

6. Listing of Soil Properties by Soil Group for Irrigation Districts

Table 29.1 MV District - Soil Group 1 Sandy soils

Soil Group 1S

Irrigation District MV

Soil Properties	Horizon A								Horizon B1							
	Sampling Points	Mean	Std	Min	Max	Percentile			Sampling Points	Mean	Std	Min	Max	Percentile		
						25	50	75						25	50	75
Soil Physical Properties																
Particle size distribution																
Clay%	8	1.5	0.6	0.3	2.2	1.2	1.6	2.0	8	4.2	2.6	1.2	7.3	1.5	4.5	6.4
Silt%	8	14.5	7.5	5.8	23.7	6.4	16.4	20.5	8	14.3	8.0	2.8	23.0	6.1	18.1	20.1
Sand%	8	84.0	8.0	74.4	93.9	77.5	81.9	92.4	8	81.6	10.2	71.4	96.0	74.4	75.7	92.5
Bulk density (g/cm3)	8	1.65	0.09	1.55	1.79	1.58	1.67	1.70	8	1.74	0.12	1.54	1.88	1.66	1.74	1.85
Organic matter (%)	8	1.8	0.4	1.3	2.5	1.4	1.7	2.0	8	1.1	0.4	0.6	1.7	0.8	1.0	1.4
Depth of horizon (mm)	0								0							
Soil Chemical Properties																
EC (dS/cm)	8	0.08	0.04	0.04	0.14	0.04	0.07	0.12	8	0.07	0.03	0.04	0.10	0.04	0.07	0.10
pH (H2O)	8	7.4	1.3	5.8	9.0	6.4	7.2	8.6	8	7.1	1.8	5.2	8.8	5.4	7.2	8.8
pH (CaCl2)	8	6.6	1.0	5.0	7.9	5.9	6.5	7.6	8	6.2	1.6	4.5	7.8	4.7	6.3	7.7
Ca (meq/100g)	8	2.9	1.4	1.0	4.7	1.9	3.0	4.1	8	1.9	1.1	0.7	3.8	0.9	2.0	2.5
Mg (meq/100g)	8	1.5	1.2	0.2	2.9	0.3	1.4	2.6	8	1.1	0.9	0.1	2.2	0.2	1.0	1.9
Na (meq/100g)	8	0.4	0.4	0.0	0.8	0.1	0.4	0.7	8	0.3	0.3	0.0	0.6	0.1	0.3	0.5
K (meq/100g)	8	0.5	0.2	0.2	0.7	0.3	0.5	0.7	8	0.5	0.3	0.1	0.8	0.2	0.5	0.7
ESP (%)	8	5.8	3.4	1.8	10.3	2.2	6.7	8.4	8	6.8	2.9	2.3	10.4	4.7	7.0	9.2
Soil Hydraulic Properties																
Sat. hydraulic conductivity (mm/hr)	8	140.5	152.6	17.8	366.9	24.8	48.3	296.4	8	36.5	31.5	6.13	83.2	12.9	21.6	66.8
Final infiltration rate (mm/hr)									8	129	169	8.52	420	13.9	28.6	258
Available water capacity (%)	4	16.4	2.5	12.8	18.5	14.9	17.2	17.9	4	14.2	3.5	9.0	16.5	12.1	15.7	16.3
Soil water retention characteristic																
Volumetric water content (%) at																
Matric suction (kPa)																
0	4	39.1	4.4	35.1	44.2	35.4	38.5	42.7	4	36.2	4.8	30.7	42.0	32.7	36.0	39.7
10	4	23.6	5.1	16.8	28.7	19.8	24.4	27.3	4	20.7	6.3	12.2	26.3	16.1	22.1	25.3
60	4	17.5	6.1	10.7	24.2	12.4	17.5	22.5	4	15.4	6.8	7.7	23.3	10.0	15.3	20.8
1500	4	7.2	3.7	4.0	11.7	4.2	6.5	10.2	4	6.5	3.1	3.2	10.1	4.0	6.3	9.0

Table 29.2 MV District - Soil Group 1 Duplex soils

Soil Properties	Irrigation District MV															
	Horizon A								Horizon B1							
	Sampling Points	Mean	Std	Min	Max	Percentile			Sampling Points	Mean	Std	Min	Max	Percentile		
25						50	75	25						50	75	
Soil Physical Properties																
Particle size distribution																
Clay%	2	26.9		26.8	26.9				2	16.3		12.6	19.9			
Silt%	2	28.2		28.0	28.3				2	31.4		24.7	38.0			
Sand%	2	45.0		44.8	45.2				2	52.4		42.1	62.7			
Bulk density (g/cm ³)	2	1.63		1.58	1.69				2	1.71		1.67	1.74			
Organic matter (%)	2	3.6		3.3	3.8				2	2.6		2.1	3.1			
Depth of horizon (mm)	2	260		200	320				0							
Soil Chemical Properties																
EC (dS/cm)	2	0.11		0.10	0.11				2	0.08		0.07	0.08			
pH (H ₂ O)	2	6.9		6.8	7.0				2	7.2		6.6	7.7			
pH (CaCl ₂)	2	6.4		6.3	6.5				2	6.6		6.1	7.1			
Ca (meq/100g)	2	6.3		6.0	6.5				2	4.1		3.5	4.7			
Mg (meq/100g)	2	5.3		5.1	5.5				2	2.5		1.9	3.0			
Na (meq/100g)	2	0.3		0.3	0.3				2	0.2		0.2	0.2			
K (meq/100g)	2	1.2		1.1	1.3				2	0.7		0.6	0.8			
ESP (%)	2	2.4		2.2	2.6				2	2.7		2.6	2.8			
Soil Hydraulic Properties																
Sat. hydraulic conductivity (mm/hr)	2	28.8		24.3	33.4				2	19.9		9.81	29.9			
Final infiltration rate (mm/hr)									2	21.4		20.9	22			
Available water capacity (%)	0								0							
Soil water retention characteristic																
Volumetric water content (%) at																
Matric suction (kPa)																
0	0								0							
10	0								0							
60	0								0							
1500									0							

Table 29.3 MV District - Soil Group 2

Soil Group 2

Irrigation District MV

Soil Properties	Horizon A									Horizon B1						
	Sampling Points	Mean	Std	Min	Max	Percentile			Sampling Points	Mean	Std	Min	Max	Percentile		
						25	50	75						25	50	75
Soil Physical Properties																
Particle size distribution																
Clay%	36	15.9	7.5	4.8	38.6	10.7	13.4	20.6	36	41.5	11.7	3.3	58.3	34.1	45.1	49.4
Silt%	36	30.8	5.6	19.5	48.2	26.2	31.0	35.0	36	25.0	5.3	14.0	34.0	21.3	25.8	28.8
Sand%	36	53.3	9.7	32.1	73.6	47.5	52.6	60.7	36	33.5	11.7	20.2	81.3	25.4	29.9	40.1
Bulk density (g/cm3)	36	1.57	0.14	1.26	1.76	1.51	1.59	1.67	36	1.63	0.09	1.44	1.84	1.58	1.62	1.68
Organic matter (%)	21	4.6	1.2	2.7	7.2	3.4	4.6	5.4	21	2.5	0.6	1.4	3.8	2.1	2.5	2.8
Depth of horizon (mm)	36	182	35	130	280	150	185	205	20	195	58	100	280	145	195	250
Soil Chemical Properties																
EC (dS/cm)	21	0.15	0.08	0.05	0.31	0.08	0.15	0.21	21	0.18	0.11	0.04	0.48	0.12	0.18	0.24
pH (H2O)	21	6.6	0.8	5.3	8.4	5.9	6.6	7.2	21	7.3	0.9	6.0	8.8	6.5	7.1	7.9
pH (CaCl2)	21	5.9	0.9	4.8	7.9	5.1	6.0	6.5	21	6.5	1.0	4.9	8.0	5.6	6.6	7.3
Ca (meq/100g)	21	6.4	1.9	4.1	12.0	5.2	6.0	7.1	21	7.0	3.9	2.0	17.0	3.9	7.1	8.7
Mg (meq/100g)	21	3.4	1.5	1.0	6.7	2.0	3.4	4.8	21	5.1	1.9	1.8	8.7	3.2	5.1	6.5
Na (meq/100g)	21	0.8	0.6	0.2	2.2	0.4	0.7	1.1	21	1.4	1.0	0.3	4.2	0.5	1.1	2.1
K (meq/100g)	21	0.8	0.7	0.2	2.2	0.2	0.7	1.2	21	0.9	0.8	0.2	2.8	0.3	0.5	1.3
ESP (%)	21	7.1	4.1	2.5	20.7	3.4	7.1	8.7	21	10.2	7.7	1.5	28.8	4.8	7.6	14.3
Soil Hydraulic Properties																
Sat. hydraulic conductivity (mm/hr)	36	20.9	12.0	4.4	49.9	11.2	16.6	29.9	29	3.16	3.24	0.10	11	0.85	2.18	3.68
Final infiltration rate (mm/hr)									18	0.89	2.44	0.005	10.6	0.02	0.15	0.78
Available water capacity (%)	18	15.5	4.0	10.4	22.8	12.1	14.1	18.5	18	12.9	3.1	8.6	20.1	10.5	12.4	14.8
Soil water retention characteristic																
Volumetric water content (%) at																
 Matric suction (kPa)																
0	18	43.1	5.8	33.5	55.5	39.6	43.6	46.9	18	44.6	4.5	35.0	55.3	43.3	44.4	47.1
10	18	38.9	5.9	29.3	52.0	34.7	39.3	42.1	18	40.9	5.0	28.6	50.7	39.9	41.2	43.3
60	18	34.4	5.5	25.7	46.3	30.7	34.3	36.5	18	37.1	4.7	25.3	45.4	35.6	38.1	40.5
1500	18	23.4	4.9	17.8	36.4	19.7	23.3	24.4	18	28.0	4.3	19.4	35.4	25.7	28.4	31.0

