



MEMO

**DATE:** December 7, 2021

**TO:** Chamness Technology SDP File, DNR Legal Services Bureau

**FROM:** Anthony Kerker – Iowa DNR Field Office 6

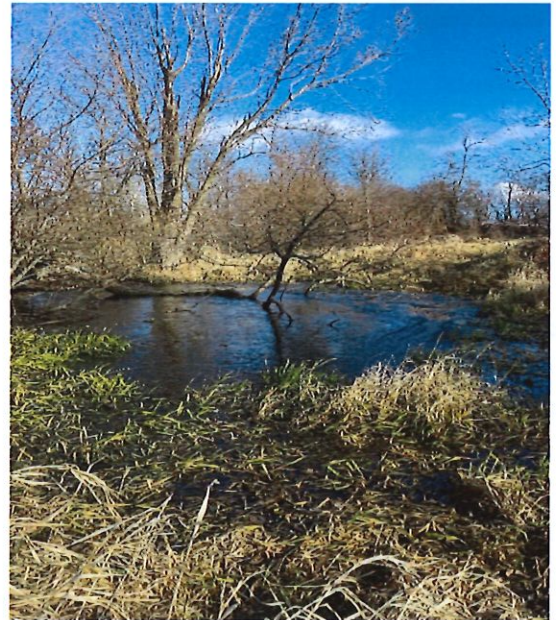
**RE:** Chamness Technology land application/Palestine creek discoloration complaint investigation  
FOCD Complaint No. 30274

On December 6, 2021, I arrived to Chamness at approximately 10:00 AM in correspondence to a complaint filed against Chamness Technology in Eddyville Iowa. The complainant reported Palestine Creek is a dark brown color and they believe it is from land application of leachate on the field directly south of Chamness. My first action in my investigation was to check a bridge crossing a few miles downstream of Chamness on 160<sup>th</sup> Ave. Upon arrival to Palestine Creek it appeared to me Palestine Creek in this location was slightly discolored. A water sample was collected and to be analyzed for BOD and Ammonia levels by the State Hygienic Laboratory.



(This picture was taken on the morning of December 6, 2021. The location is at the Palestine Creek bridge crossing a few miles East of Chamness.

I then proceeded to drive to the field South of Chamness where land application of Leachate is occurring. Upon looking around the field I noticed multiple standing tile lines have been knocked over and broken off from there placed location. I followed these tile lines to drainage ditches that flowed into Palestine creek. From my observations that day the tile line water entering the ditch was clear at that time. While looking for tile lines I noticed what appeared to be a marsh located in the field where land application was occurring. From what I observed that day the marsh had discoloration to it.



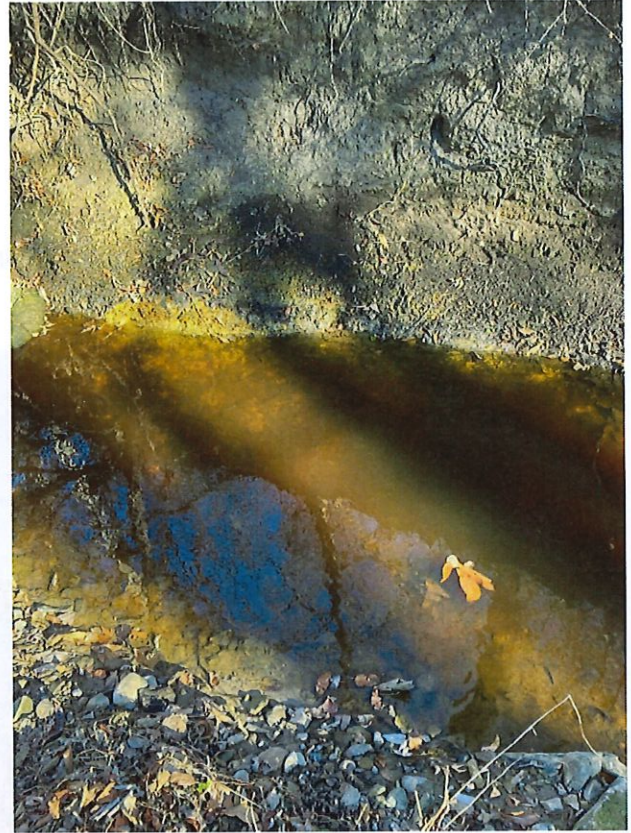
These two photos show the marsh located in the field to the South of Chamness where land application of leachate is occurring. The water quality of the marsh appears to be impacted.



The two above photos show the broken off tile risers found in the field where land application of leachate occurs. Several others in similar stages of disrepair can be found in the same field.

After checking out the field I proceeded to check out the status of Palestine Creek directly South of Chamness. I first started to the East of the leachate lagoons at Chamness and once arriving to Palestine Creek in this location I noticed the creek had a brown/orange color. I continued to collect a water sample to be tested for BOD and Ammonia. I continued to walk the creek to the East of Chamness and noticed Palestine Creek continued to maintain the same brown/orange color throughout the creek.

I proceeded to walk Palestine Creek up stream to the West back toward Chamness. From what I observed as I walked past the location where any tiles outlets could enter the Palestine Creek the water quality continued to improve the further up stream I walked. At the furthest point up stream past any potential impacts from land application could alter the water quality I collected a water sample for BOD and Ammonia (for my far upstream sample).



The above photos show the discolored water to the East of Chamness where water samples were collected from Palestine Creek. This location is also East of land application of leachate.

