INITIAL VOC & RADIOLOGICAL SUBSURFACE INVESTIGATION REPORT

VETERANS ADMINISTRATION
GREATER LOS ANGELES HEALTHCARE SYSTEM
11301 WILSHIRE BOULEVARD
LOS ANGELES, CA 90073

VOLUME 3

APPENDICES 8 & 9

PROJECT NO. 02-3454EI-3

December 10, 2010

Prepared For:

Department of Veterans Affairs
Veterans Administration - Greater Los Angeles Healthcare System
11301 Wilshire Boulevard, Building 218, Room 308
Los Angeles, CA 90073

Prepared By:

ALLWEST GEOSCIENCE Inc.
1751 Jenks Drive
Corona, CA 92880

APPENDIX 8

GROUNDWATER ANALYTICAL REPORT - VOCs

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PROJECT: **VA GLAHS**

SDG: **09L179**

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GC-SVOA	**	5000 –
HPLC	**	6000 –
METALS	**	7000 –
WET	**	8000 –
OTHERS	**	9000 –

** - Not Requested

LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 12-29-2009
EMAX Batch No.: 09L179

Attn: John Grey

Allwest Geoscience, Inc.
1751 Jenks Dr.
Corona, CA 92880

Subject: Laboratory Report
Project: VA GLAHS

Enclosed is the Laboratory report for samples received on 12/09/09.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
MW3-20V	L179-01	12/08/09	SOIL	VOLATILE ORGANICS BY GC/MS
MW3-40V	L179-02	12/08/09	SOIL	VOLATILE ORGANICS BY GC/MS
MW1	L179-03	12/09/09	WATER	VOLATILE ORGANICS BY GC/MS
MW2	L179-04	12/09/09	WATER	VOLATILE ORGANICS BY GC/MS
MW3	L179-05	12/09/09	WATER	VOLATILE ORGANICS BY GC/MS

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning
these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that the results included in this report meet all NELAC requirements unless noted in the Case Narrative.

09L179

CHAIN OF CUSTODY FORM

P.O. NUMBER:

SITE/PROJECT NAME: U.S. Dept. Veteran Affairs

JOB NUMBER: 02-3454-EC

SITE/PROJECT LOCATION: VA GLAHS

SAMPLER(S) SIGNATURE: Jay A. Boughter

SUBMIT RESULTS TO:
Allwest Geoscience
1751 Jenks Dr. Corona Ca 92880
~~4442 Avery Park Avenue~~
~~Las Vegas, NV 89110~~

ATTN: ~~Jay A. Boughter~~ John Gay
PHONE NO. (949) 350-4682
FAX NO. (702) 463-7003

ANALYTICAL METHOD

	SAMPLE NUMBER (I.D.)	YEAR 2009 DATE MM/DD	TIME AM/PM	DEPTH BELOW GRADE (ft)	NO. OF CONTAINERS	TPHg 8015M	BTEX 8260B + MTBE ETBE TAME DIPE TBA	8260B Full Suite			REMARKS
1	MW3-20V	12/8	1:30 pm	20	3+1 soil			X	soil		< 0.1 cpm
2	MW3-40V	12/8	2:20 pm	40	3+1 soil			X	soil		< 400 mr/hr
3	MW1	12/9	7:00 am	—	2 VOA water			X	water		
4	MW2	12/9	7:30 am	—	2 VOA water			X	water		
5	MW3	12/9	:	—	2 VOA water			X	water		

SAMPLES INTACT: YES..... NO.....
SAMPLES PROPERLY COOLED: YES..... NO.....
TEMPERATURED STORED: 3.6° c
PRESERVATIVES ADDED: YES.... NO..... TYPE:
SAMPLES ACCEPTED: YES..... NO.....
IF NOT, WHY:

SAMPLES PLACED IN LAB REFRIGERATOR
YES..... NO..... REP. INITIALS.....

LABORATORY NAME: EMAX

RELINQUISHED	DATE/TIME	DATE/TIME	RECEIVED
RELINQUISHED BY (SIGNATURE)/COMPANY: Jay A. Boughter	DATE/TIME 12/9/09 12:34pm	DATE/TIME 12/9/09 13:34	RECEIVED BY (SIGNATURE)/COMPANY:
RELINQUISHED BY (SIGNATURE)/COMPANY:	DATE/TIME 12/9/09 14:15	DAT/TIME 12/9/09 14:15	RECEIVED BY (SIGNATURE)/COMPANY:
RELINQUISHED BY (SIGNATURE)/COMPANY:	DATE/TIME	DATE/TIME	RECEIVED BY (SIGNATURE)/COMPANY:

1001

EMAX LABORATORIES, INC.

SAMPLE RECEIPT FORM 1

Type of Delivery	Delivered By/Airbill	ECN 09L179
☑ EMAX Courier	See COC	Receipt J-LUNA
☐ Client Delivery		Date 12-9-09
☐ Third Party		Time 1415

COC Inspection

☑ Client Name	☑ Client PM/FC	☑ Sampler Name	☑ Sampling Date/Time/Location	☑ Sample ID	☑ Matrix
☐ Address	☐ Tel # / Fax #	☑ Courier Signature	☑ Analysis Required	☐ Preservative (if any)	☐ TAT
Safety Issues	☑ None	☐ High concentrations expected	☐ Superfund Site samples	☐ Rad screening required	

Comments:

Packaging Inspection

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☐ Custody Seal	☑ Intact	☐ Damaged		
Packaging	☐ Bubble Pack	☐ Styrofoam	☐ Popcorn	☑ Sufficient	☐ _____
Temperatures (Cool, ≤6 °C but not frozen)	☑ Cooler 1 3.6 °C	☐ Cooler 2 _____ °C	☐ Cooler 3 _____ °C	☐ Cooler 4 _____ °C	☐ Cooler 5 _____ °C
	☐ Cooler 6 _____ °C	☐ Cooler 7 _____ °C	☐ Cooler 8 _____ °C	☐ Cooler 9 _____ °C	☐ Cooler 10 _____ °C

Comments: ☐ **PM was informed on non-compliant coolers imediately.**

DISCREPANCIES

LSID	LSCID	Sample Label ID ~~/COC ID~~	Discrepancy Code	Corrective Action Code
01, 02			A2, D2	R2
01	004	12/9/09	D3	R2, R5
05			H1	R5

REVIEWS

Sample Labeling _____ Date 12/9/09

SRF _____ Date 12/9/09

PM Quonglunh for ½ Date 12/10/09

LEGEND:

Code	Description- Sample Management	Code	Description-Sample Management	Code	Description-Project Management
A1	Analysis is not indicated in COC	D1	Date and/or time is not indicated in COC	R1	Hold sample(s); wait for further instructions
A2	Analysis is not indicated in label	D2	Date and/or time is not indicated in label	R2	Proceed as indicated in COC
A3	Analysis is inconsistent in COC vis-à-vis label	D3	Date and/or time is inconsistent in COC vis-à-vis label	R3	Refer to attached instruction
A4	_____	E1	Insuficient preservative	R4	Cancel the analysis
B1	Sample ID is not indicated in COC	E2	Improper preservation	R5	Inform client
B2	Sample ID is not indicated in label	F1	Insufficient Sample	R6	_____
B3	Sample ID is inconsistent in COC vis-à-vis label	F2	Bubble is> 6mm		
B4	_____	G1	Temperature is out of range		
C1	Wrong container	G2	Out of Holding Time		
C2	Broken container	G3	>20 % solid particle		
C3	Leaking container	H1	No collection time on both COC & labels		
C4	_____	H2	_____		

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

ALLWEST GEOSCIENCE, INC.

VA GLAHS

METHOD 5030B/8260B
VOLATILE ORGANICS BY GC/MS

SDG#: 09L179

CASE NARRATIVE

Client : ALLWEST GEOSCIENCE, INC.

Project : VA GLAHS

SDG : 09L179

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

A total of three (3) water samples were received on 12/09/09 for Volatile Organics by GC/MS analysis, Method SW 5030B/8260B in accordance with Department of Defense Quality Systems Manual for Environmental Laboratories, Version 3 and USEPA SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Instrument mass ratios were within specification. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried on at a frequency required by the project. All project calibration requirements were satisfied. Refer to calibration summary forms for ICAL, ICV and CCV for details.

Method Blank
Method blank was analyzed at the frequency required by the project. For this SDG, one method blank was analyzed with the samples. Result was compliant to project requirement.

Lab Control Sample
A set of LCS/LCD was analyzed with the samples in this SDG.
Percent recoveries for VO94L16L/C were all within QC limits.

Matrix QC Sample
No matrix QC sample was designated in this SDG.

Surrogate
Surrogates were added on QC and field samples. Surrogate recoveries were within project QC limits.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met otherwise anomalies were discussed within the associated QC parameter.

LAB CHRONICLE
VOLATILE ORGANICS BY GC/MS

Client : ALLWEST GEOSCIENCE, INC.
Project : VA GLAHS

SDG NO. : 09L179
Instrument ID : T-094

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	V094L16B	1	NA	12/14/0912:53	12/14/0912:53	RLD391	RKD579	V094L16	Method Blank
LCS1W	V094L16L	1	NA	12/14/0911:22	12/14/0911:22	RLD388	RKD579	V094L16	Lab Control Sample (LCS)
LCD1W	V094L16C	1	NA	12/14/0911:53	12/14/0911:53	RLD389	RKD579	V094L16	LCS Duplicate
MW1	L179-03	1	NA	12/14/0913:24	12/14/0913:24	RLD392	RKD579	V094L16	Field Sample
MW2	L179-04	1	NA	12/14/0913:55	12/14/0913:55	RLD393	RKD579	V094L16	Field Sample
MW3	L179-05	1	NA	12/14/0914:25	12/14/0914:25	RLD394	RKD579	V094L16	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

2003

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client :	ALLWEST GEOSCIENCE, INC.	Date Collected:	12/09/09
Project :	VA GLAHS	Date Received:	12/09/09
Batch No. :	09L179	Date Extracted:	12/14/09 13:24
Sample ID:	MW1	Date Analyzed:	12/14/09 13:24
Lab Samp ID:	L179-03	Dilution Factor:	1
Lab File ID:	RLD392	Matrix :	WATER
Ext Btch ID:	V094L16	% Moisture :	NA
Calib. Ref.:	RKD579	Instrument ID :	T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	1.0	0.20
1,2-DICHLOROPROPANE	ND	1.0	0.20
2-BUTANONE	7.9J	10	5.0
2-HEXANONE	ND	10	5.0
4-METHYL-2-PENTANONE	ND	10	5.0
ACETONE	22	10	5.0
BENZENE	0.38J	1.0	0.20
BROMODICHLOROMETHANE	ND	1.0	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.20
CARBON DISULFIDE	ND	1.0	0.20
CARBON TETRACHLORIDE	ND	1.0	0.20
CHLOROBENZENE	ND	1.0	0.20
CHLOROETHANE	ND	1.0	0.20
CHLOROFORM	ND	1.0	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.20
DIBROMOCHLOROMETHANE	ND	1.0	0.20
ETHYLBENZENE	ND	1.0	0.20
M/P-XYLENES	ND	2.0	0.40
METHYLENE CHLORIDE	ND	1.0	0.50
MTBE	ND	1.0	0.20
O-XYLENE	ND	1.0	0.20
STYRENE	ND	1.0	0.20
TETRACHLOROETHYLENE	ND	1.0	0.20
TOLUENE	0.38J	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	1.0	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	92	70-120
TOLUENE-D8	102	85-120
4-BROMOFLUOROBENZENE	95	75-120
DIBROMOFLUOROMETHANE	103	85-115

RL: Reporting Limit

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: ALLWEST GEOSCIENCE, INC.	Date Collected:	12/09/09
Project	: VA GLAHS	Date Received:	12/09/09
Batch No.	: 09L179	Date Extracted:	12/14/09 13:55
Sample ID:	MW2	Date Analyzed:	12/14/09 13:55
Lab Samp ID:	L179-04	Dilution Factor:	1
Lab File ID:	RLD393	Matrix	: WATER
Ext Btch ID:	V094L16	% Moisture	: NA
Calib. Ref.:	RKD579	Instrument ID	: T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	1.0	0.20
1,2-DICHLOROPROPANE	ND	1.0	0.20
2-BUTANONE	5.4J	10	5.0
2-HEXANONE	ND	10	5.0
4-METHYL-2-PENTANONE	ND	10	5.0
ACETONE	ND	10	5.0
BENZENE	ND	1.0	0.20
BROMODICHLOROMETHANE	ND	1.0	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.20
CARBON DISULFIDE	ND	1.0	0.20
CARBON TETRACHLORIDE	ND	1.0	0.20
CHLOROBENZENE	ND	1.0	0.20
CHLOROETHANE	ND	1.0	0.20
CHLOROFORM	ND	1.0	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.20
DIBROMOCHLOROMETHANE	ND	1.0	0.20
ETHYLBENZENE	ND	1.0	0.20
M/P-XYLENES	ND	2.0	0.40
METHYLENE CHLORIDE	ND	1.0	0.50
MTBE	ND	1.0	0.20
O-XYLENE	ND	1.0	0.20
STYRENE	ND	1.0	0.20
TETRACHLOROETHYLENE	ND	1.0	0.20
TOLUENE	0.34J	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	1.0	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	103	70-120
TOLUENE-D8	101	85-120
4-BROMOFLUOROBENZENE	95	75-120
DIBROMOFLUOROMETHANE	106	85-115

RL: Reporting Limit

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: ALLWEST GEOSCIENCE, INC.	Date Collected:	12/09/09
Project	: VA GLAHS	Date Received:	12/09/09
Batch No.	: 09L179	Date Extracted:	12/14/09 14:25
Sample ID:	MW3	Date Analyzed:	12/14/09 14:25
Lab Samp ID:	L179-05	Dilution Factor:	1
Lab File ID:	RLD394	Matrix	: WATER
Ext Btch ID:	V094L16	% Moisture	: NA
Calib. Ref.:	RKD579	Instrument ID	: T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	1.0	0.20
1,2-DICHLOROPROPANE	ND	1.0	0.20
2-BUTANONE	ND	10	5.0
2-HEXANONE	ND	10	5.0
4-METHYL-2-PENTANONE	ND	10	5.0
ACETONE	9.9J	10	5.0
BENZENE	ND	1.0	0.20
BROMODICHLOROMETHANE	ND	1.0	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.20
CARBON DISULFIDE	0.22J	1.0	0.20
CARBON TETRACHLORIDE	ND	1.0	0.20
CHLOROBENZENE	ND	1.0	0.20
CHLOROETHANE	ND	1.0	0.20
CHLOROFORM	ND	1.0	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.20
DIBROMOCHLOROMETHANE	ND	1.0	0.20
ETHYLBENZENE	ND	1.0	0.20
M/P-XYLENES	ND	2.0	0.40
METHYLENE CHLORIDE	ND	1.0	0.50
MTBE	ND	1.0	0.20
O-XYLENE	ND	1.0	0.20
STYRENE	ND	1.0	0.20
TETRACHLOROETHYLENE	ND	1.0	0.20
TOLUENE	0.22J	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	1.0	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	105	70-120
TOLUENE-D8	98	85-120
4-BROMOFLUOROBENZENE	103	75-120
DIBROMOFLUOROMETHANE	107	85-115

RL: Reporting Limit

QC SUMMARIES

2007

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: ALLWEST GEOSCIENCE, INC.	Date Collected:	NA
Project	: VA GLAHS	Date Received:	12/14/09
Batch No.	: 09L179	Date Extracted:	12/14/09 12:53
Sample ID:	MBLK1W	Date Analyzed:	12/14/09 12:53
Lab Samp ID:	V094L16B	Dilution Factor:	1
Lab File ID:	RLD391	Matrix :	WATER
Ext Btch ID:	V094L16	% Moisture :	NA
Calib. Ref.:	RKD579	Instrument ID :	T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.20
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.20
1,1,2-TRICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHANE	ND	1.0	0.20
1,1-DICHLOROETHENE	ND	1.0	0.20
1,2-DICHLOROETHANE	ND	1.0	0.20
1,2-DICHLOROPROPANE	ND	1.0	0.20
2-BUTANONE	ND	10	5.0
2-HEXANONE	ND	10	5.0
4-METHYL-2-PENTANONE	ND	10	5.0
ACETONE	ND	10	5.0
BENZENE	ND	1.0	0.20
BROMODICHLOROMETHANE	ND	1.0	0.20
BROMOFORM	ND	1.0	0.30
BROMOMETHANE	ND	1.0	0.20
CARBON DISULFIDE	ND	1.0	0.20
CARBON TETRACHLORIDE	ND	1.0	0.20
CHLOROBENZENE	ND	1.0	0.20
CHLOROETHANE	ND	1.0	0.20
CHLOROFORM	ND	1.0	0.20
CHLOROMETHANE	ND	1.0	0.20
CIS-1,2-DICHLOROETHENE	ND	1.0	0.20
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.20
DIBROMOCHLOROMETHANE	ND	1.0	0.20
ETHYLBENZENE	ND	1.0	0.20
M/P-XYLENES	ND	2.0	0.40
METHYLENE CHLORIDE	ND	1.0	0.50
MTBE	ND	1.0	0.20
O-XYLENE	ND	1.0	0.20
STYRENE	ND	1.0	0.20
TETRACHLOROETHYLENE	ND	1.0	0.20
TOLUENE	ND	1.0	0.20
TRANS-1,2-DICHLOROETHENE	ND	1.0	0.20
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.20
TRICHLOROETHENE	ND	1.0	0.20
VINYL CHLORIDE	ND	1.0	0.20

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	90	70-120
TOLUENE-D8	100	85-120
4-BROMOFLUOROBENZENE	95	75-120
DIBROMOFLUOROMETHANE	102	85-115

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: ALLWEST GEOSCIENCE, INC.
PROJECT: VA GLAHS
BATCH NO.: 09L179
METHOD: SW 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	VO94L16B	VO94L16L	VO94L16C		
LAB FILE ID:	RLD391	RLD388	RLD389		
DATE EXTRACTED:	12/14/0912:53	12/14/0911:22	12/14/0911:53	DATE COLLECTED:	NA
DATE ANALYZED:	12/14/0912:53	12/14/0911:22	12/14/0911:53	DATE RECEIVED:	12/14/09
PREP. BATCH:	VO94L16	VO94L16	VO94L16		
CALIB. REF:	RKD579	RKD579	RKD579		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1-Trichloroethane	ND	10.0	10.7	107	10.0	9.94	99	7	65-130	30
1,1,2,2-Tetrachloroethane	ND	10.0	11.3	113	10.0	11.1	111	2	65-130	30
1,1,2-Trichloroethane	ND	10.0	12.5	125	10.0	12.0	120	4	75-125	30
1,1-Dichloroethane	ND	10.0	11.4	114	10.0	11.0	110	4	70-135	30
1,1-Dichloroethene	ND	10.0	10.5	105	10.0	10.2	102	3	70-130	30
1,2-Dichloroethane	ND	10.0	9.97	100	10.0	9.30	93	7	70-130	30
1,2-Dichloropropane	ND	10.0	12.3	123	10.0	11.9	119	4	75-125	30
2-Butanone	ND	50.0	55.5	111	50.0	54.5	109	2	30-150	30
2-Hexanone	ND	50.0	60.9	122	50.0	57.1	114	6	55-130	30
4-Methyl-2-Pentanone	ND	50.0	57.7	115	50.0	55.3	111	4	60-135	30
Acetone	ND	50.0	51.8	104	50.0	51.1	102	1	40-140	30
Benzene	ND	10.0	11.2	112	10.0	10.7	107	5	80-120	30
Bromodichloromethane	ND	10.0	11.7	117	10.0	10.7	107	9	75-120	30
Bromoform	ND	10.0	10.0	100	10.0	9.61	96	4	70-130	30
Bromomethane	ND	10.0	9.52	95	10.0	9.57	96	1	30-145	30
Carbon Disulfide	ND	10.0	10.5	105	10.0	10.5	105	0	35-160	30
Carbon Tetrachloride	ND	10.0	10.6	106	10.0	9.68	97	9	65-140	30
Chlorobenzene	ND	10.0	11.8	118	10.0	11.3	113	4	80-120	30
Chloroethane	ND	10.0	10.8	108	10.0	11.4	114	5	60-135	30
Chloroform	ND	10.0	10.5	105	10.0	9.87	99	6	65-135	30
Chloromethane	ND	10.0	10.7	107	10.0	10.5	105	2	40-125	30
cis-1,2-Dichloroethene	ND	10.0	11.6	116	10.0	10.8	108	8	70-125	30
cis-1,3-Dichloropropene	ND	10.0	12.0	120	10.0	11.4	114	5	70-130	30
Dibromochloromethane	ND	10.0	12.8	128	10.0	11.8	118	8	60-135	30
Ethylbenzene	ND	10.0	11.3	113	10.0	10.6	106	6	75-125	30
m/p-Xylenes	ND	20.0	22.3	112	20.0	20.8	104	7	75-130	30
Methylene Chloride	ND	10.0	9.42	94	10.0	9.40	94	0	55-140	30
MTBE	ND	10.0	11.4	114	10.0	10.8	108	5	65-125	30
o-Xylene	ND	10.0	11.6	116	10.0	10.7	107	7	80-120	30
Styrene	ND	10.0	11.9	119	10.0	11.2	112	6	65-135	30
Tetrachloroethylene	ND	10.0	11.5	115	10.0	10.6	106	8	45-150	30
Toluene	ND	10.0	10.7	107	10.0	10.2	102	5	75-120	30
Trans-1,2-Dichloroethene	ND	10.0	11.4	114	10.0	10.9	109	5	60-140	30
Trans-1,3-Dichloropropene	ND	10.0	11.6	116	10.0	10.9	109	6	55-140	30
Trichloroethene	ND	10.0	11.6	116	10.0	10.9	109	6	70-125	30
Vinyl Chloride	ND	10.0	10.1	101	10.0	10.4	104	3	50-145	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	9.21	92	10.0	8.78	88	70-120
Toluene-d8	10.0	9.94	99	10.0	9.47	95	85-120
4-Bromofluorobenzene	10.0	9.33	93	10.0	9.30	93	75-120
Dibromofluoromethane	10.0	10.6	106	10.0	10.2	102	85-115

INITIAL CALIBRATIONS

2010

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc
Lab Code: EMXT Case No.:
Lab File ID: RKD573
Instrument ID: T094
GC Column:RTX502.2ID:0.32mm (mm)

Contract: VA GLAHS
SAS No.: SDG No.: 09L179
BFB Injection Date : 11/20/09
BFB Injection Time : 16:59
Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	24.94
75	30.0 - 60.0% of mass 95	57.50
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.75
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	70.56
175	5.0 - 9.0% of mass 174	5.00(7.1)1
176	95.0 - 101.0% of mass 174	68.12(96.5)1
177	5.0 - 9.0% of mass 176	4.72(6.9)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD0.3	V094K2001	RKD574	11/20/09	17:32
2	VSTD0.5	V094K2002	RKD575	11/20/09	18:02
3	VSTD01	V094K2003	RKD576	11/20/09	18:33
4	VSTD02	V094K2004	RKD577	11/20/09	19:03
5	VSTD05	V094K2005	RKD578	11/20/09	19:34
6	VSTD010	V094K2006	RKD579	11/20/09	20:04
7	VSTD020	V094K2007	RKD580	11/20/09	20:34
8	VSTD030	V094K2008	RKD581	11/20/09	21:05
9	VSTD040	V094K2009	RKD582	11/20/09	21:35

FORM V VOA OLM02.0

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc
Lab Code: EMXT Case No.:
Lab File ID: RKD613
Instrument ID: T094
GC Column:RTX502.2ID:0.32mm (mm)

Contract: VA GLAHS
SAS No.: SDG No.: 09L179
BFB Injection Date : 11/23/09
BFB Injection Time : 17:48
Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	25.50
75	30.0 - 60.0% of mass 95	58.11
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.75
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	67.66
175	5.0 - 9.0% of mass 174	5.00(7.4)1
176	95.0 - 101.0% of mass 174	64.60(95.5)1
177	5.0 - 9.0% of mass 176	4.41(6.8)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD010	IV094K2003	RKD614	11/23/09	18:18

FORM V VOA OLM02.0

2012

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :T094
Beginning DateTime :11/20/09 17:32
Spike Units :PPB
IC File :RKD579

Column Spec :RTX502.2 ID :0.32MM
Ending DateTime :11/20/09 21:35
HPChem Method :V094K20

M	IDX	Parameters	.3 17:32 RKD574	.5 18:02 RKD575	1 18:33 RKD576	2 19:03 RKD577	5 19:34 RKD578	10 20:04 RKD579	20 20:34 RKD580	30 21:05 RKD581	40 21:35 RKD582	Av_RRF	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	1	1	1	0	9.1469
	2	Dichlorodifluoromethane	0.341	0.385	0.384	0.318	0.296	0.336	0.286	0.252	------	0.325	14.34	4.4732
	3	Chloromethane	------	0.446	0.399	0.335	0.336	0.402	0.371	0.326	0.342	0.370	11.53	4.7453
	4	Vinyl chloride	0.425	0.422	0.386	0.334	0.329	0.395	0.354	0.309	0.320	0.364	12.19	4.8688
	5	Bromomethane	------	0.319	0.290	0.233	0.219	0.272	0.238	------	------	0.262	14.78	5.3187
	6	Dichlorofluoromethane	0.719	0.698	0.802	0.794	0.811	0.858	0.816	0.685	0.703	0.765	8.31	5.3449
	7	Chloroethane	0.231	0.211	0.226	0.186	0.187	0.231	0.206	0.189	0.195	0.207	9.03	5.3595
	8	Trichlorofluoromethane	0.536	0.700	0.656	0.535	0.543	0.621	0.533	0.466	0.452	0.560	14.80	5.5886
	9	sec-Propyl alcohol	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
5	10	Acrolein	0.009	0.010	0.011	0.012	0.011	0.011	0.012	0.011	0.012	0.011	9.51	5.8729
5	11	Acetone	------	------	------	0.043	0.035	0.035	0.034	0.029	0.031	0.035	13.63	5.9001
	12	1,1,2-Trichloro-1,2,2-trifluoroethane	0.197	0.173	0.218	0.239	0.232	0.251	0.237	0.211	0.215	0.219	10.94	5.9200
5	13	tert-Butyl alcohol	0.008	0.006	0.008	0.009	0.008	0.009	0.009	0.008	0.009	0.008	13.70	6.0549
	14	1,1-Dichloroethene	0.647	0.574	0.657	0.699	0.692	0.691	0.684	0.597	0.598	0.649	7.36	6.1394
	15	Methyl acetate	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	16	Iodomethane	0.478	0.480	0.555	0.534	0.564	0.598	0.602	0.537	0.572	0.547	8.24	6.4985
	17	Methylene chloride	------	0.578	0.559	0.535	0.490	0.487	0.482	0.428	0.455	0.502	10.27	6.5220
6	18	Acrylonitrile	0.025	0.028	0.028	0.029	0.028	0.030	0.032	0.030	0.033	0.029	8.10	6.5569
	19	tert-Butyl methyl ether (MTBE)	0.435	0.430	0.503	0.510	0.507	0.515	0.500	0.451	0.468	0.480	7.06	6.5862
	20	Carbon disulfide	1.027	0.960	1.126	1.116	1.136	1.231	1.267	1.168	1.254	1.143	8.97	6.7649
	21	trans-1,2-Dichloroethene	0.569	0.561	0.633	0.642	0.654	0.677	0.676	0.595	0.629	0.626	6.82	6.8153
	22	Isopropyl ether (DIPE)	0.923	0.887	0.998	1.003	0.997	1.074	1.093	0.977	1.115	1.008	7.51	6.9241
	23	Vinyl acetate	0.370	0.346	0.304	0.267	0.269	0.302	0.284	0.257	0.274	0.297	12.94	7.0395
	24	1,1-Dichloroethane	0.668	0.665	0.739	0.734	0.743	0.785	0.777	0.685	0.717	0.724	6.04	7.1987
	25	tert-Butyl ethyl ether (ETBE)	0.655	0.665	0.773	0.774	0.779	0.820	0.816	0.715	0.768	0.752	8.00	7.3304
5	26	2-Butanone	0.041	0.047	0.045	0.049	0.045	0.048	0.048	0.044	0.047	0.046	5.84	7.4961
	27	2,2-Dichloropropane	0.480	0.514	0.591	0.585	0.577	0.578	0.557	0.448	0.456	0.532	10.90	7.7723
	28	cis-1,2-Dichloroethene	0.576	0.589	0.683	0.684	0.690	0.710	0.694	0.597	0.621	0.649	8.12	7.8162
	29	tert-Butyl formate (TBF)	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	30	Chloroform	0.689	0.710	0.797	0.801	0.789	0.827	0.822	0.689	0.706	0.759	7.74	7.9884
	31	Bromochloromethane	0.227	0.200	0.245	0.247	0.248	0.261	0.264	0.232	0.246	0.241	8.02	8.2061
	32	Tetrahydrofuran	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	33	Dibromofluoromethane	0.280	0.311	0.341	0.357	0.359	0.391	0.373	0.329	0.346	0.343	9.72	8.2256
	34	1,1,1-Trichloroethane	0.627	0.607	0.739	0.741	0.751	0.753	0.736	0.609	0.617	0.687	9.99	8.4726
	35	Cyclohexane	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	36	tert-Amyl methyl ether (TAME)	0.663	0.600	0.667	0.634	0.656	0.692	0.678	0.598	0.629	0.646	5.13	8.6269
	37	1,2-Dichloroethane-d4	0.254	0.325	0.310	0.333	0.344	0.369	0.343	0.277	0.291	0.316	11.58	8.7813
	38	CHLOROBENZENE-D5	1	1	1	1	1	1	1	1	1	1	0	13.7970
	39	1,1-Dichloropropene	0.209	0.192	0.225	0.225	0.222	0.224	0.220	0.207	0.215	0.215	5.21	8.6302
	40	Carbon tetrachloride	0.770	0.685	0.802	0.842	0.827	0.856	0.792	0.701	0.680	0.773	8.83	8.8186
	41	1,2-Dichloroethane	0.581	0.535	0.609	0.579	0.549	0.558	0.524	0.435	0.456	0.536	10.76	8.8869
	42	Benzene	2.010	1.850	1.874	1.806	1.731	1.771	1.797	1.693	1.786	1.813	5.08	8.9893
	43	Trichloroethene	0.504	0.474	0.480	0.488	0.471	0.496	0.482	0.451	0.471	0.480	3.26	9.7025
	44	Methylcyclohexane	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	45	1,2-Dichloropropane	0.342	0.350	0.379	0.391	0.380	0.389	0.379	0.354	0.391	0.373	5.08	9.9040
20	46	1,4-Dioxane	------	------	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	21.08	10.1638
	47	Bromodichloromethane	0.527	0.513	0.580	0.592	0.595	0.628	0.602	0.528	0.563	0.570	6.96	10.2420
	48	Dibromomethane	0.160	0.159	0.191	0.175	0.183	0.188	0.184	0.165	0.174	0.176	6.75	10.3639
	49	2-Chloroethyl vinyl ether	------	------	------	0.029	0.033	0.039	0.042	0.040	------	0.036	14.97	10.4130
5	50	4-Methyl-2-pentanone	0.125	0.130	0.129	0.141	0.135	0.143	0.146	0.134	0.150	0.137	6.19	10.4548
	51	cis-1,3-Dichloropropene	0.465	0.510	0.563	0.560	0.596	0.618	0.611	0.551	0.581	0.562	8.74	10.8903
	52	Toluene-d8	1.153	1.322	1.328	1.356	1.358	1.495	1.369	1.333	1.440	1.350	6.93	11.3257
	53	Ethyl methacrylate	------	0.165	0.224	0.215	0.225	0.251	0.247	0.228	0.248	0.225	12.39	11.3842
	54	Toluene	2.379	1.901	1.990	1.835	1.775	1.813	1.775	1.668	1.739	1.875	11.23	11.4541
	55	trans-1,3-Dichloropropene	0.351	0.353	0.415	0.438	0.477	0.502	0.480	0.427	0.453	0.433	12.33	11.5776
	56	2-Hexanone	0.064	0.072	0.072	0.089	0.083	0.090	0.088	0.082	0.089	0.081	11.61	11.7108
	57	1,1,2-Trichloroethane	0.137	0.143	0.191	0.181	0.188	0.191	0.184	0.169	0.181	0.174	11.64	11.8814
	58	1,3-Dichloropropane	0.329	0.348	0.396	0.398	0.390	0.405	0.390	0.358	0.383	0.377	6.96	12.2616

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59	Tetrachloroethene	0.412	0.399	0.409	0.400	0.410	0.411	0.402	0.367	0.372	0.398	4.25	12.5102
60	Dibromochloromethane	0.206	0.204	0.242	0.256	0.277	0.294	0.289	0.260	0.277	0.256	12.91	12.8465
61	1,2-Dibromoethane	0.139	0.165	0.178	0.201	0.198	0.206	0.202	0.183	0.197	0.186	11.95	13.1975
62	1-Chlorohexane	0.661	0.600	0.700	0.716	0.744	0.777	0.765	0.704	0.727	0.710	7.63	13.1942
63	Chlorobenzene	0.947	0.939	1.006	0.976	1.019	1.040	1.031	0.949	------	0.988	4.10	13.8667
64	Ethylbenzene	2.155	2.039	2.253	2.187	2.244	2.319	2.265	2.065	------	2.191	4.53	13.8649
65	1,1,1,2-Tetrachloroethane	0.326	0.329	0.358	0.364	0.380	0.389	0.378	------	------	0.361	6.93	13.8811
2 66	m-Xylene & p-Xylene	1.572	1.593	1.680	1.675	1.695	1.785	1.755	------	------	1.679	4.62	13.9835
67	o-Xylene	1.496	1.418	1.589	1.570	1.670	1.705	1.598	1.435	1.495	1.553	6.40	14.7924
68	Styrene	0.888	0.780	0.989	0.956	1.006	1.080	1.052	0.966	1.006	0.969	9.28	14.8362
69	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	1	1	1	0	19.0189
70	Isopropylbenzene	5.635	5.424	6.097	5.708	5.796	6.113	5.989	5.721	6.083	5.841	4.15	15.3805
71	Bromoform	------	0.227	0.265	0.305	0.350	0.375	0.385	0.377	0.413	0.337	19.29	15.5986
72	1,1,2,2-Tetrachloroethane	0.436	0.409	0.510	0.480	0.503	0.500	0.505	0.484	0.526	0.483	7.80	15.6844
73	4-Bromofluorobenzene	1.535	1.568	1.483	1.389	1.401	1.511	1.387	1.373	1.455	1.456	4.97	15.9134
74	1,2,3-Trichloropropane	------	0.136	0.149	0.144	0.161	0.161	0.155	0.150	0.161	0.152	6.09	15.9678
75	trans-1,4-Dichloro-2-butene	------	------	0.105	0.114	0.127	0.141	0.149	0.143	0.161	0.134	14.70	15.9996
76	n-Propylbenzene	7.067	6.751	7.231	6.970	7.207	7.475	7.358	7.030	------	7.136	3.22	16.1302
77	Bromobenzene	0.943	0.923	1.047	1.020	1.057	1.068	1.058	1.028	1.049	1.021	5.13	16.3835
78	1,3,5-Trimethylbenzene	4.358	3.949	4.540	4.424	4.553	4.558	4.533	4.296	4.533	4.416	4.51	16.4014
79	2-Chlorotoluene	4.219	4.299	4.439	4.190	4.456	4.674	4.335	4.157	4.442	4.357	3.76	16.5769
80	4-Chlorotoluene	3.872	3.332	3.981	3.817	3.615	3.574	3.734	3.394	3.456	3.642	6.17	16.6354
81	tert-Butylbenzene	3.941	3.657	4.081	3.960	4.119	4.053	4.048	3.790	3.882	3.948	3.82	17.1098
82	1,2,4-Trimethylbenzene	3.780	3.803	4.307	4.079	4.133	4.153	4.168	3.872	4.121	4.046	4.54	17.1910
83	sec-Butylbenzene	5.885	5.502	6.120	5.998	6.215	6.289	6.241	5.818	6.031	6.011	4.14	17.5241
84	p-Isopropyltoluene	4.840	4.369	4.817	4.706	4.813	4.951	4.882	4.438	4.713	4.726	4.20	17.7467
85	1,3-Dichlorobenzene	1.859	1.880	2.020	1.963	2.031	2.009	2.029	1.842	1.969	1.956	3.89	18.0977
86	1,4-Dichlorobenzene	1.895	1.790	2.008	1.846	1.874	1.872	1.919	1.734	1.863	1.867	4.13	18.2910
87	n-Butylbenzene	4.690	4.149	5.365	5.298	5.654	5.771	5.854	5.386	5.506	5.297	10.35	18.5656
88	1,2-Dichlorobenzene	1.475	1.294	1.536	1.439	1.517	1.497	1.561	1.393	1.470	1.465	5.58	19.0774
89	1,2-Dibromo-3-chloropropane	------	------	------	0.049	0.052	0.064	0.065	0.063	0.067	0.060	12.73	20.6155
90	1,2,4-Trichlorobenzene	0.705	0.698	0.799	0.770	0.849	0.916	0.935	0.873	0.904	0.828	10.76	22.5317
91	Hexachlorobutadiene	0.847	0.795	0.875	0.871	0.865	0.900	0.899	0.775	0.788	0.846	5.68	22.7852
92	Naphthalene	------	------	0.709	0.757	0.820	0.899	0.955	0.909	0.981	0.861	11.85	23.2157
93	1,2,3-Trichlorobenzene	------	0.447	0.523	0.524	0.562	0.597	0.631	0.556	0.602	0.556	10.39	23.7863

Spike Amount = Nominal Amount * M
Ave_%RSD : 8.6 Max_%RSD : 21.1

Use Least Square Linear Regression with weighting factor of inverse concentration for comps with %_RSD > 15
Resp_Ratio = xo + x1 * Amt_Ratio

IDX	Parameter	x0	x1	CCF
46	1,4-Dioxane	-0.00095	0.00092	0.9973
71	Bromoform	-0.01209	0.39609	0.9990

SY 11/25/09

2011

SECOND SOURCE VERIFICATION

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\09K23\RKD614.D Vial: 2
Acq On : 23 Nov 2009 6:18 pm Operator: AS
Sample : IVO94K2003 10ppb Inst : TO94
Misc : 10ppb8260/50ppbKET-A-TBA/60ppbACN Multiplr: 1.00
MS Integration Params: 524TAIL.P

Method : D:\HPCHEM\1\METHODS\VO94K20.M (RTE Integrator)
Title : METHOD 8260B 4.0
Last Update : Mon Nov 23 17:42:15 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	99	0.00
2	T	Dichlorodifluoromethane	10.000	9.663	3.4	92	0.00
3	P,T	Chloromethane	10.000	9.935	0.6	90	0.00
4	C,T	Vinyl chloride	10.000	9.821	1.8	89	0.00
5	T	Bromomethane	10.000	9.251	7.5	88	0.00
6	T	Dichlorofluoromethane	10.000	10.670	-6.7	94	0.00
7	T	Chloroethane	10.000	9.573	4.3	85	0.00
8	T	Trichlorofluoromethane	10.000	10.577	-5.8	94	0.00
9	T	sec-Propyl alcohol	-1.000	0.000	0.0	0	0.00
10	T	Acrolein	50.000	45.910	8.2	90	0.00
11	T	Acetone	50.000	49.374	1.3	96	0.00
12	T	1,1,2-Trichloro-1,2,2-trifl	10.000	10.244	-2.4	88	0.00
13	T	tert-Butyl alcohol	50.000	54.962	-9.9	100	0.00
14	C,T,M	1,1-Dichloroethene	10.000	10.292	-2.9	95	0.00
15	T	Methyl acetate	-1.000	0.000	0.0	0	0.00
16	T	Iodomethane	10.000	10.445	-4.5	94	0.00
17	T	Methylene chloride	10.000	9.235	7.7	94	0.00
18	T	Acrylonitrile	60.000	57.992	3.3	94	0.00
19	T	tert-Butyl methyl ether (MT	10.000	10.331	-3.3	95	0.01
20	T	Carbon disulfide	10.000	10.062	-0.6	92	0.00
21	T	trans-1,2-Dichloroethene	10.000	10.197	-2.0	93	0.00
22	T	Isopropyl ether (DIPE)	10.000	10.058	-0.6	93	0.00
23	T	Vinyl acetate	10.000	9.125	8.8	89	0.01
24	P,T	1,1-Dichloroethane	10.000	10.064	-0.6	92	0.00
25	T	tert-Butyl ethyl ether (ETB	10.000	10.629	-6.3	96	0.01
26	T	2-Butanone	50.000	48.882	2.2	92	0.00
27	T	2,2-Dichloropropane	10.000	11.330	-13.3	103	0.00
28	T	cis-1,2-Dichloroethene	10.000	10.524	-5.2	95	0.00
29	T	tert-Butyl formate (TBF)	-1.000	0.000	0.0	0	0.00
30	C,T	Chloroform	10.000	10.655	-6.5	97	0.01
31	T	Bromochloromethane	10.000	10.108	-1.1	92	0.00
32	T	Tetrahydrofuran	-1.000	0.000	0.0	0	0.00
33	S	Dibromofluoromethane	10.000	9.433	5.7	82	0.00
34	T	1,1,1-Trichloroethane	10.000	10.957	-9.6	99	0.01
35	T	Cyclohexane	-1.000	0.000	0.0	0	0.00
36	T	tert-Amyl methyl ether (TAM	10.000	10.060	-0.6	93	0.00
37	S	1,2-Dichloroethane-d4	10.000	9.548	4.5	81	0.00
38	I	CHLOROBENZENE-D5	10.000	10.000	0.0	99	0.00
39	T	1,1-Dichloropropene	10.000	9.918	0.8	94	0.01
40	T	Carbon tetrachloride	10.000	10.679	-6.8	95	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\09K23\RKD614.D Vial: 2
Acq On : 23 Nov 2009 6:18 pm Operator: AS
Sample : IVO94K2003 10ppb Inst : TO94
Misc : 10ppb8260/50ppbKET-A-TBA/60ppbACN Multiplr: 1.00
MS Integration Params: 524TAIL.P

Method : D:\HPCHEM\1\METHODS\VO94K20.M (RTE Integrator)
Title : METHOD 8260B 4.0
Last Update : Mon Nov 23 17:42:15 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
41	T	1,2-Dichloroethane	10.000	10.327	-3.3	98	0.00
42	T,M	Benzene	10.000	9.526	4.7	96	0.00
43	T,M	Trichloroethene	10.000	9.817	1.8	94	0.00
44	T	Methylcyclohexane	-1.000	0.000	0.0	0	0.00
45	C,T	1,2-Dichloropropane	10.000	10.162	-1.6	96	0.00
46	T	1,4-Dioxane	200.000	209.145	-4.6	97	0.00
47	T	Bromodichloromethane	10.000	10.554	-5.5	94	0.00
48	T	Dibromomethane	10.000	10.249	-2.5	94	0.00
49	T	2-Chloroethyl vinyl ether	10.000	8.615	13.8	80	0.01
50	T	4-Methyl-2-pentanone	50.000	49.849	0.3	94	0.00
51	T	cis-1,3-Dichloropropene	10.000	10.651	-6.5	95	0.00
52	S	Toluene-d8	10.000	9.080	9.2	81	0.00
53	T	Ethyl methacrylate	10.000	10.029	-0.3	89	0.00
54	C,T,M	Toluene	10.000	9.424	5.8	96	0.00
55	T	trans-1,3-Dichloropropene	10.000	11.291	-12.9	96	0.00
56	T	2-Hexanone	50.000	53.469	-6.9	95	0.00
57	T	1,1,2-Trichloroethane	10.000	10.187	-1.9	92	0.00
58	T	1,3-Dichloropropane	10.000	10.260	-2.6	94	0.00
59	T	Tetrachloroethene	10.000	10.302	-3.0	98	0.00
60	T	Dibromochloromethane	10.000	11.208	-12.1	96	0.00
61	T	1,2-Dibromoethane	10.000	10.818	-8.2	96	0.00
62	T	1-Chlorohexane	10.000	10.389	-3.9	94	0.01
63	P,M	Chlorobenzene	10.000	10.348	-3.5	97	0.00
64	C,T	Ethylbenzene	10.000	10.261	-2.6	96	0.00
65	T	1,1,1,2-Tetrachloroethane	10.000	10.560	-5.6	96	0.00
66	T	m-Xylene & p-Xylene	20.000	21.081	-5.4	98	0.01
67	T	o-Xylene	10.000	10.768	-7.7	97	0.00
68	T	Styrene	10.000	10.639	-6.4	94	0.00
69	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	98	0.00
70	T	Isopropylbenzene	10.000	10.246	-2.5	96	0.00
71	P,T	Bromoform	10.000	9.425	5.7	95	0.00
72	P,T	1,1,2,2-Tetrachloroethane	10.000	10.159	-1.6	96	0.00
73	S	4-Bromofluorobenzene	10.000	8.771	12.3	83	0.00
74	T	1,2,3-Trichloropropane	10.000	9.857	1.4	91	0.00
75	T	trans-1,4-Dichloro-2-butene	10.000	10.063	-0.6	94	0.00
76	T	n-Propylbenzene	10.000	10.230	-2.3	96	0.00
77	T	Bromobenzene	10.000	10.227	-2.3	96	0.01
78	T	1,3,5-Trimethylbenzene	10.000	10.186	-1.9	97	0.00
79	T	2-Chlorotoluene	10.000	10.645	-6.4	97	0.00
80	T	4-Chlorotoluene	10.000	9.495	5.1	95	0.00

(#) = Out of Range

SLL 11/25/09

2017

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\09K23\RKD614.D Vial: 2
Acq On : 23 Nov 2009 6:18 pm Operator: AS
Sample : IVO94K2003 10ppb Inst : TO94
Misc : 10ppb8260/50ppbKET-A-TBA/60ppbACN Multiplr: 1.00
MS Integration Params: 524TAIL.P

Method : D:\HPCHEM\1\METHODS\VO94K20.M (RTE Integrator)
Title : METHOD 8260B 4.0
Last Update : Mon Nov 23 17:42:15 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T	tert-Butylbenzene	10.000	10.240	-2.4	98	0.00
82	T	1,2,4-Trimethylbenzene	10.000	10.055	-0.5	96	0.00
83	T	sec-Butylbenzene	10.000	10.086	-0.9	95	0.00
84	T	p-Isopropyltoluene	10.000	10.369	-3.7	97	0.00
85	T	1,3-Dichlorobenzene	10.000	9.998	0.0	95	0.00
86	T	1,4-Dichlorobenzene	10.000	10.075	-0.7	99	0.00
87	T	n-Butylbenzene	10.000	10.789	-7.9	97	0.00
88	T	1,2-Dichlorobenzene	10.000	10.197	-2.0	98	-0.02
89	T	1,2-Dibromo-3-chloropropane	10.000	9.738	2.6	89	0.00
90	T	1,2,4-Trichlorobenzene	10.000	10.202	-2.0	90	0.00
91	T	Hexachlorobutadiene	10.000	10.362	-3.6	96	0.00
92	T	Naphthalene	10.000	9.158	8.4	86	0.00
93	T	1,2,3-Trichlorobenzene	10.000	10.072	-0.7	92	0.00

SA 11/25/09

DAILY CALIBRATIONS

2019

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc
Lab Code: EMXT Case No.:
Lab File ID: RLD385
Instrument ID: T094
GC Column:RTX502.2ID:0.32mm (mm)

Contract: VA GLAHS
SAS No.: SDG No.: 09L179
BFB Injection Date : 12/14/09
BFB Injection Time : 09:46
Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	25.40
75	30.0 - 60.0% of mass 95	56.39
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.57
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	70.67
175	5.0 - 9.0% of mass 174	5.49(7.8)1
176	95.0 - 101.0% of mass 174	70.53(99.8)1
177	5.0 - 9.0% of mass 176	4.40(6.2)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD010	CV094K2033	RLD387	12/14/09	10:52
2	MBLK1W	V094L16B	RLD391	12/14/09	12:53
3	LCS1W	V094L16L	RLD388	12/14/09	11:22
4	LCD1W	V094L16C	RLD389	12/14/09	11:53
5	MW1	L179-03	RLD392	12/14/09	13:24
6	MW2	L179-04	RLD393	12/14/09	13:55
7	MW3	L179-05	RLD394	12/14/09	14:25

FORM V VOA OLM02.0

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RKD579
Instrument ID: T094
GC Column: RTX502.2 ID: 0.32mm (mm)

Project: VA GLAHS
SDG No.: 09L179
Date Analyzed: 11/20/09
Time Analyzed: 20:04
Heated Purge: (Y/N) N

		IS1(DBF)		IS2(CBZ)		IS3(DCB)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	2451476	9.15	1975209	13.80	722084	19.02
	UPPER LIMIT	4902952	9.65	3950418	14.30	1444168	19.52
	LOWER LIMIT	1225738	8.65	987605	13.30	361042	18.52
	SAMPLE ID						
1	VSTD010	2320279	9.12	1833567	13.77	732533	19.00
2	MBLK1W	2425036	9.14	1787323	13.77	602339	19.00
3	LCS1W	2383897	9.12	1849628	13.78	687444	19.00
4	LCD1W	2406983	9.14	1905380	13.77	693962	19.00
5	MW1	2281331	9.14	1661530	13.79	599958	19.01
6	MW2	1907926	9.14	1428909	13.77	531571	19.00
7	MW3	1837375	9.13	1411708	13.78	492303	19.01

IS1 (DFB) = 1,4-Difluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,2-Dichlorobenzene-d4

AREA UPPER LIMIT = + 100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
AREA UPPER LIMIT = + 50% of surrogate area
AREA LOWER LIMIT = - 50% of surrogate area

Column used to flag internal standard area values with an asterisk
* Values outside of QC limits.

FORM VIII VOA-8260 1/2000

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\09L14\RLD387.D
Acq On : 14 Dec 2009 10:52 am
Sample : CVO94K2033 10ppb
Misc : 10ppb8260/50ppbKET-A-TBA/60ppbACN
MS Integration Params: 524TAIL.P

Vial: 3
Operator: AS
Inst : TO94
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO94K20.M (RTE Integrator)
Title : METHOD 8260B 4.0
Last Update : Mon Nov 23 17:42:15 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	95	-0.03
2	T	Dichlorodifluoromethane	10.000	8.302	17.0	76	0.00
3	P,T	Chloromethane	10.000	10.249	-2.5	89	-0.02
4	C,T	Vinyl chloride	10.000	9.979	0.2	87	-0.02
5	T	Bromomethane	10.000	9.154	8.5	83	-0.01
6	T	Dichlorofluoromethane	10.000	10.032	-0.3	85	-0.02
7	T	Chloroethane	10.000	10.679	-6.8	91	-0.02
8	T	Trichlorofluoromethane	10.000	10.081	-0.8	86	0.00
9	T	sec-Propyl alcohol	-1.000	0.000	0.0	0	0.00
10	T	Acrolein	50.000	55.176	-10.4	104	-0.02
11	T	Acetone	50.000	49.044	1.9	91	-0.01
12	T	1,1,2-Trichloro-1,2,2-trifl	10.000	10.503	-5.0	87	-0.02
13	T	tert-Butyl alcohol	50.000	57.230	-14.5	100	-0.01
14	C,T,M	1,1-Dichloroethene	10.000	10.283	-2.8	91	-0.01
15	T	Methyl acetate	-1.000	0.000	0.0	0	0.00
16	T	Iodomethane	10.000	10.402	-4.0	90	-0.01
17	T	Methylene chloride	10.000	8.552	14.5	83	-0.01
18	T	Acrylonitrile	60.000	60.641	-1.1	94	-0.01
19	T	tert-Butyl methyl ether (MT	10.000	10.104	-1.0	89	-0.01
20	T	Carbon disulfide	10.000	9.557	4.4	84	-0.01
21	T	trans-1,2-Dichloroethene	10.000	10.496	-5.0	92	-0.01
22	T	Isopropyl ether (DIPE)	10.000	10.855	-8.6	96	-0.01
23	T	Vinyl acetate	10.000	9.599	4.0	89	-0.01
24	P,T	1,1-Dichloroethane	10.000	10.416	-4.2	91	-0.01
25	T	tert-Butyl ethyl ether (ETB	10.000	10.244	-2.4	89	-0.01
26	T	2-Butanone	50.000	50.359	-0.7	91	-0.03
27	T	2,2-Dichloropropane	10.000	10.896	-9.0	95	-0.01
28	T	cis-1,2-Dichloroethene	10.000	10.605	-6.1	92	-0.01
29	T	tert-Butyl formate (TBF)	-1.000	0.000	0.0	0	0.00
30	C,T	Chloroform	10.000	9.813	1.9	85	-0.01
31	T	Bromochloromethane	10.000	10.239	-2.4	89	-0.01
32	T	Tetrahydrofuran	-1.000	0.000	0.0	0	0.00
33	S	Dibromofluoromethane	10.000	10.567	-5.7	88	-0.01
34	T	1,1,1-Trichloroethane	10.000	10.251	-2.5	88	-0.01
35	T	Cyclohexane	-1.000	0.000	0.0	0	0.00
36	T	tert-Amyl methyl ether (TAM	10.000	9.947	0.5	88	-0.01
37	S	1,2-Dichloroethane-d4	10.000	9.570	4.3	78	-0.03
38	I	CHLOROBENZENE-D5	10.000	10.000	0.0	93	-0.03
39	T	1,1-Dichloropropene	10.000	10.250	-2.5	92	-0.01
40	T	Carbon tetrachloride	10.000	10.161	-1.6	85	-0.01

(#) = Out of Range

2022

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\09L14\RLD387.D
Acq On : 14 Dec 2009 10:52 am
Sample : CVO94K2033 10ppb
Misc : 10ppb8260/50ppbKET-A-TBA/60ppbACN
MS Integration Params: 524TAIL.P

Vial: 3
Operator: AS
Inst : TO94
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO94K20.M (RTE Integrator)
Title : METHOD 8260B 4.0
Last Update : Mon Nov 23 17:42:15 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
41	T	1,2-Dichloroethane	10.000	9.529	4.7	85	-0.01
42	T,M	Benzene	10.000	9.759	2.4	93	-0.01
43	T,M	Trichloroethene	10.000	10.318	-3.2	93	-0.03
44	T	Methylcyclohexane	-1.000	0.000	0.0	0	0.00
45	C,T	1,2-Dichloropropane	10.000	10.785	-7.9	96	-0.01
46	T	1,4-Dioxane	200.000	225.100	-12.5	98	-0.03
47	T	Bromodichloromethane	10.000	10.554	-5.5	89	-0.03
48	T	Dibromomethane	10.000	10.599	-6.0	92	-0.01
49	T	2-Chloroethyl vinyl ether	10.000	7.202	28.0#	63	-0.01 mtc
50	T	4-Methyl-2-pentanone	50.000	51.450	-2.9	91	-0.01
51	T	cis-1,3-Dichloropropene	10.000	10.963	-9.6	93	-0.01
52	S	Toluene-d8	10.000	9.667	3.3	81	-0.03
53	T	Ethyl methacrylate	10.000	11.527	-15.3	96	-0.03
54	C,T,M	Toluene	10.000	9.590	4.1	92	-0.01
55	T	trans-1,3-Dichloropropene	10.000	10.580	-5.8	85	-0.03
56	T	2-Hexanone	50.000	53.796	-7.6	90	-0.01
57	T	1,1,2-Trichloroethane	10.000	10.711	-7.1	91	-0.03
58	T	1,3-Dichloropropane	10.000	10.810	-8.1	93	-0.03
59	T	Tetrachloroethene	10.000	10.133	-1.3	91	-0.03
60	T	Dibromochloromethane	10.000	11.595	-16.0	94	-0.03
61	T	1,2-Dibromoethane	10.000	11.279	-12.8	94	-0.03
62	T	1-Chlorohexane	10.000	11.067	-10.7	94	-0.01
63	P,M	Chlorobenzene	10.000	10.696	-7.0	94	-0.01
64	C,T	Ethylbenzene	10.000	10.460	-4.6	92	-0.01
65	T	1,1,1,2-Tetrachloroethane	10.000	10.646	-6.5	92	-0.01
66	T	m-Xylene & p-Xylene	20.000	20.582	-2.9	90	-0.01
67	T	o-Xylene	10.000	10.725	-7.2	91	-0.03
68	T	Styrene	10.000	10.898	-9.0	91	-0.03
69	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	101	-0.02
70	T	Isopropylbenzene	10.000	9.200	8.0	89	-0.03
71	P,T	Bromoform	10.000	8.654	13.5	90	-0.03
72	P,T	1,1,2,2-Tetrachloroethane	10.000	9.752	2.5	96	-0.03
73	S	4-Bromofluorobenzene	10.000	8.878	11.2	87	-0.03
74	T	1,2,3-Trichloropropane	10.000	9.398	6.0	90	-0.03
75	T	trans-1,4-Dichloro-2-butene	10.000	10.441	-4.4	101	-0.01
76	T	n-Propylbenzene	10.000	9.611	3.9	93	-0.01
77	T	Bromobenzene	10.000	9.569	4.3	93	-0.01
78	T	1,3,5-Trimethylbenzene	10.000	9.572	4.3	94	-0.03
79	T	2-Chlorotoluene	10.000	9.571	4.3	91	-0.03
80	T	4-Chlorotoluene	10.000	9.339	6.6	97	-0.08

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\09L14\RLD387.D
Acq On : 14 Dec 2009 10:52 am
Sample : CVO94K2033 10ppb
Misc : 10ppb8260/50ppbKET-A-TBA/60ppbACN
MS Integration Params: 524TAIL.P

Vial: 3
Operator: AS
Inst : TO94
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO94K20.M (RTE Integrator)
Title : METHOD 8260B 4.0
Last Update : Mon Nov 23 17:42:15 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T	tert-Butylbenzene	10.000	8.387	16.1	83	-0.02
82	T	1,2,4-Trimethylbenzene	10.000	9.667	3.3	96	-0.02
83	T	sec-Butylbenzene	10.000	9.402	6.0	91	-0.02
84	T	p-Isopropyltoluene	10.000	9.500	5.0	92	-0.02
85	T	1,3-Dichlorobenzene	10.000	9.911	0.9	98	-0.02
86	T	1,4-Dichlorobenzene	10.000	9.469	5.3	96	-0.02
87	T	n-Butylbenzene	10.000	10.354	-3.5	96	-0.02
88	T	1,2-Dichlorobenzene	10.000	10.129	-1.3	101	-0.02
89	T	1,2-Dibromo-3-chloropropane	10.000	9.975	0.3	94	-0.02
90	T	1,2,4-Trichlorobenzene	10.000	9.731	2.7	89	-0.02
91	T	Hexachlorobutadiene	10.000	9.667	3.3	92	-0.02
92	T	Naphthalene	10.000	10.204	-2.0	99	-0.04
93	T	1,2,3-Trichlorobenzene	10.000	9.914	0.9	94	-0.04

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\09L14\RLD387.D Vial: 3
Acq On : 14 Dec 2009 10:52 am Operator: AS
Sample : CVO94K2033 10ppb Inst : TO94
Misc : 10ppb8260/50ppbKET-A-TBA/60ppbACN Multiplr: 1.00
MS Integration Params: 524TAIL.P

Method : D:\HPCHEM\1\METHODS\VO94K20.M (RTE Integrator)
Title : METHOD 8260B 4.0
Last Update : Mon Nov 23 17:42:15 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	95	-0.03
2	T	Dichlorodifluoromethane	0.325	0.270	16.9	76	0.00
3	P,T	Chloromethane	0.370	0.379	-2.4	89	-0.02
4	C,T	Vinyl chloride	0.364	0.363	0.3	87	-0.02
5	T	Bromomethane	0.262	0.240	8.4	83	-0.01
6	T	Dichlorofluoromethane	0.765	0.768	-0.4	85	-0.02
7	T	Chloroethane	0.207	0.221	-6.8	91	-0.02
8	T	Trichlorofluoromethane	0.560	0.565	-0.9	86	0.00
9	T	sec-Propyl alcohol	0.000	0.000	0.0	0#	0.00
10	T	Acrolein	0.011	0.012	-9.1	104	-0.02
11	T	Acetone	0.035	0.034	2.9	91	-0.01
12	T	1,1,2-Trichloro-1,2,2-trifl	0.219	0.230	-5.0	87	-0.02
13	T	tert-Butyl alcohol	0.008	0.009	-12.5	100	-0.01
14	C,T,M	1,1-Dichloroethene	0.649	0.667	-2.8	91	-0.01
15	T	Methyl acetate	0.000	0.000	0.0	0#	0.00
16	T	Iodomethane	0.547	0.569	-4.0	90	-0.01
17	T	Methylene chloride	0.502	0.429	14.5	83	-0.01
18	T	Acrylonitrile	0.029	0.030	-3.4	94	-0.01
19	T	tert-Butyl methyl ether (MT	0.480	0.485	-1.0	89	-0.01
20	T	Carbon disulfide	1.143	1.092	4.5	84	-0.01
21	T	trans-1,2-Dichloroethene	0.626	0.657	-5.0	92	-0.01
22	T	Isopropyl ether (DIPE)	1.008	1.094	-8.5	96	-0.01
23	T	Vinyl acetate	0.297	0.285	4.0	89	-0.01
24	P,T	1,1-Dichloroethane	0.724	0.754	-4.1	91	-0.01
25	T	tert-Butyl ethyl ether (ETB	0.752	0.770	-2.4	89	-0.01
26	T	2-Butanone	0.046	0.046	0.0	91	-0.03
27	T	2,2-Dichloropropane	0.532	0.579	-8.8	95	-0.01
28	T	cis-1,2-Dichloroethene	0.649	0.689	-6.2	92	-0.01
29	T	tert-Butyl formate (TBF)	0.000	0.000	0.0	0#	0.00
30	C,T	Chloroform	0.759	0.745	1.8	85	-0.01
31	T	Bromochloromethane	0.241	0.247	-2.5	89	-0.01
32	T	Tetrahydrofuran	0.000	0.000	0.0	0#	0.00
33	S	Dibromofluoromethane	0.343	0.363	-5.8	88	-0.01
34	T	1,1,1-Trichloroethane	0.687	0.704	-2.5	88	-0.01
35	T	Cyclohexane	0.000	0.000	0.0	0#	0.00
36	T	tert-Amyl methyl ether (TAM	0.646	0.643	0.5	88	-0.01
37	S	1,2-Dichloroethane-d4	0.316	0.303	4.1	78	-0.03
38	I	CHLOROBENZENE-D5	1.000	1.000	0.0	93	-0.03
39	T	1,1-Dichloropropene	0.215	0.221	-2.8	92	-0.01
40	T	Carbon tetrachloride	0.773	0.785	-1.6	85	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\09L14\RLD387.D Vial: 3
Acq On : 14 Dec 2009 10:52 am Operator: AS
Sample : CVO94K2033 10ppb Inst : TO94
Misc : 10ppb8260/50ppbKET-A-TBA/60ppbACN Multiplr: 1.00
MS Integration Params: 524TAIL.P

