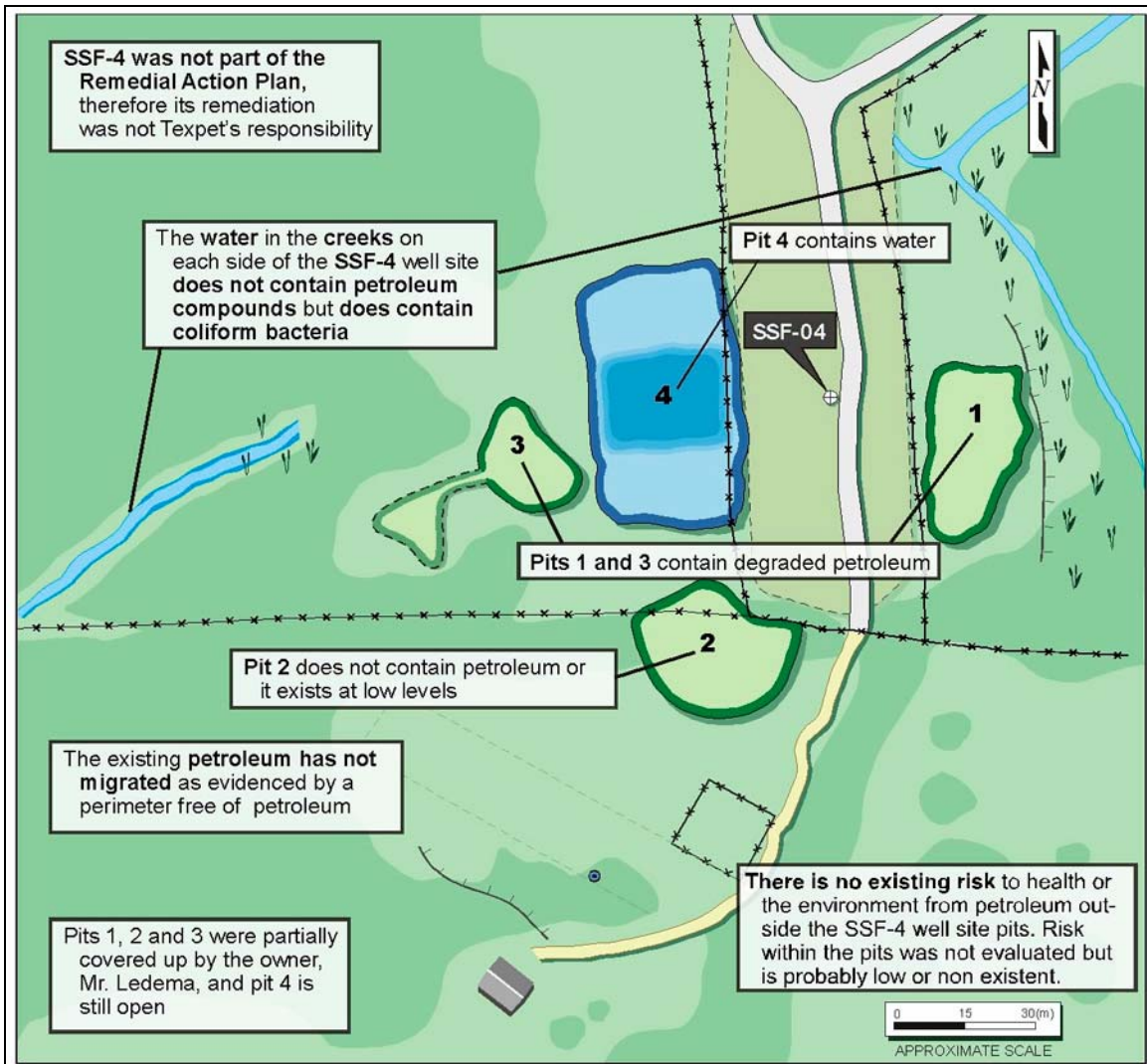


Expert Report, Mr. Ernesto Baca, P.E.
Judicial Inspection of the Shushufindi 4 Well Site
María Aguinda *et al.* Vs. ChevronTexaco Corporation
Trial No. 002-2003, Superior Justice Court, Nueva Loja, Ecuador

1 EXECUTIVE SUMMARY

Illustration of Judicial Inspection Conclusions



I, Ernesto Baca, have been designated as an expert to the Superior Justice Court President of Nueva Loja, in case No. 002-2003, María Aguinda *et al.* versus ChevronTexaco Corporation, with the purpose of conducting environmental investigations in representation of the Court. This report presents the results of the Judicial Inspection of the Shushufindi 4 (SSF-4) well site, located in the Luz y Vida compound, in the Shushufindi canton, Shushufindi parish, province of

Sucumbíos, and was conducted by order of the President of the Court on July 27, 2005. This report responds to the specific requests, as documented in the Acta, which include: i) the remediation actions conducted at this well site, and ii) the supposed impacts to human health and the environment due to the remaining petroleum at this location.

