

## PART IV - WESTGATE

### (A) Area and Location

The area surveyed is about 15 hectares situated at Armstrong about six kilometres south of Great Western (Approximately 210 kilometres west north-west of Melbourne). It is the southern part of allotment 96 (Section 15) in the Parish of Ararat, Shire of Stawell, County of Borung.

### (B) Climate

On-property records of rainfall for the past forty years were available for these vineyards. The data have been analysed and the long-term averages are listed below (Table W-1). The graphs in Figures W-1 (a) and W-1 (b) illustrate the monthly and seasonal distributions of the vineyards' average annual rainfall.

*Table W-1 - Average\* Rainfall at Westgate, Armstrong*

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
mm	33	33	32	51	59	51	63	63	57	59	48	31	580

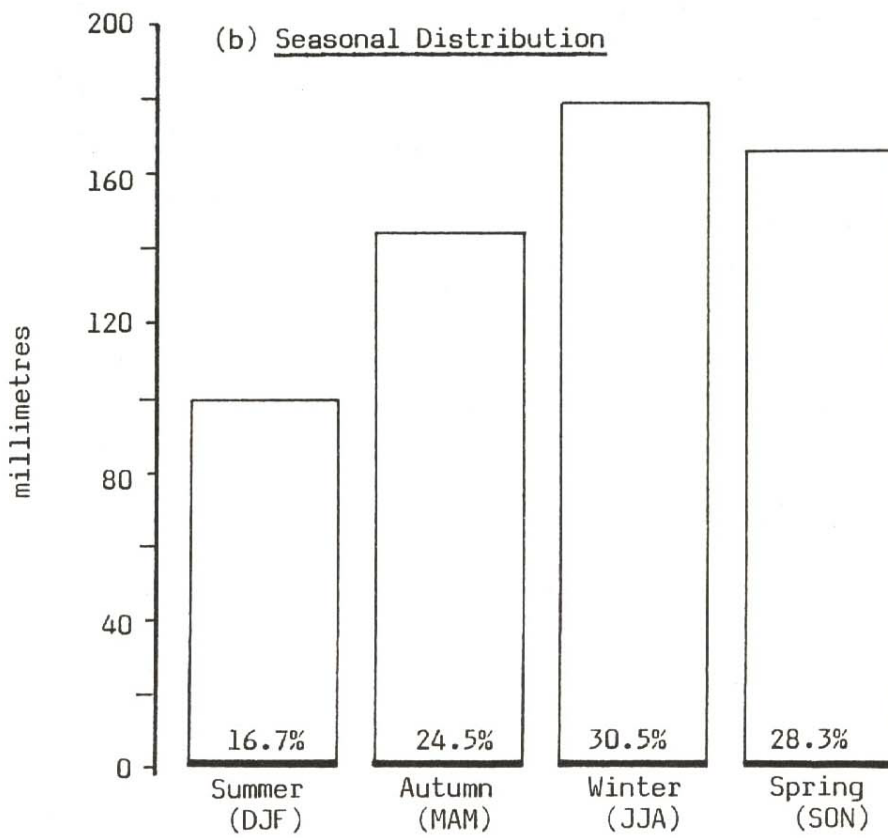
\* Period from 1939 to 1980; data for 1951, 1952 and 1966 missing.

### (C) Soils

#### (i) Soil Types and Miscellaneous Units

The main soils of the area surveyed at Westgate belong to the three soil series recognised in this investigation. These soils and their mapping symbols are listed in Table W-2 below.

Figure W-1: Distribution of the Annual Rainfall at Westgate (Armstrong)



**Table W-2 - The Main Soils of Westgate Vineyards**

Soils	Mapping Symbols
<u>Concongella Series</u>	
Concongella loam	Cl
“ “ (stony profile)	Cl (s)
“ “ (deep surface & stony profile)	
Concongella sandy clay loam (deep surface & stony profile)	Cscl (d & s)
<u>Great Western Series</u>	
Great Western sandy clay loam (deep surface & stony profile)	GWscl (d & s)
<u>Stawell Series</u>	
Stawell sandy clay loam (deep surface)	Sscl (d)
“ “ “ “ (deep surface & stony profile)	Sscl (d & s)
Stawell clay loam	Scl

Although most of these soils were mapped separately, two complex units were used where more than one soil recurred over short distances. The two units and their dominant soils are as follows:

- Complex I : Soils of this unit occur on the upper and intermediate slopes in the northern and north eastern sections of the survey. The main soils include: Cscl (d & s) and GWscl (d & s).
- Complex II : Varied soils in gullies and depressions; including Scl, Sscl (d) and Sscl (d & s).