Method : D:\HPCHEM\1\METHODS\VO94K20.M (RTE Integrator)
Title : METHOD 8260B 4.0
Last Update : Mon Nov 23 17:42:15 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
41	T	1,2-Dichloroethane	0.536	0.511	4.7	85	-0.01
42	T,M	Benzene	1.813	1.770	2.4	93	-0.01
43	T,M	Trichloroethene	0.480	0.495	-3.1	93	-0.03
44	T	Methylcyclohexane	0.000	0.000	0.0	0#	0.00
45	C,T	1,2-Dichloropropane	0.373	0.402	-7.8	96	-0.01
46	T	1,4-Dioxane	0.001	0.001	0.0	98	-0.03
47	T	Bromodichloromethane	0.570	0.601	-5.4	89	-0.03
48	T	Dibromomethane	0.176	0.186	-5.7	92	-0.01
49	T	2-Chloroethyl vinyl ether	0.036	0.026	27.8#	63	-0.01
50	T	4-Methyl-2-pentanone	0.137	0.141	-2.9	91	-0.01
51	T	cis-1,3-Dichloropropene	0.562	0.616	-9.6	93	-0.01
52	S	Toluene-d8	1.350	1.305	3.3	81	-0.03
53	T	Ethyl methacrylate	0.225	0.260	-15.6	96	-0.03
54	C,T,M	Toluene	1.875	1.798	4.1	92	-0.01
55	T	trans-1,3-Dichloropropene	0.433	0.458	-5.8	85	-0.03
56	T	2-Hexanone	0.081	0.087	-7.4	90	-0.01
57	T	1,1,2-Trichloroethane	0.174	0.186	-6.9	91	-0.03
58	T	1,3-Dichloropropane	0.377	0.408	-8.2	93	-0.03
59	T	Tetrachloroethene	0.398	0.403	-1.3	91	-0.03
60	T	Dibromochloromethane	0.256	0.297	-16.0	94	-0.03
61	T	1,2-Dibromoethane	0.186	0.209	-12.4	94	-0.03
62	T	1-Chlorohexane	0.710	0.786	-10.7	94	-0.01
63	P,M	Chlorobenzene	0.988	1.057	-7.0	94	-0.01
64	C,T	Ethylbenzene	2.191	2.292	-4.6	92	-0.01
65	T	1,1,1,2-Tetrachloroethane	0.361	0.384	-6.4	92	-0.01
66	T	m-Xylene & p-Xylene	1.679	1.728	-2.9	90	-0.01
67	T	o-Xylene	1.553	1.665	-7.2	91	-0.03
68	T	Styrene	0.969	1.056	-9.0	91	-0.03
69	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	101	-0.02
70	T	Isopropylbenzene	5.841	5.374	8.0	89	-0.03
71	P,T	Bromoform	0.337	0.331	1.8	90	-0.03
72	P,T	1,1,2,2-Tetrachloroethane	0.483	0.471	2.5	96	-0.03
73	S	4-Bromofluorobenzene	1.456	1.292	11.3	87	-0.03
74	T	1,2,3-Trichloropropane	0.152	0.143	5.9	90	-0.03
75	T	trans-1,4-Dichloro-2-butene	0.134	0.140	-4.5	101	-0.01
76	T	n-Propylbenzene	7.136	6.859	3.9	93	-0.01
77	T	Bromobenzene	1.021	0.977	4.3	93	-0.01
78	T	1,3,5-Trimethylbenzene	4.416	4.227	4.3	94	-0.03
79	T	2-Chlorotoluene	4.357	4.170	4.3	91	-0.03
80	T	4-Chlorotoluene	3.642	3.401	6.6	97	-0.08

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\09L14\RLD387.D
Acq On : 14 Dec 2009 10:52 am
Sample : CVO94K2033 10ppb
Misc : 10ppb8260/50ppbKET-A-TBA/60ppbACN
MS Integration Params: 524TAIL.P

Vial: 3
Operator: AS
Inst : TO94
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO94K20.M (RTE Integrator)
Title : METHOD 8260B 4.0
Last Update : Mon Nov 23 17:42:15 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T	tert-Butylbenzene	3.948	3.311	16.1	83	-0.02
82	T	1,2,4-Trimethylbenzene	4.046	3.912	3.3	96	-0.02
83	T	sec-Butylbenzene	6.011	5.651	6.0	91	-0.02
84	T	p-Isopropyltoluene	4.726	4.489	5.0	92	-0.02
85	T	1,3-Dichlorobenzene	1.956	1.938	0.9	98	-0.02
86	T	1,4-Dichlorobenzene	1.867	1.768	5.3	96	-0.02
87	T	n-Butylbenzene	5.297	5.485	-3.5	96	-0.02
88	T	1,2-Dichlorobenzene	1.465	1.483	-1.2	101	-0.02
89	T	1,2-Dibromo-3-chloropropane	0.060	0.060	0.0	94	-0.02
90	T	1,2,4-Trichlorobenzene	0.828	0.806	2.7	89	-0.02
91	T	Hexachlorobutadiene	0.846	0.818	3.3	92	-0.02
92	T	Naphthalene	0.861	0.879	-2.1	99	-0.04
93	T	1,2,3-Trichlorobenzene	0.556	0.551	0.9	94	-0.04

ANALYTICAL LOGS

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☒ EMAX-8260 Rev.No. 4 ☐ EMAX-524.2 Rev.No. 4 ☐ EMAX-CLP-VOA ☐ EMAX 624 Rev.No. 1 ☐

Start Date: 11-20-89 ☐ 5-ml Purge ☒ 25-ml Purge

Book # A94 -028

BATCH V094K20B0

Sample Prep. ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix pH-W	Matrix S	Notes
01	RBD573	BBB94K25	2µl				8/CHECK
02	574	V094K20B01	.5/.5/.5µl				.3 ppb 8260/.5 ppb Kel-AA/.5 ppb gases
03	575	02	.25/.25/.5µl				.5 / 2.5 / 3.0
04	576	03	.5/.5/1µl				1 / 5 / 6.0
05	577	04	1/1/2µl				2 / 10 / 12
06	578	05	2.5/2.5/5µl				5 / 25 / 30
07	579	06	5/5/1µl				10 / 50 / 60
08	580	07	10/10/2µl				20 / 100 / 120
09	581	08	15/15/3µl				30 / 150 / 180
10	582	09	20/20/4µl				40 / 200 / 240
11	583	10	25/25/5µl				50 / 250 / 300
12	584	Rinse	25ml				
13	585	V094K25B					
14	586	IV094K20B01	5/5/1µl				
15	587	02					
16	588	Rinse					
17							
18							
19							
20							
21							
22							
23							
24							
25							AS. 11/23/89

Instrument No.	94
INITIAL CALIBRATION REFERENCE	
DATE	11-20-89
CAL ID	V094K20

STANDARDS		
NAME	ID	CONC. (mg/L)
DCC 8260	SV1-15-8-1	50/250
DCC Kel-AA	-16-3	250
DCC gases	-14-1	250
BFB	SV1-14-66-3	50
IS/SURR. 55 55	SV1-15 -10-2 -10-3	250
LCS 8260	-6-2	50/250
LCS Kel-AA	-15-1	250
LCS gases	-14-2	250
SOLVENT	ID	
METHANOL		
DATA FILE	094K20	

Electronic Data Archival	
Location	Date
HPCHEM_VOA/T094	

Comments:

Analyzed By: AS

Date Disposed: 11-23-89

Disposed By: AS

2023

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☒ EMAX-8260 Rev.No. 4 ☐ EMAX-524.2 Rev.No. 4 ☐ EMAX-CLP-VOA ☐ EMAX 624 Rev.No. 1 ☐

Start Date: 11-23-09 ☐ 5-ml Purge ☒ 25-ml Purge

Book # A94 -028

BATCH V094K20Ø3

Sample Prep. ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix pH-W	Matrix S	Notes
01	RSD613	BFB94K27	2µl				TUCHECK 17:48
02	614	IV094K20Ø3	5/5/µl				
03	615	CV094K20Ø3					
04	616	V094K27L					
05	617	C					
06	618	Rinse	25 mls	1Ø			
07	619	V094K27B					
08	62Ø	Ø9K222-Ø1R			<2		VW-Ø1, TB-Ø2-Ø2-26
09	621	-Ø2R					VW-Ø2,
10	622	-Ø3R					VW-Ø3,
11	623	-Ø4R					VW-Ø4,
12	624	-Ø5R					VW-Ø5, TB-Ø2-Ø2-23
13	625	-Ø6R					VW-Ø6, TB-Ø2-Ø2-26
14	626	-Ø7R					VW-Ø7,
15	627	-Ø8R					VW-Ø8,
16	628	-Ø9R					VW-Ø9,
17	629	-1ØR					VW-Ø1,
18	63Ø	Ø9K221-Ø3					
19	631	Ø9K273-Ø3			7		VIAL LABELED HCL PRESERVED
20	632	Ø9K221-Ø1			<2		
21	633	-Ø2					
22	634	Rinse					
23	635	Ø9K273-Ø1			<2		
24	636	-Ø2					
25	637	Rinse					

Instrument No.	94
INITIAL CALIBRATION REFERENCE	
DATE	11-2Ø-Ø9
ICAL ID	V094K2Ø

STANDARDS NAME	ID	CONC. (mg/L)
DCC 8260B	SVL-15-8-1	
DCC Ket-Alk	-16-3	
DCC gases	-24-1	
BFB	SVL-14-66-3	5Ø/25Ø
IS/SURR.	SVL-15-18-3	
LCS 8260B	-6-2	
LCS Ket-Alk	-15-1	
LCS Gases	-14-2	
SOLVENT	ID	
METHANOL		
DATA FILE	Ø9K23	

Electronic Data Archival	
Location	Date
HPCHEM_VOA/TO94	

Comments:

Analyzed By: AS

Date Disposed: 11-24-09

Disposed By: AS

20030

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☒ EMAX-8260 Rev.No. 4 ☐ EMAX-524.2 Rev.No. 4 ☐ EMAX-CLP-VOA ☐ EMAX 624 Rev.No. 1 ☐

Start Date: 12-14-09 ☐ 5-ml Purge ☒ 25-ml Purge

Book # A94 -029

Sample Prep. ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix pH-W	Matrix S	Notes
01	RLD385	BFB94L16	2µl				T/CHECK 09:46
02	386	DCC TEST	5/5/1µl				
03	387	CV094K2033					
04	388	V094L16L					
05	389	C					
06	390	Rinse	25ml	1.0			
07	391	V094L16B					
08	392	09L179-03			<2		
09	393	-04					
10	394	-05					
11	395	Rinse					
12	396	09L172-01R			<2		
13	397	-09R					
14	398	-08R					
15	399	-06R					R/R@x1 tol? @trace.2
16	400	-05R					R/R x1 1st sum ✦ 1st 2nd
17	401	-04R					
18	402	-03R					
19	403	-02R					
20	404	Rinse					
21	405	09L172-07R			<2		R/R@x1
22	406	-07U					MS
23	407	-07V					MSD 2604
24	408	Rinse					
25	409						

BATCH CV094K2033

Instrument No.	94
INITIAL CALIBRATION REFERENCE	
DATE	11-24-09
ICAL ID	V094K20

STANDARDS

NAME	ID	CONC. (mg/L)
DCC 8260	SV1.15-8-1	
DCC Ket-AA	-16-3	
DCC gases	-24-1	
BFB	-33-3	50/250
IS/SURR.	-11-1	
LCS 8260	-6-2	
LCS Ket-AA	-15-1	
LCS gases	-14-2	
SOLVENT	ID	
METHANOL		
DATA FILE	09L14	

Electronic Data Archival

Location	Date
HPCHEM_VOA/TO94	

Comments:

Analyzed By: AS

Date Disposed: 12-15-09

Disposed By: AS

LABORATORY REPORT FOR

ALLWEST GEOSCIENCE, INC.

VA GLAHS

METHOD 5035/8260B
VOLATILE ORGANICS BY GC/MS

SDG#: 09L179

CASE NARRATIVE

Client : ALLWEST GEOSCIENCE, INC.

Project : VA GLAHS

SDG : 09L179

SW 5035/8260B
VOLATILE ORGANICS BY GC/MS

A total of two (2) soil samples were received on 12/09/09 for Volatile Organics by GC/MS analysis, Method SW 5035/8260B in accordance with Department of Defense Quality Systems Manual for Environmental Laboratories, Version 3 and USEPA SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Instrument mass ratios were within specification. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried on at a frequency required by the project. All project calibration requirements were satisfied. Refer to calibration summary forms for ICAL, ICV and CCV for details.

Method Blank
Method blank was analyzed at the frequency required by the project. For this SDG, one method blank was analyzed with the samples. Result was compliant to project requirement.

Lab Control Sample
A set of LCS/LCD was analyzed with the samples in this SDG.
Percent recoveries for VO02L22L/C were all within QC limits.

Matrix QC Sample
No matrix QC sample was designated in this SDG.

Surrogate
Surrogates were added on QC and field samples. Surrogate recoveries were within project QC limits.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met otherwise anomalies were discussed within the associated QC parameter.

SAMPLE RESULTS

SW 5035/8260B
VOLATILE ORGANICS BY GC/MS

Client	: ALLWEST GEOSCIENCE, INC.	Date Collected:	12/08/09
Project	: VA GLAHS	Date Received:	12/09/09
Batch No.	: 09L179	Date Extracted:	12/10/09 14:02
Sample ID:	MW3-20V	Date Analyzed:	12/10/09 14:02
Lab Samp ID:	L179-01	Dilution Factor:	0.85
Lab File ID:	RLP269	Matrix :	SOIL
Ext Btch ID:	VOO2L22	% Moisture :	23.2
Calib. Ref.:	RKP006	Instrument ID :	T-002

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	5.5	2.2
1,1,2,2-TETRACHLOROETHANE	ND	5.5	2.2
1,1,2-TRICHLOROETHANE	ND	5.5	2.2
1,1-DICHLOROETHANE	ND	5.5	2.2
1,1-DICHLOROETHENE	ND	5.5	2.2
1,2-DICHLOROETHANE	ND	5.5	2.2
1,2-DICHLOROPROPANE	ND	5.5	2.2
2-BUTANONE	ND	11	5.5
2-HEXANONE	ND	11	5.5
4-METHYL-2-PENTANONE	ND	11	5.5
ACETONE	ND	11	5.5
BENZENE	ND	5.5	2.2
BROMODICHLOROMETHANE	ND	5.5	2.2
BROMOFORM	ND	5.5	2.2
BROMOMETHANE	ND	11	2.2
CARBON DISULFIDE	ND	5.5	2.2
CARBON TETRACHLORIDE	ND	5.5	2.2
CHLOROBENZENE	ND	5.5	2.2
CHLOROETHANE	ND	5.5	2.2
CHLOROFORM	ND	5.5	2.2
CHLOROMETHANE	ND	11	2.2
CIS-1,2-DICHLOROETHENE	ND	5.5	2.2
CIS-1,3-DICHLOROPROPENE	ND	5.5	2.2
DIBROMOCHLOROMETHANE	ND	5.5	2.2
ETHYLBENZENE	ND	5.5	2.2
M/P-XYLENES	ND	11	2.2
METHYLENE CHLORIDE	ND	11	2.2
MTBE	ND	5.5	2.2
O-XYLENE	ND	5.5	2.2
STYRENE	ND	5.5	2.2
TETRACHLOROETHYLENE	ND	5.5	2.2
TOLUENE	ND	5.5	2.2
TRANS-1,2-DICHLOROETHENE	ND	5.5	2.2
TRANS-1,3-DICHLOROPROPENE	ND	5.5	2.2
TRICHLOROETHENE	ND	5.5	2.2
VINYL CHLORIDE	ND	5.5	2.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	101	70-140
TOLUENE-D8	99	85-115
4-BROMOFLUOROBENZENE	95	85-120
DIBROMOFLUOROMETHANE	97	70-130

RL: Reporting Limit

SW 5035/8260B
VOLATILE ORGANICS BY GC/MS

Client	: ALLWEST GEOSCIENCE, INC.	Date Collected:	12/08/09
Project	: VA GLAHS	Date Received:	12/09/09
Batch No.	: 09L179	Date Extracted:	12/10/09 14:31
Sample ID:	MW3-40V	Date Analyzed:	12/10/09 14:31
Lab Samp ID:	L179-02	Dilution Factor:	0.84
Lab File ID:	RLP270	Matrix :	SOIL
Ext Btch ID:	VO02L22	% Moisture :	15.8
Calib. Ref.:	RKP006	Instrument ID :	T-002

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	5.0	2.0
1,1,2,2-TETRACHLOROETHANE	ND	5.0	2.0
1,1,2-TRICHLOROETHANE	ND	5.0	2.0
1,1-DICHLOROETHANE	ND	5.0	2.0
1,1-DICHLOROETHENE	ND	5.0	2.0
1,2-DICHLOROETHANE	ND	5.0	2.0
1,2-DICHLOROPROPANE	ND	5.0	2.0
2-BUTANONE	ND	10	5.0
2-HEXANONE	ND	10	5.0
4-METHYL-2-PENTANONE	ND	10	5.0
ACETONE	ND	10	5.0
BENZENE	ND	5.0	2.0
BROMODICHLOROMETHANE	ND	5.0	2.0
BROMOFORM	ND	5.0	2.0
BROMOMETHANE	ND	10	2.0
CARBON DISULFIDE	ND	5.0	2.0
CARBON TETRACHLORIDE	ND	5.0	2.0
CHLOROBENZENE	ND	5.0	2.0
CHLOROETHANE	ND	5.0	2.0
CHLOROFORM	ND	5.0	2.0
CHLOROMETHANE	ND	10	2.0
CIS-1,2-DICHLOROETHENE	ND	5.0	2.0
CIS-1,3-DICHLOROPROPENE	ND	5.0	2.0
DIBROMOCHLOROMETHANE	ND	5.0	2.0
ETHYLBENZENE	ND	5.0	2.0
M/P-XYLENES	ND	10	2.0
METHYLENE CHLORIDE	ND	10	2.0
MTBE	ND	5.0	2.0
O-XYLENE	ND	5.0	2.0
STYRENE	ND	5.0	2.0
TETRACHLOROETHYLENE	ND	5.0	2.0
TOLUENE	ND	5.0	2.0
TRANS-1,2-DICHLOROETHENE	ND	5.0	2.0
TRANS-1,3-DICHLOROPROPENE	ND	5.0	2.0
TRICHLOROETHENE	ND	5.0	2.0
VINYL CHLORIDE	ND	5.0	2.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	105	70-140
TOLUENE-D8	101	85-115
4-BROMOFLUOROBENZENE	93	85-120
DIBROMOFLUOROMETHANE	100	70-130

RL: Reporting Limit

QC SUMMARIES

SW 5035/8260B
VOLATILE ORGANICS BY GC/MS

Client	: ALLWEST GEOSCIENCE, INC.	Date Collected:	NA
Project	: VA GLAHS	Date Received:	12/10/09
Batch No.	: 09L179	Date Extracted:	12/10/09 10:48
Sample ID:	MBLK1S	Date Analyzed:	12/10/09 10:48
Lab Samp ID:	V002L22B	Dilution Factor:	1
Lab File ID:	RLP264	Matrix :	SOIL
Ext Btch ID:	V002L22	% Moisture :	NA
Calib. Ref.:	RKP006	Instrument ID :	T-002

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	5.0	2.0
1,1,2,2-TETRACHLOROETHANE	ND	5.0	2.0
1,1,2-TRICHLOROETHANE	ND	5.0	2.0
1,1-DICHLOROETHANE	ND	5.0	2.0
1,1-DICHLOROETHENE	ND	5.0	2.0
1,2-DICHLOROETHANE	ND	5.0	2.0
1,2-DICHLOROPROPANE	ND	5.0	2.0
2-BUTANONE	ND	10	5.0
2-HEXANONE	ND	10	5.0
4-METHYL-2-PENTANONE	ND	10	5.0
ACETONE	ND	10	5.0
BENZENE	ND	5.0	2.0
BROMODICHLOROMETHANE	ND	5.0	2.0
BROMOFORM	ND	5.0	2.0
BROMOMETHANE	ND	10	2.0
CARBON DISULFIDE	ND	5.0	2.0
CARBON TETRACHLORIDE	ND	5.0	2.0
CHLOROBENZENE	ND	5.0	2.0
CHLOROETHANE	ND	5.0	2.0
CHLOROFORM	ND	5.0	2.0
CHLOROMETHANE	ND	10	2.0
CIS-1,2-DICHLOROETHENE	ND	5.0	2.0
CIS-1,3-DICHLOROPROPENE	ND	5.0	2.0
DIBROMOCHLOROMETHANE	ND	5.0	2.0
ETHYLBENZENE	ND	5.0	2.0
M/P-XYLENES	ND	10	2.0
METHYLENE CHLORIDE	ND	10	2.0
MTBE	ND	5.0	2.0
O-XYLENE	ND	5.0	2.0
STYRENE	ND	5.0	2.0
TETRACHLOROETHYLENE	ND	5.0	2.0
TOLUENE	ND	5.0	2.0
TRANS-1,2-DICHLOROETHENE	ND	5.0	2.0
TRANS-1,3-DICHLOROPROPENE	ND	5.0	2.0
TRICHLOROETHENE	ND	5.0	2.0
VINYL CHLORIDE	ND	5.0	2.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	98	70-140
TOLUENE-D8	103	85-115
4-BROMOFLUOROBENZENE	90	85-120
DIBROMOFLUOROMETHANE	97	70-130

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: ALLWEST GEOSCIENCE, INC.
PROJECT: VA GLAHS
BATCH NO.: 09L179
METHOD: SW 5035/8260B

MATRIX:	SOIL			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1S				
LAB SAMP ID:	VO02L22B	VO02L22L	VO02L22C		
LAB FILE ID:	RLP264	RLP259	RLP260		
DATE EXTRACTED:	12/10/0910:48	12/10/0908:19	12/10/0908:49	DATE COLLECTED:	NA
DATE ANALYZED:	12/10/0910:48	12/10/0908:19	12/10/0908:49	DATE RECEIVED:	12/10/09
PREP. BATCH:	VO02L22	VO02L22	VO02L22		
CALIB. REF:	RKP006	RKP006	RKP006		

ACCESSION:

PARAMETER	BLNK RSLT (ug/kg)	SPIKE AMT (ug/kg)	BS RSLT (ug/kg)	BS % REC	SPIKE AMT (ug/kg)	BSD RSLT (ug/kg)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1-Trichloroethane	ND	50.0	59.4	119	50.0	55.0	110	8	70-135	30
1,1,2,2-Tetrachloroethane	ND	50.0	50.9	102	50.0	47.5	95	7	55-130	30
1,1,2-Trichloroethane	ND	50.0	51.2	102	50.0	50.3	101	2	60-125	30
1,1-Dichloroethane	ND	50.0	58.9	118	50.0	54.5	109	8	75-125	30
1,1-Dichloroethene	ND	50.0	60.5	121	50.0	57.1	114	6	65-135	30
1,2-Dichloroethane	ND	50.0	56.5	113	50.0	53.2	106	6	70-135	30
1,2-Dichloropropane	ND	50.0	53.5	107	50.0	53.1	106	1	70-120	30
2-Butanone	ND	200	210	105	200	211	105	0	30-160	30
2-Hexanone	ND	200	202	101	200	204	102	1	45-145	30
4-Methyl-2-Pentanone	ND	200	204	102	200	204	102	0	45-145	30
Acetone	ND	200	209	105	200	207	104	1	20-160	30
Benzene	ND	50.0	52.8	106	50.0	51.4	103	3	75-125	30
Bromodichloromethane	ND	50.0	52.2	104	50.0	50.9	102	2	70-130	30
Bromoform	ND	50.0	49.2	98	50.0	46.1	92	6	55-135	30
Bromomethane	ND	50.0	45.8	92	50.0	43.9	88	4	30-160	30
Carbon Disulfide	ND	50.0	61.6	123	50.0	59.3	119	4	45-160	30
Carbon Tetrachloride	ND	50.0	56.9	114	50.0	55.9	112	2	65-135	30
Chlorobenzene	ND	50.0	53.8	108	50.0	52.6	105	2	75-125	30
Chloroethane	ND	50.0	51.5	103	50.0	51.3	103	0	40-155	30
Chloroform	ND	50.0	59.0	118	50.0	56.0	112	5	70-125	30
Chloromethane	ND	50.0	46.7	93	50.0	46.5	93	0	50-130	30
cis-1,2-Dichloroethene	ND	50.0	57.2	114	50.0	53.6	107	7	65-125	30
cis-1,3-Dichloropropene	ND	50.0	53.5	107	50.0	52.2	104	3	70-125	30
Dibromochloromethane	ND	50.0	50.5	101	50.0	49.3	99	2	65-130	30
Ethylbenzene	ND	50.0	53.9	108	50.0	52.1	104	3	75-125	30
m/p-Xylenes	ND	100	106	106	100	107	107	1	80-125	30
Methylene Chloride	ND	50.0	52.0	104	50.0	49.9	100	4	55-140	30
MTBE	ND	50.0	55.6	111	50.0	55.3	111	1	60-150	20
o-Xylene	ND	50.0	51.2	102	50.0	50.7	101	1	75-125	30
Styrene	ND	50.0	53.0	106	50.0	50.6	101	5	75-125	30
Tetrachloroethylene	ND	50.0	53.1	106	50.0	50.9	102	4	65-140	30
Toluene	ND	50.0	51.8	104	50.0	51.5	103	1	70-125	30
Trans-1,2-Dichloroethene	ND	50.0	57.5	115	50.0	54.6	109	5	65-135	30
Trans-1,3-Dichloropropene	ND	50.0	57.4	115	50.0	55.5	111	3	65-125	30
Trichloroethene	ND	50.0	53.9	108	50.0	53.1	106	1	75-125	30
Vinyl Chloride	ND	50.0	47.8	96	50.0	45.9	92	4	60-125	30

SURROGATE PARAMETER	SPIKE AMT (ug/kg)	BS RSLT (ug/kg)	BS % REC	SPIKE AMT (ug/kg)	BSD RSLT (ug/kg)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	50.0	49.3	99	50.0	49.1	98	70-140
Toluene-d8	50.0	49.5	99	50.0	49.9	100	85-115
4-Bromofluorobenzene	50.0	46.2	92	50.0	45.9	92	85-120
Dibromofluoromethane	50.0	50.4	101	50.0	48.6	97	70-130

INITIAL CALIBRATIONS

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc
Lab Code: EMXT Case No.:
Lab File ID: RKP001
Instrument ID: TQ02
GC Column:RTX502.2ID:0.32mm (mm)

Contract: VA GLAHS
SAS No.: SDG No.: 09L179
BFB Injection Date : 11/03/09
BFB Injection Time : 15:20
Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	16.89
75	30.0 - 60.0% of mass 95	44.74
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.11
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	77.20
175	5.0 - 9.0% of mass 174	5.63(7.3)1
176	95.0 - 101.0% of mass 174	75.69(98.1)1
177	5.0 - 9.0% of mass 176	4.89(6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD02	VO02K031	RKP002	11/03/09	15:53
2	VSTD04	VO02K032	RKP003	11/03/09	16:23
3	VSTD010	VO02K033	RKP004	11/03/09	16:54
4	VSTD020	VO02K034	RKP005	11/03/09	17:25
5	VSTD050	VO02K035	RKP006	11/03/09	17:55
6	VSTD080	VO02K036	RKP007	11/03/09	18:26
7	VSTD100	VO02K037	RKP008	11/03/09	18:57
8	VSTD200	VO02K038	RKP009	11/03/09	19:28
9	VSTD300	VO02K039	RKP010	11/03/09	19:59
10	VSTD050	IVO02K032	RKP014	11/03/09	22:02

FORM V VOA OLM02.0

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :T002
Beginning DateTime :11/03/09 15:53
Spike Units :PPB
IC File :RKP006

Column Spec :RTX502.2 ID :0.32MM
Ending DateTime :11/03/09 19:59
HPChem Method :V002K03

M	IDX	Parameters	2 15:53 RKP002	4 16:23 RKP003	10 16:54 RKP004	20 17:25 RKP005	50 17:55 RKP006	80 18:26 RKP007	100 18:57 RKP008	200 19:28 RKP009	300 19:59 RKP010	Av_RRF	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	1	1	1	0	9.2300
	2	Dichlorodifluoromethane	0.213	0.202	0.212	0.180	0.186	0.208	0.191	0.194	0.193	0.198	5.89	3.3896
	3	Dichlorotetrafluoroethane	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	4	Chloromethane	0.444	0.401	0.403	0.349	0.363	0.385	0.358	0.352	0.362	0.380	8.30	3.7449
	5	Vinyl chloride	0.350	0.316	0.337	0.298	0.296	0.333	0.305	0.284	0.285	0.312	7.61	3.9019
	6	Bromomethane	0.305	0.297	0.258	0.218	0.209	0.236	0.224	0.223	0.234	0.245	14.12	4.4935
	7	Chloroethane	0.165	0.171	0.172	0.154	0.166	0.181	0.168	0.172	0.170	0.169	4.24	4.5762
	8	Dichlorofluoromethane	0.459	0.547	0.516	0.544	0.560	0.585	0.568	0.578	0.564	0.547	7.07	4.5877
	9	Trichlorofluoromethane	0.267	0.285	0.308	0.273	0.280	0.318	0.285	0.285	0.288	0.288	5.53	4.8637
4	10	Acrolein	0.029	0.040	0.044	0.054	0.058	0.052	0.055	0.051	0.055	0.049	18.98	5.3017
	11	1,1,2-Trichloro-1,2,2-trifluoroethane	------	0.156	0.166	0.165	0.168	0.177	0.167	0.170	0.171	0.168	3.55	5.3650
4	12	Acetone	0.079	0.099	0.078	0.090	0.092	0.086	0.091	0.080	0.089	0.087	7.98	5.3578
	13	1,1-Dichloroethene	0.376	0.423	0.434	0.415	0.435	0.459	0.449	0.452	0.448	0.432	5.92	5.6008
5	14	tert-Butyl alcohol	0.032	0.032	0.036	0.038	0.037	0.035	0.038	0.035	0.038	0.036	6.72	5.5793
	15	Methyl acetate	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	16	Iodomethane	0.368	0.406	0.472	0.459	0.483	0.539	0.530	0.529	0.522	0.479	12.53	6.0206
	17	Methylene chloride	0.701	0.621	0.568	0.529	0.520	0.533	0.531	0.523	0.491	0.557	11.67	6.1181
5	18	Acrylonitrile	0.071	0.094	0.105	0.119	0.124	0.117	0.124	0.112	0.116	0.109	15.67	6.2156
	19	tert-Butyl methyl ether (MTBE)	0.671	0.774	0.822	0.849	0.871	0.869	0.876	0.886	0.840	0.829	8.24	6.2437
	20	Carbon disulfide	0.908	0.993	1.019	0.998	1.053	1.069	1.050	1.091	1.045	1.025	5.28	6.2949
	21	trans-1,2-Dichloroethene	0.383	0.477	0.481	0.469	0.482	0.506	0.478	0.487	0.475	0.471	7.30	6.4717
	22	Isopropyl ether (DIPE)	1.073	1.200	1.230	1.239	1.261	1.350	1.303	1.311	1.298	1.252	6.52	6.7246
	23	Vinyl acetate	0.714	0.647	0.698	0.645	0.660	0.701	0.656	0.635	0.643	0.667	4.44	6.8651
	24	1,1-Dichloroethane	0.550	0.614	0.633	0.657	0.657	0.679	0.676	0.683	0.628	0.642	6.59	6.9659
	25	tert-Butyl ethyl ether (ETBE)	0.841	0.917	1.003	0.976	1.012	1.030	1.044	1.039	1.042	0.989	6.96	7.2138
4	26	2-Butanone	0.107	0.156	0.155	0.188	0.190	0.176	0.190	0.172	0.183	0.169	15.88	7.3955
	27	2,2-Dichloropropane	0.288	0.331	0.330	0.319	0.307	0.329	0.323	0.298	0.297	0.313	5.20	7.6418
	28	cis-1,2-Dichloroethene	0.477	0.544	0.559	0.570	0.557	0.577	0.572	0.571	0.556	0.554	5.54	7.7013
	29	tert-Butyl formate (TBF)	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	30	Chloroform	0.520	0.597	0.598	0.602	0.617	0.644	0.606	0.618	0.619	0.602	5.67	7.8930
	31	Bromochloromethane	0.292	0.351	0.352	0.361	0.365	0.367	0.366	0.356	0.358	0.352	6.65	8.1293
	32	Tetrahydrofuran	0.105	0.116	0.112	0.119	0.117	0.107	0.112	0.101	0.112	0.111	5.30	8.1458
	33	Dibromofluoromethane	0.249	0.305	0.323	0.340	0.354	0.357	0.347	0.348	------	0.328	11.10	8.1700
	34	Cyclohexane	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	35	1,1,1-Trichloroethane	0.317	0.353	0.376	0.376	0.365	0.391	0.383	0.370	0.362	0.366	5.94	8.4152
	36	tert-Amyl methyl ether (TAME)	0.878	0.982	1.015	1.064	1.054	1.085	1.097	1.077	1.090	1.038	6.82	8.6648
	37	1,2-Dichloroethane-d4	0.223	0.263	0.281	0.288	0.297	0.305	0.299	0.294	------	0.281	9.65	8.7872
	38	CHLOROBENZENE-D5	1	1	1	1	1	1	1	1	1	1	0	14.0903
	39	1,1-Dichloropropene	0.146	0.167	0.152	0.150	0.174	0.186	0.172	0.172	0.160	0.164	8.05	8.6053
	40	Carbon tetrachloride	0.273	0.324	0.313	0.290	0.346	0.371	0.357	0.353	0.333	0.329	9.87	8.7722
	41	1,2-Dichloroethane	0.321	0.368	0.365	0.356	0.410	0.429	0.403	0.403	0.392	0.383	8.71	8.9077
	42	Benzene	1.350	1.532	1.419	1.334	1.520	1.610	1.520	1.543	1.436	1.474	6.36	8.9788
	43	Methylcyclohexane	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	44	Trichloroethene	0.350	0.395	0.387	0.365	0.425	0.451	0.419	0.418	0.404	0.402	7.84	9.7786
	45	1,2-Dichloropropane	0.331	0.394	0.382	0.383	0.429	0.463	0.430	0.438	0.409	0.407	9.64	10.0183
	46	Bromodichloromethane	0.387	0.434	0.429	0.442	0.513	0.537	0.522	0.517	0.507	0.476	11.25	10.3901
	47	Dibromomethane	0.193	0.220	0.223	0.228	0.254	0.270	0.255	0.251	0.248	0.238	10.06	10.5124

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	48	2-Chloroethyl vinyl ether	------	0.075	0.087	0.096	0.104	0.102	0.113	0.119	0.113	0.101	14.45	10.7028
4	49	4-Methyl-2-pentanone	0.232	0.349	0.338	0.409	0.464	0.432	0.446	0.417	0.414	0.389	18.49	10.7471
	50	cis-1,3-Dichloropropene	0.512	0.559	0.554	0.567	0.658	0.707	0.677	0.669	0.615	0.613	11.08	11.1982
	51	Toluene-d8	0.865	0.960	0.927	0.909	1.063	1.055	1.026	1.042	------	0.981	7.70	11.6560
	52	Toluene	1.189	1.353	1.253	1.223	1.370	1.468	1.367	1.375	1.327	1.325	6.63	11.7882
	53	Ethyl methacrylate	0.408	0.444	0.443	0.464	0.534	0.550	0.532	0.520	0.511	0.490	10.32	11.8510
	54	trans-1,3-Dichloropropene	0.361	0.444	0.455	0.450	0.538	0.556	0.544	0.555	0.519	0.491	13.68	11.9849
4	55	2-Hexanone	0.154	0.225	0.221	0.267	0.313	0.298	0.311	0.281	0.290	0.262	20.08	12.1733
	56	1,1,2-Trichloroethane	0.261	0.300	0.303	0.286	0.328	0.338	0.324	0.323	0.305	0.308	7.76	12.2824
	57	1,3-Dichloropropane	0.497	0.566	0.573	0.558	0.641	0.653	0.641	0.620	0.612	0.596	8.58	12.6774
	58	Tetrachloroethene	0.265	0.271	0.266	0.257	0.285	0.302	0.290	0.286	0.275	0.278	5.19	12.8608
	59	Dibromochloromethane	0.310	0.341	0.364	0.349	0.422	0.440	0.432	0.432	0.417	0.390	12.46	13.1913
	60	1,2-Dibromoethane	0.271	0.319	0.328	0.323	0.371	0.375	0.372	0.354	0.351	0.340	9.93	13.5218
	61	1-Chlorohexane	0.507	0.534	0.509	0.493	0.569	0.603	0.581	0.561	0.547	0.545	6.83	13.6044
	62	Chlorobenzene	0.923	1.004	0.962	0.936	1.049	1.093	1.023	1.026	0.950	0.996	5.72	14.1531
	63	Ethylbenzene	1.494	1.642	1.530	1.459	1.626	1.733	1.622	1.614	1.493	1.579	5.68	14.1730
	64	1,1,1,2-Tetrachloroethane	0.287	0.347	0.344	0.331	0.383	0.409	0.383	0.388	0.367	0.360	10.25	14.1845
2	65	m-Xylene & p-Xylene	1.116	1.225	1.192	1.139	1.249	1.311	1.203	1.198	0.985	1.180	7.85	14.2886
	66	o-Xylene	1.217	1.277	1.202	1.215	1.320	1.378	1.295	1.288	1.227	1.269	4.61	14.9761
	67	Styrene	0.899	1.021	0.980	0.996	1.122	1.171	1.100	1.120	1.036	1.049	8.19	15.0208
	68	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	1	1	1	0	18.1789
	69	Isopropylbenzene	3.540	3.762	3.564	3.856	3.828	3.905	3.877	3.728	3.472	3.726	4.34	15.4818
	70	Bromoform	------	0.466	0.504	0.565	0.616	0.606	0.631	0.619	0.621	0.579	10.65	15.6241
	71	1,1,2,2-Tetrachloroethane	1.078	1.205	1.222	1.274	1.293	1.248	1.293	1.218	1.240	1.230	5.32	15.7396
	72	4-Bromofluorobenzene	1.225	1.065	1.005	1.037	1.080	1.075	1.074	1.060	------	1.078	5.98	15.8950
	73	1,2,3-Trichloropropane	0.258	0.262	0.272	0.286	0.293	0.281	0.293	0.268	0.278	0.277	4.55	15.9661
	74	trans-1,4-Dichloro-2-butene	0.180	0.207	0.230	0.255	0.273	0.272	0.291	0.277	0.273	0.251	14.87	16.0140
	75	n-Propylbenzene	4.711	4.946	4.920	5.043	5.113	5.169	5.247	5.021	4.400	4.952	5.23	16.0768
	76	Bromobenzene	0.929	1.031	0.990	1.036	1.077	1.092	1.113	1.073	1.039	1.042	5.39	16.2387
	77	1,3,5-Trimethylbenzene	2.884	3.099	3.010	3.172	3.165	3.215	3.145	3.046	2.985	3.080	3.49	16.2933
	78	2-Chlorotoluene	2.769	3.151	3.262	2.765	3.461	2.889	3.459	2.984	3.105	3.094	8.61	16.3974
	79	4-Chlorotoluene	2.507	2.518	2.836	2.734	2.920	2.888	2.990	2.587	2.216	2.688	9.33	16.4470
	80	tert-Butylbenzene	3.019	3.138	3.188	3.299	3.167	3.291	3.251	3.095	3.069	3.169	3.11	16.8155
	81	1,2,4-Trimethylbenzene	2.862	3.221	3.053	3.178	3.116	3.156	3.147	3.120	3.000	3.095	3.53	16.8766
	82	sec-Butylbenzene	4.113	4.388	4.276	4.358	4.276	4.357	4.186	4.137	3.919	4.223	3.57	17.1130
	83	p-Isopropyltoluene	3.433	3.694	3.742	3.693	3.698	3.797	3.696	3.615	3.461	3.648	3.38	17.2849
	84	1,3-Dichlorobenzene	1.929	2.040	1.886	1.943	1.994	2.036	2.053	1.980	1.929	1.977	2.97	17.5146
	85	1,4-Dichlorobenzene	1.982	1.983	1.939	2.003	2.003	2.031	2.085	2.005	1.985	2.002	1.99	17.6600
	86	n-Butylbenzene	3.462	3.474	3.331	3.246	3.430	3.498	3.376	3.520	3.231	3.396	3.15	17.8666
	87	1,2-Dichlorobenzene	1.778	1.886	1.827	1.883	1.800	1.866	1.854	1.852	1.828	1.842	1.99	18.2186
	88	1,2-Dibromo-3-chloropropane	0.152	0.145	0.161	0.163	0.162	0.160	0.172	0.164	0.183	0.162	6.78	19.3506
	89	1,2,4-Trichlorobenzene	0.951	0.937	0.916	0.842	0.836	0.868	0.874	0.844	0.854	0.880	4.94	20.7306
	90	Hexachlorobutadiene	0.559	0.584	0.559	0.515	0.468	0.514	0.496	0.487	0.500	0.520	7.43	20.9091
	91	Naphthalene	2.303	2.243	2.296	2.119	2.009	2.018	2.181	1.969	2.118	2.139	5.86	21.2429
	92	1,2,3-Trichlorobenzene	0.802	0.861	0.841	0.745	0.678	0.701	0.716	0.633	0.634	0.734	11.50	21.6577

Spike Amount = Nominal Amount * M
Ave_%RSD : 7.9 Max_%RSD : 20.1

Use Least Square Linear Regression with weighting factor of inverse concentration for comps with %_RSD > 15
Resp_Ratio = xo + x1 * Amt_Ratio

ID#	Parameter	x0	x1	CCF
10	Acrolein	-0.00400	0.05387	0.9990
12	Acrylonitrile	-0.00781	0.11749	0.9993
26	2-Butanone	-0.00998	0.18177	0.9991
49	4-Methyl-2-pentanone	-0.02832	0.42645	0.9990
55	2-Hexanone	-0.02418	0.29428	0.9989

SG
11/4/09

LAB CHRONICLE
VOLATILE ORGANICS BY GC/MS

Client : ALLWEST GEOSCIENCE, INC.
Project : VA GLAHS

SDG NO. : 09L179
Instrument ID : T-002

SOIL

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1S	V002L22B	1	NA	12/10/0910:48	12/10/0910:48	RLP264	RKP006	V002L22	Method Blank
LCS1S	V002L22L	1	NA	12/10/0908:19	12/10/0908:19	RLP259	RKP006	V002L22	Lab Control Sample (LCS)
LCD1S	V002L22C	1	NA	12/10/0908:49	12/10/0908:49	RLP260	RKP006	V002L22	LCS Duplicate
MW3-20V	L179-01	0.85	23.2	12/10/0914:02	12/10/0914:02	RLP269	RKP006	V002L22	Field Sample
MW3-40V	L179-02	0.84	15.8	12/10/0914:31	12/10/0914:31	RLP270	RKP006	V002L22	Field Sample

FN - Filename
% Moist - Percent Moisture

SECOND SOURCE VERIFICATION

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\09K03\RKP014.D Vial: 14
Acq On : 3 Nov 2009 10:02 pm Operator: CGM
Sample : IVO02K032 50ppb Inst : TO02
Misc : 50ppb 8260/200ppb KET-ACL/250ppb TBA-ACN Multiplr: 1.00
MS Integration Params: 524TAIL.P

Method : D:\HPCHEM\1\METHODS\VO02K03.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Wed Nov 04 10:02:49 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	50.000	50.000	0.0	104	-0.01
2	T	Dichlorodifluoromethane	50.000	47.827	4.3	105	0.00
3	T	Dichlorotetrafluoroethane	-1.000	0.000	0.0	0	0.00
4	P,T	Chloromethane	50.000	41.672	16.7	90	-0.03
5	C,T	Vinyl chloride	50.000	39.153	21.7#	86	-0.01
6	T	Bromomethane	50.000	39.305	21.4#	96	0.00
7	T	Chloroethane	50.000	42.753	14.5	90	-0.01
8	T	Dichlorofluoromethane	50.000	52.474	-4.9	106	0.00
9	T	Trichlorofluoromethane	50.000	44.174	11.7	94	-0.01
10	T	Acrolein	200.000	165.236	17.4	78	-0.01
11	T	1,1,2-Trichloro-1,2,2-trifl	50.000	52.076	-4.2	108	0.00
12	T	Acetone	200.000	181.874	9.1	90	-0.01
13	C,T,M	1,1-Dichloroethene	50.000	50.378	-0.8	104	0.00
14	T	tert-Butyl alcohol	250.000	265.125	-6.0	105	-0.01
15	T	Methyl acetate	-1.000	0.000	0.0	0	0.00
16	T	Iodomethane	50.000	55.863	-11.7	115	0.00
17	T	Methylene chloride	50.000	43.148	13.7	96	-0.01
18	T	Acrylonitrile	250.000	251.237	-0.5	98	0.00
19	T	tert-Butyl methyl ether (MT	50.000	53.151	-6.3	105	0.00
20	T	Carbon disulfide	50.000	57.750	-15.5	117	-0.01
21	T	trans-1,2-Dichloroethene	50.000	50.230	-0.5	102	-0.01
22	T	Isopropyl ether (DIPE)	50.000	51.410	-2.8	106	-0.01
23	T	Vinyl acetate	50.000	43.802	12.4	92	-0.01
24	P,T	1,1-Dichloroethane	50.000	50.471	-0.9	102	-0.01
25	T	tert-Butyl ethyl ether (ETB	50.000	51.982	-4.0	105	-0.01
26	T	2-Butanone	200.000	186.552	6.7	91	-0.01
27	T	2,2-Dichloropropane	50.000	49.291	1.4	104	-0.01
28	T	cis-1,2-Dichloroethene	50.000	48.705	2.6	100	0.00
29	T	tert-Butyl formate (TBF)	-1.000	0.000	0.0	0	0.00
30	C,T	Chloroform	50.000	51.183	-2.4	104	0.00
31	T	Bromochloromethane	50.000	50.005	-0.0	100	-0.01
32	T	Tetrahydrofuran	50.000	49.209	1.6	97	-0.01
33	S	Dibromofluoromethane	50.000	50.598	-1.2	97	-0.01
34	T	Cyclohexane	-1.000	0.000	0.0	0	0.00
35	T	1,1,1-Trichloroethane	50.000	49.975	0.0	104	-0.01
36	T	tert-Amyl methyl ether (TAM	50.000	52.271	-4.5	107	-0.01
37	S	1,2-Dichloroethane-d4	50.000	50.570	-1.1	99	-0.01
38	I	CHLOROBENZENE-D5	50.000	50.000	0.0	103	-0.01
39	T	1,1-Dichloropropene	50.000	52.573	-5.1	102	-0.01
40	T	Carbon tetrachloride	50.000	51.134	-2.3	100	0.00

(#) = Out of Range

Sa 11/4/09a

2846

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\09K03\RKP014.D Vial: 14
Acq On : 3 Nov 2009 10:02 pm Operator: CGM
Sample : IVO02K032 50ppb Inst : TO02
Misc : 50ppb 8260/200ppb KET-ACL/250ppb TBA-ACN Multiplr: 1.00
MS Integration Params: 524TAIL.P

Method : D:\HPCHEM\1\METHODS\VO02K03.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Wed Nov 04 10:02:49 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
41	T	1,2-Dichloroethane	50.000	53.456	-6.9	103	-0.01
42	T,M	Benzene	50.000	52.713	-5.4	105	-0.01
43	T	Methylcyclohexane	-1.000	0.000	0.0	0	0.00
44	T,M	Trichloroethene	50.000	52.169	-4.3	101	-0.01
45	C,T	1,2-Dichloropropane	50.000	51.545	-3.1	100	-0.01
46	T	Bromodichloromethane	50.000	50.092	-0.2	95	-0.01
47	T	Dibromomethane	50.000	52.283	-4.6	100	0.00
48	T	2-Chloroethyl vinyl ether	50.000	52.961	-5.9	105	-0.01
49	T	4-Methyl-2-pentanone	200.000	195.440	2.3	91	-0.01
50	T	cis-1,3-Dichloropropene	50.000	51.637	-3.3	99	0.00
51	S	Toluene-d8	50.000	51.859	-3.7	98	-0.01
52	C,T,M	Toluene	50.000	52.817	-5.6	105	-0.01
53	T	Ethyl methacrylate	50.000	52.174	-4.3	98	-0.01
54	T	trans-1,3-Dichloropropene	50.000	54.801	-9.6	103	0.00
55	T	2-Hexanone	200.000	190.093	5.0	90	-0.01
56	T	1,1,2-Trichloroethane	50.000	50.737	-1.5	98	0.00
57	T	1,3-Dichloropropane	50.000	50.666	-1.3	97	-0.01
58	T	Tetrachloroethene	50.000	50.848	-1.7	102	0.00
59	T	Dibromochloromethane	50.000	49.079	1.8	93	0.00
60	T	1,2-Dibromoethane	50.000	51.302	-2.6	97	0.00
61	T	1-Chlorohexane	50.000	52.942	-5.9	104	-0.01
62	P,M	Chlorobenzene	50.000	51.575	-3.2	101	-0.01
63	C,T	Ethylbenzene	50.000	51.728	-3.5	103	0.00
64	T	1,1,1,2-Tetrachloroethane	50.000	51.341	-2.7	99	-0.01
65	T	m-Xylene & p-Xylene	100.000	102.333	-2.3	99	-0.01
66	T	o-Xylene	50.000	50.111	-0.2	99	0.00
67	T	Styrene	50.000	50.832	-1.7	98	0.00
68	I	1,2-DICHLOROBENZENE-D4	50.000	50.000	0.0	100	-0.01
69	T	Isopropylbenzene	50.000	52.287	-4.6	102	0.00
70	P,T	Bromoform	50.000	50.729	-1.5	95	-0.01
71	P,T	1,1,2,2-Tetrachloroethane	50.000	49.745	0.5	94	-0.01
72	S	4-Bromofluorobenzene	50.000	48.434	3.1	96	0.00
73	T	1,2,3-Trichloropropane	50.000	48.600	2.8	92	-0.01
74	T	trans-1,4-Dichloro-2-butene	50.000	51.971	-3.9	95	-0.01
75	T	n-Propylbenzene	50.000	50.394	-0.8	97	0.00
76	T	Bromobenzene	50.000	51.619	-3.2	100	0.00
77	T	1,3,5-Trimethylbenzene	50.000	48.543	2.9	94	-0.01
78	T	2-Chlorotoluene	50.000	46.408	7.2	83	-0.01
79	T	4-Chlorotoluene	50.000	48.579	2.8	89	0.00
80	T	tert-Butylbenzene	50.000	50.317	-0.6	101	0.00

(#) = Out of Range

SA 11/4/09

2047

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\09K03\RKP014.D Vial: 14
Acq On : 3 Nov 2009 10:02 pm Operator: CGM
Sample : IVO02K032 50ppb Inst : TO02
Misc : 50ppb 8260/200ppb KET-ACL/250ppb TBA-ACN Multiplr: 1.00
MS Integration Params: 524TAIL.P

Method : D:\HPCHEM\1\METHODS\VO02K03.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Wed Nov 04 10:02:49 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T	1,2,4-Trimethylbenzene	50.000	48.467	3.1	96	0.00
82	T	sec-Butylbenzene	50.000	49.155	1.7	97	-0.01
83	T	p-Isopropyltoluene	50.000	48.051	3.9	95	0.00
84	T	1,3-Dichlorobenzene	50.000	47.836	4.3	95	-0.01
85	T	1,4-Dichlorobenzene	50.000	47.066	5.9	94	-0.01
86	T	n-Butylbenzene	50.000	43.030	13.9	85	-0.01
87	T	1,2-Dichlorobenzene	50.000	46.864	6.3	96	0.00
88	T	1,2-Dibromo-3-chloropropane	50.000	45.889	8.2	92	0.00
89	T	1,2,4-Trichlorobenzene	50.000	42.183	15.6	89	0.00
90	T	Hexachlorobutadiene	50.000	44.818	10.4	100	0.00
91	T	Naphthalene	50.000	43.623	12.8	93	-0.01
92	T	1,2,3-Trichlorobenzene	50.000	42.023	16.0	91	-0.01

Su 11/4/09

(#) = Out of Range SPCC's out = 0 CCC's out = 1
RKP014.D VO02K03.M Wed Nov 04 10:12:21 2009

DAILY CALIBRATIONS

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc
Lab Code: EMXT Case No.:
Lab File ID: RLP258
Instrument ID: T002
GC Column:RTX502.2ID:0.32mm (mm)

Contract: VA GLAHS
SAS No.: SDG No.: 09L179
BFB Injection Date : 12/10/09
BFB Injection Time : 07:49
Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.06
75	30.0 - 60.0% of mass 95	46.25
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.50
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	80.50
175	5.0 - 9.0% of mass 174	5.76(7.2)1
176	95.0 - 101.0% of mass 174	78.00(96.9)1
177	5.0 - 9.0% of mass 176	5.09(6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD050	CV002K0336	RLP258	12/10/09	07:49
2	MBLK1S	V002L22B	RLP264	12/10/09	10:48
3	LCS1S	V002L22L	RLP259	12/10/09	08:19
4	LCD1S	V002L22C	RLP260	12/10/09	08:49
5	MW3-20V	L179-01	RLP269	12/10/09	14:02
6	MW3-40V	L179-02	RLP270	12/10/09	14:31

FORM V VOA OLM02.0

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMAX Inc
Lab Code: EMXT
Lab File ID: RKP006
Instrument ID: IO02
GC Column: RTX502.2 ID: 0.32mm (mm)

Project: VA GLAHS
SDG No.: 09L179
Date Analyzed: 11/03/09
Time Analyzed: 17:55
Heated Purge: (Y/N) Y

		IS1(DBF)		IS2(CBZ)		IS3(DCB)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	1862163	9.23	1778144	14.09	718395	18.18
	UPPER LIMIT	3724326	9.73	3556288	14.59	1436790	18.68
	LOWER LIMIT	931082	8.73	889072	13.59	359198	17.68
	SAMPLE ID						
1	VSTD050	2040613	9.21	2095288	14.08	917951	18.15
2	MBLK1S	2084217	9.22	2075629	14.07	897195	18.17
3	LCS1S	2078511	9.20	2178705	14.07	911683	18.16
4	LCD1S	2130583	9.20	2151101	14.07	924962	18.16
5	MW3-20V	2139044	9.22	2112433	14.08	871273	18.17
6	MW3-40V	2039098	9.22	2081575	14.08	888568	18.17

IS1 (DFB) = 1,4-Difluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,2-Dichlorobenzene-d4

AREA UPPER LIMIT = + 100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
AREA UPPER LIMIT = + 50% of surrogate area
AREA LOWER LIMIT = - 50% of surrogate area

Column used to flag internal standard area values with an asterisk
* Values outside of QC limits.

