

**IN THE MATTER OF AN ARBITRATION UNDER THE FREE TRADE
AGREEMENT BETWEEN THE DOMINICAN REPUBLIC-CENTRAL
AMERICA AND THE UNCITRAL RULES OF ARBITRATION (2010)**

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JEFFREY S. SHIOLENO, DAVID A. JANNEY AND ROGER RAGUSO
(United States of America) (Claimants)**

v

THE REPUBLIC OF COSTA RICA (Respondent)

**SECOND EXPERT REPORT
GERARDO BARBOZA JIMENÉZ**

I, **GERARDO BARBOZA JIMÉNEZ**, resident of Ojancha, Guanacaste (Costa Rica), DECLARE the following:

1. I am the same Gerardo Barboza Jiménez who prepared an expert report on November 27, 2015 entitled EXPERT OPINION: CASE OF THE LAS OLAS CONDOMINIUMS PROJECT, ESTERILLOS OESTE, PARRITA, PUNTARENAS, COSTA RICA" (Spanish title: "*CRITERIO DE PERITO EXPERTO: CASO PROYECTO CONDOMINIOS LAS OLAS, ESTERILLOS OESTE, PARRITA, PUNTARENAS, COSTA RICA*"), (my "**First Expert Report**").
2. My First Expert Report regarded technical and legal aspects and procedures, and soil samples to determine the existence of wetland areas in Costa Rica. In my First Expert Report, I also performed an analysis of different documents issued by state authorities regarding whether non-tidal palustrine wetland exists in one sector of the property where the "Las Olas" project is developed.
3. In my First Expert Report, I described my professional background and education, and so will not repeat that information here. Rather, I have prepared this Second Expert Report to address matters arising from the Respondent's Counter Memorial dated April 8, 2016, as well assertions made by the Respondent's Expert, Mr. Kevin Erwin, in the First KECE Report. To do this,

I have had access to these documents, and I also visited the site specified in the “Las Olas” project. During that visit, I was accompanied by two professionals who helped me prepare the four documents attached to my expert report.

4. The representations made in this current expert report are accurate to the best of my knowledge. The facts and circumstances contained in this expert report accord with my knowledge or are based on information and documents provided to me by those working under my supervision. In the latter case, I identify the sources of the information.
5. I confirm that the attorneys for the Claimants – Vinson & Elkins RLLP and Batalla Salto Luna – helped me prepare the present expert report, but, at the same time, I confirm that its contents express my independent professional judgment before the Tribunal in these proceedings.

I. My Response to Section V of the First KECE Report (“Critique of Barboza Report”).

6. First, I would like to address certain misrepresentations that Mr. Erwin makes about my First Expert Report.

A. Mr. Erwin’s misrepresentation of the purposes of my report.

7. Mr. Erwin states at paragraph 74 of the First KECE Report that one of the purposes of my First Expert Report was “*to determine whether wetlands existed on the property.*” This is wrong. My first report never aimed to determine the ecological conditions at the site at the present time.
8. On an examination of my First Expert Report, we see that it is divided into various sections, with chapter “E” divided into two parts that address the two objectives of the work performed:
 - (a) to determine whether officials from the National System of Conservation Areas (SINAC) and other participants followed exactly and applied the provisions of Executive Decree No. 35803 - MINAET [Ministry of Industry, Environment, Energy and Telecommunications] dated 26 April 2010, which is the **official procedure** of the government of Costa Rica to establish the identification, classification and conservation of wetlands; and
 - (b) (ii) to determine whether methodological or logical shortcomings affected the conclusions reached by the SINAC.
9. The first part (pages 8 to 15) consisted of explaining the legal and technical criteria used in Costa Rica to determine the existence of wetlands and delineate them; *i.e.*, it is a technical overview of what factors should be considered.
10. The second part (pages 16 to 23) consisted of examining the various documents issued by the offices of the National System of Conservation Areas (SINAC) and the National Agricultural Transfer Institute (INTA), in order to determine whether they followed a scientific method in accordance with the legal and technical criteria to determine whether a wetland exists.

11. Thus, the conclusion reached in the First KECE Report is not justified, since my First Expert Report did not aim to cover the matters that the KECE report finds fault with in the paragraphs in section V of that report and in paragraph 74. Consequently, since the First Expert Report never aimed to determine the ecological conditions present at the site, much less determine whether or not a wetland was present, it cannot be criticized for the absence of such analyses.

B. The Actual Scope of My First Expert Report.

12. As is apparent from the objectives outlined in my First Expert Report, my work was to analyze, from a technical and legal point of view, the various documents issued by the SINAC and the MINAET. In this sense, from a geographical-spatial perspective, it can be determined that the scope of my First Expert Report was limited to the physical spatial area in which the SINAC determined, in several of their official letters, the existence of an alleged "wetland," which in their opinion was being affected by the Las Olas project.
13. From a material point of view, in the analysis that I carried out in my capacity as an expert in wetlands based on my academic training and practical experience of over 2 decades in Costa Rica, I analyzed the available documents from the aforesaid entities, both the documents that affirm the existence of a wetland and those affirming their absence in that specific area.
14. It is important to clarify that in my First Expert Opinion, I never based my statements on the document SINAC-67389RNVS-2008 dated March 27, 2008, as Kevin Erwin's report erroneously claims; it is surprising that someone who claims to have such high professional qualifications reaches such biased conclusions on questions completely outside the scope of the work done, particularly when my report (page 27) contains a list of the documents that were available for its preparation.
15. Finally, I must stress that, with the professional transparency and clarity that has characterized my professional practice and personal life, I stated in my First Expert Report that "*a field verification and soil studies would be required to assess and rule out this question, which I did not perform,*" which can be verified on page 23 of my First Expert Report. Since the scope of my First Expert Report never included the generation of new evidence, much less a study of the current condition of the site of the Las Olas project or a determination of the existence or absence of a wetland, the assertions in the First KECE Report are unfounded.

C. Mr. Erwin's accusation that I "*seemingly did not conduct [my] own site visit to evaluate the ecological conditions of the property.*"

16. Mr. Erwin states at paragraph 118(a)(ii) that I "*seemingly did not conduct [my] own site visit to evaluate the ecological conditions of the property. There was no attempt to create project habitat maps based on photointerpretation of aerial photography.*" This criticism must be based on his failure to understand the purpose of my First Expert Report.
17. I clarify that at no time was I asked to evaluate the site conditions, and therefore it was not necessary to conduct a site visit. As I have explained, the objective and scope of the study I was asked to perform was to assess whether

the methodology, criteria, methods and procedures used by SINAC officials to affirm that there was a wetland on the site in question was consistent with Executive Decree No. 35803-MINAET.

18. That analysis is based on the available documentation listed in APPENDIX I of the First Expert Report, which precisely documents the procedure and methodology followed by SINAC officials, and then compares that methodology against Executive Decree No. 35803-MINAET, which establishes a binding regulation that must be observed to determine whether it is possible to consider a given geographical area in Costa Rica a wetland, considering its ecological characteristics. This is because the aforesaid documents provide information to determine whether evaluation was carried out of all factors that must be considered according to the current regulatory framework to determine whether a certain area may be technically considered a wetland.

