Understanding Chevron's "Amazon Chernobyl"

Detailed Background on Landmark Legal Case over Chevron's Environmental Contamination in Ecuador Winter 2009/Amazon Defense Coalition

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Winter 2009/AmazonDefense Coalition

- Case Filed in U.S. Federal Court in 1993: The legal case, Aguinda v. 1. ChevronTexaco, began in October 2003 in the Superior Court of Nueva Loja in Lago Agrio, Ecuador after it was transferred from a U.S. federal court at Chevron's request. The case originally was filed in the Southern District of New York against Texaco in November 1993 (Texaco was bought by Chevron in 2001 and Chevron is defending the case and will bear any liability). The plaintiffs, some 30,000 people from dozens of communities in Ecuador's Amazon, alleged massive oil contamination of their ancestral lands and waters. The plaintiffs include the members of five surviving indigenous groups who have lived in the rainforest for centuries, as well as thousands of Ecuadorians who moved to the area in recent decades in search of jobs and a better life. Texaco immediately launched a classic corporate defense strategy of trying to block the courthouse door to prevent a trial, claiming the forum was "inconvenient" even though it was just miles from Texaco's global headquarters. The company also began to lay groundwork to delay the case, promising a "lifetime of litigation" should the plaintiffs succeed in securing a trial. That approach has been borne out by 15 years of litigation, a period of time prompted largely by Chevron's strategy of designed delay. The company also has tried to generate political pressure from Ecuador's President and Attorney General to try to quash the trial process in Ecuador. It has done the same in the U.S. by trying to enlist the Congress and the USTR to "punish" the government of Ecuador on trade issues for letting its citizens exercise their right to a trial. Chevron's recent argument that is the victim of a "judicial farce" in Ecuador derives primarily from the fact the company expects an adverse judgment because of evidence suggesting Chevron's culpability. Ironically, much of the evidence that could be used to find against Chevron has been provided by the company's own lawyers and technical team. **Annex 1** is an article on the early history of the case.
- 2. Worst Oil Contamination on Earth: The lawsuit alleges as follows: that Texaco was the exclusive operator from 1964 to 1990 of an oil concession in Ecuador that covered 1,700 square miles of pristine rainforest, or an area roughly the size of Rhode Island. As the sole operator of the concession, Texaco alone made all production decisions. Both the concession contract signed by Texaco, and Ecuadorian law, imposed on the company the obligation to use practices that would not contaminate the environment. Despite this, Texaco deliberately dumped over 18.5 billion gallons of toxic "formation waters" into Amazon waterways – about 4 million gallons daily at the height of its operation, poisoning drinking water sources with carcinogens such as benzene and causing a public health catastrophe that continues to worsen by the day.¹ Texaco also gouged out of the jungle floor 916 unlined, open-air waste pits and filled them with toxic oil sludge from the drilling process. This sludge and other liquids, which contained heavy metals and synthetic chemicals using in the drilling process such as the carcinogen Chromium 6, were run off via a piping system into nearby streams and rivers. The company burned or vented millions of cubic meters of natural gas into the atmosphere without controls. Demonstrating it was conscious of the illegality of its substandard practices, Texaco tried to cover up the horrific environmental impacts by ordering its Ecuadorian

employees to destroy documents referencing its many oil spills. Texaco's pipeline ruptures alone dumped 17 million gallons of oil into the environment, or far more oil than was spilled in the Valdez disaster. **See Annex 2** for the Texaco memo ordering the destruction of documents.

