

IN THE MATTER OF AN ARBITRATION BEFORE A TRIBUNAL
CONSTITUTED
IN ACCORDANCE WITH THE TREATY BETWEEN THE U.S.A. AND THE
REPUBLIC OF ECUADOR CONCERNING THE ENCOURAGEMENT AND
RECIPROCAL PROTECTION OF INVESTMENT, SIGNED AUGUST 27, 1993
(THE "TREATY")

and

THE UNCITRAL ARBITRATION RULES 1976

- - - - -x
 In the Matter of Arbitration :
 Between: :
 :
 CHEVRON CORPORATION (U.S.A.), :
 TEXACO PETROLEUM COMPANY (U.S.A.), :
 :
 Claimants, : PCA Case No.
 : 2009-23
 and :
 :
 THE REPUBLIC OF ECUADOR, :
 :
 Respondent. :
 - - - - -x Volume 10

TRACK 2 HEARING

Monday, May 4, 2015

The World Bank
700 18th Street, N.W.
J Building
Conference Room JB1-080
Washington, D.C. 20003

The Hearing in the above-entitled matter convened
at 9:30 a.m. before:

- MR. V.V. VEEDER, Q.C., President
- DR. HORACIO GRIGERA NAÓN, Arbitrator
- PROFESSOR VAUGHAN LOWE, Q.C., Arbitrator

Registry, Permanent Court of Arbitration:

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Additional Secretary:

MS. JESSICA WELLS

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1 PROCEEDINGS
2 PRESIDENT VEEDER: Well, good morning, ladies and
3 gentlemen. We'll start day ten of this Hearing.
4 There are a couple of housekeeping matters we need
5 to address but not explore now. One is to acknowledge we
6 received a letter of the 1st of May from the Respondents on
7 the issue of the Expert to the Tribunal's Terms of
8 Reference. But more importantly, and this is for today at
9 some convenient time, we'd like to conclude the argument
10 over the video recording issue relating to the site visit,
11 so at some stage if we can break at some convenient time
12 and sort that out, we must complete the Order and the
13 Protocol today. We want it signed and issued and
14 countersigned this week. So, I think at some time if you
15 could talk to each other so that the right people are in
16 the room, we'll address that particular issue and come to a
17 decision.
18 So, we now move on to our next expert Witnesses.
19 These are witnesses from the Respondent. We understand
20 this is Dr. Garvey and Mr. Goldstein. And what we'd like
21 you to do, if you will, is to read the words on the
22 Declaration before you that we ask all expert witnesses to
23 make.
24 Perhaps, Dr. Garvey, you could start.
25 EDWARD A. GARVEY and KENNETH J. GOLDSTEIN,

C O N T E N T S

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WITNESSES:

EDWARD A. GARVEY and KENNETH J. GOLDSTEIN

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FABIÁN ANDRADE NARVÁEZ

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09:35 1 RESPONDENT'S WITNESSES, CALLED
2 THE WITNESS: (Dr. Garvey) I solemnly declare upon
3 my honor and conscience that I shall speak the truth, the
4 whole truth, and nothing but the truth, and that my
5 statement will be in accordance with my sincere belief.
6 PRESIDENT VEEDER: Thank you very much.
7 Mr. Goldstein.
8 THE WITNESS: (Mr. Goldstein) I solemnly declare
9 upon my honor and conscience that I shall speak the truth,
10 the whole truth, and nothing but the truth, and that my
11 statement will be in accordance with my sincere belief.
12 PRESIDENT VEEDER: Thank you very much.
13 So, first, there'll be questions from the
14 Respondent.
15 DIRECT EXAMINATION
16 BY MR. EWING:
17 Q. Good morning, Dr. Garvey and Mr. Goldstein.
18 My understanding is you submitted four reports in
19 this arbitration?
20 A. (Dr. Garvey) That's correct.
21 Q. And that also includes two Site Investigation
22 Reports?
23 A. (Dr. Garvey) That's correct.
24 Q. And could you briefly explain what those Site
25 Investigation reports include.

09:36 1 A. (Dr. Garvey) They include information that we
2 gathered as a result of our two Site Investigations, one in
3 2013 and the other one in 2014. We summarized a series of
4 data samples that we collected and described our
5 interpretation.

6 Q. And for your reference, I'd like to give you a
7 copy of your Reports. They are coming now, and we have
8 copies for Claimants as well.

9 Do you have any changes or updates to your Reports
10 that you wanted to bring to the Tribunal's attention?

11 A. (Dr. Garvey) We have a short list of errata that
12 we submit I believe is included with this binder.

13 Q. And you're both testifying today. Could you
14 briefly explain how you'll be handling the fact that you're
15 both at the table this morning.

16 A. (Dr. Garvey) Yes, I'll be first line of
17 questioning or first line of answers to any questions that
18 are raised, and I'll direct to my colleague when
19 appropriate.

20 Q. And I understand you also have a presentation that
21 you would like to give to the Tribunal as well?

22 A. (Dr. Garvey) Yes, we've prepared one.

23 MR. EWING: And with the Tribunal's indulgence, I
24 would like to have them do that, and we will pass out those
25 slides.

09:37 1 BY MR. EWING:

2 Q. So, Dr. Garvey, if you'd just let us pass these
3 out, and then if you will proceed.

4 A. (Dr. Garvey) Thank you.
5 (Pause.)

6 A. (Dr. Garvey) All right, good morning.

7 This morning, we'd like to present to you, Members
8 of the Tribunal, our understanding, a brief explanation of
9 our understanding of the contamination that we've observed
10 in the Oriente, and I'd like to explain to you how we
11 understand that data and what conclusions it leads us to.

12 But before I begin, let me talk a little bit about
13 myself. I'm a geochemist with more than 30 years of
14 experience in environmental work, environmental forensics
15 in particular. What I mean by environmental forensics is
16 basically the process of chasing down and understanding
17 contamination in the environment, studying its sources,
18 where it's going to, and how likely it is to stay there.

19 I have a bachelor of engineering as well as a
20 Ph.D. My Ph.D. is in geochemistry. I'm a licensed
21 professional geologist. I serve on the Environmental
22 Engineering Committee of the USEPA's Science Advisory
23 Board, and I've co-authored more than 75 presentations and
24 journal articles, and I'll let my colleague introduce
25 himself.

09:40 1 A. (Mr. Goldstein) Good morning, Members of the
2 Tribunal. I'm Ken Goldstein, I also have over 30 years of
3 experience in groundwater hydrology, contaminant hydrology
4 and contaminant hydrogeology, groundwater supply
5 development and protection. I've conducted and oversaw
6 hundreds of Site Investigations similar to what we've
7 conducted here over July 2013 and 2014, and Site
8 Investigations and site remediation.

9 I am a certified groundwater professional by the
10 National Groundwater Association of Scientists Engineers.
11 I'm also on several committees of the NGWA, and I have also
12 published and presented over 25 publications on groundwater
13 contamination, site-investigation techniques,
14 high-resolution sampling and Site Investigation,
15 particularly on groundwater remediation.

16 A. (Dr. Garvey) So, to begin, then, I'd like to
17 review LBG's Scope of Work as assigned by counsel and the
18 Government of Ecuador.

19 Our scope included the following: Evaluate the
20 environmental data and information that was presented in
21 the Lago Agrio Record and opine on the reasonableness on
22 the scientific basis of the Judgment, conduct investigation
23 of TexPet features at well sites in the Concession Area,
24 this was in part to respond to Claimants' criticisms that
25 we formed our opinions without inspecting the site, but

09:41 1 also to test the Claimants' hypothesis that they put forth
2 in their various documents regarding the Concession Area.

3 And then finally, our scope did not include
4 apportionment of liability nor assessment of costs. Those
5 are tasks that we were not given explicitly; and, as I
6 understand it, the portion of the liability and costs are
7 part of Track 3, but anyway we did not address that.

8 So, with that, then, to begin our presentation, we
9 noted in reviewing the documents that the Claimants
10 effectively posed a number of hypotheses. These are both
11 in their earlier reports as well as in the Connor 2013,
12 which I'll cite here.

13 Basically, these--I'm going to test and I will
14 show you evidence to test these four hypotheses.
15 Essentially, Claimants assert contamination is limited;
16 that is, it's limited to the site, to the well sites
17 themselves and does not extend beyond the immediate
18 vicinity of the oil fields and the oil field facilities
19 specifically. That the contamination is bounded; that the
20 sufficient information actually bound the extent of
21 contamination at each well site. That contamination is
22 immobile, that the original crude that was spilled is
23 effectively solidified. That the crude that was spilled
24 during TexPet operations is now effectively asphalt-like.

25 And then finally, that clay soils present in the

09:43 1 Oriente prevent contaminant migration, so we're going to go
 2 through each of these assertions and examine the evidence
 3 that's available in the record as well as evidence that we
 4 collected during our site inspections and see if we agree
 5 with them.
 6 So, before I begin, though, I'd like to present a
 7 simple conceptual site model of how we think our
 8 understanding of how the operation worked during TexPet's
 9 time of control there, and then how conditions are now.
 10 What I've shown before you here is a cartoon of conditions
 11 in the Oriente during a well operation, a drilling
 12 operation. What you see here on the right is a drill rig.
 13 It's there. It's where the drilling is done, where the
 14 waste is produced. The oil comes out from the drill rig,
 15 waste and oil and drilling muds into various pits located
 16 around the site. These are shallow earthen-lined pits that
 17 were--basically we would assert that were available to
 18 allow rainwater to collect in them as well as the waste
 19 material and would potentially impact groundwater if they
 20 were not impermeable.
 21 In addition, this is oil--as a result of these
 22 pits, because the ground underneath in many cases was
 23 permeable, was allowed oil and water to pass into it, oil
 24 entered the groundwater as a result of being displaced or
 25 placed in the pits.

09:45 1 As a result of the filling of these pits, oil and
 2 water would be able to leave the pits via siphons that were
 3 installed, as well as overtopping the berm when the pits
 4 were filled too much, or perhaps as a result of a rainfall
 5 event where a significant amount of water would collect in
 6 the pit and would displace the oil upward over the top of
 7 the berm.
 8 And then, finally, as a result of this overtopping
 9 of the pits or the siphons or the groundwater, oil and
 10 contaminated water would enter the local streams. Now,
 11 it's important to recognize here that because of the large
 12 amount of water that's needed for an oil drilling
 13 operation, that these drill rigs tended to be located near
 14 streams because they needed a lot of water. That's
 15 understandable. But as a result, their waste disposal
 16 practices also had the potential to impact streams in the
 17 vicinity. Because streams are moving bodies of water, when
 18 the oil reaches these streams, they can be transported for
 19 long distances downstream and impact a relatively broad
 20 area of contamination. So, these arrows here on the
 21 diagram here show you our take on how contaminant transport
 22 might have occurred around the operations conducted by
 23 TexPet.
 24 This is a conceptual site model of things
 25 currently in an area that's been abandoned. There's no

09:46 1 longer any operating drill rig here. We have on the left a
 2 pit; oil is still viable in it. We have found liquid oil
 3 in some pits, and we think that oil from that pit can still
 4 impact groundwater, can still enter the aquifer system
 5 where it will contaminate groundwater. Contaminated
 6 groundwater can migrate to the local stream, thank you, and
 7 then oil as well can impact the local stream as a result of
 8 overland runoff. Okay. So, overland runoff and
 9 groundwater both continue to transport contamination away
 10 from the pits and into the environment.
 11 So, with those two conceptual site models, which
 12 are based on our observations, we'd like to talk a little
 13 bit about the information that's available. This map
 14 presents to you locations of the 344 well sites and
 15 production stations that are spread out across the Oriente.
 16 There's a number of large well fields here, but I would
 17 point out on this map that the symbol sizes are
 18 approximately a half a kilometer in diameter. They
 19 represent about 20 hectares. That is, in fact, our
 20 estimate of the locally impacted area around each well
 21 site. As we'll show evidence that has been collected, the
 22 areas around these well sites are approximately half a
 23 kilometer in diameter, so these dots actually represent the
 24 amount of area impacted potentially by each well site.
 25 Now, this is the spread of information across the

09:48 1 Oriente. This now represents the JI inspection sites, and
 2 what you can see here by these blue symbols is that the JI
 3 inspection sites are spread out across the entire Oriente.
 4 They extend from north to south, east to west basically as
 5 far as the well fields do, so the JI inspection sites
 6 really captured a broad cross-section of the types of well
 7 sites that existed in the Oriente. Each area is well
 8 represented. And that's important because we use the data
 9 from these different well sites to help us understand the
 10 contamination in the Oriente and to extrapolate to the
 11 areas that we haven't studied.
 12 These are the sites in white that Louis Berger
 13 visited during our various site visits. It is close to--I
 14 believe there are 60 visits that we visited. Some of them
 15 are JI sites, some of them are not. But again, in our
 16 inspections, we also inspected a broad spectrum of sites,
 17 and so we considered our inspections and our site visits to
 18 have captured a broad range of conditions that might be
 19 expected in the Oriente.
 20 And, finally, these symbols in green represent the
 21 sites where we did our investigations. Again, we are
 22 capturing a broad area of coverage. It's not quite as
 23 extensive as the overall Oriente coverage of well fields,
 24 but we've covered, I think, the four or five most important
 25 well fields.

09:49 1 So, with that, then, we used that--using the
 2 information and our conceptual site models, we're going to
 3 begin to test these hypotheses, and we'll put forth to you
 4 what we understand about the information that's available
 5 in the context of these hypotheses.
 6 So, claimants' hypotheses basically address these
 7 four items. Again, contamination is limited, so we begin
 8 with that one. And we note the following: Based on our
 9 site inspections, we saw oil seeping into wetland,
 10 sediments at Guanta 6, we see here. We found oil seeping
 11 from wetlands and in stream sediments at Guanta 6, which is
 12 downstream now of that wetland, and you can see in this
 13 photograph when we zoom in, these droplets of oil; they're
 14 very clearly evident emanating from this core. This is
 15 droplets of oil trapped within the sediment; this is at
 16 Guanta 6 in a stream downstream of the site itself.
 17 This is oil in sediment from a stream--I emphasize
 18 stream again--at Shushufindi 55. Again, you can see
 19 embedded in this sediment core; these black dots represent
 20 droplets of oil that are embedded in the sediment.
 21 So, we're finding here that we see oil, liquid oil
 22 in the sediments in the streams off-site from these well
 23 sites. That means that the streams are carrying oil away
 24 from the sites and to regions downstream.
 25 In addition, we would note this slide. This is a

09:51 1 remediation that's going on at Sacha 86, but we note the
 2 extensive area of oil contamination in the sediments as
 3 well as oil contamination in the water.
 4 What you see here in the foreground is a broad
 5 area of oil-contaminated sediment as well as
 6 oil-contaminated sediment downstream of it. You can see by
 7 the scale of the backhoe on the upper left there, this is a
 8 very large area of contaminated sediments. And again, this
 9 represents an area of contaminated sediments that's being
 10 remediated. There are certainly areas downstream of this
 11 that would also need remediation. Okay? The extent of oil
 12 contamination is fairly extensive.
 13 So, what does this mean? Well, if we think about
 14 the number of well sites that we have here and the
 15 frequency of oil contamination reaching the streams and the
 16 fact that most well sites are located near streams, then
 17 this is the potential area that could be impacted as a
 18 result of oil transport away from the sites. This is
 19 widespread. Very clearly, this is not a small area of
 20 impact. This is a very large area of impact potentially.
 21 We don't have the details as to where it might be impacted,
 22 but we considered these areas are potentially important,
 23 potentially subjected to contamination.
 24 Okay. So, we reject the first hypothesis that
 25 contamination is limited.

09:52 1 To begin with the second one, contamination is
 2 bounded. This is Claimants'--sorry. The Claimants'
 3 assertions that the sites are bound by rings of clean
 4 sediment samples, soil samples. The Claimants have used
 5 these kinds of cartoons to represent the areas, typical
 6 area and how they bounded it with their samples. I have
 7 drawn in the upper left diagram there that red perimeter
 8 around the pits, okay, where they assert here in that
 9 exhibit that the area of contamination is surrounded and
 10 the right-hand diagram the Claimants assert that they
 11 stepped out the edges of pits in this fashion. We, in
 12 fact, cannot find any sites that look like this, but I'll
 13 show you some direct evidence for that.
 14 This is a map of Lago Agrio 6. It has two pits in
 15 it. You can see by the key, one is a RAP pit and one is an
 16 unremediated pit. The colors represent radial distances
 17 from the pit, zero to 50 meter, 50 to 100 meters, 100 to
 18 200 meters. We zoomed in here on this particular site just
 19 to show you the data. These dots now represent the
 20 available JI data, the data that was available to the
 21 Court. We've color-coded the symbols based on the
 22 concentrations, and you can see that the colors range from
 23 blue to deep red, meaning that concentrations range from
 24 less than 100 milligrams per kilogram, or parts per million
 25 as I'll probably say on occasion, to as much as greater

09:54 1 than 10,000 parts per million or milligrams per kilogram.
 2 If we decide to connect these points to create a
 3 perimeter, those are the points that bound the site. You
 4 will notice that there is a number of points on the
 5 perimeter that exceed 3,000 PPM, or 3,000 milligrams per
 6 kilogram, and one that exceeds 10,000 milligrams per
 7 kilogram. There are also some points around the pits
 8 themselves. In the case of Pit 1, there are two samples
 9 that might suggest they were starting to step out and
 10 trying to bound that particular pit, but it's only bounded
 11 to the north, there are no samples that are bounded to the
 12 east, west or south.
 13 For Pit 2, there is one sample that's outside of
 14 it, but it's only bounded, if you would, on the western
 15 side, and it's clearly not a clean point.
 16 Note as well that our perimeter does not include a
 17 portion of Pit 1 because it's so far outside of the array
 18 of points, and I've highlighted it there in red. So we
 19 look at this display of data and we would say the pits and
 20 site are unbounded.
 21 We note as well that for this particular site that
 22 there are PI data. If you draw attention to this sample
 23 over here on the western side, it represents a value
 24 greater than 3,000 PPM. It's clearly unbounded as well,
 25 and it represents a sample that Claimants knew about but

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<p>09:55 1 didn't do anything about it to try to bound it. They 2 didn't resample this, if you would, as part of the JI 3 investigation. 4 So, we would note that these are all points of 5 concern with respect to bounding this particular site, 6 saying that this is essentially unbounded with respect to 7 its contamination. 8 So, the PI data show contamination beyond the JI 9 perimeter. And this site remains unbounded by the 10 available data. 11 Do the same thing for this example, this is 12 Sacha 13, this is a little bit bigger scale, so you are 13 seeing much more of the blue area, out between 100 and 14 200 meters beyond the pit edge. And we can do the same 15 thing, place the concentration, the available JI data on 16 the site, color-coded by concentration. It's the same 17 scale. We can connect the dots and draw a perimeter around 18 it, and again, here I've circled the values that are above 19 1,000 on the western side and above 3,000 on the eastern 20 side here. 21 So, again, the pits and sites are unbounded 22 because we don't have clean points that bound this 23 site--the pits themselves. 24 In addition, I would point out the following, in 25 the stream adjacent to the site, we find sediments that are</p>	<p>09:58 1 compounds escaping that oil surface as detected by my meter 2 there. 3 In this particular core--this is a core from Lago 4 Agrio 2 in a pit that was collected there. Remember now 5 that Claimants' assertion is that oil that's in the Oriente 6 will have been solidified, okay? This is, again, a pit 7 from Lago Agrio 2, and this is a core from that, and this 8 core clearly contains liquid oil. That's liquid flowing 9 out of the coring barrel and onto the table. Okay? So, 10 again, inside this pit--this is an untreated pit. It 11 has--the material has not solidified and remains liquid and 12 therefore available to interact with the environment, 13 either by rainwater in filtration, perhaps migration of the 14 oil itself, perhaps groundwater contact. 15 Finally, in terms of my line of evidence here, we 16 have oil droplets coming out from a siphon at Guanta 6. In 17 the upper left-hand diagram you see a pipe that's coming 18 out of the wall of the berm. Here. There is a berm behind 19 the observer here, and this pipe is stuck into the berm. 20 Well, the berm was designed to let water come out of 21 the--it was designed to allow water to leave the berm when 22 water would fill up the pit, but now it's effectively a 23 conduit for oil to leave the pit. And we see in the lower 24 photograph, oil droplets on the surface of the water that's 25 collected below this siphon.</p>
<p>2149</p> <p>09:56 1 over 3,000 parts per million. So, this is a direct 2 evidence for this specific site of the stream carrying 3 sediments and contaminated material away from the site to 4 regions downstream. 5 So, in fact, we were able to construct a truly 6 clean perimeter--that is, a perimeter with all values less 7 than 1,000--for only four of the 51 JI sites that had data, 8 and for those four sites, two of them had a stream crossing 9 their boundary, indicating that even for those, there is a 10 significant potential for downstream transport. So, on the 11 basis of this, we would reject the second hypothesis that 12 the sites are bounded. 13 Finally--well, not finally, with our third 14 hypothesis, we looked at contamination is immobile. 15 We observe from this that contamination exists in 16 multiple media, soils, surface water, sediment and 17 groundwater. And in particular, we continue to find as 18 part of our site inspections the presence of liquid oil or 19 mobile material in terms of contaminated sediment in these 20 environments. This is an example of myself, that's 21 actually my hand in the photograph, making an air 22 measurement of volatile organic material or organic 23 compounds being emitted off of the surface of this oil 24 that's exposed at a pit at Shushufindi 34. We're measuring 25 here significant volatility, significant amount of volatile</p>	<p>2151</p> <p>09:59 1 With that, I will let my colleague continue the 2 discussion. 3 MR. GOLDSTEIN: So, I will be addressing our 4 observations concerning the occurrence of groundwater and 5 groundwater contamination, and the Claimants' Experts 6 assert that groundwater is not contaminated and can't be 7 contaminated from the E&P operations in the Oriente. So we 8 wanted to test that hypothesis, and we reviewed numerous 9 documents and data in the Lago Agrio Record. And as we 10 stated earlier, we conducted two Site Investigations, one 11 in 2013 and one in 2014. I participated in the 2013 Site 12 Investigations. 13 So, we investigated nine sites as part of those 14 two SIs--I call them, SIs, Site Investigation--and we 15 installed 38 monitoring wells. Some of those were 16 temporary well points. 17 And we also sampled that were available to us at 18 the time, three hand-dug wells. Three resident wells close 19 to the platform that were available to us. We took a total 20 of 45 groundwater samples over the two rounds of sampling, 21 that included the three hand-dug wells. And what we 22 observed is very shallow groundwater occurring at the sites 23 that we visited, typically less than 1.6 meters below 24 grade, so there is groundwater occurring at these sites, 25 and it's fairly shallow at seven of the nine sites that we</p>

10:01 1 visited.
 2 I simply collected 45 groundwater samples. From
 3 our analysis, we detected Total Petroleum Hydrocarbons at
 4 or above the Ecuadorian standard at seven wells in 2013 and
 5 then at 11 wells in 2014. And Dr. Short, Dr. Jeffrey
 6 Short, submitted numerous opinions in this arbitration as
 7 well. He did several analyses on the groundwater samples
 8 and geochemistry by various methods, and I urge you to
 9 again look at his Reports. And his analysis demonstrates
 10 that, in fact, we do have oil in our groundwater samples,
 11 oil droplets in our groundwater samples, and numerous other
 12 compounds called alkylated-PAHs or Polycyclic Aromatic
 13 Hydrocarbons. The likely transport mechanism for that, we
 14 feel, is through more permeable Sand layers and silt
 15 layers. And we also encountered fractured clay, that means
 16 that there are macro pours or throats or cracks in the clay
 17 that would allow water and fluids to migrate.
 18 Next slide, please.
 19 Claimants assert that most recently that we should
 20 have filtered all our groundwater samples, but I would like
 21 to note, that if we filtered our groundwater samples, we
 22 would have removed the evidence and would not have known
 23 that we would have had these compounds and these oil
 24 droplets in the water. They would have effectively been
 25 removed by the filter. And what I would like to urge is

10:03 1 that the residents who are living close to the E&P
 2 facilities, the former E&P facilities, are digging shallow
 3 hand-dug wells. These wells don't have screens, they're
 4 not screened wells like some of us would have for our own
 5 domestic use. They're exposed to the whole water sample.
 6 There are no filters. That's what they're exposed to.
 7 That's what they're bathing in, that's what they're using
 8 for their water resource.
 9 So, our conclusion is we have found groundwater
 10 contamination, and it has been, I would say, contamination
 11 to a limited extent around the oilfields that we have
 12 investigated. The historical documents that we reviewed
 13 would indicate that at the Production Stations, groundwater
 14 may be of greater concern.
 15 Given these observations, we see groundwater
 16 migration, contaminated groundwater migrating tens of
 17 meters from the pits and other structures facilities, and
 18 this distance is sufficient for this groundwater to
 19 discharge to the streams, as Dr. Garvey indicated, because
 20 these streams are so proximate most of the time to where
 21 the E&P operations were. Also within that limited
 22 distance, we observed that the residents of the Oriente are
 23 digging their wells within these areas, so they have the
 24 potential to be exposed to this contaminated groundwater
 25 within these limited areas.

10:04 1 So, with that, we would also reject that
 2 hypothesis that contamination was, therefore, immobile, and
 3 that there could be no groundwater contamination and
 4 groundwater does not occur in the Oriente.
 5 Our next hypothesis to test, as the Claimants
 6 assert, the clay soils throughout the Oriente would prevent
 7 migration, that we have clay, clayey soils, and that, in
 8 fact, prevents migration of any contaminant from the E&P
 9 sites.
 10 What we've done is we've tested that through what
 11 we call hydraulic conductivity testing. I'm not going to
 12 bore you with that, but what it is is essentially a measure
 13 of how easily water and fluids would move through the
 14 subsurface. The graph that I put up in front of you is a
 15 demonstration of the various layers of soil that you would
 16 typical encounter in the Oriente at the well fields. And
 17 the bar on the left demonstrates the degree of ease, for
 18 simplistic sake, of how water and fluids would move through
 19 these layers. The top being ten to the minus one means
 20 water can move pretty freely through these layers all the
 21 way down to ten to the minus ten, which is essentially a
 22 clay, a firm clay, which would essential retard the
 23 movement. Water would not move very freely through that
 24 strata.
 25 So, from our tests, we found from these seven

10:06 1 sites that the results lie within this ten to the minus
 2 one, ten to the minus four range, which is indicative of
 3 Sand, a silty sand, which would allow water and fluids and
 4 any contaminants associated with it to move through the
 5 substrata.
 6 Note, that at these seven sites, we did not find
 7 the hydraulic properties of clay. That's not to say that
 8 at the other sites we didn't encounter clay. We did. And
 9 we didn't test those because they would have a low yield,
 10 but like I said before, we also observed that they were
 11 fractured.
 12 So, with that, we would say that, no, not all pits
 13 or spill areas in the Oriente are underlined by impermeable
 14 clay.
 15 One thing to realize is that if we had this
 16 impermeable clay everywhere in the Oriente, the Oriente
 17 would essentially be one big swampy area and marsh. So,
 18 there would be no way for the water to percolate and to
 19 drain, and therefore we would have no agricultural
 20 practices, but we know that there are agricultural
 21 practices, and it's not a swamp, so we know in areas there
 22 is percolation and there is recharge of water to the
 23 subsurface.
 24 So, with that, we would dismiss the last one that
 25 clays, clayey soils prevent contaminant migration.

10:08 1 THE WITNESS: (Dr. Garvey) So, again. So, having
 2 gone through those hypotheses, we would now like to present
 3 to you our interpretation of the information that's
 4 available.
 5 One of the things that we noted is that there is
 6 quite a large number of samples, and there is a lot of
 7 contamination documented by those samples. We used that
 8 information to try to integrate and estimate the amount of
 9 petroleum mass that is in the soils of the Oriente. How do
 10 we do this?
 11 It's akin to throwing darts at a dart board. I
 12 will give you my analogy here is I have a board here, whose
 13 distribution of red and black areas is unknown. I have a
 14 cover over it, I don't know where it might be black, I
 15 don't know where it might be red, but I have the
 16 opportunity to take some samples of it and figure out, at
 17 least where I take the samples, whether or not it's black
 18 or red. So, I'll throw a series of 20 darts like any good
 19 statistician or geochemist might do at the site, and figure
 20 out for those 20 sites which of them are red and which of
 21 them are black.
 22 From my example here, I have thrown 20 darts, I've
 23 gotten 11 red ones, I've gotten nine black ones. So
 24 arguably based on my sample set at least, I have a pretty
 25 good estimate of what I might expect to find in terms of

10:10 1 draw the red/black divisions.
 2 However, if I think about it again, but I put 20
 3 darts near tells me something. It tells me I can expect,
 4 if I continue to sample, that about 45 percent of my darts
 5 will come back black, about 55 percent of my darts would
 6 come back red, and in fact, this the underlying pattern.
 7 It's a checkerboard. Look at how many darts I would have
 8 to throw at it to actually delineate each square. But we
 9 know from a checkerboard it's half black, it's half red, so
 10 by throwing a simple 20 darts at this board, I got a good
 11 estimate of the amount of black and red area, even though I
 12 couldn't tell exactly where it was.
 13 In the same fashion, the data that we have
 14 available in the Oriente represents the same kind of
 15 puzzle. We have lots of measurements, we probably can't
 16 use them to delineate, but there is more than enough
 17 measurements for us to estimate, if you would, the
 18 distribution of black and red, the distribution of
 19 contamination, in the soils of the Oriente. So we applied
 20 this principle to that.
 21 This is a principle that actually comes out of
 22 microscopic work, using microscopes to do, for instance, a
 23 white blood cell test. When a doctor does a white blood
 24 cell test, or a pathologist does a white blood cell test,
 25 he puts a smear of blood on a slide and he counts the

10:09 1 the overall area. I have thrown 20 darts, 11 of them came
 2 back black--sorry, 11 came back red, nine black, that's
 3 about 55 percent of the area or that 55 percent of the--of
 4 my samples are red and 45 percent of my samples are black.
 5 Okay, but now I'm subject to interpretation. Do I
 6 have enough information in these darts to actually begin to
 7 delineate contamination? We would assert no, and this is
 8 why. I can optimize this distribution and say, okay, let
 9 me optimize because I think the red areas are most
 10 important, so I'm going to minimize the black areas and get
 11 lots of red areas, and by connecting the dots from this
 12 diagram, I can get about 90 percent of the area as red,
 13 10 percent of the area as black. That might be one way to
 14 interpret the information. Alternatively, I can say no, I
 15 think black is most important, so I'm going to delineate to
 16 optimize the black areas, so I get 10 percent red, about
 17 90 percent black. Okay.
 18 You can see that I haven't changed the darts that
 19 I have on the board, but my interpretation of where it's
 20 red and where it's black is really quite variable, pretty
 21 uncertain.
 22 Alternatively, I can say, no, let me make my
 23 mapping match my percentages of my darts, I've got about
 24 55 percent red, 45 percent black, but again, my boundaries
 25 are not well-defined. Okay? I don't know exactly where to

10:11 1 number of white blood cells in a random distribution of
 2 squares on his slide. This is effectively the same thing.
 3 Okay.
 4 So, in this way, we can use a limited number of
 5 samples and get a very good estimate of the overall
 6 integrated mass of contamination in the area.
 7 So, doing that then, this is just an example of
 8 how we might integrate a given site. This is again that
 9 map with the pits at the center, the concentric rings of
 10 zero to 50, 50 to 100 and 100 to 200, and the red points
 11 show you how we would integrate the points based on which
 12 area they belong to. So effectively, for each zone we
 13 would use that available data for that zone across the 51
 14 JI sites and come up with an average of what the
 15 contamination is like in pits, for instance, or in the zero
 16 to 50 meter zone for the 51 JI sites. So we use the
 17 information from the 51 JI sites as an average basis to
 18 estimate the inventory.
 19 I would note again, just to bring it back to the
 20 first map that I showed you, that the feature here that I
 21 have drawn across 500 meters is half a kilometer. It's the
 22 same size as the dots that are on that first map of well
 23 sites in the Oriente.
 24 So, if we do that for the 37 well sites, we get
 25 the following, we note that the pits are pretty small in

10:13 1 terms of area, which I'm showing you on the left, but if
 2 you look at the mass that they contain based on the numbers
 3 of points that we have in there, and I believe there is
 4 about 50 or 60 points in the pits across the JI sites, the
 5 inventory is much more substantial. They represent about
 6 1 percent--they represent about 1 percent of the area, but
 7 they represent almost 8 percent of the mass. If we now
 8 integrate the next two zones, they represent about a third
 9 of the total area, but they represent over 80 percent of
 10 the mass in the Oriente, around the well sites.

