May 22, 2006

Mr. Robert Kennedy
ENSR
2 Technology Park Drive
Westford, MA 01886-3140

Subject: Data Package for MWH Laboratories Report 169215

Mr. Kennedy:

Enclosed is MWH Laboratories Report 169215 with the data, Subcontractor Report and the MWH Labs raw data package as requested.

Sample receipt: The soil samples arrived at MWH Laboratories, Monrovia, CA on March 8, 2006 for other subcontractor analysis after being picked up from EMAX Laboratories. EMAX retained the containers needed for analysis and these were reported separately under MWH Report 169338.

All containers were received without any visible signs of tampering or breakage. No analysis was performed by MWH Labs.

The samples were identified as follows:

MWH LAB#	CLIENT ID	SUBCONTRACTOR LAB
2603090024	M120-0.5	EMS, STL, GEL, FRONTIER
2603090026	M120-5	GEL
2603090027	M120-10	EMS, STL, GEL, FRONTIER
2603090028	M120-30	EMS, STL, GEL, FRONTIER
2603090029	M120-50	GEL

The subcontractor labs are as follows:

EMS: EMS, Pasadena, CA – Soil Asbestos Analysis
STL: Severn Trent Laboratories, West Sacramento, CA – Congener Analysis
GEL: General Engineering Laboratories, LLC, Charleston, SC – Radioactivity Analysis
FRONTIER: Frontier GeoSciences, Seattle, WA – Methyl mercury Analysis

Case Narrative: Please see the subcontractor reports for any technical or administrative problem during analysis, data review and reduction are contained in the analytical case narratives in the associated data package.

Data Package: The enclosed data package includes the Report, Chain of Custody, applicable Subcontractor Lab reports to document the billing and the MWH Raw data package.

Sincerely,

Linda Geddes
Project Manager

Laboratory
750 Royal Oaks Drive
Suite 100
Monrovia, California 91016
Tel: 626 386 1100
Fax: 626 386 1101

Southwest Service Center
15953 N. Greenway Hayden Loop
Suite C
Scottsdale, Arizona 85260
Tel: 480 778 1514
Fax: 480 [illegible]

Nothern California Service Center
4320 Anthony Court
Suite 15
Rocklin, California 95677
Tel: 916 652 4556
Fax: 916 652 9571

MWH Laboratories
A Division of MWH Americas, Inc.

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: 626 386 1100
Fax: 626 386 1101
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

ENSR
2 Technology Park Drive

Westford , MA 01886-3140

Attention: Robert Kennedy
Fax: 978-589-3282

DATE OF ISSUE
MAY 22 2006
MWH LABORATORIES

ACCREDITED IN ACCORDANCE WITH nelac 01114CA

LXG Linda Geddes
Project Manager

Report#: 169215
HENDERSON

Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are Comments,QC Report,QC Summary,Data Report,Hits Report, totaling 5 page[s].

CHAIN OF CUSTODY

EMAX LABORATORIES, INC
1835 W. 205th Street, Torrance, CA 90501
Tel #: 310-618-8889 Fax #: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:

SAMPLE STORAGE

EMAX CONTROL NO. * Ø6CØ71

PROJECT CODE:

CLIENT: Trinnex LLC
PROJECT: Upgradient Investigation
COORDINATOR: Ye Myint (EMAX)
TEL: 310-618-8889 x121 FAX EMAIL
SEND REPORT TO
COMPANY
ADDRESS
EMAX PM

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaOH
SS=Satd Sediment	ST=Na2S2O3
WP=Wiper FP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H_2SO_4
O=	

ANALYSIS REQUIRED: Radio nuclides; Dioxins/Dibenzofurans 8290; Methyl Hg 1630; YM 3/8/06

TAT
- ☐ Rush ____ hrs.
- ☐ Rush ____ days
- ☐ 7 days
- ☐ 14 days
- ☐ 21 days
- ☐ 30 days
- ☐ ____ days
- ☐

LAB	SAMPLE ID: CLIENT	SAMPLING: LOCATION	DATE	TIME	CONTAINER: NO.	SIZE	TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	EMAX ID	COMMENTS
1	M120-30		3/7/06	11:45	4	8oz	jar	SS		X X X	CØ71-Ø1	4°C
2	M120-50		3/7/06	12:45	2	↓	↓	↓		X	CØ71-Ø4	MS/MSD
3	M120-0.5		3/7/06	0910	4	↓	↓	↓		X X X	CØ71-Ø7	
4	M120-5		3/7/06	0930	—	—	—	—		X	CØ71-Ø8	jars not received
5	M120-10		3/7/06	1010	3/1	8oz/4oz	jar	SS		X X X	CØ71-Ø9	
6	~~M120-20~~		~~3/7/06~~	~~1045~~								ym 3/8/06
7					2	8oz	jar	SS		X	CØ71-11	
8												
9												
10												

Instructions / Comments

M120-05 (EMAX CØ71-Ø8) for Radionuclides not received.

~~##~~ EMAX CØ71-11 was received (2 jars) with no client Sample ID / Date / Time and Radionuclides analysis on the label, but not documented in ENSR COC.

Cooler #	Temp. (°C)	Sample #s

SAMPLER

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY	Date	Time
	3-8-06	1130		3-8-06	1130
					Relinquished to MWH lab.
				3-8-06	1554

NOTICE: Turn-around-time (TAT) for samples shall not begin until all discrepancies have been resolved. For samples received and discrepancies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associated with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

Linda Geddes printed this.

Ye Myint
<YMyint@emaxlabs.com>
03/09/2006 11:38 AM

To "'Kennedy, Robert'" <rkennedy@ensr.aecom.com>
cc "Krish, Ed" <ekrish@frontiernet.net>, Linda Geddes <Linda.Geddes@us.mwhglobal.com>, "Bilodeau, Sally" <SBilodeau@ensr.aecom.com>
bcc
Subject RE: Henderson COC modifications

History: This message has been replied to.

Robert,

Item#3: We have only 2 sleeves for the analyses we need to do here. 2 out of 3 samples you listed need full list of analytes and with added MS/MSD on M120-30. We will need most of the samples. All the extra jars for other labs are in MWH custody and we have no extra jar left.

One question: Do you need MBAS and Conductivity for soil? I believe you need TDS and TSS for water only and they won't be logged in for soil.

Linda: If you haven't sent out the samples to other labs yesterday, Could you please get the samples for Asbestos from the jars that were picked-up yesterday? Thanks.

Ye Myint
EMAX Laboratories, Inc.
1835 W 205th. St.
Torrance, CA 90501
Phone: (310) 618-8889 x121
Fax: (310) 618-0818
E-mail: ymyint@emaxlabs.com

-----Original Message-----
From: Kennedy, Robert [mailto:rkennedy@ensr.aecom.com]
Sent: Thursday, March 09, 2006 11:08 AM
To: Ye Myint
Cc: Krish, Ed; Linda Geddes; Bilodeau, Sally
Subject: Henderson COC modifications

Ye,

I have talked to Brian about a few changes we want to make in the COC with the serial no. 5219 from the samples collected 3/7/06:

1) Please add perchlorate and hexavalent chromium to the analytes for MS/MSD analysis of sample M120-50 MS/MSD at line item 5.

2) Please add MS/MSD analyses to the organochlorine pesticides, PCBs, organophosphorous pesticides, and SVOCs for sample M120-30 at line item 1.

3) Please add bulk asbestos in soil analysis to sample M120-30 (line item 1 on COC 5219), sample M120-0.5 (line item 1 on COC 5218), and sample M120-10 (line item 3 on COC 5218). These samples should go to EMS Laboratory. Linda said someone from MWH will be by to make a pick-up today so call Linda to see if she needs extra sample jars from your lab. If Emax can

Linda Geddes printed this.

have them ready to go then MWH will take care of the shipping to EMS.

If you have any questions please call or email me.

Robert Kennedy
Senior Project Chemist

ENSR
2 Technology Park Drive
Westford, MA 01886-3140
T 978-589-3324 F 978-589-3282
www.ensr.aecom.com

AREA FAST
COURIER SERVICE
401 N. Brand Blvd., Suite 660 • Glendale, CA 91203
Phone: 818/ 546-8684 Fax: 818/ 546-2580

INVOICE 20948
CALL NO
REF. NO
DATE 03-08-06

CHARGE TO Montgomery Lab

FROM: E MAX
1835 205 St
Torrance

TO: MWH
Monrovia

PACKAGES	DESCRIPTION		CHARGES
		REGULAR	
1	L Cooler	RUSH	
		A.S.A.P.	
		MISC. CHARGES	
		WAITING TIME	
		WEIGHT	
		TOTAL CHARGE	

DRIVER: PICK UP TIME: DELIVERY TIME: 1554
Received By: Nick Yusa

MWH Laboratories
750 Royal Oaks Drive, Monrovia, CA 91016
PHONE: 626-386-1100/FAX: 626-386-1101

ACKNOWLEDGMENT OF SAMPLES RECEIVED

ENSR
2 Technology Park Drive
Westford, MA 01886-3140
Attn: Robert Kennedy
Phone: 978-589-3324

Customer Code: ENSR-TRONOX
Group#: 169215
Project#: HENDERSON
Proj Mgr: Linda Geddes
Phone: (626) 386-1163

The following samples were received from you on **03/08/06**. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using MWH Laboratories.

Sample#	Sample Id	Tests Scheduled	Matrix	Sample Date
2603090024	M120-0.5	ASBTEM CONGENER CUSTSUB METHYLHG	Soil	07-mar-2006 09:10:00
2603090026	M120-5	CUSTSUB	Soil	07-mar-2006 09:30:00
2603090027	M120-10	ASBTEM CONGENER CUSTSUB METHYLHG	Soil	07-mar-2006 10:10:00
2603090028	M120-30	ASBTEM CONGENER CUSTSUB METHYLHG	Soil	07-mar-2006 11:45:00
2603090029	M120-50	CUSTSUB	Soil	07-mar-2006 12:45:00

Test Acronym Description

Test Acronym	Description
ASBTEM	Asbestos by PLM
CONGENER	TCDDs+PCDFs by 1613b full list
CUSTSUB	Subcontracted Analyses-soils
METHYLHG	Methyl mercury

MWH Laboratories
A Division of MWH Americas, Inc.

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: 626 386 1100
Fax: 626 386 1101
1 800 566 LABS (1 800 566 5227)

Report
Comments
#169215

Group Comments

Analytical results for Asbestos by PLM are submitted by EMS Labs Pasadena, CA.
Analytical results for Methyl Mercury are submitted by Frontier GeoSciences, Inc, Seattle, WA.
Analytical results for CONGENER are submitted by Severn Trent Laboratories, Sacramento, CA. NELAP 01119CA
Analytical results for radiologicals are submitted by General Engineering Laboratories, LLC, Charleston, SC.

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Laboratory
Hits Report
#169215

ENSR
Robert Kennedy
2 Technology Park Drive
Westford , MA 01886-3140

Samples Received
08-mar-2006 15:54:00

Analyzed	Sample#	Sample ID	Result	Federal MCL	UNITS	MRL
	2603090024	M120-0.5				
03/07/06	Methyl mercury		0.034		ng/g	0.020
	2603090027	M120-10				
	2603090028	M120-30				

SUMMARY OF POSITIVE DATA ONLY.

MWH Laboratories
A Division of MWH Americas, Inc.

750 Royal Oaks Drive, Suite 100
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Laboratory
Data Report
#169215

ENSR
Robert Kennedy
2 Technology Park Drive
Westford , MA 01886-3140

Samples Received
03/08/06

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
M120-0.5 (2603090024)				**Sampled on 03/07/06 09:10**				
	03/15/06 00:00		(SUBCONTRACT)	Asbestos by PLM	ND	%	0.2	1
	04/13/06 00:00		(8290)	TCDDs+PCDFs by 8290 full list	SUB STL	PGG	1.0	1
	04/24/06 00:00		( )	Subcontracted Analyses-soils	SUB GEL	None	0	1
	03/07/06 00:00	315069	(EPA 1630)	Methyl mercury	0.034	ng/g	0.020	1
M120-5 (2603090026)				**Sampled on 03/07/06 09:30**				
	04/24/06 00:00		( )	Subcontracted Analyses-soils	SUB GEL	None	0	1
M120-10 (2603090027)				**Sampled on 03/07/06 10:10**				
	03/15/06 00:00		(SUBCONTRACT)	Asbestos by PLM	ND	%	0.2	1
	04/13/06 00:00		(8290)	TCDDs+PCDFs by 8290 full list	SUB STL	PGG	1.0	1
	04/24/06 00:00		( )	Subcontracted Analyses-soils	SUB GEL	None	0	1
	03/07/06 00:00	315069	(EPA 1630)	Methyl mercury	ND	ng/g	0.020	1
M120-30 (2603090028)				**Sampled on 03/07/06 11:45**				
	03/15/06 00:00		(SUBCONTRACT)	Asbestos by PLM	ND	%	0.2	1
	04/13/06 00:00		(8290)	TCDDs+PCDFs by 8290 full list	SUB STL	PGG	1.0	1
	04/24/06 00:00		( )	Subcontracted Analyses-soils	SUB GEL	None	0	1
	03/07/06 00:00	315069	(EPA 1630)	Methyl mercury	ND	ng/g	0.020	1
M120-50 (2603090029)				**Sampled on 03/07/06 12:45**				
	04/24/06 00:00		( )	Subcontracted Analyses-soils	SUB GEL	None	0	1

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A Division of MWH Americas, Inc.

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1 800 566 LABS (1 800 566 5227)

Laboratory
QC Summary
#169215

ENSR

QC Ref #315069 - Methyl mercury

Analysis Date: 03/07/2006

2603090024	M120-0.5	Analyzed by: rbc
2603090027	M120-10	Analyzed by: rbc
2603090028	M120-30	Analyzed by: rbc

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Laboratory
QC Report
#169215

ENSR

QC Ref #315069 Methyl mercury

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
AASPKSMP	Spiked sample	Lab # 26	03090027	NGG	0.0	(0-0)	
LCS	Methyl mercury	5.49	5.74	NGG	104.6	(50-150)	
MBLK	Methyl mercury	ND	<0.020	NGG			
MS	Methyl mercury	4.43	4.28	NGG	96.6	(50-150)	
MSD	Methyl mercury	4.43	4.44	NGG	100.2	(50-150)	

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining. Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

ENSR-TRONOX
169215

Frontier GeoSciences Inc.

innovative solutions through advanced geochemistry

April 19, 2006

Linda Geddes
MWH Laboratories
750 Royal Oaks Drive Suite 100
Monrovia, CA 91016

Re: Methyl Mercury for Project # 169215

Dear Ms. Geddes,

Enclosed, please find our report concerning methyl mercury in three (3) soil samples received on March 17, 2006 for Project #169215.

High QA and a complete data package were added to the project on March 30, 2006 per our phone conversation.

There were no analytical issues encountered with this analysis and any QC issues are addressed in the following report.

Please feel free to call or e-mail if you have further questions or concerns.

Sincerely,

Kristina Spadafora

Kristina Spadafora
Project Manager
KristinaS@FrontierGeoSciences.com

414 Pontius Ave. N. Seattle WA 98109
206.622.6960 • fax 206.622.6870
info@frontiergeosciences.com • www.frontiergeosciences.com

MWH Laboratories
Methyl Mercury in Soil
Project # 169215

April 19, 2006

Frontier Geosciences Inc.
414 Pontius Ave. North
Seattle, WA 98109

1. Scope of Work

Three (3) soil samples were submitted on March 16, 2006 for methyl mercury analysis using cold vapor gas chromatographic atomic fluorescence spectrometry (CV-GC-AFS, FGS-070).

2. Sample Receipt

The samples identified above were received at Frontier Geosciences in good condition on March 17, 2006 within a sealed cooler at a temperature of 2.7 °C. All samples were securely received and logged in according to Frontier's protocols on the day of receipt.

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.

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 a linear regression forced through zero of the blank-corrected initial standards. For each analytical set, one matrix duplicate, two matrix spikes, and three method blanks were co-processed and analyzed in exactly the same manner as ordinary samples.

