Former Scioto Lab Complex
Radiological Analysis Summary

On 2 June 2006 representatives from the United States Army Corp of Engineers (USACE), Ohio Environmental Protection Agency, and Ohio Department of Health Bureau of Radiation Protection conducted a joint sampling effort to characterize the Waste Disposal Building (WDB) located at the Former Scioto Lab Complex in Marion, Ohio.

A total of 8 locations were sampled in and around the WDB to include two sewer catch basins for Pb-210. All of the samples were at or below background soil concentrations except one located in a sewer catch basin northeast of the Process Research Building.

Pb-210 that was detected in sediment from a sewer catch basin (sample SC-8) at a concentration of 13.4 pCi/g is within the range of values reported for some background sediments in the state of Ohio. Ohio sediments in nature may contain Pb-210 at 5.1 to 19 pCi/g as measured in an Ohio no-till basin. At Scioto, a "relatively elevated" concentration of Pb-210 measured in sediment from a sewer catch basin could be attributable to the run-off and concentration of surface soil fines containing recently deposited Pb-210 fallout. Airborne Pb-210 is generated continuously by the emanation of radon from soils containing the naturally occurring uranium decay chain. The study of Ohio sediment is referenced below. The stated sediment concentration range is fairly wide and encompasses the reported sewer catch basin concentration.

Radioactive material reported to exist in sediment in a manhole outside the Scioto site is not outside the range of naturally occurring background levels for Pb-210. One might also find Pb-210 in underground confined spaces, such as a manhole, that tend to concentrate naturally occurring radioactive materials from the decay of radon gas. Additionally, if dose to humans is considered, the methodology for soils would not directly apply due to modeling differences.

Relative to background soils, sediment activity appears to be elevated. Dose-based modeling and use assumptions about human exposure pathways for contaminated soils are invalid for the relatively inaccessible manhole sediments. The exposure pathways for manhole sediment would be different and the source volume/geometry would be very limited for manhole sediment versus current soil/sediment assumptions. If one could actually calculate a dose for sediment in manholes, it would likely be much lower than dose from the same value of soil contamination.

Reference:
Journal of Environmental Quality 31:54-61 (2002), 'Soil Erosion and Sediment Sources in an Ohio Watershed using Beryllium-7, Cesium-137, and Lead-210."

USACE - Buffalo District
Data Review Report

Scioto, OH - FUSRAP
SDG # 164270
Radiological Analysis

Data Package Summary

- The samples listed below were in the sample delivery group (work order). The samples were analyzed by General Engineering Laboratory (GEL) for radiological analysis of Lead-210 (Pb-210) by gas flow proportional counting.

Sample Cross Reference

Sample ID	Laboratory Sample ID
SC-1	164270001
SC-2	164270002
SC-3	164270003
SC-4	164270004
SC-5	164270005
SC-6	164270006
SC-7	164270007
SC-8	164270008
SC-D	164270009

Data Deliverables Completeness

- Missing complete calibration information.

Analytical Completeness

- Data completeness was 100%.

Analytical Deviations

Instrumentation

- Data package contains only continuing calibration data. Case narrative states that "All initial and continuing calibrations requirements have been met."

Batch QC Deviations

- None noted.

Sample Deviations

- None noted.

USACE - Buffalo District
Data Review Report

Data Usability

Based on the results of the data review conducted by USACE-Buffalo District the data is usable for it's intended purpose as qualified.

Data Review Sample Summary

Sample	Analyte	Result	Units	Lab Qualifier	Validation Qualifier
SC-1	Pb-210	**0.881**	pCi/g		
SC-2	Pb-210	**0.862**	pCi/g		
SC-3	Pb-210	**0.188**	pCi/g		
SC-4	Pb-210	**1.14**	pCi/g		
SC-5	Pb-210	**1.08**	pCi/g		
SC-6	Pb-210	**0.697**	pCi/g		
SC-7	Pb-210	**0.912**	pCi/g		
SC-8	Pb-210	**13.4**	pCi/g		
SC-D	Pb-210	**0.748**	pCi/g		

Primary Sample	Field Duplicate	RPD %
SC-6	SC-D	7.1

USACE - Buffalo District
Data Review Form

Data Review Cover Sheet

Project: Scioto/FUSRAP
Job/Contract/P.O.#: GELPO06-0187

SDG No.: 164270

Laboratory Identification: General Engineering Laboratory, LLC (GEL)
Address (City/State): Charleston, SC

Contractor Identification: USACE - Buffalo District
Address (City/State): Buffalo, NY

Validation Requirements Based On: GEL - SOPs
-Limited Work Plans for SI

Date of Sample Reciept: 5-Jun-06
Date of Data Package: 3-Jul-06
Completeness: 100 (Must be > 90%)

Data Review by: Mat Masset Date: 5-Jul-06

Parameters	Instrumentation
Pb-210	Gas Flow Proportional Counter

USACE - Buffalo District
Data Review Form

Data Package Checklist

Required Data Package Components

Chain of Custody?:	Y
COC No.:	SC02062006
Cooler Reciept Checklist?:	Y
Sample Preservation OK?:	Y
Cover Sheet listing samples?:	Y
Case narrative including analysis problems?:	Y
Laboratory Project Manager signed narrative?:	Y
Tabulated Results?:	N
Analytical Results for QC Samples?:	Y
Lab. Duplicates run at least once per 20 samples?:	Y
Matrix Spike Dup. run at least once per 20 samples?:	Y
Tabulation of MDLs in water?:	N
Run logs included?:	Y
10% of calculations checked by Reviewer?:	Y

USACE - Buffalo District
Data Review Form

Instrument Checklist

	Gas Flow Proportional Counter									
Basic calibration:										
Calibration file/files identified for all detectors or listing of efficiency determination present?	N									
Continuing calibration:										
Gas Flow Proportional Counter Checks?	Y									
Control charts or other documentation of instrument background provided?	N									

Compliance Listing	Non-compliance details or comments
Gas Flow Proportional Counter instrument is not in compliance. Detail of non-compliance:	Case narrative for Batch 538051 states that "All initial and continuing calibrations requirements have been met."

USACE - Buffalo District
Data Review Form

Batch QC Data Review

Batch	Isotope or Element	Method Blank			Duplicate				Laboratory Control Sample			
		< 2*QAPP Quant Limit			% RPD <30				75< % Recovery <125			
		ID	Ver. Code	Val. Code (B+/-)	ID	% RPD	Ver. Code	Val. Code (P)	ID	% Recovery	Ver. Code	Val. Code (S+/-)
538051	Pb-210	QC1201111732			QC1201111733	5			QC1201111735	108		

Batch QC Data Review

Batch	Isotope or Element	Matrix Spike				Matrix Spike Duplicate					Instrument		Summary	
		75< % Recovery <125				% RPD <20								
		ID	% Recovery	Ver. Code	Val. Code (S+/-)	Matrix Spike Duplicate ID	% Recovery	% RPD	Ver. Code	Val. Code (S+/-); (P)	Ver. Code	Val. Code (J)	Ver. Code	Val. Code
538051	Pb-210	QC1201111734	108											

USACE - Buffalo District
Data Review Form

Sample QC

Project: Scioto/FUSRAP
SDG No.: 164270
Laboratory Identification: General Engineering Laboratory, LLC (GEL)

Sample ID: SC-1 Sample Collection
Laboratory Sample ID: 164270001 Date: 2-Jun-06

Data Review Comments

Parameter	Result	Counting Uncertainty	TPU	DL	RL	Units	Lab Codes	Tracer Recovery? (J)	Holding times met? (J)	Detected ? (U)	Batch	Parameter	Data Review Comments
Pb-210	0.881	0.154	0.155	0.165	0.20	pCi/g		101	Y	Y	538051	Pb-210	Data is acceptable for it's intended purpose.

Sample ID: SC-2 Sample Collection
Laboratory Sample ID: 164270002 Date: 2-Jun-06

Parameter	Result	Counting Uncertainty	TPU	DL	RL	Units	Lab Codes	Tracer Recovery? (J)	Holding times met? (J)	Detected ? (U)	Batch	Parameter	Data Review Comments
Pb-210	0.862	0.159	0.160	0.172	0.20	pCi/g		99	Y	Y	538051	Pb-210	Data is acceptable for it's intended purpose.

Sample ID: SC-3 Sample Collection
Laboratory Sample ID: 164270003 Date: 2-Jun-06

Parameter	Result	Counting Uncertainty	TPU	DL	RL	Units	Lab Codes	Tracer Recovery? (J)	Holding times met? (J)	Detected ? (U)	Batch	Parameter	Data Review Comments
Pb-210	0.188	0.101	0.100	0.181	0.20	pCi/g		97	Y	Y	538051	Pb-210	Data is acceptable for it's intended purpose.

