



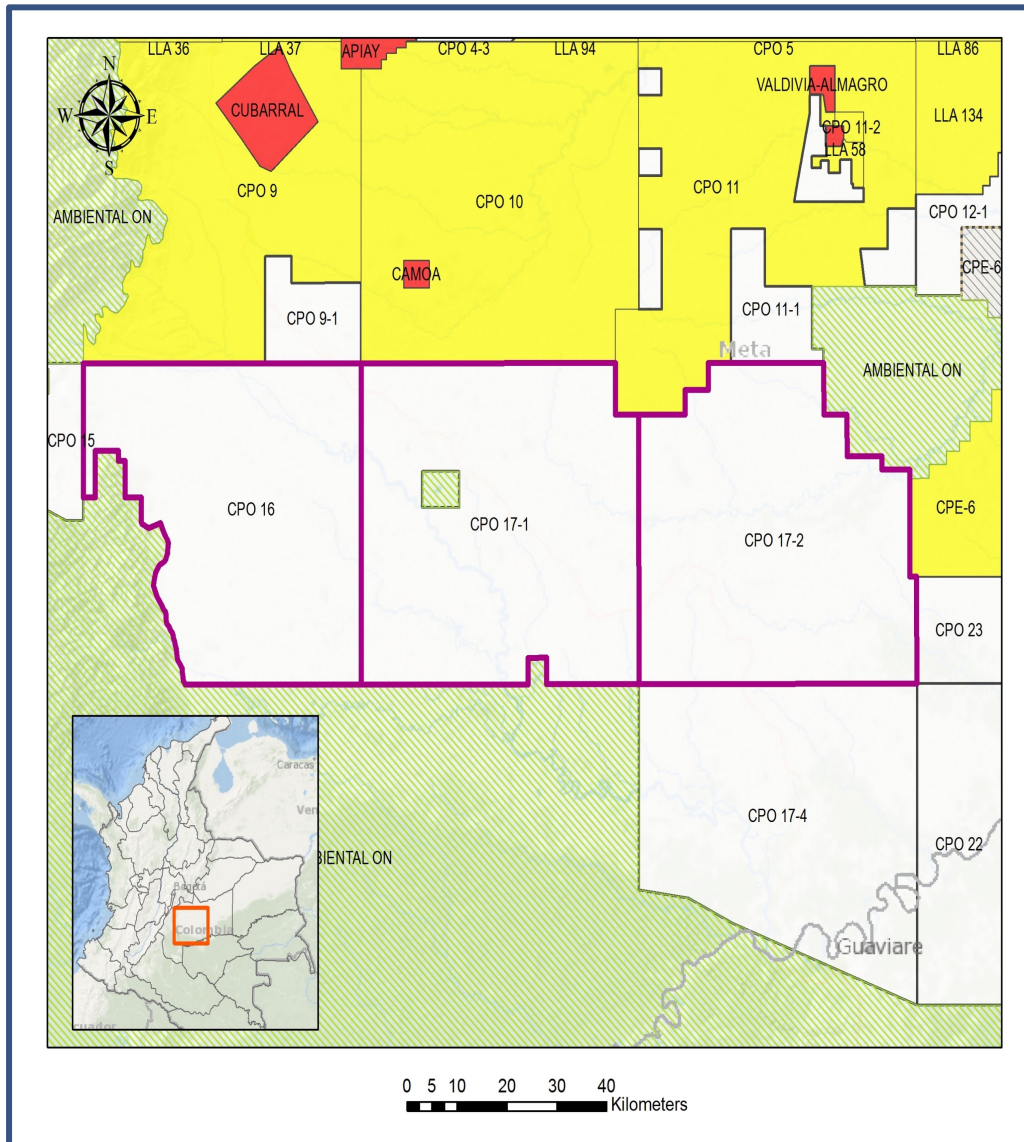
# **AREAS ADVERTISEMENT 2022**

**CPO 16, CPO 17-1 & CPO17-2 AREAS  
Southwestern Llanos Heavy Oil Trend**

- The data, maps, geological models, volumetric calculations, seismic interpretations, well correlations and production graphs that are going to be presented today were a compilation of reports handed by the Operator Companies to the ANH.
- The purpose of this compilation is to offer an understanding of the hydrocarbon systems and the remaining prospectivity of the areas located in the Llanos Heavy Oil Belt

- Location & Data: CPO 16, CPO 17-1 & CPO 17-2
- Infrastructure & Nearby Fields
- Geological Framework
- Rio Ariari (CPO 16 & CPO 17-1)
- Avellana (CPO17-1)
- Merlin (CPO 17-1 & CPO 17-2)
- Trasgo (CPO 17-2)
- Summary & Conclusions

# LOCATION & DATA

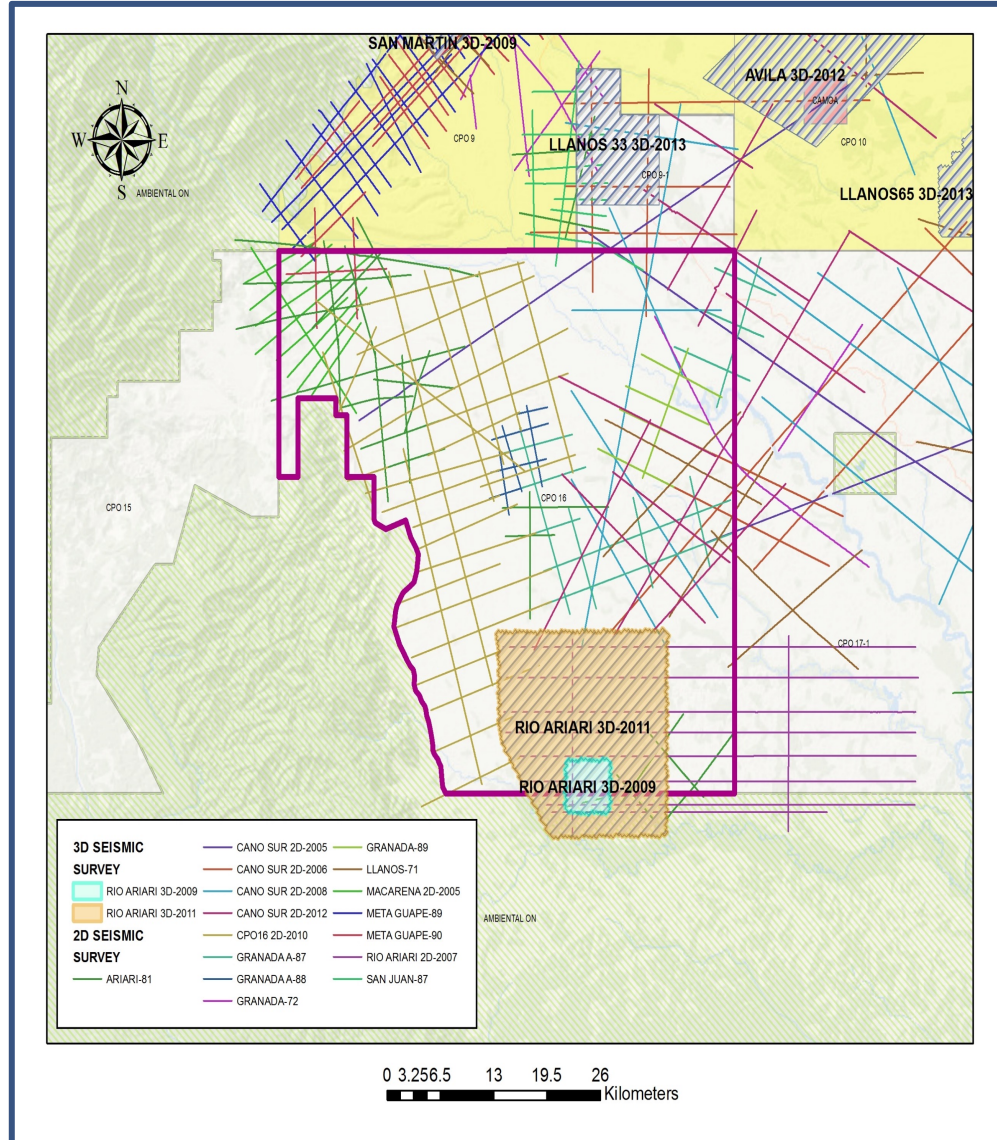


## Block Areas

- CPO 16 (250, 993Ha).
- CPO 17-1 (296,916Ha).
- CPO 17-2 (266,406 Ha).

## Departments

- Meta



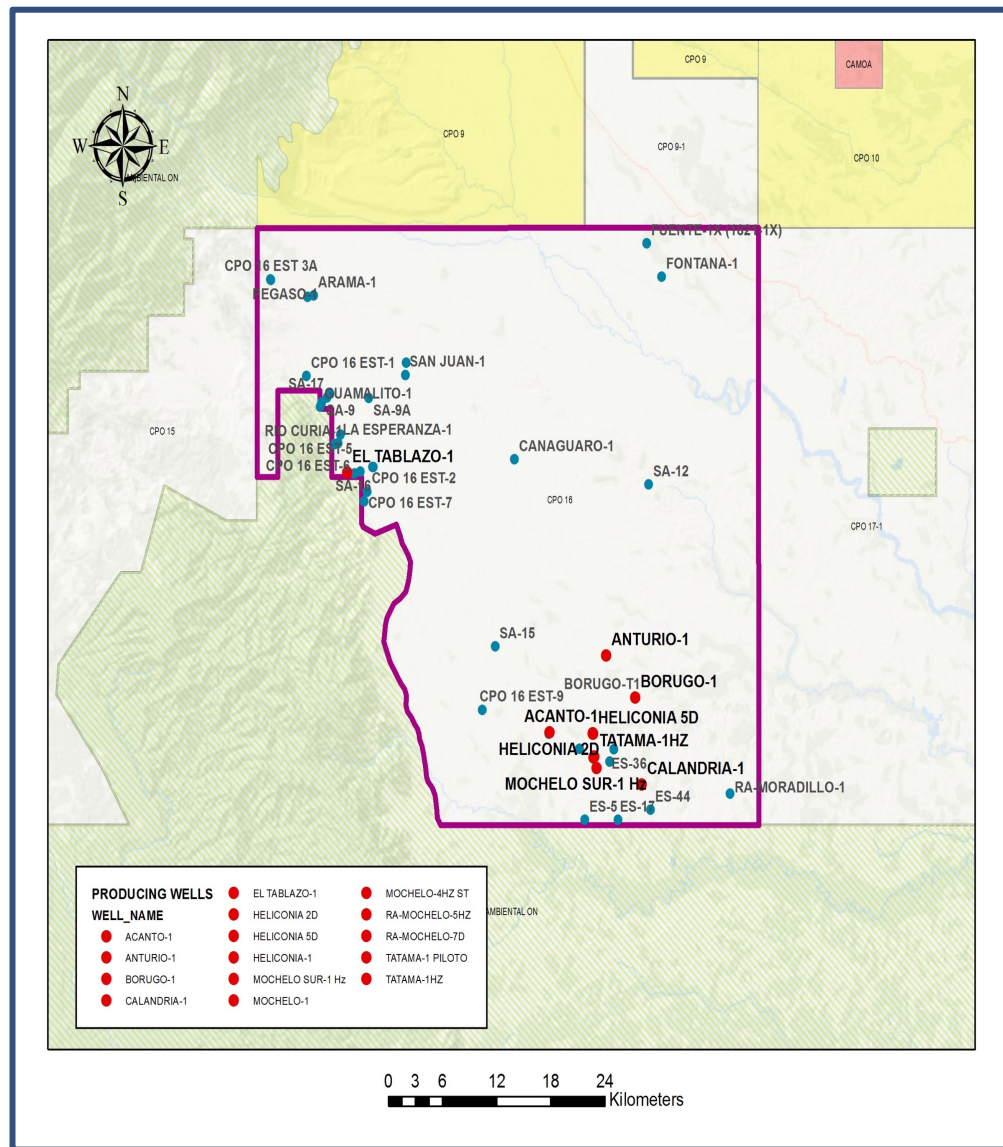
## 2D Seismic Surveys ( 16 Surveys)

- Ariari-81
- Cano Sur 2D-2005
- Cano Sur 2D-2006
- Cano Sur 2D-2008
- Cano Sur 2D-2012
- Cpo16 2D-2010
- Granada A-87
- Granada A-88
- Granada-72
- Granada-89
- Llanos-71
- Macarena 2D-2005
- Meta Guape-89
- Meta Guape-90
- Rio Ariari 2D-2007
- San Juan-87

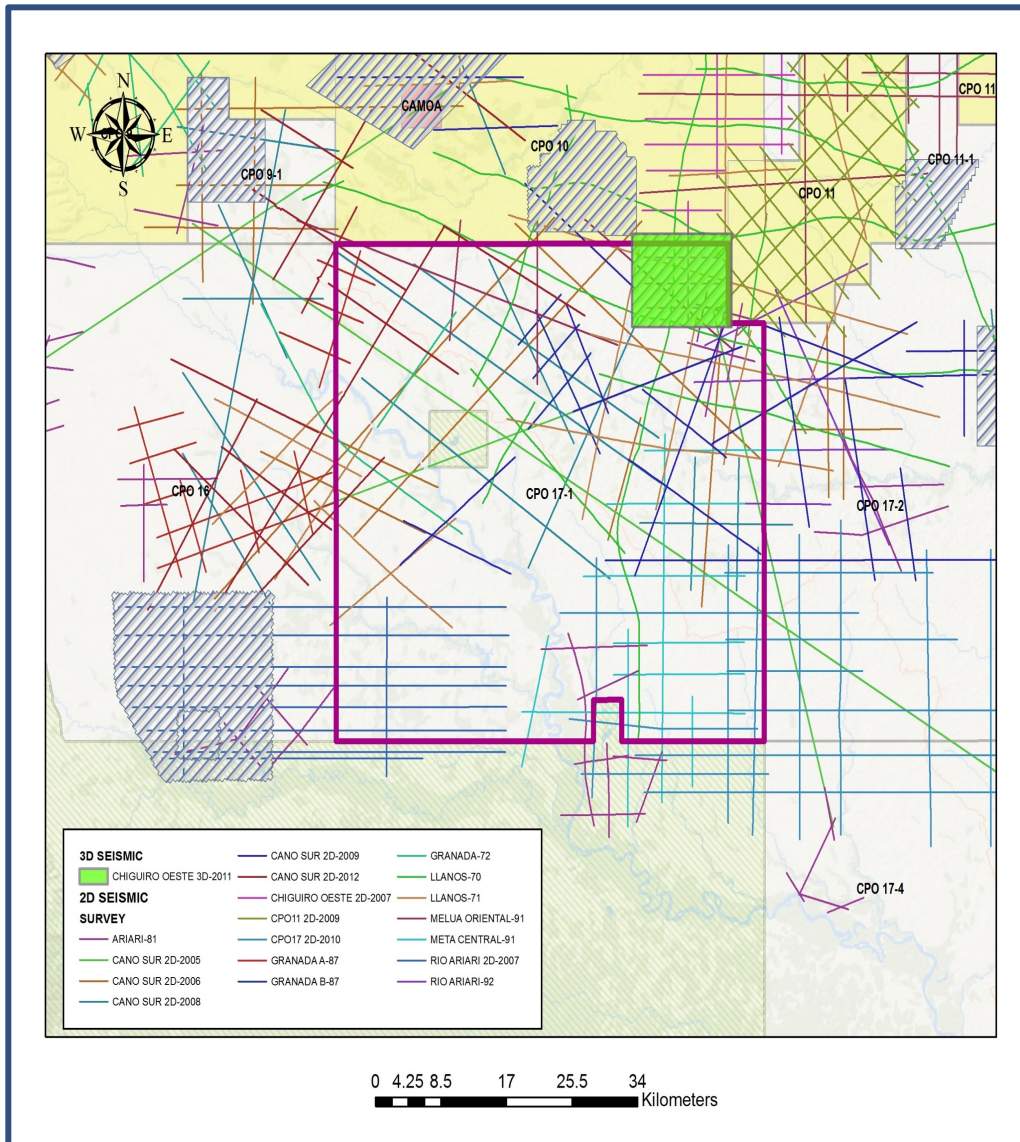
## 3D Seismic Surveys (2 Surveys)

- Rio Ariari 3D-2009 (29 Km<sup>2</sup>)
- Rio Ariari 3D-2011 (396 Km<sup>2</sup>)

# CPO 16: Well Data (64 Wells)



NAME	WELLS	TD (ft)	YEAR	NAME	WELLS	TD (ft)	YEAR
<b>Acanto-1</b>	1	5602	2011	<b>Guamalito-1</b>	1	Not reported	1982
<b>Anturio-1</b>	1	5595	2011	<b>Heliconia</b>	4	1325	2011-2014
<b>Arama-1</b>	1	4334	2005	<b>La Esperanza-1</b>	1	Not reported	1982
<b>Borugo</b>	2	5163	2011	<b>Mochelo Sur</b>	2	3565	2014
<b>Cadillo-1</b>	1	5207	2013	<b>Mochelo</b>	7	2706	2010-2014
<b>Calandria-1</b>	1	6093	2011	<b>Pegaso-1</b>	1	2545	N/A
<b>Canaguaro-1</b>	1	6600	1988	<b>RA-Acanto</b>	4	5474	N(A)
<b>CPO 16 EST</b>	10	2966	2011-2014	<b>RA-Mochelo</b>	2	5928	2014
<b>El Tablazo-1</b>	1	Not reported	1982	<b>RA Moradillo</b>	1	5985	N/A
<b>ES</b>	7	2180	2012	<b>Rio Curia-1</b>	1	350	1982
<b>Fontana-1</b>	1	7800	2013	<b>SA</b>	9	3362	1981
<b>Fuente-1X (1821-1X)</b>	1	9168	1973	<b>San Juan-1</b>	1	6962	1988
				<b>Tatama-1HZ</b>	1	5041	2012



## 2D Seismic Surveys (18 Surveys)

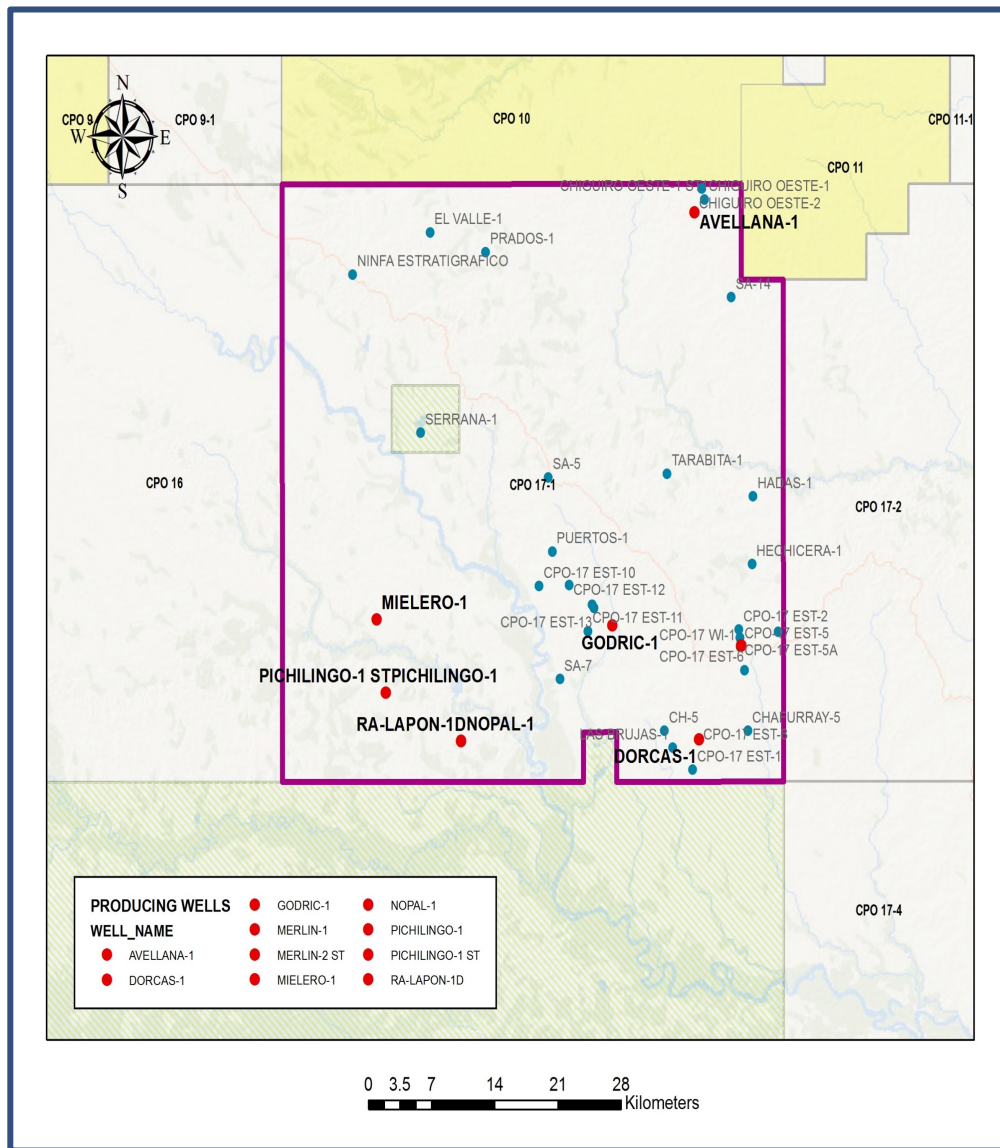
- Ariari-81
- Cano Sur 2D-2005
- Cano Sur 2D-2006
- Cano Sur 2D-2008
- Cano Sur 2D-2009
- Cano Sur 2D-2012
- Chigüiro Oeste 2D-2009
- CPO 112D-2009
- CPO 17 2D-2010
- Granada A-87
- Granada B-87
- Granada-72
- Llanos-70
- Llanos-71
- Melua Oriental-91
- Meta Central-91
- Rio Ariari 2D-2007
- Rio Ariari-92

