

Opinion of Probable Capital Construction Costs - Summary of Detailed Derivations (attached)
(Based on Revised 90% Plans for Construction - 3/18/11)

**Perimeter Containment
North Dredge Cell (Dike C)
Segment 1 - Sta. A171+50 to A179+50
Kingston Fossil Plant
Harriman, Roane County, Tennessee**

| <u>Responsible Party</u> | <u>Primary Activity</u> | <u>Estimated Cost</u> | | | | |
|---------------------------------------|---|-----------------------------------|------------------|---|------------------|--|
| Earthwork Contractor (Civil Projects) | Site Preparation (establish surface grades to support stabilized wall construction, etc.) | \$ | 369,649 | | | |
| | Foundation Improvements (stabilized wall spoils management) | \$ | 430,500 | | | |
| | Embankment Platform | \$ | 232,971 | | | |
| | Earthen Berm | \$ | 575,881 | | | |
| | Rock Berm | \$ | 648,010 | | | |
| | North Berm | \$ | 917,870 | | | |
| | Drainage | \$ | 51,438 | | | |
| | Erosion Control | \$ | 3,610 | | | |
| | Dust Control | \$ | 388,125 | | | |
| | | \$ | 3,618,053 | <i>subtotal for Earthwork Contractor (Civil Projects)</i> | | |
| Specialty Contractor | Mobilization/Demobilization | \$ | 1,085,006 | | | |
| | Working Platform | \$ | 394,372 | | | |
| | Stabilized Wall | \$ | 6,839,000 | | | |
| | | \$ | 8,318,377 | <i>subtotal for Specialty Contractor</i> | | |
| Stantec | Remove Existing Instrumentation (within stabilized wall footprint) | \$ | 50,000 | | | |
| | Stabilized Wall QC Management | \$ | 367,200 | | | |
| | Earthen Berm QC Management | \$ | 90,221 | | | |
| | | \$ | 507,421 | <i>subtotal for Stantec</i> | | |
| TVA Site Management / Administration | Considers QA Management and Stabilized Wall QC Sampling/Testing | | | \$ | 1,824,899 | <i>subtotal for TVA Site Management / Administration</i> |
| | | Total (Derived in 2010 \$) | \$ | 14,270,000 | <i>(rounded)</i> | |

Opinion of Probable Capital Construction Costs⁽¹⁾
(Based on Revised 90% Plans for Construction - 3/18/11)

Perimeter Containment
North Dredge Cell (Dike C)
Segment 1 - Sta. A161+50 to A179+50
Kingston Fossil Plant
Harriman, Roane County, Tennessee

