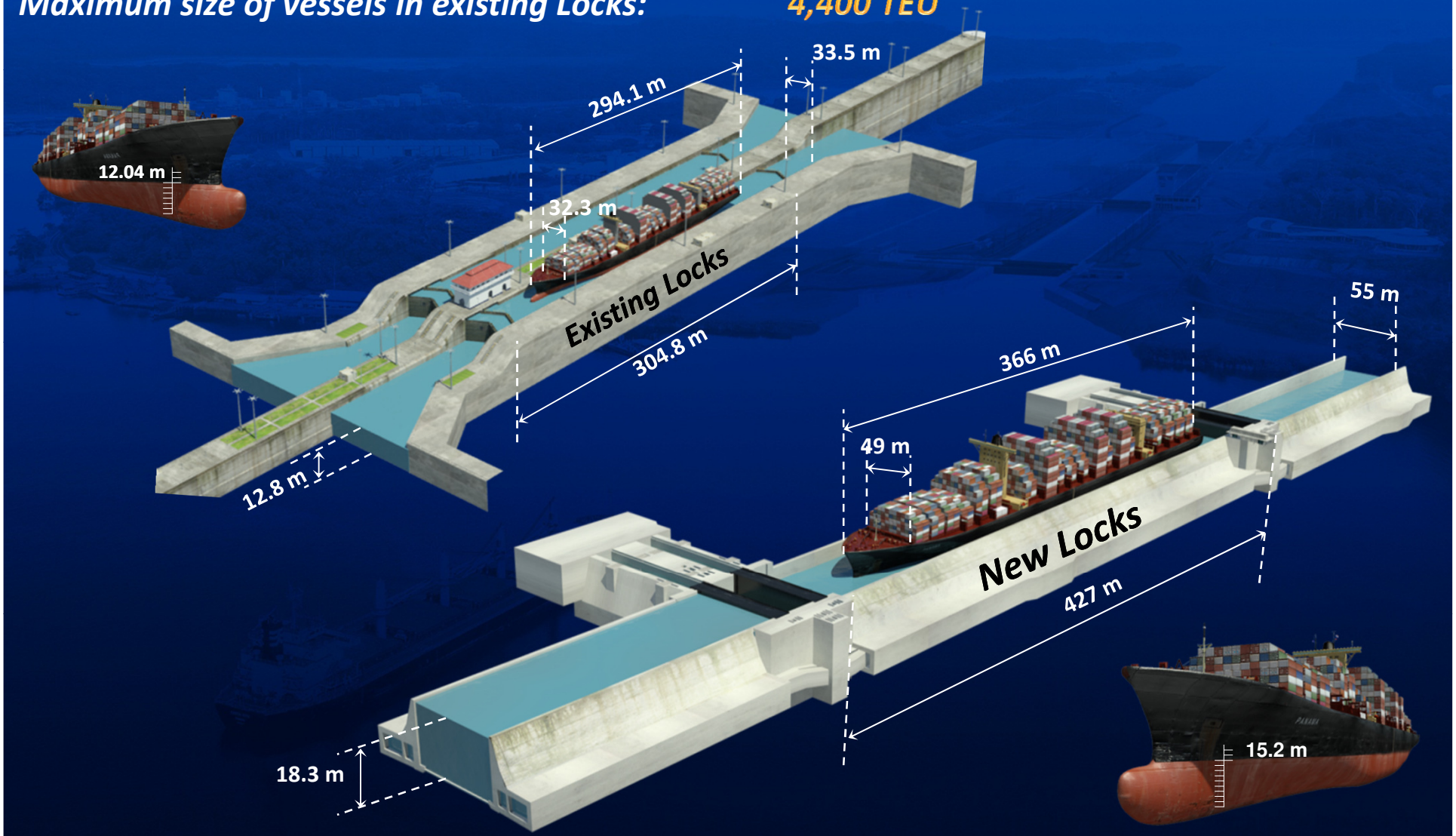

CANAL DE PANAMÁ
The Panama Canal Expansion
Rogelio A. Gordon
Executive Manager of Dredging Division
Panama Canal Authority
EuDA 20th Anniversary Celebration
November 7, 2013


The Panama Canal - 2015
It's all about economies of scale!

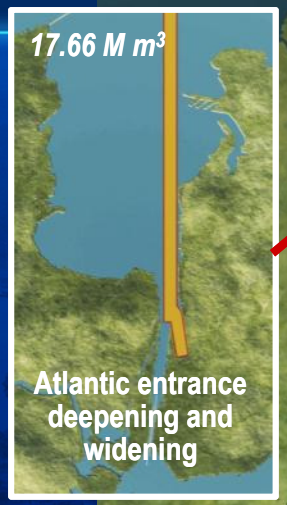
Dimensions of Locks and Ships

Maximum size of vessels in existing Locks: ***4,400 TEU***



Maximum size of vessels in new Locks: ***13,000 – 14,000 TEU***

Program Components















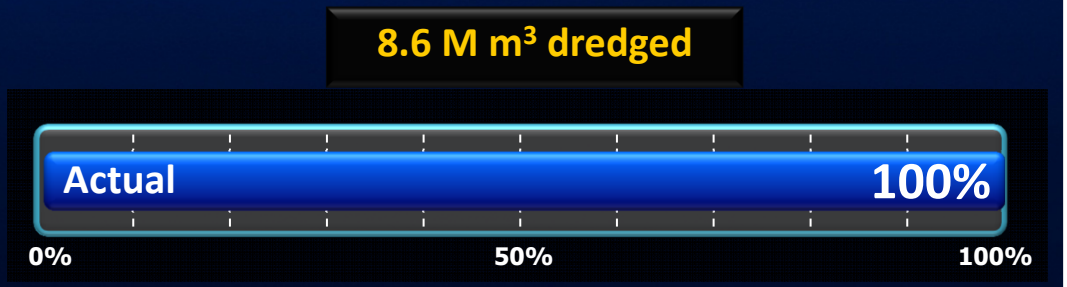
Deepening and widening of the Pacific entrance (8.6 M m^3)