Sample Extraction. Samples were processed with an extraction designed for a soil/sediment matrix (Frontier standard operating procedure FGS-045) on March 26, 2006. In summary, the methyl Hg in an aliquot of the sample is extracted from acidic bromide slurry into methylene chloride and then back into pure water.

Methyl Hg analysis. Extracted samples were analyzed for methyl Hg in accordance with the standard operating procedures (SOPs) described in the Frontier Geosciences Quality

Assurance manual. Acetate buffer and ethylating agent were added to an aliquot of sample and the methyl Hg purged onto carbotraps. The mercury species on the carbotrap column were volatilized and separated using a gas chromatography column, reduced on a pyrolytic column and detected by an atomic fluorescence detector. The extracted samples were analyzed on March 27, 2006.

4. Analytical Issues

There were no analytical issues and all QC samples were within control.

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

MWH

Methyl Mercury for Project 169215

Reported by Frontier Geosciences, Inc. 414 Pontius Avenue N, Seattle, WA 98109
April 19, 2006

Results

Sample ID	Date Sampled	Methyl Hg as Hg (ng/g) *
2603090024	3/7/06	0.034
2603090027	3/7/06	<0.020
2603090028	3/7/06	<0.020

* Reported on a wet-mass basis (not corrected for total solids)

MWH

Methyl Mercury for Project 169215

Reported by Frontier Geosciences, Inc. 414 Pontius Avenue N, Seattle, WA 98109
April 19, 2006

Preparation Blank Report

Analyte (ng/g)	PB1	PB2	PB3	Mean	St Dev	RL
Methyl Hg as Hg	0.012	0.013	0.008	0.011	0.003	**0.020**

PB = Preparation Blank
RL = Reporting Limit

Certified Reference Material Report

Analyte (ng/g)	CRM Identity	Cert Value	Obs Value	% Rec
Methyl Hg as Hg	IAEA-405	5.49	5.74	**104.6**

CRM = Certified Reference Material
Cert Value = Certified Value
Obs Value = Observed Value
% Rec = Percent Recovery

Matrix Duplicate Report

Analyte (ng/g)	Sample ID	Sample	Duplicate	Mean	RPD
Methyl Hg as Hg	2603090027	<0.020	<0.020	NC	**NC**

RPD = Relative Percent Difference
NC = Not calculated; one or more values below the reporting limit

Matrix Spike Report

Analyte (ng/g)	Sample ID	Sample	Spike	MS	% Rec	Spike	MSD	% Rec	RPD
Methyl Hg as Hg	2603090027	<0.020	4.433	4.275	**96.4**	4.464	4.436	**99.4**	**3.0**

MS = Matrix Spike
MSD = Matrix Spike Duplicate

MWH

Methyl Mercury for Project 169215

Reported by Frontier Geosciences, Inc. 414 Pontius Avenue N, Seattle, WA 98109

April 19, 2006

ICB/CCB report

Analyte (ng/L)	ICB	CCB1
Methyl Hg as Hg	0.018	0.016

ICB = Initial Calibration Blank

CCB = Continuing Calibration Blanks

ICV/CCV report

Analyte (ng/L)	ICV			CCV1		
	TV	Found	% Rec.	TV	Found	% Rec.
Methyl Hg as Hg	2.240	1.956	**87.3**	2.000	1.956	**97.8**

ICV = Initial Calibration Verification

CCV = Continuing Calibration Verification

Frontier Geosciences

Dataset for CV.GC.AFS Analysis

Analysis Method: FGS-070

MMHg

Dataset ID:	MHg7-060327-1
Analyst:	Citronc
Data Prep:	Citronc
Analysis Date:	3/27/2006

Project List:

No	HiQA	Sample Group			Corrections: Inst. Blank	Prep. Blank	MSA	Effic. Factor
2	☐	PBS			Yes-1	No	No	No
		*Prep Method:	FGS-045	MMHg MeCl Extraction				
3	☑	MWH 3/17/06			Yes-1	Yes-2	No	No
		*Prep Method:	FGS-045	MMHg MeCl Extraction				

Analytical Remarks:

No Analytical issues to report.

All results were in control.

3/28/06

QUALITY ASSURANCE

PEER - REVIEWED

INITIALS: 3/28/2006

QUALITY ASSURANCE REVIEWED

INITIALS: 4/10/06

Validator:

Printed: 3/27/2006 4:20:20

Frontier Geosciences

Dataset for CV.GC.AFS Analysis

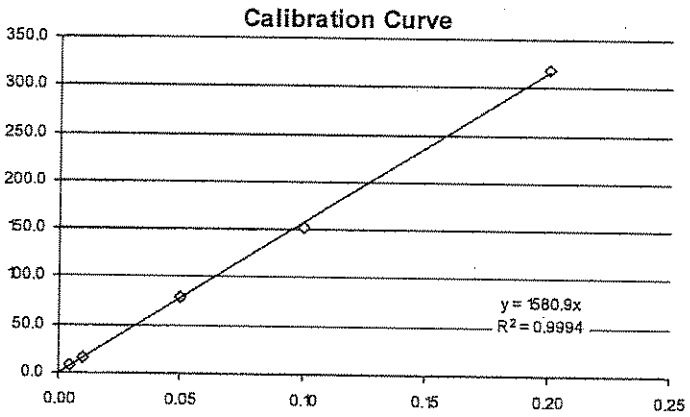
Dataset ID: MHg7-060327-1
Analyst: Citrónc
Date: 3/27/2006

Calibration Data for MMHg

ng vs. Measured Intensity

Slope: 1580.89784 *R:* 0.99971
SE: 2.73386 *Obs:* 5

True Value-x	IBC Intensity-y	Calc Value	Calc Intensity
0.0050	7.3500	0.0046	7.9045
0.0500	79.9500	0.0506	79.0449
0.1000	152.6500	0.0966	158.0898
0.2000	318.6500	0.2016	316.1796
0.0100	16.5500	0.0105	15.8090



Instrument Blank (IB) Sets

Group	Analyte	Count	Avg	St Dev	EMDL	Units	Intensity
1	MMHg	2	0.0171	0.0009	0.0027	ng/L	1.35

Preparation Blank (PB) Sets

Group	Analyte	Count	Avg	St Dev	EMDL	Units	PB1	PB2	PB3	PB4
2	MMHg	3	0.011	0.003	0.008	ng/g	0.012	0.013	0.008	

MSA Sets

QC Sets

Sample	Analyte	Sample	Duplicate	Triplicate	Spike	Spike Dup.	Spike TV	Spike Dup. TV
M120-10	MMHg	-0.005	-0.004		4.275	4.436	4.433	4.464
	ng/g	Avg=-0.004	14.6% RPD			3.0% RPD	96.5%Rec	99.5%Rec

Frontier Geosciences

Dataset for CV.GC.AFS Analysis

Dataset ID: **MHg7-060327-1**
Analyst: **Citronc**
Date: **3/27/2006**

Run	Trap	Pos	Sample Group	Sample ID	Excl.	Type	Aliquot	Inten.	Inst Value	Dil.	[Liquid Gross]	[Liquid Net]	Prep Vol.	Mass	Solid Conc	T.S.	Solid Conc (DB)	Rec.	TV	Remarks
1	1	1	(Analysis)	0.005 ng		CAL	50.000 mL	8.7	0.0046 ng	1.	0.093 ng/L	0.093 ng/L				1		93.0%	0.0050	
2	2	2	(Analysis)	0.050 ng		CAL	50.000 mL	81.3	0.0506 ng	1.	1.011 ng/L	1.011 ng/L				1		101.1%	0.0500	
3	3	3	(Analysis)	0.100 ng		CAL	50.000 mL	154	0.0966 ng	1.	1.931 ng/L	1.931 ng/L				1		96.6%	0.1000	
4	4	4	(Analysis)	0.200 ng		CAL	50.000 mL	320	0.2016 ng	1.	4.031 ng/L	4.031 ng/L				1		100.8%	0.2000	
5	5	1	(Analysis)	0.010 ng		CAL	50.000 mL	17.9	0.0105 ng	1.	0.209 ng/L	0.209 ng/L				1		104.7%	0.0100	
6	6	2	(Analysis)	ICV/Dorm-2 (2.24ng/L)		LCS	50.000 mL	156	0.0978 ng	1.	1.956 ng/L	1.956 ng/L	1000.00 mL	1.0000 g	1.956 ng/g	1	1.956 ng/g	87.3%	2.2400	
7	6	3	(Analysis)	ICB		IB	50.000 mL	1.4	0.0009 ng	1.	0.018 ng/L	0.018 ng/L				1				
8	1	4	PBS	PBS1		PB	57.600 mL	3.2	0.0012 ng	5.	0.102 ng/L	0.102 ng/L	57.60 mL	0.5000 g	0.012 ng/g	1	0.012 ng/g			
9	2	1	PBS	PBS2		PB	57.600 mL	3.4	0.0013 ng	5.	0.113 ng/L	0.113 ng/L	57.60 mL	0.5000 g	0.013 ng/g	1	0.013 ng/g			
10	3	2	PBS	PBS3		PB	57.600 mL	2.4	0.0007 ng	5.	0.058 ng/L	0.058 ng/L	57.60 mL	0.4100 g	0.008 ng/g	1	0.008 ng/g			
11	4	3	MWH 3/17/06	IAEA-405		LCS	10.000 mL	66.2	0.0410 ng	5.	20.510 ng/L	20.420 ng/L	57.60 mL	0.2110 g	5.574 ng/g	0.971	5.741 ng/g	104.6%	5.4900	
12	5	4	MWH 3/17/06	M120-0.5		S	57.600 mL	8.9	0.0048 ng	5.	0.415 ng/L	0.324 ng/L	57.60 mL	0.5440 g	0.034 ng/g	1	0.034 ng/g			
13	6	1	MWH 3/17/06	M120-10		S	57.600 mL	2.2	0.0005 ng	5.	0.047 ng/L	-0.044 ng/L	57.60 mL	0.5310 g	-0.005 ng/g	1	-0.005 ng/g			
14	6	2	MWH 3/17/06	M120-10(MD)		MD	57.600 mL	2.3	0.0006 ng	5.	0.052 ng/L	-0.038 ng/L	57.60 mL	0.5380 g	-0.004 ng/g	1	-0.004 ng/g			
15	1	3	MWH 3/17/06	M120-10(MS)		MS	10.000 mL	134	0.0839 ng	5.	41.954 ng/L	41.863 ng/L	57.60 mL	0.5640 g	4.275 ng/g	1	4.275 ng/g		4.4330	
16	2	4	MWH 3/17/06	M120-10(MSD)		MSD	10.000 mL	138	0.0864 ng	5.	43.219 ng/L	43.129 ng/L	57.60 mL	0.5600 g	4.436 ng/g	1	4.436 ng/g		4.4640	
17	3	1	MWH 3/17/06	M120-30		S	57.600 mL	3.2	0.0012 ng	5.	0.102 ng/L	0.011 ng/L	57.60 mL	0.5310 g	0.001 ng/g	1	0.001 ng/g			
18	4	2	(Analysis)	CCV1		CV	50.000 mL	156	0.0978 ng	1.	1.956 ng/L	1.956 ng/L				1		97.8%	2.0000	
19	5	3	(Analysis)	CCB1		IB	50.000 mL	1.3	0.0008 ng	1.	0.016 ng/L	0.016 ng/L				1				

Sample Digestion and Percent Solids Log

Name: MWH Andrea Pratt Date: 3.26.08 Final volume: _____

Client Name: MWH 3/17/08

Sample Matrix: ☒ Sediments ☐ Waters ☐ Tissues ☐ FSTM Traps ☐ Filters ☐ Other _____

Analysis: ☐ Total Hg ☒ Methyl Hg ☐ % Dry Weight ☐ Other _____

Pan # for %TS	Sample ID Number	Sample Size ☐ml ☐g	Dry Weight Determination Pan wt. (g)	Pan wt.+ wet sample (g)	Pan wt.+ dry sample (g)
	PBS1				
	2				
	3 (teflon chips)	0.410			
	IAEA405	0.211			
1	M120-0.5	0.544			
2	-10	0.531			
2MD	MD	0.538			
2MS	MS (25ul 100ng/ml)	0.564			
2MSD	MSD	0.5600			
3	M120-30	0.531			

3.26.08

☆ lots of rocks + pebbles.

Frontier GeoSciences, Inc
High QA Report:
Analyst: Citron Choice
Data Set : MHg7-060327-1
Reviewer : Shelly Fank
Reviewed Date: 4/10/06

1. Calibration was performed on at least five calibration standards.

2. The calibration curve used at least four standards and achieved a correlation coefficient of greater than 0.995.

3. The ICV meets acceptable criteria of 80-120%R.

4. The ICB meets acceptable criteria of less than or equal to 0.02 ng/g.

5. All CCVs have %R within 75-125% except:

CCV	Analyte	%R	Comments
None			

6. All LCS have %R within 75-125% except:

LCS ID	Analyte	%R	Comments
None			

7. All MD results pass the < 25% RPD Criteria.
   Except:None

8. No prep issues noted.

TDS checked transcription.

Any other comments regarding instrument/data packages (internal standard trends/ missing portions such as prep logs etc.):

All Sample Duplicates/Triplicates/ have RPD/RSD below 25%.
Except: None.

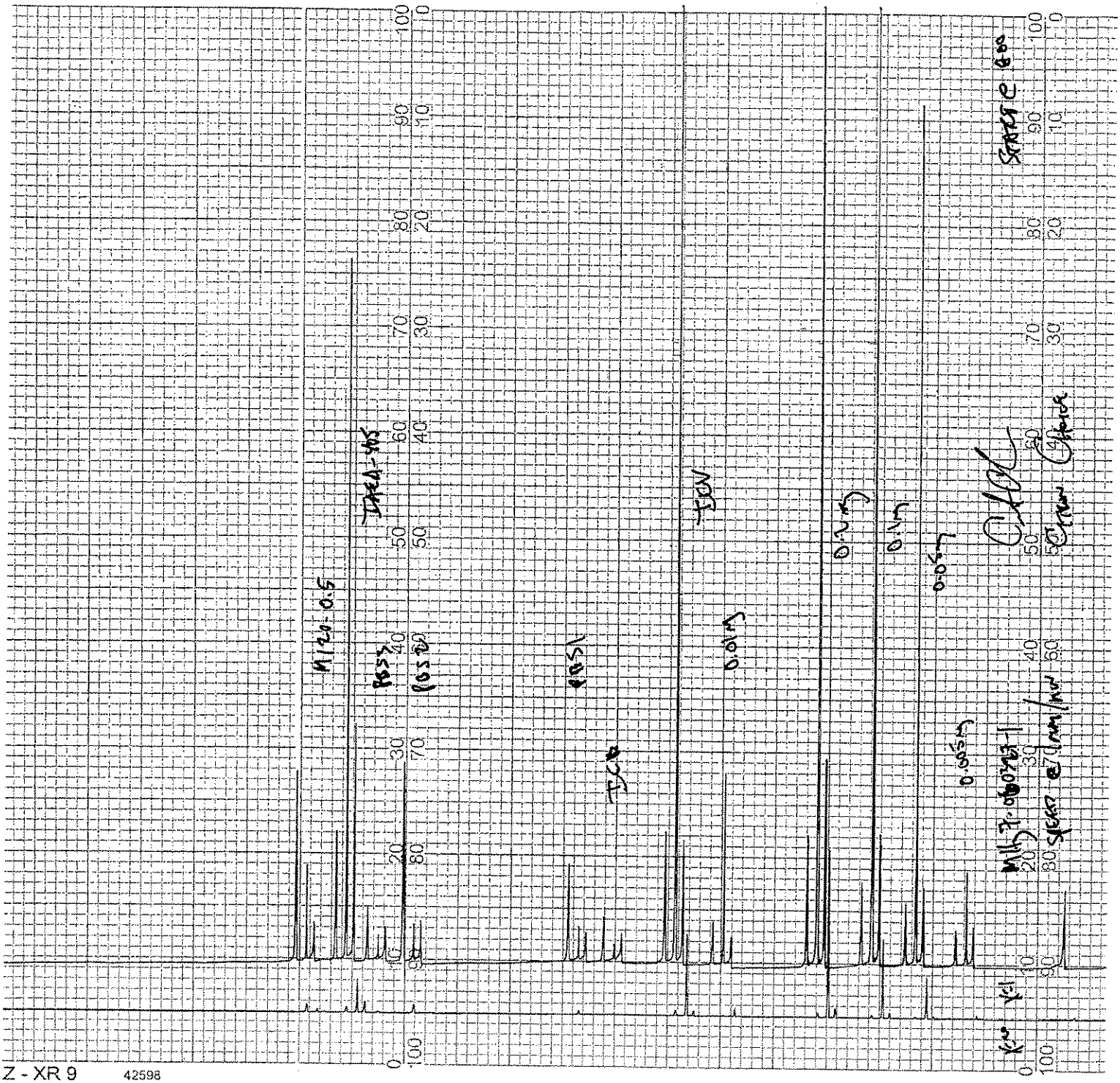
All sample MS and MSD have %R within 75-125% unless spike concentration is less than 1x the ambient concentration.
Except: None.

