



**OCCURRENCE**

Report Number: MMES-90-299 X10-90-67  
Report Date: 9/7/90

**13. OPERATING CONDITIONS OF FACILITY AT TIME OF OCCURRENCE:**

Meteorological Data: Wind Speed: N/A Wind Direction: N/A  
Temperature: N/A Stability Class: D

**14. IMMEDIATE ACTIONS TAKEN AND RESULTS:**

Press release is anticipated on 9/20/90. Additional sampling of surface sediments undertaken to determine the spatial extent of contaminated sediment. Steps taken to prevent public access to the contaminated area. Potential corrective actions to control sediment erosion and transport from the embayment are being evaluated.

**15. CAUSE:**

Direct Cause: (mark only one)

Design \_\_\_\_\_ Material \_\_\_\_\_ Personnel \_\_\_\_\_ Procedure \_\_\_\_\_ Other xx

**EXPLAIN:**

Historical releases of Cs-137 to White Oak Creek and gradual escape of Cesium-137 from old waste burial grounds resulted in contaminant accumulation in sediments of White Oak Lake and White Oak Creek embayment.

Contributing Cause(s): Design \_\_\_\_\_ Material \_\_\_\_\_ Personnel \_\_\_\_\_

**EXPLAIN:** Procedure \_\_\_\_\_ Other xx

Sediment erosion processes operating in White Oak Creek embayment gradually removed more recent, cleaner sediments and exposed old, highly contaminated sediment layers.

Root Cause: Procedure xx Training \_\_\_\_\_ Management \_\_\_\_\_

**EXPLAIN:** Personnel \_\_\_\_\_ Design \_\_\_\_\_ Material \_\_\_\_\_

Old (1940s-60s) waste management practice of disposing of environmentally mobile contaminants in permeable, shallow trenches. Resulted in contaminant migration into White Oak Creek and transport downstream.



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**20. IMPACT ON ENVIRONMENT, SAFETY, AND HEALTH:**

Contaminated sediment is covered by 10-feet of water at present. However, long-term direct exposure to dry sediment could be harmful. Efforts have been taken to better control access to area, and new warning signs have been posted around embayment. Procedures are in place to protect field sampling personnel from direct exposure. Contaminant transport off-site would not result in significant environmental or health effects, but it is controllable and should be prevented. Steps are being taken to control further sediment erosion and to prevent the downstream movement of contaminated sediment from the embayment into the Clinch River.

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**21. PROGRAMMATIC IMPACT:**

This occurrence will result in additional costs to the Environmental Restoration Program for site characterization, risk assessment, and selection and implementation of the appropriate remedial action. Additionally, this effort will likely result in delays and rescheduling in other aspects of the program.

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**22. IMPACT UPON CODES AND STANDARDS:**

None

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**23. FINAL EVALUATION AND LESSONS LEARNED:**

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**24. SIMILAR OCCURRENCE REPORT NUMBERS:**

None

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25. SIGNATURES:

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_  
Facility Manager (Name, position)

Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_  
DOE Facility Representative (Name, position)

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_  
DOE Program Manager (Name, position)  
A. W. Trivelpiece - RC

**DOE FACILITY REPRESENTATIVES INPUT**

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26. DOE FACILITY REPRESENTATIVE INPUT:

The steps that are being taken are adequate in handling the resolution of this problem.

27. Entered by: W. N. Lingle Date: 9/21/90  
Name of DOE Facility Representative