Sample ID: SC-4 Sample Collection
Laboratory Sample ID: 164270004 Date: 2-Jun-06

Parameter	Result	Counting Uncertainty	TPU	DL	RL	Units	Lab Codes	Tracer Recovery? (J)	Holding times met? (J)	Detected ? (U)	Batch	Parameter	Data Review Comments
Pb-210	1.14	0.159	0.160	0.169	0.20	pCi/g		97	Y	Y	538051	Pb-210	Data is acceptable for it's intended purpose.

Sample ID: SC-5 Sample Collection
Laboratory Sample ID: 164270005 Date: 2-Jun-06

Parameter	Result	Counting Uncertainty	TPU	DL	RL	Units	Lab Codes	Tracer Recovery? (J)	Holding times met? (J)	Detected ? (U)	Batch	Parameter	Data Review Comments
Pb-210	1.08	0.166	0.168	0.151	0.20	pCi/g		98	Y	Y	538051	Pb-210	Data is acceptable for it's intended purpose.

Sample ID: SC-6 Sample Collection
Laboratory Sample ID: 164270005 Date: 2-Jun-06

Parameter	Result	Counting Uncertainty	TPU	DL	RL	Units	Lab Codes	Tracer Recovery? (J)	Holding times met? (J)	Detected ? (U)	Batch	Parameter	Data Review Comments
Pb-210	0.697	0.139	0.140	0.151	0.20	pCi/g		89	Y	Y	538051	Pb-210	Data is acceptable for it's intended purpose.

Sample ID: SC-7 Sample Collection
Laboratory Sample ID: 164270007 Date: 2-Jun-06

Parameter	Result	Counting Uncertainty	TPU	DL	RL	Units	Lab Codes	Tracer Recovery? (J)	Holding times met? (J)	Detected ? (U)	Batch	Parameter	Data Review Comments
Pb-210	0.912	0.15	0.151	0.173	0.20	pCi/g		96	Y	Y	538051	Pb-210	Data is acceptable for it's intended purpose.

Sample ID: SC-8 Sample Collection
Laboratory Sample ID: 164270008 Date: 2-Jun-06

Parameter	Result	Counting Uncertainty	TPU	DL	RL	Units	Lab Codes	Tracer Recovery? (J)	Holding times met? (J)	Detected ? (U)	Batch	Parameter	Data Review Comments
Pb-210	13.4	0.385	0.484	0.084	0.20	pCi/g		108	Y	Y	538051	Pb-210	Data is acceptable for it's intended purpose.

Sample ID: SC-D (Duplicate of SC-6) Sample Collection
Laboratory Sample ID: 164270009 Date: 2-Jun-06

Parameter	Result	Counting Uncertainty	TPU	DL	RL	Units	Lab Codes	Tracer Recovery? (J)	Holding times met? (J)	Detected ? (U)	Batch	Parameter	Data Review Comments
Pb-210	0.748	0.147	0.148	0.165	0.20	pCi/g		93	Y	Y	538051	Pb-210	Data is acceptable for it's intended purpose.

Laboratory Data

General Engineering Laboratories, LLC (GEL)
Analysis of Lead(Pb) -210
For the US Army Corps of Engineers –Buffalo District

CASE NARRATIVE

for

U.S. Army Corps of Engineers

Buffalo District

SDG# 164270

GELPO06-0187

Site: SCIOTO-OHIO

July 03, 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 June 05, 2006 for analysis. 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
164270001	SC-1
164270002	SC-2
164270003	SC-3
164270004	SC-4
164270005	SC-5
164270006	SC-6

GENERAL ENGINEERING LABORATORIES, LLC
a Member of THE GEL GROUP, INC.
P.O. Box 30712 • Charleston, SC 29417 • 2040 Savage Road (29407)
Phone (843) 556-8171 • Fax (843) 766-1178 • www.gel.com

164270007	SC-7
164270008	SC-8
164270009	SC-D

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.

Internal Chain of Custody

Custody was maintained.

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.

The following are definitions of reporting limits used at General Engineering Laboratories, LLC:

Detection Limit (DL): The minimum level of an analyte that can be determined (identified not quantified) with 99% confidence. The values are normally achieved by preparing and analyzing seven aliquots of laboratory water spiked 1 to 5 times the estimated MDL, taking the standard deviation and multiplying it against the one-tailed t-statistic at 99%. This computed value may then be verified for reasonableness by repeating the study using the concentration found in the initial study, calculating an F-ratio and computing the final limit. Sample specific preparation and dilution factors are applied to these limits when they are reported.

The detection limit is the minimum concentration of a substance that can be identified, measured, and reported with 99% confidence that the analyte concentration is above zero. It answers the question, "Is it present?"

Quantitation Limit (QL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. The QL is generally 5 to 10 times the MDL. However, it may be nominally chosen within these guidelines to simplify data reporting. For many analytes the QL analyte concentration is selected as the lowest non-zero standard in the calibration curve. Sample QLs are highly matrix-dependent. Sample specific preparation and dilution factors are applied to these limits when they are reported.

The QL is always greater than the DL.

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Reporting limit or Contract Required Detection Limit (RL or CRDL): These are not intrinsically tied to the instrument sensitivity, but rather are reporting limits. If no RL is set by the contract then the RL will default to the practical quantitation level.

If the requested RL is less than quantitation level, the QL will overwrite the RL.

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

Laura Sluss

Project Manager

GENERAL ENGINEERING LABORATORIES, LLC
a Member of THE GEL GROUP, INC.
P.O. Box 30712 • Charleston, SC 29417 • 2040 Savage Road (29407)
Phone (843) 556-8171 • Fax (843) 766-1178 • www.gel.com

DATA REVIEW QUALIFIER FLAG DEFINITION SHEET

Data Review Qualifier Definitions

Qualifier	Explanation
*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
A	The TIC is a suspected aldol-condensation product
B	Target analyte was detected in the associated blank
B	Metals--Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
BD	Results are either below the MDC or tracer recovery is low
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of the sample
d	5-day BOD--The 2:1 depletion requirement was not met for this sample
E	Organics--Concentration of the target analyte exceeds the instrument calibration range
E	Metals--%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
H	Analytical holding time was exceeded
h	Preparation or preservation holding time was exceeded
J	Value is estimated
N	Metals--The Matrix spike sample recovery is not within specified control limits
N	Organics--Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
N/A	Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND	Analyte concentration is not detected above the reporting limit
P	Organics--The concentrations between the primary and confirmation columns/detectors is >40% different. For HPLC, difference is also <70%
R	Sample results are rejected
U	Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI	Gamma Spectroscopy--Uncertain identification
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
Z	Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.

CHAIN OF CUSTODY

Page: 1 of 1
Project #: SCioto
GEL Quote #: GEL P06-0187
COC Number (1): SC 02062006
PO Number:

GEL Chain of Custody and Analytical Request

GEL Work Order Number:

General Engineering Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

164270%

Client Name: MAT MASSET Phone #: 716-879-4448
Project/Site Name: SCIOTO - OHIO Fax #: 716-879-4355
Address: 1776 Niagara Street, Buffalo, NY 14207
Collected by: M. Masset / S. Bousquet Send Results To: Mat Masset

Sample Analysis Requested (5) (Fill in the number of containers for each test)

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Lead-210 by GFPC	<-- Preservative Type (6)	Comments
SC-1	06-02-06	0905	G	N	SO			1	X		Det Limit 0.2 pCi/g
SC-2		0915									
SC-3		0925									
SC-4		0935									
SC-5		0954									
SC-6		1028									
SC-7		1040									
SC-8		1005			SD						
SC-D		1028	FD		SO						

TAT Requested: Normal: ✓ Rush: Specify: (Subject to Surcharge) Fax Results: Yes / No Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4 PDF

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards*
NO
/ Lead-210 by GFPC - Det Limit Request at 0.2 pCi/g

Sample Collection Time Zone: Eastern / Central / Mountain / Pacific / Other

Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1 M. Masset	02 JUN 2006	1545	1 A. Morley	6/5/06	815
2			2		
3			3		

