

Agenda Item: 7.

MEMORANDUM

TO: Programs, Projects and Operations Subcommittee

FROM: Amanda Grint, Water Resources Engineer

SUBJECT: City of Blair Flood Mitigation Assistance Program (FMAP) Cost Share Request

DATE: April 2, 2015

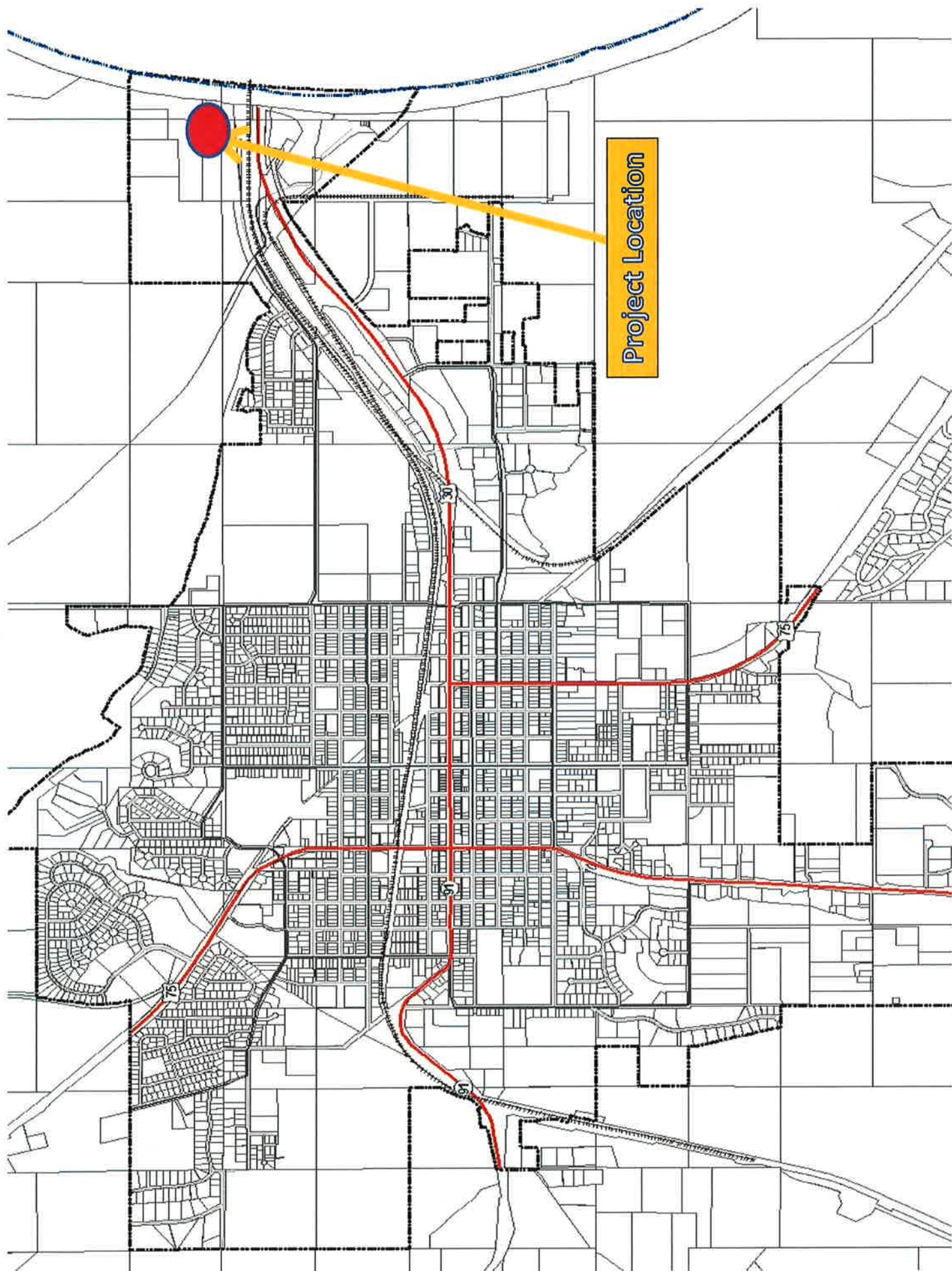
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The City of Blair has reached out to the District in 2012 and again in 2014 to request assistance in funding flood control berms to protect the water and wastewater treatment facilities for the City of Blair. Through the Hazard Mitigation Grant Program, FEMA has approved funding 75% of the project costs. The project has been broken in to three phases, Phases 1 and 2 address the flood control portion of the project and the estimated cost for those phases is \$4.9 million.

Phase 1 and 2 of the project are detailed in the attached application and memorandum from Al Schoemaker, City of Blair Director of Public Works, and consist of the flood control elements of the project. These phases include work for the earthen berms, utility relocation and penetrations through berm, pump station and a drainage structure and a flood gate. The proposed project meets the requirements of the District Policy 17.44 (FMAP). The maximum cost share under the program is \$500,000 or half the local cost share, whichever is less.