- Texaco Praised Ecuador's Courts as Fair: For ten years Texaco aggressively 3. sought to block a trial in U.S. federal court by arguing before various U.S. judges that the case should be transferred to Ecuador. Texaco submitted to the U.S. court ten sworn affidavits from high-level jurists praising the fairness of Ecuador's justice system. Dr. Ponce Martinez, a respected Ecuadorian lawyer and counsel for Texaco, submitted an affidavit to the U.S. court that was typical of the company's approach. It said: "In my opinion, based upon my knowledge and expertise, the Ecuadorian courts provide a totally adequate forum in which these plaintiffs fairly could pursue their claims." Because of the Ponce affidavit and others, and after years of delays and appeals, the U.S. federal judge finally granted Texaco's motion and removed the case to Ecuador on the condition that Texaco submit to jurisdiction there and be bound by any ruling – stipulations to which the company readily agreed to avoid the embarrassing spectacle of trial in the U.S. As late as 2007, Chevron argued on its website and in a separate case in federal court in San Francisco that Ecuador's courts represented an adequate forum. Yet in 2005, when it became clear that the evidence in the Lago trial made it likely Chevron would face an adverse judgment, the company started to attack the trial process in Lago Agrio as unfair. It is now clear that no independent court ever would be acceptable to Chevron. animating principle is clear – praise foreign courts when you think you can win, and condemn them when it appears you will lose. See Annex 3 for a summary of Chevron's affidavits praising Ecuador's courts.
- 4. **Chevron's Legal Violations**: Most of Texaco's operating practices had been outdated in the oil industry and illegal in several states for several years before the company entered Ecuador. In 1939, Texas banned open-air toxic waste pits; Louisiana outlawed the dumping of oilfield produced water to fresh water bodies in 1942. In Ecuador, the dumping of produced water violated several laws dating to 1921 that prohibit contamination.² Texaco also violated its operating agreement with the government of Ecuador, which required the company to "employ modern and efficient machinery" and to "avoid contamination of waters, airs, and lands." **See Annex 4** for a history of the laws and customs Texaco violated in Ecuador.
- 5. Oil Spills, Fires, and Dumping Along Roads: Texaco also spilled at least 17 million gallons of crude from its pipelines due to shoddy maintenance and would regularly light the pits on fire to burn off the oil and clear out capacity for more sludge to be dumped into the pits. This burning produced huge plumes of toxic black smoke that contaminated rainwater, which was the clean water source of last resort for residents. Untold millions of gallons of oil-laden sludge were suctioned out of the pits and poured along dirt roads to keep the dust down. This further spread contamination into almost all areas where people lived. Overall in Ecuador, the amount of crude Texaco either deliberately dumped or spilled from its pipeline amounts to roughly 30 times the amount discharged in the Exxon Valdez disaster. Newsweek has referred to the area as the "Amazon Chernobyl". Damages are significant but pale in comparison to the estimated \$30 billion in cumulative profits Texaco derived from Ecuador (Chevron claims profits were \$500 million by only counting the balance sheet of its local subsidiary. In any event, the amount of

- "profit" is irrelevant to a party's liability.) **See Annex 5** for the *Newsweek* story and other news columns, including one in *The New York Times* by Bob Herbert.
- 6. Violations of Oil Industry Practice: In addition to various legal violations, Texaco was widely known in Ecuador as an operator easily willing to cut corners to save money. Under customary oil field practices and various state and EPA regulations, operators are required to do environmental sampling to be sure contamination is not taking place. Texaco never took this basic step of sampling around its pits to determine the extent of any environmental contamination. Though Texaco's budgets for its Ecuador operation had a line item for "environmental protection", no money ever was allocated. In fact, the company made a conscious decision to use Ecuador's Amazon as a dumping ground to lower production costs to the bare minimum. In thousands of pages of internal Texaco memos, obtained via discovery in the U.S. phase of the litigation, there is not a single mention of the environmental impact on the indigenous people living in the region. Texaco took no steps to safeguard the locals from its sub-standard drilling practices. It never informed the people of the location of its waste pits, never put up fences around the waste pits, and deliberately used the local water supply to dispose of the wastes by running pipes from the pits into nearby streams. Annex 6 documents Chevron's misleading claims about oil field practices. Annexes 7 and 8 document how Chevron's substandard production practices in Ecuador violated customary industry standards.
- 7. Role of Petroecuador: Chevron's attempt to shift the entire blame for the contamination to Petroecuador is disingenuous. First, from a legal standpoint, Chevron is being sued for the contamination it caused as operator and the contamination caused by the subsequent operator using the illegal and flawed infrastructure design the company left behind. Oil contamination in soils and waters does not just stop the day the operator ceases its operations. It continues and even worsens year after year by migrating further into soils and groundwater until it is remediated. As a matter of law, an operator cannot absolve itself of responsibility by simply abandoning a known nuisance. It bears remembering that Texaco exclusively designed, installed, and operated all the oil production facilities in the concession from 1964 to 1990 when the vast majority of the oil was produced. It is customary in the oil industry that the operator bears 100% of the responsibility for contamination. Further, Texaco bequeathed its flawed infrastructure to Petroecuador without making any meaningful improvements, so it knew the contamination would continue for years, as it has. Texaco's own audit of its environmental practices in the early 1990s concluded that spills that occurred after 1990 (which is when Chevron handed over operations to Petroecuador) that were caused by Chevron's "improper equipment design" were still the responsibility of Texaco.³ See Annex 9 for excerpts from Texaco's own internal audits that prove contamination. Petroecuador is hardly blameless, but it is clear Chevron is the primary responsible party. Chevron is free to sue Petroecuador for a portion of the damages, and in fact has done so.
- 8. **Scientific Evidence Condemns Chevron**: Since the first of 64,000 laboratory results were submitted to the court beginning in 2004, the mounting scientific evidence has made it clear to Chevron's lawyers that the company would likely lose the trial if a decision were to be based on science and law rather than political pressure. A review of the scientific evidence shows that 100% of Chevron's former production well and production sites including sites the company claimed had been

