

KINGSTON FOSSIL PLANT
COAL YARD RUNOFF POND – ALT 4
ONE SUBMERSIBLE PUMP & ONE PIPE

24-Sep-94

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TVA – FHP FHE ESTIMATING

Phase II Approval

rept:np95

EXECUTIVE SUMMARY

Location	Material \$\$	T & L Man-Hours	Labor \$\$	Eqpt/Othr \$\$	Subcontr \$\$	Total Cost
A REMOVALS		272	4,723			4,723
COAL YARD SUMP	253	252	4,281			4,534
DX PUMPING ASSY	32,675	203	4,681			37,356
EARTHFILL	2,235	87	1,728	19		3,982
PIPE TO ASHPOND	27,557	1,333	25,291	5,562		58,410
STNLS STL PIPE	4,406	60	1,444			5,850
z0 ELECTRICAL	1,573	144	3,432	12		5,017
z1 HEAVY EQUIP				19,070		19,070
z1 TAGGED EQUIP				3,975		3,975
Construction Facilities		641	10,268	7,288	131	17,687
TOTAL DIRECT COST	68,697	2,987	55,846	35,926	131	160,600
Non-Manual Labor	(Phase 2 = 3,600 + Phase 3 = 12,200)					15,800
Total Contingency	(Phase 2 = 2,562 + Phase 3 = 11,000)					13,562
Partner Expnse/Charges(84E)	(Fee = 5,300 + Ins = 5,300)					10,600
TOTAL CONSTRUCTION						200,562
:: LESS Engineered Materials – (Phase 2 = 50,738 + 2,562 contingency)					>	53,300 <
TOTAL CONTRACT CONSTRUCTION						147,262
F&H Engineering						23,250
Plant Overhead Charges for Procurement & Handling of Capital Materials						5,500
Project Manager's Contingency						11,688
== TOTAL (PAB APPROVAL) COST ==						241,000

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Loc	Description	Quantity	Unit	Material \$\$	M-H/Unit	Man-Hours	Labor \$\$	Eqpt/Chrg \$\$	Subcont \$\$	Unit Cost	Total Cost
A REMOVALS											
	Electrical Demolition										
	Remove Pump & Piping	1.0 ls		24.00		24	580			580.00	580
	Remove Pump House & Slab	1.0 ls		48.00		48	854			854.00	854
	Remove Pump Platform & Piping	1.0 ls		144.00		144	2,091			2,091.00	2,091
		1.0 ls		56.00		56	1,198			1,198.00	1,198
	subtotal A REMOVALS			0		272	4,723	0	0		4,723
	16' Long Steel Wood Concrete Post	2 EA									
	COAL YARD SUMP										
	Excavate for sump	636	cy		0.13	83	1,412			2.28	1,412
	Backfill for sump	607	cy		0.27	162	2,773			4.65	2,773
	Backfill 1" crushed stone	29	C.Y.		0.13	3	41			12.20	244
	Filter Fabric (woven)	50	sf	203	0.04	4	55			1.05	105
	4" High Chain Link Fence - RIMP	20,840	LF								
	4" High Chain Link Fence - HOME	1	EA								
	subtotal COAL YARD SUMP			253		252	4,281	0	0		4,534
	Reinforcement	250	lbs								
	DX PUMPING ASSY Conv. Base For Sump.										
	36" Polyethylene Suction pipe	1.0 ea		40.00		40	848			8348.00	8,348
	36" Polyethylene couplings	50.0 lf		1,200	1.33	67	1,553			55.06	2,753
	6" submersible 40hp pump w/mtr	4.0 ea		112	6.00	24	582			173.50	694
	Level control system	1.0 ea		20,863		48	1,118			21,981.00	21,981
	24" Polyethylene Pipe (6" 10' / LF)	40 lf		3,000		24	580			3,580.00	3,580
	24" PE Couplings (24" / ea)	2 ea		32,675		203	4,681	0	0		37,356
	subtotal DX PUMPING ASSY										
	EARTH FILL										
	Earth Fill & compaction	700.0	C.Y.		0.01	9	151			0.22	151
	Crushed Stone Pmp House Area	230.0	tn	2,070	0.20	46	819			12.56	2,889
	1" GRS conduit w/fgs & sps	80.0	lf	165	0.40	32	758		19	11.78	942
	4" High Chain Link Fence	40 lf									
	subtotal EARTH FILL			2,235		87	1,728	19	0		3,982