11 Final, if we go out between 100 to 200 meters,
 12 that's about two-thirds of the area, but it represents less
 13 than 10 percent of the total mass. From this distribution,
 14 from this integration of points around the different well
 15 sites around the different pits, we reached the conclusion
 16 that the vast majority of TPH contamination, approximately
 17 90 percent, lies outside the pits at the well sites. It's
 18 not contained within the pits. The contamination lies
 19 outside. This represents the escape of contamination from
 20 the pits as well as just general operations, spilling and
 21 general use of those areas for processing or collecting
 22 oil. Okay.

23 We can do the same thing for the 14 Production
 24 Stations that were investigated as part of the JI. And
 25 again, you see on the left the distribution of areas and

10:14 1 then you see on the right, the distribution of mass.
 2 Again, the area less than 100 meters but outside of the
 3 pits represent the majority of oil contamination, and, in
 4 fact, overall the vast majority of contamination is outside
 5 the pits.

6 If we now take the information from the 51 JI
 7 sites which, as I've argued, are representative in general
 8 of the Oriente and scale it up to the 344 sites, we get the
 9 following, that approximately 90 million kilograms of oil,
 10 or about 660,000 barrels as measured by method 8015 would
 11 be present--are present in the soils of the Oriente. The
 12 distribution is primarily associated with well sites. Why
 13 is that? The Production Stations were more contaminated,
 14 but the Production Stations represent a much smaller total
 15 area, and so since the vast majority of sites are well
 16 sites, they end up representing the vast majority of
 17 inventory.

18 If we now scale this inventory by the different
 19 metrics that we've used, and you've heard that from
 20 Dr. Strauss on this as well as in some of our Reports, we
 21 scale this to represent the 418 method as opposed to 8015
 22 and we get the following, that the inventory is not 90
 23 million kilograms but 220 million kilograms. And if we use
 24 our TEM method we, in fact, get 460 million kilograms or
 25 about 3.4 million barrels of oil contained in the soils of

10:16 1 the Oriente.

2 The point here is that the TexPet soil site
 3 inventories are massive by any measure, whether we use the
 4 method that Chevron used or if we scaled up to the methods
 5 that we think better represent Total Petroleum
 6 Hydrocarbons, the inventories are huge. They spread out
 7 across the Oriente.

8 And the other point is that this represents the
 9 inventory in the period based on the data from 2004 to
 10 2009. This does not represent the mass of oil that was
 11 actually spilled. This represents the mass of oil that was
 12 retained by the soils, an even larger mass might have been
 13 spilled in order to generate these soil inventories. Okay.

14 Now, before I conclude, there has been quite a bit
 15 of discussion on blank contamination in the past week or
 16 so, and I would like to put--to give you a sample analogy
 17 as to how we address, how we think about blank
 18 contamination.

19 Blank contamination is effectively akin to white
 20 noise on a radio.

21 (Audio played.)

22 THE WITNESS: (Dr. Garvey) It's a signal that's
 23 there, is always there on the radio, if your radio is not
 24 tuned to a channel.

25 (Audio played.)

10:17 1 PRESIDENT VEEDER: For the people listening on
 2 headphones, the interpreters and shorthand writers, you're
 3 going to become very, very, very unpopular if you continue.

4 THE WITNESS: (Dr. Garvey) I am finished with it.
 5 I'm finished with my analogy.

6 PRESIDENT VEEDER: No more noises.

7 THE WITNESS: (Dr. Garvey) No more noises. I
 8 apologize, no more noises. Okay.

9 But you get my point that a radio has a lot of
 10 white noise until you properly tune it into the channel and
 11 you can hear the signal very well despite the fact that
 12 there is white noise underlying that. Okay. In the same
 13 way we do chemistry, we know that there's always blank
 14 contamination, there is always a blank present. It's
 15 simply a question of whether or not your instruments are
 16 sensitive enough to detect it. Okay. So, we detect, when
 17 we do our chemical analysis, we recognize that we may have
 18 blank contamination. We test for it, and we adjust our
 19 signal, we adjust our data accordingly. Okay.

20 Louis Berger applied state of the art techniques
 21 to enable detection to contamination to levels 1,000 times
 22 lower than those achieved by Chevron. However, we adjusted
 23 for blank concerns following the most stringent of EPA
 24 protocols, okay. A Stage 4 data validation done by an
 25 independent party. We didn't validate our own data. We

<p>Sheet 11</p> <p style="text-align: right;">2164</p> <p>10:18 1 had it done independently. That's a level of validation 2 that's used for legal enforcement. Okay. We do it 3 routinely, because we routinely work for the EPA, we know 4 how to do it, we have been doing it for a better part of 30 5 years. So, that's what I will say about the blank 6 contamination, and I won't turn the radio back on. 7 My apologies. 8 So, to summarize, then, our definition of 9 widespread, we find the contamination in the Oriente is 10 widespread. We find it around the pits, we find that the 11 pits are not bounded, and we find that there is significant 12 potential for streams to be impacted. In fact, we have 13 direct evidence, direct observations that show contaminated 14 sediments in the streams, therefore, representing migration 15 of contamination away from these sites to areas downstream. 16 We find that the Judgment was reasonable. We 17 basically arrived at a similar set of conclusions for our 18 own path just basically reviewing the data, not relying on 19 any of the documents in terms of how they describe their 20 logic but rather we examined the data ourselves and came to 21 the same conclusion that the Oriente is extensively 22 contaminated, and, therefore, that the Judgment is based on 23 a sound scientific basis. 24 Our opinions are consistent with those of the 25 Judgment. The Judge found that contamination exists across</p>	<p style="text-align: right;">2166</p> <p>10:21 1 the Claimants. 2 Do you need to have a short break to sort out the 3 bundles? 4 MS. RENFROE: That would be helpful, Mr. 5 President, just three or four minutes. 6 PRESIDENT VEEDER: Let's take five minutes. 7 MS. RENFROE: Thank you. 8 PRESIDENT VEEDER: We are going to ask you each 9 time we break not to discuss the case or your testimony 10 away from the Tribunal, starting now. 11 (Brief recess.) 12 PRESIDENT VEEDER: Let's resume. 13 There will now be questions from the Claimants. 14 MS. RENFROE: Thank you, Mr. President. Good 15 morning, Members of the Tribunal. 16 CROSS-EXAMINATION 17 BY MS. RENFROE: 18 Q. Good morning, Dr. Garvey and Mr. Goldstein. 19 A. (Dr. Garvey) Good morning. 20 Q. My name is Tracie Renfroe, and I have a few 21 questions this morning. 22 I'd like to start with making sure I understand 23 the division of labor between the two of you for our 24 discussion this morning. As I think you understand, we'll 25 only need one answer from one of you. Is that acceptable?</p>
<p style="text-align: right;">2165</p> <p>10:20 1 all environmental media. The data in the Lago Agrio Record 2 support this. Okay. Our interpretation of this data is 3 that there are massive amounts of contamination in the 4 soils and sediments of the Oriente. 5 The Judge awarded monetary relief to address these 6 damages. There is data available in the historical records 7 that demonstrate that TexPet oil operations resulted in 8 environmental damage, and I would point out as well that 9 our Site Investigations collected data that further support 10 the observations that were in the Lago Agrio Record. 11 Finally, the Judge establishes that soil 12 remediation--sorry, the cleanup level of 100 PPM is 13 required for his--the Judge required a 100 PPM cleanup 14 level. A criterion of 100 PPM is well above background 15 and, therefore, represents a reasonable basis to assess 16 background contamination and contamination that exceeds 17 background. 18 So, with that then, in closing we note that 19 widespread contamination persists to the present day. It 20 continues to impact people, domestic animals, and the 21 environment. 22 And that's the end of our presentation. 23 PRESIDENT VEEDER: Do you have any more questions? 24 MR. EWING: No further questions. 25 PRESIDENT VEEDER: There will be questions from</p>	<p style="text-align: right;">2167</p> <p>10:28 1 A. (Dr. Garvey) That's correct, yes. 2 Q. And then in terms of the areas that you will be 3 covering or the division of labor, can one of you describe 4 for me what topics Mr. Goldstein will be handling and what 5 topics you will be handling, Dr. Garvey? 6 A. (Dr. Garvey) I think in general I will be handling 7 the soils and surface water-related topics. Mr. Goldstein 8 will probably handle groundwater in general. 9 Q. And the Site Investigation, would that be Dr. 10 Garvey as well? 11 A. (Dr. Garvey) We both--I led the--well, I was 12 involved in the second one. Mr. Goldstein--Ken was 13 involved in the first one, so that was both depending on 14 the question. 15 Q. Okay. All right. I appreciate that 16 clarification, and-- 17 A. (Dr. Garvey) Surface water I will handle as well. 18 Q. Okay. Now, you should each have in front of you a 19 copy of a binder that has some things that we're going to 20 cover this morning, and then you have also in front of you 21 placed by your counsel your Expert Reports, okay? So, 22 you're free to refer to those materials or anything else 23 that you may need as we go through this. 24 A. (Dr. Garvey) Okay. 25 Q. So, let me begin with just a few, I think,</p>

10:29 1 hopefully, matters that are not in dispute.
 2 When Mr. Goldstein was deposed in this case and
 3 was asked the question of whether he was an expert in
 4 oilfield operations, he told us that he was not. You
 5 recall that, Mr. Goldstein?
 6 A. (Mr. Goldstein) Yes, I do.
 7 Q. So, you admitted, and then--and the same is true,
 8 you do not consider yourself an expert in oil field
 9 operations?
 10 A. (Mr. Goldstein) That's correct.
 11 Q. Or in oil field contamination sites?
 12 A. (Mr. Goldstein) What you do mean by that?
 13 Q. Well, you were asked if you were an expert in oil
 14 field Exploration and Production, and you said no?
 15 A. (Mr. Goldstein) That's correct.
 16 Q. And you were asked are you an expert in natural
 17 attenuation or bioremediation, and you said no?
 18 A. (Mr. Goldstein) I performed bioremediation and
 19 natural attenuation studies.
 20 Q. But you told us you didn't consider yourself an
 21 expert in those matters?
 22 A. (Mr. Goldstein) I wouldn't consider myself an
 23 expert in bioremediation.
 24 Q. Right. And then when you were asked the question,
 25 "Is anyone on your team, any of the four people that you

10:32 1 A. (Mr. Goldstein) That's correct.
 2 Q. Which is exactly what was going on and what we're
 3 talking about with respect to the Concession Area?
 4 A. (Mr. Goldstein) That's correct.
 5 Q. Okay. Now, what I'd like to do is make sure that
 6 I understand clearly the scope of the opinions that you and
 7 Dr. Garvey have provided. And if I understand your Reports
 8 and what you've told us this morning, you are not providing
 9 any testimony about matters in the Judgment other than soil
 10 and groundwater impacts and those Awards; is that correct?
 11 A. (Dr. Garvey) Yes. We were providing opinions on
 12 the technical basis for the Judgment.
 13 Q. With respect to the soil remediation Award in the
 14 Judgment?
 15 A. (Dr. Garvey) I'm sorry, I really don't understand
 16 your question. With respect to the presence of groundwater
 17 contamination, presence of soil contamination, and presence
 18 of surface water contamination.
 19 Q. Right. And is it fair, then, that all other
 20 topics for which the Judgment Awarded compensation, that
 21 all those other topics are outside the scope of what you've
 22 addressed?
 23 A. (Dr. Garvey) Yes, I believe so.
 24 Q. And that would also include potable water as well,
 25 wouldn't it?

10:30 1 identified [Mr. McDonald, Mr. Fidler, Mr. Bilimona, and Dr.
 2 Garvey]," which I take it refers to Dr. Garvey sitting next
 3 to you, are any of them "experts in E and P operations,"
 4 meaning exploration and production operations, you said, "I
 5 would not characterize that."
 6 Do you recall that, sir?
 7 A. (Mr. Goldstein) Repeat your question.
 8 PRESIDENT VEEDER: Let's do it differently.
 9 You've got a bundle in front of you. Please turn to Tab 1.
 10 BY MS. RENFROE:
 11 Q. Tab 1.
 12 PRESIDENT VEEDER: And you will find the text, and
 13 you could read it.
 14 MS. RENFROE: Right. And we can put that up,
 15 Mr. Johnson.
 16 We need a quick technical moment. A quick moment
 17 to make a technical revision.
 18 Q. Here we are. Here is the excerpt of your
 19 deposition where you were asked about members of your team
 20 being experts in E&P, referring to exploration and
 21 production operations. Do you see that?
 22 A. (Mr. Goldstein) Oh, yes. Okay. In terms of E&P
 23 operations, that's correct.
 24 Q. Right. And that's referring to oil-and-gas
 25 operations, isn't it?

10:33 1 A. (Dr. Garvey) Not to the extent that groundwater is
 2 potable water or should have been potable water. No, we
 3 have opinion on that.
 4 Q. And if you have said in your Report that you've
 5 not addressed potable water, are you prepared to stand by
 6 what you said in your Reports?
 7 A. (Dr. Garvey) Certainly, we're prepared to stand by
 8 our Reports.
 9 Q. Okay. Now, I understand that you have not
 10 provided any endorsement or opinion about the monetary
 11 Awards in the Judgment; is that correct?
 12 A. (Dr. Garvey) That's correct.
 13 Q. And with respect to the--so, the amount of
 14 \$5.4 billion that was awarded in the Judgment for soil
 15 remediation, you've not addressed the adequacy of that
 16 amount, have you?
 17 A. (Dr. Garvey) No, we have not.
 18 Q. And you've not addressed whether the
 19 extent--you've not addressed the extent of soil impacts
 20 throughout the Concession Area, have you?
 21 A. (Dr. Garvey) We certainly examined the extent of
 22 soil contamination throughout the Oriente based on the
 23 available data; as we presented, we don't have enough data
 24 to delineate it.
 25 Q. So, you can't tell us for any particular site the

10:34 1 actual extent of soil impacts at any given site, can you,
2 sir?
3 A. (Dr. Garvey) Not in a definitive sense, no.
4 Q. And the same would be true for the extent of any
5 sediment impacts to any stream at any particular site?
6 A. Again, we integrated the information to examine to
7 site as a whole; we can infer from the magnitude and the
8 extent of the data what it might be like in an individual
9 one, but for an individual one, we cannot draw the
10 individual boundaries.
11 Q. Meaning that for any particular site you cannot
12 tell us the extent of impacts to sediments, if there is a
13 stream there?
14 A. (Dr. Garvey) Not directly, no.
15 Q. All right. And then with respect to impacts to
16 groundwater, you also cannot tell us the extent to which
17 groundwater has been impacted, if it has been impacted, at
18 any particular site, can you?
19 A. (Dr. Garvey) No, we cannot. That was not our
20 scope, and that was not what we needed to do.
21 Q. And likewise, to the extent that you think you may
22 have spoken to the issue of potable water or drinking
23 water, once again, you're not able to tell us the extent of
24 any impacts to drinking water at any particular site if
25 drinking water has even been impacted?

10:35 1 A. No, that's correct.
2 Q. Correct?
3 A. Yes.
4 Q. All right. Now, would you also agree with me
5 that--well, I'm going back to something I read in one of
6 your Reports, which is that, when you look at an analytical
7 result for a given environmental sample, that you cannot
8 chemically distinguish between the source--between Party A
9 or Party B as to the source of that impact?
10 MR. EWING: Counsel, I would just object. If
11 you're going to look at his Reports, could we give them a
12 citation to where you're asking about?
13 MS. RENFROE: I may be able to do that, but let
14 just--well, let's look at Tab 2--actually, it's not Tab 2,
15 sorry. It's not Tab 2.
16 I can probably pull it up, but I wonder if we
17 can--
18 PRESIDENT VEEDER: Given the objection, why not
19 ask it without reference to the report as a general
20 question.
21 MS. RENFROE: Sure. Okay. Thank you for that
22 guidance.
23 BY MS. RENFROE:
24 Q. So, putting your Reports aside, would you agree
25 that with respect to this case that you are not able to

10:37 1 chemically distinguish between Party A and Party B with
2 respect to the source of an impact that may be measured in
3 an environmental sample?
4 A. (Dr. Garvey) That's correct. They're both
5 producing the same oil.
6 Q. Right. And, likewise, if you were to look at a
7 photograph of what appears to be soil impacted with oil,
8 you cannot tell by looking at that photograph whose
9 operations led to that impact, can you?
10 A. (Dr. Garvey) No, but why would we look at a
11 photograph out of context. We would want to know what site
12 it had come from. But by the photograph itself, no, we
13 wouldn't know that.
14 Q. And likewise, if you were in the field actually at
15 a given site and you observe oil on the surface of the soil
16 or on the ground, just by looking at that oil, you cannot
17 necessarily tell whose actions caused it, can you?
18 A. (Dr. Garvey) No, but in that case we would know
19 what field we were on or what feature we were examining.
20 We would know who had created it; but in and of itself, we
21 wouldn't that, but we would know that in context because
22 we'd know what site we were visiting, who had operated it,
23 who is likely to be responsible. But the observation
24 itself wouldn't tell you that. You'd have to know the
25 history of the site.

10:38 1 Q. You'd have to know the history of the site,
2 including both historical and current operations about the
3 site, wouldn't you?
4 A. (Dr. Garvey) Yes, that's correct.
5 Q. All right. So, speaking of the history of the
6 site, I'd like to sort of go back to some of the historical
7 context for these Concession sites, and again, let's see if
8 we have some points of common ground in our understanding
9 about them.
10 So, you would agree with me that TexPet was the
11 Operator for the former Concession Area until June 30 of
12 1990. Do we agree on that?
13 A. (Dr. Garvey) Yes.
14 Q. And the next month, July of 1990, Petroecuador
15 took over as the operator of the Concession Area; correct?
16 A. (Dr. Garvey) That's our understanding.
17 Q. And you also understand that Petroecuador has
18 operated the Concession Area continuously through the
19 present?
20 A. (Dr. Garvey) Yes.
21 Q. And, in fact, it's also your understanding, is it
22 not, that not only has Petroecuador or its affiliates
23 operated these sites, but in many places they've actually
24 expanded operations, haven't they?
25 A. (Dr. Garvey) Yes, that's correct.

10:39 1 Q. While you were out there on your Site
 2 Investigations, you saw some of those expanded activities,
 3 I take it?
 4 A. (Dr. Garvey) We didn't visit any of their sites,
 5 but we certainly saw the sites--passed by some of the sites
 6 they had developed.
 7 Q. Right. Now, back to the actual period of TexPet's
 8 operations, you're familiar with the fact that, after
 9 TexPet completed its period of operatorship and handed over
 10 operations to Petroecuador, that the Republic of Ecuador,
 11 Petroecuador, and TexPet jointly engaged HBT Agra to
 12 conduct an audit of the oil fields--pardon me, I apologize
 13 for stepping over your answer.
 14 A. (Dr. Garvey) Yes, we were aware of that.
 15 Q. In fact, you have reviewed and relied upon the HBT
 16 audit for your work in this case, haven't you?
 17 A. (Dr. Garvey) That's correct.
 18 Q. And did you note in the HBT audit that there were
 19 numerous places where HBT recorded or documented operating
 20 impacts at these sites by Petroecuador?
 21 A. (Dr. Garvey) Ken, do you want to answer?
 22 A. (Mr. Goldstein) Can you repeat the question again,
 23 please.
 24 Q. Yes, sir. In your review of the HBT Agra Audit
 25 Report, did you notice that HBT documented operating

10:41 1 impacts by Petroecuador at these sites in the Concession
 2 Area.
 3 A. (Mr. Goldstein) Yes, that's correct.
 4 Q. All right. Now, again, just trying to travel
 5 through the chronology of what happened, after HBT
 6 conducted its audit, the Parties--that is, Petroecuador,
 7 the Republic of Ecuador through its Ministry of Energy and
 8 Mines, and TexPet--then agreed on the Settlement Agreement
 9 and the Remedial Action Plan; correct?
 10 A. (Dr. Garvey) That's our understanding, but we
 11 don't have any opinion on that, yes.
 12 Q. And that Settlement Agreement and Remedial Action
 13 Plan were agreed by the Parties in 1995. Is that generally
 14 your understanding?
 15 A. (Dr. Garvey) In general, yes.
 16 Q. Right. Have you--do you also understand that the
 17 Remedial Action Plan in that document, the Parties
 18 allocated certain sites and certain features at certain
 19 sites to TexPet for remediation?
 20 A. (Dr. Garvey) Yes.
 21 Q. Which meant that the balance of the features at a
 22 given site remained with Petroecuador for remediation, to
 23 the extent that remediation was needed; correct?
 24 A. (Dr. Garvey) That was our understanding--that is
 25 our understanding.

10:42 1 Q. And, in fact, if we--let me direct you to--let's
 2 see if I can find it--right. If we go to Tab 5, and pull
 3 up Slide 5, this is a slide that Mr. Connor presented in
 4 his direct testimony, which you may have seen, and I put it
 5 here just to help you recall that there were 157 sites
 6 where some feature was assigned to TexPet.
 7 Do you see that, sir?
 8 A. (Dr. Garvey) Yes.
 9 Q. And then 187 sites where there was no remediation
 10 feature assigned to TexPet.
 11 Do you see that?
 12 A. (Dr. Garvey) Yes.
 13 Q. And that's consistent with your understanding of
 14 the Remedial Action Plan?
 15 A. (Dr. Garvey) In general, that simply the work was
 16 split between the two entities, yes.
 17 Q. Right. And Mr. Goldstein, were you able to find
 18 the slide?
 19 A. (Mr. Goldstein) I have it.
 20 Q. Okay. Very good.
 21 A. (Mr. Goldstein) I'm keeping up.
 22 Q. Also it's on the screen, obviously, if I get ahead
 23 of you.
 24 So, then do you both understand that pursuant to
 25 the Remedial Action Plan that the Parties agreed, that

10:43 1 there was no single site that was assigned to TexPet in its
 2 entirety for remediation?
 3 MR. EWING: Counselor, are you asking for the
 4 legal conclusions related to this or just their
 5 understanding?
 6 MS. RENFROE: Just their understanding, based on
 7 the Remedial Action Plan.
 8 THE WITNESS: (Dr. Garvey) I don't know that we
 9 thought about it in that kind of context, to be honest.
 10 BY MS. RENFROE:
 11 Q. Well, if you--so, I take it, then, you have not
 12 actually studied the tables that are contained in the
 13 Remedial Action Plan to see which pits were assigned to
 14 TexPet and which were not?
 15 A. (Dr. Garvey) We used those tables to identify
 16 features that we would investigate, but we didn't a priori
 17 decide which sites--we didn't pick on the basis that this
 18 was exclusively a TexPet site that we knew--I mean, we
 19 picked some sites that we knew were exclusively
 20 TexPet-operated but not TexPet-remediated.
 21 Q. So, it doesn't surprise you, then, to recognize
 22 that, at a given site within this population of 157 sites,
 23 there would be a mix of features assigned to TexPet in the
 24 Remedial Action Plan or what I might call RAP features,
 25 with non-RAP features at that site. Do you understand

10:44 1 that?
 2 A. (Dr. Garvey) Yes.
 3 Q. Right. And then, as I've also, I think, we've
 4 established, but let's make sure for the record, you
 5 recognize that the entire Concession Area was not assigned
 6 to TexPet for remediation in the Remedial Action Plan;
 7 correct?
 8 A. (Dr. Garvey) Yes.
 9 Q. And so, is it also your understanding that
 10 Petroecuador was continuing to operate these sites in the
 11 Concession Area even after TexPet had begun Remedial Action
 12 at the items assigned to it?
 13 A. (Dr. Garvey) The ones that were still producing,
 14 yes, some of the sites were closed, but the ones that were
 15 still producing were transferred to Petroecuador and they
 16 continued to operate.
 17 Q. Right. So, then, let's go to the next slide,
 18 Slide 6 here, and I think just to have a visual
 19 illustration of the point I was making, this is
 20 Shushufindi 45A, another slide that Mr. Connor used in his
 21 presentation. And we see the differentiation between the
 22 two pits, the two RAP pits that were assigned to TexPet,
 23 that's Pit 1A and Pit 3. Do you see that, sir?
 24 A. (Dr. Garvey) Yes.
 25 Q. And then Pits 1 and 2 were not assigned to TexPet

10:46 1 and are therefore classified as non-RAP. Do you see that,
 2 sir?
 3 A. (Dr. Garvey) Yes, I see what's presented here,
 4 yes.
 5 Q. Right. And all of the other features at this
 6 location, whatever they might be, none of those other
 7 features were assigned to TexPet in the Remedial Action
 8 Plan, and, therefore, would be non-RAP features; correct?
 9 A. (Dr. Garvey) I don't know. I mean, I don't know
 10 what was assigned and what wasn't, but I can--I will accept
 11 your word at this point.
 12 Q. Okay. And so, as you did your Site Investigation
 13 work, I take it that you did not confirm that every sample
 14 that you were taking was within a RAP feature assigned to
 15 TexPet, did you?
 16 A. (Dr. Garvey) No, in fact, we purposely targeted
 17 areas that were not RAP in some instances.
 18 Q. And, in fact, your data, the data that you
 19 produced as a result of your Site Investigation, in fact,
 20 measures the conditions at many non-RAP features in these
 21 sites, doesn't it?
 22 A. (Dr. Garvey) Yes.
 23 Q. Now, if you turn to the next slide, that is
 24 Slide 8 under Tab 5, you will see a picture or a slide that
 25 depicts the eight step process used for remediation by

10:47 1 TexPet in remediating the RAP pits.
 2 Do you see this, sir?
 3 A. Yes.
 4 Q. And I'm speaking to both of you. I don't mean to
 5 be leaving anybody out of the discussion.
 6 You have seen this image before, haven't you?
 7 A. (Dr. Garvey) Yes.
 8 Q. And it's your understanding that this was the
 9 process that TexPet used pursuant to the agreement with
 10 Ecuador and Petroecuador for remediating the RAP pits;
 11 correct?
 12 A. (Dr. Garvey) It's our understanding that this is
 13 what--you've presented this as part of Mr. Connor's Report.
 14 I have no reason to have any exception to it.
 15 Q. Okay. And it is--would it also be your
 16 understanding that the Remedial Action Plan was developed
 17 at a time when the Republic of Ecuador had not yet
 18 published any quantitative remediation standards? If you
 19 have any understanding about that, one way or the other.
 20 A. (Mr. Goldstein) The question was--
 21 (Technical difficulties.)
 22 Q. Let me withdraw the question and ask one that I
 23 think is a little bit more simpler, or more direct, more
 24 direct, and that is the Parties in the Remedial Action--
 25 PRESIDENT VEEDER: Can I interrupt? We're not

10:48 1 very happy about the single microphone. At the next break
 2 we are going to have a second microphone installed so we
 3 don't have anybody touching the microphone unnecessarily.
 4 It may be convenient to do that now, if you're having
 5 trouble.
 6 MS. RENFROE: I'm happy to accommodate, whatever,
 7 Mr. President, you would like to do.
 8 (Pause.)
 9 PRESIDENT VEEDER: Let's continue.
 10 MS. RENFROE: Thank you.
 11 BY MS. RENFROE:
 12 Q. Mr. Goldstein, I was asking, do you
 13 understand--and asking both of you, but do you understand
 14 that in the Remedial Action Plan, the Parties established
 15 an agreed remediation criteria for treatment of
 16 contaminated soils and pits?
 17 A. (Mr. Goldstein) Yes.
 18 Q. And that Agreement between the Republic of
 19 Ecuador, Petroecuador, and TexPet with respect to pits
 20 provided that the remediation standard would be 1,000 parts
 21 per million TPH measured by the TCLP test; correct?
 22 MR. EWING: I would object. Are we asking again
 23 legal conclusions here? We're getting into interpretation
 24 of the RAP.
 25 MS. RENFROE: Well, I'm happy to take him to the

10:50 1 RAP, if that would be helpful.
 2 BY MS. RENFROE:
 3 Q. Would you like to look at the RAP document? Would
 4 that be helpful?
 5 A. (Mr. Goldstein) We could.
 6 Q. I think it is at Tab 9.
 7 And if you turn to Page 9 of Tab 9, you will find
 8 the Parties' agreed remediation criteria.
 9 Specifically, you might want to look at
 10 Section 2.4.4.
 11 Do you see that, sir?
 12 A. (Dr. Garvey) I'm not there yet.
 13 Q. Okay.
 14 A. (Dr. Garvey) Yes.
 15 Q. And in this section, the Parties have agreed that
 16 the soil will be tested--will be treated and stabilized and
 17 will be tested and treated until it has less than 1,000
 18 parts per million TPH as measured by a modified TCLP
 19 procedure.
 20 Do you see that, sir?
 21 A. (Dr. Garvey) Yes.
 22 Q. And it's your understanding that was the first of
 23 the criteria to be used for remediation of pits; correct?
 24 A. (Dr. Garvey) I don't know that, but--
 25 A. (Mr. Goldstein) That's correct. There was a

10:53 1 were permitted by the Parties to remain in the pits;
 2 correct?
 3 A. (Mr. Goldstein) Yes.
 4 Q. And prior to March of 1997, prior to when that
 5 5,000 criteria was added, amounts of TPH greater than that
 6 could remain in the pit or be left in the pit provided the
 7 TCLP criteria was met; correct?
 8 A. (Dr. Garvey) There is the potential for that since
 9 it wasn't measured.
 10 Q. Right. So, then, is it also your understanding
 11 that, as the remediation process unfolded, inspectors for
 12 the Republic of Ecuador, through their Ministry of Energy
 13 and Mines, and inspectors for Petroecuador monitored
 14 TexPet's remediation of these pits?
 15 A. (Dr. Garvey) Yes.
 16 Q. And I take it you've seen documents prepared by
 17 those monitors and as part of the oversight process for the
 18 remediation work, haven't you?
 19 MR. EWING: Counsel, again, if we're going to be
 20 looking at documents, could we please--
 21 MS. RENFROE: Certainly.
 22 BY MS. RENFROE:
 23 Q. Let's go back to Tab 5, and if you look at
 24 Slide 9. Do you have those, that slide in front of you?
 25 A. (Dr. Garvey) Yes.

