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August 8, 1994

L. D. Moody, Cumberland Fossil Plant

CUMBERLAND FOSSIL PLANT (CUF) - INSPECTION OF WASTE DISPOSAL AREAS

Attached is a report from B. K. Elder to K. W. Burnett dated August 5, 1994, concerning the inspection of CUF waste disposal areas.

This report includes recommendations for corrective work. I concur with these recommendations.

RG Johnson

Ralph G. Johnson
Manager, Fossil Engineering
LP 2G-C

KWB:BKE:PHF
Attachment
cc (Attachment):
J. S. Baugh, LP 5H-C
RIMS, CST 13B-C

0605B

August 5, 1994

K. W. Burnett, Manager, Site Engineering, LP 2G-C

CUMBERLAND FOSSIL PLANT - INSPECTION OF THE WASTE DISPOSAL AREAS

1 General

1.1 This inspection of the waste disposal areas was conducted on June 8, 1994.

1.2 The last inspection was conducted on October 7, 1992.

1.3 This was a joint inspection by representatives of Cumberland Fossil Plant (CUF), Fossil Fuels, and Fossil Engineering (FE). The inspection was performed by Carrie Brigham, CUF; Jim Huber, Fossil Fuels; Ron Powell, FE; and myself, FE.

1.4 Our findings during this inspection were discussed with Marty Grasty, Technical Services Supervisor, and Carrie Brigham of Technical Services. The recommended repairs can be corrected during normal maintenance.

1.5 The areas referenced in the report are shown on the attached print of drawing 10N212.

2 Area No. 1

The dredge pond is full and has no water standing in it. A wet gypsum waste storage facility is currently being prepared in this area. A starter dike is being constructed to elevation 410 along the interior of and parallel to the northern, southern, and eastern perimeter dikes (Figure 2). The western boundary of the wet gypsum area will be defined by a starter dike which is currently being constructed to elevation 410 parallel to the eastern side of the 161 kV transmission line in area no. 2 (Figure 3).

2.1 Changes in the Dikes Since Last Inspection

2.1.1 The exterior dike is in good condition with no visible signs of instability. The vegetative cover is good.

2.1.2 The access roads along the tops of the dikes have an excellent surface of crushed stone and are in good condition.

2.2 Changes in Operations Since Last Inspection

2.2.1 The dredge cell operations in this area have been completed. A two foot thick layer of crushed stone has been placed over the dredge cell to provide a base for the wet gypsum storage area.

2.2.2 The southern portion of this area continues to serve as a wastewater holding basin. The water discharges into area no. 2 via pipes in the existing dike that separates the two areas.

3 Area No. 2

The dikes in this area have a considerable water head behind them due to the ash pond and stilling basin. Both bottom ash and fly ash sluice water are pumped into the east end of this area. The water enters the detention pond, flows into the stilling basin through a flow through spillway, and discharges into an outlet channel which empties into the

spillway, and discharges into an outlet channel which empties into the condenser cooling water discharge channel. An interior dike surrounding area 2B was constructed to relieve some of the water head that was being applied to the exterior dike. There is a history of slight seepage along a portion of the western dike in this area near the construction haul bridge at the Wells Creek Channel. Plant personnel have an excellent record of their monitoring of this seepage.

3.1 Changes in the Dikes Since Last Inspection

3.1.1 A new dike for the gypsum disposal area is being constructed in the eastern end of this area.

3.1.2 The pond level is currently being raised to elevation 384 to compensate for water storage that is being lost due to present and future construction.

3.1.3 A few small trees are beginning to grow on the interior dike slope in this area. These trees should be removed with their root structures to prevent future seepage or failures.

3.1.4 The areas of seepage along the Wells Creek Channel were not visible due to high water in the channel. Inspection revealed no signs of structural instability anywhere along the dike.

3.1.5 Vegetative cover was good on the dikes of this area (Figure 1).

3.2 Changes in Operations Since Last Inspection

3.2.1 The operation of this pond has not changed since the last inspection with the exception of the higher water levels. The procedures outlined above under section 3.0 are still being followed.

3.2.2 Bottom ash from this area is being dredged and used for construction of the new dikes and as fill material.

3.3 Condition of Spillways, Skimmers, and Outlets

3.3.1 All spillways and skimmers appear to be in good condition. A small amount of floating ash was present in the stilling pool, but it was judged as insignificant.

