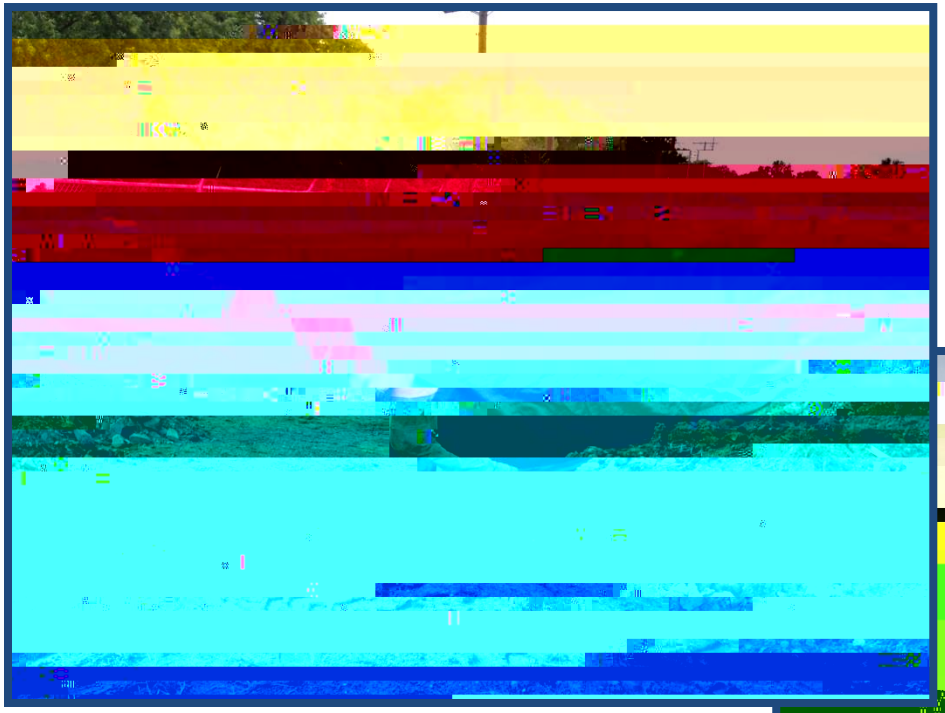
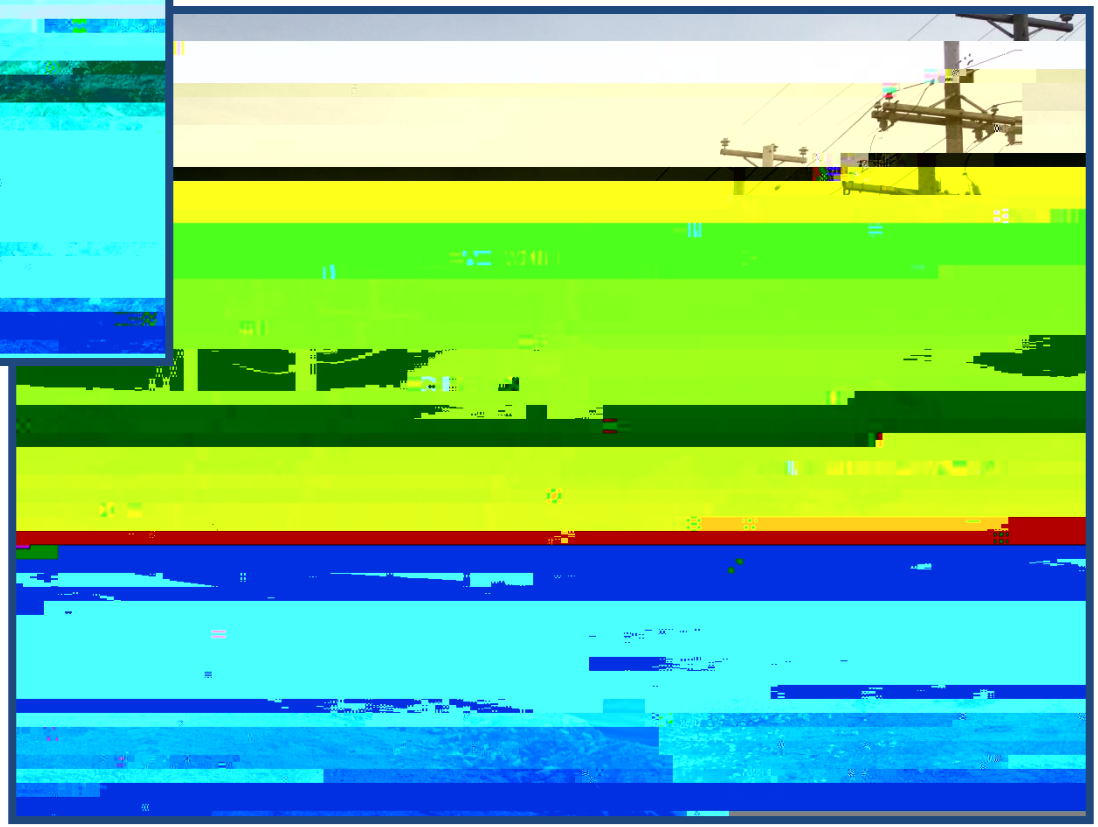
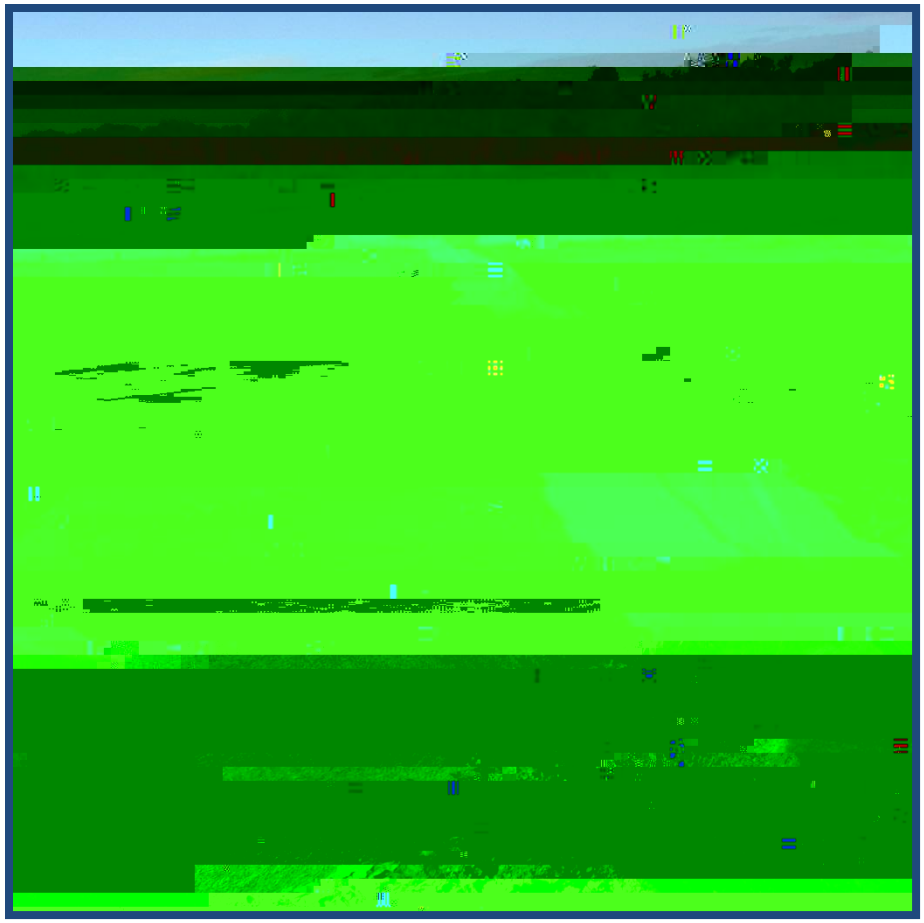
Work began on land, protecting against erosion and sediment release by installing fabric on chain-link fencing, creating “super silt fencing.”