C. Mr. Erwin's accusation that I did not "*reference (...) technical information such as existing site topographical information or geological reports.*"

19. Mr. Erwin accuses me on paragraph 118(a)(iv) of the First KECE Report that I failed to "*reference (...) technical information such as existing site topographical information or geological reports.*" I will first reiterate that it was not within the scope of my report to evaluate existing site information—only information regarding the site at the time SINAC made its determinations.
20. Furthermore, the analysis carried out in the First Expert Report is focused on a limited, small area located in the southwest portion of the Las Olas Condominium area (which is shown in APPENDIX I of this document), where the SINAC affirmed the existence of a wetland based on the conditions existing on that property in 2010 (which is why indeed it made no sense to carry out a field visit to the property in 2015 and the work focused on evaluation of the factors used by SINAC officials to come to the conclusions on the existence of a wetland in that specific area).
21. A range of information was used to perform the analysis, including project documents (as shown in Appendix I of the First Expert Report), but mainly the reports by the officials of government agencies seeking to prove the existence of a wetland in light of the official procedure to establish the identification, classification and conservation of wetlands, which in Costa Rica is Decree No. 35803-MINAET.
22. This instrument establishes, in Article 6, the characteristics necessary for a given area to be technically and legally considered a wetland. Thus, characteristics must concur in three areas, namely hydrophilic vegetation, hydric soils and hydrology. Article 6 of Decree No. 35803-MINAET provides as follows: "*The essential ecological characteristics that an area must have to be considered a wetland are: a) Hydrophilic vegetation, comprising vegetation types associated with aquatic and semi-aquatic environments, including phreatophytic vegetation that develops in permanent water or surface phreatic layers, b) Hydric soils, defined as those that develop on land with a high degree of moisture up to the degree of saturation, and c) Hydrology, characterized by climatic influence over a given territory, where*

other variables are involved such as geomorphological processes, topography, soil constituent material and occasionally other extreme events or processes."

23. These basic characteristics of a wetland according to the technical-legal criteria were not or could not be identified or characterized at the specific site of the study by the respective government officials in the documents examined in the First Expert Report. Therefore, given the absence of these elements, it is technically and legally impossible to determine that a wetland exists in the geographical area indicated in the SINAC reports.
24. The topographic and geological information, as well as the photointerpretation, only supplement the principle information to identify a wetland, since applicable regulations for determining the existence or absence of a wetland clearly require identification of specific conditions: namely, hydric soils, hydrology and hydrophilic vegetation.
25. The presence of **one** of the above characteristics at a site could cause it to be misinterpreted as a wetland without it being such, since, in accordance with Costa Rican regulations, all the characteristics must be present simultaneously, and not based on questions of topography and geology, which can be influential factors at certain sites, but not decisive.
26. Therefore, since the analysis was limited to the existing documentary evidence, it being paramount and pertinent to examine the documentation directly related to the verification of the three criteria established in Executive Decree No. 35803, the topographical and geological information and the photointerpretation **is secondary** and not determinative of the existence of a wetland. This is because topographical and geological information and photointerpretation by themselves do not demonstrate any of the three technical-legal criteria. Furthermore, such information is irrelevant to the objective set out in the First Expert Report to verify whether the SINAC had adhered to the provisions of Costa Rican legislation (which only requires verifying SINAC's adherence to the requirements of the aforesaid Decree).

D. Mr. Erwin's accusation that my First Expert Report "concluded that there were no wetlands" or that my "conclusion of 'no wetlands' in the Las Olas Ecosystem is wholly unsupported by [my] project analysis."

27. In paragraph 75 of the First KECE Report, Mr. Erwin states that "*Mr. Barboza concluded that there were no wetlands in the Project Site.*" Later, Mr. Erwin asserts at paragraph 90 of the First KECE Report that "*Mr. Barboza's conclusion of "no wetlands" on the Las Olas Ecosystem is wholly unsupported by his project analysis which relies entirely on a select set of agency field reports associated only with a reported wetland impact associated with a limited area of the property on Wetland No. 1 (APPENDIX 7).*"
28. While it is true that the final conclusion of the First Report was that "*there is no palustrine wetland at the specified site in the "Las Olas" project,*" it is necessary to clarify that this was not the objective of my report; rather, the objective of the First Expert Report was to critically analyze the official letters from the SINAC in order to determine whether they had complied with Costa Rican legislation. I reached my conclusion determining that the technical

requirements and procedures had not been met for that particular area to be legally and technically classified as a wetland, and thus this is a direct consequence of the analysis performed.

29. In this regard, it should be noted that the expert opinion presented in the First Expert Report was based solely on the documentation examined; however, it struck me as obvious, since in the First Expert Report it is clearly established that the analysis was documentary and focused on whether the official letters of the SINAC complied with the provisions of Costa Rican legislation.
30. Based on this documentation, it was concluded that the SINAC **failed** to demonstrate the existence of the three criteria established in Decree No. 35803-MINAET, and therefore it did not prove the existence of a wetland at the specified site.
31. Mr. Erwin has mischaracterized the nature and conclusions of the First Expert Report. By mistake or intentionally, he suggests that I conducted a comprehensive study to determine the existence or absence of a wetland, which is incorrect. In the First Expert Report, I clearly stated that the main objective was to identify the elements that specific Costa Rican legislation establishes and which must be applied to determine whether or not a wetland exists in order to subsequently examine whether the various documents issued by the SINAC complied with the provisions of the specific wetland legislation.
32. Clearly, the objective of my expert opinion was not to determine, on-site or in the field, the existence or absence of a wetland, and I am personally surprised that someone who claims to have so many professional credentials would try to create confusion regarding my report by attempting to expand its scope. My conclusion was based on a process of logical-deductive analysis and interpretation, and it is reasonable to say that the SINAC's failure to identify, let alone demonstrate, the presence of the three ecological characteristics established by Decree No. 35803-MINAET, shows that there is no wetland in the site studied, and consequently it is possible to affirm that one does not exist.

E. Mr. Erwin's assertion that a "crucial part of Mr. Barboza's rationale for a finding of "no wetlands" is his reference to the original Environmental Viability Assessment for the Condominium site and its associated Master Plan."

33. I completely disagree with Mr. Erwin's assertion in paragraph 79 of the First KECE Report that a "*crucial part of Mr. Barboza's rationale for a finding of "no wetlands" is his reference to the original Environmental Viability Assessment for the Condominium site (SETENA, 2008) and its associated Master Plan (GeoAmbiente, 2007).*"
34. The reasoning that I employed to reach the conclusion that there was no wetland at the specific site was through reviewing and applying the three technical and legal criteria contained in Decree No. 35803 - MINAET, which is the official instrument for that purpose, and that done by the authorities of SINAC and INTA as reflected and documented in the official reports of SINAC employees, regarding the identification of a wetland at the site and the INTA report on the soil at the specific site.