## 3D Seismic Surveys (1 Survey)

- Chigüiro Oeste 3D-2011 (134 Km<sup>2</sup>)



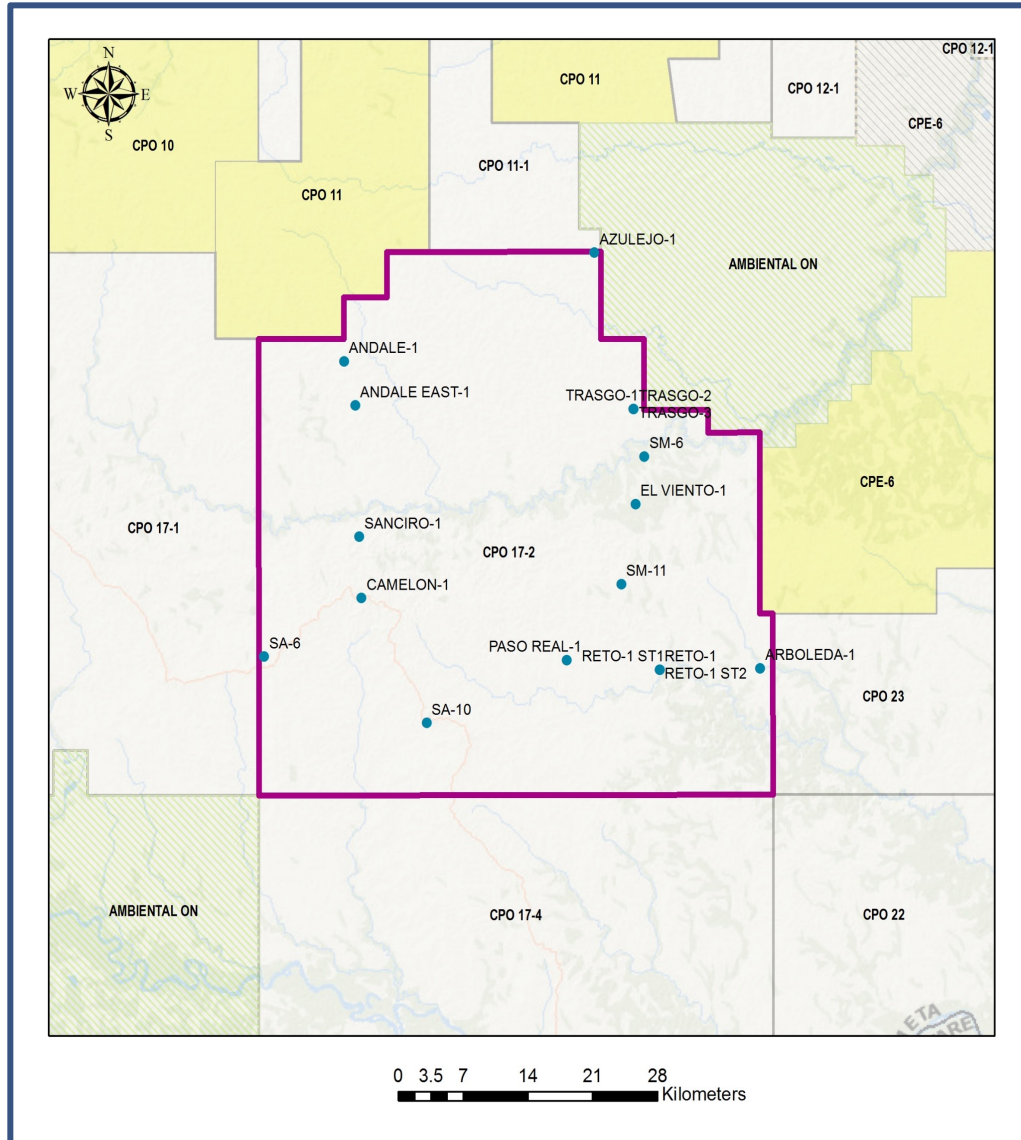
# CPO 17-1: Well Data (46 Wells)



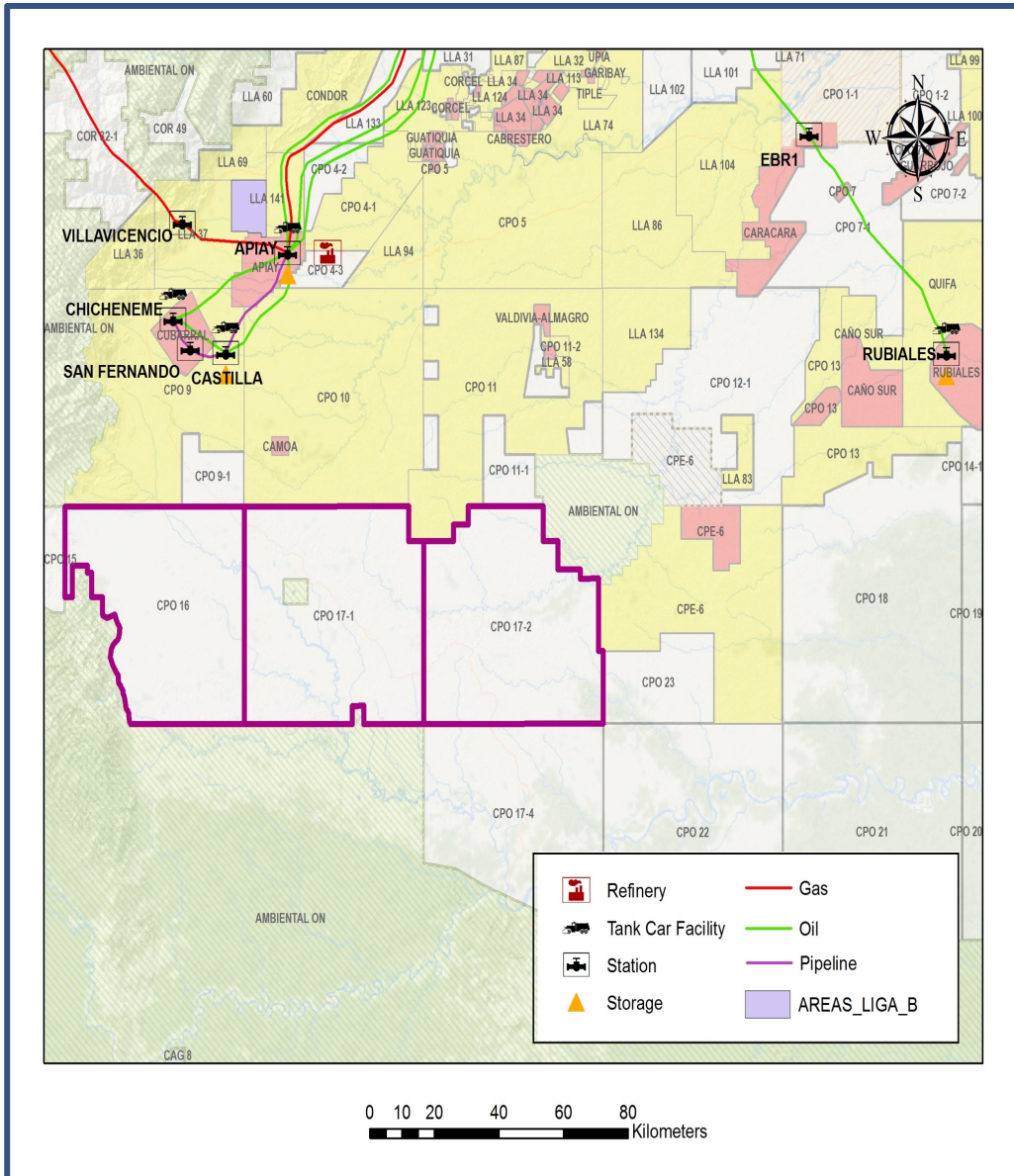
NAME	WELLS	TD (ft)	YEAR	NAME	WELLS	TD (ft)	YEAR
<b>Avellana-1</b>	1	4907	2010	<b>Las Brujas-1:</b>	1	2820	1992
<b>Chafurray-5:</b>	1	Not reported	1946	<b>Merlin</b>	7	1926	2011-2012
<b>Chigüiro Oeste</b>	3	4875	2009	<b>Mielero-1:</b>	1	4369	2012
<b>CPO-17 Est</b>	11	2662	2010-2014	<b>Ninfa Est</b>	1	Not reported	2013
<b>CPO-17 W</b>	2	1730	2013	<b>Nopal-1:</b>	1	3806	2012
<b>Dara-1</b>	1	5112	2012	<b>Pichilingo-1, 1St:</b>	1	4710	2012
<b>Dorcás-1:</b>	1	2275	2011	<b>Prados-1:</b>	1	5530	2011
<b>El Valle-1:</b>	1	5950	2017	<b>Puertos-1</b>	1	4184	2010
<b>Godric Norte</b>	2	3589	2017	<b>Ra-Lapon-1d:</b>	1	4027	2014
<b>Godric-1:</b>	1	Not reported	2013	<b>SA</b>	3	4308	1981
<b>Hadas-1:</b>	1	3360	2008	<b>Serrana-1:</b>	1	5216	2010
<b>Hechicera-1</b>	1	3088	2009	<b>Tarabita-1:</b>	1	6670	2011



# CPO 17-2: Well Data (18 Wells)



NAME	WELLS	TD (ft)	YEAR
<b>Andale</b>	2	3270	2014
<b>Arboleda-1</b>	1	2856	2014
<b>Azulejo-1</b>	1	4237	2011
<b>Camelon-1</b>	1	2730	2012
<b>El Viento-1</b>	1	2848	1981
<b>Paso Real-1</b>	1	2363	1973
<b>Reto</b>	3	2087	2012
<b>SA</b>	2	2835	1980
<b>Sanciro-1</b>	1	2916	2014
<b>SM</b>	2	2903	1981
<b>Trasgo-1,2,3</b>	3	2914	2011



## Main Infrastructure nearby

### CPO 16

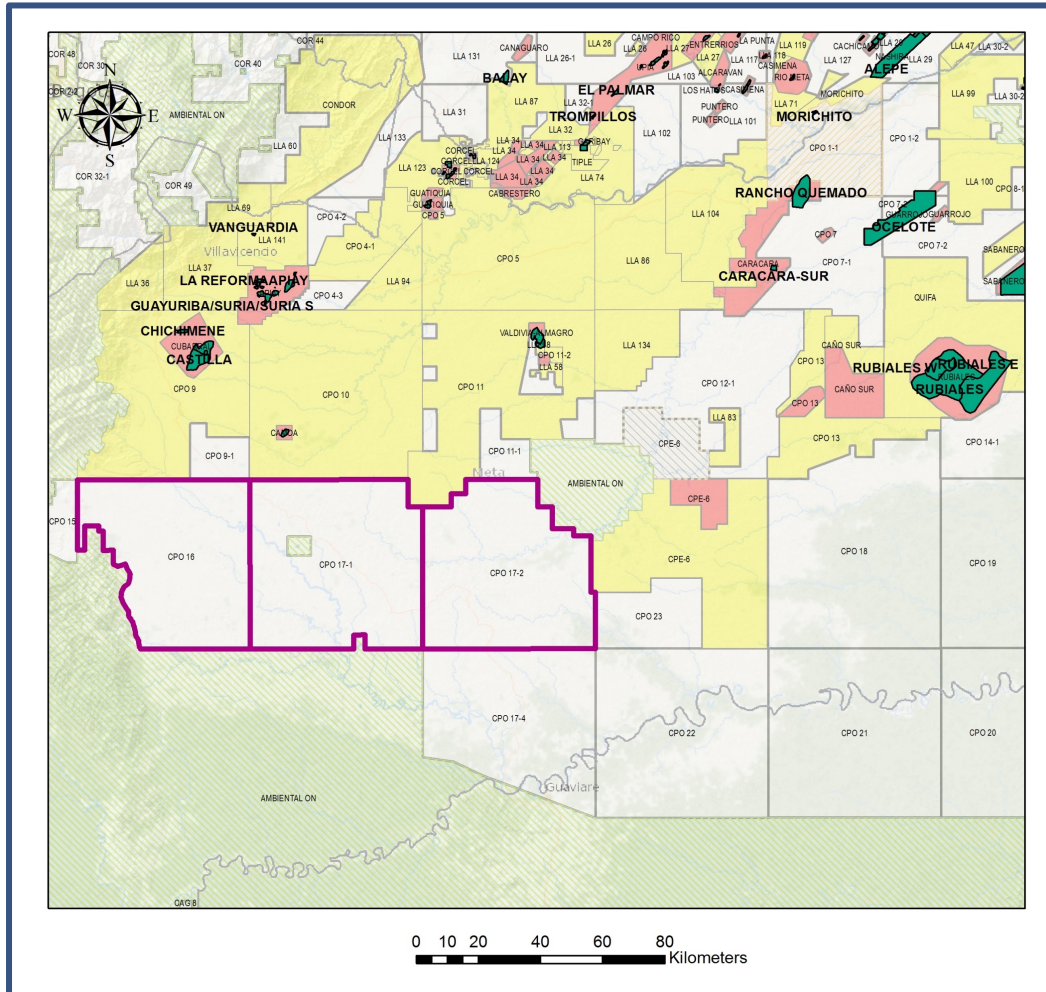
- Apíay *c.a.* 95 Km
- Castilla *c.a.* 66 Km
- Villavicencio *c.a.* 96 Km

### CPO 17-1

- Apíay *c.a.* 92 Km
- Castilla *c.a.* 74 Km
- Villavicencio *c.a.* 109 Km

### CPO 17-2

- Apíay *c.a.* 119 Km
- Castilla *c.a.* 115 Km
- Villavicencio *c.a.* 145 Km
- Rubiales *c.a.* 152 Km



## CPO 16

- Camoa *c.a.* 57 Km
- Castilla *c.a.* 65 Km
- Apiay *c.a.* 92 Km
- Valdivia *c.a.* 134 Km

## CPO 17-1

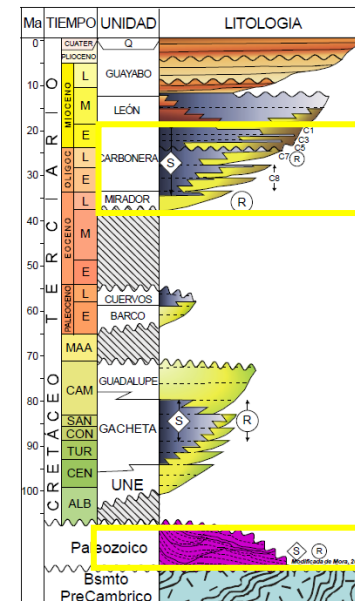
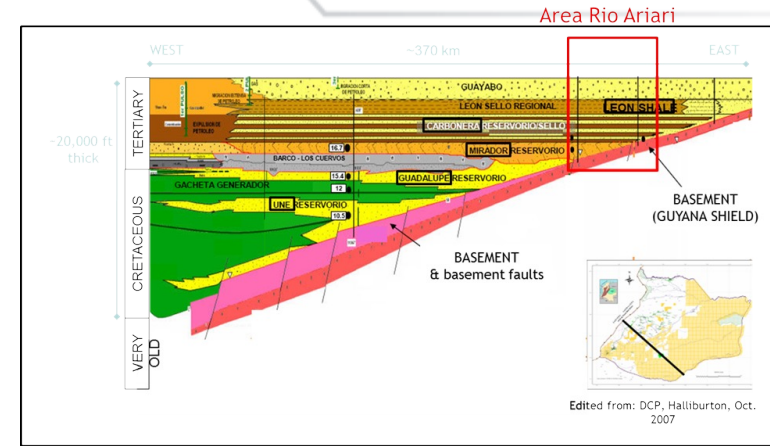
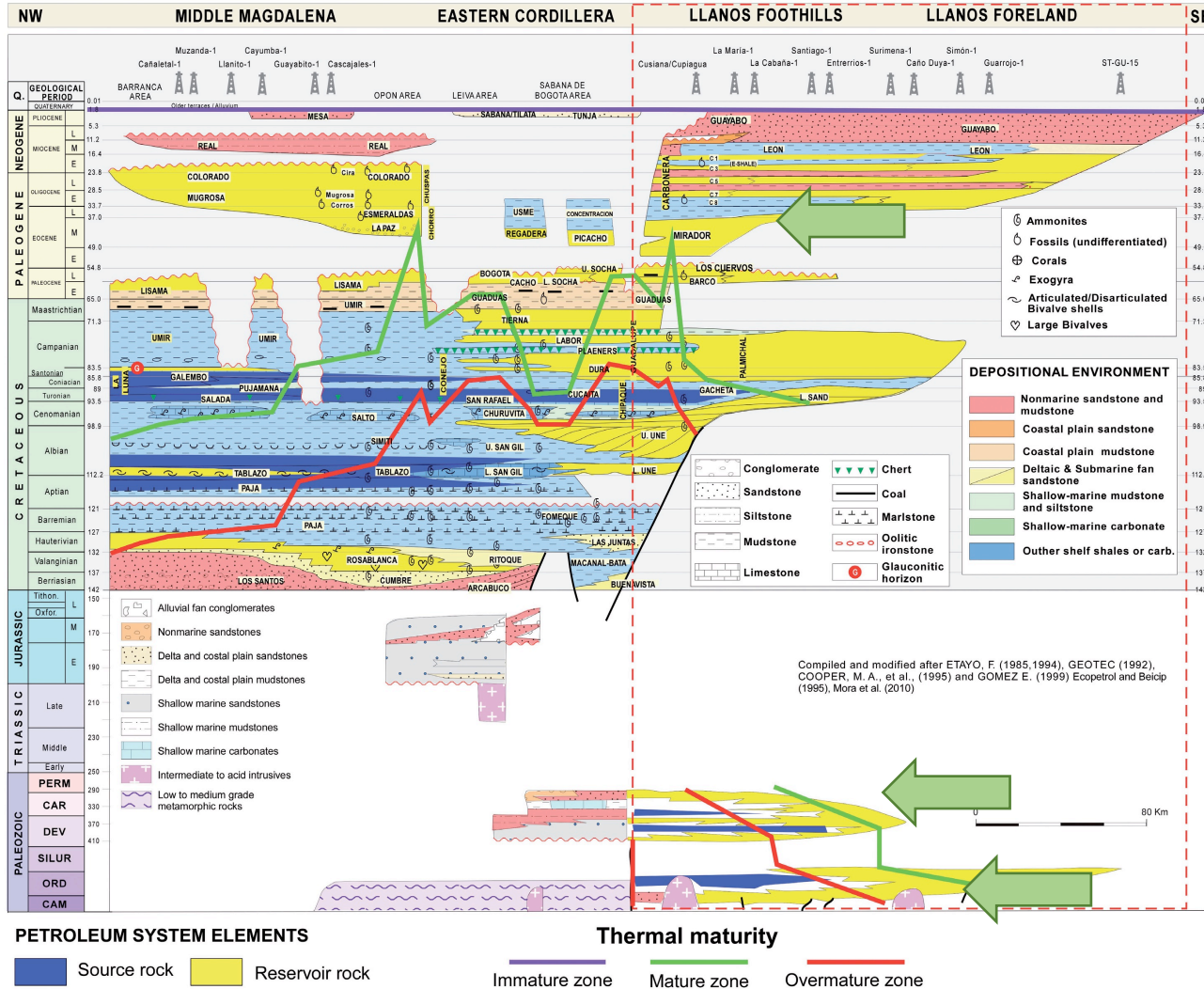
- Camoa *c.a.* 45 Km
- Castilla *c.a.* 80 Km
- Apiay *c.a.* 93 Km
- Valdivia *c.a.* 99 Km

