



## MEMORANDUM

**FROM:** Diego Martinez Garcia, Engineer

**TO:** City of Palo Alto Planning Department  
Architectural Review Board Members  
Cc – Tom Kapushinski, Senior Engineer

**PROJECT:** Local Advanced Water Purification System

**DATE:** April 19, 2024

**SUBJECT:** Relocation of Reverse Osmosis Permeate Tank

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A hearing with the City's Architectural Review Board (ARB) to recommend a Site and Design Application was held on April 4, 2024 for action on 2501 Embarcadero Way (22PLN-00367) to allow construction of a Local Advanced Water Purification System (Project) at the Regional Water Quality Control Plant (RWQCP or Plant).

The Project was approved and the motion included six Conditions of Approval. Condition or Approval #5 asked staff to "Explore the potential relocation of the reverse osmosis permeate tank to move toward the new proposed structure and/or to move towards the future headworks building". The purpose of this memo is to provide a summary of this investigation.

### **Relocation of permeate tank towards the future headworks building**

Engineering staff reviewed the design plans and existing/future facilities. Staff concluded that is not feasible to move the permeate tank towards the future Headworks building for the following reasons:

- a) The existing old chlorine contact tank will remain onsite for a few years until the new Headworks building is designed and constructed. Plant staff needs access around the old chlorine contact tank to drive trucks and equipment around it. There is an existing paved access area (18 ft wide) around the old chlorine contact tank that needs to be maintained. The proposed location for the permeate tank is such that the existing clearance is maintained. Additionally, the permeate tank manufacturers recommended maintaining 10 ft of clearance around for maintenance purposes (Figure 1).
- b) The future Headworks facility is currently in advanced planning. As such, the level of detail about the building's footprint and needs is still to be determined. Existing influent wastewater pipes run through the site and space is needed for excavation of new pipes

while maintaining existing ones in operation. Staff needs to preserve the old chlorine contact tank footprint for Headworks project needs as other Plant's facilities are contiguous to the site.

- c) The proposed Local AWPS design includes a utility corridor between the RO Permeate tank and the Old Chlorine tank. These utilities include the tertiary-treated recycled water line (feed water for the process), the final product water (permeate), the reverse osmosis concentrate line and current utilities that need to be relocated (Plant process water lines, Renzel Marsh line). Enough clearance is needed for these utilities in the existing space between tanks.

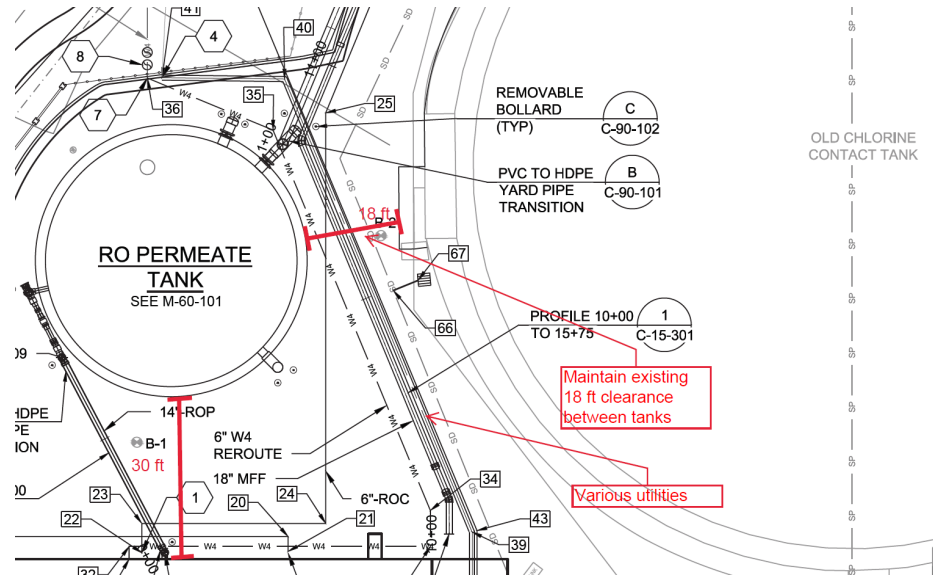


Figure 1. RO Permeate Tank and Old Chlorine Contact Tank spacing needs

### **Relocation of permeate tank towards the new proposed structure**

Engineering staff reviewed the design plans and future AWPS main structure. Staff concluded that is not feasible to move the permeate tank towards the new proposed AWPS structure for the following reasons:

- a) The AWPS requires the use of various chemicals and truck deliveries will occur on a frequent basis. The design engineer utilized a turning simulation software to assess the ingress/egress of a typical chemical truck on site. Due to existing site constraints and structures, the trucks will be required to back-up in the area between the permeate storage tank and the AWPS main structure. Figure 2 shows required space needs of a truck.

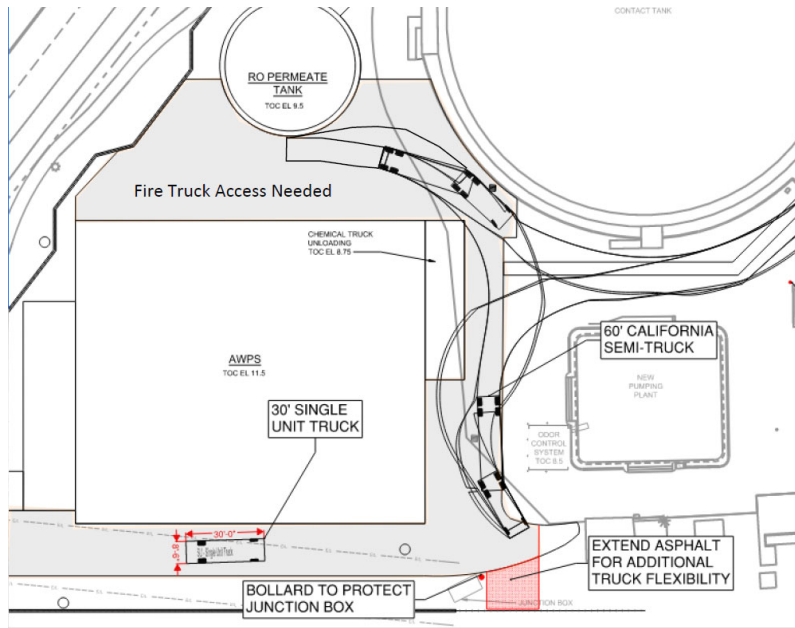


Figure 2. Chemical Delivery Truck Access

- b) During initial plan reviews, the City of Palo Alto Fire Department (PAFD) indicated that in case of an emergency, their vehicles should be able to access the AWPS facility from all the sides. They evaluated the available clearance between the permeate tank and the AWPS structure and requested to maintain that clearance for their trucks and equipment.