March 29, 2000

Victor W. Davis, LP 2T-C

KINGSTON FOSSIL PLANT (KIF)—ANNUAL INSPECTION OF WASTE DISPOSAL AREAS

Attached is a report from Sherman G. Garrett concerning the inspection of Kingston Fossil Plant's ash disposal areas.

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

Please make any additional copies as required and return originals for filing with other inspection reports.

Ronald E. Purkey
Manager, Civil Engineering
LP 2G-C

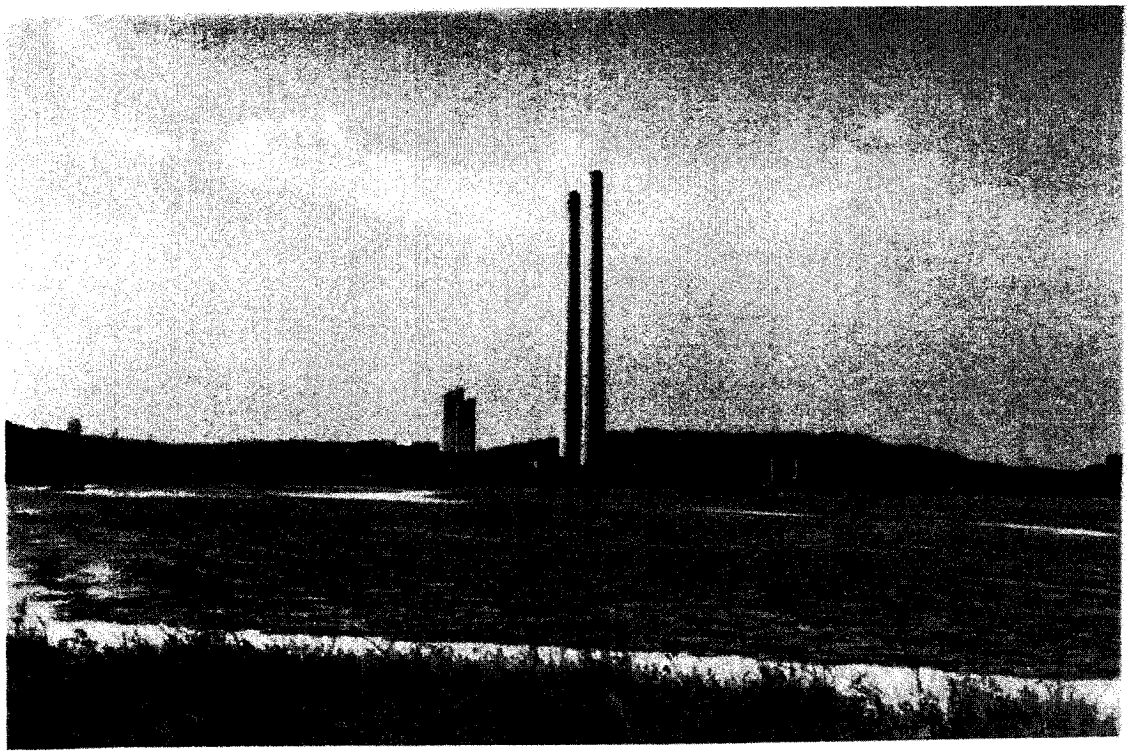
Attachment

REP:SGG

TENNESSEE VALLEY AUTHORITY

KINGSTON FOSSIL PLANT

ANNUAL INSPECTION OF WASTE DISPOSAL AREAS



Prepared by: Sherman G. Garrett
Date: March 29, 2000

KINGSTON FOSSIL PLANT
NPDES PERMIT NO. TN0005452
ANNUAL ASH POND DIKE INSPECTION
2000

The waste disposal areas at Kingston Fossil Plant were inspected for dike structural stability on March 1, 2000. The inspection was performed by Sherman G. Garrett of TVA Fossil Engineering Services, Project & Discipline Engineering. He was accompanied by James T. Settles of TVA Kingston Fossil Plant. The previous annual inspection had been performed on March 23, 1999.

The results of the annual stability inspection are listed below according to location within the ash disposal area.

