SDMS DOCID # 2281477

MEMORANDUM CH2MHILL

Data Validation Request for Carson River Mercury Study, US Army Corps of Engineers Contract Data

TO: Rose Fong. USEPA Region IX

COPY : Richard Hiett/USEPA Region IX, Ken Greene/CH2M HILL, Reno, File

FROM: Vikki Taylor/CH2M HILL, Oakland

DATE: March 21, 2008

This memorandum transmits a request for validation of results from a laboratory subcontracted by the USACE on behalf of the EPA for the Carson River Mercury Study. These data were collected during February 2008. Tier 3 level, is requested for all of the samples in SDG ACE-0801.

The data package is not in a standard full data package format. I am sending you some additional information in the form of an email and spreadsheet from the laboratory that may help with the validation process. I am also sending a spreadsheet containing the sample results that the validators can use to add the validation flags and comments in lieu of a Table 1A.

I will ship the data package to Doug Linderlof at the Region 9 laboratory next week unless I here otherwise from you. Please contact me at (510) 587-7782 if you have any questions regarding this request.

Analytical Report

To: USEPA, USACE, CH2M HILL

Project: Analysis of methyl mercury (MeHg) in Carson River sediment/soil
Samples received: 2/8/08, prepared/analyzed: 2/9-13/08
Report No.: ACE-0801 Report date: 2/20/08
Prepared by Lian Liang, Cebam Analytical, Inc.

