THE CONTENTS OF THIS SECTION ARE
THE HIGHEST QUALITY AVAILABLE

INITIAL MMO DATE 9/30/02

PAGE NUMBERING SEQUENCE IS INCONSISTENT

Appendix C

Soil Data

C. 1 SOILVISION DATA (UPPER COVER SECTION)

Table C-1. Data For Silty-Loam.

Soil Number	Void Ratio	Specific Gravity	Soil Suction (kPa)	Volumetric W/C
1364	0.75	2.631579	5.89E+00	2.60E-01
1364	0.75	2.631579	1.00E+01	2.51E-01
1364	0.75	2.631579	3.31E+01	2.17E-01
1364	0.75	2.631579	6.70E+01	1.79E-01
1364	0.75	2.631579	1.00E+02	1.62E-01
1364	0.75	2.631579	3.00E+02	3.70E-02
1364	0.75	2.631579	5.00E+02	3.30E-02
1364	0.75	2.631579	1.50E+03	1.70E-02
1449	0.76	2.681722	1.00E+01	4.33E-01
1449	0.76	2.681722	3.31E+01	3.36E-01
1449	0.76	2.681722	5.00E+01	2.31E-01
1449	0.76	2.681722	6.70E+01	1.81E-01
1449	0.76	2.681722	1.00E+02	1.61E-01
1449	0.76	2.681722	2.00E+02	1.06E-01
1449	0.76	2.681722	4.00E+02	9.42E-02
1449	0.76	2.681722	1.50E+03	6.99E-02
2323	0.82	2.636364	1.00E+01	3.80E-01
2323	0.82	2.636364	3.31E+01	2.78E-01
2323	0.82	2.636364	5.00E+01	2.37E-01
2323	0.82	2.636364	6.70E+01	2.17E-01
2323	0.82	2.636364	1.00E+02	1.68E-01
2323	0.82	2.636364	2.00E+02	1.42E-01

Table C-1. (continued).

Soil Number	Void Ratio	Specific Gravity	Soil Suction (kPa)	Volumetric W/C
2323	0.82	2.636364	5.00E+02	1.18E-01
2323	0.82	2.636364	1.00E+03	1.00E-01
2323	0.82	2.636364	1.50E+03	9.30E-02
3240	0.75	2.666667	5.89E+00	2.38E-01
3240	0.75	2.666667	1.00E+01	2.17E-01
3240	0.75	2.666667	3.31E+01	2.10E-01
3240	0.75	2.666667	6.70E+01	2.00E-01
3240	0.75	2.666667	1.00E+02	1.89E-01
3240	0.75	2.666667	2.00E+02	1.44E-01
3240	0.75	2.666667	3.00E+02	1.09E-01
3240	0.75	2.666667	5.00E+02	8.40E-02
3240	0.75	2.666667	1.50E+03	6.30E-02
3246	0.82	2.636364	5.89E+00	2.17E-01
3246	0.82	2.636364	1.00E+01	2.06E-01
3246	0.82	2.636364	3.31E+01	1.83E-01
3246	0.82	2.636364	6.70E+01	1.68E-01
3246	0.82	2.636364	1.00E+02	1.53E-01
3246	0.82	2.636364	2.00E+02	1.25E-01
3246	0.82	2.636364	3.00E+02	9.80E-02
3246	0.82	2.636364	5.00E+02	7.50E-02
3246	0.82	2.636364	1.50E+03	5.00E-02
3299	0.75	2.649123	5.89E+00	2.15E-01
3299	0.75	2.649123	1.00E+01	2.12E-01
3299	0.75	2.649123	3.31E+01	1.97E-01

Table C-1. (continued).

Soil Number	Void Ratio	Specific Gravity	Soil Suction (kPa)	Volumetric W/C
3299	0.75	2.649123	6.70E+01	1.89E-01
3299	0.75	2.649123	1.00E+02	1.86E-01
3299	0.75	2.649123	2.00E+02	1.56E-01
3299	0.75	2.649123	3.00E+02	1.32E-01
3299	0.75	2.649123	5.00E+02	1.12E-01
3299	0.75	2.649123	1.50E+03	7.60E-02
3375	0.75	2.666667	5.89E+00	1.73E-01
3375	0.75	2.666667	1.00E+01	1.69E-01
3375	0.75	2.666667	3.31E+01	1.57E-01
3375	0.75	2.666667	6.70E+01	1.46E-01
3375	0.75	2.666667	1.00E+02	1.36E-01
3375	0.75	2.666667	2.00E+02	1.23E-01
3375	0.75	2.666667	3.00E+02	1.02E-01
3375	0.75	2.666667	5.00E+02	8.40E-02
3375	0.75	2.666667	1.50E+03	5.80E-02
3414	0.75	2.631579	3.92E-01	3.77E-01
3414	0.75	2.631579	1.96E+00	3.72E-01
3414	0.75	2.631579	3.92E+00	3.58E-01
3414	0.75	2.631579	5.89E+00	3.48E-01
3414	0.75	2.631579	7.85E+00	3.40E-01
3414	0.75	2.631579	9.81E+00	3.30E-01
3414	0.75	2.631579	1.28E+01	3.22E-01
3414	0.75	2.631579	1.57E+01	3.12E-01
3414	0.75	2.631579	1.87E+02	3.01E-02

Table C-1. (continued).

Soil Number	Void Ratio	Specific Gravity	Soil Suction (kPa)	Volumetric W/C
3477	0.79	2.642857	3.31E+01	2.10E-01
3477	0.79	2.642857	5.00E+01	1.83E-01
3477	0.79	2.642857	6.00E+01	1.72E-01
3477	0.79	2.642857	1.00E+02	1.48E-01
3477	0.79	2.642857	3.00E+02	1.17E-01
3477	0.79	2.642857	5.00E+02	1.01E-01
3477	0.79	2.642857	1.00E+03	8.44E-02
3477	0.79	2.642857	1.50E+03	7.25E-02
3478	0.75	2.631579	3.31E+01	2.32E-01
3478	0.75	2.631579	5.00E+01	2.16E-01
3478	0.75	2.631579	6.00E+01	2.06E-01
3478	0.75	2.631579	1.00E+02	1.57E-01
3478	0.75	2.631579	3.00E+02	1.20E-01
3478	0.75	2.631579	5.00E+02	9.75E-02
3478	0.75	2.631579	1.00E+03	8.55E-02
3478	0.75	2.631579	1.50E+03	7.50E-02
3491	0.75	2.666667	3.31E+01	2.95E-01
3491	0.75	2.666667	5.00E+01	2.92E-01
3491	0.75	2.666667	6.00E+01	2.89E-01
3491	0.75	2.666667	1.00E+02	2.13E-01
3491	0.75	2.666667	3.00E+02	1.70E-01
3491	0.75	2.666667	5.00E+02	1.43E-01
3491	0.75	2.666667	1.00E+03	1.20E-01
3491	0.75	2.666667	1.50E+03	1.02E-01

Table C-1. (continued).

Soil Number	Void Ratio	Specific Gravity	Soil Suction (kPa)	Volumetric W/C
3509	0.82	2.636364	3.31E+01	2.94E-01
3509	0.82	2.636364	5.00E+01	2.93E-01
3509	0.82	2.636364	6.00E+01	2.89E-01
3509	0.82	2.636364	1.00E+02	2.70E-01
3509	0.82	2.636364	3.00E+02	1.80E-01
3509	0.82	2.636364	5.00E+02	1.42E-01
3509	0.82	2.636364	1.00E+03	1.23E-01
3509	0.82	2.636364	1.50E+03	1.04E-01
3517	0.82	2.672727	3.31E+01	3.32E-01
3517	0.82	2.672727	5.00E+01	3.29E-01
3517	0.82	2.672727	6.00E+01	3.25E-01
3517	0.82	2.672727	1.00E+02	2.73E-01
3517	0.82	2.672727	3.00E+02	2.15E-01
3517	0.82	2.672727	5.00E+02	1.65E-01
3517	0.82	2.672727	1.00E+03	1.44E-01
3517	0.82	2.672727	1.50E+03	1.25E-01
3518	0.75	2.649123	3.31E+01	3.61E-01
3518	0.75	2.649123	5.00E+01	3.58E-01
3518	0.75	2.649123	6.00E+01	3.52E-01
3518	0.75	2.649123	1.00E+02	2.99E-01
3518	0.75	2.649123	3.00E+02	2.40E-01
3518	0.75	2.649123	5.00E+02	1.98E-01
3518	0.75	2.649123	1.00E+03	1.71E-01
3518	0.75	2.649123	1.50E+03	1.48E-01

Table C-1. (continued).

Soil Number	Void Ratio	Specific Gravity	Soil Suction (kPa)	Volumetric W/C
3521	0.75	2.666667	3.31E+01	3.12E-01
3521	0.75	2.666667	5.00E+01	2.95E-01
3521	0.75	2.666667	6.00E+01	2.86E-01
3521	0.75	2.666667	1.00E+02	2.54E-01
3521	0.75	2.666667	3.00E+02	2.28E-01
3521	0.75	2.666667	5.00E+02	1.98E-01
3521	0.75	2.666667	1.00E+03	1.60E-01
3521	0.75	2.666667	1.50E+03	1.46E-01
3534	0.75	2.649123	3.31E+01	2.93E-01
3534	0.75	2.649123	5.00E+01	2.76E-01
3534	0.75	2.649123	6.00E+01	2.72E-01
3534	0.75	2.649123	1.00E+02	2.70E-01
3534	0.75	2.649123	3.00E+02	2.46E-01
3534	0.75	2.649123	5.00E+02	2.42E-01
3534	0.75	2.649123	1.00E+03	2.23E-01
3534	0.75	2.649123	1.50E+03	2.01E-01
3536	0.79	2.660714	3.31E+01	2.74E-01
3536	0.79	2.660714	5.00E+01	2.67E-01
3536	0.79	2.660714	6.00E+01	2.47E-01
3536	0.79	2.660714	1.00E+02	2.18E-01
3536	0.79	2.660714	3.00E+02	2.09E-01
3536	0.79	2.660714	5.00E+02	2.04E-01
3536	0.79	2.660714	1.00E+03	1.89E-01
3536	0.79	2.660714	1.50E+03	1.67E-01

Table C-1. (continued).