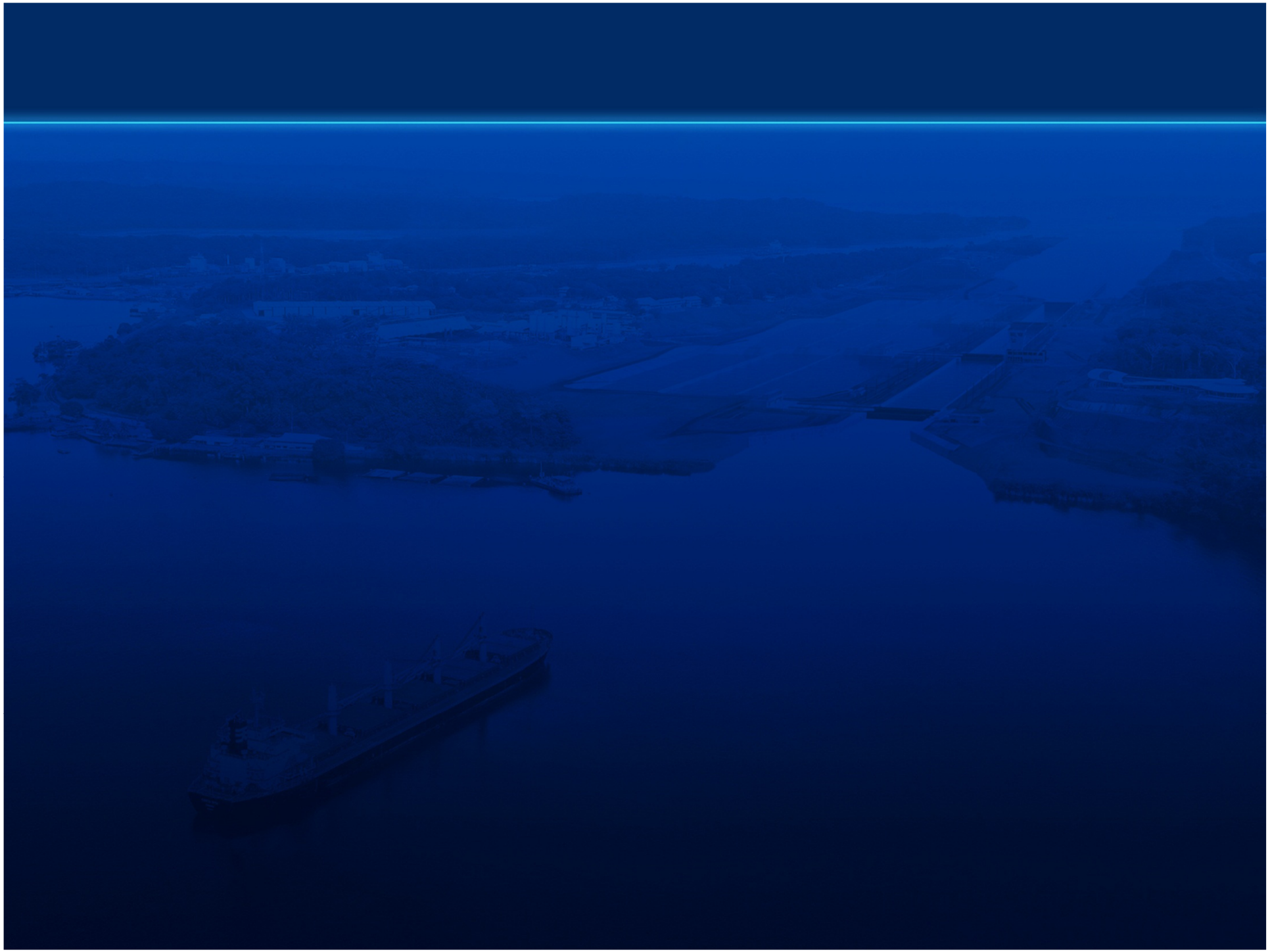




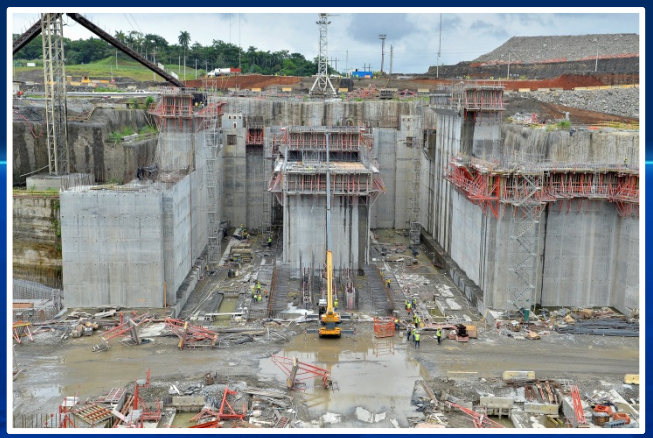


- Scope of Contract: 8.6 M m^3
- Award: April 1, 2008
- Amount: B/. 177,500,676.78
- Company: Dredging International
- Completed: November 30, 2012