10:51 1 modification following that.
 2 Q. There was a modification in March of 1997;
 3 correct?
 4 A. (Mr. Goldstein) Correct.
 5 Q. And that modification added an additional criteria
 6 and said that the soils in the pits or the contents of the
 7 pits must have no more than 5,000 parts per million TPH;
 8 correct?
 9 A. (Mr. Goldstein) That's correct.
 10 Q. And so, from March of 1997, there was that dual
 11 remediation criteria; right?
 12 A. (Mr. Goldstein) That's correct.
 13 Q. But before March of 1997, there was only the
 14 single remediation criteria which was the TCLP test; right?
 15 A. (Mr. Goldstein) That's our understanding.
 16 Q. And under either one of those criteria, whether
 17 before March of 1997 or after March of 1997, you understand
 18 that it was the Parties' agreement that the method of
 19 remediation of pits would permit certain amounts of TPH to
 20 remain in the closed pit post remediation?
 21 A. (Mr. Goldstein) Well, I'm not going to make a
 22 legal determination of what that agreement enforcement was,
 23 but my understanding is the criteria for closure was 5,000
 24 parts per million after, I think, March of 1997.
 25 Q. Which meant that amounts of TPH, 5,000 or below,

10:54 1 Q. And this slide, just quickly summarizes the
 2 various Actas that were issued as part of the remediation
 3 monitoring process. Do you understand that?
 4 A. (Dr. Garvey) I guess, they're written in Spanish,
 5 and I have to admit I don't speak any.
 6 Q. Have you, Dr. Garvey, you have not read any of the
 7 remediation Actas, even those that have been translated
 8 into English?
 9 A. (Dr. Garvey) I have read some. Mr. Goldstein has
 10 read more than I have.
 11 Q. Okay. So, fair to say you both understand that
 12 these Actas documented the monitoring and oversight of the
 13 remediation process by the Republic of Ecuador?
 14 A. (Dr. Garvey) Yes.
 15 Q. Is that correct, sir?
 16 A. (Dr. Garvey) That's my understanding.
 17 A. (Mr. Goldstein) Yes.
 18 Q. Okay. And then you see this group of 19 Approval
 19 Actas, that is--one of which is summarized in the middle of
 20 this slide?
 21 A. (Dr. Garvey) Yes.
 22 Q. You understand that these Approval Actas were the
 23 instruments issued by the Republic of Ecuador confirming
 24 that pits remediated by TexPet had been properly remediated
 25 to their satisfaction?

10:55 1 A. (Dr. Garvey) To the requirements laid out in the
 2 RAP. Is that--
 3 Q. Yes, sir, to the requirements laid out in the RAP
 4 and to the satisfaction of the Republic of Ecuador.
 5 A. (Dr. Garvey) That's--again, that's our
 6 understanding, yes.
 7 Q. Right. And then, finally if you move over to the
 8 right, you will see the Final Acta dated September of 1998,
 9 signed by various representatives from the Republic of
 10 Ecuador, and maybe we can blow this up on the right-hand
 11 side. Hopefully we could see that a little larger. Thank
 12 you, Mr. Johnson.
 13 And you see the various signatures from
 14 representatives of the Ministry of Energy and Mines at the
 15 top?
 16 A. (Dr. Garvey) Yes.
 17 Q. And on the left, the Petroecuador organization?
 18 A. (Dr. Garvey) Yes.
 19 Q. And representatives of TexPet having signed the,
 20 the two gentlemen on the left and right on the bottom;
 21 right?
 22 A. (Dr. Garvey) Yes.
 23 Q. And then just in the upper right, you see a
 24 representative of Petroproducción, who is one of the State
 25 oil companies that was involved in the oversight of the

10:57 1 Remedial Action program; correct?
 2 A. (Dr. Garvey) I see that, yes.
 3 Q. And so, what we see in this Final Acta is the
 4 final agreement in which these various entities with the
 5 Republic of Ecuador and Petroecuador and Petroproducción
 6 had concluded and were satisfied that TexPet had fully
 7 performed its obligations under the Remedial Action Plan?
 8 MR. EWING: Objection. It's calling for a legal
 9 conclusion.
 10 BY MS. RENFROE:
 11 Q. Is that generally your understanding about what
 12 this Final Acta accomplishes?
 13 A. (Dr. Garvey) I don't--I mean, in some general
 14 sense, I guess. I don't really have an opinion here.
 15 Q. All right. Now, are you familiar with the fact
 16 that even before TexPet began its remediation work that
 17 Petroecuador was not only operating these sites but, in
 18 fact, had environmental impacts at these sites? You've
 19 read that in the HBT Report, haven't you?
 20 A. (Dr. Garvey) Ken?
 21 A. (Mr. Goldstein) There has been documentation that
 22 Petroecuador was--so, you're saying that
 23 Petroecuador--before I guess, why don't you repeat your
 24 question.
 25 Q. Happy to do it.

10:58 1 A. (Mr. Goldstein) Thank you.
 2 Q. Sure.
 3 Even before TexPet completed its remediation work
 4 at the features and at the sites that were assigned to it,
 5 you recognized that Petroecuador was operating those sites
 6 and, in fact, had experienced spills and releases of oil at
 7 those sites?
 8 A. (Mr. Goldstein) Yeah, our review from the audit
 9 indicated such.
 10 Q. Right. Okay. And do you also recognize that
 11 Petroecuador did not undertake its own remediation program
 12 like TexPet's remediation program at that time?
 13 A. (Dr. Garvey) I don't know that we'd know that.
 14 Q. You haven't seen any documentation to that effect,
 15 have you?
 16 A. (Mr. Goldstein) That Petroecuador enacted its own
 17 remediation program?
 18 Q. Let me withdraw the question and give you a better
 19 one. I apologize. I think I can be more precise.
 20 The point I'm trying to explore with you is: Back
 21 in 1995 through 1998, when TexPet was undertaking and
 22 implementing its remediation program, you have not seen any
 23 information to suggest that Petroecuador was doing the same
 24 thing at that time?
 25 A. (Mr. Goldstein) We have no idea of that.

11:00 1 Q. Right. So, then, would you recognize that if
 2 Petroecuador was not remediating pits that were not
 3 assigned to TexPet but was continuing to operate at these
 4 sites, that it was causing impacts or it could be causing
 5 impacts at these sites; correct?
 6 A. (Dr. Garvey) Yes, that would be correct, yes.
 7 Q. All right. Okay. Now, moving forward in time,
 8 and I want to ask just one more question, and we may be at
 9 a good stopping point for a morning break.
 10 Moving forward in time after the 1998--after the
 11 remediation was complete in 1998 and the Final Release was
 12 issued, moving forward in time to 2001, are you familiar
 13 with the fact that the Republic of Ecuador adopted a set of
 14 environmental regulations governing oilfield operations
 15 that is sometimes referred to as Decree 1215, or the RAOH
 16 criteria?
 17 MR. EWING: Counsel, again, object to the legal
 18 conclusion or aspect of this. This is outside the scope of
 19 our Environmental Expert's expertise.
 20 MS. RENFROE: Let me respond, if I might,
 21 Mr. President. I'm not asking for a legal interpretation,
 22 only whether they are familiar with the fact that the
 23 Republic of Ecuador adopted oilfield regulations governing
 24 oilfield operations in 2001.
 25 PRESIDENT VEEDER: We will allow the question.

11:01 1 MS. RENFROE: Pardon me?
 2 PRESIDENT VEEDER: We will allow the question.
 3 MS. RENFROE: Thank you.
 4 THE WITNESS: (Mr. Goldstein) Yes, it is our
 5 understanding that, in 2001, the Decree 1215 was enacted, I
 6 believe so.
 7 BY MS. RENFROE:
 8 Q. Is it also your understanding that that set of
 9 regulations governed oilfield operations specifically?
 10 A. (Mr. Goldstein) I don't recall if it's just
 11 specifically or just exclusive to oilfield operations.
 12 Q. Okay.
 13 MS. RENFROE: Mr. President, this may be a good
 14 time for a morning break.
 15 PRESIDENT VEEDER: Let's take a 15-minute break,
 16 and come back--we will come back in 15 minutes.
 17 (Brief recess.)
 18 PRESIDENT VEEDER: Let's resume.
 19 MS. RENFROE: Thank you, Mr. President.
 20 BY MS. RENFROE:
 21 Q. Gentlemen, let's return to Tab 10 in your binder,
 22 which is Decree 1215 that we were speaking about just
 23 before the break.
 24 And I had a chance to check your Report. And just
 25 to refresh your recollection--and you can certainly look at

11:21 1 your Report if you want to, but in your First Report dated
 2 February 2013 at Page 11, you have a section in your Report
 3 entitled, "Ecuadorian Regulations Currently In Effect."
 4 And you cite there the RAOH and TULAS numerical criteria.
 5 Do you recall that, Mr. Goldstein?
 6 A. (Mr. Goldstein) Let's just check.
 7 Q. Sure, go ahead. Page 11 of your First Report.
 8 A. (Mr. Goldstein) I think we're going to run out of
 9 room on this table.
 10 Q. I'm sympathetic.
 11 A. (Mr. Goldstein) Page?
 12 Q. Right. Page 11.
 13 And it's up on the screen as well.
 14 A. (Mr. Goldstein) Okay.
 15 Q. I just wanted to establish for the benefit of the
 16 Tribunal that you in your First Report had addressed the
 17 Ecuadorian numerical criteria for oil field operations?
 18 A. (Mr. Goldstein) Correct.
 19 Q. Right. Okay. So, now I'd like to just confirm
 20 what I think is not controversial, but I just want to make
 21 sure that you are aware that Ecuador has published in the
 22 RAOH Decree 1215 regulations permissible limits for oil
 23 field compounds that may be left in soils; correct?
 24 A. (Dr. Garvey) Yes, that's our understanding.
 25 Q. Right. And depending on the use of the land,

11:23 1 there are variable levels that are permitted by the
 2 Republic of Ecuador?
 3 A. (Dr. Garvey) Yes.
 4 MR. EWING: Counsel, are we asking again for the
 5 legal conclusions here?
 6 MS. RENFROE: No. I'm certainly aware that these
 7 gentlemen are not lawyers, and I'm not trying to bind
 8 anybody. I'm simply trying to ask their understanding of
 9 the regulatory criteria as they actually addressed them in
 10 their First Report Section 2.2.5.
 11 MR. EWING: And, Mr. President, I just would
 12 raise--I asked similar questions of Mr. Connor regarding
 13 regulations in Ecuador, and counsel objected, so if we
 14 could just maintain parity in what we are addressing?
 15 PRESIDENT VEEDER: It is being maintained. We're
 16 not taking anything from the law from these people or,
 17 indeed, from other factual or technical experts, but if
 18 they deal with it in their Report, they can be asked
 19 questions about it, but not for their legal conclusions, so
 20 I think that clears it up.
 21 BY MS. RENFROE:
 22 Q. So, the only point that I want to make, and to do
 23 so it might be easier for you if we look at Table 6 of the
 24 RAOH criteria, and that's in your Tab 10, and I would
 25 direct you to Page 70 of your Tab 10. The small binder.

11:24 1 A. Page 70.
 2 Q. Page 70, and what I want to direct you to begins
 3 on Page 70, but it trails over to Page 71.
 4 You see Table 6 is cited there? And let me know
 5 when you're ready. Ready?
 6 A. (Mr. Goldstein) Yes.
 7 Q. Okay. So, if we look at Table 6, it says,
 8 "permitted limits for the identification and remediation of
 9 contaminated soils in all phases of the hydrocarbon
 10 industry." Do you see that, sir?
 11 A. (Dr. Garvey) Yes.
 12 Q. And then just quickly, we see the three different
 13 types of land use, agricultural, industrial, and sensitive
 14 ecosystems.
 15 A. (Dr. Garvey) Yes, we see that.
 16 Q. And then for each of these various chemical
 17 compounds that are used in petroleum operations, we see
 18 there is a permissible limit established; right?
 19 A. (Dr. Garvey) Yes.
 20 Q. So, for example, total hydrocarbons stated as TPH
 21 for agricultural land, the Government of Ecuador permits up
 22 to 2500 parts per million of TPH to remain in soils;
 23 correct?
 24 A. (Dr. Garvey) Yes, that true.
 25 Q. And then likewise for industrial use land such as

11:26 1 Oil Platforms, the Republic of Ecuador says that 4,000
2 parts per million TPH may remain in soils; right?
3 A. (Dr. Garvey) That's our understanding.
4 Q. And then the third category of land use there is
5 sensitive ecosystems which you may know is a specially
6 earmarked category, and there the Republic says only 1,000
7 parts per million of TPH can remain in soils.
8 Do you see that?
9 A. (Dr. Garvey) Yes, I see the thousand there, yes.
10 A. (Mr. Goldstein) Right.
11 Q. Now, it's your understanding, isn't it, that the
12 Republic of Ecuador's environmental regulations for oil
13 field operations are protective of the environment, aren't
14 they?
15 A. (Dr. Garvey) No, we're not really--we don't really
16 opine on that.
17 Q. You don't have an opinion on that?
18 A. (Dr. Garvey) We haven't been asked to offer an
19 opinion on that.
20 Q. But you're not here telling this Tribunal that
21 they're not protective of the environment, are you?
22 A. (Dr. Garvey) Dr. Strauss offered that opinion, and
23 I believe perhaps one of our earlier experts offered an
24 opinion on that. That's really not our--we're not really
25 planning to--we haven't planned to opine on that.

11:27 1 Q. And so, if someone characterized your Reports or
2 your testimony as suggesting that you were saying that
3 the--that Ecuador's environmental regulations for oil field
4 operations are not protective of the environment, that
5 would be an incorrect characterization of your testimony;
6 is that correct?
7 A. (Dr. Garvey) Can you restate that, please?
8 Q. Sure.
9 If someone were characterizing your testimony
10 either today or in your Reports as if saying that Ecuador's
11 environmental regulations in this Decree 1215 are not
12 protective of the environment, that would be a
13 misinterpretation or mischaracterization of your testimony,
14 wouldn't it?
15 (Witnesses conferring.)
16 A. (Mr. Goldstein) We're not saying that the
17 regulations here are not--if that's your question--are we
18 saying that they're not protective?
19 Q. Yes, sir, that's the question.
20 A. (Mr. Goldstein) We're not opining on if these are
21 protective or not, but we would say that--we don't think
22 that they would not be protective if they promulgated these
23 regulations.
24 Q. Okay. And then--let's move on, then. You can
25 close that page. We're going to move on to something else.

11:28 1 So, are you aware, sir, that the Judgment,
2 notwithstanding the fact that Ecuador has its own
3 environmental regulations for oil field operations, and
4 notwithstanding the fact that TexPet had an agreement in
5 the Remedial Action Plan for the permissible limits of TPH
6 that could be in soils after remediation, you're aware of
7 the fact that, notwithstanding those two things, the
8 Judgment adopts a remediation criteria of 100 parts per
9 million TPH for soils?
10 A. (Dr. Garvey) Yes.
11 Q. Now, are you also aware of the fact that when
12 Petroecuador did begin to remediate pits at former
13 Concession sites that were not assigned to TexPet, that it
14 follows this Decree 1215 or RAOH criteria? Have you seen
15 that in the documents you've reviewed?
16 A. (Mr. Goldstein) What program are you referring to?
17 Q. Sure. Let me see if I can take you to something
18 that you told us about in your Report. Just bear with me
19 while I find it.
20 Okay. Let's look at Tab 13, actually Tab 13,
21 Slide 2.
22 So, what I have excerpted here is a portion of
23 your December 2013 Report at Pages 59 and 60.
24 (Witnesses conferring.)
25 A. (Mr. Goldstein) Sorry, I'm just directing him.

11:30 1 Q. No problem.
2 In your Report you observe, "for soils at well
3 sites and Production Stations that are within the boundary
4 of E&P operations, the RAOH Table 6 permissible limit for
5 Total Petroleum Hydrocarbons or (TPH) of 2,500 milligrams
6 per kilogram for agricultural land use is considered to be
7 applicable to determine whether remediation was successful.
8 This is the standard adopted by Petroamazonas under the
9 PEPDA program."
10 I read that correctly?
11 A. (Dr. Garvey) Yes.
12 Q. From your own Report?
13 A. (Dr. Garvey) Yes.
14 Q. And so you recognized that, at least under the
15 PEPDA program, Petroecuador has remediated sites in the
16 Concession Area applying these RAOH or Decree 1215
17 standards; correct?
18 A. (Dr. Garvey) It's our understanding that they
19 apply the RAOH Standards. It's not always 2,500 milligrams
20 per kilogram, but, yes.
21 Q. It would depend on the land, the particular site
22 and the use that that land is being put to, wouldn't it?
23 A. (Dr. Garvey) Yes.
24 Q. But where the land is considered agricultural,
25 then 2500 parts per million TPH is what they use?

11:32 1 A. (Dr. Garvey) Yes, that's our understanding.
 2 Q. Right. And so, that means that, in places where
 3 Petroecuador has remediated soils applying these same
 4 criteria, that means that they are permitted to leave up to
 5 2500 parts per million TPH in soils at those sites they've
 6 remediated; correct?
 7 A. (Dr. Garvey) That would be our understanding.
 8 A. (Mr. Goldstein) Right.
 9 Q. Now, on this issue that you spoke about in your
 10 presentation about the use of 100 parts per million TPH as
 11 the remediation criteria in the Judgment, you're not saying
 12 that 100 parts per million TPH would be necessary to
 13 protect the environment, are you?
 14 A. (Dr. Garvey) No, we did not offer an opinion on
 15 that.
 16 Q. Right. In fact, I think you observed that in one
 17 of your prior reports--and we could look at your own
 18 language if you look at the slide before--that would be the
 19 first slide of Tab 13--didn't you observe in one of your
 20 prior reports that 1,000 parts per million TPH would be
 21 sufficient to promote restoration of E&P facilities to
 22 pre-oil production conditions?
 23 A. (Dr. Garvey) I'd like to look at our Report.
 24 Q. Certainly, sir. I think if you look at your
 25 Second Report, December 2013, Page 60.

11:34 1 A. (Dr. Garvey) Sorry, which tab?
 2 Q. Well, that's your bundle, so I'd have to defer to
 3 your counsel, but it's your Second Report?
 4 A. (Dr. Garvey) Third tab. And what page did you
 5 say?
 6 Q. Yes, sir, it's Page 60, second paragraph, I
 7 believe?
 8 A. (Dr. Garvey) Sorry, I'm just trying to find it.
 9 Q. Oh, certainly. I think it's in the second
 10 paragraph.
 11 Actually, first full paragraph. It's the
 12 paragraph that says, "It should be noted."
 13 A. (Dr. Garvey) Right.
 14 Q. Right. So, what you're saying here--have you
 15 found the language?
 16 A. (Dr. Garvey) Yes.
 17 Q. Right. So, what you're seeing here and which I
 18 just quoted on the slide, is that in your view, the
 19 sensitive ecosystem limit of 1,000 parts per million would,
 20 to quote you, "effectively allow environmentally
 21 unconstrained land use in the restored area and promote
 22 restoration of the E&P sites to pre-crude oil production
 23 conditions."
 24 A. (Dr. Garvey) I think we're stating here that it
 25 was the Republic's intention to achieve that, and that by

11:35 1 achieving this, they would--they would satisfy this. I
 2 don't think this is our opinion. This is our
 3 interpretation of their approach.
 4 Q. So, you're telling us, you're not advocating 1,000
 5 parts per million TPH as the remediation standard?
 6 A. (Mr. Goldstein) We are not making any
 7 legal--that's a legal determination as to what regulations
 8 would apply.
 9 Q. Right.
 10 A. (Mr. Goldstein) Simply and as you read the other
 11 reports and we refine our opinions, we take our data and we
 12 compare it to all the criteria, that this was for putting
 13 the data into context, but we are not--we are not offering
 14 opinion as to which regulation, which permissible limit
 15 would apply. That, I believe, is a legal determination.
 16 Q. Understood. So, you're not advocating either the
 17 use of 100 parts per million that's used in the Judgment?
 18 A. (Dr. Garvey) No, no.
 19 Q. Am I correct?
 20 A. (Dr. Garvey) No, we're not advocating.
 21 Q. Nor are you advocating the use of a 1,000 parts
 22 per million TPH criteria, either?
 23 A. (Dr. Garvey) No, we're not.
 24 Q. You're not advocating any particular criteria to
 25 be used, are you?

11:37 1 A. (Dr. Garvey) No, because that's again a legal
 2 decision.
 3 Q. Okay. Now, would you--I'm going to change topics
 4 just a little bit. I want to go back to now a point that
 5 I've observed in your Reports about your use of criteria in
 6 declaring certain samples to be contaminated. So, I'm
 7 switching gears just a little bit.
 8 A. (Mr. Goldstein) Okay.
 9 Q. But hopefully we've got some foundations
 10 established about what Ecuador's environmental regulations
 11 actually are.
 12 So, am I correct that, at times in your Reports,
 13 you have concluded that certain samples are
 14 contaminated--and I'm using that word in quotes now,
 15 "contaminated"--even if they are below Ecuador's Decree
 16 1215 criteria?
 17 A. (Dr. Garvey) Yes, that's correct.
 18 Q. Okay. And to illustrate this, let's look at an
 19 example, and so let's go back to Tab 5 of the small bundle
 20 in front of you. And specifically, why don't we look at
 21 Slides 31 and 32.
 22 This is another slide from--sorry.
 23 (Pause.)
 24 Q. You want to go to Slide 31. This is another slide
 25 from Mr. Connor's presentation in which he was observing

11:39 1 that your approach--in your approach, you conclude samples
2 are contaminated, even if they are below Ecuador's Decree
3 1215 criteria, so that's what this slide is about. And you
4 just told me, I believe, that, in fact, you have concluded
5 certain samples are contaminated, to use that word, even if
6 they are below Ecuador's Decree 1215 criteria.

7 A. (Dr. Garvey) Right. I mean, the background level
8 of soils, the background level of Total Petroleum
9 Hydrocarbons in these soils is on the scale of 20 parts per
10 million. Essentially anything that analytically confirms
11 that the actual concentration is 50 to 100 parts per
12 million or higher is unequivocally contaminated. It is
13 simply whether or not it meets some legal threshold as to
14 what you need to do about it, but from the chemical
15 perspective, a sample of 100 million per million Total
16 Petroleum Hydrocarbons is unequivocally contaminated. It's
17 only a question of whether or not you could live with it at
18 that level.

19 Q. And you're not superseding or second-guessing the
20 judgment of the Republic of Ecuador and its Ministries as
21 to what they have concluded is tolerable and permissible
22 for oil field operations, are you?

23 A. (Dr. Garvey) No.

24 Q. All right. And so, when we read your Reports,
25 it's important that we should recognize that when you use

11:42 1 A. (Dr. Garvey) No. No. I'd like to see our Report,
2 but I can state we would declare them contaminated if they
3 are above background, not if they are detected.

4 Q. Okay. And then would you recognize, though--and I
5 think that perhaps we already have this established, but
6 let's just complete this thought--would you recognize that
7 on the right-hand side, if you applied Ecuador's Decree
8 1215, let's say the agricultural criteria, then those ten
9 samples that you declared to be impacted or contaminated on
10 the left would be considered not contaminated on the right?

11 A. (Dr. Garvey) I don't think we would agree with the
12 use of the word "contaminated." The samples on the right
13 would show that only one of them exceeds a specific
14 standard. I don't know that that's the definition of
15 "contaminated." I would agree it exceeds the standard, or
16 it would exceed the standard.

17 Q. Okay. I think we're on the same page. I believe
18 we are. The fact is using a different set of criteria as
19 you do, on the left you declare something impacted, and on
20 the right, if you apply Ecuador's Decree 1215 criteria,
21 they do not exceed those criteria except the one red
22 sample?

23 A. (Dr. Garvey) That's correct.

24 Q. Now, let's see if we can look at the effect of
25 this in another way, another illustration, so why don't go

11:40 1 the word, "contaminated," you are using that in a different
2 fashion than the Republic of Ecuador pursuant to its
3 published Decree 1215 criteria; correct?

4 A. (Dr. Garvey) I don't know the wording of the
5 Government of Ecuador's regulations, so I don't know if
6 they used the word contaminated, even, but we use
7 contaminated to mean it's not naturally occurring, so if
8 that helps try to clarify. That's how we use the word.

9 Q. But that's completely independent of Ecuador's own
10 permissible standards for oil field operations, isn't it?

11 A. (Dr. Garvey) Yes, yes. It's based on the data and
12 what we find to be background or not background
13 contamination.

14 Q. All right. Now, let's turn to the next slide, 32,
15 in Tab 5, and another slide from Mr. Connor's presentation
16 in which I simply want to discuss with you the effect of
17 your approach to how you declare a sample to be
18 contaminated as compared to whether it would be viewed as
19 contaminated under Ecuador's Decree 1215 regulations. So,
20 let's just review this for a moment. On the left is an
21 image from one of your Reports, a map, and you show there a
22 number of yellow, 10 of 12 samples that have detections of
23 TPH in soils, and you've declared them contaminated because
24 they are above the detection limit. That would be your
25 approach, wouldn't it?

11:43 1 to Tab 14.

2 And what you have in front of you, gentlemen, is a
3 slide from the Republic of Ecuador's Opening Statement for
4 this Hearing. It's their Slide 43. And then the second
5 page behind the slide is a table from your--one of your
6 data tables that I've created an excerpt of it, and your
7 full data table is just behind that slide, just to orient
8 you.

9 So, now let's go back to the paragraph, and on
10 this slide where we see two photographs and the statement
11 is: The Oriente population is at risk."

12 Do you see that?

13 A. (Dr. Garvey) Yes.

14 Q. And that's the statement--this slide was actually
15 presented by the Republic's counsel in their opening. And
16 on the slide it says: "At Lago 16, the residents use
17 contaminated water when drinking, bathing, and washing
18 their clothes."

19 Do you see that?

20 A. (Dr. Garvey) Yes.

21 Q. And I suspect that your firm took these
22 photographs; would that be correct?

23 A. (Dr. Garvey) Yes, I was there when we actually saw
24 these photographs.

25 Q. And these photographs were included in one of your

11:45 1 Reports, weren't they?
 2 A. (Dr. Garvey) Yes.
 3 Q. And so here the Tribunal has been told that this
 4 water where--and these are hand-dug wells, aren't they?
 5 A. (Dr. Garvey) This one is, yes.
 6 Q. Right. And that this water from this hand-dug
 7 well is contaminated. That's what the Tribunal was told in
 8 Ecuador's opening; right?
 9 A. (Dr. Garvey) Yes.
 10 Q. And, in fact, I believe you said something to that
 11 effect in your Report, didn't you?
 12 A. (Dr. Garvey) Yes.
 13 Q. Now, if you turn the slide, go to the next page,
 14 and we're looking at excerpts of your data table, from your
 15 Table 5.3-2, "Summary of Groundwater Results," and you see
 16 at the top--just to orient us, you see the two groundwater
 17 wells: LA16 NDW, and then to the right, LA16 ODW? You see
 18 those?
 19 A. (Dr. Garvey) Yes.
 20 Q. And those are the two hand-dug wells that can be
 21 found at the Lago Agrio 16 well site; correct?
 22 A. (Dr. Garvey) Do you remember the numbering scheme?
 23 A. (Mr. Goldstein) Yes. Just give us a second.
 24 Q. Certainly.
 25 (Witnesses conferring.)

11:46 1 A. (Dr. Garvey) Okay.
 2 Q. So, let's go back now. Can you confirm for me
 3 that the photograph represents Lago 16 NDW?
 4 A. (Dr. Garvey) Can you confirm that?
 5 A. (Mr. Goldstein) I'm sorry, please repeat the
 6 question.
 7 Q. Sure.
 8 Let me tell you what I'm asking.
 9 A. (Mr. Goldstein) Okay.
 10 Q. And would you agree that the photograph represents
 11 either NDW or ODW? It's one of those two hand-dug wells?
 12 A. (Dr. Garvey) Yeah, that's what we're not
 13 remembering, the nomenclature that ties the individual well
 14 samples to the individual well.
 15 Q. Right.
 16 A. (Mr. Goldstein) Well, the well--permit me for a
 17 second.
 18 (Witnesses conferring.)
 19 A. (Mr. Goldstein) The question is whether that is
 20 the old one or the new one that we're looking at.
 21 A. (Dr. Garvey) this is the old well.
 22 Q. Okay. So, then let's go back to your data table,
 23 and that would mean that we should look at the column on
 24 the far right; correct, that says Lago 16 ODW?
 25 A. (Dr. Garvey) That's--partially that's the problem

11:47 1 I'm having is I don't remember, and I don't have a key to
 2 link the sample ID that can describe it here with that
 3 location. This name here just links it to Lago Agrio 16,
 4 the GW-005 or the old GW we're look at in this bunch of
 5 reports. Somewhere in there there's a key that links one
 6 to the other. I don't have it memorized. That's the
 7 problem.
 8 Q. All right. Maybe we can shortcut through this.
 9 Let me ask this question.
 10 As you look--and can we highlight the TPH criteria
 11 on the table, Mr. Johnson, please? Okay. We've circled in
 12 red what the Ecuador regulatory standards are for TPH for
 13 groundwater.
 14 Do you see that?
 15 A. (Dr. Garvey) Yes.
 16 Q. And would you agree with me that Ecuador's
 17 environmental regulations under the TULSMA, that those
 18 regulations provide that you can have up to .325 micrograms
 19 per liter of TPH in groundwater in Ecuador?
 20 A. (Dr. Garvey) Yes, that's our understanding.
 21 Q. And anything below that is permissible, isn't it?
 22 A. (Dr. Garvey) Yes.
 23 Q. And so, would you look at the results for both of
 24 these two hand-dug wells and confirm for me that both of
 25 them are below that regulatory criteria?

11:49 1 A. (Dr. Garvey) Again, I currently certainly can
 2 confirm that the numbers on this table are below that
 3 criteria. What I can't confirm is that these two samples
 4 were taken from the well in question. I don't have a key
 5 to do that.
 6 Q. So, perhaps then you could go to your Tab 10 of
 7 your--okay. Go to Tab 10 of the small bundle.
 8 A. (Dr. Garvey) I'm not trying to be difficult.
 9 There are hundreds and hundreds of samples, and I don't
 10 know the keys of all of them.
 11 Q. Right. I understand, and you're not being
 12 difficult. I just want to have a clear record, and I want
 13 you to have what you need to be certain.
 14 I'm sorry, look in your large bundle that has your
 15 own reports, and you might look at Tab 10?
 16 MS. RENFROE: Why don't we stop and take a break.
 17 Just one second. May we, Mr. President?
 18 PRESIDENT VEEDER: Of course we may. I'm just
 19 wondering whether bottles of water aren't a danger. Can we
 20 put them on the floor? We might need another table after
 21 the next break just to extend your room for maneuver.
 22 (Pause.)
 23 BY MS. RENFROE:
 24 Q. Okay, let me know when you're ready.
 25 May I proceed, Mr. President? Thank you.

11:52 1 BY MS. RENFROE:
 2 Q. Perhaps you now have in front of you from your own
 3 Report Figure 5.3-2 from your June 2014 Report.
 4 A. (Dr. Garvey) Right.
 5 Q. And this is a figure of the Lago Agrio 16 site
 6 that you provided; correct?
 7 A. (Dr. Garvey) Yes.
 8 Q. And I think this is what you wanted to consult to
 9 satisfy yourself that the photograph of the stream that we
 10 were just looking--or, excuse me, the hand-dug well that we
 11 were looking at correlates or corresponds to one of these
 12 two analytical results in your table?
 13 A. (Dr. Garvey) Yes.
 14 Q. So, which one is it? Is it NDW or ODW?
 15 A. (Dr. Garvey) In terms of the sample that was in
 16 the pit that was hand-dug?
 17 Q. Okay. Let's just clean this up. Let's step back
 18 to the photograph of the hand-dug well that you took and
 19 that was shown to the Tribunal?
 20 A. (Dr. Garvey) Quite.
 21 Q. It's just the one slide before you. It's Tab 14.
 22 A. (Dr. Garvey) Correct, um-hmm.
 23 Q. Okay. You have that?
 24 A. (Dr. Garvey) Yes.
 25 Q. And that is a hand-dug well that you photographed?

11:53 1 A. (Dr. Garvey) Correct.
 2 I didn't photograph. I was there when the
 3 photograph was taken.
 4 Q. Okay. It's being characterized as contaminated;
 5 right?
 6 A. (Dr. Garvey) Right.
 7 Q. And now I want to ask you, if you look at your
 8 data table for the results that's right behind the slide,
 9 for the results of the groundwater that was taken that was
 10 sampled by your team from this hand-dug well. Would you
 11 please confirm that the TPH results are within the TULAS
 12 regulatory criteria?
 13 A. (Dr. Garvey) Yes, they are.
 14 Q. And so, under these regulations, then, this
 15 hand-dug well is not considered--it doesn't have an
 16 exceedance of Ecuador's regulations, does it?
 17 A. (Dr. Garvey) Not for these criteria. There are
 18 also questions of taste and smell, and at times we could
 19 smell--I believe the field crew could smell oil or scent of
 20 that oil at this particular well. I have that anecdotally.
 21 Obviously and that's not quantitative.
 22 Q. Right. And you would agree with me, Dr. Garvey,
 23 wouldn't you, that there's times when anecdotal information
 24 can be disproven by analytical results from the laboratory?
 25 A. (Dr. Garvey) Yes.