35. Additionally, I also used a location map with a montage of Plan P-1244761-2007 (Property of the project Condominium Las Olas) in order to precisely locate the specific site. (*See* the diagram to locate the Las Olas project, on image 2005 in the First Expert Report).
36. The Environmental Impact Evaluation and the Master Plan for the Las Olas project were not crucial. To the contrary, they were only consulted to discern related aspects and as a complement, and to verify if there was consistency between the documents analyzed.
37. As stated, the main object of the study was to analyze criteria established in Costa Rica to define the existence of a wetland and whether the SINAC official letters were able to show those elements. The documents related to the environmental viability were analyzed as a complement, especially considering also that there is a field inspection done by SETENA at the site in dispute.
38. To clarify, the reference to the SETENA Environmental Viability Certificate for the Condominium site is important, since it's the main procedure in Costa Rica to analyze the environmental conditions of a site and the possibility of it being affected by a project. Due to the procedure's requirements, the studies that must be presented prior to a project and the monitoring given by SETENA makes it relevant to analyze the protocols for environmental, natural and human protection of the project, specifically the protocols for the protection of water and soils (*See* First Expert Report Date on pages 22 and 23). These protocols are described below:
 - (a) Protocol I (protection of the water) of the Environmental Management Plan established the following action: "a) Drainages, as much as possible maintaining natural drainages or directing changes made to them. When deemed necessary, ramps and/or falls will be established." Additionally, the project considered drainages in the Southwest section.
 - (a) Protocol II (protection of the soil) of the Environmental Management Plan established the following actions: "a) Drainage of rainwater in project areas that minimize the runoff and erosion of soil. When deemed necessary, ramps and/or falls will be established;" "c) The embankments will have moderate inclinations and those greater than 1 meter will be protected and the road cuts will be protected with permanent works to prevent collapses." "f) removed soil will be placed in adequate locations in the area or site authorized by their owner and accommodated; meanwhile, they will be protected."
39. The works mentioned above were done and endorsed by SETENA, including in the zone where the SINAC stated that there was a wetland and for this reason took action to suspend the activities of the Las Olas condominium. It's also important to indicate that since the complaint, SETENA made a field inspection at the site and concluded that there was no wetland (Resolution 2086-2010-SETENA).

II. Clarification of the Main Conclusions of My First Expert Report.

40. The main conclusions of the First Expert Report are reproduced below, with explanations.
41. *“Costa Rica has a robust legal framework to protect, identify, classify and conserve wetlands, and for such purposes it established Executive Decree No. 35803-MINAET, which specified the technical criteria and procedures that must be satisfied for a specific area to be determined to be and delineated as a wetland.”*
42. *Explanation:* As of the date of its publication, and particularly as of the date on which SETENA carried out the field inspections, Executive Decree No. 35803-MINAET is the official technical and legal instrument to be followed to identify and classify a wetland. Therefore, its use and application is compulsory to determine the existence of a wetland.
43. *“The authorities of the National System of Conservation Areas (SINAC) failed to rigorously apply the regulatory framework to evaluate the “Las Olas” project site since they failed to describe the ecological characteristics that must be present to determine that an area is a palustrine wetland, seeing as: 1. They neither sampled nor identified hydrophilic vegetation; 2. They failed to provide evidence of the existence of hydric soil and hydrology; and 3. The official agency certifying land use in Costa Rica, INTA, certified that the soils at that specific site are not typical of wetland ecosystems, since they are not hydromorphic, and the SINAC failed to present any arguments or evidence refuting INTA’s findings. Consequently, the conclusions of the SINAC authorities lack the required substantiation to establish that there is a wetland in that area of the project.”*
44. *Explanation:* As explained above, this conclusion relates to the main objective of my expert opinion. If you read and study the SINAC documents pursuant to Decree No. 35803-MINAET, it is possible to corroborate that the SINAC officials did not fully follow the procedure to identify the ecological characteristics required by the aforesaid decree to determine the existence or absence of a wetland. The activities that the SINAC officials should have performed, but did not, are: in the specific area of interest, 1) sample and identify hydrophilic vegetation; 2) characterize the hydrology; and 3) sample the soil to determine whether it is hydric soil, i.e. hydromorphic. In the case of the soil, they asked the INTA to carry out the study and issue an opinion. If the officials had rigorously performed the above activities, they would have complied with the procedure and they would have also come to the conclusion of the absence of a non-tidal palustrine wetland at that specific site. For its part, the official Costa Rican entity for the classification of soils, INTA, at the request of SINAC, determined that the specific terrain in study was not the hydromorphic type. Therefore, based on the soil studies done by INTA, there is no argument to sustain the existence of wetlands at the site, since one of the legally required criteria to classify the assessed area as a wetland does not exist.
45. *“The area resulting from the supposed palustrine wetland with its coordinates, duly certified by the competent authority of the SINAC, being located in plane No. 1244761-2007 of the project and images of the Google Earth area of the years 2005 and 2013 with coordinate system CRTM05, was located outside of the project area of ‘Las Olas’.”*

46. *Explanation:* The fact that SINAC employees gave a series of GPS coordinates that are outside of the Las Olas project site is a technical mistake that denotes a serious lack of expertise by SINAC employees, which in fact raises the question as to whether there are more important technical mistakes to the extent that the report loses credibility. In any case, though this area in study was within the "Las Olas" project, the documentation and field work of the entities involved in the study leads to the conclusion that there is NO wetland at the site, since the existence of the three ecological characteristics required to determine the existence of a wetland at the site could not be sustained.
47. *"At the time, the project began to develop the infrastructure according to the Environmental Viability Certificate granted by SETENA and the respective management plan, which included transforming and accommodating the terrain, as well as the running waters, therefore it is likely that those works have been erroneously considered by SINAC authorities as the realization of backfilling and drainage of the supposed wetland area; Nevertheless, in order to verify this matter, a study of the soils on site is required in order to assess and dismiss such facts."*
48. *Explanation:* Note that most of the wetland indicated by SINAC and by Mr. Erwin in his report was in the Las Olas Condominium Section. Precisely, in the West sector of the Las Olas Condominium, which had received an Environmental Viability Certificate, it was proposed to do some backfilling as well as works to channel rain water (according to the construction maps). It's clear that Mr. Erwin is wrong in stating that the Environmental Viability Certificate is not included for these works,. As stated, all SINAC official letters analyzed refer to the Las Olas project that was approved by SETENA, for which the SINAC requested injunctions.
49. *"In my expert opinion, there is no non-tidal palustrine wetland at the site indicated in the area of the 'Las Olas' project. For this same reason, the SINAC authorities did not technically uphold that type of ecosystem in the area studied."*
50. *Explanation:* The SINAC employees did not sustain the existence of a wetland at the specific study site, because there were no ecological characteristics required to determine the existence of a wetland, as explained in the First Expert Report. This was reinforced by the INTA criteria, which, at the request of the SINAC and by a soil sample, concluded that there was no hydromorphic soil at the study site.

A. My Conclusions regarding the SINAC March 2011 Report and my response to Mr. Erwin's critique of my assessment of this report.

