

Spreadsheet Report
KIF/0509303R1FLY&BOT ASH

KINGSTON FOSSIL PLANT
OPTION 3 - WET ASH IN POND & GYPSUM IN POND
(WITHOUT BUFFER OPTION)

Project name KIF/0509303R1FLY&BOT ASH

Engineer DAN SMITH

Estimator C. L. Tenoy

Labor rate table KIF 40 2004

Equipment rate table TVA Equipment

Project Ash
Plant KIF
Estimate # 050803R1
PCN # KIF530
Requesting Engr Dan Smith
Option 3
Revision 1
Phase 2
Estimate Type Preliminary
Estimate Accuracy +/- 20%
Est. Issue Date 07/21/2005
Funding Type Capital
Unit N

Notes
(Wet ash in dredge cell/Phase 1, Wet gypsum in Phase 2, Phase 3 is dry stack ash)

All cost are based in 2005 dollars. Additional notes are as follow:

- (1) Closure costs not included.
- (2) Liner is not required for this option.
- (3) Bottom ash columns are subject to change with final design.
- (4) Engineering [incl] TVA oversight, subcontracts, and geotechnical investigation) - Assumes 10% of construction cost.
- (5) Assuming a disposal rate of 475,600 cy annually (including bottom and fly ash) & Gypsum/ash generating 327,360 cy annually.
- (6) Single phase power is assumed for pump installed for dredge cell seepage retrofit. 3-phase power is assumed not to be required.