Active Ash Disposal Area

Plant operations continues to manage this area the same as during the last inspection. Bottom ash is sluiced into a channel south of the disposal area where it settles out and is removed by drag line, approximately once a week, to be used for dike construction. Fly ash is sluiced into a channel west of the bottom ash channel. Both channels flow north into the active ash pond where the fly ash settles out and accumulates. The fly ash is periodically dredged into one of two cells located in the western half of the disposal area. The dikes of these cells are raised using bottom ash to provide more capacity for dredged fly ash as needed. The sluice water flows into the stilling pool via two plant constructed spillways. From the stilling pool the water discharges into the plant intake channel via six standard spillways. At the time of the inspection, five of the spillways were operating. The western spillway was raised above the level of the other five and was not discharging.

All exterior dike slopes around this area were in sound condition with excellent vegetative cover. On the eastern side of the dikes extending to the area of Swan Pond Road, the vegetation needs mowing, and there are some small trees present. No sloughs were detected. The wave erosion on the interior dike slopes of the stilling pool noted in the previous report has been corrected by placement of riprap on the slopes. The divider dike between the active pond and the stilling pool had areas of rill erosion and gullies. Some clay material had been added on the dike, but there is no vegetation present, and erosion continues to persist. Due to rainfall the previous day, some areas of saturation were noted on the northern end of the ash disposal dike. The seepage previously noted on the southeastern portion of the dike was still present and does not appear to have significantly worsened. The dike roads were in good condition with a good crushed stone surface.

The engineered wetland along the southeast dike was functioning normally, receiving the seepage that collects in the anoxic limestone drain from the toe of the slope.

Dredge Cells

Dredge cells No. 2 and 3 have been combined by no longer raising the dike separating the two cells. This combined cell was being dredged into at the time of inspection. The top of dike

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elevation for Cell 2 and Cell 3 for Lift C1 is elevation 800. When construction of Lift C2 is complete, the new top of dike elevation for Cell 2 and Cell 3 will be elevation 805. Cell No. 1 is currently at elevation 800.

The dike slopes around this area were all stable with some rill erosion in places. Most areas had excellent vegetative cover. Most of the Stage C1 lift has a vegetative cover; however, there are some areas with no vegetative cover at all and minor erosion is occurring. Plans are underway to seed and mulch these areas. At completion of Lift C2, plant operations will seed and mulch Lift C2 to establish vegetation. Dike slopes with sparse vegetation should continue to be reseeded and mulched until a good vegetative cover is apparent. Plant operations continue to do a commendable job of mowing the slopes.

On the south slope of dredge cell 2, there is erosion at the discharge of a lateral drain outlet pipe. Part of the pipe itself is exposed. This area needs some minor grading as well as replacement of earth cover and reseeding.

KINGSTON FOSSIL PLANT
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2000

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein; and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. See 18 U.S.C. Section 1001 and 33 U.S.C. Section 1319. (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)

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SIGNATURE OF PRINCIPAL/EXECUTIVE OFFICER OR AGENT

FOR PLANT USE ONLY
KINGSTON FOSSIL PLANT
ANNUAL ASH POND DIKE INSPECTION—2000
OTHER AREAS INSPECTED / ACTIONS ON PREVIOUS RECOMMENDATIONS
CURRENT RECOMMENDATIONS / PHOTOGRAPHS

Chemical Treatment Ponds

The chemical treatment ponds are located southwest of the active ash pond. Both ponds were excavated and have no exterior slopes. The internal dike slopes are covered with riprap. These slopes were in good condition.

Coal Yard Drainage Basin

The coal yard drainage basin is located at the southwest corner of the coal pile. This basin was excavated below grade; therefore, there are no exterior dikes. All discharge from this basin is pumped into the fly ash discharge ditch which flows to the active ash disposal area. At the time of inspection, water in the pond was at a low level. The slopes appeared to be in satisfactory condition.

