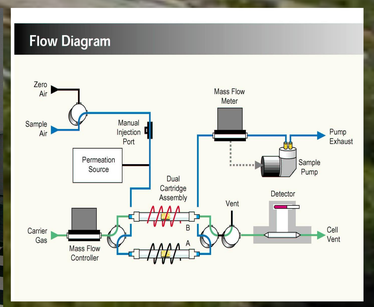
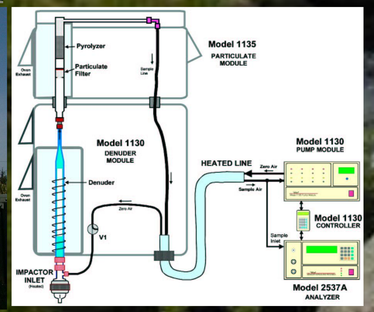
USEPA Region 9 Laboratory Mercury Monitoring

The Region 9 Laboratory is a full service laboratory offering a wide variety of analyses which can support the work of all the media divisions in Region 9. In the area of mercury analysis, the laboratory offers both field and fixed lab analyses in all matrices, including: water, soil, sediment, waste, biota, and air. The laboratory also maintains field sample collection capability for all the matrices analyzed.

Atmospheric Mercury Vapor Monitoring

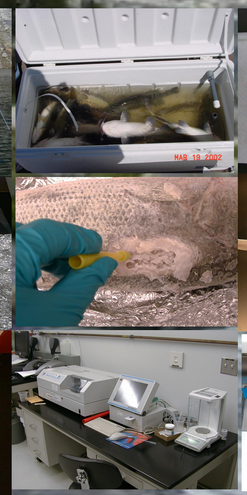
The Region 9 Laboratory monitors atmospheric mercury in the elemental, particulate and reactive phases. Utilizing a mobile trailer platform, the laboratory can provide continuous monitoring at locations throughout the Region. The mobile analytical capability includes: elemental gaseous mercury, reactive gaseous mercury, particulate mercury, ozone, NOx, SOx, CO, and a complete meteorological station. The trailer is currently supporting TMDL projects in Arizona and California.





Mercury Analysis in Biota

The Region 9 Laboratory analyzes solid matrix samples utilizing a Milestone Model DMA80, direct mercury analyzer. This system has been used with great success on fish and other biota. Recent projects include fish analyses for the Guadalupe Watershed TMDL, fish and sediments for the Sulphur Bank Mercury Mine Site, soils from the Altoona Mine Site, and fish from an NDEP/NDOW study of mercury in fish in Nevada.



Plugs vs. Homogenized Fillets

Fish ID	Sample ID	Description	Hg (ug/kg wet)	Mean	Std. Dev.
10	7	plug front upper left of #10 fillet	1511	1479	30.6
	8	plug center upper left of #10 fillet	1450		
	9	plug center lower left of #10 fillet	1476		
10	10a	Homogenized left filet	1505	1486	27.6
	10b	Homogenized left filet	1498		
	10c	Homogenized left filet	1454		
18	15	plug front upper right of #18	2067	2090	198.0
	16	plug center upper right of #18	1904		
	17	plug rear lower right of #18	2298		
18	18a	Homogenized left filet	2063	2078	21.2
	18b	Homogenized left filet	2102		
	18c	Homogenized left filet	2068		

Sample Duplicate Results - Plugs

LAB SAMPLE ID	RESULT (ug/kg wet)	SOURCE SAMPLE ID	RESULT (ug/kg wet)	RPD
B4I0141-DUP2	1075	0409027-11	1054	2.0
B4I0141-DUP1	986	0409027-02	998	1.2
B4I0143-DUP1	3640	0409028-02	3609	0.9
B4I0143-DUP2	7433	0409028-12	7351	1.1
B4I0148-DUP1	1470	0409026-06	1489	1.3
B4I0148-DUP2	2122	0409026-20	2140	0.8
B4I0160-DUP1	983	0409030-06	960	2.4
B4I0160-DUP2	471	0409030-11	446	5.6
B4I0164-DUP1	13010	0409029-07	12941	0.5
B4I0164-DUP2	4981	0409029-15	4941	0.8

Mercury Analysis in Other Matrices

The Region 9 Laboratory analyzes samples in water and soils using other instrumentation. Low level waters are analyzed using a CETAC Quick Trace Model 7500. Higher level samples are analyzed on a Leeman Model PS-200. Low to mid level solid matrix samples are analyzed on the Milestone DMA80. For screening of high level soils, both in the lab and in the field, a NITON Model 700 XRF is used.