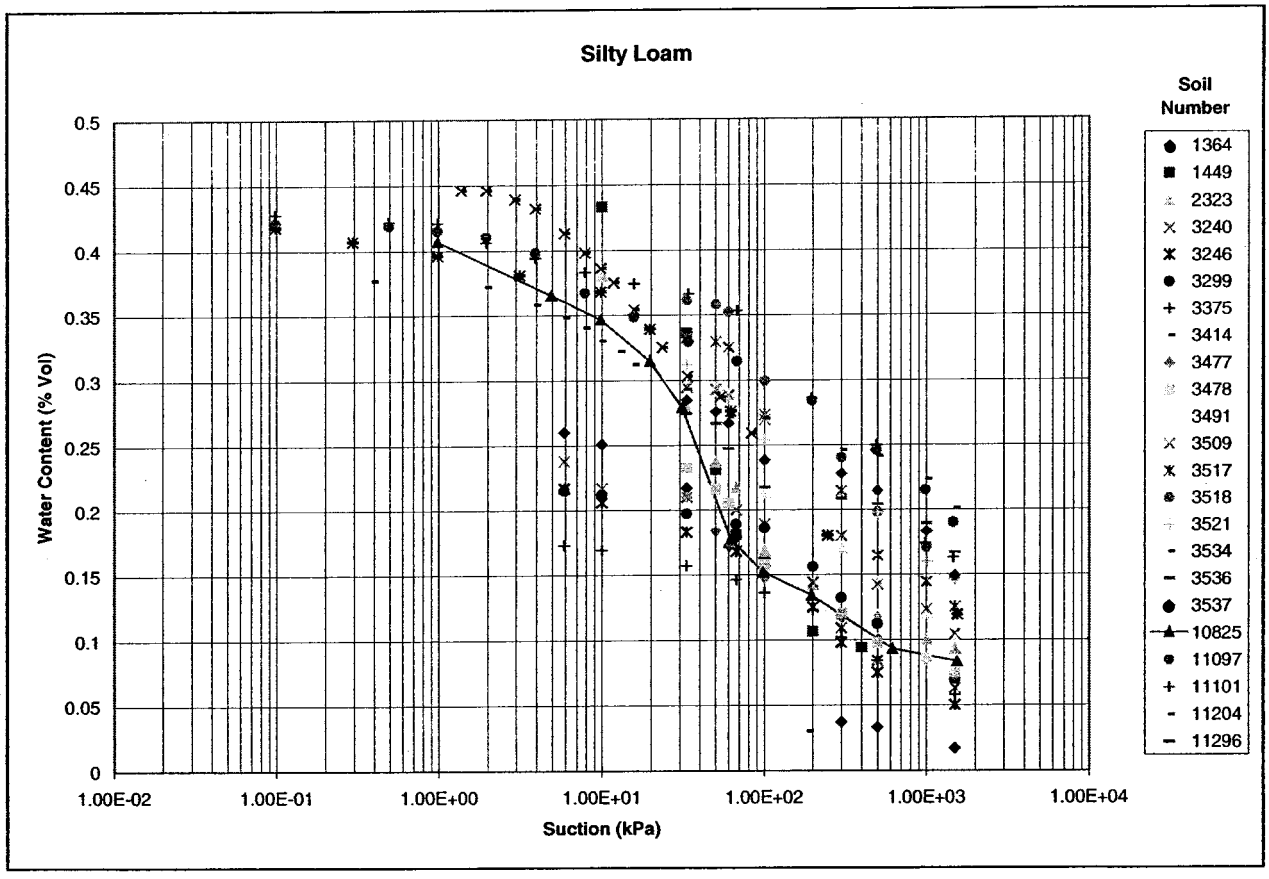
Soil Number	Void Ratio	Specific Gravity	Soil Suction (kPa)	Volumetric W/C
3537	0.79	2.660714	3.31E+01	2.85E-01
3537	0.79	2.660714	5.00E+01	2.76E-01
3537	0.79	2.660714	6.00E+01	2.67E-01
3537	0.79	2.660714	1.00E+02	2.38E-01
3537	0.79	2.660714	3.00E+02	2.28E-01
3537	0.79	2.660714	5.00E+02	2.15E-01
3537	0.79	2.660714	1.00E+03	1.83E-01
3537	0.79	2.660714	1.50E+03	1.49E-01
10825	0.79	2.65	9.81E-01	4.07E-01
10825	0.79	2.65	4.91E+00	3.65E-01
10825	0.79	2.65	9.81E+00	3.46E-01
10825	0.79	2.65	1.96E+01	3.14E-01
10825	0.79	2.65	3.10E+01	2.79E-01
10825	0.79	2.65	6.19E+01	1.77E-01
10825	0.79	2.65	9.81E+01	1.52E-01
10825	0.79	2.65	1.96E+02	1.34E-01
10825	0.79	2.65	6.19E+02	9.31E-02
10825	0.79	2.65	1.55E+03	8.34E-02
11097	0.75	2.66	9.81E-02	4.21E-01
11097	0.75	2.66	4.91E-01	4.19E-01
11097	0.75	2.66	9.81E-01	4.15E-01
11097	0.75	2.66	1.96E+00	4.10E-01
11097	0.75	2.66	3.92E+00	3.98E-01
11097	0.75	2.66	7.85E+00	3.67E-01

Table C-1. (continued).

Soil Number	Void Ratio	Specific Gravity	Soil Suction (kPa)	Volumetric W/C
11097	0.75	2.66	1.57E+01	3.48E-01
11097	0.75	2.66	3.38E+01	3.29E-01
11097	0.75	2.66	6.77E+01	3.14E-01
11097	0.75	2.66	1.96E+02	2.84E-01
11097	0.75	2.66	4.91E+02	2.46E-01
11097	0.75	2.66	9.81E+02	2.15E-01
11097	0.75	2.66	1.47E+03	1.90E-01
11101	0.75	2.63	9.81E-02	4.28E-01
11101	0.75	2.63	4.91E-01	4.22E-01
11101	0.75	2.63	9.81E-01	4.21E-01
11101	0.75	2.63	1.96E+00	4.06E-01
11101	0.75	2.63	3.92E+00	3.94E-01
11101	0.75	2.63	7.85E+00	3.83E-01
11101	0.75	2.63	1.57E+01	3.74E-01
11101	0.75	2.63	3.38E+01	3.66E-01
11101	0.75	2.63	6.77E+01	3.53E-01
11101	0.75	2.63	1.96E+02	2.86E-01
11101	0.75	2.63	4.91E+02	2.50E-01
11101	0.75	2.63	9.81E+02	1.74E-01
11101	0.75	2.63	1.47E+03	1.63E-01
11204	0.81	2.67148	1.37E+00	4.46E-01
11204	0.81	2.67148	1.96E+00	4.46E-01
11204	0.81	2.67148	2.94E+00	4.39E-01
11204	0.81	2.67148	3.92E+00	4.32E-01

Table C-1. (continued).

Soil Number	Void Ratio	Specific Gravity	Soil Suction (kPa)	Volumetric W/C
11204	0.81	2.67148	5.89E+00	4.13E-01
11204	0.81	2.67148	7.85E+00	3.98E-01
11204	0.81	2.67148	9.81E+00	3.86E-01
11204	0.81	2.67148	1.18E+01	3.75E-01
11204	0.81	2.67148	1.57E+01	3.54E-01
11204	0.81	2.67148	2.33E+01	3.25E-01
11204	0.81	2.67148	3.34E+01	3.03E-01
11204	0.81	2.67148	5.34E+01	2.87E-01
11204	0.81	2.67148	8.34E+01	2.59E-01
11296	0.81	2.7	9.81E-02	4.18E-01
11296	0.81	2.7	2.94E-01	4.07E-01
11296	0.81	2.7	9.81E-01	3.96E-01
11296	0.81	2.7	3.14E+00	3.81E-01
11296	0.81	2.7	9.81E+00	3.68E-01
11296	0.81	2.7	1.96E+01	3.39E-01
11296	0.81	2.7	6.19E+01	2.76E-01
11296	0.81	2.7	2.47E+02	1.80E-01
11296	0.81	2.7	1.55E+03	1.19E-01



The SWCC curve for soil number 10825 was selected since it represented the average (based on observation) of the silty loam soil data set.

Table C-2. Data For Fine Sand.

Soil Number	Void Ratio	Specific Gravity	Suction (kPa)	Volumetric Water Content
60	0.51	2.65	1.00E-01	3.05E-01
60	0.51	2.65	2.65E+00	2.76E-01
60	0.51	2.65	4.04E+00	2.30E-01
60	0.51	2.65	4.59E+00	1.99E-01
60	0.51	2.65	6.27E+00	1.72E-01
60	0.51	2.65	8.06E+00	1.56E-01
60	0.51	2.65	1.03E+01	1.44E-01
60	0.51	2.65	1.39E+01	1.32E-01
60	0.51	2.65	1.68E+01	1.23E-01
60	0.51	2.65	3.33E+01	1.00E-01
10819	0.66	2.82	1.00E-03	3.08E-01
10819	0.66	2.82	1.96E-01	3.00E-01
10819	0.66	2.82	6.87E-01	2.95E-01
10819	0.66	2.82	8.83E-01	2.32E-01
10819	0.66	2.82	9.81E-01	1.59E-01
10819	0.66	2.82	1.18E+00	2.06E-01
10819	0.66	2.82	1.28E+00	1.88E-01
10819	0.66	2.82	1.37E+00	1.97E-01
10819	0.66	2.82	1.47E+00	1.61E-01
10819	0.66	2.82	1.57E+00	1.41E-01
10819	0.66	2.82	1.67E+00	1.38E-01
10819	0.66	2.82	1.77E+00	1.39E-01
10819	0.66	2.82	1.86E+00	1.30E-01

Table C-2. (continued).

Soil Number	Void Ratio	Specific Gravity	Suction (kPa)	Volumetric Water Content
10819	0.66	2.82	1.96E+00	1.29E-01
10819	0.66	2.82	2.06E+00	1.25E-01
10819	0.66	2.82	2.16E+00	1.24E-01
10819	0.66	2.82	2.26E+00	1.09E-01
10819	0.66	2.82	2.35E+00	1.16E-01
10819	0.66	2.82	2.55E+00	1.08E-01
10819	0.66	2.82	2.65E+00	1.01E-01
10819	0.66	2.82	2.75E+00	1.07E-01
10819	0.66	2.82	2.84E+00	1.14E-01
10819	0.66	2.82	2.94E+00	1.07E-01
10819	0.66	2.82	3.04E+00	1.04E-01
10819	0.66	2.82	3.14E+00	9.53E-02
10819	0.66	2.82	3.24E+00	1.04E-01
10819	0.66	2.82	3.34E+00	1.03E-01
10819	0.66	2.82	3.43E+00	9.70E-02
10819	0.66	2.82	3.63E+00	9.30E-02
10819	0.66	2.82	3.73E+00	1.05E-01
10974	0.59	2.707472	1.00E-03	3.71E-01
10974	0.59	2.707472	9.81E-01	3.60E-01
10974	0.59	2.707472	2.94E+00	3.51E-01
10974	0.59	2.707472	4.91E+00	3.27E-01
10974	0.59	2.707472	9.81E+00	1.66E-01
10974	0.59	2.707472	2.94E+01	5.50E-02

Table C-2. (continued).

