Fields of Opportunities

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR
KIM REYNOLDS, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
CHUCK GIPP, DIRECTOR

November 17, 2014

CERTIFIED MAIL

United Farmers Mercantile Cooperative
Attn: Don Davis
401 N. U Avenue
Villisca, IA 50864

United Farmers Mercantile Cooperative
Attn: Kevin Rugaard
203 West Oak
Red Oak, IA 51566

NOTICE OF VIOLATION: **Iowa Code §455B.186 - Prohibited Discharge**
Subrule 567 Iowa Administrative Code (IAC) 61.3(2)"d" - General Water Quality Criteria
Subrule IAC 567-131.2 - Report of Hazardous Conditions
Rule IAC 567-133 (455B, 455E) - Cleanup Actions and Responsible Parties

SUBJECT: Unreported release and discharge of wastewater at UFMC
401 N. U Avenue, Villisca, Iowa
Montgomery County
HSI Number: 101414-JLC-1831

Dear Mr. Davis and Mr. Rugaard:

The Department of Natural Resources (DNR) spill line was notified via a complainant about a spill that occurred at the United Farmers Mercantile Cooperative (UFMC) in Villisca, Montgomery County, Iowa. It was reported that the Co-op had excavated an area near two anhydrous ammonia bulk tanks in order to repair a broken water line. The broken water line was discovered when contaminated water began seeping to the surface of the ground. The complainant stated that the contaminated water was being pumped out of the pit and flowing into a storm sewer. An investigation was conducted and verified that wastewater from your facility reached a water of the state.

Specifically, field office staff determined that liquid from the excavation at your facility was manually released. This liquid was allowed to flow onto the surface of the ground, into a storm sewer, through a drainage ditch and subsequently into an unnamed tributary of the West Nodaway River. Samples were also collected and submitted to the State Hygienic Laboratory for analysis. The sampling results confirmed elevated levels of ammonia.

Please refer to the attached Report of Investigation and laboratory analytical results for more details. Also, enclosed with this letter are aerial photos of the impacted area and photos from

observations made during the investigation. The purpose of this letter is to notify you of the regulations and our requirements as a result of this investigation.

Failure to report this incident, to the Department as soon as possible but no later than six hours upon discovery or occurrence of the release is a violation of Subrule 567 IAC 131.2. The investigation also documented a violation of Iowa Code §455B.186 which prohibits the discharge of pollutants to water of the state.

Subrule 567 IAC 61.3(2) General water quality criteria states in part, "waters shall be free from floating debris, oil, grease, scum and other floating materials attributable to wastewater discharges or agricultural practices in amounts sufficient to create a nuisance" and "waters shall be free from substances attributable to wastewater discharges or agricultural practices in concentrations or combinations which are acutely toxic to human, animal, or plant life".

Subrule 567 IAC 133.3(4) states where a source or likely source of contamination is identified, the person or persons responsible for that source or sources shall conduct necessary preventative, investigatory, and remedial actions.

All Iowa Code and Iowa Administrative Codes cited above can be viewed at http://www.legis.state.ia.us/IowaLaw.html.

As a result of the aforementioned violations, this matter will be referred to the Department's Legal Services Bureau for enforcement action.

You are required to make every effort to prevent discharges of fertilizers and other pollutants from your business from reaching a water of the state.

The Department is requiring that you complete the following;

1. Continue to contain and clean up the spilled product between your facility and the dam constructed in the drainage ditch just south of your property. **UFMC must submit a report documenting the cleanup to this office by December 1, 2014.** A reporting form is enclosed for your reference.

2. A storm water intake is located near the bulk anhydrous tanks (east side of the building). A plug has been placed on both ends of the line. The plug must remain in place and monitored. **UFMC must submit a plan outlining a manageable strategy to address this line by December 1, 2014.**

3. Due to the evidence of unreported spills on-site, UFMC must determine the extent and levels of contamination through a Site Assessment conducted under the supervision of a registered professional engineer, an expert in the field of hydrogeology, or other qualified person. The plan shall be approved by the Department prior to initiation of the assessment. **UFMC must submit a Site Assessment Plan to this office by December 1, 2014.** The department reserves the right to require further investigation by the responsible person(s) in order to adequately assess the extent of contamination (i.e.,

define the plume(s)), and may require a remedial action plan be submitted if necessary. A list of certified groundwater professionals is attached for your reference.

Sincerely,

Alison Manz

Alison Manz
Environmental Specialist
Field Services & Compliance Bureau

Enclosures: Report of Investigation
Laboratory Analytical Results
Photographs
Aerial Photographs
Certified Groundwater Professional List
Spill Reporting Form

ARM:arm/sp/villisca101514.sp.ufmc nov.manz.doc

CC: Ed Tormey, IDNR Legal Services Bureau, Des Moines, IA (w/encl.)
Cal Lundberg, IDNR Contaminated Sites Section, Des Moines, IA (w/encl.)
IDNR Emergency Response Section, Des Moines, IA (w/encl.)
UFMC File (New) Uncontrolled Sites

SUSPENSE: **December 1, 2014** **-Address 3 aforementioned requirements and submit documentation of such to this field office**

Iowa Code §455B.186
567 61.3(2)"d"
567-131.2

IOWA DEPARTMENT OF NATURAL RESOURCES

Report of Investigation

INVESTIGATION DATE: Current: 10/15/14 – Present **Last:** N/A

TO: United Farmers Mercantile Cooperative
Attn: Don Davis
401 N U Avenue
Villisca, IA 50864

RE: Hazardous Substance Incident Investigation
Incident No: 101414-JLC-1831 City of Villisca, Montgomery County, Iowa

PERSONS CONTACTED: Kevin Rugaard and Don Davis

October 14, 2014

The Department of Natural Resources (DNR) spill line was notified via a complainant about a spill that occurred at the United Farmers Mercantile Cooperative (UFMC) in Villisca, Montgomery County, Iowa. It was reported that the Co-op had excavated an area near two anhydrous ammonia bulk tanks in order to repair a broken water line. The broken water line was discovered when contaminated water began seeping to the surface of the ground. The complainant stated that the contaminated water was being pumped out of the pit and flowing into a storm sewer.

October 15, 2014

While in the area, Thad Nanfito, FO4 staff, investigated the incident. Mr. Nanfito informed the UFMC employees to discontinue pumping the product to the surface of the ground and begin the clean up process by excavating the contaminated soil. I arrived on-site shortly thereafter.

During my investigation I verified that contaminated water was entering the storm sewer and ultimately an unnamed tributary of the West Nodaway River. According to Don Davis, CFO at UFMC, employees of UFMC noticed water seeping to the surface of the ground on their property. The City of Villisca employees conducted a utility locate to determine the location of a private water line that ran through the UFMC property. Excavation began in an attempt to locate and repair the leak. Mr. Davis stated that the city started pumping the contaminated water out of the pit to the surface of the ground. It is unknown how long the pump was running or how much contaminated water was pumped out of the pit. Mr. Davis was adamant that there was NOT a spill at the site.