Report format Sorted by 'Location/Activity/Outage Seq'
'Detail summary

Spreadsheet Report
KIF0509303R1/FLY&BOT ASH

Estimate Company

Location	Activity	Usage Seq	Description	Takeoff Quantity	Labor Productivity	Labor Quantity	Labor Amount	Material Amount	Sub Amount	Equip Amount	Other Amount	Total Cost/Unit	Total Amount
01	Instl Dms/Swan Pond	Capital	5" Dia Pipe Bolards	24.00 ea	1.500	36.00 mh	1,036	4,692	12,324	245		256.78	6,163
			PVC Monitoring Wells	474.00 ea	0.200	94.80 mh	2,587	765		403		2,054.00	12,324
			5" Dia Non-Perf HDPE Comrigated Tubing Lateral Outlet Pipes (EL. 773)	16.00 in	0.500	8.00 mh	230	152		27		7.96	3.74
			Crushed Stone, Bedding 6" Depth	520.00 lf	0.200	104.00 mh	2,838	861		442		7.96	4.161
			5" Dia Non-Perf HDPE Comrigated Tubing Lateral Outlet Pipes (EL. 769)	18.00 in	0.500	9.00 mh	259	171		31		25.61	4.61
			Crushed Stone, Bedding 6" Depth	481.00 lf	0.200	96.20 mh	2,680	813		417		7.96	3.910
			5" Dia Non-Perf HDPE Comrigated Tubing Lateral Outlet Pipes (EL. 792)	17.00 in	0.500	8.50 mh	245	162		29		25.61	4.95
			Crushed Stone, Bedding 6" Depth	1,382.00 lf	0.200	276.40 mh	6,998	2,122		1,089		7.96	10,208
			5" Dia Non-Perf HDPE Comrigated Tubing Lateral Outlet Pipes (EL. 810)	43.00 in	0.500	21.50 mh	619	408		73		25.61	1.101
			Crushed Stone, Bedding 6" Depth	1,218.00 lf	0.200	243.60 mh	6,046	2,016		1,034		7.96	9,699
			5" Dia Non-Perf HDPE Comrigated Tubing Lateral Outlet Pipes (EL. 817)	1,169.00 lf	0.500	20.50 mh	590	390		70		25.61	1,050
			Crushed Stone, Bedding 6" Depth	1,169.00 lf	0.500	20.50 mh	590	390		1,002		7.96	9,396
			5" Dia Non-Perf HDPE Comrigated Tubing Lateral Outlet Pipes (EL. 825)	49.00 in	0.500	20.00 mh	576	380		69		25.61	1,024
			Crushed Stone, Bedding 6" Depth	1,169.00 lf	0.500	20.00 mh	576	380		985		7.96	9,237
			5" Dia Non-Perf HDPE Comrigated Tubing Lateral Outlet Pipes (EL. 832)	38.00 in	0.500	19.50 mh	561	371		66		25.61	999
			Crushed Stone, Bedding 6" Depth	21,196.00 sf	0.200	4,239.00 mh	121,995	36,225		36,225		7.48	159,020
			Cut For 6" Dia Non-Perforated HDPE (17.688 bcy)	14,533.00 sf	0.250	3,633.25 mh	106,746	44,811		44,811		10.20	151,227
			Backfill For 6" Dia Non-Perforated HDPE (12.351 bcy)	21,624.00 sf	0.200	4,324.80 mh	126,646	37,083		37,083		7.46	152,748
			Cut For 6" Dia Perforated HDPE (18.166 bcy)	15,276.00 sf	0.250	3,819.00 mh	108,934	45,510		45,510		10.20	155,744
			Backfill For 6" Dia Perforated HDPE (42.730 bcy)	2,000.00 lf	0.200	400.00 mh	10,917	3,310		1,598		7.96	15,976
			6" Dia Perforated HDPE Perimeter Underdrain (EL. 783)	378.00 in	0.250	94.50 mh	1,632	3,433		482		14.67	5,545
			1081 Crushed Stone	3,790.00 sf	0.250	748.00 mh	20,688	6,273		109		2.68	4,173
			Geotextile Woven Monofilament	716.00 in	0.200	143.20 mh	3,118	3,118		3,118		7.96	30,179
			6" Dia Perforated HDPE Perimeter Underdrain (EL. 772)	2,948.00 sf	0.250	589.60 mh	16,899	5,052		208		14.67	20,150
			1081 Crushed Stone	4,160.00 lf	0.200	832.00 mh	22,707	6,886		1,002		7.96	33,125
			Geotextile Woven Monofilament	3,258.00 sf	0.200	651.60 mh	1,899	1,899		226		2.68	2,666
			6" Dia Perforated HDPE Perimeter Underdrain (EL. 780)	786.00 in	0.250	196.50 mh	3,425	6,497		3,333		7.96	31,254
			Geotextile Woven Monofilament	3,258.00 sf	0.200	651.60 mh	1,899	1,899		946		14.67	10,885
			6" Dia Perforated HDPE Perimeter Underdrain (EL. 792)	742.00 in	0.250	185.50 mh	3,204	5,735		214		7.96	8,137
			1081 Crushed Stone	3,653.00 sf	0.200	730.60 mh	2,192	6,182		214		2.68	8,137
			Geotextile Woven Monofilament	6,410.00 in	0.200	1,282.00 mh	3,689	10,616		5,443		14.67	51,042
