

MEMORANDUM

DATE: February 22, 2021
TO: AltEn
THRU: Brad Pracheil
FROM: Josh Wilhelm
RE: University of Nebraska Lincoln, Agricultural Research and Development Center Site Visit

FACILITY ID: 84069

On February 19, 2021 at approximately 13:40, I, Josh Wilhelm and Dane Pauley, visited University of Nebraska Lincoln, Agricultural Research and Development Center (UNL) for a scheduled drone flight over their property. We met with Mark Schroeder the farm/facilities operator manager, at the corner of 9th Street and County Road J. Here we discussed the material that flowed from the AltEn, LLC (AltEn) (FID 84069) property onto UNL property. We discussed the best possible flight plans to safely fly the stream as it crosses UNL property.

While at this location a tractor and pump were observed just north of the intersection. Mr. Schroeder informed us that a dam had be built just off the road to collect and pump liquids from AltEn and pump the liquids to the AltEn southeast lagoon. Pump operators and AltEn staff arrived on site at approximately 13:50. It did not appear that the pump was operating at this time. Shortly after this, we moved to a location ½ mile south and ½ mile east (41.17572, -96.45451). At this location we observed another dam that was built on UNL property just north of the road culverts. Mr. Schroeder stated that the dam was built at approximately 22:00 on February 18, 2021. It appeared that the dam was constructed by digging through the ice and stream bed, and then fill placed into the hole and made approximately 4 feet above the stream bed elevation. There was no flow observed above or below this dam. While inspecting the ice, it was observed that the ice sheet was brown stained and the slush and ice above and below the ice was also brown in color. Downstream of the culvert staining had been observed in the ice, and above the current ice levels, this could indicate that 2 flow events occurred. Mr. Schroeder stated that UNL had observed flows early on February 17, 2021 and were reported to Mark Pomajzl of NDEE. Flows were observed again by UNL staff on February 18, 2021. After inspecting the dam and ice at this location, a site scouting flight was performed from this location. This flight was performed to determine the safest flight operations for the location. This site scouting flight was piloted by Dane Pauley.

The first monitoring flight was piloted by Josh Wilhelm at 14:37 using the predetermined flight path in the Litchi App. During this flight the automated recording and photo actions did not work properly, and were performed manually during the automated flight. It was determined that all flights after this would be performed manually at an altitude of 125 feet above ground level (AGL), and at approximately 10 miles per hour. The camera settings were to be at 24mm zoom setting, and a 40-degree gimbal downward angle, while remaining directly over the stream channel.

A total of 7 missions were flown following the stream channel as it crossed UNL property from 41.185423, -96.462426, to where it leaves UNL property at 41.138531, -96.425787. The flights were performed from 5 separate locations. All flights were recorded in paper flight logs and on the Kittyhawk application. NDEE staff concluded the flights and left UNL property at approximately 17:00 hours.

Attachments

- Attachment A – Arial image of UNL properties and locations of flights.
- Attachment B – Photo downstream of road crossing on UNL property
- Attachment C – Photo of dam from road crossing on UNL property
- Attachment D – Photo of dam on UNL property from east
- Attachment E – Photo of upstream side of dam on UNL property
- Attachment F – Photo of downstream side of dam on UNL property