Mr. Davis stated that about five years ago UFMC converted the anhydrous ammonia bulk tank system from below ground piping to all above ground piping. If there was a spill associated with the bulk tanks, the above ground piping would alert employees of the incident. It is speculated that the water from the water line break resulted in product, that may have been in the soil, to mix with the water from the broken water line, resulting in the contaminated water. According to Mr. Davis, the bulk tank inventory does not show a loss. The abandoned below ground lines were left in place and there are 21 2" pipes each 40' long. It was reported that the abandoned lines were purged prior to abandonment.

I observed a definite flow path from the excavation pit to a large storm water structure on the UFMC property. From the storm water structure the product flowed south into a drainage ditch. Contaminated water flowed through the drainage ditch for about a ¼ of a mile before flowing west, under Hwy 71, into an unnamed tributary of the West Nodaway River. Water in the tributary was sampled at several downstream areas and showed ammonia levels greater than 300 mg/L (highest range on the field testing kit used in the field).

Water samples were obtained and sent to the State Hygienics Laboratory where they were analyzed for ammonia nitrogen. Lab results indicate that ammonia concentrations were 1,800 mg/L at the culvert on the west side of Hwy 71. About ¾ of a mile downstream from the culvert, ammonia concentrations were .24 mg/L. I required UFMC to construct a berm in the tributary about a ½ mile downstream from the culvert on the west side of Hwy 71 to assure all contaminated water was contained during the clean up process. During this process, UFMC personnel were also pumping product out of the excavation pit at the facility.

October 16, 2014

I conducted a follow-up inspection. The berm was constructed and a 1,500 gallon vac truck was being used to pump the collected wastewater. UFMC also began flushing the storm sewer structure at the facility. During this investigation Kevin Rugaard, Agronomist with UFMC, was on-site. Mr. Rugaard confirmed that the below ground lines that were abandoned five years ago were bled off prior to abandonment. He also stated that the hydrostat on the west bulk tank was leaking (see photo 18); however, this is reportedly not associated with this incident. Rather during temperature changes, valves will open and close resulting in venting to the atmosphere. Mr. Rugaard also stated that UFMC contacted a plumber when water was observed seeping to the surface of the ground. According to Mr. Rugaard the plumber started pumping the resulting wastewater from the excavated hole to the surface of the ground.

I spoke with Don Clark, Plumber. Mr. Clark stated that UFMC contacted him on October 9, 2014, and stated that water was bubbling to the surface of the ground. Mr. Clark contacted Iowa One-Call prior to excavation. The area then received two inches of rain so he was not able to get to the site until October 14, 2014. Mr. Clark stated that he began excavating the soil but the wastewater began burning his eyes. According to Mr. Clark, Randy Walter, UFMC employee, advised him to pump the wastewater out of the excavation pit because 'water neutralizes the product'.

The City of Villisca employees were assisting Mr. Clark in locating the water leak. A large trench was being dug on the west side of the bulk tanks. The trench ran north and south, the entire length of the building site. It should be noted that during the excavation another abandoned line was located that runs east and west on the north side of the plant. According to UFMC, liquid fertilizer was stored on site in years past. The line that runs east and west was used when the facility mixed the fertilizer with water in the building before being hauled to the field for application.

Additionally, an unknown tile line was discovered on-site, near the impacted storm sewer structure. UFMC personnel speculated that the line may have been associated with a maintenance garage at one time; however, had since been plugged when the garage was converted to a storage warehouse.

October 17, 2014

I conducted a follow-up inspection. According to Mr. Rugaard, approximately 44,000 gallons of water was pumped out from behind the dam that was built in the unnamed tributary. Additionally, UFMC was flushing the storm sewer, drainage ditch, and the unnamed tributary. Field tests indicated ammonia concentrations still greater than 300 mg/L at the dam, approximately 250 mg/L at the Hwy 71 west culvert, 120 mg/L at the Hwy 71 east culvert, and 60 mg/L in the drainage ditch south of UFMC.

Samples were also obtained from the water seeping under the cracks in the floor of the storm sewer structure (see photo 6 and 24). Ammonia concentrations were at 250 mg/L. It was speculated that, due to the numerous cracks in the concrete floor, product was pooling under the concrete. UFMC was advised to flush the structure. Additionally, strong ammonia odors were coming from another tile outlet into this same storm sewer (see photo 25).

The City of Villisca's water supply wells are located near the flow path of this product. Water samples were obtained and sent to SHL to be tested for ammonia nitrogen and nitrate. The results do not show that this spill impacted the city's water wells. However, I required UFMC personnel to relocate the vac

truck being used to pump the contaminated water out of the unnamed tributary as it was being stored too close to the city's well house.

John Veach, Iowa Rural Water, assisted in smoke testing the unknown tile line. No smoke was observed. It is speculated that the line was plugged.

Excavation was still occurring at the facility. It was reported that the excavation occurring on site was causing an obnoxious odor. During my inspections I was receiving several complaints from area residents and the city personnel. Additionally, the wind was out of the north resulting in the odor travelling south through the City of Villisca.

UFMC requested permission to add rock to the trench as they were concerned with the stability of the footings of the bulk tanks. Due to the trenching, the facility was also down to one filling station. Additionally, UFMC was beginning to worry because they were 2-3 weeks away from their fall anhydrous application season. According to Mr. Rugaard, the two bulk tanks were completely full as were all of the tanks at their other facilities. On-site there was 80 tons of product, with no room at any other locations to offload. UFMC requested waiting to clean up the spill at the site until the Spring of 2015.

After discussing internally, FO 4 staff decided that there were two issues at this facility. The first issue was the spill that was reported to this office on October 14, 2014, due to contaminated water being pumped to the surface of the ground following a water line break. The second issue is ground contamination at the site that is historical and unknown. The FO4 will handle the clean-up of the spill in accordance with Chapter 131. The other issue will be handled as a contaminated site requiring a site assessment per Chapter 133.

October 20, 2014

I conducted a follow-up inspection. I was notified that the water leak was located. It is speculated that the line was leaking for at least two weeks. Even though the leak was repaired, contaminated water was still filling up the pit.

Field tests indicated ammonia concentrations of 200 mg/L at the storm sewer structure, 60 mg/L in the drainage ditch south of UFMC, 50 mg/L at the culvert on the west side of Hwy 71, 150 mg/L half way between the culvert and the dam built by UFMC, and 20 mg/L at the dam. It was speculated that product was pooling up behind the vegetation. I left the ammonia test kit with Mr. Rugaard.

October 22, 2014

I conducted a follow-up inspection. Water in the storm sewer structure showed ammonia concentrations of 90 mg/L. On the south side of UFMC, where the storm sewer overflows into the drainage ditch, the ammonia concentrations were still at 200 mg/L. I advised Mr. Rugaard that the sand piled up at this outlet was likely collecting the contaminated water and should be excavated. Ammonia concentrations on the east side of Hwy 71 were less than 100 mg/L. Ammonia concentrations on the west side of Hwy 71 and in the unnamed tributary were less than 20 mg/L.

October 23, 2014

I conducted a follow-up inspection. I documented that the unnamed tributary had been adequately cleaned to site and smell. However, ammonia concentrations from the unknown culvert that drains into the storm sewer structure were greater than 150 mg/L. UFMC was advised to assure all water flowing through the storm sewer was collected. Mr. Rugaard stated that a berm was placed in the drainage ditch approximately 50 feet downgradient from the storm sewer outlet (photos 48 and 52).

