What’s the Stink?

A Document-based Case Study in Managing Natural Resources

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INTRODUCTION

This activity is designed to measure your skills in critical thinking, making logical inferences, and verbal communication. In addition, your content knowledge about scientific inferences, watersheds, water contaminants, pollution, and modeling will be applied.

You will be preparing a verbal response to a hypothetical, but realistic situation. This activity contains a series of documents that includes a range of information sources you will use to recognize biases and logical flaws in arguments. While your personal values and experiences are important, you should base your explanations on the evidence provided in these documents.

SCENARIO

FINALLY!!! The weekend is here and you are planning to meet up with some friends at Pristine Creek for fishing and “tubing.” Although you have not been to Pristine Creek for years, you have heard that it is a beautiful waterway with clear water and lots of wildlife. The riverbanks are green and the air is fresh; a far cry from the Creek you remember growing up. You are SO excited!

But wait! On your way out of the office, your radio station manager catches you. He has caught wind of your weekend plans and has a question for you. “Oh no! He wants to come too!” you think in horror. But alas, that isn’t the case. Instead, he has learned of a town hall meeting hosted by the county board of supervisors regarding Pristine Creek. Apparently there is a hog confinement that is going to be built in the Creek’s watershed. Local residents are very concerned. They have spent tremendous time, money and energy in recent years cleaning up the once disgusting waterway that was so polluted no one, including animals, would even think of dipping a toe in its water.

Your manager’s plan is that you review the meeting minutes, which includes comments made by local residents, elected officials, the owner of the hog confinement, and other stakeholders, as well as, the documents they shared. You want to present a clear and balanced report regarding this hot topic. Your manager stresses the importance of making sure the information you include in your story is FACT-BASED...he reminds you of your obligation to not mislead the public.

Your impending deadline for this story does not dampen your excitement for your trip, however. You are extremely disappointed though when you wake up to the sound of rain splattering your bedroom window! You rush to your phone to open the weather app. The rain is heading out of the area. PHEW! Your trip is safe! You hear a car horn honking from your driveway. Your friends have arrived to pick you up. You head out the door, grabbing your sunscreen and water bottle as you go.

Riding comfortably in the backseat of your friend’s car, you notice how the countryside has changed. There are definitely more hog confinements scattered across the landscape than the last time you traveled to Pristine Creek.

Arriving at the Creek, you jump on your tube with a splash, heading downstream to relaxation. As you float along, you notice a number of "mini-waterfalls" from the morning rains flowing into the Creek. As you watch the runoff, you wonder how the proposed hog confinement might impact this waterway. UGH!!! You can’t believe how your next assignment has opened your eyes to what is going on around you! A journalist’s work is never done.

QUESTION-PRODUCT

The local radio station asks that you share the strengths and limitations of the hog confinement establishment using the facts that support your story.

Your answers to the questions below should include the appropriate and relevant evidence necessary to support your story. Explain the support for your claims, and justify those claims by explicitly referring to the specific pieces of evidence, data, and statements on which your claim is based...NOT your personal beliefs or experiences and knowledge.

1. Here in Iowa, animal confinements have become a part of our rural scenery and economy. What are the pros and cons of building hog confinements in our community? Based on the evidence provided, what effect do hog confinements have on water quality? Based on the evidence provided, what effect does water quality have on recreational use?
Don’t Let Them Turn Pristine Creek into Crap Creek!!!

Iowa’s Polluted Waterways

[Graph showing increase in polluted waterways from 1998 to 2012]
Aerial Views of Hog Confinements

- Shallow retaining lagoon: Where manure sits before being sprayed on surrounding fields.
- Hog barns (1 site of 9 with 8,832 hogs per site).
- Aeration basin: Where manure goes after the lagoon.
- More hog barns and lagoons.
- 20 million gallon manure "lagoon".
Pristine Area Residents Concerned About Proposed Hog Confinement Location

14 July 2015 12:00AM – April Raines, Journal Staff Writer

PRISTINE – “Who determines these things?” was the question posed by Jerry Long upon learning that a 2300-head hog confinement facility along 220th Street north of Pristine Creek will be built. Located in the Pristine Creek Watershed, the proposed hog facility is not being met with open arms.