11:55 1 Q. And this is exactly one of those instances,
 2 isn't it?
 3 A. (Dr. Garvey) No, I wouldn't assert that.
 4 Certainly the samples that were collected on this
 5 particular day did not exceed the TULSMA standard.
 6 Q. Pardon me. I want to make sure I heard you--
 7 A. (Dr. Garvey) These two examples when they were
 8 collected on this day did not exceed the criteria for
 9 groundwater.
 10 Q. And to be clear, then, this hand-dug well shown in
 11 the picture and which is described--it's the page
 12 before--shown in the picture and described by Ecuador's
 13 counsel as "contaminated" does not have an exceedance of
 14 Ecuador's environmental regulations, does it?
 15 A. (Dr. Garvey) No, but--Ken, did you want to make a
 16 point?
 17 A. (Mr. Goldstein) Yes, it does not exceed the TPH,
 18 but again, I urge you to take a look at Dr. Jeffrey Short's
 19 Report because he did additional analyses on these wells
 20 and he detected the presence of alkylated PAHs, other
 21 compounds and actually oil droplets in the well. I wasn't
 22 there, I'm not sure if oil droplets were observed or not on
 23 this particular one.
 24 A. (Dr. Garvey) Again, actually one of my colleagues
 25 did report it on this well. But in addition, while this

11:56 1 well does not exceed Ecuadorian criteria, it is
 2 contaminated. 150.15 milligrams per liter of TPH in this
 3 well is contaminated. It's not there. It's not above the
 4 threshold, but it is certainly not natural.
 5 Q. And this is, I think, perfectly illustrates the
 6 disagreement between you and LBG on the one hand and
 7 Mr. Connor and GSI on the other hand, when you apply
 8 Ecuador's environmental regulations to environmental
 9 samples like this groundwater sample. Mr. Connor concluded
 10 that it was not exceeding Ecuador's criteria, but on the
 11 other hand, you have concluded that it's "contaminated";
 12 correct?
 13 A. (Dr. Garvey) Yes, we don't need the quotations,
 14 but yes, I would definitely use the word "contaminated."
 15 Q. Right. Even though, as we've seen in your own
 16 data table, it does not exceed Ecuador's criteria?
 17 A. (Dr. Garvey) That's correct. Does not exceed the
 18 criteria for TPH, yes.
 19 Q. And, in fact, if you look at the next page of your
 20 data table and check the Reported data for the Polycyclic
 21 Aromatic Hydrocarbons, those PAHs that you mentioned, would
 22 you also confirm that there are no exceedances of PAHs
 23 either?
 24 A. (Dr. Garvey) I'm having a hard time reading it,
 25 even with my reading glasses.

<p>Sheet 24</p> <p style="text-align: right;">2216</p> <p>11:58 1 A. (Mr. Goldstein) Can you see it? 2 (Witnesses conferring.) 3 Q. One thing that might help you, do you recall that 4 your Reports would indicate with yellow highlighting where 5 there was an exceedance? 6 A. (Dr. Garvey) Yes. 7 Q. That was your methodology; wasn't it? 8 A. (Dr. Garvey) Yes. 9 Q. And there's no yellow highlighting in this data 10 table for any of the PAH compounds, is there? 11 A. (Dr. Garvey) The answer is no. 12 Q. So, are you now satisfied that there is no PAHs-- 13 (Technical difficulties.) 14 A. (Mr. Goldstein) Excuse me, would it be possible to 15 take a two-minute bio break? 16 PRESIDENT VEEDER: Of course. Any time. 17 (Witness Goldstein steps out of the room.) 18 MS. RENFROE: I will be glad to repeat it. 19 PRESIDENT VEEDER: Hang on, we're missing a 20 witness. 21 MS. RENFROE: Thank you. I appreciate that. 22 (Laughter.) 23 PRESIDENT VEEDER: Let's resume. 24 Q. Thank you very much. 25 BY MS. RENFROE:</p>	<p style="text-align: right;">2218</p> <p>12:04 1 PRESIDENT VEEDER: I think you need to rephrase 2 the question. But don't take it--restate the question. 3 (Pause.) 4 BY MS. RENFROE: 5 Q. One more time. I'm not asking you for any 6 interpretation of legal regulations. I'm asking you to 7 confirm your understanding that the Republic of Ecuador 8 does not require measurement or monitoring of 9 alkylated-PAHs? 10 A. (Dr. Garvey) I don't--we don't know that it's 11 spelled out that it does require that. We really don't 12 know that much about the standard in and of itself as to 13 how it regulates Total Polycyclic Aromatic Hydrocarbons. I 14 believe the standard is simply for Total Polycyclic 15 Aromatic Hydrocarbons without a specified method, but I'm 16 not a lawyer, so I don't know that. 17 Q. Right. And are you also familiar with the fact 18 that Dr. Strauss did not provide any quantitative analysis 19 of alkylated-PAHs in her risk assessments? Are you 20 familiar with that one way or the other? 21 A. (Dr. Garvey) No, I'm not. Ken? 22 A. (Mr. Goldstein) No, I'm not. 23 Q. All right. Let's then move on, if we can, to a 24 different topic, and I would like to direct you to Tab 2 in 25 the smaller binder.</p>
<p style="text-align: right;">2217</p> <p>12:03 1 Q. Thank you very much. So, I think we lost the last 2 question and answer, so I would like to repeat it, and we 3 were talking about the fact that in your data tables, your 4 practice is to indicate an exceedance of the regulatory 5 criteria with a yellow highlighting of the cell? 6 A. (Mr. Goldstein) Correct. 7 Q. And I'd asked you if you could confirm that for 8 the PAH, the Reported PAH results from these two hand-dug 9 wells, there are no exceedances of Ecuador's groundwater 10 criteria. 11 A. (Dr. Garvey) For the individual PAH compounds, 12 that's correct. 13 Q. At this point, I'm asking you about these data 14 tables? 15 A. (Mr. Goldstein) The alkylated-PAHs. 16 A. (Dr. Garvey) These data tables do not indicate any 17 exceedances of the PAH standard. 18 Q. Right. And while you've just mentioned 19 alkylated-PAHs, Mr. Goldstein, would you confirm for us 20 that the Republic of Ecuador and its Ministries do not 21 require monitoring or measurement of alkylated-PAHs, do 22 they? 23 A. (Dr. Garvey) We don't know that. 24 MR. EWING: Objection. 25 MS. RENFROE: Asking for his understanding.</p>	<p style="text-align: right;">2219</p> <p>12:07 1 And the topic that I want to visit with you about 2 now is a statement that we find in the Republic's 3 Supplemental Rejoinder and which you also spoke to in your 4 Reports and even to some extent this morning, and that is 5 your--or the view that all of the sites in the Concession 6 Area are generally similar and that conditions that you 7 found at the 13 sites that you investigated are 8 representative of conditions that would be found elsewhere 9 in the Concession Area. That's what I would like to visit 10 with you about now. And so, just to orient you, I have put 11 on the slide an excerpt from Ecuador's Rejoinder, all 12 right? So, are you with me on the topic that we are going 13 to cover now? 14 A. (Dr. Garvey) Yes. 15 Q. So, I believe that I've seen in your Reports that 16 there are some 344 sites that TexPet operated until 1990; 17 correct? 18 A. (Dr. Garvey) Right. We get that number from 19 Mr. Connor's Report. 20 Q. Okay. And thereafter, Petroecuador took over 21 operations of those sites? 22 A. (Dr. Garvey) Yes. 23 Q. Now, and, in fact, you also understand that it has 24 built or it's constructed additional oil wells within the 25 Concession Area; correct?</p>

12:08 1 A. (Dr. Garvey) Yes.
 2 Q. And would it be consistent with your understanding
 3 that since taking over, Petroecuador has constructed over
 4 740 new oil wells in the last several years?
 5 A. (Dr. Garvey) I'm not aware of the number. I know
 6 they have constructed wells. I don't know the number.
 7 Q. And likewise, with the construction of new oil
 8 wells, they have also constructed new pits, haven't they?
 9 A. (Dr. Garvey) I would assume so, but I don't know
 10 that.
 11 Q. Right. And so, would you also recognize that, in
 12 the process of operating these oilfields at these 344 plus
 13 sites, Petroecuador has had spills and leaks over the
 14 course of the last 25 years?
 15 A. (Dr. Garvey) Yes.
 16 Q. All right. And in conducting your work and taking
 17 the samples and doing your Site Investigation, did you
 18 investigate the extent of Petroecuador's operations at each
 19 of the sites that you evaluated?
 20 A. (Dr. Garvey) We used the available data to
 21 investigate the sites--well, we looked at--to the extent
 22 that we could, we looked at TexPet-operated facilities or
 23 structures or TexPet-operated sites to the extent that it
 24 was only TexPet-operated, we examined--we looked at the
 25 data that was available for the various sites.

12:10 1 Q. Okay. So, let's take a look at some things that
 2 might bear on this issue.
 3 So, if we look at Slide 16 in the small
 4 bundle--sorry, Tab 16. Tab 16. I want to show you a
 5 couple of photographs, and this is of the Shushufindi 55
 6 well site. On the left is an aerial photograph, and if you
 7 look at it, you can see the date, and it says
 8 July 26, 1990.
 9 Do you see that, sir?
 10 A. (Dr. Garvey) Yes.
 11 Q. So, we can see in this aerial photograph that
 12 there was an open pit to the right of the road as of
 13 July 26, 1990, at Shushufindi 55.
 14 A. (Dr. Garvey) I see that.
 15 Q. You see that?
 16 A. (Dr. Garvey) Yeah.
 17 Q. And, of course, that's a month after Petroecuador
 18 has taken over operations; correct?
 19 A. (Dr. Garvey) That's correct.
 20 Q. And so--and then the photograph on the right is
 21 taken from Claimants' geo-spatial mapping tool, which is
 22 C-2444, and it's the same site, and you can see the little
 23 green icon with the well.
 24 Do you see that?
 25 A. (Dr. Garvey) Yes.

12:11 1 Q. The green icon represents the wellhead?
 2 A. (Dr. Garvey) Okay.
 3 Q. And you see that the site--excuse me, the pit, the
 4 open pit, is no longer there?
 5 A. (Dr. Garvey) Right. It's no longer black.
 6 Q. Right. And is it fair to conclude from comparing
 7 these two photographs that some time between July 26 of
 8 1990 and 2014, which I will represent to you is the date of
 9 the photograph on the right, that sometime in that period,
 10 Petroecuador closed the pit that is shown in the aerial
 11 photograph on the left?
 12 A. (Dr. Garvey) I would certainly agree that between
 13 those two dates, somebody closed the pit in between.
 14 Certainly it could have been Petroecuador, but we don't
 15 know that.
 16 Q. But we do know TexPet was not operating at that
 17 time?
 18 A. (Dr. Garvey) That's correct, but they did do RAP
 19 work--I don't know if they did RAP work at this site.
 20 Q. Right. And so, to the extent that someone
 21 characterizes this pit as having been closed by TexPet
 22 before June of 1990, we know from this aerial photograph on
 23 the left that that would not be correct?
 24 A. (Dr. Garvey) I don't know that you can tell the
 25 real status of that pit at the time of July 1990. It

12:12 1 certainly is a black--darkened area, but I'm not--I'm
 2 really not an expert in interpreting these aerial
 3 photographs, so I don't know the status of that pit at the
 4 time of this photograph.
 5 Q. But, if it turns out that this pit was closed by
 6 Petroecuador between July 1990 and sometime in 2014, would
 7 you have any information about the manner in which
 8 Petroecuador closed that pit?
 9 A. (Dr. Garvey) You're pre-supposing that it was
 10 Petroecuador that closed it. No, I personally don't have
 11 it. It might be available in Petroecuador's records, but I
 12 don't--I guess I don't understand the point of the
 13 question.
 14 Q. Right. Well, you've told us that Shushufindi 55,
 15 which is one of the 13 sites you've investigated; correct?
 16 A. (Dr. Garvey) Yes.
 17 Q. And you've told us that it's one of those sites
 18 that you characterize as a TexPet-only site; right?
 19 A. (Dr. Garvey) Yes, in terms of the operation of the
 20 well.
 21 Q. Right. But when we look at this photograph, we
 22 can see that there is a pit that is open, that was open
 23 during Petroecuador's period of operation.
 24 Do you see that? We've already established that,
 25 haven't we?

12:14 1 (Witnesses conferring.)
 2 A. (Mr. Goldstein) Just to clarify, there is no oil
 3 production going on here. TexPet vacated this site,
 4 stopped producing oil--I don't remember the date, I don't
 5 recall, but I don't believe that Petroecuador is operating
 6 at this site. You see a pit here at that time.
 7 Q. But you would accept that, even though there may
 8 not have been actual oil production, that if Petroecuador
 9 closed that pit sometime after July 1990, that it would be
 10 Petroecuador who would be responsible for the effects of
 11 the manner in which it closed the pit. That would not be
 12 TexPet's responsibility, would it?
 13 A. (Dr. Garvey) That's a matter of legal issue. It
 14 was certainly TexPet created the pit and put the oil in it
 15 that Petroecuador may or may not and it could have been the
 16 local landowner as well, we have seen where local
 17 landowners have modified the pits, that whoever it was that
 18 modified it after the case certainly wasn't
 19 TexPet--whatever this is, it changed between the two
 20 photographs, so that's not TexPet's, unless it's a RAP
 21 related operation--TexPet is not responsible for this
 22 change, but that doesn't mean they're not responsible for
 23 putting the oil in the pit in the first place.
 24 Q. Fair enough, but to the extent that your criticism
 25 is the manner in which the pit was closed or covered, we've

12:15 1 established that it was not done by TexPet before June pf
 2 1990.
 3 (Witness conferring.)
 4 A. (Dr. Garvey) Ken, do we know about the RAP history
 5 for this site?
 6 A. (Mr. Goldstein) Not off the top of my head.
 7 A. (Dr. Garvey) so, I don't know what the RAP history
 8 is for this, so is it possible it was closed under the RAP,
 9 I don't know.
 10 MR. EWING: Counsel, if you're directing them to a
 11 specific criticism, would you be able to point to the
 12 Report where they made that criticism?
 13 MS. RENFROE: I think it was made in the Hearing,
 14 but we can move on. For the sake of time, I suggest we do
 15 that.
 16 BY MS. RENFROE:
 17 Q. What I'd like to do now is explore with you some
 18 later in time operations of Petroecuador, and I would like
 19 to show you a videotape of an inspection that was made at
 20 Lago Agrio 2, which was one of the sites that you have
 21 investigated in your--that you've sampled in your 13 sites;
 22 correct?
 23 A. (Dr. Garvey) That's correct.
 24 Q. So, if we can ask Mr. Johnson to play the
 25 videotape, and then I will have some questions.

12:16 1 (Video played.)
 2 Q. Now, as you saw from that video, that was a video
 3 taken in 2003 as part of the Judicial Inspection process.
 4 Did you see that, sir?
 5 A. (Dr. Garvey) Yes.
 6 Q. So, of course, that's in the time period of
 7 operations by Petroecuador, isn't it?
 8 A. (Dr. Garvey) Yes.
 9 Q. And you would acknowledge that Petroecuador has
 10 actually actively operated the Lago Agrio 2 well; correct?
 11 A. (Dr. Garvey) Yes.
 12 Q. Including having impacts at that well site,
 13 haven't they?
 14 A. (Dr. Garvey) I don't know the history of their
 15 operation to know they had impacts but I know they operated
 16 it.
 17 Q. So, you have not investigated the details of
 18 Petroecuador's impacts at the Lago 2 well platform; is that
 19 what you're telling us?
 20 A. (Dr. Garvey) We have some indication of the
 21 records, it's in our Reports, I don't know it off the top
 22 of my head.
 23 Q. Let's take a look, if we could, at some additional
 24 information about Petroecuador impacts. If we could look
 25 at Slide--excuse me, Tab 18 in your bundle.

12:18 1 Now, you told us a moment ago that you had
 2 reviewed some information about Petroecuador impacts and I
 3 wonder if you have examined what I'm going to call the
 4 SIPAS database, which is one of several databases that
 5 Petroecuador has used to document and publish spills during
 6 its operation.
 7 A. (Dr. Garvey) I believe that our staff have
 8 reviewed this, but--
 9 Q. And on this slide, I have an excerpt of the SIPAS
 10 database, just one page of it, and I have quoted from the
 11 Expert Report of Pedro Alvarez, who is an Expert on behalf
 12 of Claimants in this case. I just want to tell you what
 13 you're looking at.
 14 A. (Dr. Garvey) All right.
 15 Q. And he states in his Expert Report that from the
 16 review of this one database, that over 125,000 barrels
 17 associated with Petroecuador well operations has been
 18 spilled inside the Concession Area between 1990 and 2009.
 19 Do you see that, sir?
 20 A. (Dr. Garvey) Yes, I see that.
 21 Q. And so, have you examined these Reported spills in
 22 any detail before rendering your opinions in this case?
 23 A. (Dr. Garvey) We have, because we've used some of
 24 this information to help us select sites for investigation.
 25 Q. Okay. Then let's take a look at the next slide,

Sheet 27	2228	2230
<p>12:19 1 which is in the tab. Here is Guanta 7. Here is a 2 photograph of a crude oil spill at Guanta 7 that was 3 reported in 2003 or 2004. 4 Do you see that? 5 A. (Dr. Garvey) Yes. 6 Q. And we can find this photograph in the clickable 7 database which is in this record at R-938. 8 And you've looked at the clickable database, 9 haven't you? 10 A. (Dr. Garvey) Yes. 11 Q. And seen photographs like this one of significant 12 oil spills by Petroecuador? 13 A. (Dr. Garvey) I have certainly seen pictures of oil 14 spills. The word "significant" is--what you define by 15 that. I'm not sure what you define by that. 16 Q. Right. And you see here teams of workers are 17 vacuuming crude oil and water from the stream that's next 18 to the Guanta 7 well platform? 19 A. (Dr. Garvey) Yes. 20 Q. Okay. Let's look at the next paragraph, next 21 example. 22 This is an image also from the clickable database 23 of a flare pit at the Guanta Production Station taken in 24 2004. 25 Do you see that?</p>	<p>12:21 1 Q. And here we have Petroecuador workers in this 2 spill area. 3 Do you see that, sir? 4 A. (Dr. Garvey) Yes, I see the workers there. 5 Q. And in forming your opinions and forming your 6 opinions in this case, have you taken into account impacts 7 like these by Petroecuador where significant oil spills 8 have occurred and pipeline breaches have occurred, leaving 9 TPH in the ground? 10 A. (Dr. Garvey) If you will remember, our analysis of 11 the inventory did not differentiate between the nature of 12 the sources, the responsible Party. We documented simply 13 that there was extensive contamination in the sites around 14 the Oriente. 15 Q. Okay. Let's look at the next slide. This is an 16 image of contamination and oil spill from a flowline at the 17 Sacha Norte 1 Production Station in 2005, and you can see 18 the oil has been sprayed all over a variety of equipment 19 and what looks to be like some sort of set of buildings. 20 Do you see that? 21 A. (Dr. Garvey) Yes. 22 Q. And are you familiar, sir, with the fact that this 23 particular spill was not reported by Petroecuador and not 24 documented in the SIPAS database? 25 A. (Dr. Garvey) No, I was not aware.</p>	
<p>12:20 1 A. (Dr. Garvey) Yes. 2 Q. And you can see the impacts on the ground from the 3 flare pit. 4 Do you see that, sir? 5 A. (Dr. Garvey) I see the impacts on the ground. I 6 don't know that it's the result of the operation of the 7 flare. 8 Q. If that's what was reported in the clickable 9 database, you wouldn't have any reason to disagree with 10 that, would you? 11 A. (Dr. Garvey) These pits, from my understanding 12 these pits have had multiple uses, so it would be unclear 13 to me that we could reliably say that these flares are 14 responsible for this damage. 15 Q. You don't have any information about that one way 16 or the other? 17 A. (Dr. Garvey) No. 18 Q. Let's look at the next image, a flowline spill at 19 the Sacha 14 well site in 2004. 20 Do you see that? 21 A. (Dr. Garvey) Yes. 22 Q. And again, from the clickable database, we know 23 that there was crude oil flowing through this flowline 24 which was then released when the flowline was breached? 25 A. (Dr. Garvey) Yes.</p>	<p>12:23 1 Q. Are you familiar with the fact that not all of the 2 spills and pipeline breaches that have been experienced by 3 Petroecuador have been reported? 4 A. (Dr. Garvey) It's my understanding that generally 5 speaking Petroecuador does report its spills, although I 6 note that there are no records of spills prior to the 7 takeover--prior to 1990, to a large degree, there was 8 little recording beforehand as to the thoroughness of 9 Petroecuador reporting spill post 1990, I do know that they 10 do it. I don't know how exhaustive it is. 11 Q. Let's look at another example. The next slide-- 12 PRESIDENT VEEDER: Could I just pause you. Did I 13 understand you to say that this was not in the clickable 14 database? 15 MS. RENFROE: No, Mr. President. It is in the 16 clickable database as is shown on the bottom of the slide, 17 but it is not found in the SIPAS spill summary. 18 BY MS. RENFROE: 19 Q. Now, if we go to the next slide, we see an image 20 of another flowline spill at Guanta 6 in 2006. 21 Do you see that? 22 A. (Dr. Garvey) Yes. 23 Q. And again, this photograph comes from the 24 clickable database? 25 A. (Dr. Garvey) Okay.</p>	

12:24 1 Q. And was available for you in your work in this
 2 case; correct?
 3 A. (Dr. Garvey) Yes.
 4 Q. And Guanta 6 is one of the sites that you've
 5 included in your group of 13 where you have done sampling;
 6 right?
 7 A. (Dr. Garvey) Yes.
 8 Q. And one of those sites that you've characterized
 9 as TexPet only, meaning TexPet was the only company that
 10 operated that site?
 11 A. (Dr. Garvey) I need to review the records to see
 12 if Guanta 6 was one of those. I don't remember, no.
 13 Q. So, you recognize, then, that Petroecuador has
 14 operated this site and, as we can see from this paragraph,
 15 has had--has caused environmental contamination at this
 16 site, hasn't it?
 17 A. (Dr. Garvey) Yes. Certainly this--certainly this
 18 pipe looks like it was spilled recently.
 19 Q. Pardon me?
 20 A. (Dr. Garvey) Yes, I would agree. This pipe shows
 21 that it looks like there has been a recent spill at this
 22 location and then since it's 2006, it would have been
 23 Petroecuador.
 24 Q. Right. And once again, if you check that SIPAS
 25 database of all the spills, I think you will find that

12:25 1 there is no report in that database of this spill at
 2 Guanta 6.
 3 A. (Dr. Garvey) If that's your assertion.
 4 Q. Well, I will direct you to Tab 19 now, where I've
 5 included for you, a copy, a printout of the SIPAS database.
 6 Some of it is in Spanish, and I have included behind some
 7 of the English translations. Maybe the English is on top,
 8 and the Spanish is in the back, but if you've looked at
 9 these at this database, Dr. Garvey, you would agree with me
 10 that this database shows hundreds of spills reported by
 11 Petroecuador throughout the Concession Area during its
 12 period of operation, wouldn't you?
 13 A. (Dr. Garvey) I don't know the authenticity of the
 14 table, not that I have any reason to doubt you per se, but
 15 I don't have access to the original database. Certainly
 16 there are--I don't know how many pages represent the first
 17 half of this, so to speak, the English half.
 18 Q. Well, just to orient you a little bit, if we look
 19 at the English--one of the English translation pages, the
 20 very first page, we see in about the fourth column it says
 21 "spill area" and "spill volume."
 22 Do you see that?
 23 A. (Dr. Garvey) Yeah.
 24 Q. And so if you read throughout, you can find spills
 25 that have been reported about the various sites among the

12:26 1 344 sites operated by Petroecuador. That's what's in here,
 2 isn't it?
 3 A. (Dr. Garvey) Again, I don't know that. I have not
 4 looked at this information in this form before.
 5 Q. Well, if you accept my representation that that's
 6 what this Report is telling us, then we can see from this
 7 Report and from the photographs that I have just shown you
 8 that there have been numerous oil spills and pipeline
 9 breaches at various sites operated by Petroecuador since it
 10 took over 25 years ago?
 11 A. (Dr. Garvey) Yes.
 12 Q. And you don't dispute that, do you?
 13 A. (Dr. Garvey) No.
 14 Q. All right. Now--
 15 MS. RENFROE: Actually, Mr. President, I'm about
 16 to hit a new topic, so if we want to have a lunch break,
 17 this would be a good time to do it.
 18 PRESIDENT VEEDER: Let's do that. It's 12:30.
 19 Let's come back at 1:30. We will break for lunch. Please
 20 don't discuss the case or your testimony away from the
 21 Tribunal.
 22 MR. EWING: Can I ask how much more?
 23 MS. RENFROE: I would hope to be finished in one
 24 more hour, but I don't want to be held to that. I'm doing
 25 the best I can.

12:28 1 MR. EWING: For planning purposes.
 2 MS. RENFROE: Sure. Okay.
 3 PRESIDENT VEEDER: Thank you very much. 1:30.
 4 (Whereupon, at 12:30 p.m., the Hearing was
 5 adjourned until 1:30 p.m., the same day.)
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1 AFTERNOON SESSION
 2 PRESIDENT VEEDER: Apparently, we're being
 3 restricted in our use of the red light, and the suggestion
 4 is that if we can turn it off, we should, and that one of
 5 the Witnesses should turn the microphone off, and yours
 6 stays on. Yours will have to be clicked on and off. We'll
 7 see if that works.
 8 Let's resume.
 9 MS. RENFROE: Thank you, Mr. President, Members of
 10 the Tribunal.
 11 CONTINUED CROSS-EXAMINATION
 12 BY MS. RENFROE:
 13 Q. Good afternoon, gentlemen.
 14 A. (Dr. Garvey) Good afternoon.
 15 Q. Let's return if we can briefly to one topic that
 16 we were talking about just before the break, and if I could
 17 direct you to your slide, in your slide packets, do you
 18 have a copy of the slides that you presented?
 19 A. (Mr. Goldstein) This morning, no.
 20 A. (Dr. Garvey) No.
 21 Q. Could we trouble your counsel to give you a copy,
 22 and I'd ask you to look at your Slide 21.
 23 MS. RENFROE: Thank you, Mr. Ewing.
 24 And at the same time, I'm going to ask my
 25 colleagues to distribute some copies of excerpts from the

01:32 1 translation, I believe, in the bundle, but I think we can
 2 do this quickly, and maybe we can pull this up on the
 3 screen, Mr. Johnson, if that's possible, please. Right.
 4 And what we want to do is highlight an entry in
 5 the SIPAS database, and it's entry--you may need to turn to
 6 the next page or maybe we're there. 251--251, there we
 7 are--and I want to draw your attention, Dr. Garvey and
 8 Mr. Goldstein, to this entry which shows for the well site,
 9 well site Sacha 112.
 10 Do you see that?
 11 A. (Dr. Garvey) Yes.
 12 Q. And if you look to the right, you can see where it
 13 says Column E. Do you see that sir?
 14 A. (Dr. Garvey) Yes.
 15 Q. And it says volume, and it says derrame, which is
 16 spill volume, and then you see below 800. Do you see that,
 17 sir?
 18 A. (Dr. Garvey) Yes.
 19 Q. And from your review of these Reports, you know
 20 that that's reported in barrels; correct?
 21 A. (Dr. Garvey) Yes.
 22 Q. So, this entry is telling us that 800 barrels of
 23 oil were spilled at the Sacha 112 platform; correct?
 24 A. (Dr. Garvey) Yes, that's correct.
 25 Q. And if you look at column D, it tells us the area

01:30 1 SIPAS database which I've already given you in your bundle,
 2 but to save you the trouble of having you flip through a
 3 lengthy document, we're handing out just the excerpts that
 4 you would want to look at for my questions.
 5 BY MS. RENFROE:
 6 Q. Do we have the photograph?
 7 Okay, so let me proceed if everybody's ready. all
 8 right.
 9 So, just to be clear, the document I've just
 10 handed you is an excerpt of what was already in Tab 19?
 11 A. (Dr. Garvey) Correct.
 12 Q. All right. Now, let's walk through this together.
 13 So, we start off looking at your Slide 21 that you
 14 presented this morning, and do you have it, sir?
 15 A. (Dr. Garvey) Yes, we do.
 16 Q. And I don't have it electronically or I would put
 17 it on the screen. But in this image, this is your
 18 photograph where you describe stream contamination below
 19 Sacha 86, and you show oil contaminated sediment, oil slick
 20 on water and so on; correct?
 21 A. (Dr. Garvey) That's correct.
 22 Q. Right. And then, if we look now into that excerpt
 23 from the SIPAS database which I have given you, and if you
 24 look to I believe it's the first page of what I've given
 25 you, it is in Spanish, and you can find the English

01:33 1 that's been impacted, and it shows about 17,000 cubic
 2 meters--square meters, excuse me, 17,000 square meters.
 3 Do you see that?
 4 A. (Dr. Garvey) Yes, I do.
 5 Q. And then if you look all the way to the right,
 6 Column J, we see that that spill happened in 2005; right?
 7 A. (Dr. Garvey) Yes.
 8 Q. Now, do you have or have you considered the
 9 proximity between the Sacha 86 well site that you were
 10 portraying in the photograph in your Slide 21 and this
 11 Sacha 112 well platform where there was an 800-barrel
 12 spill?
 13 A. (Dr. Garvey) Not explicitly. That wasn't the
 14 point of the slide, but go ahead.
 15 Q. Okay. So, now, if we have a copy of the
 16 photograph, we're going to distribute a copy of a
 17 photograph that is a screenshot taken from the mapping
 18 tool, and I'd like to ask Mr. Johnson to put the mapping
 19 tool--this photograph up on the screen, please.
 20 And what I'm showing you now, gentlemen, is a
 21 screenshot from the geo-spatial mapping tool, and I'm
 22 showing you an image from the August to September 2014
 23 satellite image, and on the left you can see Sacha 112.
 24 Do you see that well platform?
 25 A. (Dr. Garvey) Yes, I do.