Sample Shipping and Delivery Details

GEL PM: Laura Sluss
Method of Shipment: FED EX Date Shipped: 02 JUN 2006
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes: **N** = Normal Sample, **TB** = Trip Blank, **FD** = Field Duplicate, **EB** = Equipment Blank, **MS** = Matrix Spike Sample, **MSD** = Matrix Spike Duplicate Sample, **G** = Grab, **C** = Composite
3.) Field Filtered: For liquid matrices, indicate with a - **Y** - for yes the sample was field filtered or - **N** - for sample was not field filtered.
4.) Matrix Codes: **DW**=Drinking Water, **GW**=Groundwater, **SW**=Surface Water, **WW**=Waste Water, **W**=Water, **SO**=Soil, **SD**=Sediment, **SL**=Sludge, **SS**=Solid Waste, **O**=Oil, **F**=Filter, **P**=Wipe, **U**=Urine, **F**=Fecal, **N**=Nasal
5.) Sample Analysis Requested: Analytical method requested (i.e. **8260B, 6010B/7470A**) and number of containers provided for each (i.e. *8260B* - **3**, *6010B/7470A* - **1**).
6.) Preservative Type: **HA** = Hydrochloric Acid, **NI** = Nitric Acid, **SH** = Sodium Hydroxide, **SA** = Sulfuric Acid, **AA** = Ascorbic Acid, **HX** = Hexane, **ST** = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? *YES* *NO*
Cooler Temp: ___ C

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

COOLER RECEIPT CHECKLIST

SAMPLE RECEIPT & REVIEW FORM

GENERAL ENGINEERING LABORATORIES, LLC

Lucra

PM use only

Client: MAT MASSET	SDG/ARCOC/Work Order:
Date Received: 6-5-06	PM(A) Review (ensure non-conforming items are resolved prior to signing):
Received By: ACM	

	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) 18°C ICE MELTED & T° ok for radiochemistry
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:
12	COC form is properly signed in relinquished/received sections?	/			
14	Air Bill ,Tracking #'s, & Additional Comments	8558 4288 7765			

	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*: 1PM 20
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: _____ Initials 6/5/06 Date:

RADIOLOGICAL ANALYSIS

Radiochemistry Case Narrative
U.S. Army Corps of Engineers, Buffalo District (ACBU)
Work Order 164270

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:	538051
Prep Batch Number:	536019
Dry Soil Prep GL-RAD-A-021 Batch Number:	536014

Sample ID	Client ID
164270001	SC-1
164270002	SC-2
164270003	SC-3
164270004	SC-4
164270005	SC-5
164270006	SC-6
164270007	SC-7
164270008	SC-8
164270009	SC-D
1201111732	Method Blank (MB)
1201111733	164270001(SC-1) Sample Duplicate (DUP)
1201111734	164270001(SC-1) Matrix Spike (MS)
1201111735	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: 164270001 (SC-1).

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.

Additional Comments
Additional comments were not required for this sample set.

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: 7/3/06

SAMPLE DATA SUMMARY

GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report
for

ACBU001 U.S. Army Corps of Engineers, Buffalo District

Client SDG: 164270 GEL Work Order: 164270

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

ND The analyte concentration is not detected above the detection limit.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.

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.

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, Laura Sluss.

Reviewed by

GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 – (843) 556–8171 – www.gel.com

Certificate of Analysis

Company : USACE–Buffalo District
Address : 1776 Niagara Street
Buffalo, New York 14207––3199

Report Date: July 3, 2006

Contact: Matthew Masset
Project: **USACE, Buffalo District GELP06–0187**

Client Sample ID:	SC–1	Project:	ACBU00001
Sample ID:	164270001	Client ID:	ACBU001
Matrix:	Soil		
Collect Date:	02–JUN–06 09:05		
Receive Date:	05–JUN–06		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Pb210, Solid											
Lead–210		0.881	+/–0.154	0.165	0.200	pCi/g		BXF1 06/19/06	1955	538051	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MXP2	06/08/06	0841	536019
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	LXM2	06/05/06	1831	536014

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE RP280 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Lead–210	GFPC, Pb210, Solid			101	(25%–125%)

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

Certificate of Analysis

Company : USACE–Buffalo District
Address : 1776 Niagara Street
Buffalo, New York 14207––3199

Report Date: July 3, 2006

Contact: Matthew Masset
Project: **USACE, Buffalo District GELP06–0187**

Client Sample ID:	SC–2	Project:	ACBU00001
Sample ID:	164270002	Client ID:	ACBU001
Matrix:	Soil		
Collect Date:	02–JUN–06 09:15		
Receive Date:	05–JUN–06		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Prôportional Counting											
GFPC, Pb210, Solid											
Lead–210		0.862	+/–0.159	0.172	0.200	pCi/g		BXF1 06/19/06	1955	538051	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MXP2	06/08/06	0841	536019
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	LXM2	06/05/06	1831	536014

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE RP280 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Lead–210	GFPC, Pb210, Solid			99	(25%–125%)

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Report Date: July 3, 2006

Contact: Matthew Masset
Project: **USACE, Buffalo District GELP06–0187**

Client Sample ID:	SC–3	Project:	ACBU00001
Sample ID:	164270003	Client ID:	ACBU001
Matrix:	Soil		
Collect Date:	02–JUN–06 09:25		
Receive Date:	05–JUN–06		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Pb210, Solid											
Lead–210		0.188	+/–0.101	0.181	0.200	pCi/g		BXF1 06/19/06	1955	538051	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MXP2	06/08/06	0841	536019
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	LXM2	06/05/06	1831	536014

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE RP280 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Lead–210	GFPC, Pb210, Solid			97	(25%–125%)

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Report Date: July 3, 2006

Contact: Matthew Masset
Project: **USACE, Buffalo District GELP06–0187**

Client Sample ID:	SC–4	Project:	ACBU00001
Sample ID:	164270004	Client ID:	ACBU001
Matrix:	Soil		
Collect Date:	02–JUN–06 09:35		
Receive Date:	05–JUN–06		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Pb210, Solid											
Lead–210		1.14	+/–0.159	0.169	0.200	pCi/g		BXF1 06/19/06	1956	538051	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MXP2	06/08/06	0841	536019
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	LXM2	06/05/06	1831	536014

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE RP280 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Lead–210	GFPC, Pb210, Solid			97	(25%–125%)

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Report Date: July 3, 2006

Contact: Matthew Masset
Project: **USACE, Buffalo District GELP06–0187**

Client Sample ID:	SC–5	Project:	ACBU00001
Sample ID:	164270005	Client ID:	ACBU001
Matrix:	Soil		
Collect Date:	02–JUN–06 09:54		
Receive Date:	05–JUN–06		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Pb210, Solid											
Lead–210		1.08	+/–0.166	0.151	0.200	pCi/g		BXF1 06/19/06	1956	538051	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MXP2	06/08/06	0841	536019
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	LXM2	06/05/06	1831	536014

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE RP280 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Lead–210	GFPC, Pb210, Solid			98	(25%–125%)

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Report Date: July 3, 2006

Contact: Matthew Masset
Project: **USACE, Buffalo District GELP06–0187**

Client Sample ID:	SC–6	Project:	ACBU00001
Sample ID:	164270006	Client ID:	ACBU001
Matrix:	Soil		
Collect Date:	02–JUN–06 10:28		
Receive Date:	05–JUN–06		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Pb210, Solid											
Lead–210		0.697	+/–0.139	0.150	0.200	pCi/g		BXF1 06/19/06	1956	538051	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MXP2	06/08/06	0841	536019
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	LXM2	06/05/06	1831	536014

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE RP280 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Lead–210	GFPC, Pb210, Solid			89	(25%–125%)

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Report Date: July 3, 2006

Contact: Matthew Masset
Project: **USACE, Buffalo District GELP06–0187**

Client Sample ID:	SC–7	Project:	ACBU00001
Sample ID:	164270007	Client ID:	ACBU001
Matrix:	Soil		
Collect Date:	02–JUN–06 10:40		
Receive Date:	05–JUN–06		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Pb210, Solid											
Lead–210		0.912	+/–0.150	0.173	0.200	pCi/g		BXF1 06/19/06	1957	538051	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MXP2	06/08/06	0841	536019
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	LXM2	06/05/06	1831	536014

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE RP280 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Lead–210	GFPC, Pb210, Solid			96	(25%–125%)

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Company : USACE–Buffalo District
Address : 1776 Niagara Street
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Report Date: July 3, 2006

Contact: Matthew Masset
Project: **USACE, Buffalo District GELP06–0187**

Client Sample ID:	SC–8	Project:	ACBU00001
Sample ID:	164270008	Client ID:	ACBU001
Matrix:	Soil		
Collect Date:	02–JUN–06 10:05		
Receive Date:	05–JUN–06		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Pb210, Solid											
Lead–210		13.4	+/–0.385	0.0842	0.200	pCi/g		BXF1 06/19/06	2130	538051	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MXP2	06/08/06	0841	536019
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	LXM2	06/05/06	1831	536014