Soil Number	Void Ratio	Specific Gravity	Suction (kPa)	Volumetric Water Content
10974	0.59	2.707472	4.91E+01	4.00E-02
11187	0.72	2.65	2.35E+00	3.22E-01
11187	0.72	2.65	3.92E+00	9.10E-02
11187	0.72	2.65	4.91E+00	7.00E-02
11187	0.72	2.65	6.08E+00	5.80E-02
11187	0.72	2.65	6.87E+00	5.40E-02
11187	0.72	2.65	8.04E+00	5.00E-02
11187	0.72	2.65	9.61E+00	4.50E-02
11187	0.72	2.65	1.47E+01	4.00E-02
11187	0.72	2.65	3.34E+01	3.40E-02
11187	0.72	2.65	4.93E+01	3.20E-02
11187	0.72	2.65	8.18E+01	3.50E-02
11354	0.63	2.65	1.96E+00	2.70E-01
11354	0.63	2.65	2.35E+00	2.58E-01
11354	0.63	2.65	2.75E+00	2.65E-01
11354	0.63	2.65	2.94E+00	2.53E-01
11354	0.63	2.65	3.34E+00	2.43E-01
11354	0.63	2.65	3.63E+00	2.26E-01
11354	0.63	2.65	3.73E+00	2.31E-01
11354	0.63	2.65	3.92E+00	2.52E-01
11354	0.63	2.65	4.02E+00	2.14E-01
11354	0.63	2.65	4.12E+00	2.01E-01
11354	0.63	2.65	4.22E+00	1.94E-01

Table C-2. (continued).

Soil Number	Void Ratio	Specific Gravity	Suction (kPa)	Volumetric Water Content
11354	0.63	2.65	4.32E+00	1.56E-01
11354	0.63	2.65	4.41E+00	1.94E-01
11354	0.63	2.65	4.51E+00	1.92E-01
11354	0.63	2.65	4.61E+00	1.66E-01
11354	0.63	2.65	4.71E+00	1.73E-01
11354	0.63	2.65	4.81E+00	1.94E-01
11354	0.63	2.65	5.00E+00	1.39E-01
11354	0.63	2.65	5.20E+00	1.08E-01
11354	0.63	2.65	5.30E+00	1.29E-01
11354	0.63	2.65	5.40E+00	1.16E-01
11354	0.63	2.65	5.49E+00	1.16E-01
11354	0.63	2.65	5.59E+00	1.29E-01
11354	0.63	2.65	5.69E+00	1.26E-01
11354	0.63	2.65	5.79E+00	1.25E-01
11354	0.63	2.65	5.89E+00	8.80E-02
11354	0.63	2.65	5.98E+00	1.18E-01
11354	0.63	2.65	6.08E+00	1.07E-01
11354	0.63	2.65	6.18E+00	9.67E-02
11354	0.63	2.65	6.28E+00	1.40E-01
11354	0.63	2.65	6.38E+00	1.03E-01
11354	0.63	2.65	6.47E+00	1.14E-01
11354	0.63	2.65	6.57E+00	8.60E-02
11354	0.63	2.65	6.67E+00	1.01E-01

Table C-2. (continued).

Soil Number	Void Ratio	Specific Gravity	Suction (kPa)	Volumetric Water Content
11354	0.63	2.65	6.77E+00	8.65E-02
11354	0.63	2.65	6.87E+00	1.02E-01
11354	0.63	2.65	6.97E+00	7.88E-02
11354	0.63	2.65	7.16E+00	1.05E-01
11354	0.63	2.65	7.26E+00	8.00E-02
11354	0.63	2.65	7.55E+00	7.20E-02
11354	0.63	2.65	7.65E+00	8.38E-02
11354	0.63	2.65	7.75E+00	8.44E-02
11354	0.63	2.65	7.85E+00	7.14E-02
11354	0.63	2.65	7.95E+00	7.29E-02
11354	0.63	2.65	8.04E+00	1.01E-01
11354	0.63	2.65	8.24E+00	1.00E-01
11354	0.63	2.65	8.53E+00	7.91E-02
11354	0.63	2.65	8.63E+00	7.19E-02
11354	0.63	2.65	8.83E+00	6.39E-02
11354	0.63	2.65	8.93E+00	7.50E-02
11354	0.63	2.65	9.12E+00	7.50E-02
11354	0.63	2.65	9.22E+00	7.20E-02
11419	0.93	2.6	5.89E-01	4.04E-01
11419	0.93	2.6	1.08E+00	4.04E-01
11419	0.93	2.6	1.37E+00	4.03E-01
11419	0.93	2.6	1.57E+00	4.03E-01
11419	0.93	2.6	1.77E+00	4.00E-01

Table C-2. (continued).

Soil Number	Void Ratio	Specific Gravity	Suction (kPa)	Volumetric Water Content
11419	0.93	2.6	1.96E+00	3.58E-01
11419	0.93	2.6	2.16E+00	2.86E-01
11419	0.93	2.6	2.55E+00	2.09E-01
11419	0.93	2.6	2.65E+00	1.80E-01
11419	0.93	2.6	2.94E+00	1.50E-01
11419	0.93	2.6	3.24E+00	1.27E-01
11419	0.93	2.6	3.53E+00	1.13E-01
11419	0.93	2.6	3.83E+00	1.00E-01
11419	0.93	2.6	4.12E+00	9.25E-02
11419	0.93	2.6	4.51E+00	8.40E-02
11419	0.93	2.6	4.81E+00	7.80E-02
11419	0.93	2.6	5.49E+00	7.00E-02
11419	0.93	2.6	6.18E+00	6.60E-02
11419	0.93	2.6	6.97E+00	6.24E-02
11419	0.93	2.6	7.95E+00	5.90E-02
11474	0.42	2.631	1.96E+00	2.56E-01
11474	0.42	2.631	3.92E+00	1.50E-01
11474	0.42	2.631	5.89E+00	9.20E-02
11474	0.42	2.631	7.85E+00	7.50E-02
11474	0.42	2.631	1.47E+01	5.40E-02
11474	0.42	2.631	2.94E+01	3.80E-02
11474	0.42	2.631	9.81E+01	2.20E-02
11474	0.42	2.631	4.91E+02	1.20E-02

Table C-2. (continued).

Soil Number	Void Ratio	Specific Gravity	Suction (kPa)	Volumetric Water Content
11474	0.42	2.631	1.47E+03	9.00E-03
11475	0.59	2.631	1.96E+00	1.60E-01
11475	0.59	2.631	3.92E+00	5.60E-02
11475	0.59	2.631	5.89E+00	4.10E-02
11475	0.59	2.631	7.85E+00	3.40E-02
11475	0.59	2.631	9.81E+00	3.10E-02
11475	0.59	2.631	1.47E+01	2.70E-02
11475	0.59	2.631	2.94E+01	2.30E-02
11475	0.59	2.631	9.81E+01	1.90E-02
11475	0.59	2.631	4.91E+02	1.30E-02
11476	0.75	2.631	1.96E+00	2.76E-01
11476	0.75	2.631	3.92E+00	1.05E-01
11476	0.75	2.631	5.89E+00	6.50E-02
11476	0.75	2.631	7.85E+00	5.00E-02
11476	0.75	2.631	9.81E+00	4.30E-02
11476	0.75	2.631	1.47E+01	3.30E-02
11476	0.75	2.631	2.94E+01	2.50E-02
11476	0.75	2.631	9.81E+01	1.60E-02
11476	0.75	2.631	4.91E+02	1.20E-02
11476	0.75	2.631	1.47E+03	9.00E-03
11477	0.66	2.631	1.96E+00	3.82E-01
11477	0.66	2.631	3.92E+00	1.86E-01
11477	0.66	2.631	5.89E+00	8.30E-02

Table C-2. (continued).

Soil Number	Void Ratio	Specific Gravity	Suction (kPa)	Volumetric Water Content
11477	0.66	2.631	7.85E+00	6.50E-02
11477	0.66	2.631	9.81E+00	5.80E-02
11477	0.66	2.631	1.47E+01	5.00E-02
11477	0.66	2.631	2.94E+01	4.10E-02
11477	0.66	2.631	9.81E+01	3.00E-02
11477	0.66	2.631	4.91E+02	2.10E-02
11477	0.66	2.631	1.47E+03	1.50E-02
11605	0.62	2.67	1.00E-02	3.81E-01
11605	0.62	2.67	2.75E+00	2.94E-01
11605	0.62	2.67	2.75E+00	3.03E-01
11605	0.62	2.67	2.75E+00	3.20E-01
11605	0.62	2.67	2.75E+00	2.99E-01
11605	0.62	2.67	2.95E+00	2.73E-01
11605	0.62	2.67	2.95E+00	2.38E-01
11605	0.62	2.67	2.95E+00	2.27E-01
11605	0.62	2.67	3.10E+00	2.14E-01
11605	0.62	2.67	3.10E+00	1.92E-01
11605	0.62	2.67	3.10E+00	2.20E-01
11605	0.62	2.67	3.60E+00	1.09E-01
11605	0.62	2.67	3.60E+00	1.21E-01
11605	0.62	2.67	3.60E+00	1.12E-01
11605	0.62	2.67	3.90E+00	3.30E-02
11605	0.62	2.67	3.90E+00	4.20E-02

Table C-2. (continued).