Actions on Recommendations of Last Inspection

- Riprap has been placed on the interior dikes of the stilling pool; however, some additional areas are showing signs of erosion, requiring riprap.
- The divider dike road has been maintained by adding bottom ash to eroded areas, but other areas are showing signs of erosion. (see photo #1)
- The ditch along Swan Pond Road has been graded and seeded. Some heavy rains have washed part of the mulch requiring some additional attention as the growing season progresses to insure sufficient ground cover. (see photo #2)
- Rutted areas noted at the southeastern end of the ditch adjacent to Cell 1 require riprap.
- Plant personnel have continued to monitor any known seep and slough areas for material movement.

Current Inspection

The dikes surrounding the stilling pool and ash disposal area, including the divider dike, are in good condition. No animal activity was observed in this area. The riprap placed on the inside slopes of the stilling pool is effective in preventing erosion of the slopes. However, there are additional areas that would benefit from riprap on the slopes. Inspection of the exterior slope of Dike "C" (the eastern side of the ash disposal areas) did not reveal any seeps or sloughs, but mowing of this area should take place as soon as weather permits. There are several small trees along this dike that should be removed before their size presents any problems.

On the northeastern slopes of Dike "C," there are areas of small trees and high vegetation that should be cleared. The area of the perimeter ditch should be regraded in those areas where water

is standing, additional grading to correct erosion, and the area reseeded (see photos #3 and 4). Just south of the perimeter ditch where the outlet drains into the active ash pond, there are several trees and undergrowth that should be removed (see photos #5 and #6).

On the eastern slope of the stage A dike, there are several areas where the outlet drains are starting to erode (see photo #7). All along the stage B lift, there were signs of erosion (see photo #8).

Recommendations

- Intermediate cover should be placed as appropriate to prevent further deterioration of the slopes along the Stage B lift. Dike slopes with sparse vegetation should continue to be reseeded and mulched until a good vegetative cover is present.
- Plant personnel should repair the rutted areas at the southeastern end of the ditch adjacent to Cell 1 by placing riprap in eroded areas.
- Place additional riprap along slopes of stilling pool and divider dike.
- Remove trees and other growth from northeast corner of ash disposal pond.
- Fill should be added and riprap placed to prevent further erosion at a few outlet drains on the eastern slope of the stage A dike.
- Maintain ditch along Swan Pond Road, ensuring erosion does not begin.
- Plant personnel should regrade the area between the perimeter ditch and dike "C" to eliminate low spots and insure drainage, place clay cover as needed, and seed and mulch to establish vegetation.
- Plant maintenance should continue to periodically mow grass and remove small trees and brush from all dike slopes.
- Plant personnel should monitor the exterior dike slopes for seepages, soft wet spots, animal burrowing, sloughing, etc., and notify Fossil Engineering Services of any changes.