“We have worked for years to clean the Creek and the surrounding area up so that it can now be used for recreation. Just this weekend my family went kayaking there. It was beautiful. The air smelled like summer. The wild flowers that were planted several years ago to help reduce contaminant runoff are in full bloom,” stated Samantha Smith.

She isn’t exaggerating. DNR records show that in 1999, Pristine Creek was deemed “unsuitable” for recreation by the county conservationist. The Creek itself was foul-smelling and the banks were made of dirt which made the waters muddy. Old tires and other discarded household appliances were the only things preventing all of the soil from washing away. It was a place no one wanted to spend any time.

Fast forward to 2011; following thousands of man-hours and a community-wide effort to clean up the Creek and surrounding area, Pristine Creek hosted a ribbon-cutting. The area was now a recreation destination, hosting family “stay-cations,” office picnics, and class reunions. Shelter houses, children’s play areas and barbecue pits had been built in green spaces that offered easy Creek entry points for canoes, inner tubes and kayaks.

The community is concerned. “That hog confinement is going to be built in Pristine Creek’s watershed. What if the manure pit lining fails? All of that untreated sewage is going to drain right into our beautiful creek!” states George Pappi.

“We have many safeguards in place so that won’t happen,” responds Sheila Bounty, spokesperson for the hog company who will oversee operations at the confinement. “The pit is completely lined with an impenetrable material preventing leakage and there is a set level that the sludge will not be allowed to surpass to prevent overflow from heavy rain downpours.”

A town hall meeting hosted by the County Board of Supervisors will be held tonight, 7pm, at The Community Center to address the concerns of citizens.
Some Neighbors Oppose New 4.600 Hog Confinement

COMMENTS

Sarah

So proud of my cousin Krista and her husband Luke. Way to go! And to all of the people who oppose this think about it this way, they are providing more food for your family.

Rob Sarah

Go live by your cousins farm.

Sarah Rob

If you have a problem with it MOVE!

MotherHouse Sarah

I live in Des Moines... I will stay here because of people like your family stinking up the surrounding area. Those people that live by your cousins farm were there before he was... so he should move! Are we letting kids comment on here too?

Jay09 MotherHouse

Well taken care of confinements don't stink unless the pits are being agitated. Learn your facts.

MotherHouse Jay09

Learn how to write.

Mr. Jones

This is a young couple looking to progress their family farm. When managed correctly (which the rules require now that the DNR goes through to get approved) the smells are extremely minimal. Also the risk of contamination to water and air like people stated in the article are minimal. Manure removal requires a plan approved by the state to keep runoff from happening like it did 30 years ago. Before these people go stating untruthful opinions they should do some research on the topics and maybe discuss it with the DNR to see what is needed to even get approval. It is not an easy process to go thru all to help our natural resources and be responsible neighbors. I grew up with over 24 hog barns within 2 miles of my house. Very very minimal smell and no contamination to the river by my house. Stop living in the past and take time to understand the topic and realize that this is a scientifically proven safe and effective way to provide the cheap food supply we as Americans have come to enjoy.

Tom Mr. Jones

Most of this statement is false. The DNR only enforces the "rules" if someone complains enough or there is a big fish kill. And for the smell being minimal is completely not true. We live almost 2000 feet from one and the smell is terrible almost every other day. To top it off we built our house first almost 10 years ago, now the confinement moved in across the road and we have to live with that smell forever now. And by the way the owner lives 20-30 miles away in the city.

Jay09 Tom

Then that's a problem with the owner of that facility. A well taken care of shouldn't smell but 2 times a year.
I. Purpose

A. Establish uniform procedures for conducting and reporting results of Clean Water Act compliance

B. Evaluation inspections at confinement animal feeding operations operating

II. Pre-Inspection Planning

A. File Review
   i. Review Manure Management Plan
   ii. Review earthen basin inspections
   iii. Review history of spills and corrective steps
   iv. Identify nearest water
   v. Note facility capacity, number of buildings, types of animals

B. Set Inspection Date
   i. State purpose and time needed for the inspection
   ii. Inquire about facility bio-security protocols

III. Inspection

A. Day of Inspection
   i. Collect materials/supplies needed
   ii. Facility Drive-by
   iii. Pre-inspection meeting

B. Facility Inspection
   i. Tour and collect data and samples
   ii. Observe inspection port for groundwater lowering tile
   iii. Review records and management plan
   iv. Exit interview

IV. Post-Inspection

A. Written Report

B. Transmit Letter to Facility
Your local radio station produces and distributes news. Often the radio journalist reporting must evaluate the media publications for validity. Think about what makes a source viable. Acknowledge any substantiated or validated facts that can be used to address any bias or unfounded claims in the source.