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE RP280 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Lead–210	GFPC, Pb210, Solid			108	(25%–125%)

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Report Date: July 3, 2006

Contact: Matthew Masset
Project: **USACE, Buffalo District GELP06–0187**

Client Sample ID:	SC–D	Project:	ACBU00001
Sample ID:	164270009	Client ID:	ACBU001
Matrix:	Soil		
Collect Date:	02–JUN–06 10:28		
Receive Date:	05–JUN–06		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Pb210, Solid											
Lead–210		0.748	+/–0.147	0.165	0.200	pCi/g		BXF1 06/19/06	2130	538051	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL–RAD–A–021B	MXP2	06/08/06	0841	536019
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	LXM2	06/05/06	1831	536014

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE RP280 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Lead–210	GFPC, Pb210, Solid			93	(25%–125%)

QUALITY CONTROL DATA

GENERAL ENGINEERING LABORATORIES, LLC

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QC Summary

Report Date: July 3, 2006
Page 1 of 2

USACE-Buffalo District
1776 Niagara Street
Buffalo, New York

Contact: Matthew Masset

Workorder: 164270

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gas Flow										
Batch 538051										
QC1201111733 164270001 DUP										
Lead-210		0.881 +/-0.154		0.923 +/-0.153	pCi/g	5		(0%-20%)	BXF1	06/19/06 21:31
QC1201111735 LCS										
Lead-210	1.76			1.89 +/-0.193	pCi/g		108	(75%-125%)		
QC1201111732 MB										
Lead-210			U	0.0112 +/-0.0415	pCi/g					06/19/06 21:30
QC1201111734 164270001 MS										
Lead-210	3.23	0.881 +/-0.154		4.39 +/-0.380	pCi/g		108	(75%-125%)		06/19/06 21:31

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

- * A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
- h Preparation or preservation holding time was exceeded

QC Summary

Workorder: **164270**

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.

RAW DATA

Radiochemistry Batch Checklist, Rev 4

Batch# 538057 Product: Pb-210 Date: 6/23/06

Criteria:	Yes	No	Comments
Sample Solids are less than 100 mg for GAB.			NA
If activity less 10* MDA, error is 150% or less of sample activity. If greater 10* MDA, error is 40% or less. If below the MDA, error is okay.	✓		
Instrument source check is within limits. Instument bkg check is within limits.	✓		
Method RDL has been met.	✓		
If duplicate activities are less 5* MDA, then rpd is 100% or less. If greater 5* MDA, then rpd 20% or less. If below the MDA, the rpd is 0%. Or meets the client's required RER acceptance criteria.	✓		
Tracer yield is 15-125% . Carrier yield 25-125%. Or meets the client's contract acceptance criteria.	✓		
Method blank is less than the RDL. (If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time. Special requirements page checked	✓		
Sample was correctly preserved if required.	✓		
Smears Taken for Radioactive batches.			NA
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms. All lineouts initialed and dated. No transcription errors are apparent.	✓		
QC data entered into QC database. Batch entered into Case Narrative.	✓		
Batch non-conformances completed if applicable.			NA

General Engineering Laboratories

2/22/2005

Primary Review Performed By: Melanie Zlynick 6/23/06

Secondary Review Performed By: MO 6/23/06

6/28 - 7/5

ACBU

Pb-210 Que Sheet

06/12/06

Batch #:538051 **Analyst: BXF1** **Minimum DueDate 06/28/2006**

Spike Isotope: Pb210 **Spike Code:** ET491E **Expiration Date:** 11-11-06 **Vol:** 0.1 ml **Bi Separation Date/Time:** 6-14-06/1230

LCS Isotope: Pb210 **LCS Code:** ET491E **Expiration Date:** 11-11-06 **Vol:** 0.1 ml **Std Wt:** 13.88

Carrier: Pb **Carrier Code:** 10068664 **Expiration Date:** 1-19-08 **Vol:** 1 ml **Analytical Scale #:** 38110047

Prep Date: 6-13-06 **Initials:** BXF **Pipet #:** 4497063 **Balance #:** 50410272 **Witness:** [illegible] 6/13/06

4-13 6/19/06

Sample ID	Client Description	Type	Hazard Code	RDL	Client	Matrix	Collection Date & Time	Bkr#	Aliquot (mL or g)	Det	Initial Pb Weight (g)	Final Pb Weight (g)	Net Pb Weight (mg)	
164270001	SC-1	SAMPLE		.2 pCi/g	ACBU001	SOIL	02-JUN-06	1	5.525	1A	0.0775	0.0915	14.0	5.027
164270002	SC-2	SAMPLE		.2 pCi/g	ACBU001	SOIL	02-JUN-06	2	5.217	1B	0.0773	0.0910	13.7	5.082
164270003	SC-3	SAMPLE		.2 pCi/g	ACBU001	SOIL	02-JUN-06	3	5.162	1C	0.0743	0.0878	13.5	5.104
164270004	SC-4	SAMPLE		.2 pCi/g	ACBU001	SOIL	02-JUN-06	4	5.719	2A	0.0724	0.0858	13.4	5.169
164270005	SC-5	SAMPLE		.2 pCi/g	ACBU001	SOIL	02-JUN-06	5	5.526	2B	0.0722	0.0858	13.6	5.048
164270006	SC-6	SAMPLE		.2 pCi/g	ACBU001	SOIL	02-JUN-06	6	5.902	2C	0.0731	0.0854	12.3	5.354
164270007	SC-7	SAMPLE		.2 pCi/g	ACBU001	SOIL	02-JUN-06	7	5.363	2D	0.0724	0.0857	13.3	5.012
164270008	SC-8	SAMPLE		.2 pCi/g	ACBU001	SOIL	02-JUN-06	8	10.323	1A	0.0760	0.0910	15.0	5.073
164270009	SC-D	SAMPLE		.2 pCi/g	ACBU001	SOIL	02-JUN-06	9	5.572	1B	0.0717	0.0846	12.9	5.062
1201111732	MB for batch 538051	MB		.2 pCi/g	QC ACCOUNT	SOIL		10	10.323	1C	0.0724	0.0846	12.2	
1201111733	SC-1(164270001DUP)	DUP		.2 pCi/g	QC ACCOUNT	SOIL	02-JUN-06	11	5.558	2B	0.0724	0.0863	13.9	5.057
1201111734	SC-1(164270001MS)	MS		.2 pCi/g	QC ACCOUNT	SOIL	02-JUN-06	12	5.632	2C	0.0726	0.0867	14.1	5.124
1201111735	LCS for batch 538051	LCS		.2 pCi/g	QC ACCOUNT	SOIL		13	10.323	3D	0.0721	0.0850	12.9	

✓ no history

Instrument Used (circle one): LB4100 S/N 8219 PIC S/N:10751-4

Data Reviewed By: mrc 6/23/06

mc 6/23/06

Weight/Loss Aliquot Correction Report

Select What to Correct Aliquot to

◉ Dry Weight ○ Wet Weight

Submit

Batch ID: 538051

Calculate Corrected Aliquot

Aliquot Correction to Dry Weight for Batch 538051

Sample Id	Aliquot (G)	Sample Type	Parent Sample Id	Loss (Dec)	Corrected Aliquot (G)
164270001	5.027	SAMPLE	NA	.0901	5.52505510
164270002	5.082	SAMPLE	NA	.0258	5.21670797
164270003	5.104	SAMPLE	NA	.0111	5.16164237
164270004	5.169	SAMPLE	NA	.0961	5.71881856
164270005	5.048	SAMPLE	NA	.0864	5.52584896
164270006	5.354	SAMPLE	NA	.0929	5.90241689
164270007	5.012	SAMPLE	NA	.0655	5.36346061
164270008	5.073	SAMPLE	NA	.5085	10.3230523
164270009	5.062	SAMPLE	NA	.0915	5.57230998
1201111732		MB	NA	NA	
1201111733	5.057	DUP	164270001	.0901	5.55802738
1201111734	5.124	MS	164270001	.0901	5.63166547
1201111735		LCS	NA	NA	

