

## Comparison of Coal Mercury Results from Independent Interlaboratory Studies (ILS)

The table below lists the results obtained for the coals employed in Phase 2 of the CCME as well as results for the same coals obtained in ILS studies conducted by CANSPEX™ and ISO over the past 4 years.

Comparison of Coal Mercury Results from Independent Interlaboratory Studies (ILS)											
Sample	Source	Rank	CCME ILS 2002-2004			CANSPEX ILS 2000-2004			ISO ILS 2001-2003		
			Labs	Value	SD	Labs	Value	SD	Labs	Value	SD
20-4	Germany	mvb	8	70	13	9	71	13	7	79	14
21-4	USA	hvAb	8	57	12	12	53	12			
22-3	UK	hvAb	8	140	17	13	133	14	6	136	21
23-1	Canada	ligA	7	136	17	15	133	16			
23-2	Canada	SubA	8	59	12	11	57	13			
23-3	USA	hvAb	7	63	13	14	65	12			
II-4	Venezuela	hvAb	10	70	12	16	73	13			

The **ISO ILS** was limited to the use of a single method that employed bomb combustion for the preparation of the sample followed with a cold vapour atomic absorption finish. 8 laboratories took part in this study.

The **CANSPEX™ ILS** is an on-going coal testing proficiency improvement program that permits the use of multiple preparation methods and finishes for the determination of mercury. Between 12 and 19 laboratories report results in this ILS.

The **CCME ILS** consisted of labs that demonstrated they were able to produce results consistent with the requirements of ISO 5725-6 for a combination 10 Certified Reference Material (CRM) and Reference Material (RM) samples. 8 laboratories met this requirement.

Only those results from laboratories that demonstrated they were able to maintain a stable measurement process were employed to derive the results for each independent ILS in the above table. The overall agreement of the values from the independent ILS studies is excellent, falling well within the standard deviation of each independent study.

Based on the comparisons in the above the following are the **recommended reference values and 99 % confidence intervals of the mean** for the coals employed in the CCME mercury study. The effective degrees of freedom (df) associated with the limits are also given.

Recommended Mercury Values and Limits for CCME Study Coals					
Sample	Source	Rank	Value	± Limits	df
20-4	Germany	mvb	72	8	17
21-4	USA	hvAb	54	7	17
22-3	UK	hvAb	133	8	21
23-1	Canada	ligA	134	10	16
23-2	Canada	SubA	57	8	16
23-3	USA	hvAb	65	7	17
II-4	Venezuela	hvAb	71	7	21