Date: 2/22/2021



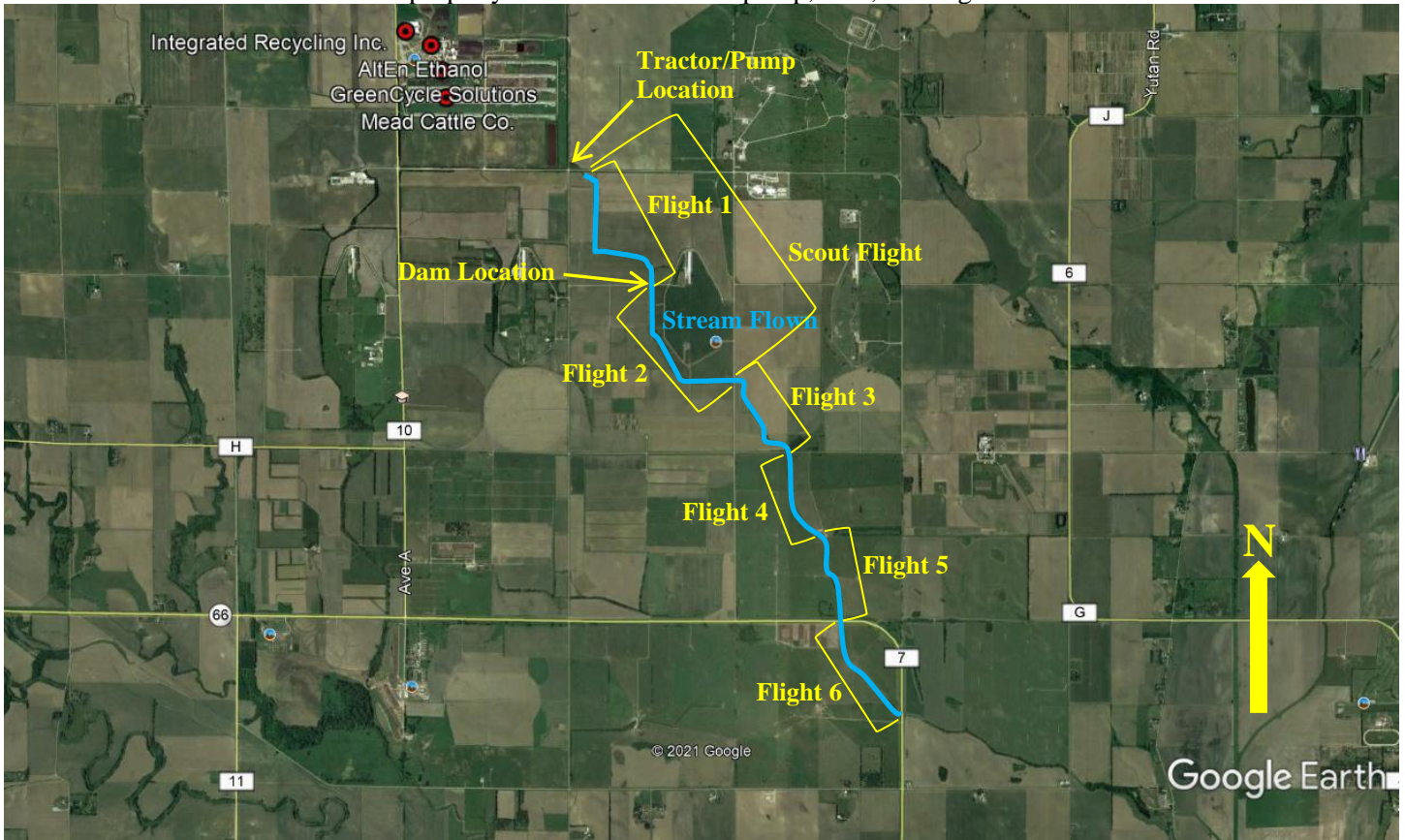
Josh Wilhelm, Program Specialist



ATTACHMENT A

Arial image of UNL property flown by NDEE staff 2/18/2021

The UNL property and locations of the pump, dam, and flight locations.

