3.3.2 The four spillways located on the northeastern corner of area no. 2 had just been raised to increase the pool elevation, so no flow was passing through them at the time of inspection. The spillways were not inspected because the access walkways were not installed due to the recent modifications (Figure 4). The spillway outlet pipes contained a fair amount of ash build-up around their inner walls. This buildup should be monitored and removed if spillway operation becomes hindered (Figure 5).

3.3.3 The spillway outlet area slopes are free of erosion damage and have excellent vegetative cover. There are a few trees growing on the exterior slope above the outlet pipes which should be removed along with their root systems to prevent slope deterioration or damage to the pipe joints from root growth.

4 Chemical Treatment Pond

4.1 The chemical treatment pond for iron is located on the north side of the dike surrounding ash disposal area no. 1. The pond was constructed by excavating into the surrounding earth, so no exterior dike slope exists. The interior slope has an excellent cover of riprap (Figure 6).

4.2 The pond appeared structurally stable and free of debris. No maintenance was necessary at the time of the inspection.

5 Coal Yard Drainage Basin

5.1 The coal yard drainage basin is located on the north side of area no. 1 just west of the chemical treatment pond. It was also constructed by excavation into surrounding earth.

5.2 The interior slopes have a good cover of vegetation (Figure 6). The pond needs to be dredged to increase its capacity to normal.

6 Recommendations

6.1 All trees along the interior slopes of the dikes should be removed by pulling with a chain to remove their root systems. (Reference 3.1.3)

6.2 Remove the trees located on the slope above the outlet discharge pipes by pulling them. The vegetation should be kept cut here so that stability of the slope above the pipes can be monitored.

6.3 Continue to monitor the seepage areas, especially since the water level behind the dike is being raised (Reference 3.1.2). Report any problems to Site Engineering.