Description of the Shushufindi 4 (SSF-4) Well Site

SSF-4 is an old well whose perforation was completed May 5, 1970. The well produced until 1984, when it was converted to an injection well for secondary recovery of petroleum crude (a process technically known as water flooding). That year, the name of the well site was changed from the SSF-4 well site to the water injection well No. 7 (WIW-7). In 1991, the well site was abandoned and thus became an inactive well. After 14 years of inactivity, Petroecuador still has not removed nor taken charge of remediating the site. The owner of the adjacent land, Gustavo Ledesma, in light of the evident unconcern from Petroecuador, tried to remediate the place by himself by contracting machinery in the 1990s (see Section 3.1.4 of my report for more detail). This well site was not remediated by Texpet because it was not within the scope of Texpet's Remediation Action Plan.

The platform is located at the end of a seldom traveled road at approximately 6 Km to the southwest of the city of Shushufindi. Around the well site there are at least four pits, numbered arbitrarily for purposes of this report, and can be seen in Figure 2. The soils around the wellhead consist of a fill that covers most of the platform. In addition, there is a house owned by Mr. Gustavo Ledesma, at approximately 120 m to the southeast of the wellhead. Mr. Ledesma dedicates himself to cattle raising activities and the cattle graze in the areas around the platform. Finally, a crude spill was found on the west side of pit 3 caused by Mr. Ledesma, who, in his eagerness to remediate the place, opened the pit's berm causing its contents to spill in a westerly direction. The exact date of the spill is unknown but, according to Mr. Ledesma, it was in the 1990s.

Important Conclusions

The main conclusions of the Shushufindi 4 (SSF-4) well site Judicial Inspection are detailed in the report and are summarized as follows:

- **Well site SSF-4 was not within Texpet's Remedial Action Plan**

The SSF-4 well site was not within the Scope of the Environmental Reparation Work – Annex "A", signed May 4, 1995 between Texaco, the Government of Ecuador and Petroecuador, and therefore, was not remediated by Texpet. Petroecuador is the current operator of the Concession.

- **All of the perimeter soil samples from the SSF-4 well site were not detectable and, therefore, below the evaluation criteria**

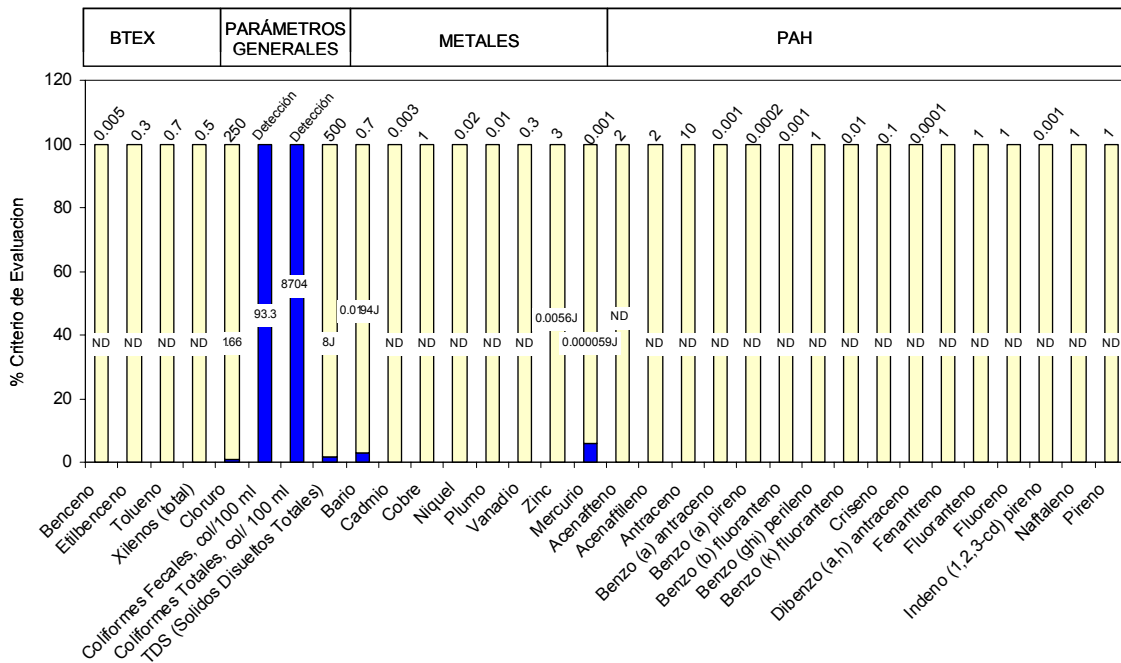
During the July 27, 2005 Judicial Inspection, five (5) soil samples were collected from the perimeter of the SSF-4 well site platform (see Figure 2). All of the analyzed samples resulted in undetectable levels of TPH (Total Petroleum Hydrocarbons), BTEX (benzene, toluene, ethylbenzene and xylenes) and PAHs (Polycyclic Aromatic Hydrocarbons), and with metal concentrations well below the evaluation criteria (see Tables 2A and 2B). The evaluation criteria