FORM VIII VOA-8260 1/2000

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\09L10\RLP258.D Vial: 2
Acq On : 10 Dec 2009 7:49 am Operator: CGM
Sample : CVO02K0336 Inst : TO02
Misc : 50ppb 8260/200ppb KET-ACL/250ppb TBA-ACN Multiplr: 1.00
MS Integration Params: 524TAIL.P

Method : D:\HPCHEM\1\METHODS\VO02K03.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Wed Nov 04 10:02:49 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	50.000	50.000	0.0	110	-0.02
2	T	Dichlorodifluoromethane	50.000	54.445	-8.9	127	0.00
3	T	Dichlorotetrafluoroethane	-1.000	0.000	0.0	0	0.00
4	P,T	Chloromethane	50.000	47.993	4.0	110	-0.05
5	C,T	Vinyl chloride	50.000	50.783	-1.6	117	-0.03
6	T	Bromomethane	50.000	48.103	3.8	124	-0.02
7	T	Chloroethane	50.000	50.987	-2.0	114	-0.03
8	T	Dichlorofluoromethane	50.000	52.840	-5.7	113	-0.02
9	T	Trichlorofluoromethane	50.000	66.151	-32.3#	149	-0.02
10	T	Acrolein	200.000	204.404	-2.2	103	-0.02
11	T	1,1,2-Trichloro-1,2,2-trifl	50.000	57.986	-16.0	127	-0.02
12	T	Acetone	200.000	223.316	-11.7	116	-0.02
13	C,T,M	1,1-Dichloroethene	50.000	56.615	-13.2	123	-0.05
14	T	tert-Butyl alcohol	250.000	271.306	-8.5	114	-0.02
15	T	Methyl acetate	-1.000	0.000	0.0	0	0.00
16	T	Iodomethane	50.000	59.065	-18.1	128	-0.05
17	T	Methylene chloride	50.000	52.701	-5.4	124	-0.02
18	T	Acrylonitrile	250.000	285.707	-14.3	118	-0.02
19	T	tert-Butyl methyl ether (MT	50.000	52.545	-5.1	110	-0.02
20	T	Carbon disulfide	50.000	54.488	-9.0	116	-0.05
21	T	trans-1,2-Dichloroethene	50.000	55.852	-11.7	120	-0.02
22	T	Isopropyl ether (DIPE)	50.000	53.661	-7.3	117	-0.03
23	T	Vinyl acetate	50.000	65.922	-31.8#	146	-0.02
24	P,T	1,1-Dichloroethane	50.000	56.517	-13.0	121	-0.03
25	T	tert-Butyl ethyl ether (ETB	50.000	53.351	-6.7	114	-0.02
26	T	2-Butanone	200.000	217.807	-8.9	112	-0.03
27	T	2,2-Dichloropropane	50.000	59.555	-19.1	133	-0.03
28	T	cis-1,2-Dichloroethene	50.000	57.133	-14.3	124	-0.02
29	T	tert-Butyl formate (TBF)	-1.000	0.000	0.0	0	0.00
30	C,T	Chloroform	50.000	57.036	-14.1	122	-0.02
31	T	Bromochloromethane	50.000	56.317	-12.6	119	-0.02
32	T	Tetrahydrofuran	50.000	54.931	-9.9	115	-0.02
33	S	Dibromofluoromethane	50.000	50.556	-1.1	103	-0.02
34	T	Cyclohexane	-1.000	0.000	0.0	0	0.00
35	T	1,1,1-Trichloroethane	50.000	59.775	-19.5	131	-0.03
36	T	tert-Amyl methyl ether (TAM	50.000	53.621	-7.2	116	-0.02
37	S	1,2-Dichloroethane-d4	50.000	50.405	-0.8	104	-0.03
38	I	CHLOROBENZENE-D5	50.000	50.000	0.0	118	-0.02
39	T	1,1-Dichloropropene	50.000	52.677	-5.4	117	-0.02
40	T	Carbon tetrachloride	50.000	57.383	-14.8	128	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\09L10\RLP258.D Vial: 2
Acq On : 10 Dec 2009 7:49 am Operator: CGM
Sample : CVO02K0336 Inst : TO02
Misc : 50ppb 8260/200ppb KET-ACL/250ppb TBA-ACN Multiplr: 1.00
MS Integration Params: 524TAIL.P

Method : D:\HPCHEM\1\METHODS\VO02K03.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Wed Nov 04 10:02:49 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
41	T	1,2-Dichloroethane	50.000	55.224	-10.4	122	-0.03
42	T,M	Benzene	50.000	51.364	-2.7	117	-0.02
43	T	Methylcyclohexane	-1.000	0.000	0.0	0	0.00
44	T,M	Trichloroethene	50.000	54.023	-8.0	120	-0.03
45	C,T	1,2-Dichloropropane	50.000	55.282	-10.6	124	-0.02
46	T	Bromodichloromethane	50.000	54.991	-10.0	120	-0.02
47	T	Dibromomethane	50.000	54.136	-8.3	119	-0.02
48	T	2-Chloroethyl vinyl ether	50.000	46.042	7.9	105	-0.02
49	T	4-Methyl-2-pentanone	200.000	216.097	-8.0	115	-0.03
50	T	cis-1,3-Dichloropropene	50.000	53.977	-8.0	119	-0.02
51	S	Toluene-d8	50.000	48.812	2.4	106	-0.02
52	C,T,M	Toluene	50.000	53.286	-6.6	121	-0.02
53	T	Ethyl methacrylate	50.000	56.505	-13.0	122	-0.02
54	T	trans-1,3-Dichloropropene	50.000	55.328	-10.7	119	-0.02
55	T	2-Hexanone	200.000	212.637	-6.3	116	-0.02
56	T	1,1,2-Trichloroethane	50.000	53.920	-7.8	119	-0.02
57	T	1,3-Dichloropropane	50.000	53.081	-6.2	116	-0.02
58	T	Tetrachloroethene	50.000	52.776	-5.6	121	-0.02
59	T	Dibromochloromethane	50.000	53.849	-7.7	117	-0.02
60	T	1,2-Dibromoethane	50.000	54.599	-9.2	118	-0.02
61	T	1-Chlorohexane	50.000	54.176	-8.4	122	-0.02
62	P,M	Chlorobenzene	50.000	55.090	-10.2	123	-0.02
63	C,T	Ethylbenzene	50.000	54.288	-8.6	124	-0.02
64	T	1,1,1,2-Tetrachloroethane	50.000	55.655	-11.3	123	-0.02
65	T	m-Xylene & p-Xylene	100.000	109.195	-9.2	121	-0.02
66	T	o-Xylene	50.000	53.985	-8.0	122	-0.02
67	T	Styrene	50.000	55.830	-11.7	123	-0.02
68	I	1,2-DICHLOROBENZENE-D4	50.000	50.000	0.0	128	-0.03
69	T	Isopropylbenzene	50.000	51.406	-2.8	128	-0.02
70	P,T	Bromoform	50.000	48.443	3.1	116	-0.02
71	P,T	1,1,2,2-Tetrachloroethane	50.000	51.557	-3.1	125	-0.02
72	S	4-Bromofluorobenzene	50.000	47.101	5.8	120	-0.02
73	T	1,2,3-Trichloropropane	50.000	50.656	-1.3	122	-0.02
74	T	trans-1,4-Dichloro-2-butene	50.000	55.514	-11.0	130	-0.02
75	T	n-Propylbenzene	50.000	51.640	-3.3	128	-0.02
76	T	Bromobenzene	50.000	49.201	1.6	122	-0.02
77	T	1,3,5-Trimethylbenzene	50.000	49.929	0.1	124	-0.02
78	T	2-Chlorotoluene	50.000	43.036	13.9	98	-0.02
79	T	4-Chlorotoluene	50.000	54.051	-8.1	127	-0.02
80	T	tert-Butylbenzene	50.000	51.675	-3.3	132	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\09L10\RLP258.D Vial: 2
Acq On : 10 Dec 2009 7:49 am Operator: CGM
Sample : CVO02K0336 Inst : TO02
Misc : 50ppb 8260/200ppb KET-ACL/250ppb TBA-ACN Multiplr: 1.00
MS Integration Params: 524TAIL.P

Method : D:\HPCHEM\1\METHODS\VO02K03.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Wed Nov 04 10:02:49 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T	1,2,4-Trimethylbenzene	50.000	52.124	-4.2	132	-0.02
82	T	sec-Butylbenzene	50.000	50.692	-1.4	128	-0.02
83	T	p-Isopropyltoluene	50.000	52.151	-4.3	131	0.00
84	T	1,3-Dichlorobenzene	50.000	50.275	-0.5	127	-0.02
85	T	1,4-Dichlorobenzene	50.000	49.974	0.1	128	-0.02
86	T	n-Butylbenzene	50.000	51.399	-2.8	130	-0.03
87	T	1,2-Dichlorobenzene	50.000	49.853	0.3	130	-0.02
88	T	1,2-Dibromo-3-chloropropane	50.000	50.205	-0.4	129	-0.02
89	T	1,2,4-Trichlorobenzene	50.000	52.478	-5.0	141	-0.02
90	T	Hexachlorobutadiene	50.000	48.299	3.4	137	-0.02
91	T	Naphthalene	50.000	47.633	4.7	130	-0.03
92	T	1,2,3-Trichlorobenzene	50.000	47.179	5.6	131	-0.03

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\09L10\RLP258.D Vial: 2
Acq On : 10 Dec 2009 7:49 am Operator: CGM
Sample : CVO02K0336 Inst : TO02
Misc : 50ppb 8260/200ppb KET-ACL/250ppb TBA-ACN Multiplr: 1.00
MS Integration Params: 524TAIL.P

Method : D:\HPCHEM\1\METHODS\VO02K03.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Wed Nov 04 10:02:49 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	110	-0.02
2	T	Dichlorodifluoromethane	0.198	0.215	-8.6	127	0.00
3	T	Dichlorotetrafluoroethane	0.000	0.000	0.0	0#	0.00
4	P,T	Chloromethane	0.380	0.364	4.2	110	-0.05
5	C,T	Vinyl chloride	0.312	0.316	-1.3	117	-0.03
6	T	Bromomethane	0.245	0.236	3.7	124	-0.02
7	T	Chloroethane	0.169	0.172	-1.8	114	-0.03
8	T	Dichlorofluoromethane	0.547	0.578	-5.7	113	-0.02
9	T	Trichlorofluoromethane	0.288	0.381	-32.3#	149	-0.02
10	T	Acrolein	0.049	0.054	-10.2	103	-0.02
11	T	1,1,2-Trichloro-1,2,2-trifl	0.168	0.194	-15.5	127	-0.02
12	T	Acetone	0.087	0.097	-11.5	116	-0.02
13	C,T,M	1,1-Dichloroethene	0.432	0.489	-13.2	123	-0.05
14	T	tert-Butyl alcohol	0.036	0.039	-8.3	114	-0.02
15	T	Methyl acetate	0.000	0.000	0.0	0#	0.00
16	T	Iodomethane	0.479	0.566	-18.2	128	-0.05
17	T	Methylene chloride	0.557	0.588	-5.6	124	-0.02
18	T	Acrylonitrile	0.109	0.133	-22.0#	118	-0.02
19	T	tert-Butyl methyl ether (MT	0.829	0.871	-5.1	110	-0.02
20	T	Carbon disulfide	1.025	1.117	-9.0	116	-0.05
21	T	trans-1,2-Dichloroethene	0.471	0.526	-11.7	120	-0.02
22	T	Isopropyl ether (DIPE)	1.252	1.343	-7.3	117	-0.03
23	T	Vinyl acetate	0.667	0.879	-31.8#	146	-0.02
24	P,T	1,1-Dichloroethane	0.642	0.726	-13.1	121	-0.03
25	T	tert-Butyl ethyl ether (ETB	0.989	1.055	-6.7	114	-0.02
26	T	2-Butanone	0.169	0.195	-15.4	112	-0.03
27	T	2,2-Dichloropropane	0.313	0.373	-19.2	133	-0.03
28	T	cis-1,2-Dichloroethene	0.554	0.633	-14.3	124	-0.02
29	T	tert-Butyl formate (TBF)	0.000	0.000	0.0	0#	0.00
30	C,T	Chloroform	0.602	0.687	-14.1	122	-0.02
31	T	Bromochloromethane	0.352	0.396	-12.5	119	-0.02
32	T	Tetrahydrofuran	0.111	0.122	-9.9	115	-0.02
33	S	Dibromofluoromethane	0.328	0.332	-1.2	103	-0.02
34	T	Cyclohexane	0.000	0.000	0.0	0#	0.00
35	T	1,1,1-Trichloroethane	0.366	0.438	-19.7	131	-0.03
36	T	tert-Amyl methyl ether (TAM	1.038	1.113	-7.2	116	-0.02
37	S	1,2-Dichloroethane-d4	0.281	0.284	-1.1	104	-0.03
38	I	CHLOROBENZENE-D5	1.000	1.000	0.0	118	-0.02
39	T	1,1-Dichloropropene	0.164	0.173	-5.5	117	-0.02
40	T	Carbon tetrachloride	0.329	0.378	-14.9	128	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\09L10\RLP258.D Vial: 2
Acq On : 10 Dec 2009 7:49 am Operator: CGM
Sample : CV002K0336 Inst : TO02
Misc : 50ppb 8260/200ppb KET-ACL/250ppb TBA-ACN Multiplr: 1.00
MS Integration Params: 524TAIL.P

Method : D:\HPCHEM\1\METHODS\VO02K03.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Wed Nov 04 10:02:49 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
41	T	1,2-Dichloroethane	0.383	0.423	-10.4	122	-0.03
42	T,M	Benzene	1.474	1.514	-2.7	117	-0.02
43	T	Methylcyclohexane	0.000	0.000	0.0	0#	0.00
44	T,M	Trichloroethene	0.402	0.434	-8.0	120	-0.03
45	C,T	1,2-Dichloropropane	0.407	0.450	-10.6	124	-0.02
46	T	Bromodichloromethane	0.476	0.524	-10.1	120	-0.02
47	T	Dibromomethane	0.238	0.257	-8.0	119	-0.02
48	T	2-Chloroethyl vinyl ether	0.101	0.093	7.9	105	-0.02
49	T	4-Methyl-2-pentanone	0.389	0.454	-16.7	115	-0.03
50	T	cis-1,3-Dichloropropene	0.613	0.662	-8.0	119	-0.02
51	S	Toluene-d8	0.981	0.958	2.3	106	-0.02
52	C,T,M	Toluene	1.325	1.412	-6.6	121	-0.02
53	T	Ethyl methacrylate	0.490	0.553	-12.9	122	-0.02
54	T	trans-1,3-Dichloropropene	0.491	0.544	-10.8	119	-0.02
55	T	2-Hexanone	0.262	0.307	-17.2	116	-0.02
56	T	1,1,2-Trichloroethane	0.308	0.332	-7.8	119	-0.02
57	T	1,3-Dichloropropane	0.596	0.632	-6.0	116	-0.02
58	T	Tetrachloroethene	0.278	0.293	-5.4	121	-0.02
59	T	Dibromochloromethane	0.390	0.420	-7.7	117	-0.02
60	T	1,2-Dibromoethane	0.340	0.372	-9.4	118	-0.02
61	T	1-Chlorohexane	0.545	0.590	-8.3	122	-0.02
62	P,M	Chlorobenzene	0.996	1.098	-10.2	123	-0.02
63	C,T	Ethylbenzene	1.579	1.715	-8.6	124	-0.02
64	T	1,1,1,2-Tetrachloroethane	0.360	0.401	-11.4	123	-0.02
65	T	m-Xylene & p-Xylene	1.180	1.288	-9.2	121	-0.02
66	T	o-Xylene	1.269	1.370	-8.0	122	-0.02
67	T	Styrene	1.049	1.172	-11.7	123	-0.02
68	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	128	-0.03
69	T	Isopropylbenzene	3.726	3.831	-2.8	128	-0.02
70	P,T	Bromoform	0.579	0.560	3.3	116	-0.02
71	P,T	1,1,2,2-Tetrachloroethane	1.230	1.269	-3.2	125	-0.02
72	S	4-Bromofluorobenzene	1.078	1.015	5.8	120	-0.02
73	T	1,2,3-Trichloropropane	0.277	0.281	-1.4	122	-0.02
74	T	trans-1,4-Dichloro-2-butene	0.251	0.278	-10.8	130	-0.02
75	T	n-Propylbenzene	4.952	5.115	-3.3	128	-0.02
76	T	Bromobenzene	1.042	1.026	1.5	122	-0.02
77	T	1,3,5-Trimethylbenzene	3.080	3.076	0.1	124	-0.02
78	T	2-Chlorotoluene	3.094	2.663	13.9	98	-0.02
79	T	4-Chlorotoluene	2.688	2.906	-8.1	127	-0.02
80	T	tert-Butylbenzene	3.169	3.275	-3.3	132	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\09L10\RLP258.D Vial: 2
Acq On : 10 Dec 2009 7:49 am Operator: CGM
Sample : CVO02K0336 Inst : TO02
Misc : 50ppb 8260/200ppb KET-ACL/250ppb TBA-ACN Multiplr: 1.00
MS Integration Params: 524TAIL.P

Method : D:\HPCHEM\1\METHODS\VO02K03.M (RTE Integrator)
Title : METHOD 8260 5.0mL
Last Update : Wed Nov 04 10:02:49 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T	1,2,4-Trimethylbenzene	3.095	3.226	-4.2	132	-0.02
82	T	sec-Butylbenzene	4.223	4.282	-1.4	128	-0.02
83	T	p-Isopropyltoluene	3.648	3.805	-4.3	131	0.00
84	T	1,3-Dichlorobenzene	1.977	1.987	-0.5	127	-0.02
85	T	1,4-Dichlorobenzene	2.002	2.001	0.0	128	-0.02
86	T	n-Butylbenzene	3.396	3.491	-2.8	130	-0.03
87	T	1,2-Dichlorobenzene	1.842	1.836	0.3	130	-0.02
88	T	1,2-Dibromo-3-chloropropane	0.162	0.163	-0.6	129	-0.02
89	T	1,2,4-Trichlorobenzene	0.880	0.924	-5.0	141	-0.02
90	T	Hexachlorobutadiene	0.520	0.502	3.5	137	-0.02
91	T	Naphthalene	2.139	2.038	4.7	130	-0.03
92	T	1,2,3-Trichlorobenzene	0.734	0.693	5.6	131	-0.03

ANALYTICAL LOGS

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 4 ☐ EMAX-524.2 Rev.No. 4 ☐ EMAX-CLP-VOA ☐ EMAX 624 Rev.No. 1 ☐

Start Date: 11/3/09 ☑ 5-ml Purge ☐ 25-ml Purge **Book # A02 -023**

BATCH V002K035

Sample Prep. ID.	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix pH-W	Matrix S	Notes
01	RKP001	BFB02K01	1µL	NA	NA	NA	15:20
02	002	V002K031	.04µL				8260 2 Ket/Az 8 TBA/Acn 10 ppb
03	003	2	.08µL				4 16 20
04	004	3	.2µL				10 40 50
05	005	4	.4µL				20 80 100
06	006	5	1µL				50 200 250
07	007	6	1.6µL				80 320 400
08	008	7	2µL				100 400 500
09	009	8	4µL				200 800 1000
10	010	9	6µL				300 1200 1500
11	011	15/55					
12	012	V002K015					
13	013	V002K031	4.5µL				80 200 250
14	014	2					50 200 250
15	015	Rinse					22:32
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							CGM 11/3/09

Instrument No.	02
INITIAL CALIBRATION REFERENCE	
DATE	11/3/09
ICAL ID	V002K03

STANDARDS

NAME	ID	CONC. (mg/L)
DCC Ket/AA	SV1 - 15 - 17 - 2	1000
DCC 8260	SV1 - 15 - 17 - 3	250/1250
DCC Gases	SV1 - 15 - 16 - 2	250
BFB	SV1 - 15 - 17 - 1	250
IS/SURR.	SV1 - 15 - 17 - 1	250
LCS Ket/AA	SV1 - 15 - 15 - 1	250
LCS 8260	SV1 - 15 - 6 - 1	50/250
LCS Gases	SV1 - 15 - 5 - 2	250
SOLVENT IS	SV1 - 15 - 19 - 1 ID	250
METHANOL SS	SV1 - 15 - 19 - 2	250
DATA FILE	09K03	

Electronic Data Archival

Location	Date
HPCHEM_VOA/TO02	

Comments:

Analyzed By: CGM

Date Disposed: 11/4/09

Disposed By: CGM

2059

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 4 ☐ EMAX-524.2 Rev.No. 4 ☐ EMAX-CLP-VOA ☐ EMAX 624 Rev.No. 1 ☐

Start Date: 12/10/09 ☑ 5-ml Purge ☐ 25-ml Purge

Book # A02 -023

BATCH V002K0336

Sample Prep. ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix pH-W	Matrix S	Notes
01	RLP257	BFB02L22 *	1µL				passing
02	258	CV002K0336	25/1µL				used as BFB 07:49
03	259	V002L22L		1.0			
04	260	C					
05	261	V002L23L					
06	262	C					
07	263	Rinse					
08	264	V002L22B	5.09	1.0			
09	265	V002L23B	5.0mL				
10	266	09L132-01T	500µL	10	<2		
11	267	-02T					
12	268	Rinse					
13	269	09L179-01	☆	☆			
14	270	-02					
15	271	Rinse					
16	272	Rinse					
17	273	09LW09-03	☆	☆			
18	274	-04					
19	275	-05					
20	276	-06					
21	277	-01					
22	278	-02					19:33
23	279	Rinse					
24	280						
25	281						

Instrument No.	02
INITIAL CALIBRATION REFERENCE	
DATE	11/3/09
ICAL ID	V002K03

STANDARDS

NAME	ID	CONC. (mg/L)
DCC	SV1-15-26-37	
DCC	-8-2	
DCC	-25-1	
BFB	-27-2	50
IS/SURR.	-27-2	250
LCS	-15-1	
LCS	-6-1	
LCS	-5-2	

SOLVENT	ID
METHANOL	
DATA FILE	09L10

Electronic Data Archival

Location	Date
HPCHEM_VOA/FO02	

Comments:

☆ Please refer to sample wt. log.
Datafile RLP282-RLP288 are rinses.

Analyzed By: CGM

Date Disposed: 12/11/09

Disposed By: CGM

2960

EXTRACTION LOGS

PRESERVATION LOG FOR VOLATILES

METHOD ☑ 5035 **Book #** E02-029

Matrix: SOIL Starting Date/Time: 12/10/2009 12:20 *Ending Date/Time* 12/10/2009 12:25

Lab Sample ID	W1 (g)	Wf (g)	Ws(g)	D.F.
BLANK	29.78	34.78	5	1.00
09L179-01	31.29	37.14	5.85	0.85
09L179-02	31.35	37.27	5.92	0.84
NOTHING FOLLOWS.				

Standards / Reagents	ID / Lot#	Amount Added
SURROGATE		
LCS/MS		
REAGENT WATER		5.0ML
$NaHSO_4$ H_2O		
SAND	SW1A-03-711	5.0G

Comments

☑ Volumetric dispenser was checked with 5-ml volumetric flask.

FROZEN ENCORES.

Prepared By: **RT**

Standard Added By: **RT**

Witnessed By: **CGM**

Checked By: **CGM**

Extract Received By: **CGM**

Extract Location N/A

ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92868 - 714/771-6900 ***FAX 714/538-1209***

CLIENT Allwest Geoscience (12399)
ATTN: Romeo Balbas
1751 Jenks Dr
Corona, CA 92880

LAB REQUEST 259388
REPORTED 08/20/2010
RECEIVED 08/10/2010

PROJECT VA GLAHS Wilshire Blvd. Los Angeles, CA

SUBMITTER Client

COMMENTS

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods as indicated on the report. This cover letter is an integral part of the final report.

Order No.	Client Sample Identification
1101787	MW1
1101788	MW2
1101789	MW3
1101790	Laboratory Method Blank

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

ASSOCIATED LABORATORIES by,

Edward S. Behare, Ph.D.
Vice President

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

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TESTING & CONSULTING
Chemical
Microbiological
Environmental

Order #: 1101787 **Client:** Allwest Geoscience
Matrix: WATER **Client Sample ID:** MW1
Date Sampled: 08/06/2010
Time Sampled: 09:00
Sampled By:

8260B Volatile Organic Compounds

Analyte	Result	DF	DLR	Units	Date/Analyst	
1,1,1,2-Tetrachloroethane	ND	1	5	ug/L	08/13/10	RP
1,1,1-Trichloroethane	ND	1	5	ug/L	08/13/10	RP
1,1,2,2-Tetrachloroethane	ND	1	5	ug/L	08/13/10	RP
1,1,2-Trichloroethane	ND	1	5	ug/L	08/13/10	RP
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/L	08/13/10	RP
1,1-Dichloroethane	ND	1	5	ug/L	08/13/10	RP
1,1-Dichloroethene	ND	1	5	ug/L	08/13/10	RP
1,1-Dichloropropene	ND	1	5	ug/L	08/13/10	RP
1,2,3-Trichlorobenzene	ND	1	5	ug/L	08/13/10	RP
1,2,3-Trichloropropane	ND	1	5	ug/L	08/13/10	RP
1,2,4-Trichlorobenzene	ND	1	5	ug/L	08/13/10	RP
1,2,4-Trimethylbenzene	ND	1	5	ug/L	08/13/10	RP
1,2-Dibromo-3-chloropropane	ND	1	5	ug/L	08/13/10	RP
1,2-Dibromoethane	ND	1	5	ug/L	08/13/10	RP
1,2-Dichlorobenzene	ND	1	5	ug/L	08/13/10	RP
1,2-Dichloroethane	ND	1	5	ug/L	08/13/10	RP
1,2-Dichloropropane	ND	1	5	ug/L	08/13/10	RP
1,3,5-Trimethylbenzene	ND	1	5	ug/L	08/13/10	RP
1,3-Dichlorobenzene	ND	1	5	ug/L	08/13/10	RP
1,3-Dichloropropane	ND	1	5	ug/L	08/13/10	RP
1,4-Dichlorobenzene	ND	1	5	ug/L	08/13/10	RP
2,2-Dichloropropane	ND	1	5	ug/L	08/13/10	RP
2-Butanone (MEK)	ND	1	100	ug/L	08/13/10	RP
2-Chloroethyl vinyl ether	ND	1	5	ug/L	08/13/10	RP
2-Chlorotoluene	ND	1	5	ug/L	08/13/10	RP
4-Chlorotoluene	ND	1	5	ug/L	08/13/10	RP
4-Methyl -2- Pentanone (MIBK)	ND	1	10	ug/L	08/13/10	RP
Acetone	ND	1	100	ug/L	08/13/10	RP
Allyl chloride	ND	1	5	ug/L	08/13/10	RP
Benzene	ND	1	1	ug/L	08/13/10	RP
Bromobenzene	ND	1	5	ug/L	08/13/10	RP
Bromochloromethane	ND	1	5	ug/L	08/13/10	RP
Bromodichloromethane	ND	1	5	ug/L	08/13/10	RP
Bromoform	ND	1	5	ug/L	08/13/10	RP
Bromomethane	ND	1	5	ug/L	08/13/10	RP
Carbon tetrachloride	ND	1	5	ug/L	08/13/10	RP
Chlorobenzene	ND	1	5	ug/L	08/13/10	RP

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 1101787 **Client:** Allwest Geoscience
Matrix: WATER **Client Sample ID:** MW1
Date Sampled: 08/06/2010
Time Sampled: 09:00
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
Chloroethane	ND	1	5	ug/L	08/13/10	RP
Chloroform	ND	1	5	ug/L	08/13/10	RP
Chloromethane	ND	1	5	ug/L	08/13/10	RP
cis-1,2-Dichloroethene	ND	1	5	ug/L	08/13/10	RP
cis-1,3-Dichloropropene	ND	1	5	ug/L	08/13/10	RP
cis-1,4-Dichloro-2-butene	ND	1	20	ug/L	08/13/10	RP
Dibromochloromethane	ND	1	5	ug/L	08/13/10	RP
Dibromomethane	ND	1	5	ug/L	08/13/10	RP
Dichlorodifluoromethane	ND	1	5	ug/L	08/13/10	RP
Ethyl benzene	ND	1	5	ug/L	08/13/10	RP
Hexachlorobutadiene	ND	1	5	ug/L	08/13/10	RP
Isopropylbenzene (Cumene)	ND	1	5	ug/L	08/13/10	RP
m and p-Xylene	ND	1	5	ug/L	08/13/10	RP
Methyl-tert-butylether (MTBE)	ND	1	1	ug/L	08/13/10	RP
Methylene chloride	ND	1	5	ug/L	08/13/10	RP
n-Butylbenzene	ND	1	5	ug/L	08/13/10	RP
n-Propylbenzene	ND	1	5	ug/L	08/13/10	RP
Naphthalene	ND	1	5	ug/L	08/13/10	RP
o-Xylene	ND	1	5	ug/L	08/13/10	RP
p-Isopropyltoluene	ND	1	5	ug/L	08/13/10	RP
sec-Butylbenzene	ND	1	5	ug/L	08/13/10	RP
Styrene	ND	1	5	ug/L	08/13/10	RP
tert-Butylbenzene	ND	1	5	ug/L	08/13/10	RP
Tetrachloroethene	ND	1	5	ug/L	08/13/10	RP
Toluene	ND	1	5	ug/L	08/13/10	RP
trans-1,2-Dichloroethene	ND	1	5	ug/L	08/13/10	RP
trans-1,3-Dichloropropene	ND	1	5	ug/L	08/13/10	RP
trans-1,4-Dichloro-2-butene	ND	1	20	ug/L	08/13/10	RP
Trichloroethene	ND	1	5	ug/L	08/13/10	RP
Trichlorofluoromethane	ND	1	5	ug/L	08/13/10	RP
Vinyl chloride	ND	1	5	ug/L	08/13/10	RP
Xylenes, total	ND	1	5	ug/L	08/13/10	RP
Di-isopropyl ether (DIPE)	ND	1	1.0	ug/L	08/13/10	RP
Ethyl-tertbutylether (ETBE)	ND	1	1.0	ug/L	08/13/10	RP
Tert-amylmethylether (TAME)	ND	1	1.0	ug/L	08/13/10	RP
Tertiary butyl alcohol (TBA)	ND	1	10	ug/L	08/13/10	RP

Surrogates		**Units**	**Control Limits**
Surr1 - Dibromofluoromethane	89	%	70 - 135

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 1101787
Matrix: WATER
Date Sampled: 08/06/2010
Time Sampled: 09:00
Sampled By:

Client: Allwest Geoscience
Client Sample ID: MW1

Analyte	Result	DF	DLR	Units	Date/Analyst
8260B Volatile Organic Compounds					
Surr2 - 1,2-Dichloroethane-d4	105			%	70 - 135
Surr3 - Toluene-d8	101			%	70 - 135
Surr4 - p-Bromofluorobenzene	104			%	70 - 135

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 1101788
Matrix: WATER
Date Sampled: 08/06/2010
Time Sampled: 10:00
Sampled By:

Client: Allwest Geoscience
Client Sample ID: MW2

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	ND	1	5	ug/L	08/13/10	RP
1,1,1-Trichloroethane	ND	1	5	ug/L	08/13/10	RP
1,1,2,2-Tetrachloroethane	ND	1	5	ug/L	08/13/10	RP
1,1,2-Trichloroethane	ND	1	5	ug/L	08/13/10	RP
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/L	08/13/10	RP
1,1-Dichloroethane	ND	1	5	ug/L	08/13/10	RP
1,1-Dichloroethene	ND	1	5	ug/L	08/13/10	RP
1,1-Dichloropropene	ND	1	5	ug/L	08/13/10	RP
1,2,3-Trichlorobenzene	ND	1	5	ug/L	08/13/10	RP
1,2,3-Trichloropropane	ND	1	5	ug/L	08/13/10	RP
1,2,4-Trichlorobenzene	ND	1	5	ug/L	08/13/10	RP
1,2,4-Trimethylbenzene	ND	1	5	ug/L	08/13/10	RP
1,2-Dibromo-3-chloropropane	ND	1	5	ug/L	08/13/10	RP
1,2-Dibromoethane	ND	1	5	ug/L	08/13/10	RP
1,2-Dichlorobenzene	ND	1	5	ug/L	08/13/10	RP
1,2-Dichloroethane	ND	1	5	ug/L	08/13/10	RP
1,2-Dichloropropane	ND	1	5	ug/L	08/13/10	RP
1,3,5-Trimethylbenzene	ND	1	5	ug/L	08/13/10	RP
1,3-Dichlorobenzene	ND	1	5	ug/L	08/13/10	RP
1,3-Dichloropropane	ND	1	5	ug/L	08/13/10	RP
1,4-Dichlorobenzene	ND	1	5	ug/L	08/13/10	RP
2,2-Dichloropropane	ND	1	5	ug/L	08/13/10	RP
2-Butanone (MEK)	ND	1	100	ug/L	08/13/10	RP
2-Chloroethyl vinyl ether	ND	1	5	ug/L	08/13/10	RP
2-Chlorotoluene	ND	1	5	ug/L	08/13/10	RP
4-Chlorotoluene	ND	1	5	ug/L	08/13/10	RP
4-Methyl -2- Pentanone (MIBK)	ND	1	10	ug/L	08/13/10	RP
Acetone	ND	1	100	ug/L	08/13/10	RP
Allyl chloride	ND	1	5	ug/L	08/13/10	RP
Benzene	ND	1	1	ug/L	08/13/10	RP
Bromobenzene	ND	1	5	ug/L	08/13/10	RP
Bromochloromethane	ND	1	5	ug/L	08/13/10	RP
Bromodichloromethane	ND	1	5	ug/L	08/13/10	RP
Bromoform	ND	1	5	ug/L	08/13/10	RP
Bromomethane	ND	1	5	ug/L	08/13/10	RP
Carbon tetrachloride	ND	1	5	ug/L	08/13/10	RP
Chlorobenzene	ND	1	5	ug/L	08/13/10	RP

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 1101788 **Client:** Allwest Geoscience
Matrix: WATER **Client Sample ID:** MW2
Date Sampled: 08/06/2010
Time Sampled: 10:00
Sampled By:

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
Chloroethane	ND	1	5	ug/L	08/13/10	RP
Chloroform	ND	1	5	ug/L	08/13/10	RP
Chloromethane	ND	1	5	ug/L	08/13/10	RP
cis-1,2-Dichloroethene	ND	1	5	ug/L	08/13/10	RP
cis-1,3-Dichloropropene	ND	1	5	ug/L	08/13/10	RP
cis-1,4-Dichloro-2-butene	ND	1	20	ug/L	08/13/10	RP
Dibromochloromethane	ND	1	5	ug/L	08/13/10	RP
Dibromomethane	ND	1	5	ug/L	08/13/10	RP
Dichlorodifluoromethane	ND	1	5	ug/L	08/13/10	RP
Ethyl benzene	ND	1	5	ug/L	08/13/10	RP
Hexachlorobutadiene	ND	1	5	ug/L	08/13/10	RP
Isopropylbenzene (Cumene)	ND	1	5	ug/L	08/13/10	RP
m and p-Xylene	ND	1	5	ug/L	08/13/10	RP
Methyl-tert-butylether (MTBE)	ND	1	1	ug/L	08/13/10	RP
Methylene chloride	ND	1	5	ug/L	08/13/10	RP
n-Butylbenzene	ND	1	5	ug/L	08/13/10	RP
n-Propylbenzene	ND	1	5	ug/L	08/13/10	RP
Naphthalene	ND	1	5	ug/L	08/13/10	RP
o-Xylene	ND	1	5	ug/L	08/13/10	RP
p-Isopropyltoluene	ND	1	5	ug/L	08/13/10	RP
sec-Butylbenzene	ND	1	5	ug/L	08/13/10	RP
Styrene	ND	1	5	ug/L	08/13/10	RP
tert-Butylbenzene	ND	1	5	ug/L	08/13/10	RP
Tetrachloroethene	ND	1	5	ug/L	08/13/10	RP
Toluene	ND	1	5	ug/L	08/13/10	RP
trans-1,2-Dichloroethene	ND	1	5	ug/L	08/13/10	RP
trans-1,3-Dichloropropene	ND	1	5	ug/L	08/13/10	RP
trans-1,4-Dichloro-2-butene	ND	1	20	ug/L	08/13/10	RP
Trichloroethene	ND	1	5	ug/L	08/13/10	RP
Trichlorofluoromethane	ND	1	5	ug/L	08/13/10	RP
Vinyl chloride	ND	1	5	ug/L	08/13/10	RP
Xylenes, total	ND	1	5	ug/L	08/13/10	RP
Di-isopropyl ether (DIPE)	ND	1	1.0	ug/L	08/13/10	RP
Ethyl-tertbutylether (ETBE)	ND	1	1.0	ug/L	08/13/10	RP
Tert-amylmethylether (TAME)	ND	1	1.0	ug/L	08/13/10	RP
Tertiary butyl alcohol (TBA)	ND	1	10	ug/L	08/13/10	RP

Surrogates		**Units**	**Control Limits**
Surr1 - Dibromofluoromethane	87	%	70 - 135

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 1101788
Matrix: WATER
Date Sampled: 08/06/2010
Time Sampled: 10:00
Sampled By:

Client: Allwest Geoscience
Client Sample ID: MW2

Analyte	Result	DF	DLR	Units	Date/Analyst
8260B Volatile Organic Compounds					
Surr2 - 1,2-Dichloroethane-d4	108			%	70 - 135
Surr3 - Toluene-d8	101			%	70 - 135
Surr4 - p-Bromofluorobenzene	102			%	70 - 135

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 1101789
Matrix: WATER
Date Sampled: 08/06/2010
Time Sampled: 12:00
Sampled By:

Client: Allwest Geoscience
Client Sample ID: MW3

8260B Volatile Organic Compounds

Analyte	Result	DF	DLR	Units	Date/Analyst	
1,1,1,2-Tetrachloroethane	ND	1	5	ug/L	08/13/10	RP
1,1,1-Trichloroethane	ND	1	5	ug/L	08/13/10	RP
1,1,2,2-Tetrachloroethane	ND	1	5	ug/L	08/13/10	RP
1,1,2-Trichloroethane	ND	1	5	ug/L	08/13/10	RP
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/L	08/13/10	RP
1,1-Dichloroethane	ND	1	5	ug/L	08/13/10	RP
1,1-Dichloroethene	ND	1	5	ug/L	08/13/10	RP
1,1-Dichloropropene	ND	1	5	ug/L	08/13/10	RP
1,2,3-Trichlorobenzene	ND	1	5	ug/L	08/13/10	RP
1,2,3-Trichloropropane	ND	1	5	ug/L	08/13/10	RP
1,2,4-Trichlorobenzene	ND	1	5	ug/L	08/13/10	RP
1,2,4-Trimethylbenzene	ND	1	5	ug/L	08/13/10	RP
1,2-Dibromo-3-chloropropane	ND	1	5	ug/L	08/13/10	RP
1,2-Dibromoethane	ND	1	5	ug/L	08/13/10	RP
1,2-Dichlorobenzene	ND	1	5	ug/L	08/13/10	RP
1,2-Dichloroethane	ND	1	5	ug/L	08/13/10	RP
1,2-Dichloropropane	ND	1	5	ug/L	08/13/10	RP
1,3,5-Trimethylbenzene	ND	1	5	ug/L	08/13/10	RP
1,3-Dichlorobenzene	ND	1	5	ug/L	08/13/10	RP
1,3-Dichloropropane	ND	1	5	ug/L	08/13/10	RP
1,4-Dichlorobenzene	ND	1	5	ug/L	08/13/10	RP
2,2-Dichloropropane	ND	1	5	ug/L	08/13/10	RP
2-Butanone (MEK)	ND	1	100	ug/L	08/13/10	RP
2-Chloroethyl vinyl ether	ND	1	5	ug/L	08/13/10	RP
2-Chlorotoluene	ND	1	5	ug/L	08/13/10	RP
4-Chlorotoluene	ND	1	5	ug/L	08/13/10	RP
4-Methyl -2- Pentanone (MIBK)	ND	1	10	ug/L	08/13/10	RP
Acetone	ND	1	100	ug/L	08/13/10	RP
Allyl chloride	ND	1	5	ug/L	08/13/10	RP
Benzene	ND	1	1	ug/L	08/13/10	RP
Bromobenzene	ND	1	5	ug/L	08/13/10	RP
Bromochloromethane	ND	1	5	ug/L	08/13/10	RP
Bromodichloromethane	ND	1	5	ug/L	08/13/10	RP
Bromoform	ND	1	5	ug/L	08/13/10	RP
Bromomethane	ND	1	5	ug/L	08/13/10	RP
Carbon tetrachloride	ND	1	5	ug/L	08/13/10	RP
Chlorobenzene	ND	1	5	ug/L	08/13/10	RP

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 1101789
Matrix: WATER
Date Sampled: 08/06/2010
Time Sampled: 12:00
Sampled By:

Client: Allwest Geoscience
Client Sample ID: MW3

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
Chloroethane	ND	1	5	ug/L	08/13/10	RP
Chloroform	ND	1	5	ug/L	08/13/10	RP
Chloromethane	ND	1	5	ug/L	08/13/10	RP
cis-1,2-Dichloroethene	ND	1	5	ug/L	08/13/10	RP
cis-1,3-Dichloropropene	ND	1	5	ug/L	08/13/10	RP
cis-1,4-Dichloro-2-butene	ND	1	20	ug/L	08/13/10	RP
Dibromochloromethane	ND	1	5	ug/L	08/13/10	RP
Dibromomethane	ND	1	5	ug/L	08/13/10	RP
Dichlorodifluoromethane	ND	1	5	ug/L	08/13/10	RP
Ethyl benzene	ND	1	5	ug/L	08/13/10	RP
Hexachlorobutadiene	ND	1	5	ug/L	08/13/10	RP
Isopropylbenzene (Cumene)	ND	1	5	ug/L	08/13/10	RP
m and p-Xylene	ND	1	5	ug/L	08/13/10	RP
Methyl-tert-butylether (MTBE)	ND	1	1	ug/L	08/13/10	RP
Methylene chloride	ND	1	5	ug/L	08/13/10	RP
n-Butylbenzene	ND	1	5	ug/L	08/13/10	RP
n-Propylbenzene	ND	1	5	ug/L	08/13/10	RP
Naphthalene	ND	1	5	ug/L	08/13/10	RP
o-Xylene	ND	1	5	ug/L	08/13/10	RP
p-Isopropyltoluene	ND	1	5	ug/L	08/13/10	RP
sec-Butylbenzene	ND	1	5	ug/L	08/13/10	RP
Styrene	ND	1	5	ug/L	08/13/10	RP
tert-Butylbenzene	ND	1	5	ug/L	08/13/10	RP
Tetrachloroethene	ND	1	5	ug/L	08/13/10	RP
Toluene	ND	1	5	ug/L	08/13/10	RP
trans-1,2-Dichloroethene	ND	1	5	ug/L	08/13/10	RP
trans-1,3-Dichloropropene	ND	1	5	ug/L	08/13/10	RP
trans-1,4-Dichloro-2-butene	ND	1	20	ug/L	08/13/10	RP
Trichloroethene	ND	1	5	ug/L	08/13/10	RP
Trichlorofluoromethane	ND	1	5	ug/L	08/13/10	RP
Vinyl chloride	ND	1	5	ug/L	08/13/10	RP
Xylenes, total	ND	1	5	ug/L	08/13/10	RP
Di-isopropyl ether (DIPE)	ND	1	1.0	ug/L	08/13/10	RP
Ethyl-tertbutylether (ETBE)	ND	1	1.0	ug/L	08/13/10	RP
Tert-amylmethylether (TAME)	ND	1	1.0	ug/L	08/13/10	RP
Tertiary butyl alcohol (TBA)	ND	1	10	ug/L	08/13/10	RP

Surrogates		**Units**	**Control Limits**
Surr1 - Dibromofluoromethane	88	%	70 - 135

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 1101789
Matrix: WATER
Date Sampled: 08/06/2010
Time Sampled: 12:00
Sampled By:

Client: Allwest Geoscience
Client Sample ID: MW3

Analyte	Result	DF	DLR	Units	Date/Analyst
8260B Volatile Organic Compounds					
Surr2 - 1,2-Dichloroethane-d4	108			%	70 - 135
Surr3 - Toluene-d8	101			%	70 - 135
Surr4 - p-Bromofluorobenzene	105			%	70 - 135

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 1101790
Matrix: WATER
Date Sampled:
Time Sampled:
Sampled By:

Client: Allwest Geoscience
Client Sample ID: Laboratory Method Blank

8260B Volatile Organic Compounds

Analyte	Result	DF	DLR	Units	Date/Analyst	
1,1,1,2-Tetrachloroethane	ND	1	5	ug/L	08/13/10	RP
1,1,1-Trichloroethane	ND	1	5	ug/L	08/13/10	RP
1,1,2,2-Tetrachloroethane	ND	1	5	ug/L	08/13/10	RP
1,1,2-Trichloroethane	ND	1	5	ug/L	08/13/10	RP
1,1,2-Trichlorotrifluoroethane	ND	1	5	ug/L	08/13/10	RP
1,1-Dichloroethane	ND	1	5	ug/L	08/13/10	RP
1,1-Dichloroethene	ND	1	5	ug/L	08/13/10	RP
1,1-Dichloropropene	ND	1	5	ug/L	08/13/10	RP
1,2,3-Trichlorobenzene	ND	1	5	ug/L	08/13/10	RP
1,2,3-Trichloropropane	ND	1	5	ug/L	08/13/10	RP
1,2,4-Trichlorobenzene	ND	1	5	ug/L	08/13/10	RP
1,2,4-Trimethylbenzene	ND	1	5	ug/L	08/13/10	RP
1,2-Dibromo-3-chloropropane	ND	1	5	ug/L	08/13/10	RP
1,2-Dibromoethane	ND	1	5	ug/L	08/13/10	RP
1,2-Dichlorobenzene	ND	1	5	ug/L	08/13/10	RP
1,2-Dichloroethane	ND	1	5	ug/L	08/13/10	RP
1,2-Dichloropropane	ND	1	5	ug/L	08/13/10	RP
1,3,5-Trimethylbenzene	ND	1	5	ug/L	08/13/10	RP
1,3-Dichlorobenzene	ND	1	5	ug/L	08/13/10	RP
1,3-Dichloropropane	ND	1	5	ug/L	08/13/10	RP
1,4-Dichlorobenzene	ND	1	5	ug/L	08/13/10	RP
2,2-Dichloropropane	ND	1	5	ug/L	08/13/10	RP
2-Butanone (MEK)	ND	1	100	ug/L	08/13/10	RP
2-Chloroethyl vinyl ether	ND	1	5	ug/L	08/13/10	RP
2-Chlorotoluene	ND	1	5	ug/L	08/13/10	RP
4-Chlorotoluene	ND	1	5	ug/L	08/13/10	RP
4-Methyl -2- Pentanone (MIBK)	ND	1	10	ug/L	08/13/10	RP
Acetone	ND	1	100	ug/L	08/13/10	RP
Allyl chloride	ND	1	5	ug/L	08/13/10	RP
Benzene	ND	1	1	ug/L	08/13/10	RP
Bromobenzene	ND	1	5	ug/L	08/13/10	RP
Bromochloromethane	ND	1	5	ug/L	08/13/10	RP
Bromodichloromethane	ND	1	5	ug/L	08/13/10	RP
Bromoform	ND	1	5	ug/L	08/13/10	RP
Bromomethane	ND	1	5	ug/L	08/13/10	RP
Carbon tetrachloride	ND	1	5	ug/L	08/13/10	RP
Chlorobenzene	ND	1	5	ug/L	08/13/10	RP

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 1101790
Matrix: WATER
Date Sampled:
Time Sampled:
Sampled By:

Client: Allwest Geoscience
Client Sample ID: Laboratory Method Blank

Analyte	Result	DF	DLR	Units	Date/Analyst	
8260B Volatile Organic Compounds						
Chloroethane	ND	1	5	ug/L	08/13/10	RP
Chloroform	ND	1	5	ug/L	08/13/10	RP
Chloromethane	ND	1	5	ug/L	08/13/10	RP
cis-1,2-Dichloroethene	ND	1	5	ug/L	08/13/10	RP
cis-1,3-Dichloropropene	ND	1	5	ug/L	08/13/10	RP
cis-1,4-Dichloro-2-butene	ND	1	20	ug/L	08/13/10	RP
Dibromochloromethane	ND	1	5	ug/L	08/13/10	RP
Dibromomethane	ND	1	5	ug/L	08/13/10	RP
Dichlorodifluoromethane	ND	1	5	ug/L	08/13/10	RP
Ethyl benzene	ND	1	5	ug/L	08/13/10	RP
Hexachlorobutadiene	ND	1	5	ug/L	08/13/10	RP
Isopropylbenzene (Cumene)	ND	1	5	ug/L	08/13/10	RP
m and p-Xylene	ND	1	5	ug/L	08/13/10	RP
Methyl-tert-butylether (MTBE)	ND	1	1	ug/L	08/13/10	RP
Methylene chloride	ND	1	5	ug/L	08/13/10	RP
n-Butylbenzene	ND	1	5	ug/L	08/13/10	RP
n-Propylbenzene	ND	1	5	ug/L	08/13/10	RP
Naphthalene	ND	1	5	ug/L	08/13/10	RP
o-Xylene	ND	1	5	ug/L	08/13/10	RP
p-Isopropyltoluene	ND	1	5	ug/L	08/13/10	RP
sec-Butylbenzene	ND	1	5	ug/L	08/13/10	RP
Styrene	ND	1	5	ug/L	08/13/10	RP
tert-Butylbenzene	ND	1	5	ug/L	08/13/10	RP
Tetrachloroethene	ND	1	5	ug/L	08/13/10	RP
Toluene	ND	1	5	ug/L	08/13/10	RP
trans-1,2-Dichloroethene	ND	1	5	ug/L	08/13/10	RP
trans-1,3-Dichloropropene	ND	1	5	ug/L	08/13/10	RP
trans-1,4-Dichloro-2-butene	ND	1	20	ug/L	08/13/10	RP
Trichloroethene	ND	1	5	ug/L	08/13/10	RP
Trichlorofluoromethane	ND	1	5	ug/L	08/13/10	RP
Vinyl chloride	ND	1	5	ug/L	08/13/10	RP
Xylenes, total	ND	1	5	ug/L	08/13/10	RP
Di-isopropyl ether (DIPE)	ND	1	1.0	ug/L	08/13/10	RP
Ethyl-tertbutylether (ETBE)	ND	1	1.0	ug/L	08/13/10	RP
Tert-amylmethylether (TAME)	ND	1	1.0	ug/L	08/13/10	RP
Tertiary butyl alcohol (TBA)	ND	1	10	ug/L	08/13/10	RP

Surrogates		**Units**	**Control Limits**
Surr1 - Dibromofluoromethane	89	%	70 - 135

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

Order #: 1101790
Matrix: WATER
Date Sampled:
Time Sampled:
Sampled By:

Client: Allwest Geoscience
Client Sample ID: Laboratory Method Blank

Analyte	Result	DF	DLR	Units	Date/Analyst
8260B Volatile Organic Compounds					
Surr2 - 1,2-Dichloroethane-d4	108			%	70 - 135
Surr3 - Toluene-d8	101			%	70 - 135
Surr4 - p-Bromofluorobenzene	103			%	70 - 135

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit, DF = Dilution Factor

ASSOCIATED LABORATORIES

QA / QC EPA Methods 8260 - GCMS # 5

Sample ID: *MS/MSD Water Sample* 259388-787
Date Prepared: August 13, 2010
Date Analyzed: 8/13-8/14/2010
Sample Matrix: Water
Units: µg/L

Lab ID#'s in Batch: 259161, 259388, 259383, 259403, 259416, 259536, 259546, 259547, 259573

Compound	Sample Conc.	Spike Added	Spike Res	Dup Res	Spike % Rec	Dup % Rec	RPD	QC RPD	Limits % Rec
1,1-Dichloroethene	0.00	50.0	54.7	52.5	109	105	4	22	59 - 172
MTBE	0.00	50.0	44.1	49.1	88	98	11	24	62 - 137
Benzene	0.00	50.0	52.1	51.0	104	102	2	24	62 - 137
Trichloroethene	0.00	50.0	53.3	50.7	107	101	5	21	66 - 142
Toluene	0.00	50.0	52.1	50.2	104	100	4	21	59 - 139
Chlorobenzene	0.00	50.0	51.3	50.3	103	101	2	21	60 - 133

Sample ID: *LCS*

Compound	Spike Added	Spike Res	Spike % Rec	Limits % Rec
1,1-Dichloroethene	50.0	52.9	106	59 - 172
MTBE	50.0	51.5	103	62 - 137
Benzene	50.0	51.3	103	62 - 137
Trichloroethene	50.0	50.1	100	66 - 142
Toluene	50.0	50.7	101	59 - 139
Chlorobenzene	50.0	51.6	103	60 - 133

*=Outside QC limits due to high concentration in sample

If Sample Result > 4 times Spike Added, then "NC"

Surrogate Recovery

Compound	MB 1 % Rec	MB 2 % Rec		MS % Rec	MSD % Rec		LCS % Rec	Limits % Rec
Dibromofluoromethane	89	89		96	95		97	70 - 135
1,2-Dichloroethane-d4	108	108		101	103		102	70 - 135
Toluene-d8	101	104		103	100		99	70 - 135
p-Bromofluorobenzene	103	102		111	105		99	70 - 135

259388

CHAIN OF CUSTODY FORM

P.O. NUMBER:	SITE/PROJECT NAME:
	VA GLAHS
JOB NUMBER:	SITE/PROJECT LOCATION:
02-3454-EI	Wilshire Blvd. Los Angeles, CA

SAMPLER(S) SIGNATURE

SUBMIT RESULTS TO:

Allwest Geoscience, Inc.
1751 Jenks Dr.
Corona, CA 92880

ATTN: Romeo Balbas
PHONE NO. (951) 898-5424
FAX NO. (951) 898-5429

ANALYTICAL METHOD

SAMPLE NUMBER (I.D.)	YEAR 2010 DATE MM/DD	TIME AM/PM	MATRIX	NO. OF CONTAINERS	Radioisotopes H3 C14 Cl36 Ra226 Ra228	VOCs 8260B Full Suite				REMARKS
MW1	8/6	8:00	GW	3		X				Normal Turnaround Time
MW2	8/6	10:00	GW	3		X				
MW3	8/6	12:00	GW	3		X				

SAMPLES INTACT: YES..... NO.....
SAMPLES PROPERLY COOLED: YES..... NO.....
TEMPERATURED STORED:
PRESERVATIVES ADDED: YES.... NO..... TYPE:
SAMPLES ACCEPTED: YES..... NO.....
IF NOT, WHY: _____

SAMPLES PLACED IN LAB REFRIGERATOR
YES..... NO..... REP. INITIALS.....

LABORATORY NAME:

RELINQUISHED	DATE/TIME	DATE/TIME	RECEIVED
RELINQUISHED BY (SIGNATURE)/COMPANY:.	DATE/TIME 8-10-10 1:30pm	DATE/TIME 8/10/10 1323	RECEIVED BY (SIGNATURE)/COMPANY:
RELINQUISHED BY (SIGNATURE)/COMPANY:	DATE/TIME	DAT/TIME	RECEIVED BY (SIGNATURE)/COMPANY:
RELINQUISHED BY (SIGNATURE)/COMPANY:	DATE/TIME	DATE/TIME	RECEIVED BY (SIGNATURE)/COMPANY:

ASSOCIATED LABORATORIES
806 North Batavia – Orange, California 92868 – 714-771-6900 *FAX 714-538-1209*

SAMPLE ACCEPTANCE CHECKLIST

Section 1
Client: Allwest Geoscience Project: 02-3454-EI
Date Received: 8-10-16 Sampler's Name: Yes No
Sample(s) received in cooler: (Yes) No (Skip Section 2)
Shipping Information: _____

Section 2
Was the cooler packed with: ___ Ice X Ice Packs ___ Bubble Wrap ___ Styrofoam
___ Paper ___ None ___ Other _____
Cooler or box temperature: 6.0C

(Acceptance range is 2 to 6 Deg. C.)

Section 3	YES	NO	N/A
Was a COC received?	X		
Is it properly completed? (IDs, sampling date and time, signature, test)	X		
Were custody seals present?			X
If Yes – were they intact?			X
Were all samples sealed in plastic bags?	X		
Did all samples arrive intact? If no, indicate below.	X		
Did all bottle labels agree with COC? (ID, dates and times)	X		
Were correct containers used for the tests required?	X		
Was a sufficient amount of sample sent for tests indicated?	X		
Was there headspace in VOA vials?		X	
Were the containers labeled with correct preservatives?	X		
Was total residual chlorine measured (Fish Bioassay samples only)? *			X

*: If the answer is no, please inform Fish Bioassay Dept. immediately.

