

Impact of Amended Feedlot Pen Surface on Cattle Health and Welfare, Environmental and Economic Sustainability





Roller Compacted Concrete "RCC"



Clay Pen Floor





RCC Pen Floor





Animal Health and Welfare Assessment



Cattle Health & Welfare

- Lameness rates
- Cattle tag score
- Cattle behaviour
- Lameness score
- Pen mud score
- Cattle stress levels



RCC Engineering Assessment



RCC Properties

- Compressive strength
- Core length
- Toxicity
- Metals analysis
- Freeze-thaw





Environmental Impact Assessment



Environmental Impact

- Ammonia
- Greenhouse gases
- Runoff water
- Seepage
- Manure



Ammonia and Greenhouse Gas Emissions



08/09/2016

#1



08/09/2016

#2



08/09/2016

#3



08/09/2016

#4







Runoff Water Assessment





Seepage (Sub-surface Soil) Assessment





Manure Assessment



Manure Properties

- Nutrient content
- Heavy metal content
- Pen cleanout volume and mass
- Transportation



Economic Assessment



Economics (\$)

- Average daily gain
- Tag scores
- Manure management
- Pen floor construction
- Pen floor maintenance



Thank You!

