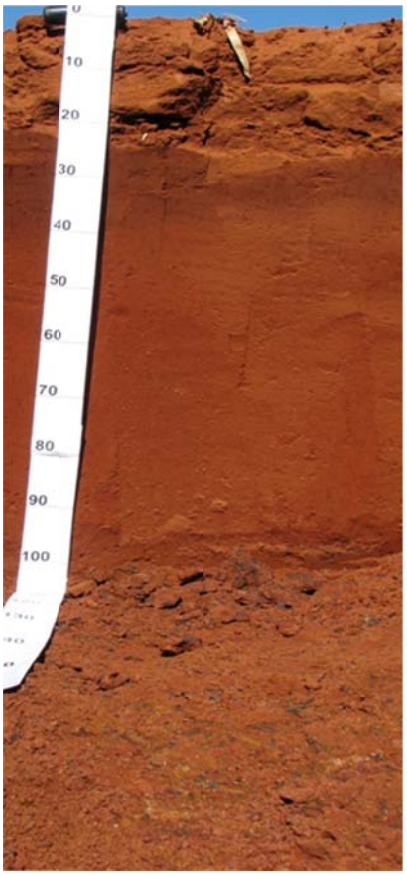
6b Photos, profile descriptions and some analytical data of typical profiles

Onderstaande inligting aangaande die Lichtenburg grondvorm is opgestel deur P le Roux, C van Huyssteen, M du Plessis en M Hensley in 'n dokument aan die GKWG, Januarie 2005 met titel: "Verslag aan die Grondklassifikasiewerkgroep: Voorstel vir erkenning van 'n nuwe grondvorm"



Orthic A
Red apedal B1
Hard plinthic B2

Profielbeskrywings

LICHTENBURG FORM – Li

Profielbeskrywings van Lichtenburggronde uit landtipe data en van NoordwesKooperasie.

PROFIELBESKRYWING			
Profiel no:	**1**		
Plaasnaam:	Doornhoek 1		
Beskryfdeur:	MJ du Plessis		
Grondvorm:	Hutton		
Familie:	Ventersdorp		
	HORISON 1	HORISON 2	HORISON 3
Meesterhorisonte	A1	B21	B22
Diktes (cm)	0-30	30-120	120-150+
Grondmonster	-	-	-
Bogrondhorison	Orties (niegebleik)	-	
Ondergrondhorisonte		RooiApedaal	HardePlintiet
Kleur (klamtoestand)	Rooibruin	Rooibruin	-
Munsellkleurwaarde	5YR4/4	5YR4/6	-
Tekens van natheid	Nieteenwoordig	Nieteenwoordig	Nieteenwoordig
Tekens van kutane	Nieteenwoordig	Nieteenwoordig	Nieteenwoordig
Struktuur	Apedaal	Apedaal	-
grootte	Massief	Massief	-
ontwikkeling	-	-	-
	-	-	-
Tekstuur (%klei)	11 - 15%	16 - 20%	-
sandgraad	Fyn	Fyn	-
Vlekke: hoeveelheid	Geen	Geen	-
grootte	-	-	-
kontras	-	-	-
kleur	-	-	-
Klip: hoeveelheid	Geen	Geen	Geen
grootte	-	-	-
tipe	-	-	-
Moedermateriaal	Graniet		
Konkresies	Geen	Geen	Volop (>50%)
Konsistensie	Effens hard	Effens hard	-
Kalkhoudendheid	Geen	Geen	Geen
Oorgange	Duidelik (25 - 100mm)	Duidelik (25 - 100mm)	-
	Plat	Plat	-
Opmerkings	Oorlêland		

