

84069
PCS NER 001153

INVESTIGATION REPORT

NDEE Investigator: Neal Heil, Mark Pomajzl

Through: Kirk Morrow

Report Date: 2/16/2021

Investigation Date: 02/13/2021

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
Mark Pomajzl	NDEE	402-471-2936
Dean Egr	AltEn LLC	

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 representatives Mark Pomajzl and Neal Heil were directed to respond to the facility on February 13th to observe site conditions and response actions taken by the facility.

DIRECTIONS TO LOCATION

1344 County Road 10, Mead, Nebraska

GPS Coordinates: 41.19714, -96.48081

INVESTIGATION NARRATIVE

Narrative by Neal Heil.

Mark and I arrived at the AltEn administrative office parking lot at about 1000 hours. Mark attempted to announce our arrival at the administrative office, but the office, although unlocked, was unstaffed. Mark and I proceeded to the location of the spill; presuming AltEn staff would be present at that location. There were no AltEn staff at the location of the digester where the spill occurred. Mark and I observed some brown-colored liquid flowing down the slope from the digester to the ditch north of the east/west road running between Mead Cattle Company and the AltEn facility (see attached photos). Mark, who had been on-site Friday, said the flow of liquid was considerably slower than it had been on Friday. I estimated the current flow of liquid to be about 10 gallons per minute. Mark said there had been pumping equipment at the location on Friday; presumably pumping the spilled liquid to the facility lagoon. There was no pumping equipment at the location at this time.

Mark and I drove east to a tee intersection at/adjacent to the Mead Cattle Company. Mark said the area had been inundated with liquid spilled from the digester during his visit on Friday. Mark said pumping equipment had been present at this location on Friday, however, none was present at this time. Fresh snowfall made it difficult to discern areas now covered with liquid spilled from the digester, but, Mark said it appeared that the liquid levels were lower compared to yesterday.

Mark and I proceeded to the area depicted as culvert A on the attached Google Earth image. We encountered two AltEn staff, including Mr. Egr, in a pickup truck at that location. Mr. Egr informed us that AltEn was attempting to seal an improvised dam, constructed on Friday, with earth. The dam, built on the upstream side of a culvert under the roadway, appeared to be built with plastic



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sheeting, large round hay bales, concrete rip-rap, and earth. Mr. Egr said a contractor was en route from Kansas with pumps/piping that would capture and transmit the spilled liquid from upstream of this dam back to the AltEn lagoon. Significant flow of liquid was apparent on the downstream side of the culvert. A payload arrived a short while later with a load of dirt and placed the dirt on the dam. We asked Mr. Egr if the digester that had leaked liquid was empty. Mr. Egr estimated only about 1 foot of liquid remained in the digester. We asked Mr. Egr if the second digester (similar in capacity to the one that suffered a release) contained liquid. Mr. Egr said it did. We asked what, if any, precautions had AltEn taken to protect the piping on the second digester at the facility from suffering a similar release. Mr. Egr said insulation had been placed over the subgrade vault where the vulnerable piping is located. Mr. Egr said a heat lamp had been placed in the vault under the insulation to prevent freezing of the piping. Mark informed Mr. Egr of our plan to inspect the spill area and provided to him an Inspection and Assistance Exit Summary (copy attached).

Mark and I proceeded to the next downstream location, depicted as culvert B on the attached Google Earth image, where the ditch intersected with a roadway. We observed liquid flowing through the culvert (see attached photos). Based upon the cold temperatures that we presume would have frozen any pre-existing water and the odor associated with the flowing liquid we observed, that the flowing liquid was likely what had spilled from the digester.

Mark and I proceeded to the location depicted as culvert C on the attached Google Earth image. We observed liquid flowing through the culvert (see attached photos). We proceeded to the location depicted as culvert D on the attached Google Earth image. We observed an inch or two of liquid on top of existing ice and within the snow cover (see attached photos). There was no obvious flow of this liquid. The liquid did exhibit an odor similar to the liquid spilled from the digester.

It was not obvious from the aerial image we had with us if the ditch continued only south, or if it branched and flowed east under county road 7. County road 7 south of H road is a minimum maintenance road and had not been plowed of snow. Mark and I walked about $\frac{1}{2}$ to $\frac{3}{4}$ mile south on county road 7 and determined that the ditch did now flow under/near county road 7. We returned to the vehicles and drove to where the ditch flowed through a culvert under county road G (culvert E on the attached Google Earth image). We scraped the snow down to the ice below at the upstream end of culvert E and did not observe any liquid. We presumed this to mean the spill had not flowed as far as culvert E.