Once I was done walking Palestine Creek and checking out the lagoons at Chamness (middle lagoon doesn't have 2 feet of freeboard), I returned to the field where land application is occurring. I drove to the Western edge of the field and found what started off as a small drainage ditch. As I followed this ditch I noticed pockets of discolored water. I was able to trace the discolored water into a widening tributary of Palestine Creek. Within the tributary I found the same brown/orange discolored water as found further downstream of Palestine Creek. I collected a sample from this tributary where it meets Palestine Creek to be analyzed for BOD and Ammonia.

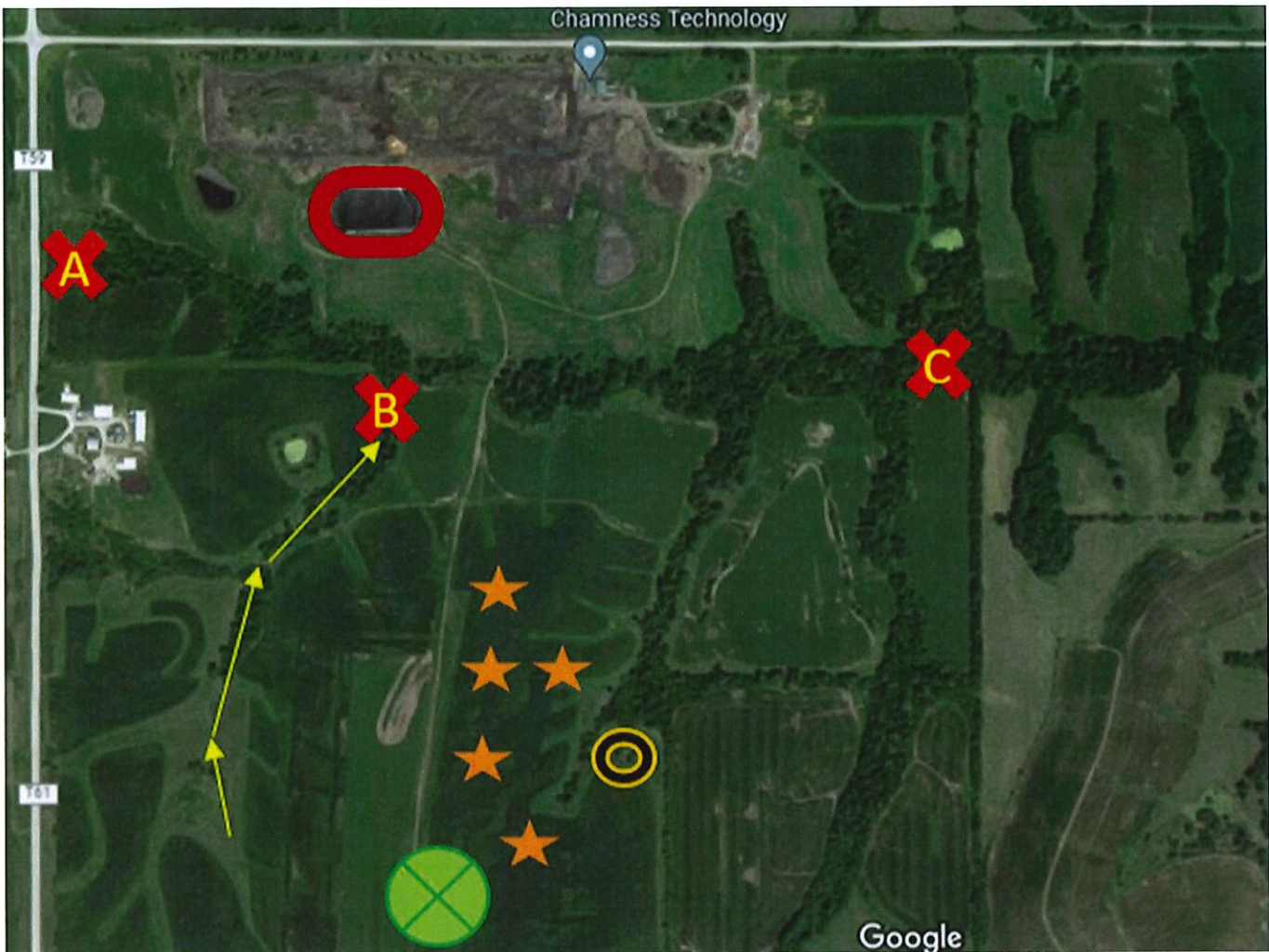


The above pictures show the start of the drainage ditch that turns into a tributary of Palestine Creek.



The above photo shows the middle lagoon that is starting to overflow. Two feet of freeboard is also not being practiced.

Map of events of December 6, 2021 are on next page.



- Red X(A) is the location up stream where a sample was collected. Clear water was seen here.
- Red X(B) is the location of where a sample was taken after following the drainage ditch tributary where discolored water was seen.
- Red X(C) is the location of where a sample was taken downstream of Palestine Creek. This location was chosen to show the any possible influence from activities occurring at Chamness and land application of leachate in the field to the South.
- Yellow arrows show the drainage ditch I walked and observed discolored water in a tributary entering Palestine Creek.
- Green circle is the location of the sprayer used for land application of leachate.
- Orange stars show broken/tipped over tile lines.
- Black/yellow circle indicates the location of the discolored marsh.
- Red oval shows location of middle lagoon that was starting to overflow and without two feet of freeboard.
- Not pictured to the right of the above map (East) of Chamness is the location further miles downstream of Palestine Creek where a water sample was taken.

