



River Systems Investigations Update TVA Kingston Ash Recovery Project

Workshop 2 of 6

April 5, 2012

- Purpose
- Composition of ash
- Residual ash
 - Nature & Extent
 - Transport Modeling

Purpose of Workshops

- Process leading to residual ash decision
- Information that will support decision
- Preview results of river investigations

Preview of “Upcoming Attractions”

Tonight's focus: Residual ash nature & extent, transport modeling

April 19: Aquatics Results

(toxicity testing, bioaccumulation in invertebrates & fishes)

May 3: Wildlife Results

(birds, turtles, mammals, plants)

May 17: Ecological Risk Assessment Process Development of General Response Actions

June 7: Alternatives Evaluation

Composition of Ash

Examples of Inorganic Concentrations in KIF Fly Ash

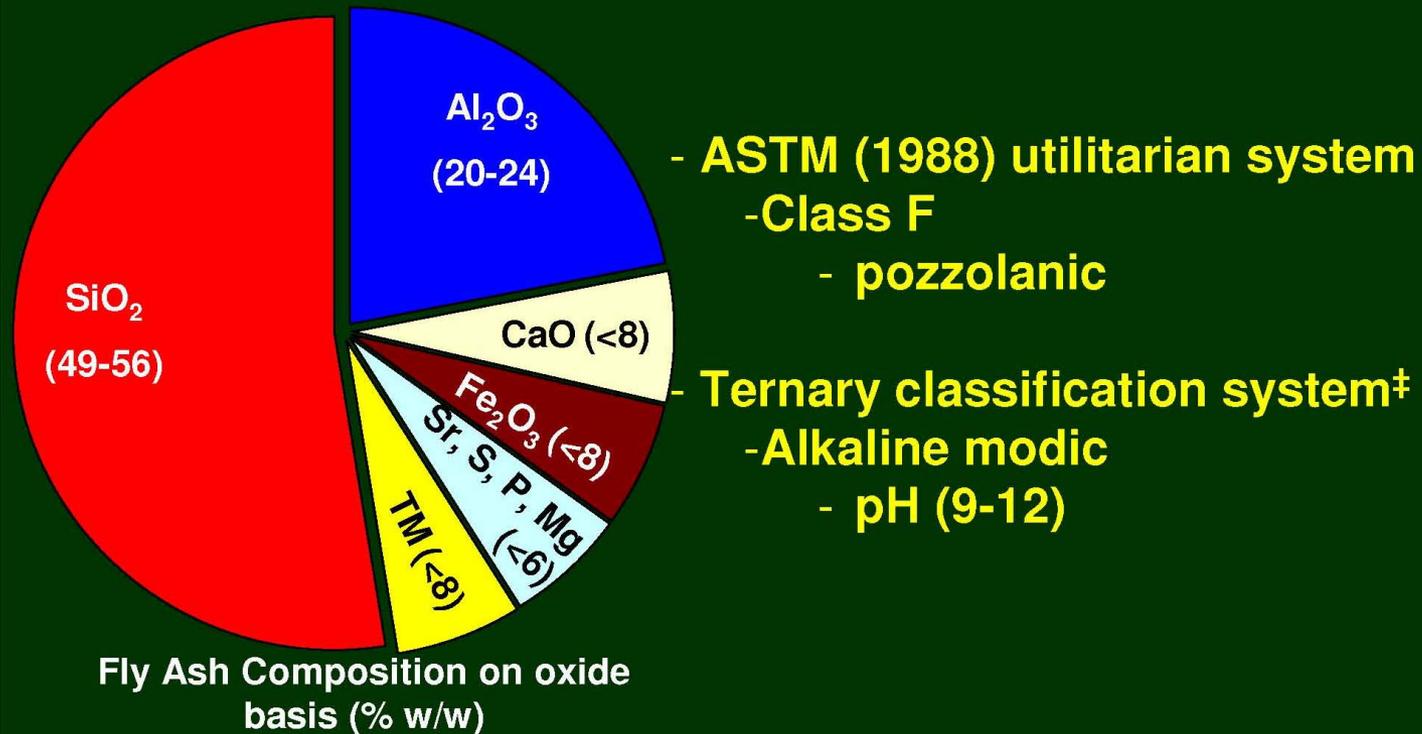
(Ash) Element	Average ppm
Aluminum	22,700
Iron	17,961
Copper	59
Arsenic	66
Selenium	6

Examples of Inorganic Concentrations in Local Soil

(Soil) Element	Average ppm
Aluminum	18,905
Iron	27,304
Copper	16
Arsenic	24
Selenium	1

