

LATE REVISIONS
Regional Water Quality Control Board, Central Valley Region
Board Meeting – 28 March 2014
ITEM # 30(a)

**City of Roseville, Dry Creek Wastewater Treatment Plant, Placer County,
(NPDES CA0079502) (*Renewal*) and Time Schedule Order (*New*)**

1. Limitations and Discharge Requirements. Section VI.C.4.b.ii UV Transmittance. Remove last sentence, as shown in strikethrough format below:
 - ii. **UV Transmittance.** The minimum hourly average UV transmittance (at 254 nanometers) in the wastewater measured at Monitoring Location UVS-001 shall not fall below 55 percent. ~~The minimum hourly average UV transmittance shall not fall below the system's design transmittance of 66 percent when flow is above 34.06 MGD.~~
2. Attachment F – Fact Sheet. Section VI.B.4.b. Ultraviolet Light (UV) Disinfection System Operating Specifications. Clarify findings as shown in underline/strikethrough format below:

The National Water Research Institute (NWRI) and American Water Works Association Research Foundation (AWWRF) *Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse* first published in December 2000 and revised as a Third Edition dated August 2012 (NWRI guidelines) includes UV operating specifications for compliance with Title 22. For water recycling in accordance with Title 22, the UV system shall be an approved system included in the Treatment Technology Report for Recycled Water, December 2009 (or a later version, as applicable) published by the DPH. The UV system shall also conform to all requirements and operating specifications of the NWRI guidelines. A Memorandum dated 1 November 2004 issued by DPH to Regional Water Board executive offices recommended that provisions be included in permits for water recycling treatment plants employing UV disinfection requiring Dischargers to establish fixed cleaning frequency of lamp sleeves, as well as, include provisions that specify minimum delivered UV dose that must be maintained (per the NWRI Guidelines). The NWRI Guidelines recommend a minimum UV dose of 100 mJ/cm² and a minimum UV transmittance of 55%.

The Discharger submitted ~~an~~ the UV Field Commissioning Test Engineering Report dated October 2008 (*City of Roseville, California, Dry Creek WWTP UV Field Commissioning Tests, Summary Report – Trojan UV3000plus System; Final October 2008; Carollo*) to DPH and the Central Valley Water Board. In a letter dated 25 February 2009 to the Central Valley Water Board, based on review of the UV Field Commissioning Test Engineering Report, DPH recommended that the Board include in the City's water reclamation permit that the "UV system must be operated to deliver a minimum UV dose of 100 mJ/cm² at all times", and also recommended several operational and maintenance requirements, that demonstrates the UV system is equivalent to a Title 22 approved UV system. The Engineering Report also demonstrates that during validation testing a minimum hourly average UV dose of 100 mJ/cm² with a design UV transmittance of 66% will achieve the virus inactivation required by Title 22 for Disinfected Tertiary Recycled Water. DPH has approved the system to operate at a minimum UV transmittance of 55% when flows are below 34.06 MGD. At flows greater than 34.06 MGD, DPH has approved the system to operate at a minimum UV transmittance of 66%. The UV system meets the dose and transmittance requirements of the NWRI Guidelines; therefore,

[The Discharger is permitted to use recycled water under Master Reclamation Permit, Order No. 97-147.] This Order includes an UV operating specifications for a minimum hourly average UV doseage of 100 mJ/cm² and a minimum hourly average UV transmittance of 55%, based on from the NWRI Guidelines and DPH recommendations. DPH's February 2009 letter also recommends the following operational parameter:

“Flow should be maintained at or below 34.06 MGD....unless the UVT is at or above 66 percent. This will maintain one redundant bank of UV lamps out of service. If during short-term, unexpected conditions the flow is greater than this and the UVT is less than 71 percent, the redundant bank would need to be utilized....to maintain the required 100-mJ/cm² dose, otherwise, the flow must be diverted.”

The UV system at this facility is set to automatically divert any flows that do not receive the 100 mJ/cm² dose. In addition, the permitted average dry weather flow is 18 MGD, peak daily flow has never been greater than 22 MGD (daily average, based on data from 2010-2013). The facility also has 45 million gallons of storage for diversions during peak flows (if the 100 mJ/cm² dose is not achieved). Because the flows will rarely exceed a peak of 34.06 MGD and only for short time periods (much less than a day), there is 45 million gallons of emergency storage, and the system is automatically set to divert, the recommended redundancy may be achieved at this site without requiring the 34.06 MGD (UV) flow limit. The recommended operational parameter will be considered further when the Central Valley Water Board renews the Discharger's Master Reclamation Permit; to increase to 66% at flows above 34.06 MGD (California Department of Public Health, Michael J. McNamara, P.E. 25 February 2009 letter to Regional Water Quality Control Board).