Later in the day, I was notified that the unknown line draining into the storm sewer structure was the same line that flows under the facility and is located near the large bulk tanks (see photo 40). All runoff

from the excavation activities and from the stockpiled contaminated runoff was flowing through this culvert into the storm sewer. Mr. Rugaard stated that a plug would be placed on the line to prevent any runoff from entering it.

Additionally, because I advised UFMC that the historical contamination on site would be handled in accordance with Chapter 133, the area where trenching occurred was backfilled. However, per Mr. Rugaard, a large tube that was drilled with holes was placed in the original excavation pit so that product could still be pumped from the pit during normal operations (see photo 46).

October 27, 2014

I conducted a follow-up inspection. UFMC had dug three holes on their property attempting to locate the line that drains from the east side of the building into the storm sewer. After locating the line, it was flushed and all product collected in the drainage ditch.

November 6, 2014

I conducted a follow-up inspection. Ammonia concentrations at the storm sewer outlet to the drainage ditch was still between 60-90 mg/L. Mr. Rugaard was advised to either continue flushing and pumping and excavate more of the sand and rock from the drainage ditch.

UFMC installed a manhole on the west side of the building and added a plug to this side of the line as well (see photo 54). It appeared as if the plugs, associated with the tile that drains under the building, are preventing water from entering the storm sewer.

RESULTS AND REQUIREMENTS PER INVESTIGATION

- Continue to contain and clean up the spilled product between your facility and the dam constructed in the drainage ditch just south of your property.
- A storm water intake is located near the bulk anhydrous tanks (east side of the building). A plug has been placed on both ends of the line. The plug must remain in place and monitored.
- Conduct a Site Assessment in accordance with Chapter 133 of the Iowa Administrative Code.

Other Information Documented During the Investigation

- Mr. Rugaard stated that the UFMC is considered a No Further Action site with the DNR Contaminated Sites section for fuel.
- According to city personnel, the Villisca FD responded to an incident at this location on October 10th. According to UFMC, there was no incident and the FD did not respond. I contacted Dave Rhemy, Villisca Fire Chief. He stated that the FD DID respond to an incident; however, water was not used. According to Chief Rhemy, the riser associated with the pump station was venting.