Locks Design and Construction



4.8Mm3 concrete



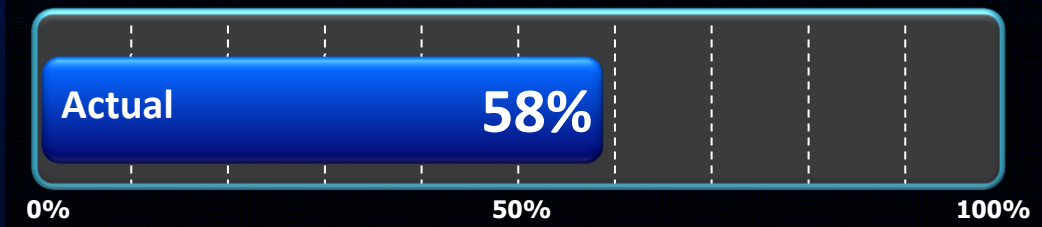


- Scope of Contract: Design and Construction of Locks
- Award: July 15, 2009
- Order to Proceed: August 25, 2009
- Initial Amount + options: B/. 3,158,600,059
- Consortium: Grupo Unidos por el Canal S.A.
  - Sacyr Vallehermoso – Impregilo –
  - Jan De Nul - CUSA



Volume excavated and dredged:

38.6 M m^3 / 46.5 M m^3



1939 Excavations – Pacific Site



Locks – Pacific Site



Locks – Pacific Site



293,000 tons



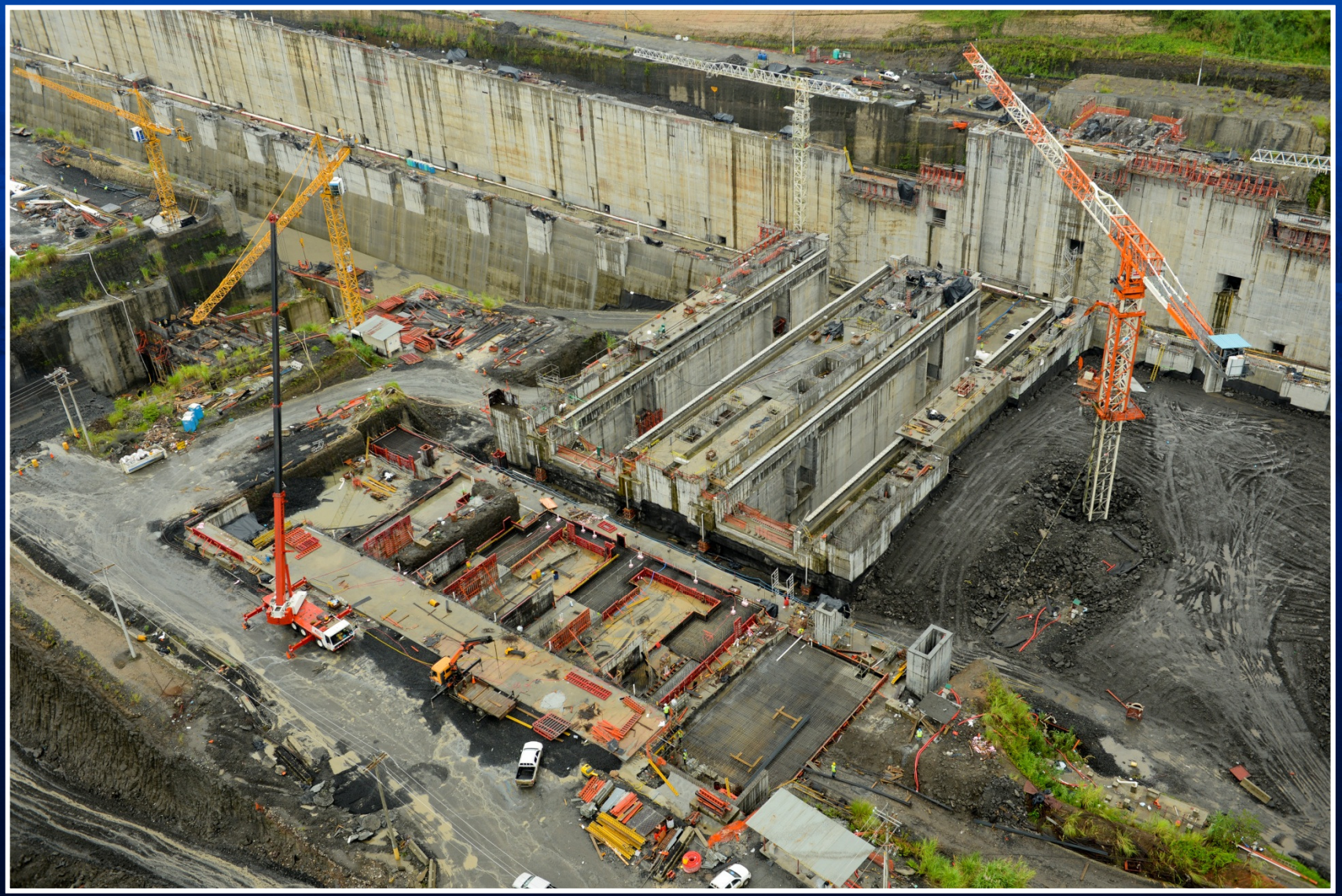