All analytical issues or other problems:
1. No other issues noted.

Frontier GeoSciences, Inc
High QA Report:
Analyst: Citron Choice
Data Set : MHg7-060327-1
Reviewer : Shelly Fank
Reviewed Date: 4/10/06

Follow-up items. (This would be items such as mass or dilution factors that have a problem or if a sample was changed on the Sample/Batch report but did not appear to be changed on the sample analysis report.)

These items should be emailed to the QA coordinator, lab manager, AL group leader, PM and PM group leader. They should respond as to how the item was addressed and what action was taken. That should then be amended to this report.


Z - XR 9
42598

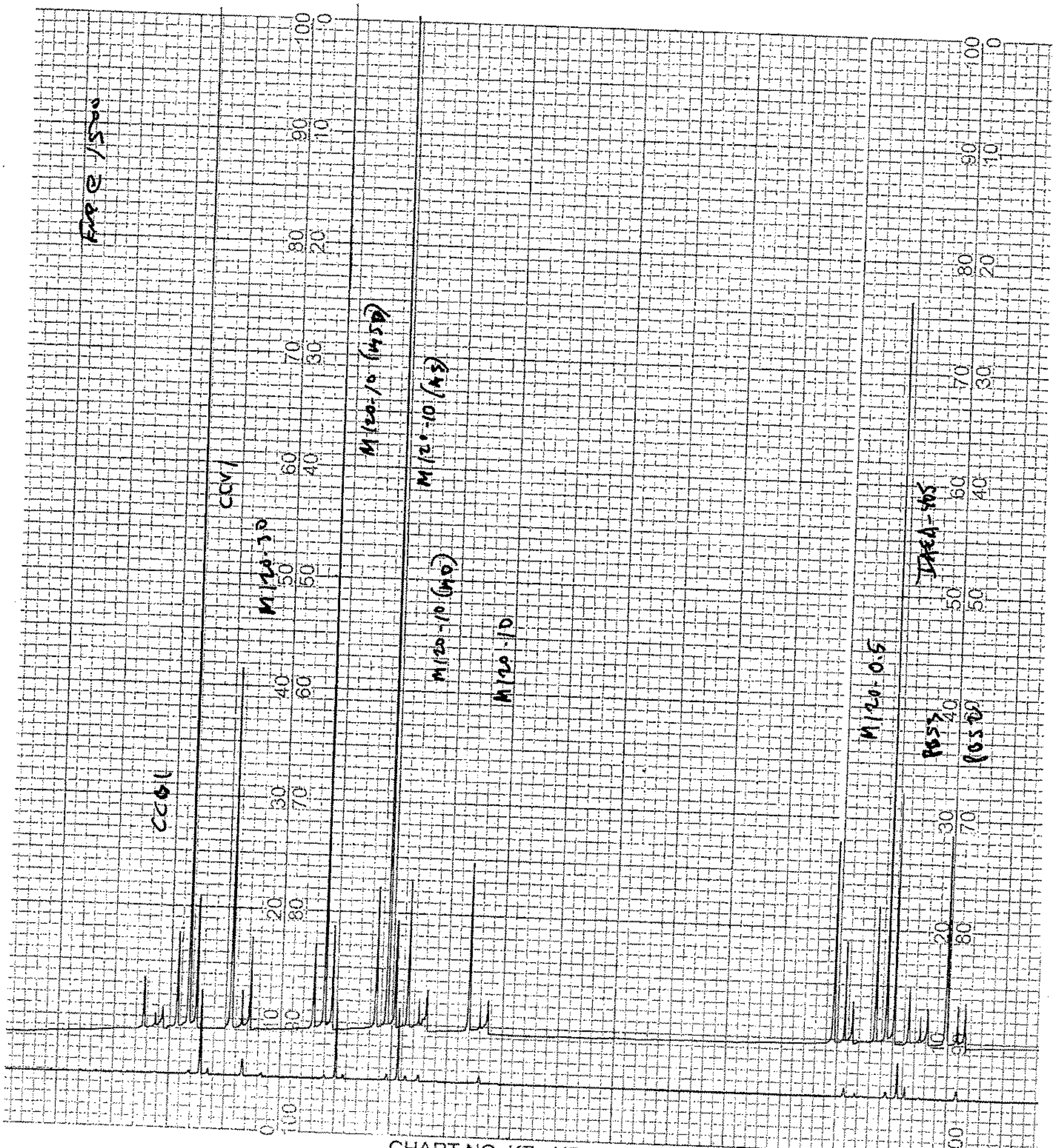


CHART NO. KZ - XR 9 42598

PM=KS

MWH Laboratories
A Division of MWH Americas,Inc.
750 Royal Oaks Drive Suite 100
Monrovia, CA 91016-3629
Ph (626) 386-1100 Fax (626) 386-1095

Date 03/16/06

Submittal Form & Purchase Order 99-22196

*REPORTING REQUIREMENTS: *Do Not Combine Report with any other samples submitted under different MWH project numbers!*
Report & Invoice must have the MWH Project Number **169215** Sub PO# **99-22196** and Job # **Find Out**

Report all quality control data according to Method. Include dates analyzed, date extracted (if extracted) and Method reference on the report.
Results must have Complete data & QC with Approval Signature. See reverse side for List of Terms and Conditions

Ship To **Russell Gerads**
Frontier Geo-Science

414 Pontius North
Seattle WA 98109

(206) 622-6960 Fax (206) 622-6870

Reports: Julie Lee Sub-contracting Administrator
EMAIL TO: Julie.Lee@mwhglobal.com
MWH Laboratories 750 Royal Oaks Dr. Ste. 100, Monrovia, CA 91016
Phone (626) 386-1136 Fax (626) 386-1095
Invoices to: MWH LABORATORIES
Accounts Payable PO BOX 6610, Broomfield, CO 80021

Provide in each Report
the Specified State
Certification # & Exp Date for
requested tests + matrix

QC REQUESTED

FREEZER I
SHELF A

MWH Project #	Report Due:	Sub PO#
169215	03/31/06	99-22196

JDL

Use MWH Lab # for ID

		Client Sample ID for reference only	Analysis Requested	Sample Date & Time	Matrix	Container
custsub	2603090024	M120-0.5	methyl mercury	03/07/06 9:10	soil	8 oz. glass jars
custsub	2603090027	M120-10	methyl mercury	03/07/06 10:10	soil	8 oz. glass jars
custsub	2603090028	M120-30	methyl mercury	03/07/06 11:45	soil	8 oz. glass jars

Fedex tracking # 6912 3665 2972
VTSR: 10:00 cooler temp: 2.7°C
C.O.C Seal: N/A

Relinquished by: Sample Control Date 03/16/06 Time 1513 MUST HAVE NOTIFICAION IF TEMP IS GREATER THAN 6 OR LESS THAN 2 CELSIUS
Page 1
Received by: Nick Hotsell FGS Date 3/17/06 Time 12:05 An Acknowledgement of Receipt is requested to attn: Julie Lee

ENSR - TRONOX

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

MWH Laboratories

Lot #: G6C100424 MWL-169215/Sub PO# 99-22090 **Date Reported:** 3/27/06

Project Number: 169215/3090024

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Client Sample ID: M120-0.5					
Sample #: 001 Date Sampled: 03/07/06 09:10 Date Received: 03/10/06 Matrix: SOLID					
Dibenzodioxins and Dibenzofurans, HRGC/HRMS					Reviewed
2,3,7,8-TCDD	ND	0.18	pg/g	SW846 8290	
Total TCDD	**0.55**		**pg/g**	**SW846 8290**	
1,2,3,7,8-PeCDD	ND	0.62	pg/g	SW846 8290	
Total PeCDD	ND	0.87	pg/g	SW846 8290	
1,2,3,4,7,8-HxCDD	ND	0.34	pg/g	SW846 8290	
1,2,3,6,7,8-HxCDD	ND	0.94	pg/g	SW846 8290	
1,2,3,7,8,9-HxCDD	ND	1.0	pg/g	SW846 8290	
Total HxCDD	ND	2.4	pg/g	SW846 8290	
1,2,3,4,6,7,8-HpCDD	**6.7**		**pg/g**	**SW846 8290**	
Total HpCDD	**12**		**pg/g**	**SW846 8290**	
OCDD	**33**		**pg/g**	**SW846 8290**	
2,3,7,8-TCDF	**2.9 CON**		**pg/g**	**SW846 8290**	
Total TCDF	**20**		**pg/g**	**SW846 8290**	
1,2,3,7,8-PeCDF	**4.7 J**		**pg/g**	**SW846 8290**	
2,3,4,7,8-PeCDF	**2.7 J**		**pg/g**	**SW846 8290**	
Total PeCDF	**22**		**pg/g**	**SW846 8290**	
1,2,3,4,7,8-HxCDF	**11**		**pg/g**	**SW846 8290**	
1,2,3,6,7,8-HxCDF	**7.7**		**pg/g**	**SW846 8290**	
2,3,4,6,7,8-HxCDF	**2.8 J**		**pg/g**	**SW846 8290**	
1,2,3,7,8,9-HxCDF	ND	0.69	pg/g	SW846 8290	
Total HxCDF	**51**		**pg/g**	**SW846 8290**	
1,2,3,4,6,7,8-HpCDF	**30**		**pg/g**	**SW846 8290**	
1,2,3,4,7,8,9-HpCDF	**6.5**		**pg/g**	**SW846 8290**	
Total HpCDF	**52**		**pg/g**	**SW846 8290**	
OCDF	**54**		**pg/g**	**SW846 8290**	

Results and reporting limits have been adjusted for dry weight.

CON Confirmation analysis.

J Estimated result. Result is less than the reporting limit.

Inorganic Analysis		Soil			Reviewed
Method for Determination of Water Content of Soil	5.9		%	ASTM D 2216-90	

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: G6C100424

MWH Laboratories
MWL-169215/Sub PO# 99-22090
Project Number: 169215/3090024

Date Reported: 3/27/06

Client Sample ID: M120-10
Sample #: 002 Date Sampled: 03/07/06 10:10 Date Received: 03/10/06 Matrix: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Dibenzodioxins and Dibenzofurans, HRGC/HRMS					Reviewed
2,3,7,8-TCDD	ND	0.27	pg/g	SW846 8290	
Total TCDD	ND	0.27	pg/g	SW846 8290	
1,2,3,7,8-PeCDD	ND	1.2	pg/g	SW846 8290	
Total PeCDD	ND	1.8	pg/g	SW846 8290	
1,2,3,4,7,8-HxCDD	ND	0.56	pg/g	SW846 8290	
1,2,3,6,7,8-HxCDD	ND	1.1	pg/g	SW846 8290	
1,2,3,7,8,9-HxCDD	ND	1.9	pg/g	SW846 8290	
Total HxCDD	ND	1.9	pg/g	SW846 8290	
1,2,3,4,6,7,8-HpCDD	ND	0.84	pg/g	SW846 8290	
Total HpCDD	ND	0.84	pg/g	SW846 8290	
OCDD	ND	1.4	pg/g	SW846 8290	
2,3,7,8-TCDF	ND	0.29	pg/g	SW846 8290	
Total TCDF	**0.74**		**pg/g**	**SW846 8290**	
1,2,3,7,8-PeCDF	ND	0.48	pg/g	SW846 8290	
2,3,4,7,8-PeCDF	ND	0.47	pg/g	SW846 8290	
Total PeCDF	ND	0.69	pg/g	SW846 8290	
1,2,3,4,7,8-HxCDF	ND	0.87	pg/g	SW846 8290	
1,2,3,6,7,8-HxCDF	ND	0.65	pg/g	SW846 8290	
2,3,4,6,7,8-HxCDF	ND	0.71	pg/g	SW846 8290	
1,2,3,7,8,9-HxCDF	ND	0.74	pg/g	SW846 8290	
Total HxCDF	ND	0.87	pg/g	SW846 8290	
1,2,3,4,6,7,8-HpCDF	ND	0.79	pg/g	SW846 8290	
1,2,3,4,7,8,9-HpCDF	ND	0.59	pg/g	SW846 8290	
Total HpCDF	ND	0.79	pg/g	SW846 8290	
OCDF	ND	1.3	pg/g	SW846 8290	

Results and reporting limits have been adjusted for dry weight.

Inorganic Analysis		Soil			Reviewed
Method for Determination of Water Content of Soil	9.1		%	**ASTM D 2216-90**	

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: G6C100424

MWH Laboratories
MWL-169215/Sub PO# 99-22090
Project Number: 169215/3090024

Date Reported: 3/27/06

Client Sample ID: M120-30
Sample #: 003 Date Sampled: 03/07/06 11:45 Date Received: 03/10/06 Matrix: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD	
Dibenzodioxins and Dibenzofurans, HRGC/HRMS					Reviewed
2,3,7,8-TCDD	ND	0.23	pg/g	SW846 8290	
Total TCDD	ND	0.23	pg/g	SW846 8290	
1,2,3,7,8-PeCDD	ND	0.79	pg/g	SW846 8290	
Total PeCDD	ND	2.4	pg/g	SW846 8290	
1,2,3,4,7,8-HxCDD	ND	0.56	pg/g	SW846 8290	
1,2,3,6,7,8-HxCDD	ND	0.51	pg/g	SW846 8290	
1,2,3,7,8,9-HxCDD	ND	0.50	pg/g	SW846 8290	
Total HxCDD	ND	0.56	pg/g	SW846 8290	
1,2,3,4,6,7,8-HpCDD	ND	0.81	pg/g	SW846 8290	
Total HpCDD	ND	0.81	pg/g	SW846 8290	
OCDD	ND	1.3	pg/g	SW846 8290	
2,3,7,8-TCDF	ND	0.17	pg/g	SW846 8290	
Total TCDF	ND	0.37	pg/g	SW846 8290	
1,2,3,7,8-PeCDF	ND	0.34	pg/g	SW846 8290	
2,3,4,7,8-PeCDF	ND	0.33	pg/g	SW846 8290	
Total PeCDF	ND	0.38	pg/g	SW846 8290	
1,2,3,4,7,8-HxCDF	ND	0.54	pg/g	SW846 8290	
1,2,3,6,7,8-HxCDF	ND	0.51	pg/g	SW846 8290	
2,3,4,6,7,8-HxCDF	ND	0.55	pg/g	SW846 8290	
1,2,3,7,8,9-HxCDF	ND	0.56	pg/g	SW846 8290	
Total HxCDF	ND	0.56	pg/g	SW846 8290	
1,2,3,4,6,7,8-HpCDF	ND	0.56	pg/g	SW846 8290	
1,2,3,4,7,8,9-HpCDF	ND	0.63	pg/g	SW846 8290	
Total HpCDF	ND	0.63	pg/g	SW846 8290	
OCDF	ND	1.4	pg/g	SW846 8290	

Results and reporting limits have been adjusted for dry weight.