Section 4
Explanations/Comments

Section 5
Was Project Manager notified of discrepancies: Y / N N/A

Completed By: M. Ehrt Date: 8-10-16

APPENDIX 9

RADIOLOGICAL ANALYTICAL RESULTS

SNC Protocol

Data from PIKA's Laboratory
Sacramento, CA
Director: Jeanne Haslett

Calibration Information
Software Version IC: 2.11
Software Version EC: 1.31
Instrument Model: Tri-Carb 3100TR
Instrument Serial Number: 432230
3H Chi Square: 9.93 Date Processed: 12/17/09 5:00:24 PM
14C Chi Square: 17.21 Date Processed: 12/17/09 5:00:24 PM
3H E^2/B (1-18.6 keV): 293.18 Date Processed: 12/17/09 5:00:24 PM
14C E^2/B (4-156 keV): 555.30 Date Processed: 12/17/09 5:00:24 PM
3H Efficiency (0-18.6 keV): 65.93 Date Processed: 12/17/09 5:00:24 PM
14C Efficiency (0-156 keV): 96.14 Date Processed: 12/17/09 5:00:24 PM
IPA Background Date Processed: 12/17/09 5:00:24 PM
3H Background CPM (0-18.6 keV): 15.52 Date Processed: 12/17/09 5:00:24 PM
14C Background CPM (0-156 keV): 22.58 Date Processed: 12/17/09 5:00:24 PM
3H Calibration DPM: 291800
3H Reference Date: 8/17/07
14C Calibration DPM: 127900

Assay Definition-

Assay Description:
LA VA

Assay Type: DPM (Dual)
Report Name: LA VA 12-17-09
Output Data Path: C:\Packard\Tricarb\Results\JMH\3H 14C dpm and Suspect
Raw Results Path: C:\Packard\Tricarb\Results\JMH\3H 14C dpm and Suspect\20091217_1700.results
Assay File Name: C:\Packard\TriCarb\Assays\3H 14C dpm and Suspect.lsa

Count Conditions-

Nuclide: 3H-14C
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Sets:
Low Energy: 3H
Mid Energy: 14C
Count Time (min): 10.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	12.0	1st Vial
B	12.0	156.0	1st Vial
C	0.0	0.0	1st Vial

Count Corrections-

Static Controller: On Luminescence Correction: On
Colored Samples: Off Heterogeneity Monitor: n/a
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: On

Regions	Half Life	Units	Reference Date	Reference Time
A	4530.37	Days	01 January 2009	Start of Assay
B	5728.45	Years	01 January 2009	Start of Assay
C	0.00	Minutes	Start of Assay	Start of Assay

Cycle 1 Results

S#	Count Time	CPMA	A:2S%	DPM1	CPMB	B:2S%	DPM2	MESSAGES	tSIE
1	10.00	3	36.38	0	16	16.02	0	B	253.22
2	10.00	0	0.00	0	0	0.00	0		246.34
3	10.00	0	*****	2	0	0.00	0		246.34
4	10.00	0	0.00	0	1	*****	1		246.34

Key:
Sample (S#) 1 is blank/background
Sample (S#) 2 is MW-1 (groundwater)
Sample (S#) 3 is MW-2
Sample (S#) 4 is MW-3

SUMMARY TABLE
Soil

Medium			Nuclide	Result	Units	Sigma
SOILS	AVERAGE of	22	Actinium-228	0.934	PCI/G	0.147
SOILS	AVERAGE of	22	Americium-241	ND	PCI/G	
SOILS	AVERAGE of	22	Antimony-124	ND	PCI/G	
SOILS	AVERAGE of	22	Antimony-125	ND	PCI/G	
SOILS	AVERAGE of	22	Barium-133	ND	PCI/G	
SOILS	AVERAGE of	22	Barium-140	ND	PCI/G	
SOILS	AVERAGE of	22	Beryllium-7	ND	PCI/G	
SOILS	AVERAGE of	22	Bismuth-212	0.061	PCI/G	0.196
SOILS	AVERAGE of	22	Bismuth-214	0.765	PCI/G	0.103
SOILS			Bromine-82	ND		
SOILS	AVERAGE of	22	Calcium-45	ND	PCI/G	
SOILS			Calcium-47	ND		
SOILS	AVERAGE of	22	Cerium-139	ND	PCI/G	
SOILS	AVERAGE of	22	Cerium-141	ND	PCI/G	
SOILS	AVERAGE of	22	Cerium-144	ND	PCI/G	
SOILS	AVERAGE of	22	Cesium-134	ND	PCI/G	
SOILS	AVERAGE of	22	Cesium-136	ND	PCI/G	
SOILS	AVERAGE of	22	Cesium-137	ND	PCI/G	
SOILS	AVERAGE of	22	Chromium-51	ND	PCI/G	
SOILS	AVERAGE of	22	Cobalt-56	ND	PCI/G	
SOILS	AVERAGE of	22	Cobalt-57	ND	PCI/G	
SOILS	AVERAGE of	22	Cobalt-58	ND	PCI/G	
SOILS	AVERAGE of	22	Cobalt-60	ND	PCI/G	
SOILS	AVERAGE of	22	Europium-152	ND	PCI/G	
SOILS	AVERAGE of	22	Europium-154	ND	PCI/G	
SOILS	AVERAGE of	22	Europium-155	ND	PCI/G	
SOILS			Gallium-67	ND		
SOILS			Gold-198	ND		
SOILS			Indium-111	ND		
SOILS			Iodine-125	ND		
SOILS			Iodine-131	ND		
SOILS	AVERAGE of	22	Iridium-192	ND	PCI/G	
SOILS	AVERAGE of	22	Iron-59	ND	PCI/G	
SOILS	AVERAGE of	22	Lead-210	0.457	PCI/G	2.939
SOILS	AVERAGE of	22	Lead-212	0.881	PCI/G	0.122
SOILS	AVERAGE of	22	Lead-214	0.873	PCI/G	0.110
SOILS	AVERAGE of	22	Manganese-54	ND	PCI/G	
SOILS			Mercury-197	ND		
SOILS	AVERAGE of	22	Mercury-203	ND	PCI/G	
SOILS			Molybdenum-99	ND		
SOILS	AVERAGE of	22	Neodymium-147	ND	PCI/G	
SOILS	AVERAGE of	22	Neptunium-239	ND	PCI/G	
SOILS	AVERAGE of	22	Nickel-63	ND	PCI/G	
SOILS	AVERAGE of	22	Niobium-94	ND	PCI/G	
SOILS	AVERAGE of	22	Niobium-95	ND	PCI/G	
SOILS	AVERAGE of	22	Phosphorus-32	ND	PCI/G	
SOILS	AVERAGE of	22	Potassium-40	20.323	PCI/G	1.379
SOILS			Potassium-42	ND		
SOILS	AVERAGE of	22	Promethium-144	ND	PCI/G	
SOILS	AVERAGE of	22	Promethium-146	ND	PCI/G	
SOILS	AVERAGE of	22	Radium-228	0.234	PCI/G	0.051

SUMMARY TABLE
Soil

Medium			Nuclide	Result	Units	Sigma
SOILS			Rubidium-81	ND		
SOILS			Rubidium-83	ND		
SOILS			Rubidium-86	ND		
SOILS	AVERAGE of	22	Ruthenium-106	ND	PCI/G	
SOILS			Scandium-46	ND		
SOILS			Selenium-75	ND		
SOILS	AVERAGE of	22	Silver-110m	ND	PCI/G	
SOILS	AVERAGE of	22	Sodium-22	ND	PCI/G	
SOILS			Sodium-24	ND		
SOILS			Strontium-85	ND		
SOILS	AVERAGE of	22	Strontium-90/Y-91	ND	PCI/G	
SOILS	AVERAGE of	22	Sulfur-35	ND	PCI/G	
SOILS	AVERAGE of	22	Technetium-99	ND	PCI/G	
SOILS	AVERAGE of	22	Thallium-208	ND	PCI/G	
SOILS	AVERAGE of	22	Thorium-234	0.820	PCI/G	0.575
SOILS	AVERAGE of	22	Tin-113	ND	PCI/G	
SOILS	AVERAGE of	22	Uranium-235	ND	PCI/G	
SOILS	AVERAGE of	22	Uranium-238	0.820	PCI/G	0.575
SOILS			Xenon-133	ND		
SOILS	AVERAGE of	22	Yttrium-88	ND	PCI/G	
SOILS	AVERAGE of	22	Zinc-65	ND	PCI/G	
SOILS	AVERAGE of	22	Zirconium-95	ND	PCI/G	
SOILS	AVERAGE of	51	Tritium	ND	PCI/G	
WATER	AVERAGE of	3	Tritium	22.330	PCI/L	
SOILS	AVERAGE of	51	Carbon-14	ND	PCI/G	
WATER	AVERAGE of	3	Carbon-14	ND	PCI/L	
SOILS	AVERAGE of	51	Chlorine-36	ND	PCI/G	
WATER	AVERAGE of	3	Chlorine-36	ND	PCI/L	
HITS						Sigma
SOILS	AVERAGE of	22	Potassium-40	20.323	PCI/G	1.379
Uranium Series						
SOILS	AVERAGE of	22	Uranium-238	0.820	PCI/G	0.575
SOILS	AVERAGE of	22	Bismuth-214	0.765	PCI/G	0.103
SOILS	AVERAGE of	22	Lead-214	0.873	PCI/G	0.110
WATER	AVERAGE of	3	Thallium-208	0.280	PCI/L	0.041
WATER	AVERAGE of	3	Uranium-238	0.820	PCI/L	0.575
WATER	AVERAGE of	3	Bismuth-214	25.834	PCI/L	22.574
WATER	AVERAGE of	2	Radium-226	4.370	PCI/L	
Thorium Series						
SOILS	AVERAGE of	22	Lead-212	0.881	PCI/G	0.122
SOILS	AVERAGE of	22	Bismuth-212	0.061	PCI/G	0.196
SOILS	AVERAGE of	22	Lead-210	0.457	PCI/G	2.939
SOILS	AVERAGE of	22	Radium-228	0.234	PCI/G	0.051
SOILS	AVERAGE of	22	Actinium-228	0.934	PCI/G	0.147
WATER	AVERAGE of	2	Radium-228	3.660	PCI/L	

SUMMARY TABLE
Water

Medium			Nuclide	Result	Units	Sigma
WATER	AVERAGE of	3	Actinium-228	ND	PCI/L	
WATER	AVERAGE of	3	Americium-241	ND	PCI/L	
WATER	AVERAGE of	3	Antimony-124	ND	PCI/L	
WATER	AVERAGE of	3	Antimony-125	ND	PCI/L	
WATER	AVERAGE of	3	Barium-133	ND	PCI/L	
WATER	AVERAGE of	3	Barium-140	ND	PCI/L	
WATER	AVERAGE of	3	Beryllium-7	ND	PCI/L	
WATER	AVERAGE of	3	Bismuth-212	ND	PCI/L	
WATER	AVERAGE of	3	Bismuth-214	25.834	PCI/L	22.57415487
WATER			Bromine-82	ND		
WATER	AVERAGE of	3	Calcium-45	ND	PCI/L	
WATER			Calcium-47	ND		
WATER	AVERAGE of	3	Cerium-139	ND	PCI/L	
WATER	AVERAGE of	3	Cerium-141	ND	PCI/L	
WATER	AVERAGE of	3	Cerium-144	ND	PCI/L	
WATER	AVERAGE of	3	Cesium-134	ND	PCI/L	
WATER	AVERAGE of	3	Cesium-136	ND	PCI/L	
WATER	AVERAGE of	3	Cesium-137	ND	PCI/L	
WATER	AVERAGE of	3	Chromium-51	ND	PCI/L	
WATER	AVERAGE of	3	Cobalt-56	ND	PCI/L	
WATER	AVERAGE of	3	Cobalt-57	ND	PCI/L	
WATER	AVERAGE of	3	Cobalt-58	ND	PCI/L	
WATER	AVERAGE of	3	Cobalt-60	ND	PCI/L	
WATER	AVERAGE of	3	Europium-152	ND	PCI/L	
WATER	AVERAGE of	3	Europium-154	ND	PCI/L	
WATER	AVERAGE of	3	Europium-155	ND	PCI/L	
WATER			Gallium-67	ND		
WATER			Gold-198	ND		
WATER			Indium-111	ND		
WATER			Iodine-125	ND		
WATER			Iodine-131	ND		
WATER	AVERAGE of	3	Iridium-192	ND	PCI/L	
WATER	AVERAGE of	3	Iron-59	ND	PCI/L	
WATER	AVERAGE of	3	Lead-210	ND	PCI/L	
WATER	AVERAGE of	3	Lead-212	ND	PCI/L	
WATER	AVERAGE of	3	Lead-214	ND	PCI/L	
WATER	AVERAGE of	3	Manganese-54	ND	PCI/L	
WATER			Mercury-197	ND		
WATER	AVERAGE of	3	Mercury-203	ND	PCI/L	
WATER			Molybdenum-99	ND		
WATER	AVERAGE of	3	Neodymium-147	ND	PCI/L	
WATER	AVERAGE of	3	Neptunium-239	ND	PCI/L	
WATER	AVERAGE of	3	Nickel-63	ND	PCI/L	
WATER	AVERAGE of	3	Niobium-94	ND	PCI/L	
WATER	AVERAGE of	3	Niobium-95	ND	PCI/L	
WATER	AVERAGE of	3	Phosphorus-32	ND	PCI/L	
WATER	AVERAGE of	3	Potassium-40	ND	PCI/L	
WATER			Potassium-42	ND		
WATER	AVERAGE of	3	Promethium-144	ND	PCI/L	
WATER	AVERAGE of	3	Promethium-146	ND	PCI/L	

SUMMARY TABLE
Water

Medium			Nuclide	Result	Units	Sigma
WATER	AVERAGE of	3	Radium-228	ND	PCI/L	
WATER			Rubidium-81	ND		
WATER			Rubidium-83	ND		
WATER			Rubidium-86	ND		
WATER	AVERAGE of	3	Ruthenium-106	ND	PCI/L	
WATER			Scandium-46	ND		
WATER			Selenium-75	ND		
WATER	AVERAGE of	3	Silver-110m	ND	PCI/L	
WATER	AVERAGE of	3	Sodium-22	ND	PCI/L	
WATER			Sodium-24	ND		
WATER			Strontium-85	ND		
WATER	AVERAGE of	3	Strontium-90/Y-90	ND	PCI/L	
WATER	AVERAGE of	3	Sulfur-35	ND	PCI/L	
WATER	AVERAGE of	3	Technetium-99	ND	PCI/L	
WATER	AVERAGE of	3	Thallium-208	0.279636364	PCI/L	0.040980304
WATER	AVERAGE of	3	Thorium-234	ND	PCI/L	
WATER	AVERAGE of	3	Tin-113	ND	PCI/L	
WATER	AVERAGE of	3	Uranium-235	ND	PCI/L	
WATER	AVERAGE of	3	Uranium-238	ND	PCI/L	
WATER			Xenon-133	ND		
WATER	AVERAGE of	3	Yttrium-88	ND	PCI/L	
WATER	AVERAGE of	3	Zinc-65	ND	PCI/L	
WATER	AVERAGE of	3	Zirconium-95	ND	PCI/L	
SOILS	AVERAGE of	51	Tritium	ND	PCI/G	
WATER	AVERAGE of	3	Tritium	22.330	PCI/L	
SOILS	AVERAGE of	51	Carbon-14	ND	PCI/G	
WATER	AVERAGE of	3	Carbon-14	ND	PCI/L	
SOILS	AVERAGE of	51	Chlorine-36	ND	PCI/G	
WATER	AVERAGE of	3	Chlorine-36	ND	PCI/L	
HITS						Sigma
SOILS	AVERAGE of	22	Potassium-40	20.323	PCI/G	1.379
Uranium Series						
SOILS	AVERAGE of	22	Uranium-238	0.820	PCI/G	0.575
SOILS	AVERAGE of	22	Bismuth-214	0.765	PCI/G	0.103
SOILS	AVERAGE of	22	Lead-214	0.873	PCI/G	0.110
WATER	AVERAGE of	3	Thallium-208	0.280	PCI/L	0.041
WATER	AVERAGE of	3	Uranium-238	0.820	PCI/L	0.575
WATER	AVERAGE of	3	Bismuth-214	25.834	PCI/L	22.574
WATER	AVERAGE of	2	Radium-226	4.370	PCI/L	
Thorium Series						
SOILS	AVERAGE of	22	Lead-212	0.881	PCI/G	0.122
SOILS	AVERAGE of	22	Bismuth-212	0.061	PCI/G	0.196
SOILS	AVERAGE of	22	Lead-210	0.457	PCI/G	2.939
SOILS	AVERAGE of	22	Radium-228	0.234	PCI/G	0.051
SOILS	AVERAGE of	22	Actinium-228	0.934	PCI/G	0.147
WATER	AVERAGE of	2	Radium-228	3.660	PCI/L	

SUMMARY TABLE
Tritium

Sample No	Sample Type	Collection Date	Parameter	Fraction	Method	Lab Result	Uncertainty	Cas_num	Units	Lab Qual	MDL	CRDL CRQL	Dilution Factor	Pct Moisture
MW1-20R	SAMPLE	12/07/09	Tritium	R	GL-RAD-A-002	0.105	0.165	10028-17-8	PCI/ML	U	0.281	6.00	1	11
MW2-40R	SAMPLE	12/07/09	Tritium	R	GL-RAD-A-002	0.0348	0.160	10028-17-8	PCI/ML	U	0.279	6.00	1	10
MW3-20R	SAMPLE	12/07/09	Tritium	R	GL-RAD-A-002	0.00434	0.157	10028-17-8	PCI/ML	U	0.278	6.00	1	21
SB10-20R	SAMPLE	12/01/09	Tritium	R	GL-RAD-A-002	-0.015	0.325	10028-17-8	PCI/ML	U	0.598	6.00	1	5.7
SB1-10R	SAMPLE	11/30/09	Tritium	R	GL-RAD-A-002	0	0.327	10028-17-8	PCI/ML	U	0.6	6.00	1	6.2
SB11-20R	SAMPLE	12/01/09	Tritium	R	GL-RAD-A-002	0.0348	0.328	10028-17-8	PCI/ML	U	0.595	6.00	1	14
SB11-40R	SAMPLE	12/01/09	Tritium	R	GL-RAD-A-002	-0.121	0.279	10028-17-8	PCI/ML	U	0.53	6.00	1	16
SB12-30R	SAMPLE	12/01/09	Tritium	R	GL-RAD-A-002	-0.202	0.310	10028-17-8	PCI/ML	U	0.605	6.00	1	8.4
SB12-50R	SAMPLE	12/01/09	Tritium	R	GL-RAD-A-002	-0.193	0.269	10028-17-8	PCI/ML	U	0.526	6.00	1	6.3
SB13-20R	SAMPLE	12/02/09	Tritium	R	GL-RAD-A-002	-0.2	0.306	10028-17-8	PCI/ML	U	0.597	6.00	1	11
SB13-40R	SAMPLE	12/02/09	Tritium	R	GL-RAD-A-002	0.164	0.305	10028-17-8	PCI/ML	U	0.53	6.00	1	15
SB14-20R	SAMPLE	12/02/09	Tritium	R	GL-RAD-A-002	-0.115	0.315	10028-17-8	PCI/ML	U	0.598	6.00	1	8.8
SB14-40R	SAMPLE	12/02/09	Tritium	R	GL-RAD-A-002	-0.344	0.256	10028-17-8	PCI/ML	U	0.531	6.00	1	8.2
SB15-20R	SAMPLE	12/02/09	Tritium	R	GL-RAD-A-002	-0.2	0.306	10028-17-8	PCI/ML	U	0.598	6.00	1	11
SB15-40R	SAMPLE	12/02/09	Tritium	R	GL-RAD-A-002	0.117	0.298	10028-17-8	PCI/ML	U	0.524	6.00	1	12
SB16-20R	SAMPLE	12/02/09	Tritium	R	GL-RAD-A-002	-0.0325	0.323	10028-17-8	PCI/ML	U	0.598	6.00	1	17
SB16-40R	SAMPLE	12/02/09	Tritium	R	GL-RAD-A-002	-0.268	0.262	10028-17-8	PCI/ML	U	0.528	6.00	1	20
SB17-20R	SAMPLE	12/02/09	Tritium	R	GL-RAD-A-002	-0.101	0.321	10028-17-8	PCI/ML	U	0.606	6.00	1	9
SB17-40R	SAMPLE	12/02/09	Tritium	R	GL-RAD-A-002	-0.0299	0.285	10028-17-8	PCI/ML	U	0.525	6.00	1	15
SB18-20R	SAMPLE	12/02/09	Tritium	R	GL-RAD-A-002	-0.132	0.312	10028-17-8	PCI/ML	U	0.596	6.00	1	14
SB18-40R	SAMPLE	12/02/09	Tritium	R	GL-RAD-A-002	-0.121	0.279	10028-17-8	PCI/ML	U	0.532	6.00	1	12
SB19-20R	SAMPLE	12/02/09	Tritium	R	GL-RAD-A-002	-0.214	0.303	10028-17-8	PCI/ML	U	0.595	6.00	1	13
SB19-40R	SAMPLE	12/02/09	Tritium	R	GL-RAD-A-002	-0.121	0.279	10028-17-8	PCI/ML	U	0.531	6.00	1	18
SB20-20R	SAMPLE	12/03/09	Tritium	R	GL-RAD-A-002	0.0497	0.329	10028-17-8	PCI/ML	U	0.594	6.00	1	14
SB20-40R	SAMPLE	12/03/09	Tritium	R	GL-RAD-A-002	-0.253	0.263	10028-17-8	PCI/ML	U	0.527	6.00	1	14
SB21-20R	SAMPLE	12/03/09	Tritium	R	GL-RAD-A-002	-0.399	0.284	10028-17-8	PCI/ML	U	0.596	6.00	1	12
SB21-40R	SAMPLE	12/03/09	Tritium	R	GL-RAD-A-002	-0.0753	0.282	10028-17-8	PCI/ML	U	0.529	6.00	1	15
SB2-19R	SAMPLE	11/30/09	Tritium	R	GL-RAD-A-002	-0.115	0.315	10028-17-8	PCI/ML	U	0.598	6.00	1	13
SB22-20R	SAMPLE	12/03/09	Tritium	R	GL-RAD-A-002	-0.182	0.307	10028-17-8	PCI/ML	U	0.596	6.00	1	22
SB22-40R	SAMPLE	12/03/09	Tritium	R	GL-RAD-A-002	-0.105	0.278	10028-17-8	PCI/ML	U	0.526	6.00	1	14

SUMMARY TABLE
Uranium-238

Sample No	Sample Type	Collection Date	Parameter	Fraction	Method	Lab Result	Uncertainty	Cas_num	Units	Lab Qual	MDL	CRDL CRQL	Dilution Factor	Pct Moisture
SB9-40R	SAMPLE	12/01/09	Uranium-238	R	DOE HASL 300, 4.5.2.3/Ga-01-R	1.29	1.95	7440-61-1	PCI/G	U	3.49		1	13
SB11-40R	SAMPLE	12/01/09	Uranium-238	R	DOE HASL 300, 4.5.2.3/Ga-01-R	1.54	0.983	7440-61-1	PCI/G		0.886		1	16
SB12-50R	SAMPLE	12/01/09	Uranium-238	R	DOE HASL 300, 4.5.2.3/Ga-01-R	-0.201	1.03	7440-61-1	PCI/G	U	1.92		1	6.3
SB13-40R	SAMPLE	12/02/09	Uranium-238	R	DOE HASL 300, 4.5.2.3/Ga-01-R	1.17	1.24	7440-61-1	PCI/G	U	1.76		1	15
SB14-40R	SAMPLE	12/02/09	Uranium-238	R	DOE HASL 300, 4.5.2.3/Ga-01-R	0.445	1.34	7440-61-1	PCI/G	U	1.54		1	8.2
SB16-40R	SAMPLE	12/02/09	Uranium-238	R	DOE HASL 300, 4.5.2.3/Ga-01-R	0.752	0.510	7440-61-1	PCI/G		0.614		1	20
SB19-40R	SAMPLE	12/02/09	Uranium-238	R	DOE HASL 300, 4.5.2.3/Ga-01-R	0	2.37	7440-61-1	PCI/G	UI	1.97		1	18
SB17-40R	SAMPLE	12/02/09	Uranium-238	R	DOE HASL 300, 4.5.2.3/Ga-01-R	1.58	1.81	7440-61-1	PCI/G	U	2.19		1	15
SB15-40R	SAMPLE	12/02/09	Uranium-238	R	DOE HASL 300, 4.5.2.3/Ga-01-R	0.713	0.881	7440-61-1	PCI/G	U	0.894		1	12
SB18-40R	SAMPLE	12/02/09	Uranium-238	R	DOE HASL 300, 4.5.2.3/Ga-01-R	0.464	1.22	7440-61-1	PCI/G	U	2.18		1	12
SB20-40R	SAMPLE	12/03/09	Uranium-238	R	DOE HASL 300, 4.5.2.3/Ga-01-R	1.11	1.91	7440-61-1	PCI/G	U	2.11		1	14
SB21-40R	SAMPLE	12/03/09	Uranium-238	R	DOE HASL 300, 4.5.2.3/Ga-01-R	0.765	1.14	7440-61-1	PCI/G	U	1.28		1	15
SB22-40R	SAMPLE	12/03/09	Uranium-238	R	DOE HASL 300, 4.5.2.3/Ga-01-R	-0.142	1.31	7440-61-1	PCI/G	U	2.38		1	14
SB23-40R	SAMPLE	12/03/09	Uranium-238	R	DOE HASL 300, 4.5.2.3/Ga-01-R	1.2	1.35	7440-61-1	PCI/G	U	1.76		1	11
SB24-40R	SAMPLE	12/03/09	Uranium-238	R	DOE HASL 300, 4.5.2.3/Ga-01-R	1.24	1.14	7440-61-1	PCI/G	U	1.48		1	9.5
SB26-40R	SAMPLE	12/03/09	Uranium-238	R	DOE HASL 300, 4.5.2.3/Ga-01-R	0.0328	1.23	7440-61-1	PCI/G	U	1.51		1	9.5
SB28-40R	SAMPLE	12/04/09	Uranium-238	R	DOE HASL 300, 4.5.2.3/Ga-01-R	1.61	1.03	7440-61-1	PCI/G		1.12		1	13
SB32-40R	SAMPLE	12/04/09	Uranium-238	R	DOE HASL 300, 4.5.2.3/Ga-01-R	1.53	1.09	7440-61-1	PCI/G		1.26		1	10
SB33-40R	SAMPLE	12/04/09	Uranium-238	R	DOE HASL 300, 4.5.2.3/Ga-01-R	0.632	1.15	7440-61-1	PCI/G	U	1.33		1	13
MW1-40R	SAMPLE	12/07/09	Uranium-238	R	DOE HASL 300, 4.5.2.3/Ga-01-R	0.267	0.546	7440-61-1	PCI/G	U	0.51		1	20
MW2-60R	SAMPLE	12/07/09	Uranium-238	R	DOE HASL 300, 4.5.2.3/Ga-01-R	0.947	1.53	7440-61-1	PCI/G	U	1.86		1	14
MW3-40R	SAMPLE	12/07/09	Uranium-238	R	DOE HASL 300, 4.5.2.3/Ga-01-R	1.1	0.469	7440-61-1	PCI/G		0.371		1	16
						0.8202		Averages			1.5643			

SUMMARY TABLE
Uranium-235

Sample No	Sample Type	Collection Date	Parameter	Fraction	Method	Lab Result	Uncertainty	Cas_Num	Units	Lab Qual	MDL	CRDL CRQL	Dilution Factor	Pct Moisture
SB9-40R	SAMPLE	12/01/09	Uranium-235	R	DOE HASL 300, 4.5.2.3/Ga-01-R	-0.122	0.220	15117-96-1	PCI/G	U	0.366		1	13
SB11-40R	SAMPLE	12/01/09	Uranium-235	R	DOE HASL 300, 4.5.2.3/Ga-01-R	0.00854	0.184	15117-96-1	PCI/G	U	0.321		1	16
SB12-50R	SAMPLE	12/01/09	Uranium-235	R	DOE HASL 300, 4.5.2.3/Ga-01-R	0.136	0.139	15117-96-1	PCI/G	U	0.247		1	6.3
SB13-40R	SAMPLE	12/02/09	Uranium-235	R	DOE HASL 300, 4.5.2.3/Ga-01-R	0.0273	0.180	15117-96-1	PCI/G	U	0.314		1	15
SB14-40R	SAMPLE	12/02/09	Uranium-235	R	DOE HASL 300, 4.5.2.3/Ga-01-R	-0.0561	0.176	15117-96-1	PCI/G	U	0.299		1	8.2
SB16-40R	SAMPLE	12/02/09	Uranium-235	R	DOE HASL 300, 4.5.2.3/Ga-01-R	-0.00278	0.147	15117-96-1	PCI/G	U	0.256		1	20
SB19-40R	SAMPLE	12/02/09	Uranium-235	R	DOE HASL 300, 4.5.2.3/Ga-01-R	0.137	0.189	15117-96-1	PCI/G	U	0.341		1	18
SB17-40R	SAMPLE	12/02/09	Uranium-235	R	DOE HASL 300, 4.5.2.3/Ga-01-R	-0.174	0.187	15117-96-1	PCI/G	U	0.307		1	15
SB15-40R	SAMPLE	12/02/09	Uranium-235	R	DOE HASL 300, 4.5.2.3/Ga-01-R	0.0106	0.201	15117-96-1	PCI/G	U	0.343		1	12
SB18-40R	SAMPLE	12/02/09	Uranium-235	R	DOE HASL 300, 4.5.2.3/Ga-01-R	-0.111	0.184	15117-96-1	PCI/G	U	0.298		1	12
SB20-40R	SAMPLE	12/03/09	Uranium-235	R	DOE HASL 300, 4.5.2.3/Ga-01-R	-0.00943	0.198	15117-96-1	PCI/G	U	0.344		1	14
SB21-40R	SAMPLE	12/03/09	Uranium-235	R	DOE HASL 300, 4.5.2.3/Ga-01-R	-0.0636	0.172	15117-96-1	PCI/G	U	0.283		1	15
SB22-40R	SAMPLE	12/03/09	Uranium-235	R	DOE HASL 300, 4.5.2.3/Ga-01-R	0.0112	0.151	15117-96-1	PCI/G	U	0.26		1	14
SB23-40R	SAMPLE	12/03/09	Uranium-235	R	DOE HASL 300, 4.5.2.3/Ga-01-R	0.159	0.168	15117-96-1	PCI/G	U	0.298		1	11
SB24-40R	SAMPLE	12/03/09	Uranium-235	R	DOE HASL 300, 4.5.2.3/Ga-01-R	0.0325	0.166	15117-96-1	PCI/G	U	0.29		1	9.5
SB26-40R	SAMPLE	12/03/09	Uranium-235	R	DOE HASL 300, 4.5.2.3/Ga-01-R	0.000212	0.175	15117-96-1	PCI/G	U	0.301		1	9.5
SB28-40R	SAMPLE	12/04/09	Uranium-235	R	DOE HASL 300, 4.5.2.3/Ga-01-R	0.112	0.120	15117-96-1	PCI/G	U	0.176		1	13
SB32-40R	SAMPLE	12/04/09	Uranium-235	R	DOE HASL 300, 4.5.2.3/Ga-01-R	0.0421	0.0835	15117-96-1	PCI/G	U	0.151		1	10
SB33-40R	SAMPLE	12/04/09	Uranium-235	R	DOE HASL 300, 4.5.2.3/Ga-01-R	0.0192	0.0978	15117-96-1	PCI/G	U	0.162		1	13
MW1-40R	SAMPLE	12/07/09	Uranium-235	R	DOE HASL 300, 4.5.2.3/Ga-01-R	0.0969	0.166	15117-96-1	PCI/G	U	0.174		1	20
MW2-60R	SAMPLE	12/07/09	Uranium-235	R	DOE HASL 300, 4.5.2.3/Ga-01-R	0.0976	0.160	15117-96-1	PCI/G	U	0.192		1	14
MW3-40R	SAMPLE	12/07/09	Uranium-235	R	DOE HASL 300, 4.5.2.3/Ga-01-R	0.0908	0.134	15117-96-1	PCI/G	U	0.144		1	16
						0.020092818		Averages			0.2666818			
MW1	SAMPLE	12/09/09	Uranium-235	R	EPA 901.1	7.73	18.4	15117-96-1	PCI/L	U	28.5		1	0
MW1	SAMPLE	12/09/09	Uranium-238	R	EPA 901.1	47.5	75.1	7440-61-1	PCI/L	U	81.0		1	0
MW2	SAMPLE	12/09/09	Uranium-235	R	EPA 901.1	0.100	25.4	15117-96-1	PCI/L	U	41.2		1	0
MW2	SAMPLE	12/09/09	Uranium-238	R	EPA 901.1	23.1	298	7440-61-1	PCI/L	U	309		1	0
MW3	SAMPLE	12/09/09	Uranium-235	R	EPA 901.1	-5.42	20.7	15117-96-1	PCI/L	U	33.7		1	0
MW3	SAMPLE	12/09/09	Uranium-238	R	EPA 901.1	104	231	7440-61-1	PCI/L	U	211		1	0

SUMMARY TABLE
Tritium

Sample No	Sample Type	Collection Date	Parameter	Fraction	Method	Lab Result	Uncertainty	Cas_num	Units	Lab Qual	MDL	CRDL CRQL	Dilution Factor	Pct Moisture
SB23-20R	SAMPLE	12/03/09	Tritium	R	GL-RAD-A-002	0.0846	0.333	10028-17-8	PCI/ML	U	0.595	6.00	1	13
SB23-40R	SAMPLE	12/03/09	Tritium	R	GL-RAD-A-002	-0.34	0.279	10028-17-8	PCI/ML	U	0.571	6.00	1	11
SB24-20R	SAMPLE	12/03/09	Tritium	R	GL-RAD-A-002	-0.232	0.325	10028-17-8	PCI/ML	U	0.631	6.00	1	13
SB24-40R	SAMPLE	12/03/09	Tritium	R	GL-RAD-A-002	-0.149	0.276	10028-17-8	PCI/ML	U	0.53	6.00	1	9.5
SB25-20R	SAMPLE	12/03/09	Tritium	R	GL-RAD-A-002	-0.162	0.272	10028-17-8	PCI/ML	U	0.525	6.00	1	8.4
SB26-20R	SAMPLE	12/03/09	Tritium	R	GL-RAD-A-002	-0.0743	0.278	10028-17-8	PCI/ML	U	0.522	6.00	1	17
SB26-40R	SAMPLE	12/03/09	Tritium	R	GL-RAD-A-002	0.135	0.304	10028-17-8	PCI/ML	U	0.533	6.00	1	9.5
SB27-20R	SAMPLE	12/04/09	Tritium	R	GL-RAD-A-002	0.197	0.170	10028-17-8	PCI/ML	U	0.281	6.00	1	20
SB28-20R	SAMPLE	12/04/09	Tritium	R	GL-RAD-A-002	-0.0065	0.157	10028-17-8	PCI/ML	U	0.278	6.00	1	21
SB28-40R	SAMPLE	12/04/09	Tritium	R	GL-RAD-A-002	-0.122	0.151	10028-17-8	PCI/ML	U	0.28	6.00	1	13
SB3-19R	SAMPLE	11/30/09	Tritium	R	GL-RAD-A-002	-0.0658	0.324	10028-17-8	PCI/ML	U	0.605	6.00	1	10
SB32-20R	SAMPLE	12/04/09	Tritium	R	GL-RAD-A-002	-0.0306	0.156	10028-17-8	PCI/ML	U	0.28	6.00	1	11
SB32-40R	SAMPLE	12/04/09	Tritium	R	GL-RAD-A-002	-0.0723	0.154	10028-17-8	PCI/ML	U	0.281	6.00	1	10
SB33-20R	SAMPLE	12/04/09	Tritium	R	GL-RAD-A-002	0.0506	0.162	10028-17-8	PCI/ML	U	0.282	6.00	1	8.5
SB33-40R	SAMPLE	12/04/09	Tritium	R	GL-RAD-A-002	-0.127	0.151	10028-17-8	PCI/ML	U	0.28	6.00	1	13
SB4-20R	SAMPLE	11/30/09	Tritium	R	GL-RAD-A-002	-0.164	0.308	10028-17-8	PCI/ML	U	0.594	6.00	1	7.8
SB9-20R	SAMPLE	12/01/09	Tritium	R	GL-RAD-A-002	-0.214	0.304	10028-17-8	PCI/ML	U	0.596	6.00	1	14
SB9-40R	SAMPLE	12/01/09	Tritium	R	GL-RAD-A-002	-0.193	0.270	10028-17-8	PCI/ML	U	0.528	6.00	1	13
MW1-40R	SAMPLE	12/07/09	Tritium	R	GL-RAD-A-002	0.00437	0.158	10028-17-8	PCI/ML	U	0.28	6.00	1	20
MW2-60R	SAMPLE	12/07/09	Tritium	R	GL-RAD-A-002	0.00887	0.161	10028-17-8	PCI/ML	U	0.284	6.00	1	14
MW3-40R	SAMPLE	12/07/09	Tritium	R	GL-RAD-A-002	0.0589	0.161	10028-17-8	PCI/ML	U	0.28	6.00	1	16
						-0.087102353		Averages			0.493784314 ~500 pCi/L MDA			

Low Level Tritium Umiami (See Next Page)

Client: PIKA INTERNATIONAL, INC
Recvd : 09/12/04, 9/12/15
Job# : 2719
Final : 10/01/15 Project Name: GLAVA

Purchase Order: NEED IT
Contact: Joel Cehn, 510/914-6262
5025 Arnold Ave.
Sacramento, CA 95652

Cust	LABEL INFO		JOB.SX	REFDATE	QUANT	ELYS	TU		eTU
PIKA	INTERNATIONAL-TW1	DIRECT	2719.01	091201	20	DIR	36		3
PIKA	INTERNATIONAL-TW3	DIRECT	2719.02	091201	20	DIR	41		3
PIKA	INTERNATIONAL-TW4	DIRECT	2719.03	091201	20	DIR	26		3
PIKA	INTERNATIONAL-TW5	DIRECT	2719.04	091201	20	DIR	19		3
PIKA	INTERNATIONAL-TW6	DIRECT	2719.05	091201	20	DIR	22		3
PIKA	INTERNATIONAL-TW7	DIRECT	2719.06	091201	20	DIR	17		3
PIKA	INTERNATIONAL-TW8	DIRECT	2719.07	091201	20	DIR	16		3
PIKA	INTERNATIONAL-TW9	DIRECT	2719.08	091202	20	DIR	17		3
PIKA	INTERNATIONAL-TW10	DIRECT	2719.09	091202	20	DIR	17		3
PIKA	INTERNATIONAL-TW11	DIRECT	2719.10	091202	20	DIR	38		3
PIKA	INTERNATIONAL-TW12	DIRECT	2719.11	091202	20	DIR	41		3
PIKA	INTERNATIONAL-TW13	DIRECT	2719.12	091202	20	DIR	41		3
PIKA	INTERNATIONAL-TW15	DIRECT	2719.13	091202	20	DIR	34		3
PIKA	INTERNATIONAL-TW41	DIRECT	2719.14	091201	20	DIR	29		3
PIKA	INTERNATIONAL-TW91	DIRECT	2719.15	091202	20	DIR	-3		3
PIKA	INTERNATIONAL-TW2	DIRECT	2719.16	091203	20	DIR	29		3
PIKA	INTERNATIONAL-MW-1	DIRECT	2719.17	091209	20	DIR	9	*	3
PIKA	INTERNATIONAL-MW-2	DIRECT	2719.18	091209	20	DIR	3		3
PIKA	INTERNATIONAL-MW-3	DIRECT	2719.19	091200	20	DIR	9		3

* Average of duplicate runs

Note:

The above low-level tritium analytical results are given in units of "tritium units" (TU). "eTU " is analytical error in tritium units.

University of Miami
Rosenstiel School of Marine and Atmospheric Science
Division of Marine and Atmospheric Chemistry
Tritium Laboratory
4600 Rickenbacker Causeway Miami, Florida 33157
USA
Phone: 305-421-4119

MKM

Ludlum 2929 SN 196230 Cal Due 11/25/10	
α eff	β eff
0.2908	0.3370

Sample Count Time (min)	Daily Bkg Count Time (min)
1.0	10.0

seq. #	Sample ID#	Date	Background Total Counts* α	Background Total Counts* β	Sample Total Counts α	Sample Total Counts β	Background (cpm) α	Background (cpm) β	Sample Counts (cpm) α	Sample Counts (cpm) β	Sample (dpm/100 cm²) α	Sample (dpm/100 cm²) β	dpm/100 cm² α Flag 10 > a flag FLAG	dpm/100 cm² β Flag 100 > β flag FLAG	Tech. Initial
315	LAVA-Geoprobe#5-01-Controls	12/17/2009	2	584	0	51	0.2	58.4	0.00	51	-0.7	-22			CWG
316	LAVA-Geoprobe#5-02-Drill Head	12/17/2009	2	584	0	63	0.2	58.4	0.00	63	-0.7	14			CWG
317	LAVA-Geoprobe#5-03-left track	12/17/2009	2	584	0	68	0.2	58.4	0.00	68	-0.7	28			CWG
318	LAVA-Geoprobe#5-04-right track	12/17/2009	2	584	0	62	0.2	58.4	0.00	62	-0.7	11			CWG
319	LAVA-Geoprobe#5-05-Tubes	12/17/2009	2	584	0	48	0.2	58.4	0.00	48	-0.7	-31			CWG
320	LAVA-Geoprobe#5-06-Drill stem	12/17/2009	2	584	0	77	0.2	58.4	0.00	77	-0.7	55			CWG
321	LAVA-CONTROLS	12/17/2009	2	584	0	71	0.2	58.4	0.00	71	-0.7	37			CWG
322	LAVA-DRILL	12/17/2009	2	584	0	59	0.2	58.4	0.00	59	-0.7	2			CWG
323	LAVA-FOOT	12/17/2009	2	584	0	66	0.2	58.4	0.00	66	-0.7	23			CWG
324	LAVA-TUBES	12/17/2009	2	584	1	73	0.2	58.4	1.00	73	2.8	43			CWG
325	LAVA-RODS	12/17/2009	2	584	0	60	0.2	58.4	0.00	60	-0.7	5			CWG
326	LAVA-RT.TRACK	12/17/2009	2	584	0	66	0.2	58.4	0.00	66	-0.7	23			CWG
327	LAVA-LT.TRACK	12/17/2009	2	584	0	54	0.2	58.4	0.00	54	-0.7	-13			CWG
328	LAVA-FRAME	12/17/2009	2	584	1	58	0.2	58.4	1.00	58	2.8	-1			CWG
329	LAVA-WATER TANK	12/17/2009	2	584	0	69	0.2	58.4	0.00	69	-0.7	31			CWG
330	LAVA-VICE	12/17/2009	2	584	0	44	0.2	58.4	0.00	44	-0.7	-43			CWG
331	LAVA-Sample equip.-handtools-01	12/17/2009	2	584	0	54	0.2	58.4	0.00	54	-0.7	-13			CWG
332	LAVA-Sample equip.-handtools-02	12/17/2009	2	584	0	66	0.2	58.4	0.00	66	-0.7	23			CWG
333	LAVA-Sample equip.-handtools-03	12/17/2009	2	584	1	56	0.2	58.4	1.00	56	2.8	-7			CWG
334	LAVA-Sample equip.-handtools-04	12/17/2009	2	584	0	59	0.2	58.4	0.00	59	-0.7	2			CWG
335	LAVA-Sample equip.-handtools-05	12/17/2009	2	584	1	69	0.2	58.4	1.00	69	2.8	31			CWG

Note:

Samples 315-335 are field equipment tests (smears) for radioactivity.

All tests were negative.

GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171 F 843.766.1178
www.gel.com

January 04, 2010

Mr. Joel Cehn
PIKA International, Inc.
5025 Arnold Ave.
Mcclellan Afb, California 95652

Re: GLAVA - PIKA International
Work Order: 242292

Dear Mr. Cehn:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on December 04, 2009. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4512.

Sincerely,

Ann Skradski
Project Manager

Enclosures

problem solved

GEL LABORATORIES LLC

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

Certificate of Analysis Report
for

PIKA003 Joel Cehn – PIKA International

Client SDG: 242292 GEL Work Order: 242292

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

H Analytical holding time was exceeded

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

UI Gamma Spectroscopy––Uncertain identification

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.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the detection limit.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Ann Skradski.

Note:

Sample list begins on page 129.

Reviewed by Ann M Skradski

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

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB2–19R	Project:	PIKA00109
Sample ID:	242292001	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	30–NOV–09 13:55		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	12.5%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		4630	33.0	100	mg/kg	1	TSM	12/08/09	1025	929945	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1450	929943

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB3–19R	Project:	PIKA00109
Sample ID:	242292002	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	30–NOV–09 14:40		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	10.2%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		4180	33.0	100	mg/kg	1	TSM	12/08/09	1125	929945	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1450	929943

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB1–10R	Project:	PIKA00109
Sample ID:	242292003	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	30–NOV–09 13:00		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	6.21%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		10800	33.0	100	mg/kg	1	TSM	12/08/09	1156	929945	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1450	929943

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB4–20R	Project:	PIKA00109
Sample ID:	242292004	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	30–NOV–09 15:00		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	7.8%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		3570	33.0	100	mg/kg	1	TSM	12/08/09	1224	929945	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1450	929943

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB9–20R	Project:	PIKA00109
Sample ID:	242292005	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	01–DEC–09 13:30		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	14.2%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		6350	33.0	100	mg/kg	1	TSM	12/08/09	1302	929945	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1450	929943

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB11–20R	Project:	PIKA00109
Sample ID:	242292006	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	01–DEC–09 10:55		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	13.9%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		904	33.0	100	mg/kg	1	TSM	12/08/09	1327	929945	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1450	929943

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB10–20R	Project:	PIKA00109
Sample ID:	242292007	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	01–DEC–09 12:00		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	5.7%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		2510	33.0	100	mg/kg	1	TSM	12/08/09	1353	929945	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1450	929943

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB12–30R	Project:	PIKA00109
Sample ID:	242292008	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	01–DEC–09 09:45		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	8.39%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		10200	33.0	100	mg/kg	1	TSM	12/08/09	1422	929945	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1450	929943

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB13–20R	Project:	PIKA00109
Sample ID:	242292009	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 09:10		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	11%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		1780	33.0	100	mg/kg	1	TSM	12/08/09	1452	929945	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1450	929943

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB16–20R	Project:	PIKA00109
Sample ID:	242292010	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 09:35		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	16.6%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		1140	33.0	100	mg/kg	1	TSM	12/08/09	1517	929945	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1450	929943

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB14–20R	Project:	PIKA00109
Sample ID:	242292011	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 07:40		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	8.82%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		8970	33.0	100	mg/kg	1	TSM	12/09/09	0830	929948	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1451	929946

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB17–20R	Project:	PIKA00109
Sample ID:	242292012	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 11:10		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	9.03%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		12400	33.0	100	mg/kg	1	TSM	12/08/09	1605	929948	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1451	929946

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB18–20R	Project:	PIKA00109
Sample ID:	242292013	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 12:45		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	14.4%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		18100	33.0	100	mg/kg	1	TSM	12/08/09	1633	929948	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1451	929946

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB15–20R	Project:	PIKA00109
Sample ID:	242292014	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 08:20		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	10.9%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		8600	33.0	100	mg/kg	1	TSM	12/08/09	1710	929948	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1451	929946

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB19–20R	Project:	PIKA00109
Sample ID:	242292015	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 14:10		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	13.3%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		8700	33.0	100	mg/kg	1	TSM	12/08/09	1734	929948	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1451	929946

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB20–20R	Project:	PIKA00109
Sample ID:	242292016	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	03–DEC–09 07:35		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	14.2%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		5420	33.0	100	mg/kg	1	TSM	12/08/09	1759	929948	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1451	929946

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB21–20R	Project:	PIKA00109
Sample ID:	242292017	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	03–DEC–09 08:45		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	12.2%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		26200	319	966	mg/kg	1	TSM	12/09/09	0949	929948	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1451	929946

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB22–20R	Project:	PIKA00109
Sample ID:	242292018	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	03–DEC–09 09:40		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	22.2%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		34800	279	846	mg/kg	1	TSM	12/09/09	1032	929948	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1451	929946

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB23–20R	Project:	PIKA00109
Sample ID:	242292019	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	03–DEC–09 10:25		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	13.4%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		5280	33.0	100	mg/kg	1	TSM	12/09/09	1059	929948	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1451	929946

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB24–20R	Project:	PIKA00109
Sample ID:	242292020	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	03–DEC–09 12:50		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	13.2%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		3560	33.0	100	mg/kg	1	TSM	12/09/09	1125	929948	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1451	929946

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB25–20R	Project:	PIKA00109
Sample ID:	242292021	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	03–DEC–09 13:30		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	8.45%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		16300	33.0	100	mg/kg	1	TSM	12/09/09	1331	929951	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1453	929950

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB26–20R	Project:	PIKA00109
Sample ID:	242292022	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	03–DEC–09 14:00		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	17.1%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		16600	33.0	100	mg/kg	1	TSM	12/09/09	1436	929951	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1453	929950

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB9–40R	Project:	PIKA00109
Sample ID:	242292023	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	01–DEC–09 13:35		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	13.2%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		3420	33.0	100	mg/kg	1	TSM	12/09/09	1500	929951	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1453	929950

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB11–40R	Project:	PIKA00109
Sample ID:	242292024	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	01–DEC–09 11:00		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	15.9%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		1600	33.0	100	mg/kg	1	TSM	12/09/09	1526	929951	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1453	929950

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB12–50R	Project:	PIKA00109
Sample ID:	242292025	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	01–DEC–09 09:50		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	6.25%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		2950	33.0	100	mg/kg	1	TSM	12/09/09	1608	929951	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1453	929950

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB13–40R	Project:	PIKA00109
Sample ID:	242292026	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 09:15		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	15.2%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		2190	33.0	100	mg/kg	1	TSM	12/09/09	1636	929951	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1453	929950

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB14–40R	Project:	PIKA00109
Sample ID:	242292027	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 07:55		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	8.24%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		3580	33.0	100	mg/kg	1	TSM	12/09/09	1702	929951	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1453	929950

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB16–40R	Project:	PIKA00109
Sample ID:	242292028	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 09:55		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	20.3%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		9590	33.0	100	mg/kg	1	TSM	12/10/09	0847	929951	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1453	929950

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB19–40R	Project:	PIKA00109
Sample ID:	242292029	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 14:15		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	18%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		1680	33.0	100	mg/kg	1	TSM	12/10/09	0916	929951	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1453	929950

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB17–40R	Project:	PIKA00109
Sample ID:	242292030	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 11:20		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	14.8%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		1110	33.0	100	mg/kg	1	TSM	12/10/09	0941	929951	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1453	929950

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB15–40R	Project:	PIKA00109
Sample ID:	242292031	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 12:00		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	11.9%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		2780	33.0	100	mg/kg	1	TSM	12/10/09	1159	929956	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1455	929955

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

Certificate of Analysis

Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB18–40R	Project:	PIKA00109
Sample ID:	242292032	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 13:00		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	12.1%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		1760	33.0	100	mg/kg	1	TSM	12/10/09	1250	929956	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1455	929955

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB20–40R	Project:	PIKA00109
Sample ID:	242292033	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	03–DEC–09 07:50		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	14%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		3290	33.0	100	mg/kg	1	TSM	12/10/09	1328	929956	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1455	929955

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB21–40R	Project:	PIKA00109
Sample ID:	242292034	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	03–DEC–09 09:10		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	14.5%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		868	33.0	100	mg/kg	1	TSM	12/10/09	1353	929956	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1455	929955

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB22–40R	Project:	PIKA00109
Sample ID:	242292035	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	03–DEC–09 09:55		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	14.1%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		1220	33.0	100	mg/kg	1	TSM	12/10/09	1434	929956	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1455	929955

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB23–40R	Project:	PIKA00109
Sample ID:	242292036	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	03–DEC–09 10:45		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	10.5%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		3310	33.0	100	mg/kg	1	TSM	12/10/09	1459	929956	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1455	929955

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB24–40R	Project:	PIKA00109
Sample ID:	242292037	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	03–DEC–09 13:00		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	9.49%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		3700	33.0	100	mg/kg	1	TSM	12/10/09	1533	929956	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1455	929955

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB26–40R	Project:	PIKA00109
Sample ID:	242292038	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	03–DEC–09 14:10		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	9.54%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		3610	33.0	100	mg/kg	1	TSM	12/10/09	1610	929956	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/07/09	1455	929955

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

QC Summary

Report Date: January 4, 2010
Page 1 of 2

PIKA International, Inc.
5025 Arnold Ave.
Mcclellan Afb, California

Contact: **Mr. Joel Cehn**

Workorder: **242292**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Carbon Analysis										
Batch 929945										
QC1201988776 242292001 DUP										
Total Carbon Average		4630		4550	mg/kg	1.85		(0%-20%)	TSM	12/08/09 10:46
QC1201988778 LCS										
Total Carbon Average	5570			5720	mg/kg		103	(80%-120%)		12/08/09 09:45
QC1201988775 MB										
Total Carbon Average			U	ND	mg/kg					12/08/09 09:59
QC1201988777 242292001 PS										
Total Carbon Average	4000	4630		8760	mg/kg		103	(54%-112%)		12/08/09 10:54
Batch 929948										
QC1201988780 242292011 DUP										
Total Carbon Average		8970		9110	mg/kg	1.48		(0%-20%)	TSM	12/09/09 08:44
QC1201988782 LCS										
Total Carbon Average	5570			6000	mg/kg		108	(80%-120%)		12/08/09 15:26
QC1201988779 MB										
Total Carbon Average			U	ND	mg/kg					12/08/09 15:29
QC1201988781 242292011 PS										
Total Carbon Average	4000	8970		13500	mg/kg		114*	(54%-112%)		12/09/09 09:13
Batch 929951										
QC1201988795 242292021 DUP										
Total Carbon Average		16300		17200	mg/kg	5.61		(0%-20%)	TSM	12/09/09 13:47
QC1201988797 LCS										
Total Carbon Average	5570			5800	mg/kg		104	(80%-120%)		12/09/09 12:56
QC1201988794 MB										
Total Carbon Average			U	ND	mg/kg					12/09/09 12:59
QC1201988796 242292021 PS										
Total Carbon Average	4000	16300		20900	mg/kg		N/A	(54%-112%)		12/09/09 14:06
Batch 929956										
QC1201988799 242292031 DUP										
Total Carbon Average		2780		2710	mg/kg	2.40		(0%-20%)	TSM	12/10/09 12:12
QC1201988801 LCS										
Total Carbon Average	5570			6020	mg/kg		108	(80%-120%)		12/10/09 11:06
QC1201988798 MB										
Total Carbon Average			U	ND	mg/kg					12/10/09 11:20
QC1201988800 242292031 PS										
Total Carbon Average	4000	2780		6810	mg/kg		101	(54%-112%)		12/10/09 12:21

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

** Analyte is a surrogate compound

< Result is less than value reported

> Result is greater than value reported

QC Summary

Workorder: 242292

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

A	The TIC is a suspected aldol-condensation product
B	For General Chemistry and Organic analysis the 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
F	Estimated Value
H	Analytical holding time was exceeded
J	Value is estimated
M	M if above MDC and less than LLD
M	Matrix Related Failure
N/A	RPD or %Recovery limits do not apply.
ND	Analyte concentration is not detected above the detection limit
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
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.
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
d	5-day BOD--The 2:1 depletion requirement was not met for this sample
h	Preparation or preservation holding time was exceeded

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.
* Indicates that a Quality Control parameter was not within specifications.
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.

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB2–19R	Project:	PIKA00109
Sample ID:	242292001	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	30–NOV–09 13:55		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	12.5%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	1.01	+/–1.98	3.54	50.0	pCi/g		DXM 2 12/18/09	1632	930069	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	–0.115	+/–0.315	0.598	6.00	pCi/mL		KXK2 12/12/09	0610	930425	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	0.0851	+/–0.884	1.54	2.00	pCi/g		EXK2 12/16/09	1418	931887	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			96.1	(25%–125%)

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Certificate of Analysis

Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB3–19R	Project:	PIKA00109
Sample ID:	242292002	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	30–NOV–09 14:40		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	10.2%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	–0.315	+/–4.74	8.87	50.0	pCi/g		DXM 2 12/18/09	1633	930069	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	–0.0658	+/–0.324	0.605	6.00	pCi/mL		KXK2 12/12/09	0627	930425	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	0.319	+/–0.923	1.59	2.00	pCi/g		EXK2 12/16/09	1455	931887	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			97.9	(25%–125%)

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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB1–10R	Project:	PIKA00109
Sample ID:	242292003	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	30–NOV–09 13:00		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	6.21%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	3.58	+/–3.84	6.39	50.0	pCi/g		DXM 2 12/18/09	1633	930069	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	0.00	+/–0.327	0.600	6.00	pCi/mL		KXK2 12/12/09	0643	930425	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	–0.243	+/–0.851	1.51	2.00	pCi/g		EXK2 12/16/09	1533	931887	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			95.3	(25%–125%)

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB4–20R	Project:	PIKA00109
Sample ID:	242292004	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	30–NOV–09 15:00		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	7.8%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	–1.16	+/–3.13	6.37	50.0	pCi/g		DXM 2 12/18/09	1633	930069	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	–0.164	+/–0.308	0.594	6.00	pCi/mL		KXK2 12/12/09	0659	930425	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	–0.0711	+/–0.896	1.58	2.00	pCi/g		EXK2 12/16/09	1610	931887	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			98.5	(25%–125%)

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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB9–20R	Project:	PIKA00109
Sample ID:	242292005	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	01–DEC–09 13:30		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	14.2%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	4.15	+/–4.78	8.04	50.0	pCi/g		DXM 2 12/18/09	1633	930069	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	–0.214	+/–0.304	0.596	6.00	pCi/mL		KXK2 12/12/09	0715	930425	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	–0.343	+/–0.870	1.55	2.00	pCi/g		EXK2 12/16/09	1648	931887	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			97.6	(25%–125%)

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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB11–20R	Project:	PIKA00109
Sample ID:	242292006	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	01–DEC–09 10:55		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	13.9%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	1.46	+/–5.05	9.05	50.0	pCi/g		DXM 2 12/18/09	1633	930069	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	0.0348	+/–0.328	0.595	6.00	pCi/mL		KXK2 12/12/09	0732	930425	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	–0.203	+/–0.877	1.55	2.00	pCi/g		EXK2 12/16/09	1725	931887	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			98.4	(25%–125%)

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Certificate of Analysis

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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB10–20R	Project:	PIKA00109
Sample ID:	242292007	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	01–DEC–09 12:00		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	5.7%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	–2.77	+/–4.26	8.33	50.0	pCi/g		DXM 12/18/09 2	1633	930069	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	–0.015	+/–0.325	0.598	6.00	pCi/mL		KXK2 12/12/09	0748	930425	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	0.342	+/–0.862	1.48	2.00	pCi/g		EXK2 12/16/09	1803	931887	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			97.3	(25%–125%)

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Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB12–30R	Project:	PIKA00109
Sample ID:	242292008	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	01–DEC–09 09:45		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	8.39%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	1.07	+/–3.26	5.94	50.0	pCi/g		DXM 12/18/09 2	1633	930069	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	–0.202	+/–0.310	0.605	6.00	pCi/mL		KXK2 12/12/09	0804	930425	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	–0.222	+/–0.862	1.53	2.00	pCi/g		EXK2 12/16/09	1840	931887	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			97.1	(25%–125%)

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB13–20R	Project:	PIKA00109
Sample ID:	242292009	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 09:10		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	11%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	–1.58	+/–4.74	9.09	50.0	pCi/g		DXM 2 12/18/09	1633	930069	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	–0.20	+/–0.306	0.597	6.00	pCi/mL		KXK2 12/12/09	0821	930425	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	0.271	+/–0.920	1.59	2.00	pCi/g		EXK2 12/16/09	1918	931887	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			97.6	(25%–125%)

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB16–20R	Project:	PIKA00109
Sample ID:	242292010	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 09:35		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	16.6%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	0.958	+/–3.72	6.74	50.0	pCi/g		DXM 2 12/18/09	1633	930069	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	–0.0325	+/–0.323	0.598	6.00	pCi/mL		KXK2 12/12/09	0837	930425	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	–0.113	+/–0.853	1.51	2.00	pCi/g		EXK2 12/16/09	1955	931887	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			95.2	(25%–125%)

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB14–20R	Project:	PIKA00109
Sample ID:	242292011	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 07:40		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	8.82%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	–1.39	+/–5.13	9.59	50.0	pCi/g		DXM 2 12/18/09	1633	930069	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	–0.115	+/–0.315	0.598	6.00	pCi/mL		KXK2 12/12/09	0853	930425	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	–0.423	+/–0.854	1.53	2.00	pCi/g		EXK2 12/16/09	2033	931887	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			98.3	(25%–125%)

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB17–20R	Project:	PIKA00109
Sample ID:	242292012	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 11:10		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	9.03%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	–1.34	+/–5.11	9.63	50.0	pCi/g		DXM 2 12/18/09	1633	930069	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	–0.101	+/–0.321	0.606	6.00	pCi/mL		KXK2 12/12/09	0910	930425	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	–0.404	+/–0.847	1.52	2.00	pCi/g		EXK2 12/16/09	2110	931887	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			97.1	(25%–125%)

Certificate of Analysis

Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB18–20R	Project:	PIKA00109
Sample ID:	242292013	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 12:45		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	14.4%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	–0.796	+/–3.54	6.85	50.0	pCi/g		DXM 2 12/18/09	1633	930069	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	–0.132	+/–0.312	0.596	6.00	pCi/mL		KXK2 12/12/09	0926	930425	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	–0.434	+/–0.831	1.49	2.00	pCi/g		EXK2 12/16/09	2148	931887	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			97.6	(25%–125%)

Certificate of Analysis

Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB15–20R	Project:	PIKA00109
Sample ID:	242292014	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 08:20		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	10.9%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	–2.95	+/–4.35	8.71	50.0	pCi/g		DXM 12/18/09 2	1633	930069	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	–0.20	+/–0.306	0.598	6.00	pCi/mL		KXK2 12/12/09	0942	930425	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	0.0376	+/–0.859	1.50	2.00	pCi/g		EXK2 12/16/09	2225	931887	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			96.2	(25%–125%)

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Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB19–20R	Project:	PIKA00109
Sample ID:	242292015	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 14:10		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	13.3%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	–0.697	+/–2.10	4.34	50.0	pCi/g		DXM 2 12/18/09	1633	930069	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	–0.214	+/–0.303	0.595	6.00	pCi/mL		KXK2 12/12/09	0959	930425	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	–0.455	+/–0.827	1.49	2.00	pCi/g		EXK2 12/16/09	2303	931887	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			96.3	(25%–125%)

Certificate of Analysis

Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB20–20R	Project:	PIKA00109
Sample ID:	242292016	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	03–DEC–09 07:35		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	14.2%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	1.06	+/–3.26	6.01	50.0	pCi/g		DXM 2 12/18/09	1633	930069	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	0.0497	+/–0.329	0.594	6.00	pCi/mL		KXK2 12/12/09	1015	930425	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	–0.27	+/–0.866	1.54	2.00	pCi/g		EXK2 12/16/09	2340	931887	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			98.3	(25%–125%)

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB21–20R	Project:	PIKA00109
Sample ID:	242292017	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	03–DEC–09 08:45		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	12.2%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	–0.485	+/–1.80	3.86	50.0	pCi/g		DXM 2 12/18/09	1633	930069	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	–0.399	+/–0.284	0.596	6.00	pCi/mL		KXK2 12/12/09	1031	930425	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	–1.08	+/–0.791	1.48	2.00	pCi/g		EXK2 12/17/09	0018	931887	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			97.1	(25%–125%)

Certificate of Analysis

Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB22–20R	Project:	PIKA00109
Sample ID:	242292018	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	03–DEC–09 09:40		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	22.2%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	0.140	+/–2.07	4.03	50.0	pCi/g		DXM 2 12/18/09	1634	930069	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	–0.182	+/–0.307	0.596	6.00	pCi/mL		KXK2 12/12/09	1048	930425	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	–0.238	+/–0.834	1.48	2.00	pCi/g		EXK2 12/17/09	0056	931887	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			95.6	(25%–125%)

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB23–20R	Project:	PIKA00109
Sample ID:	242292019	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	03–DEC–09 10:25		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	13.4%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	–2.23	+/–3.77	7.53	50.0	pCi/g		DXM 12/18/09 2	1634	930069	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	0.0846	+/–0.333	0.595	6.00	pCi/mL		KXK2 12/12/09	1104	930425	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	–0.158	+/–0.846	1.50	2.00	pCi/g		EXK2 12/17/09	0133	931887	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			97.3	(25%–125%)

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB24–20R	Project:	PIKA00109
Sample ID:	242292020	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	03–DEC–09 12:50		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	13.2%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	–3.28	+/–3.36	6.84	50.0	pCi/g		DXM 2 12/18/09	1634	930069	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	–0.232	+/–0.325	0.631	6.00	pCi/mL		KXK2 12/27/09	0547	930426	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	–0.619	+/–0.730	1.28	2.00	pCi/g		EXK2 12/18/09	0635	931888	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			95.6	(25%–125%)

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB25–20R	Project:	PIKA00109
Sample ID:	242292021	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	03–DEC–09 13:30		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	8.45%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	0.346	+/–4.58	8.41	50.0	pCi/g		DXM 2 12/21/09	1551	930070	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	–0.162	+/–0.272	0.525	6.00	pCi/mL		KXK2 12/23/09	0747	930426	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	–0.142	+/–0.732	1.26	2.00	pCi/g		EXK2 12/18/09	0738	931888	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			97.5	(25%–125%)

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB26–20R	Project:	PIKA00109
Sample ID:	242292022	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	03–DEC–09 14:00		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	17.1%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	3.43	+/–3.92	6.58	50.0	pCi/g		DXM 2 12/21/09	1551	930070	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	–0.0743	+/–0.278	0.522	6.00	pCi/mL		KXK2 12/23/09	0804	930426	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	–0.235	+/–0.739	1.28	2.00	pCi/g		EXK2 12/18/09	0842	931888	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			96.3	(25%–125%)

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB9–40R	Project:	PIKA00109
Sample ID:	242292023	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	01–DEC–09 13:35		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	13.2%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"											
Actinium–228		0.883	+/–0.256	0.195		pCi/g		MXR1 12/09/09	2122	930050	1
Americium–241	U	–0.42	+/–0.244	0.405		pCi/g					
Antimony–124	U	–0.00641	+/–0.0643	0.107		pCi/g					
Antimony–125	U	0.101	+/–0.0906	0.169		pCi/g					
Barium–133	U	–0.0212	+/–0.048	0.0703		pCi/g					
Barium–140	U	0.0716	+/–0.170	0.298		pCi/g					
Beryllium–7	U	0.0606	+/–0.282	0.494		pCi/g					
Bismuth–212	UI	0.00	+/–0.314	0.613		pCi/g					
Bismuth–214		0.832	+/–0.146	0.115		pCi/g					
Cerium–139	U	–0.0286	+/–0.0284	0.0471		pCi/g					
Cerium–141	U	–0.00439	+/–0.0536	0.0938		pCi/g					
Cerium–144	U	–0.0198	+/–0.200	0.351		pCi/g					
Cesium–134	U	0.0483	+/–0.0419	0.0794		pCi/g					
Cesium–136	U	–0.0198	+/–0.0704	0.116		pCi/g					
Cesium–137	U	–0.0314	+/–0.0344	0.0528	0.100	pCi/g					
Chromium–51	U	0.255	+/–0.309	0.571		pCi/g					
Cobalt–56	U	–0.0336	+/–0.0335	0.052		pCi/g					
Cobalt–57	U	0.000632	+/–0.0245	0.0435		pCi/g					
Cobalt–58	U	0.00255	+/–0.0324	0.0567		pCi/g					
Cobalt–60	U	0.00459	+/–0.0376	0.0636		pCi/g					
Europium–152	U	0.0201	+/–0.153	0.160		pCi/g					
Europium–154	U	–0.123	+/–0.122	0.182		pCi/g					
Europium–155	U	0.0532	+/–0.106	0.192		pCi/g					
Iridium–192	U	–0.0245	+/–0.0327	0.0554		pCi/g					
Iron–59	U	–0.00599	+/–0.0732	0.123		pCi/g					
Lead–210	U	9.38	+/–10.4	20.0		pCi/g					
Lead–212		1.04	+/–0.136	0.100		pCi/g					
Lead–214		0.908	+/–0.178	0.116		pCi/g					
Manganese–54	U	–0.0361	+/–0.0349	0.0536		pCi/g					
Mercury–203	U	0.0122	+/–0.0352	0.0639		pCi/g					
Neodymium–147	U	0.0186	+/–0.343	0.589		pCi/g					
Neptunium–239	U	0.0713	+/–0.183	0.330		pCi/g					
Niobium–94	U	0.0162	+/–0.0309	0.0563		pCi/g					
Niobium–95	U	0.0208	+/–0.0358	0.0652		pCi/g					
Potassium–40		19.5	+/–2.03	0.571		pCi/g					
Promethium–144	U	–0.00321	+/–0.0312	0.0544		pCi/g					
Promethium–146	U	0.0292	+/–0.0414	0.0752		pCi/g					