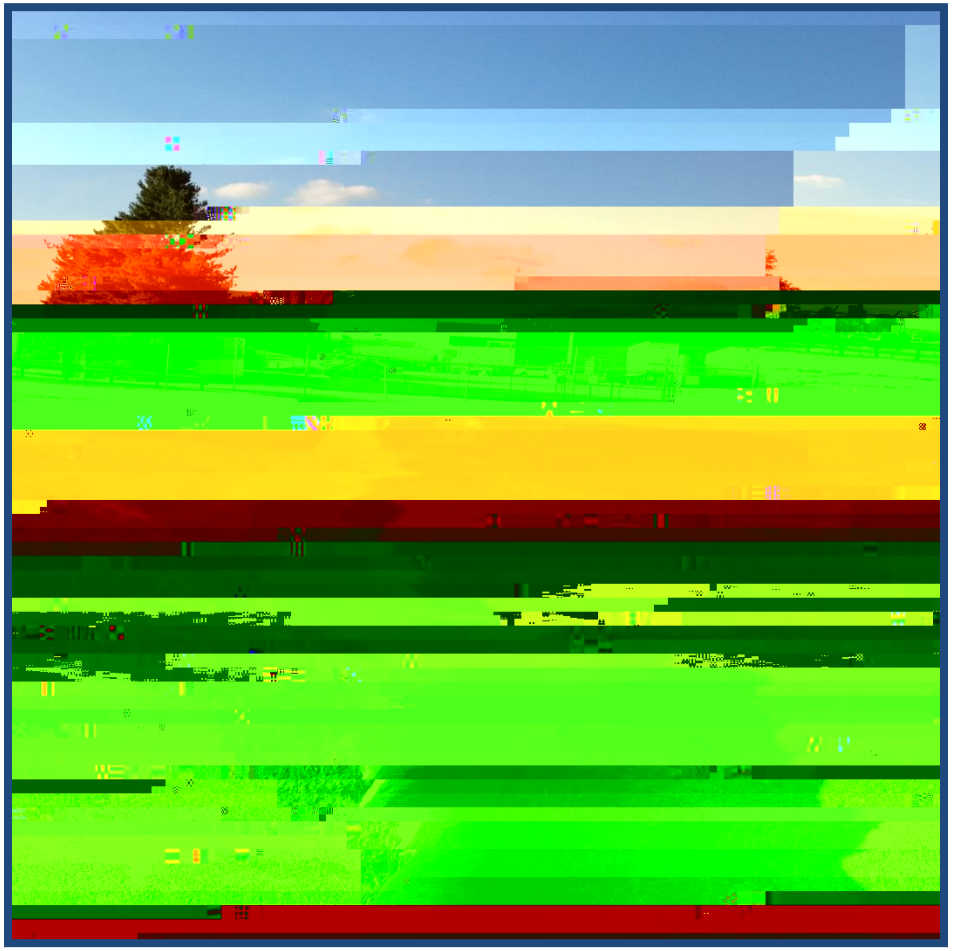




Other methods used to protect work areas included installing temporary asphalt berms, filter logs, and plastic sheeting anchored with rocks to protect rainwater outlets.

In concrete work areas, silt fencing and filter logs prevented sediments from moving outside the area.

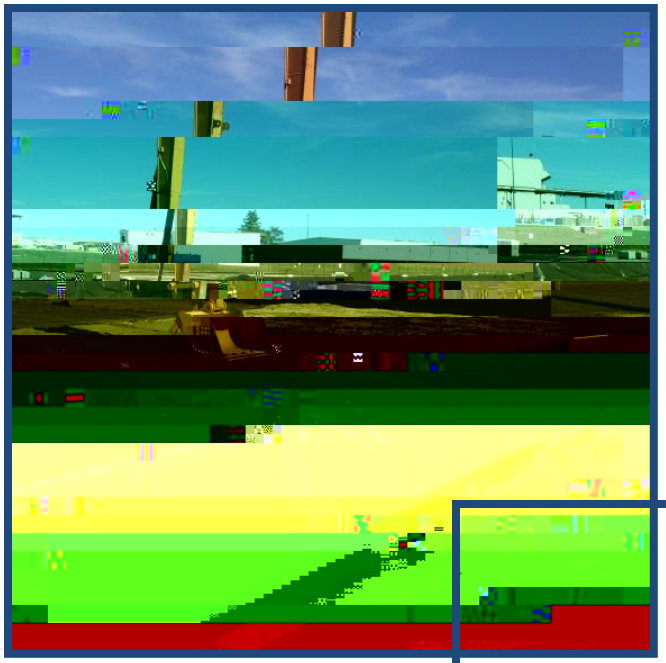




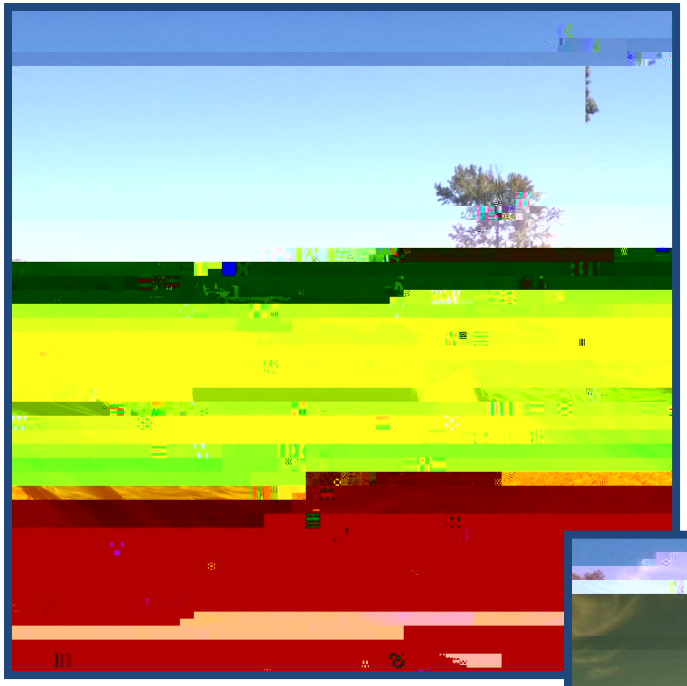
Work preparation included constructing a temporary road and entrance for construction vehicles and installing a mobile treatment system for water drained from sediment.

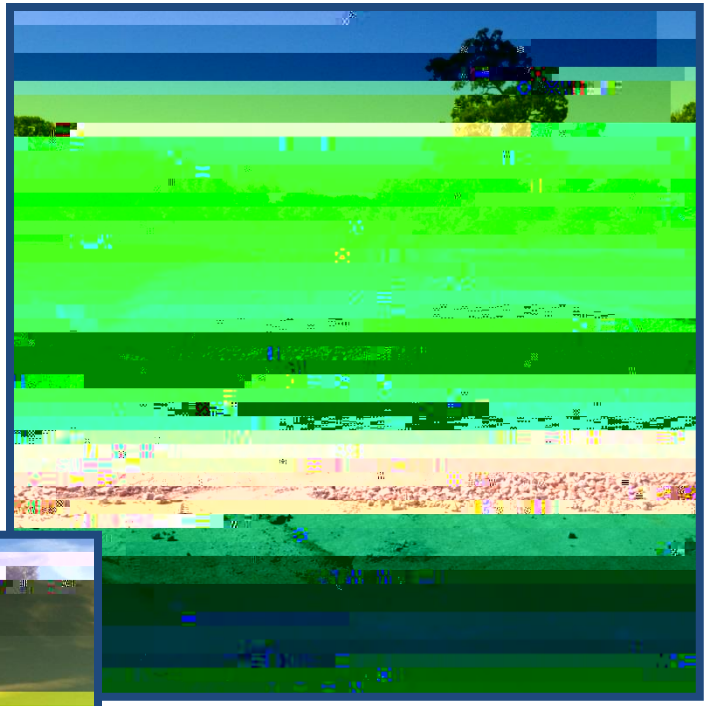
Sediment mixing bins were constructed

A base-layer of gravel was spread over the plastic sheeting for protection. Drained water filtered through the gravel, then was collected and transported to the temporary onsite water treatment system.

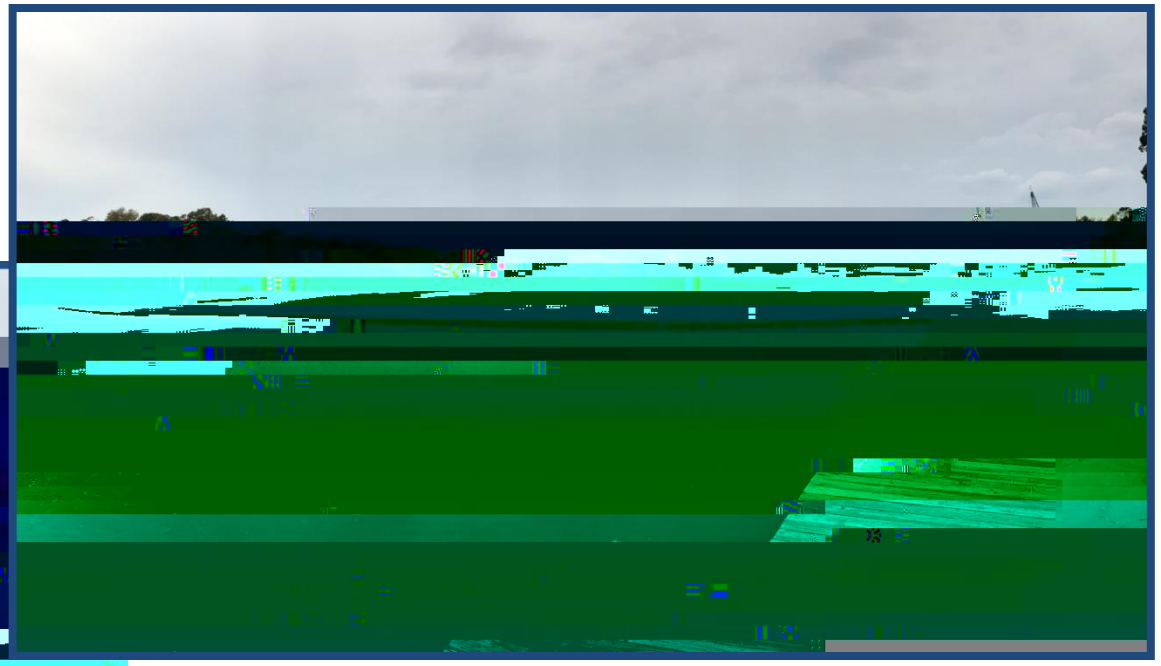


A temporary haul road was built with protective plastic sheeting and covered by gravel.