Listed in Table W-3 are the six mapping units recognised in the survey. Their approximate areas (% of the total area surveyed) are also listed in the table. The areal distribution of the units is shown on the soil map (Figure W-2).

**Table W-3 - Distribution of the Mapping Units on Westgate Vineyards**

Mapping Units	Area % (approx.)	
<u>Concongella Series</u>	50	
- Cl	24	
- Cl (s)	8	
- Cscl (d & s)	18	
<u>Stawell Series</u>	15	
- Sscl (d)	15	
<u>Soil Complexes</u>	35	
- Complex I	15	
- Complex II	20	
Total	100	100

(ii) Representative Soil Profiles

Average soil profiles were selected to represent the mapping units. These profiles have been numbered and located on the accompanying soil map (Figure W-2). The morphological features of the profiles are given below and their analytical data are listed in Appendix W. It should be appreciated, however, that within each mapping unit soil profiles at individual situations usually will differ in some features from the described and analysed profiles.

**CONCONGELLA LOAM**  
(two representative profiles)

(A) Profile W-1

**Profile Reference:** WM 13/33  
**Topography:** Upper-moderate slope in a hilly area  
**Soil Classification:** Dr 2.11/L “fs” (10 cm)

**Soil Description:**

***Surface Soil***

0 – 10 cm; reddish brown (5YR4/4m) loam “fine sandy”; weakly pedal, hard setting; hard (dry), friable (moist), non-plastic and slightly sticky (wet); slight amounts of quartz and ferruginous concretions; sharp boundary to:

***Subsoil***

10 – 40 cm; red (2.5YR4/8m) heavy clay; strong fine and medium angular blocky structure; smooth-ped fabric; hard (dry), friable (moist), very plastic and very sticky (wet); slight amounts of quartz and ferruginous concretions; gradual boundary to:

40 – 85 cm; as above but; mottled red (2.5YR4/8m) and strong brown (7.5YR5/8m); clear boundary to:

85 – 100 cm; as above but; mottled yellowish red (5YR5/8m), strong brown (7.5YR5/8m) and light brownish grey (2.5Y6/2m); bedrock at 100 cm.

**(B) Profile W-2**

**Profile Reference:** WM 13/30  
**Topography:** Upper-moderate slope in a hilly area  
**Soil Classification:** Dr 2.11/FSCL “h” (10 cm)

**Soil Description:**

***Surface Soil***

0 – 10 cm; dark red (5YR3/3m) fine sandy clay loam “heavy”; weakly pedal, hard setting; hard (dry), friable (moist), non-plastic and slightly sticky (wet); slight amounts of quartz and ferruginous concretions; clear boundary to:

***Subsoil***

10 – 40 cm; dark reddish brown (2.5YR3/4m) medium clay; strong fine and medium angular blocky structure; smooth-ped fabric; hard (dry), friable (moist), plastic and sticky (wet); trace amounts of quartz and ferruginous concretions; gradual boundary to:

40 – 60 cm; as above but; yellowish red (5YR4/6m) medium to heavy clay; the amounts of stones increase to light; clear boundary to:

60 – 70 cm; as above but; brown (7.5YR4/4m); the amounts of stones increase to moderate; bedrock at 70 cm.