Table 29.4 MV District - Soil Group 3

Soil Group 3

Irrigation District MV

Soil Properties	Horizon A								Horizon B1							
	Sampling Points	Mean	Std	Min	Max	Percentile			Sampling Points	Mean	Std	Min	Max	Percentile		
						25	50	75						25	50	75
Soil Physical Properties																
Particle size distribution																
Clay%	10	19.1	7.4	7.2	32.3	14.0	18.2	22.9	10	34.2	17.6	16.9	66.5	18.7	32.5	44.4
Silt%	10	31.1	4.8	24.7	38.4	26.6	33.0	34.1	10	27.4	7.1	15.3	37.6	21.9	28.5	31.8
Sand%	10	49.8	7.4	41.2	61.3	43.0	47.4	57.4	10	38.5	11.7	18.3	51.4	32.6	40.8	47.1
Bulk density (g/cm ³)	10	1.67	0.07	1.55	1.77	1.62	1.67	1.73	10	1.67	0.13	1.42	1.84	1.62	1.68	1.74
Organic matter (%)	5	3.8	0.5	2.9	4.2	3.6	4.0	4.2	5	2.0	0.7	1.1	2.9	1.3	2.1	2.6
Depth of horizon (mm)	10	170	28	130	230	150	170	180	8	188	33	140	230	165	180	220
Soil Chemical Properties																
EC (dS/cm)	5	0.10	0.03	0.08	0.16	0.08	0.10	0.12	5	0.07	0.02	0.05	0.10	0.06	0.07	0.09
pH (H ₂ O)	5	5.9	0.6	5.0	6.6	5.6	5.8	6.4	5	7.3	0.8	6.3	8.3	6.8	7.1	8.1
pH (CaCl ₂)	5	5.3	0.6	4.5	6.0	5.0	5.1	5.8	5	6.3	0.8	5.1	7.3	5.9	6.3	6.9
Ca (meq/100g)	5	4.6	0.6	3.8	5.5	4.2	4.6	4.8	5	5.1	2.4	2.5	7.1	2.6	6.4	7.1
Mg (meq/100g)	5	3.0	0.8	1.8	4.0	2.6	3.0	3.6	5	5.1	3.4	1.5	9.7	2.1	4.7	7.8
Na (meq/100g)	5	0.5	0.2	0.3	0.7	0.4	0.6	0.7	5	1.0	0.6	0.5	2.0	0.5	0.7	1.5
K (meq/100g)	5	0.5	0.3	0.2	0.9	0.2	0.4	0.7	5	0.6	0.4	0.1	1.1	0.1	0.6	0.9
ESP (%)	5	6.0	1.7	3.7	7.9	4.6	6.5	7.2	5	9.2	3.6	4.2	12.3	6.1	11.0	12.0
Soil Hydraulic Properties																
Sat. hydraulic conductivity (mm/hr)	10	19.8	11.0	6.6	39.4	12.8	17.3	23.1	10	1.71	1.26	0.22	4.48	0.76	1.3	2.39
Final infiltration rate (mm/hr)									4	0.87	1.40	0.005	2.95	0.01	0.27	1.74
Available water capacity (%)	7	14.0	4.4	6.6	20.5	11.7	14.6	16.3	8	11.1	2.8	5.9	15.7	9.8	11.4	12.6
Soil water retention characteristic																
Volumetric water content (%) at																
 Matric suction (kPa)																
0	7	40.5	5.3	34.4	47.6	36.7	38.0	45.9	8	40.2	7.3	32.3	51.6	33.0	40.1	45.8
10	7	34.1	5.4	26.4	42.9	31.1	33.1	37.7	8	36.3	8.8	25.8	48.2	28.9	34.8	44.5
60	7	30.8	4.9	22.9	38.5	29.0	29.4	33.7	8	33.5	9.3	23.1	44.4	25.1	32.1	42.9
1500	7	20.2	5.1	14.1	28.2	15.8	19.9	23.9	8	25.2	7.4	17.1	35.7	19.1	23.3	31.8

Table 29.5 MV District - Soil Group 5

Soil Group 5

Irrigation District MV

Soil Properties	Horizon A									Horizon B1						
	Sampling Points	Mean	Std	Min	Max	Percentile			Sampling Points	Mean	Std	Min	Max	Percentile		
						25	50	75						25	50	75
Soil Physical Properties																
Particle size distribution																
Clay%	2	43.8		33.7	53.8				2	49.1		26.8	71.3			
Silt%	2	33.9		27.6	40.1				2	31.1		20.2	41.9			
Sand%	2	22.4		18.5	26.2				2	19.9		8.5	31.3			
Bulk density (g/cm ³)	2	1.56		1.47	1.65				2	1.55		1.42	1.69			
Organic matter (%)	1	4.0							1	1.7						
Depth of horizon (mm)	2	140		130	150				2	170		150	190			
Soil Chemical Properties																
EC (dS/cm)	1	0.10							1	0.09						
pH (H ₂ O)	1	6.0							1	6.3						
pH (CaCl ₂)	1	5.1							1	5.3						
Ca (meq/100g)	1	7.2							1	3.4						
Mg (meq/100g)	1	6.8							1	3.7						
Na (meq/100g)	1	1.1							1	1.0						
K (meq/100g)	1	0.8							1	0.2						
ESP (%)	1	6.9							1	12.0						
Soil Hydraulic Properties																
Sat. hydraulic conductivity (mm/hr)	2	44.8		37.2	52.5				2	1.66		1.03	2.29			
Final infiltration rate (mm/hr)									1	1.14						
Available water capacity (%)	2	9.4		8.5	10.2				2	11.8		10.1	13.5			
Soil water retention characteristic																
Volumetric water content (%) at																
 Matric suction (kPa)																
0	2	46.0		43.8	48.2				2	45.2		36.7	53.7			
10	2	44.3		41.9	46.7				2	42.4		32.5	52.3			
60	2	42.6		40.0	45.2				2	40.1		29.8	50.4			
1500	2	34.9		31.7	38.2				2	30.6		22.4	38.8			