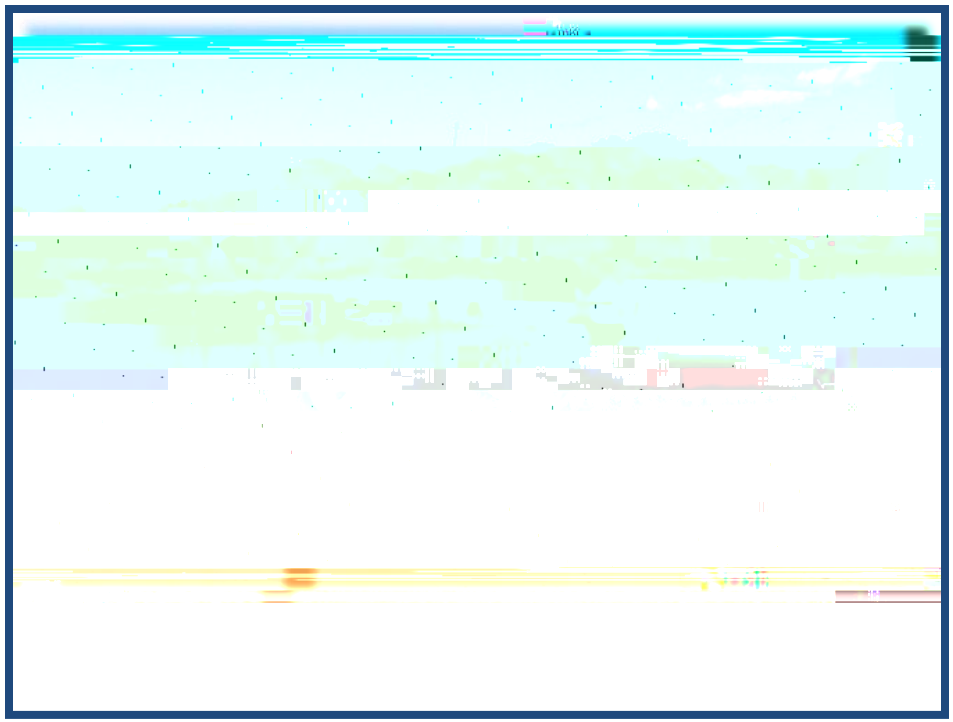


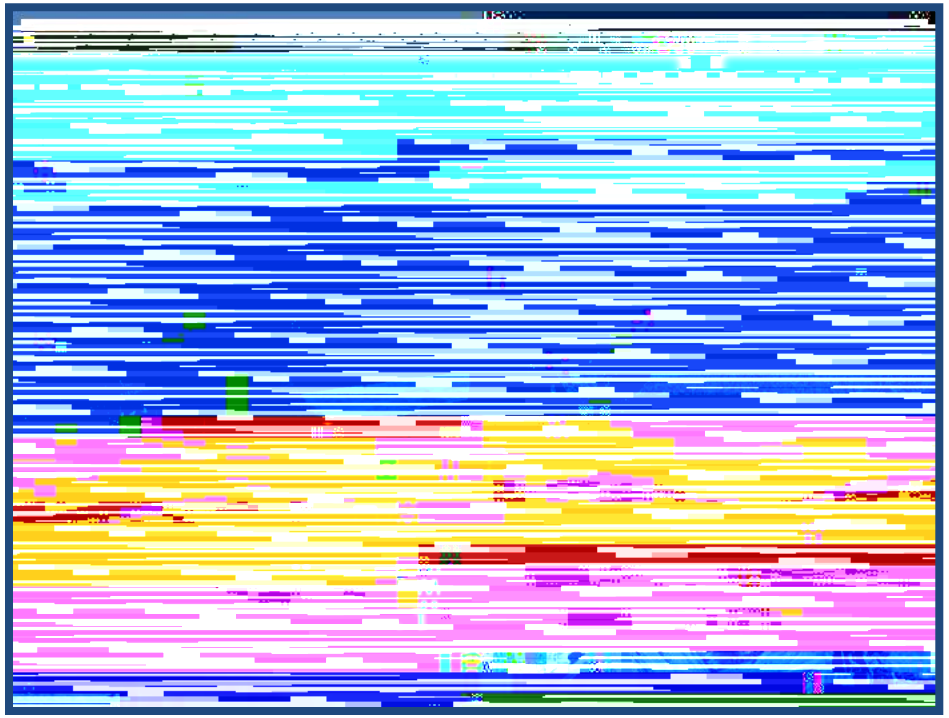


Dredging equipment arrived, then barges and cranes. A silt curtain was installed across the width of Dark Head Cove.

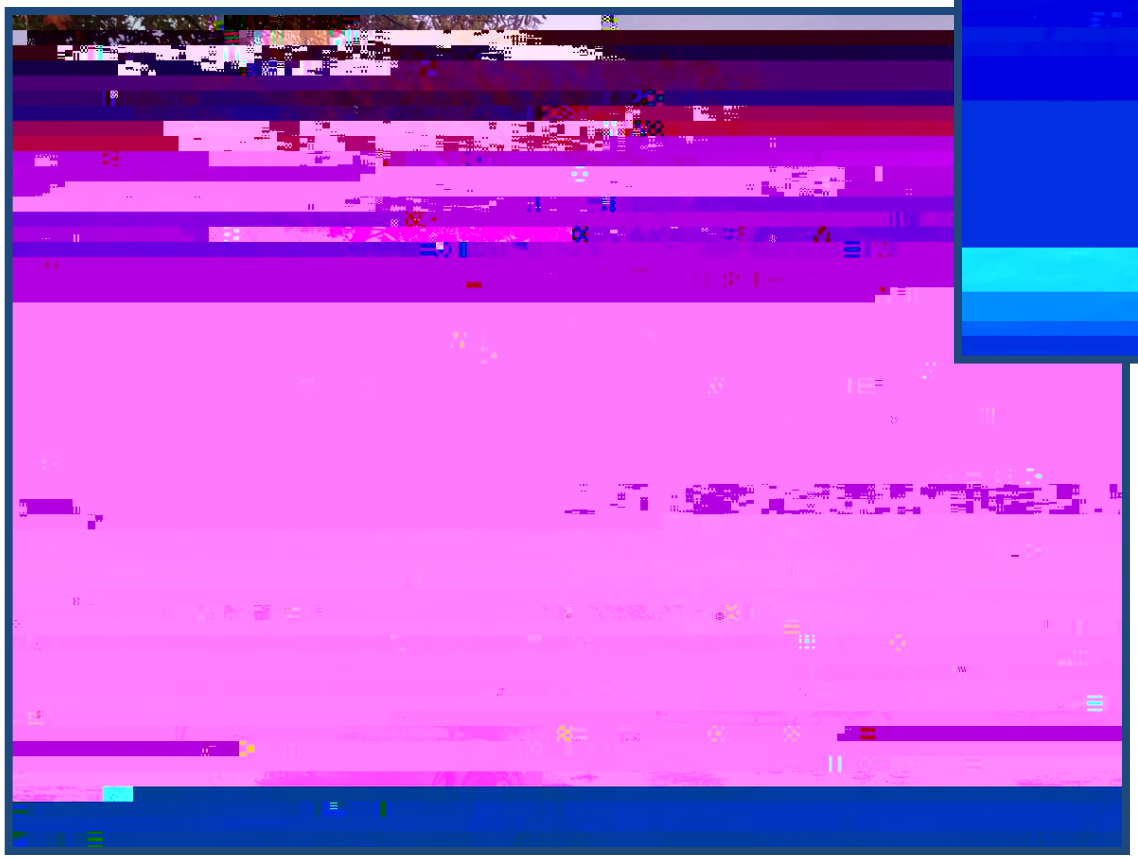


Equipment was moved around the cove using a 500 HP push-boat. Sediments were dredged using an “environmental bucket” which closes before lifting, limiting the amount of sediment released into the waterway.



