

**Ecosystem-Scale Selenium Modeling in Support of Fish and Wildlife
Criteria Development for the San Francisco Bay-Delta Estuary, California
Administrative Report**

Appendix C: Selenium discharges from oil refineries

U.S. Department of the Interior

U.S. Geological Survey

December, 2010

Find the full report and other attachments at <http://www.epa.gov/region9/water/ctr>

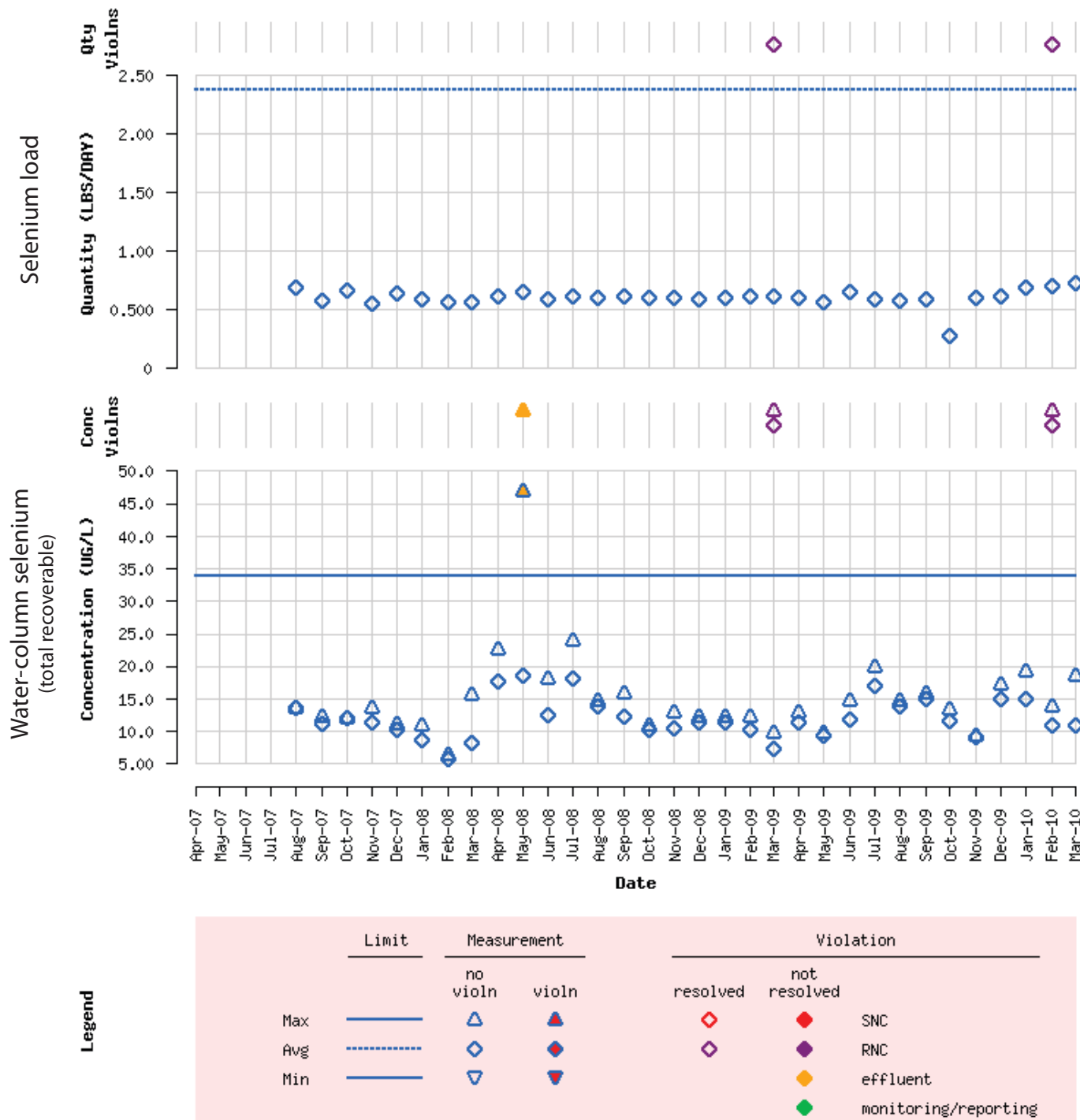
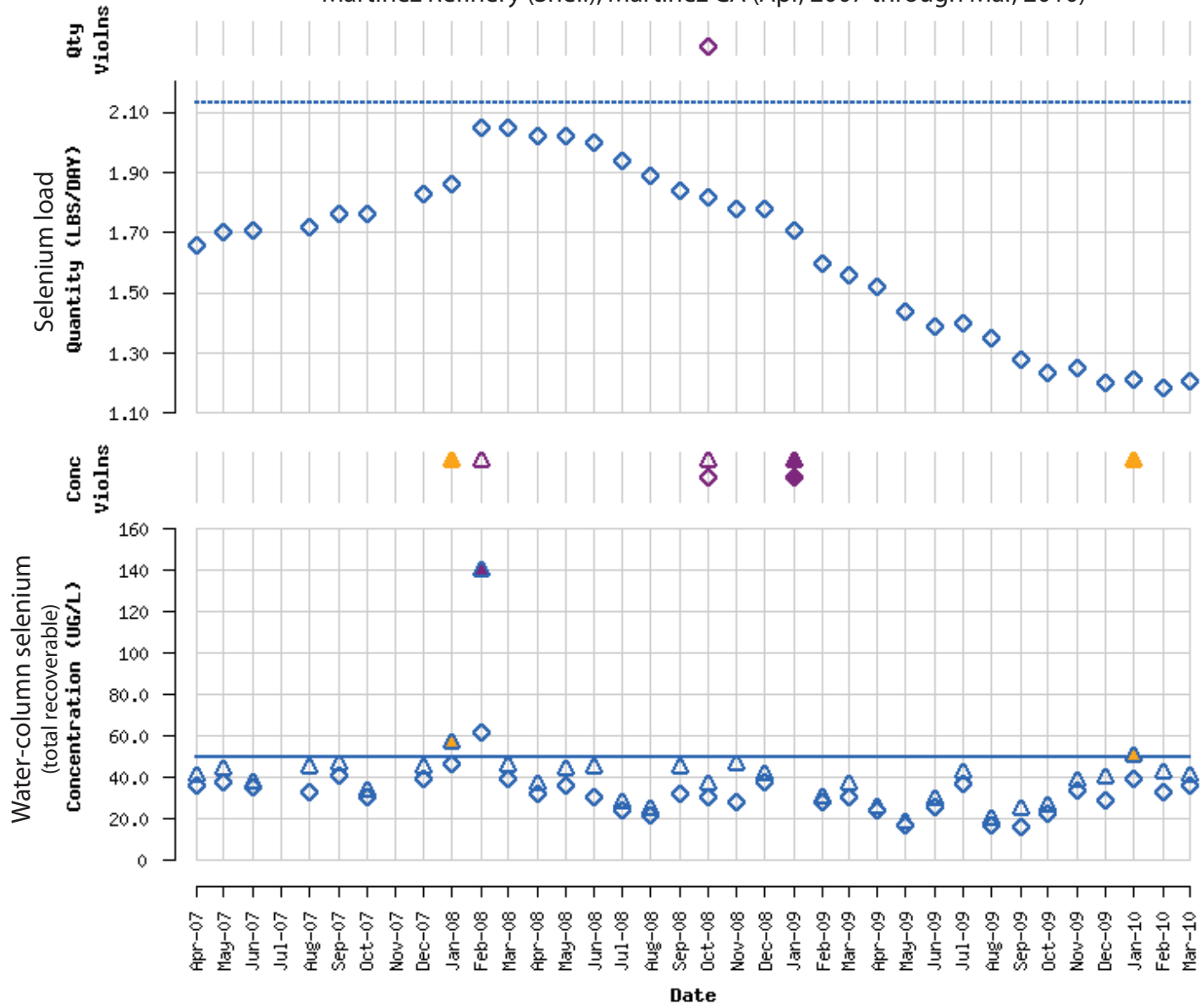