**CONGELLA LOAM (Stony Profile)**  
**(one representative profile)**

**Profile W-3**

**Profile Reference:** WM 13/31  
**Topography:** Mid-moderate slope in a hilly area  
**Soil Classification:** Dr 2.12/L “gr” (10 cm)

**Soil Description:**

***Surface Soil***

0 – 10 cm; brown (7.5YR4/4m) loam (gritty); weakly pedal, hard setting; hard (dry), friable (moist) slightly plastic and slightly sticky (wet); light amounts of quartz and ferruginous concretions; sharp boundary to:

***Subsoil***

10 – 50 cm; yellowish red (5YR4/6m) heavy clay (gritty); strong fine and medium angular blocky structure; smooth-ped fabric; hard (dry), friable (moist), plastic and sticky (wet); light amounts of quartz and ferruginous concretions; clear boundary to:

50 – 65 cm; as above but; mottled red (2.5YR4/6m), brownish yellow (10YR6/8m) and very dark grey (10YR3/1m); clear boundary to:

65 – 75 cm; as above but; mottled yellowish brown (10YR5/4m) and brownish yellow (10YR6/8m); the amounts of stones increase to moderate and include many shale fragments; bedrock at 75 cm.

**CONGELLA SANDY CLAY LOAM (Deep Surface & Stony Profile)**  
(three representative profiles)

**(A) Profile W-4**

**Profile Reference:** WM 13/34  
**Topography:** Upper-moderate slope in a hilly area  
**Soil Classification:** Dr 2.41/FSCL “gr” (30 cm)

**Soil Description:**

***Surface Soil***

0 – 10 cm; brown (7.5YR4/4m) fine sandy clay loam (gritty); weakly pedal, hard setting; hard (dry), friable (moist), non-plastic and slightly sticky (wet); light amounts of quartz and ferruginous concretions; sharp boundary to:

10 – 30 cm; as above but; yellowish red (5YR4/6m), conspicuously bleached pink (7.5YR7/4d); clear boundary to:

***Subsoil***

30 – 60 cm; red (2.5YR4/8m) with some strong brown heavy clay (gritty); strong fine and medium angular blocky structure; smooth-ped fabric; hard (dry), friable (moist), plastic and sticky (wet); light amounts of quartz and ferruginous concretions; clear boundary to:

60 – 75 cm; as above but; mottled red (2.5YR4/8m) and yellowish brown (10YR5/8m); the amounts of stones increase to moderate; bedrock at 75 cm.

**(B) Profile W-5**

**Profile Reference:** WM 13/25  
**Topography:** Upper-moderate slope in a hilly area  
**Soil Classification:** Dr 2.42/FSCL (45 cm)

**Soil Description:**

***Surface Soil***

0 – 15 cm; dark brown (7.5YR3/4m) fine sandy clay loam to sandy clay loam; weakly pedal, hard setting; moderately hard (dry), friable (moist), non-plastic and slightly sticky (wet); slight amounts of quartz and ferruginous concretions; clear boundary to:

15 – 45 cm; as above but; strong brown (5YR5/6m), conspicuously bleached pink (7.5YR7/4d) fine sandy clay loam; the amounts of stones increase to light; clear boundary to:

***Subsoil***

45 – 80 cm; red (2.5YR4/6m) heavy clay (gritty); strong fine and medium angular blocky structure; smooth-ped fabric; hard (dry), friable (moist), plastic and sticky (wet); light amounts of quartz and ferruginous concretions; clear boundary to:

80 – 100 cm; as above but; mottled red (2.5YR4/6m) and light olive brown (2.5YR5/4m); bedrock at 100 cm.

**(C) Profile W-6**

**Profile Reference:** WM 13/26  
**Topography:** Mid-moderate slope in a hilly area  
**Soil Classification:** Dr 2.42/FSCL (30 cm)

**Soil Description:**

***Surface Soil***

0 – 15 cm; reddish brown (5YR4/4m) fine sandy clay loam to sandy clay loam; weakly pedal, hard setting; slightly hard (dry), friable (moist), non-plastic and slightly sticky (wet); light amounts of quartz and ferruginous concretions; sharp boundary to:

15 – 30 cm; as above but; yellowish red (5YR4/6m), conspicuously bleached pink (7.5YR6/4d); sharp boundary to:

***Subsoil***

30 – 55 cm; yellowish red (5YR4/6m) medium clay; strong fine and medium angular blocky structure; smooth-ped fabric; moderately hard (dry), friable (moist), plastic and sticky (wet); light amounts of quartz and some ferruginous concretions; clear boundary to:

55 – 90 cm; as above but; mottled yellowish brown (10YR5/4m) and dark red (2.5YR3/6m) medium to heavy clay; bedrock at 90 cm.