Soil Number	Void Ratio	Specific Gravity	Suction (kPa)	Volumetric Water Content
11605	0.62	2.67	3.90E+00	8.12E-02
11605	0.62	2.67	3.90E+00	7.84E-02
11605	0.62	2.67	3.90E+00	8.32E-02
11605	0.62	2.67	3.90E+00	8.00E-02
11605	0.62	2.67	6.00E+00	4.60E-02
11605	0.62	2.67	6.00E+00	3.79E-02
11605	0.62	2.67	6.00E+00	3.93E-02
11606	0.62	2.67	1.00E-02	3.81E-01
11606	0.62	2.67	2.75E+00	2.94E-01
11606	0.62	2.67	2.75E+00	3.03E-01
11606	0.62	2.67	2.75E+00	3.20E-01
11606	0.62	2.67	2.75E+00	2.99E-01
11606	0.62	2.67	2.95E+00	2.73E-01
11606	0.62	2.67	2.95E+00	2.38E-01
11606	0.62	2.67	2.95E+00	2.27E-01
11606	0.62	2.67	3.10E+00	2.14E-01
11606	0.62	2.67	3.10E+00	1.92E-01
11606	0.62	2.67	3.10E+00	2.20E-01
11606	0.62	2.67	3.60E+00	1.09E-01
11606	0.62	2.67	3.60E+00	1.21E-01
11606	0.62	2.67	3.60E+00	1.12E-01
11606	0.62	2.67	3.90E+00	3.30E-02
11606	0.62	2.67	3.90E+00	4.20E-02

Table C-2. (continued).

Soil Number	Void Ratio	Specific Gravity	Suction (kPa)	Volumetric Water Content
11606	0.62	2.67	3.90E+00	8.12E-02
11606	0.62	2.67	3.90E+00	7.84E-02
11606	0.62	2.67	3.90E+00	8.32E-02
11606	0.62	2.67	3.90E+00	8.00E-02
11606	0.62	2.67	6.00E+00	4.60E-02
11606	0.62	2.67	6.00E+00	3.79E-02
11606	0.62	2.67	6.00E+00	3.93E-02
11607	0.62	2.67	1.00E-02	3.81E-01
11607	0.62	2.67	2.75E+00	2.94E-01
11607	0.62	2.67	2.75E+00	3.03E-01
11607	0.62	2.67	2.75E+00	3.20E-01
11607	0.62	2.67	2.75E+00	2.99E-01
11607	0.62	2.67	2.95E+00	2.73E-01
11607	0.62	2.67	2.95E+00	2.38E-01
11607	0.62	2.67	2.95E+00	2.27E-01
11607	0.62	2.67	3.10E+00	2.14E-01
11607	0.62	2.67	3.10E+00	1.92E-01
11607	0.62	2.67	3.10E+00	2.20E-01
11607	0.62	2.67	3.60E+00	1.09E-01
11607	0.62	2.67	3.60E+00	1.21E-01
11607	0.62	2.67	3.60E+00	1.12E-01
11607	0.62	2.67	3.90E+00	3.30E-02
11607	0.62	2.67	3.90E+00	4.20E-02

Table C-2. (continued).

Soil Number	Void Ratio	Specific Gravity	Suction (kPa)	Volumetric Water Content
11607	0.62	2.67	3.90E+00	8.12E-02
11607	0.62	2.67	3.90E+00	7.84E-02
11607	0.62	2.67	3.90E+00	8.32E-02
11607	0.62	2.67	3.90E+00	8.00E-02
11607	0.62	2.67	6.00E+00	4.60E-02
11607	0.62	2.67	6.00E+00	3.79E-02
11607	0.62	2.67	6.00E+00	3.93E-02
12463	0.63	2.63	1.47E+01	5.47E-02
12463	0.63	2.63	1.33E+01	5.43E-02
12463	0.63	2.63	1.18E+01	5.49E-02
12463	0.63	2.63	1.04E+01	5.69E-02
12463	0.63	2.63	8.87E+00	5.65E-02
12463	0.63	2.63	7.40E+00	5.99E-02
12463	0.63	2.63	5.93E+00	6.28E-02
12463	0.63	2.63	4.44E+00	7.04E-02
12463	0.63	2.63	2.94E+00	8.83E-02
12463	0.63	2.63	1.48E+00	1.51E-01
12463	0.63	2.63	9.86E-01	2.26E-01
12463	0.63	2.63	5.03E-01	3.18E-01
12463	0.63	2.63	1.81E-01	3.46E-01
12463	0.63	2.63	6.43E-02	3.48E-01

Note: The SWCC curve for soil number 12463 was selected to provide a capillary break for the silty loam.

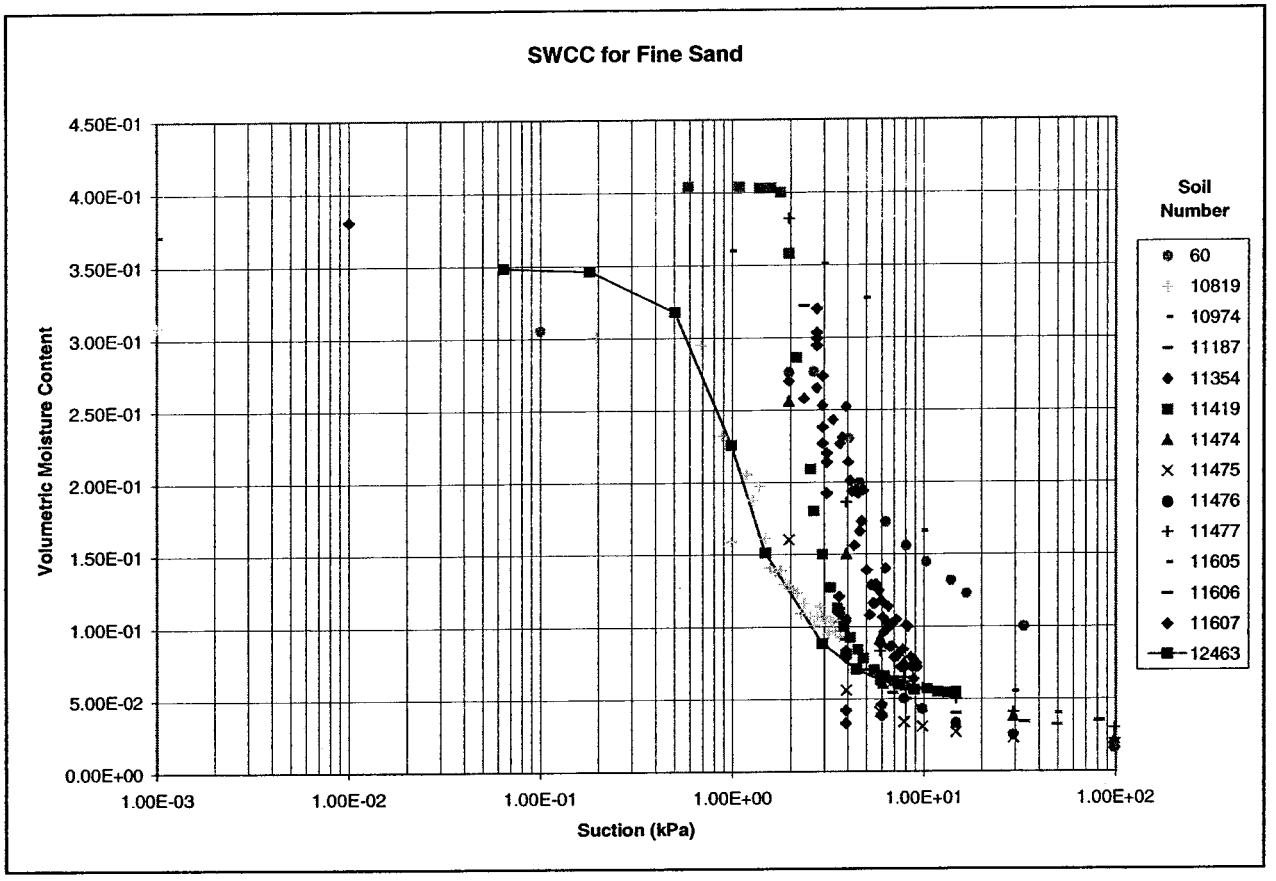

SWCC for Fine Sand
Volumetric Moisture Content
4.50E-01
4.00E-01
3.50E-01
3.00E-01
2.50E-01
2.00E-01
1.50E-01
1.00E-01
5.00E-02
0.00E+00
1.00E-03
1.00E-02
1.00E-01
1.00E+00
1.00E+01
1.00E+02
Suction (kPa)
Soil Number
60
10819
10974
11187
11354
11419
11474
11475
11476
11477
11605
11606
11607
12463

Table C-3. Data For Coarse Sand.

Soil Number	Void Ratio	Specific Gravity	Soil Suction	Volumetric W/C
202	0.34	2.65	1.00E-01	2.51E-01
202	0.34	2.65	2.00E-01	2.51E-01
202	0.34	2.65	3.00E-01	2.51E-01
202	0.34	2.65	4.00E-01	2.49E-01
202	0.34	2.65	5.00E-01	2.44E-01
202	0.34	2.65	6.00E-01	2.44E-01
202	0.34	2.65	7.00E-01	2.44E-01
202	0.34	2.65	8.00E-01	2.40E-01
202	0.34	2.65	9.00E-01	2.38E-01
202	0.34	2.65	1.00E+00	2.37E-01
202	0.34	2.65	2.00E+00	2.16E-01
202	0.34	2.65	3.00E+00	1.92E-01
202	0.34	2.65	4.00E+00	1.74E-01
202	0.34	2.65	5.00E+00	1.53E-01
202	0.34	2.65	6.00E+00	1.46E-01
202	0.34	2.65	7.00E+00	1.39E-01
202	0.34	2.65	8.00E+00	1.32E-01
202	0.34	2.65	9.00E+00	1.25E-01
202	0.34	2.65	1.00E+01	1.22E-01
202	0.34	2.65	2.00E+01	9.75E-02
202	0.34	2.65	3.00E+01	9.06E-02
202	0.34	2.65	4.00E+01	8.36E-02
202	0.34	2.65	5.00E+01	8.36E-02

Table C-3. (continued).

Soil Number	Void Ratio	Specific Gravity	Soil Suction	Volumetric W/C
202	0.34	2.65	6.00E+01	8.22E-02
202	0.34	2.65	7.00E+01	7.80E-02
202	0.34	2.65	8.00E+01	7.66E-02
202	0.34	2.65	9.00E+01	7.66E-02
202	0.34	2.65	1.00E+02	7.52E-02
202	0.34	2.65	2.00E+02	6.97E-02
202	0.34	2.65	3.00E+02	6.62E-02
232	0.40	2.78	1.00E-01	2.85E-01
232	0.40	2.78	1.09E+00	2.71E-01
232	0.40	2.78	2.06E+00	2.60E-01
232	0.40	2.78	3.23E+00	2.60E-01
232	0.40	2.78	4.29E+00	2.58E-01
232	0.40	2.78	5.59E+00	2.49E-01
232	0.40	2.78	1.04E+01	2.25E-01
232	0.40	2.78	1.59E+01	1.87E-01
232	0.40	2.78	2.32E+01	1.60E-01
232	0.40	2.78	3.07E+01	1.32E-01
232	0.40	2.78	3.99E+01	1.17E-01
232	0.40	2.78	6.97E+01	9.99E-02
232	0.40	2.78	8.88E+01	9.87E-02
232	0.40	2.78	1.00E+02	9.33E-02
234	0.41	2.78	1.00E-01	2.91E-01
234	0.41	2.78	1.58E+00	2.88E-01
234	0.41	2.78	2.48E+00	2.80E-01

Table C-3. (continued).