PROFIELBESKRYWING			
Profiel no:	**2**		
Plaasnaam:	Doornhoek		
Beskryfdeur:	MJ du Plessis		
Grondvorm:	Hutton		
Familie:	Ventersdorp		
	HORISON 1	HORISON 2	HORISON 3
Meesterhorisonte	A1	B21	B22
Diktes (cm)	0-30	30-180	180- 210+
Grondmonster	-	-	-
Bogrondhorison	Orties (niegebleik)	-	
Ondergrondhorisonte		RooiApedaal	HardePlintiet
Kleur (klamtoestand)	Rooibruin	Rooibruin	-
Munsellkleurwaarde	5YR4/4	5YR4/6	-
Tekens van natheid	Nieteenwoordig	Nieteenwoordig	-
Tekens van kutane	Nieteenwoordig	Nieteenwoordig	-
Struktuur	Apedaal	Apedaal	-
grootte	Massief	Massief	-
ontwikkeling	-	-	-
	-	-	-
Tekstuur (%klei)	11 - 15%	16 - 20%	-
sandgraad	Fyn	Fyn	-
Vlekke: hoeveelheid	Geen	Geen	-
grootte	-	-	-
kontras	-	-	-
kleur	-	-	-
Klip: hoeveelheid	Geen	Geen	Geen
grootte	-	-	-
tipe	-	-	-
Moedermateriaal	-		
Konkresies	Geen	Geen	Volop (>50%)
Konsistensie	Effens hard	Effens hard	-
Kalkhoudendheid	Geen	Geen	-
Oorgange	Duidelik (25 - 100mm)	Duidelik (25 - 100mm)	-
	Plat	Plat	-
Opmerkings	-		

PROFIELBESKRYWING			
Profiel no:	**3**		
Plaasnaam:	Doornhoek		
Beskryfdeur:	MJ du Plessis		
Grondvorm:	Hutton		
Familie:	Ventersdorp		
	HORISON 1	HORISON 2	HORISON 3
Meesterhorisonte	A1	B21	B22
Diktes (cm)	0-30	30-120	120-170
Grondmonster	-	-	-
Bogrondhorison	Orties (niegebleik)	-	
Ondergrondhorisonte		RooiApedaal	HardePlintiet
Kleur (klamtoestand)	Rooibruin	Rooibruin	-
Munsellkleurwaarde	5YR4/4	5YR4/6	-
Tekens van natheid	Nieteenwoordig	Nieteenwoordig	Nieteenwoordig
Tekens van kutane	Nieteenwoordig	Nieteenwoordig	-
Struktuur	Apedaal	Apedaal	-
grootte	Massief	Massief	-
ontwikkeling	-	-	-
	-	-	-
Tekstuur (%klei)	11 - 15%	16 - 20%	-
sandgraad	Fyn	Fyn	-
Vlekke: hoeveelheid	Geen	Geen	Geen
grootte	-	-	-
kontras	-	-	-
kleur	-	-	-
Klip: hoeveelheid	Geen	Geen	Geen
grootte	-	-	-
tipe	-	-	-
Moedermateriaal	-		
Konkresies	Geen	Geen	Volop (>50%)
Konsistensie	Effens hard	Effens hard	-
Kalkhoudendheid	Geen	Geen	Geen
Oorgange	Duidelik (25 - 100mm)	Duidelik (25 - 100mm)	Duidelik (25 - 100mm)
	Plat	Plat	Plat
Opmerkings	-		

PROFIELBESKRYWING			
Profiel no:	**4**		
Plaasnaam:	Doornhoek		
Beskryfdeur:	MJ du Plessis		
Grondvorm:	Hutton		
Familie:	Ventersdorp		
	HORISON 1	HORISON 2	HORISON 3
Meesterhorisonte	A1	B21	B22
Diktes (cm)	0-30	30-210	210+
Grondmonster	-	-	-
Bogrondhorison	Orties (niegebleik)	-	
Ondergrondhorisonte		RooiApedaal	HardePlintiet
Kleur (klamtoestand)	Rooibruin	Rooibruin	-
Munsellkleurwaarde	5YR4/4	5YR4/6	-
Tekens van natheid	Nieteenwoordig	Nieteenwoordig	-
Tekens van kutane	Nieteenwoordig	Nieteenwoordig	-
Struktuur	Apedaal	Apedaal	-
grootte	Massief	Massief	-
ontwikkeling	-	-	-
	-	-	-
Tekstuur (%klei)	11 - 15%	16 - 20%	-
sandgraad	Fyn	Fyn	-
Vlekke: hoeveelheid	Geen	Geen	-
grootte	-	-	-
kontras	-	-	-
kleur	-	-	-
Klip: hoeveelheid	Geen	Geen	Geen
grootte	-	-	-
tipe	-	-	-
Moedermateriaal	-		
Konkresies	Geen	Geen	Volop (>50%)
Konsistensie	Effens hard	Effens hard	-
Kalkhoudendheid	Geen	Geen	-
Oorgange	Duidelik (25 - 100mm)	Duidelik (25 - 100mm)	-
	Plat	Plat	-
Opmerkings	-		