The project schedule is such that the funding could be budgeted in two fiscal years, FY16 and FY17.

**Staff recommends that the Subcommittee recommend to the Board that the General Manager be authorized to approve the Flood Mitigation Assistance Program application with the City of Blair for the Water Treatment Plan Flood Protection Program in the amount of \$500,000 or half of the local cost share, whichever is less, and enter in to an interlocal agreement with the City of Blair to fund the project over two fiscal years subject to terms and conditions as determined by the General Manager and approval as to form by District Legal Counsel.**



## Memorandum

March 9, 2015

To: PMRNRD Board Members

From: Al Schoemaker

RE: Blair, Nebraska Water Treatment Plant Flood Mitigation Assistance Funding Request

After the 2011 Missouri River flooding event that cost Blair over \$4 million to protect the city's water treatment plant Blair decided to seek FEMA Mitigation funding to permanently construct flood control berms and pumping station to protect the city from future flooding events. As recently as June 2014 the Missouri River threatened the city's water treatment plant with the large rain events that occurred a few weeks before. Only the failure of a levy in Dakota County that flooded a large portion of farmland kept the Missouri River from flooding the Blair water treatment plant. Blair saves more than 10,000 residents of Washington County with water and some of the water customers include City of Blair, Village of Kennard, OPPD Nuclear Power Plant, Cargill, PMRNRD Washington County Rural Water District Number 2 and many rural residential and commercial customers.

In February 2012 Blair retained HDR to begin work on a FEMA Mitigation funding application to secure FEMA funds to construct a permanent flood control berm, pumping station, site utility work for the flood control berms and generators for the water treatment plant, water intake structure and wastewater treatment plant. After many reviews of the needed improvements and evaluation of benefits it was determined the project had a benefit to cost ratio of 1:3 which helped secure NEMA and FEMA approvals. Phase I approval of the FEMA Mitigation project was received on December 17, 2013 at which time preliminary design was started by HDR. Blair submitted the preliminary design for review and approval to NEMA and FEMA in April 2014. Phase II approval was granted by FEMA on July 3, 2014. Blair gave notice to HDR to proceed with final design shortly after.

The design was broken into three phases for bidding and construction purposes. The three phases of work are as follows. Phase I: Fairview Drive Embankment and earthwork berms, Phase II: Pump station, site utilities and flood gate and Phase III: backup generators for the water treatment plant, wastewater treatment plant and water intake structure. Phase III is not directly related to the flood control so Blair is not requesting funding participation from PMRNRD for work covered by Phase III. Fairview Drive is the only access to the Blair water treatment plant and was protected with a temporary berm during the 2011 flood. We decided to elevate Fairview Drive from the Marina Drive intersection to the west end of the water treatment plant site verses constructing flood control berm to protect Fairview Drive. The second phase includes all of the site utility work needed to allow the earthen berms to be constructed to Corp of Engineers standards, a new flood gate across Fairview Drive and the new pump station. For the purpose of this application Blair is only requesting consideration of work covered by Phases I and II.

The construction bids for Phase I is \$1,193,317 and Phase II is \$3,155,439. The engineering for this work is \$547,746.92 for a total cost of \$4,896,502.92. FEMA will pay 75% or \$3,672,377.19 and Blair is responsible for the local matching fund of 25% which is \$1,224,125.73. Blair is respectfully requesting \$500,000 from the PMRNRD Flood Mitigation Assistance Program to provide matching funding for the local cost of Phases I & II of our FEMA Mitigation project to help protect the city's water treatment plant from future flooding. Listed below is a brief description of work covered by Phase I and II.

Phase I includes the earthen berms around the water and wastewater treatment plant site. Blair's water and wastewater treatment plants share the same site, so the wastewater treatment plant is included in the area for the berms. This project also includes the elevating of Fairview Drive from Marina Drive to the west end of the water treatment plant. The flood control berms will be constructed to an elevation of 1015 or five feet above the existing ground. This was the elevation of the temporary flood control berms constructed in 2011. We had two feet of freeboard for the entire duration of the flooding event. The berms will be constructed to Corp of Engineers standards as required by FEMA.