Table 29.6 MV District - Soil Group 6

Soil Group 6

Irrigation District MV

Soil Properties	Horizon A									Horizon B1						
	Sampling Points	Mean	Std	Min	Max	Percentile			Sampling Points	Mean	Std	Min	Max	Percentile		
						25	50	75						25	50	75
Soil Physical Properties																
Particle size distribution																
Clay%	12	26.1	8.2	16.1	41.5	19.5	24.8	32.7	12	44.7	11.8	21.3	60.9	35.5	45.9	54.6
Silt%	12	37.3	6.5	27.4	50.9	32.7	36.5	40.6	12	30.5	7.6	18.8	45.1	24.8	30.1	33.2
Sand%	12	36.6	9.9	21.0	51.4	30.3	35.9	44.8	12	24.8	8.8	16.2	45.2	18.1	21.4	31.7
Bulk density (g/cm ³)	12	1.59	0.09	1.38	1.72	1.54	1.59	1.65	12	1.63	0.10	1.47	1.86	1.56	1.62	1.68
Organic matter (%)	8	3.3	1.7	1.4	6.5	1.9	3.5	3.9	8	1.5	0.5	0.7	2.1	1.2	1.5	1.8
Depth of horizon (mm)	12	195	29	140	240	175	200	215	8	189	37	120	240	170	195	210
Soil Chemical Properties																
EC (dS/cm)	8	0.09	0.03	0.04	0.13	0.07	0.08	0.12	8	0.08	0.05	0.04	0.20	0.06	0.07	0.09
pH (H ₂ O)	8	6.2	0.8	5.4	7.6	5.6	6.1	6.8	8	7.0	0.6	6.1	8.0	6.6	7.1	7.2
pH (CaCl ₂)	8	5.5	0.7	4.8	6.7	4.9	5.3	5.9	8	6.0	0.7	5.1	7.2	5.6	6.1	6.2
Ca (meq/100g)	8	5.6	1.2	4.5	8.4	4.8	5.4	6.0	8	6.3	1.9	3.2	9.7	5.5	6.1	7.0
Mg (meq/100g)	8	2.8	2.3	1.0	8.0	1.4	1.8	3.6	8	5.1	2.6	1.3	10.0	3.7	4.9	6.1
Na (meq/100g)	8	0.6	0.4	0.1	1.5	0.3	0.5	0.7	8	1.0	0.8	0.2	2.6	0.5	0.9	1.3
K (meq/100g)	8	0.6	0.6	0.2	1.9	0.2	0.4	0.7	8	0.7	0.4	0.2	1.2	0.5	0.6	1.1
ESP (%)	8	5.6	2.0	1.8	7.6	4.6	6.3	6.8	8	6.9	2.8	2.1	11.1	5.4	7.3	8.3
Soil Hydraulic Properties																
Sat. hydraulic conductivity (mm/hr)	12	14.2	9.9	4.8	42.7	8.4	11.8	15.5	8	0.54	0.32	0.03	1.17	0.39	0.45	0.72
Final infiltration rate (mm/hr)									8	0.19	0.19	0.003	0.46	0.02	0.12	0.38
Available water capacity (%)	10	8.8	3.3	5.5	14.2	5.8	7.8	11.5	10	12.5	3.3	6.5	16.7	10.4	12.6	16.2
Soil water retention characteristic																
Volumetric water content (%) at																
 Matric suction (kPa)																
0	10	40.8	3.9	35.2	46.7	38.0	40.5	44.5	10	45.5	6.9	38.1	57.9	41.6	43.3	47.8
10	10	37.6	4.4	31.8	45.3	33.9	37.0	41.1	10	42.2	6.2	34.2	53.8	39.3	41.6	42.5
60	10	34.7	4.5	29.6	43.1	30.6	34.0	37.1	10	39.1	6.3	28.2	50.6	36.7	39.2	39.8
1500	10	28.8	4.1	23.9	36.0	25.6	27.5	33.0	10	29.7	5.2	17.6	37.6	28.9	30.0	31.0

Table 29.7 GV District - Soil Group 1 Duplex soils

Soil Group 1D

Irrigation District GV

Soil Properties	Horizon A								Horizon B1							
	Sampling Points	Mean	Std	Min	Max	Percentile			Sampling Points	Mean	Std	Min	Max	Percentile		
						25	50	75						25	50	75
Soil Physical Properties																
Particle size distribution																
Clay%	14	21.2	13.3	3.5	44.1	10.6	17.2	33.1	14	28.5	7.9	15.8	46.4	25.3	28.1	33.0
Silt%	14	37.4	8.6	23.6	49.9	26.4	39.9	44.1	14	39.4	7.6	27.3	49.8	33.3	37.4	48.1
Sand%	14	41.4	13.2	21.3	73.0	32.4	39.8	48.8	14	32.1	7.7	21.5	47.4	26.1	30.8	37.3
Bulk density (g/cm ³)	14	1.62	0.12	1.36	1.80	1.53	1.61	1.72	14	1.70	0.09	1.53	1.84	1.65	1.72	1.76
Organic matter (%)	11	2.7	0.7	1.6	4.0	2.2	2.7	3.3	11	2.0	0.8	0.9	3.8	1.6	1.9	2.1
Depth of horizon (mm)	14	196	36	150	250	170	185	240	6	175	80	110	300	120	135	250
Soil Chemical Properties																
EC (dS/cm)	11	0.11	0.04	0.06	0.18	0.07	0.10	0.13	11	0.08	0.02	0.05	0.14	0.07	0.08	0.09
pH (H ₂ O)	11	7.5	1.0	5.7	8.5	6.9	7.8	8.2	11	7.8	0.9	5.9	8.8	7.1	8.0	8.3
pH (CaCl ₂)	11	6.6	0.7	5.1	7.3	6.3	6.8	7.1	11	6.7	0.5	5.5	7.5	6.4	6.9	7.0
Ca (meq/100g)	11	4.0	0.7	2.9	5.8	3.7	3.9	4.0	11	3.4	1.1	2.0	5.7	2.5	3.5	4.3
Mg (meq/100g)	11	2.5	1.3	0.4	4.1	1.2	3.2	3.4	11	1.9	1.0	0.5	3.7	1.2	1.6	2.6
Na (meq/100g)	11	1.2	1.0	0.1	3.4	0.3	1.0	1.7	11	1.1	0.8	0.1	2.3	0.3	1.1	1.5
K (meq/100g)	11	0.6	0.1	0.3	0.9	0.5	0.6	0.6	11	0.6	0.1	0.4	0.8	0.5	0.7	0.7
ESP (%)	11	12.9	9.0	1.3	31.3	5.7	11.2	17.2	11	14.5	10.7	1.6	32.8	5.2	13.6	22.7
Soil Hydraulic Properties																
Sat. hydraulic conductivity (mm/hr)	14	58.7	38.4	10.3	143.3	27.2	49.0	80.9	14	12.3	23.3	1.76	91.2	2.38	4.75	8
Final infiltration rate (mm/hr)									11	10.3	12.5	0.05	33.8	0.19	7.5	17.9
Available water capacity (%)	6	13.3	3.4	8.7	18.5	12.2	12.5	15.8	6	9.4	4.3	4.1	15.0	5.8	9.1	13.2
Soil water retention characteristic																
Volumetric water content (%) at																
 Matric suction (kPa)																
0	6	38.5	3.6	35.7	43.1	35.9	36.6	43.1	6	34.3	3.7	30.6	38.8	30.7	34.0	37.9
10	6	28.8	2.6	26.1	33.6	27.3	28.4	29.2	6	28.0	4.7	23.8	36.8	25.6	26.0	29.7
60	6	24.9	3.3	22.5	31.2	23.3	23.5	25.8	6	25.3	5.1	20.1	34.6	23.3	23.5	27.0
1500	6	15.5	5.2	10.4	25.0	12.1	14.2	17.0	6	18.6	7.5	11.1	29.6	12.8	17.2	24.0