Sample ID	Lab ID	% Dry W.	MeHg, ng/g		Dup	Mean	RPD	MS	MS level	Rec., %	MSD	MSD level	Rec., %	RPD
			Dry basis	Wet basis										
CR-S01-A-SS-020608	ACE-0801-01	97.37	0.072	0.070										
CR-S01-B-SS-020608	ACE-0801-02	95.77	0.131	0.125				5.689	5.307	104.8	5.422	5.381	98.4	1.6
CR-S01-C-SS-020608	ACE-0801-03	95.91	0.091	0.087										
CR-S01-D-SS-020608	ACE-0801-04	98.41	0.363	0.357										
CR-S01-E-SS-020608	ACE-0801-05	96.64	1.067	1.031										
CR-S01-F-SS-020608	ACE-0801-06	97.11	0.092	0.089										
CR-S02-A-SS-020608	ACE-0801-07	98.72	0.126	0.124										
CR-S02-B-SS-020608	ACE-0801-08	95.14	0.317	0.302										
CR-S02-C-SS-020608	ACE-0801-09	96.08	0.053	0.051										
CR-S02-D-SS-020608	ACE-0801-10	98.87	0.042	0.042										
CR-S02-E-SS-020608	ACE-0801-11	99.51	0.054	0.054				0.646	0.614	96.5	0.614	0.628	89.3	1.9
CR-S03-A-SS-020608	ACE-0801-12	94.71	1.383	1.310										
CR-S03-B-SS-020608	ACE-0801-13	97.07	0.551	0.535										
CR-S03-C-SS-020608	ACE-0801-14	95.17	0.110	0.105										
CR-S03-D-SS-020608	ACE-0801-15	95.44	1.653	1.577										
CR-S03-E-SS-020608	ACE-0801-16	94.02	0.146	0.138										
CR-S03-F-SS-020608	ACE-0801-17	97.61	0.388	0.379										
CR-S04-A-SS-020608	ACE-0801-18	99.24	0.169	0.168										
CR-S04-B-SS-020608	ACE-0801-19	99.68	0.102	0.102										
CR-S04-C-SS-020608	ACE-0801-20	99.92	0.197	0.197										
CR-S04-D-SS-020608	ACE-0801-21	99.84	0.040	0.040										
CR-S04-E-SS-020608	ACE-0801-22	99.84	0.082	0.082										
CR-S05-A-SS-020608	ACE-0801-23	96.76	0.651	0.630				6.687	5.866	103.3	6.402	5.749	100.4	0.7
CR-S05-B-SS-020608	ACE-0801-24	96.68	0.796	0.770										
CR-S05-C-SS-020608	ACE-0801-25	98.59	0.391	0.386										
CR-S05-D-SS-020608	ACE-0801-26	97.39	0.423	0.412										
CR-S05-E-SS-020608	ACE-0801-27	97.88	5.269	5.158	4.845	5.001	6.2							
CR-S05-F-SS-020608	ACE-0801-28	96.57	0.433	0.419										
CR-S06-A-SS-020608	ACE-0801-29	83.49	0.128	0.107										
CR-S06-B-SS-020608	ACE-0801-30	80.75	0.420	0.339										
CR-S06-C-SS-020608	ACE-0801-31	98.53	0.919	0.905										
CR-S06-D-SS-020608	ACE-0801-32	95.78	0.323	0.310										
CR-S06-E-SS-020608	ACE-0801-33	97.66	0.463	0.452										
CR-S07-A-SS-020508	ACE-0801-34	98.75	2.563	2.531										
CR-S07-B-SS-020508	ACE-0801-35	99.21	4.174	4.141										
CR-S07-C-SS-020508	ACE-0801-36	99.37	23.443	23.296	21.423	22.360	8.4							
CR-S07-D-SS-020508	ACE-0801-37	99.81	16.569	16.537										
CR-S07-E-SS-020508	ACE-0801-38	99.56	15.228	15.161										
CR-S07-F-SS-020508	ACE-0801-39	98.48	2.081	2.050										
CR-S08-A-SS-020508	ACE-0801-40	90.09	1.012	0.912										
CR-S08-B-SS-020508	ACE-0801-41	98.74	3.476	3.432										
CR-S08-C-SS-020508	ACE-0801-42	99.91	10.372	10.363										
CR-S08-D-SS-020508	ACE-0801-43	100.00	2.050	2.050										
CR-S08-E-SS-020508	ACE-0801-44	99.57	4.100	4.082										
CR-S09-A-SS-020508	ACE-0801-45	98.14	0.311	0.305										
CR-S09-B-SS-020508	ACE-0801-46	96.88	1.376	1.333				7.184	5.232	111.8	6.840	5.471	100.6	2.6
CR-S09-C-SS-020508	ACE-0801-47	94.44	0.270	0.255										
CR-S09-D-SS-020508	ACE-0801-48	90.57	1.893	1.715										
CR-S09-E-SS-020508	ACE-0801-49	88.52	1.384	1.225										
CR-S09-F-SS-020508	ACE-0801-50	92.40	0.218	0.201										
CR-S10-A-SS-020608	ACE-0801-51	98.00	15.727	15.411										
CR-S10-B-SS-020608	ACE-0801-52	97.29	1.659	1.614										
CR-S10-C-SS-020608	ACE-0801-53	94.08	3.986	3.750										
CR-S10-D-SS-020608	ACE-0801-54	96.51	10.800	10.423				14.987	6.203	73.6	14.470	5.612	72.1	0.5
CR-S10-E-SS-020608	ACE-0801-55	88.47	13.060	11.554										
BCR580, certified as 69.5 ng/g for MeHg as Hg			73.289						69.5	105.5				
	MB1			<0.02										
	MB2			<0.02										
	MB3			<0.02										
	MB4			<0.02										
	MB5			<0.02										
	MDL			0.02										