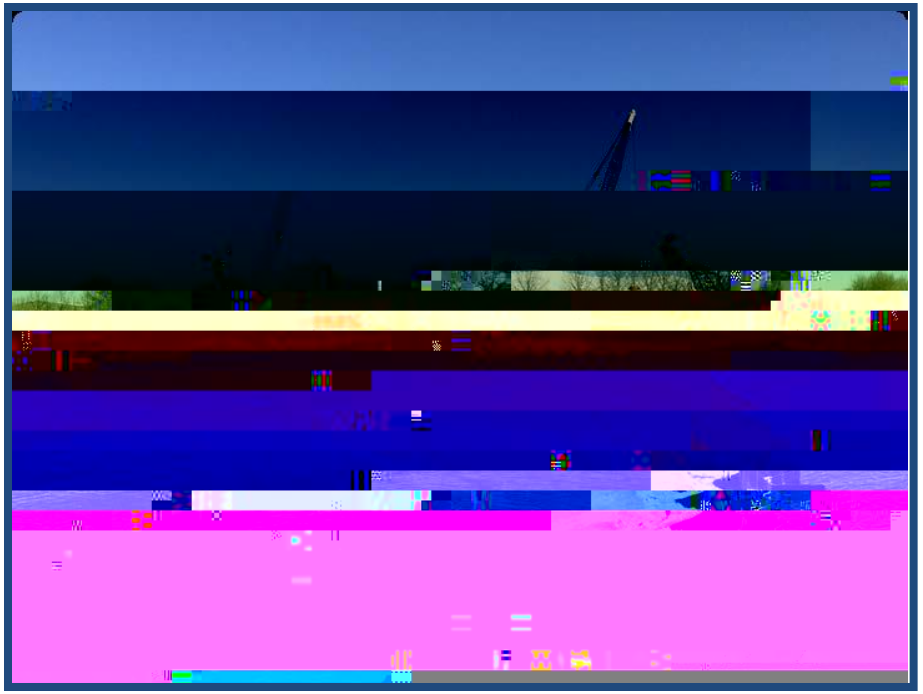


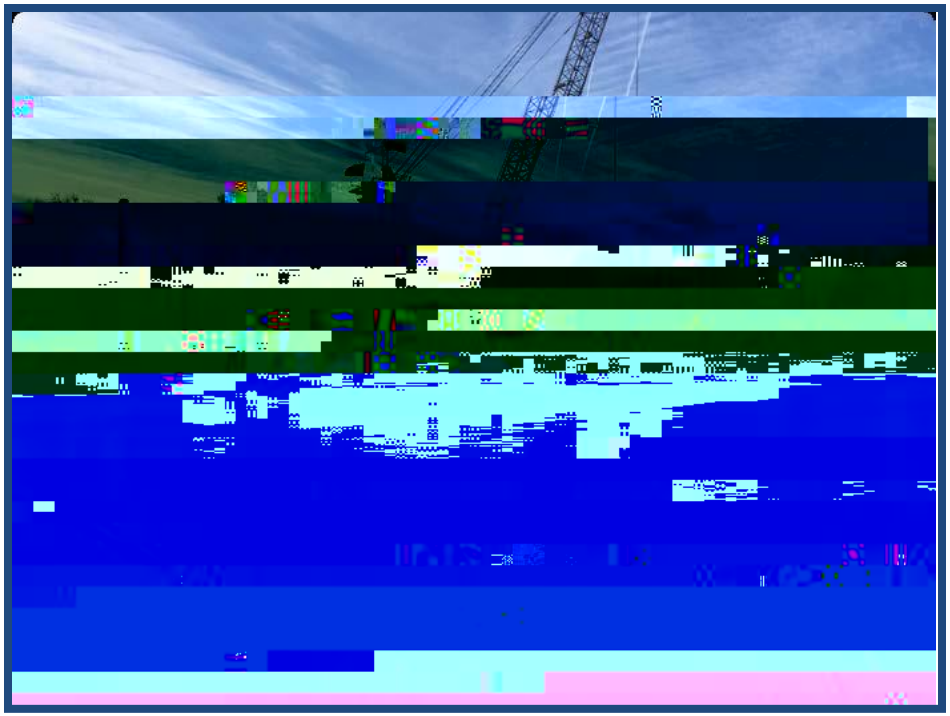
Sediment dredging began at the lower portion of Cow Pen Creek. The material was loaded onto a barge for storage, then transported to the offloading area.



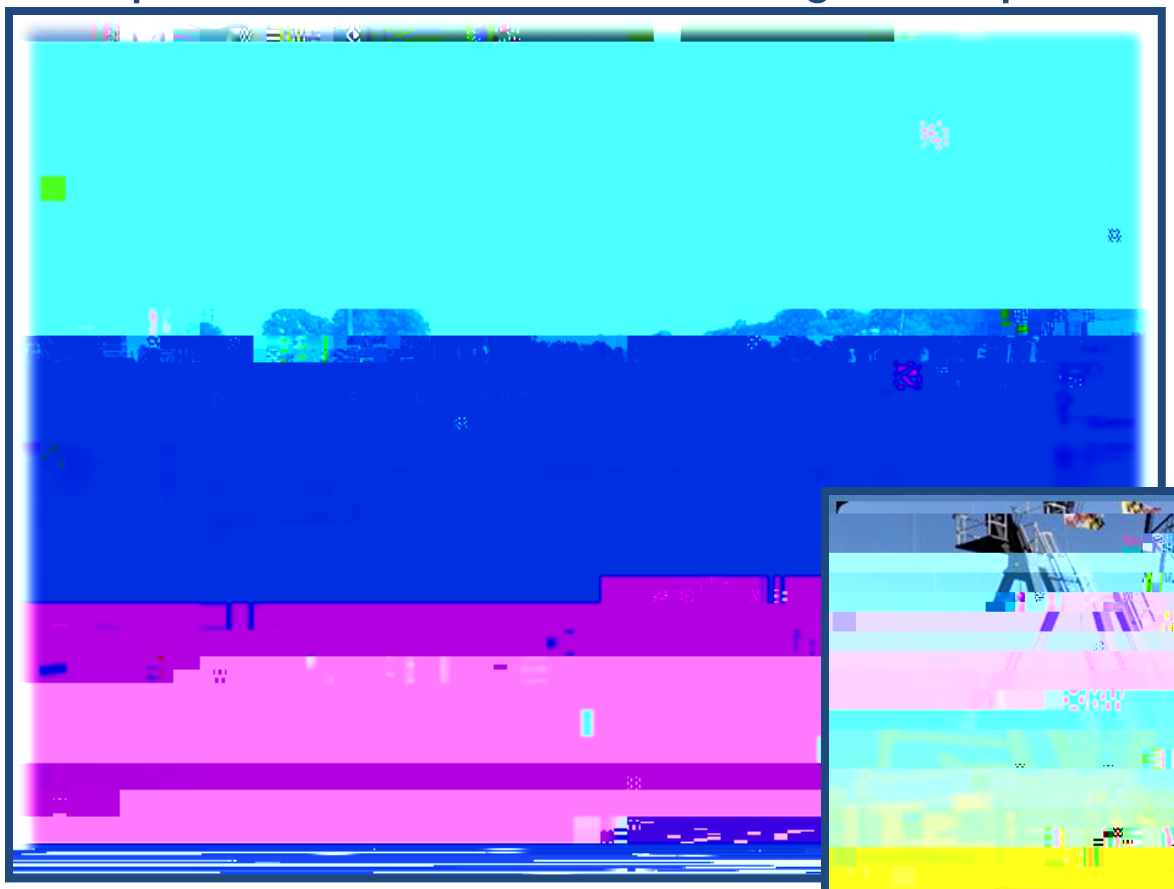
The environmental bucket is shown draining water but retaining sediment.

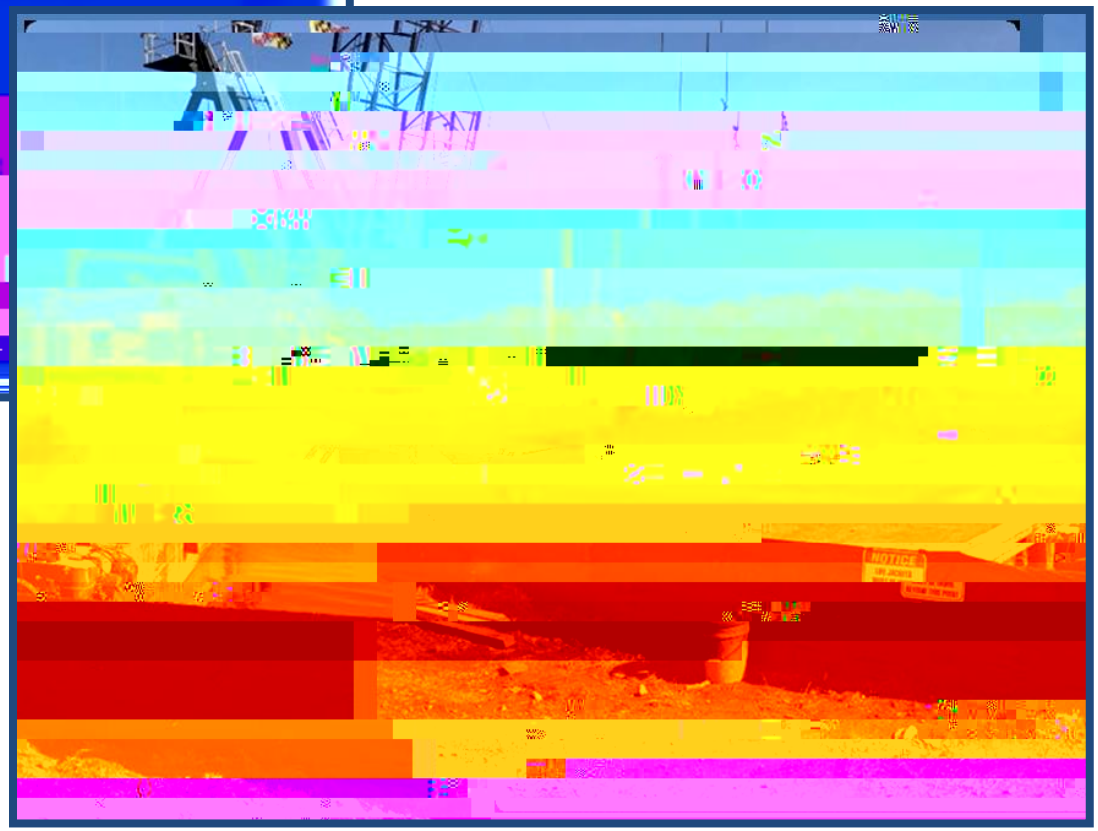
Sediment dredging proceeded to the lowest portion of Cow Pen Creek, then Dark Head Cove.



