A RELATIONAL GEOTHERMAL DATABASE AND WEB-INTERFACE FOR THE MINISTRY OF ENERGY AND MINES NICARAGUA



Mario González Barbosa
Ministry of Energy and Mines

CONTENT

- WHY DO WE NEED A GEOTHERMAL DATABASE?
- OBJECTIVES OF THE DATABASE
- ORIGIN OF THE NICARAGUAN GEOTHERMAL DATABASE
- STRUCTURE OF OUR DATABASE
- APPEAREANCE OF OUR DATABASE

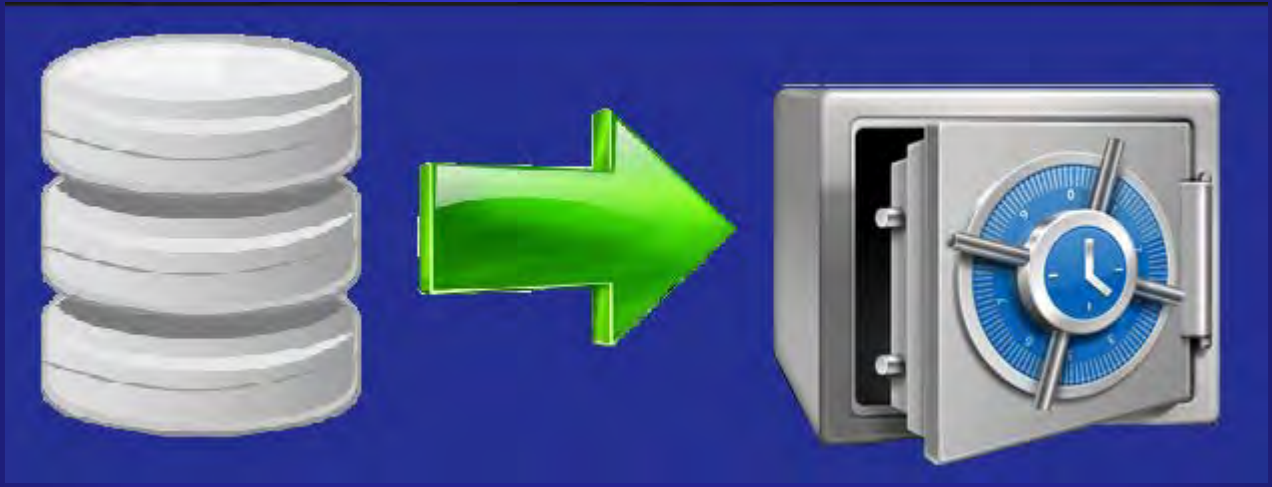
WHY DO WE NEED A GEOTHERMAL DATABASE?

AnalysisID	Sample ID	Component	Value	Filtration	Acidification	Precipitation	Dilution	Method
251	147	SiO2	112.9	None	None	None	2:1	Spectrophotometer
250	147	SiO2	111.7	None	None	None	None	Spectrophotometer
259	147	SiO2	113.1	0.45 µm	1 mL HNO3	None	None	ICP-AES
203	147	SO4	45.3	0.45 µm	None	None	None	IC
288	147	SO4	39.0	0.45 µm	None	1 mL 2 M K2	None	IC

WHAT IS THE OBJETIVE OF THE DATABASE?

Our geothermal database, like any other database in general, is used for:

Store data and keeping it safe



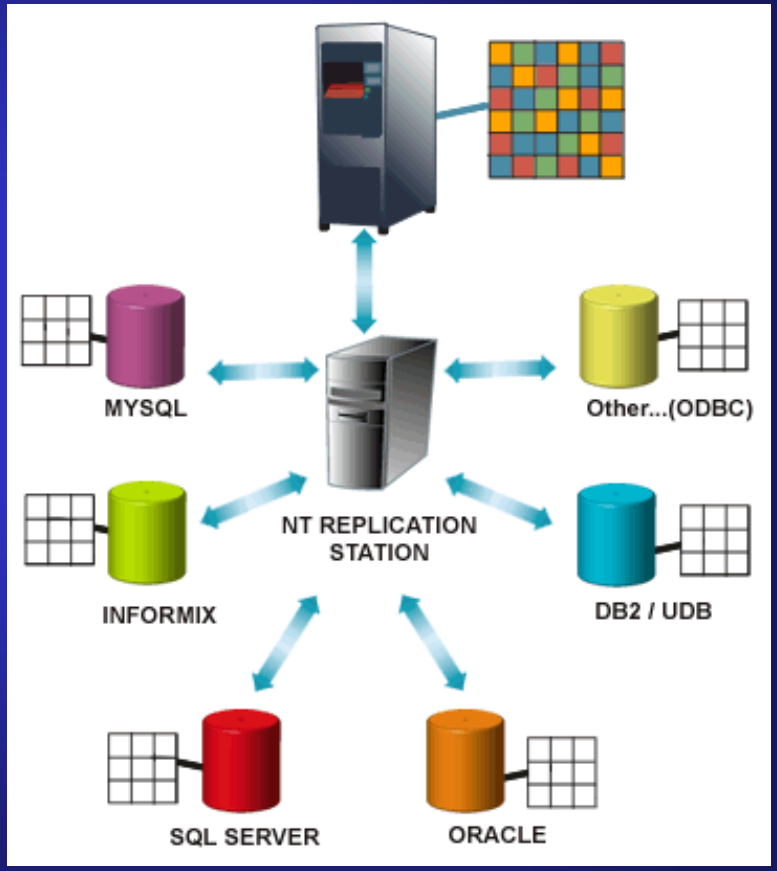
For making as good use of the geothermal information as possible.

ORIGIN OF THE NICARAGUAN GEOTHERMAL DATABASE

This database was designed with the support of The Icelandic International Development Agency (ICEIDA, 2008-2012).

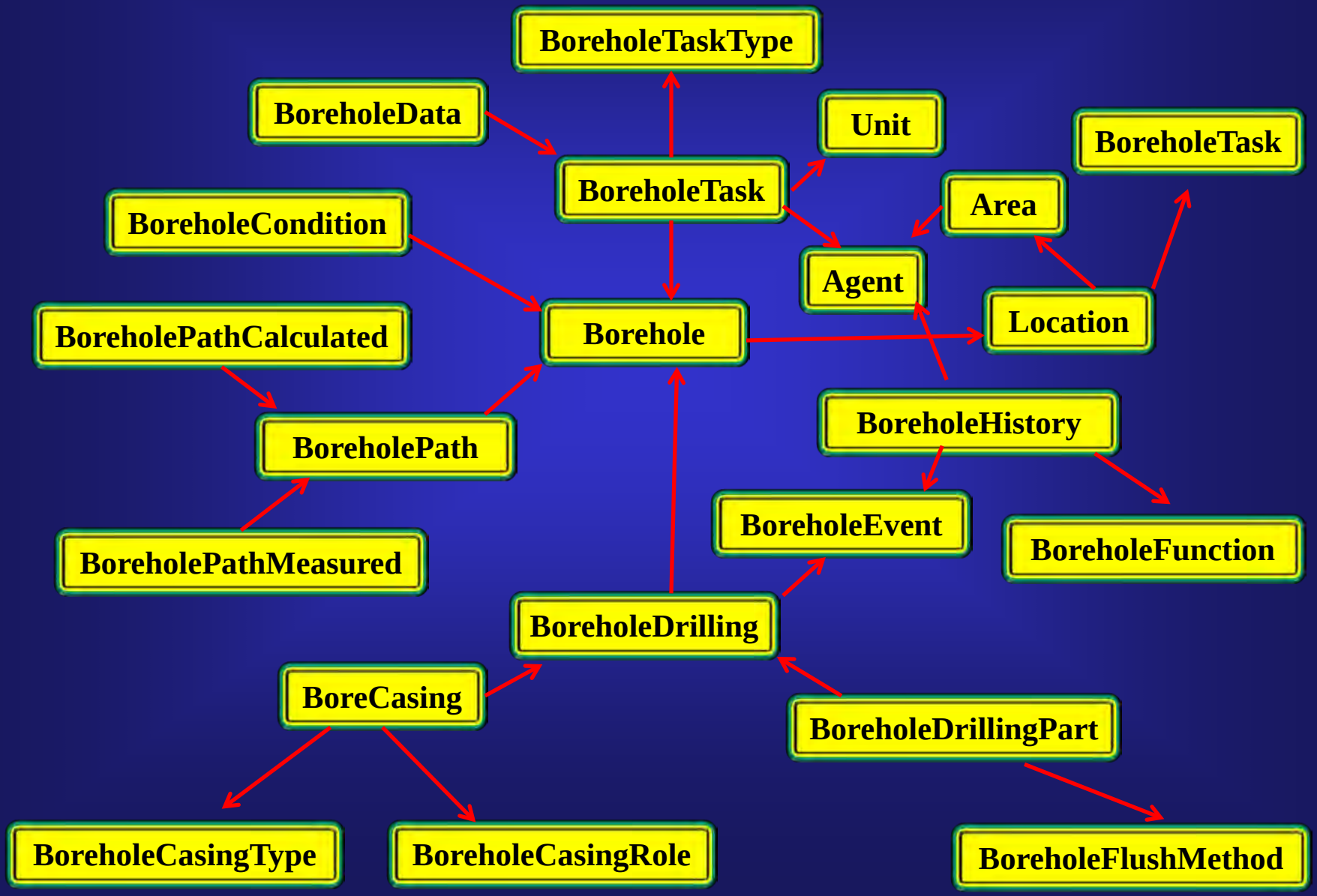
With a relational geothermal database, you are able to retrieve data quickly from such a database and to look at the data from different points of view, you can improve understanding, insight and overview of the projects and thus result in better work procedures in many stages of the geothermal work.