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Loc	Description	Quantity	Unit	M-H/Unit	Man-Hours	Labor \$\$	Eqpt/Othr \$\$	Subcontr \$\$	Unit Cost	Total Cost
PIPE TO ASHPOND										
	Temporary dike @ coal yd sump	1.0	ls	96.00	96	1,472	562		2034.00	2,034
	Backfill sand around 10' pipe	620.0	cy	0.33	205	3,047			10.37	6,429
	Excavate for 10' pipe trench	2,050.0	cy	0.11	219	3,639			1.78	3,639
	Backfill earth for 10' trench	1,430.0	cy	0.17	240	3,714			2.60	3,714
	::10' Polyethylene Pipe SDR 19	4,200.0	lf	> 18,270	< 480	11,207			7.02	29,477
	::10' Polyethylene Pipe figs 90d	2.0	ea	> 328	< 9	216			272.00	544
	::10' Polyethylene Pipe figs 45d	5.0	ea	> 385	< 23	540			185.00	925
	::10' Polyethylene Pipe flange	1.0	ea	> 97	< 5	108			205.00	205
	Rent polyethylene fusion welder	1.0	ls				5,000		5000.00	5,000
	::10' Polyethylene Pipe figs WYE	1.0	ea	> 295	< 6	144			439.00	439
	12" pipe sleeves, A53 cs, coated	100.0	lf	4,800	0.50	1,204			60.04	6,004
	subtotal PIPE TO ASHPOND				1,333	25,291	5,562	0		58,410
STNLS STL PIPE										
	6" dia SSteel 316 pipe sch 40	14.0	lf	1,061	1.30	18	440		107.21	1,501
	10" SSteel 316 flange, 150# SO	1.0	ea	700	6.00	6	145		845.00	845
	6" SSteel 316 flange, 150# SO	1.0	ea	235	4.00	4	96		331.00	331
	6" SSteel 316 90deg sch 40	1.0	ea	375	9.00	9	217		592.00	592
	10x6" SS 316 reducer sch 40	1.0	ea	600	12.00	12	289		889.00	889
	10" SSteel 316 pipe sch 40	10.0	lf	1,420	1.00	10	233		165.30	1,653
	1/2" plug hex head 316 ss	1.0	ea	15	1.00	1	24		39.00	39
	subtotal STNLS STL PIPE			4,406	60	1,444	0	0		5,850
ZO ELECTRICAL										
	3/4" GRS conduit w/figs & spts	30.0	lf	52	0.72	22	517	7	19.20	576
	1-1/2" GRS conduit w/figs & spts	12.0	lf	35	0.80	10	230	1	22.17	266
	2" GRS conduit w/figs & spts	30.0	lf	116	0.50	15	359	4	15.97	479
	3/4" flexible conduit, sealite	5.0	lf	18	1.20	6	145		32.60	163
	1" flexible conduit, sealite	10.0	lf	45	0.90	9	218		26.30	263
	2" flexible conduit, sealite	5.0	lf	53	1.80	9	218		54.20	271
	#10 -3/c PXMJ 600v P & C cable	100.0	lf	79	0.04	4	87		1.66	166

