

INVESTIGATION REPORT

NDEE Investigator: Neal Heil 

Through: _____

Report Date: 2/17/2021

Investigation Date: 2/17/2021

Re: AltEn LLC-Mead

NDEE ID: 84069

Program ID: RA 021221-NH-0845

Topic: Release of Thin Stillage and Manure from Digester

REPRESENTATIVES ON SITE

Name	Representing	Phone Number
Neal Heil	NDEE	402-471-3093
Ken Peterson	AltEn LLC	605-354-0631

INVESTIGATION PURPOSE

AltEn contacted NDEE to report a release of thin stillage and cattle manure from a four million gallon capacity digester at the AltEn Mead facility. NDEE developed a plan to maintain situational awareness of the incident by having NDEE representatives visit six pre-determined locations at least once daily. Neal Heil was directed to perform the first of these daily events.

DIRECTIONS TO LOCATION

1344 County Road 10, Mead, Nebraska

GPS Coordinates: 41.19714, -96.48081

INVESTIGATION NARRATIVE

NDEE representative Kirk Morrow had provided to me a map with six pre-determined locations I was to visit (see attached Google Earth images with locations). I arrived at Stop #1 at about 1449 hours. Stop #1 is along a paved road just east of the Ashland Gun Club. I did not observe any obvious evidence such as free-flowing liquid, brown-colored ice, melted snow, or odor that would suggest the material spilled from the digester at AltEn had reached this location (see attached photo).

I proceeded to Stop #2. Stop #2 is located a short distance north of the intersection of road 6 and road F. I did not see any evidence that the spilled material had reached this location (see attached photos). All liquid in the ditch appeared frozen and there was no flow through the culvert.

I proceeded to Stop #3. Stop #3 is located on road 7 about 1/2 mile north of road F. The surface of the liquid in the ditch at Stop #3 was frozen. I did not attempt to break through the ice to determine if there was unfrozen liquid below the ice. The ice had slight yellow/tan coloration. I observed plywood (or similar) wrapped with a tarp covering the inlet of the culvert. There were several sandbags placed at the base of the plywood/tarp to hold it in place (see attached photos). I dug through the snow at the downstream outlet of the culvert and found only ice. I did not attempt to break through the ice at the culvert outlet to look for unfrozen liquid.

I proceeded to Stop #4. Stop #4 is located on road 8 about 1/2 mile north of road H. I observed brown-colored ice both upstream and downstream from Stop #4. Upstream from Stop #4, the ice was broken in many pieces as if it froze and the liquid below drained away (see attached photos).

I proceeded to Stop #5. Stop #5 is located on a closed road (road 9) a short distance north of road J. I observed an earthen dam upstream from Stop #5. I did not see the hay bales or concrete rip-



rap I had observed at this location on February 13th. It is unknown if the bales and concrete were removed, or simply covered with earth. The volume of earth present was significantly greater than the volume of earth I had observed on the 13th. I observed brown ice both upstream and downstream of Stop #5. I made no attempt to break through the ice to determine if flowing liquid was present below the ice. I observed flexible piping laid out near Stop #5 and extending some distance to the north (see attached photos).

I called Scott Tingelhoff at about 1552 hours at the cell phone number he had provided to me. No one answered the phone and the voice mailbox was full.

I proceeded to the AltEn administrative office to request permission to visit Stop #6; the AltEn digester which had not suffered a release. Mr. Ken Peterson, Plant Manager, greeted me at the office and accompanied me to the digester. I did not attempt to view the digester that had already suffered a release as it is my understanding the complete contents of the digester had already been lost. I only viewed the digester that had not yet suffered a release. I saw no evidence of a release from this digester. Mr. Peterson showed me the insulation placed over the piping vault on this digester. Mr. Peterson said a trouble light with a 75 watt bulb was placed in the vault below the insulation to provide warmth to the piping. Mr. Peterson said AltEn employees inspect the digester hourly to ensure no leak occurs.

I left the site at about 1620 hours to return to Lincoln

CONCLUSIONS

A digester containing thin stillage and cattle manure suffered a catastrophic failure due to a pipe connected to the floor of the digester bursting; reportedly due to freezing weather. An estimated four million gallons of liquid was released to the land surface. The spilled liquid flowed into a ditch and travelled some distance from the source. Extremely cold temperatures since the date of the release appears to have frozen some/much of the spilled material.