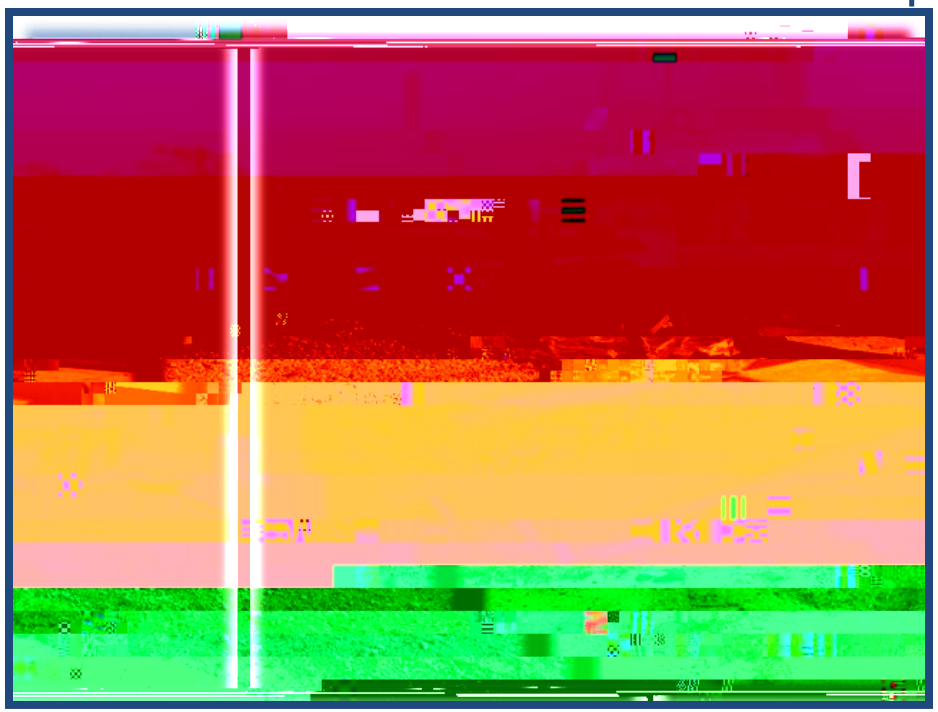


The push-boat moved the barge into position for offloading sediments.

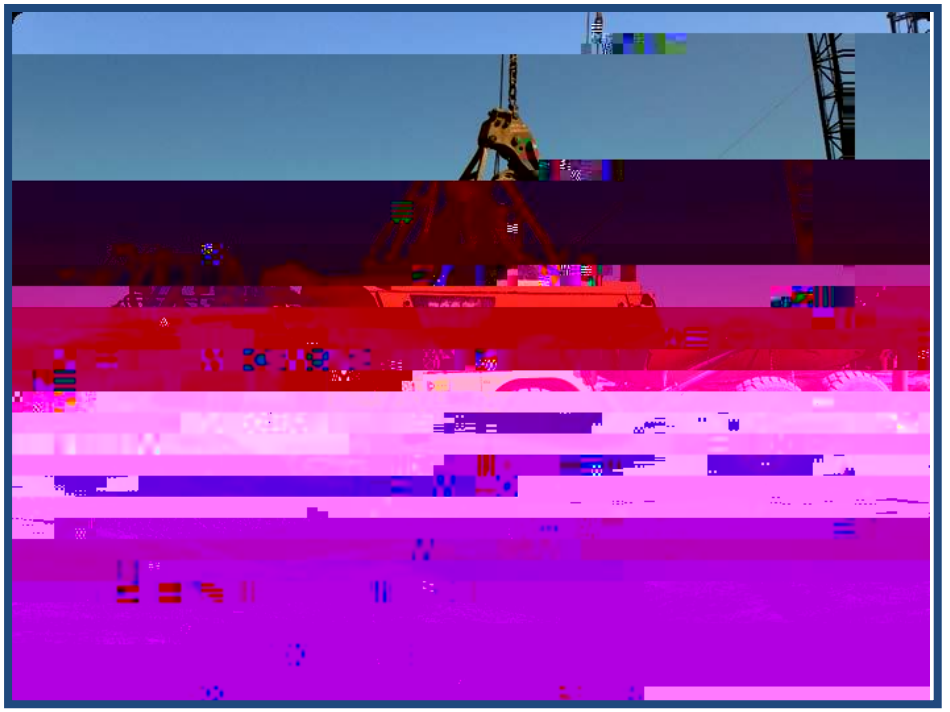




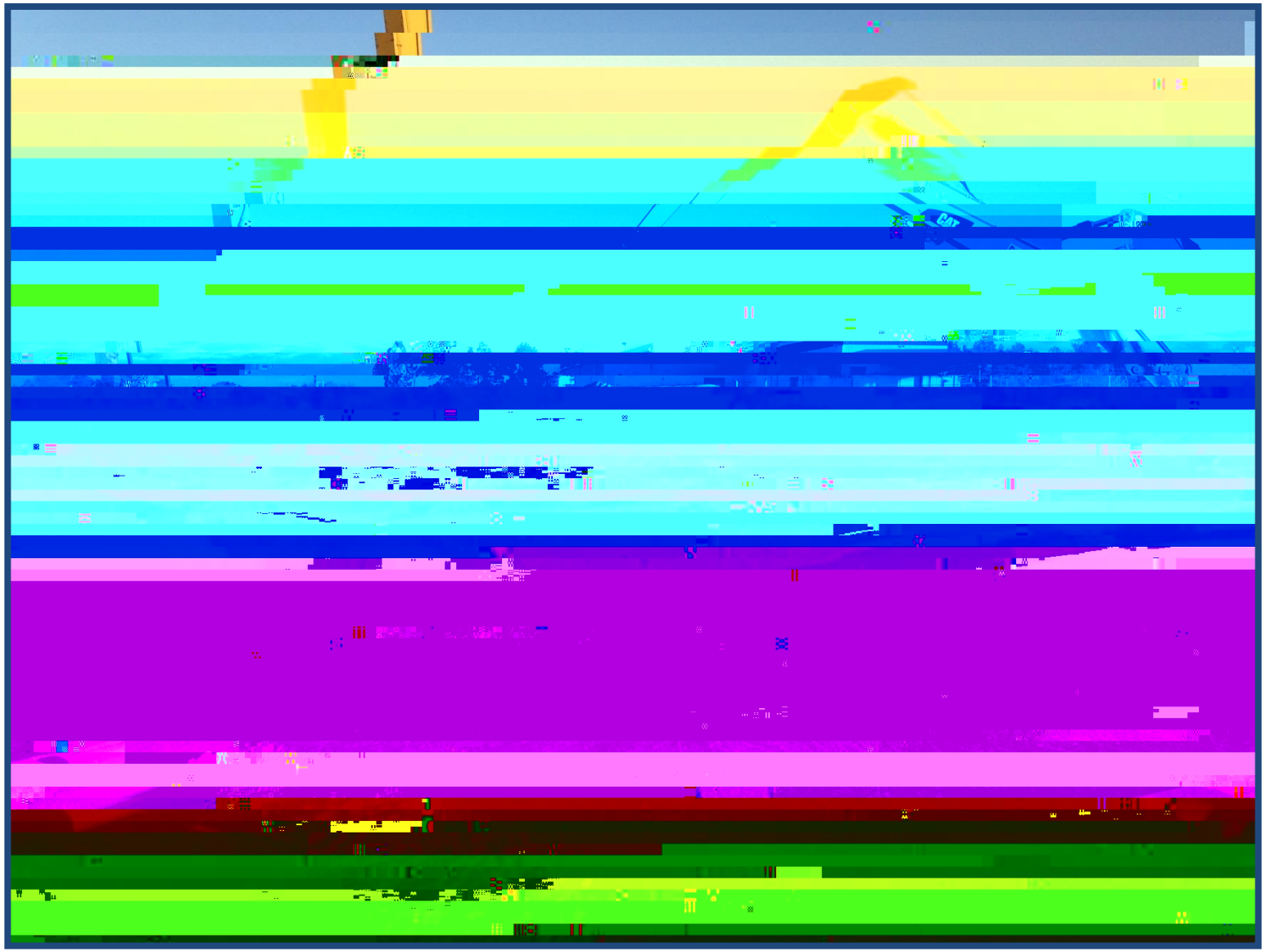
Using an apron to contain spillage, dredged sediments were offloaded from the barge. Haul trucks were positioned for sediment transfer at the spill apron.



Using a clamshell bucket, dredged sediments were transferred to a haul truck.



Sediments were then transferred into mixing bins where a specialized material (Calciment™) was added to dry the sediment adequately to meet disposal requirements.

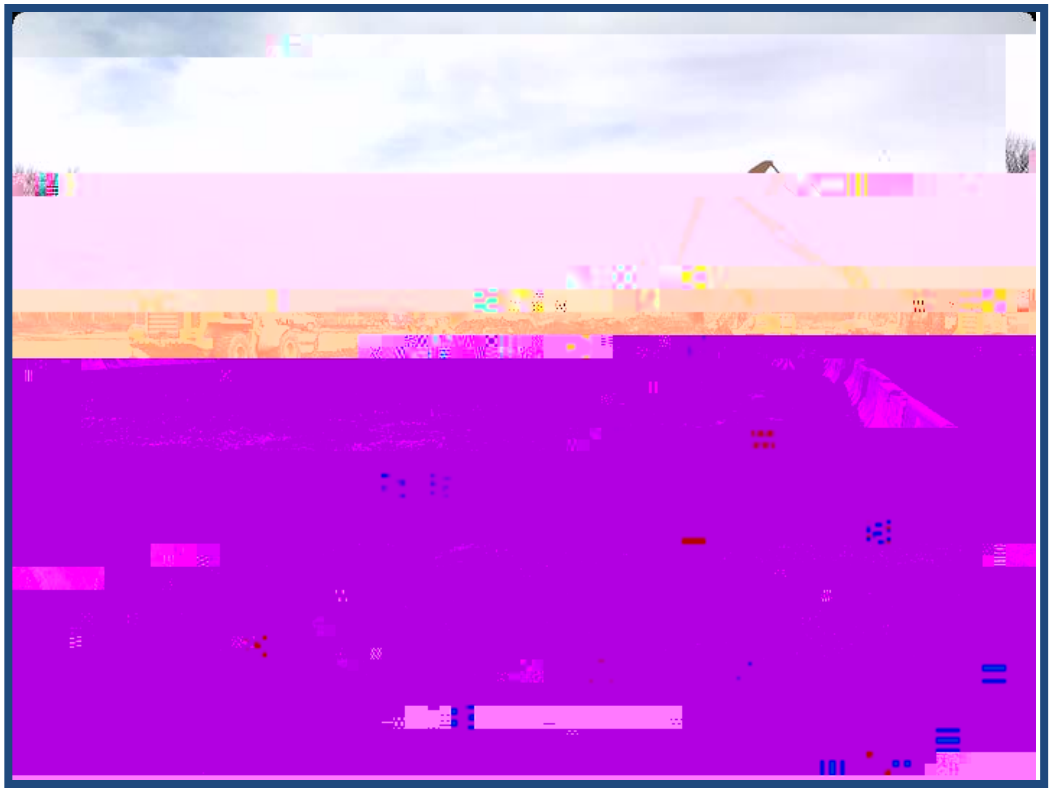


Once the sediments met disposal requirements, they were transferred to lined trucks and hauled off-site to a licensed landfill in York, Pennsylvania.