Aspects of the document that supports validity:

Aspects of the document that raise concerns about the validity:

Major points from the document that relate to the problem:
As a group, discuss what makes a source viable. Next, identify weights of your attributes of viability. Finally, score as a team using a scale from 1 to 5 using the following: 1 – very weak, 2 – weak, 3 – okay, 4 – strong, 5 – very strong. Remember to score each document against the score range, not against other documents.

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After completing your decision matrix, discuss and answer the following questions as a group.

What can be concluded about the documents after completing this decision matrix?

How will this decision matrix help your group create the news segment for the radio station?
What’s the Stink?  
Robyn Ploeger  
Hope Brown  
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**hbrown@fdschools.org**

### Intended Audience

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<th>Check all that apply...</th>
<th>X 9th grade</th>
<th>X general audience</th>
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<tr>
<td>X 11th grade</td>
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### Time Required

- **Be careful to describe in minutes – stay away from the words, “periods or blocks”.

1. **DNR Watershed 101 & Graphic Organizer**: 30-45mn...diagrams of watersheds may be projected on screen to facilitate group discussion on watersheds. The USDA Watershed Learning Animation found on YouTube may also be shown. It reviews much of the information found in the DNR Watershed 101 pamphlet. Graphic organizers may be shared with classmates via a gallery walk, use of a document camera, or other facilitation method.

2. **Present the DBCS Intro-Scenario-Question-Product**: 15mn

3. **Town Hall Meeting Minutes**: 30-45mn...this is completed as a large group (smaller groups may be used, but must be sure to check often to ensure understanding). The Minutes may be read in their entirety, then model how to “break them down” to obtain the relevant information. Model the method for students so they will understand how to evaluate documents A-E, making note of the information students will need to document on the analysis prompts following each document. At the end of instruction, you may assign the student working groups or allow students to self-select their working partners.

4. **The Documents**: 60mn...students will need to evaluate and complete the document analyses for each of the five documents.

5. **Decision Matrix**: 25mn

6. **Creating the Radio Report**: 60mn...students will complete their project as a group. They may create an audio recording OR a type-written script that when read aloud is at least 3mn, but no longer than 4mn in length.

### Introduction/Background

- **Where in the semester is this case best suited, and what type of background do the students have when they encounter the case?**

Since the focus of this case study is to practice identifying viable, relevant information, it may be used at any point in the curriculum where critical thinking is the goal. Writing and speaking skills will also be utilized. To provide students an idea of the type of radio report they should create, you may direct them to a National Public Radio broadcast found at [www.npr.org](http://www.npr.org).

Students will receive an overview of what a watershed is and its importance through the opening activity.

### Objectives of the Case

- **List exactly what the students should know and be able to do after they have finished the case that they didn’t know and couldn’t do before they went through the case.**

Students will think critically and logically to make the relationships between evidence and explanations. Students will practice the skills necessary to evaluate media publications for validity, while recognizing bias and logical flaws in arguments.

### Major Issues – Identify the major issues in the case that the students should analyze. Indicate which issues you think will (should) come up and what information you expect students to extract from each document.

Students will understand the importance of identifying a source, evaluating the source for validity and credibility, using multiple documents to verify information and validity.

From the documents, students are expected to ask the following...

**Document A**: Are the Iowa Citizens for Community Improvement a legitimate & knowledgeable organization? What information does the graph actually show? Is it helpful? Why were these pictures included in the flyer? Who handed it out (from Town Hall Meeting Minutes)?

**Document B**: Provides a visual layout of hog confinement for students...may not be important to the radio broadcast; source for this document in Town Hall Meeting Minutes

**Document C**: Newspaper article from The Valley’s Most Trusted News Source...or is it? How well does the newspaper article document the sources used? Are they valid? How do you know?