General Engineering Laboratories, LLC

MA6/23/06

Lead-210 Solid

Filename :	PB210.XLS	Spike S/N :	ET491-E			
File type :	Excel	Spike Exp Date :	11/11/2006			
Version # :	1	Spike Activity (dpm/ml):	403.52			
		Spike Volume Added:	0.1			
				Pipet, 0.1 ml Stdev : +/-	0.000701	ml
		LCS S/N :	ET491-E	Pipet, 0.5 ml Stdev : +/-	0.002564	ml
		LCS Exp Date :	11/11/2006	Pipet, 1 ml Stdev : +/-	0.005480	ml
Batch :	538051	LCS Activity (dpm/ml):	403.52			
Analyst :	BXF1	LCS Volume Added:	0.1	Procedure Code :	GFC__PBS	
Prep Date :	6/13/2006			Parmname :	Lead-210	
Pb-210 Abundance :	1	Carrier S/N :	1006864	Required MDA :	0.2	pCi/G
		Carrier Exp Date :	1/19/2008	Halflife of Pb-210 :	22.26	years
Calibration Date :	7/29/2005	Carrier Volume Added:	1.0	Halflife of Bi-210 :	5.013	days
Calibration Due Date :	7/29/2006	Carrier Weight (mg/ml):	13.88	Batch counted on :	PIC	
		Carrier Weight StDev.:	0.05	BKG Count time :	500	min

Sample Characteristics				Carrier Calculations				
Sample ID	Sample Aliquot G	Sample Aliquot StDev.	Sample Date/Time	Carrier Weight (Standard)	Net Weight (Sample)	Net Weight StDev.	Carrier Aliquot (mL)	Carrier Aliquot StDev.
164270001	5.525	3.7890E-03	6/2/2006 9:05	13.88	14.00	0.067502	1.0	0.005480
164270002	5.217	3.7576E-03	6/2/2006 9:15	13.88	13.70	0.066213	1.0	0.005480
164270003	5.162	3.7520E-03	6/2/2006 9:25	13.88	13.50	0.065353	1.0	0.005480
164270004	5.719	3.8087E-03	6/2/2006 9:35	13.88	13.40	0.064923	1.0	0.005480
164270005	5.526	3.7891E-03	6/2/2006 9:54	13.88	13.60	0.065783	1.0	0.005480
164270006	5.902	3.8273E-03	6/2/2006 10:28	13.88	12.30	0.060195	1.0	0.005480
164270007	5.363	3.7725E-03	6/2/2006 10:40	13.88	13.30	0.064493	1.0	0.005480
164270008	10.323	4.2712E-03	6/2/2006 10:05	13.88	15.00	0.071800	1.0	0.005480
164270009	5.572	3.7937E-03	6/2/2006 10:28	13.88	12.90	0.062774	1.0	0.005480
1201111732	10.323	4.2712E-03	6/13/2006 0:00	13.88	12.20	0.059766	1.0	0.005480
1201111733	5.558	3.7923E-03	6/2/2006 9:05	13.88	13.90	0.067072	1.0	0.005480
1201111734	5.632	3.7998E-03	6/2/2006 9:05	13.88	14.10	0.067932	1.0	0.005480
1201111735	10.323	4.2712E-03	6/13/2006 0:00	13.88	12.90	0.062774	1.0	0.005480

mzc 6/23/06

20 6/23/06

Count Raw Data

Detector ID	Counting Time	Gross Counts Alpha	Gross Counts Beta	Gross Beta CPM	Weekly Bkg CPM	Weekly Bkg Count Time	Detector Efficiency	Detector Efficiency Error	Count Start Date/Time	Bi-210 Separation Date/Time	Bi-210 Ingrowth	Pb-210 Decay	Sample Recovery %	Sample Recovery Error %
1A	90	8	190	2.111	0.366	500	0.3070	0.00600	6/19/2006 19:55	6/14/2006 12:30	0.522	0.999	100.86%	0.95%
1B	90	5	170	1.889	0.328	500	0.3039	0.00409	6/19/2006 19:55	6/14/2006 12:30	0.522	0.999	98.70%	0.95%
1C	90	4	63	0.700	0.362	500	0.3088	0.00344	6/19/2006 19:55	6/14/2006 12:30	0.522	0.999	97.26%	0.95%
2A	110	19	305	2.773	0.496	500	0.3124	0.00349	6/19/2006 19:56	6/14/2006 12:30	0.523	0.999	96.54%	0.95%
2B	90	10	214	2.378	0.286	500	0.3089	0.00383	6/19/2006 19:56	6/14/2006 12:30	0.522	0.999	97.98%	0.95%
2C	90	16	146	1.622	0.278	500	0.3183	0.00575	6/19/2006 19:56	6/14/2006 12:30	0.522	0.999	88.62%	0.95%
2D	110	9	238	2.164	0.454	500	0.3148	0.00479	6/19/2006 19:57	6/14/2006 12:30	0.523	0.999	95.82%	0.95%
1A	90	21	4700	52.222	0.366	500	0.2982	0.00600	6/19/2006 21:30	6/14/2006 12:30	0.526	0.999	108.07%	0.94%
1B	90	4	156	1.733	0.328	500	0.3110	0.00409	6/19/2006 21:30	6/14/2006 12:30	0.526	0.999	92.94%	0.95%
1C	90	8	36	0.400	0.362	500	0.3205	0.00344	6/19/2006 21:30	6/14/2006 12:30	0.527	0.999	87.90%	0.95%
2B	90	8	191	2.122	0.286	500	0.3061	0.00383	6/19/2006 21:31	6/14/2006 12:30	0.527	0.999	100.14%	0.95%
2C	60	6	547	9.117	0.278	500	0.3022	0.00575	6/19/2006 21:31	6/14/2006 12:30	0.526	0.999	101.59%	0.95%
3D	60	9	419	6.983	0.400	500	0.3105	0.00464	6/19/2006 21:31	6/14/2006 12:30	0.526	0.999	92.94%	0.95%

mn 6/28/06

Results

Decision Level pCi/G	Critical Level pCi/G	MDA pCi/G	Sample Act. Conc.	Sample Act. Error	Net Count Rate	Net Count Rate Error	**2 SIGMA** Counting Uncertainty	**2 SIGMA** Total Prop. Uncertainty	Sample QC	Sample Type	RPD	RER	Nominal	Recovery
0.1061	0.0749	0.1650	**0.8812**	0.0898	1.7451	0.1555	0.1539	0.1551		SAMPLE				
0.1098	0.0775	0.1717	**0.8617**	0.0948	1.5609	0.1471	0.1592	0.1601		SAMPLE				
0.1164	0.0822	0.1812	**0.1883**	0.2730	0.3380	0.0922	0.1007	0.1008		SAMPLE				
0.1107	0.0782	0.1687	**1.1393**	0.0718	2.2767	0.1619	0.1588	0.1604		SAMPLE				
0.0960	0.0677	0.1510	**1.0806**	0.0792	2.0918	0.1643	0.1663	0.1678		SAMPLE				
0.0950	0.0671	0.1498	**0.6975**	0.1020	1.3442	0.1363	0.1386	0.1395		SAMPLE				
0.1130	0.0797	0.1726	**0.9122**	0.0846	1.7096	0.1434	0.1500	0.1512		SAMPLE				
0.0541	0.0382	0.0842	**13.3559**	0.0185	51.8562	0.7622	0.3848	0.4835		SAMPLE				
0.1058	0.0747	0.1654	**0.7477**	0.1010	1.4053	0.1411	0.1472	0.1479		SAMPLE				
0.0615	0.0434	0.0957	**0.0112**	1.8919	0.0380	0.0719	0.0415	0.0415		MB				
0.0934	0.0660	0.1470	**0.9234**	0.0853	1.8362	0.1554	0.1532	0.1543	164270001	DUP	4.7%			
0.1113	0.0786	0.1795	**4.3853**	0.0456	8.8387	0.3905	0.3798	0.3915	164270001	MS			3.23	108.5%
0.0774	0.0546	0.1223	**1.8939**	0.0531	6.5833	0.3423	0.1930	0.1970		LCS			1.76	107.6%

mrze 12/23/06

538051

SampleID	Instr	Time	Alpha	Beta	Count Start Time	Count End Time
164270001	1A	90	8	190	6/19/2006 19:55	6/19/2006 21:25
164270002	1B	90	5	170	6/19/2006 19:55	6/19/2006 21:25
164270003	1C	90	4	63	6/19/2006 19:55	6/19/2006 21:25
164270004	2A	110	19	305	6/19/2006 19:56	6/19/2006 21:46
164270005	2B	90	10	214	6/19/2006 19:56	6/19/2006 21:26
164270006	2C	90	16	146	6/19/2006 19:56	6/19/2006 21:26
164270007	2D	110	9	238	6/19/2006 19:57	6/19/2006 21:47
164270008	1A	90	21	4700	6/19/2006 21:30	6/19/2006 23:00
164270009	1B	90	4	156	6/19/2006 21:30	6/19/2006 23:00
1201111732	1C	90	8	36	6/19/2006 21:30	6/19/2006 23:00
1201111733	2B	90	8	191	6/19/2006 21:31	6/19/2006 23:01
1201111734	2C	60	6	547	6/19/2006 21:31	6/19/2006 22:31
1201111735	3D	60	9	419	6/19/2006 21:31	6/19/2006 22:31