**GREAT WESTERN SANDY CLAY LOAM (Deep Surface & Stony Profile)**  
**(one representative profile)**

**Profile W-7**

**Profile Reference:** WM 13/28  
**Topography:** Top of a moderate ridge in a hilly area  
**Soil Classification:** Dr 3.41/SCL “gr” (40 cm)

**Soil Description:**

***Surface Soil***

0 – 10 cm; brown (7.5YR4/4m) light sandy clay loam (gritty); apedal, hard setting; hard (dry), friable (moist) non-plastic and non-sticky (wet); moderate amounts of quartz and ferruginous concretions; sharp boundary to:

10 – 40 cm; as above but; strong brown (7.5YR5/6m), conspicuously bleached pink (7.5YR7/4d); clear boundary to:

***Subsoil***

- 40 – 70 cm; mottled red (2.5YR4/6m), strong brown (7.5YR5/6m) and pale brown (10YR6/3m) heavy clay (gritty); strong fine and medium angular blocky structure; smooth-ped fabric; slightly hard (dry), friable (moist), plastic and sticky (wet); light amounts of quartz and ferruginous concretions; clear boundary to:
- 70 – 100 cm; as above but; mottled reddish brown (5YR4/4m) and light grey (10YR7/2m).

**STAWELL SANDY CLAY LOAM (Deep Surface)**  
**(two representative profiles)**

**(A) Profile W-8**

**Profile Reference:** WM 13/27  
**Topography:** Slight gully in a hilly area  
**Soil Classification:** Dy 3.41/FSCL (40 cm)

**Soil Description:**

***Surface Soil***

- 0 – 20 cm; dark brown (7.5YR3/4m) fine sandy clay loam; weakly pedal, hard setting; hard (dry), friable (moist), non-plastic and slightly sticky (wet); slight amounts of quartz and ferruginous concretions; sharp boundary to:
- 20 – 40 cm; as above but; brown (10YR5/3m) with some yellowish brown, conspicuously bleached light grey (10YR7/2d); clear boundary to:

***Subsoil***

- 40 – 80 cm; mottled yellowish brown (10YR5/8m) and brown (10YR5/3m) medium to heavy clay (gritty); strong fine and medium angular blocky structure; smooth-ped fabric; moderately hard (dry), friable (moist), plastic and sticky (wet); slight amounts of quartz and ferruginous concretions; bedrock at 80 cm.

**(B) Profile W-9**

**Profile Reference:** WM 13/29  
**Topography:** Lower-moderate slope in a hilly area  
**Soil Classification:** Dy 3.42/FSCL (45 cm)

**Soil Description:**

***Surface Soil***

- 0 – 15 cm; dark brown (7.5YR3/4m) fine sandy clay loam; weakly pedal, hard setting; hard (dry), friable (moist), non-plastic and slightly sticky (wet); slight amounts of quartz and ferruginous concretions; clear boundary to:
- 15 – 45 cm; as above but; brown (10YR5/3m), conspicuously bleached very pale brown (10YR7/4d) loam; clear boundary to:



***Subsoil***

- 45 – 75 cm; mottled yellowish brown (10YR5/4m) and (10YR5/8m) heavy clay (gritty); strong fine and medium angular blocky structure; smooth-ped fabric; hard (dry), friable (moist), plastic and sticky (wet); gradual boundary to:
- 75 – 100 cm; as above but; mottled yellowish brown (10YR5/8m), brown (10YR5/3m) and yellowish red (5YR5/6m).

**STAWELL SANDY CLAY LOAM (Deep Surface & Stony Profile)**  
**(one representative profile)**

**Profile W-10**

- Profile Reference:** WM 13/32  
**Topography:** Gully floor in a hilly area  
**Soil Classification:** Dy 3.42/FSCL (50 cm)

**Soil Description:**

***Surface Soil***

- 0 – 10 cm; dark brown (7.5YR4/2m) fine sandy clay loam; weakly pedal, hard setting; hard (dry), friable (moist) non-plastic and slightly sticky (wet); light amounts of quartz and ferruginous concretions; sharp boundary to:
- 10 – 50 cm; as above but; brown (10YR5/3m), conspicuously bleached white (10YR8/2d) sandy clay loam (gritty); the amounts of stones increase to moderate; clear boundary to

***Subsoil***

- 50 – 90 cm; mottled yellowish brown (10YR5/6m), yellowish red (5YR4/6m) and some very dark medium to heavy clay (gritty); strong fine and medium angular blocky structure; smooth-ped fabric; hard (dry), friable (moist), plastic and sticky (wet); moderate amounts of quartz and ferruginous concretions.