51. As explained in my First Expert Report, Report SINAC-GASP-93-11 (the "SINAC March 2011 Report") does not demonstrate that there is a wetland at that "Las Olas" project site.
52. Report SINAC-GASP-93-11 did not entirely fulfill the protocol established in Executive Decree No. 35803-MINAET, nor were the ecological characteristics of a wetland identified or described at the specific site being studied, very likely because they did not exist. Remember that in order to determine the existence of a wetland at the site (Hydrophytic vegetation, hydric soil, and

water condition), those characteristics must exist or be found and characterized. Report SINAC-GASP-93-11 presented very limited descriptions of characteristics at the site, without convincing information or supporting information as we find from the same report. I clarify that I was not given field notes with information that was not included in the report. If there were any, it would be a shortcoming of the report not to have included that information.

53. Regarding the criteria established by Executive Decree No. 35803-MINAET:
- **Hydrophytic vegetation:** Report SINAC-GASP-93-11 mentions species that were not typified as hydrophytic, such as: gramineous, palms and bushes that are in various other types of habitat. (Zamora et al, 2000; Gargiullo et al, 2008).
 - **Hydric soils:** Report SINAC-GASP-93-11 makes no reference to information and results of soil samples. On the other hand, it mentions that the INTA soil samples "detected the presence of hydromorphic soils characteristic of these ecosystems," which is evidently incorrect as found from the INTA report that categorically concludes that hydromorphic soils **do not exist**.
 - **Hydric conditions:** Report SINAC-GASP-93-11 does not present the characteristics of hydric conditions described in the regulations and, as I explained, report SINAC-GASP-93-11 contradicts itself by stating that it is a "*non-tidal palustrine wetland with a surface water level*" and then indicates that "*at the time of the inspection, no surface water source was found*" since it's not possible for both situations to occur simultaneously for the reasons explained opportunely in the First Expert Report.
- 1. My reference to Report ACOPAC-OSRAP-371-2010 (the "SINAC July 2010 Report"), its relation to the SINAC March 2011 Report, and Mr. Erwin's statements.**
54. The SINAC, in the report of July 2010, made reference to many vegetative species in the study area, such as "*pink trumpet (Tabebuia rosea)*, (ii) *cecropias (Cecropia sp.)*, (iii) *West Indian elms (Guazuma ulmifolia)*, and (iv) *María (Miconia argentea)*. Although the first three may be associated with wetlands or humid areas (MINAE-SINAC-UICN, 1998), they are not purely hydrophytic and, so, are not found only in wetlands. These species are common in other habitats that are not wetlands, such as hillsides, paddocks, natural regeneration areas, and even in dry zones such as Guanacaste (Zamora et al, 2000; and Gargiullo et al, 2008). This report was mentioned because it was an official act by SETENA that mentions the vegetation at the site at a different time than the SINAC March 2011 Report—therefore it's important to verify the coherence or inconsistency of the observations, and in this case, to reaffirm the noted criteria.
55. Mr. Erwin's statement in paragraph 103 of the First KECE Report that "*the July 2010 ACOPAC Visit Report also provides a fairly good narrative description of seepage wetland occurring onsite including presence of surface water flows,*" is wrong. The presence of surface water flows and filtrations seem to be a common manifestation in hilly terrain during the rainy season, or after strong rains, and this accumulation of water can in no way be compared to a wetland. The "Las Olas" project is located in the Central Pacific of Costa

Rica, an area where precipitation is approximately 3,000 mm annually. Therefore, a description of surface water flows and filtrations does not allow one to affirm the existence of a wetland in a specific location. That description could also correspond to rainwater flows, depending on the predominant relief. "Flows" are understood to refer to water running down a slope or an area that descends to lower zones.

56. According to INTA (DE-INTA-255-2011) *"The area in question physiographically represents concave land, where surface water flows will be deposited coming from the surrounding hills, as well as surface flows from the highway, limited on the West."* Those surface water flows are a manifestation of rainwater in this terrain, which coincides with a drainage area, the relief of which has hills, undulations, and a depression in one sector. The waters flow north-south until they empty into the main basin of the drainage and continue on (see the map in APPENDIX II and APPENDIX IV, a hydrological study). The small drainage basin is rounded and shows signs of former civil engineering works (a road, trails), as well as effects of deforestation and cattle-raising, for which reason it drains slowly. These runoff waters, which are present during the rainy season and may be retained briefly at times, do not indicate the presence of a wetland in and of themselves. This agrees with the 2010 SINAC report, as shown in what follows.
57. The report from SINAC in 2010 describes what was seen by a SINAC employee in the inspection performed during the rainy season (July of 2010) and evaluates that thesis: *"The water found in the channel probably comes from rain (storm) water, and due to the inclinations from the small hills on the property, fall directly toward the flat plane, running into and contributing to raising the water in the channel of this depression."* See ANNEX II, a map that shows the "small drainage basin in the discussion area outlined from field observation, Project Las Olas, Esterillos Oeste, July 2016." In that ANNEX II, it is clearly noted that it is a water flow area, from the upper part to the lower and more continual part.
58. It must be considered that according to Decree No. 35803-MINAET, the hydric condition is *"characterized by the climate's influence on a given territory, which many variables play into, such as geomorphologic patterns, topography, and material constituting soil, and occasionally other processes or extreme events."*
59. On the other hand, according to Decree No. 35803-MINAET, in order to determine that an area is a wetland, there must be the combined presence of Hydric Conditions, Hydric Soils and Hydrophytic Vegetation, which cannot be concluded from the documents analyzed.
60. The filtrations and presence of surface water flows on the site (during the rainy season), which are referred to, are not sufficient support to sustain hydric conditions at a site, nor to determine that it is a wetland.

B. Addressing Mr. Erwin's assertion that Report ACOPAC-CP-003 11 dated July 3, 2011 (Exhibit R-262) identifies a wetland grass.

61. In paragraph 100 of the First KECE Report, Mr. Erwin states that *"Mr. Barboza fails to make notice of the ACOPAC-CP-003-11 report dated January*

3, 2011 (the "January 2011 ACOPAC Visit Report") which identifies dominate vegetation being *Paspalum fasciculatum*, which is a wetland grass."