Inorganic Analysis		Soil			Reviewed
Method for Determination of Water Content of Soil	11.3		%	**ASTM D 2216-90**	

CASE NARRATIVE
for
MWH LABORATORIES
MWH PROJECT: 99-22088/169215
CDM/ASHTABULA SITE
SDG: 158048

April 12, 2006

Laboratory Identification:

General Engineering Laboratories, LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample receipt The samples arrived at General Engineering Laboratories, LLC, Charleston, South Carolina on March 10, 2006 for analysis. Shipping container temperatures were checked, documented, and within specifications. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage.

Sample Identification The laboratory received the following samples:

Laboratory ID	Client ID
158048001	2603090024
158048002	2603090027
158048003	2603090028
158048004	2603090026
158048005	2603090029

Case Narrative

Sample analyses were conducted using methodology as outlined in General Engineering Laboratories (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Radiochemistry.

This data package, to the best of my knowledge, is in compliance with technical and administrative requirements.

Edith M. Kent

Edith Kent

Project Manager

Chain of Custody and Supporting Documentation

MWH Laboratories
A Division of MWH Americas,Inc.
750 Royal Oaks Drive Suite 100
Monrovia, CA 91016-3629
Ph (626) 386-1100 Fax (626) 386-1095

Date 03/09/06

Submittal Form & Purchase Order 99-22088

REPORTING REQUIREMENTS:** ***Do Not Combine Report with any other samples submitted under different MWH project numbers!
Report & Invoice must have the MWH Project Number **169215** Sub PO# **99-22088** and Job # **Find Out**

Report all quality control data according to Method. Include dates analyzed, date extracted (if extracted) and Method reference on the report.
Results must have Complete data & QC with Approval Signature. See reverse side for List of Terms and Conditions

Ship To **Edie Kent**
General Engineering Laboratories, LLC
2040 Savage Road
Charleston, SC 29414

(843) 556-8171 X4433 Fax (843) 766-1178

Reports: Julie Lee Sub-contracting Administrator
EMAIL TO: Julie.Lee@mwhglobal.com
MWH Laboratories 750 Royal Oaks Dr. Ste. 100, Monrovia, CA 91016
Phone (626) 386-1136 Fax (626) 386-1095
Invoices to: MWH LABORATORIES
Accounts Payable PO BOX 6610, Broomfield, CO 80021

Provide in each Report the Specified State Certification # & Exp Date for requested tests + matrix

CA ELAP OK

EXTRA VOLUME PROVIDED FOR 2603090029. PLEASE SPIKE IF POSSIBLE OR ANALYZE IN DUPLICATE.

MWH Project #	Report Due:	Sub PO#
169215	03/24/06	99-22088
JDL		

158048?

Use MWH Lab # for ID

		Client Sample ID for reference only		Analysis Requested	Sample Date & Time	Matrix	Container
1	CUSTSUB	**2603090024**	M120-0.5	RADIUM 226	03/07/06 9:10	soil	8oz. glass jars
2				RADIUM 228			
3				LEAD 210			
4				LEAD212			
5				THORIUM (ISOTOPIC)			
6				URANIUM (ISOTOPIC)			
7				URANIUM (TOTAL)			
8				PRONACTINIUM 231			
9				ACTINIUM 228			
10				BISMUTH 212			
11				GROSS ALPHA (ADJUSTED)			
12				POLONIUM 210			
13	CUSTSUB	**2603090027**	M120-10	RADIUM 226	03/07/06 10:10	soil	8oz. glass jars
14				RADIUM 228			

Relinquished by: Sample Control Date 03/09/06 Time 1536 MUST HAVE NOTIFICAION IF TEMP IS GREATER THAN 6 OR LESS THAN 2 CELSIUS

Received by: Date 3/10/06 Time 0915

An Acknowledgement of Receipt is requested to attn: Michael Lettona

MWH Project **169215** Sub PO# **99-22088** Montgomery Watson Laboratories page 2

Use MWH LAB#

Row		*Client Sample ID for reference only*	Analysis Requested	Sample Date & Time	Matrix	Container
15			LEAD 210			
16			LEAD212			
17			THORIUM (ISOTOPIC)			
18			URANIUM (ISOTOPIC)			
19			URANIUM (TOTAL)			
20			PRONACTINIUM 231			
21			ACTINIUM 228			
22			BISMUTH 212			
23			GROSS ALPHA (ADJUSTED)			
24			POLONIUM 210			
25	CUSTSUB	**2603090028** M120-30	RADIUM 226	03/07/06 11:45	soil	8oz. glass jars
26			RADIUM 228			
27			LEAD 210			
28			LEAD212			
29			THORIUM (ISOTOPIC)			
30			URANIUM (ISOTOPIC)			
31			URANIUM (TOTAL)			
32			PRONACTINIUM 231			
33			ACTINIUM 228			
34			BISMUTH 212			
35			GROSS ALPHA (ADJUSTED)			
36			POLONIUM 210			
37	CUSTSUB	**2603090026** M120-5	RADIUM 226	03/07/06 9:30	soil	8oz. glass jars
38			RADIUM 228			
39			LEAD 210			
40			LEAD212			

Relinquished by: Sample Control Date 03/09/06 Time 1536 MUST HAVE NOTIFICAION IF TEMP IS GREATER THAN 6 OR LESS THAN 2 CELSIUS

Received by: Date 3/10/06 Time 0915 An Acknowledgement of Receipt Is requested to attn: Michael Lettona

MWH Project **169215** Sub PO# **99-22088** Montgomery Watson Laboratories page 2

Use MWH LAB#

Row	Client Sample ID for reference only		Analysis Requested	Sample Date & Time	Matrix	Container
41						
42			THORIUM (ISOTOPIC)			
43			URANIUM (ISOTOPIC)			
44			URANIUM (TOTAL)			
45	USTSUB	**2603090029** M120-50	RADIUM 226	03/07/06 12:45	soil	8oz. glass jars
46			RADIUM 228			
47			LEAD 210			
48			LEAD212			
49			THORIUM (ISOTOPIC)			
50			URANIUM (ISOTOPIC)			
			URANIUM (TOTAL)			

Page 6 of 8?

Page 35 of 95

Relinquished by: Sample Control Date 03/09/06 Time 1536 MUST HAVE NOTIFICAION IF TEMP IS GREATER THAN 6 OR LESS THAN 2 CELSIUS

Page 3

Received by: Date 3/10/06 Time 0915 An Acknowledgement of Receipt is requested to attn: Michael Lettona

SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: MWH Labs	SDG/ARCOC/Work Order: 169215/99-22088
Date Received: 3/16/06	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: [illegible]	

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
2	Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.		✓		Circle Coolant # ice bags blue ice dry ice (none) other describe) 17°C
3	Chain of custody documents included with shipment?	✓			
4	Sample containers intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
5	Samples requiring chemical preservation at proper pH?		✓		Sample ID's, containers affected and observed pH:
6	VOA vials free of headspace (defined as < 6mm bubble)?		✓		Sample ID's and containers affected:
7	Are Encore containers present? (If yes, immediately deliver to VOA laboratory)			✓	
8	Samples received within holding time?	✓			Id's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Sample ID's affected:
11	Number of containers received match number indicated on COC?			✓	Sample ID's affected: 0024, 0027, 0028 – 1 each 0026, 0029 – 2 each
12	COC form is properly signed in relinquished/received sections?	✓			
14	Air Bill ,Tracking #'s, & Additional Comments	Fed Ex 6912 3665 1440			

	Suspected Hazard Information	Non-Regulated	Regulated	High Level	RSO RAD Receipt # _____ *If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
A	Radiological Classification?	✓			Maximum Counts Observed*: 20 CPM
B	PCB Regulated?	✓			Comments:
C	Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	✓			Hazard Class Shipped: UN#:

PM (or PMA) review of Hazard classification: [illegible] Initials [illegible] Date:

Subject: More on Tronox Samples Received
From: Edie Kent <emk@gel.com>
Date: Fri, 10 Mar 2006 13:27:58 -0500
To: Linda Geddes <Linda.Geddes@us.mwhglobal.com>
CC: Edie Kent <emk@gel.com>, benjamin Jenkins <ben01079@gel.com>

Linda:
Additionally, the samplers did not sign the chain when they relinquished the samples.

Also, there is a note on the chain that an acknowledgment of receipt is requested to Michael Lettona's attention. Can you provide an e-mail address for him so that we can send that to him?

Will we be receiving samples tomorrow?

Edie

Edie Kent wrote:

> Linda:
> We received the soil samples today. The samples arrived at 17C which would not be an issue with the tests requested. We received 2 containers each for 2603090026 and 2603090029 and one container each for all other samples. The chain only indicates that extra volume is being sent for sample 2603090029.
>
> Edie

--
Edith M. Kent
Project Manager
General Engineering Laboratories, LLC
2040 Savage Road
PO Box 30712
Charleston, SC 29407
Phone: 843-556-8171, ext. 4453
Fax: 843-766-1178
e-mail: emk@gel.com
web-site: www.gel.com

RADIOLOGICAL ANALYSIS

Radiochemistry Case Narrative
MWH Laboratories (MWHL)
Work Order 158048

Method/Analysis Information

Product:	**Alphaspec Po210, solid**
Analytical Method:	DOE EML HASL-300, Po-01-RC Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	515989
Prep Batch Number:	511798

Sample ID	Client ID
158048001	2603090024
158048002	2603090027
158048003	2603090028
1201060425	Method Blank (MB)
1201060426	158048002(2603090027) Sample Duplicate (DUP)
1201060427	158048002(2603090027) Matrix Spike (MS)
1201060428	Laboratory Control Sample (LCS)
1201060429	Qualification Sample (KNOWN)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-016 REV# 8.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 158048002 (2603090027).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
Batch was reprepped due to poor resolution. Sample 1201060428 (LCS) was recounted due to low/high recovery.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Manual Integration
No manual integrations were performed on data in this batch.

Additional Comments
The sample and duplicate, 1201060426 (2603090027) and 158048002 (2603090027), do not meet the relative percent difference requirements for Po-210, however they do meet the relative error ratio requirements with a value of 0.515.

Qualifier information
Manual qualifiers were not required.

Method/Analysis Information

Product:	**Alphaspec Th, Solid**
Analytical Method:	DOE EML HASL-300, Th-01-RC Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	512068
Prep Batch Number:	511800
Dry Soil Prep GL-RAD-A-021 Batch Number:	511798

Sample ID	Client ID
158048001	2603090024
158048002	2603090027
158048003	2603090028
158048004	2603090026
158048005	2603090029
1201051873	Method Blank (MB)
1201051874	158048005(2603090029) Sample Duplicate (DUP)
1201051875	158048005(2603090029) Matrix Spike (MS)
1201051876	Laboratory Control Sample (LCS)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-038 REV# 9.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 158048005 (2603090029).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Manual Integration
No manual integrations were performed on data in this batch.

Additional Comments
The sample 158048005 and duplicate 1201051874 do not meet the relative percent difference requirements for Th-232, however they do meet the relative error ratio requirements with a value of 1.48.

Qualifier information
Manual qualifiers were not required.

Method/Analysis Information

Product:	**Alphaspec U, Solid**
Analytical Method:	DOE EML HASL-300, U-02-RC Modified
Prep Method:	Ash Soil Prep

Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	512069
Prep Batch Number:	511800
Dry Soil Prep GL-RAD-A-021 Batch Number:	511798

Sample ID	Client ID
158048001	2603090024
158048002	2603090027
158048003	2603090028
158048004	2603090026
158048005	2603090029
1201051877	Method Blank (MB)
1201051878	158048005(2603090029) Sample Duplicate (DUP)
1201051879	158048005(2603090029) Matrix Spike (MS)
1201051880	Laboratory Control Sample (LCS)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 14.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 158048005 (2603090029).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Manual Integration
No manual integrations were performed on data in this batch.

Additional Comments
The sample 158048005 and duplicate 1201051878 do not meet the relative percent difference requirements for U-238, however they do meet the relative error ratio requirements with a value of 1.24.

Qualifier information
Manual qualifiers were not required.

Method/Analysis Information

Product:	**Gamma, (Ac-228,Bi-212,Pb-212,Ra-226,Ra-228,Pa-231)**
Analytical Method:	EML HASL 300, 4.5.2.3
Prep Method:	Dry Soil Prep
Analytical Batch Number:	513799
Prep Batch Number:	511798

Sample ID	Client ID
158048001	2603090024
158048002	2603090027
158048003	2603090028
158048004	2603090026
158048005	2603090029
1201055603	Method Blank (MB)
1201055604	158048005(2603090029) Sample Duplicate (DUP)
1201055605	Laboratory Control Sample (LCS)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 10.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 158048005 (2603090029).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
Sample 1201055605 (LCS) was recounted due to low/high recovery.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Qualifier information

Qualifier	Reason	Analyte	Sample
UI	Data rejected due to low abundance.	Lead-212	1201055603

Method/Analysis Information

Product:	**GFPC, Pb210, Solid**
Analytical Method:	DOE RP280 Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	517517
Prep Batch Number:	511800
Dry Soil Prep GL-RAD-A-021 Batch Number:	511798

Sample ID	Client ID
158048001	2603090024
158048002	2603090027
158048003	2603090028
158048004	2603090026
158048005	2603090029
1201063764	Method Blank (MB)
1201063765	158048005(2603090029) Sample Duplicate (DUP)

1201063766 158048005(2603090029) Matrix Spike (MS)
1201063767 Laboratory Control Sample (LCS)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-018 REV# 5.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 158048005 (2603090029).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Chemical Recoveries
All chemical recoveries meet the required acceptance limits for this sample set.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Qualifier information
Manual qualifiers were not required.

Method/Analysis Information

Product:	**GFPC, Gross Alpha Solid**
Analytical Method:	EPA 900.0 Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	516630
Prep Batch Number:	511798

Sample ID	Client ID
158048001	2603090024
158048002	2603090027
158048003	2603090028
1201061724	Method Blank (MB)
1201061725	158048001(2603090024) Sample Duplicate (DUP)
1201061726	158048001(2603090024) Matrix Spike (MS)
1201061727	Laboratory Control Sample (LCS)
1201061728	158048001(2603090024) Matrix Spike Duplicate (MSD)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-001B REV# 9.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 158048001 (2603090024).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Chemical Recoveries
All chemical recoveries meet the required acceptance limits for this sample set.

Gross Alpha/Beta Preparation Information
High hygroscopic salt content in evaporated samples can cause the sample mass to fluctuate due to moisture absorption. To minimize this interference, the salts are converted to oxides by heating the sample under a flame until a dull red color is obtained. The conversion to oxides stabilizes the sample weight and ensures that proper alpha/beta efficiencies are assigned for each sample. Volatile radioisotopes of carbon, hydrogen, technetium, polonium and cesium may be lost during sample heating.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Qualifier information
Manual qualifiers were not required.

Method/Analysis Information

Product:	**KPA, Total U, Solid**
Analytical Method:	ASTM D 5174
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	517556
Prep Batch Number:	511800
Dry Soil Prep GL-RAD-A-021 Batch Number:	511798

Sample ID	**Client ID**
158048001	2603090024
158048002	2603090027
158048003	2603090028
158048004	2603090026
158048005	2603090029
1201063863	Method Blank (MB)
1201063864	158048005(2603090029) Sample Duplicate (DUP)
1201063865	158048005(2603090029) Matrix Spike (MS)
1201063866	Laboratory Control Sample (LCS)
1201063867	Laboratory Control Sample Duplicate (LCSD)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-023 REV# 11.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met. The calibration for Total Uranium is

performed prior to each analysis and is located in the raw data section.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 158048005 (2603090029).