B. Keith Elder
Civil Engineer, Site Engineering
LP 2G - C

BKE:bke
Attachments

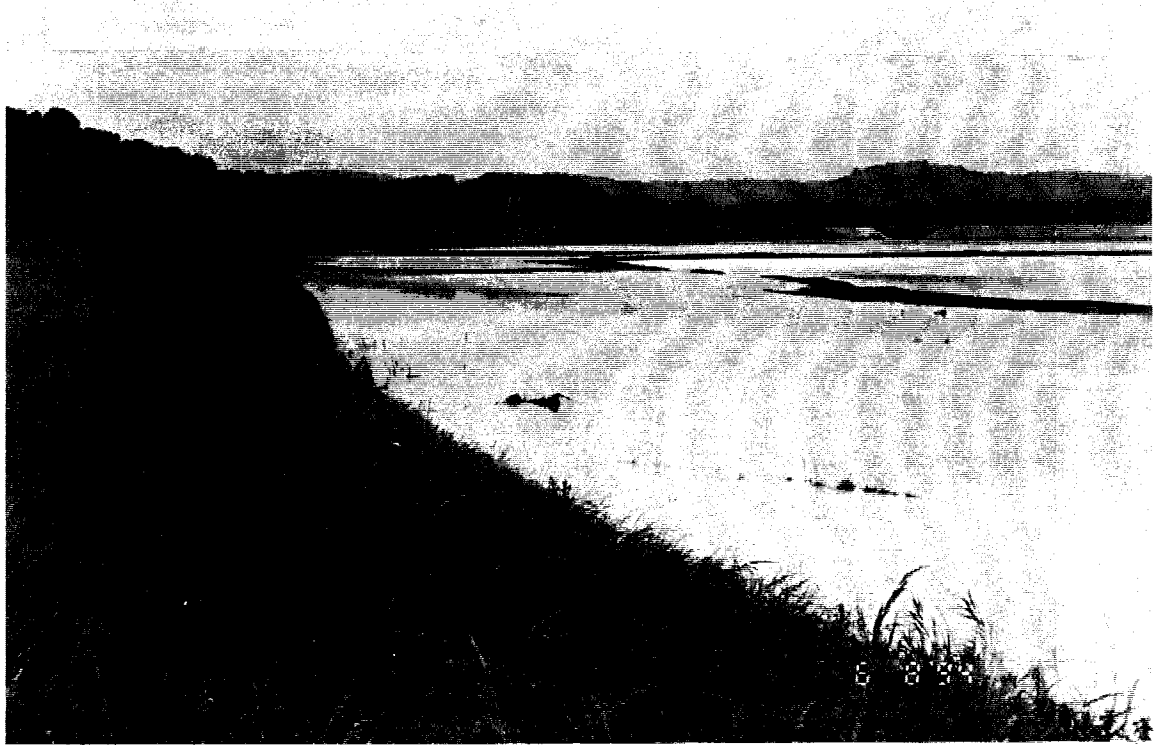


Figure 1. Excellent vegatative cover on interior slope of dike in area no. 2. Note small trees growing on interior.

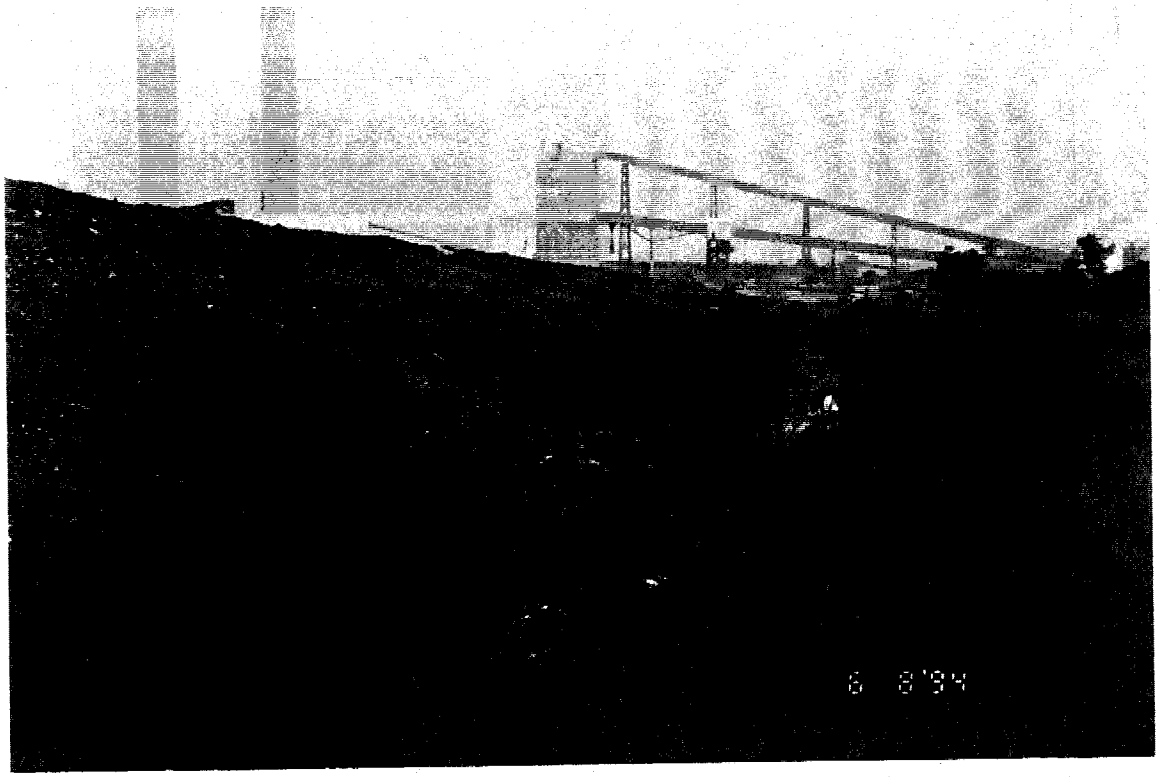


Figure 2. Ditch separating starter dike for wet gypsum stack from perimeter dike in area no. 1