| | Estimated Quantity | Units | (2010 \$) | (2010 \$) | Source |
|--|--------------------|-------|-----------------|-----------------|---|
| I. Site Preparation | | | | | |
| A. Ash Excavation (to establish surface grades prior to stabilized wall construction) ⁽²⁾ | 60,400 | CY | \$ 2.37 | \$ 143,148.00 | 2010 RSMeans Site Work and Landscape Cost Data, 31 23 1642 0020 and 0250 |
| B. Hauling (excess cut to Dredge Cell) (assume 0.5-mile cycle) | 53,100 | CY | \$ 3.55 | \$ 188,505.00 | 2010 RSMeans Site Work and Landscape Cost Data, 31 23 2320 5030 |
| C. Placement (remaining fill to establish surface grades) | 7,300 | CY | \$ 2.03 | \$ 14,819.00 | 2010 RSMeans Site Work and Landscape Cost Data, 31 23 2317 0020 |
| D. Compaction | 7,300 | CY | \$ 1.60 | \$ 11,683.00 | 2010 RSMeans Site Work and Landscape Cost Data, 31 23 2323 5640 |
| E. Remove Existing Subsurface Rock | | | | | |
| 1. Ash (Overburden) Excavation | 0 | CY | | \$ - | |
| 2. Rock Excavation | 0 | CY | | \$ - | |
| 3. Placement (to re-establish surface grades) | 0 | CY | | \$ - | |
| 4. Compaction | 0 | CY | | \$ - | |
| F. Remove Existing Instrumentation (within stabilized wall footprint) | 1 | LS | \$ 50,000.00 | \$ 50,000.00 | Estimated |
| G. Remove Existing 48-inch Drainage Pipe (within stabilized wall footprint) | | | | | |
| 1. Ash Excavation (assume trench excavation w/ 3(H):1(V) slopes) | 1,450 | CY | \$ 4.22 | \$ 6,119.00 | 2010 RSMeans Site Work and Landscape Cost Data, 31 23 1613 5110 |
| 2. Pipe Disposal (on-site) | 223 | LF | \$ 7.60 | \$ 1,694.80 | 2010 RSMeans Site Work and Landscape Cost Data, 02 41 1338 1910 |
| 3. Backfill (to re-establish surface grades) | 1,450 | CY | \$ 2.54 | \$ 3,683.00 | 2010 RSMeans Site Work and Landscape Cost Data, 31 23 1613 3020 |
| II. Foundation Improvements (assume stabilized wall construction by third-party contractor) | | | | | |
| A. Mobilization/Demobilization ⁽³⁾ | 1 | LS | \$ 1,085,005.74 | \$ 1,085,005.74 | Estimated |
| B. Working Platform (and stockpiling of spoils) | | | | | |
| 1. Construction Platform ⁽⁴⁾ | 5,750 | TON | \$ 15.00 | \$ 86,250.00 | TVA / Jacobs (Email - October 15, 2010) |
| 2. Dozer and Operator ⁽⁵⁾ | 136 | DAY | \$ 2,265.60 | \$ 308,121.60 | 2010 RSMeans Site Work and Landscape Cost Data, Crew B-10M, Page 645 |
| C. Stabilized Wall Construction | | | | | |
| 1. Overburden ⁽⁶⁾ | 80,300 | CY | \$ 70.00 | \$ 5,621,000.00 | Hayward Baker Soil Mix Soil Stabilization Budgetary Proposal dated September 17, 2009 |
| 2. Rock Embedment ⁽⁷⁾ | 5,800 | CY | \$ 210.00 | \$ 1,218,000.00 | Estimated |
| D. Spoils Management (represents additional disposal within Dredge Cell by TVA) ⁽⁸⁾ | 86,100 | CY | \$ 5.00 | \$ 430,500.00 | Addendum 3 for Deep Mixing RFP Documents (received from TVA on November 16, 2010) |