We returned to the AltEn facility to examine the digester that had not suffered a release. We observed a pile of Styrofoam insulation panels we presumed were covering the piping vault (see attached photo). We observed electrical wiring leading under the pile of insulation and presumed that to be for the heat lamp mentioned by Mr. Egr. We observed on the south side of the digester that had not suffered a leak a column of ice surrounded by caution tape (see attached photo). We could see a fitting above the column of ice actively releasing a liquid (which appeared to be freezing and creating the column of ice). We presumed this liquid was thin stillage and manure being released from the full or nearly full digester.

I called NDEE representative Kirk Morrow at about 1315 hours and provided to him a brief summary of our observations. Mark and I agreed I would call AltEn representative Scott Tinglehoff and discuss our findings with him. Mr. Tinglehoff did not answer at the number he had provided to me and his voice mailbox was full; preventing me from leaving a voice message for him.

Mark and I left the site at about 1340 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 approximately three miles from the source at the time of our response. A dam constructed some time Friday, was ineffective at stopping the flow of spilled liquid. It is not known if the lack of effectiveness of the dam was due to poor construction or failure of the dam due to build-up of hydrostatic pressure.

PENDING ACTIONS

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

ATTACHMENTS

- | | |
|---|---|
| <input type="checkbox"/> Topographic Map | <input type="checkbox"/> Sampling Receipt |
| <input checked="" type="checkbox"/> Aerial Photograph | <input type="checkbox"/> Laboratory Analytical Results |
| <input type="checkbox"/> Site Map | <input checked="" type="checkbox"/> Photographs |
| <input type="checkbox"/> Figures | <input checked="" type="checkbox"/> Other: NDEE Inspection and Assistance |
| <input type="checkbox"/> Chain of Custody | Exit Summary |

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



View north of piping vault where leak occurred



View north of digester where leak occurred

Release of Thin Stillage and Cattle Manure from Digester at AltEn LLC, IIS #84069, RA
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View east from near digester toward road ditch



View west of road ditch with digester in background

Release of Thin Stillage and Cattle Manure from Digester at AltEn LLC, IIS #84069, RA
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View NE of ditch near Mead Cattle Company



View WNW of dam upstream of culvert A

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 culvert A



View north of ditch upstream from culvert B

Release of Thin Stillage and Cattle Manure from Digester at AltEn LLC, IIS #84069, RA
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View south of ditch downstream of culvert B



View north of ditch upstream from culvert C

Release of Thin Stillage and Cattle Manure from Digester at AltEn LLC, IIS #84069, RA
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View south of ditch downstream from culvert C



View north of ditch upstream from culvert D

Release of Thin Stillage and Cattle Manure from Digester at AltEn LLC, IIS #84069, RA
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Insulation over piping vault on digester without leak



Spilling and leaking liquid from digester without leak



NEBRASKA

DEPT. OF ENVIRONMENT AND ENERGY

Inspection and Assistance Exit Summary

NDEE ID: 84069 NDEE Program & ID: _____ NDEE Notification #: 02/01/19-0000

☒ Inspection/Other ☐ Compliance Assistance Visit (CAV) ☐ Permit Assistance Visit (PAV)

Facility/Operation Name: AIKEN

Address: 1244 County Road 12

City/Town: MEAD, County: SARASOTA, State of Nebraska.

Owner/Occupant/Operator Inspection Contact(s): Don Ege

Inspector: Mark Proulx Phone No: 402-471-2931 E-Mail address: Mark.Proulx@nebraska.gov

Mark.Proulx@nebraska.gov

Mark.Proulx@nebraska.gov

Mailing Address: Department of Environment and Energy, PO Box 98922, Lincoln, Nebraska 68509-8922

Inspection Date: 2-13-21 Start Time: 12:00 End Time: 11:10 AM

☐ No concerns observed ☒ Further agency discussion needed to determine compliance

☐ Concerns observed:

* Discharge Leaking around floor
* Dam East of facility still leaking. Air gas leaking on
the issue
* Discharge (north) Has 4 million gallons. (Each has
next level Incineration installed to prevent discharge
* Air quality issues

☒ Actions to be performed immediately or as soon as reasonably practical:

* Submit corrective Action Report to state
SOGL - & Reference the spill report on (CAR)
* Contact NDEE with stormwater questions
* Monitor Cleanly Sludge residue along with the throughput plant

Please notify the Inspector when the above actions are completed.

The Department will provide a final inspection report within an agency average of 14 days of the inspection date. The final inspection report will contain a complete list of any alleged violations. This inspection exit summary does not preclude any other legal action by the Nebraska Department of Environment and Energy and your prompt attention to the documented concerns will be considered in assessment of your voluntary compliance. This summary was left

with: Don Ege. Please contact the Inspector if you have any questions concerning this inspection and assistance exit summary.

Signing this document is not an admission of liability by the facility.

Inspector Signature

Inspection Contact Signature

revised 11/19/19