Figure C1. Water-column selenium concentrations and selenium loads, Chevron Refinery, Richmond, California.

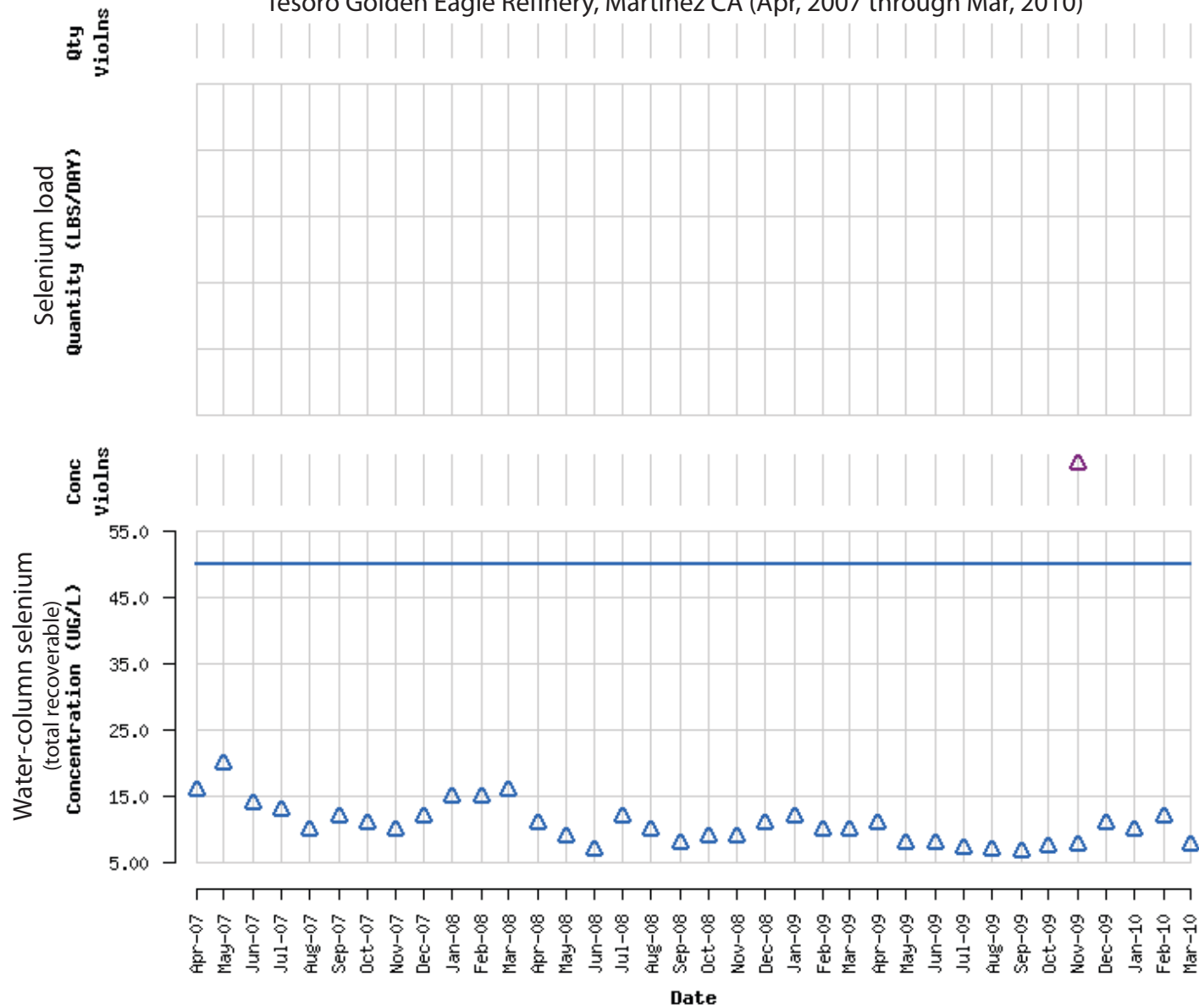
Martinez Refinery (Shell), Martinez CA (Apr, 2007 through Mar, 2010)



Legend	Limit		Measurement		Violation		
	Max	Avg	no violn	violn	resolved	not resolved	
	—	- - -	△	▲	◇	◆	
			▽	▼	◇	◆	SNC
					◇	◆	RNC
						◇	effluent
						◇	monitoring/reporting

Figure C2. Water-column selenium concentrations and selenium loads, Martinez Refinery (Shell), Martinez, California.

Tesoro Golden Eagle Refinery, Martinez CA (Apr, 2007 through Mar, 2010)



Legend	Limit	Measurement		Violation		
		no violn	violn	resolved	not resolved	
Max	—	▲	▲	◇	◇	SNC
Avg	- - -	◆	◆	◇	◆	RNC
Min	—	▼	▼		◆	effluent
					◆	monitoring/reporting

Figure C3. Water-column selenium concentrations, Tesoro Golden Eagle Refinery, Martinez, California.

