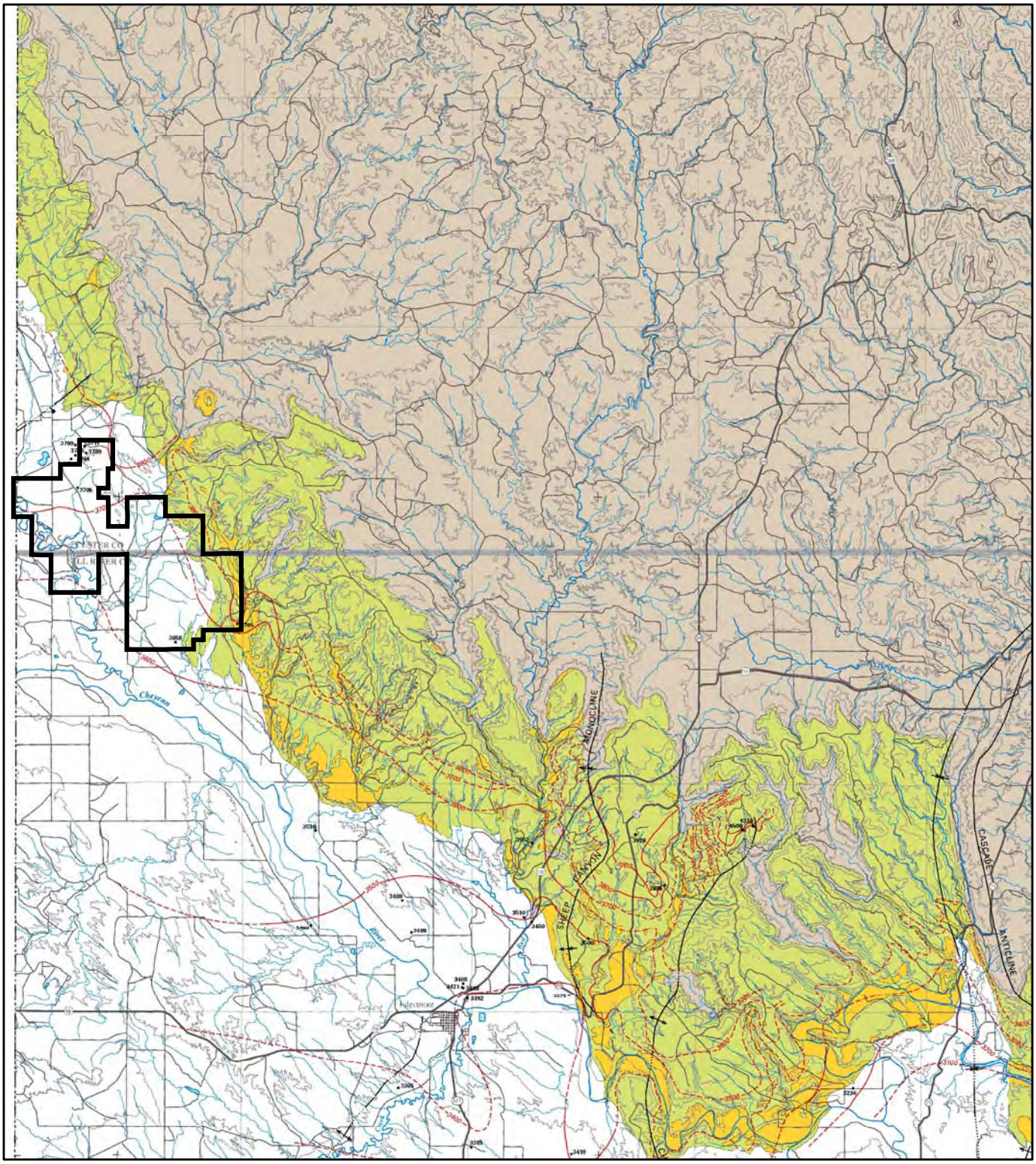
APPENDIX D

Potentiometric Surfaces in the Black Hills Area



EXPLANATION

- Outcrop of the Inyan Kara Group
- Inyan Kara Group present, but overlain directly by surficial deposits
- Inyan Kara Group absent
- **Fault**—Dashed where approximated, dotted where concealed. Bar and ball on downthrown side
- **Anticline**—Showing trace of axial plane and direction of plunge. Dashed where approximated, dotted where concealed
- **Syncline**—Showing trace of axial plane and direction of plunge. Dashed where approximated, dotted where concealed
- **Monocline**—Showing trace of axial plane. Dashed where approximated, dotted where concealed
- **Dome**—Symbol size approximately proportional to size of dome. Dome asymmetry indicated by arrow length
- **Potentiometric contour**—Shows altitude at which water would have stood in tightly cased, nonpumping wells. Contour interval 100 feet. Dashed where inferred. Datum is sea level[1]
- **Well**—Number is mean hydraulic head of the well, in feet above sea level. "R" indicates continuous recording wells
- **Spring originating from Inyan Kara aquifer**—Number is altitude of the spring, in feet above sea level

[1]Sea level: In this report, the term "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)

Feet
0 10,000 20,000
0 2,500 5,000 7,500
Meters

Legend

Project Boundary

Source: Strobel et al. (2000a)

