Major Land Resource Area 060A
Pierre Shale Plains

Accessed: 05/11/2025

Ecological site keys

MLRA 60A

I. RUN-OFF LANDSCAPE POSITIONS (Upland, normally convex short slopes > 6 percent, Shoulder)

A. Is the site on a steep slope, escarpment, river break or slump area (15-60% slope), with exposed bedrock at or near the surface, and soils generally calcareous and of various depths? Deciduous trees and shrub are almost always present on this site.

1 Yes. Thin Breaks (A landscape feature not necessarily correlated to individual soil components)

2 No. Dig hole to a depth of 20 inches minimum.Is there root restrictive layer within 10 inches of the soil surface?

i. Yes. ... R060AY016SD – Very Shallow

ii. No. Is there a root restricting layer within 10-20 inches of the surface?

a. Yes. Is the soil derived from shale with numerous (up to 50%) weathered shale chips throughout the soil profile and the soil is acid (non-calcareous)?

1) Yes. ... R060AY043SD – Shallow Porous Clay

2) No. Is the soil derived from shale with weathered shale chips below 4” in the soil profile and the soil iscalcareous? Clayey surface texture (2-3” ribbon)?

a) Yes. ... R060AY017SD – Shallow Clay

b) No. Is the soil derived from shale? Very clayey surface texture (soil > 55% clay)(>3.0” ribbon)

(1) Yes. ... R060AY025SD – Shallow Dense Clay

(2) No. Is the soil surface 10 to 20 inches with a Clay loam, Silty clay loam, Sandy clay loam or Silty texture (1-1.5” ribbon)?

(a) Yes. ... R060AY024SD – Shallow Loamy

(b) No. A Sandy loam or Loamy sand texture (0.25-0.5” ribbon)?

(1) Yes. ... R060AY044SD – Shallow Sandy

(2) No. See “Normal Landscape Positions”

b. No. Is the soil > 20 inches in depth with a thin surface layer (< 3”) and effervesce at or near the surface (within 6”)?

1) Yes. ... R060AY012SD – Thin Upland

2) No. See “Normal Landscape Positions”

II. NORMAL LANDSCAPE POSITIONS in Both Precipitation Zones (Upland, slopes normally linear, 1-6 percent except sandy/sands sites can have complex slopes, Back slope, Summit, Foot slope)

A. Dig hole to 20 inches. Are there visible salts within 16 inches of the surface?

1 Yes. Is there a claypan within 16 inches of the surface?

i. Yes. See “Other Landscape Positions”

ii. No. ... R060AY026SD – Saline Upland

2 No. Is the soil clayey and formed in acid or non-calcareous shale?

i. Yes. Does the soil contain many fragments of shale (>50%) and the plant the community resemble a sandy site?

a. Yes. ... R060AY030SD – Porous Clay

b. No. Refer to II.A.2.ii.a.1)

ii. No. What is the surface and subsoil texture?

a. Clay, Silty Clay (40 to 55% clay)orLoamy Surface (1.75 –3.0” ribbon) with Clayey Subsoil?

1) Yes. Determine Precipitation Zone.

a) 13-16". ... R060AY011SD – Clayey 13-16" P.Z.

b) 16-18". ... R060AY040SD – Clayey 16-18" P.Z.

2) No. Clay or Silty Clay (> 55% clay). (> 3.0” ribbon)? Bare ground will be common.

a) Yes. ... R060AY018SD – Dense Clay

b) No. Loam, Silt loam, Silty, Clay loam, Clay Loam, Sandy clay loam, Very fine sandy loam (0.5–1.75” ribbon)?

(1) Yes. Is the site an old stream terrace?

(a) Yes. ... R060AY022SD – Loamy Terrace

(b) No. Determine Precipitation Zone.

(1) 13-16". ... R060AY010SD – Loamy 13-16" P.Z.

(2) 16-18". ... R060AY041SD – Loamy 16-18" P.Z.

(2) No. Sandy loam, Fine sandy loam, Loamy very fine sand (0.25-0.5” ribbon)?

(a) Yes. Is the site a low stream terrace?

(1) Yes. ... R060AY042SD – Lowland

(2) No. ... R060AY009SD – Sandy

(b) No. Sand, Loamy sand, Loamy fine sand (no ribbon)?

(1) Yes. ... R060AY008SD – Sands

III. RUN-IN LANDSCAPE POSITIONS (Bottomlands, Drainageways, etc., not depressions,Toe slope)

A. Observe the soil to a depth of 60 inches. Is there evidence of a permanent water table within 1-2 feet of the surface and the site is dominated by hydrophytes?* * Permanent water table is a water table that persists longer than the wettest part of the growing season typically until the month of August.

1 Yes. ... R060AY002SD – Wet Land

2 No. Is there evidence of a permanent water table within 2 to 5 feet of the surface?* * Permanent water table is a water table that persists longer than the wettest part of the growing season typically until the month of August.

i. Yes. Does the soil have visible salt crystals within 6 inches?

a. Yes. ... R060AY036SD – Saline Subirrigated

b. No. ... R060AY003SD – Subirrigated

ii. Does water flow into and over/through the site?

a. Yes. Are there visible salts within 16 inches of the surface and permanently moistsoil at 4 to 5 feet?

1) Yes. ... R060AY007SD – Saline Lowland

2) No. Does the site occasionally flood and have a clayey or silty clay surface texture?

a) Yes. ... R060AY021SD – Clayey Overflow

b) No. ... R060AY020SD – Loamy Overflow

b. No. See “Other Landscape Positions”.

IV. OTHER LANDSCAPE POSITIONS (Basin, Depression, Normal, Run-off and/or Run-in, All Hillslope Positions except Shoulder)

A. Dig a hole to 20 inches. Does the soil have a claypan within 16 inches?

1 Yes. Is it in a closed depression?

i. Yes. ... R060AY019SD – Closed Depression

ii. No. Is the claypan within 4 inches of the surface?

a. Yes. ... R060AY015SD – Thin Claypan
b. No. ... R060AY013SD – Claypan

2 No. Is the area in a basin or closed depression with no outlet?

i. Yes. Does the site pond water briefly after snowmelt or heavy rain or during abnormally wet years?

a. Yes. ... R060AY019SD – Closed Depression

ii. No. Re-think your position and start again!