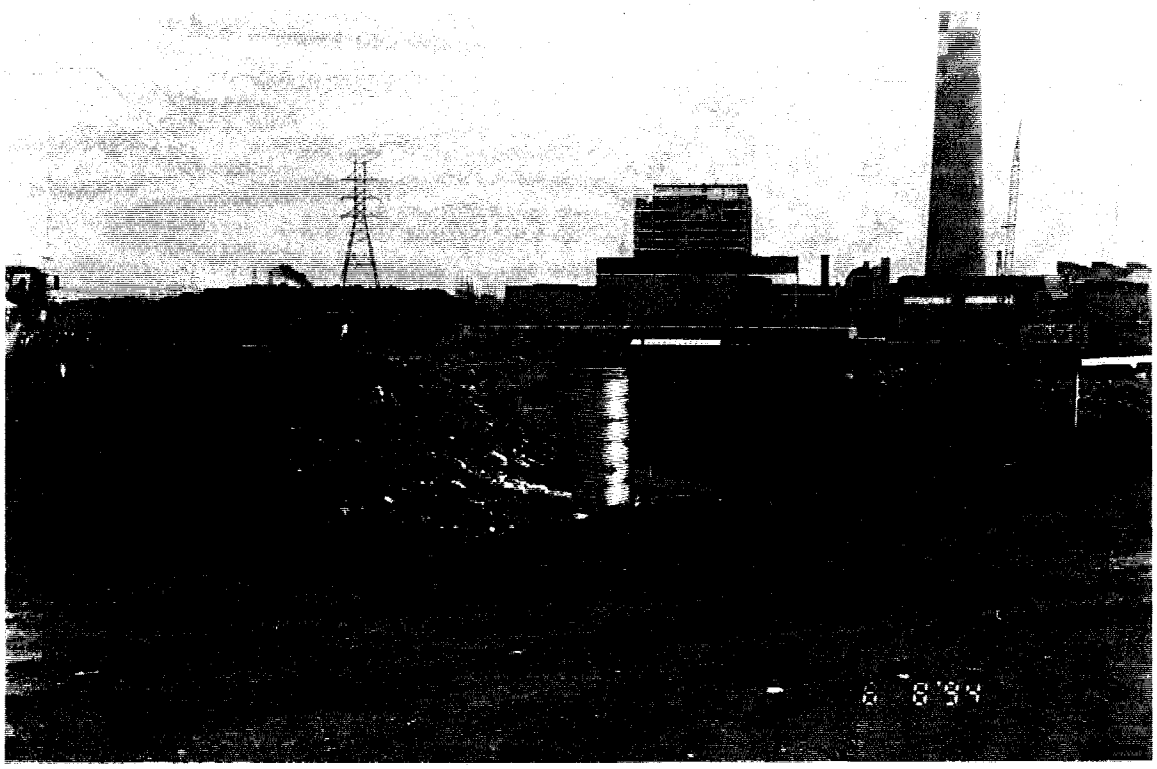


Figure 3. Construction of northern starter dike for wet gypsum stack.

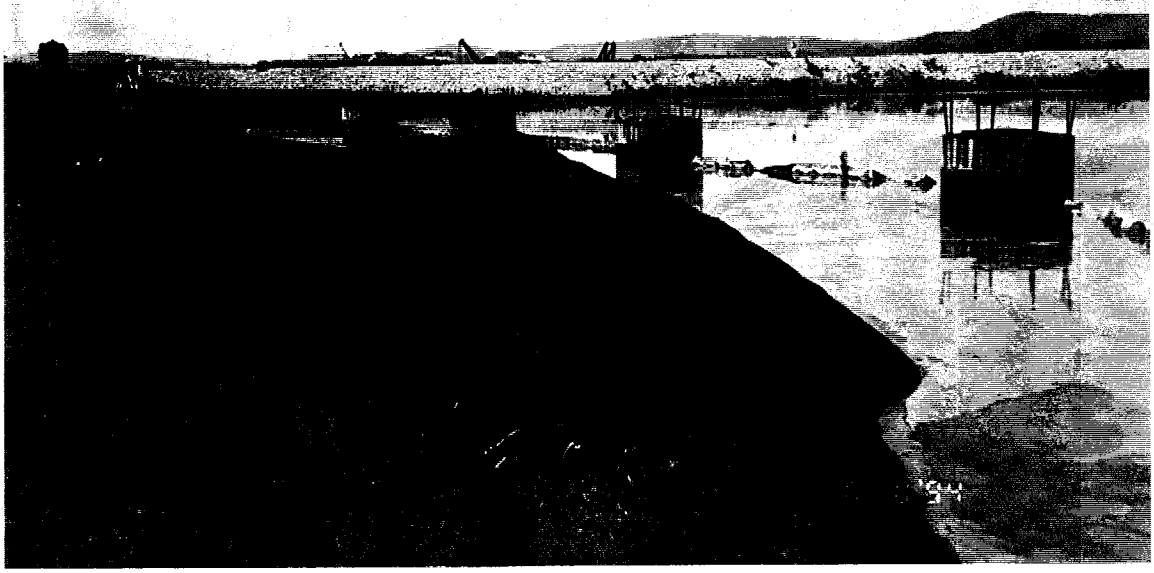


Figure 4. Spillways after being raised to elevation 378. Note the excellent riprap cover on the divider dike in the background.