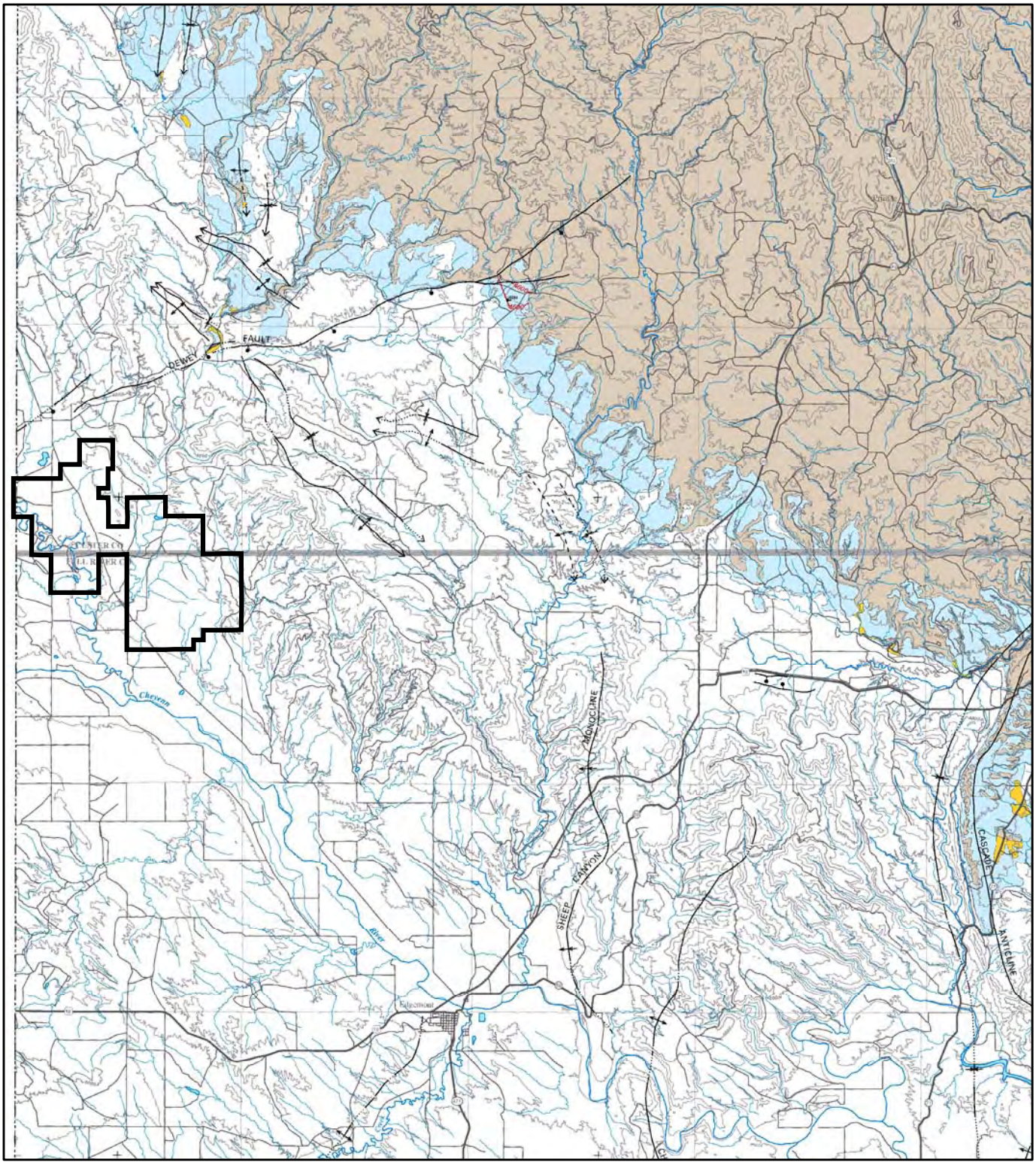
N

Potentiometric Surface of the Inyan Kara Aquifer

Dewey-Burdock Project

DRAWN BY	S. Hetrick
DATE	26-Jul-2012
FILENAME	AppD_InyanKara.mxd

POWERTECH (USA) INC.



EXPLANATION

- Outcrop of the Minnekahta Limestone
- Minnekahta Limestone present, but overlain directly by surficial deposits
- Minnekahta Limestone absent
- **Fault**—Dashed where approximated, dotted where concealed. Bar and ball on downthrown side
- **Anticline**—Showing trace of axial plane and direction of plunge. Dashed where approximated, dotted where concealed
- **Syncline**—Showing trace of axial plane and direction of plunge. Dashed where approximated, dotted where concealed
- **Monocline**—Showing trace of axial plane. Dashed where approximated, dotted where concealed
- **Dome**—Symbol size approximately proportional to size of dome. Dome asymmetry indicated by arrow length
- 3600 **Potentiometric contour**—Shows altitude at which water would have stood in tightly cased, nonpumping wells. Contour interval 100 feet. Dashed where inferred. Datum is sea level[1]
- **Well**—Number is mean hydraulic head of the well, in feet above sea level. "R" indicates continuous recording wells
- **Spring originating from Minnekahta aquifer**—Number is altitude of the spring, in feet above sea level

[1]Sea level. In this report, the term "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)

Feet
0 10,000 20,000
0 2,500 5,000 7,500
Meters

Legend

Project Boundary

Source: Strobel et al. (2000b)