remediated – have extensive levels of toxins, some thousands of times higher than norms permitted in Ecuador or the U.S. These results help explain why the company switched gears and began to wage an intensive political and media campaign to undermine the legitimacy of the trial and to apply political pressure via the Bush Administration and the Congress to quash the case. **See Annex 10** for a summary of the scientific evidence and **Annex 11** for a summary of Chevron's misleading arguments to the United States Trade Representative.

- 9. Independent Expert Assesses Damages at \$27 billion: A court-ordered damages report conducted by 14 independent scientists under the supervision of Richard Cabrera, an Ecuadorian professor and geologist, found in 2008 that all 94 Chevron oil production sites examined during the trial had illegal levels of toxins in either surrounding soils or water, or both.⁴ In a startling finding, Professor Cabrera concluded that Chevron itself had produced samples of toxins at almost every site inspected, thus proving its own culpability even without the plaintiff's evidence. Professor Cabrera found Chevron to be the primary responsible party and concluded that damages were between \$18.1 billion and \$27.3 billion (the latter figure includes \$8.3 for unjust enrichment in addition to actual damages). Even with this amount of money, it will be impossible to repair much of the environmental and social damage given the extent of the damage, much of which is irreversible. Professor Cabrera reviewed census information to estimate that 1.041 people had died from cancer linked to exposure to the oil contamination. Annex 12 summarizes the Cabrera findings and the various damage categories.
- 10. Numerous Scientists Have Reviewed Cabrera Report: Once Professor Cabrera was appointed by the court to assess damages in the final phase of the case, Chevron tried to block his ability to carry out field work to the point where the judge ordered that he be given police protection to take soil samples. Once Professor Cabrera began his field work. Chevron spent hundreds of thousands of dollars to launch a vicious public attack to smear him and cast "doubt" on his findings before they were issued. They did this by criticizing Professor Cabrera in paid advertisements in leading Ecuadorian newspapers (in the U.S. such tactics would violate ethical rules governing the legal profession). In Ecuador Professor Cabrera is a highly respected professor and environmental consultant – so much so that Chevron itself accepted him as a court-appointed expert in an earlier phase of the case and helped pay his fee, well before the company realized the trial would soon end with his later appointment. The 4,000-page report produced by Cabrera's team -- even though it unfortunately excludes certain damages categories – is clearly a product of sound scientific analysis as confirmed by Stratus Consulting, a respected environmental firm that counts the Department of Justice among its clients. Professor Cabrera was assisted in the work by 14 scientists covering all relevant disciplines. In addition, ten U.S.-based scientists who reviewed the report and found it consistent with sound scientific practice. Annex 13 is the Stratus Consulting commentary on the Cabrera report and a list of scientists who reviewed the report or advised Professor Cabrera.
- 11. Costs in Cabrera Report Consistent with Large Environmental Clean-ups: Though Chevron claims the numbers in the Cabrera report are exaggerated, the company presents no alternative estimates or substantive critique beyond the usual platitudes designed to sell doubt. The actual damages in the Cabrera report is consistent with damages assessments for other large environmental disasters accepted under the auspices of courts in the developed world. For example, the

