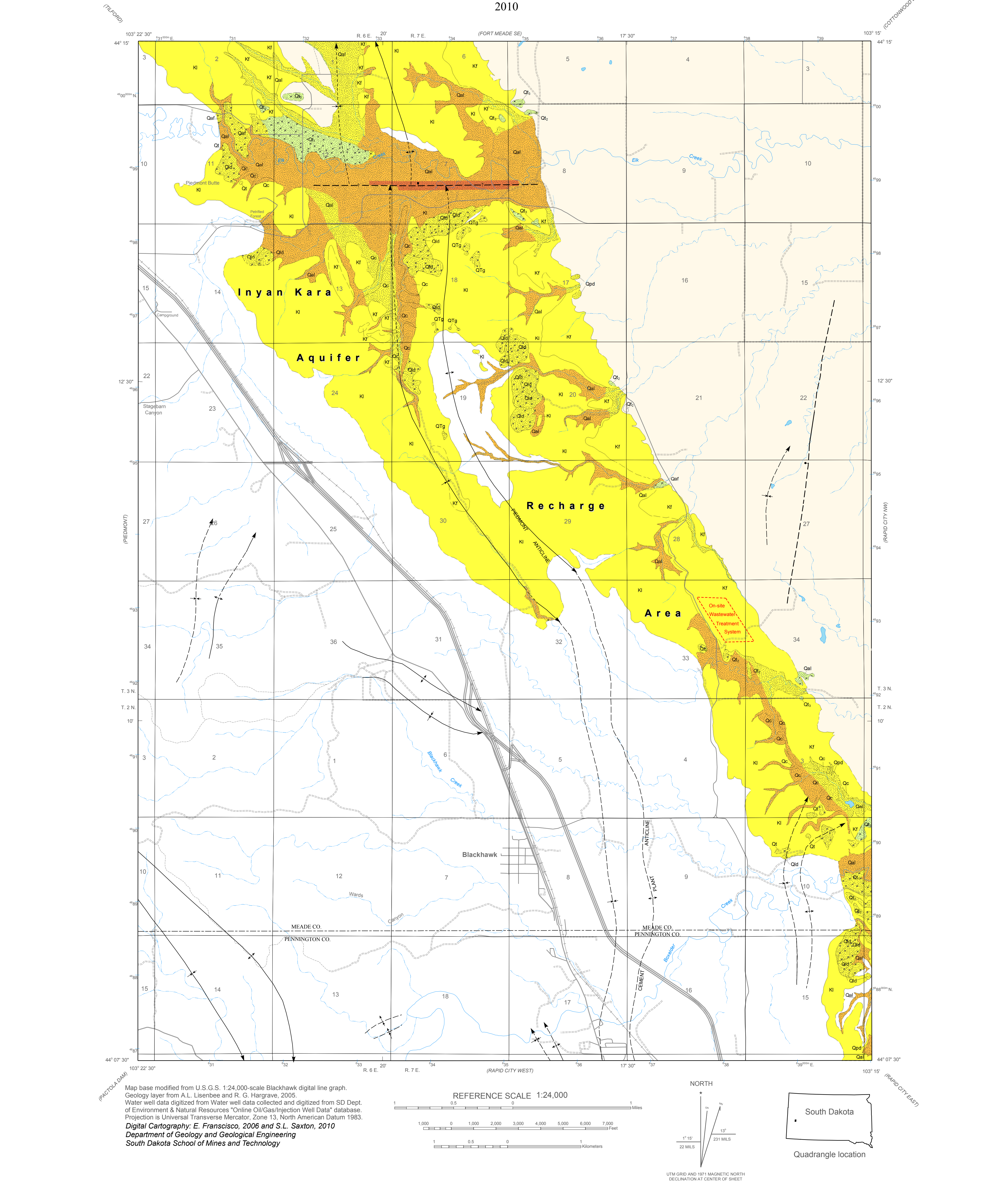


# Aquifer Susceptibility Map of the Inyan Kara Group, Blackhawk Quadrangle

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## Definition of Susceptibility

Aquifer susceptibility is the inherent ability of a formation to accept and transmit liquids (potentially including contaminants).

### Susceptibility Ranges for Hydrogeologic Units

Hydrogeologic Units	Low	Medium	High	Very High										
Lakota Recharge Area		15 - 24												
Fall River Recharge Area		9 - 17												
Saturated Alluvium over Lakota Aquifer Affected by Faults		20 - 34	26 - 42											
Saturated Alluvium over Fall River Aquifer Affected by Faults		14 - 27	20 - 36											
Gravels over Lakota Formation		7 - 19												
Gravels over Fall River Formation	1 - 12													
	0	5	10	15	20	25	30	35	40	45	50	55	60	65

Susceptibility Ratings Explanation:  
The susceptibility range is the sum of ratings for susceptibility parameters of the aquifer. The parameters used for the Minnelusa aquifer are rock type, overlying material, joints, minor karst, breccia and minor faults affecting the hydrogeologic units of the Minnelusa fm.  
The ratings for these parameters are: Rock Type, 5-8 for sandstone; Overlying Material, 5-10 for alluvium and negative 5-10 for gravel, sand and clay mixture; Joints, 5-7; Minor Karst, 5-8; Breccia, 5-7 and; Minor Faults, 4-6.  
The ratings suggested for the parameters are from Allen et al. (1987) and Davis et al., (1994.)

## EXPLANATION

- Contact  
Solid where location certain; dashed where approximately located
- Fault  
Solid where location certain; dashed where approximately located. Bar and ball on downthrown side
- Anticline  
Showing crestline and direction of plunge. Solid where location certain; dashed where approximately located
- Syncline  
Showing troughline and direction of plunge. Solid where location certain; dashed where approximately located
- Monocline - Anticlinal bend  
Axis located on steepest part of structure. Solid where location certain; dashed where approximately located
- Monocline - Synclinal bend  
Axis located on steepest part of structure. Solid where location certain; dashed where approximately located

### Susceptibility Units

- LOW SUSCEPTIBILITY - Gravels over Fall River Formation**  
Susceptibility ratings range between 1 to 12; unit is more susceptible when saturated
- MEDIUM SUSCEPTIBILITY - Alluvium over Fall River Formation**  
Susceptibility rating ranges between 14 to 27; range increases to 20 to 35 when fault is present. Unit is more susceptible if saturated
- MEDIUM SUSCEPTIBILITY - Gravels over Lakota Formation**  
Susceptibility ratings range between 7 to 19; unit is more susceptible when saturated
- HIGH SUSCEPTIBILITY - Saturated Alluvium over Inyan Kara Group**  
Saturation increases susceptibility rating from of 20 to 34 for Lakota Formation and 14 to 27 for Fall River Formation to 26 to 42 and 20 to 35 respectively; highest saturation when overlying a fault
- VERY HIGH SUSCEPTIBILITY - Highly Saturated Gravels over Lakota Formation**  
When highly saturated, gravels overlying the Lakota Formation become extremely susceptible for accepting and transmitting potential contaminants
- Inyan Kara Group - MEDIUM SUSCEPTIBILITY**  
Lakota Formation- Susceptibility rating ranges between 15 to 24  
Fall River Formation- susceptibility rating ranges between 9 to 17
- Inyan Kara Group Present in Subsurface**
- Inyan Kara Group Absent**