Soil Number	Void Ratio	Specific Gravity	Soil Suction	Volumetric W/C
234	0.41	2.78	3.62E+00	2.65E-01
234	0.41	2.78	4.35E+00	2.68E-01
234	0.41	2.78	5.97E+00	2.69E-01
234	0.41	2.78	1.00E+01	2.62E-01
234	0.41	2.78	1.48E+01	2.48E-01
234	0.41	2.78	2.16E+01	2.23E-01
234	0.41	2.78	3.00E+01	2.13E-01
234	0.41	2.78	3.98E+01	2.00E-01
234	0.41	2.78	5.00E+01	1.71E-01
234	0.41	2.78	6.57E+01	1.61E-01
234	0.41	2.78	8.51E+01	1.72E-01
234	0.41	2.78	1.00E+02	1.70E-01
1243	0.35	2.635135	5.89E+00	1.60E-01
1243	0.35	2.635135	1.00E+01	1.48E-01
1243	0.35	2.635135	3.31E+01	1.41E-01
1243	0.35	2.635135	6.70E+01	1.37E-01
1243	0.35	2.635135	1.00E+02	1.31E-01
1243	0.35	2.635135	3.00E+02	8.90E-02
1243	0.35	2.635135	5.00E+02	8.40E-02
1243	0.35	2.635135	1.50E+03	7.30E-02
4821	0.38	2.71462	1.00E+01	2.74E-01
4821	0.38	2.71462	3.00E+01	2.32E-01
4821	0.38	2.71462	6.00E+01	1.83E-01
4821	0.38	2.71462	3.00E+02	1.82E-01

Table C-3. (continued).

Soil Number	Void Ratio	Specific Gravity	Soil Suction	Volumetric W/C
4821	0.38	2.71462	1.50E+03	6.28E-02
5099	0.40	2.664797	1.96E+00	2.87E-01
5099	0.40	2.664797	3.04E+00	2.87E-01
5099	0.40	2.664797	4.51E+00	2.85E-01
5099	0.40	2.664797	5.98E+00	2.82E-01
5099	0.40	2.664797	8.04E+00	2.78E-01
5099	0.40	2.664797	1.00E+01	2.75E-01
5099	0.40	2.664797	1.50E+01	2.70E-01
5099	0.40	2.664797	2.00E+01	2.51E-01
5099	0.40	2.664797	3.31E+01	2.38E-01
5099	0.40	2.664797	5.20E+02	1.75E-01
5186	0.44	2.752161	1.96E+00	3.06E-01
5186	0.44	2.752161	3.04E+00	3.02E-01
5186	0.44	2.752161	4.51E+00	3.02E-01
5186	0.44	2.752161	5.98E+00	3.02E-01
5186	0.44	2.752161	8.04E+00	2.91E-01
5186	0.44	2.752161	1.00E+01	2.87E-01
5186	0.44	2.752161	1.50E+01	2.80E-01
5186	0.44	2.752161	2.00E+01	2.74E-01
5186	0.44	2.752161	3.31E+01	2.59E-01
5186	0.44	2.752161	5.20E+02	1.35E-01
10762	0.45	2.85	1.00E-03	2.43E-01
10762	0.45	2.85	5.00E+00	2.09E-01
10762	0.45	2.85	1.00E+01	1.92E-01

Table C-3. (continued).

Soil Number	Void Ratio	Specific Gravity	Soil Suction	Volumetric W/C
10762	0.45	2.85	2.00E+01	1.75E-01
10762	0.45	2.85	3.00E+01	1.67E-01
10762	0.45	2.85	4.00E+01	1.61E-01
10762	0.45	2.85	5.00E+01	1.55E-01
10762	0.45	2.85	6.00E+01	1.50E-01
10762	0.45	2.85	7.00E+01	1.43E-01
10762	0.45	2.85	8.00E+01	1.37E-01
10762	0.45	2.85	9.01E+01	1.33E-01
10762	0.45	2.85	1.00E+02	1.30E-01
10762	0.45	2.85	3.00E+02	1.05E-01
10762	0.45	2.85	5.00E+02	8.20E-02
10762	0.45	2.85	1.50E+03	7.50E-02
11062	0.36	2.65	9.81E-02	2.64E-01
11062	0.36	2.65	9.81E-01	2.40E-01
11062	0.36	2.65	1.96E+00	1.60E-01
11062	0.36	2.65	3.92E+00	8.30E-02
11062	0.36	2.65	7.85E+00	4.50E-02
11062	0.36	2.65	1.57E+01	4.00E-02
11062	0.36	2.65	3.38E+01	3.80E-02
11062	0.36	2.65	6.77E+01	3.50E-02
11062	0.36	2.65	1.47E+03	3.00E-02
11072	0.40	2.68	9.81E-02	2.86E-01
11072	0.40	2.68	9.81E-01	2.39E-01
11072	0.40	2.68	1.96E+00	1.85E-01

Table C-3. (continued).

Soil Number	Void Ratio	Specific Gravity	Soil Suction	Volumetric W/C
11072	0.40	2.68	3.92E+00	1.13E-01
11072	0.40	2.68	7.85E+00	8.50E-02
11072	0.40	2.68	1.47E+03	3.50E-02
11550	0.45	2.78	1.02E-01	3.12E-01
11550	0.45	2.78	2.03E-01	3.11E-01
11550	0.45	2.78	4.07E-01	3.10E-01
11550	0.45	2.78	6.14E-01	3.10E-01
11550	0.45	2.78	8.15E-01	3.10E-01
11550	0.45	2.78	1.03E+00	3.08E-01
11550	0.45	2.78	1.52E+00	3.07E-01
11550	0.45	2.78	2.54E+00	3.06E-01
11550	0.45	2.78	3.58E+00	3.03E-01
11550	0.45	2.78	4.59E+00	2.85E-01
11550	0.45	2.78	4.04E+01	1.44E-01
11550	0.45	2.78	8.59E+01	1.12E-01
11552	0.43	2.790099	1.01E-01	3.01E-01
11552	0.43	2.790099	1.01E+00	2.85E-01
11552	0.43	2.790099	2.01E+00	2.82E-01
11552	0.43	2.790099	3.03E+00	2.81E-01
11552	0.43	2.790099	4.02E+00	2.80E-01
11552	0.43	2.790099	4.50E+00	2.77E-01
11552	0.43	2.790099	5.01E+00	2.56E-01
11552	0.43	2.790099	5.52E+00	2.53E-01
11552	0.43	2.790099	2.06E+01	1.84E-01

Table C-3. (continued).

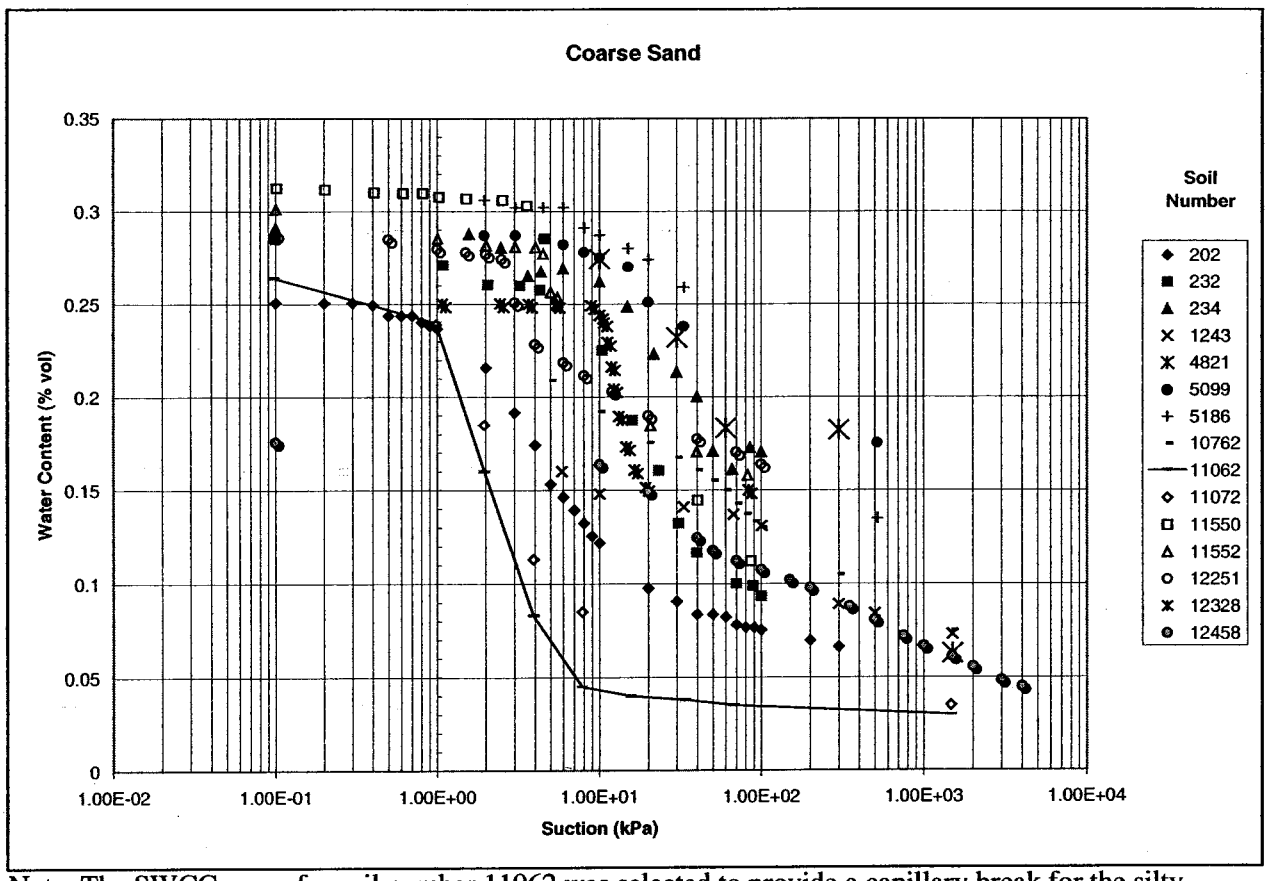
Soil Number	Void Ratio	Specific Gravity	Soil Suction	Volumetric W/C
11552	0.43	2.790099	3.97E+01	1.70E-01
11552	0.43	2.790099	8.23E+01	1.58E-01
12251	0.44	2.74	1.00E-01	2.87E-01
12251	0.44	2.74	5.00E-01	2.85E-01
12251	0.44	2.74	1.00E+00	2.80E-01
12251	0.44	2.74	1.50E+00	2.78E-01
12251	0.44	2.74	2.00E+00	2.77E-01
12251	0.44	2.74	2.50E+00	2.74E-01
12251	0.44	2.74	3.00E+00	2.51E-01
12251	0.44	2.74	4.00E+00	2.28E-01
12251	0.44	2.74	6.00E+00	2.19E-01
12251	0.44	2.74	8.00E+00	2.12E-01
12251	0.44	2.74	1.20E+01	2.03E-01
12251	0.44	2.74	2.00E+01	1.90E-01
12251	0.44	2.74	4.00E+01	1.77E-01
12251	0.44	2.74	7.00E+01	1.70E-01
12251	0.44	2.74	1.00E+02	1.64E-01
12328	0.33	2.65	1.08E+00	2.50E-01
12328	0.33	2.65	2.45E+00	2.50E-01
12328	0.33	2.65	3.65E+00	2.50E-01
12328	0.33	2.65	5.44E+00	2.50E-01
12328	0.33	2.65	8.87E+00	2.49E-01
12328	0.33	2.65	1.00E+01	2.44E-01
12328	0.33	2.65	1.06E+01	2.40E-01