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB9–40R
Sample ID: 242292023

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium–228		0.883	+/–0.256	0.195		pCi/g						
Ruthenium–106	U	–0.0431	+/–0.292	0.488		pCi/g						
Silver–110m	U	0.0327	+/–0.031	0.057		pCi/g						
Sodium–22	U	–0.0435	+/–0.0436	0.0651		pCi/g						
Thallium–208		0.358	+/–0.0792	0.0603		pCi/g						
Thorium–234	U	1.29	+/–1.95	3.49		pCi/g						
Tin–113	U	–0.00663	+/–0.0412	0.0714		pCi/g						
Uranium–235	U	–0.122	+/–0.220	0.366		pCi/g						
Uranium–238	U	1.29	+/–1.95	3.49		pCi/g						
Yttrium–88	U	–0.00449	+/–0.0268	0.0432		pCi/g						
Zinc–65	U	–0.0233	+/–0.090	0.125		pCi/g						
Zirconium–95	U	–0.0273	+/–0.0586	0.0979		pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Chlorine–36 Solid "As Received"												
Chlorine–36	U	–0.806	+/–6.00	11.0	50.0	pCi/g		DXM2	12/21/09	1552	930070	2
GFPC, Sr90, solid "Dry Weight Corrected"												
Strontium–90	U	0.127	+/–0.296	0.533	2.00	pCi/g		JXR1	12/12/09	1310	930071	3
Rad Liquid Scintillation Analysis												
LSC, Tritium Vacuum, Solid "As Received"												
Tritium	U	–0.193	+/–0.270	0.528	6.00	pCi/mL		KXK2	12/23/09	0820	930426	4
Liquid Scint C14, Solid "As Received"												
Carbon–14	U	–0.454	+/–0.744	1.30	2.00	pCi/g		EXK2	12/18/09	0946	931888	5
Liquid Scint Tc99, Solid "As Received"												
Technetium–99	U	0.112	+/–1.72	2.97	5.00	pCi/g		AXW2	12/22/09	0723	931885	6
LSC Phosphorus–32 Solid "Dry Weight Corrected"												
Phosphorus–32/33	HU	33.7	+/–63.2	108		pCi/g		GXR1	01/01/10	0232	937121	7
LSC Sulfur 35 Solid "Dry Weight Corrected"												
Sulfur–35	U	22.1	+/–27.8	46.8	50.0	pCi/g		GXR1	12/31/09	1437	937122	8
Liquid Scint Ca45, Solid "Dry Weight Corrected"												
Calcium–45	U	3.84	+/–15.0	25.8	50.0	pCi/g		GXR1	12/17/09	0016	931882	9
Liquid Scint Ni63, Solid "Dry Weight Corrected"												
Nickel–63	U	–1.97	+/–2.13	3.81	4.00	pCi/g		DXM2	12/15/09	1754	930920	10

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	CXC1	12/07/09	1112	929362

Certificate of Analysis

Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB9–40R
Sample ID: 242292023

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga–01–R	
2	GL–RAD–A–033	
3	EPA 905.0 Modified	
4	GL–RAD–A–002	
5	EPA EERF C–01 Modified	
6	DOE EML HASL–300, Tc–02–RC Modified	
7	GL–RAD–A–019	
8	NAS–NS–3054	
9	GL–RAD–A–048	
10	DOE RESL Ni–1, Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			97.3	(25%–125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"			86.3	(25%–125%)
Technetium–99m Tracer	Liquid Scint Tc99, Solid "As Received"			100	(15%–125%)
Sulfur Carrier	LSC Sulfur 35 Solid "Dry Weight Corrected"			90.7	(25%–125%)
Calcium Carrier	Liquid Scint Ca45, Solid "Dry Weight Corrected"			112	(25%–125%)
Nickel Carrier	Liquid Scint Ni63, Solid "Dry Weight Corrected"			69.7	(25%–125%)

Certificate of Analysis

Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB11–40R	Project:	PIKA00109
Sample ID:	242292024	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	01–DEC–09 11:00		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	15.9%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"											
Actinium–228		1.26	+/–0.295	0.223		pCi/g		MXR1 12/09/09	2122	930050	1
Americium–241	U	0.0178	+/–0.0602	0.0943		pCi/g					
Antimony–124	U	–0.0351	+/–0.0553	0.0726		pCi/g					
Antimony–125	U	0.00185	+/–0.0811	0.142		pCi/g					
Barium–133	U	–0.0193	+/–0.0399	0.0588		pCi/g					
Barium–140	U	–0.0895	+/–0.183	0.293		pCi/g					
Beryllium–7	U	0.0351	+/–0.298	0.520		pCi/g					
Bismuth–212	UI	0.00	+/–0.517	0.703		pCi/g					
Bismuth–214		0.826	+/–0.203	0.122		pCi/g					
Cerium–139	U	–0.0156	+/–0.0222	0.0372		pCi/g					
Cerium–141	U	–0.0176	+/–0.0457	0.0792		pCi/g					
Cerium–144	U	0.0248	+/–0.161	0.288		pCi/g					
Cesium–134	U	0.0867	+/–0.0507	0.101		pCi/g					
Cesium–136	U	–0.00724	+/–0.0752	0.126		pCi/g					
Cesium–137	U	–0.0128	+/–0.0421	0.0683	0.100	pCi/g					
Chromium–51	U	0.0098	+/–0.265	0.475		pCi/g					
Cobalt–56	U	–0.0257	+/–0.0372	0.0591		pCi/g					
Cobalt–57	U	–0.0142	+/–0.0193	0.0331		pCi/g					
Cobalt–58	U	–0.0155	+/–0.037	0.0612		pCi/g					
Cobalt–60	U	–0.00884	+/–0.0429	0.0685		pCi/g					
Europium–152	U	–0.0058	+/–0.0876	0.150		pCi/g					
Europium–154	U	0.0112	+/–0.133	0.223		pCi/g					
Europium–155	U	0.0361	+/–0.0776	0.143		pCi/g					
Iridium–192	U	0.00171	+/–0.0286	0.0479		pCi/g					
Iron–59	U	–0.116	+/–0.0912	0.128		pCi/g					
Lead–210		1.13	+/–0.790	0.723		pCi/g					
Lead–212		0.976	+/–0.127	0.0831		pCi/g					
Lead–214		0.975	+/–0.174	0.0971		pCi/g					
Manganese–54	U	–0.00579	+/–0.0402	0.0687		pCi/g					
Mercury–203	U	–0.0452	+/–0.0359	0.0546		pCi/g					
Neodymium–147	U	–0.0353	+/–0.324	0.548		pCi/g					
Neptunium–239	U	–0.0728	+/–0.146	0.256		pCi/g					
Niobium–94	U	–0.017	+/–0.0384	0.0609		pCi/g					
Niobium–95	U	0.0101	+/–0.0435	0.0775		pCi/g					
Potassium–40		20.5	+/–2.08	0.615		pCi/g					
Promethium–144	U	–0.0205	+/–0.0377	0.0591		pCi/g					
Promethium–146	U	–0.00181	+/–0.0382	0.066		pCi/g					

Certificate of Analysis

Company : PIKA International, Inc.
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Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB11–40R
Sample ID: 242292024

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium–228		1.26	+/–0.295	0.223		pCi/g						
Ruthenium–106	U	–0.0336	+/–0.326	0.544		pCi/g						
Silver–110m	U	0.00533	+/–0.034	0.058		pCi/g						
Sodium–22	U	0.00571	+/–0.0476	0.0804		pCi/g						
Thallium–208		0.342	+/–0.0796	0.065		pCi/g						
Thorium–234		1.54	+/–0.983	0.886		pCi/g						
Tin–113	U	–0.0351	+/–0.0375	0.0606		pCi/g						
Uranium–235	U	0.00854	+/–0.184	0.321		pCi/g						
Uranium–238		1.54	+/–0.983	0.886		pCi/g						
Yttrium–88	U	0.0398	+/–0.037	0.0761		pCi/g						
Zinc–65	U	0.000316	+/–0.105	0.157		pCi/g						
Zirconium–95	U	0.0149	+/–0.0644	0.110		pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Chlorine–36 Solid "As Received"												
Chlorine–36	U	2.61	+/–3.47	5.92	50.0	pCi/g		DXM 2	12/21/09	1552	930070	2
GFPC, Sr90, solid "Dry Weight Corrected"												
Strontium–90	U	–0.239	+/–0.180	0.442	2.00	pCi/g		JXR1	12/16/09	1714	930071	3
Rad Liquid Scintillation Analysis												
LSC, Tritium Vacuum, Solid "As Received"												
Tritium	U	–0.121	+/–0.279	0.530	6.00	pCi/mL		KXK2	12/23/09	0836	930426	4
Liquid Scint C14, Solid "As Received"												
Carbon–14	U	–0.491	+/–0.729	1.27	2.00	pCi/g		EXK2	12/18/09	1049	931888	5
Liquid Scint Tc99, Solid "As Received"												
Technetium–99	U	0.610	+/–1.76	3.00	5.00	pCi/g		AXW 2	12/22/09	0755	931885	6
LSC Phosphorus–32 Solid "Dry Weight Corrected"												
Phosphorus–32/33	HU	13.2	+/–65.0	112		pCi/g		GXR1	01/01/10	0248	937121	7
LSC Sulfur 35 Solid "Dry Weight Corrected"												
Sulfur–35	U	20.4	+/–28.6	48.3	50.0	pCi/g		GXR1	12/31/09	1453	937122	8
Liquid Scint Ca45, Solid "Dry Weight Corrected"												
Calcium–45	U	7.62	+/–16.8	28.6	50.0	pCi/g		GXR1	12/17/09	0037	931882	9
Liquid Scint Ni63, Solid "Dry Weight Corrected"												
Nickel–63	U	0.724	+/–2.31	3.97	4.00	pCi/g		DXM 2	12/15/09	1816	930920	10

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	CXC1	12/07/09	1112	929362

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB11–40R
Sample ID: 242292024

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga–01–R	
2	GL–RAD–A–033	
3	EPA 905.0 Modified	
4	GL–RAD–A–002	
5	EPA EERF C–01 Modified	
6	DOE EML HASL–300, Tc–02–RC Modified	
7	GL–RAD–A–019	
8	NAS–NS–3054	
9	GL–RAD–A–048	
10	DOE RESL Ni–1, Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			97.3	(25%–125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"			86.3	(25%–125%)
Technetium–99m Tracer	Liquid Scint Tc99, Solid "As Received"			97.5	(15%–125%)
Sulfur Carrier	LSC Sulfur 35 Solid "Dry Weight Corrected"			87.9	(25%–125%)
Calcium Carrier	Liquid Scint Ca45, Solid "Dry Weight Corrected"			114	(25%–125%)
Nickel Carrier	Liquid Scint Ni63, Solid "Dry Weight Corrected"			67.2	(25%–125%)

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB12–50R	Project:	PIKA00109
Sample ID:	242292025	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	01–DEC–09 09:50		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	6.25%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"											
Actinium–228		0.960	+/–0.209	0.123		pCi/g		MXR1 12/09/09	2123	930050	1
Americium–241	U	–0.0169	+/–0.118	0.223		pCi/g					
Antimony–124	U	0.0258	+/–0.0367	0.0687		pCi/g					
Antimony–125	U	0.00407	+/–0.0496	0.0891		pCi/g					
Barium–133	U	–0.00749	+/–0.0265	0.0387		pCi/g					
Barium–140	U	0.0118	+/–0.106	0.186		pCi/g					
Beryllium–7	U	0.137	+/–0.168	0.310		pCi/g					
Bismuth–212	UI	0.00	+/–0.230	0.393		pCi/g					
Bismuth–214		0.592	+/–0.105	0.0669		pCi/g					
Cerium–139	U	0.00554	+/–0.0164	0.0311		pCi/g					
Cerium–141	U	–0.0209	+/–0.0341	0.0584		pCi/g					
Cerium–144	U	0.000602	+/–0.127	0.225		pCi/g					
Cesium–134	UI	0.00	+/–0.0313	0.0537		pCi/g					
Cesium–136	U	0.0147	+/–0.0428	0.0768		pCi/g					
Cesium–137	U	0.0199	+/–0.0211	0.0396	0.100	pCi/g					
Chromium–51	U	–0.00677	+/–0.184	0.320		pCi/g					
Cobalt–56	U	0.0201	+/–0.0226	0.0413		pCi/g					
Cobalt–57	U	–0.00396	+/–0.0159	0.0281		pCi/g					
Cobalt–58	U	0.000368	+/–0.0204	0.0355		pCi/g					
Cobalt–60	U	0.000464	+/–0.0211	0.0359		pCi/g					
Europium–152	U	–0.0277	+/–0.0688	0.101		pCi/g					
Europium–154	U	–0.0319	+/–0.0747	0.123		pCi/g					
Europium–155	U	–0.00187	+/–0.0658	0.119		pCi/g					
Iridium–192	U	0.00783	+/–0.0186	0.0333		pCi/g					
Iron–59	U	–0.0268	+/–0.0479	0.0796		pCi/g					
Lead–210	U	–1.6	+/–3.58	6.81		pCi/g					
Lead–212		0.667	+/–0.0907	0.0853		pCi/g					
Lead–214		0.705	+/–0.111	0.0694		pCi/g					
Manganese–54	U	0.0207	+/–0.0218	0.0399		pCi/g					
Mercury–203	U	–0.00574	+/–0.021	0.0367		pCi/g					
Neodymium–147	U	0.0324	+/–0.210	0.370		pCi/g					
Neptunium–239	U	–0.144	+/–0.124	0.210		pCi/g					
Niobium–94	U	0.00119	+/–0.0189	0.0336		pCi/g					
Niobium–95	U	0.0272	+/–0.0246	0.0456		pCi/g					
Potassium–40		23.9	+/–2.09	0.319		pCi/g					
Promethium–144	U	–0.00218	+/–0.0195	0.0343		pCi/g					
Promethium–146	U	0.013	+/–0.0255	0.0455		pCi/g					

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Certificate of Analysis

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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB12–50R
Sample ID: 242292025

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium–228		0.960	+/–0.209	0.123		pCi/g						
Ruthenium–106	U	–0.152	+/–0.181	0.289		pCi/g						
Silver–110m	U	0.0032	+/–0.0194	0.0349		pCi/g						
Sodium–22	U	–0.011	+/–0.0267	0.044		pCi/g						
Thallium–208		0.261	+/–0.0501	0.0366		pCi/g						
Thorium–234	U	–0.201	+/–1.03	1.92		pCi/g						
Tin–113	U	–0.00157	+/–0.0239	0.043		pCi/g						
Uranium–235	U	0.136	+/–0.139	0.247		pCi/g						
Uranium–238	U	–0.201	+/–1.03	1.92		pCi/g						
Yttrium–88	U	0.0041	+/–0.0179	0.0312		pCi/g						
Zinc–65	U	0.0766	+/–0.0651	0.107		pCi/g						
Zirconium–95	U	0.00227	+/–0.0389	0.0684		pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Chlorine–36 Solid "As Received"												
Chlorine–36	U	1.02	+/–4.37	7.82	50.0	pCi/g		DXM 2	12/21/09	1552	930070	2
GFPC, Sr90, solid "Dry Weight Corrected"												
Strontium–90	U	–0.0222	+/–0.546	1.01	2.00	pCi/g		JXR1	12/12/09	1310	930071	3
Rad Liquid Scintillation Analysis												
LSC, Tritium Vacuum, Solid "As Received"												
Tritium	U	–0.193	+/–0.269	0.526	6.00	pCi/mL		KXK2	12/23/09	0852	930426	4
Liquid Scint C14, Solid "As Received"												
Carbon–14	U	0.162	+/–0.729	1.25	2.00	pCi/g		EXK2	12/18/09	1152	931888	5
Liquid Scint Tc99, Solid "As Received"												
Technetium–99	U	–0.768	+/–1.73	3.04	5.00	pCi/g		AXW 2	12/22/09	0827	931885	6
LSC Phosphorus–32 Solid "Dry Weight Corrected"												
Phosphorus–32/33	HU	47.2	+/–64.9	110		pCi/g		GXR1	01/01/10	0305	937121	7
LSC Sulfur 35 Solid "Dry Weight Corrected"												
Sulfur–35	U	29.8	+/–28.9	48.3	50.0	pCi/g		GXR1	12/31/09	1510	937122	8
Liquid Scint Ca45, Solid "Dry Weight Corrected"												
Calcium–45	U	–8.64	+/–17.0	30.1	50.0	pCi/g		GXR1	12/17/09	0059	931882	9
Liquid Scint Ni63, Solid "Dry Weight Corrected"												
Nickel–63	U	0.0788	+/–2.12	3.67	4.00	pCi/g		DXM 2	12/15/09	2057	930920	10

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	CXC1	12/07/09	1112	929362

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB12–50R
Sample ID: 242292025

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga–01–R	
2	GL–RAD–A–033	
3	EPA 905.0 Modified	
4	GL–RAD–A–002	
5	EPA EERF C–01 Modified	
6	DOE EML HASL–300, Tc–02–RC Modified	
7	GL–RAD–A–019	
8	NAS–NS–3054	
9	GL–RAD–A–048	
10	DOE RESL Ni–1, Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			98.8	(25%–125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"			87.4	(25%–125%)
Technetium–99m Tracer	Liquid Scint Tc99, Solid "As Received"			97.9	(15%–125%)
Sulfur Carrier	LSC Sulfur 35 Solid "Dry Weight Corrected"			88.9	(25%–125%)
Calcium Carrier	Liquid Scint Ca45, Solid "Dry Weight Corrected"			112	(25%–125%)
Nickel Carrier	Liquid Scint Ni63, Solid "Dry Weight Corrected"			73.4	(25%–125%)

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB13–40R	Project:	PIKA00109
Sample ID:	242292026	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 09:15		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	15.2%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"											
Actinium–228		0.922	+/–0.241	0.176		pCi/g		MXR1 12/09/09	2123	930050	1
Americium–241	U	0.0638	+/–0.129	0.211		pCi/g					
Antimony–124	U	–0.0275	+/–0.0542	0.0812		pCi/g					
Antimony–125	U	0.0402	+/–0.0701	0.128		pCi/g					
Barium–133	U	0.0254	+/–0.0356	0.0584		pCi/g					
Barium–140	U	–0.0619	+/–0.131	0.216		pCi/g					
Beryllium–7	U	–0.096	+/–0.235	0.399		pCi/g					
Bismuth–212	UI	0.00	+/–0.265	0.510		pCi/g					
Bismuth–214		0.773	+/–0.126	0.101		pCi/g					
Cerium–139	U	0.00205	+/–0.0227	0.0398		pCi/g					
Cerium–141	U	0.00886	+/–0.046	0.0804		pCi/g					
Cerium–144	U	0.0321	+/–0.161	0.286		pCi/g					
Cesium–134	U	0.0371	+/–0.0379	0.0694		pCi/g					
Cesium–136	U	–0.0276	+/–0.0584	0.0967		pCi/g					
Cesium–137	U	–0.00309	+/–0.029	0.0491	0.100	pCi/g					
Chromium–51	U	0.0283	+/–0.251	0.451		pCi/g					
Cobalt–56	U	–0.00524	+/–0.0284	0.0469		pCi/g					
Cobalt–57	U	–0.00044	+/–0.0207	0.0365		pCi/g					
Cobalt–58	U	–0.00281	+/–0.031	0.052		pCi/g					
Cobalt–60	U	–0.0128	+/–0.0324	0.0526		pCi/g					
Europium–152	U	0.0159	+/–0.0954	0.132		pCi/g					
Europium–154	U	0.0574	+/–0.0933	0.170		pCi/g					
Europium–155	U	0.00644	+/–0.0881	0.157		pCi/g					
Iridium–192	U	–0.0132	+/–0.0262	0.0441		pCi/g					
Iron–59	U	0.00967	+/–0.0711	0.125		pCi/g					
Lead–210	U	–0.961	+/–2.53	4.63		pCi/g					
Lead–212		0.890	+/–0.101	0.0807		pCi/g					
Lead–214		0.759	+/–0.123	0.100		pCi/g					
Manganese–54	U	–0.00939	+/–0.0271	0.044		pCi/g					
Mercury–203	U	–0.0043	+/–0.0302	0.054		pCi/g					
Neodymium–147	U	–0.202	+/–0.270	0.436		pCi/g					
Neptunium–239	U	0.0111	+/–0.159	0.282		pCi/g					
Niobium–94	U	0.0248	+/–0.0285	0.0518		pCi/g					
Niobium–95	U	–0.0134	+/–0.0321	0.0508		pCi/g					
Potassium–40		19.7	+/–2.01	0.472		pCi/g					
Promethium–144	U	–0.00261	+/–0.0273	0.0462		pCi/g					
Promethium–146	U	–0.00119	+/–0.0318	0.0556		pCi/g					

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Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB13–40R
Sample ID: 242292026

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium–228		0.922	+/–0.241	0.176		pCi/g						
Ruthenium–106	U	–0.0607	+/–0.271	0.457		pCi/g						
Silver–110m	U	0.0141	+/–0.0263	0.0471		pCi/g						
Sodium–22	U	0.0196	+/–0.0331	0.0603		pCi/g						
Thallium–208		0.273	+/–0.0618	0.0469		pCi/g						
Thorium–234	U	1.17	+/–1.24	1.76		pCi/g						
Tin–113	U	0.0173	+/–0.032	0.0585		pCi/g						
Uranium–235	U	0.0273	+/–0.180	0.314		pCi/g						
Uranium–238	U	1.17	+/–1.24	1.76		pCi/g						
Yttrium–88	U	–0.00653	+/–0.0254	0.0399		pCi/g						
Zinc–65	U	–0.00844	+/–0.0746	0.109		pCi/g						
Zirconium–95	U	0.0016	+/–0.0481	0.0818		pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Chlorine–36 Solid "As Received"												
Chlorine–36	U	0.775	+/–4.42	8.04	50.0	pCi/g		DXM2	12/21/09	1552	930070	2
GFPC, Sr90, solid "Dry Weight Corrected"												
Strontium–90	U	0.306	+/–0.605	1.05	2.00	pCi/g		JXR1	12/12/09	1310	930071	3
Rad Liquid Scintillation Analysis												
LSC, Tritium Vacuum, Solid "As Received"												
Tritium	U	0.164	+/–0.305	0.530	6.00	pCi/mL		KXK2	12/23/09	0909	930426	4
Liquid Scint C14, Solid "As Received"												
Carbon–14	U	0.401	+/–0.824	1.40	2.00	pCi/g		EXK2	12/18/09	1255	931888	5
Liquid Scint Tc99, Solid "As Received"												
Technetium–99	U	–0.233	+/–1.71	2.97	5.00	pCi/g		AXW2	12/22/09	0858	931885	6
LSC Phosphorus–32 Solid "Dry Weight Corrected"												
Phosphorus–32/33	HU	60.8	+/–63.5	106		pCi/g		GXR1	01/01/10	0321	937121	7
LSC Sulfur 35 Solid "Dry Weight Corrected"												
Sulfur–35	U	20.1	+/–27.5	46.4	50.0	pCi/g		GXR1	12/31/09	1526	937122	8
Liquid Scint Ca45, Solid "Dry Weight Corrected"												
Calcium–45	U	–2.33	+/–15.7	27.4	50.0	pCi/g		GXR1	12/17/09	0121	931882	9
Liquid Scint Ni63, Solid "Dry Weight Corrected"												
Nickel–63	U	–0.0802	+/–2.15	3.73	4.00	pCi/g		DXM2	12/15/09	2118	930920	10

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	CXC1	12/07/09	1112	929362

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB13–40R
Sample ID: 242292026

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga–01–R	
2	GL–RAD–A–033	
3	EPA 905.0 Modified	
4	GL–RAD–A–002	
5	EPA EERF C–01 Modified	
6	DOE EML HASL–300, Tc–02–RC Modified	
7	GL–RAD–A–019	
8	NAS–NS–3054	
9	GL–RAD–A–048	
10	DOE RESL Ni–1, Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			98.5	(25%–125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"			86.3	(25%–125%)
Technetium–99m Tracer	Liquid Scint Tc99, Solid "As Received"			100	(15%–125%)
Sulfur Carrier	LSC Sulfur 35 Solid "Dry Weight Corrected"			84.3	(25%–125%)
Calcium Carrier	Liquid Scint Ca45, Solid "Dry Weight Corrected"			115	(25%–125%)
Nickel Carrier	Liquid Scint Ni63, Solid "Dry Weight Corrected"			70.9	(25%–125%)

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Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB14–40R	Project:	PIKA00109
Sample ID:	242292027	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 07:55		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	8.24%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"											
Actinium–228		1.05	+/–0.240	0.171		pCi/g		MXR1 12/09/09	2123	930050	1
Americium–241	U	–0.0729	+/–0.116	0.180		pCi/g					
Antimony–124	U	–0.0145	+/–0.044	0.0705		pCi/g					
Antimony–125	U	0.0265	+/–0.071	0.124		pCi/g					
Barium–133	U	0.0206	+/–0.0359	0.0563		pCi/g					
Barium–140	U	0.057	+/–0.131	0.232		pCi/g					
Beryllium–7	U	0.065	+/–0.219	0.376		pCi/g					
Bismuth–212	UI	0.00	+/–0.284	0.482		pCi/g					
Bismuth–214		0.966	+/–0.164	0.0939		pCi/g					
Cerium–139	U	–0.0146	+/–0.0225	0.0388		pCi/g					
Cerium–141	U	0.0146	+/–0.042	0.076		pCi/g					
Cerium–144	U	–0.0304	+/–0.158	0.283		pCi/g					
Cesium–134	UI	0.00	+/–0.0411	0.0665		pCi/g					
Cesium–136	U	–0.019	+/–0.0557	0.091		pCi/g					
Cesium–137	U	–0.00584	+/–0.0298	0.0501	0.100	pCi/g					
Chromium–51	U	0.0236	+/–0.242	0.427		pCi/g					
Cobalt–56	U	–0.0219	+/–0.0301	0.0492		pCi/g					
Cobalt–57	U	0.00213	+/–0.0196	0.0333		pCi/g					
Cobalt–58	U	0.00316	+/–0.0271	0.0473		pCi/g					
Cobalt–60	U	0.000898	+/–0.0315	0.0533		pCi/g					
Europium–152	U	–0.0148	+/–0.0927	0.131		pCi/g					
Europium–154	U	–0.0242	+/–0.0925	0.154		pCi/g					
Europium–155	U	0.0179	+/–0.083	0.144		pCi/g					
Iridium–192	U	–0.00241	+/–0.0257	0.045		pCi/g					
Iron–59	U	–0.0374	+/–0.0613	0.0973		pCi/g					
Lead–210	U	1.86	+/–2.48	4.56		pCi/g					
Lead–212		1.02	+/–0.154	0.0777		pCi/g					
Lead–214		1.11	+/–0.186	0.0921		pCi/g					
Manganese–54	U	0.0035	+/–0.0284	0.0493		pCi/g					
Mercury–203	U	0.0237	+/–0.031	0.0537		pCi/g					
Neodymium–147	U	–0.0842	+/–0.250	0.427		pCi/g					
Neptunium–239	U	0.0213	+/–0.156	0.266		pCi/g					
Niobium–94	U	0.0218	+/–0.0268	0.0474		pCi/g					
Niobium–95	U	0.0199	+/–0.036	0.0542		pCi/g					
Potassium–40		20.3	+/–2.14	0.392		pCi/g					
Promethium–144	U	–0.00157	+/–0.0264	0.0446		pCi/g					
Promethium–146	U	0.000334	+/–0.0361	0.0577		pCi/g					

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Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB14–40R
Sample ID: 242292027

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium–228		1.05	+/–0.240	0.171		pCi/g						
Ruthenium–106	U	–0.0186	+/–0.244	0.417		pCi/g						
Silver–110m	U	0.00598	+/–0.0258	0.0446		pCi/g						
Sodium–22	U	–0.00936	+/–0.0329	0.0547		pCi/g						
Thallium–208		0.282	+/–0.0617	0.0469		pCi/g						
Thorium–234	U	0.445	+/–1.34	1.54		pCi/g						
Tin–113	U	–0.0311	+/–0.0336	0.0549		pCi/g						
Uranium–235	U	–0.0561	+/–0.176	0.299		pCi/g						
Uranium–238	U	0.445	+/–1.34	1.54		pCi/g						
Yttrium–88	U	–0.0305	+/–0.0232	0.030		pCi/g						
Zinc–65	U	0.075	+/–0.0754	0.118		pCi/g						
Zirconium–95	U	–0.0443	+/–0.0496	0.0773		pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Chlorine–36 Solid "As Received"												
Chlorine–36	U	1.29	+/–3.89	6.91	50.0	pCi/g		DXM2	12/21/09	1552	930070	2
GFPC, Sr90, solid "Dry Weight Corrected"												
Strontium–90	U	–0.328	+/–0.249	0.566	2.00	pCi/g		JXR1	12/12/09	1311	930071	3
Rad Liquid Scintillation Analysis												
LSC, Tritium Vacuum, Solid "As Received"												
Tritium	U	–0.344	+/–0.256	0.531	6.00	pCi/mL		KXK2	12/23/09	0925	930426	4
Liquid Scint C14, Solid "As Received"												
Carbon–14	U	–0.0625	+/–0.736	1.27	2.00	pCi/g		EXK2	12/18/09	1358	931888	5
Liquid Scint Tc99, Solid "As Received"												
Technetium–99	U	0.400	+/–1.71	2.93	5.00	pCi/g		AXW2	12/22/09	0930	931885	6
LSC Phosphorus–32 Solid "Dry Weight Corrected"												
Phosphorus–32/33	HU	13.7	+/–60.5	105		pCi/g		GXR1	01/01/10	0338	937121	7
LSC Sulfur 35 Solid "Dry Weight Corrected"												
Sulfur–35	U	26.2	+/–27.0	45.2	50.0	pCi/g		GXR1	12/31/09	1542	937122	8
Liquid Scint Ca45, Solid "Dry Weight Corrected"												
Calcium–45	U	–3.3	+/–25.4	44.3	50.0	pCi/g		GXR1	12/17/09	0142	931882	9
Liquid Scint Ni63, Solid "Dry Weight Corrected"												
Nickel–63	U	1.04	+/–2.26	3.86	4.00	pCi/g		DXM2	12/15/09	2139	930920	10

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	CXC1	12/07/09	1112	929362

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB14–40R
Sample ID: 242292027

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga–01–R	
2	GL–RAD–A–033	
3	EPA 905.0 Modified	
4	GL–RAD–A–002	
5	EPA EERF C–01 Modified	
6	DOE EML HASL–300, Tc–02–RC Modified	
7	GL–RAD–A–019	
8	NAS–NS–3054	
9	GL–RAD–A–048	
10	DOE RESL Ni–1, Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			97.8	(25%–125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"			89.6	(25%–125%)
Technetium–99m Tracer	Liquid Scint Tc99, Solid "As Received"			100	(15%–125%)
Sulfur Carrier	LSC Sulfur 35 Solid "Dry Weight Corrected"			89.1	(25%–125%)
Calcium Carrier	Liquid Scint Ca45, Solid "Dry Weight Corrected"			74.5	(25%–125%)
Nickel Carrier	Liquid Scint Ni63, Solid "Dry Weight Corrected"			69.7	(25%–125%)

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB16–40R	Project:	PIKA00109
Sample ID:	242292028	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 09:55		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	20.3%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"											
Actinium–228		1.09	+/–0.274	0.186		pCi/g		MXR1 12/09/09	2124	930050	1
Americium–241	U	–0.0262	+/–0.0408	0.0623		pCi/g					
Antimony–124	U	–0.00316	+/–0.0619	0.104		pCi/g					
Antimony–125	U	0.00366	+/–0.0715	0.124		pCi/g					
Barium–133	U	0.000714	+/–0.0361	0.0559		pCi/g					
Barium–140	U	–0.0722	+/–0.147	0.233		pCi/g					
Beryllium–7	U	–0.0873	+/–0.238	0.391		pCi/g					
Bismuth–212	UI	0.00	+/–0.441	0.615		pCi/g					
Bismuth–214		0.888	+/–0.177	0.0981		pCi/g					
Cerium–139	U	–0.0156	+/–0.0194	0.0325		pCi/g					
Cerium–141	U	–0.0284	+/–0.0365	0.0612		pCi/g					
Cerium–144	U	–0.0168	+/–0.132	0.234		pCi/g					
Cesium–134	U	0.049	+/–0.0393	0.0739		pCi/g					
Cesium–136	U	0.043	+/–0.0679	0.124		pCi/g					
Cesium–137	U	–0.0245	+/–0.0365	0.065	0.100	pCi/g					
Chromium–51	U	–0.136	+/–0.228	0.388		pCi/g					
Cobalt–56	U	0.00974	+/–0.0322	0.0562		pCi/g					
Cobalt–57	U	–0.00801	+/–0.0148	0.026		pCi/g					
Cobalt–58	U	0.0181	+/–0.0323	0.0577		pCi/g					
Cobalt–60	U	–0.0242	+/–0.0346	0.0522		pCi/g					
Europium–152	U	–0.0292	+/–0.0825	0.124		pCi/g					
Europium–154	U	–0.0244	+/–0.116	0.192		pCi/g					
Europium–155	U	0.024	+/–0.0601	0.111		pCi/g					
Iridium–192	U	–0.00918	+/–0.0241	0.0417		pCi/g					
Iron–59	U	–0.0315	+/–0.0763	0.126		pCi/g					
Lead–210		0.917	+/–0.528	0.496		pCi/g					
Lead–212		1.07	+/–0.154	0.0827		pCi/g					
Lead–214		1.00	+/–0.164	0.0923		pCi/g					
Manganese–54	U	–0.00122	+/–0.032	0.054		pCi/g					
Mercury–203	U	–0.00798	+/–0.0307	0.0488		pCi/g					
Neodymium–147	U	0.0857	+/–0.314	0.540		pCi/g					
Neptunium–239	U	–0.0863	+/–0.114	0.198		pCi/g					
Niobium–94	U	–0.0131	+/–0.0277	0.0457		pCi/g					
Niobium–95	U	0.0463	+/–0.0335	0.0585		pCi/g					
Potassium–40		20.6	+/–2.27	0.414		pCi/g					
Promethium–144	U	0.0187	+/–0.0293	0.0532		pCi/g					
Promethium–146	U	0.0118	+/–0.0337	0.0592		pCi/g					

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Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB16–40R
Sample ID: 242292028

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium–228		1.09	+/–0.274	0.186		pCi/g						
Ruthenium–106	U	0.0745	+/–0.254	0.455		pCi/g						
Silver–110m	U	–0.038	+/–0.0302	0.0462		pCi/g						
Sodium–22	U	–0.00339	+/–0.0411	0.0687		pCi/g						
Thallium–208		0.328	+/–0.0742	0.0526		pCi/g						
Thorium–234		0.752	+/–0.510	0.614		pCi/g						
Tin–113	U	–0.00412	+/–0.0343	0.0591		pCi/g						
Uranium–235	U	–0.00278	+/–0.147	0.256		pCi/g						
Uranium–238		0.752	+/–0.510	0.614		pCi/g						
Yttrium–88	U	0.0267	+/–0.0316	0.0613		pCi/g						
Zinc–65	U	–0.0154	+/–0.0872	0.125		pCi/g						
Zirconium–95	U	0.0244	+/–0.0539	0.0962		pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Chlorine–36 Solid "As Received"												
Chlorine–36	U	1.02	+/–2.46	4.34	50.0	pCi/g		DXM 2	12/21/09	1552	930070	2
GFPC, Sr90, solid "Dry Weight Corrected"												
Strontium–90	U	–0.126	+/–0.426	0.805	2.00	pCi/g		JXR1	12/12/09	1311	930071	3
Rad Liquid Scintillation Analysis												
LSC, Tritium Vacuum, Solid "As Received"												
Tritium	U	–0.268	+/–0.262	0.528	6.00	pCi/mL		KXK2	12/23/09	0941	930426	4
Liquid Scint C14, Solid "As Received"												
Carbon–14	U	–0.474	+/–0.748	1.31	2.00	pCi/g		EXK2	12/18/09	1501	931888	5
Liquid Scint Tc99, Solid "As Received"												
Technetium–99	U	0.439	+/–1.76	3.03	5.00	pCi/g		AXW 2	12/22/09	1002	931885	6
LSC Phosphorus–32 Solid "Dry Weight Corrected"												
Phosphorus–32/33	HU	–7.04	+/–62.3	109		pCi/g		GXR1	01/01/10	0354	937121	7
LSC Sulfur 35 Solid "Dry Weight Corrected"												
Sulfur–35		22.7	+/–29.1	49.0	50.0	pCi/g		GXR1	12/31/09	1559	937122	8
Liquid Scint Ca45, Solid "Dry Weight Corrected"												
Calcium–45	U	3.15	+/–15.6	26.9	50.0	pCi/g		GXR1	12/17/09	0314	931882	9
Liquid Scint Ni63, Solid "Dry Weight Corrected"												
Nickel–63	U	–0.986	+/–2.17	3.83	4.00	pCi/g		DXM 2	12/15/09	2201	930920	10

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	CXC1	12/07/09	1112	929362

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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB16–40R
Sample ID: 242292028

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga–01–R	
2	GL–RAD–A–033	
3	EPA 905.0 Modified	
4	GL–RAD–A–002	
5	EPA EERF C–01 Modified	
6	DOE EML HASL–300, Tc–02–RC Modified	
7	GL–RAD–A–019	
8	NAS–NS–3054	
9	GL–RAD–A–048	
10	DOE RESL Ni–1, Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			96.5	(25%–125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"			85.2	(25%–125%)
Technetium–99m Tracer	Liquid Scint Tc99, Solid "As Received"			96.9	(15%–125%)
Sulfur Carrier	LSC Sulfur 35 Solid "Dry Weight Corrected"			84.6	(25%–125%)
Calcium Carrier	Liquid Scint Ca45, Solid "Dry Weight Corrected"			117	(25%–125%)
Nickel Carrier	Liquid Scint Ni63, Solid "Dry Weight Corrected"			70.1	(25%–125%)

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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB19–40R	Project:	PIKA00109
Sample ID:	242292029	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 14:15		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	18%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"											
Actinium–228		0.857	+/–0.290	0.205		pCi/g		MXR1 12/10/09	1434	930050	1
Americium–241	U	–0.096	+/–0.169	0.256		pCi/g					
Antimony–124	U	0.0771	+/–0.0672	0.136		pCi/g					
Antimony–125	U	0.0278	+/–0.0829	0.144		pCi/g					
Barium–133	U	0.00466	+/–0.0412	0.0628		pCi/g					
Barium–140	U	0.0967	+/–0.164	0.296		pCi/g					
Beryllium–7	U	–0.237	+/–0.296	0.463		pCi/g					
Bismuth–212	UI	0.00	+/–0.490	0.581		pCi/g					
Bismuth–214		0.787	+/–0.147	0.0997		pCi/g					
Cerium–139	U	–0.00251	+/–0.024	0.0431		pCi/g					
Cerium–141	U	–0.0321	+/–0.0478	0.0816		pCi/g					
Cerium–144	U	0.0705	+/–0.181	0.313		pCi/g					
Cesium–134	U	0.0713	+/–0.0421	0.0822		pCi/g					
Cesium–136	U	–0.0684	+/–0.0722	0.106		pCi/g					
Cesium–137	U	0.00954	+/–0.0333	0.0592	0.100	pCi/g					
Chromium–51	U	0.0115	+/–0.281	0.488		pCi/g					
Cobalt–56	U	–0.0185	+/–0.0353	0.0567		pCi/g					
Cobalt–57	U	–0.0198	+/–0.0227	0.0369		pCi/g					
Cobalt–58	U	–0.012	+/–0.030	0.0488		pCi/g					
Cobalt–60	U	0.00456	+/–0.0396	0.069		pCi/g					
Europium–152	U	0.00891	+/–0.0954	0.145		pCi/g					
Europium–154	U	0.0179	+/–0.116	0.203		pCi/g					
Europium–155	U	0.0794	+/–0.102	0.181		pCi/g					
Iridium–192	U	0.0205	+/–0.0284	0.0516		pCi/g					
Iron–59	U	–0.000703	+/–0.0756	0.126		pCi/g					
Lead–210	U	1.91	+/–3.56	6.55		pCi/g					
Lead–212		0.979	+/–0.116	0.0815		pCi/g					
Lead–214		0.885	+/–0.158	0.104		pCi/g					
Manganese–54	U	–0.0205	+/–0.0362	0.0581		pCi/g					
Mercury–203	U	0.0209	+/–0.0322	0.0584		pCi/g					
Neodymium–147	U	–0.00102	+/–0.315	0.556		pCi/g					
Neptunium–239	U	–0.119	+/–0.178	0.294		pCi/g					
Niobium–94	U	–0.000356	+/–0.0296	0.051		pCi/g					
Niobium–95	U	–0.0219	+/–0.0389	0.0637		pCi/g					
Potassium–40		18.2	+/–1.91	0.534		pCi/g					
Promethium–144	U	–0.0187	+/–0.0298	0.0484		pCi/g					
Promethium–146	U	0.0187	+/–0.0376	0.0662		pCi/g					

Certificate of Analysis

Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB19–40R
Sample ID: 242292029

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium–228		0.857	+/–0.290	0.205		pCi/g						
Ruthenium–106	U	–0.271	+/–0.287	0.457		pCi/g						
Silver–110m	U	–0.0208	+/–0.0282	0.0452		pCi/g						
Sodium–22	U	0.00503	+/–0.0414	0.0719		pCi/g						
Thallium–208		0.305	+/–0.0656	0.0539		pCi/g						
Thorium–234	UI	0.00	+/–2.37	1.97		pCi/g						
Tin–113	U	–0.0154	+/–0.0384	0.0635		pCi/g						
Uranium–235	U	0.137	+/–0.189	0.341		pCi/g						
Uranium–238	UI	0.00	+/–2.37	1.97		pCi/g						
Yttrium–88	U	0.0295	+/–0.0303	0.0607		pCi/g						
Zinc–65	U	–0.00969	+/–0.0759	0.106		pCi/g						
Zirconium–95	U	0.0533	+/–0.0579	0.108		pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Chlorine–36 Solid "As Received"												
Chlorine–36	U	1.45	+/–2.21	3.81	50.0	pCi/g		DXM2	12/21/09	1552	930070	2
GFPC, Sr90, solid "Dry Weight Corrected"												
Strontium–90	U	0.108	+/–0.258	0.471	2.00	pCi/g		JXR1	12/12/09	1311	930071	3
Rad Liquid Scintillation Analysis												
LSC, Tritium Vacuum, Solid "As Received"												
Tritium	U	–0.121	+/–0.279	0.531	6.00	pCi/mL		KXK2	12/23/09	0957	930426	4
Liquid Scint C14, Solid "As Received"												
Carbon–14	U	–0.242	+/–0.725	1.25	2.00	pCi/g		EXK2	12/18/09	1605	931888	5
Liquid Scint Tc99, Solid "As Received"												
Technetium–99	U	0.118	+/–1.82	3.14	5.00	pCi/g		AXW2	12/22/09	1033	931885	6
LSC Phosphorus–32 Solid "Dry Weight Corrected"												
Phosphorus–32/33	HU	–5.42	+/–58.7	103		pCi/g		GXR1	01/01/10	0410	937121	7
LSC Sulfur 35 Solid "Dry Weight Corrected"												
Sulfur–35	U	13.8	+/–26.7	45.4	50.0	pCi/g		GXR1	12/31/09	1616	937122	8
Liquid Scint Ca45, Solid "Dry Weight Corrected"												
Calcium–45	U	6.16	+/–17.8	30.5	50.0	pCi/g		GXR1	12/17/09	0336	931882	9
Liquid Scint Ni63, Solid "Dry Weight Corrected"												
Nickel–63	U	0.678	+/–2.30	3.94	4.00	pCi/g		DXM2	12/15/09	2222	930920	10

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	CXC1	12/07/09	1112	929362

Certificate of Analysis

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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB19–40R
Sample ID: 242292029

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga–01–R	
2	GL–RAD–A–033	
3	EPA 905.0 Modified	
4	GL–RAD–A–002	
5	EPA EERF C–01 Modified	
6	DOE EML HASL–300, Tc–02–RC Modified	
7	GL–RAD–A–019	
8	NAS–NS–3054	
9	GL–RAD–A–048	
10	DOE RESL Ni–1, Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			97.5	(25%–125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"			86.3	(25%–125%)
Technetium–99m Tracer	Liquid Scint Tc99, Solid "As Received"			95.6	(15%–125%)
Sulfur Carrier	LSC Sulfur 35 Solid "Dry Weight Corrected"			85.3	(25%–125%)
Calcium Carrier	Liquid Scint Ca45, Solid "Dry Weight Corrected"			110	(25%–125%)
Nickel Carrier	Liquid Scint Ni63, Solid "Dry Weight Corrected"			68.0	(25%–125%)

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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB17–40R	Project:	PIKA00109
Sample ID:	242292030	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 11:20		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	14.8%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"											
Actinium–228		0.773	+/–0.242	0.205		pCi/g		MXR1 12/10/09	1435	930050	1
Americium–241	U	–0.0209	+/–0.167	0.269		pCi/g					
Antimony–124	U	–0.0329	+/–0.0514	0.0729		pCi/g					
Antimony–125	U	0.0987	+/–0.080	0.151		pCi/g					
Barium–133	U	–0.0326	+/–0.0406	0.057		pCi/g					
Barium–140	U	–0.0516	+/–0.152	0.252		pCi/g					
Beryllium–7	U	0.115	+/–0.259	0.463		pCi/g					
Bismuth–212	UI	0.00	+/–0.357	0.538		pCi/g					
Bismuth–214		0.614	+/–0.148	0.0977		pCi/g					
Cerium–139	U	–0.00192	+/–0.0246	0.0429		pCi/g					
Cerium–141	U	–0.014	+/–0.0467	0.0813		pCi/g					
Cerium–144	U	–0.0141	+/–0.166	0.293		pCi/g					
Cesium–134	U	0.0087	+/–0.0401	0.0713		pCi/g					
Cesium–136	U	0.0315	+/–0.0736	0.131		pCi/g					
Cesium–137	U	0.0181	+/–0.0305	0.0546	0.100	pCi/g					
Chromium–51	U	0.155	+/–0.269	0.493		pCi/g					
Cobalt–56	U	–0.00227	+/–0.0333	0.0574		pCi/g					
Cobalt–57	U	–0.0115	+/–0.0208	0.036		pCi/g					
Cobalt–58	U	0.0229	+/–0.0317	0.0588		pCi/g					
Cobalt–60	U	0.00294	+/–0.0321	0.0545		pCi/g					
Europium–152	U	0.0383	+/–0.0949	0.144		pCi/g					
Europium–154	U	0.0259	+/–0.114	0.196		pCi/g					
Europium–155	U	0.0337	+/–0.0933	0.170		pCi/g					
Iridium–192	U	–0.0038	+/–0.0274	0.0484		pCi/g					
Iron–59	U	–0.0916	+/–0.0783	0.116		pCi/g					
Lead–210	U	–0.994	+/–4.69	8.40		pCi/g					
Lead–212		0.659	+/–0.101	0.0963		pCi/g					
Lead–214		0.783	+/–0.135	0.0959		pCi/g					
Manganese–54	U	–0.00202	+/–0.0331	0.0572		pCi/g					
Mercury–203	U	0.0238	+/–0.0327	0.0607		pCi/g					
Neodymium–147	U	–0.0328	+/–0.310	0.529		pCi/g					
Neptunium–239	U	–0.0547	+/–0.159	0.279		pCi/g					
Niobium–94	U	0.0174	+/–0.0305	0.054		pCi/g					
Niobium–95	U	0.00523	+/–0.0384	0.0649		pCi/g					
Potassium–40		17.6	+/–1.86	0.447		pCi/g					
Promethium–144	U	–0.0211	+/–0.0302	0.0473		pCi/g					
Promethium–146	U	–0.0107	+/–0.0362	0.0614		pCi/g					

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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB17–40R
Sample ID: 242292030

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium–228		0.773	+/–0.242	0.205		pCi/g						
Ruthenium–106	U	–0.13	+/–0.257	0.414		pCi/g						
Silver–110m	U	–0.0156	+/–0.0281	0.0448		pCi/g						
Sodium–22	U	0.0101	+/–0.0407	0.0703		pCi/g						
Thallium–208		0.188	+/–0.0669	0.0589		pCi/g						
Thorium–234	U	1.58	+/–1.81	2.19		pCi/g						
Tin–113	U	–0.0333	+/–0.0355	0.058		pCi/g						
Uranium–235	U	–0.174	+/–0.187	0.307		pCi/g						
Uranium–238	U	1.58	+/–1.81	2.19		pCi/g						
Yttrium–88	U	0.00499	+/–0.025	0.0443		pCi/g						
Zinc–65	U	–0.0833	+/–0.0928	0.115		pCi/g						
Zirconium–95	U	0.0168	+/–0.056	0.0966		pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Chlorine–36 Solid "As Received"												
Chlorine–36	U	–2.5	+/–5.30	10.1	50.0	pCi/g		DXM 2	12/21/09	1552	930070	2
GFPC, Sr90, solid "Dry Weight Corrected"												
Strontium–90	U	0.139	+/–0.381	0.680	2.00	pCi/g		JXR1	12/12/09	1311	930071	3
Rad Liquid Scintillation Analysis												
LSC, Tritium Vacuum, Solid "As Received"												
Tritium	U	–0.0299	+/–0.285	0.525	6.00	pCi/mL		KXK2	12/23/09	1014	930426	4
Liquid Scint C14, Solid "As Received"												
Carbon–14	U	0.484	+/–0.751	1.27	2.00	pCi/g		EXK2	12/18/09	1708	931888	5
Liquid Scint Tc99, Solid "As Received"												
Technetium–99	U	–0.0904	+/–1.80	3.12	5.00	pCi/g		AXW 2	12/22/09	1105	931885	6
LSC Phosphorus–32 Solid "Dry Weight Corrected"												
Phosphorus–32/33	HU	44.8	+/–63.6	108		pCi/g		GXR1	01/01/10	0427	937121	7
LSC Sulfur 35 Solid "Dry Weight Corrected"												
Sulfur–35	U	13.6	+/–28.0	47.7	50.0	pCi/g		GXR1	12/31/09	1632	937122	8
Liquid Scint Ca45, Solid "Dry Weight Corrected"												
Calcium–45	U	–4.32	+/–15.4	27.1	50.0	pCi/g		GXR1	12/17/09	0357	931882	9
Liquid Scint Ni63, Solid "Dry Weight Corrected"												
Nickel–63	U	0.792	+/–2.39	4.09	4.00	pCi/g		DXM 2	12/15/09	2244	930920	10

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	CXC1	12/07/09	1112	929362

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB17–40R
Sample ID: 242292030

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga–01–R	
2	GL–RAD–A–033	
3	EPA 905.0 Modified	
4	GL–RAD–A–002	
5	EPA EERF C–01 Modified	
6	DOE EML HASL–300, Tc–02–RC Modified	
7	GL–RAD–A–019	
8	NAS–NS–3054	
9	GL–RAD–A–048	
10	DOE RESL Ni–1, Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			96.5	(25%–125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"			86.3	(25%–125%)
Technetium–99m Tracer	Liquid Scint Tc99, Solid "As Received"			94.5	(15%–125%)
Sulfur Carrier	LSC Sulfur 35 Solid "Dry Weight Corrected"			85.1	(25%–125%)
Calcium Carrier	Liquid Scint Ca45, Solid "Dry Weight Corrected"			113	(25%–125%)
Nickel Carrier	Liquid Scint Ni63, Solid "Dry Weight Corrected"			64.8	(25%–125%)

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Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB15–40R	Project:	PIKA00109
Sample ID:	242292031	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 12:00		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	11.9%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"											
Actinium–228		0.811	+/–0.331	0.258		pCi/g		MXR1 12/10/09	1438	930050	1
Americium–241	U	–0.0203	+/–0.0568	0.0933		pCi/g					
Antimony–124	U	–0.0288	+/–0.0764	0.118		pCi/g					
Antimony–125	U	–0.0109	+/–0.0837	0.147		pCi/g					
Barium–133	U	0.0278	+/–0.0509	0.0792		pCi/g					
Barium–140	U	–0.165	+/–0.205	0.324		pCi/g					
Beryllium–7	U	0.0344	+/–0.297	0.525		pCi/g					
Bismuth–212	UI	0.00	+/–0.549	0.685		pCi/g					
Bismuth–214		0.690	+/–0.182	0.130		pCi/g					
Cerium–139	U	0.0118	+/–0.0263	0.0458		pCi/g					
Cerium–141	U	–0.0412	+/–0.0483	0.0799		pCi/g					
Cerium–144	U	–0.0952	+/–0.183	0.311		pCi/g					
Cesium–134	U	0.086	+/–0.0522	0.100		pCi/g					
Cesium–136	U	–0.0704	+/–0.0939	0.148		pCi/g					
Cesium–137	U	–0.00604	+/–0.0396	0.0663	0.100	pCi/g					
Chromium–51	U	0.106	+/–0.302	0.533		pCi/g					
Cobalt–56	U	0.0127	+/–0.0418	0.0738		pCi/g					
Cobalt–57	U	–0.0246	+/–0.0216	0.0356		pCi/g					
Cobalt–58	U	–0.00473	+/–0.040	0.0686		pCi/g					
Cobalt–60	U	0.00554	+/–0.0434	0.0748		pCi/g					
Europium–152	U	0.0137	+/–0.102	0.170		pCi/g					
Europium–154	U	–0.0216	+/–0.132	0.222		pCi/g					
Europium–155	U	0.0235	+/–0.0843	0.152		pCi/g					
Iridium–192	U	–0.0155	+/–0.0306	0.0512		pCi/g					
Iron–59	U	–0.105	+/–0.0959	0.144		pCi/g					
Lead–210		1.00	+/–0.675	0.707		pCi/g					
Lead–212		0.784	+/–0.112	0.0809		pCi/g					
Lead–214		0.927	+/–0.163	0.125		pCi/g					
Manganese–54	U	–0.00675	+/–0.0395	0.0673		pCi/g					
Mercury–203	U	0.0335	+/–0.0351	0.0642		pCi/g					
Neodymium–147	U	–0.035	+/–0.407	0.692		pCi/g					
Neptunium–239	U	–0.143	+/–0.163	0.274		pCi/g					
Niobium–94	U	0.0207	+/–0.0353	0.0621		pCi/g					
Niobium–95	U	0.0599	+/–0.0456	0.0856		pCi/g					
Potassium–40		19.1	+/–1.83	0.588		pCi/g					
Promethium–144	U	–0.000935	+/–0.0383	0.0643		pCi/g					
Promethium–146	U	–0.0136	+/–0.0481	0.0793		pCi/g					

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Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB15–40R
Sample ID: 242292031

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium–228		0.811	+/–0.331	0.258		pCi/g						
Ruthenium–106	U	–0.0628	+/–0.333	0.559		pCi/g						
Silver–110m	U	–0.0239	+/–0.0368	0.059		pCi/g						
Sodium–22	U	–0.00899	+/–0.0468	0.0786		pCi/g						
Thallium–208		0.308	+/–0.0687	0.0628		pCi/g						
Thorium–234	U	0.713	+/–0.881	0.894		pCi/g						
Tin–113	U	0.025	+/–0.0445	0.0779		pCi/g						
Uranium–235	U	0.0106	+/–0.201	0.343		pCi/g						
Uranium–238	U	0.713	+/–0.881	0.894		pCi/g						
Yttrium–88	U	0.0112	+/–0.0319	0.0575		pCi/g						
Zinc–65	U	0.112	+/–0.105	0.171		pCi/g						
Zirconium–95	U	0.0238	+/–0.0773	0.132		pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Chlorine–36 Solid "As Received"												
Chlorine–36	U	1.81	+/–4.34	7.65	50.0	pCi/g		DXM2	12/21/09	1552	930070	2
GFPC, Sr90, solid "Dry Weight Corrected"												
Strontium–90	U	0.0625	+/–0.414	0.752	2.00	pCi/g		JXR1	12/12/09	1311	930071	3
Rad Liquid Scintillation Analysis												
LSC, Tritium Vacuum, Solid "As Received"												
Tritium	U	0.117	+/–0.298	0.524	6.00	pCi/mL		KXK2	12/23/09	1144	930426	4
Liquid Scint C14, Solid "As Received"												
Carbon–14	U	0.263	+/–0.733	1.25	2.00	pCi/g		EXK2	12/18/09	1811	931888	5
Liquid Scint Tc99, Solid "As Received"												
Technetium–99	U	0.0275	+/–1.82	3.15	5.00	pCi/g		AXW2	12/22/09	1137	931885	6
LSC Phosphorus–32 Solid "Dry Weight Corrected"												
Phosphorus–32/33	HU	–21.4	+/–61.8	110		pCi/g		GXR1	01/01/10	0443	937121	7
LSC Sulfur 35 Solid "Dry Weight Corrected"												
Sulfur–35	U	5.77	+/–28.5	49.0	50.0	pCi/g		GXR1	12/31/09	1648	937122	8
Liquid Scint Ca45, Solid "Dry Weight Corrected"												
Calcium–45	U	1.27	+/–17.2	29.8	50.0	pCi/g		GXR1	12/17/09	0419	931882	9
Liquid Scint Ni63, Solid "Dry Weight Corrected"												
Nickel–63	U	–0.385	+/–2.28	3.98	4.00	pCi/g		DXM2	12/15/09	2305	930920	10

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	CXC1	12/07/09	1112	929362

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB15–40R
Sample ID: 242292031

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga–01–R	
2	GL–RAD–A–033	
3	EPA 905.0 Modified	
4	GL–RAD–A–002	
5	EPA EERF C–01 Modified	
6	DOE EML HASL–300, Tc–02–RC Modified	
7	GL–RAD–A–019	
8	NAS–NS–3054	
9	GL–RAD–A–048	
10	DOE RESL Ni–1, Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			98.2	(25%–125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"			88.5	(25%–125%)
Technetium–99m Tracer	Liquid Scint Tc99, Solid "As Received"			94.5	(15%–125%)
Sulfur Carrier	LSC Sulfur 35 Solid "Dry Weight Corrected"			78.4	(25%–125%)
Calcium Carrier	Liquid Scint Ca45, Solid "Dry Weight Corrected"			112	(25%–125%)
Nickel Carrier	Liquid Scint Ni63, Solid "Dry Weight Corrected"			66.8	(25%–125%)

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Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB18–40R	Project:	PIKA00109
Sample ID:	242292032	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	02–DEC–09 13:00		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	12.1%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"											
Actinium–228		0.966	+/–0.248	0.191		pCi/g		MXR1 12/10/09	1449	930050	1
Americium–241	U	0.0326	+/–0.149	0.267		pCi/g					
Antimony–124	U	–0.0246	+/–0.0638	0.0978		pCi/g					
Antimony–125	U	0.0116	+/–0.0772	0.133		pCi/g					
Barium–133	U	0.0402	+/–0.0391	0.0646		pCi/g					
Barium–140	U	0.0139	+/–0.135	0.241		pCi/g					
Beryllium–7	U	0.120	+/–0.241	0.423		pCi/g					
Bismuth–212	UI	0.00	+/–0.389	0.517		pCi/g					
Bismuth–214		0.814	+/–0.142	0.0958		pCi/g					
Cerium–139	U	–0.00435	+/–0.0217	0.039		pCi/g					
Cerium–141	U	–0.00778	+/–0.0447	0.0751		pCi/g					
Cerium–144	U	–0.153	+/–0.165	0.265		pCi/g					
Cesium–134	U	0.0418	+/–0.0388	0.0726		pCi/g					
Cesium–136	U	0.0069	+/–0.0603	0.102		pCi/g					
Cesium–137	U	0.00377	+/–0.0274	0.0482	0.100	pCi/g					
Chromium–51	U	0.0505	+/–0.262	0.461		pCi/g					
Cobalt–56	U	0.007	+/–0.0284	0.0496		pCi/g					
Cobalt–57	U	0.00114	+/–0.0197	0.0339		pCi/g					
Cobalt–58	U	0.0162	+/–0.0285	0.0515		pCi/g					
Cobalt–60	U	–0.0094	+/–0.0324	0.053		pCi/g					
Europium–152	U	–0.0384	+/–0.0867	0.133		pCi/g					
Europium–154	U	0.000143	+/–0.108	0.186		pCi/g					
Europium–155	U	0.0662	+/–0.0919	0.164		pCi/g					
Iridium–192	U	–0.00358	+/–0.0275	0.0474		pCi/g					
Iron–59	U	0.054	+/–0.0707	0.127		pCi/g					
Lead–210	U	–3.15	+/–4.49	7.80		pCi/g					
Lead–212		0.759	+/–0.121	0.107		pCi/g					
Lead–214		0.974	+/–0.165	0.0978		pCi/g					
Manganese–54	U	0.0131	+/–0.0333	0.0587		pCi/g					
Mercury–203	U	0.0272	+/–0.0286	0.0529		pCi/g					
Neodymium–147	U	0.00367	+/–0.287	0.507		pCi/g					
Neptunium–239	U	0.0461	+/–0.158	0.275		pCi/g					
Niobium–94	U	0.0319	+/–0.0291	0.0545		pCi/g					
Niobium–95	U	0.00977	+/–0.0339	0.0595		pCi/g					
Potassium–40		19.7	+/–2.15	0.418		pCi/g					
Promethium–144	U	–0.0156	+/–0.0287	0.0472		pCi/g					
Promethium–146	U	0.0364	+/–0.0367	0.0667		pCi/g					

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Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB18–40R
Sample ID: 242292032