QC Information
Refer to Non-Conformance Report.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
The initial result of the following sample, 158048003 (2603090028), failed lifetime during initial analysis. Sample was reanalyzed and passed. Second result is reported. The initial results for samples 158048001 (2603090024) and 158048004 (2603090026) failed lifetime. Samples were diluted 1:10 and reanalyzed. The diluted samples were reanalyzed a second time to verify the initial diluted results. The initial diluted results are reported. The initial results for samples 158048002 (2603090027) and 158048005 (2603090029) were greater than CRDL. Samples were reanalyzed and passed. The batch was reprepped due to a failed laboratory control sample recovery and a failed relative percent difference.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. The following NCR was generated for this SDG:
NCR 306774 was generated due to Failed Recovery for MS/PS. 1.The matrix spike, 1201063865, did not meet the recovery requirement due to matrix interference. The batch was previously prepped with similar results. 1. Reporting results.

Qualifier information
Manual qualifiers were not required.

Certification Statement
Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Review Validation:
GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer/Date:  4/12/06

COMPANY - WIDE NONCONFORMANCE REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
10-APR-06	Radiochemistry	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
Kinetic Phosphorescence Analyzer	ASTM D 5174	Solid	MWHL
Batch ID:	**Sample Numbers:**		
517556	See Below		

Potentially affected work order(s)(SDG): 158048

Application Issues:

Failed Recovery for MS/PS

Specification and Requirements Nonconformance Description:	NRG Disposition:
1.The matrix spike, 1201063865, did not meet the recovery requirement due to matrix interference. The batch was previously prepped with similar results.	1. Reporting results.

Originator's Name:

Salina Pizarro 10-APR-06

Data Validator/Group Leader:

Melanie Aycock 11-APR-06

Quality Review:

Director:

SAMPLE DATA SUMMARY

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report
for

MWHL002 MWH Laboratories (PO 99-22088)

Client SDG: 158048 GEL Work Order: 158048

The Qualifiers in this report are defined as follows:

* Indicates that a quality control analyte recovery is outside of specified acceptance criteria.
< Result is less than amount reported.
> Result is greater than amount reported.
B Target analyte was detected in the sample as well as the associated blank.
BD Results below the MDC or low tracer recovery.
D Sample has been diluted and reanalyzed after initially exceeding inst. calibration range
E Concentration of the target analyte exceeds the instrument calibration range.
H Analytical holding time exceeded.
J Indicates an estimated value.
P The response between the confirmation and the primary columns is >40% Different.
R Sample results are rejected.
U Target analyte was analyzed for but not detected above the MDL or LOD.
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
Y QC Samples were not spiked with this compound.
Z Paint Filter qualifier: Particulates passed through the filter. No free liquids were observed.
d The 2:1 depletion requirement was not met for this sample
h Sample preparation or preservation holding time exceeded.
ND The analyte concentration is not detected above the reporting limit.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.
** Indicates the analyte is a surrogate compound.
This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Edith Kent.

Reviewed by

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : MWH Laboratories
Address : 750 Royal Oaks Drive, Suite 100
Monrovia, California 91016

Report Date: April 12, 2006

Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Client Sample ID: 2603090024
Sample ID: 158048001
Matrix: Soil
Collect Date: 07-MAR-06 09:10
Receive Date: 10-MAR-06
Collector: Client

Project: MWHL00106
Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate Time	Batch	Method
Rad Alpha Spec Analysis										
Alphaspec Po210, solid										
Polonium-210		1.76	+/-0.600	0.326	1.00	pCi/g		JXG1 04/05/06 1734	515989	1
Alphaspec Th, Solid										
Thorium-228		2.01	+/-0.617	0.348	1.00	pCi/g		DDR1 04/05/06 0952	512068	2
Thorium-230		1.09	+/-0.419	0.272	1.00	pCi/g				
Thorium-232		1.94	+/-0.592	0.187	1.00	pCi/g				
Alphaspec U, Solid										
Uranium-233/234		0.962	+/-0.339	0.227	1.00	pCi/g		DDR1 04/05/06 0819	512069	3
Uranium-235/236	U	-0.00891	+/-0.0748	0.196	1.00	pCi/g				
Uranium-238		0.911	+/-0.335	0.271	1.00	pCi/g				
Rad Gamma Spec Analysis										
Gamma, (Ac-228,Bi-212,Pb-212,Ra-226,Ra-228,Pa-231)										
Actinium-228		1.87	+/-0.126	0.0854	1.00	pCi/g		MJH1 04/06/06 2345	513799	4
Bismuth-212		1.28	+/-0.238	0.184	1.00	pCi/g				
Lead-212		1.97	+/-0.0566	0.042	10.0	pCi/g				
Protactinium-231	U	0.177	+/-0.626	1.10	0.500	pCi/g				
Radium-226		1.02	+/-0.0667	0.0462	2.00	pCi/g				
Radium-228		1.87	+/-0.126	0.0854	1.00	pCi/g				
Rad Gas Flow Proportional Counting										
GFPC, Gross Alpha Solid										
Alpha		19.9	+/-4.41	2.76	5.00	pCi/g		CXO1 04/03/06 1910	516630	5
GFPC, Pb210, Solid										
Lead-210	U	0.462	+/-0.490	1.03	3.00	pCi/g		BXF1 04/09/06 0957	517517	6
Rad Total Uranium										
KPA, Total U, Solid										
Total Uranium		21.1	+/-1.69	1.08	1.00	ug/g		DRS1 04/07/06 1326	517556	7

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL-RAD-A-021B	MXP2	03/16/06	0900	511800
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	03/15/06	1043	511798

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL-300, Po-01-RC Modified	

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : MWH Laboratories
Address : 750 Royal Oaks Drive, Suite 100
Monrovia, California 91016

Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Report Date: April 12, 2006

Client Sample ID: 2603090024
Sample ID: 158048001

Project: MWHL00106
Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
2	DOE EML HASL-300, Th-01-RC Modified										
3	DOE EML HASL-300, U-02-RC Modified										
4	EML HASL 300, 4.5.2.3										
5	EPA 900.0 Modified										
6	DOE RP280 Modified										
7	ASTM D 5174										

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Polonium-209	Alphaspec Po210, solid			57	(25%-125%)
Actinium-227	Alphaspec Th, Solid			108	
Actinium-227	Alphaspec Th, Solid			108	
Actinium-227	Alphaspec Th, Solid			108	
Uranium-232	Alphaspec U, Solid			90	(25%-125%)
Uranium-232	Alphaspec U, Solid			90	(25%-125%)
Uranium-232	Alphaspec U, Solid			90	(25%-125%)
Lead-210	GFPC, Pb210, Solid			50	(25%-125%)

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : MWH Laboratories
Address : 750 Royal Oaks Drive, Suite 100
Monrovia, California 91016

Report Date: April 12, 2006

Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Client Sample ID: 2603090027
Sample ID: 158048002
Matrix: Soil
Collect Date: 07-MAR-06 10:10
Receive Date: 10-MAR-06
Collector: Client

Project: MWHL00106
Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Alpha Spec Analysis											
Alphaspec Po210, solid											
Polonium-210		0.648	+/-0.383	0.177	1.00	pCi/g		JXG1 04/05/06	1734	515989	1
Alphaspec Th, Solid											
Thorium-228		1.44	+/-0.499	0.364	1.00	pCi/g		DDR1 04/05/06	0952	512068	2
Thorium-230		1.13	+/-0.426	0.310	1.00	pCi/g					
Thorium-232		1.98	+/-0.597	0.252	1.00	pCi/g					
Alphaspec U, Solid											
Uranium-233/234		1.24	+/-0.396	0.240	1.00	pCi/g		DDR1 04/05/06	0819	512069	3
Uranium-235/236		0.197	+/-0.172	0.118	1.00	pCi/g					
Uranium-238		0.812	+/-0.319	0.198	1.00	pCi/g					
Rad Gamma Spec Analysis											
Gamma, (Ac-228,Bi-212,Pb-212,Ra-226,Ra-228,Pa-231)											
Actinium-228		1.87	+/-0.250	0.084	1.00	pCi/g		MJH1 04/06/06	2345	513799	4
Bismuth-212		1.18	+/-0.233	0.183	1.00	pCi/g					
Lead-212		1.86	+/-0.152	0.0383	10.0	pCi/g					
Protactinium-231	U	-0.753	+/-0.572	0.981	0.500	pCi/g					
Radium-226		1.06	+/-0.122	0.0429	2.00	pCi/g					
Radium-228		1.87	+/-0.250	0.084	1.00	pCi/g					
Rad Gas Flow Proportional Counting											
GFPC, Gross Alpha Solid											
Alpha		20.1	+/-4.10	2.35	5.00	pCi/g		CXO1 04/03/06	1901	516630	5
GFPC, Pb210, Solid											
Lead-210	U	-0.0593	+/-0.322	0.842	3.00	pCi/g		BXF1 04/09/06	0957	517517	6
Rad Total Uranium											
KPA, Total U, Solid											
Total Uranium		2.73	+/-0.134	0.106	1.00	ug/g		DRS1 04/07/06	1328	517556	7

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL-RAD-A-021B	MXP2	03/16/06	0900	511800
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	03/15/06	1043	511798

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL-300, Po-01-RC Modified	

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Company : MWH Laboratories
Address : 750 Royal Oaks Drive, Suite 100
Monrovia, California 91016

Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Report Date: April 12, 2006

Client Sample ID: 2603090027
Sample ID: 158048002

Project: MWHL00106
Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
2	DOE EML HASL-300, Th-01-RC Modified										
3	DOE EML HASL-300, U-02-RC Modified										
4	EML HASL 300, 4.5.2.3										
5	EPA 900.0 Modified										
6	DOE RP280 Modified										
7	ASTM D 5174										

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Polonium-209	Alphaspec Po210, solid			45	(25%-125%)
Actinium-227	Alphaspec Th, Solid			106	
Actinium-227	Alphaspec Th, Solid			106	
Actinium-227	Alphaspec Th, Solid			106	
Uranium-232	Alphaspec U, Solid			91	(25%-125%)
Uranium-232	Alphaspec U, Solid			91	(25%-125%)
Uranium-232	Alphaspec U, Solid			91	(25%-125%)
Lead-210	GFPC, Pb210, Solid			66	(25%-125%)

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Company : MWH Laboratories
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Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Report Date: April 12, 2006

Client Sample ID: 2603090028
Sample ID: 158048003
Matrix: Soil
Collect Date: 07-MAR-06 11:45
Receive Date: 10-MAR-06
Collector: Client

Project: MWHL00106
Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Alpha Spec Analysis											
Alphaspec Po210, solid											
Polonium-210		0.623	+/-0.499	0.594	1.00	pCi/g		JXG1 04/05/06	1734	515989	1
Alphaspec Th, Solid											
Thorium-228		2.06	+/-0.567	0.281	1.00	pCi/g		DDR1 04/05/06	0952	512068	2
Thorium-230		1.77	+/-0.504	0.128	1.00	pCi/g					
Thorium-232		1.74	+/-0.499	0.151	1.00	pCi/g					
Alphaspec U, Solid											
Uranium-233/234		2.00	+/-0.493	0.216	1.00	pCi/g		DDR1 04/05/06	0819	512069	3
Uranium-235/236		0.280	+/-0.216	0.267	1.00	pCi/g					
Uranium-238		1.39	+/-0.416	0.267	1.00	pCi/g					
Rad Gamma Spec Analysis											
Gamma, (Ac-228,Bi-212,Pb-212,Ra-226,Ra-228,Pa-231)											
Actinium-228		2.24	+/-0.208	0.155	1.00	pCi/g		MJH1 04/06/06	2346	513799	4
Bismuth-212		1.33	+/-0.348	0.344	1.00	pCi/g					
Lead-212		2.26	+/-0.0797	0.0652	10.0	pCi/g					
Protactinium-231	U	0.00123	+/-1.01	1.81	0.500	pCi/g					
Radium-226		1.73	+/-0.114	0.0835	2.00	pCi/g					
Radium-228		2.24	+/-0.208	0.155	1.00	pCi/g					
Rad Gas Flow Proportional Counting											
GFPC, Gross Alpha Solid											
Alpha		18.9	+/-3.98	2.14	5.00	pCi/g		CXO1 04/03/06	1901	516630	5
GFPC, Pb210, Solid											
Lead-210	U	0.0294	+/-0.329	0.810	3.00	pCi/g		BXF1 04/09/06	0957	517517	6
Rad Total Uranium											
KPA, Total U, Solid											
Total Uranium		3.45	+/-0.128	0.107	1.00	ug/g		DRS1 04/07/06	1410	517556	7

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL-RAD-A-021B	MXP2	03/16/06	0900	511800
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	03/15/06	1043	511798

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL-300, Po-01-RC Modified	

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Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Report Date: April 12, 2006

Client Sample ID: 2603090028
Sample ID: 158048003

Project: MWHL00106
Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
2	DOE EML HASL-300, Th-01-RC Modified										
3	DOE EML HASL-300, U-02-RC Modified										
4	EML HASL 300, 4.5.2.3										
5	EPA 900.0 Modified										
6	DOE RP280 Modified										
7	ASTM D 5174										

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Polonium-209	Alphaspec Po210, solid			28	(25%-125%)
Actinium-227	Alphaspec Th, Solid			119	
Actinium-227	Alphaspec Th, Solid			119	
Actinium-227	Alphaspec Th, Solid			119	
Uranium-232	Alphaspec U, Solid			104	(25%-125%)
Uranium-232	Alphaspec U, Solid			104	(25%-125%)
Uranium-232	Alphaspec U, Solid			104	(25%-125%)
Lead-210	GFPC, Pb210, Solid			66	(25%-125%)

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Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Report Date: April 12, 2006

Client Sample ID: 2603090026
Sample ID: 158048004
Matrix: Soil
Collect Date: 07-MAR-06 09:30
Receive Date: 10-MAR-06
Collector: Client

Project: MWHL00106
Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Alpha Spec Analysis											
Alphaspec Th, Solid											
Thorium-228		1.88	+/-0.537	0.377	1.00	pCi/g		DDR1 04/05/06	0952	512068	1
Thorium-230		1.26	+/-0.409	0.263	1.00	pCi/g					
Thorium-232		1.99	+/-0.542	0.230	1.00	pCi/g					
Alphaspec U, Solid											
Uranium-233/234		1.18	+/-0.350	0.268	1.00	pCi/g		DDR1 04/05/06	0952	512069	2
Uranium-235/236	U	0.0953	+/-0.126	0.237	1.00	pCi/g					
Uranium-238		1.16	+/-0.342	0.205	1.00	pCi/g					
Rad Gamma Spec Analysis											
Gamma, (Pb-212,Ra-226,Ra-228)											
Lead-212		1.79	+/-0.0815	0.0766	10.0	pCi/g		MJH1 04/06/06	2346	513799	3
Radium-226		0.907	+/-0.114	0.0884	2.00	pCi/g					
Radium-228		1.86	+/-0.227	0.167	1.00	pCi/g					
Rad Gas Flow Proportional Counting											
GFPC, Pb210, Solid											
Lead-210	U	0.0735	+/-0.414	1.01	3.00	pCi/g		BXF1 04/09/06	0957	517517	4
Rad Total Uranium											
KPA, Total U, Solid											
Total Uranium		26.2	+/-1.58	1.08	1.00	ug/g		DRS1 04/07/06	1332	517556	5

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL-RAD-A-021B	MXP2	03/16/06	0900	511800
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	03/15/06	1043	511798

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL-300, Th-01-RC Modified	
2	DOE EML HASL-300, U-02-RC Modified	
3	EML HASL 300, 4.5.2.3	
4	DOE RP280 Modified	
5	ASTM D 5174	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits

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Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Report Date: April 12, 2006

Client Sample ID: 2603090026
Sample ID: 158048004

Project: MWHL00106
Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Surrogate/Tracer recovery	**Test**						**Result**	**Nominal**	**Recovery%**	**Acceptable Limits**	
Actinium-227	Alphaspec Th, Solid								118		
Actinium-227	Alphaspec Th, Solid								118		
Actinium-227	Alphaspec Th, Solid								118		
Uranium-232	Alphaspec U, Solid								105	(25%-125%)	
Uranium-232	Alphaspec U, Solid								105	(25%-125%)	
Uranium-232	Alphaspec U, Solid								105	(25%-125%)	
Lead-210	GFPC, Pb210, Solid								51	(25%-125%)	