Table C-3. (continued).

Soil Number	Void Ratio	Specific Gravity	Soil Suction	Volumetric W/C
12328	0.33	2.65	1.11E+01	2.29E-01
12328	0.33	2.65	1.18E+01	2.16E-01
12328	0.33	2.65	1.23E+01	2.04E-01
12328	0.33	2.65	1.32E+01	1.90E-01
12328	0.33	2.65	1.46E+01	1.73E-01
12328	0.33	2.65	1.64E+01	1.61E-01
12328	0.33	2.65	1.92E+01	1.51E-01
12328	0.33	2.65	8.31E+01	1.50E-01
12458	0.38	2.64	1.00E-01	1.76E-01
12458	0.38	2.64	1.00E+01	1.64E-01
12458	0.38	2.64	2.00E+01	1.49E-01
12458	0.38	2.64	4.00E+01	1.25E-01
12458	0.38	2.64	5.00E+01	1.18E-01
12458	0.38	2.64	7.00E+01	1.12E-01
12458	0.38	2.64	1.00E+02	1.07E-01
12458	0.38	2.64	1.50E+02	1.02E-01
12458	0.38	2.64	2.00E+02	9.79E-02
12458	0.38	2.64	3.50E+02	8.79E-02
12458	0.38	2.64	5.00E+02	8.07E-02
12458	0.38	2.64	7.50E+02	7.20E-02
12458	0.38	2.64	1.00E+03	6.68E-02
12458	0.38	2.64	1.50E+03	6.10E-02
12458	0.38	2.64	2.00E+03	5.55E-02
12458	0.38	2.64	3.00E+03	4.83E-02

Table C-3. (continued).

Soil Number	Void Ratio	Specific Gravity	Soil Suction	Volumetric W/C
12458	0.38	2.64	4.00E+03	4.49E-02



Note: The SWCC curve for soil number 11062 was selected to provide a capillary break for the silty loam.

C.2 SOIL DATA (UPPER SECTION)

C.2.1 Silty Loam Soil Properties

Saturated Hydraulic Conductivity = 5 X 10^{-4} cm/s

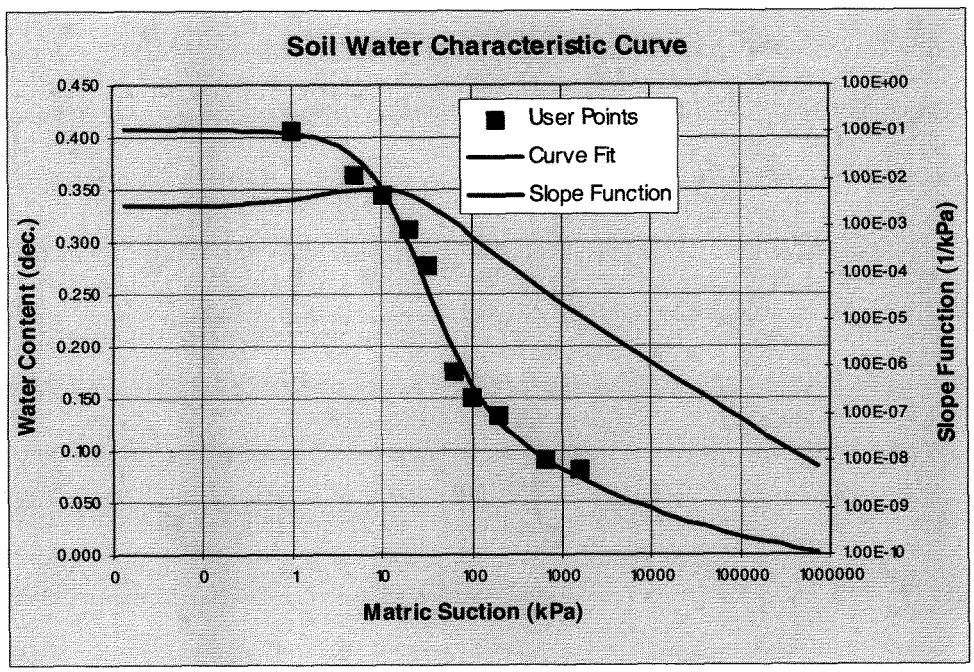
Porosity = 44.1%

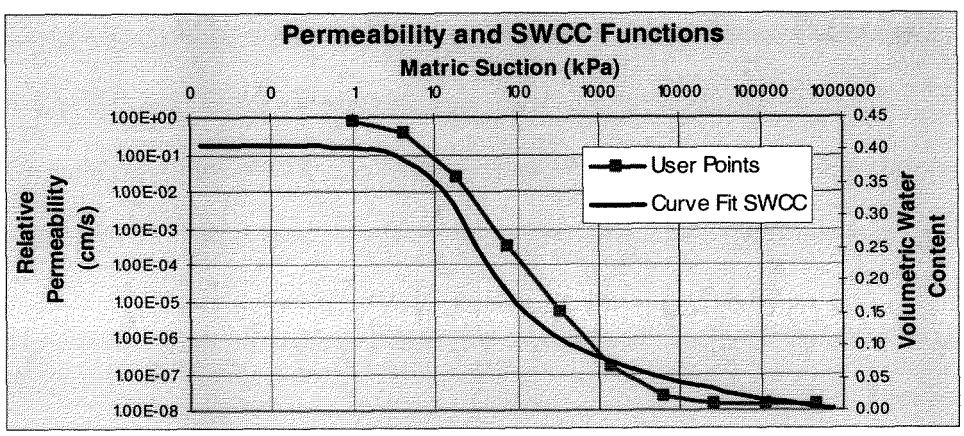
Curve Fit Parameters (Fredlund and Xing)

a = 15.84

n = 1.41

m = 0.88





C.2.2 Fine Sand Soil Properties

Saturated Hydraulic Conductivity = 1 X 10^{-3} cm/s

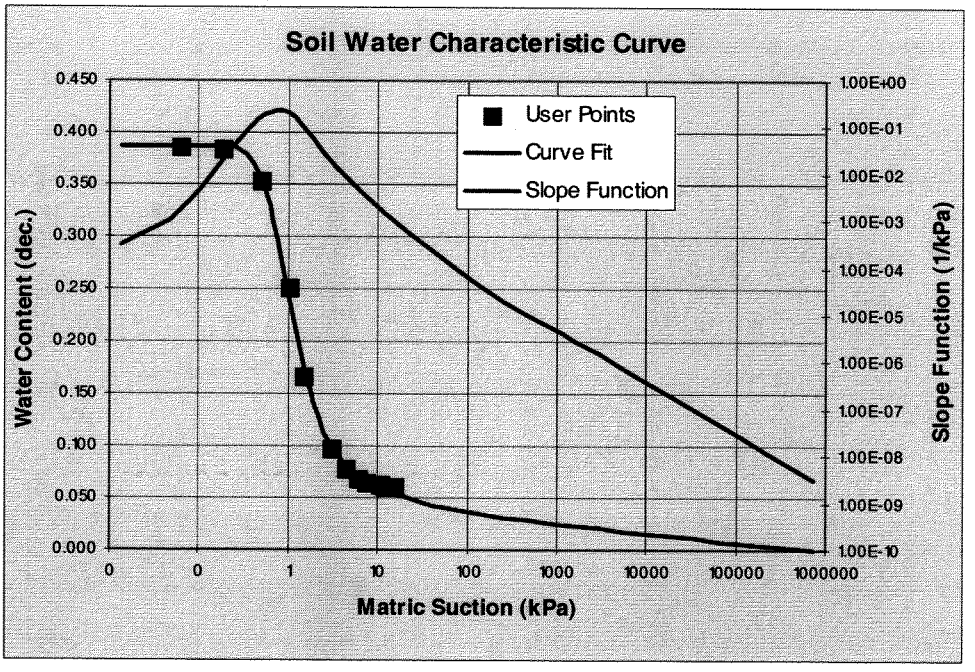
Porosity = 38.7%

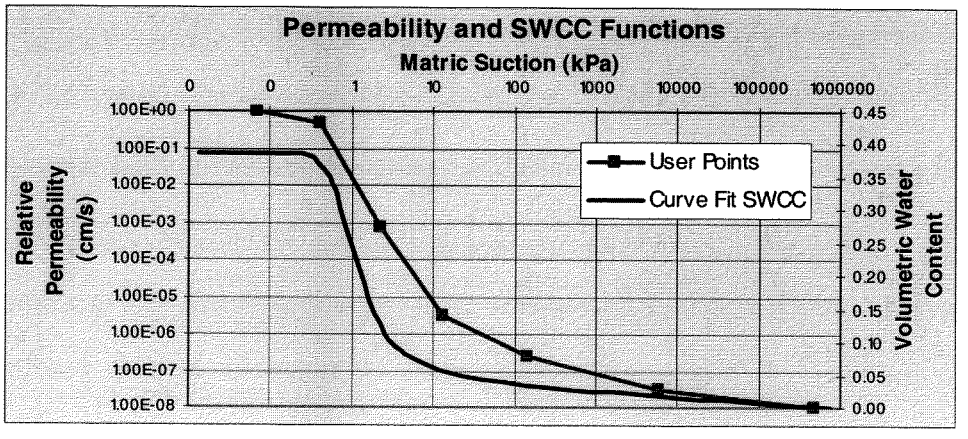
Curve Fit Parameters (Fredlund and Xing)

