

# The Cuban Oil Boom and the Discovery of Jatibonico Oil Field\*

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## Introduction

Following the end of the Second World War, there was a great hope that the same oil prospectivity found in Venezuela might also exist in Cuba. Established international companies acquired concessions from the government as quickly as possible and new local companies were being formed every day to compete with them. The government limited the number and size of concessions a company could have; so at least one firm was formed as an umbrella, or an amalgam, of companies and investors, each with one concession. Some of these were public with stock on the market, some were private. Some U.S. drilling contractors also acquired contracts and shipped rigs to the island to get in on the new oil boom.

## Initial Exploration

As I recall, a Cuban who lived in the town of Jatibonico, named Echeverria (I can't recall his first name), had noticed oil stains in the limy soil at the surface of a small hill in a sugarcane field east of the town and obtained a concession from the government. He blocked out the concession in rectangular tracts and made a deal with a group of Cuban businessmen (Grupo Jarueca) who owned a small oil refinery in Cabaiguan, Refinería Cabaiguán (affiliated with Esso). Tracts within the concession were allocated to Grupo Jarueca in a near-checkerboard pattern – or, at least, the best checkerboard pattern one could hope to allocate with rectangular tracts. Jatibonico is approximately in the center of Cuba ([Figure 1](#)). The town is on the extreme western edge of Camagüey Province (now Sancti Spiritus Province). The principal industry is, or was, the Central Jatibonico sugar refinery.

After the end of the war, the Cuban government bought a National 75 drilling rig to stimulate exploration. Grupo wanted to use the rig, but the government required them to get an experienced contractor to run it: enter Kerr-McGee. Formed in the 1930s (which was relatively recent to the period under discussion) by U.S. Senator Robert Kerr of Oklahoma and Dean McGee, former chief geologist for Phillips Petroleum, Kerr-McGee Oil Industries had mainly been a drilling contractor, making money drilling wells for others and sometimes earning a portion of the operating position as part of its fee. The company was also in the exploration business with geological offices in Oklahoma City, New Orleans,

Amarillo and Midland. Kerr-McGee was the operator and drilling contractor on the first producing well in the Gulf of Mexico out of the sight of land in Ship Shoal Block 32 in 1947. The well was drilled from a platform with a converted LST for the tender.

To satisfy the government, Grupo made a deal with Kerr-McGee to use the National 75 to drill the first well in what would soon become Jatibonico Field. Well No. 1 was drilled on the hill to a depth below 7000 feet. Buster Golding was the tool pusher, and, I suspect, the drillers and a few other rig hands on the initial well were also Kerr-McGee employees. Kerr-McGee was strictly the drilling contractor on the first well; however, some geologists who worked for a major oil company in Havana sat the well for Grupo.

The stratigraphic section for the initial well consisted of an upper pale green marly shale and then, at about 1100 feet, a green and black series of volcanic rocks or tuffs of Cretaceous age ([Figure 2](#)). The geologists told their company the well was a dry hole. When it reached total depth, casing was run, and the well was tested in a number of zones in the volcanics chosen by a consultant for Grupo. Those zones were non-productive; so Buster was directed to perforate a zone at about 1100 feet at the top of the volcanics where there had been a good show of oil on the pits when the well was being drilled.

As they say, “the rest is history.” After the well had been tested (and this is my recollection of what I was told by Buster), the manager of the company that had provided the geologists brought his entire staff of geologists to the rig. He asked Buster to open the well to flow to the pits. He then said (according to Buster), “Gentlemen, that is oil – spelled O-I-L. Get to know what it looks like. That is what you are looking for.” I omit the name of the company deliberately.

### **Arrival in Cuba**

Kerr-McGee took over operations for the subsequent wells, although the official name on the wells was still Grupo Jarueca. Wells No. 2 and 3 were also drilled before I became involved; Kerr-McGee sent a geologist from Midland, Texas, to sit them. Both were sited short distances from Well No. 1, which turned out to be the structurally highest well on the top of the volcanics in the field ([Figure 2](#)). I was sent to Cuba at the beginning of Well 4, and I think I was selected because I was young, single, knew well-site work and had roughnecking experience. So, off I went in the fall of 1954, speaking no Spanish and never having been out of the country. Buster was my guide in getting to Jatibonico for the first time.