**STAWELL CLAY LOAM**  
**(one representative profile)**

**Profile W-11**

- Profile Reference:** WM 13/35  
**Topography:** Gully floor in a hilly area  
**Soil Classification:** Dy 3.12/CL “gr” (40 cm)

**Soil Description:**

***Surface Soil***

- 0 – 40 cm; dark brown (7.5YR3/2m) clay loam (gritty); weakly pedal, hard setting; hard (dry), friable (moist) slightly plastic and slightly sticky (wet); light amounts of quartz and ferruginous concretions; gradual boundary to:

**Subsoil**

40 – 80 cm; mottled yellowish brown (10YR5/4m), and strong brown (7.5YR5/8m) medium clay to heavy clay (sandy); gradually becoming more clayey with depth; strong fine and medium angular blocky structure; smooth-ped fabric; hard (dry), friable (moist), plastic and sticky (wet); light amounts of quartz and ferruginous concretions; gradual boundary to:

80 – 100 cm; as above but; heavy clay.

**(D) Irrigation Water**

Plans for irrigating the vineyards using sub-artesian water from an abandoned gold mine shaft (approximately 42 m deep) located on the property are currently being implemented. In the present survey, a water sample from this shaft has been analysed. The approximate location of the shaft is shown on soil map (Figure W-2) and the water analytical data are listed in Table W-4, below.

**Table W-4 - Analytical Data for a Water Sample from an Abandoned Mine Shaft on Westgate Vineyards**

EC *	TSS **	Cl <sup>-</sup> ***	Soluble Cations			SAR ϕϕ
			Ca <sup>++</sup>	Mg <sup>++</sup>	Na <sup>+</sup>	
μS/cm	ppm	ppm	m.e/l	m.e/l	m.e/l	% ϕ
3030	1960	948	4.77	6.71	18.26	61.4

\* Electrical Conductivity at 20°C.