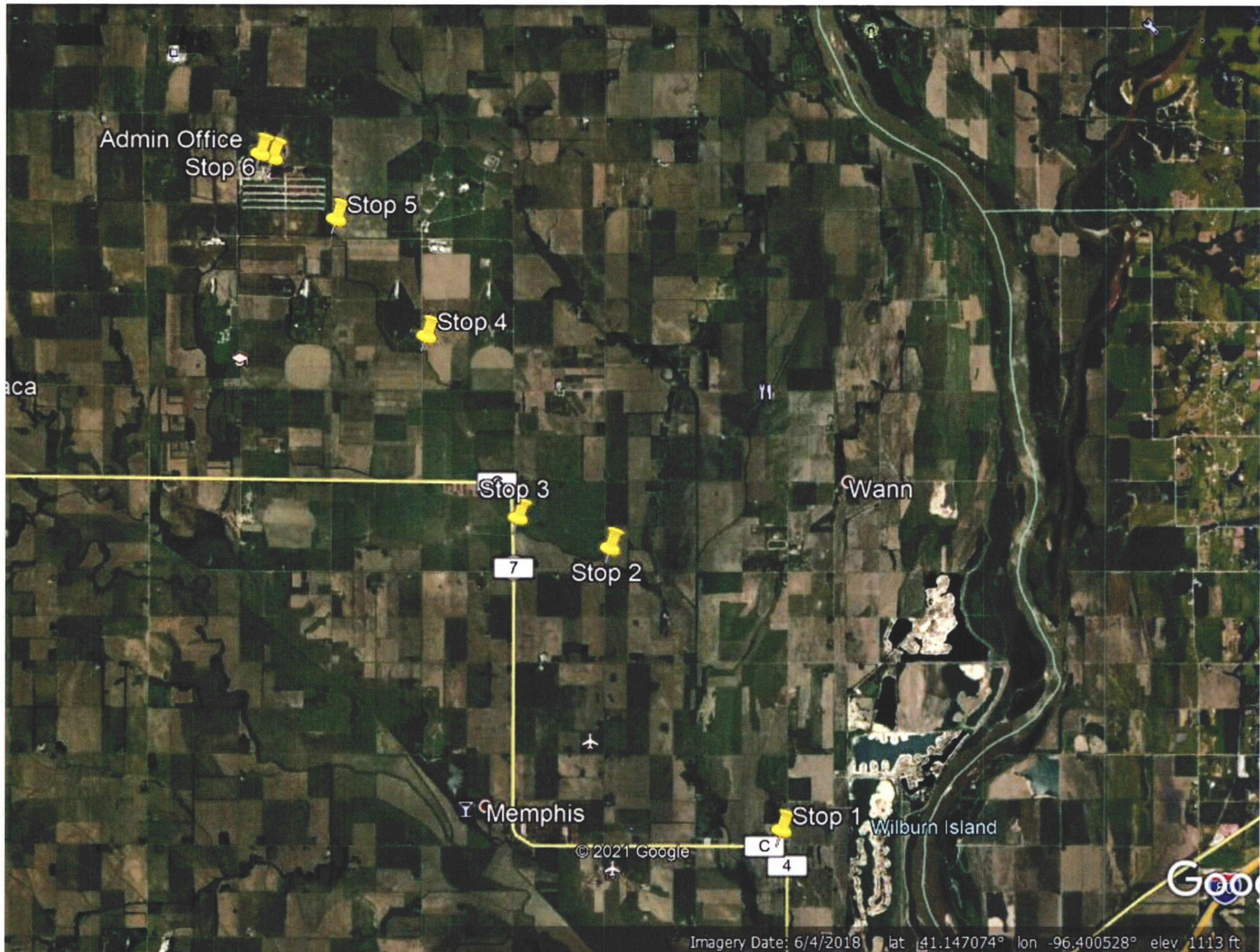
PENDING ACTIONS

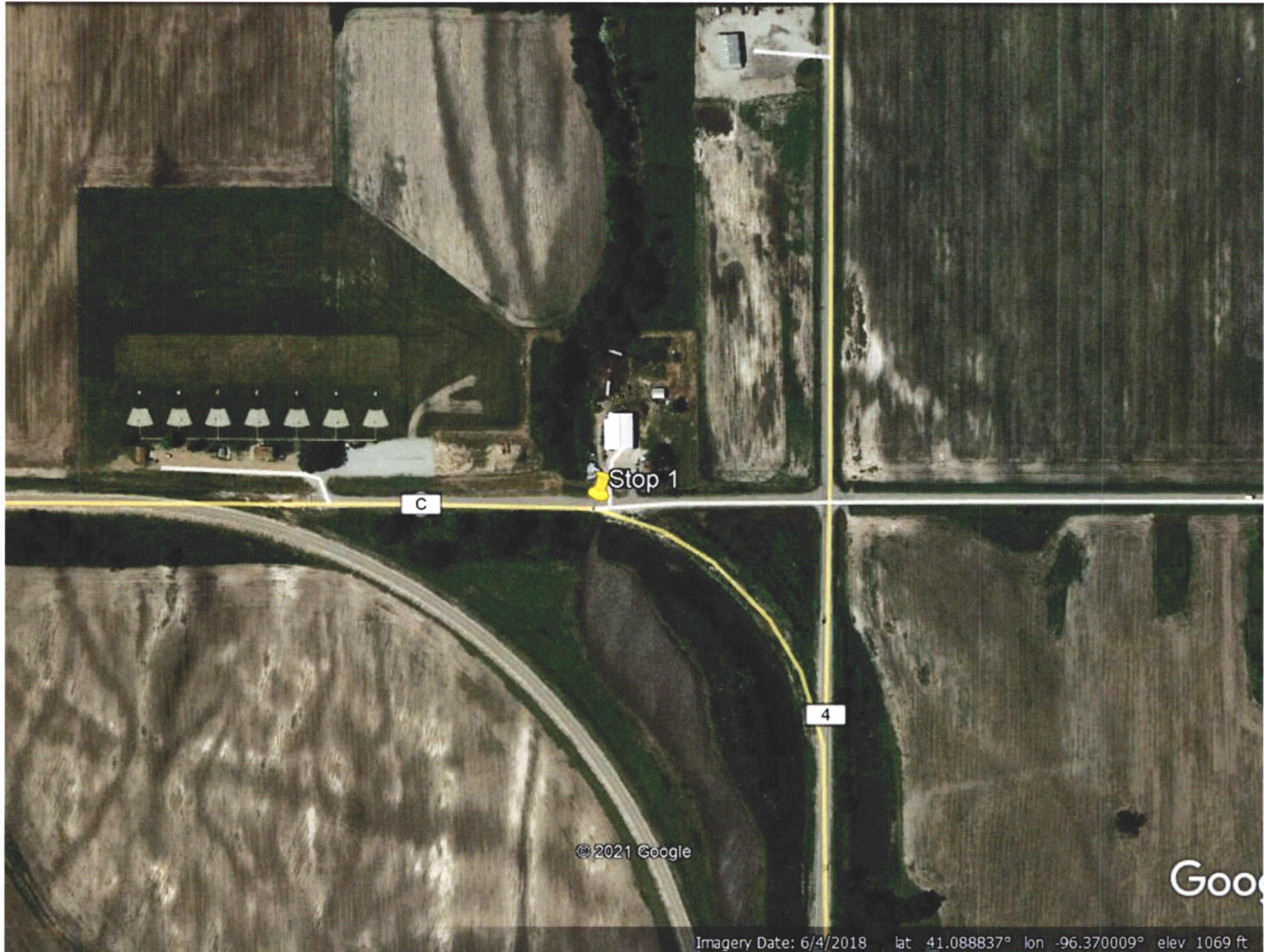
NDEE will determine if additional remedial actions are warranted for this release incident.