Land type data profile descriptions

SOIL PROFILE DESCRIPTION

NATIONAL SOIL PROFILE NO : 1130

Map/photo : 2426BD Smaldeel

Latitude + Longitude: 24° 17' 12" / 26° 59' 12"

Land Type No :

Climate Zone : 00000H

Altitude : 878 m

Terrain Unit: Footslope

Slope: 2 %

Slope Shape : Straight

Aspect : North

Microrelief : None

Parent Material Solum :

Underlying Material :

Soil form and series : Hutton shorrocks

Surface rockiness : None

Surface stoniness : None

Occurence of flooding : None

Wind erosion : None

Water Erosion : None

Vegetation / Land use : Shrubveld, open

Water table : None

Described by : D.G. Paterson

Date Described : 8805

Weathering of underlying material:

Horizon	Depth (mm)	Description	Diagnostic horizon
A1	0 - 200	Dry state; dry colour: dark reddish brown 5YR3/4; texture: coarse sandy loam; structure: massive; consistence: slightly hard; many fine pores; common roots; gradual smooth transition.	Orthic
B2	200 - 1000	Dry state; dry colour: red 2.5YR4/6; texture: coarse sandy loam; structure: massive; consistence: slightly hard; many fine pores; few rounded gravel 2-6mm; few fine <2-6mm ; few roots; abrupt wavy transition.	Red apedal
B3	1000 - 1000 +	Dry state; dry colour: dark red 2.5YR3/6; texture: coarse sandy loam; many coarse prominent black iron oxide mottles; structure: massive; consistence: slightly hard; many fine pores; discontinuous strong massive cementation of iron oxides; common rounded gravel 2-6mm; common mixed-shape ; common fine <2-6mm ; common coarse >25mm sesquioxide concretions.	Hard plinthic

SOIL PROFILE DESCRIPTION

NATIONAL SOIL PROFILE NO : 1787

Map/photo : 2628 East-rand

Latitude + Longitude: 26° 9' 0" / 28° 43' 50"

Land Type No : Ba2

Climate Zone : 24S

Altitude : 1570 m

Terrain Unit: Crest

Slope: 1 %

Slope Shape : Convex

Aspect : West

Microrelief : None

Parent Material Solum :

Underlying Material :

Soil form and series : Hutton hutton

Surface rockiness : None

Surface stoniness : None

Occurence of flooding : None

Wind erosion : None

Water Erosion : None

Vegetation / Land use :

Water table : None

Described by : J.L. Schoeman

Date Described : 7309

Weathering of underlying material:

Horizon	Depth (mm)	Description	Diagnostic horizon
A1	0 - 450	Dry state; dry colour: dark reddish brown 5YR3/4; texture: fine sandy clay loam; structure: massive; consistence: slightly hard; few ; few gravel 2-6mm; few fine <2-6mm sesquioxide concretions; few fine <2-6mm ; gradual smooth transition.	Orthic
B21	450 - 900	Dry state; dry colour: dark reddish brown 5YR3/4; texture: fine sandy clay loam; structure: single grain; consistence: slightly hard; few ; few gravel 2-6mm; few fine <2-6mm sesquioxide concretions; few fine <2-6mm ; clear smooth transition.	Red apedal
B22	900 - 1350	Dry state; dry colour: dark reddish brown 5YR3/4; texture: fine sandy clay loam; structure: single grain; consistence: slightly hard; common ; few gravel 2-6mm; common fine <2-6mm sesquioxide concretions; few fine <2-6mm ; clear wavy transition.	Red apedal
B23	1350 - 1500 +		Hard plinthic

SOIL PROFILE DESCRIPTION

NATIONAL SOIL PROFILE NO : 1808

Map/photo : 2628 East-rand

Latitude + Longitude: 26° 44' 0" / 28° 23' 30"