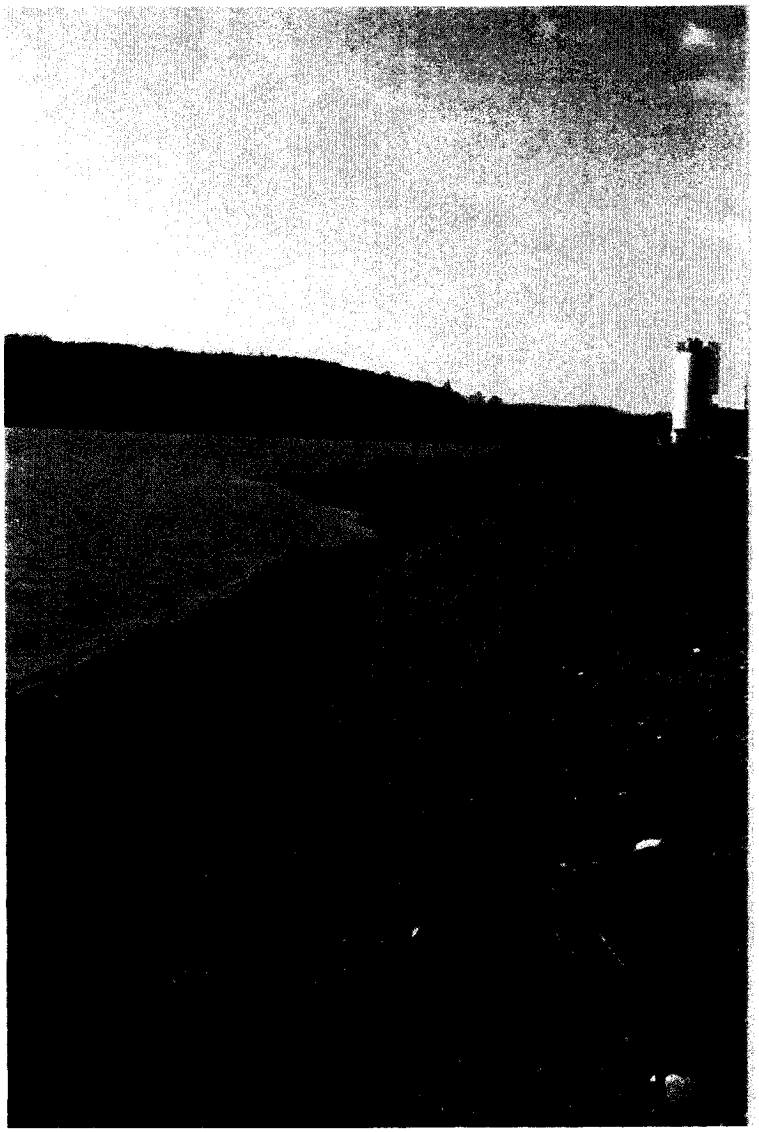


Photo 1—Looking southwest: Divider dike slope

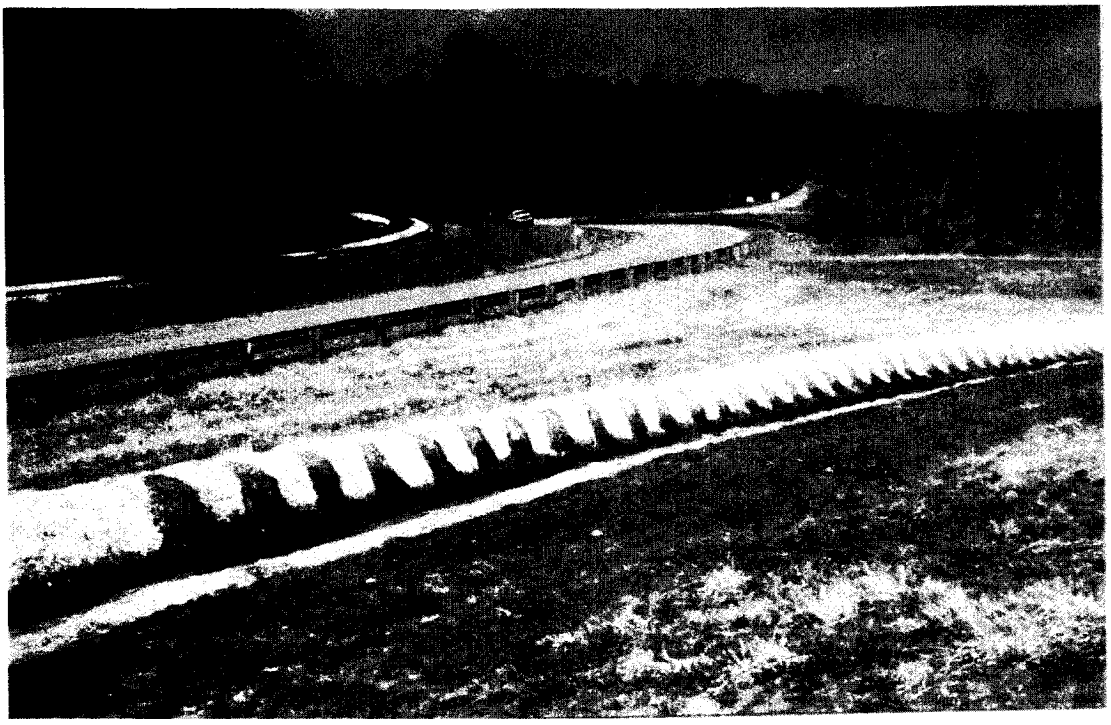


Photo 2—Looking northeast: Drainage ditch along Swan Pond Road