1939 Excavations - Atlantic





Locks – Atlantic Site



Locks – Atlantic Site



CANAL DE PANAMÁ

Valves - Manufacturing

Hyundai Samho Heavy Industries, South Korea

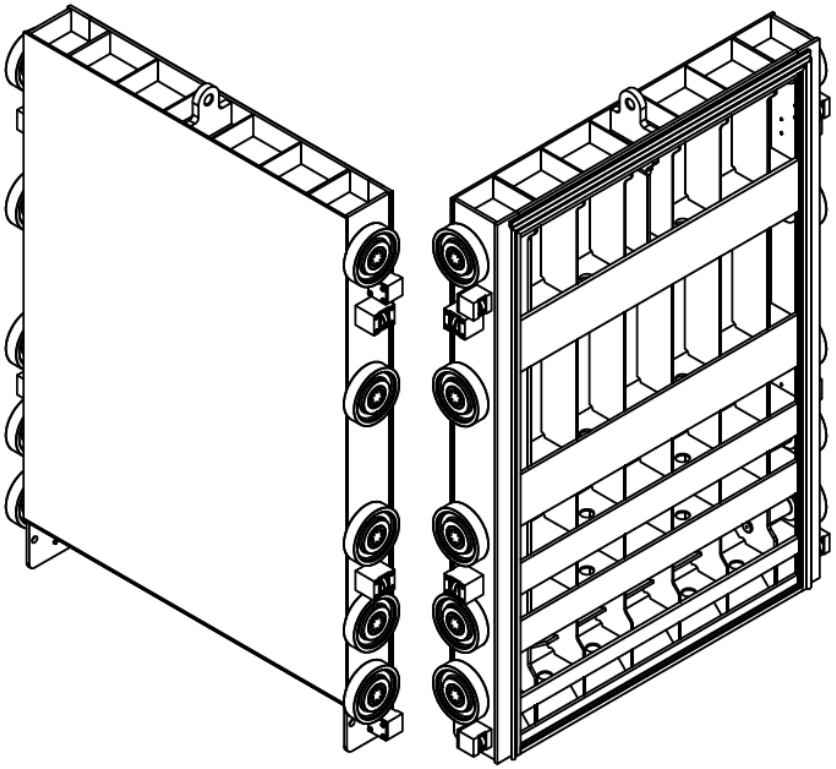


Locks Valves

Total operating valves: 152

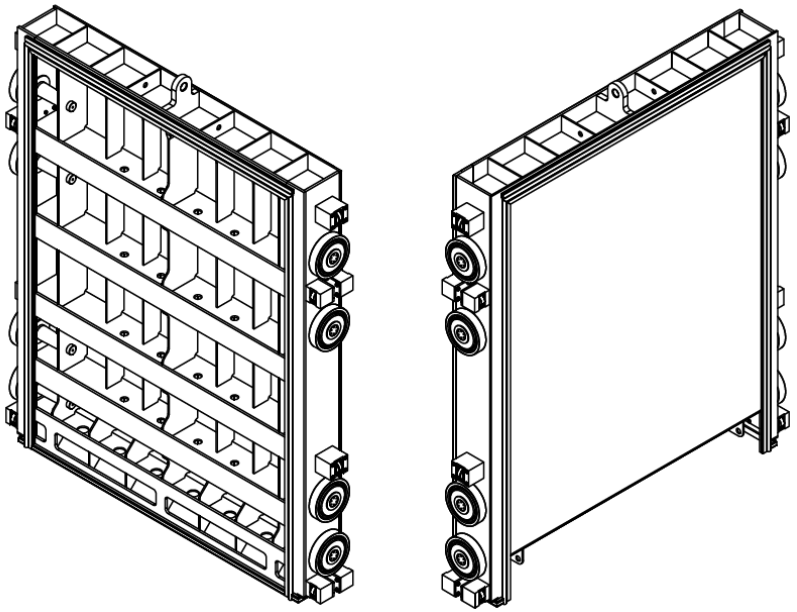
First batch of 40 valves arrived on November 2012

Main Sewer Valves 4.69m x 6.786m



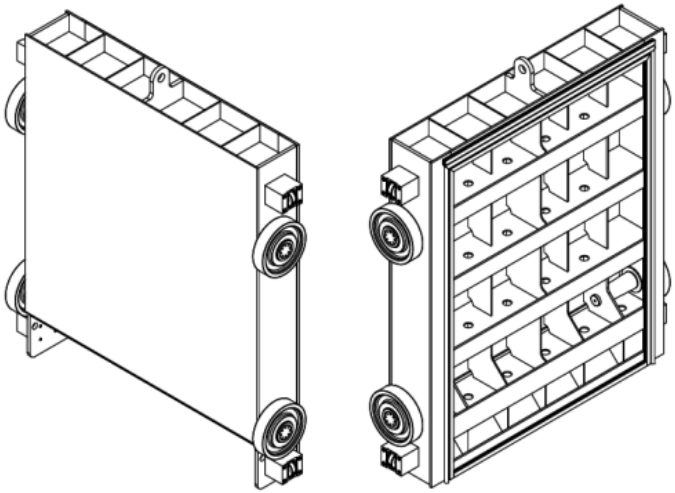
64 + 2 (replacement)

Pipeline Valves 4.69m x 6.786m



72 + 2 (replacement)

Equalization Valves 3.545m x 4.285m



16 + 2 (replacement)

