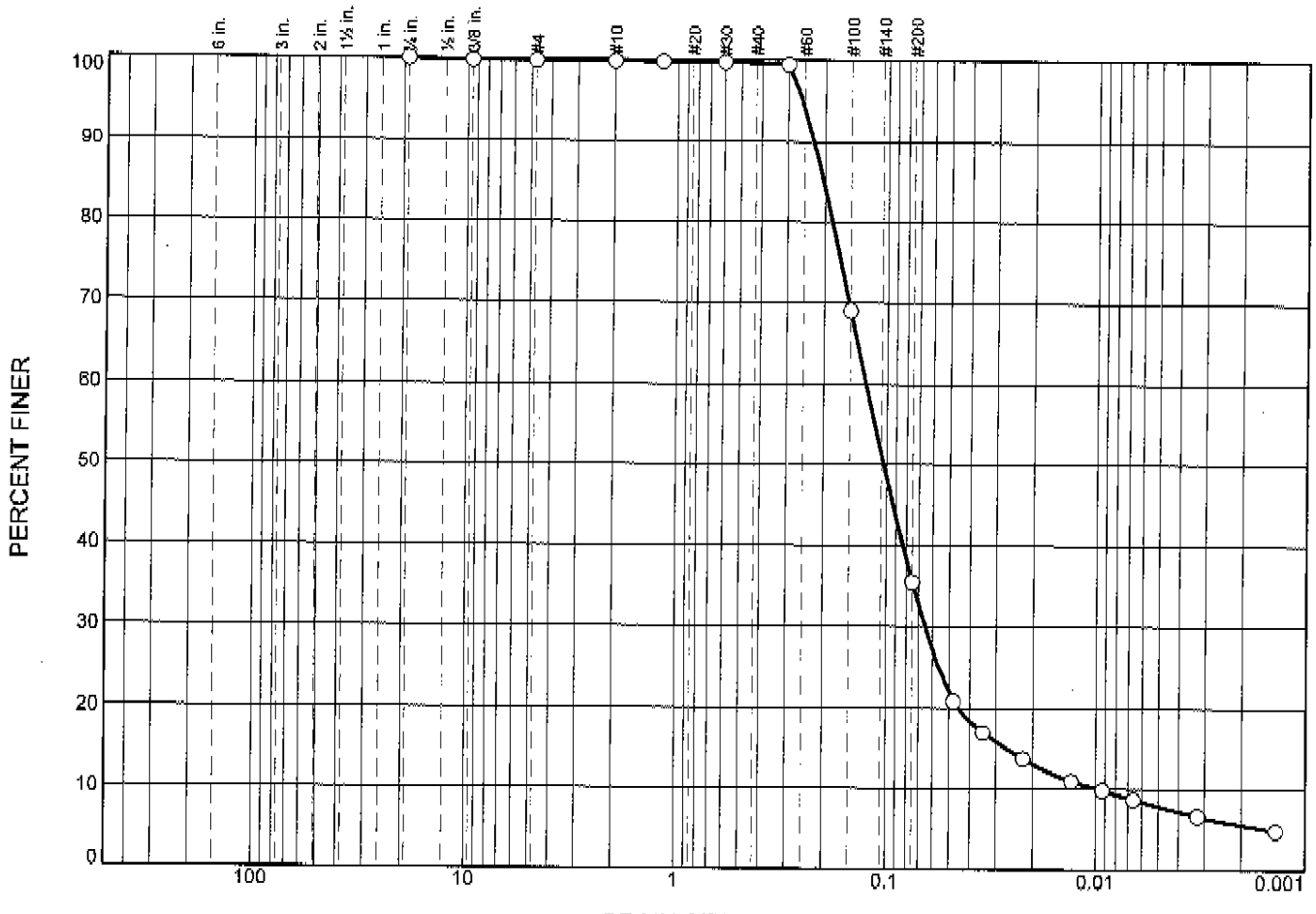
Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
1.00	20.0	25.0	21.0	0.0134	24.5	12.3	0.0471	23.0
2.00	20.0	22.0	18.0	0.0134	21.5	12.8	0.0340	19.7
5.00	20.0	19.0	15.0	0.0134	18.5	13.3	0.0219	16.4
15.00	19.9	16.0	11.9	0.0135	15.5	13.8	0.0129	13.1
30.00	19.8	15.0	10.9	0.0135	14.5	13.9	0.0092	12.0
60.00	19.7	13.0	8.9	0.0135	12.5	14.2	0.0066	9.8
250.00	20.2	10.5	6.5	0.0134	10.0	14.7	0.0032	7.1
1440.00	19.6	9.0	4.9	0.0135	8.5	14.9	0.0014	5.4

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.0	54.2	54.2	37.4	8.4	45.8

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0068	0.0182	0.0366	0.0563	0.0813	0.1005	0.1634	0.1849	0.2108	0.2446

Fineness Modulus	C_u	C_c
0.24	14.78	4.64

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.2	0.0	0.2	64.2	27.6	7.8

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	SR-4			Dark Grey Silty Sand (SM)	SM

R G H CONSULTANTS, INC.