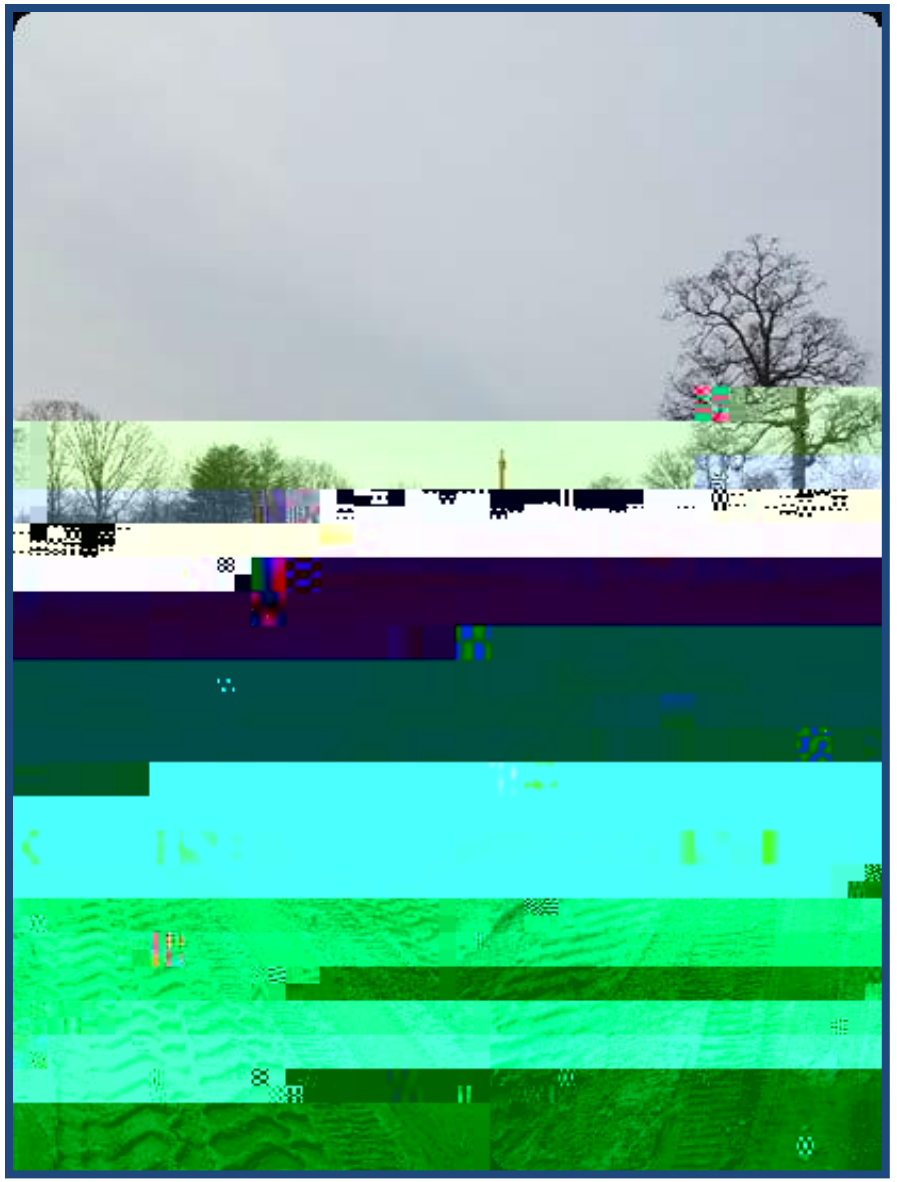
Once planned dredging depths were met, confirmation samples were taken for chemical analysis to determine whether additional dredging was needed. Four dredge areas required additional dredging, extending the project window by three weeks.

After sand placement, cores were taken to confirm six inches of sand were evenly placed.

After confirming all dredging goals were met, sediment handling bins were deconstructed, and materials were sent to the landfill.