Valve Fabrication





CANAL DE PANAMÁ

Gate - Fabrication

Cimolai Spa, Italia



Gates - Fabrication





47,000 tons of structural steel





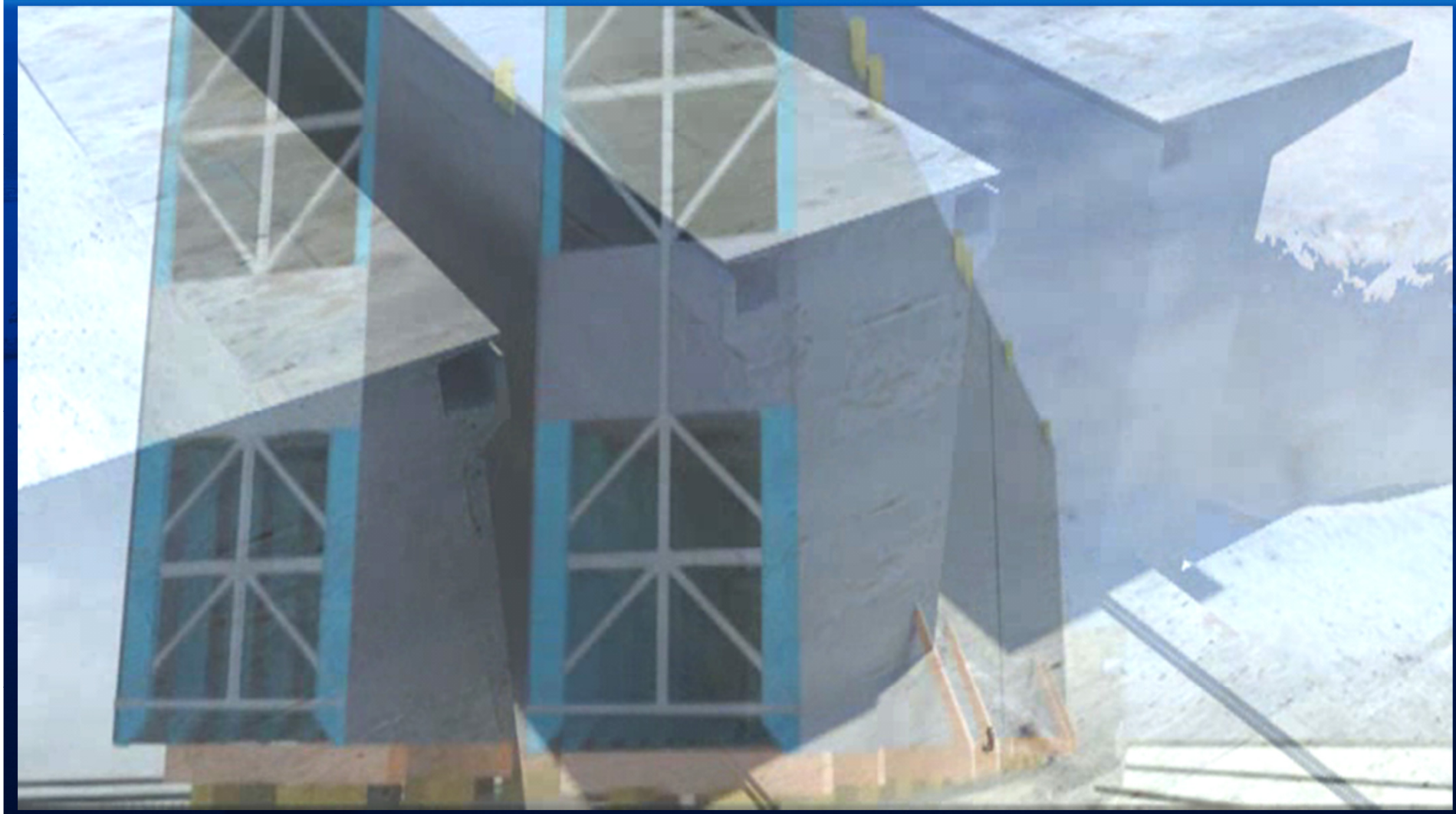
Gates Transport



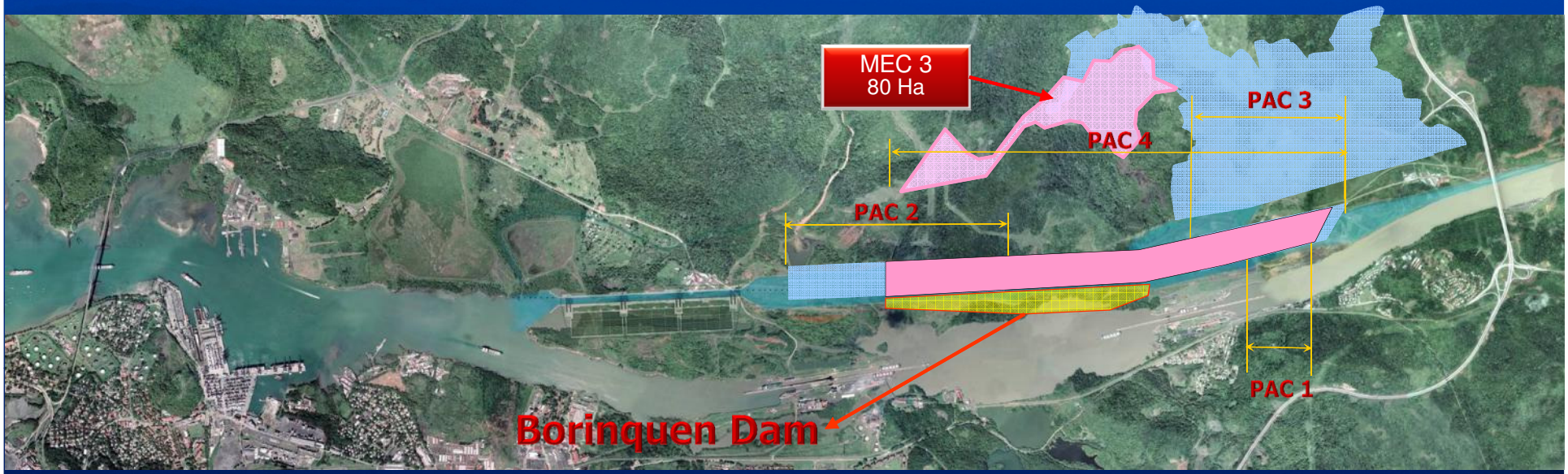
Gates Storage

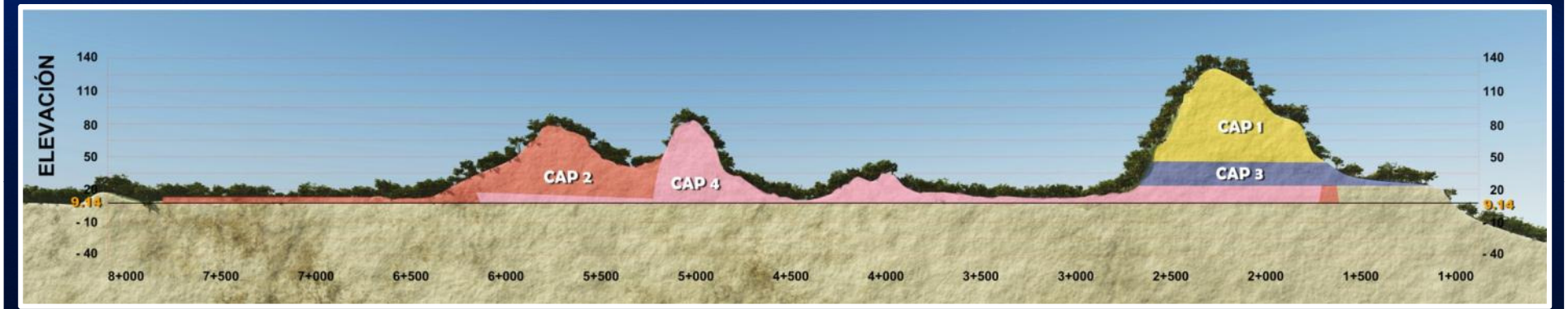


Gates Transport and Installation



Pacific Access Channel





Pacific Access Channel



PAC-1



PAC-2



PAC-3

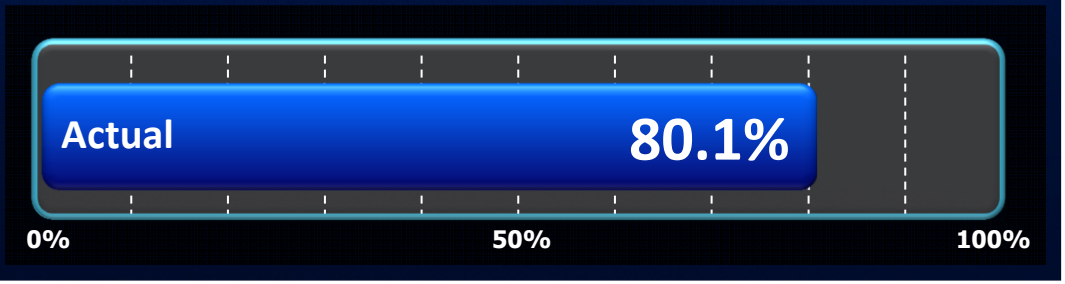


PAC-4



- PAC : last award contract 7-Jan-10
- Company: Consortium ICA-FCC-MECO
- Amount of award: B/. 267,798,795.99
- Order to proceed: 22-Ene-10
- Start date: 27-Apr-10
- Estimated completion date: 31-Oct-13

42.8 M m³ excavated / 49 M m³



Pacific Access Channel – Phase 4

26 M m³ dry excavation



- Scope of Contract:
  - 26 M m3 excavation
  - Borinquen dam construction
  - Clearing of 80 hectares of MEC.
- Award: January 7, 2010
- Amount: B/. 267,798,795.99
- Company: Consortium ICA-FCC-MECO
- Completion of contract: August 2, 2013