01:35 1 Q. And then on the right-hand side of the image, you
 2 see Sacha 86?
 3 A. (Dr. Garvey) Yes.
 4 Q. And then if you look just above the white legend,
 5 you can see an area that looks like it's a wetland area
 6 that's been somewhat cleared.
 7 Do you see that, sir?
 8 A. (Dr. Garvey) Is that what you're indicating there
 9 with the mouse?
 10 Q. Yes, sir.
 11 A. (Dr. Garvey) Yes.
 12 Q. All right. And would it surprise you to know that
 13 this area that you have presented in your photograph, your
 14 Slide 21, of stream contamination below Sacha 86, this is
 15 the area that was impacted by that 800-barrel spill at the
 16 Sacha 112 well platform which is only about 300 meters
 17 away?
 18 A. (Dr. Garvey) I need to understand something about
 19 the photograph and the hydrodynamics of the system. I
 20 can't tell from this photograph which way the water flows.
 21 Q. But I guess my point is, when you presented your
 22 photograph, your Slide 21--
 23 A. (Dr. Garvey) Yes.
 24 Q. --showing this stream contamination below
 25 Sacha 86, you weren't suggesting that this was a

01:38 1 not representing that, are you?
 2 A. (Dr. Garvey) What I'm representing is that this
 3 contamination that's downstream of Sacha 86 is undoubtedly
 4 a combination or the integration of impacts to the stream
 5 that have been caused by sites that are upstream of it. It
 6 could be Sacha 86, it could be Sacha 112, if it's on the
 7 same stream. I can't tell that from here, given this
 8 diagram. But in any case, the point is simply that
 9 contamination that reaches the streams from the well sites
 10 travels downstream and impacts the sediments. Whether
 11 it's--which specific site it is, is not really particularly
 12 relevant. It's examples of the kind of contamination we
 13 would expect to find in the Oriente.
 14 Q. But what is relevant is the extent to which you
 15 are trying to support or offer your support to the Judgment
 16 which is supposed to be concerning or purportedly concerns
 17 actions of TexPet. And what you're telling us is that you
 18 don't have any ability to differentiate between actions of
 19 Petroecuador or actions of TexPet; and in presenting this
 20 picture to the Tribunal and suggesting that this is
 21 contamination that justifies the Judgment, you're not
 22 suggesting that, are you?
 23 A. (Dr. Garvey) There are ways to tell which is
 24 TexPet and which is Petroecuador based on the history of
 25 the sites and their usage. As to who operated what site

01:36 1 contamination event caused by TexPet, were you?
 2 A. (Dr. Garvey) I was indicating that the streams
 3 downstream--the areas downstream of the well sites in
 4 general are extensively contaminated, whether this is due
 5 to activity at 86 or due to Sacha 112 or most likely a
 6 combination of both, the point is that the streams are
 7 contaminated with oil. I don't know the history
 8 explicitly. Certainly the spill at Sacha 112 was of
 9 significant magnitude, but I don't know its spatial extent,
 10 how far down it went into the stream, et cetera, but that
 11 wasn't the point of the slide. The point of the slide was
 12 simply to say streams contained contamination, and the
 13 contamination that reaches them travels downstream. This
 14 is a case in point, assuming now that we have the
 15 connection between Sacha 112 on the left and the wetland on
 16 the right. My point precisely, the contamination from that
 17 site is emanating downstream. Contamination from other
 18 spills that have historically reached their respective
 19 streams and traveled downstream as well, so this is just an
 20 example; not this was the site to clean up or an area that
 21 explicitly represented TexPet's specific operations.
 22 Q. So, just to be very, very clear, sir, you've just
 23 told us that you can't--you're not in any way representing
 24 that this Sacha 86 contamination that you've shown in your
 25 Slide 21, that it has anything to do with TexPet? You're

01:39 1 when. There are sites that are explicitly operated by
 2 TexPet as well as those that were operated by both.
 3 There's 25 or 30 years of legacy operations by TexPet in
 4 this system. I don't for a moment believe that there were
 5 no spills during that time, okay? But that said,
 6 Petroamazonas--Petroecuador also operated many of these
 7 sites afterwards, so they're both--there are
 8 responsibilities to be shared, although we're not involved
 9 in the allocation, but certainly both entities spilled oil,
 10 both entities have impacts. This is simply an example of a
 11 stream that has been severely impacted.
 12 As to exactly which part of this is due to who,
 13 I'm not making any differentiation here.
 14 Q. Okay. And we looked earlier today at the
 15 Settlement Agreement and the Remedial Action Plan and the
 16 Final Release between the Republic of Ecuador,
 17 Petroecuador, and TexPet that resolved TexPet's share of
 18 these impacts. We saw that earlier, didn't we?
 19 MR. EWING: Counsel, you're asking for a legal
 20 conclusion again.
 21 MS. RENFROE: No, I'm asking for a fact that we've
 22 already discussed.
 23 THE WITNESS: (Dr. Garvey) What we established was
 24 TexPet's responsibility for cleaning up the pits. That's
 25 all, not any other responsibility. That was the Agreement

<p>Sheet 31</p> <p style="text-align: right;">2244</p> <p>01:40 1 between Ecuador--the Government of Ecuador and TexPet 2 regarding the pits. I don't have an opinion about streams 3 and the rest. That's really not a part of our realm. 4 BY MS. RENFROE: 5 Q. So, now, let's look at your Slide 32 in which, if 6 you could turn to that, please. 7 A. (Dr. Garvey) Sure. 8 Q. Slide 32 of your presentation this morning. 9 Do you have that, gentlemen? 10 A. (Dr. Garvey) Yes, we do. 11 Q. Now I believe your presentation to the Tribunal 12 today was that this picture showed oil droplets on water 13 below a siphon at Guanta 6? 14 A. (Dr. Garvey) That's correct. 15 Q. And are you familiar with the fact that 16 Petroecuador installed this flre and the siphon at Guanta 6 17 and not TexPet? 18 A. (Dr. Garvey) I believe that the historical 19 evidence on that particular pit is unclear. We see 20 evidence in the aerial photographs that there was, in fact, 21 a disturbance there prior to Petroecuador taking over the 22 operations, so that it's not clear to me who is responsible 23 for the pit that's upstream of this particular siphon. 24 Q. Or the oil droplets in the photograph? 25 A. (Dr. Garvey) Right.</p>	<p style="text-align: right;">2246</p> <p>01:44 1 Look at the third page under the tab. 2 Do you have it? 3 A. (Dr. Garvey) 5.5-1? 4 Q. Yes, sir, 5.5-1. And would you confirm, please, 5 that this is your figure from your Report for the 6 Shushufindi 34 well platform, and this is your presentation 7 of your soil sampling results using your total extractable 8 method, material method, TEM for short; is that correct? 9 A. (Dr. Garvey) I believe so. This looks like the 10 reproduction from my Report. 11 Q. Okay. You recognize it? 12 A. (Dr. Garvey) Yes. 13 Q. Okay. And what I'd like to examine with you is, I 14 want to test your theory a bit about--that the pits are 15 leaking and that material is migrating from them; all 16 right, sir? 17 A. (Dr. Garvey) Okay. 18 Q. Now, this is one of the sites that LBG 19 investigated in its 2013-2014 investigation; correct? 20 A. (Dr. Garvey) Yes. 21 Q. And you took samples at this site in 2014? 22 A. (Dr. Garvey) That's correct. 23 Q. And what we see on this map is a pit which is 24 indicated in the purple? 25 A. (Dr. Garvey) That's correct.</p>
<p style="text-align: right;">2245</p> <p>01:42 1 Q. Now, let's move to a different topic, if I might, 2 and that is the Conceptual Site Model that you presented to 3 the extent that it's your theory or your concept that pits 4 are leaking, so that's where I want to go now, okay? 5 A. (Dr. Garvey) That's fine. 6 Q. Now, if I understand your presentation and your 7 prior reports, it's your theory that the pits are leaking 8 and that I believe you told us earlier today that 9 approximately 90 percent of their contents would be on the 10 outside of a pit as opposed to the inside of a pit. 11 A. (Dr. Garvey) The current inventory of 12 contamination in the soils of the--around the well sites 13 exists outside of the pits. 14 Q. And that's based on a calculation that you have 15 made? 16 A. (Dr. Garvey) That's correct. 17 Q. So, let's take a look at one of the sites that 18 you've sampled and that you've presented among the 13, and 19 I would direct you now to Tab 30 in the smaller bundle. 20 MS. RENFROE: And for the record, this is a map 21 of--it's Figure 5.5-1 of Shushufindi 34. 22 BY MS. RENFROE: 23 Q. Have you found that map? 24 A. (Dr. Garvey) Figure 3.7-1? 25 Q. No, sir, it's Figure 5.5-1.</p>	<p style="text-align: right;">2247</p> <p>01:45 1 Q. All right. And then in the squares, the little 2 orange squares, those indicate your TEM sample locations. 3 A. (Dr. Garvey) Yes. 4 Q. Would you also confirm, Dr. Garvey, that this 5 purple pit is a non-RAP pit under the Remedial Action Plan? 6 A. (Dr. Garvey) That I can't confirm from this. I 7 would need to look at the Report. I don't remember. 8 Q. Well, if you recall the way that you prepared your 9 maps for other cases, you would indicate in blue if it was 10 a RAP-remediated pit? 11 A. (Dr. Garvey) Yes. 12 Q. And this one see is in purple, and you described 13 it as undocumented? 14 A. (Dr. Garvey) Right. 15 Q. So, let's now look at the sample results. And 16 again, what we're exploring here is the extent to which you 17 say that the pits are leaking and that 90 percent of their 18 contents would not only migrate outside of the pit, but I 19 think you told us earlier today you thought that they would 20 move radially outside of the pit to some 20 hectares, I 21 thought you said. Do I have that right? 22 A. (Dr. Garvey) What we said was not that the 23 contamination from the pit would necessarily emanate out 24 radially, but that the contamination in the soils 25 effectively radiates outward radially from the pits because</p>

01:47 1 of the activities that would be associated with it. So,
2 it's not a requirement per se that the pit leak into the
3 environment surrounding it and that is the basis for all
4 the soil contamination outside of the pit. What it says,
5 what we're asserting is that, simply because the pits were
6 the center of this kind of disposal activity, that we would
7 expect either loss from the pit via various mechanisms or
8 by operations that would have occurred around the pits;
9 that the areas closest to the pits would be the most
10 contaminated, and that contamination would be less intense
11 as you moved away from the pit and away from this kind of
12 activity.

13 This is not a geochemical model that says the pit
14 starts the contamination, and it spills and disturbs in all
15 directions under simple geochemical processes. This is a
16 model that says the pits are where we tried--where they try
17 to get rid of the contamination or try to store the
18 contamination. Sometimes it got there, sometimes it
19 didn't. Sometimes there were other activities associated
20 with this pit that might have spilled material in the
21 vicinity. The hose didn't make it to the pit, the hose
22 fell out of the pit. Who knows. There's all kinds of
23 possible explanations. It does not require that the
24 contamination start in the pit and come out of the walls
25 and affect the areas around it.

01:48 1 Q. And the conceptual model that you've
2 described--the conceptual model that you've described,
3 would you agree with me that as between data and a
4 conceptual model that you would--that we ought to rely upon
5 the actual measured data as opposed to a model prediction?

6 A. (Dr. Garvey) That's correct.

7 Q. Because, after all, valid data really is the gold
8 standard, isn't it?

9 A. (Dr. Garvey) We've relied on the data in our
10 analysis, yes.

11 Q. Right. And if there is a conflict between what
12 your model is telling us or what the data is telling us, we
13 should be guided by what the data is telling us; correct?

14 A. (Dr. Garvey) In general, that's the rule one
15 applies.

16 Q. Right. So, then let's look at the data and see
17 what it is telling us here.

18 If we look at the sample results on the outside of
19 the pit--oh, by the way, before I ask that question, let's
20 see if we can both agree that, as compared between your TEM
21 sampling results and the 8015 sampling results, you're
22 generally going to have higher concentrations measured by
23 your TEM method than the 8015 method, aren't you?

24 A. (Dr. Garvey) That's correct.

25 Q. Now, this map is presenting your TEM result,

01:49 1 isn't it?

2 A. (Dr. Garvey) Yes.

3 Q. And if we look at the sample results that you've
4 put on your map, outside the pit, would you look at SL-002,
5 which is in the northwest corner of the pit. Do you see
6 that, sir?

7 A. (Dr. Garvey) Yes.

8 Q. That tells us that your TEM measurement is
9 non-detect in the soil?

10 A. (Dr. Garvey) That's right.

11 Q. Looking then to the right at sample SL-006, do you
12 see that, sir?

13 A. (Dr. Garvey) Yes.

14 Q. And that's just on the edge of the pit, and it
15 also is a non-detect under the TEM method?

16 A. (Dr. Garvey) That's correct.

17 Q. And then we look to the next sample, SL-001, and
18 it reports 640 parts per million TEM; right?

19 A. (Dr. Garvey) That's right.

20 Q. Which is below even the sensitive ecosystem
21 standard of Decree 1215, isn't it?

22 A. (Dr. Garvey) Yes, it's less than 1,000.

23 Q. Less than 1,000.

24 So, then, continuing down south, you see the
25 SL-004 sample that you have taken there?

01:50 1 A. (Dr. Garvey) Yes.

2 Q. And that also confirms that it is a non-detect for
3 TPH using your TEM method in soils; right?

4 A. (Dr. Garvey) That's correct.

5 Q. And then we continue around the pit going to
6 SL-012 on the edge of the pit about 7:00.

7 Do you see that, sir?

8 A. (Dr. Garvey) Yes, I do.

9 Q. And that's also a non-detect, isn't it?

10 A. (Dr. Garvey) Yes.

11 Q. Continuing then clockwise around the pit, if you
12 go out to SL-003, some distance from the pit, we see that's
13 a non-detect also?

14 A. (Dr. Garvey) That's correct.

15 Q. And then continuing, I think we have now gone all
16 the way around the pit and we're looking at the samples
17 that you and your team took, and we can see from your own
18 data that the sample results are showing us largely
19 non-detections of TPH using the TEM method; correct?

20 A. (Dr. Garvey) There are several non-detect samples
21 surrounding this site--in the vicinity of the site, I
22 should say.

23 Q. And so, what this data is telling us is that the
24 contents of the pit have not gone--

25 A. (Dr. Garvey) No.

01:51 1 Q. --materially beyond the walls if you use your TEM
2 method?
3 A. (Dr. Garvey) No, that's not correct. Each of
4 these points represents a sample that's approximately
5 3-inches in diameter, okay? And you're spanning distances
6 of tens of meters.
7 Q. And so, if you look at your scale, we see a scale
8 here of zero to 8 meters, don't we?
9 A. (Dr. Garvey) Yes.
10 Q. And, so, if you look at your sample SL-003 on the
11 southwest side, that's about the most remote sample you
12 have, isn't it?
13 A. (Dr. Garvey) That's correct.
14 Q. And under your scale, that looks to be about ten
15 to 15 meters; right?
16 A. (Dr. Garvey) That's right.
17 Q. And it's non-detect, isn't it?
18 A. (Dr. Garvey) Yes.
19 Q. And then if you then go counter clockwise, SL-001,
20 right on the edge of the pit, right on the edge of the pit
21 it's non-detect?
22 A. (Dr. Garvey) Yes.
23 Q. So, we can continue this exercise, but I think
24 it's apparent to everyone who looks at this that this pit
25 is not showing--or your own soil measurements are not

01:54 1 a simple trough. It may travel via groundwater. It's not
2 clear at all that you can discern that from this pit. This
3 is the problem with trying to delineate contamination with
4 a limited number of samples. As extensively as we have
5 studied this, there are still fine scale details that are
6 not captured by these very small points. Again, it's
7 3-inches in diameter--sorry, it's 9-centimeters in
8 diameter, versus distances of many meters. This is not
9 supported at all to debunk, if you would, our hypothesis
10 here.
11 Q. But if we apply Ecuador's own environmental
12 regulations under Decree 1215 and applied the agricultural
13 standard, we can see that there is not one data point, not
14 one soil sample measurement outside of this pit that
15 exceeds the agricultural standard of 2500?
16 A. (Dr. Garvey) That's correct.
17 Q. Let's move now to your mass calculation.
18 A. (Dr. Garvey) Sure.
19 Q. And I would like to go to the slide you presented
20 at Slide 50.
21 A. (Dr. Garvey) Our Slide 50?
22 Q. Yes, sir, your Slide 50.
23 A. (Dr. Garvey) Okay.
24 Q. And just to set the context, you told us this
25 morning that you had calculated this Petroleum Hydrocarbon

01:52 1 suggesting that there is "widespread migration from this
2 pit?"
3 A. (Dr. Garvey) No, I don't agree with you. I don't
4 believe this data set is sufficient to assess that.
5 Q. You can't say one way or the another from this
6 map, you can't say that there is widespread contamination
7 from this pit, can you?
8 A. (Dr. Garvey) It wouldn't make it a basis for that
9 finding on the basis of a single pit. We base that finding
10 of the basis of the integration of all of the available
11 data, our data, the Plaintiffs' data, the Claimants' data,
12 the various reports, and our site evaluations. We did not
13 base it on a single series of samples around a pit.
14 Q. But if we go back to the point that we just
15 established, that the data rules over a model, the data in
16 this case for this pit at this site does not support your
17 model, does it?
18 A. (Dr. Garvey) No, that's not true. You don't have
19 data to dispute or support the model in this particular
20 case. You don't have sufficient information to discern
21 whether or not contamination is migrating from this pit. I
22 mean, you have a series of values, some are high, some are
23 low, you have values outside the perimeter of the pit that
24 are as high as 1700 parts per million on the SL-008. Once
25 the material leaves the pit, it may follow a stream bed or

01:55 1 inventory and that it was your estimate under your 8015
2 method on the bottom, that there were some 660,000 barrels
3 of oil on the outside of the pits in the Concession Area.
4 A. (Dr. Garvey) No, that's not correct.
5 Q. Okay, please correct me then.
6 A. (Dr. Garvey) The 660,000 barrels refers to the
7 entire inventory--I apologize, I know I talk too
8 fast--refers to the entire inventory of material. It
9 includes the pits. These numbers are the integration of
10 the pit masses as well as the mass of contamination outside
11 the pits.
12 Q. And as you told us this morning, this is a
13 calculation that you've made; right?
14 A. (Dr. Garvey) That's correct.
15 Q. Based on the Judicial Inspection data from 2003
16 to--what was the ending year that you used?
17 A. (Dr. Garvey) I believe it's 2009.
18 Q. Okay. Whatever the JI data said.
19 A. (Dr. Garvey) That's correct.
20 Q. Whatever the dates of that are.
21 So, you took that dataset and you simply
22 calculated to develop this estimate of 660,000 barrels.
23 A. (Dr. Garvey) We used the numbers and integrated
24 them. I wouldn't call it a simple calculation.
25 Q. Okay. But I do want to be very clear, when you

01:57 1 use the word "inventory," inventory is a calculation that
2 you have developed?
3 A. (Dr. Garvey) No. Inventory is a measure of the
4 amount of mass that's present in the environment. It's our
5 estimate of the amount of mass that's present there.
6 Q. And based on the Judicial Inspection samples?
7 A. (Dr. Garvey) That's right.
8 Q. And you've used only the soil samples; correct?
9 A. (Dr. Garvey) We've used--actually to be specific,
10 we've use soil and sediment samples as defined by the
11 various investigators, but we've used exclusively the
12 Chevron data for this purpose.
13 Q. Okay. If we can now, if I could ask you to turn
14 to Tab 8 and to Slide 12 in Tab 8.
15 Now, this is--are you there?
16 A. (Dr. Garvey) I think so. Slide 12, Tab 8. Yes.
17 Q. Yes, sir.
18 And this is an image from Dr. Hinchee's
19 presentation of a pit that has not been closed as of the
20 time of this photograph. It's at the Sacha 14 well site.
21 Do you see this?
22 A. (Dr. Garvey) Yes.
23 Q. And, so, if I understand your mass calculation
24 theory, it is that some 80 to 90 percent of the pits'
25 contents are actually outside of the pit?

01:58 1 A. (Dr. Garvey) No, that's not correct.
2 Q. So, you didn't say that. You didn't tell us that
3 this morning?
4 A. (Dr. Garvey) No, you're not stating what I said
5 correctly. What we said this morning is that if you
6 integrate the mass across the Concession Area, that you
7 will find that the majority of the Petroleum Hydrocarbon
8 contamination lies outside of the pits. The pits, despite
9 their high concentrations and obvious presence of oil, are
10 sufficiently small in their footprint, that the areas
11 outside when you integrate them actually represent a
12 greater mass. That is, most of the oil that has been
13 spilled in the Oriente lies outside the pits. That's not
14 the same as the pit's contents have been dumped outside per
15 se.
16 Q. So, you're not saying that 80 percent--well, I
17 thought you were saying that 80 to 90 percent of the oil is
18 outside the pits?
19 A. (Dr. Garvey) That is what I'm saying, but that's
20 not how I understood your first question.
21 Q. Okay. So, I'm sorry if I have misunderstood.
22 So, let's see if we are in the same place.
23 Your position is that 80 to 90 percent of the oil
24 that originated from the pits is now outside of the pits?
25 A. (Dr. Garvey) No, our position is that 80 to

02:00 1 90 percent of the oil that is present in the Oriente as
2 waste or spilled material lies outside the pits. It does
3 not require that it originated in the pits. It could have
4 been a hose break, a spill directly on to the ground. It
5 doesn't require that it originated from the pit. That's
6 the distinction I think I'm trying to make.
7 Q. Okay. I appreciate that. Now, if we can look at
8 your large bundle, Tab 18. I want to go to a portion of
9 your Report where you're providing some of the information
10 that you used to develop the calculation.
11 A. (Dr. Garvey) This is Appendix A?
12 Q. Yes, sir. It's Appendix A. And if you might,
13 turn to A-2, please.
14 Are you there?
15 A. (Dr. Garvey) Yes.
16 MS. RENFROE: Let's give the Tribunal an
17 opportunity to catch up with us.
18 Okay, Mr. Johnson, can you bring that up on the
19 screen, please.
20 Thank you.
21 BY MS. RENFROE:
22 Q. So, gentlemen, I've placed or I've asked you to
23 look at Appendix A from your Report, your March 2015
24 Report, and we're looking at Table A-1. And what I wanted
25 to point out is that to develop your calculation of the

02:02 1 660,000 barrels of oil that you hypothesis is in the
2 Concession Area outside of the pits, if I can draw your
3 attention to the mean column.
4 MS. RENFROE: And let's highlight that for the
5 distance from pit perimeter. And I would like to highlight
6 the 2300, the 1500 and the 360. And if we can also
7 highlight the zero to 50 meters, 50 to 100 meters. Right.
8 Let's highlight that entire cell, please, Mr. Johnson.
9 BY MS. RENFROE:
10 Q. So, I believe this is your area, Dr. Garvey, if
11 I'm correct?
12 A. (Dr. Garvey) That's correct.
13 Q. And so, what you're saying here is that the
14 working assumption that you've developed is that--between
15 zero to 50 meters from a pit, you have concluded that the
16 mean concentration in soils is 2300 parts per million TPH?
17 A. (Dr. Garvey) That's correct.
18 Q. And then between 50 to 100-meters from a pit, you
19 are assuming that there is a mean concentration of 1500
20 parts per million TPH?
21 A. (Dr. Garvey) No. Well, to be clear, the 1500 PPM
22 is the average of the data that was collected in that
23 interval. We are assuming that that value applies to that
24 interval, but it, in fact, is the average of the data for
25 that interval.

02:03 1 Q. Right. And then the third interval that you've
2 used for your calculation is 100 meters to 200 meters from
3 the pit?
4 A. (Dr. Garvey) That's correct.
5 Q. Where, according to your approach, you conclude
6 that the mean concentration of TPH is 360 parts per
7 million?
8 A. (Dr. Garvey) That's correct.
9 Q. Right. And so, just as a starting point, would
10 you confirm that the 360--in fact, all three of these
11 levels of TPH are all below the Decree 1215 standard for
12 agricultural use of land?
13 A. (Dr. Garvey) Yes, the average is below.
14 Q. Right. So, even if hypothetically your
15 calculation were correct--hypothetically--all of the
16 concentrations that you would be presenting in your
17 calculation would all be below the Decree 1215 standard for
18 agricultural land use?
19 A. (Dr. Garvey) Your question doesn't make sense to
20 me. Can you rephrase it?
21 Q. Well, if--and I'm not--I haven't accepted your
22 calculation.
23 A. (Dr. Garvey) I appreciate that. That's fine.
24 Q. Right. But just hypothetically, even if we did,
25 if we were looking at the zero to 50 meters and your

02:04 1 calculation would tell us that soils in that ring would be
2 2300 parts per million TPH?
3 A. (Dr. Garvey) On average.
4 Q. On average?
5 A. (Dr. Garvey) Yes.
6 Q. And if that was the average and if you were
7 correct, then that would be below the agricultural standard
8 of Decree 1215?
9 A. (Dr. Garvey) Right, the average is below, yes.
10 Q. And the same would be true for the average
11 concentrations in the next two rings?
12 A. (Dr. Garvey) That's correct.
13 Q. Okay. Now, if we go back to, if we can possibly
14 pull up or ask you to look at the image that we were just
15 looking at, your map, Shushufindi 34, Figure 5.5-1.
16 And let me help you get there.
17 That's Tab 30, and it is the third page of Tab 30.
18 If we wanted to ground-truth your calculation using
19 Shushufindi 34 as an example, we would see that, according
20 to your estimates, you've predicted that there should be
21 100 to 200 meters away from this pit, there should be TPH
22 concentrations of 360 parts per million. That's what your
23 model predicts?
24 A. (Dr. Garvey) No, the model says that the average
25 of all of the soils that falls between--what interval were

02:07 1 you using, 100 to 200?
2 Q. Yes, sir. 100 to 200.
3 A. (Dr. Garvey) The model says that, on average,
4 around all of the pits in the JI sites, the average for
5 that interval is 360 parts per million.
6 Q. Right. And in your case of Shushufindi 34, where
7 you took soil samples anywhere you wanted to, you don't
8 have any data here that would confirm your model, do you?
9 A. (Dr. Garvey) No.
10 Q. And then likewise, if we go to the 50 to 100-meter
11 ring and your assumption there that there would be 1500
12 parts per million TPH, you don't have any data at this
13 site, Shushufindi 34, to confirm that portion of your
14 model, do you?
15 A. (Dr. Garvey) No, our objective here was not to
16 confirm the Chevron database. It was to examine this
17 particular pit.
18 Q. Right. But I'm asking you about your model and
19 whether your own data can ground-truth it.
20 And so, then, if we look at the final ring of your
21 assumption, zero to 50 meters from this pit where you've
22 assumed the concentrations would be 2300 parts per million
23 on average, none of your datapoints meets that standards or
24 meets that assumption, do they?
25 A. (Dr. Garvey) None of--the average of the values in

02:08 1 this diagram do not appear to exceed 2300 in the zero to
2 50-meter interval. But this is not a basis to ground-truth
3 it, you would have to investigate a comparable number of
4 well sites and a comparable number of pits to ground-truth
5 the study that we did. That's the basis part, we can't do
6 it at this scale.
7 Q. In fact, not a single measurement that you report
8 on this map comports with the model assumptions that you
9 have made for any of these distances from your pit; isn't
10 that correct?
11 A. (Dr. Garvey) No. These are fine observations of
12 zero to 50-meter concentrations. We have plenty of
13 non-detects in the zero to 50-meter interval at other well
14 sites, so they make perfect sense. It's just that some of
15 what we didn't find is any of the very, very high values.
16 But you don't find very, very high values at all of the
17 well sites, you find them at some, you don't find them at
18 others, but you are throwing darts at a dart board.
19 Sometimes you get a red one, sometimes you get a black one.
20 We are doing the same thing here with concentrations and
21 sometimes you get it, sometimes you don't. The point is
22 that by throwing enough darts at enough well sites, you get
23 the spectrum of contamination. To ground-truth what we had
24 done, you would need to throw comparable numbers of darts
25 at comparable numbers of well sites. To do it at one, you

02:09 1 are comparing apples to oranges.
 2 Q. Would you agree with me that for your dartboard
 3 analogy to work and for this calculation, this model that
 4 you've developed, that that presumes at a minimum that the
 5 data is the result of random sampling?
 6 A. (Dr. Garvey) That the data are representative of
 7 the area, which is not quite the same thing. You can also
 8 be--a gridded sample set would also work.
 9 Q. Okay. All right. Just a few more questions about
 10 this mass calculation of oil outside the pits. In
 11 developing this calculation, did you make any deductions
 12 for the oil that was spilled in these various sites by
 13 Petroecuador?
 14 A. (Dr. Garvey) No, we did not.
 15 Q. And you recognize that the JI data measured places
 16 where oil had been spilled by Petroecuador?
 17 A. (Dr. Garvey) Yes.
 18 Q. All right.
 19 A. (Dr. Garvey) At least potentially. I don't know
 20 exactly where Petroecuador spilled their oil versus where
 21 the points that Chevron and the Plaintiffs placed, so I
 22 don't know that, but it's certainly a possibility.
 23 Q. Thank you, Dr. Garvey. I have no further
 24 questions.
 25 PRESIDENT VEEDER: Are there any questions from

02:21 1 samples taken that day?
 2 A. (Dr. Garvey) Well, as I recalled previous in the
 3 week, when some of our staff had visited the site, they
 4 smelled and saw oil on the surface of that well, that was
 5 my understanding; and so had that well been sampled on
 6 another day, it might have shown an impact that might have
 7 exceeded the standard, certainly that the well was
 8 contaminated.
 9 In addition, there are other wells in the area
 10 that documented the presence of groundwater contamination.
 11 That red symbol there at MW-01, MW-01 shows groundwater in
 12 exceedance of the standard. So, we're only talking about a
 13 short distance from a well that's clearly impacted to the
 14 well that the local people were using.
 15 Q. And if I could step to another site that counsel
 16 asked you about, they showed you a picture of a pipeline
 17 spill at Guanta 6. Do you know where that alleged or that
 18 pipeline spill occurred in relation to the area that you
 19 investigated?
 20 A. (Dr. Garvey) No, I don't.
 21 Q. And if we could turn to Tab 5 of your
 22 Report--sorry, Tab 5, and this is your 2013 Report, and if
 23 you could look at Figure 5.2-1. 5.2-1. It's not on the
 24 screen yet.
 25 A. (Dr. Garvey) Okay. We have it.

02:10 1 the Respondent?
 2 MR. EWING: I do have some questions, if I could
 3 just have five minutes.
 4 PRESIDENT VEEDER: Let's take a five-minute break.
 5 MR. EWING: Thank you.
 6 (Brief recess.)
 7 PRESIDENT VEEDER: Let's resume.
 8 There will be questions from the Respondent.
 9 MR. EWING: Thank you, Mr. President.
 10 I think we will be brief today.
 11 REDIRECT EXAMINATION
 12 BY MR. EWING:
 13 Q. If I could pull up on the screen--this is Tab 10;
 14 this is your November 2014 SI Report, and it's Figure 3-2.
 15 This is Tab 2. 5.3-2. This is Tab 10, and it is your
 16 November 14 SI Report?
 17 A. (Dr. Garvey) Right.
 18 Q. And it is Figure 5.3-2.
 19 A. (Dr. Garvey) It's the end of the volume.
 20 Q. And this is the same picture that counsel earlier
 21 had presented to you with Lago Agrio 16. I'm just using it
 22 straight from your Report.
 23 You mentioned during counsel's questions about the
 24 results of Lago Agrio 16's groundwater analysis that the
 25 results from that day did not violate. Why did you mention

02:23 1 Q. Do you remember earlier counsel showed you a
 2 picture at Lago Agrio 2 of an oil-water separator?
 3 A. (Dr. Garvey) Yes.
 4 Q. Where is that located on this map?
 5 A. (Dr. Garvey) It's shown on the eastern--sorry, the
 6 western side of the platform area about halfway down the
 7 length of the platform. It's labeled on the map.
 8 Q. And did that oil-water separator in any way affect
 9 your conclusion at Lago Agrio 2?
 10 A. (Dr. Garvey) No, no, because the majority of the
 11 contamination at Lago Agrio 2 is in the wetlands to the
 12 north of the area, and generally speaking, not downhill, so
 13 to speak, from the oil-water separator. The contamination
 14 is around the other side of the hill so to speak from where
 15 the oil-water separator was. You can see that on the map.
 16 The oil-water separator is on the west. The bulk of the
 17 contamination is to the north associated with the pit
 18 that's found there.
 19 Q. And if I were to walk through the rest or the
 20 remainder of the slides and pictures of Petroecuador's, the
 21 contamination that counsel claims that Petroecuador caused,
 22 would that alter your opinion?
 23 A. No. I mean, to the extent that some of the areas
 24 may be outside of our ring of where ended, the inventoried
 25 area, that would be useful, but not in general because the

02:24 1 activities that were occurring as part of Petroecuador's
2 activities presumably with the same kinds of activities
3 that occurred when TexPet was operating--spills,
4 accidents--these things happen as a result of the
5 operations. So, again, we expect that both operating
6 Parties spilled oil and that the soils and samples that we
7 saw in the area were generally characteristic of the kinds
8 of contamination that exist in the Oriente, in the
9 Concession Area.

