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Ref: Research labour certificate– Santiago Sandoval Arenas

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To whom it may concern:

Hereby, as the director of the research project *Study of the treatability of Bogota's wastewater outlet with a testing WWTP by the use of activated sludge technologies* (Legal Agreement PUJ – EAAB No. 9-07-25100-0763-2010), I declare that from February of 2011 to December of 2012 Santiago Sandoval worked as a research collaborative with a full-time dedication to the mentioned project. This research project is sponsored by the *Pontificia Universidad Javeriana's* Civil Engineering Department, and has been jointly consolidated between *Pontificia Universidad Javeriana* and Bogotá's Waterworks Company. The functions that Santiago developed as a research collaborative were mostly related to research activities. Development of research projects; reading, summarizing and analysis of research articles (states of art, including formulation of research questions); data collection, processing and analysis (search of innovative methods, as well as the execution of them with the data collected in field); computer programming, scientific text writing, submission to journals and correction of papers (in terms of content and style). Specifically, Santiago worked in a section of the project dedicated to the study of relationships between rainfall characteristics and operation of wastewater treatment plants. In this section, Santiago has participated in the publication of one article in Urban Water Journal, an oral presentation at a national scientific conference and another one at an international conference. Furthermore, by exploiting the results of the research activities developed for the project, Santiago has been an active member of the research group *Ciencia e Ingeniería del Agua y el Ambiente* (Science and Engineering of Water and Environment, B rated by Colciencias, Colombian research's regulation agency).

Jaime Lara Borrero (CE, MSc, PhD)
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Director of *Maestría en Hidrosistemas*

Director of the research project: *Study of the treatability of Bogota's wastewater outlet with a testing WWTP by the use of activated sludge technologies*