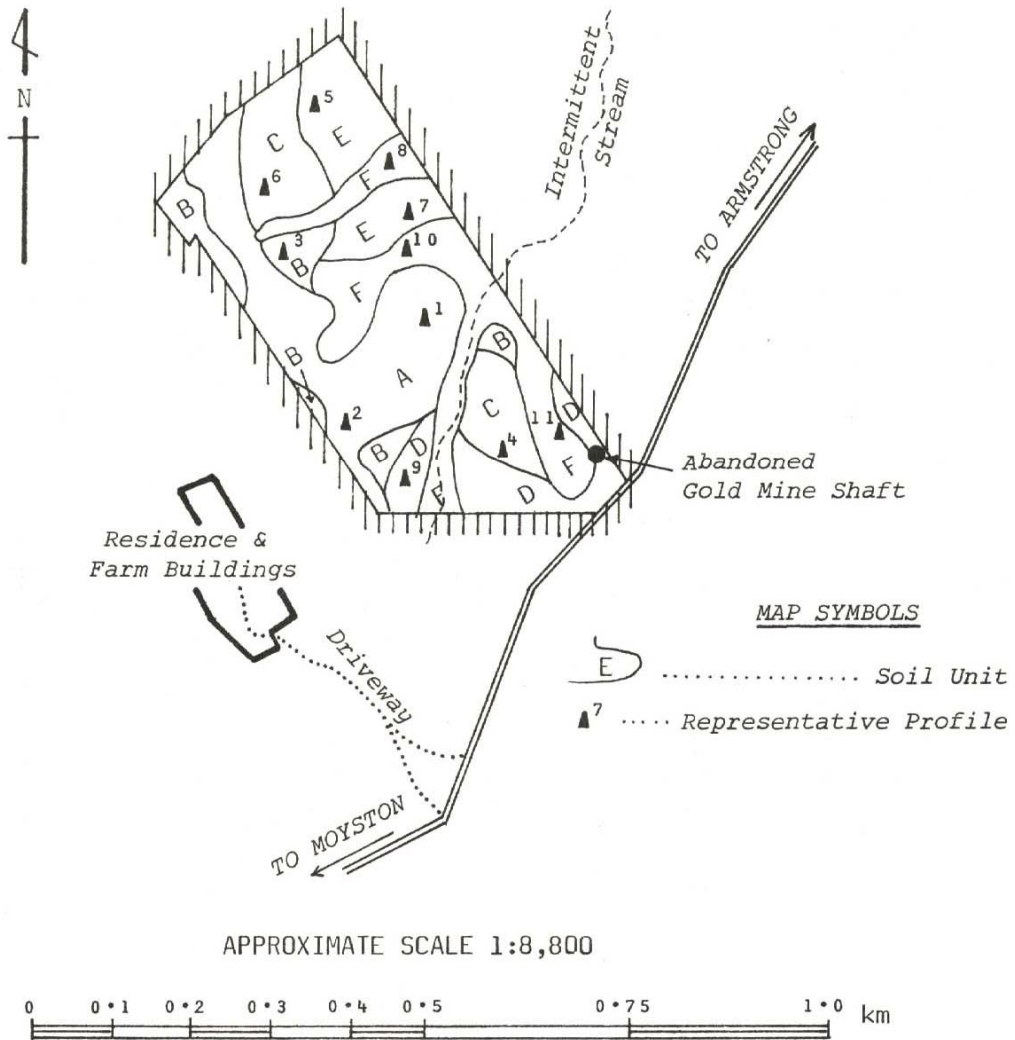
\*\* Total Soluble Salts

\*\*\* Chlorides as sodium chloride (common salt)

ϕ Sodium Percentage =  $100 (Na^+) / (Ca^{++} + Mg^{++} + Na^+)$

ϕϕ Sodium – Adsorption – Ratio =  $Na^+ / \sqrt{(Ca^{++} + Mg^{++})/2}$

Figure W-2: Soil Map of Westgate Vineyards  
 Armstrong, County of Borung, Victoria



DEPARTMENT OF AGRICULTURE, VICTORIA  
 DIVISION OF AGRICULTURAL CHEMISTRY  
 SOILS SECTION  
 Field Operations: 1980  
 Soil Surveyors: N.S. Badawy and N.B. Lewis  
 Map compiled and drawn by:  
 Nabil S. Badawy, Soils Officer

## LEGEND

### (i) MAPPING UNITS

Unit	Soils
A	Cl [Concongella loam]
B	Cl (s) [Concongella loam (stony profile)]
C	Cscl (d & s) [Concongella sandy clay loam (deep surface & stony profile)]
D	Sscl (d) [Stawell sandy clay loam (deep surface)]
E	Soil Complex I: - Cscl (d & s) [Concongella sandy clay loam (deep surface & stony profile)] - GWscl (d & s) [Great Western sandy clay loam (deep surface & stony profile)]
F	Soil Complex II: Varied soils in gullies and depressions including: - Scl [Stawell clay loam] - Sscl (d) [Stawell sandy clay loam (deep surface)] - Sscl (d & s) [Stawell sandy clay loam (deep surface & stony profile)]

### (ii) REPRESENTATIVE PROFILES

Map Reference	Report Reference	Soil Classification	
		PPF (Northcote '79)	Soil Type
Δ 1	W- 1	Dr 2.11/L "fs" (10 cm)	Cl
Δ 2	W- 2	Dr 2.11/FSCL "h" (10 cm)	"
Δ 3	W- 3	Dr 2.12/L "gr" (10 cm)	Cl (s)
Δ 4	W- 4	Dr 2.41/FSCL "gr" (30 cm)	Cscl (d & s)
Δ 5	W- 5	Dr 2.42/FSCL (45 cm)	"
Δ 6	W- 6	Dr 2.42/FSCL (30 cm)	"
Δ 7	W- 7	Dr 3.41/SCL "gr" (40 cm)	GWscl (d & s)
Δ 8	W- 8	Dy 3.41/FSCL (40 cm)	Sscl (d)
Δ 9	W- 9	Dy 3.42/FSCL (45 cm)	"
Δ 10	W-10	Dy 3.42/FSCL (50 cm)	Sscl (d & s)
Δ 11	W-11	Dy 3.12/CL "gr" (40 cm)	Scl