Figure 5. Spillway outlet pipe. Buildup of ash material is evident.

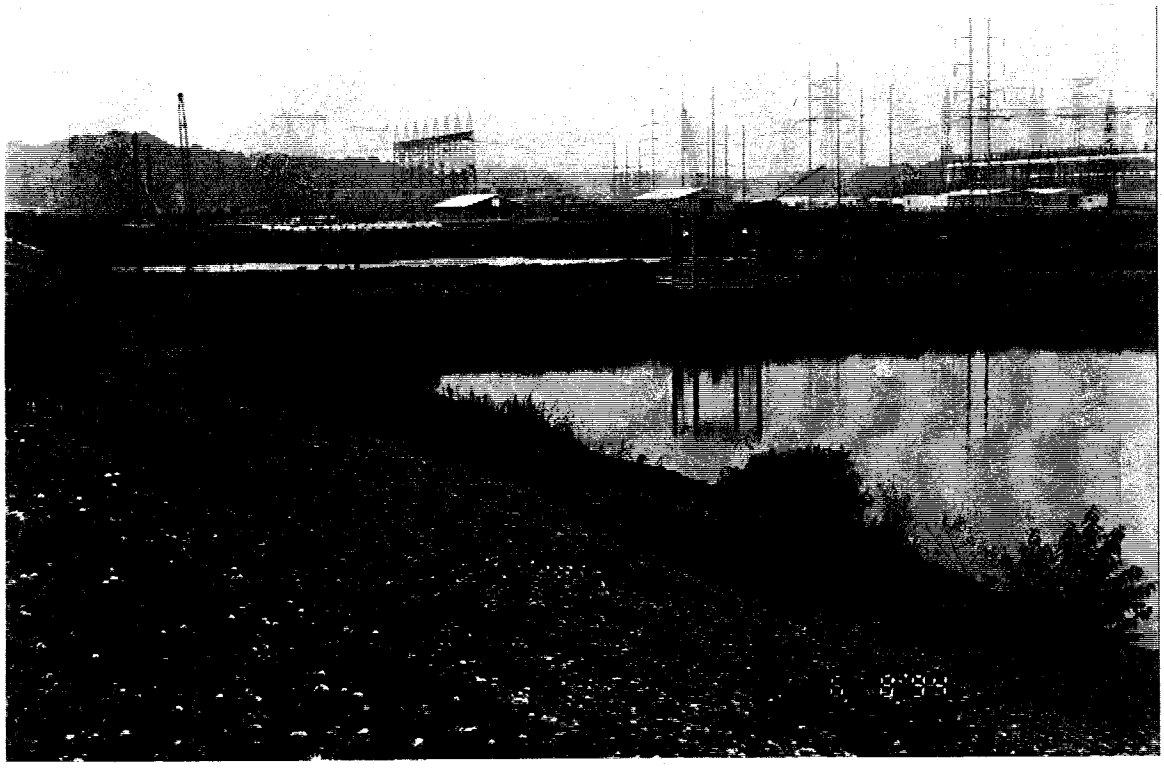
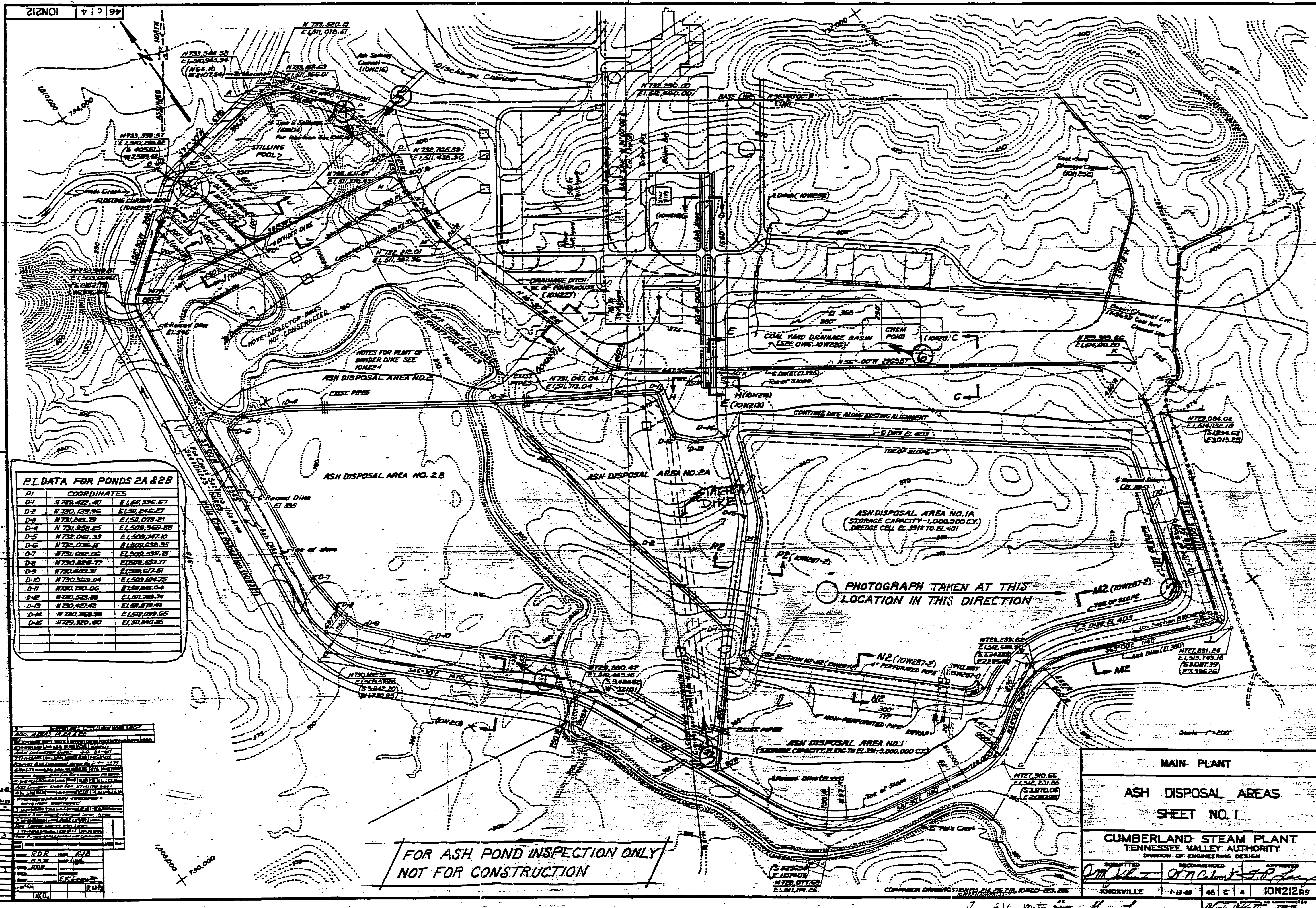


Figure 6. Chemical treatment pond with excellent riprap cover on the dike slopes. Coal yard drainage basin is in background with good vegetative cover on the dike slopes



P.I. DATA FOR PONDS 2A & 2B

PI	COORDINATES	
D-1	N 729,422.40	E 1,511,396.67
D-2	N 730,139.96	E 1,511,246.27
D-3	N 731,245.79	E 1,511,073.21
D-4	N 731,958.25	E 1,509,969.88
D-5	N 732,061.33	E 1,509,747.10
D-6	N 732,036.15	E 1,509,638.35
D-7	N 731,052.06	E 1,509,532.15
D-8	N 730,886.77	E 1,509,553.17
D-9	N 730,659.31	E 1,509,617.51
D-10	N 730,369.04	E 1,509,874.75
D-11	N 730,730.06	E 1,511,845.04
D-12	N 730,523.88	E 1,511,785.74
D-13	N 730,427.42	E 1,511,879.43
D-14	N 730,368.98	E 1,512,089.05
D-15	N 729,320.60	E 1,511,840.35