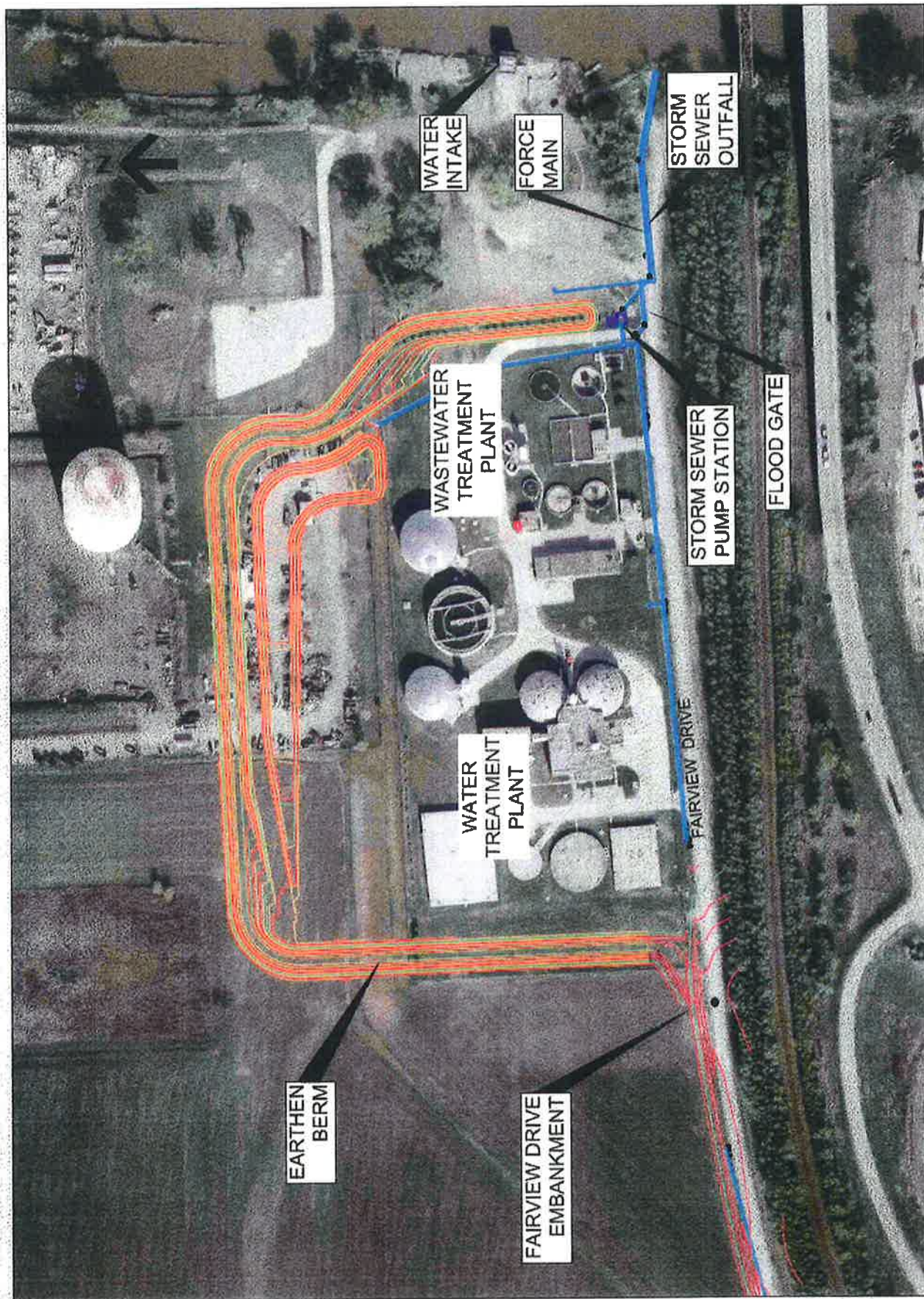
Phase II work includes encasement of all site Utilities that cross the new flood control berms, the relocation of the existing water and sanitary sewer mains from under Fairview Drive in the area of the new embankment elevating Fairview Drive and a new pump station to pump effluent from the water treatment plant and storm water during a flooding event. During the 2011 Missouri River flooding we had to pump all effluent from the water treatment plant and storm water from inside the berms. This required a number of pumps located around the entire site and involved a number of personnel to monitor and man these temporary pumps. The new pump station is designed to handle all of the storm water and effluent discharges from the water treatment plant. Lastly there will be a new flood gate installed as a part of this work. The flood gate will provide flood control at the intersection of Fairview Drive and the new flood control berms. The gate will lay horizontal with the paved road surface most of the time and will only be raised in the event of flooding.

This project has been under construction as of mid November 2014 with all of the work scheduled to be completed by mid 2016. Fairview Drive paving work must be completed by August 1, 2015 to be eligible for FEMA funding from the original disaster declaration. The FEMA Mitigation project must be completed and closed out by December 16, 2017 including final audit. We contacted the PMRNRD General Manager in June 2014 about the status of the project. I followed that up with a letter to the General Manager in August 2014 requesting to make a presentation and funding request for our project and was advised to wait until early winter 2014/15 thus the reason for the timeline for submittal of funding request.

In summary the Blair FEMA Mitigation project Phases I and II for a total cost of \$4,896,502.92 including engineering services. Blair is responsible for the local match of 25% or \$1,224,125.73. Blair is requesting \$500,000 grant from the PMRNRD Board under the Flood Mitigation Assistance Program spread over fiscal years 2016 and 2017. This amount represents 41% of the local funding of relevant project costs. The City of Blair would like to thank the PMRNRD Board and Staff for their time reviewing this request for funding. I have attached a aerial photo showing the improvements.



