

Expert Report, Mr. Orlando Felicita

Judicial Inspection of the Sacha Sur Station

**María Aguinda et. Al. Vs. ChevronTexaco Corporation
Trial No. 002-2003, Superior Justice Court, Nueva Loja, Ecuador**

Executive Summary

A. On all three studied sites (3 pits within the station, the marsh that leads to San Carlos and the swamp located southeast of the station), soil and water pollution was found at levels that greatly surpass applicable environmental laws, among which the following should be noted:

1. Soil results: TPH, 23,760.60 mg/kg (22.76 times the legal limit); Barium, 1,604.93 mg/kg (1.14 times the legal limit); Cadmium, 2.13 mg/kg (1.13 times the legal limit); Copper, 87.79 mg/kg (1,93 times the legal limit); Chromium VI, 0.66 mg/kg (0.66 times the legal limit).
2. Water results: TPH, 3.7 mg/l (10.38 times the legal limit); HAP's, 0.001 mg/l (2.33 times the legal limit); Barium, 0.64 mg/l (0.89 times the legal limit); Nickel, 0.062mg/l (1.48 times the legal limit)

B. It was determined that Texaco and its operation of the station is responsible for existing pollution

1. According to the results of the analysis of several aerial photographs taken in 1976, 1985 and 1990, all three pits were being used during Texaco's operations, being used mainly to discharge waste through the use of tubes and pipes. Therefore, it is concluded that all waste present is a consequence of Texaco's operational methods. It must also be considered that even though this area was included in the RAP, no further work was deemed necessary despite the fact that the pits contain contamination levels well above those permitted by applicable domestic laws. Currently, these pits have been closed.

2. One can clearly see a black spot marking an oil spill on 1985's photograph. Given the geographical characteristics of the zone, I can conclude that the spill reached the marsh that crosses the swamps. All this happened while Texaco was operating the site.

C. All contamination on the site is a consequence of Texaco's bad operational practices

1. The oil pits at the site were simply dug directly into the ground, without any type of lining, each containing 3,015 cubic meters of toxic contaminated material. The lack of proper lining allows the toxics to migrate towards the natural water systems of the area, and eventual into the Napo river.
2. During Texaco's operation of the site, 25,327,922 barrels of formation water were dumped directly into rivers, with no treatment whatsoever.
3. During Texaco's operation of the site, 1,870,710 thousands of cubic feet of gas were burned directly using vertical burners.
4. When the station was handed over from Texaco to CEPE, none of the existing environmental damages were considered.

D. There is evidence of health risks and damages to both the people and the environment, created by the presence of these toxics.

1. Because of the nature of the soil, contaminants such as TPH, HAP's, Cd, Ba, Cu, Cr+6, and Ni, migrate towards the marsh, and from there to the Napo river. This exposes the users of this water to great risks.
2. The locals use contaminated water in various activities, such as such as bathing, washing, irrigation, and even as drinking water. This can produce several damages to their health.
3. The toxic products that were found cause adverse effects on human health, such as damages to the nervous, digestive, respiratory, and immunologic systems, as well as damages to skin, eyes, heart, liver and kidneys. They have also been known to produce different types of cancer. (ANNEX H)
4. Observation and analysis confirm both the testimony of local villagers and Dr. Miguel San Sebastian's research results: cancer rates have shot up, and this disease's occurrence in the village of San Carlos is **2,26 times higher than expected**. Accordingly, cancer-related death rates are **3,6 times higher** in San Carlos than in

Quito. (San Sebastián, 2005)

E. Samples taken by Texaco are not representative of existing contamination.

1. Even though some samples were taken on the contaminated areas (namely Pit 1, Marsh and the Swamp), the vast majority of the defendant's samples were taken from areas not directly affected by any contamination "hotspot".
2. Texaco's sampling promotes the dilution of contaminants, by taking composite samples to determine the presence of hydrocarbons, and taking samples in areas located upstream from the natural flow of contaminated water.

F. Laws existing at the time of Texaco's operation forced it to use better operational practices and technology, to make oil production more eco-friendly, respecting and protecting the environment. However, these laws were ignored and such practices omitted.

1. Long before Texaco began its Ecuador operation, laws in Louisiana, Texas and California, prohibited contamination. In the United States, Texaco effectively met the government imposed standards that existed to lower the impact of oil production on human health and the environment. These standards were very specific, outlawing pits dug directly into the ground –precisely the type of pits to be found in Ecuador– in areas where water could be contaminated, and requiring formation water to be reinjected. (Powers, Quarles, 2006)
2. In Ecuador, the following laws were notably ignored: **Ley de Yacimientos** (1921) "the right to use the water for production needs, and in necessary quantities, without taking away its purity"; **Ley de Hidrocarburos** (1971) "contractors are compelled to: e) employ modern, and efficient machinery; s) adopt all necessary measures in order to protect all animal and plant life, as well as other natural resources; t) avoid water, atmosphere and soil pollution"; **Ley de Aguas** (1972) CHAPTER II. Of Contamination. Art. 22. Contract of Concession (1964), Official Registry No. 186, Friday, February 21st (1964).