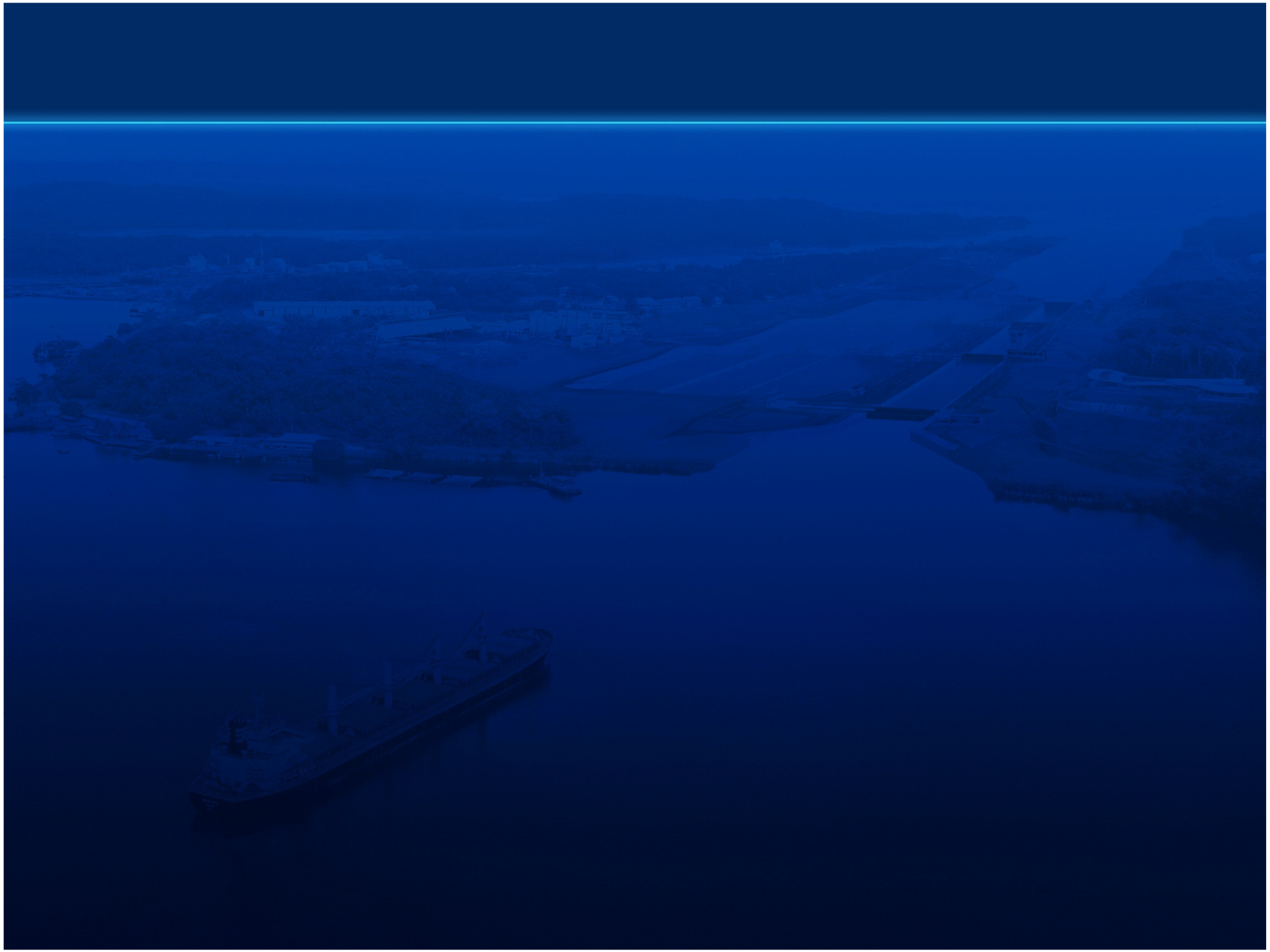
Borinquen Dam



Pacific Acc

Miraflores Lake

Clay core



Pacific Access Channel – Phase 4




Post-Panamax navigational channel
9 m
Miraflores Lake

Excavation and dredging at the northern entrance of the Access Channel to the New Locks