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Loc	Description	Quantity	Unit	Material \$\$	M-H/Unit	Man-Hours	Labor \$\$	Eqpt/Othr \$\$	Subcontr \$\$	Unit Cost	Total Cost
	#12-4/c PXMJ 600v P & C cable	40.0	lf	37	0.08	3	73			2.75	110
	#2/0-s/c PXJ-600v P & C cable	120.0	lf	228	0.08	9	221			3.74	449
	Cable Terminations	62.0	ea	62	0.40	25	600			10.68	662
	Bare copper wire stranded #2	50.0	lf	39	0.30	15	363			8.04	402
	Grnd,cdrwl,#2 wire mobt frame	4.0	ea	40	2.00	8	196			59.00	236
	1" FD outlet box	1.0	ea	10	0.67	1	16			26.00	26
	Ground fault indicating,15 amp	1.0	ea	40	1.00	1	24			64.00	64
	Cover plwthr proof nema.7-23	1.0	ea	19	1.00	1	24			43.00	43
	Safety hvy duty 600v 3p 60 a	1.0	ea	700	6.00	6	141			841.00	841
	subtotal z0 ELECTRICAL			1,573		144	3,432	12	0		5,017
	z1 HEAVY EQUIP										
	AirComp, 250cfm	1.0	ea					250		250.00	250
	Trac,Crawl,Med,DS,100-110 hp	1.0	ea					2,700		2,700.00	2,700
	Trac,Crawl,Hvy,DS,270-300 hp	1.0	ea					1,750		1,750.00	1,750
	Compct,SheepFt,Res 3-50	1.0	ea					2,800		2,800.00	2,800
	Bkhd/Ldr, 1-1/4CYX17'x18"	2.0	ea					2,700		1,350.00	2,700
	TrkDmp, 4x2, Platform	1.0	ea					750		750.00	750
	TrkDmp,6x4,12-14CY, OnRd	2.0	ea					1,800		900.00	1,800
	Trk, Fuel, 4x2	1.0	ea					750		750.00	750
	Sprnkr,6x4, 2,000 Gal	1.0	ea					900		900.00	900
	Crn,RghTrn,21-25Tn,SwCb	1.0	ea					1,800		1,800.00	1,800
	Crn,RghTrn,41-50Tn,SwCb	1.0	ea					1,500		1,500.00	1,500
	Welder	1.0	ea					500		500.00	500
	Tugger, 2,000-2,500 lb	1.0	ea					870		870.00	870
	subtotal z1 HEAVY EQUIP			0		0	0	19,070	0		19,070
	z1 TAGGED EQUIP										
	Air Host(Tugger)1000#	1.0	ea					750		750.00	750
	AirEgp,ukhm, to 70# paving blk	2.0	ea					240		120.00	240
	CmptEgp,Tamper,175lb,	2.0	ea					2,400		1,200.00	2,400
	Bndr,hydrf,cndt/pipe to 2"	1.0	ea					585		585.00	585

94336. (file 94336A4)
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 ATTACHMENT 1

Loc	Description	Quantity	Unit	Material \$\$	M-H/Unit	Man-Hours	Labor \$\$	Eqpt/Othr \$\$	Subcont \$\$	Unit Cost	Total Cost
subtotal z1 TAGGED EQUIP											
		0		0		0	0	3,975	0		3,975
Construction Facilities											
	Mobilization										
	Admin Time(Employee proc,etc.)	1.0 WKS.		192.00		192	2,876	243		3119.00	3,119
	General Cleanup	7.0 WKS.		7.00		49	1,042			148.86	1,042
	Drinking Water	7.0 WKS.		16.00		112	1,874	424		299.71	2,098
	Hauling	7.0 WKS.		8.00		56	937	774		244.43	1,711
	Small Tool Dispense & Repair	7.0 WKS.		24.00		168	2,812	1,273		583.57	4,085
	Portable Toilet Service	2,988.0 sthr						2,032		0.68	2,032
	Consumables & Expendables	7.0 WKS							131	18.71	131
	Demobilization	2,988.0 ceft						2,421		0.81	2,421
		1.0 WKS.		64.00		64	927	121		1048.00	1,048
subtotal Construction Facilities											
		0		0		641	10,268	7,288	131		17,687

94336.(file 94336A4)

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ATTACHMENT 1

Loc	Description	Quantity	Unit	Material \$\$	M - H/Unit	Man - Hours	Labor \$\$	Eqpt/Othr. \$\$	Subcont. \$\$	Unit Cost	Total Cost
	TOTAL DIRECT COST			68,697		2,987	55,846	35,926	131		160,600
	Non-Manual Labor										
	Total Contingency										15,800
	Partner Expenses/Charges (84E)										13,562
											10,600
	TOTAL CONSTRUCTION										200,562
	LESS Engineered Materials - (Indicated by ><)										53,300 <
											147,262
	TOTAL CONTRACT CONSTRUCTION										147,262
	F&H Engineering - Phase 1										21,580
	F&H Engineering - Phase 2										1,670
	F&H Engineering - Phase 3										5,500
	Plant Overhead Charges for Procurement & Handling of Capital Materials										11,688
	Project Manager's Contingency										
	= TOTAL (PAB APPROVAL) COST = =										241,000