Photo 3—Looking southwest: Standing water in perimeter ditch

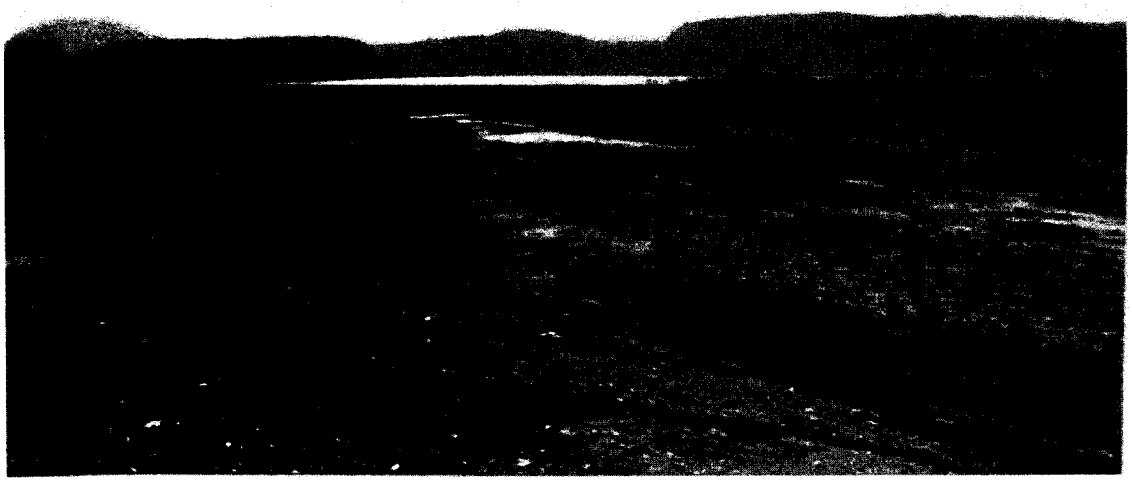


Photo 4—Looking southwest: Slopes of perimeter ditch