Client: Kamman Hydrology and Engineering
Project: Salt River
Project No.: 3042
Plate

Tested By: SW **Checked By:** TMc

GRAIN SIZE DISTRIBUTION TEST DATA

11/9/2005

Client: Kamman Hydrology and Engineering
Project: Salt River
Project Number: 3042
Location: SR-4
Material Description: Dark Grey Silty Sand (SM)
USCS: SM
Tested by: SW **Checked by:** TMc

Sieve Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 64.60
Tare Wt. = 0.00
Minus #200 from wash = 84.1%

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
407.00	0.00	0.00	1.5		
			.75	0.00	100.0
			.375	0.70	99.8
			#4	0.80	99.8
			#10	0.90	99.8
			#16	1.00	99.8
			#30	1.20	99.7
			#50	2.30	99.4
			#100	126.20	69.0
			#200	263.10	35.4

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 99.8
Weight of hydrometer sample =90
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -4
Meniscus correction only = -0.5
Specific gravity of solids = 2.70
Hydrometer type = 152H
Hydrometer effective depth equation: L = 16.294964 - 0.164 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
1.00	19.9	23.0	18.9	0.0135	22.5	12.6	0.0478	20.8
2.00	19.9	19.5	15.4	0.0135	19.0	13.2	0.0346	16.9
5.00	19.9	16.5	12.4	0.0135	16.0	13.7	0.0223	13.6
15.00	19.9	14.0	9.9	0.0135	13.5	14.1	0.0130	10.9
30.00	19.8	13.0	8.9	0.0135	12.5	14.2	0.0093	9.8
60.00	19.8	12.0	7.9	0.0135	11.5	14.4	0.0066	8.7
250.00	20.4	10.0	6.0	0.0134	9.5	14.7	0.0032	6.6
1440.00	19.7	8.5	4.4	0.0135	8.0	15.0	0.0014	4.8

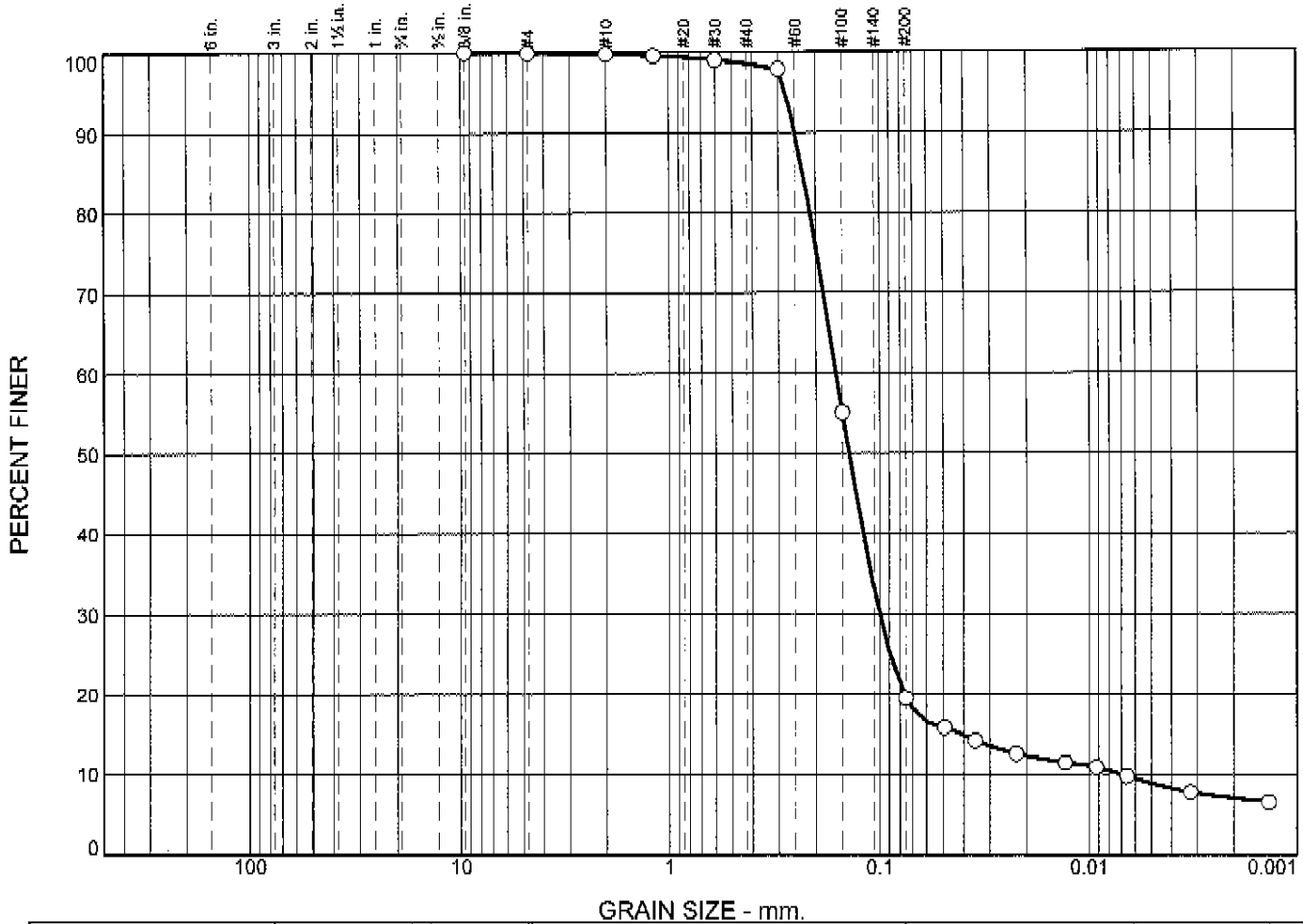
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.2	0.2	0.0	0.2	64.2	64.4	27.6	7.8	35.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0100	0.0270	0.0458	0.0655	0.1036	0.1265	0.1843	0.2034	0.2264	0.2568