Table 29.8 GV District - Soil Group 2

Soil Group 2

Irrigation District GV

Soil Properties	Horizon A								Horizon B1							
	Sampling Points	Mean	Std	Min	Max	Percentile			Sampling Points	Mean	Std	Min	Max	Percentile		
						25	50	75						25	50	75
Soil Physical Properties																
Particle size distribution																
Clay%	58	12.8	4.4	4.4	25.6	9.6	11.7	15.5	58	36.4	11.9	11.5	57.7	28.3	38.4	44.8
Silt%	58	37.3	7.5	21.0	63.4	33.2	35.2	41.3	58	35.8	7.1	10.1	48.6	31.8	35.5	41.5
Sand%	58	49.9	10.3	23.2	74.7	45.4	51.5	57.3	58	27.8	11.0	10.3	58.4	20.2	25.5	33.6
Bulk density (g/cm3)	58	1.53	0.12	1.01	1.76	1.49	1.53	1.59	58	1.65	0.08	1.51	1.95	1.59	1.64	1.68
Organic matter (%)	52	5.3	1.2	2.3	7.6	4.5	5.4	6.3	52	2.7	0.7	1.1	4.2	2.2	2.9	3.3
Depth of horizon (mm)	18	186	30	140	250	160	185	210	10	211	62	120	310	180	215	240
Soil Chemical Properties																
EC (dS/cm)	52	0.12	0.09	0.04	0.71	0.09	0.11	0.13	52	0.10	0.11	0.04	0.84	0.07	0.09	0.10
pH (H2O)	52	6.0	0.5	5.0	8.3	5.9	5.9	6.1	52	6.8	0.5	6.1	8.7	6.5	6.7	7.0
pH (CaCl2)	52	5.3	0.5	4.5	7.9	5.2	5.3	5.4	52	6.0	0.6	5.2	8.2	5.6	5.8	6.1
Ca (meq/100g)	52	5.3	1.2	3.2	10.0	4.6	5.4	6.0	52	5.2	1.2	2.4	7.5	4.4	5.3	6.4
Mg (meq/100g)	52	3.3	0.9	0.9	6.3	3.2	3.5	3.8	52	3.6	1.3	1.1	8.5	2.8	3.4	4.4
Na (meq/100g)	52	0.9	0.5	0.1	3.9	0.7	0.8	1.0	52	1.1	0.8	0.2	5.6	0.8	1.0	1.2
K (meq/100g)	52	0.3	0.2	0.1	1.0	0.2	0.3	0.4	52	0.5	0.3	0.1	1.8	0.3	0.4	0.6
ESP (%)	52	8.3	3.1	2.0	22.3	6.9	8.3	9.4	52	10.2	3.9	2.3	28.4	8.7	10.2	11.5
Soil Hydraulic Properties																
Sat. hydraulic conductivity (mm/hr)	58	27.3	15.9	3.9	67.4	14.5	24.5	34.6	16	5.16	5.08	0.11	18.3	0.61	4.52	8.18
Final infiltration rate (mm/hr)									52	0.81	2.02	0.01	10.9	0.08	0.13	0.47
Available water capacity (%)	12	12.8	4.7	5.3	19.6	7.9	13.9	16.6	12	12.5	2.5	7.0	16.6	11.6	12.5	14.0
Soil water retention characteristic																
Volumetric water content (%) at																
 Matric suction (kPa)																
0	12	41.2	5.7	34.4	57.5	38.7	40.1	41.6	12	44.8	5.1	37.9	52.3	39.3	45.6	49.1
10	12	36.5	5.8	29.5	53.3	34.5	35.9	36.9	12	42.3	5.5	31.9	49.8	38.6	43.2	47.2
60	12	33.2	6.2	25.8	51.2	30.3	32.4	34.1	12	39.5	5.8	28.1	47.3	35.8	39.2	45.4
1500	12	23.7	7.1	13.6	38.8	17.9	22.6	28.9	12	29.8	5.7	17.9	37.8	26.3	28.9	34.9

Table 29.9 GV District - Soil Group 3

Soil Group 3

Irrigation District GV

Soil Properties	Horizon A								Horizon B1							
	Sampling Points	Mean	Std	Min	Max	Percentile			Sampling Points	Mean	Std	Min	Max	Percentile		
						25	50	75						25	50	75
Soil Physical Properties																
Particle size distribution																
Clay%	54	17.6	7.8	7.4	41.7	11.9	16.2	21.2	53	44.3	12.6	14.5	70.4	38.7	44.9	52.6
Silt%	54	36.5	8.3	23.6	65.0	30.5	35.3	40.9	53	28.9	7.2	15.4	44.7	24.2	27.9	34.3
Sand%	54	46.0	11.8	16.7	65.1	42.1	46.9	55.1	53	26.9	10.3	4.2	63.5	19.8	26.0	31.8
Bulk density (g/cm ³)	54	1.56	0.18	1.00	1.81	1.53	1.59	1.69	53	1.65	0.10	1.48	1.94	1.58	1.63	1.73
Organic matter (%)	36	4.1	1.4	2.1	8.2	3.1	3.8	4.9	36	2.0	0.6	1.1	3.8	1.6	1.8	2.2
Depth of horizon (mm)	54	173	37	100	290	150	170	190	21	151	46	60	250	128	140	170
Soil Chemical Properties																
EC (dS/cm)	36	0.16	0.13	0.04	0.67	0.08	0.13	0.19	36	0.12	0.08	0.04	0.30	0.06	0.09	0.15
pH (H ₂ O)	36	6.4	0.9	4.7	8.6	5.8	6.4	6.9	36	7.1	0.7	5.8	8.8	6.7	7.1	7.5
pH (CaCl ₂)	36	5.8	0.9	4.4	8.6	5.0	5.9	6.3	36	6.3	0.8	5.0	8.3	5.8	6.2	6.5
Ca (meq/100g)	36	5.5	2.2	3.1	12.0	3.9	4.8	6.5	36	5.1	2.1	1.9	14.0	3.8	4.7	5.9
Mg (meq/100g)	36	2.9	1.5	0.9	7.1	1.9	2.8	3.6	36	4.6	1.9	1.6	9.4	3.1	4.3	5.8
Na (meq/100g)	36	0.8	0.9	0.1	4.6	0.3	0.5	1.0	36	1.2	1.0	0.2	4.8	0.5	0.8	1.6
K (meq/100g)	36	0.6	0.4	0.1	1.6	0.3	0.4	0.9	36	0.7	0.4	0.2	1.4	0.3	0.6	1.0
ESP (%)	36	6.9	5.6	1.5	25.5	3.1	5.3	10.4	36	10.1	6.5	2.4	28.2	4.6	7.8	14.7
Soil Hydraulic Properties																
Sat. hydraulic conductivity (mm/hr)	54	47.8	32.7	4.3	143.3	26.0	41.5	67.0	53	6.24	7.36	0.14	43.3	2.32	3.7	8.21
Final infiltration rate (mm/hr)									35	1.87	4.36	0.1	25.9	0.32	0.69	1.43
Available water capacity (%)	23	13.6	4.5	3.7	22.1	12.2	13.4	16.7	26	12.1	3.5	4.3	18.2	9.3	12.0	14.1
Soil water retention characteristic																
Volumetric water content (%) at																
 Matric suction (kPa)																
0	23	44.5	6.4	36.0	61.5	39.7	43.7	49.5	26	43.9	5.0	33.7	52.4	40.8	43.1	48.6
10	23	37.2	6.7	28.7	50.5	31.7	34.2	42.8	26	39.0	5.6	26.4	47.0	35.0	38.9	45.0
60	23	33.3	6.5	23.8	46.0	27.6	31.4	39.6	26	35.2	5.9	24.0	44.9	31.9	34.0	40.6
1500	23	23.6	4.9	15.4	33.3	19.4	24.0	27.0	26	27.0	5.8	15.1	39.0	23.1	27.8	30.2