a = 1.73

n = 3.45

m = 0.84





C.2.3 Coarse Sand Soil Properties

Saturated Hydraulic Conductivity = 1 X 10^{-2} cm/s

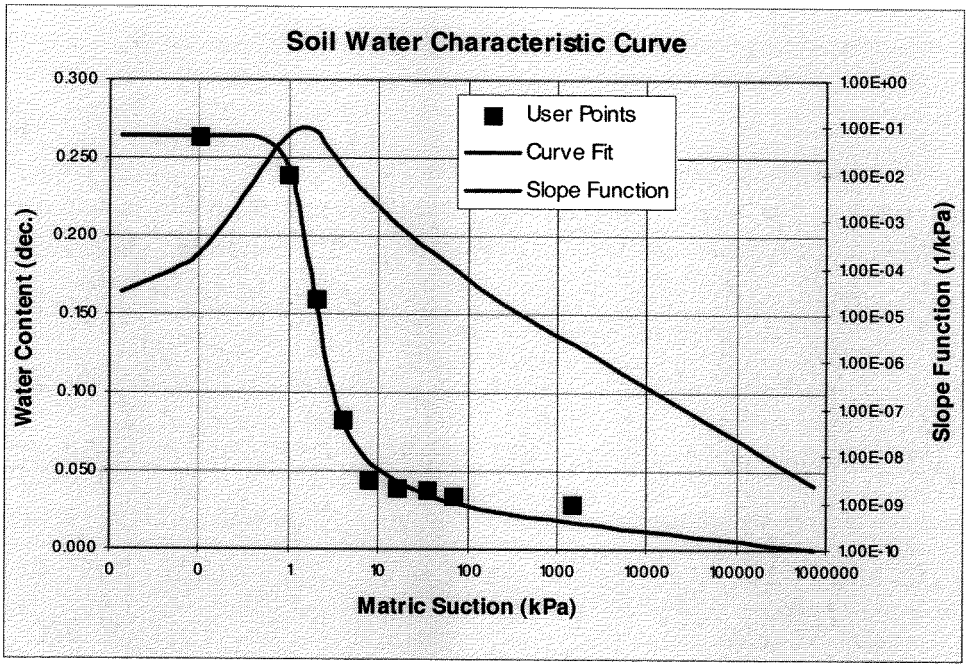
Porosity = 26.5%

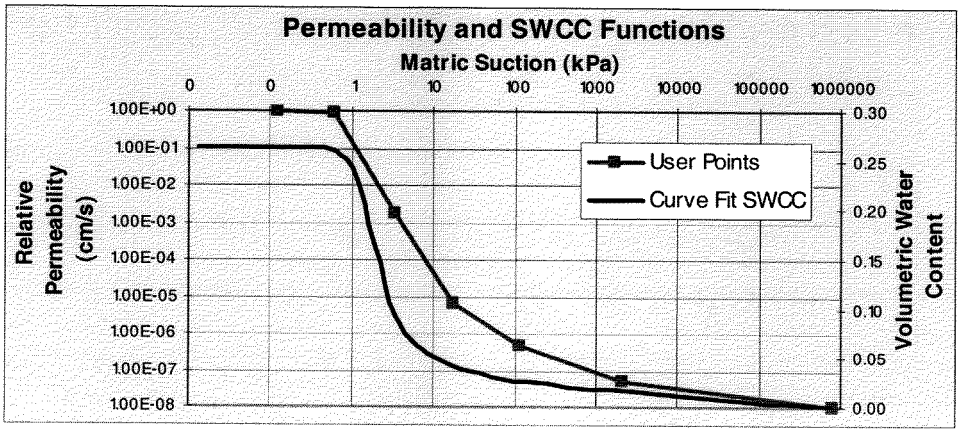
Curve Fit Parameters (Fredlund and Xing)

a = 1.36

n = 3.88

m = 0.80





C.2.4 Cobble Soil Properties

Saturated Hydraulic Conductivity = 1 X 10^{-1} cm/s

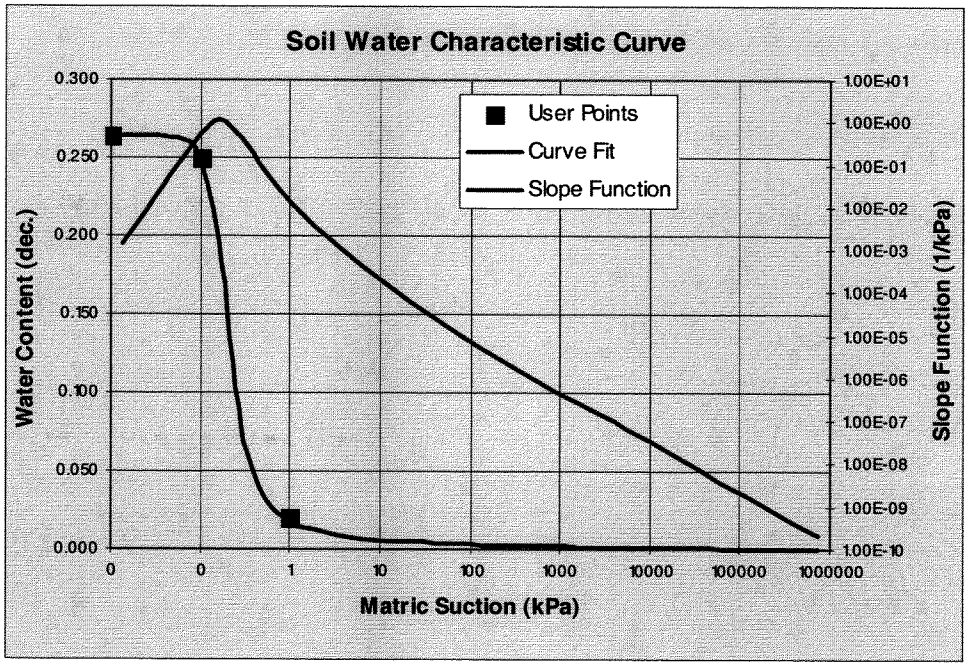
Porosity = 26.5%

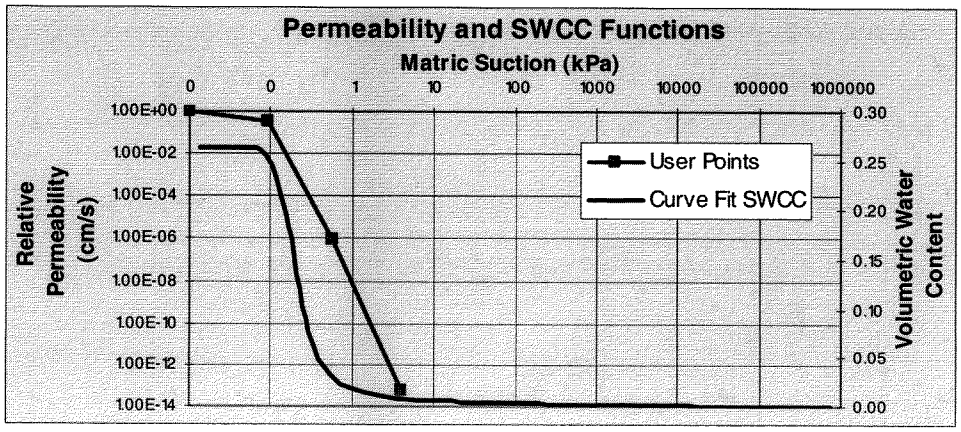
Curve Fit Parameters (Fredlund and Xing)

a = 0.17

n = 4.06

m = 1.35





COBBLE POROSITY					
USCS Classification	Void Ratio e_{min}	Void Ratio e_{max}	Porosity n_{min}	Porosity n_{avg}	Porosity n_{max}
GW	0.24	0.45	0.19	0.25	0.31
GW	0.20	0.39	0.17	0.22	0.28
GW	0.21	0.41	0.17	0.23	0.29
GW	0.25	0.49	0.20	0.26	0.33
GW	0.20	0.48	0.17	0.25	0.32
GW	0.21	0.52	0.17	0.26	0.34
GW	0.13	0.34	0.12	0.18	0.25
GP	0.23	0.43	0.19	0.24	0.30
GP	0.22	0.44	0.18	0.24	0.31
GP	0.22	0.45	0.18	0.25	0.31
GP	0.18	0.45	0.15	0.23	0.31
GP	0.17	0.44	0.15	0.23	0.31
GP	0.17	0.48	0.15	0.23	0.32
Reference: Fang, Foundation Engineering Handbook 2 Ed., 1991, page 262.					