CONTINUING CALIBRATION DATA

Gas Flow Proportional Counter Checks for 19-JUN-2006

Short Name	Parmname	Run Time	Count Time	Counts	CPM	Stdev	Status	Comments
LB4100A1	ALPHA BKG	06:56	500	31.0	0.06	0.13	GOOD	
	BETA BKG	06:56	500	450	0.9	-0.28	GOOD	
	ALPHA EFF	07:47	30	23098	770	-0.68	GOOD	
	BETA EFF	07:47	30	1.78E+05	5920	0.46	GOOD	
LB4100A2	ALPHA BKG	06:56	500	33.0	0.07	-0.08	GOOD	
	BETA BKG	06:56	500	407	0.81	-0.27	GOOD	
	ALPHA EFF	07:47	30	15721	524	-0.69	GOOD	
	BETA EFF	07:47	30	1.32E+05	4380	1.12	GOOD	
LB4100A3	ALPHA BKG	06:56	500	26.0	0.05	-0.42	GOOD	
	BETA BKG	06:56	500	422	0.84	-0.54	GOOD	
	ALPHA EFF	07:47	30	22206	740	-0.37	GOOD	
	BETA EFF	07:47	30	1.56E+05	5200	-0.04	GOOD	
LB4100A4	ALPHA BKG	06:56	500	22.0	0.04	-0.2	GOOD	
	BETA BKG	06:56	500	6120	12.2	32.6	DETL	Outside 2 sigma for >= 2 days
	ALPHA EFF	07:47	30	19581	653	-1.2	GOOD	
	BETA EFF	07:47	30	1.71E+05	5710	1.24	GOOD	
LB4100B1	ALPHA BKG	06:56	500	13.0	0.03	-0.33	PEND	
	BETA BKG	06:56	500	395	0.79	-0.64	GOOD	
	ALPHA EFF	07:47	30	21449	715	0.49	GOOD	
	BETA EFF	07:47	30	1.88E+05	6260	0.34	GOOD	
LB4100B2	ALPHA BKG	06:56	500	27.0	0.05	0.36	GOOD	
	BETA BKG	06:56	500	405	0.81	-0.23	GOOD	
	ALPHA EFF	07:47	30	21109	704	0.2	GOOD	
	BETA EFF	07:47	30	1.62E+05	5416	-0.04	GOOD	
LB4100B3	ALPHA BKG	06:56	500	25.0	0.05	0.02	GOOD	
	BETA BKG	06:56	500	584	1.17	-0.27	GOOD	
	ALPHA EFF	07:47	30	15879	529	0.06	GOOD	
	BETA EFF	07:47	30	1.24E+05	4130	1.1	GOOD	
LB4100B4	ALPHA BKG	06:56	500	14.0	0.03	-0.38	GOOD	
	BETA BKG	06:56	500	1942	3.8	28.3	DETL	Outside 2 sigma for >= 2 days
	ALPHA EFF	07:47	30	18257	609	-1	GOOD	
	BETA EFF	07:47	30	1.56E+05	5189	1.04	GOOD	
LB4100C1	ALPHA BKG	06:56	500	122	0.24	0.03	GOOD	
	BETA BKG	06:56	500	599	1.2	-0.27	PEND	
	ALPHA EFF	07:47	30	19180	639	-1.8	GOOD	
	BETA EFF	07:47	30	1.31E+05	4380	-1.1	GOOD	
LB4100C2	ALPHA BKG	06:56	500	41.0	0.08	0.18	GOOD	
	BETA BKG	06:56	500	541	1.08	1.31	PEND	
	ALPHA EFF	07:47	30	19971	666	-1.3	GOOD	
	BETA EFF	07:47	30	1.85E+05	6160	-1.6	GOOD	
LB4100C3	ALPHA BKG	06:56	500	21.0	0.04	-0.45	GOOD	
	BETA BKG	06:56	500	395	0.79	-0.75	PEND	

— = Alpha Lockout

— = Alpha/Beta lockout

	ALPHA EFF	07:47	30	15023	501	-2.1	GOOD	
	BETA EFF	07:47	30	1.34E+05	4480	-0.29	GOOD	
LB4100C4	ALPHA BKG	06:56	500	29.0	0.06	0.14	PEND	
	BETA BKG	06:56	500	4842	9.68	51.2	DETL	Outside 3 sigma for > 2 days
	ALPHA EFF	07:47	30	21461	715	-0.65	GOOD	
	BETA EFF	07:47	30	2.15E+05	7160	0.16	GOOD	
LB4100D1	ALPHA BKG	06:56	500	170	0.34	5.58	DETL	Outside 2 sigma for >= 2 days
	BETA BKG	06:56	500	521	1.04	1.5	GOOD	
	ALPHA EFF	07:47	30	26213	874	-0.78	GOOD	
	BETA EFF	07:47	30	2.40E+05	8010	0.53	GOOD	
LB4100D2	ALPHA BKG	06:56	500	67.0	0.13	-0.22	GOOD	
	BETA BKG	06:56	500	468	0.94	-0.41	GOOD	
	ALPHA EFF	07:47	30	19224	641	-0.41	GOOD	
	BETA EFF	07:47	30	1.51E+05	5040	0.69	GOOD	
LB4100D3	ALPHA BKG	06:56	500	26.0	0.05	-0.01	PEND	
	BETA BKG	06:56	500	379	0.76	-0.08	PEND	
	ALPHA EFF	07:47	30	18181	606	-0.85	GOOD	
	BETA EFF	07:47	30	1.50E+05	5000	1.02	GOOD	
LB4100D4	ALPHA BKG	06:56	500	21.0	0.04	-0.74	PEND	
	BETA BKG	06:56	500	493	0.99	0.39	GOOD	
	ALPHA EFF	07:47	30	20484	683	-1.4	GOOD	
	BETA EFF	07:47	30	1.84E+05	6140	1.14	GOOD	
LB4100E1	ALPHA BKG	07:10	500	80.0	0.16	-0.41	GOOD	
	BETA BKG	07:10	500	750	1.5	1.62	GOOD	
	ALPHA EFF	08:00	30	32918	1100	-0.96	GOOD	
	BETA EFF	08:00	30	2.14E+05	7150	0.89	GOOD	
LB4100E2	ALPHA BKG	07:10	500	65.0	0.13	0.07	GOOD	
	BETA BKG	07:10	500	842	1.68	0.12	GOOD	
	ALPHA EFF	08:00	30	34934	1160	-0.16	GOOD	
	BETA EFF	08:00	30	2.89E+05	9640	0.47	GOOD	
LB4100E3	ALPHA BKG	07:10	500	23.0	0.05	-0.72	GOOD	
	BETA BKG	07:10	500	494	0.99	-0.6	GOOD	
	ALPHA EFF	08:00	30	35997	1200	0.15	GOOD	
	BETA EFF	08:00	30	2.39E+05	7950	1.02	GOOD	
LB4100E4	ALPHA BKG	07:10	500	49.0	0.1	-0.56	PEND	
	BETA BKG	07:10	500	818	1.64	-1.1	PEND	
	ALPHA EFF	08:00	30	31463	1050	1.02	GOOD	
	BETA EFF	08:00	30	2.26E+05	7520	0.08	GOOD	
LB4100F1	ALPHA BKG	07:10	500	37.0	0.07	-0.03	GOOD	
	BETA BKG	07:10	500	430	0.86	-0.86	GOOD	
	ALPHA EFF	08:00	30	25549	852	-4	DETL	Outside 2 sigma for >= 2 days
	BETA EFF	08:00	30	2.03E+05	6750	0.32	GOOD	
LB4100F2	ALPHA BKG	07:10	500	47.0	0.09	-0.44	PEND	
	BETA BKG	07:10	500	629	1.26	1.25	PEND	
	ALPHA EFF	08:00	30	27295	910	1.57	GOOD	
	BETA EFF	08:00	30	2.21E+05	7360	-00	GOOD	