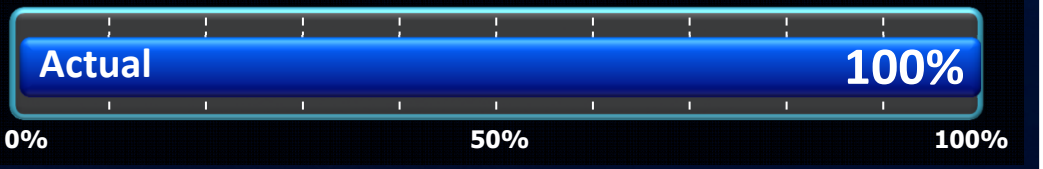
Oct 2012

3.98 M m^3 dredged-dry dredged

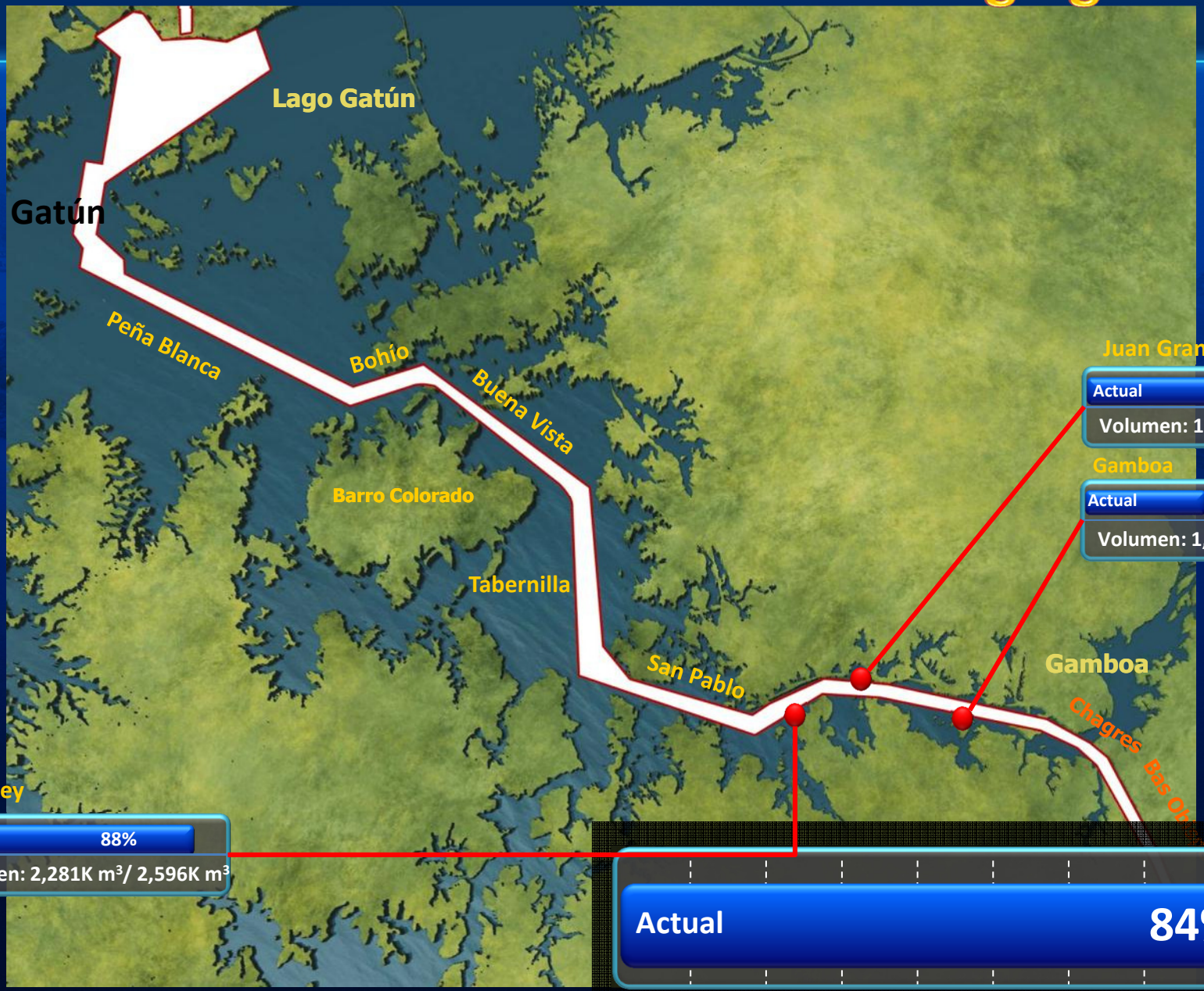


CONCLUDED
17-Oct-2012

- Scope of Contract:
  - Deepening of 27.5m a 9.14m PLD
  - Channel Width = 218m
  - Length = 1.6km
  - Volume approved 4 M m3
- Award: August 16, 2010
- Amount: B/. 54,550,647
- Company: Jan De Nul n.v.
- Concluded: 17 October 2012



Gatun Lake and Gaillard Cut Dredging Areas



22.3 M m³ dredged / 26.5 M m³

Dredging Areas in the Culebra Cut



Actual 100%
Volume: 655K m³

Actual 100%
Volume: 307K m³

Actual 100%
Volume: 412K m³

Actual 100%
Volume: 240K m³

Actual 100%
Volume: 664K m³

Actual 100%
Volume: 512K m³

Actual 100%
Volume: 204K m³


Quibian I dredge


Cornelius dredge

Dredging in Gatun Lake and the Culebra Cut

Quibián I



Christensen



Cornelius



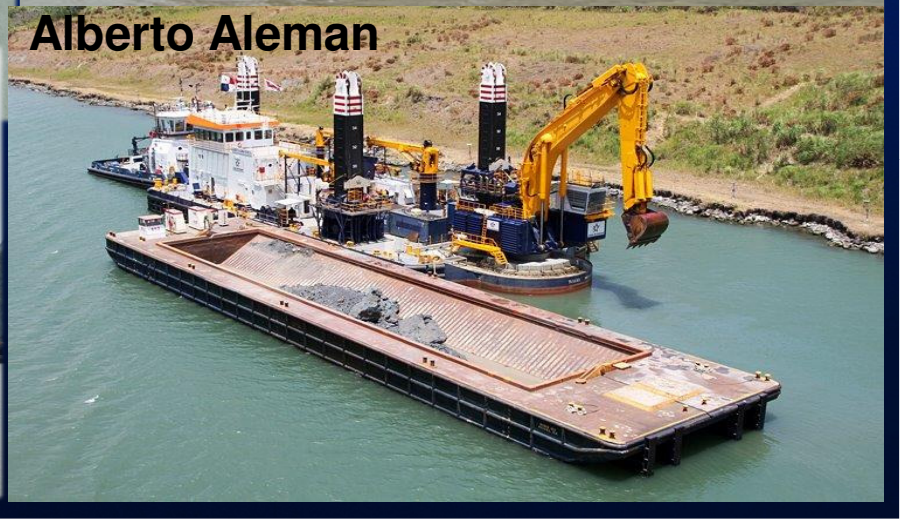
IL Principe



Mindi



Alberto Aleman



Critical dredging areas in Gatun Lake





Atlantic Entrance Deepening & Widening

17.38 M m^3 dredged and excavated / 17.66 M m^3



Award: September 25, 2009

Amount: B/. 144,236,596.44

Company: Jan De Nul NV

Conclusion of contract: April 25, 2013



Atlantic Entrance Deepening & Widening





Atlantic Entrance Deepening & Widening



Thanks

CANAL DE PANAMÁ

100 años