By the implementation of this data management system, MEM have a very useful tool to safely and systematically store and use the valuable data we get from the geothermal developers in Nicaragua.



STRUCTURE OF OUR DATABASE

BOREHOLE COMPONENTS



STRUCTURE OF OUR DATABASE

GEOCHEMISTRY COMPONENTS

Agent

Laboratory

Analysis

Sample

Component

Filtration

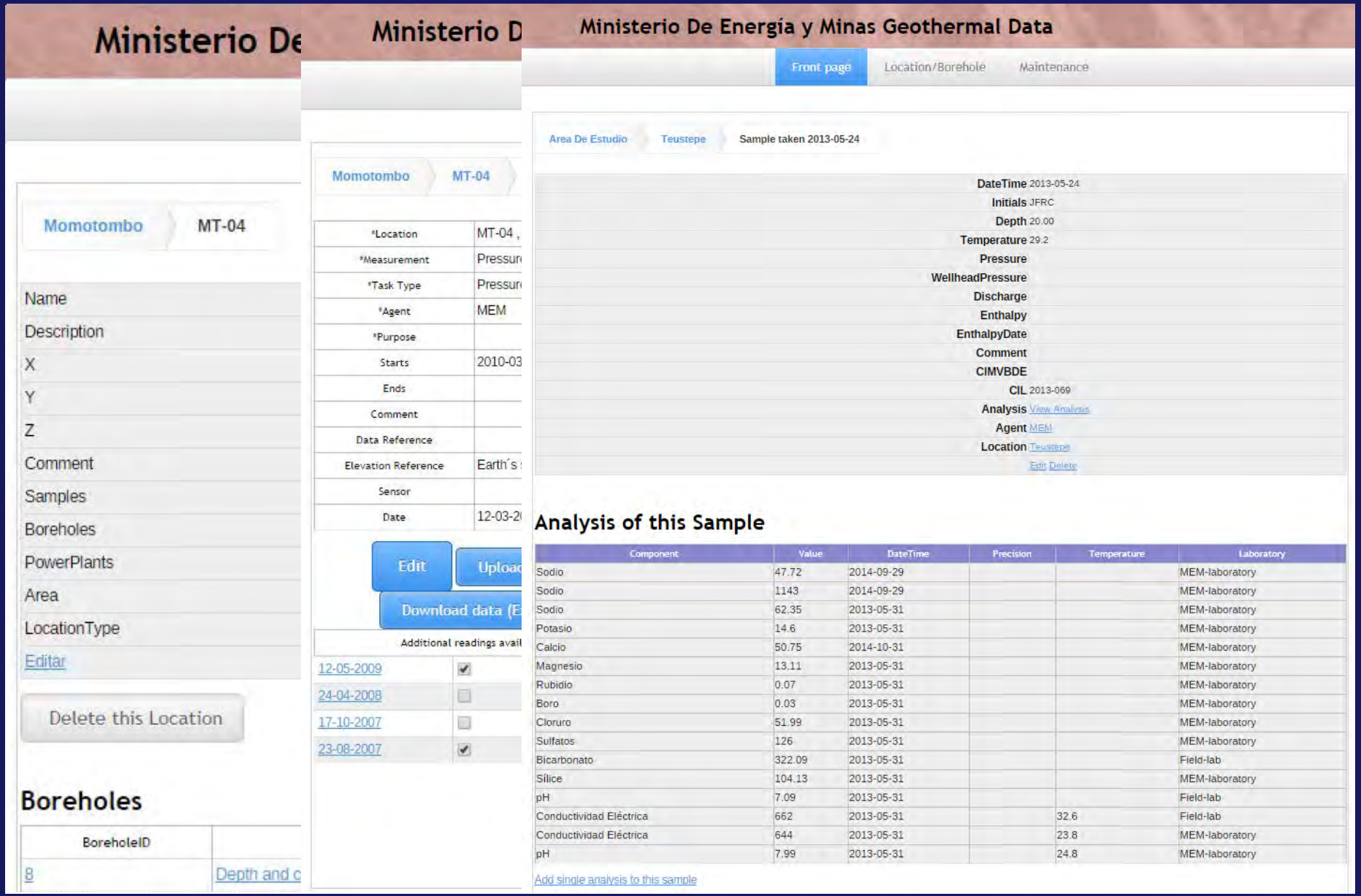
Method

Acidification

Dilution

Precipitation

APPEAREANCE OF OUR DATABASE



Ministerio De

Momotombo | MT-04

Name
Description
X
Y
Z
Comment
Samples
Boreholes
PowerPlants
Area
LocationType
Editar

Delete this Location

Boreholes

BoreholeID	
8	Depth and c

Ministerio D

Momotombo | MT-04

*Location	MT-04 ,
*Measurement	Pressur
*Task Type	Pressur
*Agent	MEM
*Purpose	
Starts	2010-03
Ends	
Comment	
Data Reference	
Elevation Reference	Earth´s
Sensor	
Date	12-03-2

Edit | Uploac

Download data (E

Additional readings avail

12-05-2009	☑
24-04-2008	☐
17-10-2007	☐
23-08-2007	☑

Ministerio De Energía y Minas Geothermal Data

Front page | Location/Borehole | Maintenance