Prestige oil spill off the coast of Spain in 2002 cost \$4.2 billion. Rocky Flats, an area of 25 square miles (or about 1% of the size of Texaco's concession) costs \$7.2 billion to remediate, according to the Department of Energy. Chevron's environmental problem in Ecuador, according to Cabrera, has roughly \$6 billion in clean-up costs and \$21 billion for other damages, including compensation for the cancer deaths. The clean-up of some sites in the U.S., such as the Hanford nuclear waste facility in Washington State, cost upwards of \$50 billion. **Annex 14** is a cost comparison for the clean-up of other large waste sites.

- 12. **Chevron's "Unjust Enrichment"**: By refusing to replicate environmentally safe practices required in the U.S. at the time, it is estimated that Chevron saved an estimated \$1 to \$3 per barrel. According to the court's special master, the cost savings derived from using sub-standard operational practices (such as the dumping of "formation waters", building unlined pits to store toxic waste, and the burning of natural gas) has created an "unjust enrichment" to Chevron shareholders of \$8.3 billion. This category of damages is customary in environmental cases, particularly when actual damages cannot compensate people for that part of the harm that is irreversible (such as loss of indigenous culture and parts of the rainforest). The plaintiffs are asking that this latter amount be disgorged from the company in addition to the actual clean-up costs.
- 13. **Impacts on Indigenous Groups**: The five indigenous groups that inhabited the region have been devastated by Texaco's drilling practices. One of the groups (the Tetete) has disappeared while four others (the Cofan, Secoya, Siona, and Wuaroni) are struggling to survive after having lost 95% or more of their ancestral land to oil operations and squatters from other parts of Ecuador. Further, the contaminated water and soil makes it virtually impossible for the indigenous groups to survive in the rainforest. Hunting and fishing is virtually impossible, and traditional lifestyles have been all but decimated. Oral testimonies gathered during the trial from elders demonstrate that Texaco workers would lie about the oil, claiming it was full of vitamins and was as healthy as milk. Several indigenous women reported they were raped or subjected to sexual assault by oil workers. The main town in the region, Lago Agrio, was built in the middle of Cofan ancestral land and named by Texaco after a town in Texas.
- 14. **Health Impacts and Cancer Rates**: Nobody can be sure exactly how many people have died from cancer and other oil-related diseases where Texaco operated, but it is likely that the number of victims reaches into at least hundreds and probably thousands. Professor Cabrera, using conservative assumptions, estimated that there have been 1,401 excess deaths from cancer in the area where Texaco operated. Despite the severe contamination, neither Texaco nor Chevron ever has conducted a single health evaluation in the area. What we do know is that the U.S. government links TPH exposure to cancer, reproductive problems, nervous system damage, immune system impairment, and a host of other health problems.³ epidemiological study published in the prestigious academic journal International Journal of Occupation and Environmental Health found rates of cancer in the area Chevron operated 130% above Ecuador's norm.⁶ Another found 91 cases of child leukemia, and rates of child cancer four times higher in the area where Chevron operated than in other parts of Ecuador. Other peer-reviewed scientific studies have found elevated rates of oil-related health problems such as spontaneous miscarriages and genetic defects. 8 In what can only be described as an insult, Chevron blames the

health problems in Ecuador's Amazon poor personal hygiene and on the presence of coliforms (feces) in the water. Coliforms, which generally exist in the water supply throughout rural Latin America (and indeed in some rural U.S. communities), do not derive from oil contamination and above all do not cause cancer. Partly as a result of this insulting stance, dozens of prominent scientists from 17 countries recently signed an open letter criticizing Chevron's lack of scientific integrity in Ecuador.

See Annex 15 for independent evaluations of oil-related health impacts in the region, and Annex 16 for the letter from the scientists.