| E. QC Management | | | | | |
| 1. Stabilized Wall QC Manager ⁽⁹⁾ | 1,360 | HR | \$ 120.00 | \$ 163,200.00 | Stantec Schedule of Fees (Contract No. 74705) |
| 2. Stabilized Wall Technician ⁽¹⁰⁾ | 2,720 | HR | \$ 75.00 | \$ 204,000.00 | Stantec Schedule of Fees (Contract No. 74705) |
| 3. Core Sampling | 1 | LS | \$ 250,000.00 | \$ 250,000.00 | Estimated |
| 4. Material Testing (core samples) | | | | | |
| (i). Unconfined Compressive Strength (ASTM D 1633) ⁽¹¹⁾ | 1,230 | EA | \$ 50.00 | \$ 61,500.00 | Estimated |
| (ii). Stabilized Wall QC Administrative/Technical Support ⁽¹²⁾ | 1 | EA | \$ 36,720.00 | \$ 36,720.00 | Estimated |
| F. QA Management | | | | | |
| 1. Stabilized Wall QA Manager ⁽¹³⁾ | 1,360 | HR | \$ 120.00 | \$ 163,200.00 | Stantec Schedule of Fees (Contract No. 74705) |
| 2. Stabilized Wall QA Administrative/Technical Support ⁽¹²⁾ | 1 | EA | \$ 16,320.00 | \$ 16,320.00 | Estimated |
| III. Embankment Platform | | | | | |
| A. TDOT No. 10 Screening Product | | | | | |
| 1. Materials ⁽¹⁴⁾ | 12,250 | TON | \$ 14.95 | \$ 183,137.50 | TVA / Jacobs (Email - October 12, 2010) |
| 2. Placement | 5,500 | CY | \$ 2.03 | \$ 11,165.00 | 2010 RSMeans Site Work and Landscape Cost Data, 31 23 2317 0020 |
| 3. Compaction | 5,500 | CY | \$ 1.60 | \$ 8,800.00 | 2010 RSMeans Site Work and Landscape Cost Data, 31 23 2323 5640 |
| B. No. 57 Coarse Aggregate | | | | | |
| 1. Materials ⁽¹⁵⁾ | 2,020 | TON | \$ 12.45 | \$ 25,149.00 | TVA / Jacobs (Email - October 12, 2010) |
| 2. Placement | 1,300 | CY | \$ 2.03 | \$ 2,639.00 | 2010 RSMeans Site Work and Landscape Cost Data, 31 23 2317 0020 |
| 3. Compaction | 1,300 | CY | \$ 1.60 | \$ 2,080.00 | 2010 RSMeans Site Work and Landscape Cost Data, 31 23 2323 5640 |
| IV. Earthen Berm | | | | | |
| A. Excavation and Load-out (from off-site borrow area) | 27,700 | CY | \$ 10.55 | \$ 292,235.00 | 2010 RSMeans Site Work and Landscape Cost Data, 31 23 2315 6010 |
| B. Hauling (assume 2-mile cycle) | 27,700 | CY | \$ 6.35 | \$ 175,895.00 | 2010 RSMeans Site Work and Landscape Cost Data, 31 23 2320 1430 |
| C. Placement | 27,700 | CY | \$ 2.03 | \$ 56,231.00 | 2010 RSMeans Site Work and Landscape Cost Data, 31 23 2317 0020 |
| D. Compaction | 27,700 | CY | \$ 1.60 | \$ 44,320.00 | 2010 RSMeans Site Work and Landscape Cost Data, 31 23 2323 5640 |
| E. Hydroseeding, with Mulch and Fertilizer (temporary, long-term duration) | 120,000 | SF | \$ 0.06 | \$ 7,200.00 | 2010 RSMeans Site Work and Landscape Cost Data, 32 92 1914 4600 |
| F. QC Management | | | | | |
| 1. Earthwork QC Manager ⁽¹⁶⁾ | 300 | HR | \$ 120.00 | \$ 36,000.00 | Stantec Schedule of Fees (Contract No. 74705) |
| 2. Earthwork Technician ⁽¹⁷⁾ | 600 | HR | \$ 75.00 | \$ 45,000.00 | Stantec Schedule of Fees (Contract No. 74705) |
| 3. Material Testing | | | | | |