# BLAIR FLOOD MITIGATION PROJECT



## Memorandum

March 6, 2015

To: PMRNRD Board Members

From: Al Schoemaker

RE: Blair, Nebraska Water Treatment Plant Flood Mitigation Assistance Funding Request

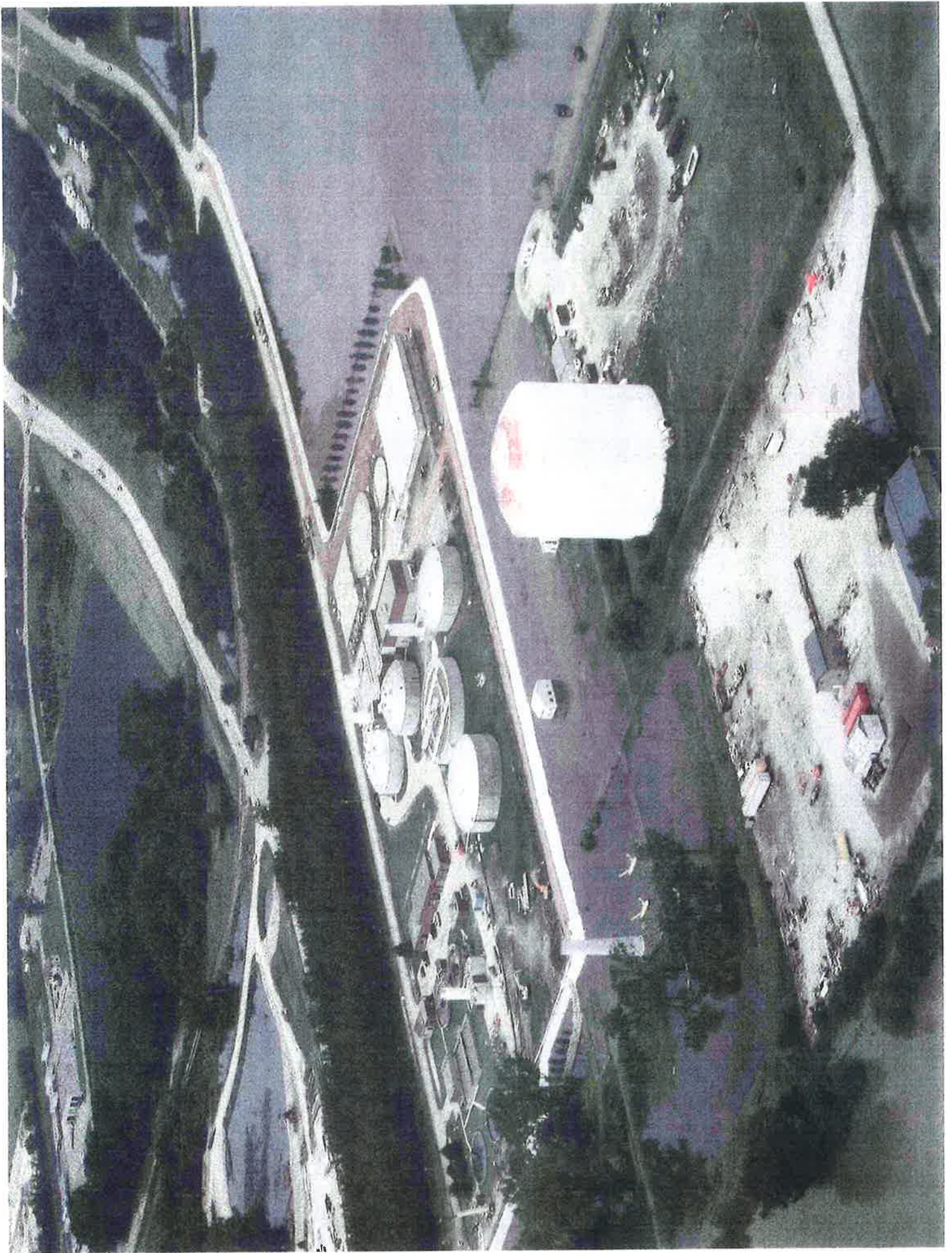
During the summer of 2011 the Corp of Engineers increased the release of water from Gavin Point Dam into the Missouri River basin at an ultimate peak rate of 165,000 cubic feet per second which caused flooding all along the Missouri River tributary from Gavin Point Dam to Kansas City. Blair, Nebraska's water treatment plant is located on property owned by the City of Blair adjacent to the Missouri River, and the property is located in a 100 year floodplain but the buildings were constructed to one foot above the 100 year flood plain however the Missouri River flooding was estimated to be a 500 year flooding event.

Blair officials recognizing that we needed to construct temporary flood control berms to protect the water treatment plant from the pending Missouri River flooding. Blair hired a number of contractors to construct a berm, seal off all penetrations under the berm, and provide pumps to pump effluent from the water treatment plant and storm water during the flooding event. The flooding started June 25<sup>th</sup> and ended September 15<sup>th</sup>. After the flooding event passed Blair had to clean up the mess created by the temporary flood control berms and all of the pumping of effluent from the water treatment plant. We discharge lime solids and solids settled out in our preset basins to the Missouri River under a NPDES permit. These discharges are normally done by gravity but with the river flooding we had to pump these discharges over the berms to the surrounding property. These solids then were cleaned up after the flooding. The cost of providing these temporary protections and pumping was over \$4 million.