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium–228		0.966	+/–0.248	0.191		pCi/g						
Ruthenium–106	U	–0.0979	+/–0.228	0.379		pCi/g						
Silver–110m	U	–0.00285	+/–0.0255	0.0438		pCi/g						
Sodium–22	U	–0.00857	+/–0.0397	0.0664		pCi/g						
Thallium–208		0.244	+/–0.0605	0.0491		pCi/g						
Thorium–234	U	0.464	+/–1.22	2.18		pCi/g						
Tin–113	U	0.0179	+/–0.0341	0.0607		pCi/g						
Uranium–235	U	–0.111	+/–0.184	0.298		pCi/g						
Uranium–238	U	0.464	+/–1.22	2.18		pCi/g						
Yttrium–88	U	–0.00835	+/–0.0315	0.0493		pCi/g						
Zinc–65	U	–0.0243	+/–0.0913	0.125		pCi/g						
Zirconium–95	U	0.0221	+/–0.0502	0.090		pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Chlorine–36 Solid "As Received"												
Chlorine–36	U	–2.03	+/–3.19	6.50	50.0	pCi/g		DXM2	12/21/09	1552	930070	2
GFPC, Sr90, solid "Dry Weight Corrected"												
Strontium–90	U	–0.0442	+/–0.294	0.570	2.00	pCi/g		JXR1	12/12/09	1311	930071	3
Rad Liquid Scintillation Analysis												
LSC, Tritium Vacuum, Solid "As Received"												
Tritium	U	–0.121	+/–0.279	0.532	6.00	pCi/mL		KXK2	12/23/09	1200	930426	4
Liquid Scint C14, Solid "As Received"												
Carbon–14	U	–0.14	+/–0.723	1.25	2.00	pCi/g		EXK2	12/18/09	1915	931888	5
Liquid Scint Tc99, Solid "As Received"												
Technetium–99	U	0.749	+/–1.82	3.11	5.00	pCi/g		AXW2	12/22/09	1209	931885	6
LSC Phosphorus–32 Solid "Dry Weight Corrected"												
Phosphorus–32/33	HU	–19.3	+/–59.9	106		pCi/g		GXR1	01/01/10	0500	937121	7
LSC Sulfur 35 Solid "Dry Weight Corrected"												
Sulfur–35	U	14.1	+/–26.4	44.8	50.0	pCi/g		GXR1	12/31/09	1705	937122	8
Liquid Scint Ca45, Solid "Dry Weight Corrected"												
Calcium–45	U	1.49	+/–16.2	27.9	50.0	pCi/g		GXR1	12/17/09	0441	931882	9
Liquid Scint Ni63, Solid "Dry Weight Corrected"												
Nickel–63	U	0.201	+/–2.16	3.74	4.00	pCi/g		DXM2	12/15/09	2327	930920	10

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	CXC1	12/07/09	1112	929362

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB18–40R
Sample ID: 242292032

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga–01–R	
2	GL–RAD–A–033	
3	EPA 905.0 Modified	
4	GL–RAD–A–002	
5	EPA EERF C–01 Modified	
6	DOE EML HASL–300, Tc–02–RC Modified	
7	GL–RAD–A–019	
8	NAS–NS–3054	
9	GL–RAD–A–048	
10	DOE RESL Ni–1, Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			96.3	(25%–125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"			88.5	(25%–125%)
Technetium–99m Tracer	Liquid Scint Tc99, Solid "As Received"			96.2	(15%–125%)
Sulfur Carrier	LSC Sulfur 35 Solid "Dry Weight Corrected"			83.4	(25%–125%)
Calcium Carrier	Liquid Scint Ca45, Solid "Dry Weight Corrected"			112	(25%–125%)
Nickel Carrier	Liquid Scint Ni63, Solid "Dry Weight Corrected"			71.3	(25%–125%)

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Certificate of Analysis

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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB20–40R	Project:	PIKA00109
Sample ID:	242292033	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	03–DEC–09 07:50		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	14%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"											
Actinium–228		0.843	+/–0.283	0.205		pCi/g		MXR1 12/10/09	1531	930050	1
Americium–241	U	0.0571	+/–0.161	0.276		pCi/g					
Antimony–124	U	0.0167	+/–0.0616	0.110		pCi/g					
Antimony–125	U	0.0232	+/–0.0889	0.155		pCi/g					
Barium–133	U	–0.0192	+/–0.0445	0.0651		pCi/g					
Barium–140	U	–0.031	+/–0.154	0.253		pCi/g					
Beryllium–7	U	0.0536	+/–0.268	0.461		pCi/g					
Bismuth–212	UI	0.00	+/–0.349	0.623		pCi/g					
Bismuth–214		0.754	+/–0.160	0.101		pCi/g					
Cerium–139	U	–0.0164	+/–0.0257	0.0429		pCi/g					
Cerium–141	U	–0.0416	+/–0.0474	0.0792		pCi/g					
Cerium–144	U	–0.17	+/–0.175	0.290		pCi/g					
Cesium–134	U	0.0344	+/–0.0448	0.081		pCi/g					
Cesium–136	U	–0.0449	+/–0.0689	0.111		pCi/g					
Cesium–137	U	–0.0133	+/–0.0328	0.0547	0.100	pCi/g					
Chromium–51	U	0.0788	+/–0.275	0.492		pCi/g					
Cobalt–56	U	–0.0142	+/–0.0361	0.0586		pCi/g					
Cobalt–57	U	0.0224	+/–0.0223	0.0412		pCi/g					
Cobalt–58	U	–0.0115	+/–0.0319	0.0521		pCi/g					
Cobalt–60	U	0.0331	+/–0.0336	0.0639		pCi/g					
Europium–152	U	–0.0138	+/–0.0937	0.150		pCi/g					
Europium–154	U	–0.068	+/–0.115	0.181		pCi/g					
Europium–155	U	0.0128	+/–0.0853	0.154		pCi/g					
Iridium–192	U	0.0162	+/–0.0305	0.0552		pCi/g					
Iron–59	U	–0.0463	+/–0.0778	0.126		pCi/g					
Lead–210	U	0.515	+/–5.01	8.58		pCi/g					
Lead–212		1.02	+/–0.158	0.0837		pCi/g					
Lead–214		0.940	+/–0.193	0.108		pCi/g					
Manganese–54	U	–0.00245	+/–0.0342	0.0574		pCi/g					
Mercury–203	U	–0.00789	+/–0.0324	0.0568		pCi/g					
Neodymium–147	U	–0.192	+/–0.330	0.521		pCi/g					
Neptunium–239	U	–0.12	+/–0.152	0.258		pCi/g					
Niobium–94	U	0.0158	+/–0.0313	0.056		pCi/g					
Niobium–95	U	0.0067	+/–0.0384	0.0664		pCi/g					
Potassium–40		20.3	+/–2.38	0.468		pCi/g					
Promethium–144	U	–0.0203	+/–0.0298	0.0482		pCi/g					
Promethium–146	U	–0.00174	+/–0.0395	0.0669		pCi/g					

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB20–40R
Sample ID: 242292033

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium–228		0.843	+/–0.283	0.205		pCi/g						
Ruthenium–106	U	–0.183	+/–0.289	0.476		pCi/g						
Silver–110m	U	0.0154	+/–0.0293	0.0531		pCi/g						
Sodium–22	U	–0.0251	+/–0.041	0.0643		pCi/g						
Thallium–208		0.238	+/–0.0677	0.0569		pCi/g						
Thorium–234	U	1.11	+/–1.91	2.11		pCi/g						
Tin–113	U	0.00222	+/–0.0388	0.0673		pCi/g						
Uranium–235	U	–0.00943	+/–0.198	0.344		pCi/g						
Uranium–238	U	1.11	+/–1.91	2.11		pCi/g						
Yttrium–88	U	0.0233	+/–0.0278	0.0548		pCi/g						
Zinc–65	U	0.0474	+/–0.0849	0.136		pCi/g						
Zirconium–95	U	0.0215	+/–0.0633	0.111		pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Chlorine–36 Solid "As Received"												
Chlorine–36	U	5.11	+/–4.73	7.77	50.0	pCi/g		DXM2	12/21/09	1552	930070	2
GFPC, Sr90, solid "Dry Weight Corrected"												
Strontium–90	U	0.363	+/–0.481	0.819	2.00	pCi/g		JXR1	12/12/09	1312	930071	3
Rad Liquid Scintillation Analysis												
LSC, Tritium Vacuum, Solid "As Received"												
Tritium	U	–0.253	+/–0.263	0.527	6.00	pCi/mL		KXK2	12/23/09	1217	930426	4
Liquid Scint C14, Solid "As Received"												
Carbon–14	U	0.303	+/–0.736	1.25	2.00	pCi/g		EXK2	12/18/09	2019	931888	5
Liquid Scint Tc99, Solid "As Received"												
Technetium–99	U	–0.434	+/–1.72	2.99	5.00	pCi/g		AXW2	12/22/09	1241	931885	6
LSC Phosphorus–32 Solid "Dry Weight Corrected"												
Phosphorus–32/33	HU	–1.33	+/–55.5	97.0		pCi/g		GXR1	01/01/10	0516	937121	7
LSC Sulfur 35 Solid "Dry Weight Corrected"												
Sulfur–35	U	24.7	+/–27.2	45.7	50.0	pCi/g		GXR1	12/31/09	1721	937122	8
Liquid Scint Ca45, Solid "Dry Weight Corrected"												
Calcium–45	U	0.00	+/–17.3	30.0	50.0	pCi/g		GXR1	12/17/09	0502	931882	9
Liquid Scint Ni63, Solid "Dry Weight Corrected"												
Nickel–63	U	–0.262	+/–2.00	3.48	4.00	pCi/g		DXM2	12/15/09	2348	930920	10

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	CXC1	12/07/09	1112	929362

Certificate of Analysis

Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB20–40R
Sample ID: 242292033

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga–01–R	
2	GL–RAD–A–033	
3	EPA 905.0 Modified	
4	GL–RAD–A–002	
5	EPA EERF C–01 Modified	
6	DOE EML HASL–300, Tc–02–RC Modified	
7	GL–RAD–A–019	
8	NAS–NS–3054	
9	GL–RAD–A–048	
10	DOE RESL Ni–1, Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			98.9	(25%–125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"			87.4	(25%–125%)
Technetium–99m Tracer	Liquid Scint Tc99, Solid "As Received"			99.3	(15%–125%)
Sulfur Carrier	LSC Sulfur 35 Solid "Dry Weight Corrected"			87.4	(25%–125%)
Calcium Carrier	Liquid Scint Ca45, Solid "Dry Weight Corrected"			112	(25%–125%)
Nickel Carrier	Liquid Scint Ni63, Solid "Dry Weight Corrected"			77.0	(25%–125%)

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Certificate of Analysis

Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB21–40R	Project:	PIKA00109
Sample ID:	242292034	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	03–DEC–09 09:10		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	14.5%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"											
Actinium–228		0.803	+/–0.256	0.173		pCi/g		MXR1 12/10/09	1532	930050	1
Americium–241	U	0.0289	+/–0.088	0.144		pCi/g					
Antimony–124	U	–0.0228	+/–0.0605	0.0915		pCi/g					
Antimony–125	U	–0.0419	+/–0.078	0.126		pCi/g					
Barium–133	U	–0.00208	+/–0.0417	0.0632		pCi/g					
Barium–140	U	0.0342	+/–0.131	0.233		pCi/g					
Beryllium–7	U	0.119	+/–0.250	0.436		pCi/g					
Bismuth–212	UI	0.00	+/–0.305	0.567		pCi/g					
Bismuth–214		0.702	+/–0.141	0.0927		pCi/g					
Cerium–139	U	0.00147	+/–0.0223	0.0378		pCi/g					
Cerium–141	U	0.0139	+/–0.0437	0.0745		pCi/g					
Cerium–144	U	0.0403	+/–0.161	0.279		pCi/g					
Cesium–134	U	0.0273	+/–0.0385	0.0696		pCi/g					
Cesium–136	U	0.0104	+/–0.0633	0.111		pCi/g					
Cesium–137	U	–0.024	+/–0.0291	0.046	0.100	pCi/g					
Chromium–51	U	0.159	+/–0.257	0.462		pCi/g					
Cobalt–56	U	–0.0129	+/–0.0323	0.0522		pCi/g					
Cobalt–57	U	–0.0103	+/–0.0201	0.0332		pCi/g					
Cobalt–58	U	0.0144	+/–0.0281	0.0502		pCi/g					
Cobalt–60	U	0.00458	+/–0.0305	0.0526		pCi/g					
Europium–152	U	–0.039	+/–0.082	0.131		pCi/g					
Europium–154	U	–0.0232	+/–0.105	0.174		pCi/g					
Europium–155	U	0.0903	+/–0.0797	0.145		pCi/g					
Iridium–192	U	–0.004	+/–0.0277	0.0464		pCi/g					
Iron–59	U	0.0423	+/–0.0698	0.127		pCi/g					
Lead–210	U	–1.03	+/–1.46	2.59		pCi/g					
Lead–212		0.992	+/–0.126	0.0729		pCi/g					
Lead–214		0.694	+/–0.140	0.101		pCi/g					
Manganese–54	U	–0.0364	+/–0.0334	0.0501		pCi/g					
Mercury–203	U	–0.0117	+/–0.0283	0.0483		pCi/g					
Neodymium–147	U	0.0272	+/–0.254	0.450		pCi/g					
Neptunium–239	U	0.0134	+/–0.147	0.255		pCi/g					
Niobium–94	U	0.00912	+/–0.0283	0.0498		pCi/g					
Niobium–95	U	–0.0108	+/–0.0322	0.0531		pCi/g					
Potassium–40		20.8	+/–2.25	0.548		pCi/g					
Promethium–144	U	–0.00921	+/–0.0292	0.0487		pCi/g					
Promethium–146	U	0.018	+/–0.037	0.0646		pCi/g					

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB21–40R
Sample ID: 242292034

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium–228		0.803	+/–0.256	0.173		pCi/g						
Ruthenium–106	U	0.141	+/–0.246	0.448		pCi/g						
Silver–110m	U	–0.00851	+/–0.0251	0.0418		pCi/g						
Sodium–22	U	–0.00525	+/–0.0368	0.0615		pCi/g						
Thallium–208		0.279	+/–0.0733	0.0518		pCi/g						
Thorium–234	U	0.765	+/–1.14	1.28		pCi/g						
Tin–113	U	–0.00177	+/–0.0333	0.0566		pCi/g						
Uranium–235	U	–0.0636	+/–0.172	0.283		pCi/g						
Uranium–238	U	0.765	+/–1.14	1.28		pCi/g						
Yttrium–88	U	–0.0102	+/–0.0274	0.0429		pCi/g						
Zinc–65	U	–0.0445	+/–0.0833	0.113		pCi/g						
Zirconium–95	U	0.00693	+/–0.0556	0.0959		pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Chlorine–36 Solid "As Received"												
Chlorine–36	U	1.30	+/–2.96	5.36	50.0	pCi/g		DXM 2	12/21/09	1552	930070	2
GFPC, Sr90, solid "Dry Weight Corrected"												
Strontium–90	U	0.220	+/–0.285	0.486	2.00	pCi/g		JXR1	12/12/09	2020	930071	3
Rad Liquid Scintillation Analysis												
LSC, Tritium Vacuum, Solid "As Received"												
Tritium	U	–0.0753	+/–0.282	0.529	6.00	pCi/mL		KXK2	12/23/09	1233	930426	4
Liquid Scint C14, Solid "As Received"												
Carbon–14	U	–0.133	+/–0.746	1.29	2.00	pCi/g		EXK2	12/18/09	2123	931888	5
Liquid Scint Tc99, Solid "As Received"												
Technetium–99	U	–0.375	+/–1.72	3.00	5.00	pCi/g		AXW 2	12/22/09	1312	931885	6
LSC Phosphorus–32 Solid "Dry Weight Corrected"												
Phosphorus–32/33	HU	23.8	+/–59.1	102		pCi/g		GXR1	01/01/10	0533	937121	7
LSC Sulfur 35 Solid "Dry Weight Corrected"												
Sulfur–35	U	12.9	+/–28.5	48.6	50.0	pCi/g		GXR1	12/31/09	1802	937122	8
Liquid Scint Ca45, Solid "Dry Weight Corrected"												
Calcium–45	U	7.99	+/–17.6	30.0	50.0	pCi/g		GXR1	12/17/09	0524	931882	9
Liquid Scint Ni63, Solid "Dry Weight Corrected"												
Nickel–63	U	–0.0787	+/–2.11	3.66	4.00	pCi/g		DXM 2	12/16/09	0010	930920	10

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	CXC1	12/07/09	1112	929362

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB21–40R
Sample ID: 242292034

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga–01–R	
2	GL–RAD–A–033	
3	EPA 905.0 Modified	
4	GL–RAD–A–002	
5	EPA EERF C–01 Modified	
6	DOE EML HASL–300, Tc–02–RC Modified	
7	GL–RAD–A–019	
8	NAS–NS–3054	
9	GL–RAD–A–048	
10	DOE RESL Ni–1, Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			98.4	(25%–125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"			88.5	(25%–125%)
Technetium–99m Tracer	Liquid Scint Tc99, Solid "As Received"			99.7	(15%–125%)
Sulfur Carrier	LSC Sulfur 35 Solid "Dry Weight Corrected"			85.3	(25%–125%)
Calcium Carrier	Liquid Scint Ca45, Solid "Dry Weight Corrected"			106	(25%–125%)
Nickel Carrier	Liquid Scint Ni63, Solid "Dry Weight Corrected"			73.8	(25%–125%)

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Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB22–40R	Project:	PIKA00109
Sample ID:	242292035	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	03–DEC–09 09:55		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	14.1%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"											
Actinium–228		0.728	+/–0.209	0.162		pCi/g		MXR1 12/10/09	1532	930050	1
Americium–241	U	–0.0239	+/–0.155	0.285		pCi/g					
Antimony–124	U	–0.00176	+/–0.055	0.091		pCi/g					
Antimony–125	U	0.0225	+/–0.0678	0.120		pCi/g					
Barium–133	U	0.0226	+/–0.0322	0.0528		pCi/g					
Barium–140	U	–0.000504	+/–0.108	0.183		pCi/g					
Beryllium–7	U	–0.0164	+/–0.200	0.340		pCi/g					
Bismuth–212	UI	0.00	+/–0.309	0.530		pCi/g					
Bismuth–214		0.587	+/–0.117	0.0932		pCi/g					
Cerium–139	U	–0.000717	+/–0.0204	0.0353		pCi/g					
Cerium–141	U	0.00175	+/–0.0375	0.0658		pCi/g					
Cerium–144	U	0.187	+/–0.144	0.265		pCi/g					
Cesium–134	U	0.0395	+/–0.032	0.0613		pCi/g					
Cesium–136	U	–0.0537	+/–0.0589	0.0882		pCi/g					
Cesium–137	U	–0.0234	+/–0.0266	0.043	0.100	pCi/g					
Chromium–51	U	0.153	+/–0.217	0.400		pCi/g					
Cobalt–56	U	–0.00685	+/–0.0281	0.0469		pCi/g					
Cobalt–57	U	–0.0189	+/–0.018	0.030		pCi/g					
Cobalt–58	U	–0.0111	+/–0.0266	0.0437		pCi/g					
Cobalt–60	U	–0.00856	+/–0.0277	0.0452		pCi/g					
Europium–152	U	–0.0209	+/–0.0711	0.113		pCi/g					
Europium–154	U	0.0694	+/–0.0967	0.178		pCi/g					
Europium–155	U	0.0966	+/–0.0753	0.142		pCi/g					
Iridium–192	U	–0.0249	+/–0.0239	0.0394		pCi/g					
Iron–59	U	–0.0246	+/–0.0636	0.101		pCi/g					
Lead–210	U	–7.44	+/–5.98	10.5		pCi/g					
Lead–212		0.744	+/–0.0887	0.0671		pCi/g					
Lead–214		0.746	+/–0.137	0.0848		pCi/g					
Manganese–54	U	0.014	+/–0.028	0.0502		pCi/g					
Mercury–203	U	0.013	+/–0.027	0.0496		pCi/g					
Neodymium–147	U	–0.088	+/–0.233	0.379		pCi/g					
Neptunium–239	U	–0.0896	+/–0.134	0.230		pCi/g					
Niobium–94	U	–0.00302	+/–0.0253	0.0436		pCi/g					
Niobium–95	U	0.0331	+/–0.0308	0.0523		pCi/g					
Potassium–40		21.1	+/–2.24	0.298		pCi/g					
Promethium–144	U	0.000726	+/–0.0256	0.0448		pCi/g					
Promethium–146	U	–0.00549	+/–0.0308	0.0521		pCi/g					

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Certificate of Analysis

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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB22–40R
Sample ID: 242292035

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium–228		0.728	+/–0.209	0.162		pCi/g						
Ruthenium–106	U	–0.0732	+/–0.218	0.373		pCi/g						
Silver–110m	U	–0.00407	+/–0.0224	0.0387		pCi/g						
Sodium–22	U	0.0209	+/–0.0348	0.0635		pCi/g						
Thallium–208		0.273	+/–0.0593	0.042		pCi/g						
Thorium–234	U	–0.142	+/–1.31	2.38		pCi/g						
Tin–113	U	–0.00219	+/–0.0303	0.0525		pCi/g						
Uranium–235	U	0.0112	+/–0.151	0.260		pCi/g						
Uranium–238	U	–0.142	+/–1.31	2.38		pCi/g						
Yttrium–88	U	–0.0198	+/–0.0225	0.0277		pCi/g						
Zinc–65	U	0.0204	+/–0.0776	0.116		pCi/g						
Zirconium–95	U	–0.000804	+/–0.0478	0.0827		pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Chlorine–36 Solid "As Received"												
Chlorine–36	U	–0.195	+/–2.38	4.85	50.0	pCi/g		DXM2	12/21/09	1552	930070	2
GFPC, Sr90, solid "Dry Weight Corrected"												
Strontium–90	U	0.171	+/–0.328	0.580	2.00	pCi/g		JXR1	12/12/09	2020	930071	3
Rad Liquid Scintillation Analysis												
LSC, Tritium Vacuum, Solid "As Received"												
Tritium	U	–0.105	+/–0.278	0.526	6.00	pCi/mL		KXK2	12/23/09	1249	930426	4
Liquid Scint C14, Solid "As Received"												
Carbon–14	U	–0.252	+/–0.754	1.30	2.00	pCi/g		EXK2	12/18/09	2227	931888	5
Liquid Scint Tc99, Solid "As Received"												
Technetium–99	U	–0.627	+/–1.69	2.96	5.00	pCi/g		AXW2	12/22/09	1344	931885	6
LSC Phosphorus–32 Solid "Dry Weight Corrected"												
Phosphorus–32/33	HU	26.7	+/–60.1	103		pCi/g		GXR1	01/01/10	0549	937121	7
LSC Sulfur 35 Solid "Dry Weight Corrected"												
Sulfur–35	U	6.32	+/–26.6	45.7	50.0	pCi/g		GXR1	12/31/09	1818	937122	8
Liquid Scint Ca45, Solid "Dry Weight Corrected"												
Calcium–45	U	5.80	+/–16.7	28.7	50.0	pCi/g		GXR1	12/17/09	0545	931882	9
Liquid Scint Ni63, Solid "Dry Weight Corrected"												
Nickel–63	U	–0.202	+/–2.16	3.76	4.00	pCi/g		DXM2	12/16/09	0031	930920	10

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	CXC1	12/07/09	1112	929362

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB22–40R
Sample ID: 242292035

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga–01–R	
2	GL–RAD–A–033	
3	EPA 905.0 Modified	
4	GL–RAD–A–002	
5	EPA EERF C–01 Modified	
6	DOE EML HASL–300, Tc–02–RC Modified	
7	GL–RAD–A–019	
8	NAS–NS–3054	
9	GL–RAD–A–048	
10	DOE RESL Ni–1, Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			98.3	(25%–125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"			79.6	(25%–125%)
Technetium–99m Tracer	Liquid Scint Tc99, Solid "As Received"			100	(15%–125%)
Sulfur Carrier	LSC Sulfur 35 Solid "Dry Weight Corrected"			84.3	(25%–125%)
Calcium Carrier	Liquid Scint Ca45, Solid "Dry Weight Corrected"			115	(25%–125%)
Nickel Carrier	Liquid Scint Ni63, Solid "Dry Weight Corrected"			71.7	(25%–125%)

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Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB23–40R	Project:	PIKA00109
Sample ID:	242292036	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	03–DEC–09 10:45		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	10.5%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"											
Actinium–228		1.20	+/–0.281	0.175		pCi/g		MXR1 12/10/09	1533	930050	1
Americium–241	U	0.0536	+/–0.127	0.215		pCi/g					
Antimony–124	U	–0.00826	+/–0.0465	0.0757		pCi/g					
Antimony–125	U	0.00346	+/–0.073	0.125		pCi/g					
Barium–133	U	–0.00204	+/–0.0384	0.057		pCi/g					
Barium–140	U	–0.101	+/–0.138	0.218		pCi/g					
Beryllium–7	U	–0.175	+/–0.239	0.376		pCi/g					
Bismuth–212	UI	0.00	+/–0.335	0.524		pCi/g					
Bismuth–214		0.797	+/–0.137	0.0879		pCi/g					
Cerium–139	U	–0.00278	+/–0.0234	0.040		pCi/g					
Cerium–141	U	–0.021	+/–0.0406	0.0684		pCi/g					
Cerium–144	U	–0.0993	+/–0.156	0.263		pCi/g					
Cesium–134	U	0.066	+/–0.0453	0.0746		pCi/g					
Cesium–136	U	–0.00876	+/–0.0643	0.109		pCi/g					
Cesium–137	U	–0.0381	+/–0.0318	0.0484	0.100	pCi/g					
Chromium–51	U	–0.124	+/–0.241	0.406		pCi/g					
Cobalt–56	U	–0.000306	+/–0.032	0.0538		pCi/g					
Cobalt–57	U	–0.00393	+/–0.019	0.0329		pCi/g					
Cobalt–58	U	–0.026	+/–0.0296	0.0451		pCi/g					
Cobalt–60	U	0.000474	+/–0.0351	0.0591		pCi/g					
Europium–152	U	0.0224	+/–0.0828	0.130		pCi/g					
Europium–154	U	0.0062	+/–0.109	0.185		pCi/g					
Europium–155	U	0.0831	+/–0.081	0.150		pCi/g					
Iridium–192	U	0.0067	+/–0.0239	0.0426		pCi/g					
Iron–59	U	–0.0301	+/–0.0641	0.104		pCi/g					
Lead–210	U	0.232	+/–2.57	4.69		pCi/g					
Lead–212		0.882	+/–0.101	0.0765		pCi/g					
Lead–214		0.843	+/–0.138	0.0902		pCi/g					
Manganese–54	U	0.0257	+/–0.0328	0.0591		pCi/g					
Mercury–203	U	0.0169	+/–0.028	0.0511		pCi/g					
Neodymium–147	U	–0.147	+/–0.284	0.449		pCi/g					
Neptunium–239	U	0.0501	+/–0.142	0.255		pCi/g					
Niobium–94	U	0.0232	+/–0.029	0.0529		pCi/g					
Niobium–95	U	0.0431	+/–0.0324	0.0612		pCi/g					
Potassium–40		21.0	+/–2.05	0.498		pCi/g					
Promethium–144	U	–0.0356	+/–0.0288	0.0437		pCi/g					
Promethium–146	U	0.0186	+/–0.0327	0.0581		pCi/g					

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB23–40R
Sample ID: 242292036

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium–228		1.20	+/–0.281	0.175		pCi/g						
Ruthenium–106	U	0.066	+/–0.251	0.447		pCi/g						
Silver–110m	U	0.0175	+/–0.0256	0.0469		pCi/g						
Sodium–22	U	0.00221	+/–0.0389	0.066		pCi/g						
Thallium–208		0.318	+/–0.0678	0.049		pCi/g						
Thorium–234	U	1.20	+/–1.35	1.76		pCi/g						
Tin–113	U	–0.0115	+/–0.0331	0.0552		pCi/g						
Uranium–235	U	0.159	+/–0.168	0.298		pCi/g						
Uranium–238	U	1.20	+/–1.35	1.76		pCi/g						
Yttrium–88	U	–0.0076	+/–0.0284	0.0453		pCi/g						
Zinc–65	U	–0.0195	+/–0.0796	0.113		pCi/g						
Zirconium–95	U	0.0125	+/–0.0529	0.0923		pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Chlorine–36 Solid "As Received"												
Chlorine–36	U	0.549	+/–2.93	5.53	50.0	pCi/g		DXM2	12/21/09	1552	930070	2
GFPC, Sr90, solid "Dry Weight Corrected"												
Strontium–90	U	–0.168	+/–0.174	0.412	2.00	pCi/g		JXR1	12/12/09	2020	930071	3
Rad Liquid Scintillation Analysis												
LSC, Tritium Vacuum, Solid "As Received"												
Tritium	U	–0.34	+/–0.279	0.571	6.00	pCi/mL		KXK2	12/23/09	1305	930426	4
Liquid Scint C14, Solid "As Received"												
Carbon–14	U	0.417	+/–0.732	1.24	2.00	pCi/g		EXK2	12/18/09	2330	931888	5
Liquid Scint Tc99, Solid "As Received"												
Technetium–99	U	–0.841	+/–1.70	2.98	5.00	pCi/g		AXW2	12/22/09	1416	931885	6
LSC Phosphorus–32 Solid "Dry Weight Corrected"												
Phosphorus–32/33	HU	13.8	+/–56.2	97.0		pCi/g		GXR1	01/01/10	0605	937121	7
LSC Sulfur 35 Solid "Dry Weight Corrected"												
Sulfur–35	U	8.13	+/–25.4	43.5	50.0	pCi/g		GXR1	12/31/09	1834	937122	8
Liquid Scint Ca45, Solid "Dry Weight Corrected"												
Calcium–45	U	10.4	+/–16.4	27.9	50.0	pCi/g		GXR1	12/17/09	0607	931882	9
Liquid Scint Ni63, Solid "Dry Weight Corrected"												
Nickel–63	U	–0.419	+/–2.24	3.91	4.00	pCi/g		DXM2	12/16/09	0052	930920	10

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	CXC1	12/07/09	1112	929362

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB23–40R
Sample ID: 242292036

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga–01–R	
2	GL–RAD–A–033	
3	EPA 905.0 Modified	
4	GL–RAD–A–002	
5	EPA EERF C–01 Modified	
6	DOE EML HASL–300, Tc–02–RC Modified	
7	GL–RAD–A–019	
8	NAS–NS–3054	
9	GL–RAD–A–048	
10	DOE RESL Ni–1, Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			97.8	(25%–125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"			91.9	(25%–125%)
Technetium–99m Tracer	Liquid Scint Tc99, Solid "As Received"			100	(15%–125%)
Sulfur Carrier	LSC Sulfur 35 Solid "Dry Weight Corrected"			83.2	(25%–125%)
Calcium Carrier	Liquid Scint Ca45, Solid "Dry Weight Corrected"			114	(25%–125%)
Nickel Carrier	Liquid Scint Ni63, Solid "Dry Weight Corrected"			68.9	(25%–125%)

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Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB24–40R	Project:	PIKA00109
Sample ID:	242292037	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	03–DEC–09 13:00		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	9.49%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"											
Actinium–228		0.976	+/–0.234	0.161		pCi/g		MXR1 12/10/09	1533	930050	1
Americium–241	U	0.0772	+/–0.103	0.172		pCi/g					
Antimony–124	U	–0.0127	+/–0.042	0.0639		pCi/g					
Antimony–125	U	–0.004	+/–0.0634	0.111		pCi/g					
Barium–133	U	0.00784	+/–0.0332	0.0525		pCi/g					
Barium–140	U	0.0107	+/–0.124	0.216		pCi/g					
Beryllium–7	U	–0.0686	+/–0.205	0.349		pCi/g					
Bismuth–212	UI	0.00	+/–0.267	0.516		pCi/g					
Bismuth–214		0.689	+/–0.118	0.0769		pCi/g					
Cerium–139	U	–0.00808	+/–0.0219	0.0378		pCi/g					
Cerium–141	U	0.00174	+/–0.0421	0.073		pCi/g					
Cerium–144	U	0.00375	+/–0.155	0.275		pCi/g					
Cesium–134	U	0.0502	+/–0.0387	0.0716		pCi/g					
Cesium–136	U	0.0204	+/–0.0554	0.0986		pCi/g					
Cesium–137	U	0.00766	+/–0.0283	0.0493	0.100	pCi/g					
Chromium–51	U	–0.114	+/–0.220	0.371		pCi/g					
Cobalt–56	U	0.000327	+/–0.0266	0.0466		pCi/g					
Cobalt–57	U	0.00115	+/–0.0184	0.033		pCi/g					
Cobalt–58	U	–0.014	+/–0.029	0.0464		pCi/g					
Cobalt–60	U	–0.00198	+/–0.0293	0.049		pCi/g					
Europium–152	U	0.0648	+/–0.106	0.122		pCi/g					
Europium–154	U	0.0544	+/–0.0995	0.178		pCi/g					
Europium–155	U	0.0793	+/–0.0806	0.150		pCi/g					
Iridium–192	U	–0.000417	+/–0.0233	0.0418		pCi/g					
Iron–59	U	–0.0224	+/–0.0639	0.106		pCi/g					
Lead–210	U	–0.575	+/–1.72	3.20		pCi/g					
Lead–212		0.948	+/–0.105	0.0705		pCi/g					
Lead–214		0.923	+/–0.136	0.0849		pCi/g					
Manganese–54	U	0.0248	+/–0.0293	0.0544		pCi/g					
Mercury–203	U	–0.00997	+/–0.0264	0.0467		pCi/g					
Neodymium–147	U	0.0215	+/–0.249	0.434		pCi/g					
Neptunium–239	U	–0.0419	+/–0.144	0.255		pCi/g					
Niobium–94	U	–0.0259	+/–0.0258	0.0398		pCi/g					
Niobium–95	UI	0.00	+/–0.0339	0.0595		pCi/g					
Potassium–40		22.2	+/–2.13	0.472		pCi/g					
Promethium–144	U	–0.0161	+/–0.0257	0.0412		pCi/g					
Promethium–146	U	0.00388	+/–0.0338	0.0543		pCi/g					

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Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB24–40R
Sample ID: 242292037

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium–228		0.976	+/–0.234	0.161		pCi/g						
Ruthenium–106	U	–0.209	+/–0.254	0.394		pCi/g						
Silver–110m	U	0.0142	+/–0.0262	0.0467		pCi/g						
Sodium–22	U	0.0191	+/–0.0354	0.0632		pCi/g						
Thallium–208		0.292	+/–0.0638	0.0447		pCi/g						
Thorium–234	U	1.24	+/–1.14	1.48		pCi/g						
Tin–113	U	–0.00828	+/–0.0299	0.0518		pCi/g						
Uranium–235	U	0.0325	+/–0.166	0.290		pCi/g						
Uranium–238	U	1.24	+/–1.14	1.48		pCi/g						
Yttrium–88	U	–0.0156	+/–0.021	0.0295		pCi/g						
Zinc–65	U	0.0116	+/–0.0744	0.112		pCi/g						
Zirconium–95	U	0.0588	+/–0.0496	0.0921		pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Chlorine–36 Solid "As Received"												
Chlorine–36	U	–1.55	+/–4.08	7.98	50.0	pCi/g		DXM 2	12/21/09	1552	930070	2
GFPC, Sr90, solid "Dry Weight Corrected"												
Strontium–90	U	–0.163	+/–0.226	0.487	2.00	pCi/g		JXR1	12/12/09	2020	930071	3
Rad Liquid Scintillation Analysis												
LSC, Tritium Vacuum, Solid "As Received"												
Tritium	U	–0.149	+/–0.276	0.530	6.00	pCi/mL		KXK2	12/23/09	1322	930426	4
Liquid Scint C14, Solid "As Received"												
Carbon–14	U	0.122	+/–0.724	1.24	2.00	pCi/g		EXK2	12/19/09	0033	931888	5
Liquid Scint Tc99, Solid "As Received"												
Technetium–99	U	0.114	+/–1.76	3.03	5.00	pCi/g		AXW 2	12/22/09	1448	931885	6
LSC Phosphorus–32 Solid "Dry Weight Corrected"												
Phosphorus–32/33	HU	–1.3	+/–54.3	95.0		pCi/g		GXR1	01/01/10	0622	937121	7
LSC Sulfur 35 Solid "Dry Weight Corrected"												
Sulfur–35	U	9.18	+/–26.0	44.5	50.0	pCi/g		GXR1	12/31/09	1850	937122	8
Liquid Scint Ca45, Solid "Dry Weight Corrected"												
Calcium–45	U	2.01	+/–18.2	31.4	50.0	pCi/g		GXR1	12/17/09	0628	931882	9
Liquid Scint Ni63, Solid "Dry Weight Corrected"												
Nickel–63	U	–1.48	+/–2.21	3.93	4.00	pCi/g		DXM 2	12/16/09	0114	930920	10

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	CXC1	12/07/09	1112	929362

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB24–40R
Sample ID: 242292037

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga–01–R	
2	GL–RAD–A–033	
3	EPA 905.0 Modified	
4	GL–RAD–A–002	
5	EPA EERF C–01 Modified	
6	DOE EML HASL–300, Tc–02–RC Modified	
7	GL–RAD–A–019	
8	NAS–NS–3054	
9	GL–RAD–A–048	
10	DOE RESL Ni–1, Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			97.4	(25%–125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"			91.9	(25%–125%)
Technetium–99m Tracer	Liquid Scint Tc99, Solid "As Received"			98.0	(15%–125%)
Sulfur Carrier	LSC Sulfur 35 Solid "Dry Weight Corrected"			89.6	(25%–125%)
Calcium Carrier	Liquid Scint Ca45, Solid "Dry Weight Corrected"			105	(25%–125%)
Nickel Carrier	Liquid Scint Ni63, Solid "Dry Weight Corrected"			68.0	(25%–125%)

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Certificate of Analysis

Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB26–40R	Project:	PIKA00109
Sample ID:	242292038	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	03–DEC–09 14:10		
Receive Date:	04–DEC–09		
Collector:	Client		
Moisture:	9.54%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"											
Actinium–228		1.23	+/–0.269	0.145		pCi/g		MXR1 12/10/09	1534	930050	1
Americium–241	U	0.141	+/–0.108	0.185		pCi/g					
Antimony–124	U	0.0129	+/–0.0437	0.0771		pCi/g					
Antimony–125	U	–0.00413	+/–0.0715	0.122		pCi/g					
Barium–133	U	–0.0261	+/–0.0389	0.0556		pCi/g					
Barium–140	U	–0.0355	+/–0.122	0.209		pCi/g					
Beryllium–7	U	–0.0352	+/–0.232	0.388		pCi/g					
Bismuth–212	UI	0.00	+/–0.373	0.444		pCi/g					
Bismuth–214		0.697	+/–0.143	0.0888		pCi/g					
Cerium–139	U	0.013	+/–0.0218	0.0395		pCi/g					
Cerium–141	U	0.0323	+/–0.0418	0.0767		pCi/g					
Cerium–144	U	0.029	+/–0.147	0.268		pCi/g					
Cesium–134	U	0.0564	+/–0.0347	0.0634		pCi/g					
Cesium–136	U	–0.000948	+/–0.0518	0.0869		pCi/g					
Cesium–137	U	0.0128	+/–0.0301	0.0525	0.100	pCi/g					
Chromium–51	U	0.0267	+/–0.223	0.395		pCi/g					
Cobalt–56	U	0.00484	+/–0.0282	0.0491		pCi/g					
Cobalt–57	U	–0.0102	+/–0.0196	0.0324		pCi/g					
Cobalt–58	U	–0.00468	+/–0.0262	0.0447		pCi/g					
Cobalt–60	U	–0.00266	+/–0.0286	0.048		pCi/g					
Europium–152	U	–0.0168	+/–0.0819	0.128		pCi/g					
Europium–154	U	0.0456	+/–0.0946	0.166		pCi/g					
Europium–155	U	–0.0321	+/–0.0841	0.142		pCi/g					
Iridium–192	U	0.00367	+/–0.0234	0.0415		pCi/g					
Iron–59	U	–0.019	+/–0.0617	0.101		pCi/g					
Lead–210	U	1.92	+/–2.36	4.34		pCi/g					
Lead–212		0.917	+/–0.142	0.0756		pCi/g					
Lead–214		0.805	+/–0.148	0.0908		pCi/g					
Manganese–54	U	0.0149	+/–0.027	0.0481		pCi/g					
Mercury–203	U	0.0112	+/–0.0293	0.0502		pCi/g					
Neodymium–147	U	–0.00329	+/–0.240	0.419		pCi/g					
Neptunium–239	U	–0.0334	+/–0.156	0.262		pCi/g					
Niobium–94	U	–0.0022	+/–0.0254	0.0428		pCi/g					
Niobium–95	UI	0.00	+/–0.0345	0.0583		pCi/g					
Potassium–40		19.3	+/–2.11	0.419		pCi/g					
Promethium–144	U	0.0255	+/–0.0267	0.0476		pCi/g					
Promethium–146	U	0.0291	+/–0.0322	0.0572		pCi/g					

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB26–40R
Sample ID: 242292038

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium–228		1.23	+/–0.269	0.145		pCi/g						
Ruthenium–106	U	–0.015	+/–0.227	0.389		pCi/g						
Silver–110m	U	0.0297	+/–0.0265	0.0479		pCi/g						
Sodium–22	U	0.0172	+/–0.0338	0.0595		pCi/g						
Thallium–208		0.295	+/–0.064	0.0424		pCi/g						
Thorium–234	U	0.0328	+/–1.23	1.51		pCi/g						
Tin–113	U	0.0297	+/–0.034	0.061		pCi/g						
Uranium–235	U	0.000212	+/–0.175	0.301		pCi/g						
Uranium–238	U	0.0328	+/–1.23	1.51		pCi/g						
Yttrium–88	U	–0.00714	+/–0.0216	0.0342		pCi/g						
Zinc–65	U	0.0145	+/–0.0752	0.109		pCi/g						
Zirconium–95	U	0.0134	+/–0.0486	0.0831		pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Chlorine–36 Solid "As Received"												
Chlorine–36	U	–0.874	+/–2.56	5.22	50.0	pCi/g		DXM2	12/21/09	1552	930070	2
GFPC, Sr90, solid "Dry Weight Corrected"												
Strontium–90	U	–0.189	+/–0.364	0.709	2.00	pCi/g		JXR1	12/12/09	2020	930071	3
Rad Liquid Scintillation Analysis												
LSC, Tritium Vacuum, Solid "As Received"												
Tritium	U	0.135	+/–0.304	0.533	6.00	pCi/mL		KXK2	12/23/09	1338	930426	4
Liquid Scint C14, Solid "As Received"												
Carbon–14	U	0.0226	+/–0.735	1.26	2.00	pCi/g		EXK2	12/19/09	0136	931888	5
Liquid Scint Tc99, Solid "As Received"												
Technetium–99	U	–0.288	+/–1.73	3.01	5.00	pCi/g		AXW2	12/22/09	1519	931885	6
LSC Phosphorus–32 Solid "Dry Weight Corrected"												
Phosphorus–32/33	HU	–18.4	+/–57.3	101		pCi/g		GXR1	01/01/10	0638	937121	7
LSC Sulfur 35 Solid "Dry Weight Corrected"												
Sulfur–35	U	8.46	+/–29.4	50.4	50.0	pCi/g		GXR1	12/31/09	1907	937122	8
Liquid Scint Ca45, Solid "Dry Weight Corrected"												
Calcium–45	U	4.55	+/–16.6	28.5	50.0	pCi/g		GXR1	12/17/09	0650	931882	9
Liquid Scint Ni63, Solid "Dry Weight Corrected"												
Nickel–63	U	0.487	+/–2.20	3.78	4.00	pCi/g		DXM2	12/16/09	0135	930920	10

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	CXC1	12/07/09	1112	929362

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB26–40R
Sample ID: 242292038

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga–01–R	
2	GL–RAD–A–033	
3	EPA 905.0 Modified	
4	GL–RAD–A–002	
5	EPA EERF C–01 Modified	
6	DOE EML HASL–300, Tc–02–RC Modified	
7	GL–RAD–A–019	
8	NAS–NS–3054	
9	GL–RAD–A–048	
10	DOE RESL Ni–1, Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			98.8	(25%–125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"			87.4	(25%–125%)
Technetium–99m Tracer	Liquid Scint Tc99, Solid "As Received"			97.8	(15%–125%)
Sulfur Carrier	LSC Sulfur 35 Solid "Dry Weight Corrected"			82.2	(25%–125%)
Calcium Carrier	Liquid Scint Ca45, Solid "Dry Weight Corrected"			111	(25%–125%)
Nickel Carrier	Liquid Scint Ni63, Solid "Dry Weight Corrected"			71.3	(25%–125%)

QC Summary

Report Date: January 4, 2010
Page 1 of 12

PIKA International, Inc.
5025 Arnold Ave.
Mcclellan Afb, California

Contact: Mr. Joel Cehn

Workorder: 242292

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 930050										
QC1201989042 242292023 DUP										
Actinium-228		0.883 +/-0.256		0.871 +/-0.203	pCi/g	1.32		(0% - 20%)	MXR1	12/10/09 15:43
Americium-241	U	-0.42 +/-0.244	U	-0.00929 +/-0.0867	pCi/g	191		N/A		
Antimony-124	U	-0.00641 +/-0.0643	U	0.00318 +/-0.0437	pCi/g	594		N/A		
Antimony-125	U	0.101 +/-0.0906	U	0.00318 +/-0.067	pCi/g	188		N/A		
Barium-133	U	-0.0212 +/-0.048	U	0.00687 +/-0.0336	pCi/g	392		N/A		
Barium-140	U	0.0716 +/-0.170	U	0.0726 +/-0.125	pCi/g	1.33		N/A		
Beryllium-7	U	0.0606 +/-0.282	U	-0.0631 +/-0.200	pCi/g	9660		N/A		
Bismuth-212	UI	0.00 +/-0.314	UI	0.00 +/-0.276	pCi/g	2.75		N/A		
Bismuth-214		0.832 +/-0.146		0.732 +/-0.149	pCi/g	12.7		(0% - 20%)		
Cerium-139	U	-0.0286 +/-0.0284	U	-0.00649 +/-0.0187	pCi/g	126		N/A		
Cerium-141	U	-0.00439 +/-0.0536	U	0.0201 +/-0.0353	pCi/g	312		N/A		
Cerium-144	U	-0.0198 +/-0.200	U	0.0394 +/-0.127	pCi/g	602		N/A		
Cesium-134	U	0.0483 +/-0.0419	U	0.0453 +/-0.0502	pCi/g	6.41		N/A		
Cesium-136	U	-0.0198 +/-0.0704	U	0.00834 +/-0.0616	pCi/g	490		N/A		
Cesium-137	U	-0.0314 +/-0.0344	U	0.005 +/-0.0262	pCi/g	276		N/A		
Chromium-51	U	0.255 +/-0.309	U	0.143 +/-0.218	pCi/g	56.2		N/A		
Cobalt-56	U	-0.0336 +/-0.0335	U	-0.0081 +/-0.024	pCi/g	122		N/A		
Cobalt-57	U	0.000632 +/-0.0245	U	-0.0013 +/-0.0151	pCi/g	577		N/A		
Cobalt-58	U	0.00255 +/-0.0324	U	-0.00167 +/-0.0247	pCi/g	955		N/A		
Cobalt-60	U	0.00459 +/-0.0376	U	0.016 +/-0.0299	pCi/g	111		N/A		

QC Summary

Workorder: 242292

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 930050										
Europium-152	U	0.0201 +/-0.153	U	0.0247 +/-0.066	pCi/g	20.5		N/A		
Europium-154	U	-0.123 +/-0.122	U	-0.0435 +/-0.0821	pCi/g	95.4		N/A	MXR1	12/10/09 15:43
Europium-155	U	0.0532 +/-0.106	U	0.0741 +/-0.0645	pCi/g	32.9		N/A		
Iridium-192	U	-0.0245 +/-0.0327	U	-0.00402 +/-0.0223	pCi/g	144		N/A		
Iron-59	U	-0.00599 +/-0.0732	U	-0.0237 +/-0.066	pCi/g	119		N/A		
Lead-210	U	9.38 +/-10.4	U	-0.0193 +/-1.63	pCi/g	201		N/A		
Lead-212		1.04 +/-0.136		1.00 +/-0.158	pCi/g	3.83		(0% - 20%)		
Lead-214		0.908 +/-0.178		1.06 +/-0.192	pCi/g	15.7		(0% - 20%)		
Manganese-54	U	-0.0361 +/-0.0349	U	-0.0246 +/-0.0263	pCi/g	37.9		N/A		
Mercury-203	U	0.0122 +/-0.0352	U	-0.00748 +/-0.0266	pCi/g	837		N/A		
Neodymium-147	U	0.0186 +/-0.343	U	-0.00905 +/-0.275	pCi/g	578		N/A		
Neptunium-239	U	0.0713 +/-0.183	U	-0.0601 +/-0.115	pCi/g	2340		N/A		
Niobium-94	U	0.0162 +/-0.0309	U	0.0226 +/-0.0263	pCi/g	33.4		N/A		
Niobium-95	U	0.0208 +/-0.0358	U	0.0154 +/-0.0339	pCi/g	30.2		N/A		
Potassium-40		19.5 +/-2.03		20.3 +/-2.14	pCi/g	4.08		(0% - 20%)		
Promethium-144	U	-0.00321 +/-0.0312	U	0.00654 +/-0.0245	pCi/g	585		N/A		
Promethium-146	U	0.0292 +/-0.0414	U	0.0249 +/-0.028	pCi/g	15.9		N/A		
Radium-228		0.883 +/-0.256		0.871 +/-0.203	pCi/g	1.32		(0% - 20%)		
Ruthenium-106	U	-0.0431 +/-0.292	U	-0.00485 +/-0.228	pCi/g	160		N/A		
Silver-110m	U	0.0327 +/-0.031	U	-0.00116 +/-0.0237	pCi/g	215		N/A		
Sodium-22	U	-0.0435 +/-0.0436	U	-0.0152 +/-0.0293	pCi/g	96.3		N/A		
Thallium-208		0.358 +/-0.0792		0.276 +/-0.0645	pCi/g	25.9*		(0% - 20%)		
Thorium-234	U	1.29		1.61	pCi/g	22.4		(0% - 100%)		

QC Summary

Workorder: 242292

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 930050										
		+/-1.95		+/-1.13						
Tin-113		U -0.00663	U	-0.0364	pCi/g	138			N/A MXR1	12/10/09 15:43
		+/-0.0412		+/-0.0305						
Uranium-235		U -0.122	U	0.0698	pCi/g	730			N/A	
		+/-0.220		+/-0.141						
Uranium-238		U 1.29		1.61	pCi/g	22.4		(0% - 100%)		
		+/-1.95		+/-1.13						
Yttrium-88		U -0.00449	U	0.00257	pCi/g	738			N/A	
		+/-0.0268		+/-0.0199						
Zinc-65		U -0.0233	U	-0.0192	pCi/g	19.4			N/A	
		+/-0.090		+/-0.0761						
Zirconium-95		U -0.0273	U	0.00286	pCi/g	247			N/A	
		+/-0.0586		+/-0.0497						
QC1201989043 LCS										
Actinium-228				1.01	pCi/g					12/10/09 15:44
				+/-0.599						
Americium-241	15.9			14.6	pCi/g		91.8	(75%-125%)		
				+/-2.36						
Antimony-124			U	-0.0199	pCi/g					
				+/-0.103						
Antimony-125			U	0.049	pCi/g					
				+/-0.217						
Barium-133			U	0.061	pCi/g					
				+/-0.107						
Barium-140			U	0.171	pCi/g					
				+/-0.298						
Beryllium-7			U	-0.592	pCi/g					
				+/-0.657						
Bismuth-212			U	0.306	pCi/g					
				+/-0.555						
Bismuth-214				0.417	pCi/g					
				+/-0.232						
Cerium-139			U	0.017	pCi/g					
				+/-0.0488						
Cerium-141			U	-0.00676	pCi/g					
				+/-0.0818						
Cerium-144			U	-0.0876	pCi/g					
				+/-0.367						
Cesium-134			U	0.0172	pCi/g					
				+/-0.102						
Cesium-136			U	0.0948	pCi/g					
				+/-0.124						
Cesium-137	5.58			5.51	pCi/g		98.7	(75%-125%)		
				+/-0.393						

QC Summary

Workorder: 242292

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 930050										
Chromium-51			U	0.0534 +/-0.553	pCi/g					
Cobalt-56			U	-0.0478 +/-0.0818	pCi/g				MXR1	12/10/09 15:44
Cobalt-57				0.209 +/-0.0853	pCi/g					
Cobalt-58			U	-0.0263 +/-0.0777	pCi/g					
Cobalt-60	6.54			6.64 +/-0.604	pCi/g		101	(75%-125%)		
Europium-152			U	-0.13 +/-0.279	pCi/g					
Europium-154			U	-0.0758 +/-0.155	pCi/g					
Europium-155			U	0.0997 +/-0.193	pCi/g					
Iridium-192			U	-0.031 +/-0.064	pCi/g					
Iron-59			U	0.0813 +/-0.186	pCi/g					
Lead-210			U	14.0 +/-22.9	pCi/g					
Lead-212				1.01 +/-0.209	pCi/g					
Lead-214				0.757 +/-0.259	pCi/g					
Manganese-54			U	-0.0389 +/-0.0836	pCi/g					
Mercury-203			U	0.022 +/-0.0685	pCi/g					
Neodymium-147			U	0.223 +/-0.536	pCi/g					
Neptunium-239			U	0.110 +/-0.388	pCi/g					
Niobium-94			U	-0.0517 +/-0.0675	pCi/g					
Niobium-95			U	0.0512 +/-0.0754	pCi/g					
Potassium-40			U	1.03 +/-0.535	pCi/g					
Promethium-144			U	0.0638 +/-0.0622	pCi/g					
Promethium-146			U	0.0461 +/-0.111	pCi/g					
Radium-228				1.01	pCi/g					

QC Summary

Workorder: 242292

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 930050										
				+/-0.599						
Ruthenium-106			U	0.106	pCi/g				MXR1	12/10/09 15:44
				+/-0.647						
Silver-110m				0.570	pCi/g					
				+/-0.120						
Sodium-22			U	-0.0277	pCi/g					
				+/-0.0548						
Thallium-208				0.274	pCi/g					
				+/-0.144						
Thorium-234			U	-3.05	pCi/g					
				+/-4.11						
Tin-113			U	0.0287	pCi/g					
				+/-0.0883						
Uranium-235			U	0.100	pCi/g					
				+/-0.353						
Uranium-238			U	-3.05	pCi/g					
				+/-4.11						
Yttrium-88			U	0.00249	pCi/g					
				+/-0.0555						
Zinc-65			U	-0.185	pCi/g					
				+/-0.209						
Zirconium-95			U	0.0268	pCi/g					
				+/-0.127						
QC1201989041 MB										
Actinium-228			U	-0.0133	pCi/g					12/10/09 15:34
				+/-0.0582						
Americium-241			U	0.0119	pCi/g					
				+/-0.0142						
Antimony-124			U	0.0243	pCi/g					
				+/-0.0314						
Antimony-125			U	-0.0177	pCi/g					
				+/-0.0405						
Barium-133			U	0.00517	pCi/g					
				+/-0.0173						
Barium-140			U	-0.0181	pCi/g					
				+/-0.0623						
Beryllium-7			U	0.0179	pCi/g					
				+/-0.104						
Bismuth-212			U	0.154	pCi/g					
				+/-0.125						
Bismuth-214			U	0.00152	pCi/g					
				+/-0.035						
Cerium-139			U	-0.00491	pCi/g					
				+/-0.00933						

QC Summary

Workorder: 242292

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 930050										
Cerium-141			U	-0.0389 +/-0.0175	pCi/g					
Cerium-144			U	0.0118 +/-0.0581	pCi/g				MXR1	12/10/09 15:34
Cesium-134			U	-0.00784 +/-0.0141	pCi/g					
Cesium-136			U	-0.00465 +/-0.0216	pCi/g					
Cesium-137			U	-0.0128 +/-0.0239	pCi/g					
Chromium-51			U	0.00602 +/-0.103	pCi/g					
Cobalt-56			U	-0.00392 +/-0.0154	pCi/g					
Cobalt-57			U	0.000453 +/-0.00732	pCi/g					
Cobalt-58			U	0.00121 +/-0.0151	pCi/g					
Cobalt-60			U	0.000152 +/-0.020	pCi/g					
Europium-152			U	-0.00112 +/-0.038	pCi/g					
Europium-154			U	7.52E-06 +/-0.0493	pCi/g					
Europium-155			U	0.0183 +/-0.0268	pCi/g					
Iridium-192			U	-0.00432 +/-0.0108	pCi/g					
Iron-59			U	0.0199 +/-0.0321	pCi/g					
Lead-210			U	-0.108 +/-0.189	pCi/g					
Lead-212			U	0.00418 +/-0.034	pCi/g					
Lead-214			U	-0.0122 +/-0.0339	pCi/g					
Manganese-54			U	-0.00457 +/-0.0152	pCi/g					
Mercury-203			U	-0.00737 +/-0.0154	pCi/g					
Neodymium-147			U	0.0417 +/-0.108	pCi/g					
Neptunium-239			U	-0.00709 +/-0.0525	pCi/g					
Niobium-94			U	0.00999	pCi/g					

QC Summary

Workorder: 242292

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 930050										
				+/-0.0163						
Niobium-95			U	-0.00472	pCi/g				MXR1	12/10/09 15:34
				+/-0.0154						
Potassium-40			U	-0.201	pCi/g					
				+/-0.221						
Promethium-144			U	0.0111	pCi/g					
				+/-0.0152						
Promethium-146			U	0.00607	pCi/g					
				+/-0.0198						
Radium-228			U	-0.0133	pCi/g					
				+/-0.0582						
Ruthenium-106			U	0.0197	pCi/g					
				+/-0.131						
Silver-110m			U	-0.0323	pCi/g					
				+/-0.0193						
Sodium-22			U	-0.00198	pCi/g					
				+/-0.0179						
Thallium-208			U	-0.000534	pCi/g					
				+/-0.0187						
Thorium-234			U	0.127	pCi/g					
				+/-0.269						
Tin-113			U	-9.91E-05	pCi/g					
				+/-0.0184						
Uranium-235			U	0.0371	pCi/g					
				+/-0.0748						
Uranium-238			U	0.127	pCi/g					
				+/-0.269						
Yttrium-88			U	-0.00248	pCi/g					
				+/-0.015						
Zinc-65			U	0.00796	pCi/g					
				+/-0.0347						
Zirconium-95			U	-0.0116	pCi/g					
				+/-0.0243						
Rad Gas Flow										
Batch 930069										
QC1201989117 242292001 DUP										
Chlorine-36	U	1.01	U	0.448	pCi/g	0.00		N/A	DXM2	12/18/09 16:32
		+/-1.98		+/-5.02						
QC1201989119 LCS										
Chlorine-36	313			299	pCi/g		95.7	(75%-125%)		12/18/09 16:32
				+/-14.3						
QC1201989116 MB										
Chlorine-36			U	2.79	pCi/g					12/18/09 16:32
				+/-2.24						
QC1201989118 242292001 MS										

QC Summary

Workorder: 242292

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gas Flow											
Batch 930069											
Chlorine-36	1170	U	1.01 +/-1.98		1380 +/-58.2	pCi/g		119	(75%-125%)		12/18/09 16:32
Batch 930070											
QC1201989121 242292021 DUP											
Chlorine-36		U	0.346 +/-4.58	U	-0.357 +/-2.37	pCi/g	0.00			N/A DXM2	12/21/09 15:51
QC1201989123 LCS											
Chlorine-36	244				223 +/-10.8	pCi/g		91.2	(75%-125%)		12/21/09 15:51
QC1201989120 MB											
Chlorine-36				U	-0.412 +/-1.18	pCi/g					12/21/09 15:51
QC1201989122 242292021 MS											
Chlorine-36	599	U	0.346 +/-4.58		641 +/-28.6	pCi/g		107	(75%-125%)		12/21/09 15:51
Batch 930071											
QC1201989125 242292023 DUP											
Strontium-90		U	0.127 +/-0.296	U	0.0695 +/-0.274	pCi/g	0.00			N/A JXR1	12/12/09 20:20
QC1201989127 LCS											
Strontium-90	37.5				35.4 +/-1.91	pCi/g		94.6	(75%-125%)		12/12/09 20:20
QC1201989124 MB											
Strontium-90				U	-0.0331 +/-0.171	pCi/g					12/16/09 22:10
QC1201989126 242292023 MS											
Strontium-90	37.7	U	0.127 +/-0.296		37.2 +/-1.98	pCi/g		98.8	(75%-125%)		12/12/09 20:20
Rad Liquid Scintillation											
Batch 930425											
QC1201989977 242292001 DUP											
Tritium		U	-0.115 +/-0.315	U	-0.131 +/-0.311	pCi/mL	0.00			N/A KXK2	12/12/09 11:36
QC1201989979 LCS											
Tritium	5.61				5.26 +/-0.663	pCi/mL		93.7	(75%-125%)		12/12/09 12:09
QC1201989976 MB											
Tritium				U	0.232 +/-0.344	pCi/mL					12/12/09 11:20
QC1201989978 242292001 MS											
Tritium	11.2	U	-0.115 +/-0.315		10.6 +/-0.883	pCi/mL		94.3	(75%-125%)		12/12/09 11:53
Batch 930426											
QC1201989981 242292022 DUP											
Tritium		U	-0.0743 +/-0.278	U	-0.314 +/-0.258	pCi/mL	0.00			N/A KXK2	12/23/09 14:10
QC1201989983 LCS											

QC Summary

Workorder: 242292

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Liquid Scintillation											
Batch 930426											
Tritium	5.61				6.51 +/-0.662	pCi/mL		116	(75%-125%)		12/23/09 14:43
QC1201989980 MB											
Tritium				U	-0.163 +/-0.272	pCi/mL				KXK2	12/23/09 13:54
QC1201989982 242292022 MS											
Tritium	11.2	U	-0.0743 +/-0.278		12.4 +/-0.881	pCi/mL		110	(75%-125%)		12/23/09 14:27
Batch 930920											
QC1201991129 242292023 DUP											
Nickel-63		U	-1.97 +/-2.13	U	0.723 +/-2.18	pCi/g	0.00		N/A	DXM2	12/16/09 02:18
QC1201991131 LCS											
Nickel-63	114				112 +/-4.36	pCi/g		98.1	(75%-125%)		12/16/09 03:01
QC1201991128 MB											
Nickel-63				U	-0.874 +/-1.85	pCi/g					12/16/09 01:57
QC1201991130 242292023 MS											
Nickel-63	1540	U	-1.97 +/-2.13		1610 +/-60.7	pCi/g		104	(75%-125%)		12/16/09 02:40
Batch 931882											
QC1201993409 242292023 DUP											
Calcium-45		U	3.84 +/-15.0	U	-15 +/-17.1	pCi/g	0.00		N/A	GXR1	12/17/09 07:33
QC1201993411 LCS											
Calcium-45	129				106 +/-17.8	pCi/g		82.5	(75%-125%)		12/17/09 11:08
QC1201993408 MB											
Calcium-45				U	-1.56 +/-14.1	pCi/g					12/17/09 07:11
QC1201993410 242292023 MS											
Calcium-45	159	U	3.84 +/-15.0		119 +/-20.8	pCi/g		75.1	(75%-125%)		12/17/09 10:47
Batch 931885											
QC1201993413 242292023 DUP											
Technetium-99		U	0.112 +/-1.72	U	0.143 +/-1.68	pCi/g	0.00		N/A	AXW2	12/22/09 16:23
QC1201993415 LCS											
Technetium-99	148				136 +/-4.19	pCi/g		91.4	(75%-125%)		12/22/09 17:26
QC1201993412 MB											
Technetium-99				U	-0.402 +/-1.69	pCi/g					12/22/09 15:51
QC1201993414 242292023 MS											
Technetium-99	148	U	0.112 +/-1.72		133 +/-4.11	pCi/g		89.5	(75%-125%)		12/22/09 16:55
Batch 931887											

QC Summary

Workorder: 242292

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Liquid Scintillation										
Batch 931887										
QC1201993421 242292001 DUP										
Carbon-14	U	0.0851 +/-0.884	U	-0.313 +/-0.854	pCi/g	0.00			N/A EXK2	12/17/09 02:48
QC1201993423 LCS										
Carbon-14	56.9			54.9 +/-3.48	pCi/g		96.4	(75%-125%)		12/17/09 03:43
QC1201993420 MB										
Carbon-14			U	0.0834 +/-0.867	pCi/g					12/17/09 02:11
QC1201993422 242292001 MS										
Carbon-14	57.2	U 0.0851 +/-0.884		55.1 +/-3.41	pCi/g		96.2	(75%-125%)		12/17/09 03:26
Batch 931888										
QC1201993425 242292020 DUP										
Carbon-14	U	-0.619 +/-0.730	U	0.347 +/-0.736	pCi/g	0.00			N/A EXK2	12/19/09 03:43
QC1201993427 LCS										
Carbon-14	56.7			54.5 +/-1.57	pCi/g		96.2	(75%-125%)		12/19/09 05:49
QC1201993424 MB										
Carbon-14			U	0.255 +/-0.742	pCi/g					12/19/09 02:40
QC1201993426 242292020 MS										
Carbon-14	57.5	U -0.619 +/-0.730		57.0 +/-1.65	pCi/g		99.2	(75%-125%)		12/19/09 04:45
Batch 937121										
QC1202005281 242292023 DUP										
Phosphorus-32/33	HU	33.7 +/-63.2	HU	14.6 +/-59.3	pCi/g	0.00			N/A GXR1	01/01/10 07:11
QC1202005283 LCS										
Phosphorus-32/33	141			118 +/-19.8	pCi/g		83.7			01/01/10 07:44
QC1202005280 MB										
Phosphorus-32/33			U	1.72 +/-15.3	pCi/g					01/01/10 06:55
QC1202005282 242292023 MS										
Phosphorus-32/33	561	HU 33.7 +/-63.2		511 +/-80.6	pCi/g		91			01/01/10 07:28
Batch 937122										
QC1202005285 242292023 DUP										
Sulfur-35	U	22.1 +/-27.8	U	-7.33 +/-26.3	pCi/g	0.00			N/A GXR1	01/04/10 12:46
QC1202005287 LCS										
Sulfur-35	8080			6120 +/-124	pCi/g		75.8	(75%-125%)		12/31/09 20:35
QC1202005284 MB										
Sulfur-35			U	-3.23 +/-21.0	pCi/g					12/31/09 19:55

QC Summary

Workorder: 242292

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Liquid Scintillation										
Batch 937122										
QC1202005286 242292023 MS										
Sulfur-35	11700	22.1 +/-27.8	U	11200 +/-225	pCi/g		95.7	(75%-125%)	GXR1	12/31/09 20:28

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

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the 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
- F Estimated Value
- H Analytical holding time was exceeded
- J Value is estimated
- M M if above MDC and less than LLD
- M Matrix Related Failure
- N/A RPD or %Recovery limits do not apply.
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- 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.
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- h Preparation or preservation holding time was exceeded

QC Summary

Workorder: **242292**

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.
* Indicates that a Quality Control parameter was not within specifications.
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.