- 15. **Dangerous Levels of Toxins**: Evidence in the trial is significant because it proves that Chevron's former concession area is not just slightly contaminated, but dangerously contaminated where thousands of lives are currently being exposed daily to cancer-causing toxins. Worse, there is almost a complete overlap between the location of the contamination and the location of the population. Professor Cabera concluded that the soil around one well site operated exclusively by Chevron (Lago 35) had Total Petroleum Hydrocarbons (TPHs) at 414,414 parts per millionan astounding 4,144 times higher than the typical US soil clean-up norm of 100 ppm. (TPHs are harmful chemicals that derive from crude oil and include the carcinogen benzene.) Other sites showed contamination as high as 900,000 ppm of TPH (pure oil is 1 million ppm), or 9,000 times higher than maximum allowances in California. Cabrera also found that roughly 80% of Chevron's remediated pits contain illegal levels of toxins. Chevron itself found TPHs in its own sampling hundreds of times higher than Ecuadorian and U.S. norms. **Annex 10**, prepared by Stratus Consulting, provides a summary of the scientific evidence in the trial as well as site-specific examples of contamination around former Texaco well sites.
- 16. Chevron's So Called "Remediation": In 1995, in a maneuver to dismiss the lawsuit then pending in U.S. federal court, Texaco claims it paid \$40 million for a clean up to procure a legal release from Ecuador's government for any environmental claims the government had against the company. Texaco sought the release even though it claimed it had not caused environmental damage. That said, an analysis by the plaintiffs indicates the remediation designed by Texaco covered less than 1% of the actual damages. It focused only on about 15% of the 916 waste pits Texaco had built, leaving the vast majority untouched. It excluded any remediation of damage to groundwater, rivers, and streams. It proposed no funds to cure infrastructure deficiencies that caused PetroEcuador to continue contaminating with Texaco's It did not address problems with health care, potable water, and economic compensation for damage to property. It proposed no funds to try to Significantly, the release was granted before rebuild the indigenous communities. any remediation work was actually done. The entire sordid episode is now the subject of a fraud indictment in Ecuador against two Chevron lawyers and seven former government officials. These individuals are accused of lying about the results of the clean-up to secure a legal release that was used by Texaco to try to dismiss the civil suit.
- 17. **Like Treating Skin Cancer with Make-up**: Texaco's limited "remediation" consisted primarily of dumping dirt over a small number of waste pits without first cleaning out the toxins, the equivalent of trying to treat skin cancer with make-up. For example at one of the so-called remediated sites operated exclusively by Texaco, Parahaucu 3, the TPH level today is 2,065 times higher than allowed in the US and 206 times higher than allowed by Ecuadorian law yet Chevron certified this as

"remediated" to get its release. Several others sites, as one can see from the chart below, show massive amounts of pollutants where Texaco had claimed a remediation took place. The special master generally found no difference in levels of toxins between pits Texaco "remediated" and pits that had not been remediated. In essence, the Texaco remediation was a sham. **Annex 17** documents Texaco's "phony" clean-up.

18. **Evidence of Fraud against Chevron:** There is substantial evidence that Texaco committed fraud in the "remediation". More than 80% of the 54 so-called remediated waste pits inspected by the court in the Lago trial have illegal levels of toxins in the soil yet Chevron certified them as "clean" to secure its legal release. It was recently discovered that Texaco, in violation of EPA advisories, used a bogus analytical test to measure soil samples after its remediation that undercounted toxins so as to guarantee it would not violate the agreement needed to secure its release. In actuality, a double fraud was committed – one victimized the people of Ecuador, while the other victimized a U.S. federal court, which at the time was asked by Texaco to accept a potentially fraudulent legal release to extinguish the legal claims of thousands of vulnerable Amazonian residents. See Annex 18 for a list of fraudulently remediated pits, Annex 19 for an analysis of how Texaco used the bogus laboratory test and Annex 20 for the press release that explains the body of scientific evidence that supports the indictment of the Chevron lawyers for fraud.