## CPO 17-2

- Camoa *c.a.* 85 Km
- Castilla *c.a.* 122 Km
- Apiay *c.a.* 120 Km
- Valdivia *c.a.* 78 Km
- Rubiales *c.a.* 152 Km

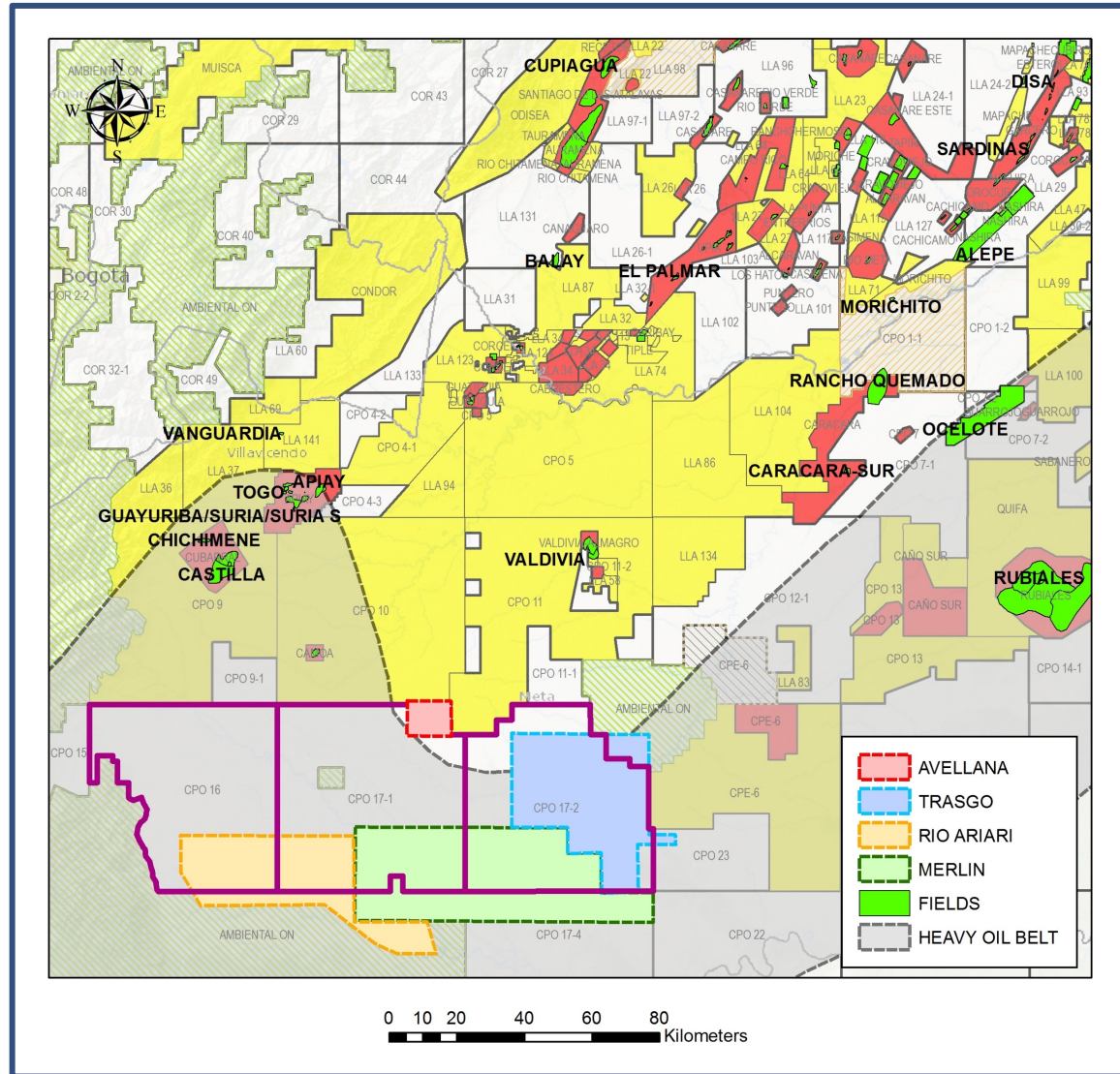
# GEOLOGICAL FRAMEWORK





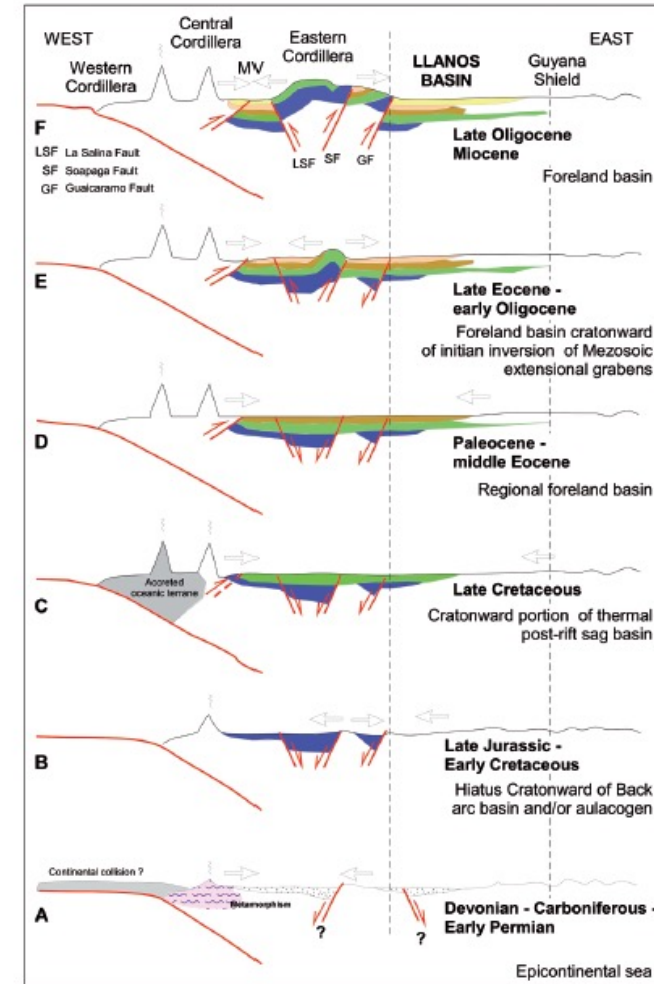
- Usually main reservoirs are located in **Carbonera (C5 – C7)** and **Mirador Formations** (fluvial and estuary deposits).
- There are another common reservoir from Eocene - Oligocene (?) age known as basal sandstones usually above the **unconformity above Paleozoic**
- **Paleozoic** is thought to be a good source and reservoir as well with a likely **potential of gas**



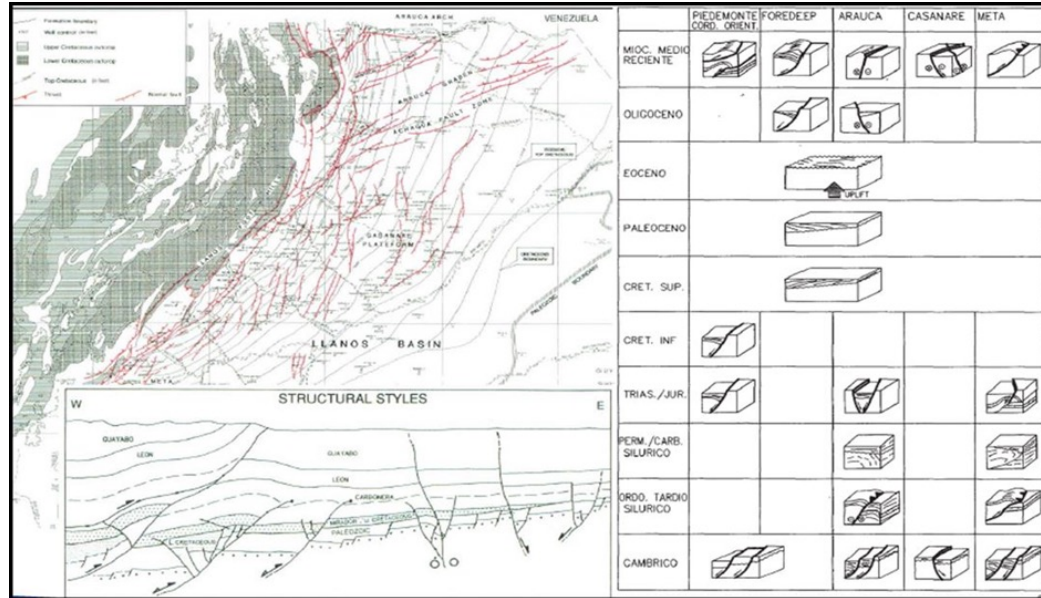


- The three blocks CPO 16, CPO 17-1, CPO 17-2 are located in what is known as the **Heavy Oil Belt** where fields such as Rubiales and Hamaca are located
- The oil is **Chichimene Castilla oil type**, an oil ranging from 8 to 14°
- There is a **hydrodynamic** important component with the entry of water at the Macarena Range
- In some areas the blocks are located below the **biodegradation** line
- A mixture of oils could be found as well

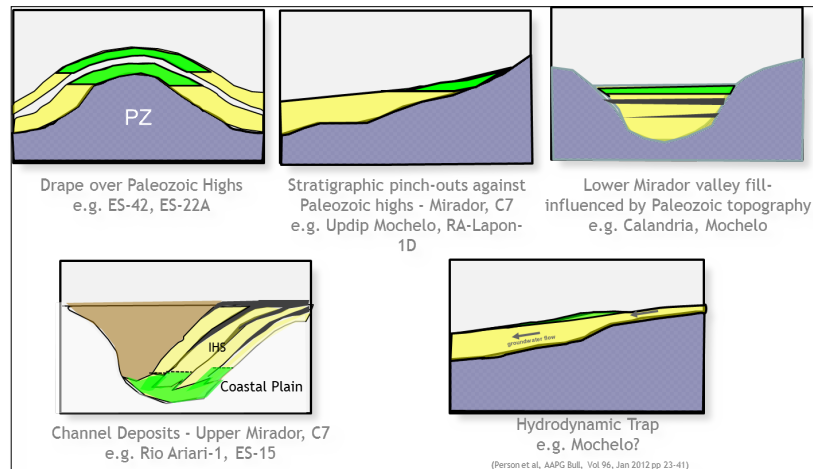
- The three areas are located in the **Meta Structural province** which is controlled by the paleo-highs of Voragine, Candilejas and Macarena
- The western zone of this province is characterized by a **tectonized sequence** (Cambrian – Ordovician) which corresponds to a **folded belt** (Caledonian Orogen)
- The front of the deformed belt rests over the north-western flank of the Voragine paleo high and is affected by normal faults with N-S orientation
- At the eastern part of this province there is an structural domain with normal and reverse faults
- Most of the structures into the CPO 16, CPO 17-1 & CPO 17-2 are associated with normal faults



General tectonic evolution of the Llanos Basin. Taken from Horton et al (2010a)

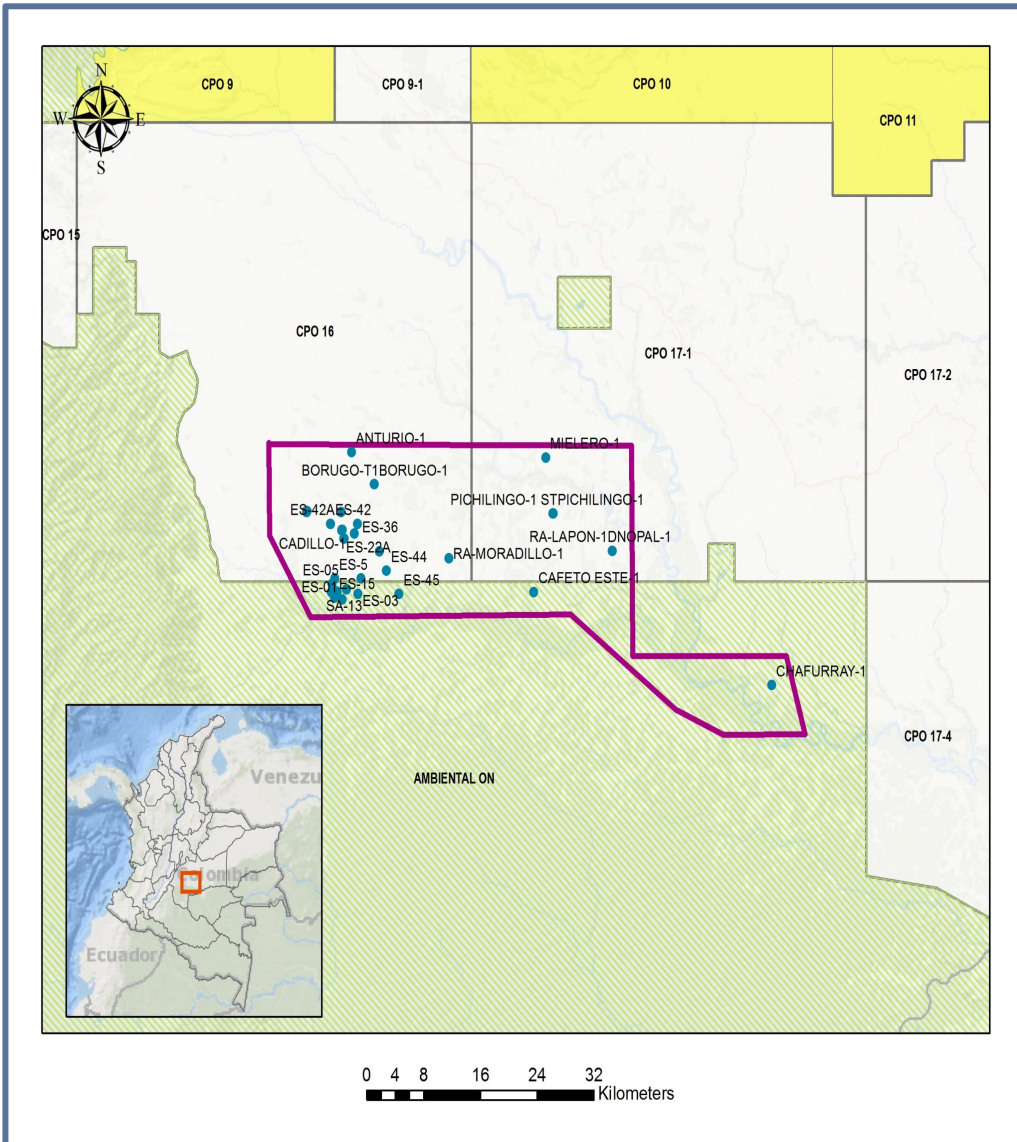


- The hydrocarbon accumulations are related to a proven system (Gacheta-Mirador) that had a expulsion in the Eocene-Oligocene
- The hydrocarbons were migrated to Upper Cretaceous to Oligocene reservoirs
- A secondary system could be associated to the Palaeozoic Sequence with reservoirs accumulating dry gas
- Remind that there is an important hydrodynamic component that tilt the traps as shown in the picture



# RIO ARIARI (CPO 16 & CPO 17-1)

# Rio Ariari Location & Wells (53)



NAME	WELLS	TD (ft)	YEAR
<b>Acanto-1</b>	1	5602	2011
<b>Anturio-1</b>	1	5595	2011
<b>Asarina-1</b>	1	5881	2010
<b>Borugo-1</b>	2	5325	2011
<b>Cadillo-1</b>	1	5207	2011
<b>Cafeto Este-1</b>	1	4464	2012
<b>Calandria-1</b>	1	6093	2011
<b>Chafurray</b>	1	Not reported	1946
<b>ES</b>	13	3087	2011
<b>Heliconia</b>	4	1766	2014
<b>Mieler-1</b>	1	4369	2012

NAME	WELLS	TD (ft)	YEAR
<b>Mochelo Sur</b>	2	3356	2014
<b>Mochelo</b>	7	2706	2010-2014
<b>Nopal-1</b>	1	3806	2012
<b>Pichilingo</b>	2	4710	2012
<b>RA-Acanto</b>	4	5474	2014
<b>RA-Asarina4D</b>	1	4873	2014
<b>RA-Lapon</b>	1	4027	2014
<b>RA-Mochelo</b>	2	5928	2014
<b>RA-Moradillo</b>	1	5985	2014
<b>Rio Ariari</b>	2	5028	2010
<b>SA-13</b>	1	5018	1981
<b>Tatama</b>	2	5150	2012

## BORUGO - 1

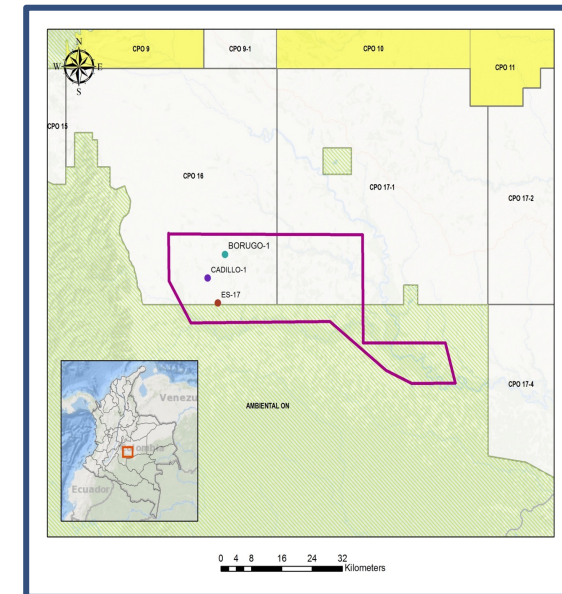
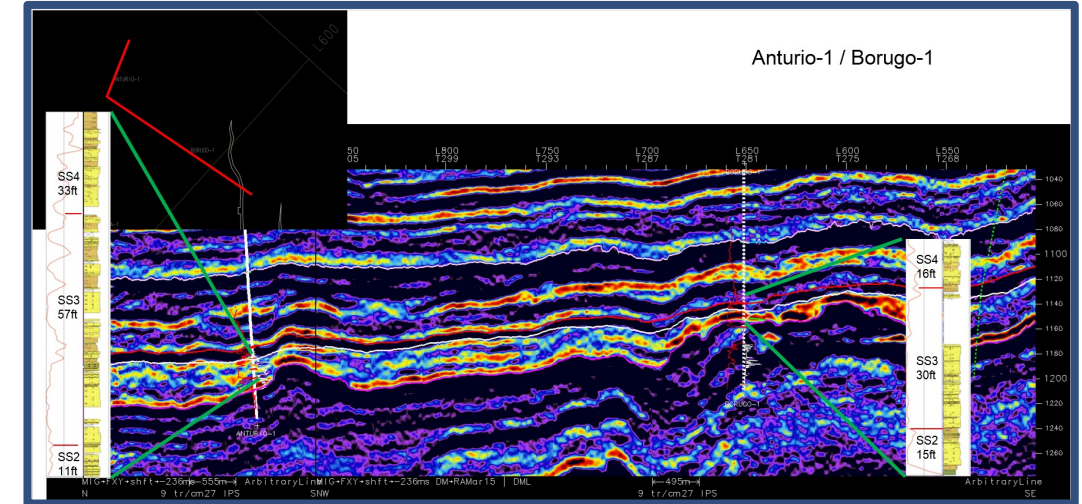
- Well drilled by Petrominerales in 2011 with a TD of 5,259’.
- The thermal maturity for the interval 5420-30’ is considered to be very high, possibly beyond the dry gas window

## ES 17

- Stratigraphic well drilled by Petrominerales in 2009 with a TD of 4,994’
- The well reached Ordovician in age supported in some Chitinozoa badly preserved and absence of spores

## CADILLO - 1

- Well drilled by Petrominerales in 2013 with a TD of 5,207’
- The studied Tertiary section for this well is immature to marginally mature for the generation of liquid hydrocarbons
- The Paleozoic section is overmature for the generation of hydrocarbons



