

**KS651.0280 Feedlot Assessment**

The feedlot assessment worksheet on Figure KS2-1 provides an assessment of surface water and ground water quality as it may be affected by the feedlot.

When filling out the worksheet, assess the appropriateness of the rating system (risk factors) for each of the items in Sections A, B, and C.

**Instructions and Definitions for the Feedlot Assessment Worksheet**

Complete the blanks (name, address, etc.) in the heading area of the worksheet.

**Section A – Surface Water Quality Assessment**

1. Using the definition of animal units, determine proposed/existing maximum capacity of the facility. Use the table to determine a risk factor.
2. Determine the slope of the pen area along the longest runoff flow path. The slope is the change in elevation divided by flow length (rise/run) in the same units of measure. It is common practice to express the slope in percent, so multiply the rise/run by 100 to get the percent slope. The use of topographic maps or hand level and pacing can help in making this determination. Use the table to determine a risk factor.
3. Determine the slope from the pen area to the nearest protected water body along the runoff flow path. Use the methods and sides described in Item 2 above. The change in elevation is measured from the top of the stream or channel bank to the bottom elevation of the pens. A protected water body is a stream shown on a United States Geological Survey (USGS) topographic map, any water body listed in the Kansas Water Quality Standards, and all wetlands. Use the table to determine a risk factor.
4. Determine the distance to the nearest protected water body. This is the same distance used in Item 3 as the flow length (run). Use the table to determine a risk factor.
5. Interview the operator to determine the length of time the facility will be used each year. Use the table to determine a risk factor.
6. Use the soil information that is available at the [Web Soil Survey](#) to determine the predominant soil type along the flow path used in Items 3 and 4. Use the table to determine a risk factor.
7. Observe the buffer area. The buffer area is that area below the pens where runoff from the pens remains dispersed, solids in the runoff can be collected, and the depth of flow does not exceed three inches. Use the table to determine a risk factor.
8. Compare the size of the buffer to the existing or proposed pen area. Use the table to determine a risk factor.
9. Extraneous drainage is that area above the confinement area, which will allow runoff to flow through the pens and will not or cannot be diverted around the confinement area. Compare the extraneous drainage area to the pen area. Use the table to determine a risk factor.
10. Use the reference material in [Appendix 10D](#) to determine annual rainfall for the county in which the facility is located. Use the table to determine a risk factor.
11. Use reference material in [Appendix 10D](#) to determine rainfall intensity. For the purpose

of this form, use the 25-year, 24-hour rainfall event. Use the table to determine a risk factor.

facility. Use the table to determine a risk factor.

### **Section B – Ground Water Quality Assessment**

1. Use the same answer as given in question A1.
2. Use the same answer as given in question A10.
3. Use the best available information to determine depth to ground water. Possible sources of information: measure a nearby well, use the [Kansas Geological Survey \(KGS\) well log database](#) or interview a well driller who is familiar with the area. Use the table to determine a risk factor.
4. Use the soil information that is available at the [Web Soil Survey](#) to determine the type of soil in the area. It should be the same soil type as in question A6. Use the table to determine a risk factor.
5. Measure the distance using maps or wheel for wells other than those wells used by the

### **Section C – Special Conditions**

1. Observe the existing/proposed pens and runoff flow path for springs, rock outcrops, and other features that, if contaminated by runoff, could cause an environmental problem. If a potential problem is observed, enter “yes.”
2. Consult the Kansas Department of Health and Environment (KDHE) publication titled [“Kansas Sensitive Groundwater Areas for Wastewater Lagoons.”](#)
3. Consult the KDHE Outstanding Natural Resource Waters and Special Aquatic Life Use Surface Waters map from the Water Quality Standards.

### **Section D – Evaluation**

Section D is self-explanatory.

**Figure KS2-1 Feedlot Assessment Worksheet**

Name \_\_\_\_\_ Date \_\_\_\_\_

Address \_\_\_\_\_

City/State/Zip \_\_\_\_\_

Location: \_\_\_\_\_ 1/4, Section \_\_\_\_\_, T- \_\_\_\_\_ -S, R- \_\_\_\_\_ -E/W, \_\_\_\_\_ County

Assessment by \_\_\_\_\_

**Section A Surface Water Quality Assessment**

	<u>Risk Factor</u>		
1. Capacity			
<50	1	Comments:	Risk = _____
50 - 100	3		
100 - 300	5		
300 - 500	7		
500 - 700	8		
700 - <1000	9		
2. Pen slope			
<1%	1	Comments:	Risk = _____
1 - 2%	3		
2 - 3%	5		
3 - 4%	7		
4 - 5%	9		
>5%	10		
3. Slope from pen to protected water body			
<1%	1	Comments:	Risk = _____
1 - 2%	3		
2 - 3%	5		
3 - 4%	7		
4 - 5%	9		
>5%	10		