COMPANY – WIDE NONCONFORMANCE REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
10–DEC–09	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
TOC	SW846 9060 Modified	Solid	PIKA
Batch ID:	**Sample Numbers:**		
929948	See Below		

Potentially affected work order(s)(SDG): 242292

Application Issues:

Failed Recovery for MS/PS

Specification and Requirements Nonconformance Description:	NRG Disposition:
1. Failed Recovery for PS: QC 1201988781PS	1. The post spike was analyzed twice to confirm that matrix interference cause unacceptable recoveries. The project manager was notified.

Originator's Name:

Theresa McKelvey 10–DEC–09

Data Validator/Group Leader:

Elzbieta Szulc 19–DEC–09

COMPANY – WIDE NONCONFORMANCE REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
15–DEC–09	Radiochemistry	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
LSC	GL–RAD–A–002	Solid	PIKA
Batch ID:	**Sample Numbers:**		
930425	See Below		

Potentially affected work order(s)(SDG): 242292

Application Issues:

Container scanning event for custody missed

Specification and Requirements Nonconformance Description:	NRG Disposition:
1. The analyst did not scan the sample 242292019 into the batch prior to analysis, however the samples did remain in their custody at all times. The error has been corrected and the analyst has been instructed on proper scanning procedures.	1. Reporting results.

Originator's Name:

Lesley Anderson 15–DEC–09

Data Validator/Group Leader:

Angela Johnson 15–DEC–09

COMPANY – WIDE NONCONFORMANCE REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
02–JAN–10	Radiochemistry	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
LSC	NAS–NS–3054	Solid	PIKA
Batch ID:	**Sample Numbers:**		
937122	242623011, 242623012		

Potentially affected work order(s)(SDG): 242292,242623

Application Issues:

Container scanning event for custody missed

Specification and Requirements Nonconformance Description:	NRG Disposition:
1. The analyst did not scan samples 242623011 and 242632012 into his/her custody. The analyst had physical custody of the samples during the analysis.	1. The analyst has been instructed on proper scanning procedures. Reporting results.

Originator's Name:

Dana Hunt 02–JAN–10

Data Validator/Group Leader:

Lesley Anderson 04–JAN–10

COMPANY – WIDE NONCONFORMANCE REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
04–JAN–10	Radiochemistry	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
LSC	GL–RAD–A–019	Solid	PIKA
Batch ID:	**Sample Numbers:**		
937121	See Below		

Potentially affected work order(s)(SDG): 242292

Application Issues:

Sample Analyzed out of Holding

Specification and Requirements Nonconformance Description:	NRG Disposition:
1. Samples, 242292023, 242292024, 242292025, 242292026, 242292027, 242292028, 242292029, 242292030, 242292031, 242292032, 242292033, 242292034, 242292035, 242292036, 242292037, 242292038, 1202005281, and 1202005282, were received within the holding period but were analyzed out of holding.	1. Reporting results

Originator's Name:

Takesha Mungo 04–JAN–10

Data Validator/Group Leader:

Lesley Anderson 04–JAN–10

PIKA
International, Inc.

Chain of Custody Record

242292

Quote Number	GELP08-0262rev3	Project Fax	510-268-8654
Project Name	GLAVA	Req'd Report Date	
Project Manager	Joel I. Cehn	Lab Contact	Anne Skradski
Project Phone	510-914-6262	Lab Phone	843-556-8171

BILLING ADDRESS:	SEND REPORT TO:	LAB ADDRESS:
Pika Int'l., Inc. 12723 Capricorn Drive Stafford, TX 77477	Pika Int'l., Inc. Joel Cehn 5025 Arnold Ave. Sacramento, CA 95652	Gen. Eng. Labs 2040 Savage Rd. Charleston, SC 29407 843-556-8171

#	Sample ID# and Description	MAT -RIX		CONTAINER TYPE (G, P)	VOLUME	NO. OF CONTAIN-ERS	ANALYSIS REQUESTED										DATE & TIME COLLECTED	SPECIAL INSTRUCTION NOTES
		AQUEOUS	SOIL				H-3 (vacuum	C-14	Cl-36		Total Carbon							
1	SB2-19R		x	P		1	x	x	x		x						11/30/2009 ~~1355~~	
2	SB3-19R		x	P		1	x	x	x		x						11/30/2009 ~~1445~~	
3	SB1-10R		x	P		1	x	x	x		x						11/30/2009	
4	SB4-20R		x	P		1	x	x	x		x						11/30/2009	
5	SB9-20R		x	P		1	x	x	x		x						12/1/2009	
6	SB11-20R		x	P		1	x	x	x		x						12/1/2009	
7	SB10-20R		x	P		1	x	x	x		x						12/1/2009	
8	SB12-30R		x	P		1	x	x	x		x						12/1/2009	

Sample TAT Req'd: 21d

Sample Disposal: ☐ Archive for _____ Months. ☒ Disposal by Lab ☐ Return to origin

QC Requirements: per quotation

Notes/Comments:

CUSTODY TRACKING

1)	Relinquished By: Joel Cehn	Date: 12/3/09	Time: 3:00PM	Received By: R.M. Stelling	Date: 12/4/09	Time: 850
2)	Relinquished By:	Date:	Time:	Received By:	Date:	Time:
3)	Relinquished By:	Date:	Time:	Received By:	Date:	Time:

PIKA
International, Inc.

Chain of Custody Record

Quote Number	GELP08-0262rev3	Project Fax	510-268-8654
Project Name	GLAVA	Req'd Report Date	
Project Manager	Joel I. Cehn	Lab Contact	Anne Skradski
Project Phone	510-914-6262	Lab Phone	843-556-8171

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#	Sample ID# and Description	MAT-RIX		CONTAINER TYPE (G, P)	VOLUME	NO. OF CONTAIN-ERS	ANALYSIS REQUESTED										DATE & TIME COLLECTED	SPECIAL INSTRUCTIONS NOTES
		AQUEOUS	SOIL				H-3 (vacuum	C-14	Cl-36		Total Carbon							
9	SB13-20R		x				x	x	x		x						12/2/2009	
10	SB16-20R		x				x	x	x		x						12/2/2009	
11	SB14-20R		x				x	x	x		x						12/2/2009	
12	SB17-20R		x				x	x	x		x						12/2/2009	
13	SB18-20R		x				x	x	x		x						12/2/2009	
14	SB15-20R		x				x	x	x		x						12/2/2009	
15	SB19-20R		x				x	x	x		x						12/2/2009	
			x															

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Sample TAT Req'd: ___21d__	Sample Disposal:	☐ Archive for _____ Months.	☒ Disposal by Lab	☐ Return to origin	QC Requirements: per quotation
Notes/Comments:				

CUSTODY TRACKING

1)	Relinquished By: Joel Cehn	Date: 12-3/09	Time: 3PM	Received By: R.M. Stelling	Date: 12/4/09	Time: 800
2)	Relinquished By:	Date:	Time:	Received By:	Date:	Time:
3)	Relinquished By:	Date:	Time:	Received By:	Date:	Time:

PIKA
International, Inc.

Chain of Custody Record

Quote Number	GELP08-0262rev3	Project Fax	510-268-8654
Project Name	GLAVA	Req'd Report Date	
Project Manager	Joel I. Cehn	Lab Contact	Anne Skradski
Project Phone	510-914-6262	Lab Phone	843-556-8171

BILLING ADDRESS:	SEND REPORT TO:	LAB ADDRESS:
Pika Int'l., Inc. 12723 Capricorn Drive Stafford, TX 77477	Pika Int'l., Inc. Joel Cehn 5025 Arnold Ave. Sacramento, CA 95652	Gen. Eng. Labs 2040 Savage Rd. Charleston, SC 29407 843-556-8171

#	Sample ID# and Description	MAT-RIX		CONTAINER TYPE (G, P)	VOLUME	NO. OF CONTAIN-ERS	ANALYSIS REQUESTED										DATE & TIME COLLECTED	SPECIAL INSTRUCTIONS NOTES
		AQUEOUS	SOIL				H-3 (vacuum	C-14	Cl-36		Total Carbon							
16	SB20-20R		x	P			x	x	x		x						12/3/2009	
17	SB21-20R		x	P			x	x	x		x						12/3/2009	
18	SB22-20R		x	P			x	x	x		x						12/3/2009	
19	SB23-20R		x	P			x	x	x		x						12/3/2009	
20	SB24-20R		x	P			x	x	x		x						12/3/2009	
21	SB25-20R		x	P			x	x	x		x						12/3/2009	
22	SB26-20R		x	P			x	x	x		x						12/3/2009	
23			x	P			x	x	x		x						12/3/2009	

Page 15 of 35

Sample TAT Req'd: 21d	Sample Disposal:	☐ Archive for _____ Months.	☒ Disposal by Lab	☐ Return to origin	QC Requirements: per quotation
Notes/Comments:				

CUSTODY TRACKING

1)	Relinquished By: Joel Cehn	Date: 12/3/09	Time: 3PM	Received By: R.M. Stelling	Date: 12/4/09	Time: 8:50
2)	Relinquished By:	Date:	Time:	Received By:	Date:	Time:
3)	Relinquished By:	Date:	Time:	Received By:	Date:	Time:

PIKA
International, Inc.

Chain of Custody Record

Quote Number	GELP08-0262rev3	Project Fax	510-268-8654
Project Name	GLAVA	Req'd Report Date	
Project Manager	Joel I. Cehn	Lab Contact	Anne Skradski
Project Phone	510-914-6262	Lab Phone	843-556-8171

BILLING ADDRESS:	SEND REPORT TO:	LAB ADDRESS:
Pika Int'l., Inc. 12723 Capricorn Drive Stafford, TX 77477	Pika Int'l., Inc. Joel Cehn 5025 Arnold Ave. Sacramento, CA 95652	Gen. Eng. Labs 2040 Savage Rd. Charleston, SC 29407 843-556-8171

#	Sample ID# and Description	MAT-RIX		CONTAINER TYPE (G, P)	VOLUME	NO. OF CONTAINERS	ANALYSIS REQUESTED											DATE & TIME COLLECTED	SPECIAL INSTRUCTIONS / NOTES
		AQUEOUS	SOIL				Gamma spec	H-3 (vacuum	C-14	Cl-36	S-35	Ca-45	Ni-63	P-32	Sr-90	Tc-99	Total Carbon		
1	SB9-40R		x	P			x	x	x	x	x	x	x	x	x	x	x	12/1/2009	
2	SB11-40R		x	P			x	x	x	x	x	x	x	x	x	x	x	12/1/2009	
3	SB12-50R		x	P			x	x	x	x	x	x	x	x	x	x	x	12/1/2009	
4	SB13-40R		x	P			x	x	x	x	x	x	x	x	x	x	x	12/2/2009	
5	SB14-40R		x	P			x	x	x	x	x	x	x	x	x	x	x	12/2/2009	
6	SB16-40R		x	P			x	x	x	x	x	x	x	x	x	x	x	12/2/2009	
7	SB19-40R		x	P		2	x	x	x	x	x	x	x	x	x	x	x	12/2/2009	
8	SB17-40R		x	P			x	x	x	x	x	x	x	x	x	x	x	12/2/2009	

Sample TAT Req'd: 21d

Sample Disposal: ☐ Archive for _____ Months. ☒ Disposal by Lab ☐ Return to origin

QC Requirements: per quotation

Notes/Comments:

CUSTODY TRACKING

1)	Relinquished By: Joel Cehn	Date: 12-3-08	Time: 3PM	Received By: R. M. Stellmy	Date: 12/4/09	Time: 800
2)	Relinquished By:	Date:	Time:	Received By:	Date:	Time:
3)	Relinquished By:	Date:	Time:	Received By:	Date:	Time:

PIKA
International, Inc.

Chain of Custody Record

Quote Number	GELP08-0262rev3	Project Fax	510-268-8654
Project Name	GLAVA	Req'd Report Date	
Project Manager	Joel I. Cehn	Lab Contact	Anne Skradski
Project Phone	510-914-6262	Lab Phone	843-556-8171

BILLING ADDRESS:	SEND REPORT TO:	LAB ADDRESS:
Pika Int'l., Inc. 12723 Capricorn Drive Stafford, TX 77477	Pika Int'l., Inc. Joel Cehn 5025 Arnold Ave. Sacramento, CA 95652	Gen. Eng. Labs 2040 Savage Rd. Charleston, SC 29407 843-556-8171

#	Sample ID# and Description	MAT-RIX		CONTAINER TYPE (G, P)	VOLUME	NO. OF CONTAINERS	ANALYSIS REQUESTED											DATE & TIME COLLECTED	SPECIAL INSTRUCTIONS NOTES
		AQUEOUS	SOIL				Gamma spec	H-3 (vacuum	C-14	Cl-36	S-35	Ca-45	Ni-63	P-32	Sr-90	Tc-99	Total Carbon		
9	SB15-40R		x	P			x	x	x	x	x	x	x	x	x	x	x	12/2/2009	
10	SB18-40R		x	P			x	x	x	x	x	x	x	x	x	x	x	12/2/2009	
11	SB20-40R		x	P			x	x	x	x	x	x	x	x	x	x	x	12/3/2009	
12	SB21-40R		x	P			x	x	x	x	x	x	x	x	x	x	x	12/3/2009	
13	SB22-40R		x	P			x	x	x	x	x	x	x	x	x	x	x	12/3/2009	
14	SB23-40R		x	P			x	x	x	x	x	x	x	x	x	x	x	12/3/2009	
15	SB24-40R		x	P			x	x	x	x	x	x	x	x	x	x	x	12/3/2009	
16	SB26-40R		x	P			x	x	x	x	x	x	x	x	x	x	x	12/3/2009	

Sample TAT Req'd: 21d	Sample Disposal:	☐ Archive for _____ Months.	☒ Disposal by Lab	☐ Return to origin	QC Requirements: per quotation
Notes/Comments:				

CUSTODY TRACKING

1)	Relinquished By: Joel Cehn	Date: 12-3-09	Time: 3PM	Received By: R.M. Stelling	Date: 12/4/09	Time: 800
2)	Relinquished By:	Date:	Time:	Received By:	Date:	Time:
3)	Relinquished By:	Date:	Time:	Received By:	Date:	Time:

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: Pika	SDG/ARCOC/Work Order: 242292
Received By: RMS	Date Received: 12/4/09

Suspected Hazard Information	Yes	No	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further investigation.
COC/Samples marked as radioactive?		✓	Maximum Counts Observed*:
Classified Radioactive II or III by RSO?		✓	30cpm
COC/Samples marked containing PCBs?		✓	
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		✓	

	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 0 ≤ 6 deg. C?	✓			Preservation Method: ice bags blue ice dry ice none other (describe) 6C
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: If Preservation added, Lot#:
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 Volatiles 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?	✓ 2PM		✓	Sample ID's affected: no time on COC see copy of COC for time.
11	Number of containers received match number indicated on COC?	✓			Sample ID's affected: one container received per ID. AMS 12/4/09
12	COC form is properly signed in relinquished/received sections?	✓			

Comments:

Fx: 8410 3516 6183

PM (or PMA) review: Initials AMS Date 12/4/09

List of current GEL Certifications as of 04 January 2010

State	Certification
Arizona	AZ0668
Arkansas	88–0651
CLIA	42D0904046
California – NELAP	01151CA
Colorado	GEL
Connecticut	PH–0169
Dept. of Navy	NFESC 413
EPA Region 5	WG–15J
Florida – NELAP	E87156
Georgia	E87156 (FL/NELAP)
Georgia DW	967
Hawaii	N/A
ISO 17025	2567.01
Idaho	SC00012
Illinois – NELAP	200029
Indiana	C–SC–01
Kansas – NELAP	E–10332
Kentucky	90129
Louisiana – NELAP	03046
Maryland	270
Massachusetts	M–SC012
Nevada	SC00012
New Jersey – NELAP	SC002
New Mexico	FL NELAP E87156
New York – NELAP	11501
North Carolina	233
North Carolina DW	45709
Oklahoma	9904
Pennsylvania – NELAP	68–00485
South Carolina	10120001/10120002
Tennessee	TN 02934
Texas – NELAP	T104704235–07B–TX
U.S. Dept. of Agriculture	S–52597
Utah – NELAP	GEL
Vermont	VT87156
Virginia	00151
Washington	C1641

GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171 F 843.766.1178
www.gel.com

January 04, 2010

Mr. Joel Cehn
PIKA International, Inc.
5025 Arnold Ave.
Mcclellan Afb, California 95652

Re: GLAVA - PIKA International
Work Order: 242623

Dear Mr. Cehn:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on December 10, 2009. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4512.

Sincerely,

Ann Skradski
Project Manager

Purchase Order: 0990103-001
Enclosures

problem solved

GEL LABORATORIES LLC

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

Certificate of Analysis Report
for

PIKA003 Joel Cehn – PIKA International

Client SDG: 242623 GEL Work Order: 242623

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

H Analytical holding time was exceeded

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

UI Gamma Spectroscopy––Uncertain identification

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.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the detection limit.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Ann Skradski.

Note:

Sample list begins on page 77.

Reviewed by Ann M Skradski

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB27–20R	Project:	PIKA00109
Sample ID:	242623001	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	04–DEC–09 08:35		
Receive Date:	10–DEC–09		
Collector:	Client		
Moisture:	20%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		5290	33.0	100	mg/kg	1	TSM	12/11/09	1157	931508	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/10/09	1250	931507

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB28–20R	Project:	PIKA00109
Sample ID:	242623002	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	04–DEC–09 07:20		
Receive Date:	10–DEC–09		
Collector:	Client		
Moisture:	20.6%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		10300	33.0	100	mg/kg	1	TSM	12/11/09	1319	931508	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/10/09	1250	931507

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB32–20R	Project:	PIKA00109
Sample ID:	242623003	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	04–DEC–09 10:15		
Receive Date:	10–DEC–09		
Collector:	Client		
Moisture:	10.6%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		7050	33.0	100	mg/kg	1	TSM	12/11/09	1352	931508	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/10/09	1250	931507

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB33–20R	Project:	PIKA00109
Sample ID:	242623004	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	04–DEC–09 11:45		
Receive Date:	10–DEC–09		
Collector:	Client		
Moisture:	8.54%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		7740	33.0	100	mg/kg	1	TSM	12/11/09	1423	931508	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/10/09	1250	931507

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	MW1–20R	Project:	PIKA00109
Sample ID:	242623005	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	07–DEC–09 12:00		
Receive Date:	10–DEC–09		
Collector:	Client		
Moisture:	11.4%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		2190	33.0	100	mg/kg	1	TSM	12/11/09	1547	931508	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/10/09	1250	931507

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	MW2–40R	Project:	PIKA00109
Sample ID:	242623006	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	07–DEC–09 10:30		
Receive Date:	10–DEC–09		
Collector:	Client		
Moisture:	10.4%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		2120	33.0	100	mg/kg	1	TSM	12/11/09	1615	931508	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/10/09	1250	931507

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	MW3–20R	Project:	PIKA00109
Sample ID:	242623007	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	07–DEC–09 13:30		
Receive Date:	10–DEC–09		
Collector:	Client		
Moisture:	20.6%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		1560	33.0	100	mg/kg	1	TSM	12/11/09	1639	931508	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/10/09	1250	931507

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB28–40R	Project:	PIKA00109
Sample ID:	242623008	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	04–DEC–09 07:30		
Receive Date:	10–DEC–09		
Collector:	Client		
Moisture:	13%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		3900	33.0	100	mg/kg	1	TSM	12/11/09	1705	931508	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/10/09	1250	931507

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

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

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB32–40R	Project:	PIKA00109
Sample ID:	242623009	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	04–DEC–09 10:30		
Receive Date:	10–DEC–09		
Collector:	Client		
Moisture:	10.5%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		2610	33.0	100	mg/kg	1	TSM	12/11/09	1732	931508	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/10/09	1250	931507

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB33–40R	Project:	PIKA00109
Sample ID:	242623010	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	04–DEC–09 12:00		
Receive Date:	10–DEC–09		
Collector:	Client		
Moisture:	12.6%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		6660	33.0	100	mg/kg	1	TSM	12/12/09	1002	931508	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/10/09	1250	931507

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	MW1–40R	Project:	PIKA00109
Sample ID:	242623011	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	07–DEC–09 12:00		
Receive Date:	10–DEC–09		
Collector:	Client		
Moisture:	19.9%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		1450	33.0	100	mg/kg	1	TSM	12/12/09	1028	931508	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/10/09	1250	931507

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	MW2–60R	Project:	PIKA00109
Sample ID:	242623012	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	07–DEC–09 11:50		
Receive Date:	10–DEC–09		
Collector:	Client		
Moisture:	13.9%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		1210	33.0	100	mg/kg	1	TSM	12/12/09	1116	931508	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/10/09	1250	931507

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	MW3–40R	Project:	PIKA00109
Sample ID:	242623013	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	07–DEC–09 14:20		
Receive Date:	10–DEC–09		
Collector:	Client		
Moisture:	15.7%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
SW846 9060 Total Carbon In Soil "As Received"											
Total Carbon Average		1690	33.0	100	mg/kg	1	TSM	12/12/09	1145	931508	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9060 Modified Pre	SW846–9060 Modified Total Carbon Prep	TSM	12/10/09	1250	931507

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060 Modified	

GEL LABORATORIES LLC

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

QC Summary

Report Date: January 4, 2010
Page 1 of 2

PIKA International, Inc.
5025 Arnold Ave.
Mcclellan Afb, California

Contact: **Mr. Joel Cehn**

Workorder: **242623**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Carbon Analysis										
Batch 931508										
QC1201992494 242623001 DUP										
Total Carbon Average		5290		5220	mg/kg	1.18		(0%-20%)	TSM	12/11/09 12:16
QC1201992500 242623011 DUP										
Total Carbon Average		1450		1530	mg/kg	5.39		(0%-20%)		12/12/09 10:42
QC1201992493 LCS										
Total Carbon Average	5570			6340	mg/kg		114	(80%-120%)		12/11/09 11:02
QC1201992492 MB										
Total Carbon Average			U	ND	mg/kg					12/11/09 11:08
QC1201992495 242623001 PS										
Total Carbon Average	4000	5290		9290	mg/kg		100	(54%-112%)		12/11/09 12:24
QC1201992501 242623011 PS										
Total Carbon Average	4000	1450		5630	mg/kg		105	(54%-112%)		12/12/09 10:50

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

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the 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
- F Estimated Value
- H Analytical holding time was exceeded
- J Value is estimated
- M M if above MDC and less than LLD
- M Matrix Related Failure
- N/A RPD or %Recovery limits do not apply.
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- 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

QC Summary

Workorder: **242623**

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

Y	QC Samples were not spiked with this compound
Z	Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
d	5-day BOD--The 2:1 depletion requirement was not met for this sample
h	Preparation or preservation holding time was exceeded

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.
* Indicates that a Quality Control parameter was not within specifications.
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.

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB27–20R	Project:	PIKA00109
Sample ID:	242623001	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	04–DEC–09 08:35		
Receive Date:	10–DEC–09		
Collector:	Client		
Moisture:	20%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	3.11	+/–4.92	8.47	50.0	pCi/g		DXM 2 12/22/09	1623	932785	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	0.197	+/–0.170	0.281	6.00	pCi/mL		KXK2 12/26/09	1522	933028	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	–0.834	+/–0.885	1.57	2.00	pCi/g		EXK2 12/23/09	2202	935783	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			96.5	(25%–125%)

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB28–20R	Project:	PIKA00109
Sample ID:	242623002	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	04–DEC–09 07:20		
Receive Date:	10–DEC–09		
Collector:	Client		
Moisture:	20.6%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	1.81	+/–2.27	3.85	50.0	pCi/g		DXM 2 12/22/09	1651	932785	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	–0.0065	+/–0.157	0.278	6.00	pCi/mL		KXK2 12/26/09	1609	933028	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	–1.21	+/–0.865	1.56	2.00	pCi/g		EXK2 12/23/09	2255	935783	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			96.9	(25%–125%)

Certificate of Analysis

Company : PIKA International, Inc.
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Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB32–20R	Project:	PIKA00109
Sample ID:	242623003	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	04–DEC–09 10:15		
Receive Date:	10–DEC–09		
Collector:	Client		
Moisture:	10.6%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	–1.18	+/–5.67	10.5	50.0	pCi/g		DXM 2 12/22/09	1651	932785	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	–0.0306	+/–0.156	0.280	6.00	pCi/mL		KXK2 12/26/09	1655	933028	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	–1.15	+/–0.918	1.64	2.00	pCi/g		EXK2 12/23/09	2348	935783	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			97.6	(25%–125%)

Certificate of Analysis

Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB33–20R	Project:	PIKA00109
Sample ID:	242623004	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	04–DEC–09 11:45		
Receive Date:	10–DEC–09		
Collector:	Client		
Moisture:	8.54%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	0.714	+/–2.21	4.08	50.0	pCi/g		DXM 2 12/22/09	1726	932785	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	0.0506	+/–0.162	0.282	6.00	pCi/mL		KXK2 12/26/09	1741	933028	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	–0.999	+/–0.931	1.66	2.00	pCi/g		EXK2 12/24/09	0153	935783	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			98.8	(25%–125%)

Certificate of Analysis

Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	MW1–20R	Project:	PIKA00109
Sample ID:	242623005	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	07–DEC–09 12:00		
Receive Date:	10–DEC–09		
Collector:	Client		
Moisture:	11.4%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	2.06	+/–2.35	3.94	50.0	pCi/g		DXM 2 12/22/09	1726	932785	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	0.105	+/–0.165	0.281	6.00	pCi/mL		KXK2 12/26/09	1828	933028	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	–0.959	+/–0.908	1.61	2.00	pCi/g		EXK2 12/24/09	0246	935783	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			98.5	(25%–125%)

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	MW2–40R	Project:	PIKA00109
Sample ID:	242623006	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	07–DEC–09 10:30		
Receive Date:	10–DEC–09		
Collector:	Client		
Moisture:	10.4%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	–0.893	+/–2.48	5.25	50.0	pCi/g		DXM 12/22/09 2	1726	932785	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	0.0348	+/–0.160	0.279	6.00	pCi/mL		KXK2 12/26/09	1914	933028	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	–0.124	+/–0.898	1.55	2.00	pCi/g		EXK2 12/24/09	0338	935783	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			97.5	(25%–125%)

Certificate of Analysis

Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	MW3–20R	Project:	PIKA00109
Sample ID:	242623007	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	07–DEC–09 13:30		
Receive Date:	10–DEC–09		
Collector:	Client		
Moisture:	20.6%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 Solid "As Received"											
Chlorine–36	U	1.38	+/–2.67	4.77	50.0	pCi/g		DXM 2 12/22/09	1726	932785	1
Rad Liquid Scintillation Analysis											
LSC, Tritium Vacuum, Solid "As Received"											
Tritium	U	0.00434	+/–0.157	0.278	6.00	pCi/mL		KXK2 12/26/09	2000	933028	2
Liquid Scint C14, Solid "As Received"											
Carbon–14	U	–0.47	+/–0.918	1.61	2.00	pCi/g		EXK2 12/24/09	0431	935783	3

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL–RAD–A–033	
2	GL–RAD–A–002	
3	EPA EERF C–01 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			96.6	(25%–125%)

Certificate of Analysis

Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB28–40R	Project:	PIKA00109
Sample ID:	242623008	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	04–DEC–09 07:30		
Receive Date:	10–DEC–09		
Collector:	Client		
Moisture:	13%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"											
Actinium–228		0.866	+/–0.158	0.108		pCi/g		MXR1 12/14/09	2315	931510	1
Americium–241	U	0.0621	+/–0.0843	0.140		pCi/g					
Antimony–124	U	0.0291	+/–0.0323	0.0604		pCi/g					
Antimony–125	U	0.0375	+/–0.0441	0.0785		pCi/g					
Barium–133	U	0.0258	+/–0.0238	0.0382		pCi/g					
Barium–140	U	0.023	+/–0.0931	0.168		pCi/g					
Beryllium–7	U	–0.12	+/–0.152	0.249		pCi/g					
Bismuth–212		0.665	+/–0.277	0.214		pCi/g					
Bismuth–214		0.767	+/–0.0959	0.0565		pCi/g					
Cerium–139	U	–0.0034	+/–0.0133	0.0242		pCi/g					
Cerium–141	U	0.0306	+/–0.0324	0.0451		pCi/g					
Cerium–144	U	–0.0678	+/–0.111	0.166		pCi/g					
Cesium–134	UI	0.00	+/–0.0234	0.0448		pCi/g					
Cesium–136	U	–0.00576	+/–0.0435	0.0725		pCi/g					
Cesium–137	U	–0.012	+/–0.0177	0.030	0.100	pCi/g					
Chromium–51	U	–0.184	+/–0.162	0.272		pCi/g					
Cobalt–56	U	–0.0192	+/–0.0188	0.0301		pCi/g					
Cobalt–57	U	0.00829	+/–0.0119	0.0212		pCi/g					
Cobalt–58	U	–0.0165	+/–0.0179	0.0291		pCi/g					
Cobalt–60	U	0.00655	+/–0.0173	0.0306		pCi/g					
Europium–152	U	0.000401	+/–0.0504	0.0815		pCi/g					
Europium–154	U	0.00101	+/–0.0612	0.106		pCi/g					
Europium–155	U	0.0756	+/–0.0527	0.0957		pCi/g					
Iridium–192	U	0.00404	+/–0.0157	0.0279		pCi/g					
Iron–59	U	–0.0166	+/–0.0458	0.0749		pCi/g					
Lead–210	U	1.40	+/–1.94	3.63		pCi/g					
Lead–212		0.827	+/–0.0767	0.0438		pCi/g					
Lead–214		0.816	+/–0.103	0.0586		pCi/g					
Manganese–54	U	–0.00876	+/–0.0184	0.0308		pCi/g					
Mercury–203	U	0.00391	+/–0.0179	0.0319		pCi/g					
Neodymium–147	U	0.0779	+/–0.192	0.348		pCi/g					
Neptunium–239	U	–0.0669	+/–0.101	0.159		pCi/g					
Niobium–94	U	–0.00272	+/–0.0165	0.0284		pCi/g					
Niobium–95	U	0.0299	+/–0.0217	0.0358		pCi/g					
Potassium–40		19.9	+/–1.63	0.244		pCi/g					
Promethium–144	U	–0.000247	+/–0.0165	0.0288		pCi/g					
Promethium–146	U	0.0178	+/–0.021	0.0373		pCi/g					

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB28–40R
Sample ID: 242623008

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium–228		0.866	+/–0.158	0.108		pCi/g						
Ruthenium–106	U	–0.0289	+/–0.146	0.255		pCi/g						
Silver–110m	U	0.00389	+/–0.0152	0.027		pCi/g						
Sodium–22	U	0.00105	+/–0.0219	0.0379		pCi/g						
Thallium–208		0.269	+/–0.0496	0.0293		pCi/g						
Thorium–234		1.61	+/–1.03	1.12		pCi/g						
Tin–113	U	–0.00423	+/–0.0215	0.0368		pCi/g						
Uranium–235	U	0.112	+/–0.120	0.176		pCi/g						
Uranium–238		1.61	+/–1.03	1.12		pCi/g						
Yttrium–88	U	–0.00559	+/–0.015	0.0236		pCi/g						
Zinc–65	U	–0.0202	+/–0.0533	0.0742		pCi/g						
Zirconium–95	U	0.0347	+/–0.0316	0.0579		pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Chlorine–36 Solid "As Received"												
Chlorine–36	U	1.93	+/–5.07	8.99	50.0	pCi/g		DXM2	12/22/09	1853	932785	2
GFPC, Sr90, solid "Dry Weight Corrected"												
Strontium–90	U	0.446	+/–0.555	0.940	2.00	pCi/g		JXR1	12/16/09	2020	932787	3
Rad Liquid Scintillation Analysis												
LSC, Tritium Vacuum, Solid "As Received"												
Tritium	U	–0.122	+/–0.151	0.280	6.00	pCi/mL		KXK2	12/26/09	2046	933028	4
Liquid Scint C14, Solid "As Received"												
Carbon–14	U	0.563	+/–0.936	1.59	2.00	pCi/g		EXK2	12/24/09	0524	935783	5
Liquid Scint Tc99, Solid "As Received"												
Technetium–99	U	–3.27	+/–2.61	4.72	5.00	pCi/g		AXW2	12/21/09	2348	932585	6
LSC Phosphorus–32 Solid "Dry Weight Corrected"												
Phosphorus–32/33	HU	8.11	+/–46.6	80.7		pCi/g		GXR1	12/31/09	0818	937120	7
LSC Sulfur 35 Solid "Dry Weight Corrected"												
Sulfur–35	U	16.2	+/–21.2	35.8	50.0	pCi/g		GXR1	12/31/09	1204	937401	8
Liquid Scint Ca45, Solid "Dry Weight Corrected"												
Calcium–45	U	–11.8	+/–22.1	39.0	50.0	pCi/g		GXR1	12/21/09	2107	932592	9
Liquid Scint Ni63, Solid "Dry Weight Corrected"												
Nickel–63	U	–0.372	+/–1.54	2.69	4.00	pCi/g		DXM2	12/17/09	1647	932593	10

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	DRS1	12/10/09	1500	931484

Certificate of Analysis

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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB28–40R
Sample ID: 242623008

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga–01–R	
2	GL–RAD–A–033	
3	EPA 905.0 Modified	
4	GL–RAD–A–002	
5	EPA EERF C–01 Modified	
6	DOE EML HASL–300, Tc–02–RC Modified	
7	GL–RAD–A–019	
8	NAS–NS–3054	
9	GL–RAD–A–048	
10	DOE RESL Ni–1, Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			99.3	(25%–125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"			91.9	(25%–125%)
Technetium–99m Tracer	Liquid Scint Tc99, Solid "As Received"			66.8	(15%–125%)
Sulfur Carrier	LSC Sulfur 35 Solid "Dry Weight Corrected"			102	(25%–125%)
Calcium Carrier	Liquid Scint Ca45, Solid "Dry Weight Corrected"			95.2	(25%–125%)
Nickel Carrier	Liquid Scint Ni63, Solid "Dry Weight Corrected"			80.3	(25%–125%)

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB32–40R	Project:	PIKA00109
Sample ID:	242623009	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	04–DEC–09 10:30		
Receive Date:	10–DEC–09		
Collector:	Client		
Moisture:	10.5%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"											
Actinium–228		0.848	+/–0.155	0.0981		pCi/g		MXR1 12/14/09	2315	931510	1
Americium–241	U	–0.0205	+/–0.0966	0.163		pCi/g					
Antimony–124	U	–0.00443	+/–0.026	0.0425		pCi/g					
Antimony–125	U	0.0164	+/–0.036	0.0643		pCi/g					
Barium–133	U	0.000337	+/–0.0192	0.030		pCi/g					
Barium–140	U	–0.00943	+/–0.0853	0.145		pCi/g					
Beryllium–7	U	–0.00886	+/–0.126	0.218		pCi/g					
Bismuth–212	UI	0.00	+/–0.221	0.267		pCi/g					
Bismuth–214		0.732	+/–0.0886	0.0479		pCi/g					
Cerium–139	U	0.00927	+/–0.0115	0.0208		pCi/g					
Cerium–141	U	0.00894	+/–0.0228	0.0411		pCi/g					
Cerium–144	U	–0.0911	+/–0.0911	0.139		pCi/g					
Cesium–134	UI	0.00	+/–0.0286	0.0377		pCi/g					
Cesium–136	U	–0.0268	+/–0.0389	0.0627		pCi/g					
Cesium–137	U	0.00665	+/–0.0211	0.0272	0.100	pCi/g					
Chromium–51	U	–0.111	+/–0.133	0.232		pCi/g					
Cobalt–56	U	0.00753	+/–0.0156	0.0277		pCi/g					
Cobalt–57	U	–0.0019	+/–0.00976	0.0175		pCi/g					
Cobalt–58	U	–0.00503	+/–0.0159	0.0271		pCi/g					
Cobalt–60	U	–0.0134	+/–0.0174	0.0275		pCi/g					
Europium–152	U	–0.0139	+/–0.0416	0.0677		pCi/g					
Europium–154	U	0.0123	+/–0.0551	0.0967		pCi/g					
Europium–155	UI	0.00	+/–0.0537	0.0769		pCi/g					
Iridium–192	U	0.00969	+/–0.013	0.024		pCi/g					
Iron–59	U	0.00256	+/–0.0377	0.0636		pCi/g					
Lead–210	U	0.745	+/–3.70	7.15		pCi/g					
Lead–212		0.745	+/–0.0722	0.0383		pCi/g					
Lead–214		0.816	+/–0.0935	0.0498		pCi/g					
Manganese–54	U	0.0158	+/–0.0158	0.0288		pCi/g					
Mercury–203	U	0.000746	+/–0.0148	0.0269		pCi/g					
Neodymium–147	U	–0.0703	+/–0.177	0.297		pCi/g					
Neptunium–239	U	0.0617	+/–0.0742	0.138		pCi/g					
Niobium–94	U	–0.0111	+/–0.014	0.0237		pCi/g					
Niobium–95	U	0.0031	+/–0.0171	0.0302		pCi/g					
Potassium–40		19.0	+/–1.55	0.215		pCi/g					
Promethium–144	U	0.0071	+/–0.014	0.0254		pCi/g					
Promethium–146	U	–0.00248	+/–0.0198	0.0308		pCi/g					

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB32–40R
Sample ID: 242623009

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium–228		0.848	+/–0.155	0.0981		pCi/g						
Ruthenium–106	U	0.0136	+/–0.126	0.214		pCi/g						
Silver–110m	U	0.00387	+/–0.0155	0.0244		pCi/g						
Sodium–22	U	0.00305	+/–0.0198	0.0347		pCi/g						
Thallium–208		0.211	+/–0.0328	0.0244		pCi/g						
Thorium–234		1.53	+/–1.09	1.26		pCi/g						
Tin–113	U	–0.00933	+/–0.017	0.0292		pCi/g						
Uranium–235	U	0.0421	+/–0.0835	0.151		pCi/g						
Uranium–238		1.53	+/–1.09	1.26		pCi/g						
Yttrium–88	U	0.00606	+/–0.0121	0.0215		pCi/g						
Zinc–65	U	–0.0167	+/–0.0458	0.064		pCi/g						
Zirconium–95	U	0.0146	+/–0.0281	0.0505		pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Chlorine–36 Solid "As Received"												
Chlorine–36	U	–0.0524	+/–3.22	6.30	50.0	pCi/g		DXM2	12/23/09	1233	932785	2
GFPC, Sr90, solid "Dry Weight Corrected"												
Strontium–90	U	–0.193	+/–0.502	0.980	2.00	pCi/g		JXR1	12/16/09	2020	932787	3
Rad Liquid Scintillation Analysis												
LSC, Tritium Vacuum, Solid "As Received"												
Tritium	U	–0.0723	+/–0.154	0.281	6.00	pCi/mL		KXK2	12/26/09	2133	933028	4
Liquid Scint C14, Solid "As Received"												
Carbon–14	U	–1.11	+/–0.886	1.59	2.00	pCi/g		EXK2	12/24/09	0616	935783	5
Liquid Scint Tc99, Solid "As Received"												
Technetium–99	U	–3.04	+/–2.64	4.76	5.00	pCi/g		AXW2	12/22/09	0019	932585	6
LSC Phosphorus–32 Solid "Dry Weight Corrected"												
Phosphorus–32/33	HU	–17.9	+/–49.9	88.3		pCi/g		GXR1	12/31/09	0834	937120	7
LSC Sulfur 35 Solid "Dry Weight Corrected"												
Sulfur–35	U	–12.8	+/–22.0	38.5	50.0	pCi/g		GXR1	12/31/09	1256	937401	8
Liquid Scint Ca45, Solid "Dry Weight Corrected"												
Calcium–45	U	–5.28	+/–22.2	38.8	50.0	pCi/g		GXR1	12/21/09	2128	932592	9
Liquid Scint Ni63, Solid "Dry Weight Corrected"												
Nickel–63	U	0.750	+/–1.56	2.67	4.00	pCi/g		DXM2	12/17/09	1729	932593	10

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	DRS1	12/10/09	1500	931484

Certificate of Analysis

Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB32–40R
Sample ID: 242623009

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga–01–R	
2	GL–RAD–A–033	
3	EPA 905.0 Modified	
4	GL–RAD–A–002	
5	EPA EERF C–01 Modified	
6	DOE EML HASL–300, Tc–02–RC Modified	
7	GL–RAD–A–019	
8	NAS–NS–3054	
9	GL–RAD–A–048	
10	DOE RESL Ni–1, Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			98.7	(25%–125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"			86.3	(25%–125%)
Technetium–99m Tracer	Liquid Scint Tc99, Solid "As Received"			66.4	(15%–125%)
Sulfur Carrier	LSC Sulfur 35 Solid "Dry Weight Corrected"			97.6	(25%–125%)
Calcium Carrier	Liquid Scint Ca45, Solid "Dry Weight Corrected"			79.2	(25%–125%)
Nickel Carrier	Liquid Scint Ni63, Solid "Dry Weight Corrected"			78.7	(25%–125%)

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Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	SB33–40R	Project:	PIKA00109
Sample ID:	242623010	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	04–DEC–09 12:00		
Receive Date:	10–DEC–09		
Collector:	Client		
Moisture:	12.6%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"											
Actinium–228		0.873	+/–0.162	0.104		pCi/g		MXR1 12/14/09	2315	931510	1
Americium–241	U	0.0272	+/–0.106	0.177		pCi/g					
Antimony–124	U	0.0324	+/–0.0332	0.0613		pCi/g					
Antimony–125	U	–0.0108	+/–0.0401	0.0684		pCi/g					
Barium–133	U	–0.00476	+/–0.0199	0.0302		pCi/g					
Barium–140	U	–0.00538	+/–0.0882	0.148		pCi/g					
Beryllium–7	U	0.0365	+/–0.129	0.222		pCi/g					
Bismuth–212	UI	0.00	+/–0.254	0.285		pCi/g					
Bismuth–214		0.678	+/–0.0842	0.0491		pCi/g					
Cerium–139	U	–0.00738	+/–0.0128	0.0217		pCi/g					
Cerium–141	U	0.0189	+/–0.0244	0.0434		pCi/g					
Cerium–144	U	–0.0666	+/–0.0966	0.146		pCi/g					
Cesium–134	UI	0.00	+/–0.0305	0.043		pCi/g					
Cesium–136	U	–0.000236	+/–0.0406	0.068		pCi/g					
Cesium–137	U	–0.0096	+/–0.0157	0.0267	0.100	pCi/g					
Chromium–51	U	0.0239	+/–0.141	0.250		pCi/g					
Cobalt–56	U	–0.00956	+/–0.0176	0.0291		pCi/g					
Cobalt–57	U	0.00305	+/–0.0107	0.019		pCi/g					
Cobalt–58	U	–0.0081	+/–0.0156	0.026		pCi/g					
Cobalt–60	U	–0.00356	+/–0.0192	0.0323		pCi/g					
Europium–152	U	0.00479	+/–0.0449	0.0697		pCi/g					
Europium–154	U	–0.00942	+/–0.0546	0.0928		pCi/g					
Europium–155	U	0.0663	+/–0.0649	0.0824		pCi/g					
Iridium–192	U	–0.00509	+/–0.0142	0.0247		pCi/g					
Iron–59	U	–0.00526	+/–0.0418	0.0691		pCi/g					
Lead–210	U	0.186	+/–3.98	6.96		pCi/g					
Lead–212		0.845	+/–0.0812	0.049		pCi/g					
Lead–214		0.791	+/–0.0978	0.0493		pCi/g					
Manganese–54	U	0.0084	+/–0.0164	0.0289		pCi/g					
Mercury–203	U	0.0162	+/–0.0175	0.0286		pCi/g					
Neodymium–147	U	–0.0314	+/–0.181	0.303		pCi/g					
Neptunium–239	U	–0.0134	+/–0.0808	0.142		pCi/g					
Niobium–94	U	0.0103	+/–0.0145	0.0262		pCi/g					
Niobium–95	U	0.0231	+/–0.0204	0.0328		pCi/g					
Potassium–40		20.5	+/–1.92	0.263		pCi/g					
Promethium–144	U	0.00456	+/–0.0156	0.0275		pCi/g					
Promethium–146	U	0.0127	+/–0.0184	0.0325		pCi/g					

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB33–40R
Sample ID: 242623010

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium–228		0.873	+/–0.162	0.104		pCi/g						
Ruthenium–106	U	–0.0367	+/–0.131	0.228		pCi/g						
Silver–110m	U	0.00481	+/–0.0143	0.0254		pCi/g						
Sodium–22	U	–0.00515	+/–0.0197	0.0332		pCi/g						
Thallium–208		0.266	+/–0.0343	0.0286		pCi/g						
Thorium–234	U	0.632	+/–1.15	1.33		pCi/g						
Tin–113	U	–0.004	+/–0.0188	0.0324		pCi/g						
Uranium–235	U	0.0192	+/–0.0978	0.162		pCi/g						
Uranium–238	U	0.632	+/–1.15	1.33		pCi/g						
Yttrium–88	U	0.00389	+/–0.0139	0.0239		pCi/g						
Zinc–65	U	–0.0156	+/–0.0473	0.0656		pCi/g						
Zirconium–95	U	0.0278	+/–0.0301	0.0543		pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Chlorine–36 Solid "As Received"												
Chlorine–36	U	–2.85	+/–3.08	6.60	50.0	pCi/g		DXM2	12/22/09	1853	932785	2
GFPC, Sr90, solid "Dry Weight Corrected"												
Strontium–90	U	0.0475	+/–0.663	1.20	2.00	pCi/g		JXR1	12/16/09	2019	932787	3
Rad Liquid Scintillation Analysis												
LSC, Tritium Vacuum, Solid "As Received"												
Tritium	U	–0.127	+/–0.151	0.280	6.00	pCi/mL		KXK2	12/26/09	2219	933028	4
Liquid Scint C14, Solid "As Received"												
Carbon–14	U	–0.688	+/–0.880	1.55	2.00	pCi/g		EXK2	12/24/09	0709	935783	5
Liquid Scint Tc99, Solid "As Received"												
Technetium–99	U	–1.92	+/–2.19	3.85	5.00	pCi/g		AXW2	12/22/09	1157	932585	6
LSC Phosphorus–32 Solid "Dry Weight Corrected"												
Phosphorus–32/33	HU	1.08	+/–54.4	94.8		pCi/g		GXR1	12/31/09	0851	937120	7
LSC Sulfur 35 Solid "Dry Weight Corrected"												
Sulfur–35	U	0.942	+/–21.3	36.7	50.0	pCi/g		GXR1	12/31/09	1317	937401	8
Liquid Scint Ca45, Solid "Dry Weight Corrected"												
Calcium–45	U	–4.61	+/–23.0	40.1	50.0	pCi/g		GXR1	12/21/09	2150	932592	9
Liquid Scint Ni63, Solid "Dry Weight Corrected"												
Nickel–63	U	–0.422	+/–1.44	2.51	4.00	pCi/g		DXM2	12/17/09	1811	932593	10

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	DRS1	12/10/09	1500	931484

Certificate of Analysis

Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: SB33–40R
Sample ID: 242623010

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga–01–R	
2	GL–RAD–A–033	
3	EPA 905.0 Modified	
4	GL–RAD–A–002	
5	EPA EERF C–01 Modified	
6	DOE EML HASL–300, Tc–02–RC Modified	
7	GL–RAD–A–019	
8	NAS–NS–3054	
9	GL–RAD–A–048	
10	DOE RESL Ni–1, Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			95.3	(25%–125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"			87.4	(25%–125%)
Technetium–99m Tracer	Liquid Scint Tc99, Solid "As Received"			56.5	(15%–125%)
Sulfur Carrier	LSC Sulfur 35 Solid "Dry Weight Corrected"			105	(25%–125%)
Calcium Carrier	Liquid Scint Ca45, Solid "Dry Weight Corrected"			93.0	(25%–125%)
Nickel Carrier	Liquid Scint Ni63, Solid "Dry Weight Corrected"			75.8	(25%–125%)

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Certificate of Analysis

Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	MW1–40R	Project:	PIKA00109
Sample ID:	242623011	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	07–DEC–09 12:00		
Receive Date:	10–DEC–09		
Collector:	Client		
Moisture:	19.9%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"											
Actinium–228		0.859	+/–0.165	0.139		pCi/g		MXR1 12/14/09	2316	931510	1
Americium–241	U	0.0183	+/–0.0297	0.0514		pCi/g					
Antimony–124	U	–0.0312	+/–0.0447	0.0692		pCi/g					
Antimony–125	U	0.00503	+/–0.0495	0.089		pCi/g					
Barium–133	U	–0.0188	+/–0.0291	0.0404		pCi/g					
Barium–140	U	0.0208	+/–0.0958	0.169		pCi/g					
Beryllium–7	U	0.0299	+/–0.164	0.293		pCi/g					
Bismuth–212	UI	0.00	+/–0.268	0.352		pCi/g					
Bismuth–214		0.896	+/–0.119	0.0637		pCi/g					
Cerium–139	U	–0.0113	+/–0.0146	0.0248		pCi/g					
Cerium–141	U	0.0104	+/–0.0294	0.0465		pCi/g					
Cerium–144	U	–0.00532	+/–0.107	0.169		pCi/g					
Cesium–134	U	0.0457	+/–0.0283	0.0523		pCi/g					
Cesium–136	U	–0.0111	+/–0.0443	0.074		pCi/g					
Cesium–137	U	–0.0058	+/–0.0231	0.0391	0.100	pCi/g					
Chromium–51	U	0.00625	+/–0.155	0.272		pCi/g					
Cobalt–56	U	–0.0177	+/–0.0227	0.038		pCi/g					
Cobalt–57	U	–0.000672	+/–0.0115	0.0204		pCi/g					
Cobalt–58	U	–0.0206	+/–0.0226	0.0378		pCi/g					
Cobalt–60	U	0.000712	+/–0.0219	0.0376		pCi/g					
Europium–152	U	–0.0104	+/–0.0643	0.090		pCi/g					
Europium–154	U	–0.0158	+/–0.0757	0.129		pCi/g					
Europium–155	U	0.0054	+/–0.0458	0.0832		pCi/g					
Iridium–192	U	–0.00498	+/–0.0166	0.0287		pCi/g					
Iron–59	U	–0.0286	+/–0.0519	0.0849		pCi/g					
Lead–210		0.710	+/–0.434	0.411		pCi/g					
Lead–212		0.787	+/–0.087	0.0487		pCi/g					
Lead–214		0.819	+/–0.108	0.0661		pCi/g					
Manganese–54	U	–0.00535	+/–0.0227	0.0391		pCi/g					
Mercury–203	U	–0.00263	+/–0.0179	0.0316		pCi/g					
Neodymium–147	U	0.0665	+/–0.194	0.344		pCi/g					
Neptunium–239	U	–0.0393	+/–0.0884	0.157		pCi/g					
Niobium–94	U	–0.0166	+/–0.021	0.0344		pCi/g					
Niobium–95	U	0.0443	+/–0.024	0.0446		pCi/g					
Potassium–40		20.4	+/–1.50	0.332		pCi/g					
Promethium–144	U	–0.000443	+/–0.0219	0.0371		pCi/g					
Promethium–146	U	0.00904	+/–0.0242	0.0437		pCi/g					

Certificate of Analysis

Company : PIKA International, Inc.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: MW1–40R
Sample ID: 242623011

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium–228		0.859	+/–0.165	0.139		pCi/g						
Ruthenium–106	U	0.0245	+/–0.189	0.326		pCi/g						
Silver–110m	U	0.00784	+/–0.0207	0.0359		pCi/g						
Sodium–22	U	–0.00589	+/–0.027	0.0459		pCi/g						
Thallium–208		0.234	+/–0.0475	0.0352		pCi/g						
Thorium–234	U	0.267	+/–0.546	0.510		pCi/g						
Tin–113	U	0.00941	+/–0.0232	0.0403		pCi/g						
Uranium–235	U	0.0969	+/–0.166	0.174		pCi/g						
Uranium–238	U	0.267	+/–0.546	0.510		pCi/g						
Yttrium–88	U	0.00408	+/–0.0197	0.0341		pCi/g						
Zinc–65	U	0.0445	+/–0.0642	0.0967		pCi/g						
Zirconium–95	U	0.0265	+/–0.0401	0.0694		pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Chlorine–36 Solid "As Received"												
Chlorine–36	U	1.35	+/–6.40	11.4	50.0	pCi/g		DXM2	12/22/09	1853	932785	2
GFPC, Sr90, solid "Dry Weight Corrected"												
Strontium–90	U	–0.0616	+/–0.313	0.638	2.00	pCi/g		JXR1	12/17/09	0921	932787	3
Rad Liquid Scintillation Analysis												
LSC, Tritium Vacuum, Solid "As Received"												
Tritium	U	0.00437	+/–0.158	0.280	6.00	pCi/mL		KXK2	12/26/09	2305	933028	4
Liquid Scint C14, Solid "As Received"												
Carbon–14	U	–1.3	+/–0.905	1.63	2.00	pCi/g		EXK2	12/24/09	0802	935783	5
Liquid Scint Tc99, Solid "As Received"												
Technetium–99	U	–2.41	+/–2.09	3.70	5.00	pCi/g		AXW2	12/22/09	1259	932585	6
LSC Phosphorus–32 Solid "Dry Weight Corrected"												
Phosphorus–32/33	HU	–21.9	+/–46.4	82.6		pCi/g		GXR1	12/31/09	0907	937120	7
LSC Sulfur 35 Solid "Dry Weight Corrected"												
Sulfur–35	U	1.44	+/–28.3	48.9	50.0	pCi/g		GXR1	12/31/09	1923	937122	8
Liquid Scint Ca45, Solid "Dry Weight Corrected"												
Calcium–45	U	1.29	+/–17.9	30.9	50.0	pCi/g		GXR1	12/21/09	2211	932592	9
Liquid Scint Ni63, Solid "Dry Weight Corrected"												
Nickel–63	U	–1.04	+/–1.47	2.61	4.00	pCi/g		DXM2	12/18/09	1345	932593	10

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	DRS1	12/10/09	1500	931484

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: MW1–40R
Sample ID: 242623011

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga–01–R	
2	GL–RAD–A–033	
3	EPA 905.0 Modified	
4	GL–RAD–A–002	
5	EPA EERF C–01 Modified	
6	DOE EML HASL–300, Tc–02–RC Modified	
7	GL–RAD–A–019	
8	NAS–NS–3054	
9	GL–RAD–A–048	
10	DOE RESL Ni–1, Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			98.4	(25%–125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"			88.5	(25%–125%)
Technetium–99m Tracer	Liquid Scint Tc99, Solid "As Received"			57.9	(15%–125%)
Sulfur Carrier	LSC Sulfur 35 Solid "Dry Weight Corrected"			82.9	(25%–125%)
Calcium Carrier	Liquid Scint Ca45, Solid "Dry Weight Corrected"			98.1	(25%–125%)
Nickel Carrier	Liquid Scint Ni63, Solid "Dry Weight Corrected"			72.5	(25%–125%)