**Document D**: Are the comments valid? How do you know? Who are these people? Are they credible?

**Document E**: DNR confinement inspection outline provides legitimate information which can be used to help evaluate the claims found in the other documents.

### Classroom Management

- **Tells the reader just how the case should be used in a classroom situation. The explanation must be presented in detail. What to do first, second, and last? How long do certain activities take? Indicate any pre-class assignments and**

1. **DNR Watershed 101 & Graphic Organizer**: 30-45mn...diagrams of watersheds may be projected on screen to facilitate group discussion on watersheds. The USDA Watershed Learning Animation found on YouTube may also be shown. It reviews much of the information found in the DNR Watershed 101 pamphlet. Graphic organizers may be shared with classmates via a gallery walk, use of a document camera, or other facilitation method.

2. **Present the DBCS Intro-Scenario-Question-Product**: 15mn

   **Town Hall Meeting Minutes**: 30-45mn...this is completed as a large group (smaller groups may be used, but must be sure to check often to ensure understanding). The Minutes may be read in their entirety, then...
model how to “break them down” to obtain the relevant information. Model the method for students so they will understand how to evaluate documents A-E, making note of the information students will need to document on the analysis prompts following each document. The Master Matrix referenced in the Town Hall Meeting Minutes is included for review. At the end of instruction, you may assign the student working groups or allow students to self-select their working partners.

3. The Documents: 60mn...students will need to evaluate and complete the document analyses for each of the five documents.

4. Decision Matrix: 25mn

5. Creating the Radio Report: 60mn...students will complete their project as a group. They may create an audio recording OR a type-written script that when read aloud is at least 3mn, but no longer than 4mn in length.

6. Presenting the Reports: 4mn x # of student groups...Each group may present their radio segment during class. Depending on your school, you may want to have the students select an outstanding radio report and have it played over the school intercom during school announcements.

Throughout the DBCS, visit student groups as they work checking for understanding with the information provided within the documents, use of the decision matrix, and parameters of the radio report. Provide instruction as needed. Student groups should be able to work constructively and cooperatively. Provide assistance as needed to ensure student success.

References & Resources
Include a list of references to follow up particular lines of thought or included in your documents. May also include online resources & associated URLs.


Examples of radio news stories (select stories that are 3-4 minutes in length) [http://www.npr.org/programs/morning-edition/](http://www.npr.org/programs/morning-edition/)

USDA Watershed Learning Animation [https://www.youtube.com/watch?v=dUAAANVBYHM](https://www.youtube.com/watch?v=dUAAANVBYHM)


Resource: Town Hall Meeting Minutes
Story County Board of Supervisors Minutes 5/27/14

Resource: Master Matrix the Town Hall Minutes references this:

Document A: Images
Hog Confinement manure storage pit: [http://www.agronext.iastate.edu/immag/pubsfst.html](http://www.agronext.iastate.edu/immag/pubsfst.html)

Document B: Images
Aerial with comments: [https://www.flickr.com/photos/sraproject/3238913955/in/photostream/](https://www.flickr.com/photos/sraproject/3238913955/in/photostream/)

Document D
Comment Strand reference

Document E
DNR website to procedural document.


Assessment of product – Identify the product that students will produce as a result of this DBCS. Do you evaluate class discussions? Do you have students complete peer evaluations? What are students expected to complete? Do you have a rubric to evaluate the final product? Include as many tools for this element as possible.

Your local radio station produces and distributes news. Often the radio journalist reporting must evaluate the media publications for validity. What makes a source viable? Which of your sources are viable? What substantiated or validated facts can be used to address any bias or unfounded claims in your sources?

In answering the above questions, students will create a 3-4mn radio news report on a proposed hog confinement in the Pristine Creek Watershed. Students will be assessed on their ability to identify and use the viable information (free of bias and unfounded claims) in their news report.

Each student will complete an analysis for each document. Then, student pairs will pool their knowledge and analyses to complete the Decision Matrix. This may be used as a formative assessment.

Working with their partner, students will complete the radio news report using the information they determined to be viable.