Land Type No : Ba2

Climate Zone : 24S

Altitude : 1540 m

Terrain Unit: Midslope

Slope: 1 %

Slope Shape : Convex

Aspect : East

Microrelief : None

Parent Material Solum :

Underlying Material :

Soil form and series : Hutton doveton

Surface rockiness : None

Surface stoniness : None

Occurence of flooding : None

Wind erosion : None

Water Erosion : None

Vegetation / Land use :

Water table : None

Described by : J.L. Schoeman

Date Described : 7611

Weathering of underlying material:

Horizon	Depth (mm)	Description	Diagnostic horizon
A1	0 - 260	Moist state; moist colour: dusky red 2.5YR3/2; texture: medium sandy clay loam; structure: massive; consistence: firm; few ; few fine <2-6mm biocasts; gradual smooth transition.	Orthic
B21	260 - 540	Moist state; moist colour: dusky red 2.5YR3/2; texture: medium sandy clay; structure: weak medium subangular blocky; consistence: firm; common ; common fine <2-6mm biocasts; gradual smooth transition.	Red apedal
B22	540 - 800	Moist state; moist colour: dark reddish brown 2.5YR3/4; texture: medium sandy clay; structure: single grain; consistence: firm; abrupt smooth transition.	Red apedal
B23	540 - 800 +		Hard plinthic

SOIL PROFILE DESCRIPTION

NATIONAL SOIL PROFILE NO : 6287

Map/photo : 2524 Mafikeng

Latitude + Longitude: 25° 40' 12" / 25° 49' 48"

Land Type No : Ah13

Climate Zone : 9S

Altitude : 1410 m

Terrain Unit:

Slope:

Slope Shape :

Aspect :

Microrelief : None

Parent Material Solum :

Underlying Material : Lithology unknown or generalized

Soil form and series : Hutton mangano

Surface rockiness : None

Surface stoniness : None

Occurence of flooding : None

Wind erosion : Moderate wind

Water Erosion : None

Vegetation / Land use : Agronomic cash crops

Water table : None

Described by : R.W. Bruce

Date Described : 7803

Weathering of underlying material:

Horizon	Depth (mm)	Description	Diagnostic horizon
A1	0 - 250	Dry state; dry colour: dark reddish brown 2.5YR3/4; texture: fine sand; structure: massive; consistence: slightly hard; gradual smooth transition.	Orthic
B2	250 - 700	Moist state; moist colour: red 2.5YR4/6; texture: loamy fine sand; structure: single grain; consistence: slightly firm; few ; few fine <2-6mm sesquioxide concretions; abrupt wavy transition.	Red apedal
C	700 - 700 +	texture: loamy coarse sand.	Hard plinthic

SOIL PROFILE DESCRIPTION

NATIONAL SOIL PROFILE NO : 10819

Map/photo : 2429DA Ga-Masemola

Latitude + Longitude: 24° 30' 20" / 29° 34' 30"

Land Type No : Ae351

Climate Zone : 917S

Altitude : 775 m

Terrain Unit: Upper Footslope

Slope: 2 %

Slope Shape : Straight

Aspect : North-west

Microrelief : None

Parent Material Solum : Origin single, solid rock

Underlying Material : Acid intrusive rocks

Geological Group / Formation : Nebo Granite, Bushveld Complex.

Soil form and series : Hutton shorrocks

Surface rockiness : None

Surface stoniness : None

Occurence of flooding : None

Wind erosion : None

Water Erosion : None

Vegetation / Land use : Shrubveld, closed

Water table : None

Described by :

Date Described : 9407

Weathering of underlying material: Moderate physical, strong chemical

Alteration of underlying material : Ferruginised

Horizon	Depth (mm)	Description	Diagnostic horizon
A1	801 - 350	Dry state; horizon undisturbed; dry colour: red 2.5YR4/6; texture: coarse sandy loam; structure: apedal massive; consistence: slightly hard; few fine normal pores; common roots; gradual smooth transition.	Orthic
B1	350 - 800	Dry state; horizon undisturbed; dry colour: dark red 2.5YR3/6; texture: coarse sandy loam; structure: apedal massive; consistence: hard; few fine normal pores; very few rounded gravel 2-6mm; few roots; abrupt wavy transition.	Red apedal
B2	800 - 800 +	Ferricrete: Dry state; horizon undisturbed; dry colour: dark red 10R3/6; many medium bluish black oxidized iron oxide mottles; few coarse reddish brown unknown mottles; structure: apedal massive; consistence: very hard; continuous strong nodular pan cementation of iron & manganese oxides; common mixed-shape gravel 2-6mm; many fine <2-6mm sesquioxide concretions.	Hard plinthic