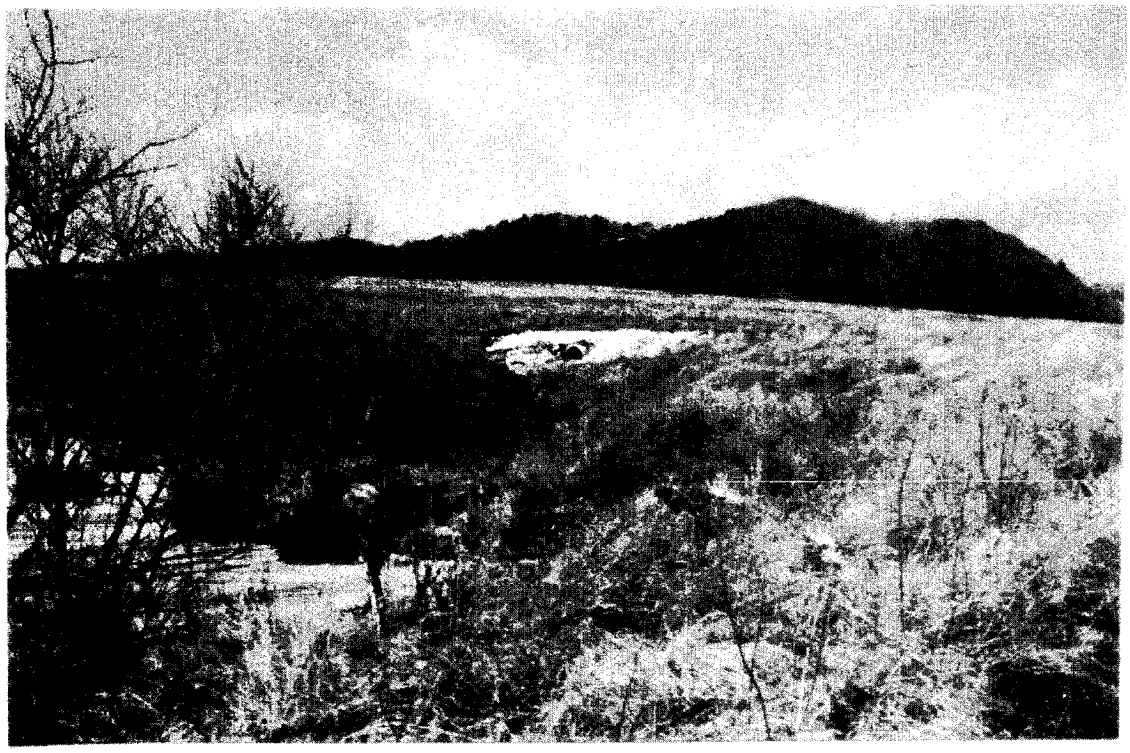


Photo 5—Looking northwest: Trees and brush at discharge of perimeter ditch

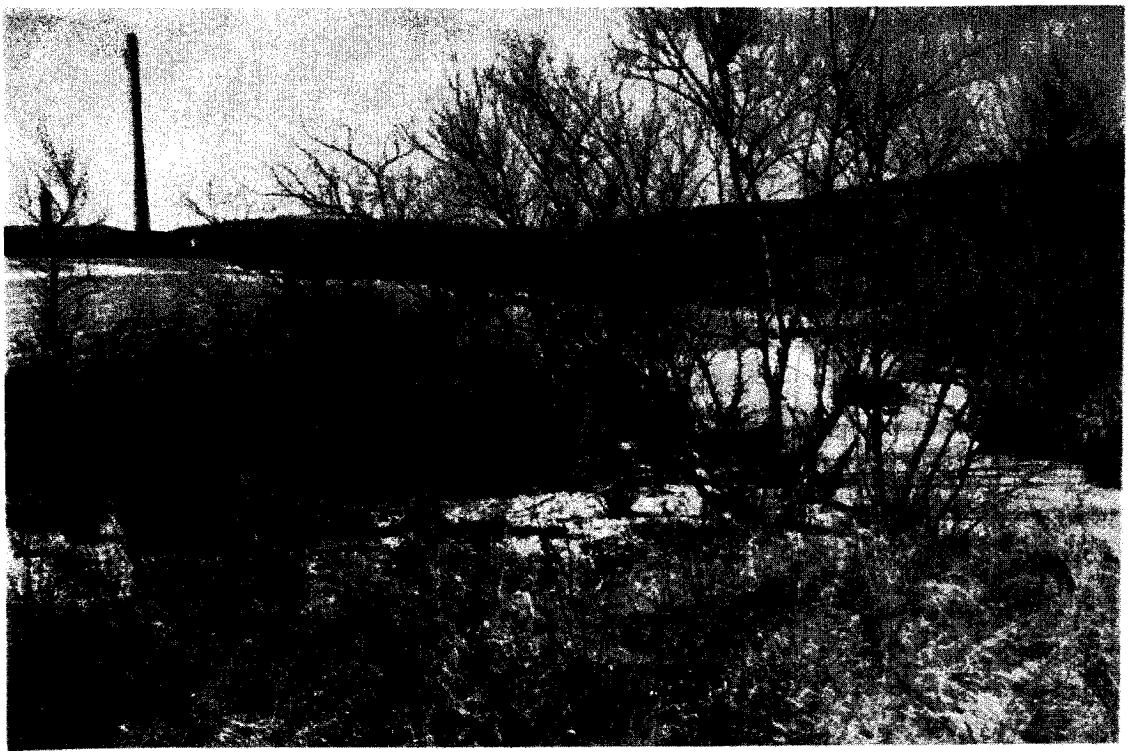


