



PROJECT HIGHLIGHTS

Commissioned December, 2009 Domestic WW, Greenfield Permit(s); Reuse 10/NA/0.2 (TN/TP/Turbidity) Municipal \Rightarrow Groundwater Recharge MMF Capacity: 0.23 MGD \$26.96/gal "The resulting MBR plant protects 2 FTE (Full-Time Employees)



The resulting MBR plant protects Tenino's potable water, removes the need to condemn houses and avoids regulatory mandates" – Gibbs & Olson, Inc.

PROJECT OVERVIEW

System Type(s):	Enviroquip [®] MBR
Previous Facility Type:	Septic
Owner:	City of Tenino
Engineer:	Gibbs & Olson
Contractor:	BOSS Construction
Operations:	City of Tenino
Delivery Method:	Negotiation
Time To Build:	18 months
Total Installed Project Cost:	6,200,000

DESCRIPTION

The old and inadequate septic systems in the Tenino, WA area were causing ground water contamination with nitrates confirmed by the 2004 General Sewer and Facilities Plan (GSP/FP). In order to promote growth and economic development and to stem the contamination of the aquifer, the city of Tenino constructed the new 0.230 MGD MBR plant in 2009. With no back-up or emergency discharge location for the treated effluent, the plant utilized two identical treatment trains to provide 100% redundancy as required. The treatment facility has been providing Class A reclaimed water that is gravity discharged into a groundwater recharge basin.

OVIVO MBR
ONE SYSTEM, MANY SOLUTIONS



PLANT DESIGN INFORMATION

Fine Screen Type : Bar Screen

Aperture or Slot Size : 1 mm

Supplemental Aeration Technology : Fine Bubble, Strips

MBR Blower Type : Positive Displacement

Solids Management Data : Facultative Sludge Lagoon

SCADA System : PanelView

Disinfection Method : Chlorine

Process Stages : 3

MBR (MEMBRANE ZONE) DESIGN

Filtration Mode: Pumped

of Reactors: 2

Submerged Membrane Unit (SMU):

SMU: 6

Design Flux (MMF): 11.1 gfd

Minimum Temperature: 10°C

Peak Factor: 2.0

of Maintenance Cleans: 4