Area De Estudio | Teustepe | Sample taken 2013-05-24

DateTime 2013-05-24
Initials JFRC
Depth 20.00
Temperature 29.2
Pressure
WellheadPressure
Discharge
Enthalpy
EnthalpyDate
Comment
CIMVBDE
CIL 2013-069
Analysis View Analysis
Agent MEM
Location Teustepe
Edit Delete

Analysis of this Sample

Component	Value	DateTime	Precision	Temperature	Laboratory
Sodio	47.72	2014-09-29			MEM-laboratory
Sodio	1143	2014-09-29			MEM-laboratory
Sodio	62.35	2013-05-31			MEM-laboratory
Potasio	14.6	2013-05-31			MEM-laboratory
Calcio	50.75	2014-10-31			MEM-laboratory
Magnesio	13.11	2013-05-31			MEM-laboratory
Rubidio	0.07	2013-05-31			MEM-laboratory
Boro	0.03	2013-05-31			MEM-laboratory
Cloruro	51.99	2013-05-31			MEM-laboratory
Sulfatos	126	2013-05-31			MEM-laboratory
Bicarbonato	322.09	2013-05-31			Field-lab
Sílice	104.13	2013-05-31			MEM-laboratory
pH	7.09	2013-05-31			Field-lab
Conductividad Eléctrica	662	2013-05-31		32.6	Field-lab
Conductividad Eléctrica	644	2013-05-31		23.8	MEM-laboratory
pH	7.99	2013-05-31		24.8	MEM-laboratory

Add single analysis to this sample


THANK YOU FOR YOUR ATTENTION
mario.gonzalez@mem.gob.ni