## RIO ARIARI - 1

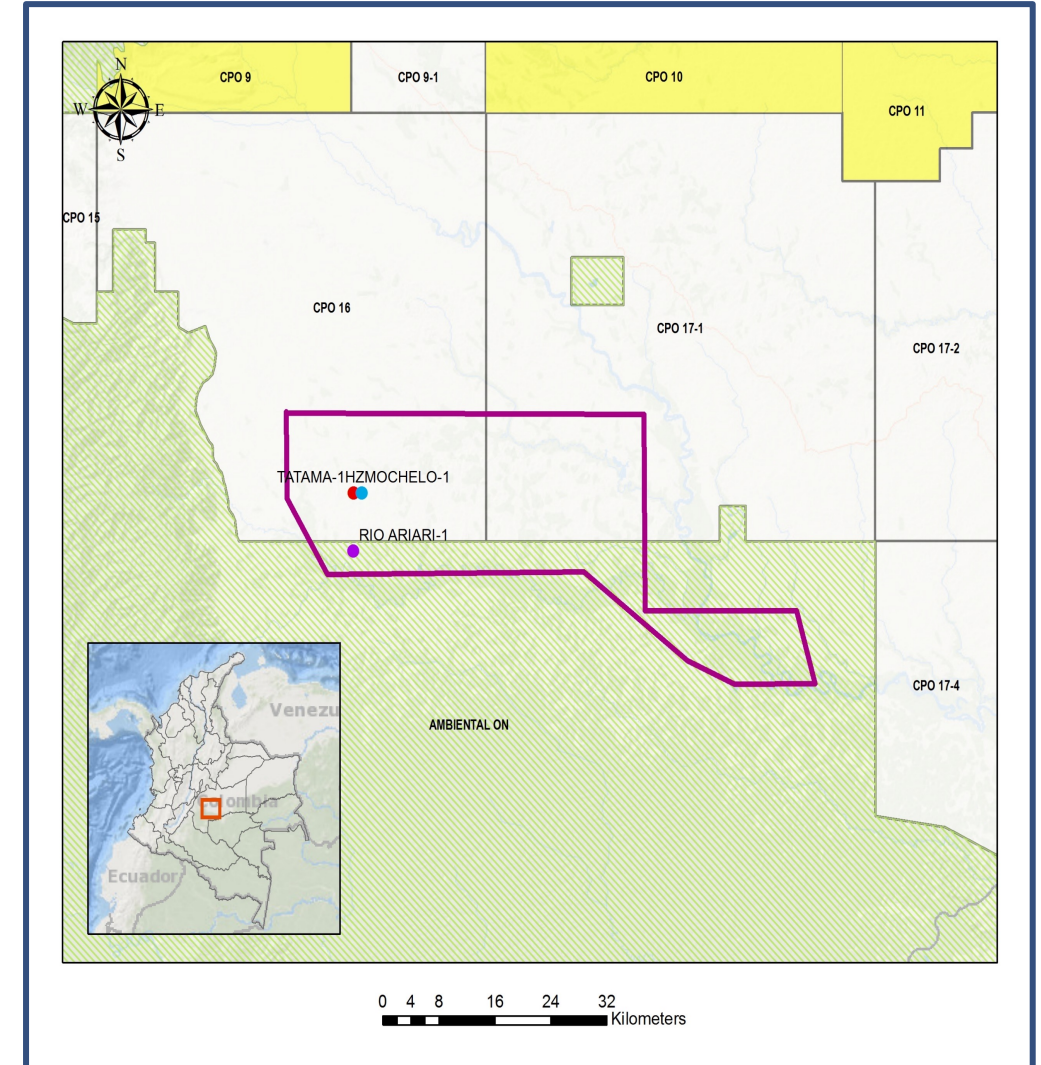
- Well drilled by Petrominerales in 2009 with a TD of 4,859'
- The main target of the well was the Mirador Formation
- The cumulative production of the well up to 2016 was 20,299 bbl

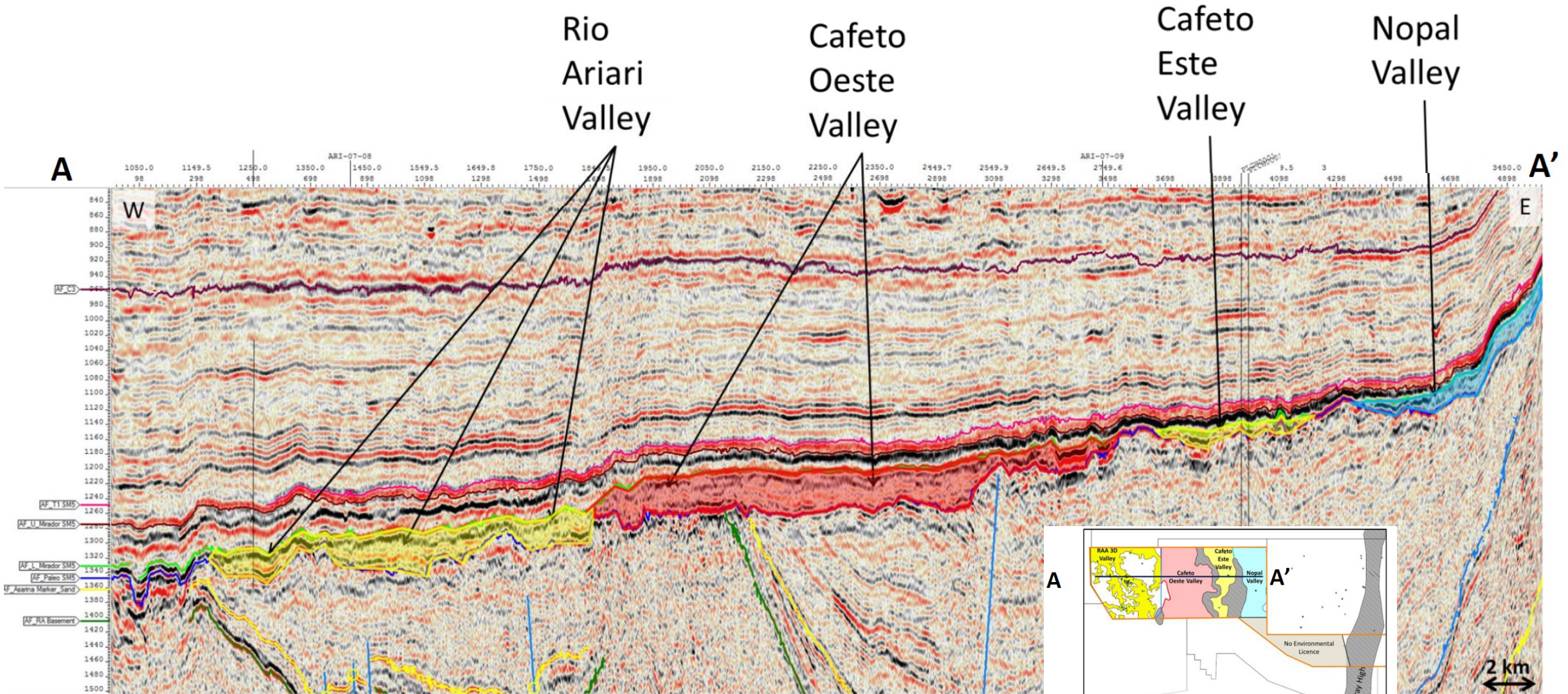
## MOCHELO - 1

- Well drilled by Petrominerales in 2010 with a TD of 5,308'
- The well reported in 2016 a cumulative production of 548 bbl

## TATAMA HZ - 1

- Well drilled by Petrominerales in 2012 with a TD of 5,041'
- The well proved heavy oil in the Mirador Formation
- The well reported a cumulative production in 2016 of 194,146 bbl



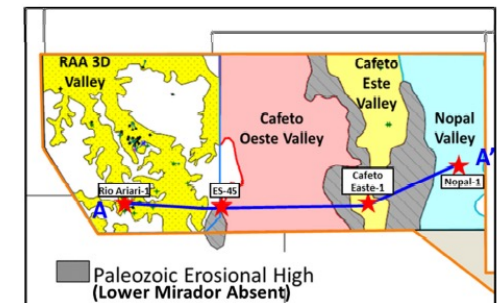
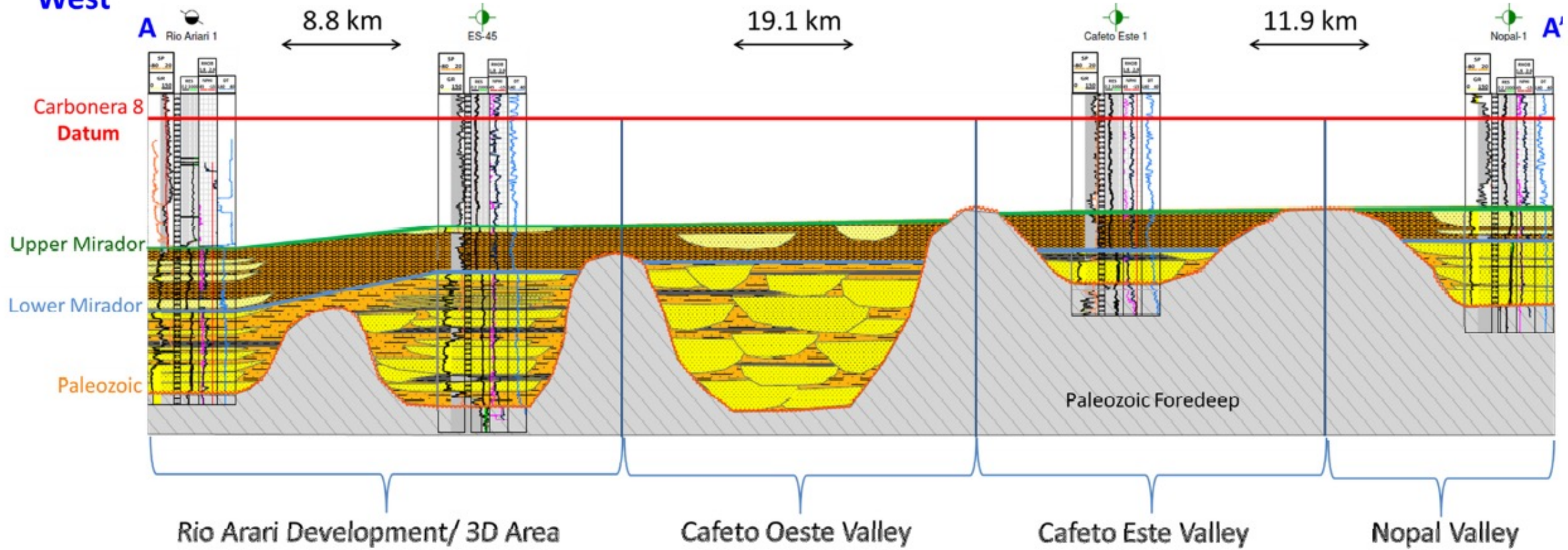


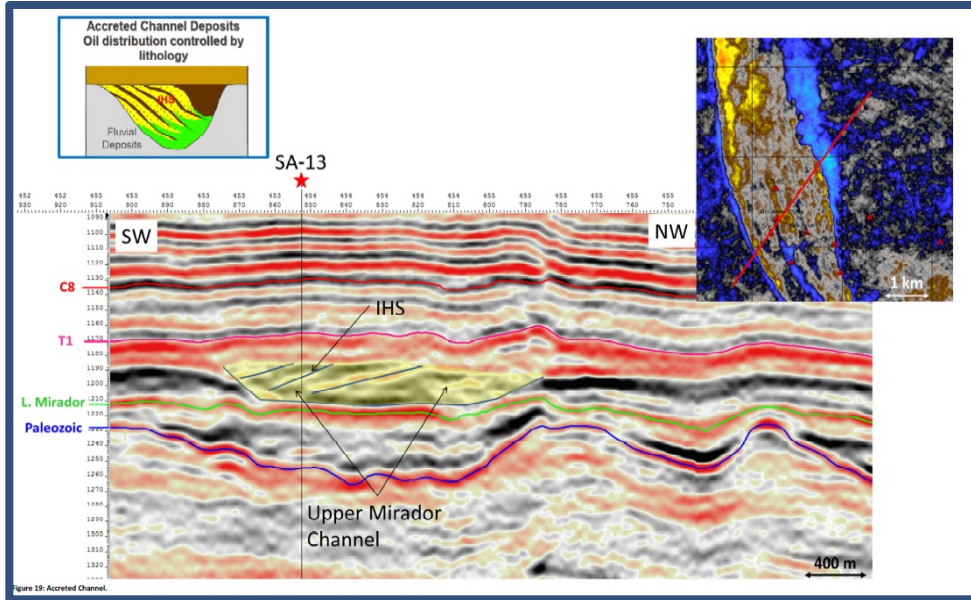


# Stratigraphic Cross Section

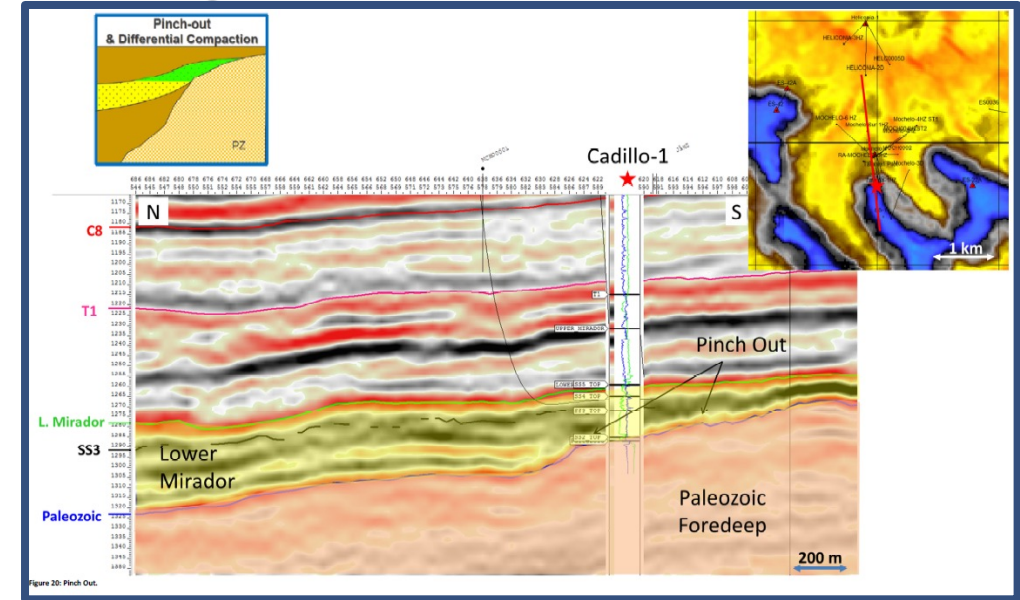
West

East

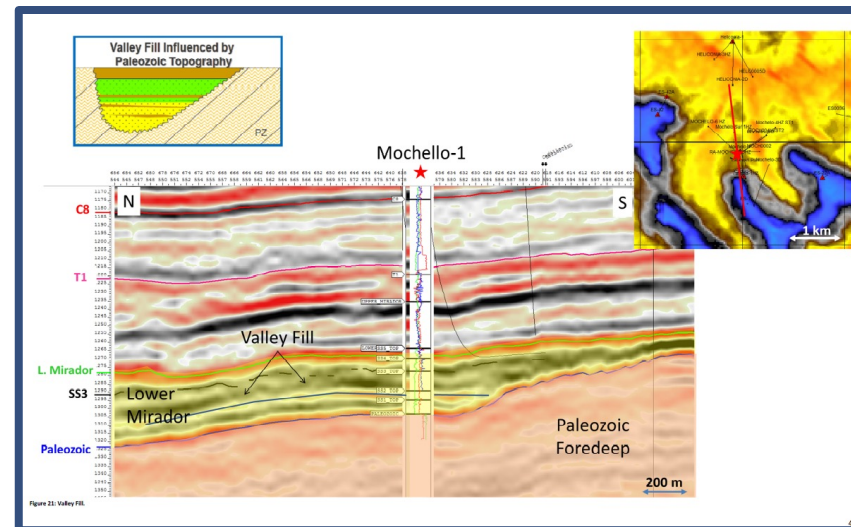




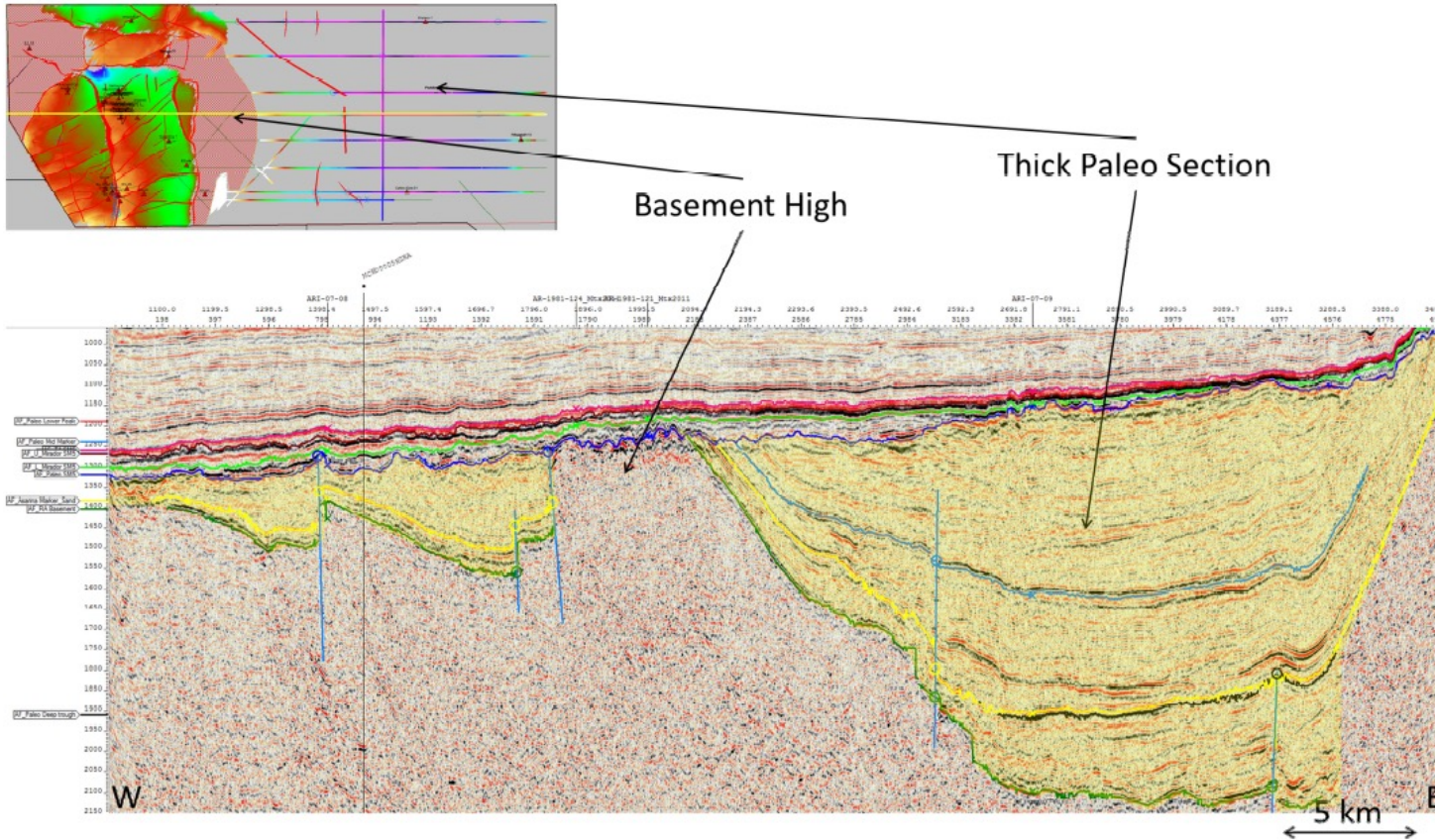
Channel Stacked Deposits



Pinch Out and Onlap



Stratigraphic Onlapping with Paleotopography

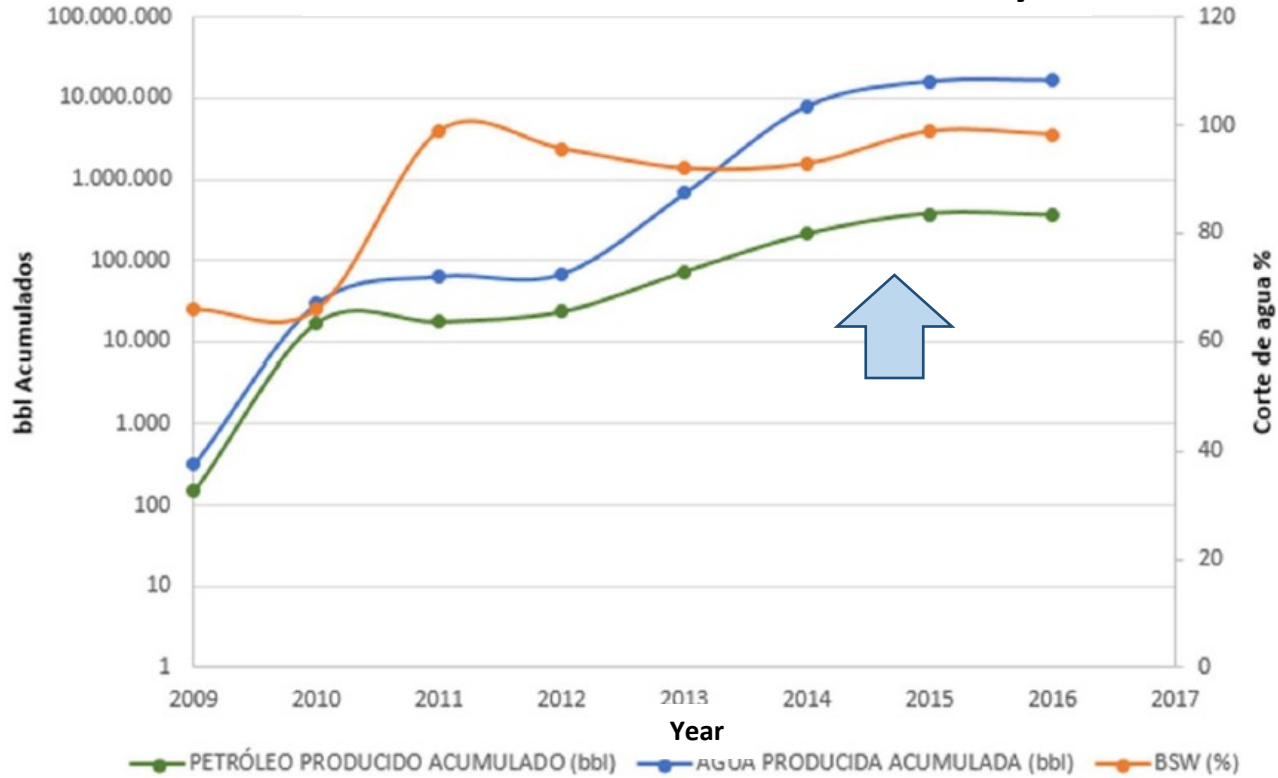


- Wells such as: Asarina – 1, Calandria – 1, Lapon – 1D, Haliconia - 2D and Rio Ariari – 2 showed the highest gas increases in the Paleozoic
- The shows were determined by gas chromatography but none of them have undergone formal tests
- A gross calculation for gas reserves into the Paleozoic was calculated by the operator company