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Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Report Date: April 12, 2006

Client Sample ID: 2603090029
Sample ID: 158048005
Matrix: Soil
Collect Date: 07-MAR-06 12:45
Receive Date: 10-MAR-06
Collector: Client

Project: MWHL00106
Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Alpha Spec Analysis											
Alphaspec Th, Solid											
Thorium-228		1.80	+/-0.534	0.355	1.00	pCi/g		DDR1 04/05/06	0952	512068	1
Thorium-230		1.55	+/-0.475	0.232	1.00	pCi/g					
Thorium-232		1.28	+/-0.414	0.0738	1.00	pCi/g					
Alphaspec U, Solid											
Uranium-233/234		2.36	+/-0.512	0.243	1.00	pCi/g		DDR1 04/05/06	0952	512069	2
Uranium-235/236	U	0.0797	+/-0.122	0.243	1.00	pCi/g					
Uranium-238		1.97	+/-0.464	0.176	1.00	pCi/g					
Rad Gamma Spec Analysis											
Gamma, (Pb-212,Ra-226,Ra-228)											
Lead-212		1.50	+/-0.135	0.0539	10.0	pCi/g		MJH1 04/06/06	2346	513799	3
Radium-226		1.34	+/-0.155	0.065	2.00	pCi/g					
Radium-228		1.45	+/-0.251	0.128	1.00	pCi/g					
Rad Gas Flow Proportional Counting											
GFPC, Pb210, Solid											
Lead-210	U	0.533	+/-0.462	0.935	3.00	pCi/g		BXF1 04/09/06	0957	517517	4
Rad Total Uranium											
KPA, Total U, Solid											
Total Uranium		4.10	+/-0.202	0.0981	1.00	ug/g		DRS1 04/07/06	1334	517556	5

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL-RAD-A-021B	MXP2	03/16/06	0900	511800
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	03/15/06	1043	511798

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL-300, Th-01-RC Modified	
2	DOE EML HASL-300, U-02-RC Modified	
3	EML HASL 300, 4.5.2.3	
4	DOE RP280 Modified	
5	ASTM D 5174	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits

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Company : MWH Laboratories
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Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Report Date: April 12, 2006

Client Sample ID: 2603090029
Sample ID: 158048005

Project: MWHL00106
Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Surrogate/Tracer recovery	**Test**						**Result**	**Nominal**	**Recovery%**	**Acceptable Limits**	
Actinium-227	Alphaspec Th, Solid								101		
Actinium-227	Alphaspec Th, Solid								101		
Actinium-227	Alphaspec Th, Solid								101		
Uranium-232	Alphaspec U, Solid								90	(25%-125%)	
Uranium-232	Alphaspec U, Solid								90	(25%-125%)	
Uranium-232	Alphaspec U, Solid								90	(25%-125%)	
Lead-210	GFPC, Pb210, Solid								57	(25%-125%)	

QUALITY CONTROL DATA

QC Summary

MWH Laboratories
750 Royal Oaks Drive, Suite 100
Monrovia, California

Report Date: April 12, 2006

Contact: Ms. Julie Lee

Workorder: 158048

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Alpha Spec										
Batch 512068										
QC1201051874 158048005 DUP										
Thorium-228		1.80 +/-0.534		1.69 +/-0.586	pCi/g	6		(0%-20%)	DDR1	04/05/06 09:52
Thorium-230		1.55 +/-0.475		1.59 +/-0.549	pCi/g	3		(0%-20%)		
Thorium-232		1.28 +/-0.414		1.83 +/-0.600	pCi/g	35*		(0%-20%)		
QC1201051876 LCS										
Thorium-228			U	0.0767 +/-0.166	pCi/g			(75%-125%)		
Thorium-230				39.4 +/-6.74	pCi/g			(75%-125%)		
Thorium-232	45.3		U	0.0899 +/-0.105	pCi/g		88	(75%-125%)		
QC1201051873 MB										
Thorium-228			U	0.172 +/-0.163	pCi/g					
Thorium-230			U	-0.0102 +/-0.054	pCi/g					
Thorium-232			U	-0.00558 +/-0.0112	pCi/g					
QC1201051875 158048005 MS										
Thorium-228		1.80 +/-0.534		1.66 +/-0.494	pCi/g			(75%-125%)		
Thorium-230		1.55 +/-0.475		41.2 +/-6.64	pCi/g			(75%-125%)		
Thorium-232	45.3	1.28 +/-0.414		1.86 +/-0.503	pCi/g		88	(75%-125%)		
Batch 512069										
QC1201051878 158048005 DUP										
Uranium-233/234		2.36 +/-0.512		2.22 +/-0.513	pCi/g	6		(0%-20%)	DDR1	04/05/06 09:52
Uranium-235/236	U	0.0797 +/-0.122	U	0.176 +/-0.163	pCi/g	75*		(0%-20%)		
Uranium-238		1.97 +/-0.464		1.52 +/-0.424	pCi/g	26*		(0%-20%)		
QC1201051880 LCS										
Uranium-233/234				10.1 +/-1.31	pCi/g			(75%-125%)		
Uranium-235/236				0.488 +/-0.319	pCi/g			(75%-125%)		
Uranium-238	11.0			11.0 +/-1.36	pCi/g		100	(75%-125%)		
QC1201051877 MB										

QC Summary

Workorder: 158048

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Alpha Spec										
Batch 512069										
Uranium-233/234			U	0.106 +/-0.117	pCi/g					
Uranium-235/236			U	0.0168 +/-0.067	pCi/g				DDR1	04/05/06 09:52
Uranium-238			U	-0.0377 +/-0.0302	pCi/g					
QC1201051879 158048005 MS										
Uranium-233/234		2.36 +/-0.512		9.55 +/-1.10	pCi/g			(75%-125%)		
Uranium-235/236		U 0.0797 +/-0.122		1.57 +/-0.496	pCi/g			(75%-125%)		
Uranium-238	11.0	1.97 +/-0.464		12.4 +/-1.25	pCi/g		95	(75%-125%)		
Batch 515989										
QC1201060426 158048002 DUP										
Polonium-210		0.648 +/-0.383		0.802 +/-0.406	pCi/g	21*		(0%-20%)	JXG1	04/05/06 17:34
QC1201060429 KNOWN										
Polonium-210	7.70			7.41 +/-0.958	pCi/g		96			
QC1201060428 LCS										
Polonium-210	7.70			6.08 +/-1.19	pCi/g		79	(75%-125%)		04/06/06 13:23
QC1201060425 MB										
Polonium-210			U	-0.0227 +/-0.0315	pCi/g					04/05/06 17:34
QC1201060427 158048002 MS										
Polonium-210	8.90	0.648 +/-0.383		10.6 +/-1.52	pCi/g		112	(75%-125%)		
Rad Gamma Spec										
Batch 513799										
QC1201055604 158048005 DUP										
Actinium-228		1.45 +/-0.251		1.47 +/-0.262	pCi/g	2			MJH1	04/10/06 15:42
Bismuth-212		0.979 +/-0.325		0.908 +/-0.261	pCi/g	8				
Lead-212		1.50 +/-0.135		1.60 +/-0.167	pCi/g	6				
Protactinium-231		U -0.347 +/-0.825	U	-0.378 +/-0.855	pCi/g	9				
Radium-226		1.34 +/-0.155		1.49 +/-0.158	pCi/g	11		(0%-20%)		
Radium-228		1.45 +/-0.251		1.47 +/-0.262	pCi/g	2		(0%-20%)		
QC1201055605 LCS										
Actinium-228			U	0.401 +/-0.573	pCi/g					04/12/06 12:22
Americium-241	24.4			24.3	pCi/g		100	(75%-125%)		

QC Summary

Workorder: 158048

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 513799										
Bismuth-212			U	+/-1.38 -0.248 +/-0.930	pCi/g				MJH1	04/12/06 12:22
Cesium-137	9.29			9.78 +/-0.441	pCi/g		105	(75%-125%)		
Cobalt-60	13.4			13.9 +/-0.616	pCi/g		104	(75%-125%)		
Lead-212			U	0.00864 +/-0.155	pCi/g					
Protactinium-231			U	-2.99 +/-4.49	pCi/g					
Radium-226			U	0.0932 +/-0.211	pCi/g			(75%-125%)		
Radium-228			U	0.401 +/-0.573	pCi/g			(75%-125%)		
QC1201055603 MB										
Actinium-228			U	0.000515 +/-0.0619	pCi/g					04/10/06 11:17
Bismuth-212			U	-0.00629 +/-0.0918	pCi/g					
Lead-212			UUI	0.00 +/-0.0338	pCi/g					
Protactinium-231			U	-0.332 +/-0.506	pCi/g					
Radium-226			U	0.0138 +/-0.0214	pCi/g					
Radium-228			U	0.000515 +/-0.0619	pCi/g					
Rad Gas Flow										
Batch 516630										
QC1201061725 158048001 DUP										
Alpha		19.9 +/-4.41		22.1 +/-4.81	pCi/g	10		(0%-20%)	CXO1	04/03/06 19:01
QC1201061727 LCS										
Alpha	108			102 +/-7.72	pCi/g		94	(75%-125%)		
QC1201061724 MB										
Alpha			U	0.514 +/-0.742	pCi/g					
QC1201061726 158048001 MS										
Alpha	102	19.9 +/-4.41		112 +/-10.1	pCi/g		90	(75%-125%)		
QC1201061728 158048001 MSD										
Alpha	102	19.9 +/-4.41		103 +/-9.30	pCi/g	8	82			
Batch 517517										
QC1201063765 158048005 DUP										

QC Summary

Workorder: 158048

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gas Flow											
Batch 517517											
Lead-210		U	0.533 +/-0.462	U	0.0696 +/-0.366	pCi/g	0		(0%-20%)	BXF1	04/09/06 09:57
QC1201063767 LCS											
Lead-210	7.02				5.38 +/-0.793	pCi/g		77	(75%-125%)		
QC1201063764 MB											
Lead-210				U	0.0926 +/-0.347	pCi/g					
QC1201063766 158048005 MS											
Lead-210	7.67	U	0.533 +/-0.462		6.53 +/-1.01	pCi/g		85	(75%-125%)		
Rad Total U											
Batch 517556											
QC1201063864 158048005 DUP											
Total Uranium			4.10 +/-0.202		4.20 +/-0.155	ug/g	3		(0%-20%)	DRS1	04/07/06 13:14
QC1201063866 LCS											
Total Uranium	9.52				7.26 +/-0.779	ug/g		76	(75%-125%)		04/07/06 13:24
QC1201063867 LCSD											
Total Uranium	0.952				0.898 +/-0.0199	ug/g	156	94			04/07/06 13:19
QC1201063863 MB											
Total Uranium				U	0.0814 +/-0.00273	ug/g					04/07/06 13:10
QC1201063865 158048005 MS											
Total Uranium	8.77		4.10 +/-0.202		9.94 +/-0.739	ug/g		67*	(75%-125%)		04/07/06 13:18

Notes:
The Qualifiers in this report are defined as follows:

- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.
- E Concentration of the target analyte exceeds the instrument calibration range.
- H Analytical holding time exceeded.
- J Indicates an estimated value.
- U Target analyte was analyzed for but not detected above the MDL or LOD.
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- d The 2:1 depletion requirement was not met for this sample
- h Sample preparation or preservation holding time exceeded.

QC Summary

Workorder: 158048

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Laboratory Data Package

Lab Name: EMS Laboratories, Inc. City/State: Pasadena, California

MWH PROJECT # 169215,
Sub PO#99-22089

	Page Nos From	To
1. Inventory Sheet (DC-2) not numbered		
2. Cover Page	1	1
3. Narrative	2	2
4. PLM Results	3	4
5. Bench Sheets	5	6
PLM		
6. Calibrations	7	10
7. Blank - SRM Glass Fibers as the Blank	11	14
8. Replicate	3	4
9. Shipping /Receiving Documents		
Airbill (No. of Shipments 1)	NONE	
Seals, Copies of Tags	NONE	
Chain-of-Custody Records EMS, MWH	15	16
10. Sample Log-in-sheet		
EMS Laboratories	17	19
DC - 1	20	20
11: Tracking Sheets	21	21
12. PLM NVLAP proficiency Results	22	26

Completed by:

Bernadine Kolk

Signature

Bernadine Kolk, Laboratory Director
Print Name & Title

5/19/06
Date

EMS LABORATORIES 117 West Bellevue Drive / Pasadena CA 91105 2503 /626 568 4065

COVER PAGE

DATE: May 19, 2006

CLIENT: MWH Laboratories, Inc.
750 Royal Oaks Drive, Ste 100
Monrovia, CA 91016

ATTENTION: Julie Lee, Linda Geddes

REFERENCE: Project No.: 169215
Sub PO#99-22089

REPORT NO: 106002

SAMPLES SUBMITTED IN PACKAGE: Soils

Three samples were submitted for PLM analysis

The samples were identified as follows:

2603090024
2603090027
2063090028

The sample identifications and assigned EMS Laboratories, Numbers are found in the Narrative which follows.

Respectfully submitted,

EMS LABORATORIES, INC.

A.J. Kolk
Technical Director

AJK/ah

NOTE: The results of the analysis are based upon the samples submitted to the laboratory. No representation is made regarding the sampling area other than that implied by the analytical results for the immediate vicinity of the samples analyzed as calculated from the data presented with those samples.
This report, from a NIST laboratory through NVLAP, must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.
This report shall not be reproduced, except in full, without the written approval of EMS Laboratories, Inc.
Any deviation or exclusion from the test method is noted in this cover letter.
Unless otherwise noted in this cover letter, the samples were received properly packaged, clearly identified and intact.

NARRATIVE

REFERENCE: Project No.: 169215
Sub PO#99-22089

REPORT NO: 106002

Three samples were received on March 10, 2006 at 12:00pm for asbestos analysis by PLM. The samples were collected on March 7, 2006. The samples were identified as:

Sample No.	EMS Lab No.
2603090024	106002-4
2603090027	106002-7
2603090028	106002-8

No problems were encounter during sample receipt.

The soil samples were prepared according to CARB 435 and analyzed according to EPA 600/R-93/116.

The samples were dried at 60°C for four hours. The dried soil was crushed and milled until the final material was 200 mesh or less.

The soil was first examined at low magnification in a stereo microscope for suspected asbestos fiber bundles or mats.

The samples were then analyzed by PLM with dispersion staining for asbestos fibers. If none were found in the first preparation, two more preparations were made.

Instruments used were Zeiss a microscopes, Serial Nos. 122310 and 102702. The microscopes were serviced on May 13, 2005 by an optical microscope specialist firm.

The calibration of the refractive index liquid (used for dispersion staining) is enclosed.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. In addition, I certify that to the best of my knowledge and belief, the data as reported are true and accurate. Release of the data contained in this data package has been authorized by A.J. Kolk, Jr., Technical Director, as verified by the following signature.