Dry weight sheet	2/11/2008				
Project: ACE-0801					
Vial #	**Sample ID**	**W1, g**	**W2, g**	**W3, g**	**% dry**
1	1	0.9353	5.5013	5.3814	97.37
2	2	0.933	5.8991	5.6892	95.77
3	MS				
4	MSD				
5	3	0.9302	5.8671	5.6654	95.91
6	4	0.9204	4.8403	4.7779	98.41
7	5	0.9204	4.662	4.5362	96.64
8	6	0.933	6.5366	6.3748	97.11
9	7	0.9187	6.8648	6.7888	98.72
10	8	0.9229	6.3784	6.1135	95.14
11	9	0.9233	6.0633	5.862	96.08
12	10	0.9238	6.6813	6.6165	98.87
13	11	0.929	6.6948	6.6668	99.51
14	12	0.9227	7.1124	6.7851	94.71
15	13	0.9306	5.0246	4.9046	97.07
16	14	0.9293	7.3304	7.0212	95.17
17	15	0.9281	5.0055	4.8194	95.44
18	16	0.9287	6.7007	6.3558	94.02
19	17	0.9293	5.3082	5.2034	97.61
20	18	0.9285	6.0744	6.0352	99.24
21	19	0.9294	5.0529	5.0397	99.68
22	20	0.9286	7.0157	7.0108	99.92
23	21	0.9224	5.0453	5.0387	99.84
24	22	0.9324	5.1962	5.1893	99.84
25	23	0.9144	5.1564	5.0191	96.76
26	MS				
27	MSD				
28	24	0.915	5.2026	5.0603	96.68
29	25	0.9315	5.618	5.5521	98.59
30	26	0.9336	5.5746	5.4533	97.39
31	27	0.9157	5.2193	5.1279	97.88
32	28	0.928	6.1524	5.9733	96.57
33	29	0.9126	6.8095	5.8359	83.49
34	30	0.9217	6.4128	5.356	80.75
35	31	0.9318	5.5125	5.4451	98.53
36	32	0.9306	5.2383	5.0566	95.78
37	33	0.917	5.3917	5.2868	97.66
38	34	0.9234	6.4714	6.402	98.75
39	35	0.9416	5.9251	5.8857	99.21
40	36	0.9137	5.638	5.6083	99.37
41	37	0.9285	5.5541	5.5451	99.81
42	38	0.9277	5.016	4.9981	99.56
43	39	0.9224	5.271	5.205	98.48
44	40	0.9207	6.5916	6.0295	90.09
45	41	0.9411	4.6975	4.6503	98.74
46	42	0.9297	4.7568	4.7534	99.91
47	43	0.9323	5.3668	5.3666	100.00
48	44	0.9399	6.2133	6.1904	99.57
49	45	0.9233	5.6228	5.5352	98.14
50	46	0.9474	5.604	5.4587	96.88
51	MS				
52	MSD				
53	47	0.9487	5.0084	4.7825	94.44
54	48	0.9468	6.0064	5.5292	90.57
55	49	0.9425	5.343	4.8377	88.52
56	50	0.9419	6.3623	5.9504	92.40
57	51	0.9496	5.1354	5.0515	98.00
58	52	0.9328	6.2122	6.0692	97.29
59	53	0.9355	5.4237	5.1579	94.08
60	54	0.9352	5.5838	5.4217	96.51
61	MS				
62	MSD				
63	55	0.938	5.1657	4.6781	88.47
64	BCR580				

Calculate Mean, St Dev and %RSD

0.0198	**N =**	5
	Sum =	0.088533277
0.017094017		
0.017897092 `	**Mean =**	0.0177
0.016580311	**STDev =**	0.0013
0.017161858	**%RSD =**	7.1209
	Combo =	0.0177 / 0.0013 / 7.1209

Convert	Unit	Result		Factor
	°C	**°F**		0.556
	cm	**inch**		2.540
	M	**Ft**		0.305
	KM	**Mile**		1.609
	Sq.Ft	**Sq.M**		0.093
	g	**oz**		28.375
	Kg	**lb**		0.454
	L	**Gal**		3.785
	inch-Hg	**%**		29.920
14:11	**Beijing**	**23:11 Seattle**	**PDT**	15:00