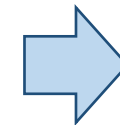
Preliminary Summary of Undiscovered Gas Initially-In-Place With Paleozoic			
Estimate	Gross Undiscovered Free GIIP (Bcf)	Gross Undiscovered Sorbed GIIP (Bcf)	Gross Undiscovered Total GIIP (Bcf)
Low Estimate	982	34	1,016
Best Estimate	3,300	228	3,528
High Estimate	10,727	1,290	12,017

Figure 32: Preliminary Summary of Undiscovered Gas Initially-In-Place with Paleozoic (Sproule)

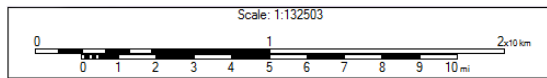
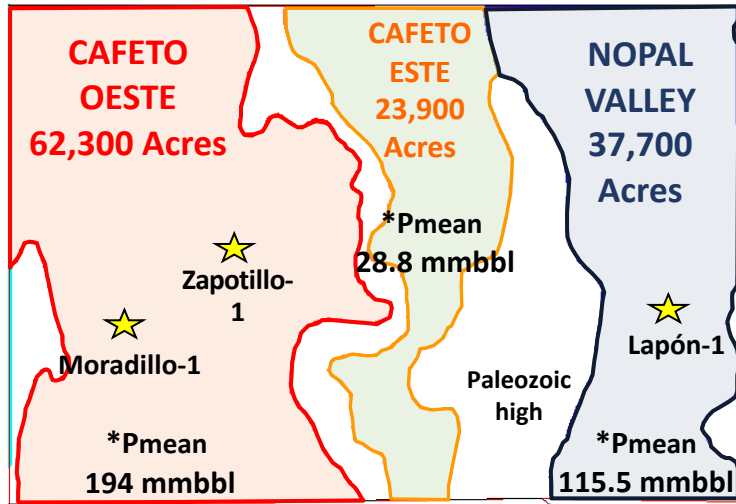
## Rio Ariari Field Production History



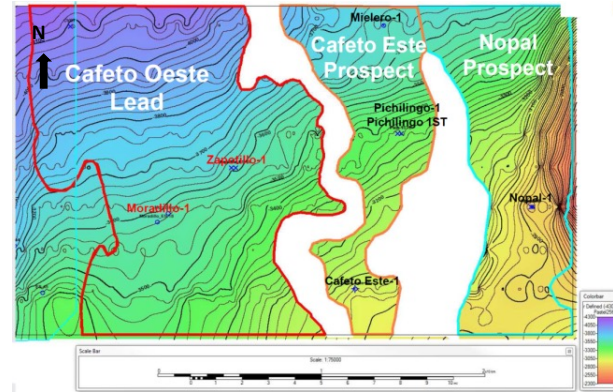
- The whole production history has been accompanied by a high BSW
- From 2009 to 2010 both water and oil production increase simultaneously. The main input came from Mochelo and Rio Ariari
- From 2010 to 2013 the production came from the fields Heliconia, Mochelo, Tatama and Mochelo Sur. BSW increases more than Oil
- After 2013 BSW increases exponentially, decreasing naturally the Oil production. The production came from Acanto, Heliconia, Mochelo, Rio Ariari and Lapon
- **The cumulative production to 2013 was**



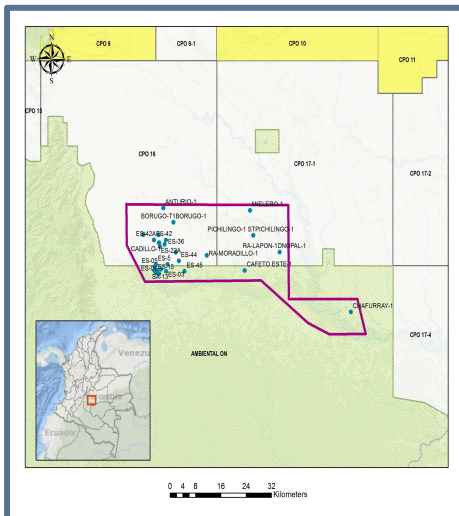
**High mobility rate water/oil**



### 3 Prospective Areas

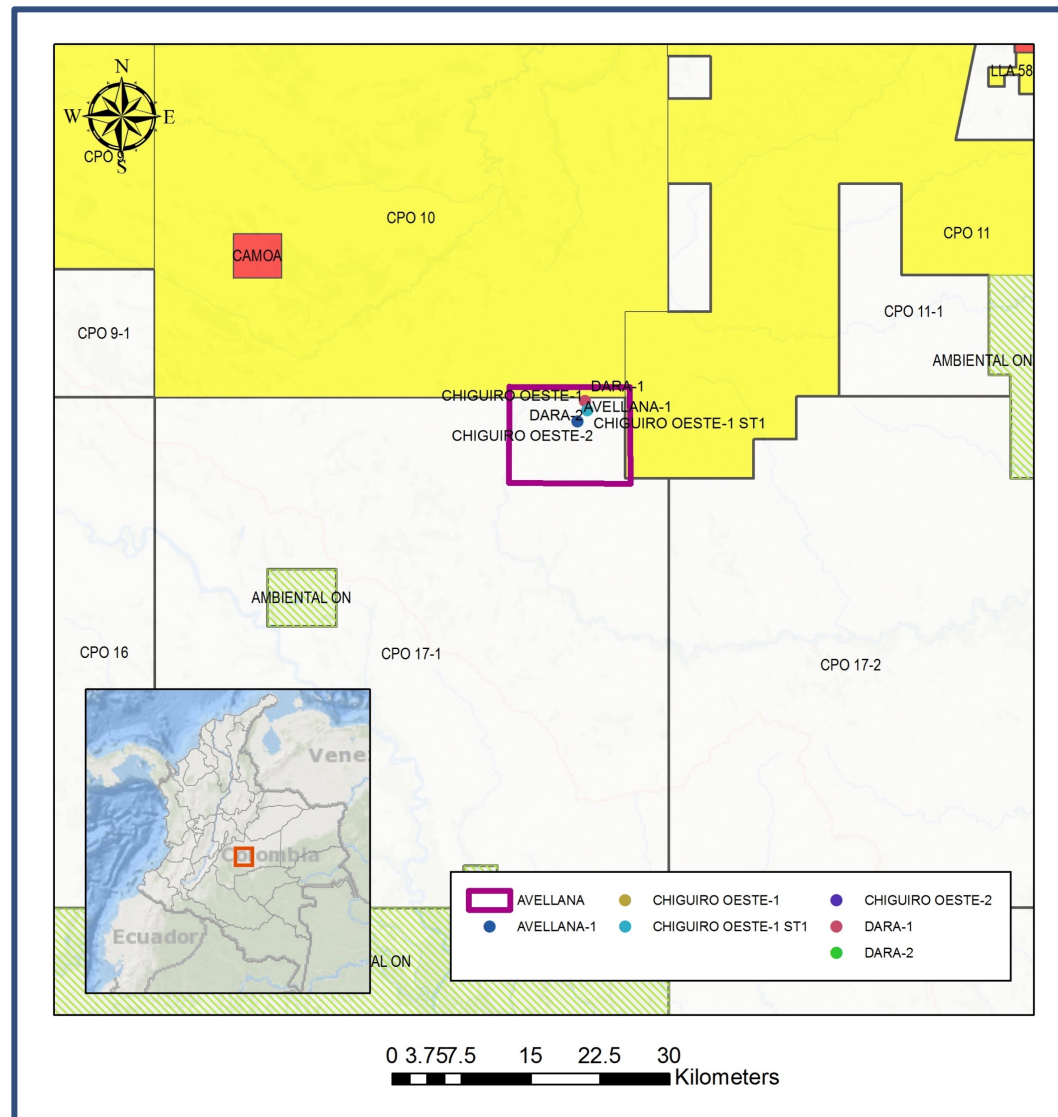


\*Pmean: Pmean recoverable oil 15% recovery factor, unrisks

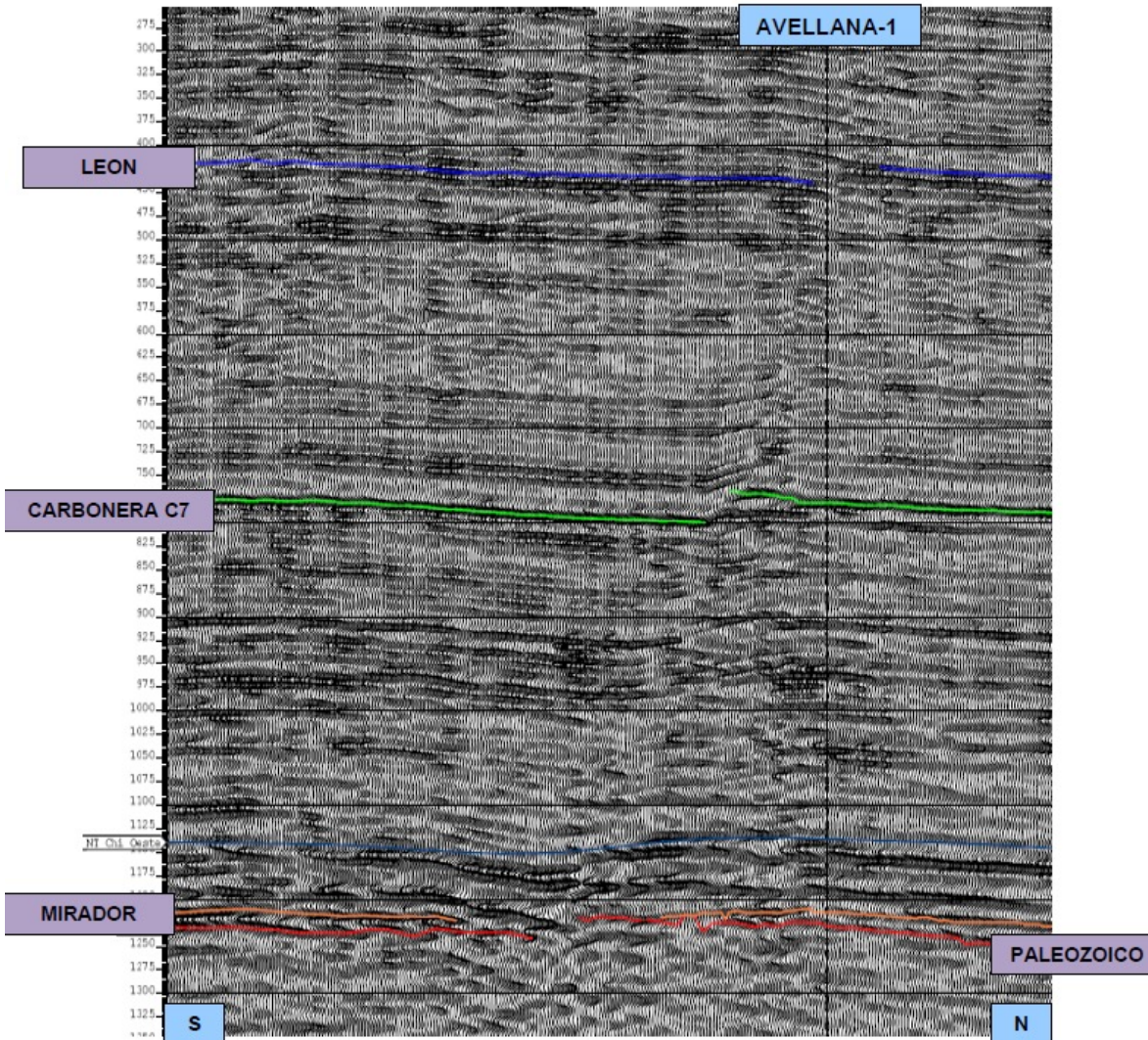


- In 2014 de recovery factor was established in 7,7%
- New areas were added in 2014 and 2015 drilling 12 wells
- Using a recovery factor of 15%, a **Pmean of recoverable oil unrisks** was calculated for some opportunities
- **Cafeto Oeste (Lead):** 194 MMbbl
- **Cafeto Este (Prospect):** 28,8 MMbbl
- **Nopal Valley (Prospect):** 115,5 MMbbl
- The last value reported of **OOIP** in the Rio Ariari area was of **1,805 MMbbl**

# AVELLANA (CPO 17-1)



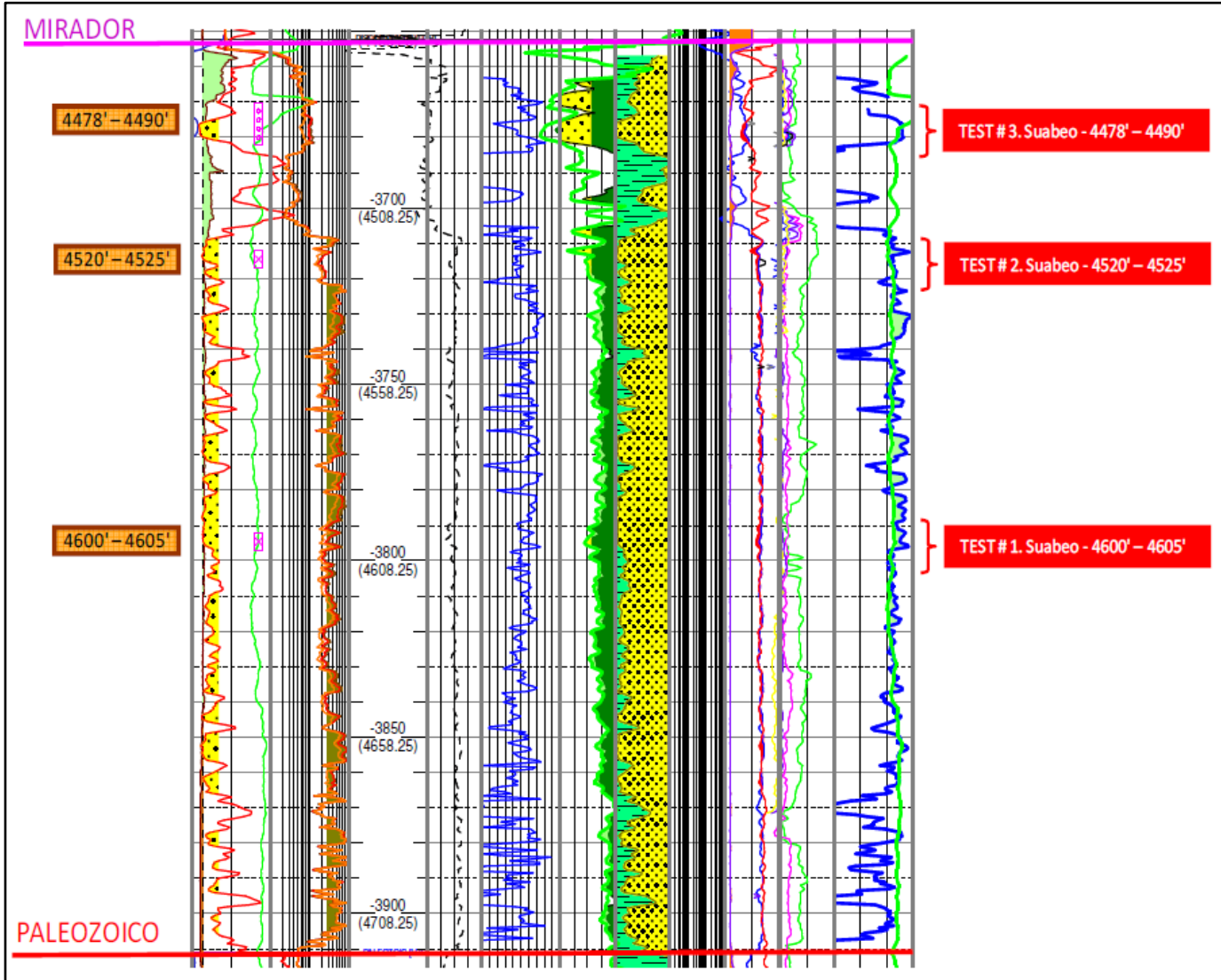
- The block is located nearby the municipalities of Puerto Lopéz and San Martín
- Inside the Chiguiro Oeste 3D – 2011 4 wells have been drilled: Chiguiro West – 1, Chiguiro West – 1ST and Avellana -1
- Preliminary results from the well tests by mean of PCP suggests the presence of heavy hydrocarbons of low mobility
- Its necessary a more detailed evaluation of an optimum strategy for evaluation and future production



Strike seismic Line: It could be observed the projection of the well Avellana - 1