Fineness Modulus	C_u	C_c
0.33	12.68	3.40

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.1	0.1	1.3	79.0	10.7	8.8

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	SR-5			Dark Grey Silty Sand (SM)	SM

R G H CONSULTANTS, INC.

Client: Kamman Hydrology and Engineering
Project: Salt River
Project No.: 3042 **Plate**

Tested By: SW **Checked By:** TMc

GRAIN SIZE DISTRIBUTION TEST DATA

11/9/2005

Client: Kamman Hydrology and Engineering
Project: Salt River
Project Number: 3042
Location: SR-5
Material Description: Dark Grey Silty Sand (SM)
USCS: SM
Tested by: SW **Checked by:** TMc

Sieve Results

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 80.50
Tare Wt. = 0.00
Minus #200 from wash = 78.3%

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
370.60	0.00	0.00	1.5		
			.75		
			.375	0.00	100.0
			#4	0.20	99.9
			#10	0.80	99.8
			#16	1.60	99.6
			#30	3.70	99.0
			#50	7.90	97.9
			#100	166.90	55.0
			#200	298.50	19.5

Hydrometer Results

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 99.8
Weight of hydrometer sample =90
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -4
Meniscus correction only = -0.5
Specific gravity of solids = 2.70
Hydrometer type = 152H
Hydrometer effective depth equation: L = 16.294964 - 0.164 x **Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
1.00	19.9	18.5	14.4	0.0135	18.0	13.3	0.0492	15.8
2.00	19.9	17.0	12.9	0.0135	16.5	13.6	0.0351	14.2
5.00	19.9	15.5	11.4	0.0135	15.0	13.8	0.0224	12.5
15.00	19.9	14.5	10.4	0.0135	14.0	14.0	0.0130	11.4
30.00	19.8	14.0	9.9	0.0135	13.5	14.1	0.0092	10.9
60.00	19.7	13.0	8.9	0.0135	12.5	14.2	0.0066	9.8
250.00	20.3	11.0	7.0	0.0134	10.5	14.6	0.0032	7.7
1440.00	19.7	10.0	5.9	0.0135	9.5	14.7	0.0014	6.5

