Dam:	Changuinola 1	Country	Panama
River	Changuinola	9°14'11.63"N 82°29'41.13"W	9.236564 -82.494759
Owner/Client	AES (Allied Energy Systems Co.) Panama SRL		
Designer/Engineer	Vattenfall & MD&A		
Contractor	CCWJV (JV of Pihl and son, M.T. Hojgaard & Alstrom)		

Purpose (code)	H
Site start	01.04.2007
RCC start	03.12.2009
RCC completion	26.04.2011
Site completion	30.10.2011
Height (m)	105
Length (m)	595
Volume of RCC (m^3x10^3)	884
Total volume (m^3x10^3)	910
Reservoir capacity (m^3x10^6)	347
Upstream slope	V
Forming of upstream face (code)	(3')
Downstream slope	0.50 0.70
Forming of downstream face (code)	(3') * (3') *
Spillway slope	0.50
Forming of spillway face (code)	(12)
Depth of layers (mm)	300
Depth of lifts (mm)	300
Cement content (kg/m^3)	70 65
Pozzolan content (kg/m^3)	145 150
Code for pozzolan	(F)
RCCDAM Unique Serial No.	RCCDAM0496

Under Construction



RCCDAM0496UC

Completed Dam



RCCDAM0496CD

Google Earth



RCCDAM0496GE

Guide to Abbreviations

Purpose

E	Environmental
F	Flood control
G	Groundwater recharge
H	Flood control
I	Irrigation
N	Navigation
P	Pollution control
R	Recreation
W	Water supply

Facing method

(1)	Traditional concrete against formwork
(2)	Traditional concrete against formwork with external geomembrane
(3)	RCC against formwork
(4)	RCC against formwork with external geomembrane
(5)	Traditional concrete against precast concrete panels
(6)	Traditional concrete against precast concrete panels with geomembrane
(7)	RCC against precast concrete panels
(8)	RCC against precast concrete panels with geomembrane
(9)	RCC against precast concrete panels with hot poured membrane
(10)	RCC against precast concrete blocks
(11)	Reinforced conventional concrete cast before RCC placement
(12)	Reinforced conventional concrete cast after RCC placement
(13)	Reinforced concrete cast against precast units or slip-formed facing elements
(14)	Slip-formed/extruded facing elements
(15)	RCC supported by fill shoulders
(16)	Mechanically compacted unformed face of RCC
(17)	Unformed face of RCC
'	GEVR/GE-RCC
*	Stepped face

Pozzolans

(-)	No Pozzolan Used
(C)	High-lime flyash (ASTM Class C)
(F)	Low-lime flyash (ASTM Class F)
(M)	Milled sand
(N)	Natural pozzolan (ASTM Class N)
(R)	ROLAC (mixture of flyash and slag with or without limestone fines)
(S)	Ground-granulated blast-furnace slag
(L)	Mixture of GGBFS and limestone fines