Opinion of Probable Capital Construction Costs⁽¹⁾
(Based on Revised 90% Plans for Construction - 3/18/11)

Perimeter Containment
North Dredge Cell (Dike C)
Segment 1 - Sta. A161+50 to A179+50
Kingston Fossil Plant
Harriman, Roane County, Tennessee

| | Estimated Quantity | Units | (2010 \$) | (2010 \$) | Source |
|---|--------------------|-------|-----------------|--------------------------------|---|
| (i). Natural Moisture Content (ASTM D 2216) ⁽¹⁸⁾ | 3 | EA | \$ 8.50 | \$ 25.50 | Stantec Schedule of Fees (Contract No. 74705) |
| (ii). Atterberg Limits (ASTM D 4318) ⁽¹⁸⁾ | 3 | EA | \$ 60.00 | \$ 180.00 | Stantec Schedule of Fees (Contract No. 74705) |
| (iii). Sieve and Hydrometer Analysis (ASTM D 422) ⁽¹⁸⁾ | 3 | EA | \$ 85.00 | \$ 255.00 | Stantec Schedule of Fees (Contract No. 74705) |
| (iv). Specific Gravity (ASTM D 854) ⁽¹⁸⁾ | 3 | EA | \$ 45.00 | \$ 135.00 | Stantec Schedule of Fees (Contract No. 74705) |
| (v). Standard Proctor (ASTM D 698) ⁽¹⁸⁾ | 3 | EA | \$ 175.00 | \$ 525.00 | Stantec Schedule of Fees (Contract No. 74705) |
| 4. Earthwork QC Administrative/Technical Support ⁽¹²⁾ | 1 | EA | \$ 8,100.00 | \$ 8,100.00 | Estimated |
| V. Rock Berm | | | | | |
| A. Site Preparation | | | | | |
| 1. Ash Excavation (addressed in Embayment excavation estimates) | 0 | CY | | \$ - | |
| B. TDOT Class "B" Machined Riprap | | | | | |
| 1. Materials ⁽¹⁹⁾ | 4,700 | TON | \$ 15.85 | \$ 74,495.00 | TVA / Jacobs (Email - October 12, 2010) |
| 2. Placement | 3,300 | CY | \$ 3.10 | \$ 10,230.00 | 2010 RSMMeans Site Work and Landscape Cost Data, 31 23 2315 5010 |
| C. No. 2 Coarse Aggregate | | | | | |
| 1. Materials ⁽²⁰⁾ | 27,300 | TON | \$ 15.00 | \$ 409,500.00 | TVA / Jacobs (Email - October 15, 2010) |
| 2. Placement | 18,400 | CY | \$ 3.10 | \$ 57,040.00 | 2010 RSMMeans Site Work and Landscape Cost Data, 31 23 2315 5010 |
| D. No. 57 Coarse Aggregate | | | | | |
| 1. Materials ⁽¹⁵⁾ | 6,700 | TON | \$ 12.45 | \$ 83,415.00 | TVA / Jacobs (Email - October 12, 2010) |
| 2. Placement | 4,300 | CY | \$ 3.10 | \$ 13,330.00 | 2010 RSMMeans Site Work and Landscape Cost Data, 31 23 2315 5010 |
| VI. North Berm⁽²¹⁾ | | | | | |
| A. Site Preparation | | | | | |
| 1. Ash Excavation (addressed in Embayment excavation estimates) | 0 | CY | | \$ - | |
| B. Rock Fill | | | | | |
| 1. Materials ⁽¹⁹⁾ | 53,400 | TON | \$ 15.00 | \$ 801,000.00 | TVA / Jacobs (Email - October 15, 2010) |
| 2. Placement | 37,700 | CY | \$ 3.10 | \$ 116,870.00 | 2010 RSMMeans Site Work and Landscape Cost Data, 31 23 2315 5010 |
| VII. Drainage | | | | | |
| A. Reinforced Concrete Pipe - 48-inch | | | | | |
| 1. Materials | 136 | LF | \$ 191.00 | \$ 25,976.00 | 2010 RSMMeans Site Work and Landscape Cost Data, 33 41 1360 2080 and 2524 |
| 2. Excavation | 305 | CY | \$ 5.75 | \$ 1,753.75 | 2010 RSMMeans Site Work and Landscape Cost Data, 31 23 1613 5070 |
| 3. Hauling (to Dredge Cell) (assume 0.5-mile cycle) | 305 | CY | \$ 3.55 | \$ 1,082.75 | 2010 RSMMeans Site Work and Landscape Cost Data, 31 23 2320 5030 |
| 4. Flowable Fill Backfill | 250 | CY | \$ 90.50 | \$ 22,625.00 | 2010 RSMMeans Site Work and Landscape Cost Data, 03 31 0535 4250 |
| VIII. Erosion Control | | | | | |
| A. Silt Fence | 3,800 | LF | \$ 0.95 | \$ 3,610.00 | 2010 RSMMeans Site Work and Landscape Cost Data, 31 25 1310 1000 |
| IX. Dust Control⁽²²⁾ | 207 | DAY | \$ 1,875.00 | \$ 388,125.00 | 2010 RSMMeans Site Work and Landscape Cost Data, 31 23 2320 2510 |
| X. Site Management / Administration⁽²³⁾ | 1 | EA | \$ 1,297,159.06 | \$ 1,297,159.06 | Estimated |
| Total (Derived in 2010 \$) | | | \$ | \$ 14,270,000 (rounded) | |

⁽¹⁾ This Opinion of Probable Capital Construction Costs is based on the Revised 90% Construction Plans for North Dredge Cell (Dike C) Segment 1 Perimeter Containment and will be updated in future design packages. The quantities represent the design as of 3/18/11.

⁽²⁾ Excludes quantity addressed in Embayment excavation estimates.

⁽³⁾ Represents mobilization/demobilization, mix design, etc.; assume 15% of platform construction, stockpiling of spoils, and stabilized wall construction costs.

⁽⁴⁾ Assumes platform will be constructed from aggregates (unit weight 115 pounds per cubic foot) and reused during stabilized wall construction activities; assumes base platform with dimensions of 100 feet wide x 100 feet long x 5 feet thick; assumes aggregates will be purchased twice due to anticipated loss.

⁽⁵⁾ Assumes stabilized wall contractor will maintain 1 dozer (300 hp) and operator on-site during stabilized wall construction activities to support platform construction and stockpiling of spoils for disposal within Dredge Cell by TVA; assumes stabilized wall construction schedule is 136 working days (5/12/11 - 11/22/11) based on construction schedule provided by Jacobs, run date 3/1/11.