62. The *Paspalum fasciculatum* grass, is not a species exclusive to wetlands, but has a wide variety of habitats. In Costa Rica it's known as "gamalote." If it's a grass next to wetland sites that grows very well in slow-draining soils, on the shores of rivers, and in gullies at low altitudes, along irrigation canals and ditches, but it is also a very common grass in paddocks, in zones of the central pacific, the South of the country, in the North zone and in the Caribbean. It is also found in banana plantations (Segura, 1957).
63. The presence of this grass at the study site is probably favored by the humidity caused by rainwater flows in that depression of the terrain, and which is evidently reported in the SINAC reports.
64. Therefore, the report that there is *Paspalum fasciculatum* at the site, indicates the presence of certain humid conditions, but **DOES NOT allow a conclusion** that it fulfils the criteria for hydrophytic vegetation required by Decree No. 35803-MINAET for the area in question. *Paspalum fasciculatum* has in fact been considered common undergrowth during the establishment of oil palm plantations in Costa Rica (Ortiz, R. and Fernández, O. 2000).
65. Indeed, none of the SINAC reports of July 2010 or of March 2011 support the existence of hydrophytic vegetation at the site in dispute, which affirms the existence of the wetland at Las Olas. The above is obtained from the contents of each of those reports, as stated below:

- (a) Official communication ACOPAC-OSRAP-371-2010, from 7/16/2010, reports that in the tour of the property where the "Las Olas" project was being developed, in order to determine if there was any area with wetland characteristics, the following was reported: "*The following species were observed among the arboreal vegetation, pink trumpet (Tabebuia rosea), cecropias (Cecropia sp.), West Indian elms (Guazuma ulmifolia), and María (Miconia argentea).*"

The paragraph of results and conclusions, page 3, paragraph 2, says: "*If there were a wetland on this property, it would be characterized by a permanent or temporary stretch of water, and with plants that are adapted to aquatic environments or habitats and that may be emerging plants, amphibious plants, floating rooted plants, submerged plants or plants that float freely, woody or herbaceous plants that may be terrestrial and that may survive in places in wet conditions where they have structures morphologically adapted to those environments, hydromorphic land and hydric conditions, **which was not found on the property.***"

It goes on to say: "*In the field inspections done on the property of the project Horizontal Residential Condominium Las Olas, due to the topographical and ecological characteristics and the vegetation profile presented, in addition to the soil and reports mentioned above, which do not mention that this property has parts that include wetland areas, therefore it is established that **there are no wetlands** on this property.*" (Emphasis added).

The previous paragraph reports species that are not hydrophytic, such as: “*pink trumpet (Tabebuia rosea)*, *cecropias (Cecropia sp.)*, *West Indian elms (Guazuma ulmifolia)*, and *María (Miconia argentea)*”, because, as stated above, those species are common in many types of habitats and are very common in dry tropical forests. (Zamora et al, 2000; and Gargiullu et al, 2008). Occasionally they can be found in association with wetlands, but they are not hydrophytic.

- (a) Report SINAC-GASP-093-11 of 3/18/11, did not identify or record species of this type of vegetation (hydrophytic), but only states that: “*the presence of a non-tidal palustrine wetland was detected... dominated by grasses, palms and some bushes.*”

Regarding the ecological characteristics of Hydrophytic Vegetation to determine the existence of wetlands, said official letter does not describe or identify species of hydrophytic vegetation.

The above because grasses, palms and bushes include plants whose characteristics are present in different habitats and types of terrain, and were not characterized as hydrophytic, nor were any hydrophytic species reported, therefore it does not support this ecological characteristic of a palustrine wetland, as dictated by Decree No. 35803-MINAET.

Despite the above, the mere presence of a hydrophytic species at a site is not enough support to determine the existence of wetlands, because as established by Costa Rican norms, the three ecological characteristics must be present. A hydrophytic species can be found and reported at a specific site without that site qualifying as a wetland.

C. Addressing Mr. Erwin’s assertion regarding Report ACOPAC-OSRAP-784-2011 (the “SINAC January 2011 Report”) (Exhibit C-143).

66. I do not agree with Mr. Erwin’s assertion regarding Manfredi’s visit on November 7, 2011 (ACOPAC-OSRAP-784-2011) in paragraph 105 of the First KECE Report.
67. Even parting from the assumption that at that time (2011) a “*cutting of vegetation in the wetland undergrowth*” was being done, and as stated by Mr. Erwin, this would not make the eco systemic condition of the site disappear. That is, if someone occasionally cuts wetland vegetation, the vegetation will return, due to the natural productivity that characterizes the wetland ecosystem. Apart from that, the other characteristics of the site would persist.
68. Such observations do not affect my conclusion that the SINAC reports do not demonstrate that the existence of wetlands in the specific “Las Olas” site in question. The existence of a wetland at a site is not only determined by the existence of a certain type of vegetation, hydrophytic vegetation, but rather by the three essential ecological characteristics an area must possess to be considered a wetland (Article 6, Decree No. 35803-MINAET). Remember that, based on this Costa Rican legislation, in order to determine the existence of a wetland on the site, it is necessary to identify and characterize Hydrophytic Vegetation, Hydric Soil and Hydric Conditions. These are the

three technical and legal criteria that must be met in order to determine that a site is a wetland.

69. Additionally, as I stated, if the vegetation was cut, in time it would have grown again due to the regeneration and natural productivity that characterizes the wetland ecosystem, which apparently did not occur.

D. Mr. Erwin's statement that there is no contradiction in the SINAC March 2011 Report between the presence of a superficial water table and the fact that the reviewers did not observe any source of surface water at the time of inspection.

70. In paragraphs 107 to 108, Mr. Erwin purports to explain away in his First KECE Report an apparent contradiction in the SINAC March 2011 Report regarding the presence of a superficial water table and the fact that the reviewers did not observe any source of surface water at the time of the inspection.
71. In my opinion there is a contradiction. Because according to the report of INTA employees, it states that in sampling the site, on a similar date, it was reported that the water table was under 120 cm deep, it is odd that there would be "surface water" on the same site, at the same time.
72. The term surface water seems to be a simple and undocumented perception by the observer at the time, because a clear description of what it was about was not given. There is no evidence of this in any of the reports analyzed.
73. As mentioned, the report used the term water surface to imply that it is equivalent to the water table, but without arguments that would support it. On the contrary, the only sample taken was from INTA, that in its report stated that said water table was found to be under 120 cm. Therefore, the contradiction is clear.
74. It is important to highlight that the existence of a wetland was not demonstrated at this specific site, and that the works in the Las Olas project had an Environmental Viability Certificate.
75. Also, given the location of plan P-1244761-2007 in the Environmental Management Plan of the Las Olas Project and a GPS field survey, (*see ANNEX II*), it was found that the works to channel "drainage" waters, the land moving and the filling were done to the East of this drainage, in the Las Olas Condominium, and were established in the Management Plan for the Las Olas Project.

E. Mr. Erwin's accusation of a "false deduction" that the "SINAC-ACOPAC authorities erroneously considered site work to be resulting in the filling and draining of wetlands when the work should rather be considered approved site work to develop site infrastructure as reviewed and approved in the environmental viability assessment and associated management plan."

76. In paragraphs 85 through 89, Mr. Erwin accuses that I made a false deduction on pages 22-23 of my First Expert Report that "*the SINAC-ACOPAC authorities erroneously considered site work to be resulting in the filling and draining of wetlands when the work should rather be considered approved site*

work to develop site infrastructure as reviewed and approved in the environmental viability assessment and associated management plan.”