Photo 6—Looking west: Trees and brush at discharge of perimeter ditch

Photo 7—Looking west: Outlet drain erosion

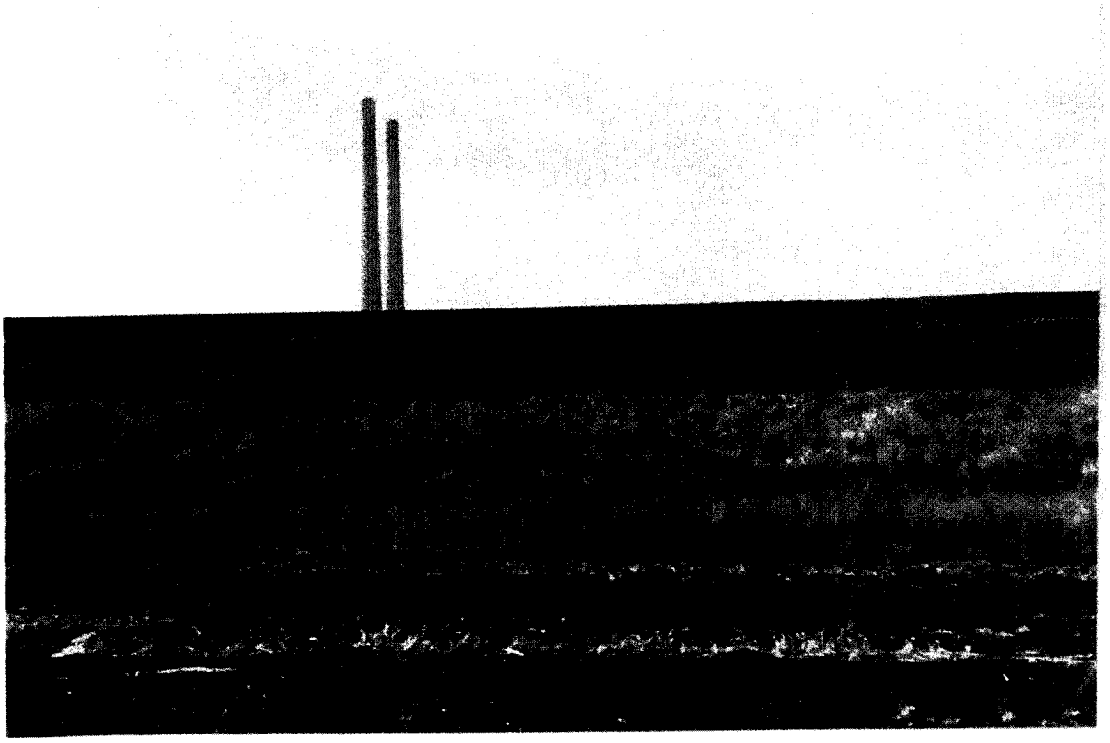
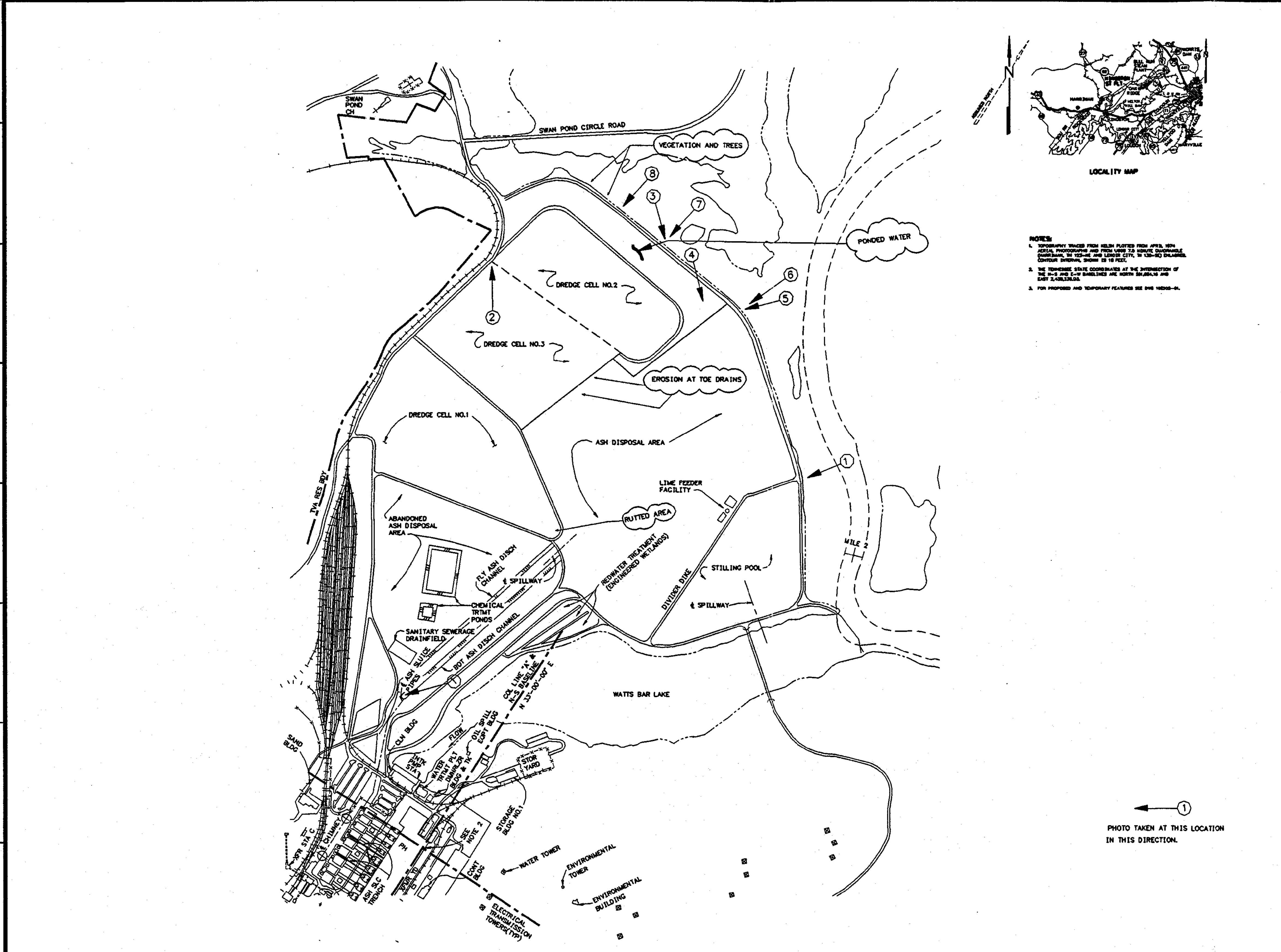