			6" Dia Perforated HDPE Perimeter Underdrain (EL. 810)	1,211.00 in	0.250	302.75 mh	8,229	15,454		1,544		7.96	17,785
			1081 Crushed Stone	4,866.00 sf	0.200	973.20 mh	2,926	8,592		349		2.68	13,371
			Geotextile Woven Monofilament	6,090.00 lf	0.200	1,218.00 mh	3,242	10,098		5,171		7.96	16,885
			6" Dia Perforated HDPE Perimeter Underdrain (EL. 817)	1,151.00 in	0.250	287.75 mh	8,392	15,454		1,544		14.67	16,885
			1081 Crushed Stone	4,237.00 sf	0.200	847.40 mh	2,489	7,286		331		2.68	10,203
			Geotextile Woven Monofilament	5,900.00 lf	0.200	1,180.00 mh	3,205	9,796		5,010		7.96	14,891
			6" Dia Perforated HDPE Perimeter Underdrain (EL. 823)	1,115.00 in	0.250	278.75 mh	8,124	15,454		1,544		14.67	16,357
			1081 Crushed Stone	4,569.00 sf	0.200	913.80 mh	2,693	7,921		1,422		2.68	12,306
			Geotextile Woven Monofilament	5,900.00 lf	0.200	1,180.00 mh	3,205	9,796		321		7.96	14,891
			6" Dia Perforated HDPE Perimeter Underdrain (EL. 832)	1,096.00 in	0.250	274.00 mh	8,040	15,454		1,544		14.67	16,078
			1081 Crushed Stone	4,511.00 sf	0.200	902.20 mh	2,647	7,921		1,397		2.68	12,302
			Geotextile Woven Monofilament	2,590.00 lf	0.250	518.00 mh	1,604	4,843		216		7.96	10,997
			12" Dia Eco-Mesh HDPE Perimeter Underdrain (EL. 763)	575.00 in	0.150	86.25 mh	2,483	4,511		739		14.67	8,435
			1081 Crushed Stone	1,000 ea	56,000	56,000 mh	2,286	5,095		209		2,560.57	7,551
			Submersible Pumping Station Equipment Package	1.00 ea	60,000	60,000 mh	1,810	3,093		475		5,338.36	5,338
			Geotextile Perimeter Monofilament	2,293.00 sf	0.021	47.17 mh	1,346	4,643		169		2.68	6,149
			6" Dia Perforated HDPE Perimeter Underdrain (EL. 823)	54.00 in	1,000	54.00 mh	1,515	2,886		30		80.19	4,870
			1081 Crushed Stone	2.00 ea	4,000	8.00 mh	304	102		80		243.02	486
			Steel Weir 1/4" Thick A-36 Steel Plate	50.00 in	1,000	50.00 mh	1,487	2,800		490		30.19	4,780
			Great Seal Storm Drain 24" Diameter (Pump & Plug)	2.00 ea	4,000	8.00 mh	304	102		80		243.02	486
			Steel Weir 1/4" Thick A-36 Steel Plate	23.00 in	1,000	23.00 mh	645	1,216		212		50.18	2,074
			Great Seal Storm Drain 24" Diameter (Pump & Plug)	2.00 ea	4,000	8.00 mh	304	102		80		243.02	486
			Steel Weir 1/4" Thick A-36 Steel Plate	38.00 in	4,480	182.40 mh	773	1,487		68		35.34	1,339
			24" CMP Storm Drain	30.00 sf	0.200	6.00 mh	173	77		77		8.31	349
			Excavation For 24" Dia Pipe (25 bcy)	21.00 sf	0.320	6.72 mh	183	166		166		25.61	102
			Backfill For 24" Diameter Pipe (17 bcy)	4.00 in	0.500	2.00 mh	59	38		7		25.61	102
			24" CMP Storm Drain	81.00 sf	0.200	16.20 mh	486	270		265		58.90	4,233
			Excavation For 36" Dia Pipe (67 bcy)	57.00 in	0.320	18.24 mh	451	421		207		6.31	976
			Backfill For 36" Diameter Pipe (47 bcy)	9.00 in	0.500	4.50 mh	130	86		15		17.33	206
			24" CMP Storm Drain	10,380.00 sf	0.200	2,076.00 mh	59,780	17,885		26,469		6.31	65,228
			Anchor Trench : Excavate into Bare Area (0.650 bcy)	4,356.00 sf	0.050	217.80 mh	157,885	24,663		14,113		3.70	19,685
			Upper & Lower LDPE Geogrids	1.00 sf	0.040	0.40 mh	1,193	2,800		2,582		19,369	19,369
			Contingency @ 10%				5,807					2.99	19,369
			Instl Dms/Swan Pond				1,016,066	495,705	12,324		178,875	178,875.00	1,967,628
			Capital				35,789.66 hrs	1,016,066	12,324		178,875	178,875	1,967,628
			01				35,789.66 hrs	1,016,066	12,324		178,875	178,875	1,967,628
04	Asht/ Gypsum In Pond	Capital	Excav. Still P. Area	1,000.00 lf	0.069	68.57 mh	1,994	592		317		28.1	2,513
			Geotextile (Nonwoven) Erosion Protection Channel	4,300.00 sf	0.016	68.80 mh	1,983	572		175		1.84	7,911