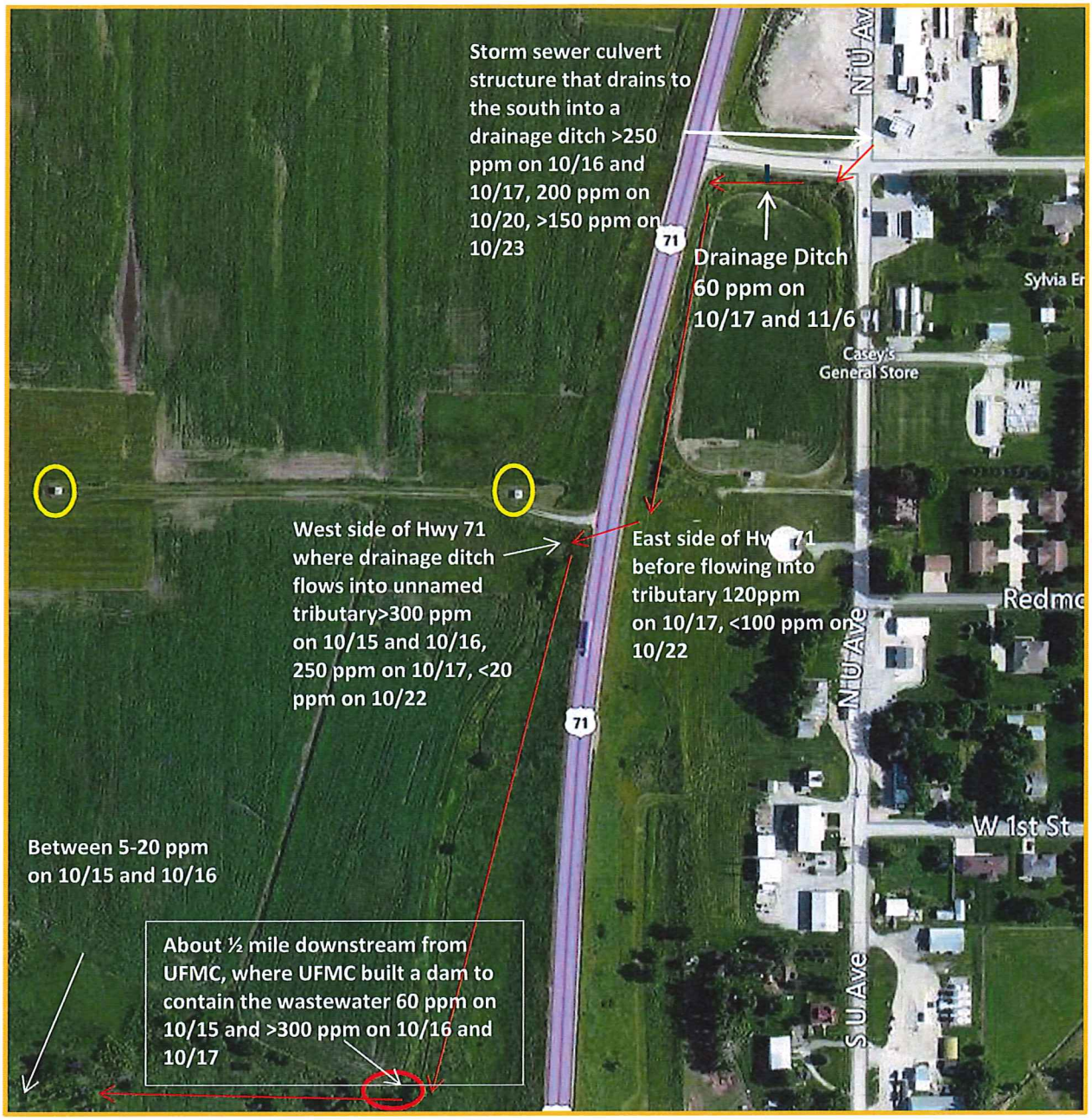
Inspector: Alison Manz Alison Manz

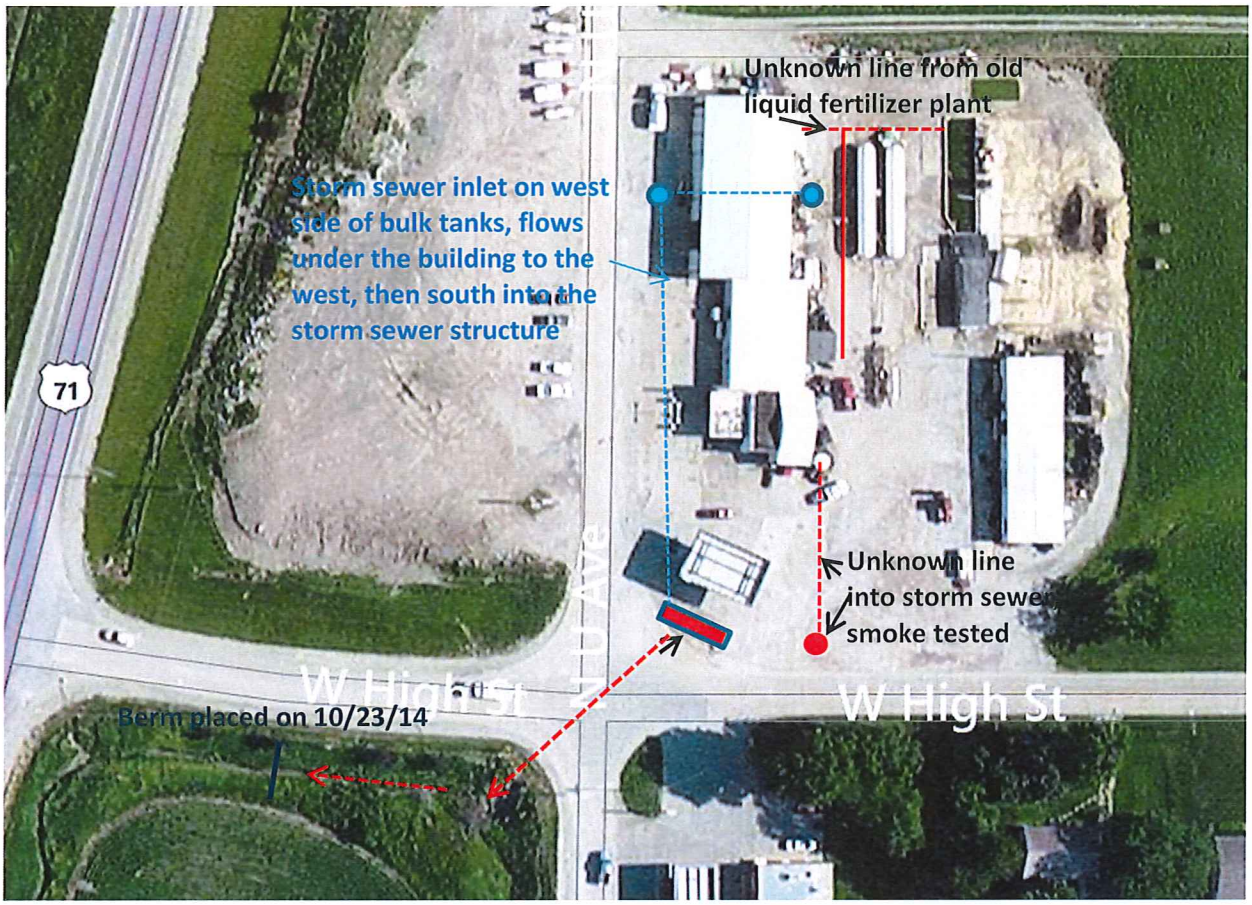
Reviewer: Jessica Watson

Distribution: Field Office: Central Office: Inspected Facility

Date Sent: 11/17/14

File: villisca101515.sp.ufmc roi.manz.doc


Storm sewer culvert structure that drains to the south into a drainage ditch >250 ppm on 10/16 and 10/17, 200 ppm on 10/20, >150 ppm on 10/23
Drainage Ditch 60 ppm on 10/17 and 11/6
Casey's General Store
West side of Hwy 71 where drainage ditch flows into unnamed tributary>300 ppm on 10/15 and 10/16, 250 ppm on 10/17, <20 ppm on 10/22
East side of Hwy 71 before flowing into tributary 120ppm on 10/17, <100 ppm on 10/22
Between 5-20 ppm on 10/15 and 10/16
About ½ mile downstream from UFMC, where UFMC built a dam to contain the wastewater 60 ppm on 10/15 and >300 ppm on 10/16 and 10/17
71
N U Ave
S U Ave
W 1st St



Wednesday, October 15, 2014

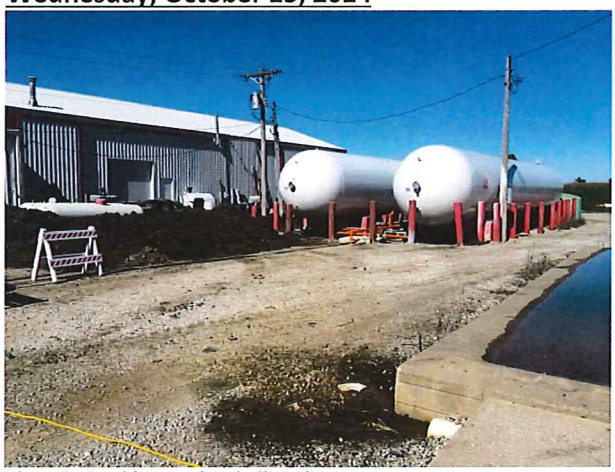


Photo 1: Looking north at bulk tanks



Photo 2: Looking west at filling station



Photo 3: Looking southwest at filling station



Photo 4: Looking west at spill



Photo 5: Looking south where spill entered storm sewer

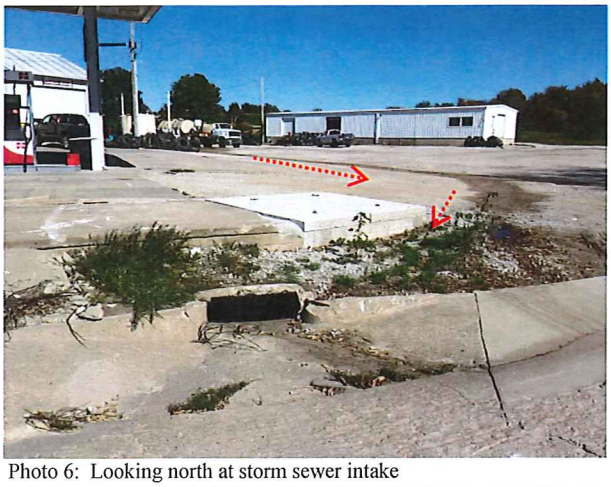


Photo 6: Looking north at storm sewer intake



Photo 7: Looking east where storm sewer crosses under Hwy 71



Photo 8: Looking at contaminated water flowing from storm sewer into the unnamed tributary