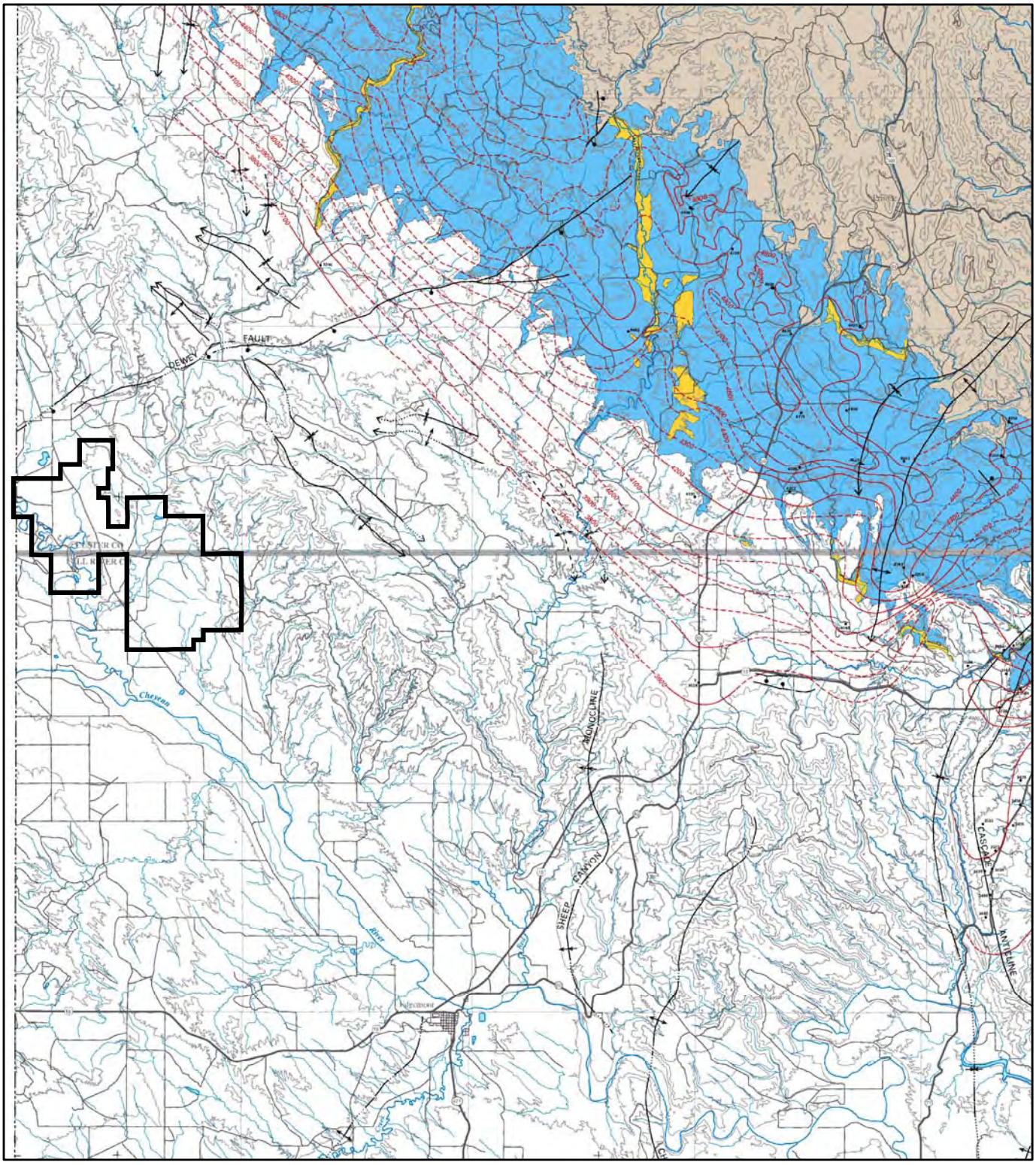
N

Potentiometric Surface of the Minnekahta Aquifer

Dewey-Burdock Project

DRAWN BY	S. Hetrick
DATE	26-Jul-2012
FILENAME	AppD_Minnekahta.mxd

POWERTECH (USA) INC.



EXPLANATION

- Outcrop of the Minnelusa Formation
- Minnelusa Formation present, but overlain directly by surficial deposits
- Minnelusa Formation absent
- **Fault**—Dashed where approximated, dotted where concealed. Bar and ball on downthrown side
- **Anticline**—Showing trace of axial plane and direction of plunge. Dashed where approximated, dotted where concealed
- **Syncline**—Showing trace of axial plane and direction of plunge. Dashed where approximated, dotted where concealed
- **Monocline**—Showing trace of axial plane. Dashed where approximated, dotted where concealed
- **Dome**—Symbol size approximately proportional to size of dome. Dome asymmetry indicated by arrow length
- 2500 **Potentiometric contour**—Shows altitude at which water would have stood in tightly cased, nonpumping wells. Contour interval 100 feet. Dashed where inferred. Datum is sea level[1]
- **Well**—Number is mean hydraulic head of the well, in feet above sea level. "R" indicates continuous recording wells
- **Spring originating from Minnelusa aquifer**—Number is altitude of the spring, in feet above sea level