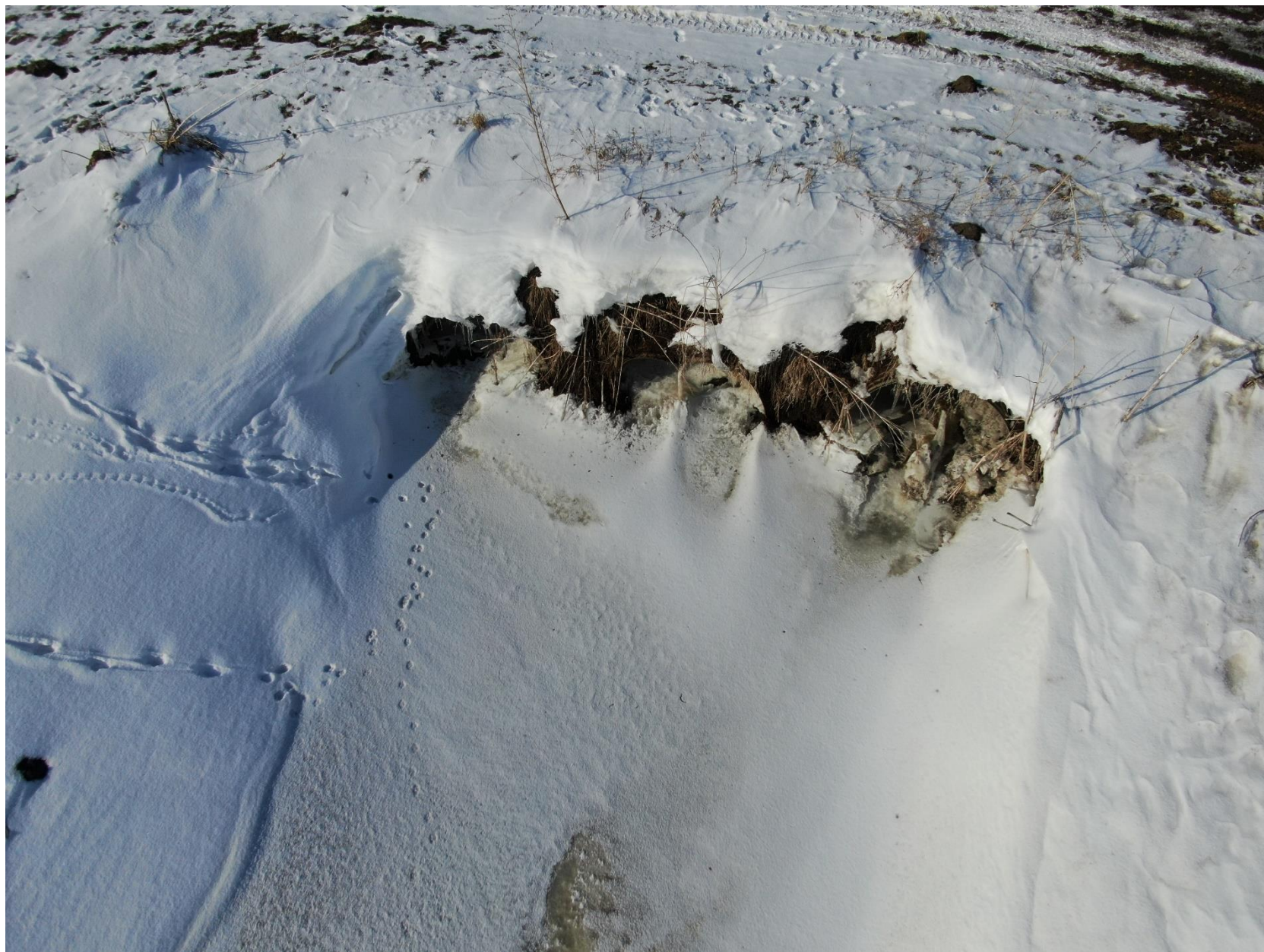










































































ATTACHMENT B

Downstream of road crossing near UNL dam site – 2/19/2021

Photo taken by Josh Wilhelm (NDEE)

Staining in ice and on top of ice south of dam and road crossing on UNL property.



ATTACHMENT C

Dam built on UNL property – 2/19/2021

Photo taken by Josh Wilhelm (NDEE)

View of dam from road crossing on ULN property with visible staining in ice and on top of ice.



ATTACHMENT D

Dam built on UNL property – 2/19/2021

Photo taken by Josh Wilhelm (NDEE)

View of dam from the east on ULN property with equipment tracks in the snow.



ATTACHMENT E

Dam built on UNL property – 2/19/2021

Photo taken by Josh Wilhelm (NDEE)

Upstream side of dam on ULN property with visible staining in ice and on top of ice. No sign of liquids flowing or backing up behind the dam were observed.



ATTACHMENT F

Dam built on UNL property – 2/19/2021

Photo taken by Josh Wilhelm (NDEE)

Downstream side of dam on ULN property with visible staining in ice and on top of ice. No signs of flowing liquids were observed below the dam.