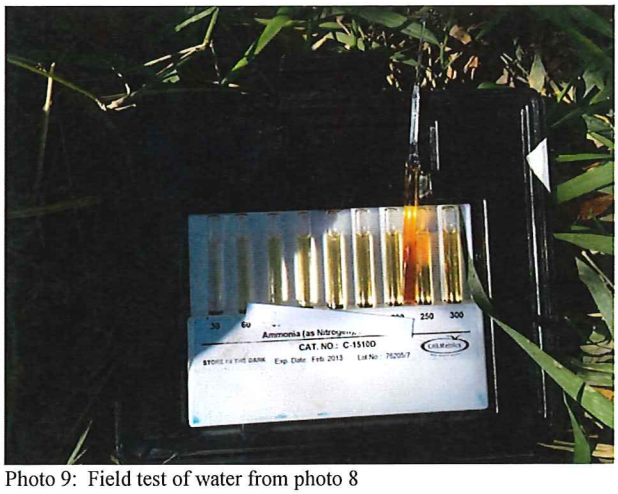


Photo 9: Field test of water from photo 8

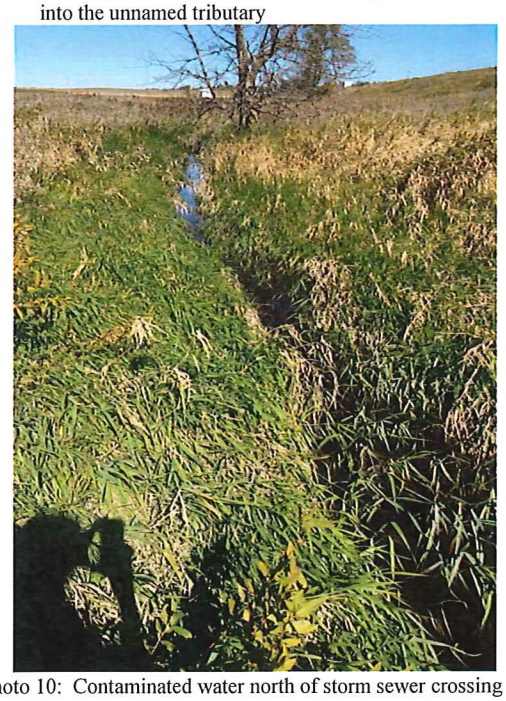


Photo 10: Contaminated water north of storm sewer crossing

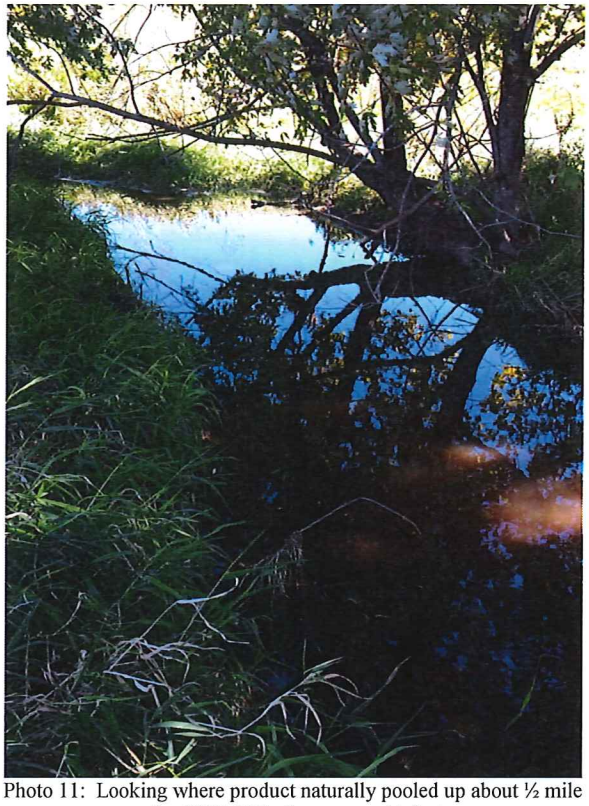


Photo 11: Looking where product naturally pooled up about ½ mile south of UFMC in the unnamed tributary