Table 29.10 GV District - Soil Group 4

Soil Group 4

Irrigation District GV

Soil Properties	Horizon A								Horizon B1							
	Sampling Points	Mean	Std	Min	Max	Percentile			Sampling Points	Mean	Std	Min	Max	Percentile		
						25	50	75						25	50	75
Soil Physical Properties																
Particle size distribution																
Clay%	24	17.0	8.9	4.2	36.6	10.9	15.6	23.4	24	32.6	12.0	6.6	50.5	27.5	34.5	40.4
Silt%	24	38.9	5.3	29.0	49.2	35.9	39.9	42.0	24	37.3	5.7	29.1	53.4	33.9	36.3	39.5
Sand%	24	44.1	7.6	31.3	57.7	38.0	46.0	49.2	24	30.1	10.2	17.0	57.7	22.8	27.8	36.4
Bulk density (g/cm ³)	24	1.53	0.12	1.33	1.78	1.42	1.52	1.64	24	1.65	0.12	1.42	1.91	1.59	1.64	1.74
Organic matter (%)	21	4.4	0.9	2.5	6.7	3.8	4.4	4.9	21	2.0	0.9	1.0	5.0	1.5	1.9	2.2
Depth of horizon (mm)	24	203	69	130	340	150	160	275	6	152	27	120	200	140	145	160
Soil Chemical Properties																
EC (dS/cm)	21	0.14	0.17	0.04	0.73	0.06	0.07	0.13	21	0.12	0.13	0.04	0.52	0.06	0.07	0.11
pH (H ₂ O)	21	6.3	0.8	5.5	8.4	5.8	6.1	6.5	21	7.0	0.5	6.2	7.8	6.7	6.9	7.5
pH (CaCl ₂)	21	5.7	1.0	4.9	8.3	5.2	5.4	5.8	21	6.2	0.5	5.5	7.4	5.8	6.3	6.5
Ca (meq/100g)	21	5.6	1.3	3.5	9.4	4.6	5.5	6.1	21	5.8	1.9	2.6	9.6	4.0	6.0	7.2
Mg (meq/100g)	21	2.7	1.4	0.6	6.5	1.9	2.3	3.4	21	4.0	1.4	1.4	6.4	3.1	4.3	5.0
Na (meq/100g)	21	0.7	1.1	0.1	4.2	0.2	0.3	0.5	21	0.9	1.0	0.2	3.8	0.4	0.6	1.0
K (meq/100g)	21	0.7	0.4	0.2	1.4	0.4	0.7	1.1	21	0.6	0.3	0.2	1.4	0.4	0.6	0.8
ESP (%)	21	5.5	5.5	1.5	23.0	2.0	3.9	5.7	21	7.6	5.9	2.0	26.0	4.8	6.3	7.6
Soil Hydraulic Properties																
Sat. hydraulic conductivity (mm/hr)	24	25.9	15.3	5.0	64.4	14.2	24.5	32.5	22	3.3	5.74	0.44	27.4	1.14	1.31	2.69
Final infiltration rate (mm/hr)									20	0.37	0.53	0.005	1.92	0.09	0.16	0.36
Available water capacity (%)	6	13.6	6.7	4.2	22.1	8.3	14.4	18.3	6	14.9	4.0	8.2	19.2	13.6	14.8	18.7
Soil water retention characteristic																
Volumetric water content (%) at																
 Matric suction (kPa)																
0	6	41.8	5.8	37.1	50.1	37.5	38.9	48.1	6	43.0	4.9	38.9	52.0	39.5	41.3	44.8
10	6	38.6	6.0	32.6	46.5	34.7	35.8	45.9	6	39.7	6.1	33.0	50.3	36.0	38.1	42.5
60	6	35.5	5.9	28.8	43.4	32.2	33.3	42.0	6	36.2	7.7	25.7	48.8	32.8	35.0	40.0
1500	6	25.0	5.2	17.9	32.1	20.6	25.4	28.3	6	24.8	8.0	13.8	34.6	17.3	26.4	30.2

Table 29.11 GV District - Soil Group 5

Soil Group 5

Irrigation District GV

Soil Properties	Horizon A								Horizon B1							
	Sampling Points	Mean	Std	Min	Max	Percentile			Sampling Points	Mean	Std	Min	Max	Percentile		
						25	50	75						25	50	75
Soil Physical Properties																
Particle size distribution																
Clay%	6	23.0	6.7	16.2	33.0	16.9	21.5	29.1	6	47.0	7.8	39.3	58.8	41.4	44.5	53.6
Silt%	6	32.9	4.3	27.2	40.3	31.7	31.9	34.4	6	30.5	4.3	23.1	36.2	29.6	31.0	31.8
Sand%	6	44.1	10.2	26.8	56.6	39.0	46.7	48.7	6	22.6	7.8	11.6	30.3	14.8	24.6	29.5
Bulk density (g/cm ³)	6	1.40	0.07	1.32	1.51	1.36	1.38	1.45	6	1.58	0.08	1.47	1.67	1.53	1.59	1.65
Organic matter (%)	5	5.0	1.7	2.5	6.7	3.8	5.5	6.4	5	1.6	0.2	1.3	1.8	1.5	1.7	1.7
Depth of horizon (mm)	6	207	12	200	230	200	200	210	2	180		150	210			
Soil Chemical Properties																
EC (dS/cm)	5	0.20	0.02	0.18	0.22	0.19	0.21	0.21	5	0.18	0.06	0.13	0.27	0.13	0.14	0.23
pH (H ₂ O)	5	7.2	0.4	6.9	7.8	7.0	7.1	7.3	5	7.7	0.1	7.6	7.9	7.7	7.7	7.8
pH (CaCl ₂)	5	6.7	0.2	6.5	7.1	6.6	6.6	6.7	5	7.0	0.2	6.9	7.3	6.9	6.9	7.1
Ca (meq/100g)	5	11.9	2.0	9.5	15.0	10.6	12.0	12.8	5	10.1	2.7	6.8	14.0	8.6	9.4	11.8
Mg (meq/100g)	5	6.7	2.0	5.0	10.0	5.3	6.3	7.5	5	7.9	2.8	5.4	12.0	5.9	6.6	10.1
Na (meq/100g)	5	0.8	0.3	0.5	1.3	0.6	0.8	0.9	5	1.1	0.4	0.7	1.6	0.7	1.1	1.5
K (meq/100g)	5	1.1	0.2	1.0	1.4	1.0	1.1	1.3	5	1.2	0.2	0.9	1.4	0.9	1.2	1.3
ESP (%)	5	3.9	0.9	2.9	4.8	2.9	3.9	4.8	5	5.4	1.0	3.9	6.4	4.9	5.5	6.2
Soil Hydraulic Properties																
Sat. hydraulic conductivity (mm/hr)	5	37.1	20.6	23.6	72.6	24.1	28.0	45.9	4	2.35	2.43	0.42	5.65	0.52	1.67	4.19
Final infiltration rate (mm/hr)									5	0.12	0.17	0.02	0.42	0.03	0.05	0.15
Available water capacity (%)	2	6.7		6.0	7.4				2	13.7		13.6	13.7			
Soil water retention characteristic																
Volumetric water content (%) at																
 Matric suction (kPa)																
0	2	48.6		44.2	53.0				2	48.7		48.1	49.2			
10	2	43.0		41.5	44.5				2	45.2		44.9	45.6			
60	2	41.1		40.0	42.3				2	43.3		42.6	44.0			
1500	2	36.3		35.5	37.1				2	31.6		31.2	31.9			

Table 29.12 GV District - Soil Group 6

Soil Group 6

Irrigation District GV

Soil Properties	Horizon A								Horizon B1							
	Sampling Points	Mean	Std	Min	Max	Percentile			Sampling Points	Mean	Std	Min	Max	Percentile		
						25	50	75						25	50	75
Soil Physical Properties																
Particle size distribution																
Clay%	4	25.7	9.0	17.4	38.0	19.2	23.7	32.2	4	35.0	3.6	32.0	40.2	32.9	33.9	37.1
Silt%	4	36.7	3.4	32.2	39.4	34.2	37.7	39.2	4	36.2	2.4	32.7	38.3	34.8	37.0	37.6
Sand%	4	37.6	7.2	29.9	46.4	32.0	37.1	43.2	4	28.8	4.4	22.8	33.6	25.9	29.4	31.6
Bulk density (g/cm ³)	4	1.52	0.02	1.48	1.53	1.50	1.53	1.53	4	1.69	0.07	1.63	1.79	1.64	1.66	1.73
Organic matter (%)	4	3.6	0.5	2.9	4.2	3.3	3.7	4.0	4	1.4	0.2	1.2	1.6	1.3	1.3	1.5
Depth of horizon (mm)	4	195	13	180	210	185	195	205	0							
Soil Chemical Properties																
EC (dS/cm)	4	0.08	0.01	0.07	0.09	0.08	0.08	0.09	4	0.06	0.00	0.06	0.06	0.06	0.06	0.06
pH (H ₂ O)	4	5.7	0.2	5.5	6.0	5.6	5.7	5.9	4	6.5	0.5	6.1	7.1	6.2	6.3	6.8
pH (CaCl ₂)	4	5.1	0.2	4.9	5.3	5.0	5.1	5.3	4	5.7	0.5	5.3	6.3	5.4	5.5	6.0
Ca (meq/100g)	4	4.6	1.1	3.8	6.2	4.0	4.2	5.3	4	3.0	0.2	2.8	3.2	2.9	3.1	3.2
Mg (meq/100g)	4	2.4	0.9	1.8	3.8	1.8	2.1	3.1	4	3.3	0.6	2.7	4.0	2.9	3.2	3.7
Na (meq/100g)	4	0.4	0.1	0.3	0.4	0.3	0.3	0.4	4	0.5	0.1	0.4	0.6	0.4	0.5	0.5
K (meq/100g)	4	0.4	0.4	0.2	0.9	0.2	0.3	0.6	4	0.4	0.2	0.2	0.5	0.2	0.3	0.5
ESP (%)	4	4.8	1.6	3.4	7.1	3.7	4.3	5.9	4	6.7	0.7	6.1	7.6	6.1	6.6	7.3
Soil Hydraulic Properties																
Sat. hydraulic conductivity (mm/hr)	4	41.1	11.6	30.5	55.9	31.9	38.9	50.2	4	2.88	0.63	2.37	3.82	2.42	2.67	3.35
Final infiltration rate (mm/hr)									4	0.37	0.36	0.05	0.73	0.07	0.36	0.68
Available water capacity (%)	2	13.6		13.0	14.2				2	12.1		10.7	13.6			
Soil water retention characteristic																
Volumetric water content (%) at																
 Matric suction (kPa)																
0	2	48.0		47.3	48.6				2	45.6		43.9	47.2			
10	2	41.5		41.4	41.7				2	39.0		36.9	41.0			
60	2	37.2		36.6	37.8				2	35.1		31.7	38.4			
1500	2	27.9		27.2	28.7				2	26.9		23.3	30.4			