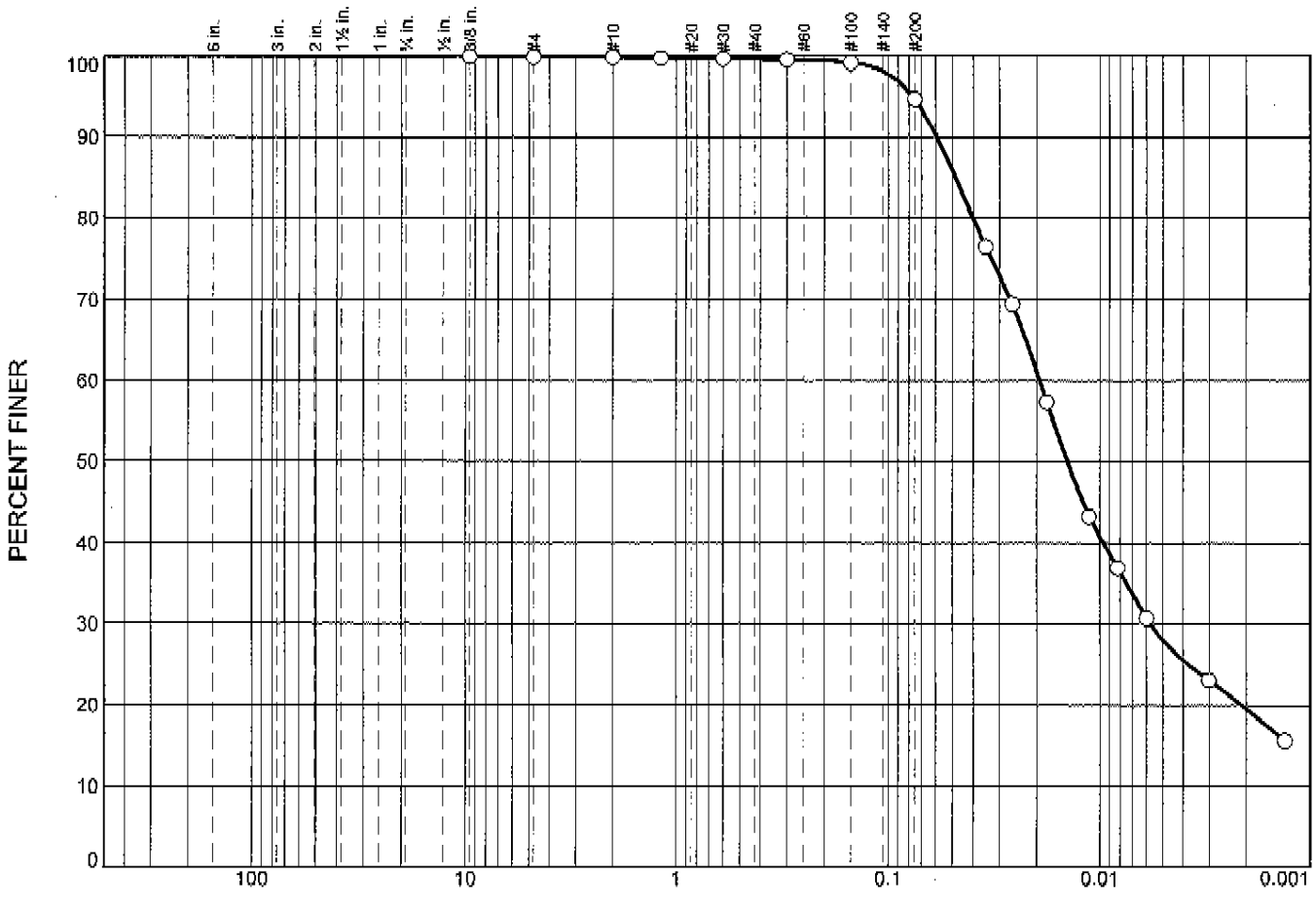
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.1	0.1	0.1	1.3	79.0	80.4	10.7	8.8	19.5

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0070	0.0409	0.0767	0.1001	0.1397	0.1608	0.2125	0.2297	0.2503	0.2776

Fineness Modulus	C_u	C_c
0.49	22.84	8.85

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.1	0.0	0.3	5.0	66.7	27.9

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	SR-6			Grey Elastic Silt (MH)	MH

R G H CONSULTANTS, INC.

Client: Kamman Hydrology and Engineering
Project: Salt River
Project No.: 3042 **Plate**

Tested By: SW **Checked By:** TMc

GRAIN SIZE DISTRIBUTION TEST DATA

11/9/2005

Client: Kamman Hydrology and Engineering
Project: Salt River
Project Number: 3042
Location: SR-6
Material Description: Grey Elastic Silt (MH)
USCS: MH
Tested by: SW **Checked by:** TMc

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 5.40
Tare Wt. = 0.00
Minus #200 from wash = 98.5%

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
357.20	0.00	0.00	1.5		
			.75		
			.375	0.00	100.0
			#4	0.20	99.9
			#10	0.40	99.9
			#16	0.70	99.8
			#30	1.10	99.7
			#50	1.60	99.6
			#100	2.90	99.2
			#200	19.20	94.6

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 99.9
Weight of hydrometer sample =70
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -4
Meniscus correction only = -0.5
Specific gravity of solids = 2.70
Hydrometer type = 152H
Hydrometer effective depth equation: L = 16.294964 - 0.164 **x Rm**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
1.00	20.8	58.0	54.1	0.0133	57.5	6.9	0.0349	76.4
2.00	20.8	53.0	49.1	0.0133	52.5	7.7	0.0261	69.3
5.00	20.8	44.5	40.6	0.0133	44.0	9.1	0.0179	57.3
15.00	20.8	34.5	30.6	0.0133	34.0	10.7	0.0113	43.2
30.00	20.8	30.0	26.1	0.0133	29.5	11.5	0.0082	36.9
60.00	21.0	25.5	21.7	0.0133	25.0	12.2	0.0060	30.6
250.00	21.7	20.0	16.3	0.0132	19.5	13.1	0.0030	23.1
1440.00	20.3	15.0	11.0	0.0134	14.5	13.9	0.0013	15.6