Weight	Height	Unit	BMI	Status
		lb / inch		

Analytical sheet				2/13-14/2008						
Project: ACE-0801										
880/2.5										
Vail #	**Sample ID**	**W., g**	**Solv. Add, g**	**Solv. tran, g**	**V1, mL**	**V2, mL**	**PA**	**CF**	**MeHg, ng/g**	**MS level**
	BB						104	114+/-		
	BB						75			
	5	pg					352	0.0210		
	5	pg					366	0.0198	0.020	
	10	pg					566	0.0221		
	10	pg					591	0.0210	0.022	
	BB						163			
	MB	1	9.57	8.5	50	12	156		0.003	
	20	pg					1284	0.0171		
	40	pg					2349	0.0179		
	80	pg					4939	0.0166		
	160	pg					9437	0.0172		
								0.0177 / 0.0013 / 7.1209		
64	BCR580	0.1411	9.57	8.13	50	0.6	6070		73.289	69.5
1	1	0.8906	9.68	8.59	50	12	861		0.070	
2	2	0.9629	9.56	8.43	50	12	1554		0.125	
3	2MS	0.9421	9.55	8.35	50	0.75	4085		5.689	5.307
4	2MSD	0.9292	9.58	8.04	50	0.75	3697		5.422	5.381
5	3	0.9022	9.56	8.35	50	12	1046		0.087	
6	4	0.8591	9.55	8.31	50	12	3733		0.357	
7	5	0.9405	9.56	8.35	50	12	11602		1.031	
8	6	0.9287	9.57	7.87	50	12	1039		0.089	
9	7	0.9472	9.57	8.61	50	12	1548		0.124	
10	8	0.8403	9.54	8.56	50	12	3201		0.302	
11	9	0.9949	9.61	8.44	50	12	714		0.051	
12	10	0.9937	9.56	8.57	50	12	619		0.042	
13	11	0.9005	9.57	8.65	50	12	706		0.054	
14	12	0.8694	9.52	7.81	50	12	12781		1.310	
15	13	0.9425	9.58	5.27	50	12	3873		0.535	
16	14	0.8901	9.57	8.21	50	12	1200		0.105	
17	15	0.88	9.62	7.97	50	12	15707		1.577	
18	16	0.8233	9.57	7.89	50	12	1381		0.138	
19	17	0.8454	9.57	8.63	50	12	4028		0.379	
20	18	0.9728	9.57	6.92	50	12	1712		0.168	
21	19	0.9553	9.57	7.92	50	12	1206		0.102	
22	20	0.9853	9.57	8.52	50	12	2461		0.197	
23	21	0.9773	9.57	8.41	50	12	577		0.040	
24	22	0.8286	9.57	7.96	50	12	879		0.082	
25	23	0.8835	9.57	8.11	50	12	6508		0.630	
26	23MS	0.8524	9.57	7.57	50	0.75	3935		6.687	5.866
27	23MSD	0.8697	9.57	8.17	50	0.75	4142		6.402	5.749
28	24	0.9496	9.57	8.01	50	12	8409		0.770	
29	25	0.9622	9.57	8.02	50	12	4331		0.386	
30	26	0.9355	9.57	7.85	50	12	4401		0.412	
31	27	0.8834	9.57	7.43	50	12	48076		5.158	
32	28	0.8663	9.57	7.28	50	12	3853		0.419	
33	29	1.1905	9.57	6.97	50	12	1371		0.107	
34	30	0.9359	9.57	7.85	50	12	3643		0.339	
35	31	0.9553	9.57	7.44	50	12	9231		0.905	
	11MS	0.9005	9.57	8.65	50	12	7245		0.646	0.614
	11MSD	0.9005	9.57	8.65	50	12	7046		0.628	0.614
	100	pg					6429	0.0158		
	100	pg					6241	0.0163		
36	32	0.9221	9.57	7.91	50	12	3315		0.310	
37	33	0.9105	9.57	7.3	50	12	4373		0.452	
38	34	0.9447	9.57	7.09	50	12	24129		2.531	
39	35	0.9124	9.57	7.32	50	12	39295		4.141	
40	36	0.9271	9.57	7.27	50	12	222565		23.296	
41	37	0.9947	9.57	7.75	50	12	180724		16.537	
42	38	0.9256	9.57	7.53	50	12	149816		15.161	
43	39	0.9502	9.57	7.65	50	12	21222		2.050	
44	40	1.0491	9.57	7.14	50	12	9792		0.912	
45	41	0.8925	9.57	7.34	50	12	31968		3.432	
46	42	0.9268	9.57	7.59	50	12	103387		10.363	
47	43	1.0706	9.57	7.37	50	12	23029		2.050	
48	44	0.8162	9.57	7.46	50	12	35323		4.082	
49	45	0.9468	9.57	8.18	50	12	3463		0.305	
	100	pg					6661	0.0153		
	600	pg					40734	0.0148		
61	54MS	0.806	9.57	7.82	50	0.75	8478		14.987	6.203
62	54MSD	0.8909	9.57	6.71	50	0.75	7773		14.470	5.612
63	55	0.9622	9.57	7.53	50	12	118706		11.554	
40	36	0.9271	9.57	7.27	50	0.4	6933		21.423	
31	27	0.8834	9.57	7.43	50	1.5	5746		4.845	
50	46	0.9423	9.57	7.3	50	12	13109		1.333	
51	46MS	0.9557	9.57	7.34	50	0.75	4576		7.184	5.232
52	46MSD	0.9139	9.57	7.46	50	0.75	4243		6.840	5.471
53	47	0.9668	9.57	8.01	50	12	2912		0.255	
54	48	0.8857	9.57	7.54	50	12	16337		1.715	
55	49	1.1751	9.57	7.5	50	12	15414		1.225	
56	50	1.0859	9.57	7.72	50	12	2500		0.201	
57	51	0.9298	9.57	7.24	50	12	147091		15.411	
58	52	0.9542	9.57	7.81	50	12	17153		1.614	
59	53	0.814	9.57	7.53	50	12	32675		3.750	
60	54	0.8556	9.57	7.73	50	12	97777		10.423	
	1000	pg					65082	0.0154		
	2000	pg					119400	0.0168		
MB		1	9.57	8.5	50	12	116		0.000	
MB		1	9.57	8.5	50	12	58		-0.005	
MB		1	9.57	8.5	50	12	127		0.001	
MB		1	9.57	8.5	50	12	135		0.002	