[1]Sea level: In this report, the term "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)

Feet
0 10,000 20,000
0 2,500 5,000 7,500
Meters

Legend

Project Boundary

Source: Strobel et al. (2000c)

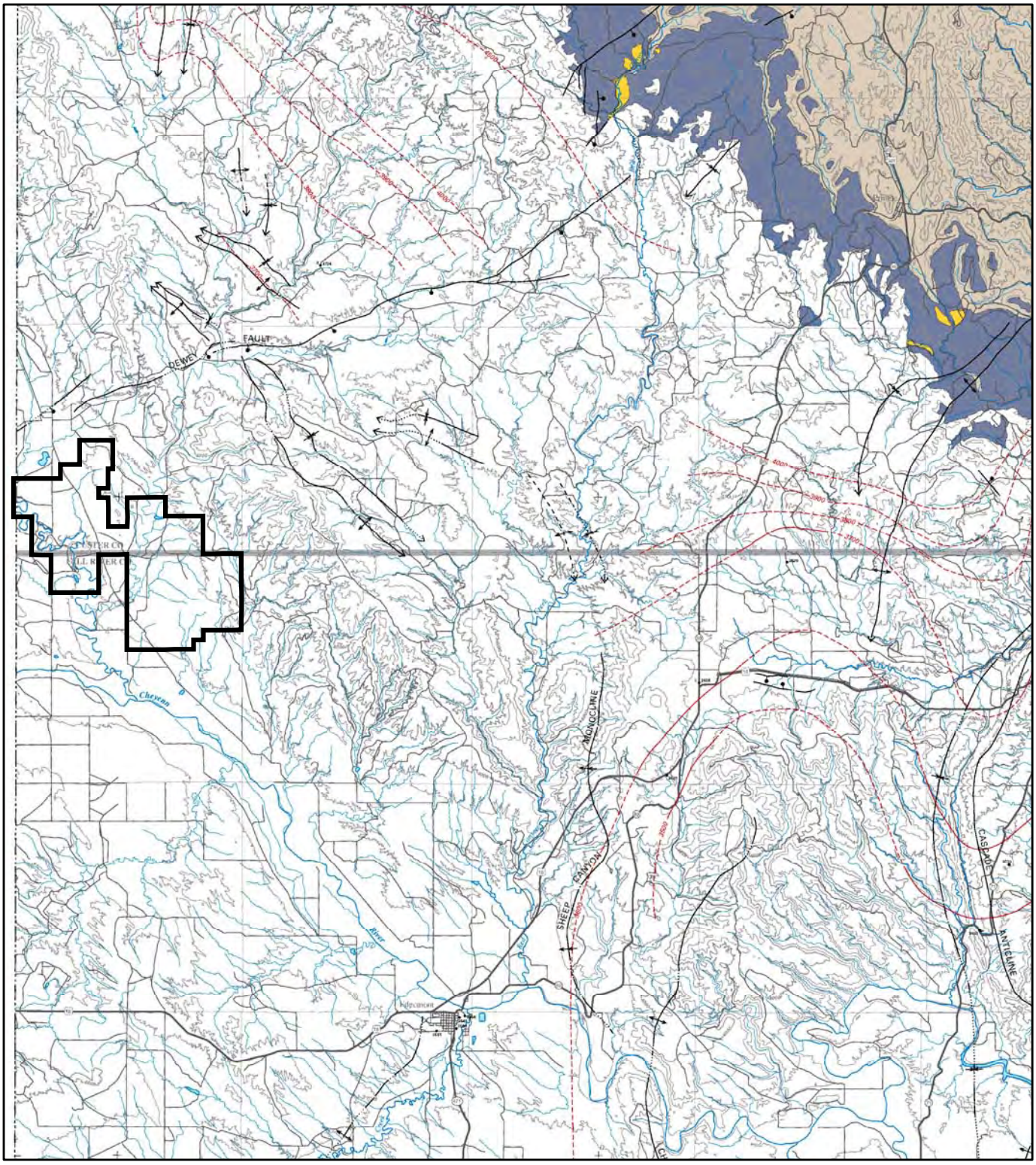
N

Potentiometric Surface of the Minnelusa Aquifer

Dewey-Burdock Project

DRAWN BY	S. Hetrick
DATE	26-Jul-2012
FILENAME	AppD_Minnelusa.mxd

POWERTECH (USA) INC.



EXPLANATION

- Outcrop of the Madison Limestone or Englewood Formation
- Madison Limestone or Englewood Formation present, but overlain directly by surficial deposits
- Madison Limestone or Englewood Formation absent
- **Fault**—Dashed where approximated, dotted where concealed. Bar and ball on downthrown side
- **Anticline**—Showing trace of axial plane and direction of plunge. Dashed where approximated, dotted where concealed
- **Syncline**—Showing trace of axial plane and direction of plunge. Dashed where approximated, dotted where concealed
- **Monocline**—Showing trace of axial plane. Dashed where approximated, dotted where concealed
- **Dome**—Symbol size approximately proportional to size of dome. Dome asymmetry indicated by arrow length
- **Potentiometric contour**—Shows altitude at which water would have stood in tightly cased, nonpumping wells. Contour interval 100 or 500 feet where appropriate. Dashed where inferred. Datum is sea level[1]
- **Well**—Number is mean hydraulic head of the well, in feet above sea level. "R" indicates continuous recording wells
- **Spring originating from Madison aquifer**—Number is altitude of the spring, in feet above sea level

[1]Sea level: In this report, the term "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)

Feet
0 10,000 20,000
0 2,500 5,000 7,500
Meters

Legend

Project Boundary

Source: Strobel et al. (2000d)