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Location	Activity	Usage Seq	Description	Takeoff Quantity	Labor Productivity	Labor Quantity	Labor Amount	Material Amount	Sub Amount	Equip Amount	Other Amount	Total Cost/Unit	Total Amount		
05	Capital		050' 6" Riprap	5,215.00 in	0.320	1,668.80 mh	49,667	53,037	26,865			24.85	129,588		
			3" S&B, 1" Thick To Prevent Erosion (Assume 105 pcf)	2,004.00 in	0.096	192.33 mh	5,056	18,190	3,066	10,860.64			13.65	27,132	
			3" S&B, 1" Thick Subsoil (112' or 48" Dia Riser Stand Pipe @ .28 FIEs)	4.00 ea	168.084	664.33 mh	20,450	20,199	2,795				10,860.64	43,443	
			Cut (Excavation For Placement Of 48" Dia Half-Round Pipe) 43' by	53.00 cy	0.400	20.80 mh	589	1,107	177				14.91	2,510	
			Fill With 1032 Compacted Crushed Stone	1,000.00 in	0.400	800.00 mh	17,481	3,682	47,611				47.61	47,611	
			30" Diameter CMP Culvert	135.00 in	0.500	67.50 mh	1,943	3,457	4,404				52.70	3,457	
			Bodding For 30" CMP, 6" Thick	720.00 in	0.500	360.00 mh	1,043	1,943	2,520				34.83	2,520	
			30" Diameter CMP Stand Pipe (Rises @ 6' Stages w/30' Per Stage)	540.00 mh	0.500	270.00 in	16,233	2,279	29,940				52.70	29,940	
			050' 6" Riprap Outlet For Metal Siphon	18.00 in	0.320	5.76 mh	15.03	539	1,317				74.85	1,317	
			Galvanized Corrugated Metal Anti-Sweep Collar	26.00 ea	15.000	255.00 mh	7,661	1,571	13,914				669.59	13,914	
			See Much Dislaid Areas	3,528.00 in	0.120	423.36 mh	13,738	4,147	49,336				14.18	49,336	
			1032 Crushed Stone Base, 6" Depth	5,935.00 in	0.120	712.20 mh	28,972	9,122	114,478				18.18	114,478	
			1032 Roller Compacted Crushed Stone Base, 6" Depth	7.00 lot					0.00				0.00	0.00	0.00
			Base Layers												
			Cut For Dredge Coll (288,000 cu)	322,200.00 cy	0.040	12,888.00 mh	429,995	338,837	788,442				3.39		788,442
			Compacted Fly Ash Base (Fill)	910,556.00 cy	1,300,000	700.43	1,695,157	1,474,981	3,170				3.42		3,170
			Profolot Subgrade	281,111.00 cy	281,111.000	10.00	8,497	4,030	9,527				0.95		9,527
			2.5" Thick Bottom Ash Layer	242,407.00 cy	1,300,000	186.47	451,549	378,604	3,422				8.42		3,422
			0.5" Thick Fly Ash Filter Layer	48,481.00 cy	1,300,000	37.29	90,309	75,300	2,034				20.34		2,034
			18" Dia Coarse Bottom Ash Drain Columns (haul 2 miles, 1, 100' by)	16,920.00 in		200.79	117,943	32,770	159,712				0.54		159,712
			Roll Tilt Fly Ash Layer	281,111.00 cy	1,400,000	125.86	304,775	254,191	342				0.34		342
			Bottom Ash Dike Fill	163,614.00 cy	1,300,000	1,258.62	1,594,775	1,258,620	373				3.73		373
			4" Diameter Perforated PVC Pipe (Underdrains) SDR 17.5	41,400.00 in	0.070	2,898.00 mh	79,084	64,987	159,521				7.46		159,521
			Trenching For The Drain System (4" Dia Underdrains), 1,333' by	1,840.00 cy	0.200	368.00 mh	10,693	3,128	14,921				1.21		14,921
			Strip Existing 1" Soil Cover (Phase 1 Expansion), 19,133' by	22,960.00 cy	800,000	28.79	14,128	14,930	29,958				1.21		29,958
			Another Trench Cut	2,073.00 cy	0.200	414.60 mh	11,935	5,286	17,221				8.31		17,221
