



Project

Haley & Aldrich helps Palm Springs safely and efficiently comply with airport-related PFAS order

3

Groundwater monitoring wells installed in under 3 weeks

130

Soil samples taken in under 3 weeks

Summary

- The California State Water Board ordered the city of Palm Springs to conduct a comprehensive audit of aqueous film-forming foam (AFFF) storage, use, and management at its airport. AFFF used at airports contains [per- and polyfluoroalkyl substances \(PFAS\)](#), which some studies have linked to health problems in humans. Because AFFF can potentially impact the environment, the state required the city to determine if any contamination had occurred.–
- Drawing on our deep experience providing geochemical and environmental services to airports, we designed a practical and timely plan to locate PFAS sources and investigate potential contamination without impacting airport operations.–
- We sampled soil across the site using two drilling techniques at the same time — one for shallower soil sampling and another for deeper soil sampling — to complete the work on a tight timeline.–
- We also proactively engaged the California Regional Water Quality Control Board by inviting representatives to a site walk at the start of the field program, discussing sampling locations and objectives with them, and received approval for a phased investigation approach based on initial laboratory results.

Client challenge

In 2019, the California State Water Board issued an order to the city of Palm Springs (and many other cities with airports) to conduct a comprehensive site audit of AFFF storage, use, and management. AFFF used at airports and other industrial sites contains PFAS — so-called “forever chemicals” — that some studies have linked to cancer and other health problems in humans. Because AFFF can potentially impact the environment, the state also required the implementation of an investigative work plan to determine if any contamination had occurred.

The city faced several challenges in meeting the Board’s order (including the unfolding COVID-19 pandemic). The required audit had to be completed without disturbing airport business, but the investigative program would have to cover a large area among the potential PFAS sources — places where firefighters had trained or used the foam to put out a fire and areas where the foam was stored — and the groundwater table to know if and how much PFAS had impacted the soil and groundwater.

The city of Palm Springs reached out to Haley & Aldrich for help complying with the Board’s order after a direct referral from another airport and because of our reputation as a top geochemical and environmental services provider to many airports in the nation.

Our approach

The Haley & Aldrich team designed a practical and timely plan to locate PFAS sources and investigate their impact on the environment without disrupting airport operations. We first researched historical records and conducted interviews with airport tenants and other officials, in addition to completing a site audit. We also proactively engaged the Board by inviting representatives to a site walk and discussing sampling locations and objectives with them.-

Our staff then sampled soil at areas where firefighting foam had been used and stored and along disposal routes, such as stormwater drainageway and water infiltration and retention basins. To reduce project costs and minimize interruption to the airport’s operations, we used two drilling techniques at the same time: one method for surface and shallow soil sampling and another for deeper soil sampling. This approach allowed our team to collect more than 130 soil samples and install three groundwater monitoring wells in less than three weeks — a quick process that still produced comprehensive results.

We developed a complete lithological profile based on the investigation and found previously unknown fine-grained sediment embedded among alluvial deposits. The presence of these fine-grained sediments and the vertical PFAS sampling results showed that PFAS concentrations decreased significantly with depth, which allowed us to avoid the cost and time of unnecessary corrective actions.

Our commitment to health and safety also played a key role in the project. Since the work unfolded during the COVID-

19 pandemic, we instituted extensive monitoring protocols to safeguard airport personnel, contractors, the public, and others. We also implemented procedures to keep people safe during hot weather (Palm Springs daytime temperatures regularly top 100 degrees Fahrenheit in the summer) and provided training on common aircraft operation hazards for relevant personnel.

Value delivered

- Understanding the specific operational constraints, customized our field activities to minimize our presence and avoid disruptions to airport business.–
- Engaged proactively with the regulatory agency to resolve questions, allowed the agency to be part of the solution, and expedited its reviews – which resulted in approval of the work plan with only minor comments.–
- Completed a site conceptual model that gave a more accurate understanding of PFAS' fate and transport, which saved costs and resources by eliminating unnecessary corrective actions.–

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