*Appendix W - Analytical Data for representative profiles from Westgate Vineyards*

Depth (cm)	Field Texture	pH	T.S.S. (%)	Chloride "as NaCl" (%)	Total N (%)	Org. C (%)	Exchangeable Cations "milliequivalents per 100 g soils"					Aggregate Stability		Moisture (%)	
							Ca	Mg	K	Na	H	Class	Index	@ -15 Bar	@ -1/3 Bar
(1)	(1)	(2)	(2)	(3)	(4)	(5)	(4)	(5)	(6)	(7)	(4)	(5)	(6)	(7)	
<b>PROFILE W-1; CONGELLA LOAM; Dr 2.11/L "fs" (10 cm)</b>															
0 – 10	L "fs"	6.2	0.011	-								2	10	8.2	24.7
10 – 40	HC	6.2	0.015	-								3	2	16.1	29.4
40 – 85	HC	6.3	0.020	-								5	0	15.0	30.0
85 – 100	HC	6.2	0.032	-								2	10	11.8	29.5
<b>PROFILE W-2; CONGELLA LOAM; Dr 2.11/FSCL "h" (10 cm)</b>															
0 – 10	FSCL "h"	7.0	0.083	0.013								3	5	11.5	30.3
10 – 40	MC	5.7	0.022	-								5	0	12.7	28.2
40 – 60	M-HC	6.2	0.017	-								5	0	13.0	26.7
60 – 70	M-HC	6.4	0.016	-								5	0	11.5	24.2
<b>PROFILE W-3; CONGELLA LOAM (Stony Profile); Dr 2.12/L "gr" (10 cm)</b>															
0 – 10	L "gr"	6.1	0.015	-	0.169	1.9	1.8	0.7	1.0	0.1	7.5	2	10	10.3	26.6
10 – 50	HC "gr"	6.1	0.013	-			2.4	0.9	0.6	0.1	6.5	5	1	15.0	28.6
50 – 65	HC "gr"	6.9	0.014	-			2.8	2.6	0.6	0.1	5.4	5	1	17.2	30.8
65 – 75	HC "gr"	6.8	0.016	-			1.5	1.5	0.4	0.1	3.6	5	0	9.8	24.3
<b>PROFILE W-4; CONGELLA SANDY CLAY LOAM (Deep Surface &amp; Stony Profile); Dr 2.41/FSCL "gr" (30 cm)</b>															
0 – 10	FSCL "gr"	5.6	0.021	-	0.216	2.7	1.2	0.6	0.9	0.1	10.4	2	10	10.4	24.4
10 – 30	FSCL "gr"	5.4	0.009	-			0.6	0.4	0.5	0.1	7.0	2	10	9.5	22.7
30 – 60	HC "gr"	5.7	0.015	-			0.7	2.1	0.4	0.2	6.7	3	2	17.5	28.3
60 – 75	HC "gr"	6.4	0.020	-			0.3	3.3	0.4	0.4	4.6	3	2	16.8	28.9
<b>PROFILE W-5; CONGELLA SANDY CLAY LOAM (Deep Surface &amp; Stony Profile); Dr 2.42/FSCL (45 cm)</b>															
0 – 15	FSCL	5.7	0.043	-								3	2	9.1	25.6
15 – 45	FSCL "gr"	5.8	0.017	-								2	10	7.4	19.9
45 – 80	HC "gr"	6.0	0.015	-								3	8	13.1	23.0
80 – 100	HC "gr"	6.8	0.026	-								2	12	15.8	28.4