SOIL PROFILE DESCRIPTION

NATIONAL SOIL PROFILE NO : 10845

Map/photo : 2426 Thabazimbi

Latitude + Longitude: 24° 43' 25" / 26° 8' 45"

Land Type No : Bc39a

Climate Zone : 16S

Altitude : 1055 m

Terrain Unit: Midslope

Slope: 3 %

Slope Shape : Straight

Aspect : South

Microrelief : None

Parent Material Solum : Origin single, solid rock

Underlying Material : Lithology unknown or generalized

Soil form and family Hutton ventersdorp

Surface rockiness : None

Surface stoniness : None

Occurence of flooding : None

Wind erosion : None

Water Erosion : None

Vegetation / Land use : Bushland

Water table : None

Described by : P. Steenekamp

Date Described : 9407

Weathering of underlying material:

Horizon	Depth (mm)	Description	Diagnostic horizon
A1	0 - 350	Dry state; horizon undisturbed; dry colour: yellowish red 5YR4/6; moist colour: reddish brown 5YR4/4; texture: coarse sandy loam; structure: apedal massive; consistence: slightly hard, friable; few fine normal pores; water absorption: 1 second(s); common roots; clear smooth transition.	Orthic
B1	350 - 1100	Dry state; horizon undisturbed; dry colour: yellowish red 5YR5/8; moist colour: yellowish red 5YR4/6; texture: coarse sandy clay loam; structure: apedal massive; consistence: slightly hard, friable; few fine normal pores; very few rounded gravel 2-6mm; water absorption: 1 second(s); few roots; clear wavy transition.	Red apedal
B2	1100 - 1200		Hard plinthic

SOIL PROFILE DESCRIPTION

NATIONAL SOIL PROFILE NO : 14920

Map/photo : 2528DA Cullinan (3)

Latitude + Longitude: 25° 30' 5" / 28° 34' 20"

Land Type No : Bb9

Climate Zone : 580S

Altitude : 1230 m

Terrain Unit: Midslope

Slope: 3 %

Slope Shape : Straight

Aspect : North-west

Microrelief :

Parent Material Solum : Origin single, solid rock

Underlying Material : Acid intrusive rocks

Geological Group / Formation : Grey to pink coarse grained granite of the Nebo Granite, Bushveld Complex

Soil form and family Hutton stella

Surface rockiness :

Surface stoniness : None

Occurence of flooding : None

Wind erosion : None

Water Erosion : None

Vegetation / Land use : Grassveld, closed

Water table : None

Described by : D.G. Paterson

Date Described : 12/2002

Weathering of underlying material:

Alteration of underlying material : Ferruginised

Horizon	Depth (mm)	Description	Diagnostic horizon
A1	0 - 100	Moist state; horizon disturbed; moist colour: brown to dark brown 7.5YR4/4; texture: loamy medium sand; structure: apedal massive; consistence: friable; common medium & coarse normal pores; water absorption: 1 second(s); common roots; clear smooth transition.	Orthic
B1	100 - 240	Moist state; horizon undisturbed; moist colour: yellowish red 5YR4/6; texture: loamy medium sand; few fine faint reddish brown unknown mottles; structure: apedal massive; consistence: friable; common medium & coarse normal pores; water absorption: 1 second(s); common roots; gradual smooth transition.	Red apedal
B2	240 - 780	Moist state; horizon undisturbed; moist colour: red 2.5YR4/8; texture: loamy medium sand; few fine faint reddish brown unknown mottles; structure: apedal massive; consistence: friable; few medium & coarse normal pores; water absorption: 2 second(s); few roots; abrupt wavy transition.	Red apedal
B3	780 - 780 +	Ferricrete: horizon undisturbed; continuous strong nodular pan cementation of iron & manganese oxides.	Hard plinthic