10 Q. Counsel also asked you a series of questions about
11 RAP versus non-RAP features and asked you to look at the
12 RAP.

13 How, if at all, did the RAP affect your
14 determination of groundwater impacts?

15 A. (Mr. Goldstein) Well, we saw impacts of
16 groundwater at both RAP and non-RAP sites.

17 Q. How, if at all, did the RAP versus non-RAP
18 distinction affect your determination of soil impacts in
19 the Concession Area?

20 A. (Dr. Garvey) It really doesn't factor into it per
21 se in the sense that soil contamination is soil
22 contamination. When we inventoried the soils, we treated
23 the remediated pits as its own group, and we calculated
24 mass for those separate from the mass that we calculated
25 for non-remediated pits and for the soils.

02:28 1 that was available for these streams and said, the data
2 that's available for these streams shows impacts.
3 Q. And how, if at all, did the RAP versus non-RAP
4 distinction affect your determination that the Judgment's
5 finding of contamination was reasonable?

6 A. (Dr. Garvey) Again, the Judge's determination was
7 that 100 parts per million was an acceptable level for
8 background. We, in fact, assigned background close to ten,
9 so his threshold is already ten times greater than what we
10 would consider to be pristine or undisturbed. The RAP
11 versus non-RAP issue is really a question of who is
12 responsible for what piece, to some degree, but the fact
13 remains that the areas surrounding these pits remained
14 contaminated, and so identifying the Judge's decisions that
15 these areas needed to be cleaned up is really independent
16 of whether or not some of the pits have been addressed.
17 The vast majority of the area in this area, in this
18 Concession, has not been addressed.

19 Q. And, Dr. Garvey, we just finished up some
20 questions about your overall estimate for the amount of oil
21 that you estimate to be around the sites, the Concession
22 Area sites. Do you remember those questions?

23 A. Yes.

24 Q. Whose data did you use for those estimates?

25 A. (Dr. Garvey) We exclusively use the Chevron data

02:26 1 So, the presence or absence of a RAP-treated pit
2 really doesn't tell you anything about the surrounding area
3 as to whether or not it's clean or not. In the RAP they
4 remediated various pits, but the soils surrounding those
5 pits remained unaddressed, as we understand it, and again,
6 we effectively treated those areas around RAP pits or
7 non-RAP pits in the same fashion, saying this is simply
8 characteristic of soils in the vicinity of operational pits
9 because there was no evidence to suggest that they were
10 remediating beyond the pit perimeter.

11 Q. How, if at all, did the RAP versus non-RAP
12 distinction affect your determination of sediment impacts?

13 A. (Dr. Garvey) There again, pits in operations
14 spills, the various processes that went on at these sites
15 would cause contaminants to migrate to the surrounding
16 streams. To the extent that groundwater was carrying it or
17 it was running as a result of surface runoff or as a result
18 of direct spillage into the streams, the remediation of the
19 RAP pits is just a small portion of the footprint of the
20 impact of these sites. So, these streams would--we would
21 expect these streams to show these kinds of impacts with or
22 without knowing what the RAP pits were. We were just
23 assessing to see what was found. We weren't basing our
24 conclusions on what we found in the stream as to what not
25 the local area was remediated or not. We looked at data

02:30 1 that was obtained, the PI and the JI data, the Rebuttal
2 data, as well as what's sometimes called "shadow data,"
3 basically all the information that we could glean from the
4 Chevron databases we use for this purpose.

5 Q. And do you believe that using Chevron's results
6 would affect your analysis?

7 A. (Dr. Garvey) No. We took the data to be valid
8 measurements of 8015-related Total Petroleum Hydrocarbons,
9 so we thought that the data was a good--internally
10 consistent from an analytical perspective and from a
11 collection perspective dataset that we could use to make
12 this assessment.

13 Q. And do you believe that Chevron's data is an
14 accurate reflection of the current conditions in the
15 Oriente?

16 A. (Dr. Garvey) Yes, yeah.

17 Q. Have you ever done this type of estimate of
18 contamination or of spread of contaminants before?

19 A. (Dr. Garvey) Oh, yes.

20 Q. Where have you done it?

21 A. (Dr. Garvey) On several major Superfund sites for
22 the USEPA. We've inventoried PCB contamination in the
23 Hudson River over a distance of 200 miles. Well, the
24 inventory was for 40 miles. We traced contamination for
25 200. We did it for the Passaic River in New Jersey. Our

02:31 1 estimates have been pretty good. For the Hudson River we
 2 estimated approximately 2.7 million cubic yards of
 3 contaminated sediment. They just are about to finish the
 4 remediation of the river this summer. The estimate that
 5 they would come up is that they would remove
 6 2.9 million cubic yards. We were off--with data that was
 7 available close to 16 years ago, we were off by 10 percent.
 8 So, we have done similar calculations for the Passaic River
 9 for docks and related contamination and the volume of
 10 contaminated sediments there. So, we've inventoried both
 11 contamination and the volume of material that needed to be
 12 remediated.

13 Q. Thank you. I have no further questions.

14 PRESIDENT VEEDER: Thank you.

15 Any questions?

16 QUESTIONS FROM THE TRIBUNAL

17 ARBITRATOR LOWE: Just one point of clarification
 18 on the record, if you could help with it. On your
 19 Slide 54, the bottom right-hand cell says a criterion of
 20 100 milligrams per kilogram in soils is close to background
 21 in the Concession Area.

22 When you were speaking about it, and it's at
 23 Page 40, Line 1 of the Transcript, you said that the
 24 criterion of 100 parts per million is well above
 25 background. Could you just explain those two points,

02:34 1 THE WITNESS: (Dr. Garvey) I apologize for the
 2 lack of clarity here. It's close in the sense that it's
 3 five times better, five times higher than background, but
 4 certainly, I guess where we're coming at it is that you
 5 would not want to clean up--if you were trying to clean up
 6 the background, you run the problem saying I have a sample,
 7 let's say, at 30 parts per million, 30 milligrams per
 8 kilogram. Is that background or isn't it? Well, sometimes
 9 it might be because the background has a variance, it's not
 10 uniquely ten or uniquely 15. It ranges with an average of
 11 ten or 15, so your problem is that a value of 30 is like,
 12 well, I'm not sure if I've got contamination or not. I'd
 13 have to do further analysis and so on. By picking a value
 14 of a hundred, you're close enough to background so say,
 15 yeah, I'm getting pretty close, but I'm comfortable that
 16 values above this are clearly impacted and clearly
 17 contaminated, so that's the ambiguity.

18 PRESIDENT VEEDER: Are there any questions arising
 19 from the Tribunal's questions from counsel?

20 We ask the Claimants first.

21 MS. RENFROE: Yes, Mr. President, if I might.
 22 It's perhaps not so much of a question as an observation
 23 that I'd like to share with the Tribunal in light of the
 24 question, and that is the Expert Report of Dr. Jeffrey
 25 Short, one of the Respondent's Experts, his Report of

02:33 1 please.

2 THE WITNESS: (Dr. Garvey) Sure. To be clear, we
 3 find, and actually so do the Claimants find, that
 4 background levels in the soils of the Oriente are about
 5 under 20 parts per million, so the choice of--sorry--100
 6 milligrams--sorry, I'll start again.

7 Both we and the Claimants find that concentrations
 8 of background levels of TPH in the soils are between ten
 9 and 15 milligrams per kilogram in the soils. So, this
 10 criterion here of a hundred means that it's relatively
 11 close to background, but readily distinguishes being
 12 different from background. You may have an occasional
 13 sample that might have ten or 20 or even 30 milligrams per
 14 liter--I'm sorry, milligrams per kilogram, but the average
 15 of background soils is around 10 to 15. Okay? By using a
 16 hundred here, you have a reasonable expectation that
 17 anything that you're finding at this level and higher is
 18 clearly due to Total Petroleum Hydrocarbons as a result of
 19 the TexPet--as a result of oil operations in the Oriente.

20 ARBITRATOR LOWE: Thank you.

21 PRESIDENT VEEDER: If I can follow that up, I
 22 mean, the wording that we got in Slide 54 was close to
 23 background. Is the terminology the same? Does it have the
 24 same meaning whether it's close to or well above
 25 background?

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2 MR. EWING: Counsel, is this appropriate for
 3 question?

4 PRESIDENT VEEDER: Well, it may be, because it's a
 5 Tribunal inquiry, so let's see where it goes. Please
 6 continue.

7 MS. RENFROE: Right. At page 4--

8 PRESIDENT VEEDER: You may need to dig it out--oh,
 9 you've dug it out.

10 MS. RENFROE: At Page 4--I hope this is the same
 11 document. The copy I'm looking at does not have a draft,
 12 but in any event, we did get a draft of it from Dr. Short
 13 and then we got a document that didn't have a draft. But
 14 in any event, if you look at Section 3.2, the first bullet
 15 says: "The average natural background of organic material
 16 extractable," et cetera, et cetera, et cetera, "is about
 17 160 milligrams per kilogram and is almost certainly less
 18 than 400 milligrams per kilogram." So, using the TEM
 19 method, according to Dr. Short, the background is this
 20 range, 160 to 400, but then two bullets later if you use
 21 the 8015 method, he says the background is 50 to a hundred.

22 So, I just think that that's an appropriate piece
 23 of information for the Tribunal as you have this--as you
 24 ponder this question.

25 PRESIDENT VEEDER: I think it's only fair if you

02:37 1 want to comment on this, you should be given a chance to do
2 so. If you wish to, please proceed.
3 THE WITNESS: (Dr. Garvey) Just briefly. Those
4 are differences between the two methods, and we've talked
5 about here the value of 100 milligrams per kilogram was
6 based on the methods that were available to the Tribunal at
7 the time, which was primarily Method 8015. The TEM method
8 really has a lower background level so, it represents a
9 different basis to establish background. The context here
10 is to establish background essentially based on the 8015
11 method. We would point out that of the dataset that's
12 collected by Chevron, approximately 425 or so samples are
13 non-detect but detection limits averaging between 10 and 20
14 milligrams per kilogram. So, clearly for 8015,
15 100 milligrams per kilogram is far above what would be true
16 background by Method 8015, so we would just offer that.
17 PRESIDENT VEEDER: Thank you very much.
18 Do you have any other questions arising from the
19 Tribunal's inquiry?
20 MS. RENFROE: No, Mr. President.
21 PRESIDENT VEEDER: And the Respondent?
22 MR. EWING: No, Mr. President.
23 PRESIDENT VEEDER: Well, thank you very much,
24 we've come to the end of your testimony. We thank you for
25 coming here to assist the Tribunal. You may leave the

02:38 1 table.
2 A. Thank you for listening.
3 (Witnesses step down.)
4 PRESIDENT VEEDER: Before we proceed to the next
5 witness, would this be a convenient time to conclude the
6 debate on the audio recording issue for the site visit?
7 That is, is everybody who needs to be here, here? We will
8 ask the Claimants first?
9 MS. RENFROE: Yes, from the Claimant.
10 MR. EWING: Yes, from the Respondent.
11 PRESIDENT VEEDER: Let's give the floor to the
12 Claimants first. If you want to add anything, please do,
13 but you don't need to repeat anything you've already said.
14 MS. RENFROE: Well, I would be repeating what
15 we've previously said. I just can't underscore the
16 concerns enough that we have about the chilling effect from
17 having a videographer present under the circumstances of
18 this case.
19 PRESIDENT VEEDER: Thank you for the brevity.
20 For the Respondent?
21 MR. EWING: If I could yield the floor to José
22 Manuel, who is right here.
23 PRESIDENT VEEDER: Please proceed.
24 MR. GARCÍA REPRESA: Thank you, Mr. President.
25 I would just like to comment on Ms. Renfroe's

02:40 1 chilling effect subject. I was unfortunately not here when
2 that comment was first made. I was presenting during the
3 Burlington site visit myself at the 12 sites that were
4 visited.
5 I was watching the video this week. I did not
6 feel any chilling effect, and I have to say that I have
7 less experience than Ms. Renfroe in hearings, but certainly
8 it's no different than a hearing in that respect, and I
9 actually found it extremely helpful to see that video
10 afterwards.
11 I think it's a unique opportunity that we will
12 have of recording what is happening. There may be multiple
13 uses for that information afterwards. If there is no video
14 now, there will never be a video. I think those are
15 important items.
16 I did not understand and, I certainly didn't see
17 Ms. Renfroe in any way limited in her brilliant
18 presentations at that site visit. So, I'm just puzzled by
19 that statement.
20 MS. RENFROE: Well, Mr. President--
21 PRESIDENT VEEDER: Let's just make sure there is
22 nothing else.
23 Nothing else from the Respondents on this matter?
24 MR. EWING: Yes, Mr. President, just to make sure
25 our proposal is very clear, we would propose or ask that

02:41 1 the proceedings at the site visit continue with video with
2 two understood conditions: One is that, as probably need
3 not be said, but to be clear, that the Tribunal can
4 terminate the video recordings at any time, if it
5 determines that they are problematic in any way; and, two,
6 that if the videos would remain confidential and available
7 to the Tribunal in the first place, and that later, if
8 necessary, the Parties can seek leave from the Tribunal to
9 request the video and to make use of it.
10 That is all.
11 PRESIDENT VEEDER: Thank you for that. You have a
12 right to Reply.
13 MS. RENFROE: Thank you, Mr. President. May I
14 have just 30 seconds to confer with my colleague?
15 PRESIDENT VEEDER: You can have 35. Thank you.
16 MS. RENFROE: Thank you.
17 (Pause.)
18 MS. RENFROE: Thank you, Mr. President.
19 On behalf of our client and my colleagues,
20 unfortunately I'm constrained to re-urge our concern about
21 the proposed video even under the two conditions. There
22 has been just too much history of leakage in this case, and
23 there is no ability to control how these materials may
24 ultimately be used, and we've already heard repeatedly that
25 they may be put to many uses.

02:43 1 And so, I think that the Republic has the
 2 opportunity at any time it wishes to videotape what it
 3 wants to in the Concession Area, and I would respectfully
 4 urge the Tribunal not to videotape this upcoming site
 5 visit. The Burlington situation is entirely different, for
 6 obvious reasons.
 7 And notwithstanding the flattery from my
 8 colleague, Mr. García Represa, I can tell you that there
 9 was a very--a restraining effect by having to accommodate
 10 the video that I would like not to be restrained by for
 11 this upcoming site visit. So, I just want to repeat: Our
 12 Number 1 concern is about the misuse and the inability to
 13 control how these videotapes will be used. Number 2, the
 14 chilling effect not on counsel--not just on counsel--but on
 15 the participants, the other participants, in the site visit
 16 who will have no ability to limit how video footage of what
 17 they say can be used or misused. And third is the
 18 practical constraining effect of it.
 19 So, with those three points, we respectfully urge
 20 the Tribunal not to permit the videotape of this site
 21 visit.
 22 MR. EWING: Mr. President, if I could clarify one
 23 point.
 24 PRESIDENT VEEDER: Yes.
 25 MR. EWING: I don't know if this came across

02:45 1 Tribunal). This repeats the wording we already have in
 2 subparagraph (b), and I hope that is not controversial.
 3 Paragraph 2: A verbatim Transcript and a video
 4 recording of the Parties' Site Addresses--that's a defined
 5 term in the Order and Protocol--shall be made by suitably
 6 qualified persons to be appointed by the PCA in
 7 consultation with the Parties.
 8 Three: The Transcript shall record only the
 9 Parties' Site Addresses, together with any questions from
 10 and answers to the Tribunal during such Site Addresses.
 11 Four: The video recording shall film only the
 12 individuals making the Site Address for the Parties and, if
 13 and only to the extent practicable, those specific areas or
 14 objects which are identified by such individuals and
 15 approved by the Tribunal during such Site Addresses as
 16 being necessary to video record.
 17 Five: Apart from an individual making the
 18 Parties' Site Address during that individual's Site
 19 Address, the video recording shall not record any of the
 20 participants to the Site Visit at any time.
 21 Six: The Tribunal shall retain full control over
 22 the procedures for both the Transcript and video recording
 23 throughout the period of the Site Visit. It may order at
 24 any time that such transcription or recording cease
 25 immediately if the Tribunal considers that the orderly

02:44 1 clearly, our second condition would be that the video would
 2 be maintained in the Tribunal's possession, which should, I
 3 believe, eliminate any concerns about release of
 4 confidential material.
 5 PRESIDENT VEEDER: We understood that.
 6 MR. EWING: Thank you.
 7 PRESIDENT VEEDER: This is obviously a very
 8 contentious matter, but we've struggled so long with this
 9 site visit order and the protocol. It's the last half mile
 10 of a very long marathon, and we are determined to square
 11 the circle, so we are going to find a solution to both
 12 side's concerns.
 13 What we are going to do is to propose a Draft
 14 Order which we would like you to consider. If there's time
 15 today, we can come back to it this evening--if not, first
 16 thing tomorrow morning--because we've got to find a way to
 17 square the circle.
 18 I'm going to read out some draft wording. It's
 19 quite complicated because it's trying to address the
 20 concerns of both sides. We may disappoint you equally.
 21 So, I am going to read it out slowly, but we can actually
 22 send it to you as a typescript draft, and I could certainly
 23 hand it to our shorthand writers; it's in English.
 24 One: The Site Visit shall be attended by the
 25 complete Tribunal (together with the Secretaries to the

02:47 1 conduct of the Site Visit is adversely affected or for any
 2 other good reason.
 3 Seven: Following the Site Visit, the final
 4 Transcript shall be distributed to the Parties as if the
 5 Site Visit were a hearing.
 6 Eight: The video recording shall, however, remain
 7 under the exclusive control of the Tribunal. Copyright in
 8 the video recording shall vest unconditionally in the PCA.
 9 The Parties shall not be provided with copies of the video
 10 recording.
 11 Nine: However, arrangements will be made by the
 12 Tribunal for the Parties to view the video recording during
 13 the arbitration in a manner that does not permit its
 14 reproduction or distribution.
 15 Ten: These arrangements will be finalized by the
 16 Tribunal after the Site Visit in further consultations with
 17 the Parties. Currently, subject to those consultations,
 18 the Tribunal has in mind each Party's external counsel
 19 holding one copy of the video recording to be kept securely
 20 in its own possession and not to be copied in any form.
 21 Eleven: The Transcript and the video recording
 22 shall form part of the record in the arbitration.
 23 Twelve: No other Transcript, audio, film, or
 24 video recording of the Site Visit shall be allowed.
 25 Thirteen: The Tribunal, the Secretaries and the

<p>Sheet 41</p> <p style="text-align: right;">2284</p> <p>02:48 1 Parties may, however, take still photographs for their own 2 use as long as there is no adverse effect upon the Site 3 Visit, the Parties' Site Addresses, or the work of the 4 Tribunal. All photographs shall be limited to the Site 5 Addresses and upon related areas or objects and shall not 6 be taken of other participants in the Site Visit. In the 7 event of any conduct inconsistent with these restrictions, 8 the Tribunal may order the immediate cessation of all still 9 photography. 10 Fourteen, for the avoidance of doubt, the Tribunal 11 will not admit into the record of this arbitration any 12 still photographs made by the Parties during the Site 13 Visit. 14 That's the end of the proposed draft. I suggest 15 you look at it in writing, and then come back to us in due 16 course, but you can see what we're trying to do: Have 17 video recording, not have a freezing or chilling effect, 18 and try and protect the confidentiality of the recording. 19 And there may be better ways of doing it, so please don't 20 hesitate to suggest further ideas. 21 Now, we have now also received a letter from the 22 Claimants about the Terms of Reference--we haven't had time 23 to study it so I don't suggest we get into that now. We 24 will come back to that I hope tomorrow. 25 Is there any housekeeping we could usefully</p>	<p style="text-align: right;">2286</p> <p>03:05 1 Spanish language. 2 THE WITNESS: Good afternoon, everyone. 3 I am Fabian Andrade Narvaez. 4 I solemnly declare upon on my honor and conscience 5 that I shall speak the truth, the whole truth, and nothing 6 but the truth, and that my statement shall be in accordance 7 with my sincere belief. 8 PRESIDENT VEEDER: Thank you very much. 9 There will now be questions first from the 10 Respondent. 11 MR. LEONARD: Thank you, Mr. President. 12 DIRECT EXAMINATION 13 BY MR. LEONARD: 14 Q. Good afternoon, Dr. Andrade. 15 You're here today to be examined on the foreign 16 law declarations that you've offered in support of the 17 Republic's Track 2 and Track 2 B submissions. Do you 18 understand that? 19 A. I do understand that, yes. 20 Q. You've offered three declarations; is that 21 correct? 22 A. Yes, I have submitted three declarations. 23 Q. We've provided you with a booklet containing 24 documents we might refer to during your examination. You 25 will find at Tabs 1, 2, and 3 copies of three declarations</p>
<p style="text-align: right;">2285</p> <p>02:50 1 address at this stage? We ask the Claimants first. 2 MR. BISHOP: I don't believe so, Mr. President. 3 Thank you. 4 PRESIDENT VEEDER: And the Respondent? 5 MR. EWING: Not right now, Mr. President. 6 PRESIDENT VEEDER: Do we move on to the next 7 witness? We are actually gaining time. Is this 8 appropriate. It's really your witness. Is he here? 9 MR. EWING: Yes, he is here. 10 PRESIDENT VEEDER: Would you like to start with 11 him? 12 MR. EWING: I would not like too, but I'm sure 13 someone would. 14 PRESIDENT VEEDER: Shall we take 15-minute's break 15 and then we will start with him? 16 (Brief recess.) 17 FABIÁN ANDRADE NARVÁEZ, RESPONDENT'S WITNESS, CALLED 18 PRESIDENT VEEDER: Good afternoon. I'm addressing 19 you in English. We must first check whether you can hear 20 me in Spanish translation. 21 THE WITNESS: Yes, very well, thank you. 22 PRESIDENT VEEDER: Now, you will see before you a 23 sheet of paper with the words of the Declaration in 24 Spanish. And if you will, we'd ask you to state your full 25 name and then read the words of the Declaration in the</p>	<p style="text-align: right;">2287</p> <p>03:06 1 entered into the record of these proceedings as RE-9, 2 RE-20, and RE-27, respectively. 3 Do you see them? 4 A. I do see them, yes. 5 Q. Do you recognize them as the three declarations 6 that you have submitted in these proceedings? 7 A. These are my statements, yes. 8 Q. Are there any corrections that you would like to 9 make to any of them at this time? 10 A. None, thank you. 11 Q. Briefly, could you tell us about your academic 12 background. 13 A. I have a degree in juridical sciences. I am a 14 lawyer. I have a doctorate in jurisprudence by the 15 Pontificia Universidad Católica del Ecuador. I have 16 conducted studies at the postgraduate level in the 17 doctorate program in the Universidad Competencia of Madrid. 18 I did a Master's degree in the Francisco de 19 Victoria University. I've also conducted master's degree 20 studies in the Andina Simon Bolivar University. I also 21 have a diploma from the University of Salamanca. 22 I have conducted a research visit in the Antonio 23 Chico Institute at the University of Bologna. I am 24 currently a professor at the San Francisco de Quito 25 University in issues that have to do with legal research--</p>

03:08 1 Q. If you don't mind, would you be so kind to repeat
2 your answer, please. We're not having an English
3 translation.

4 PRESIDENT VEEDER: Can I also suggest you speak
5 slightly more slowly. Just remind yourself to slow down.

6 THE WITNESS: My pleasure.

7 Do I have to repeat everything?

8 BY MR. LEONARD:

9 Q. Yes.

10 A. Of course, no problem.

11 I have a degree in juridical sciences. I'm a
12 lawyer, I have a doctorate in jurisprudence by the
13 Pontificia Universidad Católica of Ecuador. I have also
14 pursued a doctorate from the Universidad Competencia of
15 Madrid, I have a Master's degree from the San Francisco de
16 Victoria University. I conducted studies at the Master's
17 level at the Universidad Andina Simón Bolívar. I also have
18 a diploma from the University of Salamanca. I conducted a
19 research visit during my doctorate program at the
20 University of Bologna at the Antonio Cicu Institute I was
21 telling you that I am a professor at the San Francisco de
22 Quito University. I teach a class in connection with legal
23 research methodology, reasoning, and I also participate in
24 the methodological director--direction that is conducted at
25 the university.

03:12 1 approximately.

2 And, currently, I practice my profession in the
3 private sphere, in the private sphere in issues that have
4 to do with these matters.

5 Q. Have you served as an expert for the Republic in
6 any other matter besides this case?

7 A. Yes. In connection precisely with tort liability
8 for environmental damages, I have been an expert in the
9 Burlington v. Ecuador Case, Perenco v. Ecuador as well.

10 Q. Have you ever acted as counsel in litigation
11 adverse to the State or any State entity?

12 A. Yes.

13 In my professional practice, I have worked in a
14 number of cases against the State and its
15 instrumentalities. The Attorney General of the State has
16 also participated as the representative of the State of
17 Ecuador.

18 Q. Are you currently acting as counsel in litigation
19 against the State represented by the Attorney General's
20 Office?

21 A. Yes. I have a number of cases that are still
22 pending as one of the litigant lawyers, and the Attorney
23 General of the State is also involved in those cases,
24 representing the country of Ecuador.

25 Q. Thank you.

03:10 1 I was also Professor of the general theory of
2 legal proceedings at the Universidad Pontificia Católica of
3 Ecuador.

4 These are the main issues that have to do with my
5 educational background.

6 BY MR. LEONARD:

7 Q. Thank you.

8 What can you tell us about your professional
9 experience?

10 A. Well, I have been practicing my profession for the
11 past 17 years. In my professional activities, I have
12 rendered services as an adviser to the National Congress at
13 the time precisely when the environmental management law
14 was being discussed. Later on, I served at the Supreme
15 Court of Justice as an adviser in the administrative
16 division presided over by Hernan Salgado Pesantez. He was
17 a professor, one of the Professors that was cited during
18 the Opening Statements in these proceedings.

19 In that context, I was involved in the preparation
20 of resolutions in about 800 cases that were adjudicated
21 before the Court during that period of time and at that
22 division, and then I rendered services for the municipality
23 of the City of Quito. I was the Attorney General for the
24 city; and, in that context, I adjudicated cases that had to
25 do with the city, and we're talking about 4,500 cases,

03:13 1 Dr. Andrade, I'm going to ask you to address the
2 Tribunal today on issues relating to general tort law in
3 Ecuador. The microphone is yours.

4 A. Thank you very much.

5 Indeed, I have been requested to make a short
6 presentation and to talk to you about the tort law system
7 under the legal structure of Ecuador. My presentation will
8 be divided into two different sets of issues.

9 First, we're going to talk about the substantive
10 aspects of tort liability in Ecuador; and, in that regard,
11 we are going to talk about the general principles and how
12 liability is generally attributed in the Civil Code.

13 I'm going to then talk about two types of specific
14 rules that entail specific matters related to activities
15 that are inherently dangerous.

16 And also I'm going to talk about the tort
17 liability related to contingent harm.

18 Then I'm going to make reference to protected
19 legal interests under these sets of rules.

20 And, finally, I'm going to talk about the joint
21 and several liability system that is used in Ecuador.

22 Now, in connection with procedural aspects, I have
23 taken as a referent the Year 1999 when the Environmental
24 Management Law was passed and the procedural system was
25 structured, this in connection with Article 43.

03:16 1 I'm going to talk about the procedural situation
 2 in Ecuador before Article 43 of the EMA was passed and
 3 after the Environmental Management Law was adopted.
 4 First, I'd like to say to you that the tort system
 5 provided for in the Civil Code dates back to 1861. In 1861
 6 in Ecuador, the 1852 Constitution was current. The Civil
 7 Code was published on 1st January 1861, and a few days
 8 later--ten days later, in fact, García Romeno took over as
 9 President. He created a Constituent Assembly, and passed
 10 the Constitution of 1852, and then in the concept of these
 11 two constitutions we were in presence of classical
 12 constitutionalism in connection with individual rights, et
 13 cetera.
 14 Now, the Civil Code was born out of that process,
 15 and there is a very well-known general principle reflected
 16 in Article 2214 of the Civil Code that says that,
 17 practically speaking, whoever commits an offense because of
 18 its conduct that harms third-parties is obligated to repair
 19 that harm. This is the general principle that is enshrined
 20 in our regime.
 21 Now, the system of allocation of liability that is
 22 provided for in the Civil Code entails a number of elements
 23 in connection with the allocation of harm. First, you need
 24 a conduct.
 25 You also need harm to exist. That harm needs to

03:19 1 objective elements; for example, the harm itself or the
 2 conduct itself.
 3 Now, according to this system, we have a damage
 4 that is typical, normal, natural, in connection with
 5 certain activity.
 6 Now, the individual performing that activity has
 7 to be rendered liable when that activity creates a harm.
 8 The origin of this form of establishing a
 9 causation link between the harm and the activity, arises
 10 precisely from the fact that the activity performed has
 11 hazardous traits not commonly present in human activity.
 12 This is the way in which the Supreme Court of Justice has
 13 explained this concept as to how this system of the
 14 allocation of responsibility is created.
 15 The conduct, the activity, and the harm, the
 16 objective elements are underscored. It is a kind of strict
 17 liability of sorts.
 18 Clearly, the initial problem that has come about
 19 in connection with this matter has to do with those
 20 elements of causation. What we're looking at here is the
 21 fact that the system creates a way of linking the harm to
 22 the conduct.
 23 Now, we're not talking about common elements
 24 because the activity that we're dealing with here is not a
 25 common activity. When I allocate liability and attribute

03:18 1 be connected or linked to that conduct. It has to be in
 2 relationship of cause and effect. This is called
 3 causation. And this characterizes the general regime as
 4 well. Well, we're not talking about any conduct. We're
 5 talking about a conduct that was created on the basis of
 6 malice or in violation of the due diligence or negligence
 7 as well.
 8 This characteristic of our system has led to it
 9 being named a subjective system of allocation of liability.
 10 i.e., the element of intent present in that conduct is, in
 11 practice, what characterizes our system for allocation of
 12 liability.
 13 Next slide, please.
 14 Now, out of this general system of allocation of
 15 liability which is, like I said, a subjective system, if
 16 you will, there are specific provisions that modify this
 17 regime according to the different circumstances.
 18 I'm going to talk about the system of allocation
 19 of liability in the case of inherently dangerous
 20 activities. The Supreme Court of Justice in connection
 21 with these inherently dangerous activities, has stated that
 22 the system of allocation of liability is based on the
 23 theory of the created risk.
 24 Now, subjective elements are no longer important
 25 in this case, and other elements become more relevant,

03:21 1 it to the conduct of the individual conducting the
 2 inherently dangerous activity, what should happen for that
 3 individual not to be determined as liable is that that
 4 causation link has to be severed.
 5 And how can he do it? Showing, alleging that the
 6 detected and verified harm was not the product of the
 7 inherently dangerous activity, but of any external element.
 8 These are the traditional statutory exemptions from
 9 liability: force majeure or unforeseeable circumstances,
 10 the exclusive fault of the victim, or the exclusive act of
 11 a third party.
 12 This is the manner in which a party performing a
 13 hazardous activity can be released from liability for those
 14 damages that are ordinarily produced by the type of
 15 activity performed.
 16 Now, generally speaking, we have talked about the
 17 criteria of allocation of liability and causation.
 18 Mr. Barros, in his Report of January 2015, says that the
 19 criteria in order to determine this causation is based on
 20 two different theories. One has to do with the necessary
 21 cause, the sine qua non cause, or the equivalent causes,
 22 and this is Paragraph 49 of his Report, and then together
 23 with this theory, according to Mr. Barros, there is another
 24 theory that should be applied to determine causation which
 25 has to do with proximity, the proximate cause.