77. Mr. Erwin does not accurately categorize what I said. The first thing that is important to clarify is that the affected project which the official letters refer to in Annex I of the First Report is the Las Olas Condominium Section--and not the area Easements Section.
78. This is because the map locating Plan P-1244761-2007 on the Google Earth Aerial Image of March 2013 (*see* ANNEX III, map) which corresponds to the Environmental Management Plan of the Las Olas Project, confirms that the works to channel the "drainage" waters," as well as part of the cutting of land and backfill made to the East of this drainage, are within the Las Olas Project area and were works in this project that had an Environmental Viability Certificate.
79. If carefully observed, Mr. Erwin's assertions regarding the locations of his alleged wetlands do not to what SINAC identified in their official communications to be the wetland area. More specifically, Mr. Erwin indicates that the alleged wetland is within the easement area, which is not consistent with what the SINAC reports have concluded. This is clearly an inconsistency in itself, since otherwise the suspension on doing works would have been on the Easement Section, and not the Condominium Section of Las Olas. I do not know if there is any corresponding study on the Easement and other lots" Section. In any case, the SINAC reports were not able to support *the existence of a wetland on that site.*
80. *Moreover, the backfilling works or others supposedly done to the West of the ones shown, would be outside the area of the "Las Olas" Condominium, and belonged to what are called easements and other lots. In any case, no wetland was backfilled and, so, the existence of a wetland was not demonstrated.*

F. Mr. Erwin's critique of Mr. Barboza's assessment of the INTA Report, and contradictions between the INTA Report and the SINAC March 2011 Report.

81. I considered the INTA report because:
 - (a) In my experience both as employee of the SINAC and later as a consultant, INTA is the Costa Rican government agency specializing in soils, and this comes from a competence established in the legal ordinance. I also know that the Attorney General of the Republic of Costa Rica has issued criteria related to Law No. 7779 (1998) (Law on the Use, Handling and Conservation of Soils), and has stated in that regard: *"Therefore, it is up to INTA, as the agency specializing in investigation, to study the soil on a national level--for purposes of agriculture and conservation-. This is a part of its functions of investigation and generation of technology."* (See Ruling C-349-2014, confirmed by Ruling C-042-2015).
 - (b) In that framework, and because it's part of its competence, INTA, at the request of the Central Pacific Conservation Area (ACOPAC), in official letter DE-INTA-255-2011, of May 5, 2011, issued the technical criteria on soil and capacity of use of lands, of the Horizontal

Residential Condominium Las Olas, which includes the study area in debate.

- (c) SINAC is the entity in charge of wetlands in Costa Rica, but in relation to soil studies, the INTA's criteria are supported and requested, as the entity with competence in this matter. Therefore, this type of coordination and collaboration is necessary, especially if we take into account that Executive Decree No. 35803-MINAET, regarding the classification of soils, expressly refers to Executive Decree No. 23214-MAG-MIRENEM on Classification by Land Utilization Capacity.
- (d) In addition, I have not been given any document issued by SINAC that contradicts or refutes official letter DE-INTA-255-2011.

1. Mr. Erwin's conclusions regarding the INTA Report and the SINAC March 2011 Report are wrong.

- 82. Mr. Erwin states in paragraph 113 of the First KECE Report that the SINAC March 2011 Report (Exhibit C-116), which included INTA's findings on the soil samples, "*indicated the presence of poorly drained soils with hydromorphic properties.*" (Para. 113)
- 83. There is a clear contradiction between the SINAC March 2011 Report and the INTA report. Official Report SINAC- GASP-093-11, of March 18, 2011, reports that: "*As part of the sampling of soils by INTA employees, the presence of hydromorphic earth was found, which is characteristic of this type of ecosystem.*"; while the INTA criteria establishes that: "*The anthropic interference that has been going on for many decades in this sector (road infrastructure, deforestation, livestock) and the definition of the Handling Unit of point 4 do not support cataloging the soils in this site as typical of wetland ecosystems.*"
- 84. As reported by INTA in that official letter, its conclusions found gley soil in the horizon of 80 centimeters from the soil, and the water table at 120 centimeters, but this is not hydromorphic earth, so it can be concluded that this ecological characteristic does not occur in the area indicated as a wetland in official letter SINAC- GASP-093-11 of March 18, 2011.
- 85. I reach the above conclusion because, if the condition of gley soil is not present in the first 60 cm of the soil horizon, it cannot be classified as hydromorphic soil, though certain hydromorphic characteristics can be found at a greater depth (Cervantes, C. 2016). Soil can have certain hydromorphic properties, but it cannot be classified as hydromorphic as is the case in the study.
- 86. As a result, there are clear contradictions in the SINAC March 2011 Report that demonstrate that it is unreliable and unsound.
- 87. There are reasons why SINAC must rely on people with knowledge of soil such as INTA, because SINAC did not have specialists in this area. Therefore the importance of coordinating with the INTA cannot be underestimated. It is probable that one or a few soil samples, during the joint sampling by SINAC employees and INTA employees, induced SINAC employees to erroneously interpret this finding. It's clear from the INTA report that the soil **did not have the hydromorphic conditions normally found in wetlands.**

88. Mr. Erwin also states in paragraph 114 of the First KECE Report that in the INTA Report, the reviewer “identifies the presence of anaerobic (wetland) soil process increasing with depth including radical glazing at 80 cm. and that the water table at the time of the survey was below 120 cm., identifying anaerobic evidence significantly above the current water table.” He goes on to assert that this discredits the contradiction I identify in the SINAC March 2011 Report with the presence of a superficial water table without the presence of a water source. (Para. 114)
89. I completely disagree. The presence of a soil sample with anaerobic conditions at 80 cm depth and a water table at 120 cm, though with the presence of anaerobic presence over the water table, in the opinion of soil specialists, does not justify considering it hydromorphic soil. Soil can have certain hydromorphic characteristics, at certain depths, but it is not enough to deem it true hydromorphic soil, since that requires it to be gley soil in the first 60 cm of soil horizon (Cervantes, C. 2016).
90. It is likely that this data shows a certain process of evolution of the soil by site, due to any changes in the pattern of flows and even the temporary retention of rainwaters or slow drainage as a result of the historical use over many years of the area and its surroundings, with great interference of human activities, which for many decades have occurred in this area, such as road infrastructure, deforestation and livestock. This situation is relatively common in different locations in the country, where highways and other infrastructure works were made that incorporated natural drainage conditions.
91. It is important to clarify that the soil structure conditions do not change rapidly. To the contrary, it is a very slow process, so if the site being studied was a wetland and was affected, the hydromorphic conditions of the soil would persist. Precisely for this reason, Executive Decree No. 35803-MINAET establishes it as mandatory criteria for analysis, and for many the most important one, because the soil functions as a type of record that allows studying whether a place where a simple look shows that the ecological conditions of a wetland have disappeared, may have been one at some point.
92. I further disagree with Mr. Erwin’s statements made in paragraph 115 of the First KECE Report. Mr. Erwin states that the INTA Report describes the sampled area as *“having wetland characteristics including location, surface water inputs, poor drainage, anaerobic soil process and having severe limitations for agriculture and development use due to climatic and drainage limitations”* and that this supports the findings in the SINAC March 2011 Report that there were wetlands at Las Olas. (Para. 115).
93. First, this paragraph indicated by Mr. Erwin, and put in quotes by him, is not consistent with the INTA report, indicated in the official INTA criteria DE-INTA-255-2011, of May 5, 2011, because in reviewing that report, this description was not found.
94. Second, among the findings reported by INTA in this report, it states that there is slow drainage, soil with root processes at approximately 80 cm due to the presence of gley soil and that the water table was deeper than 120 cm. It concludes that *“The anthropic interference and the definition of the Handling Unit do not support cataloging the soils on this site as typical of wetland ecosystems.”* It is important to note that in order for there to be hydromorphic

soil, the soil must be gley soil in the first 60 cm. Therefore, this in no way allows the deduction in the SINAC report of March 2011, that there is a wetland at the site in question in the "Las Olas" Project.