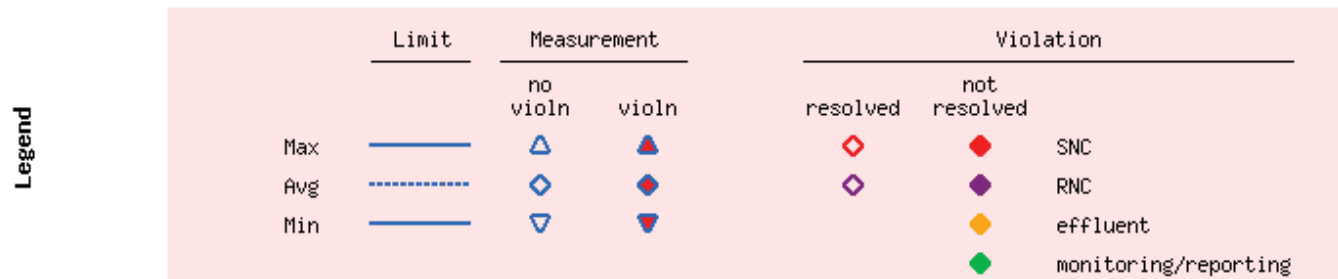
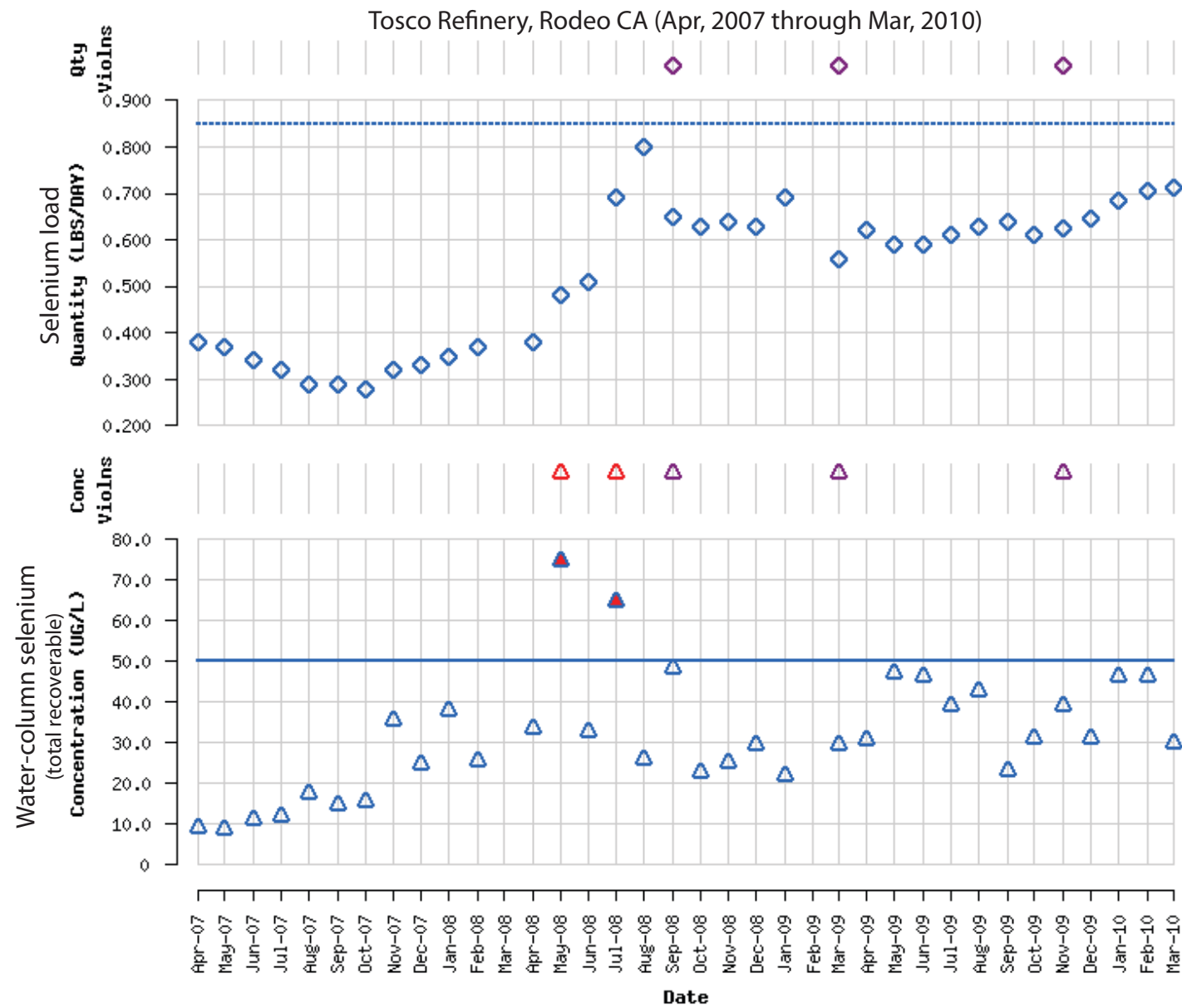
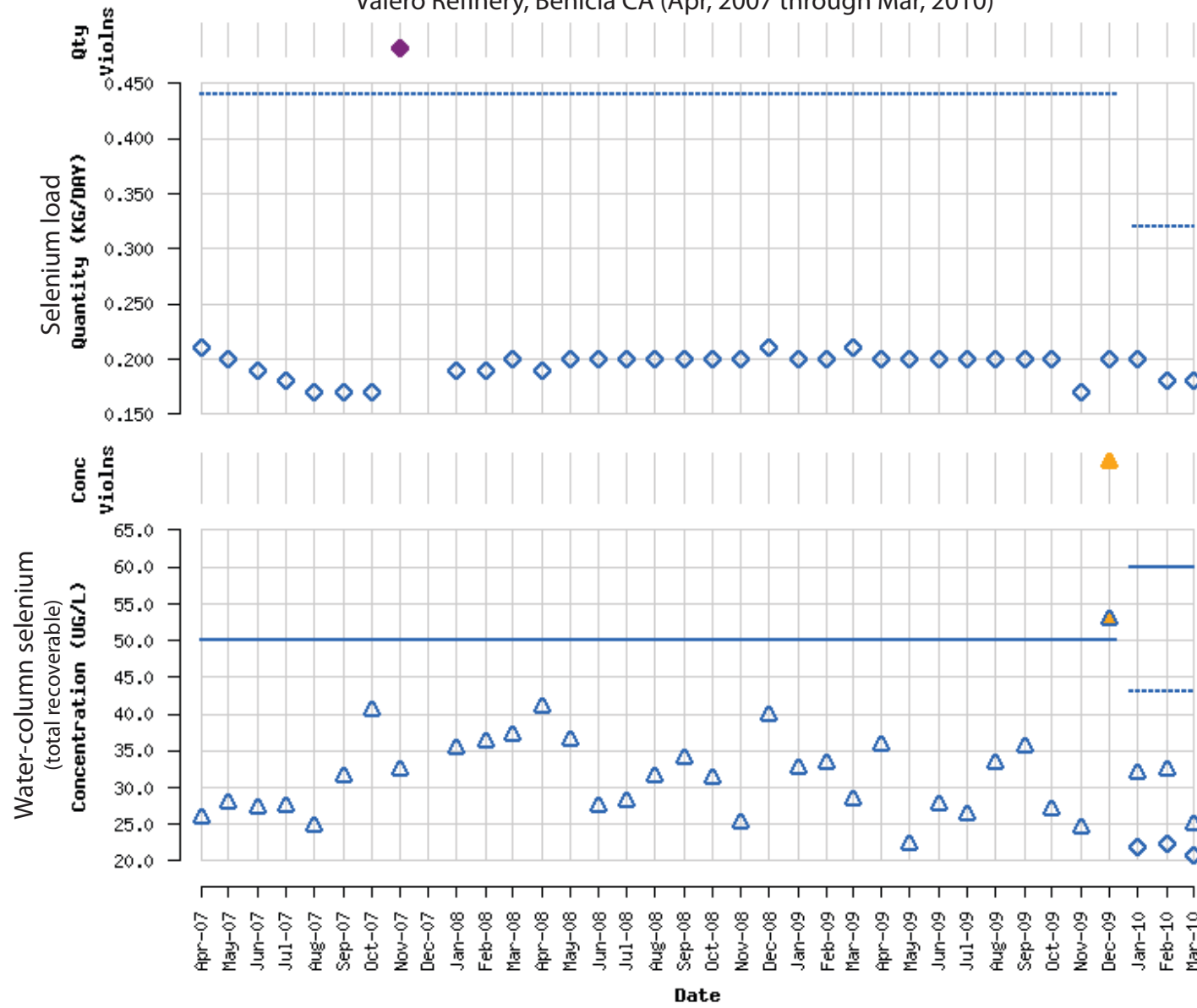


Figure C4. Water-column selenium concentrations and selenium loads, Tosco Refinery, Rodeo, California.

Valero Refinery, Benicia CA (Apr, 2007 through Mar, 2010)



Legend	Limit		Measurement		Violation		SNC RNC effluent monitoring/reporting
	Max	Avg	no violn	violn	resolved	not resolved	
			▲	▲	◇	◇	
	—	---	—	—	—	—	
	—	---	▼	▼	◇	◇	

Figure C5. Water-column selenium concentrations and selenium loads, Valero Refinery, Benicia, California.