Buster and I, along with the production people sent to handle problems, lived in a house on the eastern edge of Jatibonico. The house was constructed of wood, had a high ceiling – 15 or more feet high – and was divided into rooms by walls approximately eight feet tall; there was sight-privacy but not sound privacy. The building included a kitchen and eating area, a bathroom and a few small bedrooms. There was electricity, a telephone and running water – in other words, all the comforts of home. The porch was wide enough for me to park a war-surplus Jeep owned by Refineria Cabaiguán under cover so that it did not block the road. We employed a local woman who cooked and kept the place clean. One day she was furious with me because she wanted a mop bucket and I didn’t understand the word “cubo.” I finally caught on and bought her one. Additionally, I was elected to buy the meat because I was the only one who wasn’t bothered by the open-air meat market.

Kerr-McGee, or perhaps Grupo, eventually obtained a work-over rig designed to pull and lay down single joints of tubing. Buster had fitted it out with a monkey board so the drill pipe could be racked vertically. The rig probably had been used for Wells 2 and 3 but was definitely used for No. 4 and subsequent wells. When I arrived, the National 75 was still stacked at the location of Well No. 1. The rig hands were all Cuban, and they taught me the Spanish I needed to know at the wellsite. Our main contact with Grupo for the operations was a man named Bill King, who operated Refineria Cabaiguán. Bill had been in the U.S. Army Air Forces during the war; I believe he had been smart enough to marry the daughter of the local governor. He complained to me that before we showed up he was getting rusty in English, but after dealing with us his Spanish was going bad.

A company named Cuban-Canadian Oil (CC) made a deal for other tracts on the concession some time after the discovery well had been completed. I think it was in early 1955 when CC brought in a rig and crews from Pennsylvania. The equipment was shipped on rail cars delivered to Jatibonico on the main railroad down the center of the island ([Figure 1](#)). At that time there was a rail-ferry service between the United States and Cuba. Once in town, the cars were moved to a track used by the Central Jatibonico sugar refinery that ran out through the cane fields. The refinery's locomotive was an old 10-wheeler type built about 1910; it did not have much pulling power so that the wheels would slip before the load would start to move. The equipment was unloaded near CC's first drilling site, and I watched some of the unloading.

Cuban-Canadian's people were not good about letting us know what they were doing, and one especially egregious example was when CC staked and started drilling a well on Grupo's main producing block. There was a real stink about that when Kerr-McGee formally notified CC that it was drilling on our tract; one result, I was later told, was that Cuban President Fulgencio Batista said the problem must be settled immediately or all of Kerr-McGee's people would be thrown out of the country in 24 hours. The dispute was quickly settled with CC getting a small portion of our block around its well.

### **Field Operations**

We used the surveyor from the sugar refinery to stake the wells. I would give him the location in feet from a nearby well, and he then converted the distances to meters (he taught me the magic number of .3048) and hacked a path through the cane to the location. He also provided the ground-level elevations of the drill sites. We measured the well depths in feet; the production was found at depths between approximately 1100 and 1400 feet. The oil was heavy, about 12 degrees API gravity, and the produced water was fresh. There was not much difference in specific gravity between the two so we had difficulty separating them during production. Eventually we constructed a tank battery and a heater-treater close to the location of Well 1. The heater-treater was used to separate the oil and water and, after some experimenting by a Kerr-McGee employee from Oklahoma with production experience, an additive was found that would cause the oil and water to separate when run through the heater-treater. The oil was sold to Esso and trucked to Havana where Esso sold it as road sealant, as there was not enough volume to warrant refining.

We used Halliburton for logging and completions. The logging truck was based in Sancti Spiritus, a nearby town west of Jatibonico situated in Las Villas province. I think Halliburton sent it to Cuba with the expectation that, if the equipment were available, the company would get the business. The electric log was the only log available, and I don't remember if there was the equivalent of a microlog. Perforations were made using short, sharp steel bullets shot out of barrels screwed into a long tool that looked like a sidewall core device. Both the logging engineer

and the cementer were Americans and lived in Sancti Spiritus, but the logging truck operator was a Cuban named Nick Lopez. I understand that after Castro took over, Nick became an engineer for Halliburton and, I believe, was based in Argentina.