Solvent extraction sheet				2/12/2008	
Project: ACE-0801					
Vial #	Sample ID	W4, g	Solv. Add, g	Solv. Tran, g	Back-extract V., mL
1	1	0.8906	9.68	8.59	50
2	2	0.9629	9.56	8.43	50
3	MS	0.9421	9.55	8.35	50
4	MSD	0.9292	9.58	8.04	50
5	3	0.9022	9.56	8.35	50
6	4	0.8591	9.55	8.31	50
7	5	0.9405	9.56	8.35	50
8	6	0.9287	9.57	7.87	50
9	7	0.9472	9.57	8.61	50
10	8	0.8403	9.54	8.56	50
11	9	0.9949	9.61	8.44	50
12	10	0.9937	9.56	8.57	50
13	11	0.9005	9.57	8.65	50
14	12	0.8694	9.52	7.81	50
15	13	0.9425	9.58	5.27	50
16	14	0.8901	9.57	8.21	50
17	15	0.88	9.62	7.97	50
18	16	0.8233	9.57	7.89	50
19	17	0.8454	9.57	8.63	50
20	18	0.9728	9.57	6.92	50
21	19	0.9553	9.57	7.92	50
22	20	0.9853	9.57	8.52	50
23	21	0.9773	9.57	8.41	50
24	22	0.8286	9.57	7.96	50
25	23	0.8835	9.57	8.11	50
26	MS	0.8524	9.57	7.57	50
27	MSD	0.8697	9.57	8.17	50
28	24	0.9496	9.57	8.01	50
29	25	0.9622	9.57	8.02	50
30	26	0.9355	9.57	7.85	50
31	27	0.8834	9.57	7.43	50
32	28	0.8663	9.57	7.28	50
33	29	1.1905	9.57	6.97	50
34	30	0.9359	9.57	7.85	50
35	31	0.9553	9.57	7.44	50
36	32	0.9221	9.57	7.91	50
37	33	0.9105	9.57	7.3	50
38	34	0.9447	9.57	7.09	50
39	35	0.9124	9.57	7.32	50
40	36	0.9271	9.57	7.27	50
41	37	0.9947	9.57	7.75	50
42	38	0.9256	9.57	7.53	50
43	39	0.9502	9.57	7.65	50
44	40	1.0491	9.57	7.14	50
45	41	0.8925	9.57	7.34	50
46	42	0.9268	9.57	7.59	50
47	43	1.0706	9.57	7.37	50
48	44	0.8162	9.57	7.46	50
49	45	0.9468	9.57	8.18	50
50	46	0.9423	9.57	7.3	50
51	MS	0.9557	9.57	7.34	50
52	MSD	0.9139	9.57	7.46	50
53	47	0.9668	9.57	8.01	50
54	48	0.8857	9.57	7.54	50
55	49	1.1751	9.57	7.5	50
56	50	1.0859	9.57	7.72	50
57	51	0.9298	9.57	7.24	50
58	52	0.9542	9.57	7.81	50
59	53	0.814	9.57	7.53	50
60	54	0.8556	9.57	7.73	50
61	MS	0.806	9.57	7.82	50
62	MSD	0.8909	9.57	6.71	50
63	55	0.9622	9.57	7.53	50
64	BCR580	0.1411	9.57	8.13	50
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