Table 29.13 RO District - Soil Group 1 Duplex soils

Soil Properties	Irrigation District RO															
	Horizon A								Horizon B1							
	Sampling Points	Mean	Std	Min	Max	Percentile			Sampling Points	Mean	Std	Min	Max	Percentile		
25						50	75	25						50	75	
Soil Physical Properties																
Particle size distribution																
Clay%	54	9.5	3.7	3.1	22.1	6.9	8.9	11.2	54	30.5	9.0	11.5	52.3	24.6	31.0	35.9
Silt%	54	38.2	7.7	19.5	54.0	32.7	38.5	43.4	54	42.5	10.5	18.0	57.2	38.9	44.9	49.3
Sand%	54	52.3	9.2	35.0	76.6	46.2	51.6	60.5	54	27.1	11.5	9.4	59.8	19.4	24.6	32.3
Bulk density (g/cm3)	54	1.43	0.16	0.96	1.80	1.37	1.44	1.50	54	1.68	0.08	1.46	1.93	1.63	1.68	1.72
Organic matter (%)	44	7.7	2.1	1.9	12.0	6.8	7.8	8.9	44	2.6	0.6	1.0	3.8	2.3	2.5	2.9
Depth of horizon (mm)	14	186	37	140	260	150	175	220	14	193	49	110	320	170	180	220
Soil Chemical Properties																
EC (dS/cm)	44	0.16	0.08	0.06	0.45	0.11	0.14	0.17	44	0.09	0.04	0.04	0.30	0.07	0.08	0.10
pH (H2O)	44	5.7	0.3	5.2	6.7	5.6	5.6	5.8	44	6.8	0.5	5.9	8.3	6.6	6.8	7.1
pH (CaCl2)	44	5.1	0.3	4.6	6.3	4.9	5.0	5.2	44	6.0	0.5	5.1	7.7	5.7	5.9	6.1
Ca (meq/100g)	44	6.9	1.6	2.0	11.0	6.2	7.1	8.0	44	6.5	1.6	2.0	10.0	5.8	6.6	7.4
Mg (meq/100g)	44	4.0	0.7	2.3	5.6	3.6	4.0	4.5	44	4.4	1.0	1.9	6.5	3.8	4.3	4.9
Na (meq/100g)	44	0.5	0.2	0.2	1.2	0.4	0.5	0.6	44	0.7	0.3	0.3	1.7	0.5	0.6	0.8
K (meq/100g)	44	0.7	0.5	0.1	2.1	0.3	0.5	1.1	44	0.4	0.3	0.1	1.5	0.2	0.4	0.5
ESP (%)	44	4.8	2.6	1.5	19.4	3.6	4.3	5.5	44	5.7	1.8	3.1	12.8	4.5	5.3	6.6
Soil Hydraulic Properties																
Sat. hydraulic conductivity (mm/hr)	49	46.4	27.5	10.3	130.5	28.1	38.2	61.0	12	9.59	6.64	0.65	20.4	3.47	10.1	13.9
Final infiltration rate (mm/hr)									43	3.98	7.17	0.005	36.2	0.2	1.23	3.28
Available water capacity (%)	8	20.4	6.7	12.9	31.2	15.3	18.1	26.3	8	15.4	6.6	10.1	30.8	11.7	13.9	15.5
Soil water retention characteristic																
Volumetric water content (%) at																
Matric suction (kPa)																
0	8	41.5	4.7	34.8	49.7	38.9	40.6	44.4	8	39.8	3.9	32.3	45.4	38.2	40.3	41.8
10	8	36.3	6.1	29.2	46.2	32.7	34.4	40.4	8	35.7	4.2	26.3	39.7	34.5	37.2	38.2
60	8	30.2	7.8	23.7	43.1	25.5	26.0	35.7	8	29.9	5.6	20.6	36.0	25.6	31.8	34.1
1500	8	15.9	4.1	7.6	21.9	14.9	16.4	17.5	8	20.3	6.7	7.8	26.8	16.0	22.5	25.4

Table 29.14 RO District - Soil Group 2

Soil Properties	Irrigation District RO															
	Horizon A								Horizon B1							
	Sampling Points	Mean	Std	Min	Max	Percentile			Sampling Points	Mean	Std	Min	Max	Percentile		
25						50	75	25						50	75	
Soil Physical Properties																
Particle size distribution																
Clay%	18	12.3	5.9	4.4	28.5	8.5	11.3	13.5	18	40.6	14.6	8.2	61.5	34.3	43.4	50.5
Silt%	18	36.0	7.0	26.8	51.6	29.3	35.3	38.0	18	31.6	6.9	17.0	43.4	26.7	34.2	36.3
Sand%	18	51.8	10.6	25.6	66.9	45.5	53.7	59.1	18	27.8	15.8	7.1	61.2	15.9	21.5	38.3
Bulk density (g/cm3)	18	1.43	0.18	1.09	1.77	1.28	1.44	1.58	18	1.62	0.10	1.48	1.81	1.55	1.59	1.68
Organic matter (%)	11	5.0	1.8	1.9	8.4	4.0	5.3	6.1	11	2.3	0.3	1.8	2.9	2.1	2.3	2.5
Depth of horizon (mm)	18	191	42	130	290	160	185	210	10	166	30	120	230	160	170	170
Soil Chemical Properties																
EC (dS/cm)	11	0.25	0.27	0.07	0.98	0.09	0.12	0.29	11	0.21	0.21	0.08	0.81	0.10	0.13	0.27
pH (H2O)	11	6.3	0.7	5.3	7.6	6.0	6.2	6.7	11	7.6	0.5	6.8	8.4	7.4	7.7	7.9
pH (CaCl2)	11	5.7	0.8	4.9	7.2	5.2	5.4	6.0	11	6.7	0.5	5.8	7.8	6.5	6.6	7.0
Ca (meq/100g)	11	6.7	2.2	3.4	10.0	5.4	6.8	8.3	11	6.5	1.4	3.9	9.1	5.8	6.7	7.2
Mg (meq/100g)	11	4.2	2.0	2.3	9.1	2.8	3.4	5.3	11	6.2	1.3	4.9	8.1	5.3	5.5	7.7
Na (meq/100g)	11	1.0	1.1	0.4	4.4	0.5	0.6	0.8	11	2.0	1.1	1.0	5.0	1.6	1.8	2.1
K (meq/100g)	11	0.5	0.4	0.1	1.4	0.2	0.4	0.6	11	0.6	0.5	0.2	1.9	0.3	0.4	0.7
ESP (%)	11	7.5	4.4	3.0	19.0	4.6	6.4	9.2	11	12.9	4.2	7.4	22.8	10.3	11.7	15.1
Soil Hydraulic Properties																
Sat. hydraulic conductivity (mm/hr)	18	40.1	30.3	9.4	109.1	19.2	29.5	45.0	18	2.96	3.48	0.16	13.8	0.81	1.27	4.12
Final infiltration rate (mm/hr)									8	1.29	1.5	0.08	3.92	0.18	0.41	2.57
Available water capacity (%)	6	15.9	3.6	11.4	20.1	13.4	15.6	19.3	6	11.6	3.0	8.4	16.4	9.4	10.7	14.0
Soil water retention characteristic																
Volumetric water content (%) at																
Matric suction (kPa)																
0	6	48.0	9.9	36.7	66.0	43.0	46.5	49.4	6	47.1	5.6	35.8	51.2	48.6	48.7	49.7
10	6	40.5	7.4	30.5	52.8	37.7	39.3	43.7	6	43.7	6.8	30.6	50.0	44.1	45.4	46.9
60	6	35.2	7.0	25.7	46.2	30.4	35.2	38.8	6	40.0	6.9	26.1	44.3	41.1	42.6	43.5
1500	6	24.6	6.5	17.1	33.5	18.4	24.2	30.3	6	32.1	6.2	19.6	36.1	32.9	34.2	35.7