95. I also strongly disagree with Mr. Erwin's statement (also in paragraph 115 of the First KECE Report) that INTA's conclusion that the site does not have soils typical of a wetland ecosystem due to anthropic changes that have occurred over decades due to land use is "*based on a methodology used to assess soils for agricultural use, which is not the proper methodology to consider the existence of wetlands*"? (Para. 115).
96. The official criteria given by INTA in its reports is literally: "*the anthropic interference and the **definition of the Handling Unit** do not support cataloging the soils on this site as of wetland ecosystems.*" The determined Handling Unit has the greatest weight in this criteria, as per Costa Rican legal ordinance.
97. On the other hand, the INTA methodology is correct and is official for agricultural and conservation soils. Let it be considered that "the Attorney General of the Republic has issued criteria related to Law No. 7779 (1998), Law on the Use, Handling and Conservation of Soils, and has stated in that regard: "*Therefore, it is up to INTA, as the agency specializing in investigation, to study the soil on a national level--for purposes of agriculture and conservation-. This is a part of its functions of investigation and generation of technology.*" (See Ruling C-349-2014, confirmed by Ruling C-042-2015).
98. INTA in its report also attributed the filling of a wetland in Las Olas as "*over a period of time due to land use*" rather than the Las Olas development activities. Mr. Erwin stated in paragraph 117 of the First KECE Report that INTA made this supposition without supporting evidence.
99. I complete disagree. It is widely known that anthropic interference can cause significant changes to a given landscape, in certain periods of time. Nevertheless, the interpretation of the anthropic interference stated in the INTA report, in the official INTA criteria DE-INTA-255-2011, of May 5, 2011, is a part of the technical criteria issued, since the most essential part is the Soil Management Unit, which was scientifically determined by the sampling and analysis of the Laboratory soil. That is precisely what led INTA to conclude that the soil at the site is not hydromorphic, because the absence of this basic ecological characteristic allows the determination that the soil at the site is not typical of wetlands.
100. On the other hand, a "recent backfill" would not lead to an abrupt or sudden change in the soil, therefore even with this assumption of "backfilling" of certain points in the area being studied, the sampling of soils was done in expert criteria, and in this case was taken to a Handling Unit and hydromorphic soil characteristics. The changes to this kind of soil are slow, and therefore even if there were a "backfill," this type of characteristic would have been found on the site, and it was not.
101. In my opinion, the facts presented in this SECOND EXPERT OPINION are accurate.

References.

1. Barboza, G. 2015. Primer Informe Pericial [First Expert Report]. Las Olas Project Case. 30 pp.
2. Cervantes, C. 2016. Personal communication. PhD. Soil Science Edaphology and soil fertility, Certificate of compliant use.
3. Gaceta [Gazette] No. 73 of April, 2010.
4. Erwin, K. 2016. Expert Report, the “Las Olas” Case. 186 pp.
5. Gargiullo, M. et al. 2008. A field guide to the plants of Costa Rica. Oxford University Press. 544 pp.
6. MINAE-SINAC-UICN. 1998. Inventario de los humedales de Costa Rica. [An Inventory of Costa Rican Wetlands.] 279 pp.
7. Ortíz, R. and O. Fernández. 2000. The Cultivation of Oil Palms. EUNED. San José, Costa Rica.
8. Oviedo, J.A. 2014. Official Letter C-349-2014. From 10/20/2014. Assistant Prosecutor.
9. Attorney General of the Republic. Ruling C-042-2015. From 3/2/2015.
10. Segura, G. 1957. Hábitos de crecimiento del zacate *Paspalum fasciculatum* Willd. Y su posible control con herbicidas. [Growth habits of grass *Paspalum fasciculatum* Willd. and its possible control with herbicides.] IICA. Turrialba, Costa Rica. Masters Thesis. 130 pp.
11. SETENA. Ruling No. 2086-2010-SETENA. From 9/1/2010.
12. Zamora, N; Jiménez, Q; Poveda, L. 2000. Árboles de Costa Rica. [Trees of Costa Rica.] Vol II. Heredia Costa Rica. National Institute of Biodiversity. 374 pp.

Signed:[signature].....

Gerardo Barboza Jiménez

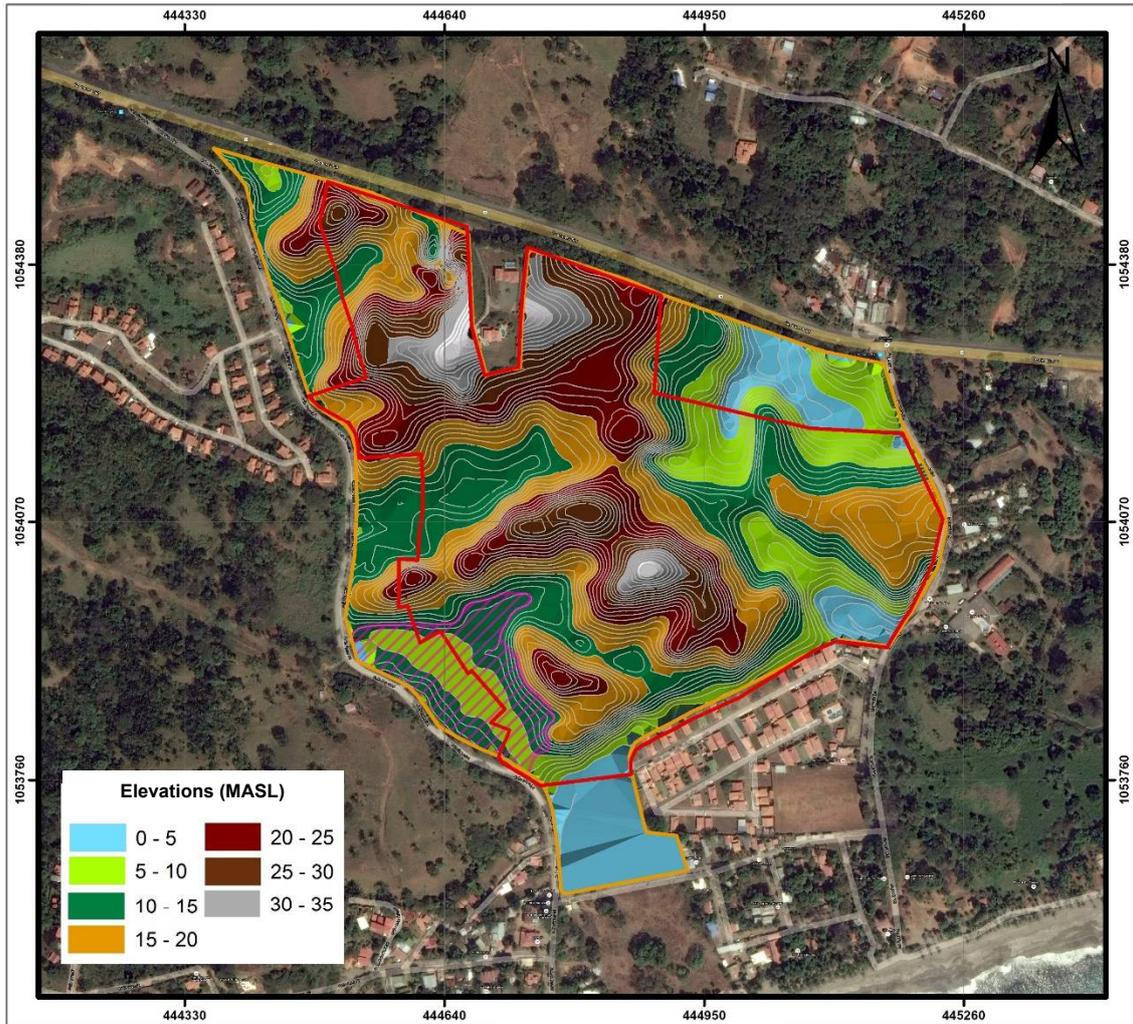
Date: ...Aug 4, 2016.....