Depth (cm)	Field Texture	pH	T.S.S. (%)	Chloride "as NaCl" (%)	Total N (%)	Org. C (%)	Exchangeable Cations "milliequivalents per 100 g soils"					Aggregate Stability		Moisture (%)	
							Ca	Mg	K	Na	H	Class	Index	@ -15 Bar	@ -1/3 Bar
(1)			(2)	(3)								(4)	(5)	(6)	(7)
<b>PROFILE W-6; CONCONGELLA SANDY CLAY LOAM (Deep Surface &amp; Stony Profile); Dr 2.42/FSCL (30 cm)</b>															
0 – 15	FSCL	5.9	0.016	-								2	10	13.0	20.2
15 – 30	FSCL	5.9	0.018	-								3	2	12.3	19.4
30 – 55	MC	6.3	0.017	-								3	3	14.9	22.1
55 – 90	M-HC "s"	6.5	0.019	-								5	0	14.4	23.1
<b>PROFILE W-7; GREAT WESTERN SANDY CLAY LOAM (Deep Surface &amp; Stony Profile); Dr 3.41/SCL "gr" (40 cm)</b>															
0 – 10	SCL "gr"	6.9	0.051	0.009								2	10	8.6	15.5
10 – 40	SCL "gr"	5.4	0.086									2	12	9.0	14.6
40 – 70	HC "gr"	5.6	0.019	-								3	6	15.4	22.4
70 – 100	HC "gr"	5.2	0.034	-								1	14	17.7	23.4
<b>PROFILE W-8; STAWELL SANDY CLAY LOAM (Deep Surface); Dy 3.41/FSCL (40 cm)</b>															
0 – 20	FSCL	6.3	0.043	-								3	3	8.5	33.8
20 – 40	FSCL "gr"	5.6	0.016	-								3	7	7.6	23.8
40 – 80	M-HC "gr"	6.1	0.026	-								5	0	13.6	27.9
<b>PROFILE W-9; STAWELL SANDY CLAY LOAM (Deep Surface); Dy 3.42/FSCL (45 cm)</b>															
0 – 15	FSCL	6.3	0.019	-								2	10	7.6	25.8
15 – 45	L	6.6	0.020	-								3	7	9.0	24.7
45 – 75	HC "gr"	7.4	0.030	-								5	0	13.0	25.6
75 – 100	HC "gr"	7.3	0.026	-								5	0	12.0	25.5
<b>PROFILE W-10; STAWELL SANDY CLAY LOAM (Deep Surface &amp; Stony Profile); Dy 3.42/FSCL (50 cm)</b>															
0 – 10	FSCL	6.3	0.017	-	0.137	1.6	1.7	0.9	0.6	0.4	8.3	2	10	11.7	26.7
10 – 50	SCL "gr"	6.3	0.034	-			1.8	1.0	0.2	0.2	3.4	2	10	9.5	20.0
50 – 90	M-HC "gr"	6.8	0.022	-			1.0	3.5	0.4	0.5	4.3	2	10	13.5	22.6

Depth (cm)	Field Texture  (1)	pH	T.S.S. (%)  (2)	Chloride "as NaCl" (%)  (3)	Total N (%)	Org. C (%)	Exchangeable Cations "milliequivalents per 100 g soils"					Aggregate Stability		Moisture (%)	
							Ca	Mg	K	Na	H	Class  (4)	Index  (5)	@ -15 Bar (6)	@ - <sup>1</sup> / <sub>3</sub> Bar (7)
PROFILE W-11; STAWELL CLAY LOAM; Dy 3.12/CL "gr" (40 cm)															
0 – 40	CL	5.9	0.015	-							3	2	9.0	26.3	
40 – 80	M-HC "s"	6.9	0.018	-							3	2	10.5	24.2	
80 - 100	HC	6.9	0.016	-							3	2	10.0	23.3	

- (1) Field Texture; see Appendix G for definitions and symbols used.
- (2) Total Soluble Salts (%) = Electrical Conductivity ( $\mu\text{S}/\text{cm}$ )  $\times 3.3 \times 10^{-4}$ .
- (3) The dashes recorded in this column indicate negligible amounts of sodium chloride.
- (4) Aggregate stability Class (Emerson 1967).
- (5) Aggregate Dispersion Index (Loveday 1974).
- (6) Moisture (%) at -15 Bar; approximately "Wilting Point", see Appendix G.
- (7) Moisture (%) at -<sup>1</sup>/<sub>3</sub> Bar; approximately "Field Capacity", see Appendix G.