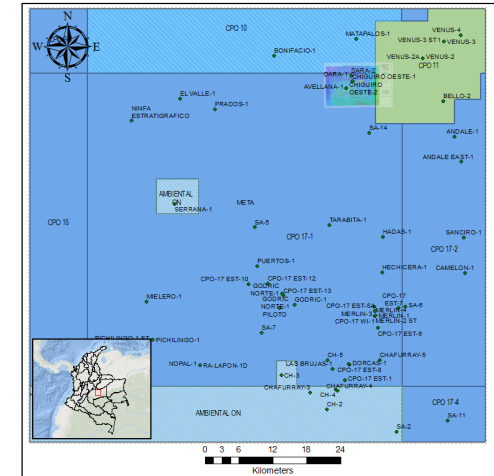
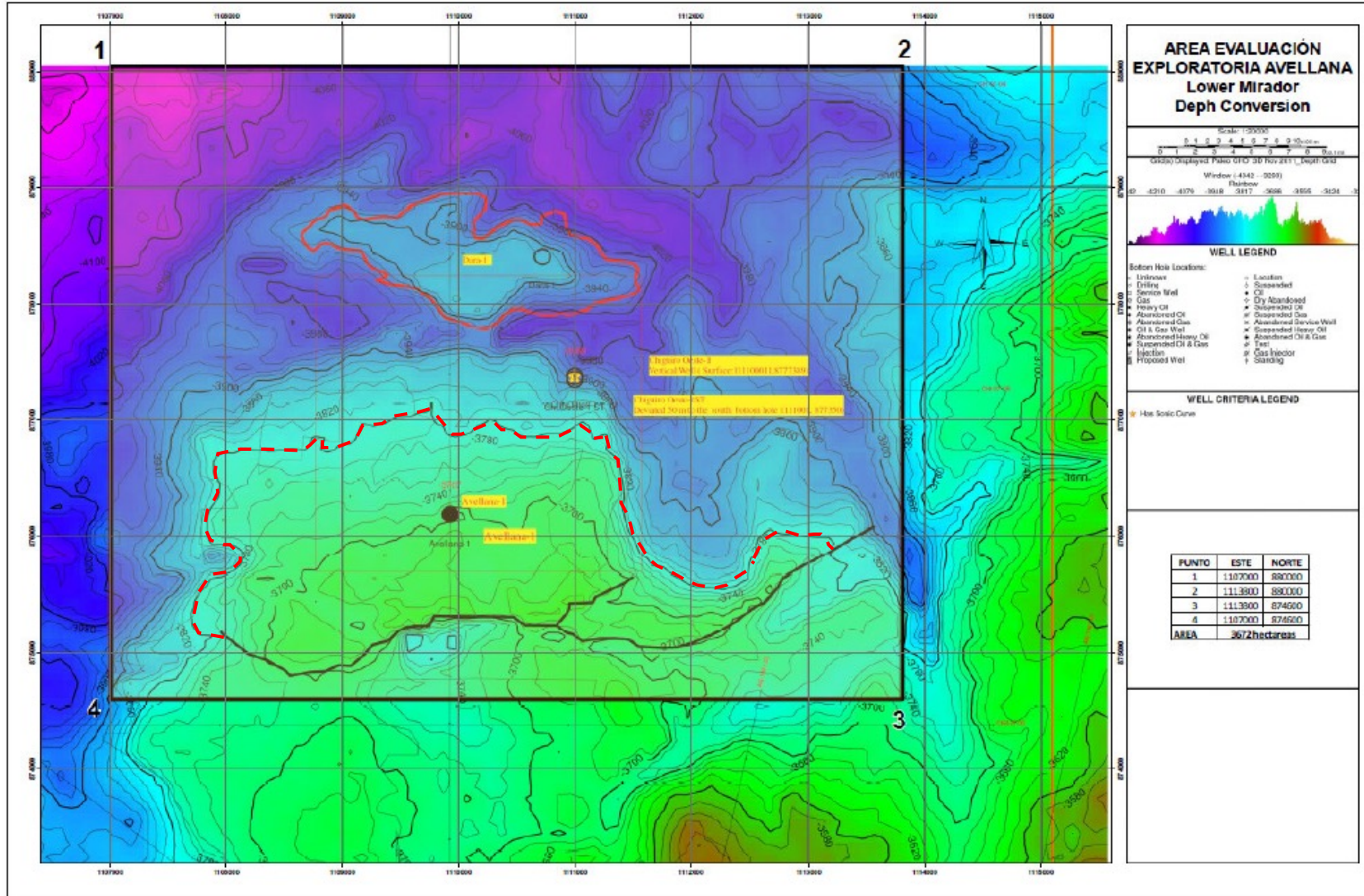
- Avellana Prospect: Mirador Formation as main target
- Type of Trap: Stratigraphic in channels
- TD: 4908' MD/TVD. Top of Mirador Formation found at 4460'
- Spud date: 8<sup>th</sup> of August of 2010
- Reserves: Due to the lack of information the calculation of prospective resources have not been carried out





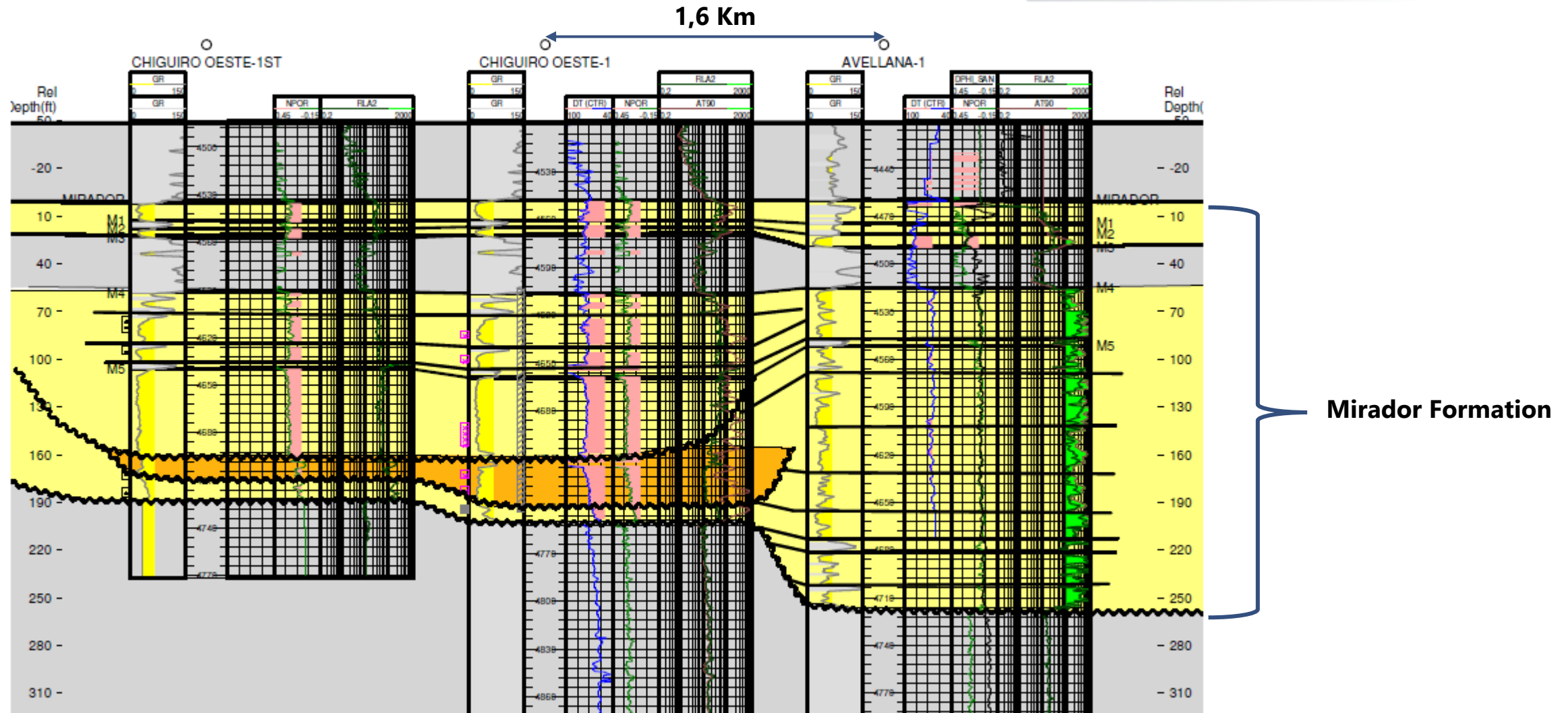
- Three test were carried out in the Mirador Formation with one of them Test 3 (4478'-4490') producing 0,18 BOPD with a BSW of 99%
- The petrophysics in the Avellana-1 well gave as result a Net Pay of 6', mean Porosity of 28% and So of 75% and
- The API gravity reported in the well is 9.3°

Interval (ft)	Type	Total Gas%	C1 (ppm)	C2 (ppm)	C3 (ppm)	iC4 (ppm)	nc4 (ppm)	iC5 (ppm)	nC5 (ppm)
4460-4470	FG	0.002	139.2	15.5	13	0	0	0	0
4475-4490	FG	0.11	30.2	23.4	70.4	17.3	31.8	49.7	10.1
4496-4506	BGG	0.001	38	11	0	0	0	0	0
4506-4530	FG	0.22	1210	28.7	23.3	16.2	0	0	0
4530-4572	BGG	0.02	156	12.5	10.2	20.3	12.9	0	0
4572-4591	FG	0.1	511	41	22	11	0	0	0
4591-4636	BGG	0.01	34	29.6	14	9	0	0	0
4636-4653	FG	0.1	523	45	11	4	0	0	0



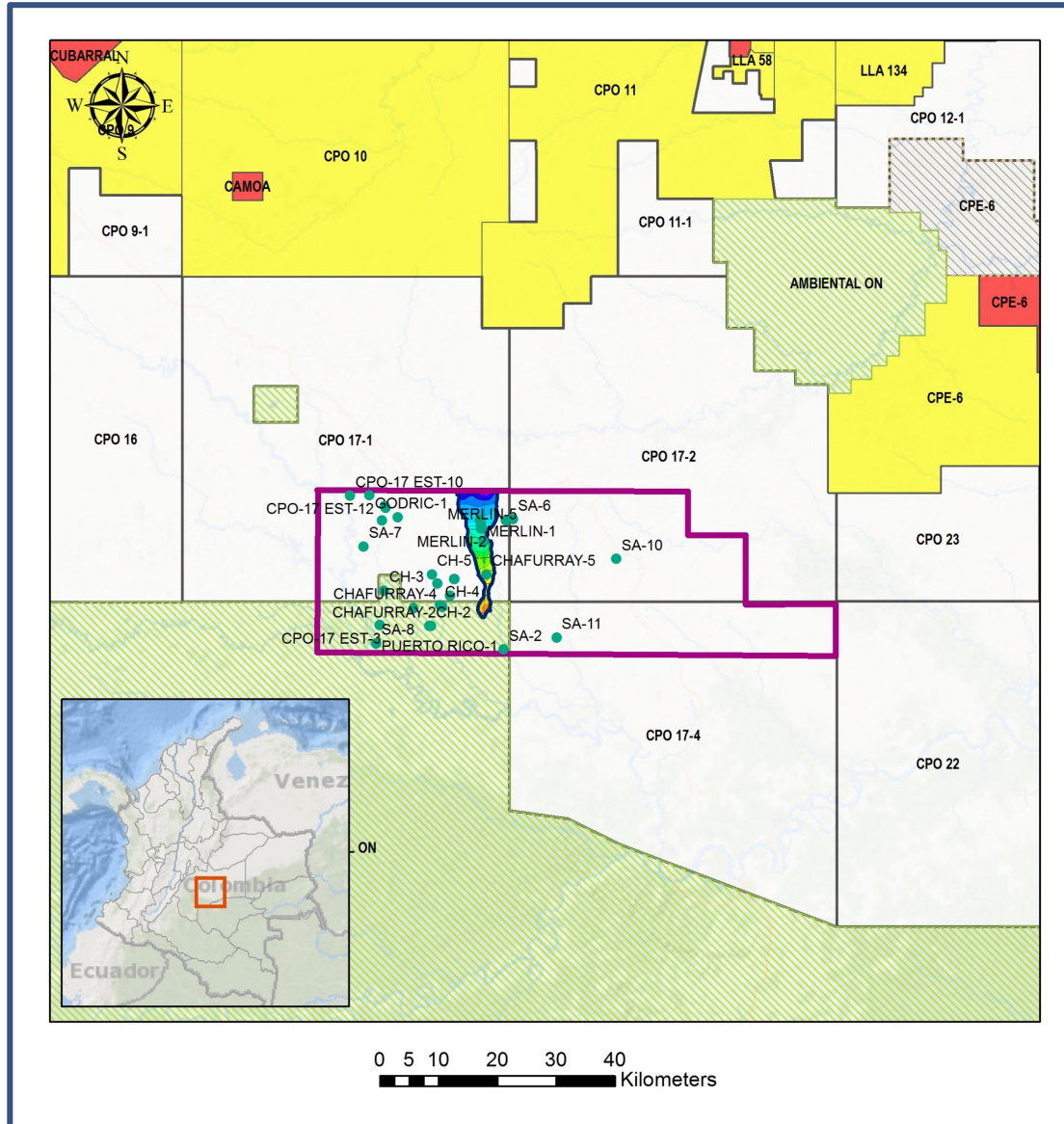
- **Two structures** were drilled based on the structural map of the **Lower Mirador**
- At the **north** the structure drilled by the wells **Dara**
- At the **south** the structure drilled by the well **Avellana - 1**

# Well Correlation: Chiguiro West – 1 and Avellana-1



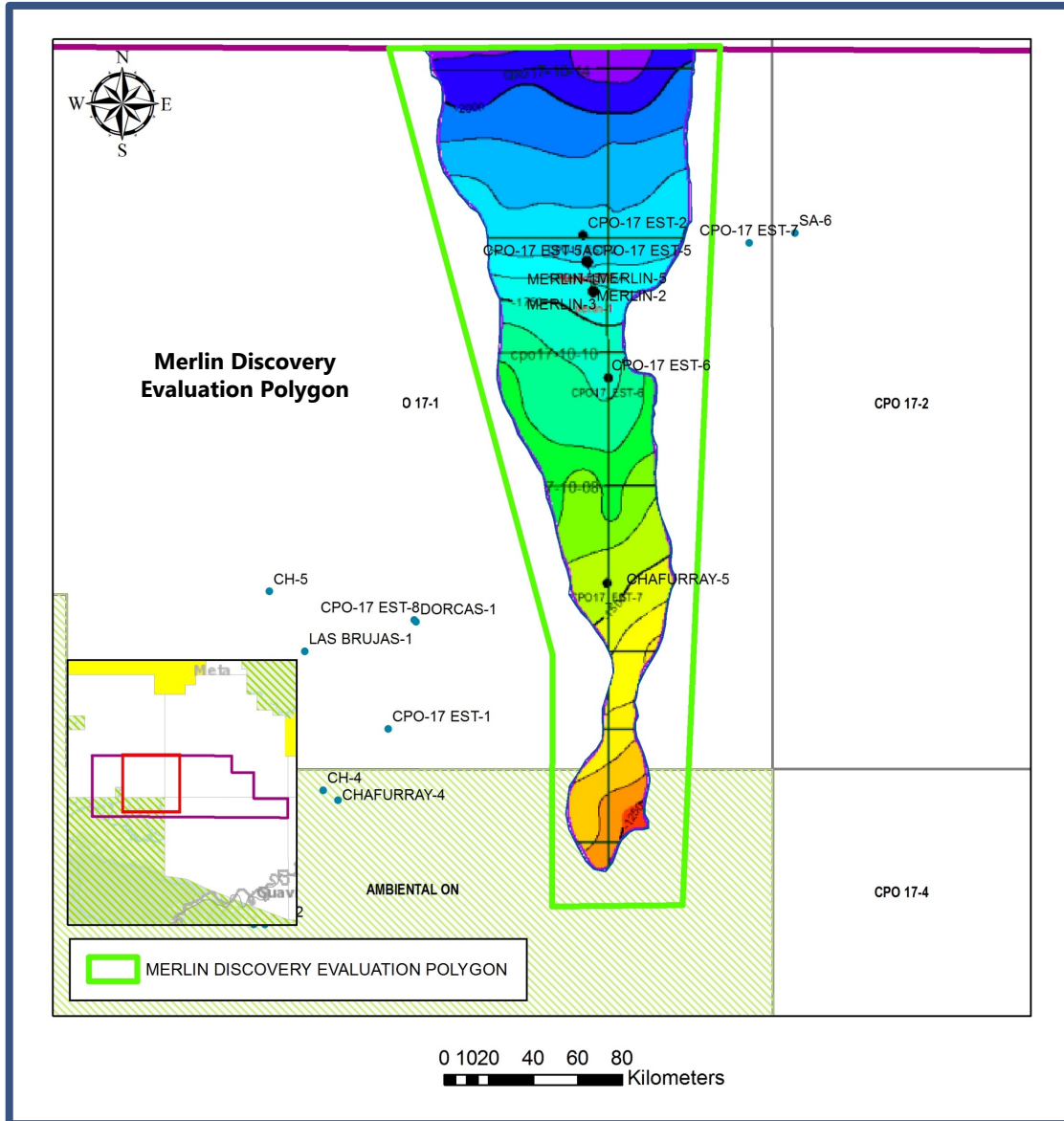
# MERLIN (CPO 17-1 & CPO 17-2)

# Merlin Location



- Merlin is located in in the southwestern part of the Llanos Orientales Basin in the Meta Department
- The area covered the municipalities of Puerto Lleras, Mapiripán, Puerto Rico and Puerto Concordia

# Structural Map Merlin: Top of Oligocene Sandstones



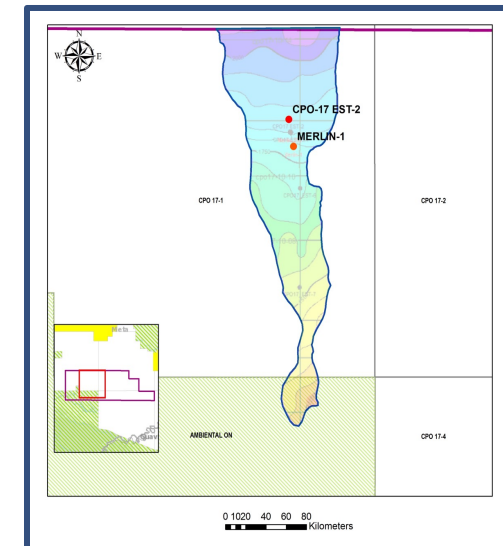
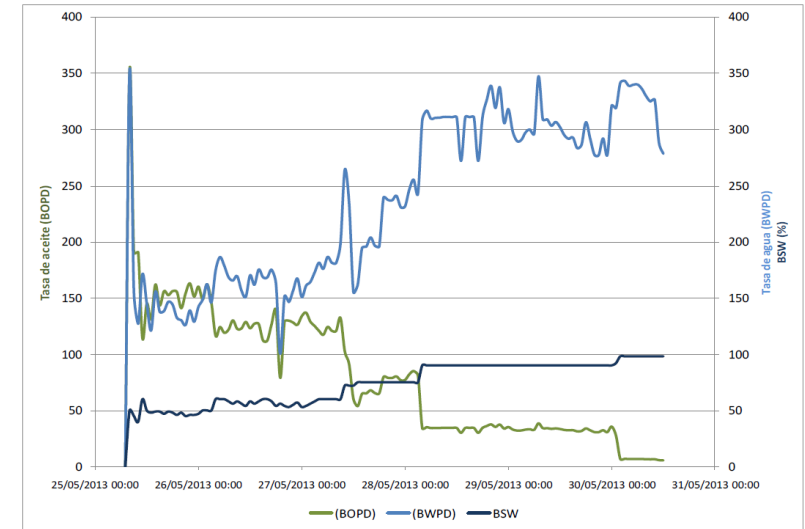
- Structural map in Depth of the Oligocene basal sandstones in the discovery area of Merlin