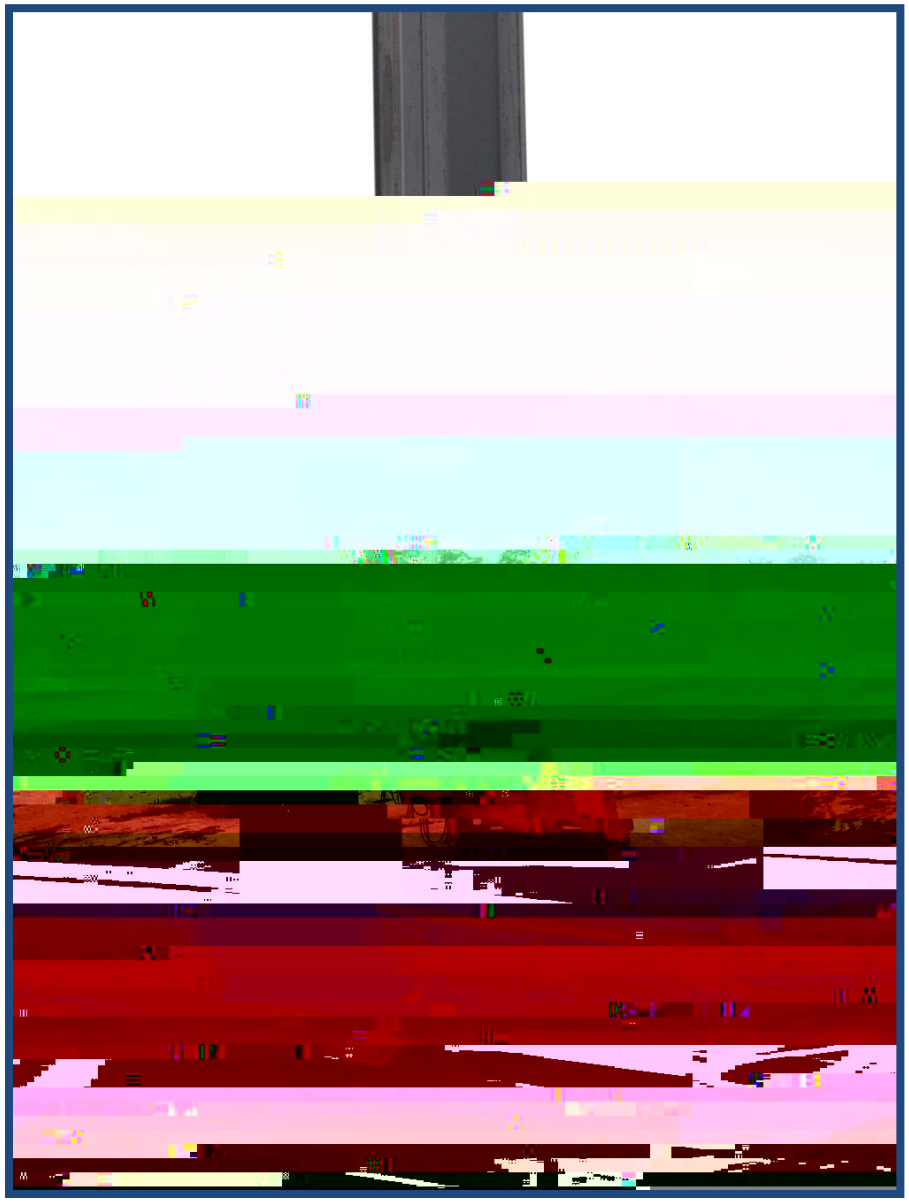


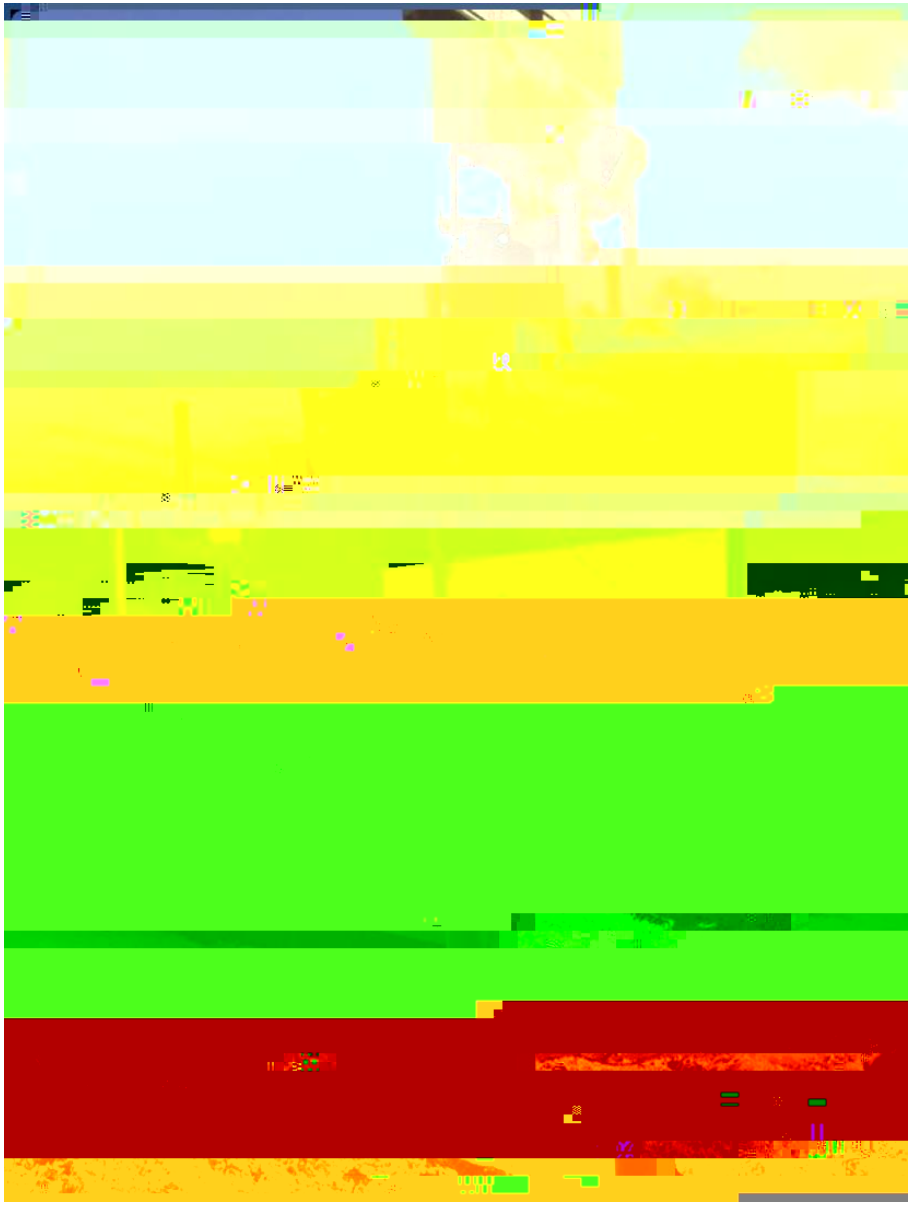
Once sediment and sand handling work was finished, the temporary haul road was removed and restored to its earlier uses, and no longer used as a road.



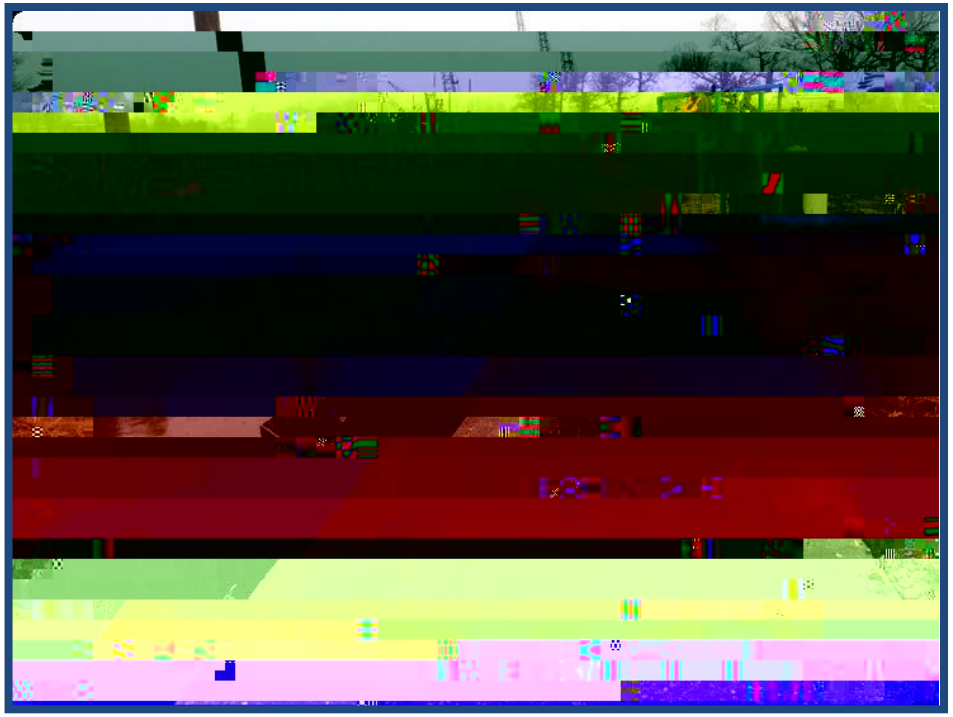
Another separate aspect of Season 1 work was to upgrade the deteriorating bulkhead with new sheet piles, which were barged to the site. Temporary template piles were

A crane positioned the sheet piles, and a vibrating hammer drove them to the planned depth.

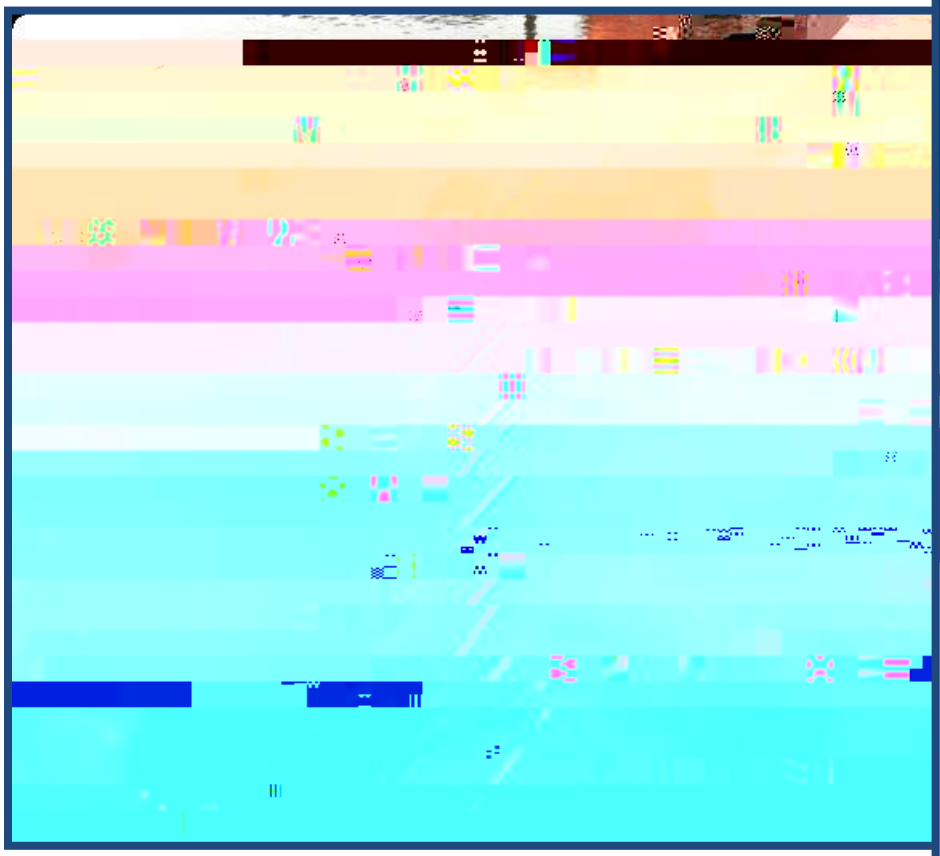




Drainage holes were drilled prior to driving sheet piles to their final grade.

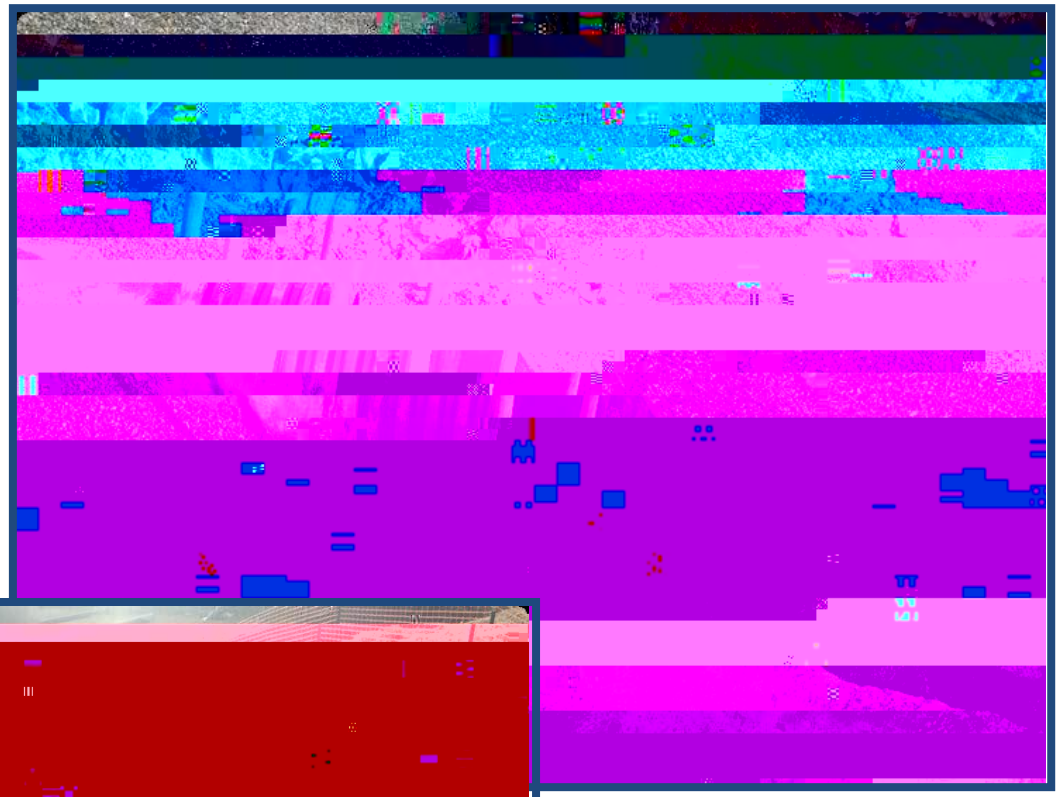


Spaces between the new sheet pile and the old bulk head were filled with gravel.