			Another Trench Fill & Compact	1,971.00 cy	0.320	630.72 mh	18,158	15,807	33,965				7.13		33,965
			2.0" Thick Bottom Ash Blanket Drain	39,111.00 cy	1,300,000	30.09	72,855	30,382	133,262				3.42		133,262
			1.0" Thick Filter Drain Ash Layer	19,556.00 cy	1,300,000	15.04	35,428	30,382	66,811				3.42		66,811
			Geomembrane	58,667.00 cy	0.050	2,933.35 mh	83,682	6,666	22,444				3.73		22,444
			Perforated PVC ADS Drain Tub, 6" Diameter	7,650.00 in	0.200	1,530.00 mh	4,249	2,449	5,898				7.96		5,898
			Geotextile For Underdrain	6,542.00 in	0.021	134.57 mh	3,339	12,247	17,586				4.67		17,586
			#57 Stone For Outlet Pipe Bedding (135 pcf)	1,590.00 in	0.200	318.00 mh	6,865	14,432	14,432				14.67		14,432
			Solid Outlet Pipe ADS Drain 6" Diameter	1,963.00 in	0.200	392.60 mh	1,714	1,687	3,373				14.07		3,373
			#57 Stone For Outlet Pipe Bedding (135 pcf)	397.00 in	0.150	59.55 mh	3,249	906	3,922				9.79		3,922
			6" Dia Non-Perf HDPE Computed Tubing Lateral Outlet Pipes (EL: 7.60)	480.00 in	0.500	240.00 mh	794	408	1,202				2.51		1,202
			6" Dia Perforated HDPE Drain (EL: 7.60)	2,400.00 in	0.200	480.00 mh	13,100	3,972	17,072				7.96		17,072
			108" Crushed Stone	454.00 in	0.500	227.00 mh	4,317	773	5,090				2.51		5,090
			Geotextile, Nylon Monofilament	356.00 cy	0.200	71.20 mh	2,050	131	2,181				2.88		2,181
			Cut For Underdrain System	267.00 in	0.250	66.75 mh	1,921	801	2,722				10.20		2,722
			Basin Wall Underdrain System	1.00 ls			10,981	12,041	21,022				50,000		71,043
			Certification	6,976.00 in	1,200,000	5.82	10,981	12,041	21,022				50,000		71,043
			Cut For Ditch (5.15' by)	4,238.00 in	0.320	1,356.48 mh	40,371	21,837	106,319				24.85		121,156
			050' 6" Riprap	6,976.00 in	0.320	2,223.36 mh	7,289	427	7,716				1.19		7,716
			Seed Ditch	6,976.00 in	0.012	83.74 mh	2,234	12,075	14,309				24.85		14,309
			Joint Mailing	2,344.00 in	0.320	750.08 mh	2,324	23,838	26,162				14.18		26,162
			Riprap 050' Size 6"	6,300.00 in	1,200,000	3.58	6,757	7,420	14,177				757,914		772,091
			Cut For Basin (3.92' by)	1.00 ls			3,758,438	2,770,633	6,529,071				8.337,057		8,337,057
			Contingency @ 10%				375,843.8	574,334	950,178				8,337,057		9,287,236
			Ash / Gypsum in Pond				114,446.15 hrs	574,334	6,529,071				8,337,057		9,287,236
Contingency @ 10%				114,446.15 hrs	574,334	6,529,071				8,337,057		9,287,236			
Capital				31,076.30 hrs	1,349,489	21,977,800				2,566,248		24,544,048			
Miscellaneous				31,076.30 hrs	1,349,489	21,977,800				2,566,248		24,544,048			
05															
06															
Dry Fly Ash Conversion Capital Cost				1.00 ls	20,149.780	20,149.780						20,149.780			
Non-Manual				1.00 ls	10,528.516	10,528.516						10,528.516			
Mobilize, Drug Test, Misc Other, & Demobilize				1.00 ls	342.000	342.000						342.000			
Contingency @ 10%				1.00 ls	1,349,489	1,349,489						1,349,489			
Capital				1.00 lot	1,349,489	1,349,489						1,349,489			
Miscellaneous				1.00 lot	1,349,489	1,349,489						1,349,489			
06															
07															