## Merlin - 1

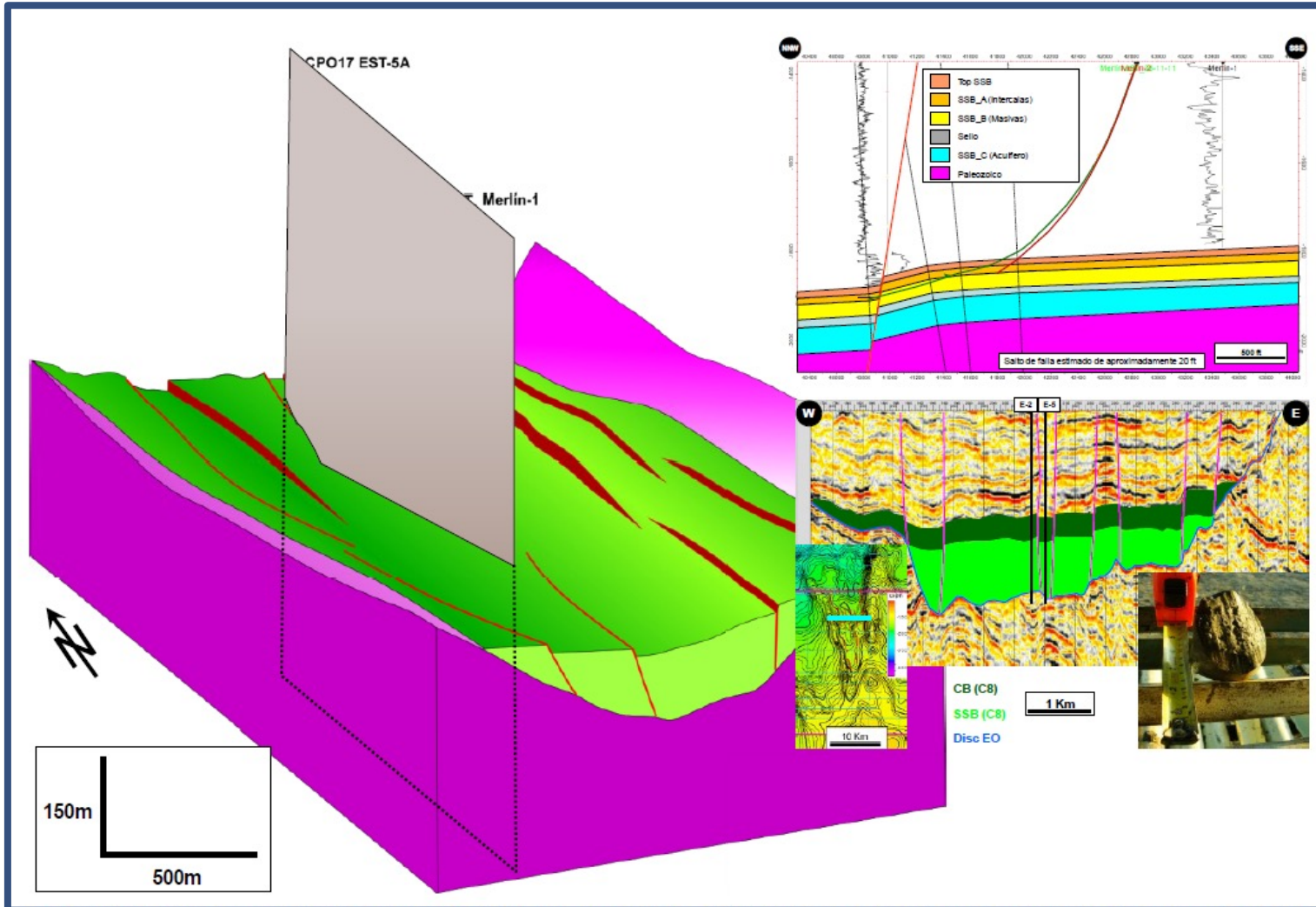
- Well drilled by Hocol in 2011 with a TD of 2683'
- The target of the well was to reach the Oligocene Basal Sandstones
- During the initial tests the well shows a higher capacity of production than the estimated one
- Vapor injection was performed using the well Merlin – 6IV
- The well, limited by the design of the tests reached a production of 350 bbl per day that fall down afterwards

## CPO 17 EST - 2

- Well drilled by Hocol in 2010 with a TD of 2834'
- The target of the well was to reach the C8 member of the Carbonera Formation (Basal SS of the Oligocene)
- Between 2170' and 2180' good oil shows were found
- The C7 had good oil shows between (2400' and 2410')
- Very good oil shows were found in the interval 2665' to 2713' in the Oligocene Basal Sandstone

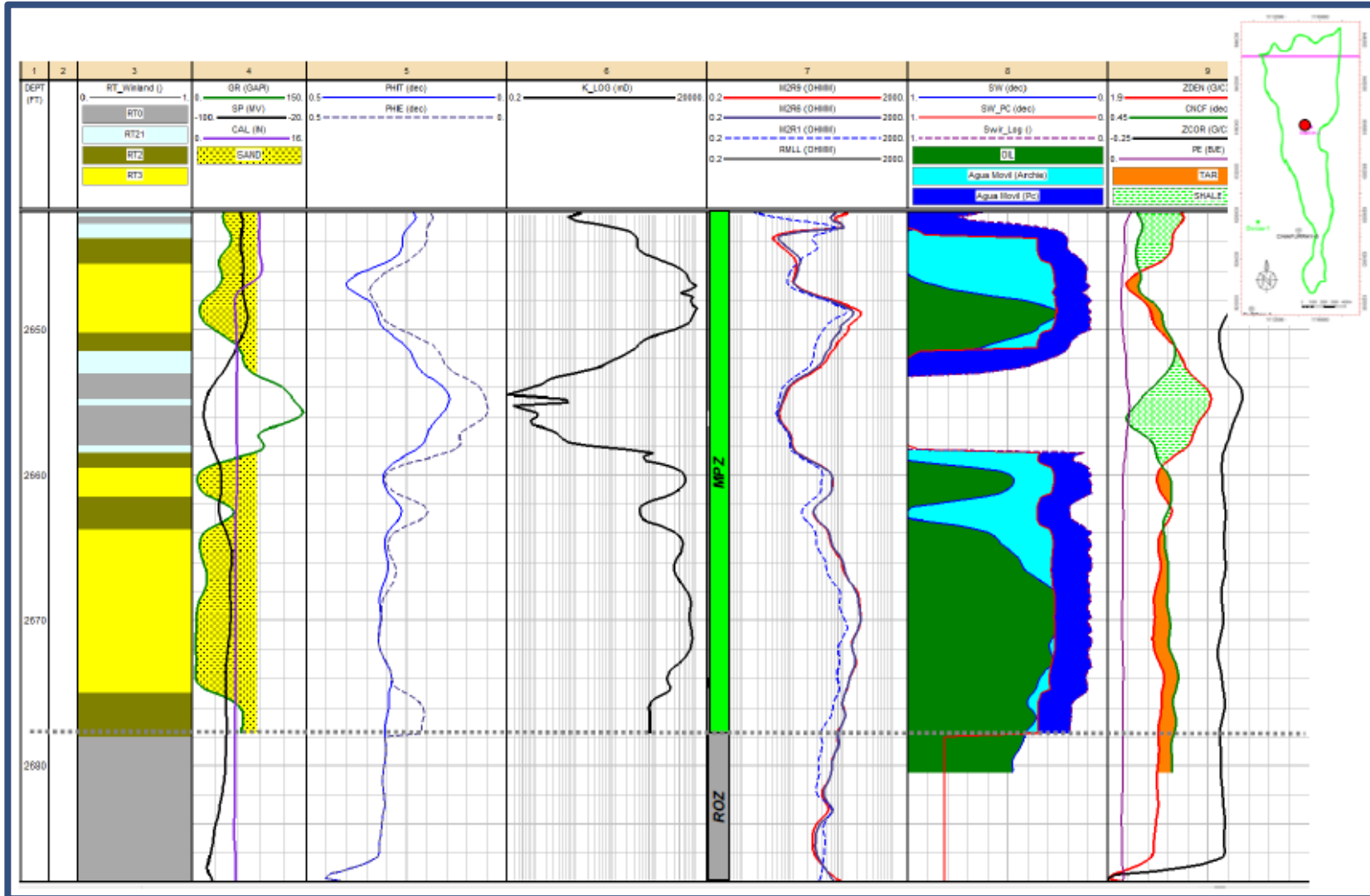


# Merlin Model

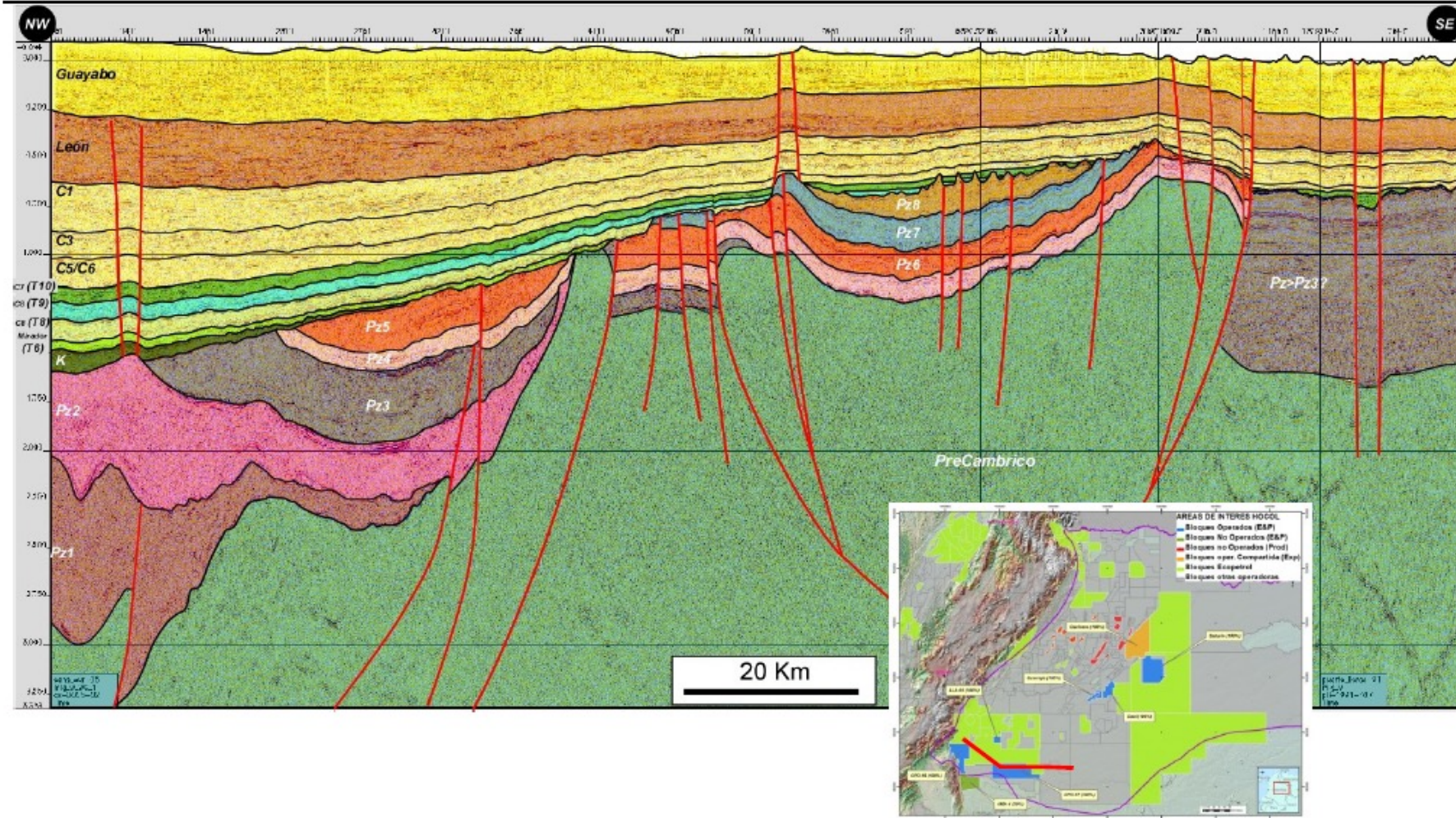


- Post drilling model of the Merlin discovery
- The fault throw is about 20 to 35' with NNW – SSE orientation
- In the cores, evidence of kinematic indicators can be seen

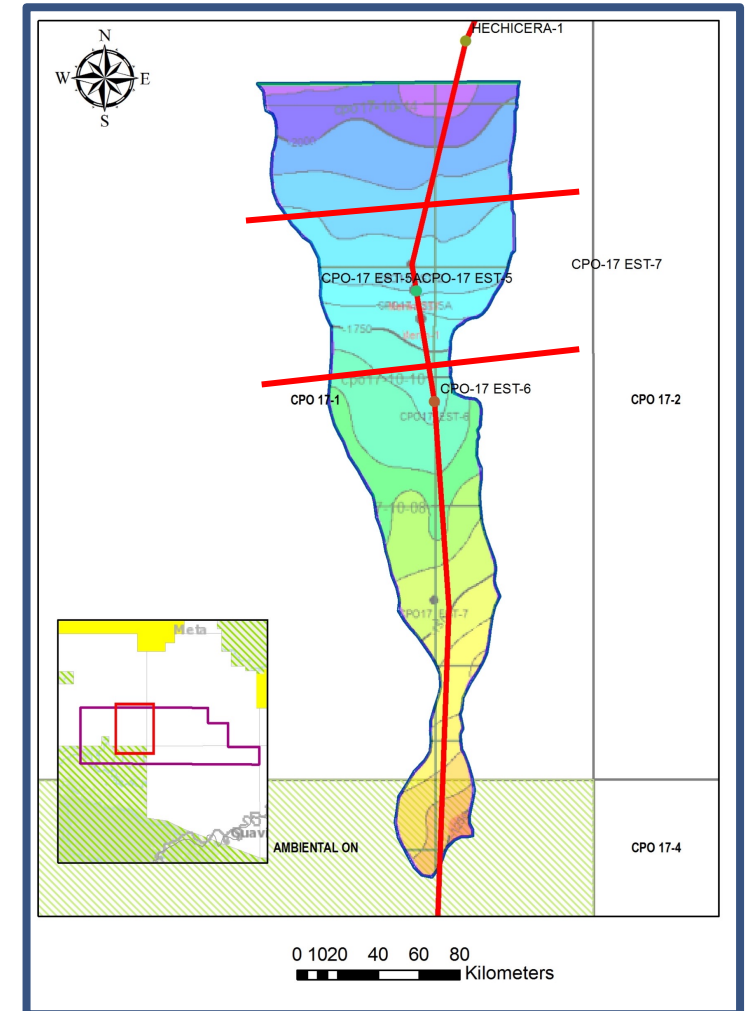
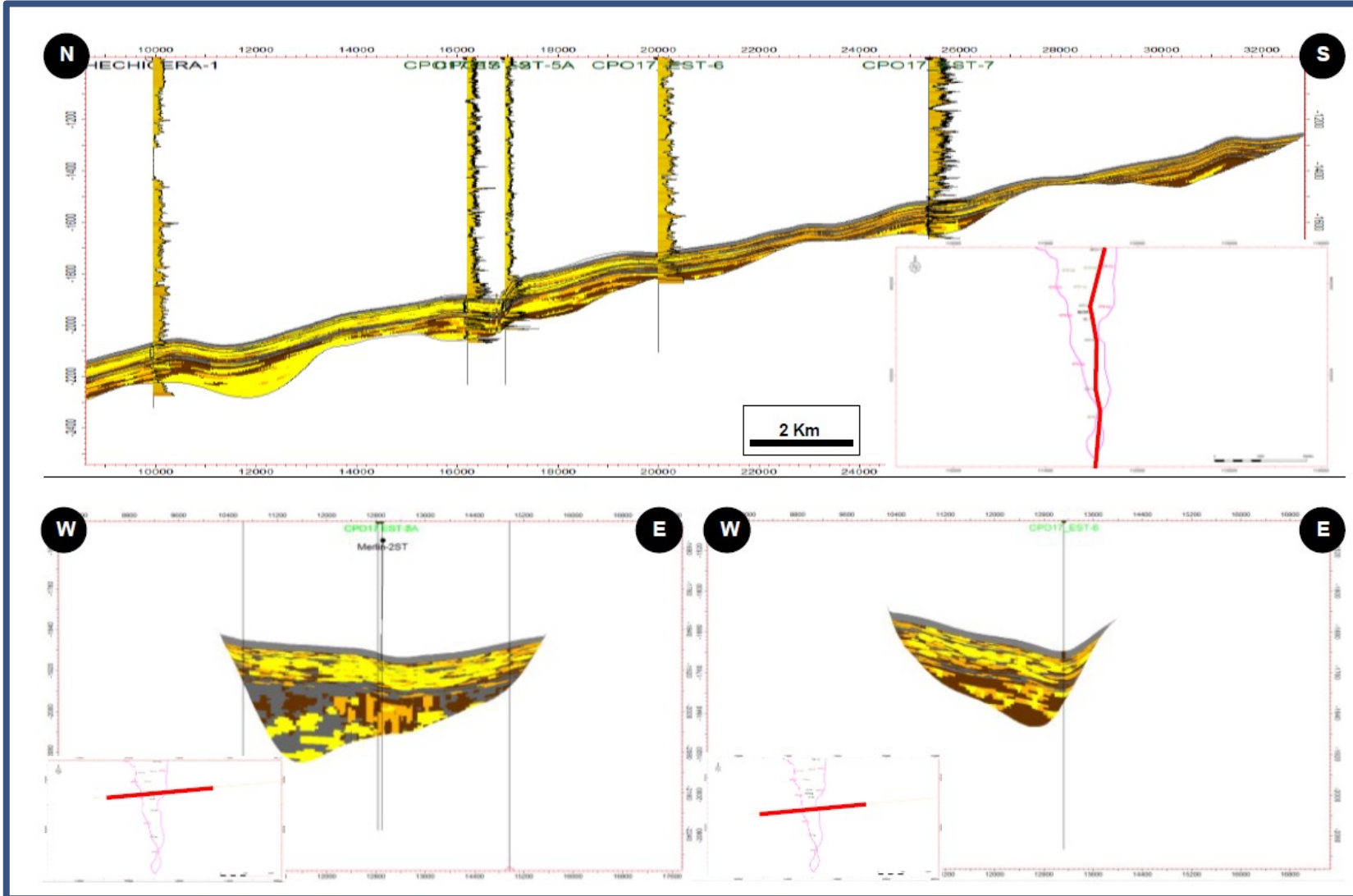




- Petrophysics of the well Merlin – 1
- Oligocene basal sands with petrophysical oil saturation calculated in two different intervals: **2645-2650'** and **2660'-2685'**
- Effective porosities around **30%** could be observed in the cleanest sections of the sandstones intervals



**Main structural elements and framework from the southern Llanos Domain could be appreciated**



- MPZ (Main Producer Zone)**

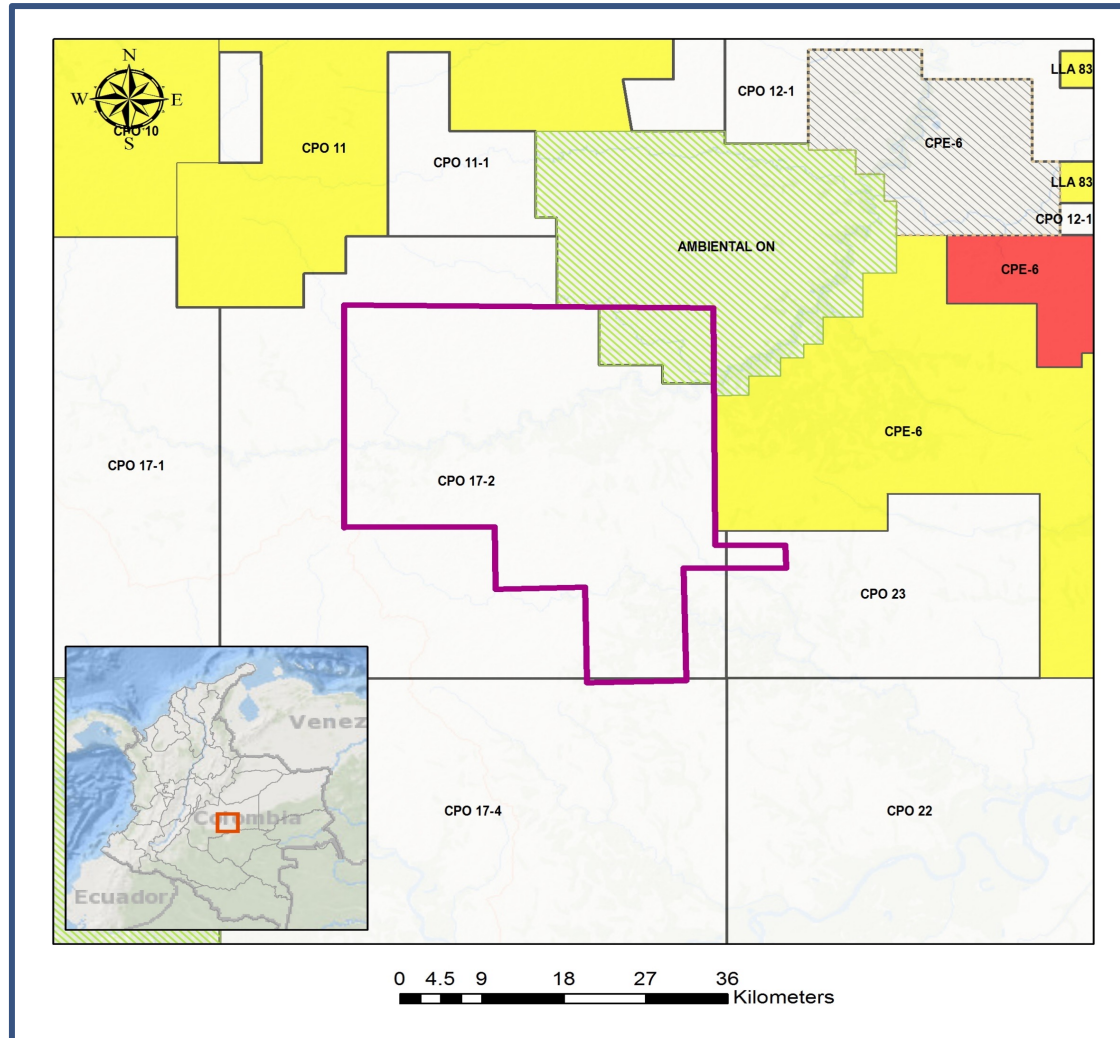
PARÁMETROS PARA EL CÁLCULO DE RECURSOS DEL PROSPECTO MERLIN-MPZ BASE									
FORMACIÓN SSBO									
PARÁMETROS	Unidad	Distrib.	P99	P90	P50	P10	P1	Mean	P10/P90
Volumen Roca - Hcs	K Acre-Pie	LogNormal	684	692	703	714	724	703	1
Área Promedio	Acres	LogNormal	17,216	17,388	17,644	17,912	18,141	17,649	0
Espesor Gross Prom	Pies	LogNormal	39.79	39.81	39.85	39.89	39.91	39.85	1
Espesor Neto Prom - Hcs	Pies	LogNormal	9	12	17	23	26	17	2
NTG	%	Lognormal	22	30	43	58	65	43	2
Factor Geométrico	%	Normal	100	100	100	100	100	100	1
Porosidad	%	Normal	25.1	26.1	29.2	32.4	33.8	29.2	1
So	%	Normal	50	53	62	72	75	63	1
			0	0	0	0	0	0	1
Bo	BLS/STB	Normal	1.0226	1.0240	1.0280	1.0320	1.0334	1.0280	1
	%		0	0	0	0	0	0	1
<b>OOIP</b>	<b>MMBLS</b>	<b>LogNormal</b>	<b>195.70</b>	<b>272.14</b>	<b>406.46</b>	<b>579.48</b>	<b>712.25</b>	<b>417.8</b>	<b>2</b>