used are the same or more strict than the Ecuadorian criteria of the time of the Petroecuador—Texpet Consortium. The SSF-4 well site, which includes the four identified pits, were excluded from the Remediation Action Plan, therefore, the pits were not remediated by Texpet. Currently Petroecuador is the Concession's operator.

- **There is no evidence of petroleum crude migration from the pits to the surrounding streams**

Stream water samples were collected from the creeks east and west of the SSF-4 well site. Analytical results of all of the samples showed that there is no migration of petroleum from the pits (see Tables 3A and 3B). Considering this expert's experience in other places in the Oriente, the extreme climatological conditions that exist in tropical areas, the results from the analyses conducted on the water samples from the two water bodies east and west of the platform, and the perimeter soils samples, the remaining crude in the pits are probably in a high state of degradation. The degraded petroleum is not mobile and not bioavailable, as described in Appendices Q.1, U and X of my Sacha 14 expert report submitted to the Court on July 4, 2005 and Appendix W of expert John Connor's report of the Shushufindi Sur Station presented to the Court July 20, 2005.

Maximum concentrations of BTEX, general parameters, metals and PAHs and water samples from the creeks as a percentage of the evaluation criteria.



Note: ND = Compound Not Detected

As can be seen in this graphic, there is no concentration of parameters related to petroleum that has migrated from the pits of the SSF-4 well site to the surrounding creeks. Nevertheless, one can observe a very large quantity of coliform bacteria in the water samples, a product of grazing. The evaluation criteria used the applicable norms, at the time of Texpet's remediation,

for Ecuador, Latin America, the USA, and WHO, and it is described in section 3.4.2 of the current report.

- **The well that was used as a *water supply* seems to be contaminated with coliform bacteria**

The only water supply well near the well site is that of Mr. Gustavo Ledesma's, owner of the house and land around the SSF-4 well site, who constructed the well in approximately 1990 (see photo to the right). According to his statements, he abandoned the water well approximately 10 months ago (September 2004), presently his water supply comes from the city of Shushufindi, which Mr. Ledesma brings by truck. Presently, the well is in poor condition with trash around its environs, including a car oil filter. During the Judicial Inspection, there were approximately 15 head of cattle that grazed very near the well, the same that is not protected against biological contamination, product of grazing. The well had a foul organic smell, likely with very high levels of coliform bacteria, which is not related to petroleum. Water from this well could cause sickness to any person who might drink it, just as Mr. Gustavo Ledesma stated.



- **There is *no risk* to health or the environment**

Despite the fact that the SSF-4 well site was never included in the Remediation Plan (RAP), and for that reason, any remediation would correspond to Petroecuador, the possible risk to health was investigated. For this evaluation, the SSF-4 well site was divided into two areas: i) areas outside of the pits, and ii) the pits and associated spills.

Around the pits of the SSF-4 well site, the concentrations of chemical potentially toxic compounds (BTEX and PAHs) in the soil and water samples were undetected, which means that there is no exposure and that they are well below the evaluation criteria. The clean samples taken in close proximity to the perimeter of the pits, indicate that there is no evidence of migration; even though none of the pits were subject to remediation. For those reasons, there is no risk to health or the environment (see Tables 2, 3 and Figures 11 and 12).