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Estimate Company

Location	Activity	Outage Seq	Description	Takeoff Quantity	Labor Productivity	Labor Quantity	Labor Amount	Material Amount	Sub Amount	Equip Amount	Other Amount	Total Cost/Unit	Total Amount
10	Ph 2&Ph 3 Base Const	O & M	QA/QC For Construction Of Disposal Facility	1.00 ls					746,424			746,423.69	746,424
			O & M			0.00 hrs	0	0	746,424			746,424	746,424
			Ph 2&Ph 3 Base Const			0.00 hrs	0	0	746,424			746,424	746,424
			07										
	Ph 2 Initial Const	O & M	Wet Sluice Sedimented Gypsum Quantities	451,295.00 cy								0.00	0
			Initial Disposal Life	7,370.00 lf	0.200	1,474.00 mh	40,229	12,189		5,258		0.00	56,886
			Perforated Pipe ADS Drain Tube, 6" Diameter	6,142.00 sy	0.021	126.34 mh	3,604	12,437		19,471		2.68	19,471
			Generator For Underdrain	1,492.00 in	0.150	223.80 mh	6,442	13,542		1,902		14.67	21,387
			#57 Stone For Outlet Pipe Bedding (135 pc)	1,658.00 lf	0.200	331.60 mh	9,050	2,744		1,458		7.96	13,292
			Solid Outlet Pipe ADS Drain 6" Diameter	336.00 in	0.150	50.40 mh	1,451	3,050		428		14.67	4,929
			#57 Stone For Outlet Pipe Bedding (135 pc)			2,206.14 hrs	60,777	43,972		10,427			115,175
			O & M			2,206.14 hrs	60,777	43,972		10,427			115,175
			Ph 2 Initial Const			2,206.14 hrs	60,777	43,972		10,427			115,175
			10										
11	Rim Ditches	O & M	Cut (11,889 box)	134,279.00 cy	235.000	571.40 cd	187,815			399,260		4.22	587,076
			O & M			4,571.20 hrs	187,815			399,260			587,076
			Rim Ditches			4,571.20 hrs	187,815			399,260			587,076
			11										
12	Ph 2 Operation Cost	O & M	Stage 1 (3 To 1 Side Slopes)	1.00 lot								0.00	0
			Wet Cast Gypsum Dike Fill	255,189.00 cy	235.000	1,065.51 cd	319,823			756,770		4.22	1,077,593
			1,334,496.00 cy									0.00	0
			Wet Sluice Gypsum Quantities	4.90 yrs								0.00	0
			Stage 1 Disposal Life (Assumes Dikes & Sluice Gypsum)	11,495.00 lf	0.200	2,299.00 mh	62,746	19,026		9,761		2.68	94,533
			Perforated Pipe ADS Drain Tube, 6" Diameter	9,579.00 sy	0.021	197.04 mh	5,921	19,995		570		14.67	20,565
			Generator For Underdrain	2,328.00 in	0.150	348.20 mh	10,952	2,368		2,983		7.96	13,935
			#57 Stone For Outlet Pipe Bedding (135 pc)	2,596.00 lf	0.200	517.20 mh	14,116	4,480		2,196		14.67	18,792
			Solid Outlet Pipe ADS Drain 6" Diameter	524.00 in	0.150	78.60 mh	2,263	4,756		688		14.67	6,441
			O & M			12,128.33 hrs	413,721	68,889		775,034			1,297,343
			Ph 2 Operation Cost			12,128.33 hrs	413,721	68,889		775,034			1,297,343
			12										
13	Ph 2 Operation Cost	O & M	Stage 2 (3 To 1 Side Slopes)	1.00 lot								0.00	0
			Wet Cast Gypsum Dike Fill	263,403.00 cy	235.000	1,120.86 cd	329,189			763,193		4.22	1,123,382
			1,509,673.00 cy									0.00	0
			Wet Sluice Gypsum Quantities	3.40 yrs								0.00	0
			Stage 2 Disposal Life (Assumes Dike & Sluice Gypsum)	11,965.00 lf	0.200	2,373.00 mh	64,765	19,539		10,075		2.68	94,779
			Perforated Pipe ADS Drain Tube, 6" Diameter	9,688.00 sy	0.021	203.40 mh	5,902	20,022		692		14.67	20,714
			Generator For Underdrain	2,403.00 in	0.150	360.15 mh	10,206	2,181		3,054		7.96	13,251
			#57 Stone For Outlet Pipe Bedding (135 pc)	2,670.00 lf	0.200	534.00 mh	14,512	4,411		2,267		14.67	18,779
			Solid Outlet Pipe ADS Drain 6" Diameter	541.00 in	0.150	81.15 mh	2,336	4,911		680		14.67	7,936
			O & M			12,518.91 hrs	427,043	70,801		799,981			1,297,925
			Ph 2 Operation Cost			12,518.91 hrs	427,043	70,801		799,981			1,297,925
			13										
14	Ph 3 Initial Const	O & M	Dry Ash Stack	569,783.00 cy	1,100.000	517.98 cd	1,134,475			760,816		3.33	1,895,291
			O & M			37,294.89 hrs	1,134,475			760,816		0.00	1,895,291
			Disposal Life (Assumes Dry Stack Ash)	1.20 yrs		37,294.89 hrs	1,134,475			760,816			1,895,291
			O & M			37,294.89 hrs	1,134,475			760,816			1,895,291
			Ph 3 Initial Const										
			14										
15	Ph 3 Operation Cost	O & M	Stage 1 (3 To 1 Side Slopes)	1.00 lot								0.00	0
			Dry Stack Ash Quantities	1,345,160.00 cy	1,100.000	1,226.53 cd	2,666,306			1,801,523		3.33	4,467,829
			2.80 yrs									0.00	0
			Stage 1 Disposal Life (Assume Dike Stack)										