END

ANNEXES.

ANNEX I

**Area in Question with Boundaries Based on Contour Lines and Onsite Observation.
Las Olas Project. Esterillos Oeste. Puntarenas**



Symbols

- Contour Lines
- Map: P-1244761-2007 (P-EMP)
- Map: 6-1021869-2005
- Area in Question

**Numeric Scale: 1:6,300
Graphic Scale**



Location Diagram



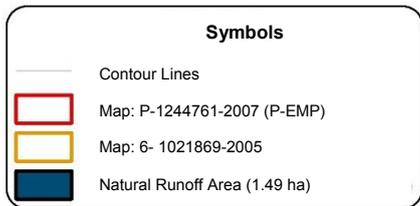
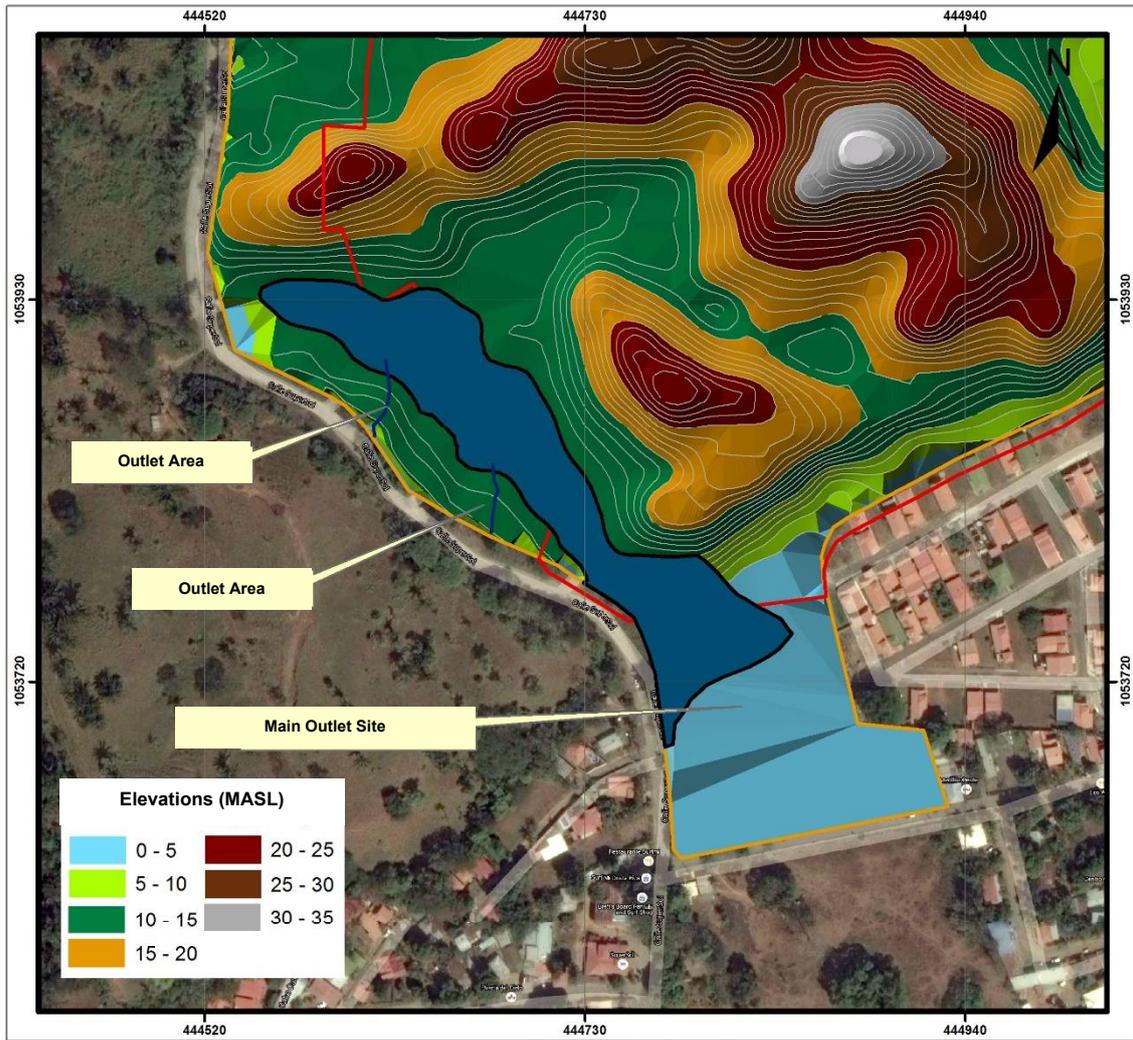
Source:
Cadastral Plan: P-1244761-2007 &
6-1021869-2005
Image Area Google Earth
Image Date: February, 2016
Contour Lines: SO+MUSSIO, M, 2008
Datum: WGS84
Coordinate System: CRTM05
Date: July, 2016

Prepared by:
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Biologists of Costa Rica]

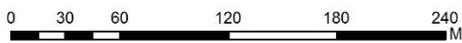
Map Design:
Mr. Nahuel Flores Bianchi
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ANNEX II

**Área y Patrón de Escorrentía Superficial de Aguas Pluviales en el Proyecto Las Olas
Esterillos Oeste. Puntarenas**



Numeric Scale: 1:3,000
Graphic Scale



Source:
Cadastral Plan: P-1244761-2007 &
6-1021869-2005
Image Area Google Earth
Image Date: February, 2016
Contour Lines: SO+MUSSIO, M, 2008
Datum: WGS84
Coordinate System: CRTM05
Date: July, 2016

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