Thursday, October 16, 2014



Photo 12: Required berming, same area from photo 11

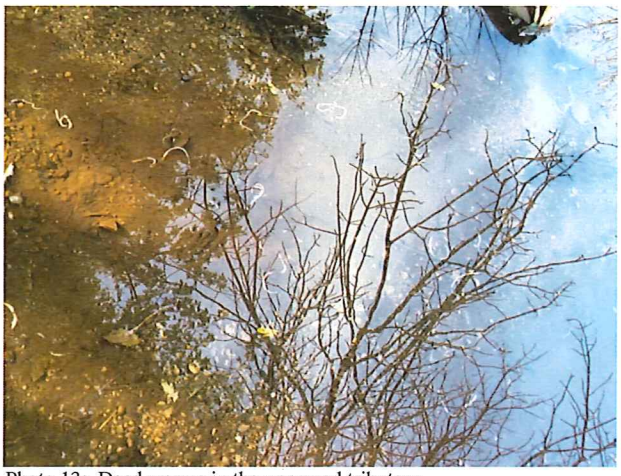


Photo 13: Dead worms in the unnamed tributary

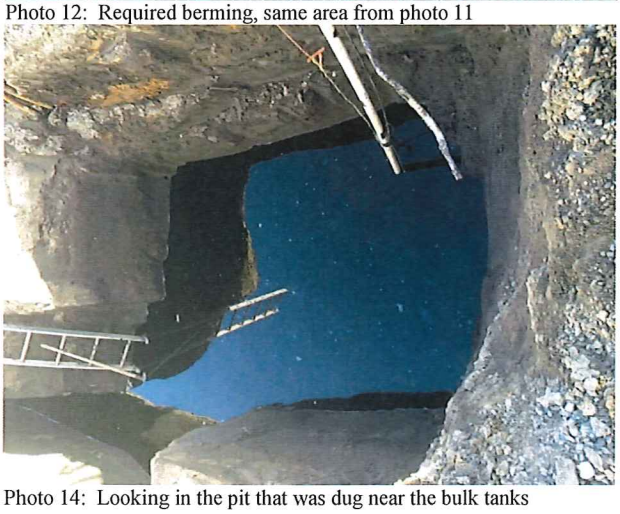


Photo 14: Looking in the pit that was dug near the bulk tanks

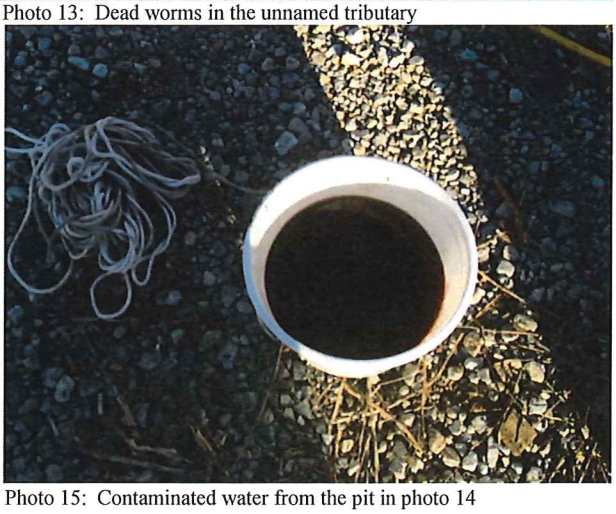


Photo 15: Contaminated water from the pit in photo 14



Photo 16: Looking north at trenching near bulk tanks



Photo 16: Looking south at filling station



Photo 17: Looking north at bulk tanks and above ground piping

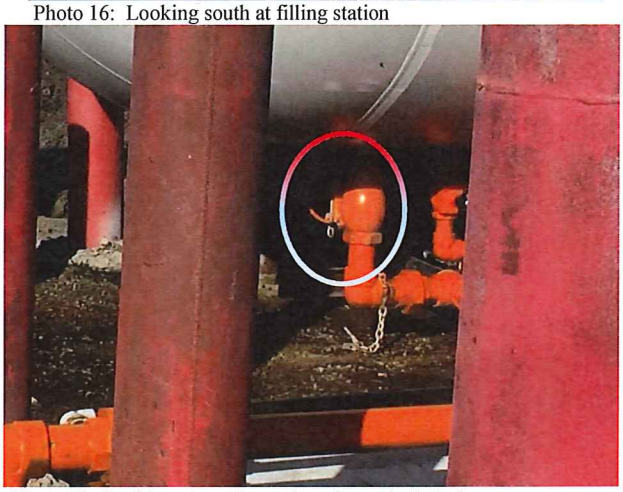


Photo 18: Looking at venting valve of west bulk tank

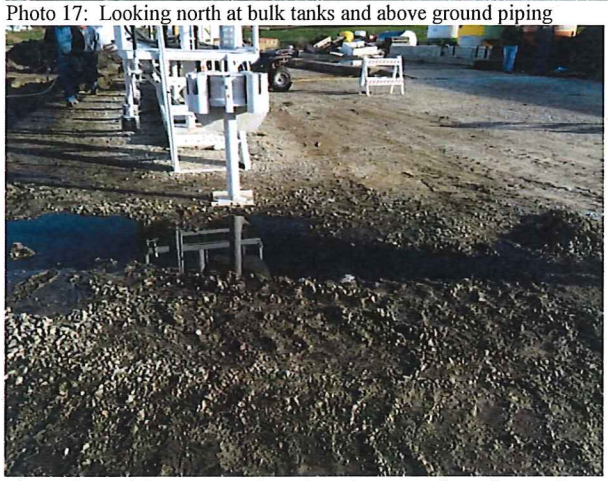


Photo 19: Looking at contaminated product on surface of ground

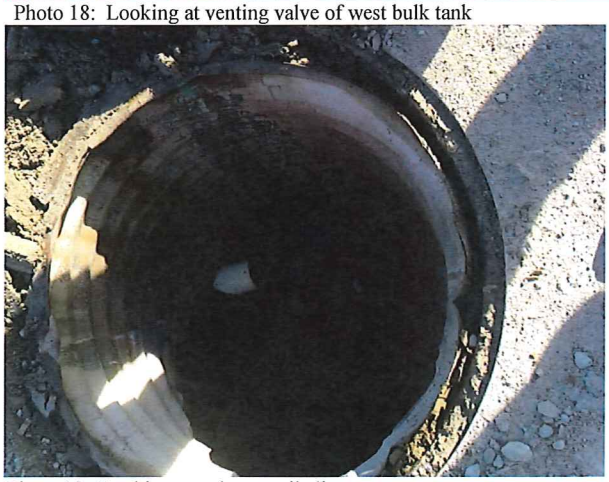


Photo 20: Looking at unknown tile line



Photo 21: Looking at old liquid fertilizer plant (secondary containment)

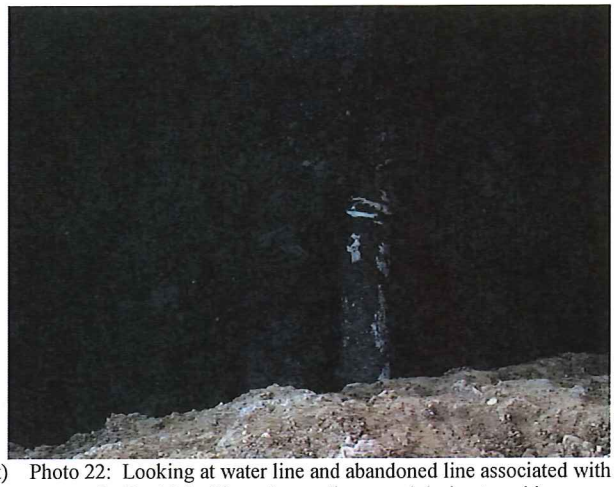


Photo 22: Looking at water line and abandoned line associated with the liquid fertilizer plant – discovered during trenching

Friday, October 17, 2014

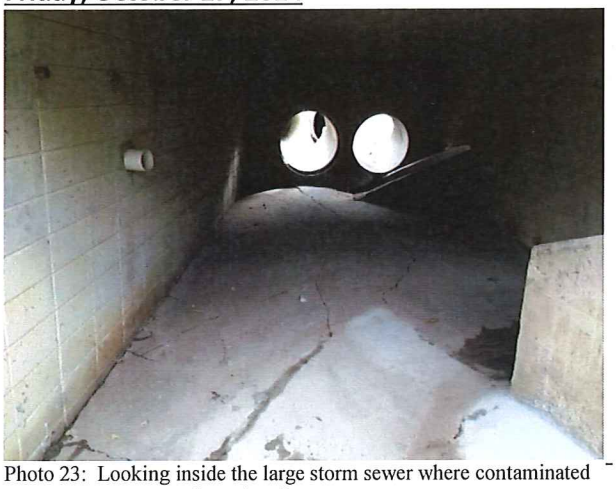


Photo 23: Looking inside the large storm sewer where contaminated water was allowed to flow



Photo 24: Contaminated water seeping through the cracks in concrete floor of the large storm sewere



Photo 25: Looking inside the large storm sewer at another culvert that drains into it

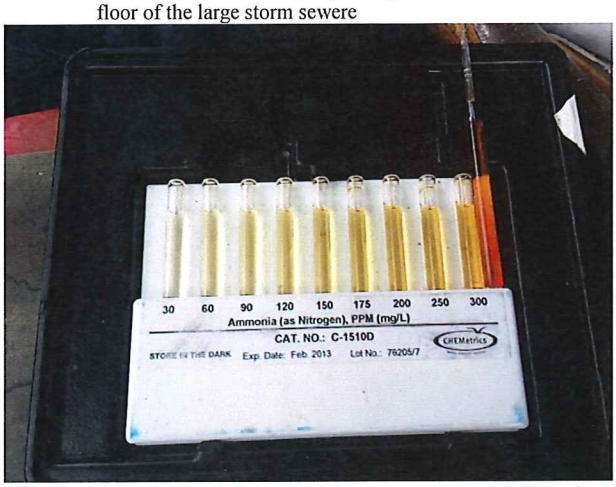


Photo 26: Ammonia concentrations of water seeping through cracks very high



Photo 27: Smoke testing unknown tile line (see photo 20)



Photo 28: Determined unknown tile line used to connect to maintenance garage – now plugged



Photo 29: Looking at city's south well house and tank being used to pump product out of the tributary – RP told to move tank



Photo 30: Excavation, city trying to locate water break

Monday, October 20, 2014



Photo 31: Looking at product still seeping into pit dug at facility

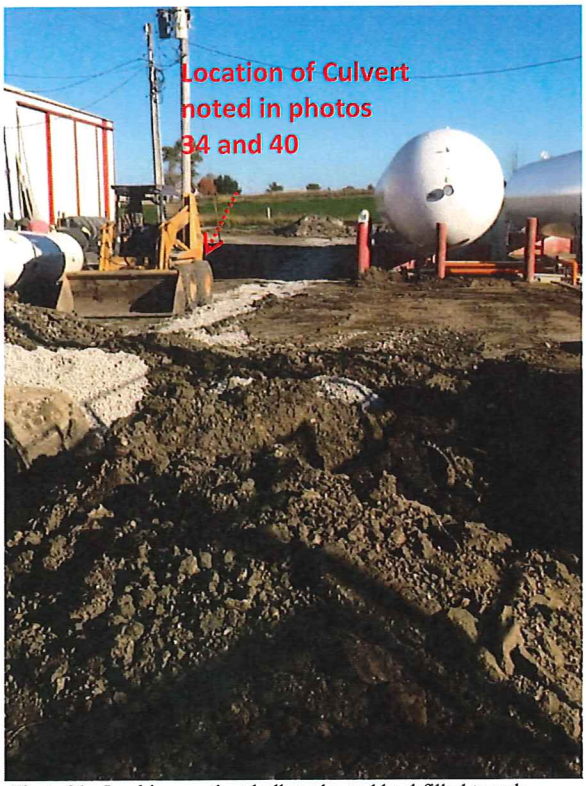


Photo 32: Looking north at bulk tanks and backfilled trench



Photo 33: Looking south at trench area



Photo 34: Looking at culvert that drains storm water around bulk tanks into storm water noted in photo 25