03:23 1 These are two theories that we can discuss in
 2 legal doctrine but the Ecuadorian system has discarded
 3 these two theories explicitly. In the case of Delfina
 4 Torres specifically at the Whereas Number 20, well, a
 5 number of causation theories have been analyzed. The
 6 Supreme Court of Justice has discarded each one of the
 7 theories put forth by Mr. Barros, and here you can see the
 8 reasons that were put forth by the Court. This comes from
 9 the Delfina Torres case, and first the theory of necessary
 10 cause or *condicione sine qua non* has been discarded because
 11 it was considered that if we apply this theory, I could
 12 find a cause of the cause *ad infinitum*. And the theory of
 13 the proximate cause was discarded, as a general rule,
 14 because then we would face the issue of determining what is
 15 the adequate cause to create the harm.
 16 Now, instead of these theories that have been put
 17 forward by Mr. Barros in connection with these matters, the
 18 Court has chosen the theory of the appropriate cause or
 19 adequate cause.
 20 The adequate cause is a very simple proposition.
 21 It mandates that it is the judge's duty, in the exercise of
 22 his or her own discretionary powers, to determine in each
 23 case how to determine, how to establish that causal nexus
 24 between the harm and the alleged harmful activity. The
 25 explanation by Dr. Barros is that one cannot leave it to

03:25 1 the Judge's arbitrariness to determine causation. The
 2 initial problem here is that the concept of discretionality
 3 is confused with the concept of arbitrariness.
 4 Arbitrariness in Spanish means a mere whim, something done
 5 voluntary.
 6 In Spanish, now, discretionality means something
 7 completely different from that. It means that you're
 8 acting prudently, you're acting reasonably. You are acting
 9 according to the rules of logic, and you're providing due
 10 justification. This is not something that I'm saying. The
 11 Supreme Court of Justice in a number of decisions has
 12 indicated over and over again the mechanism to be used in
 13 order to determine causation.
 14 In the case of Andrade Medina versus CONELEC has
 15 has again explained that the judge is responsible for
 16 determining in each specific case the causation
 17 relationship that exists between the harmful event and
 18 harm, and this has to be determined under the rules of
 19 reasonableness. This is the explanation of what the
 20 discretionary power means. Of course, all other theories
 21 are just a set of guidelines for the Court and for the
 22 Court to be able to make a decision in connection with the
 23 existence of this element of causation for purposes of
 24 determining the allocation of liability.
 25 But of course. Look at Dr. Barros' observations

03:27 1 and invitation to use a number of theories that do not
 2 exist in the legal system and that clearly are discussed in
 3 the opinion of legal scholars but not applied in Ecuador.
 4 So, he has talked about this in general. It has to do with
 5 the whole system of tort liability.
 6 If these theories are not applied in the system as
 7 a whole, they're much less applied in the case of
 8 inherently dangerous activities. Let me give you an
 9 example which is very simple and that comes out of
 10 Article 2229(2). The Supreme Court has structured the
 11 whole system of inherently dangerous activities and the
 12 liability thereof on the basis of this provision. I'm
 13 going to take numeral 1 of Article 229. This list, the
 14 Supreme Court tells us, is a list of activities that when
 15 the Civil Code was created were determined as inherently
 16 dangerous activities. We have many more today that we
 17 could also consider, but let's just take an example just to
 18 illustrate this concept.
 19 Let us assume that right now I start handling
 20 explosives right here in this room. A pause is made, a
 21 coffee break as you will, and when you come back, you find
 22 this room completely destroyed. Common sense and
 23 experience would indicate that the reason why this room has
 24 been destroyed is because Mr. Fabian Andrade was handling
 25 explosives in this room. This indicates experience,

03:28 1 something that is reasonable.
 2 And clearly, in order to release myself from
 3 liability because of the damage done to this room because
 4 of an inherently dangerous activity--that is to say, the
 5 handling of these explosives--I'm going to have to provide
 6 a justification in the sense that the damage was not born
 7 of my conduct, but it was born of an external factor, for
 8 example, a gas pipeline exploded. This is to be alleged
 9 and justified as well.
 10 As you can see in connection with inherently
 11 dangerous activities, what happens is that the burden of
 12 proof is reversed with the purpose of breaking the causal
 13 link. A causal link that is established for the mere fact
 14 that the harm is typical, it's natural of the abnormally
 15 dangerous activity.
 16 Now, let us use the same example, but in
 17 connection with activities that are relevant to us.
 18 For example, let's suppose that there is a forest
 19 that has no human activity whatsoever, it's pristine, and
 20 in the forest you have rivers, you have wildlife. Well,
 21 now, we place oil facilities in the forest, the activities
 22 are conducted with no problem whatsoever, and then as time
 23 goes by, I look at the conditions in the forest. In the
 24 forest we find contaminants that are typical of oil
 25 activities: Oil, for example, chemicals. What does

03:30 1 experience tell us and common sense, according to this
 2 system as put forth by the Supreme Court of Justice? Well,
 3 that those chemicals and the substances are the ordinary or
 4 regular effect of hydrocarbon activities. I have not said
 5 so far that hydrocarbon activities are inherently dangerous
 6 activities.
 7 The Supreme Court dealt with this issue when it
 8 decided the Delfina Torres case. It reached the conclusion
 9 that today one must say that hydrocarbon activities are
 10 inherently dangerous activities.
 11 Now, those who carried out hydrocarbon activities
 12 in that forest become responsible for the damage caused to
 13 that forest for the harm that is born of the regular
 14 activity that, as was said, was inherently dangerous.
 15 The way through which the operator of the oilfield
 16 could release itself from liability is showing that the
 17 substances to be found in the forest and the natural
 18 environment do not have to do with its own activities, but
 19 they have to do with an external factor, and it has to
 20 argue and prove the different events that would release
 21 itself from liability.
 22 Let us look at the other specific system that we
 23 have.
 24 Our tort liability system does not only deal with
 25 harm that has already been produced. It also establishes a

03:35 1 fall onto the street. There is a harm that I would like to
 2 avoid, which is that the passerby that is walking down the
 3 street receives this hit from the blunt plant object, and
 4 his or her health may be impaired.
 5 And then we have an indeterminate number of
 6 people, which is this group of passersby that cannot be
 7 identified, and that walk down the street.
 8 Now, let us think that that building has a rooftop
 9 but does not overlook the street, but it overlooks the
 10 interior of a building.
 11 Now, we have the same number of elements: The
 12 plant pot that can fall on to the interior of the building.
 13 We have a damage that we would like to avoid--that is to
 14 say damage to life or health--but in this case there is a
 15 determinate number of individuals, which is the people who
 16 live in the building. Under this scenario, the person who
 17 can bring an action to remove the plant pot and avoid
 18 damage to the passersby is no longer any individual;
 19 rather, it has to exclusively be an individual who lives in
 20 the building. These are the rules of Article 2236, and
 21 these are the different events that can be assumed here,
 22 the different assumptions.
 23 As I told you, I was going to go back to explain
 24 this concept of popular action, it's also called collective
 25 action. That's what legal scholars call it as well. What

03:32 1 regime to prevent contingent harm. We're trying to do away
 2 with risk factors to avoid damage from existing. This is
 3 what we call the regime of contingent harm liability. The
 4 specific rule is contained in Article 2236. What this
 5 provision does is to grant a popular action, and we're
 6 going to talk about the popular-action article in the
 7 context of the Civil Code, but the popular action is
 8 granted, is granted in two events. When the threat of harm
 9 is related to an undeterminate number of individuals that
 10 cannot be determined at the time when the action is put
 11 forth, because anyone can put forth an action to take away
 12 the risk that can potentially damage this indeterminate
 13 group of people. The other rule is that when the group of
 14 potentially affected is determined, only a member of such
 15 group or class must bring the action.
 16 Let me give you an example which is used in law
 17 school classrooms and that may be useful to illustrate this
 18 idea. Let us imagine that we have a building, and the
 19 building has a terrace, a rooftop, and the rooftop is
 20 overlooking the street. Now, we have a large object there
 21 that has been placed there, a pot, a plant pot. And that
 22 plant pot, if it falls on the street, can hit a passerby on
 23 the head, can affect this person physically, and the person
 24 is going to be sent to the hospital. So, as you can see,
 25 there is a risk factor which is this plant pot that can

03:36 1 does this mean in our system? In our system, it is a
 2 representation granted by law and that has two
 3 characteristics: first, it is a procedural representation,
 4 purely procedural representation; that is to say, the law
 5 has attributed to an individual in accordance with the two
 6 rules that I have explained before under Article 2236,
 7 where the law has allowed this individual to bring the case
 8 to a court for the Court to hear the case and for the Court
 9 to make a decision. These are procedural steps. This is
 10 only done in order to bring the action.
 11 The second feature here is that this is a limited
 12 right. It only has to do with procedural aspects. The law
 13 allows any person to represent other individuals in the
 14 case of an undetermined group of individuals, or to a
 15 certain person in the case of a determined group of
 16 individuals. Well, that does not mean that the person
 17 bringing the action can dispose of the substantive rights
 18 of that group of individuals. For example, it cannot make
 19 arrangements in connection with substantial rights, it
 20 cannot settle, it cannot bring the case to a panel of
 21 arbitrators. Why? Because, of all these purposes, our
 22 legislation, according to Article 44 of the Code of Civil
 23 Procedure, indicates that there has to be a Power of
 24 Attorney that is given voluntarily. A Power of Attorney
 25 will specifically provide powers of representation to the

03:38 1 agent.
 2 Now, to end with this matter, I wanted to talk
 3 about the evidence requirements related it Article 2236 in
 4 connection with activities that may bring about a
 5 contingent harm. This is easy when we're talking about
 6 inherently dangerous activities. In that case I need to
 7 determine evidence that there is an actual risk that a harm
 8 may be caused to a group of individuals. For example, in
 9 the case of the forest, I would have to show that, for
 10 example, the presence of environmental pollution in the
 11 forest may affect adversely the rights of the forest
 12 dwellers. We're talking about, for example, 278
 13 families--this was the case of Delfina Torres, and
 14 1,000-odd individuals in the case of Delfina Torres as
 15 well.
 16 I would have to show that the contamination of the
 17 environment may impair the rights of those 1,057
 18 individuals and bring this to justice.
 19 The other matter I would like to discuss in
 20 connection with the substantive aspects of this matter, I
 21 wanted to also say that we need to talk about the legal
 22 interest. I have been asked not to talk about specifically
 23 the word "right" or legal right, which has a specific
 24 meaning that is well understood in Spanish and that can be
 25 translated to protected interest. To address this subject,

03:40 1 first, we have to understand what harm means from the
 2 viewpoint of the tort system.
 3 Now, harm means that a legal protected interest is
 4 impaired or it's affected adversely.
 5 Now, from the report of Mr. Coronel that was
 6 submitted on June 3 2013, at Paragraph 92, he proposes and
 7 states that the legal regime I just commented on, Article
 8 2214 which establishes the general rule, Article 2229,
 9 which talks about abnormally dangerous activities I talked
 10 to you about, and even Article 2236, which refers to
 11 contingent harm, could not be applied--he states--to
 12 collective harm or included within environmental harm. I
 13 think it's the fourth line of this text here. Mr. Coronel
 14 asserts this, but as you can see, this finds support in no
 15 provision, no norm, nothing. This is just an opinion.
 16 Now, if one tries to justify this concept from a
 17 positive viewpoint, the easiest thing is to go back to
 18 2214, and to find that 2214, when it makes reference to the
 19 harm that must be repaired and that must be caused by the
 20 conduct of the individual does not make a difference among
 21 the different categories of damage or protected legal
 22 interest.
 23 Now, Article 2229 establishes, in its first
 24 paragraph, the general rule related to the element of
 25 intention in the torts regime, says explicitly any harm,

03:42 1 any impairment any adverse effect to a legally protected
 2 interest must be compensated.
 3 Now, 2236, when it talks about contingent damage,
 4 draws no distinction also, and what is usually said here is
 5 that when the legislator does not draw any distinction, the
 6 individual applying the provision must not draw a
 7 distinction, either.
 8 Now, 2229 and 2214, these two provisions were
 9 invoked in the Delfina Torres case. In that case, there
 10 were damages produced in connection with an event that had
 11 to do with environmental contamination, now an impairment.
 12 These two provisions were established.
 13 Now, if a legal system does not distinguish
 14 between the kinds of damages and the legally protected
 15 interest, one must understand that this system applies to
 16 property impairments, for example, impairment of the right
 17 to property, the right to realty, or the impairment of
 18 personal rights--credits, for example--and also impairments
 19 that don't have to do with property things, for example,
 20 life, health, physical integrity, honor. All of these are
 21 legally protected interests in our legal system.
 22 If these legally protected interests are harmed,
 23 then the legal regime provided for in the Civil Code is
 24 also useful.
 25 And I would like to end this part regarding the

03:45 1 legally protected interest, by telling you that also none
 2 of the provisions therein established draws a distinction
 3 in connection with the mechanism to provide a remedy.
 4 Thus, the mechanism for compensation is not useful criteria
 5 to indicate distinctions or modifications to the placing of
 6 the legal interest that is being vindicated through this
 7 regime.
 8 In the case of Delfina Torres, the Plaintiff
 9 itself put forth a number of protective measures as a
 10 mechanism to compensate for impaired rights. This
 11 mechanism did not change the allegations related to the
 12 harm suffered and the liability of those who carried out
 13 the activities that brought about the harm.
 14 Next, please. Next one, please.
 15 Now, in connection with these substantive matters,
 16 I wanted to talk about how the joint and several liability
 17 regime works in Ecuador. So, I wanted to also talk about
 18 the concept that we're going talk about.
 19 Now, let us imagine that there is a rock, right?
 20 A stone, and also that a number of individuals drop water
 21 for a long time on that rock. Finally, that rock breaks.
 22 The pertinent question there is which one of the drops
 23 broke the rock? The first one or the last one or the
 24 second one? The Ecuadorian legislators chose a solution
 25 for events such as these. These are joint causes, if you

03:46 1 will, so we call them there, and that is what Article 2217
 2 provides for. When a number of individuals contribute to a
 3 certain harm, all of them are jointly and severally
 4 responsible.
 5 Now, the solution of the Ecuadorian legislator in
 6 1861 seems unjust if we don't really understand the system
 7 as a whole. The system states that, of course, the victim,
 8 the sufferer of the harm, may choose amongst all the
 9 individuals that contributed jointly and severally to bring
 10 about the harm, and a claim may be brought against one of
 11 these individuals, and the full payment of the obligation
 12 may be asked of only one of them.
 13 And to complete the system, the joint and several
 14 debtor paying for the obligation has the right to obtain
 15 from the joint and several co-debtor, the corresponding
 16 amount, in the corresponding proceedings and with the
 17 corresponding evidence, related to such amount that he is
 18 entitled to. This regime is established, not because I say
 19 so but because it is provided for in the Civil Code since
 20 1861, in Article 1530, regarding the possibility or ability
 21 that the victim has to sue all or any of the joint and
 22 several debtors, and Article 1538, regarding the right that
 23 the joint and several debtor who paid that obligation has
 24 to come after the other debtors to pay the amount to which
 25 they are obligated.

03:50 1 the Court could protect the individual's right.
 2 In the case of my example, the forest, where these
 3 272 families lived and the 1,057 individuals also lived, in
 4 principle, each one of these individuals could have brought
 5 a claim to the extent that the impairment of the
 6 environment generated a harm for each one of them, a direct
 7 harm to each one of them.
 8 Now, in practice, what will we get? We would have
 9 1,057 severed claims; right? Based on the same legal
 10 system and in the cases of pollution, it will be based on
 11 the same facts. This is what the legal regulations allowed
 12 for.
 13 Now, this was a mechanism that was going against
 14 procedural economy, and it was very complicated from the
 15 viewpoint of legal certainty because each one of the courts
 16 considering the different allegations, the strategies put
 17 forth by the parties in each one of these cases, the
 18 evidence submitted by the Parties, well, different judges
 19 could have made different decisions. There could have been
 20 an inconsistency amongst all of these Court decisions. The
 21 Ecuadorian procedural system allowed for a joinder of
 22 cases, so all of these cases could have been joined that
 23 would otherwise have been proposed independently so that
 24 the Judge who heard the first case could decide on all of
 25 the cases. These are joinder of cases, and this joinder of

03:48 1 And also, there is another Article that has to do
 2 with the right that the payor of the obligation has in
 3 order to go after his co-debtors and ask for the amount
 4 that he paid.
 5 So far we have reviewed these substantive aspects
 6 that have been emphasized with respect to torts under
 7 Ecuadorian law. Now, let us talk about procedural aspects
 8 right now.
 9 Okay. First, what happened before the EMA in
 10 connection with procedural regulations? Now, any
 11 individual that sees his or her rights impaired in this
 12 legally protected interest could put forth an action in
 13 ordinary proceedings. This was the right kind of case to
 14 bring. Why? Because the Civil Code of procedure,
 15 according to a very old rule, established that in every
 16 single case where a specific proceeding has not been
 17 stated, all claims must be done through the ordinary
 18 proceedings. This is Article 59 of the Code of Civil
 19 Proceedings. This is a very simple rule.
 20 Any individual that may have seen his or her
 21 rights impaired could bring a claim under ordinary
 22 proceedings for the Court, whether, according to the
 23 general regime or because of an inherently dangerous
 24 activity or in order to avoid contingent harm, well, via
 25 the ordinary proceedings, that claim could be brought, and

03:52 1 cases is regulated under Articles 108 and 109 of the Code
 2 of Civil Procedure.
 3 Think of the Delfina Torres case. In the case of
 4 Delfina Torres we had there 278 families, we had 1,057
 5 individuals. Now, these 1,057 individuals--I don't think
 6 it was all of them, but at any rate, let's just say that
 7 the 1,057 individuals think of it as individuals bringing
 8 different cases. So, instead of doing this, they decided
 9 to create an entity that is different from themselves, and
 10 it's called the Delfina Torres Committee. So, the Delfina
 11 Torres Committee acting by its legal representative is the
 12 one who brought the action based on his own rights and
 13 based on rights of this entity, this legal person.
 14 In the Delfina Torres case, as you know, in
 15 Whereas Number 5, the problem was dealt with in connection
 16 with the right to bring a claim procedurally, the ability
 17 to bring a claim, and it was said that the underlying legal
 18 relationship and the purpose of the litigation is
 19 completely different. So, this is what happened to the
 20 community that lived in the Delfina Torres case.
 21 Now, the 1,057 individuals could have brought
 22 their own individual actions, and we could have found a
 23 solution vis-à-vis this multiplicity of cases based on the
 24 same legal grounds.
 25 Now, under Article 43 of the EMA, without

03:53 1 modifying the substantive system, the same regime we have
 2 had in the Civil Code dating back to 1861 and the same
 3 system of tort liability, well, we would have a number of
 4 civil actions. So, this is an article that's called,
 5 "civil actions." Well, the civil actions are those actions
 6 that are provided for in the legal system.
 7 Now, Article 43 wanted to bring order to
 8 procedural matters. One no longer needs a claim, an
 9 individual claim, that each one of the impaired parties
 10 would bring because of an event, an environmental event,
 11 but what it can be done is that since all of them are
 12 connected because of the common interest and impaired by
 13 the same environmental event, well, all of them can bring a
 14 claim. This is a procedural joinder of cases that is
 15 legislatively ordered.
 16 I don't need a judicial proceeding that heard the
 17 first case by motion of a party, brings together all the
 18 cases and makes a decision now, because of the legislative
 19 order under Article 43, that joinder of cases, procedurally
 20 speaking, has been provided for under Article 43(1).
 21 Now, what else does Article 43 do? Well, this is
 22 no longer an ordinary proceeding, but we will be using a
 23 summary verbal proceeding. Article 59 that we talked about
 24 a moment ago, says that when the law does not establish a
 25 specific proceeding, then the ordinary proceeding will be

03:57 1 the first copy of the document is in English. There is a
 2 pink divider, and then the second copy of the document is
 3 in Spanish for you to look at.
 4 And while we're doing that, you mentioned in your
 5 direct testimony earlier that it was in connection with
 6 precisely some of these issues of tort liability that
 7 you've discussed this afternoon that you also appeared as
 8 an expert for Ecuador in the Burlington case; is that
 9 correct?
 10 A. Yes, that is correct.
 11 And good afternoon, Mr. Coriell. A pleasure to
 12 see you again.
 13 Q. Thank you.
 14 And in the Burlington Case in which you appeared
 15 and discussed these issues of tort liability, you're aware
 16 that the State was bringing environmental counterclaims
 17 against Burlington for environmental impact or
 18 environmental harm in the blocks that it had operated in
 19 Ecuador. Do you recall that?
 20 A. Yes, I do remember that.
 21 Q. And in the Perenco Case, which you also appeared
 22 in as an expert brought by the Republic of Ecuador, you did
 23 so at a counterclaims Hearing where the State was bringing
 24 claims for environmental harm against Perenco for its
 25 operations in Ecuador; correct?

03:55 1 applied. This is a verbal or an oral summary proceeding.
 2 The regime established in Article 43 applies to
 3 all damages arising from an impact to the natural
 4 environment, whether the harm is actual or contingent.
 5 Article 43 does not bring about any innovation in the
 6 substantive law in connection with tort liability. What it
 7 does is that it Orders the different proceedings, it puts
 8 order into different proceedings when the harm is
 9 originated by an event that affected adversely the
 10 environment.
 11 Sir, you have the floor.
 12 Q. Thank you, Doctor. I believe that we have
 13 exceeded the time we had for direct examination, so I will
 14 tender the Witness now.
 15 PRESIDENT VEEDER: Thank you very much.
 16 There will now be questions from the Claimants.
 17 MR. CORIELL: Thank you, Mr. President.
 18 CROSS-EXAMINATION
 19 BY MR. CORIELL:
 20 Q. Dr. Andrade, good afternoon. Good to see you
 21 again. I'm Wade Coriell. We spoke, as you recall, law
 22 June during the Burlington environmental counterclaims
 23 Hearings which you referenced in your direct testimony. My
 24 colleague is going to be handing out two binders to you.
 25 The tabs in the binders are numbered, and behind each tab,

03:59 1 A. That is correct.
 2 Q. Okay. I'd like to move first, if we could, to a
 3 discussion of the Collusion Prosecution Act, which you
 4 bring up in your Second Report, and you can find it at
 5 Tab 2 of your binder.
 6 And I think this will be uncontroversial. I just
 7 want to get a sense of what precisely you are opining with
 8 respect to the Collusion Prosecution Act.
 9 It's my understanding--and I'm reading from Page 4
 10 in the English, but I think it's Page 5 in the Spanish...
 11 A. I'm sorry, what tab? Two? Did you say two?
 12 Q. Tab 2, yes, which is your Second Report dated
 13 November 7th of 2014. Do you recall that?
 14 A. Yes.
 15 Q. And so, on Page 5 of the Spanish, I think near the
 16 top, you say that, "Ecuadorian law provides for an action
 17 under the Collusive Prosecution Act specifically designed
 18 to address cases of judicial fraud such as the one Chevron
 19 alleges here." That's your opinion; right?
 20 A. That is correct.
 21 Q. And then if we look at the bottom of Page 5 in the
 22 English--and I think it's on Page 6 in the Spanish, you
 23 have a paragraph that begins, "In this case," and you say:
 24 "The CPA provides the only proper remedy in Ecuador for
 25 Chevron to air its allegations of fraud and to adduce

04:01 1 evidence purportedly in support of those allegations."
 2 Do you see that?
 3 A. Yes, I do see that.
 4 Q. And so I understand this right, what you're saying
 5 here is two things; right? The only--the CPA is the only
 6 proper remedy first for airing fraud allegations; correct?
 7 A. No, it is not correct.
 8 Q. There are, in fact, other proper remedies for
 9 fraud allegations in the case of judicial fraud; right?
 10 A. Yes, there are other mechanisms which are not
 11 useful for the presentation of this extrinsic of evidence.
 12 Q. I understand. What I'm trying to understand here
 13 is that you say that the CPA is the only proper remedy for
 14 Chevron to air its allegations of fraud and to adduce
 15 evidence purportedly in support of those allegations. So,
 16 let me ask you this way: Do you believe that the CPA is
 17 the only proper remedy for Chevron to air its allegations
 18 of fraud in Ecuadorian courts?
 19 A. Let me repeat it. It is the only mechanism where
 20 Chevron could introduce new evidence to prove fraud.
 21 Q. So, you would agree with me that any fraud
 22 allegation that Chevron were to make that did not require
 23 new evidence could be heard by the ordinary courts, and
 24 there would be no need for a CPA action; is that correct?
 25 A. I agree. Due process--is the concern of every

04:05 1 one is referring to the evidence, the rule is that evidence
 2 that has been improperly presented is of no value to the
 3 proceeding, so the Judge cannot assign any value to that
 4 evidence when issuing a decision. But it is a different
 5 thing to have a violation in the procedure that leads to a
 6 nullity in that proceeding. Agree?
 7 There is a humongous difference here. So the
 8 Judge in this case has to separate this tainted evidence
 9 and do not consider it for the decision-making process.
 10 When there is a violation of the due process that leads to
 11 nullity, the Judge should consider the record of the
 12 proceeding, whatever was introduced correctly or properly.
 13 For example, the proceeding could be declared null and void
 14 and then returned to the point where the due process
 15 violation occurred.
 16 Q. I appreciate your explanation, that wasn't my
 17 question. Let me see if I can get at it a different way.
 18 Let's go back and talk about the Collusion Prosecution Act,
 19 which you say that in the case of the allegations of fraud
 20 that Chevron is making in this case, is the only proper
 21 remedy; correct?
 22 A. That is the only mechanism to introduce evidence,
 23 and clearly obtain what Chevron is expecting to receive in
 24 connection with the process.
 25 Q. Now, you would agree with me that there is an

04:03 1 judge in Ecuador.
 2 Q. So, the question isn't the type of allegation.
 3 The question is whether or not new evidence is required in
 4 order to prove the allegation; right?
 5 A. Yes, indeed, that is the problem because you
 6 cannot try to protect due process based on a violation of
 7 due process. This is like that.
 8 Q. And to be clear, just so that the record is clear,
 9 you said yes, indeed, that is the problem, you agree with
 10 my proposition that the question is not whether the
 11 allegation is fraud or not. The question is whether new
 12 evidence outside the trial court record has to be adduced
 13 in order to prove the allegation?
 14 A. Yes.
 15 Q. So, in a hypothetical scenario--and I'm not
 16 telling you that this is the scenario in fact, I'm just
 17 asking you to assume these facts for purposes of the next
 18 couple of questions--if there is proof within a trial court
 19 record that a report of a court appointed global damages
 20 Expert was ghostwritten as the result of fraudulent acts,
 21 it would be appropriate for the courts, and it would be
 22 required of the courts, to look into that fraud allegation
 23 as long as that proof was on the trial court record; is
 24 that a fair statement?
 25 A. I think that these are two different things. When

04:06 1 ultima ratio requirement under Ecuadorian law; correct?
 2 The CPA is only an available remedy if there is no other
 3 available remedy under Ecuadorian Law?
 4 A. Yes. The rule to apply is that the Collusion
 5 Prosecution Act shall be used whenever there is no other
 6 means to be used for the presentation of these allegations.
 7 Q. And it should not be used when there is another
 8 means available for the presentation; correct?
 9 A. Whenever there are other mechanisms to be used in
 10 response to the claim under this Collusion Prosecution Act,
 11 yes, the collusion claim should be discarded.
 12 Q. Right. And I'm referring to Paragraph 95 of your
 13 Second Report, you might not have to go there, but your
 14 view is that Chevron could have pursued a CPA action as of
 15 the time it became aware of the purported evidence of the
 16 fraud in this case; right? It's the second to last
 17 sentence of your Paragraph 95.
 18 A. Yes, I do see the text at Paragraph 95.
 19 PRESIDENT VEEDER: Stop a second.
 20 (Pause.)
 21 PRESIDENT VEEDER: Please continue.
 22 BY MR. CORIELL:
 23 Q. And your view is that Chevron could and should
 24 have pursued a CPA action at the time that it became aware
 25 of the purported evidence of fraud that's at issue in this

04:09 1 proceeding; right?
 2 A. Yes, indeed, because, in this case, what it had
 3 through the normal course was an appellate instance, in
 4 which you could not produce evidence. It had a cassation
 5 appeal which explicitly does not have an evidentiary phase
 6 and you cannot produce evidence. And it has an
 7 extraordinary action for protection in which you also
 8 cannot produce evidence. So, if I discovered and I had the
 9 right element to file an action because of fraud, because
 10 of collusion, then the reasonable thing in a well-thought
 11 strategy would have been to immediately file a collusion
 12 action.
 13 Q. And the Appellate Courts couldn't look at it
 14 because the Judge can't look at evidence that's not in the
 15 record. That's basically what it comes down to; right?
 16 A. Yes, the issue is not that they could not
 17 analyze--is that they could not take as valid evidence
 18 external to the proceeding, that was not ordered and had
 19 not been contradicted by the other party. In a nutshell,
 20 due process rules.
 21 Q. Because it's a requirement of due process that
 22 evidence external to the proceeding has to be treated by
 23 the Court as not existing for the purposes of that Court's
 24 Judgment; right?
 25 A. Yes, indeed. Evidence that is not properly

04:11 1 produced should be treated as if it did not exist. It
 2 could not be the grounds for a judgment. It's a very
 3 simple rule.
 4 Q. And you were here during Ecuador's opening
 5 presentation two weeks ago; is that right?
 6 A. I was here, yes, during the Opening Arguments of
 7 Chevron and Ecuador.
 8 Q. And you may recall during Ecuador's Opening
 9 Arguments that it took the position that Chevron could have
 10 pursued the CPA action that you and I have been talking
 11 about as of February 14th of 2011, when the Lago Agrio
 12 Judgment was issued; do you recall that?
 13 A. To be honest, I do not remember.
 14 Q. Okay. We have been talking about your Second
 15 Report in which you discuss the Collusion Prosecution Act,
 16 and I would like to turn to your First Report, which was
 17 issued in February of 2013. Does that timing sound
 18 correct? I think it was February 18th, and it's behind
 19 Tab 1 of your binder.
 20 Do you recall that report, and do you recall
 21 issuing it in February of 2013?
 22 A. Yes.
 23 Q. And you recall that the Cassation Decision in this
 24 case, the Chevron-Aguinda Case, was issued by the National
 25 Court of Justice some nine months later, which was I

04:13 1 believe mid-November of 2013. Do you recall that?
 2 A. I remember that it was after the Report, yes.
 3 Q. So, I would like to look at Page 4 of your First
 4 Report, and it's the first full paragraph in the English
 5 version, the paragraph that begins "however," if you're
 6 looking in the Spanish version.
 7 A. What paragraph? Are you saying Number 4?
 8 Q. I'm sorry, I misspoke. It's Page 4. It's Page 4
 9 of both the English and Spanish versions, and it's the
 10 paragraph beginning "However, Ecuadorian law provides."
 11 And you see that what you say to the Tribunal here
 12 is that Ecuadorian law provides for at least two effective
 13 remedies to address the alleged fraud or comparable
 14 violations of due process and other constitutional rights,
 15 and then you list those two remedies with a lower case (i)
 16 and a lower case (ii) as the cassation appeal to the
 17 National Court of Justice, and the extraordinary action for
 18 protection before the Constitutional Court. You didn't
 19 mention the Collusion Prosecution Act as availability
 20 remedy for, in your words, the alleged fraud or comparable
 21 violations of due process, did you?
 22 A. That is correct. And the reason is that at that
 23 time we were discussing whether we could get to see
 24 violations of due process. We never discussed whether I
 25 wanted to introduce external evidence to that proceeding to

04:15 1 get to a decision. In fact, if you look at this,
 2 Mr. Coriell, you are going to see a full chapter on the
 3 valuation of evidence, and you're also going to find the
 4 previous paragraph, the one before where you read that it
 5 said that that cannot be used.
 6 Q. I would like to look at the previous paragraph
 7 because it will walk us through what allegations of fraud
 8 you were referring to when you talked about these two
 9 effective remedies.
 10 If you go back to Page 3 of the English version,
 11 it's the paragraph before the one we've been looking at,
 12 Dr. Andrade, it begins "Chevron." Do you see where I am,
 13 "Chevron submitted." It's the paragraph right before the
 14 one we just looked at. It says: "Chevron submitted
 15 voluminous documentary evidence to the trial court in
 16 support of its allegations of ghostwriting of the Judgment
 17 by the Lago Agrio Plaintiffs and fraud surrounding the
 18 Cabrera Report and the Calmbacher Report."
 19 Do you see that?
 20 A. Yes, I do see that.
 21 Q. Okay. So, that's Chevron's submissions.
 22 And then you go on to say: "The submissions were
 23 untimely and largely comprised of inadmissible evidence
 24 under applicable rules of procedure. The appellate panel
 25 was therefore barred from considering them."