LB4100F3	ALPHA BKG	07:10	500	85.0	0.17	-0.11	PEND	
	BETA BKG	07:10	500	665	1.33	-0.22	GOOD	
	ALPHA EFF	08:00	30	27262	909	-0.05	GOOD	
	BETA EFF	08:00	30	2.44E+05	8140	-0.78	GOOD	
LB4100F4	ALPHA BKG	07:10	500	22.0	0.04	0.03	GOOD	
	BETA BKG	07:10	500	377	0.75	-0.45	GOOD	
	ALPHA EFF	08:00	30	26950	898	0.76	GOOD	
	BETA EFF	08:00	30	1.72E+05	5720	-3.9	DETL	Outside 2 sigma for >= 2 days
LB4100G1	ALPHA BKG	07:10	500	48.0	0.1	-1.1	GOOD	
	BETA BKG	07:10	500	946	1.89	2.7	DETL	Outside 2 sigma for >= 2 days
	ALPHA EFF	08:00	30	31161	1040	-0.4	GOOD	
	BETA EFF	08:00	30	2.19E+05	7300	-1.2	GOOD	
LB4100G2	ALPHA BKG	07:10	500	46.0	0.09	0.89	GOOD	
	BETA BKG	07:10	500	455	0.91	1.15	GOOD	
	ALPHA EFF	08:00	30	31514	1050	-0.23	GOOD	
	BETA EFF	08:00	30	2.86E+05	9520	0.31	GOOD	
LB4100G3	ALPHA BKG	07:10	500	88.0	0.18	-0.46	PEND	
	BETA BKG	07:10	500	532	1.06	0.49	PEND	
	ALPHA EFF	08:00	30	22182	739	-1.1	GOOD	
	BETA EFF	08:00	30	2.46E+05	8190	-0.24	GOOD	
LB4100G4	ALPHA BKG	07:10	500	21.0	0.04	-0.26	GOOD	
	BETA BKG	07:10	500	473	0.95	-0.02	GOOD	
	ALPHA EFF	08:00	30	15311	510	0.75	GOOD	
	BETA EFF	08:00	30	1.50E+05	5010	-0.52	GOOD	
LB4100H1	ALPHA BKG	07:10	500	36.0	0.07	-0.46	GOOD	
	BETA BKG	07:10	500	341	0.68	-0.33	GOOD	
	ALPHA EFF	08:00	30	28547	952	-1.3	GOOD	
	BETA EFF	08:00	30	1.47E+05	4910	1	GOOD	
LB4100H2	ALPHA BKG	07:10	500	28.0	0.06	-0.35	GOOD	
	BETA BKG	07:10	500	411	0.82	-0.57	GOOD	
	ALPHA EFF	08:00	30	18485	616	-0.2	GOOD	
	BETA EFF	08:00	30	1.48E+05	4940	0.25	GOOD	
LB4100H3	ALPHA BKG	07:10	500	52.0	0.1	-0.26	PEND	
	BETA BKG	07:10	500	439	0.88	0.51	PEND	
	ALPHA EFF	08:00	30	18527	618	-0.83	GOOD	
	BETA EFF	08:00	30	1.54E+05	5120	0.32	GOOD	
LB4100H4	ALPHA BKG	07:10	500	32.0	0.06	-0.27	GOOD	
	BETA BKG	07:10	500	377	0.75	-0.16	GOOD	
	ALPHA EFF	08:00	30	17982	599	-0.83	GOOD	
	BETA EFF	08:00	30	1.24E+05	4120	0.22	GOOD	
PIC1A	ALPHA BKG	07:28	500	28.0	0.06	-1.6	GOOD	
	BETA BKG	07:28	500	183	0.37	-1	GOOD	
	ALPHA EFF	08:08	30	9701	323	-1.3	GOOD	
	BETA EFF	08:08	30	1.96E+05	6530	0.09	GOOD	
PIC1B	ALPHA BKG	07:29	500	24.0	0.05	-1.1	GOOD	
	BETA BKG	07:29	500	164	0.33	-0.39	GOOD	

	ALPHA EFF	08:08	30	10980	366	-1.7	GOOD	
	BETA EFF	08:08	30	2.14E+05	7130	-0.31	GOOD	
PIC1C	ALPHA BKG	07:29	500	26.0	0.05	-0.86	GOOD	
	BETA BKG	07:29	500	181	0.36	-0.16	GOOD	
	ALPHA EFF	08:08	30	15996	533	0.08	GOOD	
	BETA EFF	08:08	30	2.44E+05	8140	-1	GOOD	
PIC1D	ALPHA BKG	07:29	500	23.0	0.05	-1.5	GOOD	
	BETA BKG	07:29	500	151	0.3	-1	GOOD	
	ALPHA EFF	08:08	30	15808	527	-1.4	GOOD	
	BETA EFF	08:08	30	1.91E+05	6360	2.15	DETL	Outside 2 sigma for >= 2 days
PIC2A	ALPHA BKG	07:30	500	114	0.23	2.31	DETL	Outside 2 sigma for >= 2 days
	BETA BKG	07:30	500	248	0.5	-0.08	GOOD	
	ALPHA EFF	08:08	30	15219	507	-1.8	GOOD	
	BETA EFF	08:08	30	2.31E+05	7710	-0.2	GOOD	
PIC2B	ALPHA BKG	07:30	500	34.0	0.07	-0.31	GOOD	
	BETA BKG	07:30	500	143	0.29	-0.5	GOOD	
	ALPHA EFF	08:09	30	13316	444	-2.8	DETL	Outside 2 sigma for >= 2 days
	BETA EFF	08:09	30	2.29E+05	7640	-0.07	GOOD	
PIC2C	ALPHA BKG	07:30	500	48.0	0.1	-0.46	GOOD	
	BETA BKG	07:30	500	139	0.28	-0.62	GOOD	
	ALPHA EFF	08:09	30	18530	618	-1.3	GOOD	
	BETA EFF	08:09	30	1.94E+05	6460	0.68	GOOD	
PIC2D	ALPHA BKG	07:30	500	31.0	0.06	-1	GOOD	
	BETA BKG	07:30	500	227	0.45	0.3	GOOD	
	ALPHA EFF	08:09	30	16434	548	-1.9	GOOD	
	BETA EFF	08:09	30	2.24E+05	7470	0.81	GOOD	
PIC3A	ALPHA BKG	07:30	500	62.0	0.12	0.02	GOOD	
	BETA BKG	07:30	500	193	0.39	-0.43	GOOD	
	ALPHA EFF	08:09	30	21047	702	-2.3	DETL	Outside 2 sigma for >= 2 days
	BETA EFF	08:09	30	1.80E+05	6000	2.17	DETL	Outside 2 sigma for >= 2 days
PIC3B	ALPHA BKG	07:07	500	48.0	0.1	-0.56	GOOD	
	BETA BKG	07:07	500	164	0.33	-0.76	GOOD	
	ALPHA EFF	08:09	30	20002	667	-1.6	GOOD	
	BETA EFF	08:09	30	1.99E+05	6630	2.7	DETL	Outside 2 sigma for >= 2 days
PIC3C	ALPHA BKG	07:08	500	44.0	0.09	-0.58	GOOD	
	BETA BKG	07:08	500	181	0.36	-0.38	GOOD	
	ALPHA EFF	08:09	30	16613	554	-2	DETL	Outside 2 sigma for >= 2 days
	BETA EFF	08:09	30	2.14E+05	7120	1.81	GOOD	
PIC3D	ALPHA BKG	07:08	500	41.0	0.08	-0.71	GOOD	
	BETA BKG	07:08	500	200	0.4	-0.26	GOOD	
	ALPHA EFF	08:09	30	24865	829	-1.3	GOOD	
	BETA EFF	08:09	30	2.15E+05	7160	0.3	GOOD	
PIC4A	ALPHA BKG	07:08	500	50.0	0.1	-0.25	GOOD	
	BETA BKG	07:08	500	369	0.74	1.26	GOOD	
	ALPHA EFF	08:10	30	12489	416	-1.8	GOOD	
	BETA EFF	08:10	30	1.75E+05	5840	0.36	GOOD	