A.J. Kolk, Jr.
Technical Director
May 19, 2006

EMS LABORATORIES 117 West Bellevue Drive / Pasadena CA 91105 2503 (626) 568-4065

Soil Analysis

CARB 435 METHOD (Determination of Asbestos Content)

LABORATORY NO:	106002	**DATE OF RECEIVED:**	3-10-06
CLIENT:	MWH LABS	**DATE OF ANALYSIS:**	3-15-06
ATTENTION:	Julie Lee	**QC ANALYST:**	Sojean Peau
REFERENCE NO:	169215	**ANALYST:**	Jeff Wan

SAMPLE ID: 2603090024

SAMPLE APPEARANCE	BROWN GRANULAR		
OTHER FIBROUS MATERIAL	CELLULOSE LESS THAN 1% GLASSWOOL LESS THAN 1%		
NON FIBROUS MATERIAL	GRANULAR MINERALS OPAQUES MICA		
POINT COUNT	1 NA	**POINT COUNT**	5 NA
	2 NA		6 NA
	3 NA		7 NA
	4 NA		8 NA
VISUAL ESTIMATE	1 NONE DETECTED	**ASBESTOS TYPE & PERCENTAGE**	NONE DETECTED
	2 NONE DETECTED		
	3 NONE DETECTED		

SAMPLE ID: 2603090027

SAMPLE APPEARANCE	BROWN GRANULAR		
OTHER FIBROUS MATERIAL	CELLULOSE LESS THAN 1%, GLASSWOOL LESS THAN 1% SYNTHETICS LESS THAN 1%		
NON FIBROUS MATERIAL	GRANULAR MINERALS OPAQUES MICA		
POINT COUNT	1 NA	**POINT COUNT**	5 NA
	2 NA		6 NA
	3 NA		7 NA
	4 NA		8 NA
VISUAL ESTIMATE	1 NONE DETECTED (sp)	**ASBESTOS TYPE & PERCENTAGE**	NONE DETECTED
	2 NONE DETECTED		
	3 NONE DETECTED		

If visual extimate <10%, do 8 preps with 50 pts each, 3 preps for negative and >10% do visual estimate

Soil Analysis

CARB 435 METHOD (Determination of Asbestos Content)

LABORATORY NO:	106002	**DATE OF RECEIVED:**	3-10-06
CLIENT:	MWH LABS	**DATE OF ANALYSIS:**	3-15-06
ATTENTION:	Julie Lee	**QC ANALYST:**	
REFERENCE NO:	169215	**ANALYST:**	Jeff Wan
SAMPLE ID:	2603090028		
SAMPLE APPEARANCE	BROWN GRANULAR		
OTHER FIBROUS MATERIAL	CELLULOSE LESS THAN 1% GLASSWOOL LESS THAN 1%		
NON FIBROUS MATERIAL	GRANULAR MINERALS OPAQUES MICA		

POINT COUNT	**1**	NA	**POINT COUNT**	**5**	NA
	2	NA		**6**	NA
	3	NA		**7**	NA
	4	NA		**8**	NA
VISUAL ESTIMATE	**1**	NONE DETECTED	**ASBESTOS TYPE & PERCENTAGE**		NONE DETECTED
	2	NONE DETECTED			
	3	NONE DETECTED			

If visual extimate <10%, do 8 preps with 50 pts each, 3 preps for negative and >10% do visual estimate

Soil Analysis

CARB 435 METHOD (Determination of Asbestos Content)

LABORATORY NO:	106002	**DATE OF RECEIVED:**	3-10-06
CLIENT:	MWH LABS	**DATE OF ANALYSIS:**	3-15-06
ATTENTION:	N.A.	**QC ANALYST:**	SP
REFERENCE NO:	169215	**ANALYST:**	

SAMPLE ID: 2603090024

SAMPLE APPEARANCE: BROWN GRANULAR

OTHER FIBROUS MATERIAL: Cellulose <1%, Glass wool <1%

NON FIBROUS MATERIAL: Granular mineral, Opaques, Mica

POINT COUNT		POINT COUNT	
1		5	
2		6	
3		7	
4		8	

VISUAL ESTIMATE		ASBESTOS TYPE & PERCENTAGE	
1	N.D.		N.D.
2	N.D.		
3	N.D.		

SAMPLE ID: 2603090027

SAMPLE APPEARANCE: BROWN GRANULAR

OTHER FIBROUS MATERIAL: Cellulose <1, Glass wool <1%

NON FIBROUS MATERIAL: Granular mineral, Opaques, Mica

POINT COUNT		POINT COUNT	
1		5	
2		6	
3		7	
4		8	

VISUAL ESTIMATE		ASBESTOS TYPE & PERCENTAGE	
1	N.D. SP		N.D.
2	N.D.		
3	N.D.		

If visual extimate <10%, do 8 preps with 50 pts each, 3 preps for negative and >10% do visual estimate

Soil Analysis

CARB 435 METHOD (Determination of Asbestos Content)

LABORATORY NO:	106002	**DATE OF RECEIVED:**	3-10-06
CLIENT:	MWH LABS	**DATE OF ANALYSIS:**	3-15-06
ATTENTION:	N.A.	**QC ANALYST:**	
REFERENCE NO:	169215	**ANALYST:**	

SAMPLE ID: 2603090028

SAMPLE APPEARANCE BROWN GRANULAR

OTHER FIBROUS MATERIAL Cellulose, Glass wool

NON FIBROUS MATERIAL Granular mineral, Quartz, Mica

POINT COUNT	1	**POINT COUNT**	5
	2		6
	3		7
	4		8

VISUAL ESTIMATE	1 N.D.	**ASBESTOS TYPE & PERCENTAGE**	N.D.
	2 N.D.		
	3 N.D.		

SAMPLE ID:

SAMPLE APPEARANCE

OTHER FIBROUS MATERIAL

NON FIBROUS MATERIAL

POINT COUNT	1	**POINT COUNT**	5
	2		6
	3		7
	4		8

VISUAL ESTIMATE	1	**ASBESTOS TYPE & PERCENTAGE**	
	2		
	3		

If visual extimate <10%, do 8 preps with 50 pts each, 3 preps for negative and >10% do visual estimate

PLM CALIBRATION LOG BOOK 2006

Microscope Type: ZEISS STD 14

Mircoscope Serial No: 122310

Analyst: SOJEAN

PLM MICROSCOPE DAILY CALIBRATION SHEET FILE: XRD, CMPTR, PLM

Dates	User	Microscope	Objective Centering	Kohler Illum.	X-Polars Align	X-Hair Align	Lab Temp.	Daily RTI Ref. No.	Daily RTI Ref. Result	Daily RTI Ref. QC	Remarks
3/1/06		NIKON/ZEISS	✓	✓	✓	✓	22.0	13	8%	6%	
3/2/06		NIKON/ZEISS	✓	✓	✓	✓	21.0	14	7.1%	7%	
3/3/06		NIKON/ZEISS	✓	✓	✓	✓	21.5	15	1%	1%	
3/4/06		NIKON/ZEISS									
3/5/06		NIKON/ZEISS									
3/6/06		NIKON/ZEISS	✓	✓	✓	✓	22.0	16	ND	ND	
3/7/06		NIKON/ZEISS	✓	✓	✓	✓	22.0	1	3%	<1%	
3/8/06		NIKON/ZEISS	✓	✓	✓	✓	21.5	2	2%	2%	
3/9/06		NIKON/ZEISS	✓	✓	✓	✓	21.0	3	5%	5%	
3/10/06		NIKON/ZEISS	✓	✓	✓	✓	20.5	4	3%	3%	
3/11/06		NIKON/ZEISS									
3/12/06		NIKON/ZEISS									
3/13/06		NIKON/ZEISS	✓	✓	✓	✓	17.5	5	3%	3%	
3/14/06		NIKON/ZEISS	✓	✓	✓	✓	21.0	6	1.9%	2%	
3/15/06		NIKON/ZEISS	✓	✓	✓	✓	21.0	7	7.1%	3%	
3/16/06		NIKON/ZEISS	✓	✓	✓	✓	22.0	8	1%	1.2%	
3/17/06		NIKON/ZEISS	✓	✓	✓	✓	21.0	11	3%	3%	
3/18/06		NIKON/ZEISS									
3/19/06		NIKON/ZEISS									
3/20/06		NIKON/ZEISS	✓	✓	✓	✓	20.0	12	12.9%	10%	
3/21/06		NIKON/ZEISS	✓	✓	✓	✓	20.0	13	8%	8%	
3/22/06		NIKON/ZEISS	✓	✓	✓	✓	20.0	14	7.1%	7%	
3/23/06		NIKON/ZEISS	✓	✓	✓	✓	20.0	15	1%	1%	
3/24/06		NIKON/ZEISS	✓	✓	✓	✓	20.5	16	ND	ND	
3/25/06		NIKON/ZEISS									
3/26/06		NIKON/ZEISS									
3/27/06		NIKON/ZEISS	✓	✓	✓	✓	20.0	1	3%	<1%	
3/28/06		NIKON/ZEISS	✓	✓	✓	✓	20.0	2	2%	2%	
3/29/06		NIKON/ZEISS	✓	✓	✓	✓	19.5	3	5%	5%	
3/30/06		NIKON/ZEISS	✓	✓	✓	✓	20.0	4	3%	3%	
3/31/06		NIKON/ZEISS	✓	✓	✓	✓	20.0	5	3%	3%	

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PLM CALIBRATION LOG BOOK 2005-6

Microscope Type: ZEISS STD

Mircoscope Serial No: 102742

Analyst: JEFF WAN

EMS LABORATORIES 117 West Bellevue Drive / Pasadena CA 91105-2503 /626-568-4065

PLM MICROSCOPE DAILY CALIBRATION SHEET

FILE:XRD, CMPTR, PLM

Dates	User	Microscope	Objective Centering	Kohler Illum.	X-Polars Align	X-Hair Align	Lab Temp.	Daily RTI Ref. No.	Daily RTI Ref. Result	Daily RTI Ref. QC	Remarks
3/1/06		NIKON/ZEISS									
3/2/06		NIKON/ZEISS									
3/3/06		NIKON/ZEISS									
3/4/06		NIKON/ZEISS									
3/5/06		NIKON/ZEISS									
3/6/06		NIKON/ZEISS									
3/7/06		NIKON/ZEISS									
3/8/06		NIKON/ZEISS									
3/9/06		NIKON/ZEISS									
3/10/06		NIKON/ZEISS									
3/11/06		NIKON/ZEISS									
3/12/06		NIKON/ZEISS									
3/13/06	Z	NIKON/ZEISS	✓	✓	✓	✓	23°	5	CHg <0.1	CHg <1%	
3/14/06	Z	NIKON/ZEISS	✓	✓	✓	✓	23°	2	0.5→1.0	CHg 1→2%	
3/15/06	Z	NIKON/ZEISS	✓	✓	✓	✓	23°	5	CHg 0.1	CHg <1%	
3/16/06	Z	NIKON/ZEISS	✓	✓	✓	✓	24	3	Amos 2% 1→1.50	CHg 5%	
3/17/06		NIKON/ZEISS									
3/18/06		NIKON/ZEISS									
3/19/06		NIKON/ZEISS									
3/20/06	Z	NIKON/ZEISS	✓	✓	✓	✓	23	1	CHg 0→0.25	CHg <1%	
3/21/06	Z	NIKON/ZEISS	✓	✓	✓	✓	24	3	Amos 5% 0→0.25	Amos <1% 5	
3/22/06	Z	NIKON/ZEISS	✓	✓	✓	✓	23	5	CHg 0→0.5	CHg 0 <1%	
3/23/06	Z	NIKON/ZEISS	✓	✓	✓	✓	21	8	Amos Ze 0.75→1.25	Amos Ze 2%	
3/24/06	Z	NIKON/ZEISS	✓	✓	✓	✓	24	9	CHg 2.0→2.5	CHg 2%	
3/25/06		NIKON/ZEISS									
3/26/06		NIKON/ZEISS									
3/27/06	Z	NIKON/ZEISS	✓	✓	✓	✓	23	12	Amos Ze 11.25→14	Amos Ze 10%	
3/28/06	Z	NIKON/ZEISS	✓	✓	✓	✓	24°	6	CHg 1.5→2.25	CHg 2%	
3/29/06	Z	NIKON/ZEISS	✓	✓	✓	✓	21°	5	CHg 0→0.5	CHg 0<1%	
3/30/06		NIKON/ZEISS									
3/31/06		NIKON/ZEISS									

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EMS LABORTORIES

PLM Hood #2

Log book

2006

HOOD #2 DATE	USER	CONTAMINATION CHECK				CLEANING	REMARK
		GLASS SILDE	COVER SLIP	1.55 HD.OIL	1866A F.GLASS		
3/1/06							
3/2/06	GS	✓	✓	✓	✓		
3/3/06							
3/4/06							
3/5/06							
3/6/06	GS	✓	✓	✓	✓		
3/7/06							
3/8/06							
3/9/06							
3/10/06	GS	✓	✓	✓	✓		
3/11/06							
3/12/06							
3/13/06	GS	✓	✓	✓	✓		
3/14/06							
3/15/06	GS2	✓	✓	✓	✓		
3/16/06							
3/17/06							
3/18/06							
3/19/06							
3/20/06							
3/21/06							
3/22/06	GS	✓	✓	✓	✓		
3/23/06	GS	✓	✓	✓	✓		
3/24/06							
3/25/06							
3/26/06							
3/27/06	GS	✓	✓	✓	✓		
3/28/06	GS	✓	✓	✓	✓		
3/29/06							
3/30/06							
3/31/06							

EMS

REFRACTIVE INDEX LIQUID CALIBRATION USING OPTICAL GLASS STANDARDS

Cargillie Series

- 1.550 (Series E)
- 1.605 (Series E)
- 1.680 (Series B)

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R.I. Liquid Calibration Using Glass Standard

Table 11. A Suggested Format for Recording Results of RI Liquids Calibration Using Cargille Glass Standard and Dispersion Staining Method

file name: RI CALIBRATION TALBE.WKS

Date	Nominal or Labeled nD 25Cel.	Cargille Glass		Oil Expiration Date	Central Stop	DS Observation	Liquid Room Temperature Celsius (C)	Actual or Calibrated nD 25 Deg	Difference between Calibrated nD 25 Cel. & Labeled nD 25 Cel.	Accept or Reject	Analyst
		Nominal or Labeled R.I.	Lot No.		Predominant DS Color	Corresponding Lambda					
1/16/06	1.680	1.680	B	10/2010	Blue	600	25°C	1.683	0.002	A	2
	1.605	1.60	↓	10/2010	B. Green	620	25°C	1.603	0.002	A	2
	1.555	1.55	↓	2/2008	Blue	580	25°C	1.549	0.001	A	1
2/13/06	1.680	1.680	↓	10/2010	Blue	600	25°C	1.675	0.001	A	2
	1.605	1.60	↓	10/2010	Blue	600	25°C	1.602	0.003	A	2
	1.55	1.55	↓	2/2008	Purple	580	25°C	1.55	0	A	2
3/20/06	1.68	1.68	B	10/2010	B. Green	620	25°C	1.681	0.001	A	2
	1.605	1.60	↓	10/2010	L.B. Green	600	↓	1.603	0.002	A	2
	1.55	1.55	↓	2/2008	Purple	560	↓	1.552	0.002	A	2
4/17/06	1.68	1.68	B	10/2010	Blue	580	27°C	1.682	0.002	A	2
	1.605	1.60	↓	10/2010	B. Green	620	↓	1.606	0.001	A	2
	1.55	1.55	↓	2/2008	Pl. Blue	580	↓	1.551	0.001	A	2
5/15/06	1.68	1.680	B	10/2010	B. Green	620	27	1.682	0.002	A	2
	1.605	1.60	↓	10/2010	B. Green	600	27	1.604	0.001	A	2
	1.55	1.55	↓	2/2008	Blue	600	27	1.553	0.002	A	2

Original version: October 1996 (Shu-Chun Su, Technical Expert for NVLAP Asbestos Programs), EMS EDITED VERSION, SEPT. 2001 VERSION

EMS LABORATORIES 117 WEST BELLIEVUE DR. /PASADENA CA 91105-2503 / 626-568-4065 /FAX: 626-796-5282

MWH Laboratories
A Division of MWH Americas,Inc.
750 Royal Oaks Drive Suite 100
Monrovia, CA 91016-3629
Ph (626) 386-1100 Fax (626) 386-1095

Date 03/09/06

Submittal Form & Purchase Orc

*REPORTING REQUIREMENTS: *Do Not Combine Report with any other samples submitted under differe..*
Report & Invoice must have the MWH Project Number **169215** Sub PO# **99-22089** and Job

Report all quality control data according to Method. Include dates analyzed, date extracted (if extracted) and Method refere.
Results must have Complete data & QC with Approval Signature. See reverse side for List of Terms and Conditions

Ship To **Bernie Kolk**
EMS Labs

117 West Bellvue Drive
Pasadena, CA 91105

(626) 568-4065 ext 2542 Fax (626) 796-5282

Reports: Julie Lee Sub-contracting Administrator
EMAIL TO: Julie.Lee@mwhglobal.com
MWH Laboratories 750 Royal Oaks Dr. Ste. 100, Monrovia, CA 91016
Phone (626) 386-1136 Fax (626) 386-1095
Invoices to: MWH LABORATORIES
Accounts Payable PO BOX 6610, Broomfield, CO 80021

Provide in each Report the Specified State Certification # & Exp Date for requested tests + matrix

CA ELAP OK

MWH Project #	Report Due:	Sub PO#
169215	03/24/06	99-22089
JDL		

Page 84 of 95

	Use MWH Lab # for ID	Client Sample ID for reference only	Analysis Requested	Sample Date & Time	Matrix	Container
CUSTSUB	2603090024	M120-0.5	ASBESTOS BY PLM	03/07/06 9:10	soil	8 oz. glass jars
CUSTSUB	2603090027	M120-10	ASBESTOS BY PLM	03/07/06 10:10	soil	8 oz. glass jars
CUSTSUB	2603090028	M120-30	ASBESTOS BY PLM	03/07/06 11:45	soil	8 oz. glass jars

Relinquished by: Sample Control Date 03/09/06 Time 1511 MUST HAVE NOTIFICAION IF TEMP IS GREATER THAN 6 OR LESS THAN 2 CELSIU

Received by: Date 3-10-06 Time 1200

An Acknowledgement of Receipt is requested to attn: Michael Lettona

SUBMITTAL FORM/*Laboratory Services* 106002

PAGE ___ OF ___

TURNAROUND TIME: STD ☒ 48 HR. ☐ 24 HR. ☐
<8 HR. ☐ WKND ☐ OTHER:

RELINQUISHED BY

TIME / DATE

CLIENT MWH / VAR

ADDRESS

DATE OF SHIPMENT ___ CARRIER ___

CLIENT P.O. NO.