04:16 1 Do you see that?
 2 A. I see that, yes.
 3 Q. Okay. So, we have the submissions, we have the
 4 inability of the Appellate Court to consider them, and then
 5 you say: "However"--and I'm using your words--"Ecuadorian
 6 law provides for at least two effective remedies," and you
 7 say that's the Cassation Court and the Constitutional
 8 Court. That word "however" seems important. You're saying
 9 that the new evidence was inadmissible for the Appellate
 10 Court, however, the cassation appeal and the Constitutional
 11 Court are the two appropriate remedies; correct?
 12 A. Not exactly. As I said before, in connection with
 13 that topic, we are discussing the value of evidence--you
 14 can see this above. We are under the numeral dealing with
 15 summary of the considerations in the Report, right? We
 16 have to first look at where we are for the context.
 17 Second, we are summing up what the weighing of the
 18 evidence means and the appellate standard of review,
 19 correct? And we are saying, if you look at it starting
 20 from Paragraph 63 of the same report, how the weighing of
 21 the evidence works in the Ecuadorian system, and I am
 22 telling you that that evidence could not be considered
 23 valid under the standard. And, of course, fraud is not
 24 only based on evidence, you will remember that there have
 25 been allegations of violation of breach of due process in

04:18 1 connection with lack of jurisdiction, competence, breach of
 2 procedure, and a series of elements. So, Chevron's
 3 allegations in this area and those originating from the
 4 proceeding could easily be analyzed by any judge in the
 5 Republic, and also the various levels. But what cannot
 6 happen is that improperly produced evidence be used as
 7 grounds. And if I would like to use that evidence, what I
 8 need to do is go through the convenient course, the right
 9 course.
 10 Q. Dr. Andrade, if you could confine your answers now
 11 to these two paragraphs, which as I understand it are
 12 entitled Section E of your Report. "Assessment of evidence
 13 and standard of review of the appellate level." Am I right
 14 that this is a summary of your full conclusions in this
 15 report in February of 2013 as to that issue?
 16 A. Yes, Mr. Coriell, the only thing I hope is that my
 17 answer is not taken out of context. It is convenient that,
 18 for the understanding of both paragraphs, be so kind as to
 19 refer back to the explanatory bases provided in the rest of
 20 the Report. Yes
 21 Q. Well, let me ask you one more question about this
 22 summary, and then I will move to the place where you
 23 address these two effective remedies in detail. The very
 24 middle sentence in that paragraph beginning "however," you
 25 say; "in fact"--this is after you've told us what the two

04:20 1 effective remedies are--you say: "In fact, the National
 2 Court can and presumably will review Chevron's allegations
 3 of fraud."
 4 Am I to understand that when you say "Chevron's
 5 allegations of fraud," you are not referring to the
 6 ghostwriting of the Judgment; you are not referring to the
 7 Cabrera Report, you're referring to those due process
 8 violations that you just gave to me in your last answer?
 9 Is that your distinction?
 10 A. Basically the concept of fraud as used in this
 11 proceeding and also the one mentioned here is quite broad.
 12 No? Indeed, I was not referring to the allegations of
 13 fraud that are based on external evidence.
 14 Q. Okay. So, you were referring to allegations of
 15 fraud based on internal evidence, but you're not referring
 16 to allegations of fraud based on external evidence; is that
 17 correct?
 18 A. That is correct.
 19 Q. You didn't mention that distinction here or, in
 20 fact, anywhere in your First Report, did you?
 21 A. That is completely correct because I did not refer
 22 in detail to the facts, rather the applicable law.
 23 Q. Okay. You did not refer in detail to the facts
 24 but rather to the applicable law.
 25 Can we go--let's go to Paragraph 1 of this First

04:21 1 Report, and that's where you discuss the scope of your
 2 Declaration. And you say you have been asked by the
 3 Republic's legal counsel to issue a legal opinion
 4 addressing several of Claimants' allegations of judicial
 5 error and due process violations in the Lago Agrio
 6 Litigation; right?
 7 A. Correct.
 8 Q. Okay. And then if you go--let's go to the section
 9 of your Report where you then do that in detail. It's on
 10 Page 25 of the English, beginning at Paragraph 78 in both
 11 versions.
 12 You see that?
 13 And Paragraph 79 is just a repeat of the
 14 conclusion that you made earlier on about the two effective
 15 remedies being the cassation appeal and the extraordinary
 16 action before the Constitutional Court; right?
 17 A. I'm sorry, in what part of 78?
 18 Q. Paragraph 79. You repeat your conclusion that
 19 Ecuadorian law provides for at least two effective remedies
 20 to address the alleged fraud and consequent violations of
 21 due process, and then you say the Constitutional Court and
 22 the National Court cassation appeal; right?
 23 A. Yes, Paragraph 79 refers to the summary of this
 24 Report. Yes.
 25 Q. Okay. And if you could turn now to Paragraph 81,

04:24 1 you have two sentences there. The first you say:
 2 Claimants assert that the cassation appeal is not an
 3 effective remedy because it is limited to legal issues and
 4 cannot be bought on the basis of factual matters.
 5 Do you see that?
 6 A. Did you say 81?
 7 Q. Yeah.
 8 And then you say: "The violation which Chevron
 9 alleged--"
 10 A. Yes.
 11 Q. And then the next sentence you say: "the
 12 violations which Chevron alleged in its cassation appeal
 13 and also described in Claimants' memorials in the
 14 arbitration proceedings, fall squarely within each of the
 15 grounds established in Article 3 of the law on cassation."
 16 Do you see that?
 17 A. Yes, I see that, at Paragraph 80. In fact, I
 18 mentioned each of the grounds invoked. Uh-huh.
 19 Q. You actually mention them, I think, more
 20 specifically, if you look over to Paragraph 83, you say:
 21 "The main grounds asserted by Chevron to invalidate the
 22 Lago Agrio proceeding can be summarized" and then you list
 23 Chevron's allegations.
 24 Do you see that list (a) through (f)?
 25 A. Yes, I do see the list.

04:25 1 Q. And (d) is Chevron's allegation that the Judgment
 2 was drafted by a third party; right?
 3 A. Yes, this is the list. As you can see, it's
 4 basically a partial cite--well, let's say a paraphrasing of
 5 Chevron's allegations, yes.
 6 Q. Okay. One of which is drafting of the Judgment by
 7 a third party. Can we just agree to refer to that as
 8 ghostwriting as we continue this discussion?
 9 A. In what sense?
 10 Q. I'm just asking if you and I can agree that
 11 drafting of the Judgment by a third party, I will now call
 12 ghostwriting so that I don't keep repeating the seven or
 13 eight words in this line.
 14 A. No problem.
 15 Q. You see in (e), another allegation that you looked
 16 at by Chevron was procedural fraud; right?
 17 A. Yes.
 18 Q. And then right after this list in Paragraph 84,
 19 you have a one-sentence paragraph that says: "The National
 20 Court can review Chevron's allegations pursuant to its
 21 powers under Article 3 of the Law of Cassation." So, you
 22 were telling the Tribunal with this sentence that the
 23 National Court could review Chevron's allegations of
 24 ghostwriting and of procedural fraud; correct?
 25 A. No, no, that is not correct, and let me tell you

04:27 1 why: First, the list, (a) through (f), refers to a very
 2 specific allegation. It states, the violation of the right
 3 of defense. (I), is what Article 83 states, the main
 4 grounds, it refers to the violation of procedural
 5 requirements, due process. Number 2 refers to the right of
 6 defense, and Chevron bases itself on those allegations.
 7 And then at Paragraph 84, what I'm saying is that the Court
 8 can review those allegations pursuant to its powers under
 9 Article 3. And Article 3 basically grants powers to review
 10 the legality. This is the role of the cassation court.
 11 That is say, to look at the legality of the decision rather
 12 than the facts, the facts are already reflected in the
 13 Judgment under review. And it is interesting to see your
 14 interpretation, but clearly, that is not the meaning.
 15 Q. Well, I didn't mean to make an interpretation.
 16 The last sentence in Paragraph 83 says: "Chevron makes the
 17 following allegations," and then it lists them, and the
 18 only sentence in Paragraph 84 says: "The National Court
 19 can review these allegations pursuant to its powers." I
 20 understood that to mean that that list of allegations,
 21 including ghostwriting, could be reviewed by the National
 22 Court; correct?
 23 A. I apologize if I didn't say it correctly or you
 24 understood me wrong but the truth of the matter is that
 25 article--Paragraph 84, what I am saying that all of these

04:29 1 allegations may be considered within the framework of
 2 Article 3 of the Law of Cassation. And Article 3 of the
 3 Law of Cassation clearly shows you the grounds. Chevron,
 4 the Appellant Party, clearly knows the grounds and that's
 5 the reason why they referred to it as lack of application,
 6 improper application or wrong application of a law. What
 7 I'm trying to say, that Article 3 of the Law of Cassation
 8 grants specific power to the Cassation Court, and that is
 9 to review the legality of the decision based on the grounds
 10 under Article 3.
 11 At Paragraph 80 you see the grounds invoked by the
 12 appellant party and all of them have to do with the lack of
 13 application or the lack of interpretation or the improper
 14 application of substantive rules, procedural rules, rules
 15 on the weighing of the evidence, coherence.
 16 Q. Can we go back, then, to that section of the
 17 Report? Let's look at Footnote 91 of the Report where you
 18 say: "The allegations brought by Chevron before the
 19 National Court comprise nearly all of the same issues that
 20 are mentioned by Claimants in their Memorial on the Merits
 21 for this arbitration."
 22 Do you see that?
 23 A. Yes, yes, I do see it.
 24 Q. Now, as we have established, you have filed this
 25 Report, you wrote those words in February of 2013. You

04:30 1 were responding to a March 2012 Memorial on the Merits that
 2 Chevron had submitted in this arbitration proceeding;
 3 correct?
 4 A. Yes, in connection with the issues that I was
 5 consulted on. Yes? It was not that I was answering the
 6 Memorial. I suppose that is the job of the representatives
 7 of the Republic.
 8 Q. I understand that, but your footnote that we just
 9 looked at, Footnote 91, says that these allegations that
 10 you listed and that you're purporting to describe the
 11 proper remedy for in this Report are nearly all of the same
 12 issues--your words--that are mentioned in this Memorial;
 13 right? So, presumably you looked at this Memorial to
 14 determine that the issues were nearly all the same; right?
 15 A. The allegations on the violation of due process
 16 and the right to defense, yes. They're detailed starting
 17 at Paragraph 80, yes.
 18 Q. So, let's look to the Memorial, which is behind
 19 Tab 8 of your binder. It's only in English. It was only
 20 submitted in English.
 21 When you reviewed this Memorial, did you review it
 22 in its English version, or did you have a translation?
 23 A. The truth is I don't recall. I have seen a number
 24 of documents in English, and a number of documents in
 25 Spanish.

04:32 1 Q. Okay. So, I will just read to you the few points
 2 that I want you to look at, and it can be interpreted into
 3 Spanish, and I just want you to flip the page over to the
 4 Table of Contents so that we can see the allegations in
 5 this Memorial that you say were nearly the same as the
 6 cassation appeal allegations.
 7 You see the Table of Contents?
 8 A. I'm looking at the Table of Contents, yes.
 9 Q. And you see how the first sentence in the Table of
 10 Contents says: "The Lago Agrio Judgment is Fraudulent"?
 11 A. Yes. It's Page 3.
 12 Q. Right. And then the next sentence right under
 13 that says: "The Plaintiffs colluded with the Court to
 14 draft the Judgment." So, you see that? You looked at that
 15 as well; right?
 16 A. Yes.
 17 Q. Okay. And then let's turn to Page 4, the actual
 18 text of the Memorial, which is the beginning of Chevron's
 19 allegations of fraud in this document.
 20 And you see that section titled "1, The Plaintiffs
 21 Colluded with the Court to Draft the Judgment," and you
 22 know there are several paragraphs on that that I am not
 23 going to read you through, but I'll point you, you see in
 24 Footnote 15, at the end of it, you see how there's a
 25 citation to the Declaration of Patrick Juola? It's at the

04:34 1 ends of Footnote 15?
 2 A. Yes.
 3 Q. And you see in Footnote 16, it's a footnote to
 4 some text and it cites to the Expert Report of
 5 Robert A Leonard.
 6 Do you see that?
 7 A. I do see that, yes.
 8 Q. And then we turn over to Page 6 of the same
 9 document. It's in the same section on collusion, and you
 10 see Paragraph 24 has a discussion--I'm sorry, you see that
 11 Footnote 24 is a citation to the Expert Report of
 12 Gerald R McMnamin.
 13 You see that; right?
 14 A. I'm looking at it, yes.
 15 Q. And you're aware that these are all Expert Reports
 16 that have been relied on in Chevron's cassation appeal and
 17 also in these arbitration proceedings, obviously as to the
 18 latter; right?
 19 A. No, I did not know that, no.
 20 Q. You knew they were being relied on in these
 21 arbitration proceedings at least because you read them in
 22 the Memorial that you reviewed in these arbitration
 23 proceedings?
 24 A. I'm sure I did not do the kind of reading that was
 25 done by those who prepared the Memorial or those who have

04:35 1 to answer the Memorial. I was interested there in looking
 2 at the fact that whether these allegations like fraud, et
 3 cetera, are included in the grounds related to the
 4 violation of the right to defense for purposes of a
 5 National Court to review a cassation appeal. I didn't
 6 really--I didn't look at each and every one--
 7 Q. I understand that you didn't look at those
 8 Reports, and that's not what I had asked.
 9 You did, however, I assumed you looked at the
 10 Table of Contents at least of this Memorial that you
 11 claimed was consistent with the grounds in Chevron's
 12 cassation appeal? You were aware of the allegations that
 13 were being made in this Memorial that you described as
 14 "nearly all of the same issues that are mentioned by
 15 Claimants in their cassation appeal"?
 16 A. We looked at a pertinent paragraph where we
 17 described the allegations made by Chevron to bring the
 18 cassation appeal. When one looks at the cassation appeal
 19 and one finds allegations of fraud or whatever, and the
 20 contents of whatever it may be, and this has to do with the
 21 violation of a specific provision that has to do with the
 22 violation of due process, what I have done here is to
 23 compare the Memorial and the cassation appeal on the basis
 24 of the grounds invoked, and I conclude that there was an
 25 allegation of fraud that has been described in the Report,

04:37 1 and this is the grounds used by Chevron to consider that a
 2 specific provision of due process has been violated, and
 3 that is what has been submitted in the cassation appeal. I
 4 think the reasoning is very simple. I have not looked at
 5 the facts, and that is the thing.
 6 Q. And I'm not asking you about these particular
 7 facts. I'm asking you about the allegations that you
 8 reviewed that you then testified to this Tribunal could be
 9 remedied by the National Court of Justice on the cassation
 10 appeal, so let's go back to Paragraph 83 of your First
 11 Report, where you say in support of the general--of what
 12 you called the main grounds of Chevron's cassation appeal,
 13 at Paragraph 83 you said: "In support, Chevron makes the
 14 following allegations," then you listed six of them. The
 15 fourth one, (d), is drafting of the Judgment by a third
 16 party.
 17 So, you understood when you wrote these words that
 18 Chevron was making a ghostwriting allegation to the
 19 National Court of Justice. Can we agree on that?
 20 A. Yes, we agree on that. It says here, the
 21 violation to the right of defense based on--
 22 Q. I asked you what was a yes-or-no question. You
 23 understand that Chevron was making an allegation that the
 24 Judgment had been drafted by a third party. Yes or no?
 25 A. Yes, as a justification of the violation of the

04:40 1 the grounds to maintain that there has been a violation of
 2 due process is the same. I didn't have to consider even
 3 whether the grounds were correct or not. I had to consider
 4 only whether the allegations made by Chevron are included
 5 or not within the regime of due process for a due process
 6 case to come under Point 2 of the cassation law.
 7 Q. Dr. Andrade, we may be having a translation issue,
 8 but I think it would help if you could just answer my
 9 precise question. Let me represent to you, I am in none of
 10 these questions am I suggesting that you did or were asked
 11 to or should have reviewed the substance of the facts to
 12 determine whether the allegations are true. So, at any
 13 point going forward where I'm referring to these
 14 allegations and you are looking at them, I'm only referring
 15 to the question whether you realized that certain
 16 allegations were being made, okay?
 17 A. Okay, we agree.
 18 Q. We agree that you knew that Chevron had raised in
 19 its cassation appeal an allegation that the Judgment was
 20 drafted by a third party. Yes or no?
 21 A. Yes.
 22 Q. We agree that you knew--and we have seen it in
 23 this Memorial on the Merits in this arbitration--that
 24 Chevron had raised an allegation that the Judgment had been
 25 drafted by a third party. Yes or no?

04:39 1 right to defense. It's right there. You have to look at
 2 83, that's it.
 3 Q. I see that it's there. And if we look at 91, it
 4 also says that the allegations brought by Chevron,
 5 including the allegation of drafting of the Judgment by a
 6 third party, as we have just agreed, comprise nearly all of
 7 the same issues that are mentioned by Claimants in their
 8 Memorial on the Merits for this arbitration. So, this
 9 footnote would indicate that you understood that in its
 10 Memorial on the Merits, that Chevron was making an
 11 allegation that the Judgment was drafted by a third party;
 12 correct?
 13 A. Again, yes. Chevron submitted in its cassation
 14 appeal as a grounds for the allegation of the violation of
 15 the right to defense a provision, that may be reviewed by
 16 the Cassation Court amongst other things fraud, and this is
 17 what has been put forth in the Report, yes.
 18 Q. Now, to have been able to say that Chevron alleged
 19 ghostwriting of the Judgment, and also to be able to say
 20 that that allegation was reflected in this Memorial that we
 21 have been looking at, you must have looked at least at
 22 Chevron's ghostwriting allegations in the Memorial;
 23 correct?
 24 A. No. I only had to look at what the cassation
 25 appeal said and what the Memorial said, and to find that

04:42 1 A. Yes.
 2 Q. And we agree that Paragraph 84 of your First
 3 Report says the National Court can review Chevron's
 4 allegations. Yes or no?
 5 A. 84?
 6 Q. Yes.
 7 A. Again, within the context of Article 3 of the
 8 cassation law, and the reading is very simple. The
 9 National Court may examine the allegations made by Chevron
 10 on the basis of the powers granted to it by Article 3 of
 11 the cassation law. What are these powers granted by
 12 Article 3 of the cassation law? The review of the aspects
 13 of legality in the Judgment, not others. It doesn't review
 14 factual issues. This is a Cassation Court. It is not an
 15 additional instance that can review factual issues, rather
 16 it is on the ground that there is a violation of a legal
 17 rule that establishes the way evidence must be submitted.
 18 Again, cassation is a review of the legality of
 19 the Judgment. That is what Article 3 says.
 20 Now, all of the allegations made by Chevron, all
 21 of those had been submitted in the cassation appeal on the
 22 basis of the invocation of one ground, and that ground is
 23 under Paragraph 80. That is what Chevron's cassation
 24 appeal says. All of these are allegations--
 25 Q. Do you believe that drafting of the Judgment by a

04:44 1 third party is what you refer to as a factual issue or what
 2 you refer to as an issue of legality?
 3 A. The drafting for these purposes and any other
 4 element that is factual in nature is just the grounds to
 5 allege, as Chevron itself says, the violation of a
 6 provision that defines due process and to allege Ground
 7 Number 2 of Article 3 of the cassation law. That is what
 8 Chevron does in its appeal of cassation. We agree?
 9 Q. It's not whether we agree. I don't think I
 10 understand your answer. You have made a distinction
 11 between factual arguments that a court cannot consider and
 12 legal arguments that a court can consider. You have listed
 13 six allegations that you said the National Court could, in
 14 your words, review. One of those allegations is drafting
 15 of the Judgment by a third party. Is drafting of the
 16 Judgment by a third party a factual issue that the Court
 17 cannot review, or does it raise a legal issue that the
 18 Court can or can in certain circumstances review?
 19 A. Let's see I repeat: The Court is going to review
 20 all Chevron's allegations within the context of its powers.
 21 The powers are put forth in Article 3 of the cassation law.
 22 I can allege whatever it is that I know, right? But the
 23 Court is not going to review any circumstance whatsoever
 24 that is factual in nature, right? What the Court is going
 25 to do is to review legality issues, so much so that

04:48 1 Are you saying when you listed these six
 2 categories and when you said the National Court can review
 3 these allegations, by "review," did you mean, well, they
 4 have to consider anything that Chevron says, but, of
 5 course, we don't know whether they are allowed to actually
 6 rule on that basis, or did you mean these were legitimate
 7 grounds that, if proved, could result in a successful
 8 cassation appeal?
 9 A. Let's see: None of the two. First, because these
 10 allegations could not be proven at the cassation level.
 11 No, I repeat: There is no evidentiary period at the
 12 cassation period. That is not the concept. These
 13 allegations that give grounds for Chevron's allegations in
 14 connection with its cassation appeal, are allegations
 15 regarding Procedural Rule violations. These were the ones
 16 presented at the cassation level. Right?
 17 Then, what are you saying? For example, what is
 18 the cassation appeal saying? Lack of jurisdiction.
 19 Violation of Article--I don't remember exactly but let's
 20 say...
 21 Q. Can we stay focused on the one ground that I have
 22 been asking you about, which is drafting of the Judgment by
 23 a third party? I'm not asking you about lack of
 24 jurisdiction. Can you confine your answer to the one
 25 ground that I'm asking you about? Can someone successfully

04:46 1 Chevron, for each one of its allegations, included in
 2 Article 83, well, Chevron included all of these under the
 3 umbrella of a legal allegation regarding the Judgment, and
 4 used one by one, the five grounds of Article 3 of the
 5 cassation law. This is what it did and what I'm trying to
 6 explain to you in the report. Any other interpretation of
 7 this matter, well, what you are saying to me is that at
 8 Paragraph 84 I'm saying that all of those allegations must
 9 be reviewed by the National Court. That is not what I'm
 10 saying at 84. What I'm saying is that all those
 11 allegations may be considered by the National Court within
 12 the context of the powers that have been granted to it
 13 under Article 3 of the cassation law.
 14 Q. So, your view, what you understood your
 15 one-sentence Paragraph 84 to mean was simply that anything
 16 Chevron alleges the National Court has to consider, but you
 17 were not expressing in one way or another whether these six
 18 allegations that you listed were appropriate grounds for
 19 potential overturning of the case on cassation?
 20 A. No. The grounds--we will see again--of the
 21 judgment; of the instance judge, must originate from some
 22 illegality ground...
 23 Q. I don't mind if you explain yourself, but can you
 24 at least begin with an answer to my question, and then if
 25 you need to explain, I am not going to interrupt you.

04:49 1 win a cassation appeal in Ecuador on the basis that the
 2 original Judgment was drafted by a third party? Yes or no.
 3 A. At the cassation level, what Judgment? Well, it
 4 depends, you will see. Let me give you a context.
 5 I'm going to assume that this fact took place at
 6 the trial level. The appeal of the trial level has an
 7 evidentiary period. Okay? During the evidentiary period,
 8 I could submit evidence. If the evidence was correctly
 9 presented, then a judgment was going to be handed down, and
 10 a decision was going to be made. The evidence was
 11 correctly submitted. It was timely.
 12 Can I win a cassation appeal with that argument
 13 under those circumstances? Possibly, yes. Everything is
 14 in order. Okay, do we agree?
 15 Q. So, if I understand correctly your answer is,
 16 Number 1, and I'm going to try to walk through these in
 17 steps. Number 1, you would agree that drafting of--that
 18 you can win a cassation appeal in Ecuador on the basis of
 19 proving drafting of the Judgment by a third party in
 20 certain circumstances; is that correct? And we'll get to
 21 what those are?
 22 A. That depends on the case, yes. That depends on
 23 the case.
 24 Q. And that circumstance would be when the drafting
 25 of Judgment by a third party can be proved by reference

04:51 1 only to documents legitimately admitted into the trial
 2 court record?
 3 A. Let us say that in the proceeding and at the
 4 relevant stages, evidently, yes.
 5 Q. Okay. So, the distinction that you're making is
 6 Scenario 1 you can put--if you have documents that are duly
 7 admitted to the trial court record, and on those bases you
 8 can conclude that the Judgment was drafted by a third
 9 party, in that scenario, you can win a cassation appeal in
 10 Ecuador?
 11 A. Yes, hypothetically, according to your statement,
 12 I would require that the appellate judgment, the second
 13 instance had failed to estimate, for example, duly
 14 submitted evidence, violating a rule and a rule in
 15 connection with the drafting of the Judgment; correct?
 16 That is to say, the evidence regarding the ghostwriting of
 17 the Judgment was set aside without grounds for doing so, in
 18 violation of evidentiary rules. For example I will present
 19 a cassation appeal. Surely, I will allege Ground 3 of
 20 Article 3 that has to do with violating rules regarding the
 21 weighing of the evidence, and surely the court if it finds
 22 that the allegation is well-founded in accordance with
 23 everything in the proceedings, it will say whether the
 24 violation of the evidentiary rule existed, in relation to
 25 these documents which were improperly produced in the

04:55 1 Judgment, by a third party--let's say the Plaintiffs who
 2 win the Judgment--do you believe that that violates a legal
 3 rule under Ecuadorian law?
 4 A. Assuming the fact, yes, if there is a
 5 violation--imagine, there is a due process violation, there
 6 are criminal offenses committed, a number of legal
 7 provisions would be violated, of course.
 8 Q. Okay. So, let's take the due process one as the
 9 basis in my hypothetical, and now we are before the
 10 Cassation Court, okay? You agree with me that, in that
 11 situation--and again, I'm not asking you obviously to talk
 12 about the facts being right or wrong--in that situation, it
 13 is appropriate for the Cassation Court to review the
 14 question of whether the Judgment was drafted by a third
 15 party, and potentially, depending on its analysis, overturn
 16 the Judgment on due process grounds?
 17 A. Perfectly, yes.
 18 You have put to me a violation of a legal
 19 provision, and that is exactly what happens in Chevron's
 20 cassation appeal. That legal provision is reviewed on the
 21 basis of the case file, and then the problem of the
 22 external evidence arises. If I would like to ground the
 23 violation of the due process, which is exactly what's
 24 stated there--right?--with external pieces of evidence
 25 then, surely the Cassation Court is going to say no, you

04:52 1 proceeding, and then the trial court Judgment will be
 2 quashed, and the court will issue another Judgment in its
 3 place. That is how the system works.
 4 Q. I appreciate the explanation again, but I want to
 5 clear up the record just so that we're talking, and so if
 6 you could try to give a shorter answer so that I make sure
 7 we're on the same page.
 8 Assume a first-instance Judgment that is appealed
 9 to the Provincial Court, and one of the allegations made on
 10 appeal to the Provincial Court is that the Judgment was
 11 drafted by a third party. Okay?
 12 A. Okay.
 13 Q. Assume that the Provincial Court denies the
 14 appeal, and then there is a cassation appeal on the same
 15 basis, obviously under a different law, Law 3 on Cassation,
 16 but the same allegation is made: Ghostwriting of the
 17 Judgment. Okay? Assume that.
 18 A. Okay, I'm going to assume that. I would like to
 19 assume that but you need to add what the legal rule
 20 violated was, and then I'm going to be able to answer with
 21 no problems in connection with what would happen at the
 22 cassation level. Up to what you've said, everything is
 23 clear. All these factual circumstances, you see?
 24 Q. So, do you believe--let's explore that. Do you
 25 believe that drafting of the Judgment, a first-instance

04:56 1 have to go to the right course, why? Because you're going
 2 to have to show the fact. And what is the fact? The fact
 3 is that someone else has drafted that ruling; correct?
 4 Q. So, to be clear, in that scenario that I gave you,
 5 we agree if that can be shown based on the existing record,
 6 it can be overturned on cassation for that reason that we
 7 were discussing; right? And the reason for that--the
 8 reason for that distinction is because Ecuadorian courts
 9 can only rely on evidence that's duly admitted into the
 10 record?
 11 A. Exactly. That is the difference. It's not
 12 anything that is included in the case file. Rather, the
 13 things that have been added to the case file in accordance
 14 with procedural rules, okay?
 15 MR. CORIELL: Mr. President, we have been going
 16 for some time. I don't know if--I'm getting a head signal
 17 that this might be a good time for a break.
 18 PRESIDENT VEEDER: We're going to break at
 19 5:00 o'clock for 15 minutes but before we do, we're not
 20 pressing you in any way because we're ahead of schedule,
 21 but can you give us some idea whether you will finish
 22 tonight or will we go into tomorrow morning?
 23 MR. CORIELL: Can I reflect on that and let you
 24 know after the break?
 25 PRESIDENT VEEDER: Absolutely.

04:58 1 Come back in 15 minutes.
 2 MR. CORIELL: Okay, thank you.
 3 PRESIDENT VEEDER: We say this to all witnesses,
 4 we ask you not to discuss the case or your testimony whilst
 5 you're away from the Tribunal. Do you understand?
 6 THE WITNESS: Yes, I will do that, Mr. President.
 7 PRESIDENT VEEDER: Thank you.
 8 (Brief recess.)
 9 PRESIDENT VEEDER: Let's resume.
 10 (Overlapping interpretation.)
 11 MR. CORIELL: I'm not going to be able to finish
 12 tonight. I suspect I have 2, 2.5 hours left to go, and I
 13 wonder if it might--rather than starting a new, topic it's
 14 been fairly slow-going, so I'm a little reluctant to start
 15 a new topic so late in the day, and I would be happy to
 16 break now and resume in the morning, if that makes the most
 17 sense, but I'm in your hands.
 18 PRESIDENT VEEDER: The proposal is that we stop
 19 now. It's been a long day for most of us, and we will
 20 start again tomorrow at 9:30, but clearly we will finish
 21 tomorrow without any doubt whatever.
 22 MR. CORIELL: Absolutely.
 23 PRESIDENT VEEDER: Is that inconvenient or
 24 agreeable to the Respondent?
 25 MR. LEONARD: It is agreeable to the Respondent.

CERTIFICATE OF REPORTER

I, David A. Kasdan, RDR-CRR, Court Reporter, do hereby certify that the foregoing proceedings were stenographically recorded by me and thereafter reduced to typewritten form by computer-assisted transcription under my direction and supervision; and that the foregoing transcript is a true and accurate record of the proceedings.

I further certify that I am neither counsel for, related to, nor employed by any of the parties to this action in this proceeding, nor financially or otherwise interested in the outcome of this litigation.


 DAVID A. KASDAN

05:10 1 PRESIDENT VEEDER: Well, it's agreeable to
 2 everybody, so we will stop today's Hearing, and we will
 3 come back tomorrow at 9:30 to hear more questions put to
 4 you. Again, we ask you not to discuss the case or your
 5 testimony over night away from the Tribunal, not until you
 6 come back at 9:30.
 7 Do you understand that?
 8 THE WITNESS: I will be isolated.
 9 PRESIDENT VEEDER: You don't have to be isolated.
 10 You can meet anybody you like, but just don't talk about
 11 the case. See you tomorrow at 9:30.
 12 THE WITNESS: See you tomorrow then.
 13 PRESIDENT VEEDER: Then tomorrow we must come back
 14 to the site visit Draft Order.
 15 (Whereupon, at 5:11 p.m., the Hearing was
 16 adjourned until 9:30 p.m. the following day.)
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