PIC4B	ALPHA BKG	07:08	500	98.0	0.2	1.81	GOOD	
	BETA BKG	07:08	500	246	0.49	0.19	GOOD	
	ALPHA EFF	08:10	30	17720	591	-2.2	DETL	Outside 2 sigma for >= 2 days
	BETA EFF	08:10	30	2.22E+05	7400	-1.5	GOOD	
PIC4C	ALPHA BKG	07:09	500	63.0	0.13	-0.13	GOOD	
	BETA BKG	07:09	500	201	0.4	-0.31	GOOD	
	ALPHA EFF	08:10	30	20147	672	-1.6	GOOD	
	BETA EFF	08:10	30	2.01E+05	6700	0.11	GOOD	
PIC4D	ALPHA BKG	07:09	500	37.0	0.07	-0.75	GOOD	
	BETA BKG	07:09	500	250	0.5	0.37	GOOD	
	ALPHA EFF	08:14	30	19457	649	-2.2	DETL	Outside 2 sigma for >= 2 days
	BETA EFF	08:14	30	2.13E+05	7090	1.5	GOOD	
PIC5A	ALPHA BKG	07:09	500	71.0	0.14	1.32	PEND	
	BETA BKG	07:09	500	472	0.94	3.83	DETL	Outside 2 sigma for >= 2 days
	ALPHA EFF	08:11	30	10843	361	-1.2	GOOD	
	BETA EFF	08:11	30	3.95E+05	13200	-2.9	GOOD	
PIC5B	ALPHA BKG	07:09	500	75.0	0.15	1.82	GOOD	
	BETA BKG	07:09	500	913	1.83	-1.5	GOOD	
	ALPHA EFF	08:11	30	9834	328	-1.3	GOOD	
	BETA EFF	08:11	30	3.49E+05	11600	-0.63	GOOD	
PIC5C	ALPHA BKG	07:10	500	210	0.42	10.7	DETL	Outside 2 sigma for >= 2 days
	BETA BKG	07:10	500	7283	14.6	148	DETL	Outside 2 sigma for >= 2 days
	ALPHA EFF	08:11	30	9817	327	-1.3	GOOD	
	BETA EFF	08:11	30	3.86E+05	12900	-0.6	GOOD	
PIC5D	ALPHA BKG	07:10	500	105	0.21	2.86	DETL	Outside 2 sigma for >= 2 days
	BETA BKG	07:10	500	1998	4	37.6	DETL	Outside 2 sigma for >= 2 days
	ALPHA EFF	08:11	30	8536	285	-1.2	GOOD	
	BETA EFF	08:11	30	3.08E+05	10300	-0.65	GOOD	
PIC6A	ALPHA BKG	07:10	500	273	0.55	11.4	DETL	Outside 2 sigma for >= 2 days
	BETA BKG	07:10	500	4672	9.34	39.8	DETL	Outside 2 sigma for >= 2 days
	ALPHA EFF	08:11	30	7655	255	-1.2	GOOD	
	BETA EFF	08:11	30	2.80E+05	9330	-0.82	GOOD	
PIC6B	ALPHA BKG	07:10	500	143	0.29	7.05	DETL	Outside 2 sigma for >= 2 days
	BETA BKG	07:10	500	2400	4.8	52.5	DETL	Outside 2 sigma for >= 2 days
	ALPHA EFF	08:11	30	9562	319	-1.7	GOOD	
	BETA EFF	08:11	30	2.89E+05	9620	-0.85	GOOD	
PIC6C	ALPHA BKG	07:10	500	139	0.28	6.33	DETL	Outside 2 sigma for >= 2 days
	BETA BKG	07:10	500	2620	5.24	53.8	DETL	Outside 2 sigma for >= 2 days
	ALPHA EFF	08:12	30	14074	469	-0.98	GOOD	
	BETA EFF	08:12	30	3.50E+05	11700	-0.47	GOOD	
PIC6D	ALPHA BKG	07:10	500	117	0.23	3.76	DETL	Outside 2 sigma for >= 2 days
	BETA BKG	07:10	500	5482	11	99.4	DETL	Outside 2 sigma for >= 2 days
	ALPHA EFF	08:12	30	10794	360	-1.2	GOOD	
	BETA EFF	08:12	30	3.59E+05	12000	0.1	GOOD	
PIC7A	ALPHA BKG	07:10	500	146	0.29	1.96	GOOD	
	BETA BKG	07:10	500	740	1.48	1.07	GOOD	

	ALPHA EFF	08:12	30	9511	317	-0.83	GOOD	
	BETA EFF	08:12	30	3.76E+05	12500	-2.3	DETL	Outside 2 sigma for >= 2 days
PIC7B	ALPHA BKG	07:11	500	191	0.38	0.02	RERUN	
	BETA BKG	07:11	500	401	0.8	-0.22	GOOD	
	ALPHA EFF	08:12	30	9790	326	-1.2	GOOD	
	BETA EFF	08:12	30	3.16E+05	10500	-0.81	GOOD	
PIC7C	ALPHA BKG	07:11	500	76.0	0.15	-0.11	PEND	
	BETA BKG	07:11	500	860	1.72	1.59	PEND	
	ALPHA EFF	08:13	30	10901	363	-1.1	GOOD	
	BETA EFF	08:13	30	3.78E+05	12600	-0.97	GOOD	
PIC7D	ALPHA BKG	07:11	500	112	0.22	-0.27	GOOD	
	BETA BKG	07:11	500	882	1.76	1.38	GOOD	
	ALPHA EFF	08:13	30	8098	270	-0.79	GOOD	
	BETA EFF	08:13	30	2.81E+05	9380	-0.4	GOOD	
PIC8A	ALPHA BKG	07:11	500	101	0.2	0.12	GOOD	
	BETA BKG	07:11	500	2148	4.3	0.94	RERUN	
	ALPHA EFF	08:13	30	13071	436	0.09	GOOD	
	BETA EFF	08:13	30	3.72E+05	12400	-1.7	GOOD	
PIC8B	ALPHA BKG	07:11	500	84.0	0.17	0.21	GOOD	
	BETA BKG	07:11	500	1276	2.55	1.23	RERUN	
	ALPHA EFF	08:13	30	9300	310	-1.2	GOOD	
	BETA EFF	08:13	30	3.68E+05	12300	-0.67	GOOD	
PIC8C	ALPHA BKG	07:12	500	241	0.48	0.29	RERUN	
	BETA BKG	07:12	500	874	1.75	2.37	DETL	Outside 2 sigma for >= 2 days
	ALPHA EFF	08:13	30	14116	471	-0.87	GOOD	
	BETA EFF	08:13	30	4.27E+05	14200	-0.48	GOOD	
PIC8D	ALPHA BKG	07:12	500	123	0.25	-0.22	GOOD	
	BETA BKG	07:12	500	2805	5.61	2.93	RERUN	
	ALPHA EFF	08:13	30	10807	360	1.18	GOOD	
	BETA EFF	08:13	30	3.69E+05	12300	-0.12	GOOD	

Reviewed by _____

Date 6/19/06

General Engineering Laboratories, LLC

RUNLOGS

Instrument Run Log

ID	Sample Type	Analyst	Instrument	Dil	Run Date	Batch Id	Status	Geometry	Cal Date
164270001	SAMPLE	BXF1	PIC1A		19-JUN-2006 19:55	538051	DONE	Tuffryn Filter	29-JUL-2005
164270002	SAMPLE	BXF1	PIC1B		19-JUN-2006 19:55	538051	DONE	Tuffryn Filter	29-JUL-2005
164270003	SAMPLE	BXF1	PIC1C		19-JUN-2006 19:55	538051	DONE	Tuffryn Filter	29-JUL-2005
164270004	SAMPLE	BXF1	PIC2A		19-JUN-2006 19:56	538051	DONE	Tuffryn Filter	29-JUL-2005
164270005	SAMPLE	BXF1	PIC2B		19-JUN-2006 19:56	538051	DONE	Tuffryn Filter	29-JUL-2005
164270006	SAMPLE	BXF1	PIC2C		19-JUN-2006 19:56	538051	DONE	Tuffryn Filter	29-JUL-2005
164270007	SAMPLE	BXF1	PIC2D		19-JUN-2006 19:57	538051	DONE	Tuffryn Filter	29-JUL-2005
164270008	SAMPLE	BXF1	PIC1A		19-JUN-2006 21:30	538051	DONE	Tuffryn Filter	29-JUL-2005
164270009	SAMPLE	BXF1	PIC1B		19-JUN-2006 21:30	538051	DONE	Tuffryn Filter	29-JUL-2005
1201111732	MB	BXF1	PIC1C		19-JUN-2006 21:30	538051	DONE	Tuffryn Filter	29-JUL-2005
1201111733	DUP	BXF1	PIC2B		19-JUN-2006 21:31	538051	DONE	Tuffryn Filter	29-JUL-2005
1201111734	MS	BXF1	PIC2C		19-JUN-2006 21:31	538051	DONE	Tuffryn Filter	29-JUL-2005
1201111735	LCS	BXF1	PIC3D		19-JUN-2006 21:31	538051	DONE	Tuffryn Filter	29-JUL-2005

Version 1.1 9/5/05
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