Backfilled areas with granular material were compacted and empty spaces were filled with a flowable material, similar to a watery concrete.

Outfalls passing through the new bulkhead sheet piling were extended and connected using HDPE (High Density Polyethylene) piping.

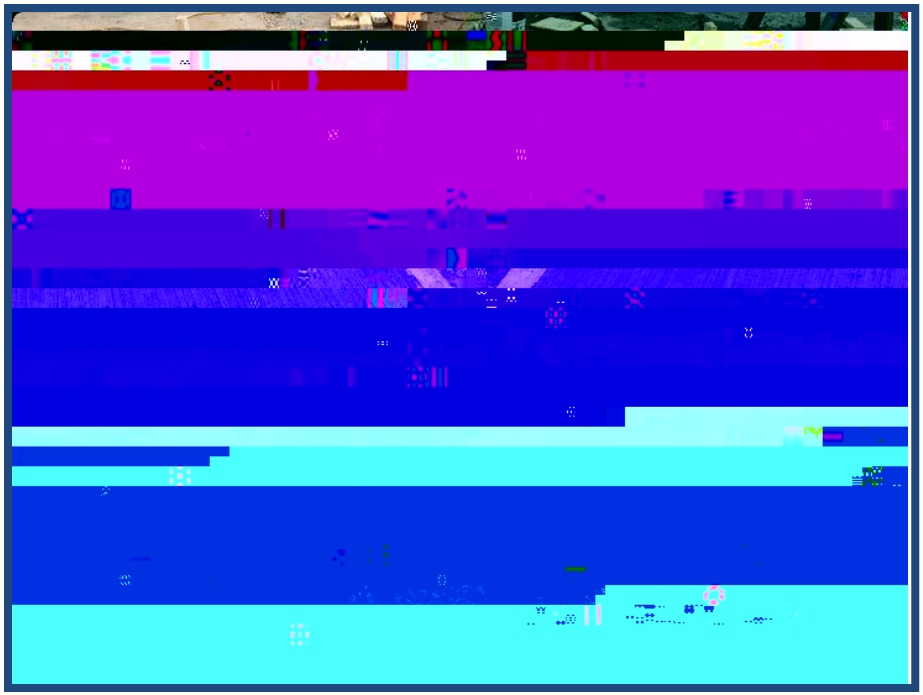


New manholes were installed above five outfalls.

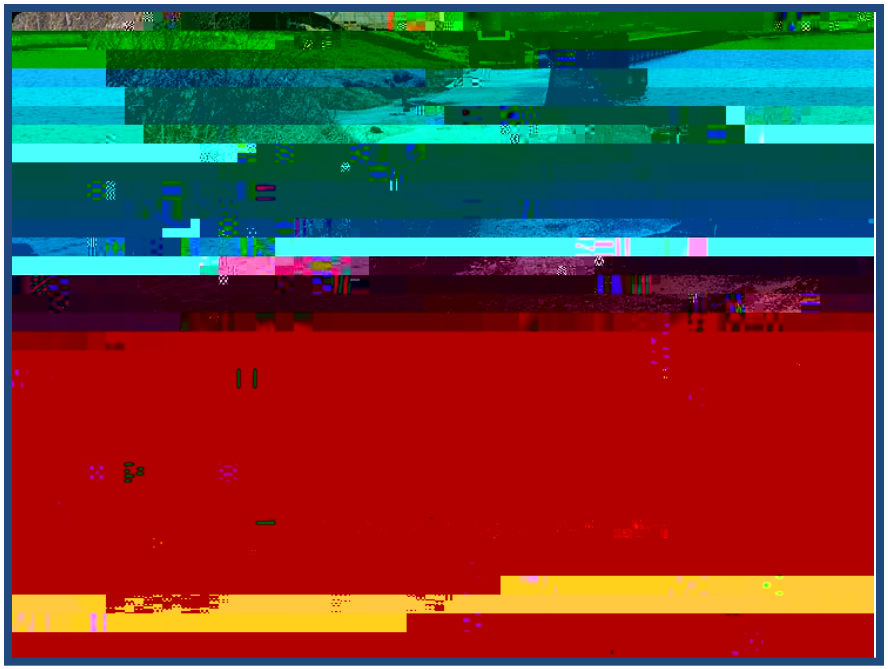
A protective cofferdam was set up outside the area where a new outfall was being installed.

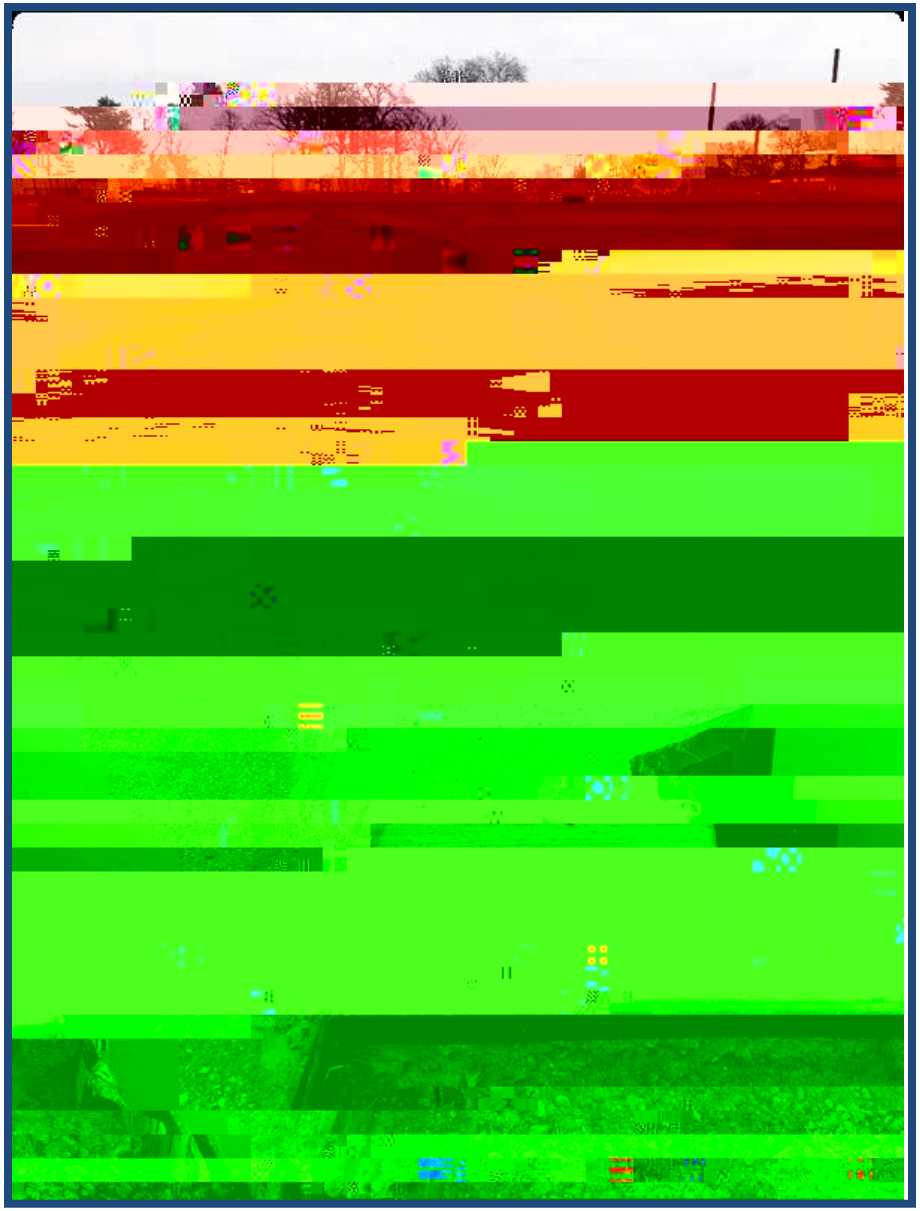
At Outfall 009 a new bed was laid, new pipes installed then covered

Another outfall (007) needed a culvert hatch box installed.



Bulkhead work was almost completed; however, some work remained beyond completion of the Season 1 sediment work.





For questions, comments or conc 0.2 fi2.71 52 filease ct71 5