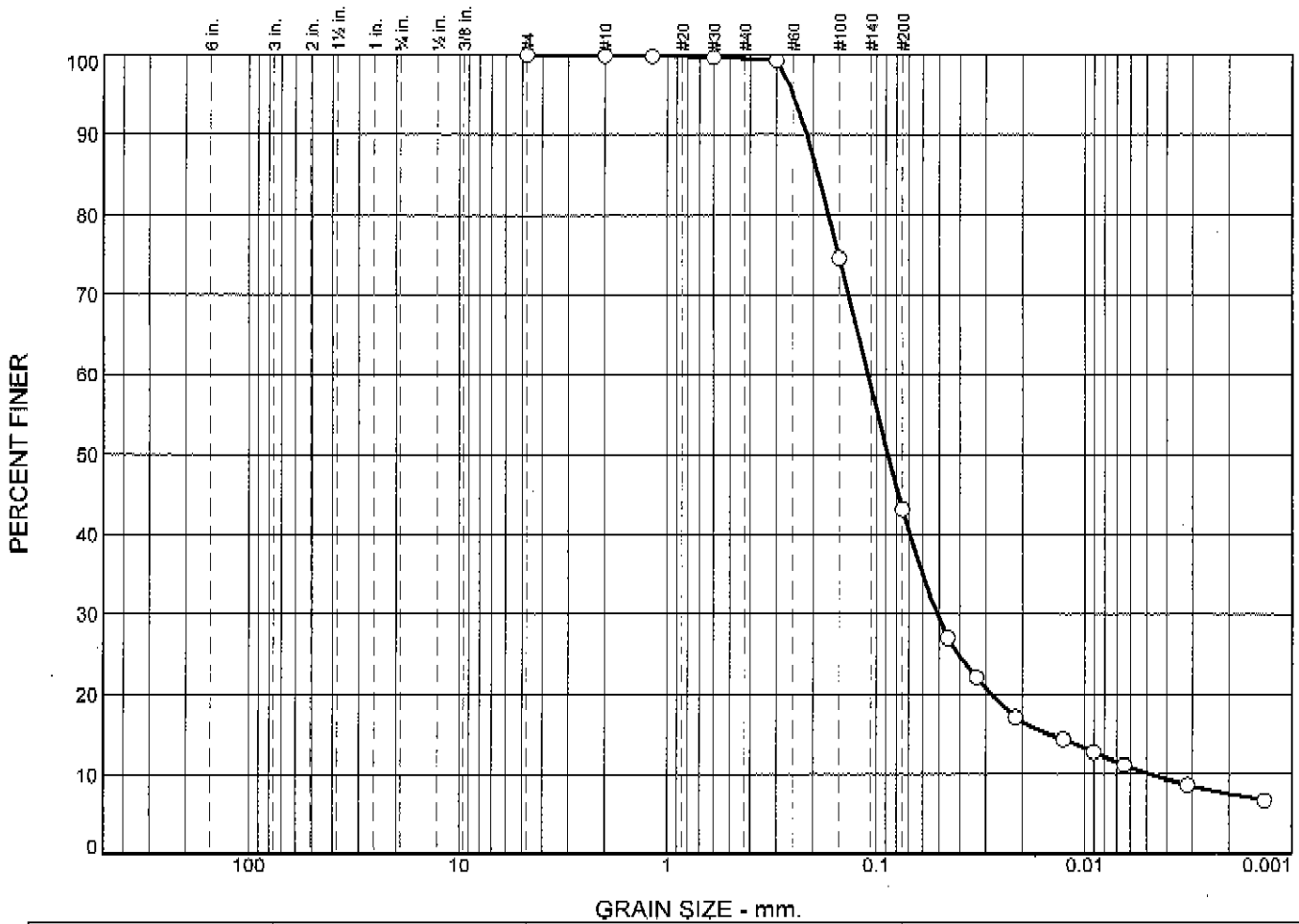
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.1	0.1	0.0	0.3	5.0	5.3	66.7	27.9	94.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
		0.0021	0.0058	0.0144	0.0194	0.0402	0.0487	0.0595	0.0768

Fineness Modulus
0.02

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.1	0.4	56.4	33.0	10.1

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	SR-7			Dark Grey Silty Sand (SM)	SM

RGH CONSULTANTS, INC.

