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# Climate Alerts





"Climate Alerts" is a new **ARPEL** initiative that consists in the development of executive reports on extreme climate incidents that have affected the companies of the sector (their facilities or operations) in the region, with the objective to create awareness on climate-related vulnerability and risks, emphasizing their direct impacts, and the conclusions and actions taken, thus contributing to increase the response capacity and resilience of the sector before climate impacts.

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## Overflow of the box that collects chemical wastes from a laboratory for the physical-chemical analysis of crude oil.

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### Context

In a facility to receive, separate, control and export hydrocarbons, which handles fluids from several wells located in a mountainside, and including a laboratory for the physical-chemical analysis of crude oil, a heavy rain (heavier than the average expected values for the season of the year) caused an overflow and spill of a box that collects chemical wastes from the laboratory.

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### Facts background

Two hours of heavy rain in the area, 98 mm of rain, and the average value for the season of the year in which the incident occurred was 30 mm.

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### Case description

Around 7:30pm on the day of the event, and after approximately 2 hours of heavy rain in the area and under permanent climate conditions of heavy rain and electric storms, a technician from the maintenance workshop smells hydrocarbons in the area, alerting him to move an inspection forward and detect a spill caused by an overflow of products stored in a collecting box at the Laboratory, flowing to the rainfall channel. The timely reaction of the technician allowed to activate the Emergency Planning of the facility and stop the overflow, with no environmental consequences. The spill (1 gallon approximately) did not surpass the operative facilities; only traces were observed in the collecting box in front of the materials warehouse. Passive protections functioned properly.

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### Lessons learned

To update the maps with the changes implemented to the drains of the facility.

To develop a tutorial to operate the gates of the rainfall drain system to control spills, and tag each gate.

To increase the height of the kerbs so that it prevents rainfall to enter into the box with fluids from the laboratory, and into the box for domestic wastewater inspection. To tag them as well.

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## Suggestions

To clean and maintain rainfall channels, skimmer (internal and external) and ditches in the external area of the mesh.

To review the capacity of the channel that receives rainfall from the pipeline coming from the electrical substation.

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## Future challenges

To analyze the possibility to install an automatic sensor of the drainage level in the box of wastes from laboratory samples.

To monitor changes in the maximum levels of rainfall expected in each facility, and update the contingency plans and control systems of the facilities to make them resilient to extreme climate events, like the one described hereby.

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## Conclusions

Since heavy rains -heavier than the average- happened during the day of the incident, overflowing the height of the kerbs, this condition must be considered for future designs. If the design of a box or water drainages changes with respect to the original one, a proper risk assessment should be carried out, considering external factors such as climate and vulnerability of the facility so that control elements can handle extreme climate conditions forecasted by climate change scenarios.

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## Costs

The approximate cost of primary attention, cleaning and research of this event, and the preventive measures taken to avoid its repetition was USD 4500.

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**This report was developed by the ARPEL Climate Change Working Group**, in which the following member companies participate: Ancap, Chevron, Cupet, Enap, EP Petroecuador, Equion, Honeywell, Oldelval, Pemex, Petroamazonas EP, Petropar, Petroperú, Pluspetrol, Tecpetrol and YPF.

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Information provided in this climate alert is based in a separate extreme climate event which caused a particular impact to an operation. This information is a reference and does not pretend to determine that it was directly caused by "climate change", but to create awareness on the relevance of climate risks and their impacts in oil companies operations.