

EMPLOYEE RECOGNITION AWARD

October 2024

EMPLOYEE: Jack Rayl

UNIT: Groundwater Unit, Redding Office

TITLE: Engineering Geologist

SUPERVISOR/TITLE: Mey Bunte, Senior Water Resource Control Engineer

Jack Rayl is an engineering geologist who has been with the Redding Groundwater Unit since 2021. His expertise in environmental fieldwork, which he honed during his 5 years in consulting, is an asset to the Groundwater Unit. A sample result is only as reliable as its method of collection; Jack prioritizes the importance of sampling integrity, raising the standard of practice within the Groundwater Unit. In addition to traditional groundwater and soil sampling, Jack is well versed in newer drilling technologies and sampling tools such as sonic drilling and x-ray fluorescence. He is also a professional at vapor sampling techniques, specifically sub-slab and indoor air, which have become a larger component of our site cleanup work as we focus on how subsurface contamination directly affects our indoor living spaces.

Jack has earned this Employee Recognition Award for his excellent work on the Groundwater Unit's per- and polyfluoroalkyl substances (PFAS) investigation of the Reynolds and Evoqua sites, both in Red Bluff. PFAS is an emerging class of over 14,000 ubiquitous chemicals. Many PFAS chemicals are cancer-causing or have the potential to break down into carcinogens. This year USEPA released MCLs that are in the parts per trillion range. As such, analytical methods for PFAS are evolving rapidly as our understanding of sources, fate and transport, and human health and environmental impacts grow.

All this makes planning and carrying out the PFAS investigations at Reynolds and Evoqua challenging. Laboratory certification for the emerging PFAS methods is spotty and our lab presently does not run a newer PFAS test, TOP. Jack had the difficult task of communicating with our analytical lab to ensure they and their sub-lab would produce data that meets our needs. He was in constant contact with our Region 5 PFAS expert and our lab to ensure we selected appropriate analytical methods, and the resulting data had sufficiently low reporting levels. Jack's attention to fieldwork details reduced the potential for cross contamination and increased the integrity of the samples. He ensured all sampling equipment including decon water was PFAS-free, not even overlooking ice packs. Additionally, there were times Jack needed to educate the consultants regarding cross-contamination risks.

Planning fieldwork for a case as involved as the Reynolds PFAS case is complex. Work was conducted over several days and multiple media were sampled: groundwater, surface water (boat ride!), pond water, sludge and

industrial effluent. The State Board PFAS expert said such a large PFAS sampling program using two emerging analytical methods, TOP and AOF, had not yet been conducted by the State or Regional Board. Jack's vast field experience allowed him to anticipate issues and take action to prevent problems; consequently, the field work at both sites, while eventful, was conducted flawlessly.

Lastly, Jack's enthusiasm is infectious. In the several days of sampling, three coworkers who were novice-samplers assisted Jack in the field; it was their fortune to receive on-the-job training in sound, defensible fieldwork procedures. There were some long, hot days but you wouldn't have thought so considering how energetic and happy he was. Jack shined.