Client: Kamman Hydrology and Engineering
Project: Salt River
Project No.: 3042 **Plate**

Tested By: SW **Checked By:** TMc

GRAIN SIZE DISTRIBUTION TEST DATA

11/9/2005

Client: Kamman Hydrology and Engineering
Project: Salt River
Project Number: 3042
Location: SR-7
Material Description: Dark Grey Silty Sand (SM)
USCS: SM
Tested by: SW **Checked by:** TMc

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 56.90
Tare Wt. = 0.00
Minus #200 from wash = 85.0%

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
379.90	0.00	0.00	1.5		
			.75		
			.375		
			#4	0.00	100.0
			#10	0.30	99.9
			#16	0.50	99.9
			#30	1.10	99.7
			#50	2.70	99.3
			#100	96.70	74.5
			#200	216.00	43.1

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 99.9
Weight of hydrometer sample =90
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -4
Meniscus correction only = -0.5
Specific gravity of solids = 2.70
Hydrometer type = 152H
Hydrometer effective depth equation: L = 16.294964 - 0.164 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
1.00	20.8	28.5	24.6	0.0133	28.0	11.7	0.0455	27.0
2.00	20.8	24.0	20.1	0.0133	23.5	12.4	0.0332	22.1
5.00	20.8	19.5	15.6	0.0133	19.0	13.2	0.0216	17.2
15.00	20.8	17.0	13.1	0.0133	16.5	13.6	0.0127	14.4
30.00	20.9	15.5	11.7	0.0133	15.0	13.8	0.0090	12.8
60.00	21.0	14.0	10.2	0.0133	13.5	14.1	0.0064	11.2
250.00	21.7	11.5	7.8	0.0132	11.0	14.5	0.0032	8.6
1440.00	20.4	10.0	6.0	0.0134	9.5	14.7	0.0014	6.6

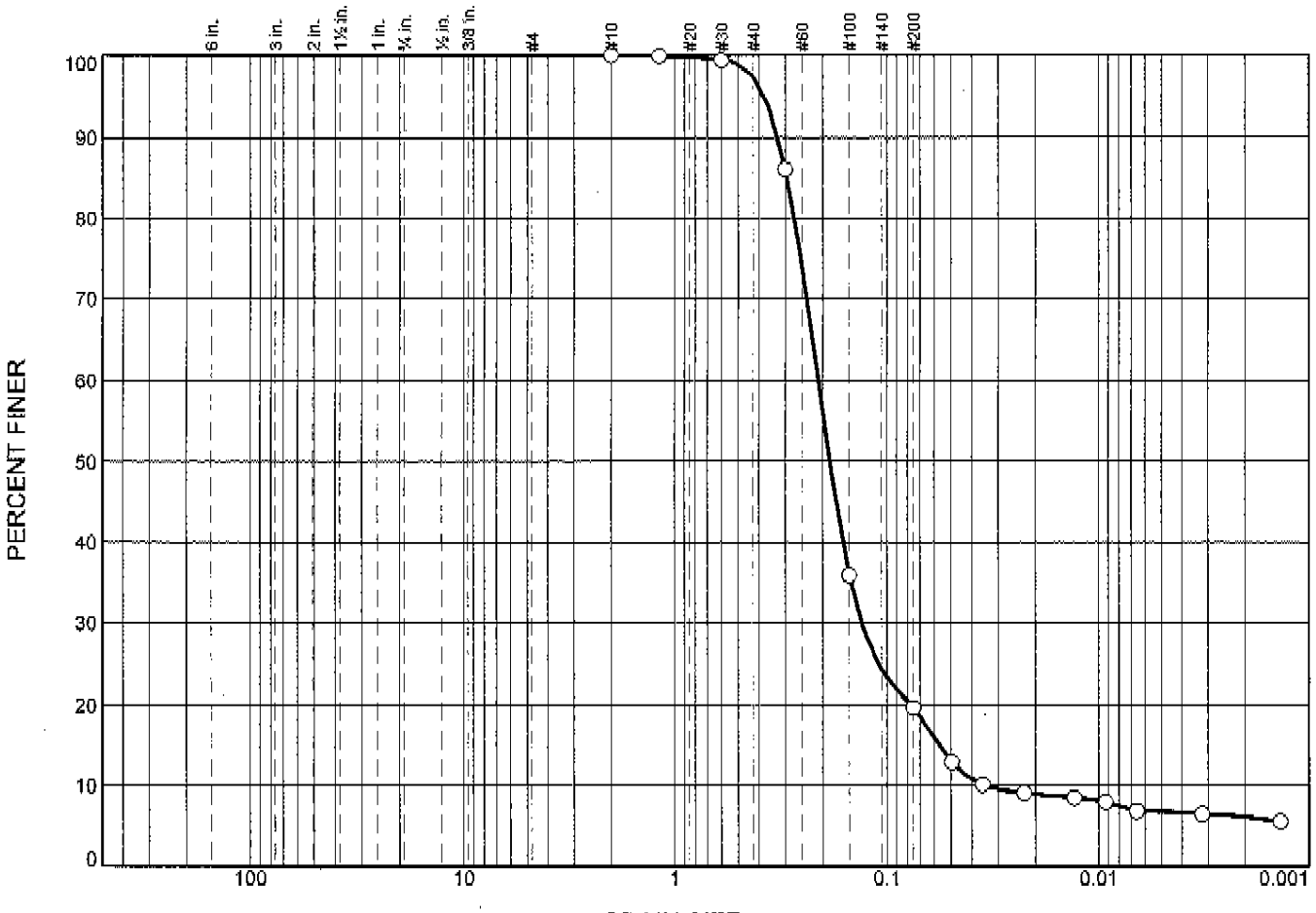
Percent Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.1	0.4	56.4	56.9	33.0	10.1	43.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0048	0.0147	0.0281	0.0514	0.0882	0.1099	0.1690	0.1895	0.2149	0.2495

