



**Frontier
GeoSciences Inc.**

414 Pontius Ave N
Seattle, WA 98109

206-622-6960
fax 206-622-6870

RECEIVED

JUN 06 2005

NAPA CO. CONSERVATION
DEVELOPMENT & RECREATION DEPT.

Hydrologic Systems Inc.
Adam Klein
2175 E. Francisco Boulevard, Suite E
San Rafael, CA 94901
Phone # 415-454-6056
Fax # 415-454-6057

August 25, 2004

Dear Mr. Klein,

Following is a report containing analytical results for total mercury in the soil samples collected on August 12, 2004. Frontier Geosciences Inc. received the samples in good condition on August 13, 2004.

There were no significant analytical issues and any QC issues experienced are addressed within the following report. Please feel free to contact me if you have any questions regarding this report.

Sincerely,

Frank Colich

Project Manager

Frankc@Frontiergeosciences.com

Mercury in Soils
Hydrologic Systems
August 25, 2004

Frank Colich
Frontier Geosciences Inc.
414 Pontius Ave. N
Seattle, WA 98109
(206) 622-6960

1. Scope of Work

Eight samples were submitted for total mercury analysis on August 25, 2004.

2. Sample Receipt

The samples identified above arrived by FEDEX on August 25, 2004. The samples on the chain of custody (COC) were received in good condition.

3. Analysis

Samples were processed using ultra-clean sample handling techniques in laminar flow clean areas known to be low in atmospheric trace metals. Reagents, gases, and deionized water are all reagent or ultra-pure grade, and were previously analyzed for trace metals to ensure very low blanks. Total mercury analysis was performed using CVAFS (FGS-069 or EPA 1631 mod)

Daily analytical runs were begun with a 5 point standard curve, spanning the entire analytical range of interest, with additional standards run every 10 samples. The daily standard curves were calculated using the blank-corrected initial standards, a linear regression forced through zero. For each analytical set one matrix duplicate, two matrix spikes, and at least three method blanks were co-processed and analyzed in exactly the same manner as ordinary samples.

4. Total Mercury Analysis

Aliquots of the samples were weighed out in Teflon containers, $\text{NH}_2\text{OH} \cdot \text{HCl}$ was added to destroy free halogens, and then each sample was poured into pre-

purged bubblers. Then SnCl_2 was added to reduce $\text{Hg}(\text{II})$ to Hg^0 , which was then purged onto gold traps as a preconcentration step. The Hg^0 contained on the gold traps was then analyzed by thermal desorption into a CVAFS, using the dual amalgamation technique. Peak areas were assessed by integrators. Net THg concentrations were calculated according to the following formula, where PA is the integrator peak area, b is the mean bubbler blank, V is the digest volume (in liters), B is the mean BrCl method blank (ng/L), F_D is the dilution factor associated with preserving the samples, and S is the calibration curve slope in units/ng:

$$[\text{THg}] (\text{ng/L}) = \frac{((\text{PA}-\text{b})/\text{S})/(\text{V}) - \text{B}}{F_D}$$

5. Analytical Issues

There were no significant analytical difficulties experienced during the analysis of these samples and all QC parameters were within established control limits with the following exceptions:

Please contact me with any questions or concerns regarding this report.

Trace Metals Results for Hydrologic Systems

Mondavi Vineyards Conversion

Reported August 25, 2004

Frontier Geosciences Inc., 414 Pontius Ave. N, Suite B, Seattle WA 98109

Sample Results

Sample ID	% Total Solids	Hg (ng/g) wet weight	Hg (ng/g) dry weight
51	94.7	106	112
52	96.7	145	150
53	90.8	69.0	75.9
54	92.3	58.5	63.4
55	94.7	57.3	60.5
56	95.9	57.7	60.2
57	96.0	61.8	64.4
58	93.8	62.7	66.9

Trace Metals Results for Hydrologic Systems

Monday Vineyards Conversion

Reported August 25, 2004

Frontier Geosciences Inc., 414 Pontius Ave. N, Suite B, Seattle WA 98109

Quality Control Data - Matrix Duplicate Report

Analyte	Sample ID	Sample	Duplicate	Mean	RPD
Hg (ng/g)	51	112.1	114.6	113.4	2.2
% Total Solids	51	94.7	95.0	94.9	0.3

Quality Control Data - Matrix Spike / Matrix Spike Duplicate Report

Analyte	Sample ID	Mean	Spike TV	MS	Spike %Rec	Spike Dup TV	MSD	Spike Dup %Rec	RPD
Hg (ng/g)	51	113.4	105.6	222.8	103.7	105.0	208.8	90.9	13.2

MS = Matrix Spike

MSD = Matrix Spike Duplicate

RPD = Relative Percent Difference

N/C = Not calculated due to one or more concentrations below the reporting limit.