Spreadsheet Report
KIF0509303R1FLY&BOT ASH

Estimate Company

Location	Activity	Outage Set	Description	Takeoff Quantity	Labor Productivity	Labor Quantity	Labor Amount	Material Amount	Sub Amount	Equip Amount	Other Amount	Total Cost/Unit	Total Amount
16	Ph 3 Operation Cost	O & M	Ph 3 Operation Cost 15			88,309.56 hrs	2,686,305			1,801,523			4,487,828
			Stage 2 (3 To 1 Side Slopes)	1.00 lot	1,100,000	1,368.02 sq	2,996,204			2,009,352		0.00	5,005,556
			Dry Stack Ash Quantities	1,504,825.00 sq	1,100,000							3.33	0
			Stage 2 Disposal Life (Assume Dry Stack)	3.20 yrs			2,996,204			2,009,352		0.00	5,005,556
			O & M			88,407.64 hrs	2,686,204			1,801,523			4,487,828
			Ph 3 Operation Cost			88,407.64 hrs	2,686,204			1,801,523			4,487,828
			16			98,497.64 hrs	2,996,204			2,009,352			5,005,556
17	Ph 3 Operation Cost	O & M	Dry Stack Ash Quantities	1,334,189.00 sq	1,100,000	1,212.50 sq	2,656,457			1,781,506		3.33	4,437,963
			Stage 3 Disposal Life (Assume Dry Stack)	2.80 yrs			2,656,457			1,781,506		0.00	4,437,963
			O & M			87,328.74 hrs	2,656,457			1,781,506			4,437,963
			Ph 3 Operation Cost			87,328.74 hrs	2,656,457			1,781,506			4,437,963
			17										
18	Ph 2 Operation Cost	O & M	Stage 3 (3 To 1 Side Slopes)	1.00 lot	235,000	966.41 cu	283,828			675,269		4.22	959,096
			Wet Cast Gypsum Dike Fill	227,106.80 sq								0.00	0
			Stage 3 Disposal Life (Assume Dike & Sluice Ash & Gypsum)	4.80 yrs								0.00	0
			O & M			2,046.00 mh	55,841	16,932		6,687		7.96	81,460
			Perforated Pipe ADS Drain Tube, 6" Diameter	10,230.00 lf	0.200	175.96 mh	5,003	17,262		587		2.68	22,861
			Geotextile For Undergrain	6,525.00 sq	0.021	310.60 mh	8,947	18,807		2,642		14.67	30,395
			#57 Stone For Outlet Pipe Bedding (135 pc)	2,072.00 lf	0.150	460.40 mh	12,658	4,230		594		7.96	18,330
			Solid Outlet Pipe ADS Drain 6" Diameter	2,302.00 lf	0.200	65.90 mh	2,012	61,041		689,743		14.67	1,118,978
			#57 Stone For Outlet Pipe Bedding (135 pc)	466.00 in	0.150	10,793.73 hrs	368,194	61,041		689,743		14.67	1,118,978
			O & M			10,793.73 hrs	368,194	61,041		689,743		14.67	1,118,978
			Ph 2 Operation Cost			10,793.73 hrs	368,194	61,041		689,743		14.67	1,118,978
			18										
19	Ph 2 Operation Cost	O & M	Stage 4 (3 To 1 Side Slopes)	1.00 lot	235,000	718.43 sq	210,997			501,996		4.22	712,993
			Wet Cast Gypsum Dike Fill	166,851.00 sq								0.00	0