Fineness Modulus	C_u	C_c
0.27	22.74	4.97

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	2.6	77.8	12.9	6.7

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	SR-8			Dark Grey Silty Sand (SM)	SM

R G H CONSULTANTS, INC.

Client: Kamman Hydrology and Engineering
Project: Salt River
Project No.: 3042 **Plate**

Tested By: SW **Checked By:** TMc

GRAIN SIZE DISTRIBUTION TEST DATA

11/9/2005

Client: Kamman Hydrology and Engineering
Project: Salt River
Project Number: 3042
Location: SR-8
Material Description: Dark Grey Silty Sand (SM)
USCS: SM
Tested by: SW **Checked by:** TMc

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 80.40
Tare Wt. = 0.00
Minus #200 from wash = 82.4%

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
455.70	0.00	0.00	1.5		
			.75		
			.375		
			#4		
			#10	0.00	100.0
			#16	0.30	99.9
			#30	2.70	99.4
			#50	63.60	86.0
			#100	292.40	35.8
			#200	366.40	19.6

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =90
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -4
Meniscus correction only = -0.5
Specific gravity of solids = 2.70
Hydrometer type = 152H
Hydrometer effective depth equation: L = 16.294964 - 0.164 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
1.00	20.8	15.5	11.6	0.0133	15.0	13.8	0.0495	12.8
2.00	20.8	13.0	9.1	0.0133	12.5	14.2	0.0355	10.0
5.00	20.8	12.0	8.1	0.0133	11.5	14.4	0.0226	8.9
15.00	20.9	11.5	7.7	0.0133	11.0	14.5	0.0131	8.4
30.00	20.9	11.0	7.2	0.0133	10.5	14.6	0.0093	7.9
60.00	21.0	10.0	6.2	0.0133	9.5	14.7	0.0066	6.8
250.00	21.7	9.5	5.8	0.0132	9.0	14.8	0.0032	6.4
1440.00	20.3	9.0	5.0	0.0134	8.5	14.9	0.0014	5.5

