Challenges in the Implementation of the Remediation Actions in a Residential Area with a History of Conflict of Interest

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Background/Objectives. Approving and implementing remediation in a residential condominium, with over 5,000 residents, requires multidisciplinary efforts from a team that has solid technical knowledge and negotiation and communication skills to manage and converge the interest of all the people involved in the environmental recovery of the area. These skills must also consider the history of socio-environmental, legal, and economic conflicts between the stakeholders (the ones legally responsible for the liabilities, environmental agency, Public Prosecutor's Office, and residents). Building of the Residential Condominium began in the 1990s when around 50 buildings were installed with 1.670 apartments. The site has approximately 170,000 m^2 and in the 1970s, it received a significant amount of industrial waste (mainly foundry sand), which generated accumulation of methane in the subsurface leading to a serious accident. This issue later had repercussions in the media.

Approach/Activities. The strong database generated in the investigations subsidized the evaluations of the potential risks to the environment and human health, regarding the presence of the methane and other chemical substances of concern found beneath the surface. It also supported the Environmental Recovery Executive Project, containing the necessary actions to guarantee safe conditions to the residents and minimize the impacts on the physical environment. The project included the deployment of a SVE, removal of specific wastes, air sparging, water and gas treatment units, adjustment of the pavement, aerobic in situ stabilization (to stop methane generation), and pilot testing of solidification/ stabilization. Management met multiple challenges during implementation. These included: planning, organization, licenses and monitoring, supervising 15 contractors and about 80 people working on-site. Therefore, the performance of a multidisciplinary and experienced team (civil, chemical, security, environmental and process engineers, geologists, lawyers, architects, technicians, among others) was fundamental. The communication strategy was maintained during the entire process, aiming to establish an objective and transparent interlocution, which benefits both sides. Considering this context, the participation of the management in the committees and meetings (technical, communication, legal, and residents) contributed to strengthen the relations of the people involved and precluded the conflicts, so that the project implementation was successful.

Results/Lessons Learned. The remediation actions foreseen inside the residential condominium were implemented smoothly, with no interruptions, without people removal and brought satisfaction to the residents. Besides solving the environmental and security issues, they also promoted improvements in the condominium infrastructure. The SVE, air sparging, and the water and gas units are operating and the results of the environmental monitoring indicate that the main objective was already reached through the reduction of the substance concentrations and the methane occurrence area. The management of the Executive Project implementation was a challenge and a consistent learning process of how to lead an environmental recovery project in sensitive cases. The most common approach is to focus only on the technical aspects of the environmental liabilities, yet it is essential to mark the importance of a management that integrates the communication with the stakeholders, social and negotiation skills, in an effort to always keep the technical and economic objectives feasible.