I was in Cuba for several wells between November 1954 and May 1955, when the drilling was stopped for the rainy season. On the way back I flew into New Orleans, and in the terminal the cacophony of people speaking English bewildered me as I had become so accustomed to hearing Spanish. During that summer, I was the spare geologist and was loaned to the Amarillo office to sit wells in the Oklahoma panhandle. After that assignment I asked what the company planned next for me and was told, "New Orleans." My answer was, "At least they have decent coffee." My fate was sealed, partially because I had learned to really enjoy the dark-roast, almost syrupy Cuban coffee.

### **End of the Line**

In early September 1955, I transferred to Kerr-McGee's office in New Orleans, and, in addition to my normal duties in South Louisiana, handled the Cuban wells during the drilling season of 1955 to 1956, commuting for each well. I would leave New Orleans when a well spudded, fly to Havana, then to Santa Clara and then take the bus to Jatibonico. I reversed the route to get back to New Orleans. On at least one occasion, I took a load of pump parts down with me as personal baggage and got through customs with no problem by simply telling the customs man what they were. There was no duty for drilling equipment going into Cuba because the government was encouraging exploration. After I arrived in either Cuba or New Orleans, it usually took about a week or so for the food at either end to start tasting good. Fortunately, I had learned enough Spanish to be able to spell my name over the telephone when I made an airline reservation to the States and have it spelled correctly on my ticket.

Cuban-Canadian drilled one well some distance west of the field, though I do not remember exactly where in relation to the town of Jatibonico. The test penetrated a sand above the volcanics that were encountered, but much deeper than in the field, and it was the first real sand penetrated near the field. Cuban-Canadian was going to test the sand through casing so I sat around at the well site that night while the zone was being perforated and tested with a consulting geologist I had never met before. He had bought a pineapple, and pared it, so we ate it while we visited. I enjoyed listening to stories about his early experiences running a core-drill rig in California. His name was Cam Sproule (namesake of the AAPG J.C. "Cam" Sproule Memorial Award) and I did not know who he was at the time (so much for being young and green). Unfortunately, the zone tested salt water.

Kerr-McGee had to stop drilling in the field at the end of May 1956 because there were money problems with Grupo. I returned to the States, bringing in as personal baggage a cardboard box full of little paper envelopes containing all the dried cuttings, my sample logs and electric logs from the wells, in addition to my personal luggage. Getting the box of cuttings through the customs agents in New Orleans was an interesting experience, to say the least.

Unfortunately for me and for Kerr-McGee, the revolution started the following year. Foreign and private businesses were taken over by the new government, and that was the end of Kerr-McGee's connection with Jatibonico Field, as well as my own.

In the end, the field was discovered by pure luck based on some traces of oil at the surface, and the quick thinking of an enterprising individual who got the concession and persuaded others to drill a test well. As far as I know, there was no seismic, or even gravity data used prior to the drilling of Echeverria 1. That initial well tested a zone that had flowed oil during drilling, and that is how the field was discovered.

The significance of the Jatibonico discovery was that it was the first new field to be found since the Second World War, and its discovery reignited oil exploration in Cuba. Majors to small private startup companies snapped up acreage and drilled wells at a rapid pace until 1959, when the revolution was ultimately successful, and all the concessions were nationalized.

### **Reference Cited**

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### **Author**

AAPG Life Member John D. Silvernail ([Figure 3](#)) started his more than 60 year career working on a seismic crew in South Dakota for Kerr-McGee. He then became an independent and consulting geologist primarily in South Louisiana and adjacent offshore areas. He has worked for a number of small companies and done consulting work for individual clients as well as major multinationals. In addition to Cuba, Silvernail worked in The Netherlands and Ras-al-Khaima, United Arab Emirates. He currently resides in Shreveport, LA.

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Figure 1. Location of the towns of Jatibonico and Sancti Spiritus. Former Las Villas and Camagüey provinces are included within the red border.

