A Sustainable Water Future for CalPortland's Rocky Canyon Quarry

Onsite staff helped solve a potentially costly and complex stormwater matter and provided a reliable source of water

By Murry Wilson
Environmental Manager
CalPortland Company

The construction of the upsized waterline to deliver water from the existing pond near the entrance to the large pond by the shop.

THE ARID WEST, MORE specifically the central coast of California, is constantly in search of sustainable water resources to support both existing and future uses. Permitting of new wells for water supply is a rigorous and difficult process. Drought and water shortages are on the minds of residents, businesses and local government officials. As mining activities continue at CalPortland's Rocky Canyon Quarry (located in Atascadero, California), the production of aggregates to meet local demand also rely on this valuable natural resource to wash aggregates and for on-site dust control. Water to meet current and future demands for Rocky Canyon Quarry requires a sustainable source of water and the development of an additional water well at the quarry has been a part of recent capital project discussions.

While water availability is a concern in the region, water quality regulations shape the design and layout of industrial facilities such as Rocky Canyon Quarry. CalPortland is deeply committed to regulatory compliance, which it views as a component of operating a sustainable business. To maintain compliance with the facility's stormwater permit requirements, the quarry recently installed a series of improvements to better manage stormwater at the site. Rainfall at Rocky Canyon Quarry often comes in heavy bursts, making it an engineering challenge to keep all stormwater on site (i.e., one avenue of compliance) or build a large treatment facility to meet the sites stringent water quality permit requirements (i.e., another avenue of compliance). The rather infrequent but large rainfall events drove CalPortland to focus on water storage and re-use rather than extensive capital outlays for water treatments systems which may only get used two or three times a year. The facility has plenty of available stormwater storage but moving the water to the appropriate storage location to minimize or eliminate stormwater discharges was the challenge.

The initial design phase goal of the stormwater improvement project was

Construction of new pond up gradient of existing pond.

The new pond was constructed to slow water flowing into the existing primary stormwater pond near the plant entrance.

to capture all stormwater on site and to prevent future stormwater discharges from the facility. The quarry site is bisected by Rocky Canyon Creek, with the mining area and plant located on opposite sides of the creek and connected by a conveyor. The steep topography and long narrow canyon where the industrial activities take place would require engineering solutions such as an upsized stormwater pump, a new pond and new upsized stormwater conveyance pipes to move stormwater to an existing upgradient storage pond. At the time the initial work began, the discussion of future water supply at Rocky Canyon was not part of the conversation. When the project left the initial design phase and was brought to facility personnel for input, they had some great ideas on how to transform the stormwater compliance project to a bonus supplemental water supply project for Rocky Canyon.

Water coming from springs in the mining formation have been a year around occurrence and had historically drained to the large storage pond near the shop where the water would go unused. This year-round water source along with firsthand knowledge of the amount of water that could be expected to flow from the mining area during the rainy season quickly converted this stormwater quality project to a water sustainability project that will help contribute to the facility's sustainable water future.

Staff suggested improvements to the project would only require a new valve and a water transmission line hung from the existing conveyor across Rocky Canyon Creek. Gravity would do the rest of the work to get this new source of water for the aggregate plant. The idea would ensure the ability to control or direct both spring water and stormwater flowing from the mining area to a chosen storage pond downgradient. This would ensure the basin receiving the additional stormwater from the upsized pump would not discharge during large storm events and it would also provide the benefit of being able to deliver water to a pond near the rock plant providing an additional source of wash water. This pond is underlaid by a shallow well that would typically be shut down in the summer due to lack of water availability.

Fast forward two rainy seasons and one summer since completion of the water sustainability project and CalPortland's Rocky Canyon Quarry has not had a stormwater discharge. The supplemental source provided water through the entire summer of 2020 allowing the plant to maintain continuous operation without the worry of shortages. Additionally, the supplemental water supply has led to reduced groundwater pumping from the other on-site wells resulting in the conservation of groundwater resources for future use. What started as a stormwater compliance project quickly changed into what CalPortland considers a win, win, win. Compliance with stormwater requirements was achieved a reliable water source was developed for current and future use and development of additional wells and increased groundwater pumping was avoided. ■