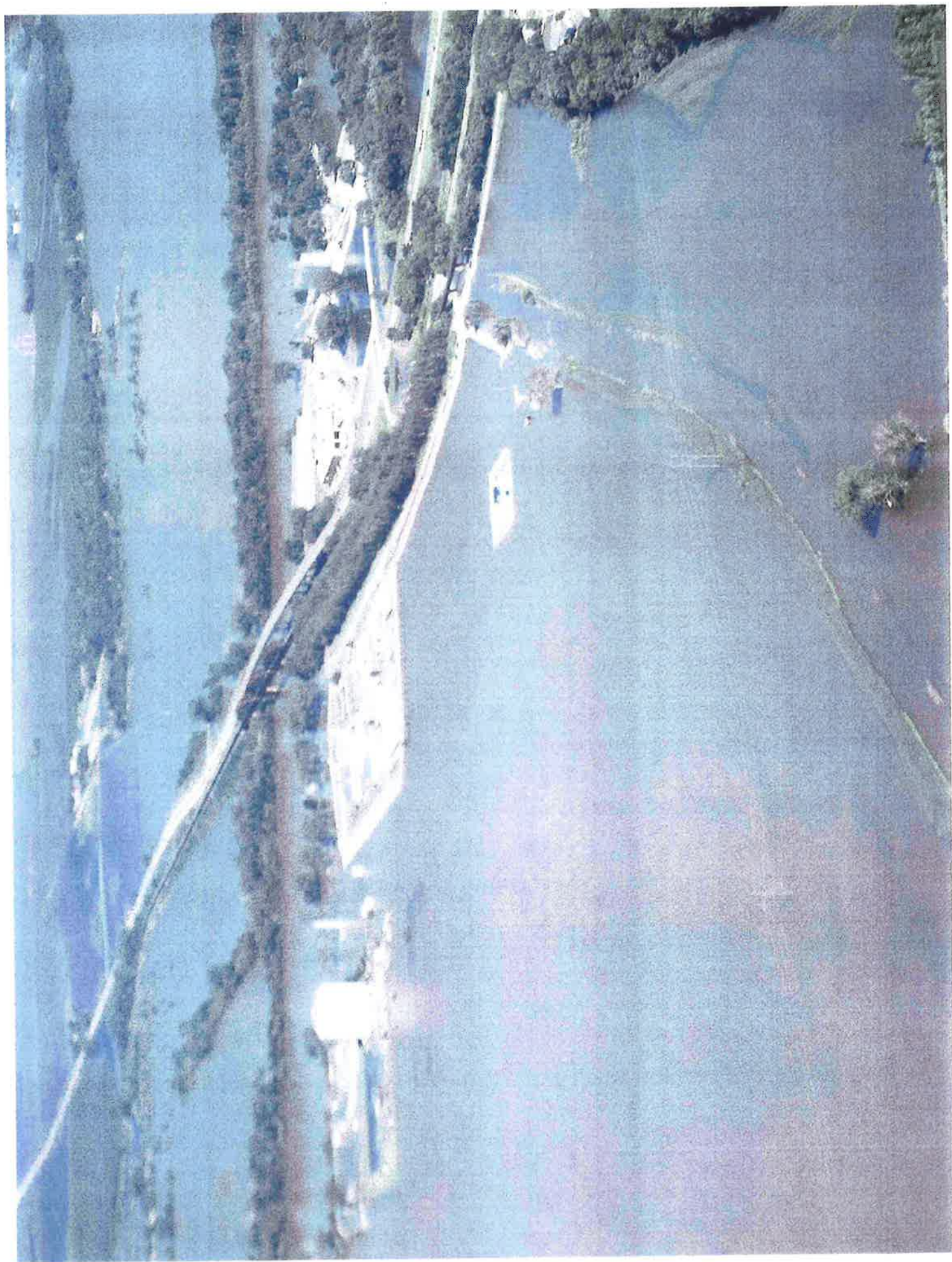
Once the flooding subsided Blair filed a claim with FEMA to provide federal funding assistance for constructing the temporary flood control devices and the cleanup from the flooding event but this required Blair to remove all flood control berms and other flood protection devices and restore the site to pre-flood condition. Knowing that this same type of flooding event could happen again Blair decided to look at funding options to construct permanent flood protection for the city's water treatment plant and decided the best course of action was to file an application for FEMA Mitigation funding assistance for permanent flood control for the city's water treatment plant site.

I have attached a few pictures from the 2011 Missouri River flooding and the temporary flood control berms and pumping we had to install to protect the city's water treatment plant.