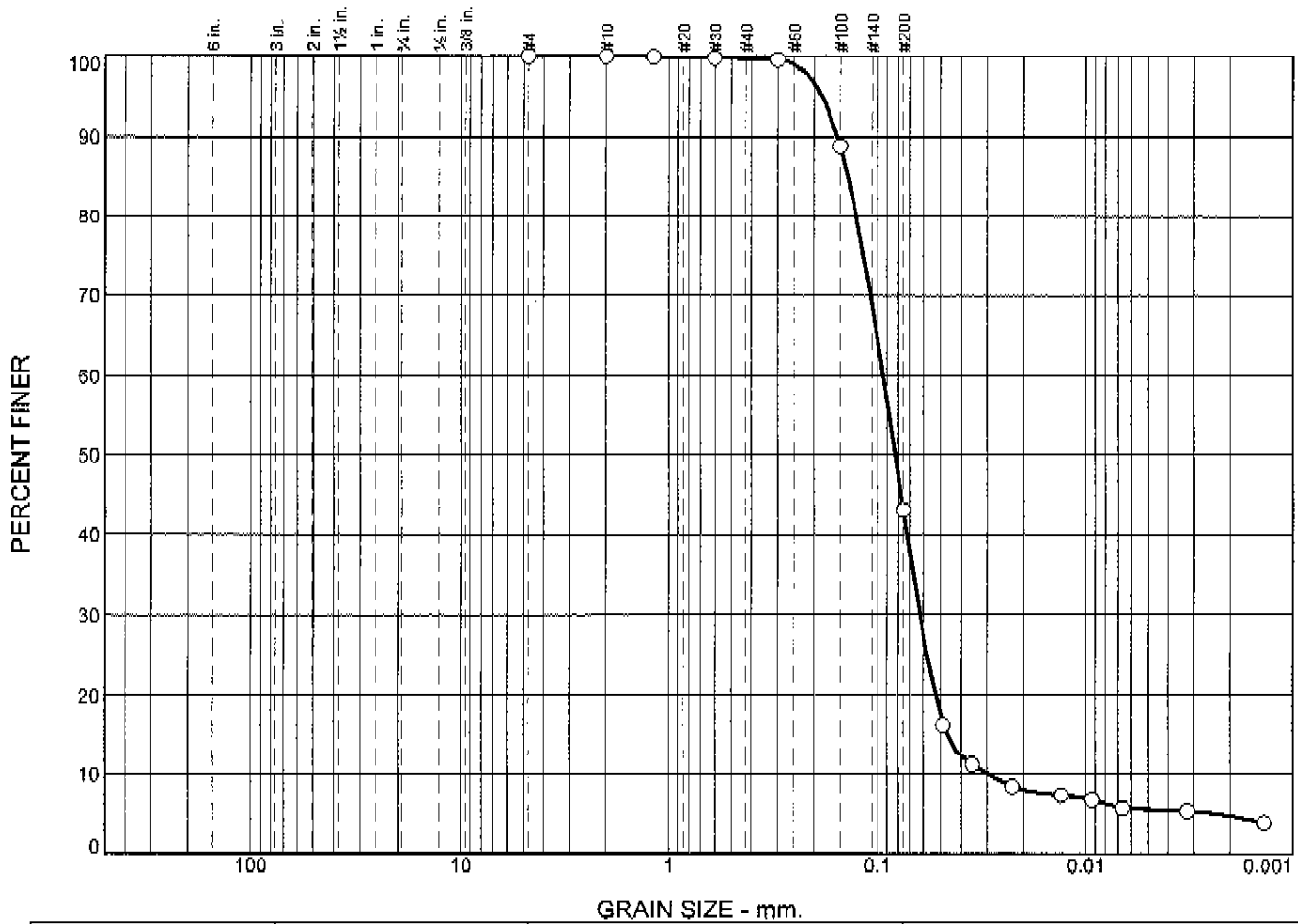
Percent Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	2.6	77.8	80.4	12.9	6.7	19.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0353	0.0571	0.0773	0.1320	0.1850	0.2097	0.2720	0.2945	0.3253	0.3769

Fineness Modulus	C_u	C_c
0.79	5.95	2.36

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.3	56.6	37.6	5.5

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	SR-9			Grey Silty Sand (SM)	SM

R G H CONSULTANTS, INC.

Client: Kamman Hydrology and Engineering
Project: Salt River
Project No.: 3042 **Plate**

Tested By: SW **Checked By:** TMc

GRAIN SIZE DISTRIBUTION TEST DATA

11/9/2005

Client: Kamman Hydrology and Engineering
Project: Salt River
Project Number: 3042
Location: SR-9
Material Description: Grey Silty Sand (SM)
USCS: SM
Tested by: SW **Checked by:** TMc

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 56.90
Tare Wt. = 0.00
Minus #200 from wash = 87.7%

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
463.30	0.00	0.00	1.5		
			.75		
			.375		
			#4	0.00	100.0
			#10	0.10	100.0
			#16	0.30	99.9
			#30	0.90	99.8
			#50	2.00	99.6
			#100	52.10	88.8
			#200	263.70	43.1

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0
Weight of hydrometer sample =90
Automatic temperature correction
Composite correction (fluid density and meniscus height) at 20 deg. C = -4
Meniscus correction only = -0.5
Specific gravity of solids = 2.70
Hydrometer type = 152H
Hydrometer effective depth equation: L = 16.294964 - 0.164 x Rm

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
1.00	20.9	18.5	14.7	0.0133	18.0	13.3	0.0486	16.1
2.00	20.9	14.0	10.2	0.0133	13.5	14.1	0.0353	11.2
5.00	20.9	11.5	7.7	0.0133	11.0	14.5	0.0226	8.4
15.00	20.9	10.5	6.7	0.0133	10.0	14.7	0.0131	7.3
30.00	20.9	10.0	6.2	0.0133	9.5	14.7	0.0093	6.8
60.00	21.0	9.0	5.2	0.0133	8.5	14.9	0.0066	5.7
250.00	21.7	8.5	4.8	0.0132	8.0	15.0	0.0032	5.3
1440.00	20.3	7.5	3.5	0.0134	7.0	15.1	0.0014	3.9

Soil Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.3	56.6	56.9	37.6	5.5	43.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
0.0296	0.0469	0.0532	0.0628	0.0821	0.0937	0.1260	0.1382	0.1548	0.1826

Fineness Modulus	C_u	C_c
0.12	3.16	1.42