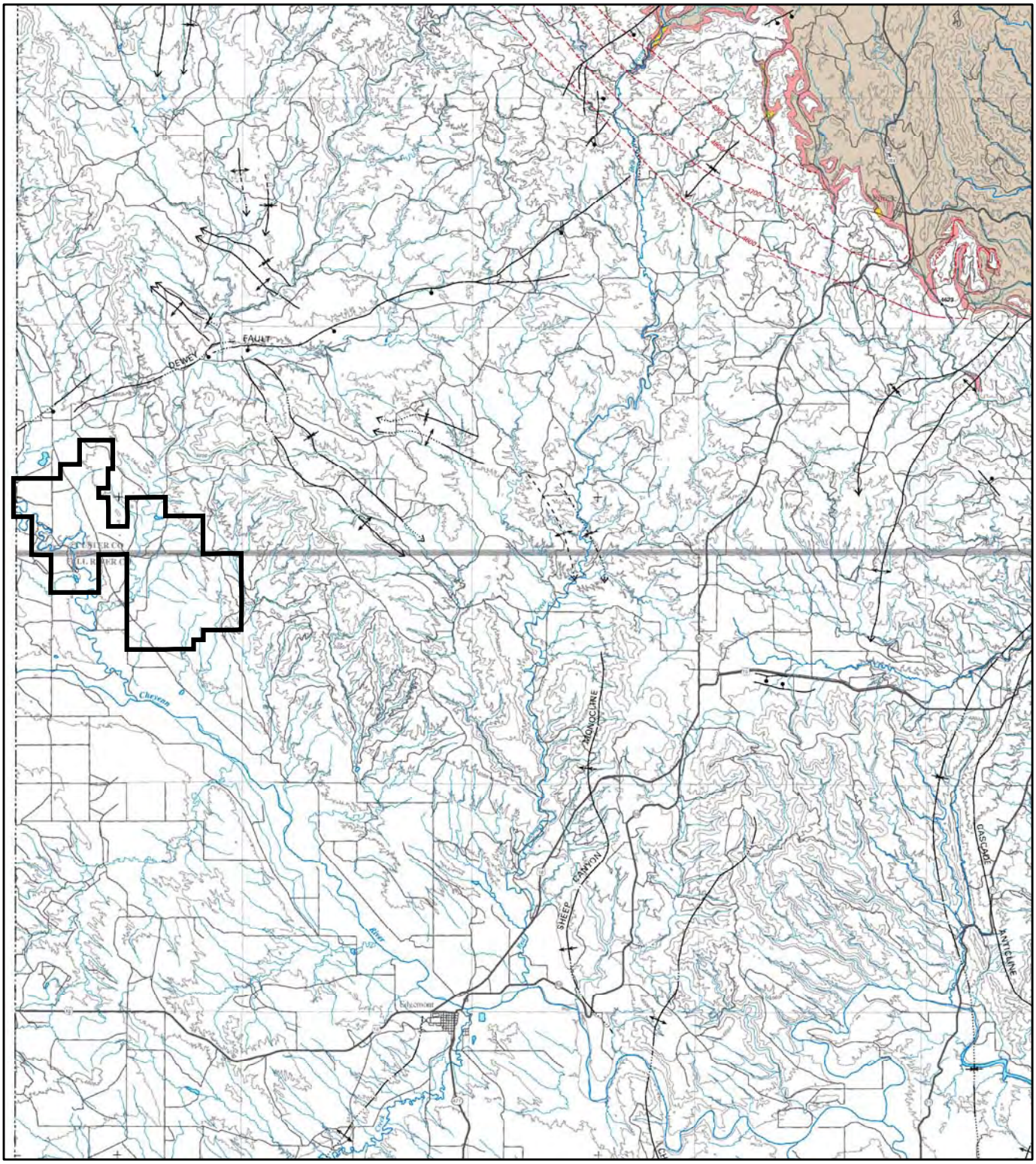
N

Potentiometric Surface of the Madison Aquifer

Dewey-Burdock Project

DRAWN BY	S. Hetrick
DATE	26-Jul-2012
FILENAME	AppD_Madison.mxd

POWERTECH (USA) INC.



EXPLANATION

- **Outcrop of the Deadwood Formation**
- **Deadwood Formation present, but overlain directly by surficial deposits**
- **Deadwood Formation absent**
- **Fault**—Dashed where approximated, dotted where concealed. Bar and ball on downthrown side
- **Anticline**—Showing trace of axial plane and direction of plunge. Dashed where approximated, dotted where concealed
- **Syncline**—Showing trace of axial plane and direction of plunge. Dashed where approximated, dotted where concealed
- **Monocline**—Showing trace of axial plane. Dashed where approximated, dotted where concealed
- **Dome**—Symbol size approximately proportional to size of dome. Dome asymmetry indicated by arrow length
- 5000 **Potentiometric contour**—Shows altitude at which water would have stood in tightly cased, nonpumping wells. Contour interval 100 feet. Dashed where inferred. Datum is sea level[1]
- 4629 **Well**—Number is mean hydraulic head of the well, in feet above sea level. "R" indicates continuous recording wells
- 6875 **Spring originating from Deadwood aquifer**—Number is altitude of the spring, in feet above sea level

[1]Sea level. In this report, the term "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)

Feet
0 10,000 20,000
0 2,500 5,000 7,500
Meters

Legend

Project Boundary

Source: Strobel et al. (2000e)

N

Potentiometric Surface of the Deadwood Aquifer

Dewey-Burdock Project

DRAWN BY	S. Hetrick
DATE	26-Jul-2012
FILENAME	AppD_Deadwood.mxd

POWERTECH (USA) INC.