**Figure KS2-1 Feedlot Assessment Worksheet (Page 2)**

	<u>Risk Factor</u>		
4. Distance from pens to protected water body			
>5280	1		Risk = _____
4000 - 5280	2	Comments:	
2640 - 4000	4		
1000 - 2640	5		
500 - 1000	7		
100 - 500	9		
<100	10		
5. Utilization			
<3 months/year	1		Risk = _____
3 - 4	4	Comments:	
4 - 6	6		
>7	9		
6. Soils between pens and protected water body			
Sand	1		Risk = _____
Silty Sand	3	Comments:	
Silt	5		
Silty Clay	7		
Clay	9		
7. Buffer (existing)			
Dense cover of grass	1		Risk = _____
Grass w/woody plants	4	Comments:	
Cultivated crop ground	6		
Bare earth	10		
8. Buffer size (existing)			
>2X pen area	1		Risk = _____
1X - 2X pen area	4	Comments:	
0.5X - 1X pen area	7		
<0.5X pen area	10		
9. Extraneous drainage			
>1X pen area	1		Risk = _____
1X - 3X pen area	4	Comments:	
3X - 5X pen area	7		
>5X pen area	9		

**Figure KS2-1 Feedlot Assessment Worksheet (Page 3)**

	<u>Risk Factor</u>		
10. Annual rainfall			
<20 inches per year	1		Risk = _____
20 - 25	3	Comments:	
25 - 30	5		
30 - 35	7		
35 - 40	9		
>40 inches	10		
11. Rainfall intensity (25-year, 24-hour storm)			
<4.5 inches	1		Risk = _____
4.5 - 5	3	Comments:	
5 - 5.5	5		
5.5 - 6	7		
6 - 6.5	9		
>6.5	10		
<b>Section B</b>			
<b>Ground Water Quality Assessment</b>			
1. Capacity (Animal Units)			Risk = _____
<50	1		
50 - 100	3	Comments:	
100 - 300	5		
300 - 500	7		
500 - 700	8		
700 - <1000	9		
2. Annual rainfall			
<20 inches per year	1		Risk = _____
20 - 25	3	Comments:	
25 - 30	5		
30 - 35	7		
35 - 40	9		
>40	10		
3. Depth to ground water			
>150 feet	1		Risk = _____
25 - 150	3	Comments:	
10 - 25	6		
5 - 10	8		
<5	10		

**Figure KS2-1 Feedlot Assessment Worksheet (Page 4)**

	<u>Risk Factor</u>		
4. Soils receiving runoff			
Clay	1		Risk = _____
Silty Clay	3	Comments:	
Silt	5		
Silty Sand	7		
Sand	9		
5. Distance to nearest well (water, gas, oil) potentially impacted (down gradient)			
>600 feet	1		Risk = _____
200 - 600	3	Comments:	
100 - 200	5		
50 - 100	7		
1 - 50	9		
0	10		

**Section C Special Conditions**

- |   |     |    |
|---|-----|----|
| 1. Springs, seeps, rock outcrops<br>in pens or direct runoff area   | Yes | No |
| 2. Located in a sensitive ground water area   | Yes | No |
| 3. Is the protected water body an Outstanding<br>Natural Resource Water or Special<br>Aquatic Life Use Surface Water? | Yes | No |

**Section D Evaluation**

1. Section A – Sum of risk factors >60 is a significant surface water quality concern.  
 $A1 + A2 + A3 + A4 + A5 + A6 + A7 + A8 + A9 + A10 + A11 = \text{Surface Water Factor}$   
 \_\_\_ + \_\_\_ + \_\_\_ + \_\_\_ + \_\_\_ + \_\_\_ + \_\_\_ + \_\_\_ + \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_\_\_
2. Section B – Sum of risk factors >25 is a significant ground water quality concern.  
 $B1 + B2 + B3 + B4 + B5 = \text{Ground Water Factor}$   
 \_\_\_ + \_\_\_ + \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_\_\_
3. Section C –
  - a. If C1 or C2 is yes and the Ground Water Factor is >20, then there is a ground water quality concern.
  - b. If C3 is yes and the Surface Water Factor is >50, then there is a surface water quality concern.

Buffers designed to reduce the risk in questions A7 and A8 must meet the requirements of the Standard for Waste Treatment Strip - Code 635.