Chevron's Fraud During The Ecuador Remediation (Measured in TPHs)

Site of Judicial Inspection:	Chevron's Reported Result to Obtain Release From Ecuador	Actual Result At Same Site During Trial
Lago Agrio Trial	(1998)	(2006)
Lago 02	<5,000 ppm	325,000 ppm
Lago 06	4,000 ppm	299,000 ppm
Sacha 65	3,600 ppm	32,400 ppm
Sacha 7A	<5,000 ppm	12,700 ppm
SSF-18	<5,000 ppm	301,000 ppm
SSF-27	<5,000 ppm	26,400 ppm

19. Chevron's So-Called "Release" Does Not Apply to the Lago Case: In any event, Chevron's claim that it was "released" from further responsibility for clean-up is highly dubious. Chevron's legal release from Ecuador's government carves out the private claims being pressed in the Lago lawsuit, which was pending at the time the release was negotiated in 1994. The plain language of the final Memorandum of Agreement ("MOU") between Texaco and the Republic of Ecuador incorporates this express "carve out" language: "The provisions of this [MOU] shall apply without prejudice to the rights possibly held by third parties for the impact caused as a consequence of the operations of the former Petroecuador-Texaco consortium." Even Texaco's principal attorney who negotiated the agreement, Rodrigo Perez Pallares, stated in sworn deposition testimony in the U.S. that the release carves out third party claims. No court in either Ecuador or the U.S. has ever accepted Chevron's claim that the release covers such claims. That said, Chevron – with no legal or factual basis -- still claims in its press releases and lobbying materials that the very existence of the Aguinda case in Ecuador violates its rights under the

- release. See Annex 21 for a comprehensive analysis of why the release does not apply to the Lago case.
- 20. **Questions about Chevron's Environmental Discrimination**: Chevron's current legal arguments in the *Aguinda* case betray a double standard that appears discriminatory. Ecuador law currently prohibits TPHs in the soil at amounts greater than 1,000 ppm (considered a lax standard for polluters as the median U.S. standard is 100 ppm. Yet Chevron has urged the Ecuadorian court to adopt the astonishingly high standard of 10,000 ppm for TPH 100 times higher than the soil clean-up standard in its home state of California. Chevron has not explained why it used a 5,000 ppm standard (still a grossly inflated standard) in its "remediation" contract but insists that the court adopt a 10,000 ppm standard during the trial. Some critics have characterized the Chevron practice of using different clean-up standards for different groups depending on where they live or their ethnic status as *environmental racism*. In effect, the company is valuing life in Ecuador's Amazon at 1% of the value it assigns life in California unfortunately, a telling illustration of how the company treated the Amazon rainforest in its operations.
- 21. Chevron's junk science and hired guns: The plaintiffs have carefully documented how Chevron's scientists use sleight of hand to distract attention from the actual evidence. In *Doubt Is Their Product*, published in April by Oxford University Press, epidemiologist David Michaels describes the growing corporate practice of "manufacturing" scientific uncertainty to thwart regulation of products that appear to pose risks. The tobacco industry employed this practice for decades, and Chevron is now using it in the Lago trial. It explains why Chevron has not conducted its own health evaluations of the region, but instead critiques peer-reviewed studies as imperfect. It also explains how the company hires highly suspect "scientists" many without proper qualifications – and pays them to produce reports that are given directly to the media rather than submitted to a peer-review process. Among these scientists are Ralph Marquez, a Karl Rove protégé who use to lobby for the chemical industry in Texas and who has a long history of pro-industry bias in his work. Another Chevron scientific consultant, Douglas Southgate, is affiliated with a think tank that denies human activity contributes to global warming. See Annex 22 for an analysis of Chevron's deceptive field sampling methods, and Annex 23 for a press release describing the qualifications of Ralph Marquez and Douglas Southgate.
- 22. Chevron's Attempts to Undermine the Trial Process: Rather than respond to the scientific evidence, Chevron has claimed in its public relations materials that it is the victim of a "judicial farce" in Ecuador. In actuality, the trial court in Ecuador has been forced to withstand inappropriate pressure from Chevron and its political allies in Ecuador to deny the legal rights of the Amazonian residents who have brought the case. The complete list of such acts is too long to include in this memo. But they include Chevron's local lawyers visiting Ecuador's Attorney General in the days before the trial began in 2003 in Ecuador and urging him to persuade the judge to drop the case; visits with former Ecuador President Alfredo Palacio in 2006, in an effort to get him to interfere in the case on behalf of Chevron; various meetings with officials in Ecuador's current government, including Security Minister Gustavo Larrea, in a renewed effort to undermine the case. In previous years Texaco drafted letters for Ecuador's U.S. ambassador, Edgar Teran, urging the U.S. court to dismiss the case. During the trial itself, Chevron fabricated a security threat to delay a critical field inspection in indigenous land; paid local army officers to provide

private security, in violation of Ecuadorian law; and built a villa on a local army base to house its lawyers. It has bought dozens of newspaper advertisements in Ecuador criticizing the court, court-appointed experts, and lawyers for the plaintiffs. Lawyers for the plaintiffs have had to endure death threats, robberies of case materials, and in one case an attempted assault. More recently, Chevron has been trying to mislead the U.S. government about the facts of the "release" in an effort to enlist in its effort to undermine the trial via outside political pressure. **See Annex 24** for a letter to an international NGO documenting human rights abuses surrounding the trial.