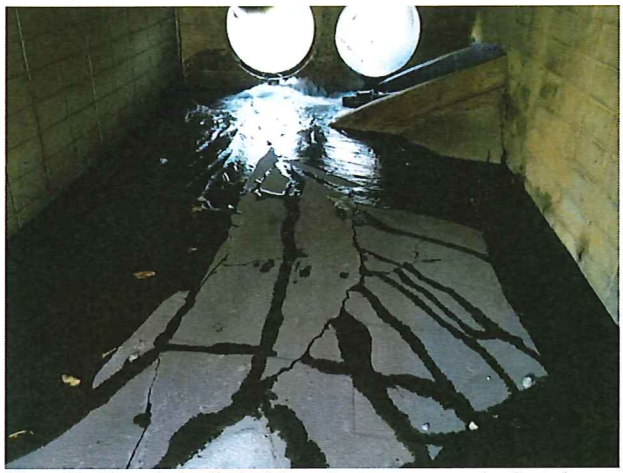


Photo 35: Water being flushed through storm sewer and collected downstream

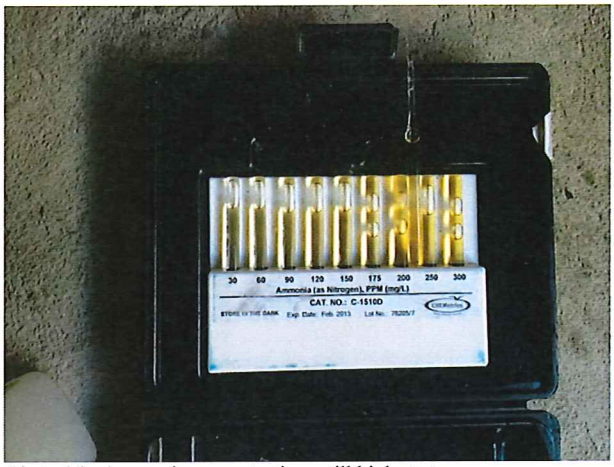


Photo 36: Ammonia concentrations still high at storm sewer

Wednesday, October 22, 2014

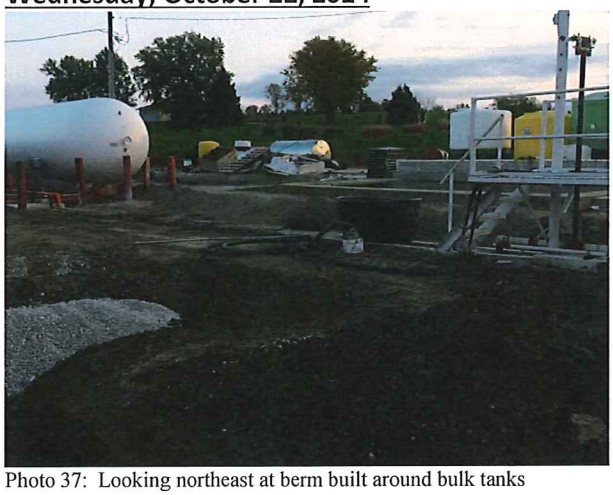


Photo 37: Looking northeast at berm built around bulk tanks



Photo 38: Looking at pit that was dug on-site, tube to be placed in the pit before backfilling to aid in pumping product out