Table 29.15 RO District - Soil Group 3

Soil Group 3

Irrigation District RO

Soil Properties	Horizon A									Horizon B1						
	Sampling Points	Mean	Std	Min	Max	Percentile			Sampling Points	Mean	Std	Min	Max	Percentile		
						25	50	75						25	50	75
Soil Physical Properties																
Particle size distribution																
Clay%	22	25.5	9.9	9.1	46.2	17.4	22.6	33.7	22	41.1	15.5	17.7	60.1	22.6	47.9	53.7
Silt%	22	35.6	9.3	17.2	53.4	27.9	36.4	42.6	22	35.7	15.2	12.0	73.3	23.7	32.8	47.3
Sand%	22	38.9	11.1	18.5	57.4	30.9	38.0	46.5	22	23.2	10.2	7.9	46.6	15.2	22.7	30.8
Bulk density (g/cm ³)	22	1.50	0.15	1.19	1.73	1.38	1.54	1.61	22	1.53	0.11	1.29	1.71	1.47	1.52	1.59
Organic matter (%)	16	5.0	1.7	2.5	7.4	3.6	4.8	6.4	16	2.2	0.2	1.7	2.5	2.1	2.2	2.4
Depth of horizon (mm)	22	162	38	100	262	140	160	180	10	160	39	80	210	140	155	200
Soil Chemical Properties																
EC (dS/cm)	16	0.25	0.21	0.07	0.72	0.11	0.16	0.36	16	0.30	0.28	0.07	1.10	0.11	0.22	0.37
pH (H ₂ O)	16	6.4	0.7	5.5	8.4	5.8	6.5	6.7	16	7.3	0.8	5.8	9.1	6.8	7.3	7.7
pH (CaCl ₂)	16	5.8	0.8	4.9	7.9	5.1	6.0	6.3	16	6.6	0.9	5.4	8.5	6.0	6.6	7.2
Ca (meq/100g)	16	7.7	3.2	4.8	18.0	5.6	7.2	9.0	16	7.8	3.2	4.2	18.0	6.0	6.9	8.6
Mg (meq/100g)	16	6.1	2.0	3.0	8.7	4.1	6.3	7.7	16	7.9	1.9	4.0	10.0	6.9	8.4	9.6
Na (meq/100g)	16	1.1	0.7	0.3	2.9	0.6	1.0	1.5	16	1.8	1.0	0.3	3.7	1.1	1.5	2.9
K (meq/100g)	16	0.6	0.4	0.2	1.4	0.3	0.4	1.0	16	0.7	0.3	0.2	1.2	0.4	0.7	1.0
ESP (%)	16	7.0	3.0	2.8	14.7	4.9	7.5	8.7	16	9.7	4.8	2.8	17.2	4.8	9.4	14.0
Soil Hydraulic Properties																
Sat. hydraulic conductivity (mm/hr)	18	46.8	29.1	12.0	120.7	26.3	36.4	72.6	17	6.30	4.38	0.19	14.9	2.86	6.03	9.59
Final infiltration rate (mm/hr)									16	2.48	3.66	0.01	10.3	0.25	0.74	3.06
Available water capacity (%)	7	11.8	2.1	9.6	15.1	9.9	11.7	13.5	8	12.5	2.5	9.1	16.2	10.5	12.7	14.2
Soil water retention characteristic																
Volumetric water content (%) at																
 Matric suction (kPa)																
0	7	45.1	4.5	38.1	53.2	43.5	44.7	46.2	8	47.4	9.8	32.9	60.5	40.1	46.3	56.5
10	7	40.5	3.4	34.3	43.5	38.8	41.0	43.3	8	40.7	8.3	27.1	51.2	34.9	40.7	48.1
60	7	35.4	4.4	30.0	40.3	30.9	36.9	39.4	8	36.5	8.7	22.2	47.4	30.7	36.6	43.8
1500	7	28.8	3.2	24.4	33.0	26.1	29.8	31.0	8	28.2	7.4	13.8	36.0	23.6	30.5	33.7

Table 29.16 RO District - Soil Group 4

Soil Group 4

Irrigation District RO

Soil Properties	Horizon A									Horizon B1						
	Sampling Points	Mean	Std	Min	Max	Percentile			Sampling Points	Mean	Std	Min	Max	Percentile		
						25	50	75						25	50	75
Soil Physical Properties																
Particle size distribution																
Clay%	10	29.2	12.1	13.4	47.9	21.7	24.9	42.4	10	48.5	11.2	23.1	60.1	43.1	51.5	57.3
Silt%	10	39.2	7.5	28.5	54.5	34.2	37.0	44.8	10	33.4	8.7	24.2	54.5	27.0	31.9	37.3
Sand%	10	31.6	12.7	8.3	44.7	21.5	37.3	41.3	10	18.1	5.9	8.5	28.0	13.5	19.1	22.2
Bulk density (g/cm ³)	10	1.55	0.13	1.34	1.74	1.45	1.53	1.63	10	1.52	0.05	1.43	1.57	1.49	1.53	1.56
Organic matter (%)	5	4.0	0.9	3.4	5.3	3.4	3.4	4.8	5	2.0	0.4	1.5	2.5	1.7	1.9	2.2
Depth of horizon (mm)	10	147	28	120	200	120	140	170	10	214	48	160	320	180	205	230
Soil Chemical Properties																
EC (dS/cm)	5	0.21	0.05	0.13	0.27	0.19	0.23	0.24	5	0.31	0.11	0.17	0.45	0.25	0.30	0.39
pH (H ₂ O)	5	6.1	0.5	5.4	6.7	5.8	6.0	6.4	5	7.3	0.6	6.6	8.0	6.7	7.5	7.7
pH (CaCl ₂)	5	5.6	0.5	5.0	6.1	5.2	5.4	6.0	5	6.7	0.7	5.9	7.7	6.1	6.7	7.0
Ca (meq/100g)	5	7.1	3.9	3.1	13.0	3.8	7.5	9.3	5	9.1	4.7	4.4	17.0	6.7	7.9	10.8
Mg (meq/100g)	5	4.4	0.8	3.5	5.5	3.8	4.2	5.2	5	9.5	2.1	7.5	13.0	8.0	9.3	10.5
Na (meq/100g)	5	0.9	0.6	0.1	1.5	0.6	1.0	1.4	5	2.2	1.1	0.9	4.0	1.5	2.1	2.7
K (meq/100g)	5	0.5	0.2	0.2	0.7	0.4	0.6	0.6	5	0.6	0.3	0.4	1.0	0.4	0.5	0.8
ESP (%)	5	8.5	5.6	0.5	15.6	4.6	9.7	11.8	5	11.0	5.3	2.8	17.9	8.9	11.5	13.2
Soil Hydraulic Properties																
Sat. hydraulic conductivity (mm/hr)	9	26.7	20.4	9.8	74.8	14.7	17.4	35.5	7	2.78	1.61	0.82	4.8	1.27	2.63	4.29
Final infiltration rate (mm/hr)									5	1.18	0.51	0.7	1.98	0.77	1.16	1.44
Available water capacity (%)	10	11.2	2.0	8.2	14.1	9.7	10.8	12.8	10	13.1	3.9	5.9	18.5	11.4	13.3	16.2
Soil water retention characteristic																
Volumetric water content (%) at																
Matric suction (kPa)																
0	10	43.1	5.9	35.2	52.2	40.1	42.3	47.8	10	50.3	4.9	43.7	58.6	46.5	49.2	54.7
10	10	38.5	5.4	29.0	46.7	36.8	38.0	41.1	10	45.6	4.4	37.6	52.1	43.8	44.7	48.4
60	10	34.2	5.6	24.7	42.8	31.2	34.5	35.6	10	41.8	4.4	33.3	47.7	39.3	42.4	45.3
1500	10	27.4	5.8	19.7	35.9	22.7	28.9	29.7	10	32.5	4.1	24.5	38.5	30.1	33.3	35.0