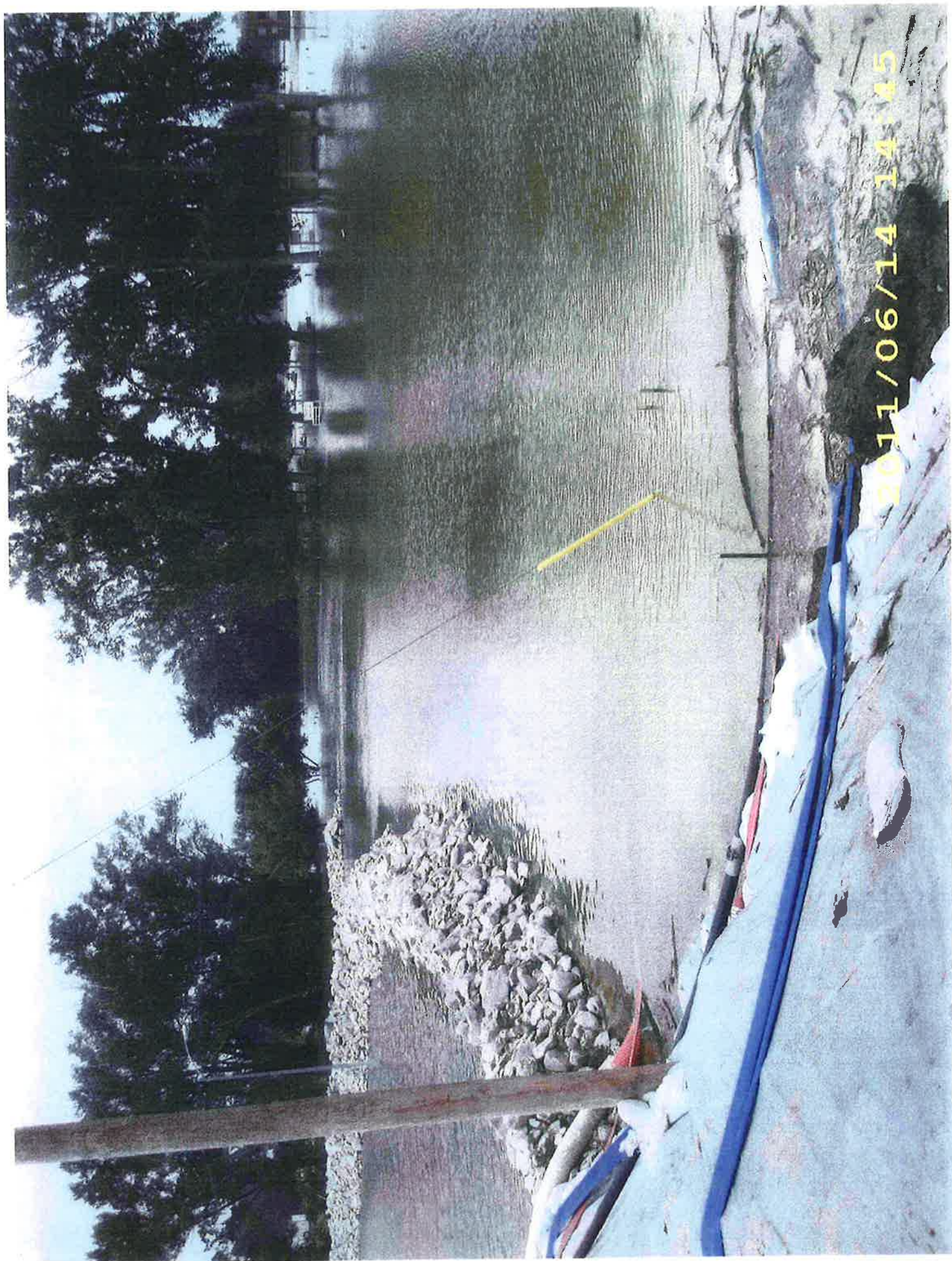




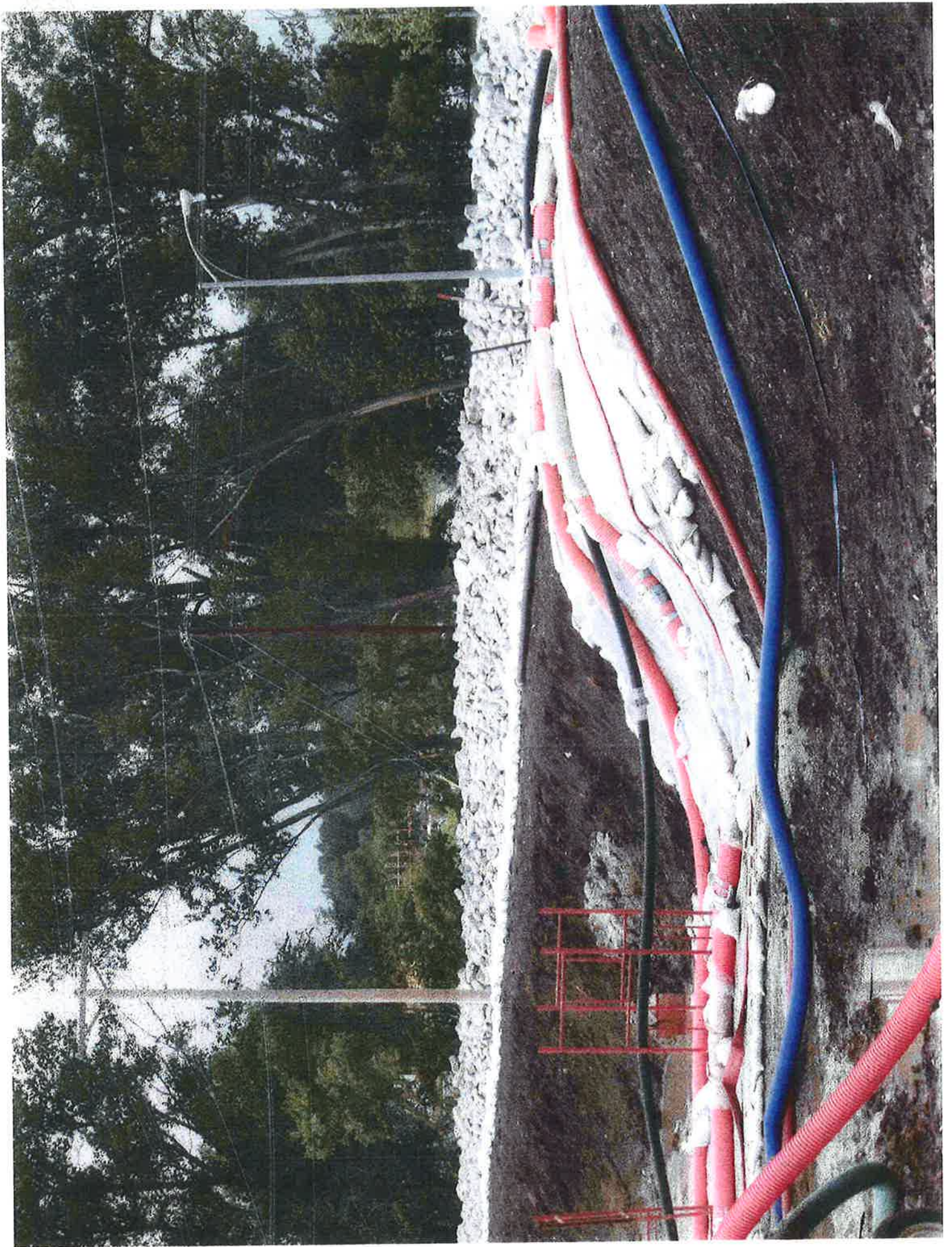