¹ "Produced water" contains a variety of toxic and carcinogenic petroleum hydrocarbons, including benzene, toluene, ethylbenzene and xylene (together known as BTEX) and polynuclear aromatic hydrocarbons (PAHs).

² Ecuador's *Ley de Yacimientos* (Mineral Deposits Law), which entered into force on December 17, 1921, prohibits water contamination during exploration and production activities by companies exploiting natural resources. Ecuador passed a Hydrocarbons Law in 1971 that required oil companies to "adopt all necessary measures to protect the flora, fauna, and natural resources" and to "avoid contamination of water, air, and land." Ecuador's Ley de Agua (Water Law), which went into effect in 1972, "prohibits all contamination of waters that affect human health or impacts the development of flora and fauna;" the country's Ley de Prevención y Control de Contaminación Ambiental (Law of Prevention and Control of Environmental Contamination), which became law in 1976, "prohibits the discharge ... of any type of contamination that could alter the quality of the soil and affect human health, the flora, the fauna, natural resources, and other natural capital." Ecuador's national Constitution recognizes the right to "to live in an environment free of contamination" which also means to live "without fear" of any eventual environmental threats. Ecuador Constitution, Art. 23.6. A complete list of Ecuador's anti-pollution laws in effect during Chevron's operation in that country is available from the plaintiffs.

³ Fugro-McClelland, 1992. Environmental Field Audi for Practices 1964-1990, Petroecuador-Texaco Consortium, Oriente, Ecuador.

⁴ Ecuadorian courts generally give wide deference to the findings of court-appointed experts, who are akin to special masters in the United States.

⁵ See U.S. Agency for Toxic Substances and Disease Registry (ATSDR) at www.atsdr.cdc.gov.

⁶ San Sebastian M., Armstrong B. and Stephens C., <u>Outcomes of pregnancy among women living in the proximity of oil fields in the Amazon basin of Ecuador</u>, INTERNATIONAL JOURNAL OF OCCUPATIONAL & ENVIRONMENTAL HEALTH, 8(4):312-9 (2002).

⁷ Hurtig AK. and San Sebastian M., <u>Incidence of Childhood Leukemia and Oil Exploitation in the Amazon Basin of Ecuador</u>, INTERNATIONAL JOURNAL OF EPIDEMIOLOGY; 31:1021-1027 (2002) (significantly higher rates of child leukemia found in rainforest counties where oil exploitation had been ongoing for at least 20 years as compared with non-oil-producing counties).

⁸ See, e.g., San Sebastian M., Armstrong B., Cordoba JA. and Stephens C., Exposures and cancer incidence near oil fields in the Amazon basin of Ecuador, OCCUPATIONAL & ENVIRONMENTAL MEDICINE, 58(8):517-22 (2001) (an investigation of the Ecuador community of San Carlos located in Chevron's former concession revealed severe exposure to TPHs by the residents and significantly higher than expected rates of cancer and cancer deaths, even when controlling for employment in the oil industry and smoking habits); San Sebastian M., Armstrong B. and Stephens C., La salud de mujeres que viven cerca de pozos y estaciones de petróleo en la Amazonía ecuatoriana, REVISTA PANAMERICANA DE SALUD PUBLICA, 9(6): 375-384 (2001) (communities relying on streams with high TPH concentrations demonstrated significantly higher prevalence of skin fungi, nasal irritation, throat irritation, and associations with higher prevalence of fatigue, headaches, eye irritation, earaches, diarrhea, and gastritis).

⁹ <u>Texaco And Its Consultants</u>, International Journal of Occupational & Environmental Health, 11(2):217-20(2005).