Table 29.17 RO District - Soil Group 5

Soil Group 5

Irrigation District RO

Soil Properties	Horizon A								Horizon B1							
	Sampling Points	Mean	Std	Min	Max	Percentile			Sampling Points	Mean	Std	Min	Max	Percentile		
						25	50	75						25	50	75
Soil Physical Properties																
Particle size distribution																
Clay%	8	36.8	13.6	23.6	62.7	27.8	30.6	45.8	8	62.7	3.5	56.8	67.3	60.6	62.7	65.6
Silt%	8	28.1	3.5	22.9	34.1	25.7	28.1	30.2	8	19.5	4.3	13.9	24.9	16.7	17.6	24.2
Sand%	8	35.1	11.7	10.9	46.5	29.6	39.6	42.4	8	17.8	5.2	11.0	26.9	13.7	17.9	20.7
Bulk density (g/cm3)	8	1.42	0.09	1.29	1.53	1.34	1.41	1.51	8	1.45	0.03	1.41	1.51	1.43	1.45	1.47
Organic matter (%)	6	5.4	1.7	2.9	8.0	4.8	5.3	5.9	6	2.1	0.3	1.8	2.5	1.8	2.2	2.3
Depth of horizon (mm)	8	161	15	130	170	155	170	170	4	155	39	110	200	125	155	185
Soil Chemical Properties																
EC (dS/cm)	6	0.40	0.17	0.13	0.64	0.31	0.42	0.47	6	0.39	0.16	0.24	0.64	0.24	0.35	0.52
pH (H2O)	6	6.7	0.2	6.5	6.9	6.5	6.7	6.8	6	7.5	0.2	7.3	7.7	7.4	7.5	7.7
pH (CaCl2)	6	6.1	0.2	5.7	6.4	6.1	6.2	6.3	6	6.9	0.1	6.8	7.0	6.8	6.9	6.9
Ca (meq/100g)	6	8.3	1.5	5.9	9.8	7.8	8.5	9.5	6	8.6	1.1	6.7	9.9	8.1	8.9	9.2
Mg (meq/100g)	6	7.3	0.6	6.5	8.2	6.9	7.2	7.9	6	10.7	1.8	7.9	13.0	10.0	10.5	12.0
Na (meq/100g)	6	1.8	0.3	1.4	2.4	1.7	1.8	1.8	6	3.7	0.5	2.9	4.3	3.3	3.7	4.1
K (meq/100g)	6	0.9	0.4	0.4	1.4	0.8	0.9	1.3	6	1.8	0.7	0.5	2.6	1.8	1.9	2.0
ESP (%)	6	9.9	2.2	7.6	13.6	8.5	9.2	11.2	6	14.9	2.4	10.9	17.2	13.6	15.7	16.6
Soil Hydraulic Properties																
Sat. hydraulic conductivity (mm/hr)	7	33.2	23.6	14.4	82.5	17.4	24.6	38.4	6	1.82	1.05	0.54	3.67	1.35	1.73	1.89
Final infiltration rate (mm/hr)									6	0.42	0.43	0.06	1.2	0.08	0.34	0.51
Available water capacity (%)	4	12.3	4.9	7.2	18.9	8.9	11.6	15.8	4	11.9	1.3	10.9	13.8	11.0	11.4	12.8
Soil water retention characteristic																
Volumetric water content (%) at																
 Matric suction (kPa)																
0	4	49.5	4.6	45.2	53.8	45.6	49.5	53.5	4	55.4	6.9	49.0	61.5	49.4	55.6	61.4
10	4	45.5	2.9	43.0	48.7	43.0	45.2	48.0	4	48.2	2.9	45.1	52.1	46.3	47.7	50.0
60	4	42.8	3.4	39.5	47.0	40.1	42.3	45.5	4	46.3	2.6	43.6	49.9	44.7	45.9	47.9
1500	4	33.2	4.5	28.4	38.1	29.4	33.2	36.9	4	36.3	1.6	34.3	38.3	35.2	36.2	37.3

Table 29.18 RO District - Soil Group 6

Soil Group 6

Irrigation District RO

Soil Properties	Horizon A								Horizon B1							
	Sampling Points	Mean	Std	Min	Max	Percentile			Sampling Points	Mean	Std	Min	Max	Percentile		
						25	50	75						25	50	75
Soil Physical Properties																
Particle size distribution																
Clay%	6	37.4	21.9	19.6	70.8	21.7	26.6	59.1	6	59.3	3.6	54.2	63.7	56.5	59.6	62.2
Silt%	6	27.9	4.9	21.5	32.9	23.9	28.0	32.8	6	22.4	7.5	15.2	34.4	18.3	18.8	28.8
Sand%	6	34.7	20.5	7.6	56.5	10.3	44.2	45.5	6	18.3	9.2	7.3	28.3	7.5	19.9	27.0
Bulk density (g/cm3)	6	1.52	0.19	1.23	1.72	1.36	1.58	1.68	6	1.48	0.07	1.41	1.57	1.41	1.45	1.56
Organic matter (%)	5	4.4	1.3	2.5	5.7	3.6	4.6	5.4	5	2.5	0.8	1.3	3.3	2.1	2.7	3.2
Depth of horizon (mm)	6	177	50	100	240	140	190	200	2	235		200	270			
Soil Chemical Properties																
EC (dS/cm)	5	0.12	0.05	0.08	0.21	0.09	0.10	0.14	5	0.13	0.05	0.07	0.21	0.09	0.12	0.16
pH (H2O)	5	6.1	0.7	5.5	7.1	5.6	5.7	6.6	5	7.4	0.4	7.0	7.8	7.1	7.3	7.8
pH (CaCl2)	5	5.5	0.7	4.9	6.6	5.0	5.1	5.9	5	6.6	0.5	6.1	7.3	6.2	6.4	6.9
Ca (meq/100g)	5	7.5	4.9	4.1	16.0	4.2	6.3	9.3	5	9.1	3.3	7.0	15.0	7.4	7.6	9.9
Mg (meq/100g)	5	5.0	2.2	3.2	8.6	3.3	4.4	6.4	5	9.8	0.9	8.4	11.0	9.5	9.9	10.2
Na (meq/100g)	5	0.6	0.2	0.4	0.8	0.5	0.6	0.6	5	1.5	0.6	1.0	2.2	1.1	1.2	2.1
K (meq/100g)	5	0.9	1.1	0.3	2.9	0.3	0.6	1.3	5	1.1	0.7	0.4	2.2	0.6	0.9	1.5
ESP (%)	5	4.6	1.8	2.1	6.7	3.7	4.4	6.0	5	7.3	2.8	4.2	10.4	5.1	6.3	10.1
Soil Hydraulic Properties																
Sat. hydraulic conductivity (mm/hr)	6	23.0	16.5	4.0	49.6	12.8	20.7	30.1	5	1.39	1	0.44	3.12	0.92	1.14	1.64
Final infiltration rate (mm/hr)									4	0.03	0.02	0.01	0.05	0.01	0.03	0.05
Available water capacity (%)	4	12.4	3.9	8.5	16.3	9.1	12.3	15.7	4	13.2	2.8	10.2	15.7	10.8	13.5	15.6
Soil water retention characteristic																
Volumetric water content (%) at																
Matric suction (kPa)																
0	4	56.3	8.5	48.0	67.8	50.2	54.7	62.4	4	61.2	3.0	59.3	65.7	59.6	60.0	62.9
10	4	45.8	4.5	41.3	51.6	42.3	45.1	49.2	4	52.3	1.6	50.2	53.6	51.0	52.7	53.6
60	4	42.4	5.2	36.9	49.0	38.6	41.9	46.3	4	48.7	1.3	47.5	50.6	47.8	48.3	49.5
1500	4	33.4	7.5	24.9	43.0	28.4	32.7	38.4	4	39.1	1.7	37.9	41.6	38.0	38.4	40.2