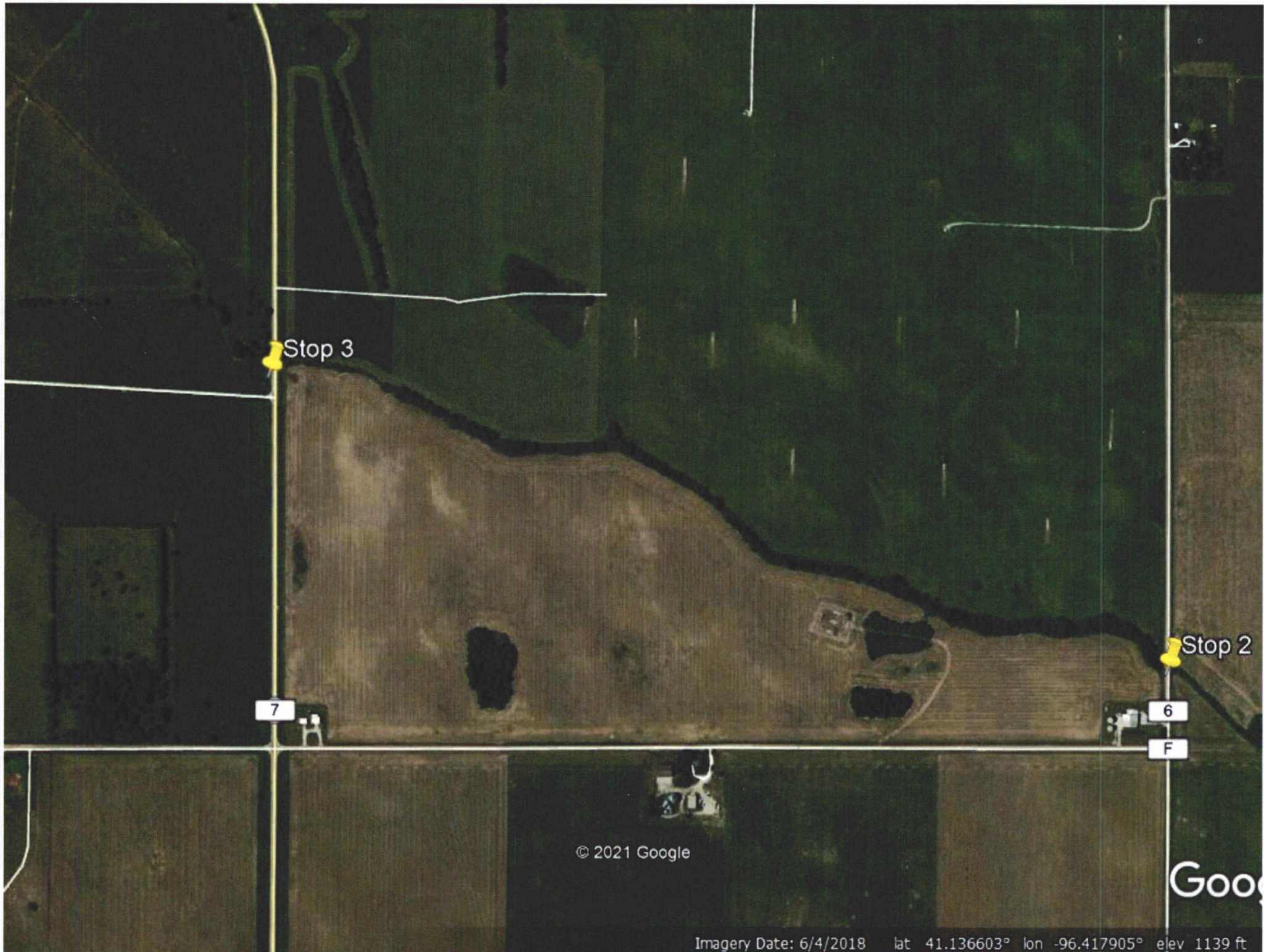
ATTACHMENTS

- ☐ Topographic Map
- ☒ Aerial Photograph
- ☐ Site Map
- ☐ Figures
- ☐ Chain of Custody

- ☐ Sampling Receipt
- ☐ Laboratory Analytical Results
- ☒ Photographs
- ☐ Other: _____







Stop 3

Stop 2

7

6

F

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Go

Imagery Date: 6/4/2018 lat 41.136603° lon -96.417905° elev 1139 ft

Stop 5

9

8th St

7

Stop 4

8

9th St

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Imagery Date: 6/4/2018 lat 41.175746° lon -96.448379° elev 1173 ft



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Imagery Date: 6/4/2018 lat 41.196144° lon -96.479899° elev 1199 ft

Release of Thin Stillage and Cattle Manure from Digester at AltEn LLC, IIS #84069, RA
#021221-NH-0845



View north of ditch upstream from Stop #1



View west of ditch upstream from Stop #2

Release of Thin Stillage and Cattle Manure from Digester at AltEn LLC, IIS #84069, RA
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View east of ditch downstream from Stop #2



View east of upstream culvert inlet at Stop #2

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View west of ditch upstream from Stop #3



Containment structure in culvert inlet at Stop #3

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View east of ditch downstream from Stop #3



View west of ditch upstream from Stop #4

Release of Thin Stillage and Cattle Manure from Digester at AltEn LLC, IIS #84069, RA
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Broken crust of ice at culvert inlet at Stop #4



View east of ditch downstream from Stop #4

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View west of dam upstream of Stop #5



View east of ditch downstream from Stop #5

Release of Thin Stillage and Cattle Manure from Digester at AltEn LLC, IIS #84069, RA
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View north of piping laid out at Stop #5



Insulation over piping well on digester w/out leak