- ROZ (Residual Oil Zone)**

PARÁMETROS PARA EL CÁLCULO DE RECURSOS DEL PROSPECTO MERLIN-ROZ									
FORMACIÓN SSBO									
PARÁMETROS	Unidad	Distrib.	P99	P90	P50	P10	P1	Mean	P10/P90
Volumen Roca - Hcs	K Acre-Pie	LogNormal	394	400	409	418	425	409	1
Área Promedio	Acres	LogNormal	16,453	16,678	17,010	17,325	17,561	17,007	0
Espesor Gross Prom	Pies	LogNormal	24.00	24.01	24.03	24.11	24.21	24.05	1
Espesor Neto Prom - Hcs	Pies	LogNormal	5	7	10	14	16	10	2
NTG	%	Lognormal	22	30	43	58	65	43	2
Factor Geométrico	%	Normal	100	100	100	100	100	100	1
Porosidad	%	Normal	25.1	26.1	29.2	32.4	33.8	29.2	1
So	%	Normal	34	37	45	53	56	45	1
			0	0	0	0	0	0	1
Bo	BLS/STB	Normal	1.0226	1.0240	1.0280	1.0320	1.0334	1.0280	1
	%		0	0	0	0	0	0	1
<b>OOIP</b>	<b>MMBLS</b>	<b>LogNormal</b>	<b>79.68</b>	<b>111.81</b>	<b>171.66</b>	<b>242.26</b>	<b>301.83</b>	<b>175.1</b>	<b>2</b>

- These tables show the OOIP for the MPZ and ROZ respectively
- The mean for the **MPZ** is **417,8 MMBLS**
- The mean for the **ROZ** is **175,1 MMBLS**

# TRASGO (CPO 17-2)



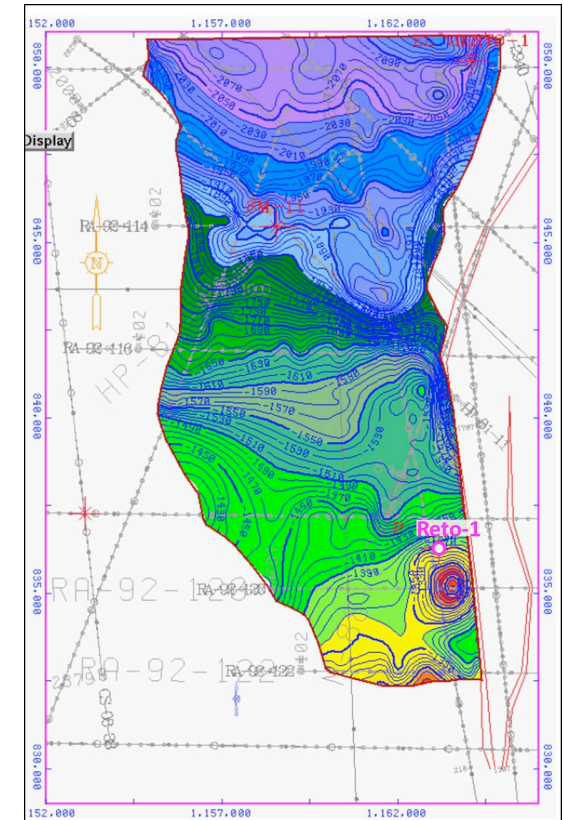
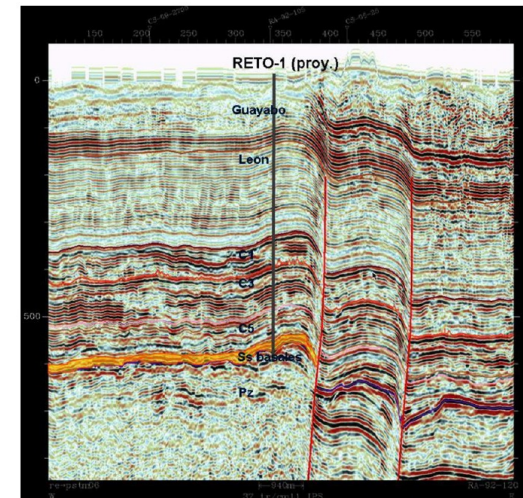
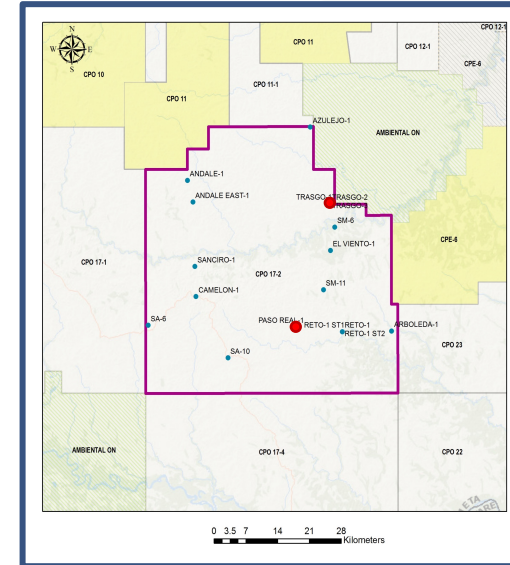
- Trasgo evaluation area is bounded by a polygon located in the municipalities of Mapiripán y San Martín in the Meta Department
- The area was in exploration activity carried out by Ecopetrol from 2011 to 2016
- Initially the contract was known as Caño Sur

## Trasgo – 1

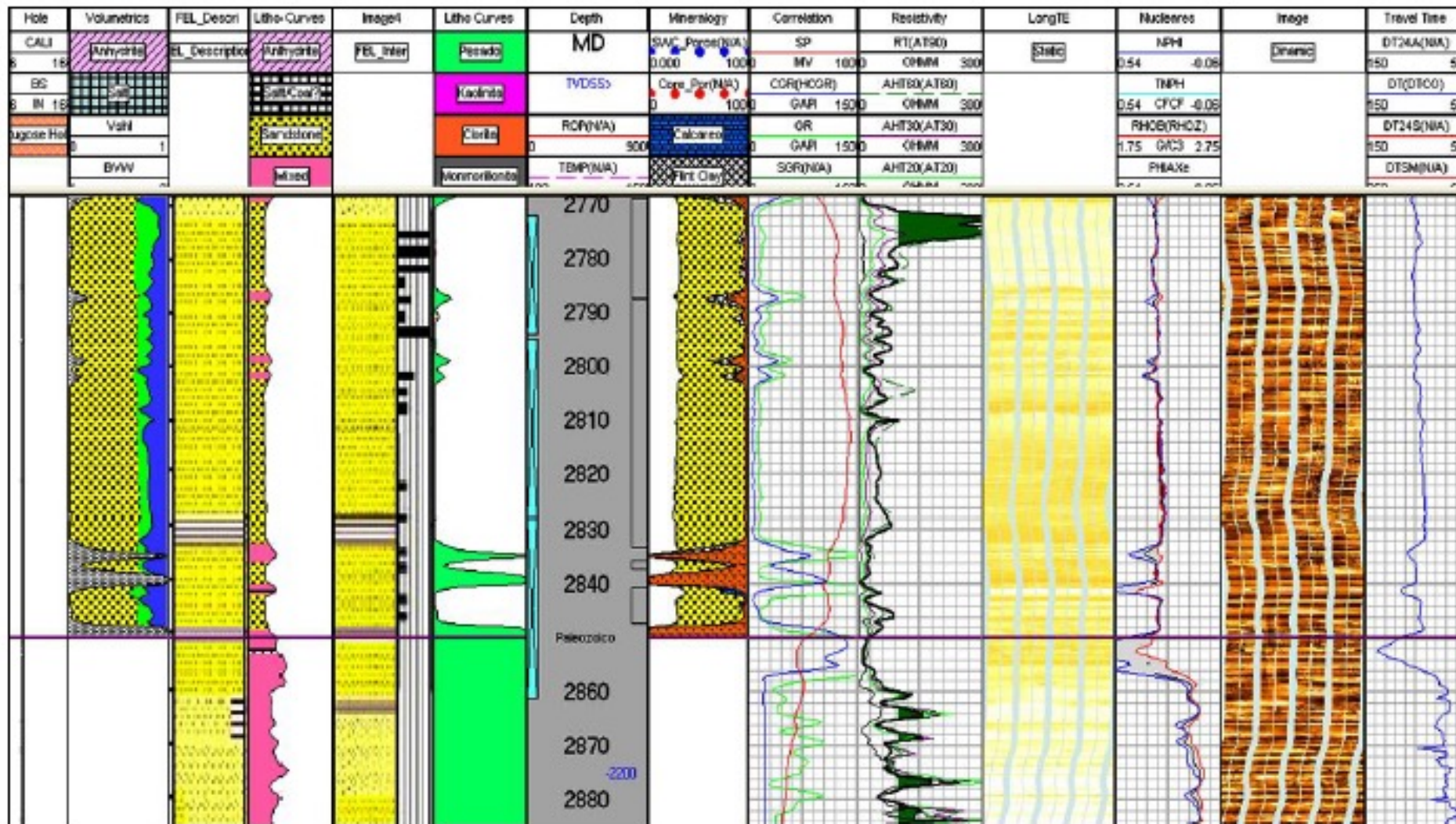
- The well Trasgo – 1 was drilled in 2011 by Ecopetrol with a TD of 2934'
- It discovered a hydrocarbon accumulation in a structural trap associated to a high angle reverse fault that juxtaposes the sandy Carbonera intervals with the shaly ones
- The well DSTs produced 5471 bbl of fluid with 1240 bbls of oil (14,6° API) and 4,231 of formation water (208,6 ppm Cl<sup>-</sup>)
- During the extended test the well produced 55 bopd

## Reto - 1

- The well Reto – 1 was drilled in 2012 by Ecopetrol with a TD of 2090'
- The target of the well was proving the Oligocene basal sands in a structure that consists in a combined trap with closure against El Viento Fault (E) and onlapping against Paleozoic (W)
- The thickness expect of the unit was not found

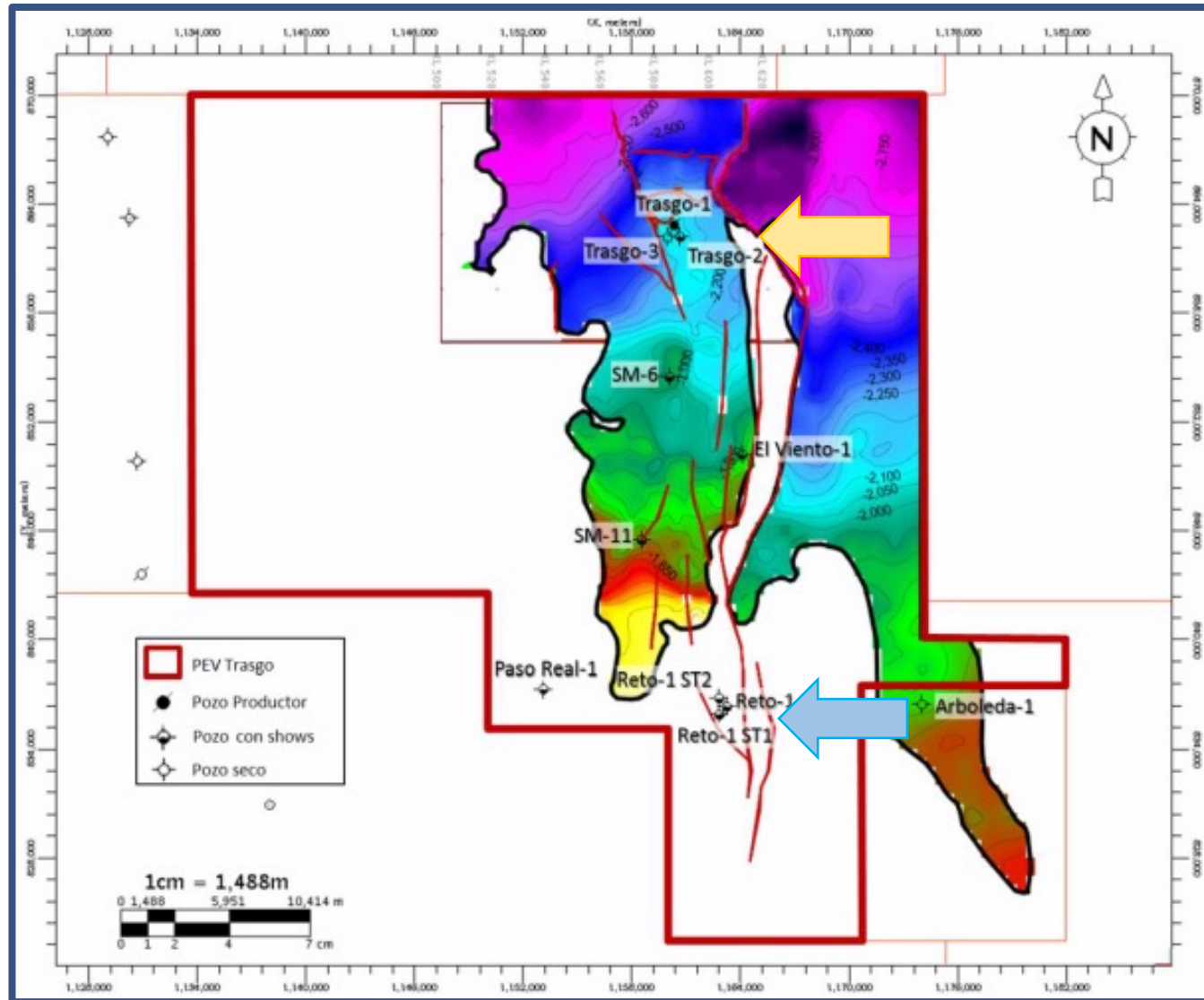


# Petrophysics Basal Sands

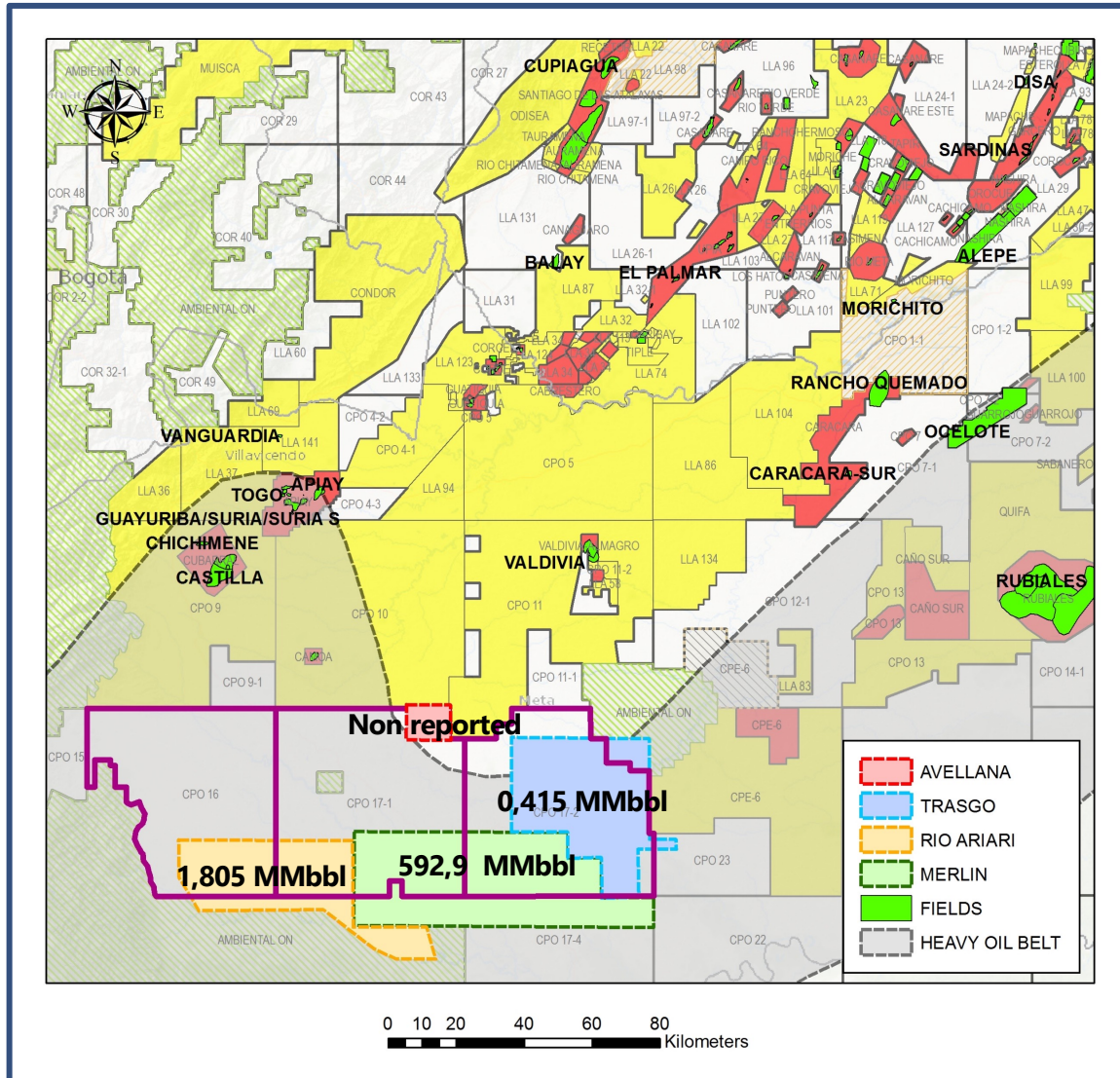




## Structural Map: Top Oligocene Basal Sands and Volumetrics



- As Trasgo has not been declared a commercial field yet, there are no reserves reported
- Based on the interpretation of the 3D seismic survey Trasgo 2D, and the data acquired by the wells Trasgo-1, Trasgo-2 & Trasgo-3, **0,415 MMbbl** of contingent resources were calculated



- **Rio Ariari** has a reported **OOIP** value of **1,805 MMbbl**
- **Avellana** does not have a calculated OOIP or estimated reserves
- **Merlin** has an **OOIP** for the **Main Producer Zone** of **417,8 MMbbls** and in the **Residual Oil Zone** of **175,1 MMbbls**
- In **Trasgo** **0,415 MMbbl** were calculated as **contingent resources**

- The ANH has presented three areas that are located into the trend known as the Heavy Oil Belt. Those areas are **CPO 16, CPO 17-1 and CPO 17-2**
- Most of the areas have had an exploratory activity with proven oil systems. **Due to oil prices and development of heavy oil reservoirs most of them were not declared commercial**
- As result of the exploratory activity the areas are well covered with 2D seismic surveys and 4 3D seismic surveys located in what are thought as prospective areas
- **The exploration led to the definition of 4 potential areas**, one of them a truly developed field: Rio Ariari, Avellana (Chiguiro), Merlin & Trasgo
- The main reservoirs are located in the **lower Mirador and lower Carbonera**. However there is a chance of having a **huge gas potential into the Palaeozoic sequence**
- The areas of **Rio Ariari** and **Merlin** have an **OOIP of 1,805 MMbbl** and **592,9 MMbbl** respectively, while the area of **Trasgo** has calculated contingent resources of **0,415 MMbbl**