			Stage 4 Disposal Life (Assume Dike & Sluice Ash)	2.70 yrs								0.00	0
			O & M			1,521.00 mh	41,512	12,588		6,459		7.96	60,557
			Perforated Pipe ADS Drain Tube, 6" Diameter	7,665.00 lf	0.200	130.37 mh	3,719	12,633		443		2.68	16,996
			Geotextile For Undergrain	6,338.00 sq	0.021	310.60 mh	8,947	18,807		2,642		14.67	22,991
			#57 Stone For Outlet Pipe Bedding (135 pc)	1,540.00 lf	0.150	342.20 mh	9,340	2,632		1,453		7.96	13,624
			Solid Outlet Pipe ADS Drain 6" Diameter	1,711.00 lf	0.200	52.05 mh	1,488	3,150		442		14.67	5,090
			#57 Stone For Outlet Pipe Bedding (135 pc)	347.00 in	0.150	8,024.06 hrs	273,716	45,381		512,756		14.67	831,853
			O & M			8,024.06 hrs	273,716	45,381		512,756		14.67	831,853
			Ph 2 Operation Cost			8,024.06 hrs	273,716	45,381		512,756		14.67	831,853
			19										
20	Ph 3 Operation Cost	O & M	Stage 4 (3 To 1 Side Slopes)	1.00 lot	1,100,000	525.10 cu	1,150,265			771,271		0.00	1,921,536
			Dry Stack Ash Quantities	57,613.00 sq	1,100,000							3.33	1,921,536
			Stage 4 Disposal Life (Dry Stack Ash)	1.20 yrs								0.00	0
			O & M			37,807.40 hrs	1,150,265			771,271			1,921,536
			Ph 3 Operation Cost			37,807.40 hrs	1,150,265			771,271			1,921,536
			20			37,807.40 hrs	1,150,265			771,271			1,921,536

Estimate Totals

Labor	20,416,775								
Material	1,359,322								
Subcontract	30,763,666								
Equipment	16,070,509								
Other	3,337,918								
	<u>72,414,790</u>								
Engineered Materials - PH 2					100,000	%	C		
Adjustment - Engr Materials					(100,000)	%	C		
					<u>72,414,790</u>				
Environmental Costs									
Adjustment Environmental					100,000	%	C		
					(100,000)	%	C		
					<u>72,414,790</u>				
PPS Mech Engr - Phase 2	7,001				0.026	% @ 42.00	A		167
PPS Elec Engr - Phase 2	7,001				0.026	% @ 42.00	A		167
PPS Civil Engr - Phase 2	16,001				0.060	% @ 42.00	A		381
Non-TVA Engr - Phase 2	281,004				0.611	% @ 72.00	A		3,903
PPS Proj Civil Cost - Phase 2	995				0.004	% @ 42.00	A		24
PPS Proj Civil Sched - Phase 2	3,000				0.011	% @ 42.00	A		71
PPS Cost Estimating - Phase 2	1,000				0.004	% @ 42.00	A		24
PPS Engr Records - Phase 2	1,000				0.004	% @ 42.00	A		24
Engr Contingency@10%-Phase 2	31,700				0.004	% @ 42.00	A		24
	<u>346,702</u>				0.118	% @ 42.00	A		755
Rounding	508						L		
	<u>508</u>								
Total					72,824,000				
					<u>72,824,000</u>				