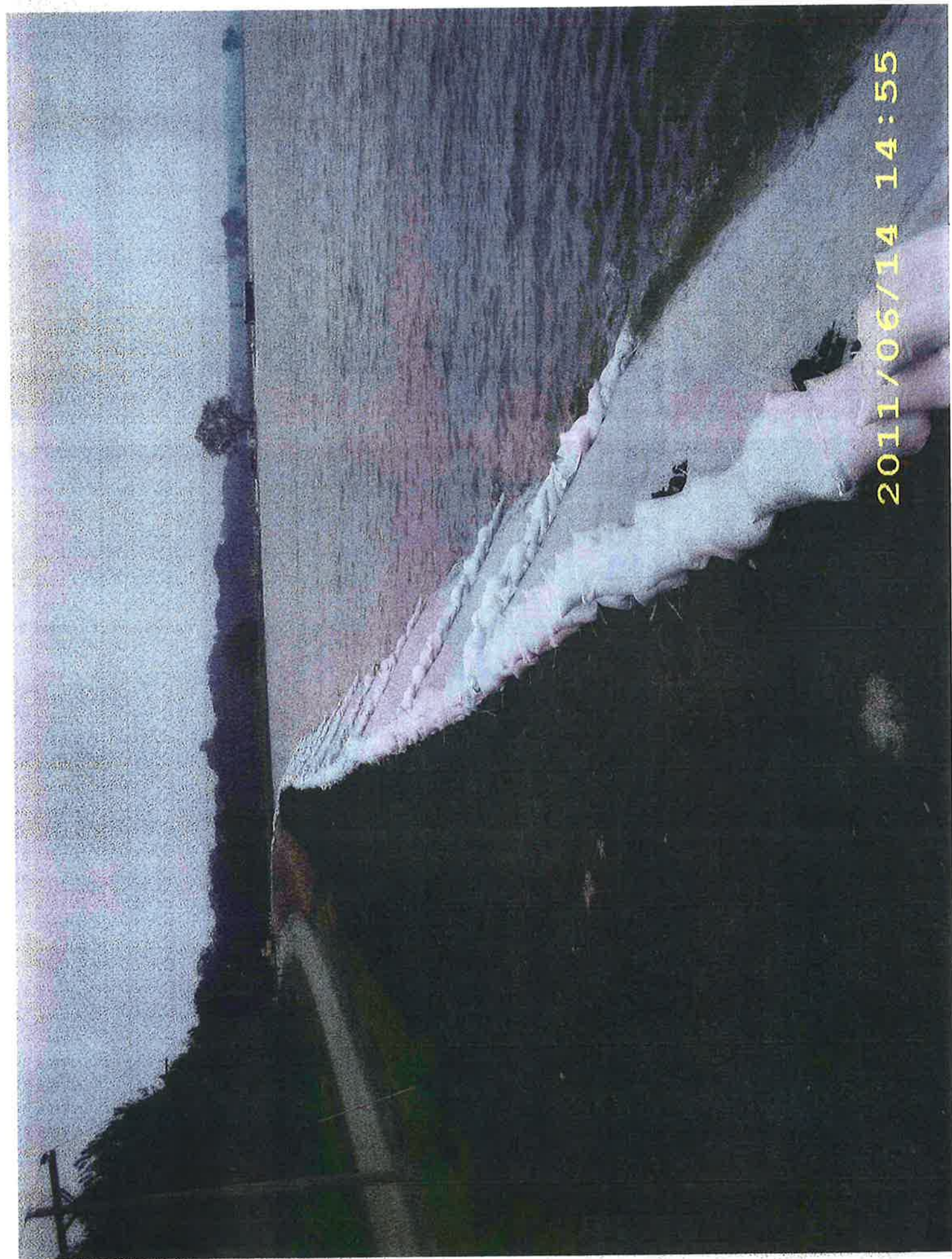






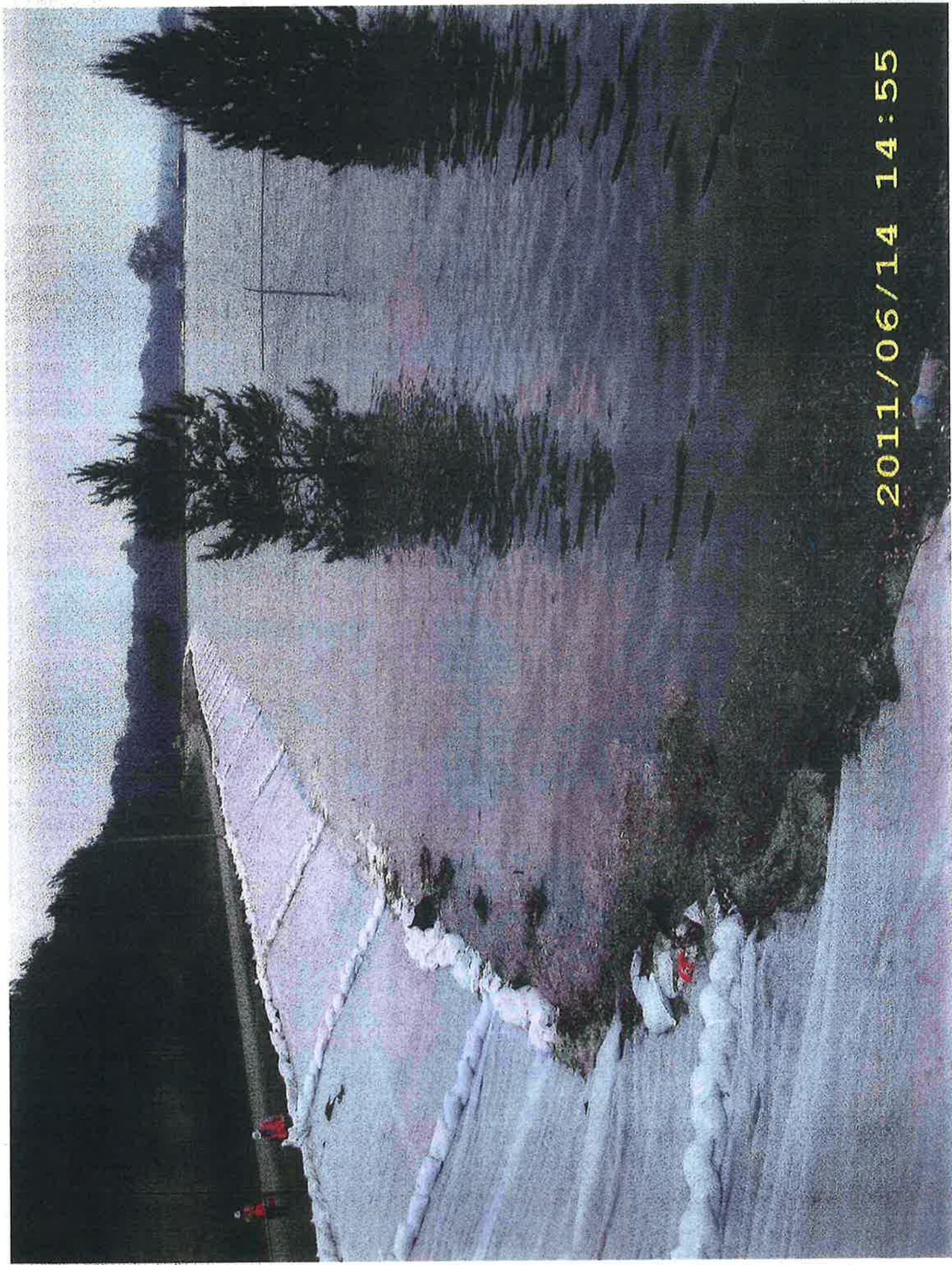






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