Photo 39: Storm sewer intake noted in photo 34 plugged



Photo 40: Looking south at backfilled trench and storm sewer intake

Thursday, October 23, 2014



Photo 41: Looking at berm around the east side of bulk tanks



Photo 42: Looking at berm around the north edge of bulk tanks

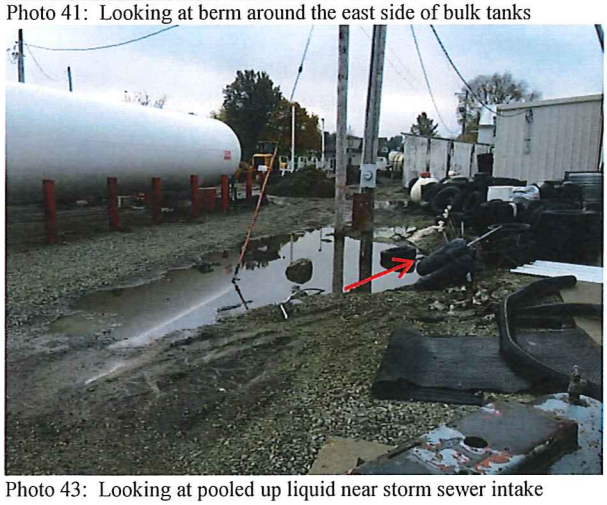


Photo 43: Looking at pooled up liquid near storm sewer intake

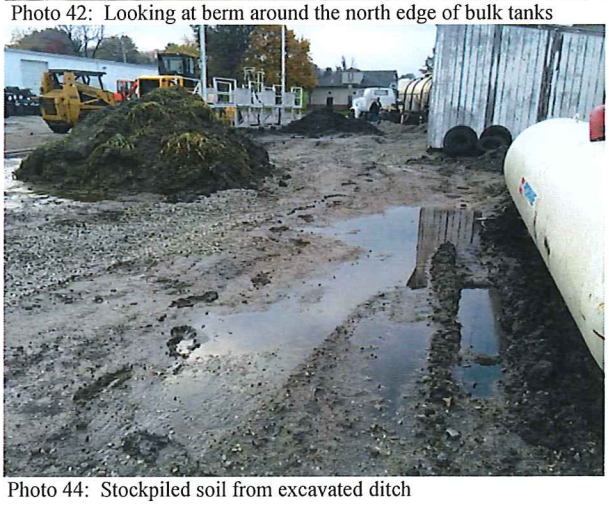


Photo 44: Stockpiled soil from excavated ditch



Photo 45: Runoff from contaminated soil stored on-site



Photo 46: Sump pit built by RP, still pumping contaminated liquid



Photo 47: Looking at unknown line noted in photo 25- possible flow

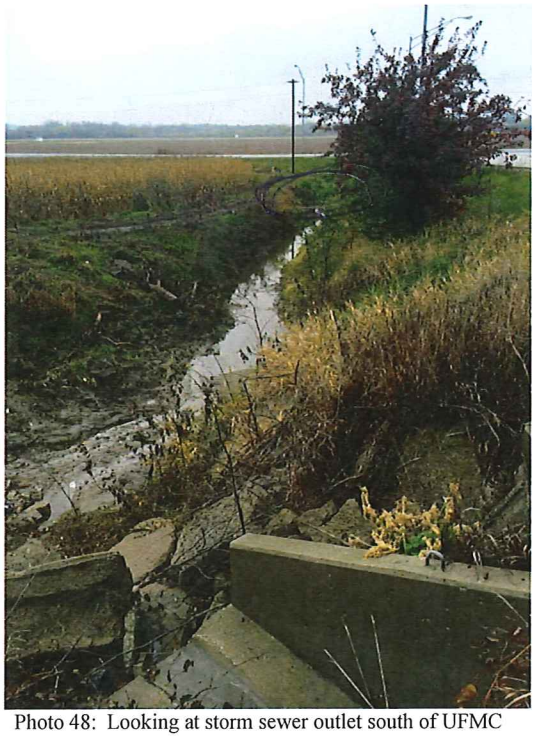


Photo 48: Looking at storm sewer outlet south of UFMC

October 27, 2014



Photo 49: Looking south at pits dug to determine location of sewer line



Photo 50: Storm sewer line plugged, RP unplugging by flushing

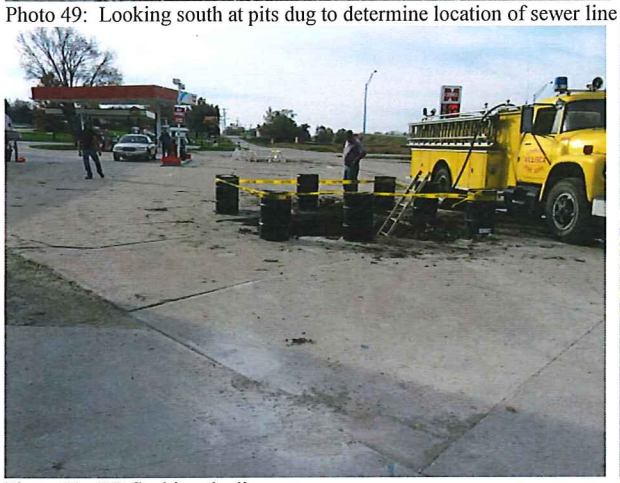


Photo 51: RP flushing the line



Photo 52: Berm to the south of facility (photo 48) still in place to collect while flushing



Photo 53: Standing on berm in drainage ditch just south of the facility

November 6, 2014

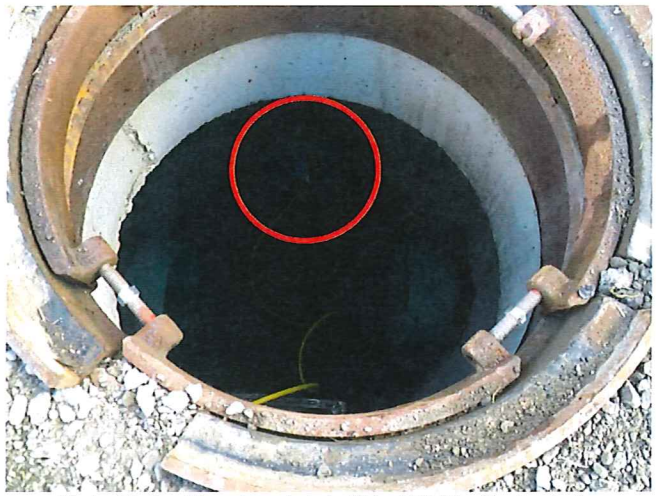


Photo 54: Looking at manhole built by UFMC with plug in the storm sewer that flows under the building

State Hygienic Laboratory

The University of Iowa

Accession Number	197885
Date Sample Finalized	2014-10-27 08:02
Date Received	2014-10-17 15:00
Sample Source	Non-Drinking Water
Project	04WQFS
Date Collected	2014-10-17 13:40
Collection Site	at dam
Collection Town	VILLISCA
Sample Description	ufmc upstream
Client Reference	anhydrous from ufmc
Collector	manz alison
Phone	712/243-1934

IDNR-FO 4
1401 SUNNYSIDE LANE
ATLANTIC, IA 50022-

Note: Upon arrival, sample met container and preservation requirements for the analysis requested. Please review carefully your sample results for additional analyte comments or method exceptions.

Results of Analyses

Ammonia as N, LAC 10-107-06-1J

Units	mg/L	Analyzed In	Ankeny
Date Analyzed	2014-10-24 14:15	Date Verified	2014-10-27 08:02
Analyst	MGB	Verifier	JAE
Analysis Prep	Ammonia distillation, SM 4500-NH3 B		

Analyte	Result	Quant Limit
Ammonia nitrogen as N	1800	0.05

Description of Units used within this report
mg/L = Milligrams per Liter

The result(s) of this report relate only to the items analyzed. This report shall not be reproduced except in full without the written approval of the laboratory.
Iowa Environmental Laboratory IDs are: Ankeny #397, Iowa City/Coralville #027, Lakeside #393.
If you have any questions, please call Client Services at 800/421-IOWA (4692) or 319/335-4500. Thank you.

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Ankeny, IA 50023
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State Hygienic Laboratory

The University of Iowa

Accession Number	197884
Date Sample Finalized	2014-10-24 07:54
Date Received	2014-10-17 15:00
Sample Source	Non-Drinking Water
Project	04WQFS
Date Collected	2014-10-17 13:20
Collection Site	unnamed tributary
Collection Town	VILLISCA
Sample Description	ufmc downstream
Client Reference	anhydrous from ufmc
Collector	manz alison
Phone	712/243-1934

IDNR-FO 4
1401 SUNNYSIDE LANE
ATLANTIC, IA 50022-

Note: Upon arrival, sample met container and preservation requirements for the analysis requested. Please review carefully your sample results for additional analyte comments or method exceptions.

Results of Analyses

Ammonia as N, LAC 10-107-06-1J

Units	mg/L	Analyzed In	Ankeny
Date Analyzed	2014-10-23 14:08	Date Verified	2014-10-24 07:54
Analyst	MGB	Verifier	JAE
Analysis Prep	Ammonia distillation, SM 4500-NH3 B		

Analyte	Result	Quant Limit
Ammonia nitrogen as N	0.24	0.05

Description of Units used within this report

mg/L = Milligrams per Liter

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State Hygienic Laboratory

The University of Iowa

Accession Number	200570
Date Sample Finalized	2014-11-11 16:01
Date Received	2014-11-04 10:33
Sample Source	Non-Drinking Water
Project	04WQFS
Date Collected	2014-10-23 10:10
Collection Site	@culvert 71, near the south well
Collection Town	
Sample Description	
Client Reference	from ufmc spill
Collector	manz alison
Phone	712/243-1934

ALISON MANZ
IDNR-FO 4
1401 SUNNYSIDE LANE
ATLANTIC, IA 50022-

Note: Sample exceeded required temperature upon receipt.

Results of Analyses

Ammonia as N, LAC 10-107-06-1J

Units	mg/L	Analyzed In	Ankeny
Date Analyzed	2014-11-10 09:21	Date Verified	2014-11-11 16:01
Analyst	MGB	Verifier	JAE
Analysis Prep	Ammonia distillation, SM 4500-NH3 B		

Analyte	Result	Quant Limit
Ammonia nitrogen as N	8.0	0.05

Description of Units used within this report
mg/L = Milligrams per Liter

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