Quality Control Data - Preparation Blank Report

Analyte	PBW1	PBW2	PBW3	PBW4	Mean	St Dev	Reporting Limit
Hg (ng/g)	0.82	0.52	0.70	0.44	0.62	0.17	0.45

Quality Control Data - Certified Reference Materials Report

Analyte	CRM Identity	Cert Value	Obs Value	% Rec
Hg (ng/g)	NIST 2709	1400	1446	103.3

CRM Identity = Certified reference material identity

Cert. Value = Certified value

Obs. Value = Experimental result

% Rec. = Percent recovery

Frontier Geosciences Inc.

Environmental Research & Specialty Analytical Laboratory

414 Pontius Avenue North, Suite B Seattle WA 98109
 (206) 622-6960 fax (206) 622-6870 Info@Frontier.WA.com

Chain-of-Custody Record & Laboratory Analysis Request

Date: 8/12/04 Page: 1 of 1

Client Company: <u>Hydrologic Systems</u>				Frontier Project Manager: <u>Frank / Nancy</u>			
Address:				Guaranteed Turnaround Time:			
CONTACT: <u>Adam Klein</u>				Confirmation of Sample Arrival at Frontier: <input type="checkbox"/> YES <input type="checkbox"/> NO			
Phone: <u>415-454-6056</u> Fax:				Quality Assurance Level: <input type="checkbox"/> Standard <input type="checkbox"/> High			
Email:				Disposal*: <input type="checkbox"/> Frontier Dispose <input type="checkbox"/> Return to Client <input type="checkbox"/> Ship to 3rd Party**			
Project Name: <u>Mondavi Vineyards Conversion</u>				*All samples are held for at least 2 months after date of receipt. Please note that after this time they are disposed of or returned to the client. Clients may request a longer holding time by writing to the Frontier Project Manager.			
Contract/PO #: <u>1159</u> <u>Bags</u>				**Please discuss this with the Frontier Project Manager.			
				Carrier Information: FED EX <input checked="" type="checkbox"/> UPS <input type="checkbox"/> Other <input type="checkbox"/>			
				Tracking # <u>8335 1854 0187</u>			
Engraved Bottle ID	Sample ID	Matrix ¹	# Bottles	Date/Time Sampled	Collected by	Preservation	Analysis Required/Comments
	• S1	Soil	1	8/12/04, 17:25	Adam Klein	None	Total Mercury
	• S2			17:28			
	• S3			17:50			
	• S4			17:55			
	• S5			16:55			
	* S6			15:23			
	* S7			16:35			
	* S8	↓	↓	15:10	↓	↓	↓
Sample Receipt				Relinquished by: <u>Adam Klein</u>			
C.O.C. Seal Intact? <input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> N/A				Print name: <u>Adam Klein</u>			
Cooler Temperature: <u>ambient</u> °C				Company: <u>HSI</u>			
Comments:				Date: <u>8/12/04</u> Time: <u>7:55pm</u>			
VTSR: <u>6550</u>				Received by: <u>[Signature]</u>			
¹ Matrix Codes: FW = fresh water (salinity < 0.5 ppt) BW = brackish water SW = seawater WW = wastewater SE = sediment SO = soil AT = animal tissue PT = plant tissue TR = trap PP = petroleum product OT = other				Print name: <u>Elizabeth Reagon</u>			
				Company: <u>Frontier Geosciences</u>			
				Date: <u>8.13.04</u> Time: <u>1240</u>			
				Relinquished by:			
				Print name:			
				Company:			
				Date:			
				Time:			
				Received by:			
				Print name:			
				Company:			
				Date:			
				Time:			