CLIENT JOB/PROJECT ID NO(S). 169215

TELEPHONE (626) 386-1100

CONTACT

PACKAGE SHIPPED FROM

RESULTS REQUESTED VIA VERBAL ☐ FAX ☐

CLIENT FAX NO. (626) 386-1045

(NOTE: Complete written reports will follow all analyses, in addition to any prior transmitted verbal or fax results.)

DATE/TIME OF SAMPLE COLLECTION 3-7-06

SAMPLE PRESERVATIVES HOLDING TIMES

NO. OF SAMPLES SENT 3 SAMPLER'S NAME

SIGNATURE PRINTED

TYPE: ☐ WATER ☐ WASTE WATER ☐ SOIL ☐ FILTER ☐ SORBENT TUBE ☐ IMPINGER ☐ OTHER Purge

(FOR EMS ONLY) EMS Sample No.	CLIENT SAMPLE NO.	DESCRIPTION/LOCATION/ANALYSIS	VOLUME/ TIME/WEIGHT *(IF APPLICABLE)*
106002-4	260309002	27 PM1	
7	↓	28 Soil	
↓ 8			

15 lines

(SF 5/00)

FOR EMS ONLY

Laboratory No. 106002

Date of Package Delivery 3-10-06

Received By

Time 1200

Shipping Bill Retained: YES ☐ NONE ☒

Condition of Package on Receipt OK

Condition of Custody Seal

(NOTE: If the package has sustained substantial damage or the custody seal is broken, stop and contact the project manager and the shipper.)

No. of Samples 3

Chain-of-Custody Signature

Date of Acceptance into Sample Bank 3-10-06

Misc. Info.

Disposition of Samples

EMS LOG

Log Book 0733

FROM: 10-18-05

TO: 03-13-06

LAB #	DATE	CLIENT	DEPT
105990	03-10-06	Del Mar Analytical	TCM
105991	03-10-06	Edward S. Babcock & Son	TCM
105992	03-10-06	Edward S. Babcock & Son	TCM
105993	03-10-06	Edward S. Babcock & Son	TCM
105994	03-10-06	GEM Services	TCM
105995	03-10-06	Larry Hall	CHCM
105996	03-10-06	Independent Roofing Co.	PCM
105997	03-10-06	Kinetra IH - Long Beach	PCM
105998	03-10-06	Soto Environmental	CHCM
105999	03-10-06	Soto Environmental	CHCM
106000	03-10-06	Soto Environmental	CHCM
106001	03-10-06	Soto Environmental	CHCM
106002	03-10-06	MWH Lab	PCM
106003	03-10-06	C. A. Shapiro	PCM
106004	03-10-06	Environmental Solutions	PCM
106005	03-10-06	American Hydrology Inc.	PCM
106006	03-10-06	T-M Hirselberger	CHCM
106007	03-10-06	MACTEC	PLM
106008	03-10-06	Pacific Health & Safety	TEM
106009	03-10-06	Pacific Health & Safety	TEM
106010	03-10-06	IRC (INDEPENDENT Roofing Consultants)	PLM
106011	03-10-06	Fresh Air	PCM
106012	03-12-06	Ace Enviro	TEM
106013	03-13-06	Pacific Health & Safety	PCM
106014	03-13-06	Pacific Health & Safety	PCM
106015	03-13-06	Pacific Health & Safety	CHCM
106016	03-13-06	Pacific Health & Safety	PCM
106017	03-13-06	Pacific Health & Safety	PCM
106018	03-13-06	Pacific Health & Safety	CHCM
106018.1	03-13-06	Pacific Health & Safety	PCM
106019	03-13-06	Pacific Health & Safety	PCM
106020	03-13-06	Pacific Health & Safety	PCM
106021	03-13-06	Janet Bennett	PCM
106022	03-13-06	LA Q Check	SIOC
106023	03-13-06	Thomas Hughes	SIOC
106024	03-13-06	ECA Environmental	PCM
106025	03-13-06	EMI Inc	CHCM
106026	03-13-06	EMI Inc	CHCM
106027	03-13-06	City of San Diego	CHCM
106028	03-13-06	[illegible]	[illegible]

PO/TBA#	SAMPLE # & DESCRIPTION	COND
EC-0312	1 for TEM(WATER) # CPC-0312-01; EMS#105990-01.	✓
76C-0946	1 for TEM(WATER) # 76C-0946-01; EMS#105991-01.	✓
763-0942	1 for TEM(WATER) # 76C-0942-01; EMS#105992-01.	✓
763-0906	2 for TEM(WATER) # 76C-0906 1,2; EMS#105993-1,2.	✓
11545	13 for TEM(AHERA) #01→13; EMS#105994-01→13.	✓
IIC	4 for chem (PB; AIR) # 3106-1→4; EMS#105995-1→4.	✓
	1 for PLM #1; EMS#105996-1.	✓
24040	43 for PLM #1-1,2,3 → 14-1,2,3; EMS#105997-1-1,2,3 → 14-1,2,3.	✓
	12 for chem (PB; WIPE) # NT-36-10→15; 37-10→15; EMS#105998-36-10→15; 37-10→15	✓
	12 for chem (PB; WIPE) # NAB 32-10→15; 33-10→15; EMS#105999-32-10→15; 33-10→15.	✓
	12 for chem (PB; WIPE) # CHE 29-10→15; NSB 13-10→15; EMS#106000-29-10→15; 13-10→15.	✓
	12 for chem (PB; WIPE) # NT 35-10→15; 10-10→15; EMS#106001-35-10→15; 10-10→15.	✓
69215	3 for PLM(SOIL) # 0603090024,27,28; EMS#106002-24,27,28.	✓
2L458	1 for PLM #1; EMS#106003-1.	✓
06-027	3 for PLM # 027-1,2,3; EMS#106004-1,2,3.	✓
5107	2 for PLM # 1,2; EMS#106005-1,2.	✓
C.908	3 for chem (PB; WATER) # 1,2,3; EMS#106006-1,2,3.	✓
2-05-0902	1 FOR PLM(1000 PTCT) #24; EMS#106007-24	✓
-0086	2 FOR TEM(7402) # 06-0086-0306-P1,-P3; EMS#106008-P1,P3	OK
-0086	2 FOR TEM(7402) # 06-0086-0906-P2,P6; EMS#106009-P2,P6	OK
49.00	1 FOR PLM #1, EMS#106010-1	OK
	1 for PLM (1000 POINT COUNT) #1; EMS#106011-1.	OK
TRL 180	10 for TEM 01-12; EMS 106012-01 to 12	ok
6-0086	3 for PCM # 06-0086-0309 B1,2,3; EMS#106013-1,2,3.	✓
6-0086	8 for PCM # 06-0086-0310 P1→5,8; BL,1; EMS#106014-1→5,8; BL; B1.	✓
6-0091	2 for chem (PB; BULK) # 06-0091-0309 L1,2; EMS#106015-1,2.	✓
6-0091	43 for PCM # 06-0091-B01→43; EMS#106016-01→43.	✓
6-0086	3 for PCM # 0603-19,20,21; EMS#106017-19,20,21.	✓
6-0086	3 for chem (PB; BULK) # 06-0086-0309 BL1,2,3; EMS#106018-1,2,3.	✓
6-0086	3 for PCM # 06-0086-0309-BL1,2,3; EMS#106018.1-1,2,3.	✓
6-0086	6 for PCM # 06-0086-0310-R1→4, P6,7; EMS#106019-1→4,6,7.	✓
6-0086	5 for PCM # 06-0086-0311 A1→5; EMS#106020-1→5.	✓
2L729	3 for PLM #1,2,3; EMS#106021-1,2,3.	✓
SEL-MGR	4 for BIOL(MOLD) #1,2,3,4; EMS#106022-1,2,3,4.	✓
C 1708	3 for BIOL(MOLD) #1,2,3; EMS#106023-1,2,3.	✓
7458	5 for PCM # 030806-46-P1,2; 44-P1,2; BL; EMS#106024-46-1,2; 44-1,2; BL.	✓
11-13	7 for chem (PB; 6P.CU.1W) # SORB-01; MY-PB-1→6; EMS#106025-S1; M1→6.	✓
11-12	1 for chem (PB; P.CU) # PB-PR-01; EMS#106026-01.	✓
33498	4 for chem (PB; 18-3W) # 733498-S1-W1,2,3; EMS#106027-S1; W1,2,3.	✓
8168	1 for chem (PB; SOIL) # 78168-S1; EMS#106028-1.	✓

SAMPLE LOG-IN SHEET

Lab Name: EMS Laboratories	Page _____ of _____
Received By (Print Name): T. PRZYBYLSKI	Log in Date: 03-10-06
Received by (Signature)	
	Sample Delivery Group No.

		EPA Sample #	Corresponding Sample Tag#	Corresponding Assigned Tag#	Remarks Condition of Sample, Shipment etc
Remarks		2603090024	—	106002-4	(good)
1. Custody Seal(s)	Present/(Absent) Intact/Broken	2603090027	—	106002-7	(good)
2. Custody Seal Nos	—	2603090028	—	106002-8	(good)
3. Chain-of-Custody Records	(Present)/Absent				
4. ~~Traffic Reports or Packing~~ Lists	(Present)/Absent				
5. Air Bill	Airbill Sticker Present/Absent				
6. Air Bill No.	—				
7. Sample Tags	Present/(Absent)				
Sample Tag Numbers	(Listed)/Not Listed on Chain-of-Custody				
8. Sample Condition	(Intact)/Broken/Leaking				
9. Does information on custody records, traffic reports and sample tags agree?	(Yes)/No				
10. Date Received at Lab	03-10-06				
11. Time Received	12:00				

Sample Transfer	
Fraction	Fraction
Area	Area
By	By
On	On

Contract Client and Attach Records of Resolution

Received By	Logbook No.
Date	Logbook Page No.

FORM DC-1

TRACKING SHEET

DATE DUE: _____ TIME DUE: _____

EMS REPORT: 106002

DATE IN: 3/10/6

PRIORITY: STD

CLIENT: MWH Laboratories
750 Royal Oaks Drive, Ste 100
Monrovia, CA 91016

ATTENTION:

CUSTOMER REFERENCE NO.:169215

NO. OF SAMPLES: 3 DEPT: PLM
SUBJECT: ACM

DATE TO ANALYST: 3/10/06 ANALYST: _____

ANALYTIC METHODS: PLM (435)

DATE ANALYZED: 3/14/06

QA ANALYST: SP QA DATE: 3/15/06

DATE FAXED: 3-16-06 VERBAL RESULTS: _____

DATE MAILED: 3-22-06

INVOICE INSTRUCTIONS:

NVLAP Lab Code 101218-0

PROFICIENCY TEST M22005 SUBTOTALS

Sample 1	0
Sample 2	0
Sample 3	0
Sample 4	0

TOTAL POINTS 0

Failure = 150 or more total points

NVLAP Lab Code 101218-0

SAMPLE 1

Criteria	Reported by Laboratory	Reference Values	Acceptable Answers	Assigned Points
Asbestos Type (150 pts./type)	CHRY	Chrysotile	Chrysotile	0
Reporting Additional Asbestos Type (150 pts. if >0.1%, 75 pts. if 0.1%)	NONE	None	None	0
% Asbestos (50 pts.)	1.9	3%	1% to 10%	0
Color (10 pts.)	CL	CL (clear)	CL (clear)	0
Pleochroism (10 pts.)	N	N (no)	N (no)	0
Extinction (10 pts.)	P	P (parallel)	P (parallel)	0
Sign of Elongation (10 pts.)	P	P (positive)	P (positive)	0
Average Refractive Index (40 pts. each index, 10 pts. if $\gamma=\alpha$ or γ & α reversed)	1.554 1.549	γ=1.557 α=1.549	γ=1.550 to 1.564 α=1.542 to 1.556	0
Birefringence (10 pts.)	L	L (low)	L (low)	0

Total Points Assigned for Sample 1 = 0

NVLAP Lab Code 101218-0

SAMPLE 2

Criteria	Reported by Laboratory	Reference Values	Acceptable Answers	Assigned Points
Asbestos Type (150 pts./type)	CHRY	Chrysotile	Chrysotile	0
Reporting Additional Asbestos Type (150 pts. if >0.1%, 75 pts. if 0.1%)	NONE	None	None	0
% Asbestos (50 pts.)	14.1	7%	1% to 30%	0
Color (10 pts.)	CL	CL (clear)	CL (clear)	0
Pleochroism (10 pts.)	N	N (no)	N (no)	0
Extinction (10 pts.)	P	P (parallel)	P (parallel)	0
Sign of Elongation (10 pts.)	P	P (positive)	P (positive)	0
Average Refractive Index (40 pts. each index, 10 pts. if $\gamma=\alpha$ or γ & α reversed)	1.553 1.551	γ=1.558 α=1.551	γ=1.551 to 1.565 α=1.544 to 1.558	0
Birefringence (10 pts.)	L	L (low)	L (low)	0

Total Points Assigned for Sample 2 = 0

NVLAP Lab Code 101218-0

SAMPLE 3

Criteria	Reported by Laboratory	Reference Values	Acceptable Answers	Assigned Points
Asbestos Type (150 pts./type)	NONE	None	None	0

Total Points Assigned for Sample 3 = 0

NVLAP Lab Code 101218-0

SAMPLE 4

Criteria	Reported by Laboratory	Reference Values	Acceptable Answers	Assigned Points
Asbestos Type (150 pts./type)	TREM	Tremolite	Actinolite or Tremolite	0
Reporting Additional Asbestos Type (150 pts. if >0.1%, 75 pts. if 0.1%)	NONE	None	None	0
% Asbestos (50 pts.)	1.3	0.5%	0.1% to 4%	0
Color (10 pts.)	CL	CL (clear)	CL (clear)	0
Pleochroism (10 pts.)	N	N (no)	N (no)	0
Extinction (10 pts.)	I	I (inclined)	I (inclined)	0
Sign of Elongation (10 pts.)	P	P (positive)	P (positive)	0
Average Refractive Index (40 pts. each index, 10 pts. if $\gamma=\alpha$ or γ & α reversed)	1.630 1.606	γ=1.633 α=1.603	γ=1.618 to 1.648 α=1.588 to 1.618	
Birefringence (10 pts.)	M	M (medium)	M (medium)	0

Total Points Assigned for Sample 4 = 0