Photo 8—Looking west: Erosion on slopes of stage B lift



SWAN POND CH
SWAN POND CIRCLE ROAD
VEGETATION AND TREES
PONDED WATER
DREDGE CELL NO.2
DREDGE CELL NO.3
DREDGE CELL NO.1
EROSION AT TOE DRAINS
ASH DISPOSAL AREA
LIME FEEDER FACILITY
RUTTED AREA
REDWATER TREATMENT (ENGINEERED WETLANDS)
DIVIDER DIKE
STILLING POOL
℄ SPILLWAY
MILE 2
TVA RES BDY
ABANDONED ASH DISPOSAL AREA
FLY ASH DISCH CHANNEL
℄ SPILLWAY
CHEMICAL TRTMT PONDS
SANITARY SEWERAGE DRAINFIELD
ASH SLUICE PIPES
BOT ASH DISCH CHANNEL
COL LINE "A" & N-S BASELINE
N 33°-00'-00" E
WATTS BAR LAKE
SAND BLDG
CLN BLDG
FLOW
OIL SPILL EQPT BLDG
STOR YARD
PENTR STA
WATER PLT TRTMT BLDG & TK
STORAGE BLDG NO.1
SEE NOTE 2
XFR STA C
CHIMNEY
PH
ASH SLC TRENCH
CONT BLDG
WATER TOWER
ENVIRONMENTAL TOWER
ENVIRONMENTAL BUILDING
ELECTRICAL TRANSMISSION TOWERS(TYP)
LOCALITY MAP
NOTES:
PHOTO TAKEN AT THIS LOCATION IN THIS DIRECTION.
TOPOGRAPHY TRACED BY M.P. TERRICH 1/26/1989

SCALE: NONE — EXCEPT AS NOTED

YARD

ASH DISPOSAL AREA
2000 ANNUAL INSPECTION

DRAWN BY	CHECKED BY	SUPERVISED BY	REVIEWED BY	APPROVED BY	ISSUED BY
MPT	CPJ	CPJ		ROB	

KINGSTON FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

AUTOCAD R 14 | DATE 04/28/81 | 36 | C | AP100 | R

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C.A.D. DRAWING DO NOT ALTER MANUALLY

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