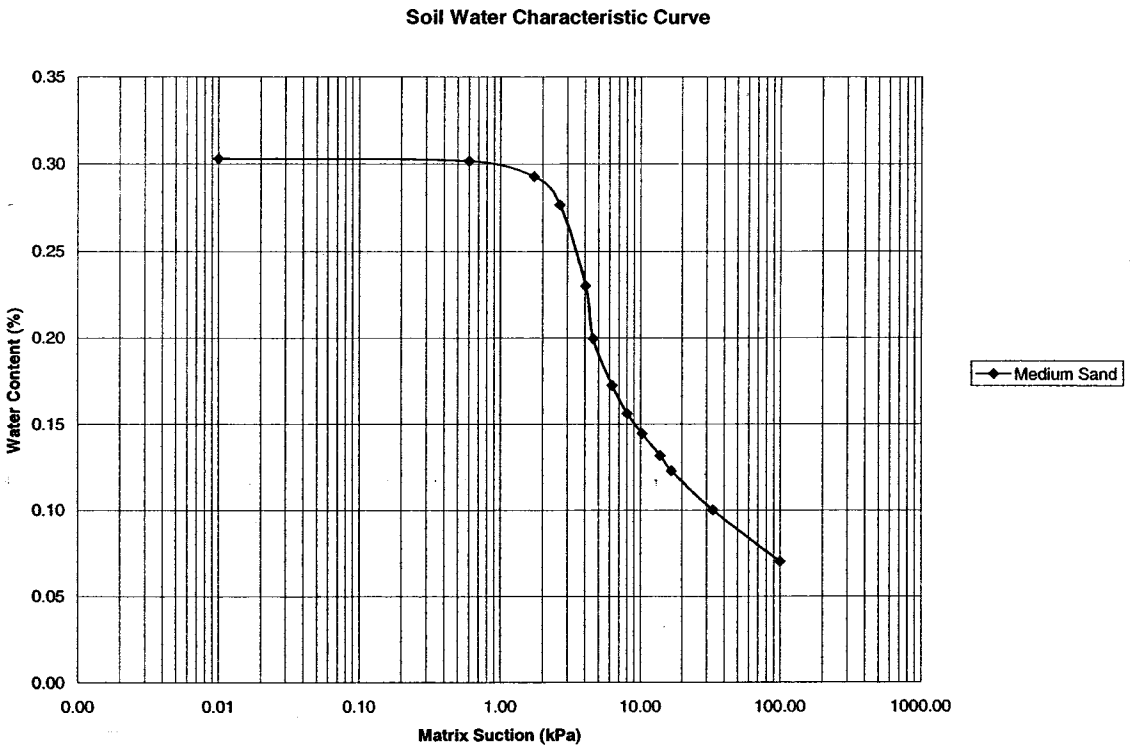
C.3 SOIL DATA (LOWER SECTION)

C.3.1 Medium Sand Properties

Saturated Hydraulic Conductivity = 2 X 10^{-3} cm/s

Porosity = 30%

Curve Fit Parameters - Spline Function

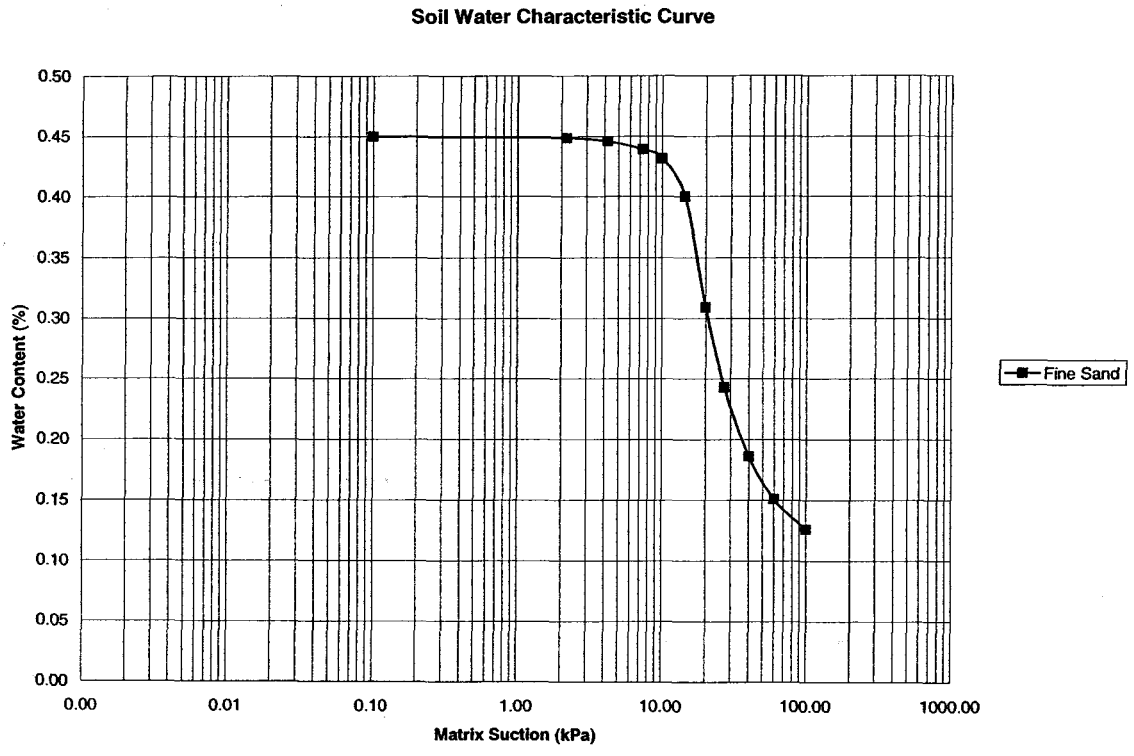

Soil Water Characteristic Curve
Water Content (%)
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
0.00
0.01
0.10
1.00
10.00
100.00
1000.00
Matrix Suction (kPa)
Medium Sand

C.3.2 Silty Fine Sand

Saturated Hydraulic Conductivity = 5 X 10^{-5} cm/s

Porosity = 45%

Curve Fit Parameters - Spline Function

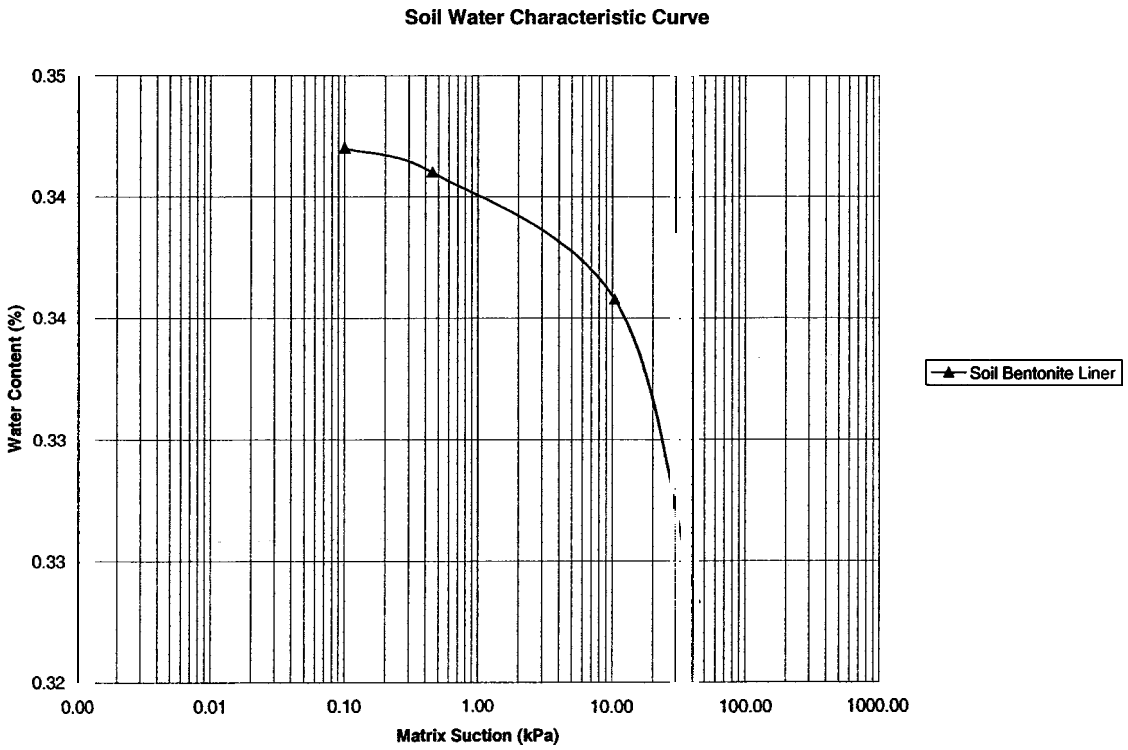


C.3.3 Soil Bentonite Liner

Saturated Hydraulic Conductivity = 7 X 10^{-8} cm/s

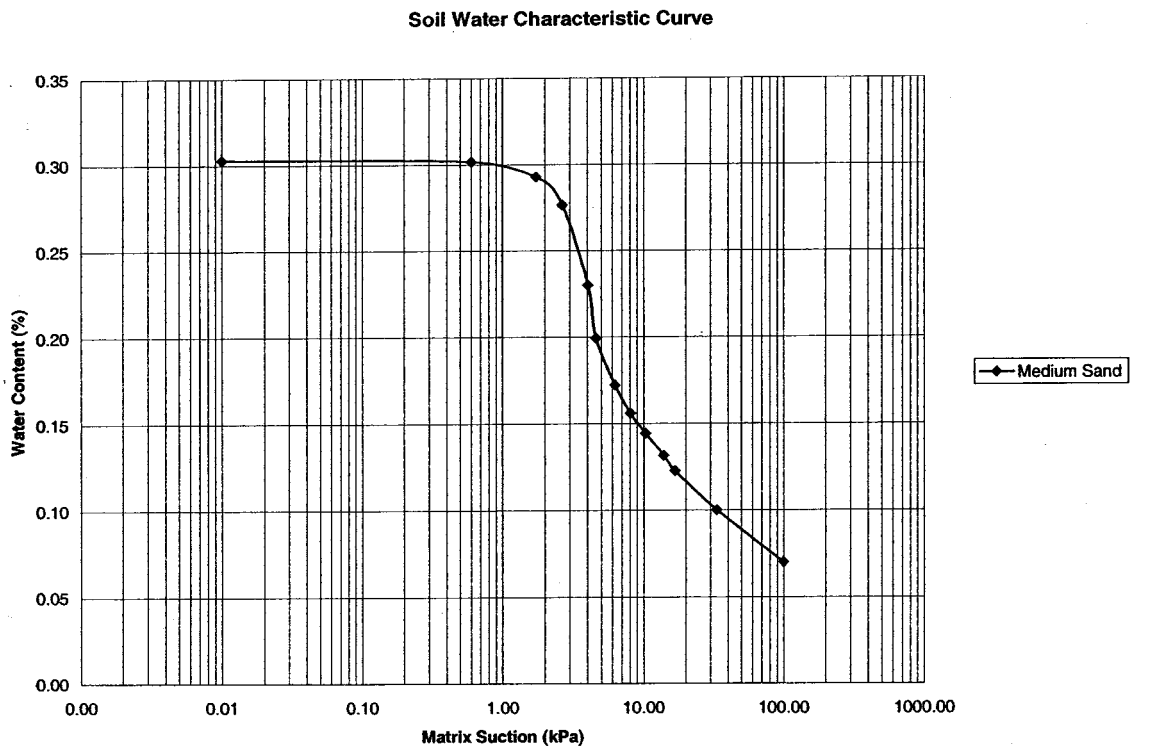
Porosity = 34%

Curve Fit Parameters - Spline Function



C.3.5 Structural Fill Properties

Saturated Hydraulic Conductivity = 2 X 10^{-3} cm/s

Porosity = 30%

Curve Fit Parameters - Spline Function