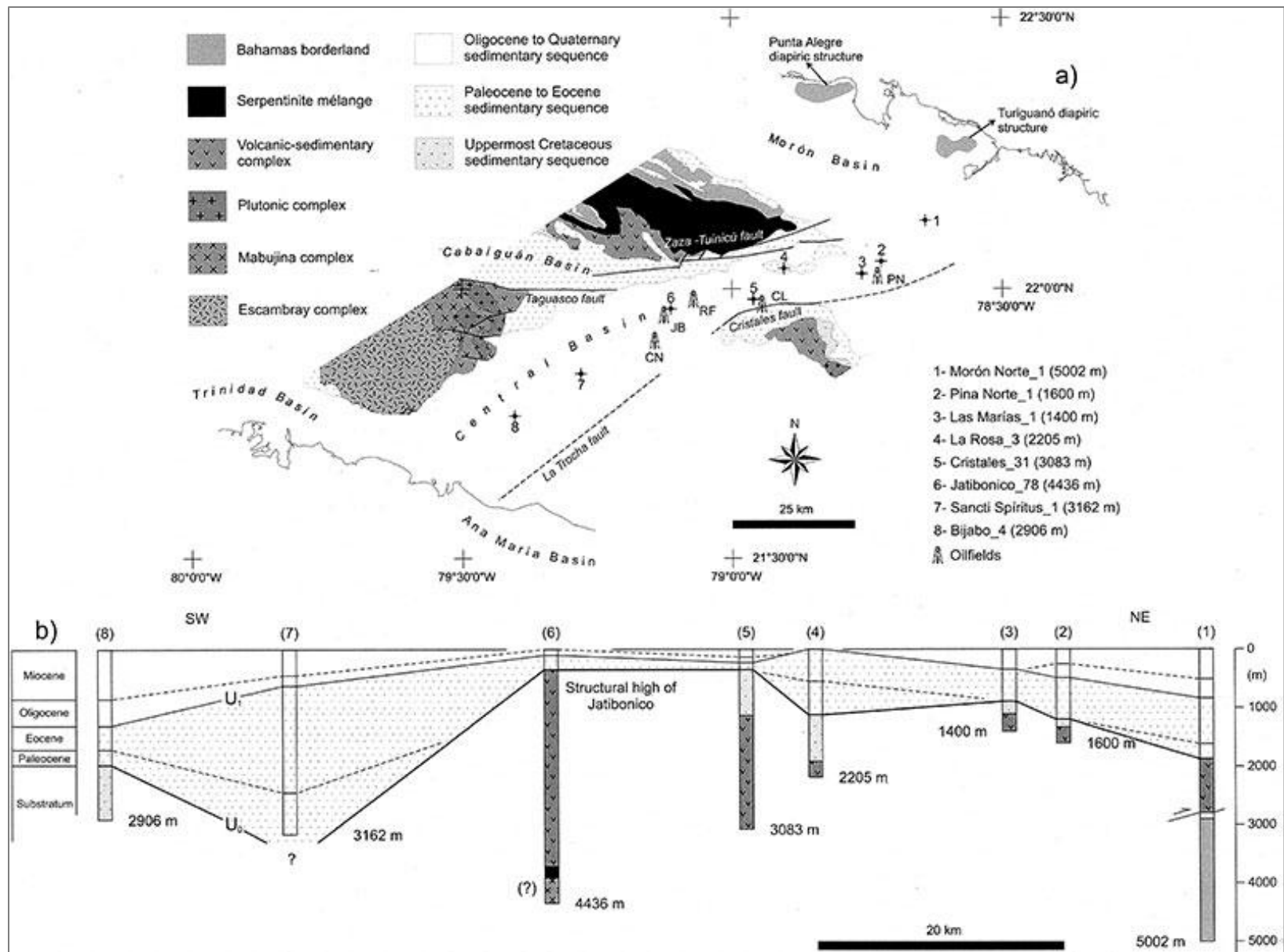


Figure 2. SW-NE cross-section through Jatibonico Field (structural high), within the Central Basin of the La Trocha Fault Zone (from Cruz-Orosa et al., 2012).



Figure 3. John D. Silvernail, author.