Composition of Ash

Main Fly Ash Matrix Constituents: Si, Al, Ca, Fe

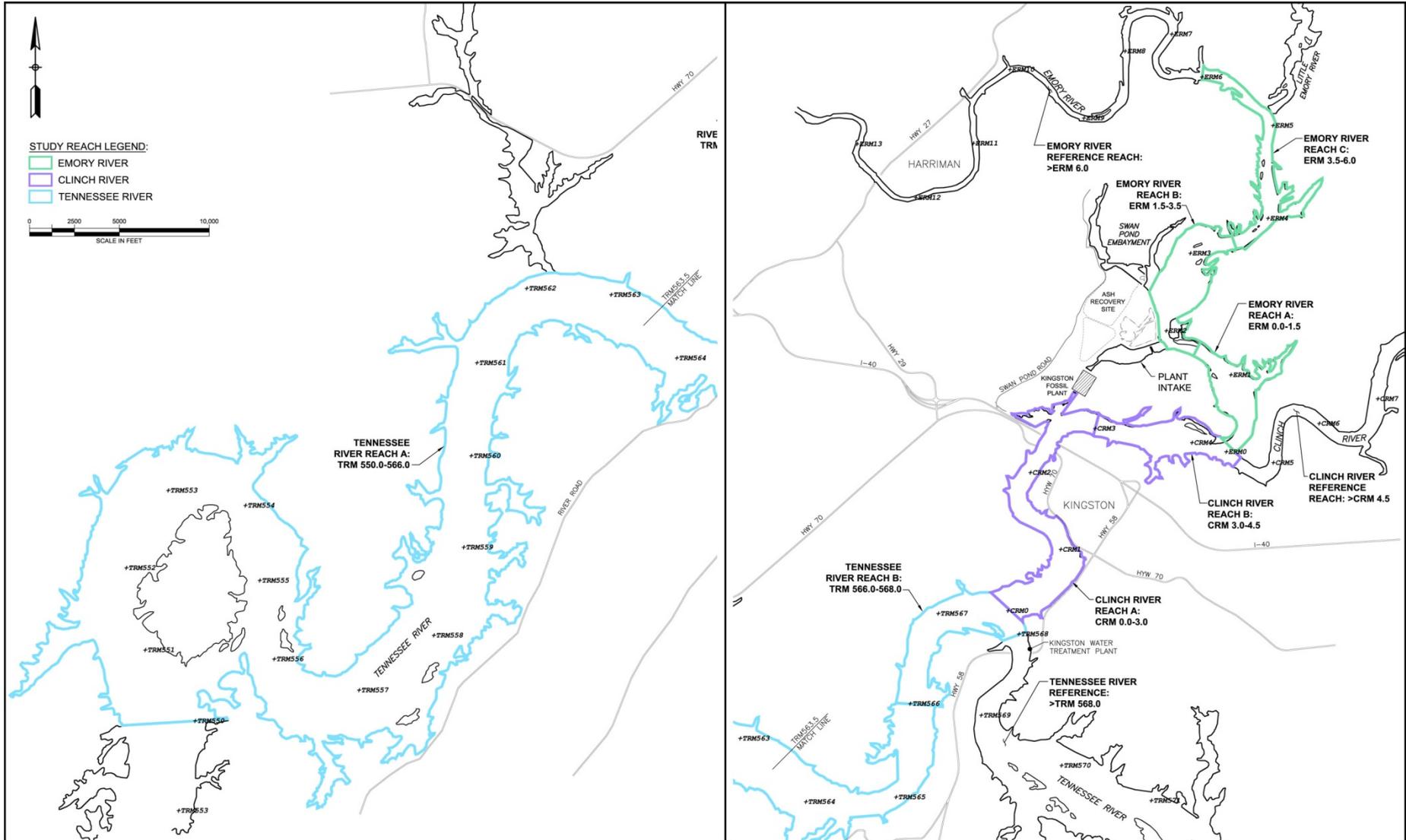


ASTM: American Society for Testing Materials, [‡]Roy & Griffin (1982)

Ash Nature and Extent

- 268 ash deposit samples collected from October 20, 2010 – April 20, 2011
 - 3 reaches in the Emory River
 - 2 reaches in the Clinch River
 - 2 reaches in the Tennessee River
 - 1 reference reach in each river
- Samples collected using a boat equipped with VibeCore apparatus
- Upper 6” of each core analyzed onsite using polarized light microscopy (PLM)
- Field PLM results >50% ash and random 10% of the cores analyzed at RJ Lee Group, Inc. for confirmatory PLM
- Operational definition of ash present = PLM result > 50% ash

Ash Nature and Extent





Ash Nature and Extent

River Reach	No. of Samples	No. of Samples with >0.5 ft Ash	Max. Thickness of Ash (ft)	Mean Thickness of Ash (ft)
Emory River				
Reach ER-R	11	0	<0.5	<0.5
Reach ER-C	35	3	1.3	1.0
Reach ER-B	69	20	4.2	1.9
Reach ER-A	45	10	2.9	1.4
Clinch River				
Reach CR-R	3	0	<0.5	<0.5
Reach CR-B	40	13	2.6	1.5
Reach CR-A	36	1	0.5	<0.5
Tennessee River				
Reach TR-R	3	0	<0.5	<0.5
Reach TR-B	14	0	<0.5	<0.5
Reach TR-A	12	0	<0.5	<0.5
Total	268	47	4.2	--

VibeCore Sampling



VibeCore Sampling