⁽⁶⁾ Represents stabilized wall construction activities within foundation ash/soil layers (above bedrock); assumes effective thickness of 4 feet for shear walls.

⁽⁷⁾ Represents stabilized wall construction activities within foundation bedrock; assumes rock embedment depth of 3.1 feet (based on effective thickness of 4 feet for shear walls).

⁽⁸⁾ Assumes 100% spoils generation from stabilized wall construction activities for disposal within Dredge Cell by TVA.

⁽⁹⁾ Assumes 0.5 person (for each stabilized wall set-up) working 10-hour shifts, 5 days per week during stabilized wall construction activities; assumes stabilized wall construction schedule is 136 working days (5/12/11 - 11/22/11) based on construction schedule provided by Jacobs, run date 3/1/11; assumes average overburden stabilized wall construction rate of 750 cubic yards per shift per set-up; assumes average rock embedment stabilized wall construction rate of 250 cubic yards per shift per set-up.

⁽¹⁰⁾ Assumes 1 person (for each stabilized wall set-up) working 10-hour shifts, 5 days per week during stabilized wall construction activities; assumes stabilized wall construction schedule is 136 working days (5/12/11 - 11/22/11) based on construction schedule provided by Jacobs, run date 3/1/11; assumes average overburden stabilized wall construction rate of 750 cubic yards per shift per set-up; assumes average rock embedment stabilized wall construction rate of 250 cubic

Opinion of Probable Capital Construction Costs⁽¹⁾
(Based on Revised 90% Plans for Construction - 3/18/11)

Perimeter Containment
North Dredge Cell (Dike C)
Segment 1 - Sta. A161+50 to A179+50
Kingston Fossil Plant
Harriman, Roane County, Tennessee

| | Estimated Quantity | Units | (2010 \$) | (2010 \$) | Source |
|---|-----------------------|-------|-----------|-----------|--------|
| yards per shift per set-up. | | | | | |
| ⁽¹¹⁾ Assumes 25 core samples taken along 100-foot parcels over 20 percent of total length with 2 test specimens per sample. | | | | | |
| ⁽¹²⁾ Assumes 10% of QA/QC Manager and Technician costs. | | | | | |
| ⁽¹³⁾ Assumes 1 person working 10-hour shifts, 5 days per week during stabilized wall construction activities; assumes stabilized wall construction schedule is 136 working days (5/12/11 - 11/22/11) based on construction schedule provided by Jacobs, run date 3/1/11. | | | | | |
| ⁽¹⁴⁾ Assumes lower layer of embankment platform will be constructed from TDOT No. 10 Screening Product; assumes unit cost consistent with project unit cost used for sand (unit weight of 165 pounds per cubic foot). | | | | | |
| ⁽¹⁵⁾ Assumes upper layer of embankment platform will be constructed from No. 57 Coarse Aggregate; assumes unit weight of 115 pounds per cubic foot. | | | | | |
| ⁽¹⁶⁾ Assumes 0.5 person working 10-hour shifts, 5 days per week during earthen berm construction; assumes earthen berm construction is 60 working days (9/21/11 - 12/15/11) based on construction schedule provided by Jacobs, run date 3/1/11. | | | | | |
| ⁽¹⁷⁾ Assumes 1 person working 10-hour shifts, 5 days per week during earthen berm construction; assumes earthen berm construction is 60 working days (9/21/11 - 12/15/11) based on construction schedule provided by Jacobs, run date 3/1/11. | | | | | |
| ⁽¹⁸⁾ Assumes 1 test per 10,000 cubic yards of material placed. | | | | | |
| ⁽¹⁹⁾ Assumes unit weight 105 pounds per cubic foot. | | | | | |
| ⁽²⁰⁾ Assumes unit weight 110 pounds per cubic foot. | | | | | |
| ⁽²¹⁾ The material specification and quantity for the North Berm is based on conceptual design. A sediment pond is proposed for the area. Details including material specifications and berm geometry will be defined in a future design package. | | | | | |
| ⁽²²⁾ Assumes total project duration of 207 working days (3/10/11 to 1/4/12) based on construction schedule provided by Jacobs, run date 3/1/11. | | | | | |
| ⁽²³⁾ Assumes 10% of total capital construction costs. | | | | | |