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Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	MW2–60R	Project:	PIKA00109
Sample ID:	242623012	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	07–DEC–09 11:50		
Receive Date:	10–DEC–09		
Collector:	Client		
Moisture:	13.9%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"											
Actinium–228		0.829	+/–0.169	0.115		pCi/g		MXR1 12/14/09	2316	931510	1
Americium–241	U	0.111	+/–0.152	0.248		pCi/g					
Antimony–124	U	0.0114	+/–0.0327	0.0576		pCi/g					
Antimony–125	U	–0.0125	+/–0.0545	0.0897		pCi/g					
Barium–133	U	0.00549	+/–0.0267	0.0412		pCi/g					
Barium–140	U	–0.0638	+/–0.0952	0.153		pCi/g					
Beryllium–7	U	0.178	+/–0.172	0.294		pCi/g					
Bismuth–212		0.667	+/–0.270	0.244		pCi/g					
Bismuth–214		0.856	+/–0.107	0.0621		pCi/g					
Cerium–139	U	–0.00332	+/–0.0166	0.0288		pCi/g					
Cerium–141	U	0.00233	+/–0.0345	0.0529		pCi/g					
Cerium–144	U	–0.0577	+/–0.126	0.202		pCi/g					
Cesium–134	UI	0.00	+/–0.0335	0.046		pCi/g					
Cesium–136	U	0.0303	+/–0.0398	0.0705		pCi/g					
Cesium–137	U	0.0108	+/–0.0199	0.0343	0.100	pCi/g					
Chromium–51	U	–0.268	+/–0.175	0.292		pCi/g					
Cobalt–56	U	–0.000406	+/–0.0196	0.0337		pCi/g					
Cobalt–57	U	0.00257	+/–0.0137	0.0243		pCi/g					
Cobalt–58	U	0.00166	+/–0.0195	0.0339		pCi/g					
Cobalt–60	U	–0.0189	+/–0.0228	0.0354		pCi/g					
Europium–152	U	0.0111	+/–0.0662	0.0963		pCi/g					
Europium–154	U	–0.0638	+/–0.0727	0.109		pCi/g					
Europium–155	U	0.0344	+/–0.0611	0.110		pCi/g					
Iridium–192	U	0.0124	+/–0.0183	0.033		pCi/g					
Iron–59	U	–0.0404	+/–0.0463	0.0741		pCi/g					
Lead–210	U	2.94	+/–6.52	10.8		pCi/g					
Lead–212		0.855	+/–0.0919	0.0535		pCi/g					
Lead–214		0.974	+/–0.126	0.0662		pCi/g					
Manganese–54	U	0.012	+/–0.0197	0.035		pCi/g					
Mercury–203	U	0.018	+/–0.023	0.0369		pCi/g					
Neodymium–147	U	0.0216	+/–0.190	0.326		pCi/g					
Neptunium–239	U	–0.0457	+/–0.106	0.186		pCi/g					
Niobium–94	U	0.0159	+/–0.0179	0.0326		pCi/g					
Niobium–95	UI	0.00	+/–0.0207	0.0389		pCi/g					
Potassium–40		21.4	+/–1.86	0.312		pCi/g					
Promethium–144	U	0.00838	+/–0.0182	0.0324		pCi/g					
Promethium–146	U	0.0115	+/–0.0244	0.0429		pCi/g					

Certificate of Analysis

Company : PIKA International, Inc.
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Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: MW2–60R
Sample ID: 242623012

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium–228		0.829	+/–0.169	0.115		pCi/g						
Ruthenium–106	U	–0.127	+/–0.170	0.276		pCi/g						
Silver–110m	U	–0.0122	+/–0.0186	0.0301		pCi/g						
Sodium–22	U	–0.0226	+/–0.0259	0.0389		pCi/g						
Thallium–208		0.283	+/–0.0474	0.0318		pCi/g						
Thorium–234	U	0.947	+/–1.53	1.86		pCi/g						
Tin–113	U	–0.00365	+/–0.0246	0.0426		pCi/g						
Uranium–235	U	0.0976	+/–0.160	0.192		pCi/g						
Uranium–238	U	0.947	+/–1.53	1.86		pCi/g						
Yttrium–88	U	0.00641	+/–0.016	0.0281		pCi/g						
Zinc–65	U	0.00422	+/–0.0568	0.0826		pCi/g						
Zirconium–95	U	–0.00627	+/–0.0348	0.0601		pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Chlorine–36 Solid "As Received"												
Chlorine–36	U	–0.076	+/–3.02	5.91	50.0	pCi/g		DXM2	12/22/09	1853	932785	2
GFPC, Sr90, solid "Dry Weight Corrected"												
Strontium–90	U	0.0658	+/–0.542	0.998	2.00	pCi/g		JXR1	12/16/09	2019	932787	3
Rad Liquid Scintillation Analysis												
LSC, Tritium Vacuum, Solid "As Received"												
Tritium	U	0.00887	+/–0.161	0.284	6.00	pCi/mL		KXK2	12/26/09	2351	933028	4
Liquid Scint C14, Solid "As Received"												
Carbon–14	U	–0.571	+/–0.895	1.57	2.00	pCi/g		EXK2	12/24/09	0855	935783	5
Liquid Scint Tc99, Solid "As Received"												
Technetium–99	U	–0.552	+/–2.51	4.38	5.00	pCi/g		AXW2	12/22/09	0154	932585	6
LSC Phosphorus–32 Solid "Dry Weight Corrected"												
Phosphorus–32/33	HU	–10.5	+/–47.0	82.9		pCi/g		GXR1	12/31/09	0923	937120	7
LSC Sulfur 35 Solid "Dry Weight Corrected"												
Sulfur–35	U	–3.84	+/–28.4	49.3	50.0	pCi/g		GXR1	12/31/09	1939	937122	8
Liquid Scint Ca45, Solid "Dry Weight Corrected"												
Calcium–45	U	–0.724	+/–19.9	34.6	50.0	pCi/g		GXR1	12/21/09	2233	932592	9
Liquid Scint Ni63, Solid "Dry Weight Corrected"												
Nickel–63	U	–0.033	+/–1.51	2.62	4.00	pCi/g		DXM2	12/17/09	1905	932593	10

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	DRS1	12/10/09	1500	931484

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: MW2–60R
Sample ID: 242623012

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga–01–R	
2	GL–RAD–A–033	
3	EPA 905.0 Modified	
4	GL–RAD–A–002	
5	EPA EERF C–01 Modified	
6	DOE EML HASL–300, Tc–02–RC Modified	
7	GL–RAD–A–019	
8	NAS–NS–3054	
9	GL–RAD–A–048	
10	DOE RESL Ni–1, Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			97.4	(25%–125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"			87.4	(25%–125%)
Technetium–99m Tracer	Liquid Scint Tc99, Solid "As Received"			72.3	(15%–125%)
Sulfur Carrier	LSC Sulfur 35 Solid "Dry Weight Corrected"			75.0	(25%–125%)
Calcium Carrier	Liquid Scint Ca45, Solid "Dry Weight Corrected"			99.0	(25%–125%)
Nickel Carrier	Liquid Scint Ni63, Solid "Dry Weight Corrected"			78.3	(25%–125%)

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Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
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Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	MW3–40R	Project:	PIKA00109
Sample ID:	242623013	Client ID:	PIKA003
Matrix:	Soil		
Collect Date:	07–DEC–09 14:20		
Receive Date:	10–DEC–09		
Collector:	Client		
Moisture:	15.7%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"											
Actinium–228		0.913	+/–0.189	0.122		pCi/g		MXR1 12/14/09	2317	931510	1
Americium–241	U	0.0138	+/–0.0261	0.0393		pCi/g					
Antimony–124	U	0.0127	+/–0.0391	0.0685		pCi/g					
Antimony–125	U	0.0151	+/–0.0441	0.0761		pCi/g					
Barium–133	U	0.000578	+/–0.0221	0.0337		pCi/g					
Barium–140	U	0.0184	+/–0.0914	0.153		pCi/g					
Beryllium–7	U	–0.0295	+/–0.157	0.261		pCi/g					
Bismuth–212	UI	0.00	+/–0.240	0.341		pCi/g					
Bismuth–214		0.888	+/–0.134	0.0605		pCi/g					
Cerium–139	U	0.00397	+/–0.0128	0.020		pCi/g					
Cerium–141	U	0.00857	+/–0.0239	0.0378		pCi/g					
Cerium–144	U	–0.00329	+/–0.0804	0.135		pCi/g					
Cesium–134	UI	0.00	+/–0.0443	0.0505		pCi/g					
Cesium–136	U	–0.0404	+/–0.0397	0.0635		pCi/g					
Cesium–137	U	–0.0266	+/–0.0292	0.0433	0.100	pCi/g					
Chromium–51	U	0.035	+/–0.141	0.248		pCi/g					
Cobalt–56	U	–0.0101	+/–0.0205	0.0333		pCi/g					
Cobalt–57	U	–0.00152	+/–0.00905	0.0159		pCi/g					
Cobalt–58	U	–0.00714	+/–0.0208	0.0344		pCi/g					
Cobalt–60	U	0.00819	+/–0.0213	0.0367		pCi/g					
Europium–152	U	–0.0113	+/–0.0508	0.0808		pCi/g					
Europium–154	U	0.0846	+/–0.073	0.130		pCi/g					
Europium–155	U	0.0384	+/–0.0367	0.0668		pCi/g					
Iridium–192	U	–0.0011	+/–0.0147	0.0255		pCi/g					
Iron–59	U	0.0104	+/–0.0476	0.0822		pCi/g					
Lead–210		0.959	+/–0.393	0.316		pCi/g					
Lead–212		0.965	+/–0.119	0.0437		pCi/g					
Lead–214		1.02	+/–0.143	0.0567		pCi/g					
Manganese–54	U	0.0125	+/–0.0214	0.037		pCi/g					
Mercury–203	U	0.0179	+/–0.0261	0.0265		pCi/g					
Neodymium–147	U	–0.115	+/–0.187	0.299		pCi/g					
Neptunium–239	U	–0.104	+/–0.0715	0.119		pCi/g					
Niobium–94	U	0.00533	+/–0.0184	0.032		pCi/g					
Niobium–95	UI	0.00	+/–0.0245	0.0403		pCi/g					
Potassium–40		22.1	+/–2.08	0.319		pCi/g					
Promethium–144	U	0.00262	+/–0.0187	0.0322		pCi/g					
Promethium–146	U	–0.00128	+/–0.0223	0.0375		pCi/g					

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: MW3–40R
Sample ID: 242623013

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium–228		0.913	+/–0.189	0.122		pCi/g						
Ruthenium–106	U	–0.0989	+/–0.160	0.267		pCi/g						
Silver–110m	U	–0.048	+/–0.0207	0.0304		pCi/g						
Sodium–22	U	0.0269	+/–0.026	0.0463		pCi/g						
Thallium–208		0.305	+/–0.0508	0.0303		pCi/g						
Thorium–234		1.10	+/–0.469	0.371		pCi/g						
Tin–113	U	–0.000371	+/–0.0205	0.0351		pCi/g						
Uranium–235	U	0.0908	+/–0.134	0.144		pCi/g						
Uranium–238		1.10	+/–0.469	0.371		pCi/g						
Yttrium–88	U	–0.0182	+/–0.0224	0.0299		pCi/g						
Zinc–65	U	–0.00649	+/–0.0568	0.0825		pCi/g						
Zirconium–95	U	0.048	+/–0.0353	0.0636		pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Chlorine–36 Solid "As Received"												
Chlorine–36	U	0.0929	+/–1.68	3.18	50.0	pCi/g		DXM2	12/22/09	1853	932785	2
GFPC, Sr90, solid "Dry Weight Corrected"												
Strontium–90	U	–0.0917	+/–0.584	1.10	2.00	pCi/g		JXR1	12/16/09	2032	932787	3
Rad Liquid Scintillation Analysis												
LSC, Tritium Vacuum, Solid "As Received"												
Tritium	U	0.0589	+/–0.161	0.280	6.00	pCi/mL		KXK2	12/27/09	0038	933028	4
Liquid Scint C14, Solid "As Received"												
Carbon–14	U	–1.15	+/–0.891	1.60	2.00	pCi/g		EXK2	12/24/09	0948	935783	5
Liquid Scint Tc99, Solid "As Received"												
Technetium–99	U	–0.874	+/–2.00	3.47	5.00	pCi/g		AXW2	12/22/09	1402	932585	6
LSC Phosphorus–32 Solid "Dry Weight Corrected"												
Phosphorus–32/33	HU	7.20	+/–47.7	82.6		pCi/g		GXR1	12/31/09	0940	937120	7
LSC Sulfur 35 Solid "Dry Weight Corrected"												
Sulfur–35	U	8.34	+/–19.8	33.6	50.0	pCi/g		GXR1	12/31/09	1338	937401	8
Liquid Scint Ca45, Solid "Dry Weight Corrected"												
Calcium–45	U	–13.5	+/–20.1	35.7	50.0	pCi/g		GXR1	12/21/09	2254	932592	9
Liquid Scint Ni63, Solid "Dry Weight Corrected"												
Nickel–63	U	0.583	+/–1.36	2.32	4.00	pCi/g		DXM2	12/17/09	1947	932593	10

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL–RAD–A–021	DRS1	12/10/09	1500	931484

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: MW3–40R
Sample ID: 242623013

Project: PIKA00109
Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga–01–R	
2	GL–RAD–A–033	
3	EPA 905.0 Modified	
4	GL–RAD–A–002	
5	EPA EERF C–01 Modified	
6	DOE EML HASL–300, Tc–02–RC Modified	
7	GL–RAD–A–019	
8	NAS–NS–3054	
9	GL–RAD–A–048	
10	DOE RESL Ni–1, Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 Solid "As Received"			98.0	(25%–125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"			86.3	(25%–125%)
Technetium–99m Tracer	Liquid Scint Tc99, Solid "As Received"			63.2	(15%–125%)
Sulfur Carrier	LSC Sulfur 35 Solid "Dry Weight Corrected"			98.8	(25%–125%)
Calcium Carrier	Liquid Scint Ca45, Solid "Dry Weight Corrected"			99.0	(25%–125%)
Nickel Carrier	Liquid Scint Ni63, Solid "Dry Weight Corrected"			77.9	(25%–125%)

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	MW1	Project:	PIKA00109
Sample ID:	242623014	Client ID:	PIKA003
Matrix:	Water		
Collect Date:	09–DEC–09 07:20		
Receive Date:	10–DEC–09		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Liquid (Standard List) "As Received"											
Actinium–228	U	12.8	+/–12.9	23.0		pCi/L		KXG3 12/17/09	1129	931514	1
Americium–241	U	–1.48	+/–5.45	7.78		pCi/L					
Antimony–124	U	–5.85	+/–6.08	7.14		pCi/L					
Antimony–125	U	–0.809	+/–6.74	11.2		pCi/L					
Barium–133	U	0.329	+/–3.42	5.90		pCi/L					
Barium–140	U	10.5	+/–13.9	24.7		pCi/L					
Beryllium–7	U	8.50	+/–20.7	36.6		pCi/L					
Bismuth–212	U	–7.71	+/–22.3	35.9		pCi/L					
Bismuth–214	U	0.402	+/–7.03	11.6		pCi/L					
Cerium–139	U	0.328	+/–2.33	3.97		pCi/L					
Cerium–141	U	–0.315	+/–3.99	6.76		pCi/L					
Cerium–144	U	11.3	+/–15.1	27.0		pCi/L					
Cesium–134	U	–0.489	+/–3.65	6.01		pCi/L					
Cesium–136	U	3.47	+/–5.59	10.5		pCi/L					
Cesium–137	U	–3.46	+/–4.45	7.51	10.0	pCi/L					
Chromium–51	U	–17	+/–25.4	40.9		pCi/L					
Cobalt–56	U	–4.61	+/–3.23	3.99		pCi/L					
Cobalt–57	U	–0.867	+/–1.90	3.17		pCi/L					
Cobalt–58	U	0.862	+/–2.99	5.24		pCi/L					
Cobalt–60	U	–0.363	+/–3.05	4.97		pCi/L					
Europium–152	U	0.520	+/–7.55	13.0		pCi/L					
Europium–154	U	–0.913	+/–8.21	13.5		pCi/L					
Europium–155	U	7.76	+/–7.31	13.6		pCi/L					
Iridium–192	U	1.14	+/–2.58	4.62		pCi/L					
Iron–59	U	–0.152	+/–6.34	10.8		pCi/L					
Lead–210	U	43.4	+/–104	75.5		pCi/L					
Lead–212	U	4.48	+/–6.01	9.69		pCi/L					
Lead–214	U	5.80	+/–6.61	12.0		pCi/L					
Manganese–54	U	–1.54	+/–2.89	4.40		pCi/L					
Mercury–203	U	3.35	+/–3.37	5.74		pCi/L					
Neodymium–147	U	–2.59	+/–27.8	45.3		pCi/L					
Neptunium–239	U	12.9	+/–14.4	26.2		pCi/L					
Niobium–94	U	–0.121	+/–2.79	4.72		pCi/L					
Niobium–95	U	–3.94	+/–3.45	4.77		pCi/L					
Potassium–40	U	–38.1	+/–43.3	73.8		pCi/L					
Promethium–144	U	0.124	+/–2.96	5.06		pCi/L					
Promethium–146	U	–1.08	+/–3.44	5.52		pCi/L					
Radium–228	U	12.8	+/–12.9	23.0		pCi/L					

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: MW1 Project: PIKA00109
Sample ID: 242623014 Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Liquid (Standard List) "As Received"											
Ruthenium–106	U	1.84	+/–22.7	39.5		pCi/L					
Silver–110m	U	–8.38	+/–3.59	4.22		pCi/L					
Sodium–22	U	–1.01	+/–3.06	4.78		pCi/L					
Thallium–208	U	0.275	+/–3.62	5.88		pCi/L					
Thorium–234	U	47.5	+/–75.1	81.0		pCi/L					
Tin–113	U	–2.5	+/–3.40	5.26		pCi/L					
Uranium–235	U	7.73	+/–18.4	28.5		pCi/L					
Uranium–238	U	47.5	+/–75.1	81.0		pCi/L					
Yttrium–88	U	–0.121	+/–3.41	5.69		pCi/L					
Zinc–65	U	3.27	+/–6.01	10.2		pCi/L					
Zirconium–95	U	–1.63	+/–4.64	7.34		pCi/L					
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 liquid "As Received"											
Chlorine–36	U	–5.28	+/–24.7	50.4	100	pCi/L		DXM 2	12/22/09	1854	934102 2
GFPC, Sr90, liquid "As Received"											
Strontium–90	U	–0.64	+/–0.973	1.83	2.00	pCi/L		MXB1	12/18/09	2004	931973 3
Rad Liquid Scintillation Analysis											
LSC Phosphorus–32 Liquid "As Received"											
Phosphorus–32	HU	–16.1	+/–75.5	133	200	pCi/L		GXR1	12/27/09	0729	932595 4
LSC Sulfur 35 Liquid "As Received"											
Sulfur–35	U	28.2	+/–35.4	59.6	100	pCi/L		GXR1	12/30/09	1954	937402 5
Liquid Scint Ca45, Liquid "As Received"											
Calcium–45	U	20.3	+/–24.3	40.8	100	pCi/L		GXR1	12/27/09	0002	932597 6
Liquid Scint Ni63, Liquid "As Received"											
Nickel–63	U	–10	+/–17.8	31.9	50.0	pCi/L		DXM 2	12/22/09	1637	934622 7
Liquid Scint Tc99, Liquid "As Received"											
Technetium–99	U	2.73	+/–19.3	33.1	50.0	pCi/L		AXW 2	12/28/09	0903	932599 8

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 901.1	
2	GL–RAD–A–033	
3	EPA 905.0 Modified	
4	GL–RAD–A–019	
5	NAS–NS–3054	

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: MW1 Project: PIKA00109
Sample ID: 242623014 Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
6	GL–RAD–A–048										
7	DOE RESL Ni–1, Modified										
8	DOE EML HASL–300, Tc–02–RC Modified										

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 liquid "As Received"			105	(25%–125%)
Strontium Carrier	GFPC, Sr90, liquid "As Received"			63.9	(25%–125%)
Sulfur Carrier	LSC Sulfur 35 Liquid "As Received"			120	(25%–125%)
Calcium Carrier	Liquid Scint Ca45, Liquid "As Received"			99.0	(25%–125%)
Nickel Carrier	Liquid Scint Ni63, Liquid "As Received"			75.8	(25%–125%)
Technetium–99m Tracer	Liquid Scint Tc99, Liquid "As Received"			97.8	(15%–125%)

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	MW2	Project:	PIKA00109
Sample ID:	242623015	Client ID:	PIKA003
Matrix:	Water		
Collect Date:	09–DEC–09 08:00		
Receive Date:	10–DEC–09		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Liquid (Standard List) "As Received"											
Actinium–228	U	–11.1	+/–12.8	19.6		pCi/L		KXG3 12/17/09	1137	931514	1
Americium–241	U	5.71	+/–23.4	37.5		pCi/L					
Antimony–124	U	1.35	+/–5.88	10.6		pCi/L					
Antimony–125	U	–1.88	+/–8.75	14.2		pCi/L					
Barium–133	U	–0.204	+/–4.88	7.20		pCi/L					
Barium–140	U	–9.14	+/–17.1	25.6		pCi/L					
Beryllium–7	U	3.51	+/–26.1	43.7		pCi/L					
Bismuth–212	U	–2.3	+/–22.7	37.8		pCi/L					
Bismuth–214		43.5	+/–14.9	9.39		pCi/L					
Cerium–139	U	1.74	+/–3.11	5.32		pCi/L					
Cerium–141	U	–0.751	+/–5.92	9.78		pCi/L					
Cerium–144	U	15.4	+/–22.5	39.0		pCi/L					
Cesium–134	U	1.48	+/–3.38	6.03		pCi/L					
Cesium–136	U	1.37	+/–6.82	11.7		pCi/L					
Cesium–137	U	–3.31	+/–3.74	5.09	10.0	pCi/L					
Chromium–51	U	–22.2	+/–31.1	49.9		pCi/L					
Cobalt–56	U	0.0737	+/–3.14	5.24		pCi/L					
Cobalt–57	U	–0.343	+/–2.73	4.56		pCi/L					
Cobalt–58	U	1.35	+/–3.53	6.17		pCi/L					
Cobalt–60	U	–0.436	+/–3.10	5.05		pCi/L					
Europium–152	U	2.09	+/–9.90	15.9		pCi/L					
Europium–154	U	–3.23	+/–9.52	15.0		pCi/L					
Europium–155	U	–2.26	+/–12.1	20.3		pCi/L					
Iridium–192	U	0.300	+/–3.17	5.44		pCi/L					
Iron–59	U	7.52	+/–6.05	12.2		pCi/L					
Lead–210	U	381	+/–695	1150		pCi/L					
Lead–212	U	2.93	+/–7.14	11.2		pCi/L					
Lead–214	UI	0.00	+/–14.5	22.0		pCi/L					
Manganese–54	U	0.660	+/–2.67	4.63		pCi/L					
Mercury–203	U	–5.31	+/–3.43	5.14		pCi/L					
Neodymium–147	U	–22.4	+/–34.3	51.3		pCi/L					
Neptunium–239	U	–6.77	+/–20.2	33.4		pCi/L					
Niobium–94	U	–0.301	+/–2.35	3.90		pCi/L					
Niobium–95	U	4.39	+/–3.85	7.28		pCi/L					
Potassium–40	U	8.95	+/–43.0	81.4		pCi/L					
Promethium–144	U	1.57	+/–2.65	4.83		pCi/L					
Promethium–146	U	0.289	+/–4.30	7.17		pCi/L					
Radium–228	U	–11.1	+/–12.8	19.6		pCi/L					

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: MW2 Project: PIKA00109
Sample ID: 242623015 Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Liquid (Standard List) "As Received"											
Ruthenium–106	U	19.5	+/–28.1	51.7		pCi/L					
Silver–110m	U	2.08	+/–2.96	5.45		pCi/L					
Sodium–22	U	–1.04	+/–3.42	5.43		pCi/L					
Thallium–208	U	0.471	+/–3.77	6.53		pCi/L					
Thorium–234	U	23.1	+/–298	309		pCi/L					
Tin–113	U	–6.49	+/–4.32	6.15		pCi/L					
Uranium–235	U	0.100	+/–25.4	41.2		pCi/L					
Uranium–238	U	23.1	+/–298	309		pCi/L					
Yttrium–88	U	–1.16	+/–3.54	5.53		pCi/L					
Zinc–65	U	–0.888	+/–6.92	9.81		pCi/L					
Zirconium–95	U	–0.955	+/–5.08	8.29		pCi/L					
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 liquid "As Received"											
Chlorine–36	U	1.39	+/–12.8	22.2	100	pCi/L		DXM 2 12/23/09	1812	934102	2
GFPC, Sr90, liquid "As Received"											
Strontium–90	U	–0.542	+/–0.724	1.37	2.00	pCi/L		MXB1 12/18/09	2004	931973	3
Rad Liquid Scintillation Analysis											
LSC Phosphorus–32 Liquid "As Received"											
Phosphorus–32	HU	1.66	+/–74.5	130	200	pCi/L		GXR1 12/27/09	0746	932595	4
LSC Sulfur 35 Liquid "As Received"											
Sulfur–35	U	5.97	+/–38.1	65.4	100	pCi/L		GXR1 12/30/09	2016	937402	5
Liquid Scint Ca45, Liquid "As Received"											
Calcium–45	U	–1.9	+/–24.5	41.9	100	pCi/L		GXR1 12/27/09	0049	932597	6
Liquid Scint Ni63, Liquid "As Received"											
Nickel–63	U	–8.13	+/–20.4	36.2	50.0	pCi/L		DXM 2 12/22/09	1708	934622	7
Liquid Scint Tc99, Liquid "As Received"											
Technetium–99	U	–4.71	+/–18.6	32.3	50.0	pCi/L		AXW 2 12/28/09	0940	932599	8

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 901.1	
2	GL–RAD–A–033	
3	EPA 905.0 Modified	
4	GL–RAD–A–019	
5	NAS–NS–3054	

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: MW2 Project: PIKA00109
Sample ID: 242623015 Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
6	GL–RAD–A–048										
7	DOE RESL Ni–1, Modified										
8	DOE EML HASL–300, Tc–02–RC Modified										

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 liquid "As Received"			105	(25%–125%)
Strontium Carrier	GFPC, Sr90, liquid "As Received"			84.0	(25%–125%)
Sulfur Carrier	LSC Sulfur 35 Liquid "As Received"			110	(25%–125%)
Calcium Carrier	Liquid Scint Ca45, Liquid "As Received"			96.5	(25%–125%)
Nickel Carrier	Liquid Scint Ni63, Liquid "As Received"			66.8	(25%–125%)
Technetium–99m Tracer	Liquid Scint Tc99, Liquid "As Received"			100	(15%–125%)

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	MW3	Project:	PIKA00109
Sample ID:	242623016	Client ID:	PIKA003
Matrix:	Water		
Collect Date:	09–DEC–09 11:25		
Receive Date:	10–DEC–09		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Liquid (Standard List) "As Received"											
Actinium–228	U	10.9	+/–10.5	20.5		pCi/L		KXG3 12/17/09	1217	931514	1
Americium–241	U	0.348	+/–16.3	23.9		pCi/L					
Antimony–124	U	1.66	+/–5.19	9.53		pCi/L					
Antimony–125	U	–4.35	+/–6.42	10.0		pCi/L					
Barium–133	U	–0.0854	+/–3.84	5.84		pCi/L					
Barium–140	U	–3.62	+/–13.5	21.9		pCi/L					
Beryllium–7	U	17.4	+/–22.7	41.7		pCi/L					
Bismuth–212	U	6.15	+/–20.6	34.3		pCi/L					
Bismuth–214		33.6	+/–12.9	10.1		pCi/L					
Cerium–139	U	0.191	+/–2.66	4.50		pCi/L					
Cerium–141	U	1.60	+/–4.98	8.62		pCi/L					
Cerium–144	U	–0.803	+/–17.6	29.9		pCi/L					
Cesium–134	U	0.565	+/–3.24	5.72		pCi/L					
Cesium–136	U	–3.67	+/–4.08	5.34		pCi/L					
Cesium–137	U	–0.96	+/–2.65	4.12	10.0	pCi/L					
Chromium–51	U	19.3	+/–26.7	46.2		pCi/L					
Cobalt–56	U	0.503	+/–2.71	4.78		pCi/L					
Cobalt–57	U	1.01	+/–2.26	3.98		pCi/L					
Cobalt–58	U	–0.031	+/–2.36	4.05		pCi/L					
Cobalt–60	U	–0.699	+/–2.43	3.71		pCi/L					
Europium–152	U	–0.127	+/–7.55	13.1		pCi/L					
Europium–154	U	–1.34	+/–8.42	13.5		pCi/L					
Europium–155	U	4.10	+/–9.66	17.1		pCi/L					
Iridium–192	U	0.562	+/–2.83	4.68		pCi/L					
Iron–59	U	0.00	+/–4.46	7.49		pCi/L					
Lead–210	U	–260	+/–411	606		pCi/L					
Lead–212	U	1.45	+/–6.91	10.7		pCi/L					
Lead–214	UI	0.00	+/–12.2	17.4		pCi/L					
Manganese–54	U	–2.31	+/–2.20	3.04		pCi/L					
Mercury–203	U	2.05	+/–3.01	5.22		pCi/L					
Neodymium–147	U	3.53	+/–27.3	46.7		pCi/L					
Neptunium–239	U	4.88	+/–17.9	31.2		pCi/L					
Niobium–94	U	1.58	+/–2.40	4.33		pCi/L					
Niobium–95	U	–0.749	+/–2.89	4.52		pCi/L					
Potassium–40	U	–9.66	+/–38.8	67.6		pCi/L					
Promethium–144	U	–0.435	+/–2.37	3.78		pCi/L					
Promethium–146	U	–0.367	+/–3.32	5.58		pCi/L					
Radium–228	U	10.9	+/–10.5	20.5		pCi/L					

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: MW3 Project: PIKA00109
Sample ID: 242623016 Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Liquid (Standard List) "As Received"											
Ruthenium–106	U	9.33	+/–26.6	46.1		pCi/L					
Silver–110m	U	–0.568	+/–2.58	4.13		pCi/L					
Sodium–22	U	–0.546	+/–2.99	4.78		pCi/L					
Thallium–208	U	–0.211	+/–2.75	4.64		pCi/L					
Thorium–234	U	104	+/–231	211		pCi/L					
Tin–113	U	0.410	+/–3.08	5.37		pCi/L					
Uranium–235	U	–5.42	+/–20.7	33.7		pCi/L					
Uranium–238	U	104	+/–231	211		pCi/L					
Yttrium–88	U	0.384	+/–2.49	4.36		pCi/L					
Zinc–65	U	1.14	+/–5.03	7.83		pCi/L					
Zirconium–95	U	1.25	+/–4.78	8.15		pCi/L					
Rad Gas Flow Proportional Counting											
GFPC, Chlorine–36 liquid "As Received"											
Chlorine–36	U	–10.9	+/–14.5	25.9	100	pCi/L		DXM 2	12/23/09 1812	934102	2
GFPC, Sr90, liquid "As Received"											
Strontium–90	U	0.376	+/–0.791	1.37	2.00	pCi/L		MXB1	12/18/09 2004	931973	3
Rad Liquid Scintillation Analysis											
LSC Phosphorus–32 Liquid "As Received"											
Phosphorus–32	HU	–51.8	+/–71.6	128	200	pCi/L		GXR1	12/27/09 0802	932595	4
LSC Sulfur 35 Liquid "As Received"											
Sulfur–35	U	22.2	+/–42.6	72.4	100	pCi/L		GXR1	12/30/09 2037	937402	5
Liquid Scint Ca45, Liquid "As Received"											
Calcium–45	U	2.69	+/–24.0	40.9	100	pCi/L		GXR1	12/27/09 0136	932597	6
Liquid Scint Ni63, Liquid "As Received"											
Nickel–63	U	–11.5	+/–17.6	31.6	50.0	pCi/L		DXM 2	12/22/09 1739	934622	7
Liquid Scint Tc99, Liquid "As Received"											
Technetium–99	U	–1.1	+/–18.2	31.4	50.0	pCi/L		AXW 2	12/28/09 1017	932599	8

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 901.1	
2	GL–RAD–A–033	
3	EPA 905.0 Modified	
4	GL–RAD–A–019	
5	NAS–NS–3054	

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 4, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID: MW3 Project: PIKA00109
Sample ID: 242623016 Client ID: PIKA003

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
6	GL–RAD–A–048										
7	DOE RESL Ni–1, Modified										
8	DOE EML HASL–300, Tc–02–RC Modified										

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine–36 liquid "As Received"			103	(25%–125%)
Strontium Carrier	GFPC, Sr90, liquid "As Received"			85.2	(25%–125%)
Sulfur Carrier	LSC Sulfur 35 Liquid "As Received"			99.0	(25%–125%)
Calcium Carrier	Liquid Scint Ca45, Liquid "As Received"			98.7	(25%–125%)
Nickel Carrier	Liquid Scint Ni63, Liquid "As Received"			76.6	(25%–125%)
Technetium–99m Tracer	Liquid Scint Tc99, Liquid "As Received"			103	(15%–125%)

QC Summary

Report Date: January 4, 2010
Page 1 of 20

PIKA International, Inc.
5025 Arnold Ave.
Mcclellan Afb, California

Contact: Mr. Joel Cehn

Workorder: 242623

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 931510										
QC1201992497 242623008 DUP										
Actinium-228		0.866 +/-0.158		0.977 +/-0.227	pCi/g	12.1		(0% - 20%)	MXR1	12/15/09 09:35
Americium-241	U	0.0621 +/-0.0843	U	0.00317 +/-0.0339	pCi/g	181		N/A		
Antimony-124	U	0.0291 +/-0.0323	U	0.0424 +/-0.0584	pCi/g	37.2		N/A		
Antimony-125	U	0.0375 +/-0.0441	U	-0.0597 +/-0.0672	pCi/g	879		N/A		
Barium-133	U	0.0258 +/-0.0238	U	0.0057 +/-0.0313	pCi/g	128		N/A		
Barium-140	U	0.023 +/-0.0931	U	0.0422 +/-0.158	pCi/g	58.9		N/A		
Beryllium-7	U	-0.12 +/-0.152	U	0.0393 +/-0.223	pCi/g	396		N/A		
Bismuth-212		0.665 +/-0.277	U	0.479 +/-0.339	pCi/g	32.6		(0% - 100%)		
Bismuth-214		0.767 +/-0.0959		0.891 +/-0.158	pCi/g	15.0		(0% - 20%)		
Cerium-139	U	-0.0034 +/-0.0133	U	-0.01 +/-0.0171	pCi/g	98.5		N/A		
Cerium-141	U	0.0306 +/-0.0324	U	-0.0103 +/-0.0349	pCi/g	402		N/A		
Cerium-144	U	-0.0678 +/-0.111	U	0.0198 +/-0.113	pCi/g	364		N/A		
Cesium-134	UI	0.00 +/-0.0234	UI	0.00 +/-0.0584	pCi/g	37.0		N/A		
Cesium-136	U	-0.00576 +/-0.0435	U	-0.00786 +/-0.0592	pCi/g	30.9		N/A		
Cesium-137	U	-0.012 +/-0.0177	U	0.0186 +/-0.0408	pCi/g	917		N/A		
Chromium-51	U	-0.184 +/-0.162	U	-0.067 +/-0.217	pCi/g	93.3		N/A		
Cobalt-56	U	-0.0192 +/-0.0188	U	-0.00419 +/-0.0294	pCi/g	128		N/A		
Cobalt-57	U	0.00829 +/-0.0119	U	0.0027 +/-0.0134	pCi/g	102		N/A		
Cobalt-58	U	-0.0165 +/-0.0179	U	0.0171 +/-0.0293	pCi/g	10200		N/A		
Cobalt-60	U	0.00655 +/-0.0173	U	-0.00219 +/-0.0312	pCi/g	402		N/A		

QC Summary

Workorder: 242623

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 931510										
Europium-152	U	0.000401 +/-0.0504	U	-0.0148 +/-0.0659	pCi/g	211		N/A		
Europium-154	U	0.00101 +/-0.0612	U	-0.0388 +/-0.0965	pCi/g	211		N/A	MXR1	12/15/09 09:35
Europium-155	U	0.0756 +/-0.0527	U	0.0559 +/-0.0551	pCi/g	30.1		N/A		
Iridium-192	U	0.00404 +/-0.0157	U	-0.00601 +/-0.0203	pCi/g	1020		N/A		
Iron-59	U	-0.0166 +/-0.0458	U	-0.0238 +/-0.0596	pCi/g	35.6		N/A		
Lead-210	U	1.40 +/-1.94		1.29 +/-0.501	pCi/g	8.20		(0% - 100%)		
Lead-212		0.827 +/-0.0767		0.875 +/-0.121	pCi/g	5.64		(0% - 20%)		
Lead-214		0.816 +/-0.103		0.924 +/-0.152	pCi/g	12.4		(0% - 20%)		
Manganese-54	U	-0.00876 +/-0.0184	U	0.0224 +/-0.0312	pCi/g	457		N/A		
Mercury-203	U	0.00391 +/-0.0179	U	0.00296 +/-0.0268	pCi/g	27.9		N/A		
Neodymium-147	U	0.0779 +/-0.192	U	-0.0493 +/-0.303	pCi/g	887		N/A		
Neptunium-239	U	-0.0669 +/-0.101	U	0.0247 +/-0.101	pCi/g	435		N/A		
Niobium-94	U	-0.00272 +/-0.0165	U	0.00596 +/-0.0249	pCi/g	535		N/A		
Niobium-95	U	0.0299 +/-0.0217	U	0.0091 +/-0.0332	pCi/g	107		N/A		
Potassium-40		19.9 +/-1.63		21.5 +/-2.27	pCi/g	7.53		(0% - 20%)		
Promethium-144	U	-0.000247 +/-0.0165	U	-0.00843 +/-0.0246	pCi/g	189		N/A		
Promethium-146	U	0.0178 +/-0.021	U	0.0267 +/-0.0308	pCi/g	40.1		N/A		
Radium-228		0.866 +/-0.158		0.977 +/-0.227	pCi/g	12.1		(0% - 20%)		
Ruthenium-106	U	-0.0289 +/-0.146	U	-0.00385 +/-0.244	pCi/g	153		N/A		
Silver-110m	U	0.00389 +/-0.0152	U	-0.00491 +/-0.0298	pCi/g	1720		N/A		
Sodium-22	U	0.00105 +/-0.0219	U	-0.00955 +/-0.0341	pCi/g	249		N/A		
Thallium-208		0.269 +/-0.0496		0.281 +/-0.0683	pCi/g	4.58		(0% - 20%)		
Thorium-234		1.61		1.20	pCi/g	29.0		(0% - 100%)		

QC Summary

Workorder: 242623

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 931510										
		+/-1.03		+/-0.610						
Tin-113		U -0.00423	U	0.00184	pCi/g	509		N/A	MXR1	12/15/09 09:35
		+/-0.0215		+/-0.0293						
Uranium-235		U 0.112	U	0.0593	pCi/g	61.4		N/A		
		+/-0.120		+/-0.129						
Uranium-238		1.61		1.20	pCi/g	29.0		(0% - 100%)		
		+/-1.03		+/-0.610						
Yttrium-88		U -0.00559	U	-0.00591	pCi/g	5.69		N/A		
		+/-0.015		+/-0.0227						
Zinc-65		U -0.0202	U	-0.022	pCi/g	8.59		N/A		
		+/-0.0533		+/-0.0781						
Zirconium-95		U 0.0347	U	-0.00669	pCi/g	296		N/A		
		+/-0.0316		+/-0.0495						
QC1201992498 LCS										
Actinium-228				1.73	pCi/g					12/15/09 10:48
				+/-0.582						
Americium-241	16.3			14.6	pCi/g		89.3	(75%-125%)		
				+/-1.43						
Antimony-124			U	0.014	pCi/g					
				+/-0.123						
Antimony-125			U	0.0396	pCi/g					
				+/-0.206						
Barium-133			U	0.0111	pCi/g					
				+/-0.0881						
Barium-140			U	-0.0438	pCi/g					
				+/-0.267						
Beryllium-7			U	-0.375	pCi/g					
				+/-0.681						
Bismuth-212			U	0.669	pCi/g					
				+/-0.744						
Bismuth-214				0.720	pCi/g					
				+/-0.332						
Cerium-139			U	0.0126	pCi/g					
				+/-0.043						
Cerium-141			U	-0.0815	pCi/g					
				+/-0.0692						
Cerium-144			U	-0.0313	pCi/g					
				+/-0.307						
Cesium-134			U	0.111	pCi/g					
				+/-0.114						
Cesium-136			U	0.0394	pCi/g					
				+/-0.149						
Cesium-137	5.72			5.99	pCi/g		105	(75%-125%)		
				+/-0.548						

QC Summary

Workorder: 242623

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 931510										
Chromium-51			U	-0.198 +/-0.499	pCi/g					
Cobalt-56			U	-0.0475 +/-0.0891	pCi/g				MXR1	12/15/09 10:48
Cobalt-57				0.227 +/-0.073	pCi/g					
Cobalt-58			U	0.0958 +/-0.0873	pCi/g					
Cobalt-60	6.69			7.04 +/-0.561	pCi/g		105	(75%-125%)		
Europium-152			U	-0.0364 +/-0.188	pCi/g					
Europium-154			U	-0.0877 +/-0.166	pCi/g					
Europium-155			U	-0.00931 +/-0.143	pCi/g					
Iridium-192			U	0.0823 +/-0.0591	pCi/g					
Iron-59			U	-0.16 +/-0.210	pCi/g					
Lead-210			U	1.08 +/-1.33	pCi/g					
Lead-212				1.42 +/-0.199	pCi/g					
Lead-214				1.16 +/-0.267	pCi/g					
Manganese-54			U	-0.0538 +/-0.0901	pCi/g					
Mercury-203			U	-0.0709 +/-0.0631	pCi/g					
Neodymium-147			U	-0.036 +/-0.515	pCi/g					
Neptunium-239			U	0.105 +/-0.281	pCi/g					
Niobium-94			U	0.00201 +/-0.0831	pCi/g					
Niobium-95			U	0.0114 +/-0.0926	pCi/g					
Potassium-40			U	-0.0555 +/-0.723	pCi/g					
Promethium-144			U	-0.0133 +/-0.0828	pCi/g					
Promethium-146			U	-0.0156 +/-0.108	pCi/g					
Radium-228				1.73	pCi/g					

QC Summary

Workorder: 242623

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 931510										
				+/-0.582						
Ruthenium-106			U	0.0435	pCi/g				MXR1	12/15/09 10:48
				+/-0.659						
Silver-110m			U	0.121	pCi/g					
				+/-0.0915						
Sodium-22			U	-0.0332	pCi/g					
				+/-0.0587						
Thallium-208				0.507	pCi/g					
				+/-0.151						
Thorium-234			U	-0.974	pCi/g					
				+/-1.11						
Tin-113			U	0.0167	pCi/g					
				+/-0.0862						
Uranium-235			U	0.335	pCi/g					
				+/-0.313						
Uranium-238			U	-0.974	pCi/g					
				+/-1.11						
Yttrium-88			U	0.0669	pCi/g					
				+/-0.0621						
Zinc-65			U	-0.0984	pCi/g					
				+/-0.256						
Zirconium-95			U	-0.0561	pCi/g					
				+/-0.155						
QC1201992496 MB										
Actinium-228			U	-0.0683	pCi/g					12/15/09 09:34
				+/-0.0821						
Americium-241			U	0.0288	pCi/g					
				+/-0.0831						
Antimony-124			U	-0.0207	pCi/g					
				+/-0.0412						
Antimony-125			U	0.0245	pCi/g					
				+/-0.0518						
Barium-133			U	0.00869	pCi/g					
				+/-0.0274						
Barium-140			U	-0.0395	pCi/g					
				+/-0.070						
Beryllium-7			U	0.0533	pCi/g					
				+/-0.154						
Bismuth-212			U	0.147	pCi/g					
				+/-0.160						
Bismuth-214			U	-0.0215	pCi/g					
				+/-0.0488						
Cerium-139			U	-0.0118	pCi/g					
				+/-0.0156						

QC Summary

Workorder: 242623

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 931510										
Cerium-141			U	-0.0162 +/-0.024	pCi/g					
Cerium-144			U	-0.0462 +/-0.109	pCi/g				MXR1	12/15/09 09:34
Cesium-134			U	0.00619 +/-0.0223	pCi/g					
Cesium-136			U	-0.00299 +/-0.0293	pCi/g					
Cesium-137			U	-0.0118 +/-0.0224	pCi/g					
Chromium-51			U	0.0393 +/-0.157	pCi/g					
Cobalt-56			U	0.00465 +/-0.0228	pCi/g					
Cobalt-57			U	0.002 +/-0.0123	pCi/g					
Cobalt-58			U	0.0167 +/-0.0192	pCi/g					
Cobalt-60			U	0.000896 +/-0.0232	pCi/g					
Europium-152			U	-0.0268 +/-0.0549	pCi/g					
Europium-154			U	-0.00206 +/-0.0566	pCi/g					
Europium-155			U	0.00317 +/-0.0516	pCi/g					
Iridium-192			U	0.000717 +/-0.0176	pCi/g					
Iron-59			U	0.0157 +/-0.0339	pCi/g					
Lead-210			U	1.84 +/-2.99	pCi/g					
Lead-212			U	0.00396 +/-0.0346	pCi/g					
Lead-214			U	-0.0303 +/-0.0483	pCi/g					
Manganese-54			U	0.0245 +/-0.021	pCi/g					
Mercury-203			U	-0.0019 +/-0.0177	pCi/g					
Neodymium-147			U	-0.0368 +/-0.127	pCi/g					
Neptunium-239			U	-0.00541 +/-0.098	pCi/g					
Niobium-94			U	-0.000512	pCi/g					

QC Summary

Workorder: 242623

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 931510										
				+/-0.0171						
Niobium-95			U	0.00156	pCi/g				MXR1	12/15/09 09:34
				+/-0.0194						
Potassium-40			U	0.369	pCi/g					
				+/-0.340						
Promethium-144			U	0.00745	pCi/g					
				+/-0.019						
Promethium-146			U	0.0105	pCi/g					
				+/-0.0273						
Radium-228			U	-0.0683	pCi/g					
				+/-0.0821						
Ruthenium-106			U	-0.107	pCi/g					
				+/-0.181						
Silver-110m			U	-0.00386	pCi/g					
				+/-0.0164						
Sodium-22			U	-0.00187	pCi/g					
				+/-0.0199						
Thallium-208			U	0.000164	pCi/g					
				+/-0.0231						
Thorium-234			U	0.406	pCi/g					
				+/-1.22						
Tin-113			U	0.0128	pCi/g					
				+/-0.023						
Uranium-235			U	0.0455	pCi/g					
				+/-0.121						
Uranium-238			U	0.406	pCi/g					
				+/-1.22						
Yttrium-88			U	0.00718	pCi/g					
				+/-0.0221						
Zinc-65			U	-0.0112	pCi/g					
				+/-0.0423						
Zirconium-95			U	0.0261	pCi/g					
				+/-0.0338						
Batch 931514										
QC1201992507 242623014 DUP										
Actinium-228	U	12.8	U	-1.15	pCi/L	240		N/A	KXG3	12/17/09 13:35
		+/-12.9		+/-11.3						
Americium-241	U	-1.48	U	-15	pCi/L	164		N/A		
		+/-5.45		+/-14.4						
Antimony-124	U	-5.85	U	3.04	pCi/L	634		N/A		
		+/-6.08		+/-6.80						
Antimony-125	U	-0.809	U	1.99	pCi/L	475		N/A		
		+/-6.74		+/-6.85						
Barium-133	U	0.329	U	-0.736	pCi/L	523		N/A		

QC Summary

Workorder: 242623

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch 931514											
		+/-3.42		+/-3.53							
Barium-140	U	10.5	U	-1.22	pCi/L	253			N/A KXG3	12/17/09	13:35
		+/-13.9		+/-14.7							
Beryllium-7	U	8.50	U	6.21	pCi/L	31.2			N/A		
		+/-20.7		+/-23.0							
Bismuth-212	U	-7.71	U	1.10	pCi/L	267			N/A		
		+/-22.3		+/-19.9							
Bismuth-214	U	0.402	UI	0.00	pCi/L	187			N/A		
		+/-7.03		+/-8.17							
Cerium-139	U	0.328	U	1.32	pCi/L	120			N/A		
		+/-2.33		+/-2.71							
Cerium-141	U	-0.315	U	-2.43	pCi/L	154			N/A		
		+/-3.99		+/-4.93							
Cerium-144	U	11.3	U	5.53	pCi/L	68.5			N/A		
		+/-15.1		+/-17.8							
Cesium-134	U	-0.489	U	-2.98	pCi/L	144			N/A		
		+/-3.65		+/-3.63							
Cesium-136	U	3.47	U	1.77	pCi/L	65.1			N/A		
		+/-5.59		+/-5.43							
Cesium-137	U	-3.46	U	1.28	pCi/L	435			N/A		
		+/-4.45		+/-2.79							
Chromium-51	U	-17	U	-3.11	pCi/L	138			N/A		
		+/-25.4		+/-27.4							
Cobalt-56	U	-4.61	U	0.117	pCi/L	210			N/A		
		+/-3.23		+/-2.84							
Cobalt-57	U	-0.867	U	-1.41	pCi/L	47.9			N/A		
		+/-1.90		+/-2.35							
Cobalt-58	U	0.862	U	-0.507	pCi/L	770			N/A		
		+/-2.99		+/-2.83							
Cobalt-60	U	-0.363	U	2.93	pCi/L	257			N/A		
		+/-3.05		+/-2.75							
Europium-152	U	0.520	U	8.33	pCi/L	177			N/A		
		+/-7.55		+/-8.58							
Europium-154	U	-0.913	U	2.44	pCi/L	439			N/A		
		+/-8.21		+/-7.28							
Europium-155	U	7.76	U	-0.178	pCi/L	209			N/A		
		+/-7.31		+/-9.89							
Iridium-192	U	1.14	U	1.28	pCi/L	12.0			N/A		
		+/-2.58		+/-2.89							
Iron-59	U	-0.152	U	0.214	pCi/L	1180			N/A		
		+/-6.34		+/-5.76							
Lead-210	U	43.4	U	-204	pCi/L	308			N/A		
		+/-104		+/-288							
Lead-212	U	4.48	U	1.77	pCi/L	86.5			N/A		

QC Summary

Workorder: 242623

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch 931514											
		+/-6.01		+/-6.28							
Lead-214	U	5.80	U	10.9	pCi/L	60.6			N/A KXG3	12/17/09	13:35
		+/-6.61		+/-11.5							
Manganese-54	U	-1.54	U	-1.05	pCi/L	37.2			N/A		
		+/-2.89		+/-2.69							
Mercury-203	U	3.35	U	-0.87	pCi/L	340			N/A		
		+/-3.37		+/-3.12							
Neodymium-147	U	-2.59	U	8.48	pCi/L	376			N/A		
		+/-27.8		+/-25.8							
Neptunium-239	U	12.9	U	-2.11	pCi/L	278			N/A		
		+/-14.4		+/-18.1							
Niobium-94	U	-0.121	U	0.588	pCi/L	304			N/A		
		+/-2.79		+/-2.79							
Niobium-95	U	-3.94	U	1.99	pCi/L	606			N/A		
		+/-3.45		+/-2.89							
Potassium-40	U	-38.1	U	15.4	pCi/L	471			N/A		
		+/-43.3		+/-32.9							
Promethium-144	U	0.124	U	-0.884	pCi/L	265			N/A		
		+/-2.96		+/-2.53							
Promethium-146	U	-1.08	U	-1.95	pCi/L	57.3			N/A		
		+/-3.44		+/-3.98							
Radium-228	U	12.8	U	-1.15	pCi/L	240			N/A		
		+/-12.9		+/-11.3							
Ruthenium-106	U	1.84	U	0.960	pCi/L	63.0			N/A		
		+/-22.7		+/-21.9							
Silver-110m	U	-8.38	U	-0.774	pCi/L	166			N/A		
		+/-3.59		+/-2.51							
Sodium-22	U	-1.01	U	0.869	pCi/L	2760			N/A		
		+/-3.06		+/-2.60							
Thallium-208	U	0.275	U	2.24	pCi/L	156			N/A		
		+/-3.62		+/-3.31							
Thorium-234	U	47.5	U	-106	pCi/L	525			N/A		
		+/-75.1		+/-132							
Tin-113	U	-2.5	U	1.54	pCi/L	848			N/A		
		+/-3.40		+/-3.54							
Uranium-235	U	7.73	U	-22.2	pCi/L	414			N/A		
		+/-18.4		+/-20.8							
Uranium-238	U	47.5	U	-106	pCi/L	525			N/A		
		+/-75.1		+/-132							
Yttrium-88	U	-0.121	U	3.65	pCi/L	214			N/A		
		+/-3.41		+/-3.45							
Zinc-65	U	3.27	U	-0.24	pCi/L	232			N/A		
		+/-6.01		+/-5.95							
Zirconium-95	U	-1.63	U	3.70	pCi/L	514			N/A		

QC Summary

Workorder: 242623

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch 931514											
		+/-4.64		+/-4.93							
QC1201992509 LCS											
Actinium-228			U	-3.75 +/-40.8	pCi/L				KXG3	12/12/09	15:46
Americium-241	1240			1420 +/-190	pCi/L		115	(75%-125%)			
Antimony-124			U	3.36 +/-8.50	pCi/L						
Antimony-125			U	-20.8 +/-21.3	pCi/L						
Barium-133			U	-2.51 +/-10.0	pCi/L						
Barium-140			U	15.3 +/-30.1	pCi/L						
Beryllium-7			U	42.0 +/-72.4	pCi/L						
Bismuth-212			U	13.5 +/-63.5	pCi/L						
Bismuth-214			U	-1.39 +/-15.7	pCi/L						
Cerium-139			U	-9.14 +/-6.61	pCi/L						
Cerium-141			U	-10.6 +/-10.0	pCi/L						
Cerium-144			U	-23 +/-46.2	pCi/L						
Cesium-134			U	-1.13 +/-10.1	pCi/L						
Cesium-136			U	2.12 +/-12.8	pCi/L						
Cesium-137	434			443 +/-37.5	pCi/L		102	(75%-125%)			
Chromium-51			U	-9.97 +/-60.2	pCi/L						
Cobalt-56			U	1.48 +/-8.40	pCi/L						
Cobalt-57				21.0 +/-9.57	pCi/L						
Cobalt-58			U	-5.71 +/-9.03	pCi/L						
Cobalt-60	508			522 +/-50.6	pCi/L		103	(75%-125%)			
Europium-152			U	-7.09 +/-21.3	pCi/L						

QC Summary

Workorder: 242623

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 931514										
Europium-154			U	6.67 +/-17.7	pCi/L					
Europium-155			U	-3.99 +/-25.0	pCi/L				KXG3	12/12/09 15:46
Iridium-192			U	-1.74 +/-6.74	pCi/L					
Iron-59			U	-4.81 +/-17.3	pCi/L					
Lead-210			U	-310 +/-1850	pCi/L					
Lead-212			U	-5.67 +/-13.2	pCi/L					
Lead-214			U	3.27 +/-16.6	pCi/L					
Manganese-54			U	-6.4 +/-9.34	pCi/L					
Mercury-203			U	-0.505 +/-7.33	pCi/L					
Neodymium-147			U	-34.8 +/-54.3	pCi/L					
Neptunium-239			U	55.0 +/-46.2	pCi/L					
Niobium-94			U	-0.474 +/-7.02	pCi/L					
Niobium-95			U	-0.76 +/-8.01	pCi/L					
Potassium-40			U	-42.4 +/-68.9	pCi/L					
Promethium-144			U	-1.0 +/-7.54	pCi/L					
Promethium-146			U	-1.6 +/-11.3	pCi/L					
Radium-228			U	-3.75 +/-40.8	pCi/L					
Ruthenium-106			U	-7.82 +/-69.0	pCi/L					
Silver-110m				19.3 +/-9.41	pCi/L					
Sodium-22			U	2.26 +/-6.27	pCi/L					
Thallium-208			U	6.18 +/-8.79	pCi/L					
Thorium-234			U	-118 +/-422	pCi/L					
Tin-113			U	1.95	pCi/L					

QC Summary

Workorder: 242623

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 931514										
				+/-9.69						
Uranium-235			U	7.77	pCi/L				KXG3	12/12/09 15:46
				+/-44.9						
Uranium-238			U	-118	pCi/L					
				+/-422						
Yttrium-88			U	0.852	pCi/L					
				+/-4.13						
Zinc-65			U	-34.8	pCi/L					
				+/-22.2						
Zirconium-95			U	2.97	pCi/L					
				+/-13.5						
QC1201992506	MB									
Actinium-228			U	-4.4	pCi/L					12/12/09 14:42
				+/-16.1						
Americium-241			U	-0.834	pCi/L					
				+/-5.46						
Antimony-124			U	-1.79	pCi/L					
				+/-5.02						
Antimony-125			U	1.59	pCi/L					
				+/-7.56						
Barium-133			U	-1.92	pCi/L					
				+/-3.50						
Barium-140			U	3.30	pCi/L					
				+/-10.4						
Beryllium-7			U	13.0	pCi/L					
				+/-23.8						
Bismuth-212			U	-23.5	pCi/L					
				+/-29.0						
Bismuth-214			U	5.47	pCi/L					
				+/-7.33						
Cerium-139			U	-1.17	pCi/L					
				+/-1.77						
Cerium-141			U	-3.41	pCi/L					
				+/-3.11						
Cerium-144			U	2.22	pCi/L					
				+/-13.7						
Cesium-134			U	-2.33	pCi/L					
				+/-3.93						
Cesium-136			U	-0.181	pCi/L					
				+/-4.03						
Cesium-137			U	2.18	pCi/L					
				+/-3.64						
Chromium-51			U	17.3	pCi/L					
				+/-20.7						

QC Summary

Workorder: 242623

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch 931514											
Cobalt-56			U	0.798 +/-3.01	pCi/L						
Cobalt-57			U	0.466 +/-1.91	pCi/L				KXG3	12/12/09	14:42
Cobalt-58			U	0.834 +/-3.18	pCi/L						
Cobalt-60			U	-0.148 +/-3.15	pCi/L						
Europium-152			U	-3.0 +/-7.26	pCi/L						
Europium-154			U	1.36 +/-10.5	pCi/L						
Europium-155			U	5.14 +/-6.93	pCi/L						
Iridium-192			U	-0.128 +/-2.69	pCi/L						
Iron-59			U	-1.11 +/-5.11	pCi/L						
Lead-210			UI	0.00 +/-87.1	pCi/L						
Lead-212			U	-1.17 +/-5.99	pCi/L						
Lead-214			U	9.59 +/-6.44	pCi/L						
Manganese-54			U	-0.293 +/-3.28	pCi/L						
Mercury-203			U	0.994 +/-2.64	pCi/L						
Neodymium-147			U	4.96 +/-20.6	pCi/L						
Neptunium-239			U	-10.2 +/-13.5	pCi/L						
Niobium-94			U	-0.163 +/-3.07	pCi/L						
Niobium-95			U	-1.56 +/-2.59	pCi/L						
Potassium-40			U	1.35 +/-24.7	pCi/L						
Promethium-144			U	0.501 +/-3.41	pCi/L						
Promethium-146			U	3.16 +/-3.69	pCi/L						
Radium-228			U	-4.4 +/-16.1	pCi/L						
Ruthenium-106			U	-2.96	pCi/L						

QC Summary

Workorder: 242623

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 931514										
				+/-30.9						
Silver-110m			U	-1.52	pCi/L				KXG3	12/12/09 14:42
				+/-3.09						
Sodium-22			U	0.626	pCi/L					
				+/-3.77						
Thallium-208			U	-0.0312	pCi/L					
				+/-4.07						
Thorium-234			U	-47.9	pCi/L					
				+/-58.5						
Tin-113			U	1.14	pCi/L					
				+/-3.36						
Uranium-235			U	-5.5	pCi/L					
				+/-15.7						
Uranium-238			U	-47.9	pCi/L					
				+/-58.5						
Yttrium-88			U	-0.572	pCi/L					
				+/-2.42						
Zinc-65			U	-1.59	pCi/L					
				+/-7.28						
Zirconium-95			U	-2.15	pCi/L					
				+/-5.66						
Rad Gas Flow										
Batch 931973										
QC1201993622 242635001 DUP										
Strontium-90		U -0.414	U	0.770	pCi/L	0.00			N/A MXB1	12/18/09 19:54
		+/-0.650		+/-1.14						
QC1201993624 LCS										
Strontium-90	64.4			59.9	pCi/L		92.9	(75%-125%)		12/18/09 19:54
				+/-3.87						
QC1201993621 MB										
Strontium-90			U	-0.466	pCi/L					12/18/09 19:55
				+/-0.587						
QC1201993623 242635001 MS										
Strontium-90	129	U -0.414		119	pCi/L		92	(75%-125%)		12/18/09 19:54
		+/-0.650		+/-7.60						
Batch 932785										
QC1201995432 242623001 DUP										
Chlorine-36		U 3.11	U	-4.69	pCi/g	0.00			N/A DXM2	12/22/09 18:53
		+/-4.92		+/-5.47						
QC1201995434 LCS										
Chlorine-36	241			216	pCi/g		89.8	(75%-125%)		12/22/09 18:53
				+/-10.7						
QC1201995431 MB										
Chlorine-36			U	-0.864	pCi/g					12/22/09 18:53
				+/-1.27						

QC Summary

Workorder: 242623

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gas Flow											
Batch 932785											
QC1201995433 242623001 MS											
Chlorine-36	326	U	3.11 +/-4.92		356 +/-15.6	pCi/g		109	(75%-125%)	DXM2	12/22/09 18:53
Batch 932787											
QC1201995437 242623008 DUP											
Strontium-90		U	0.446 +/-0.555	U	0.470 +/-0.745	pCi/g	0.00		N/A	JXR1	12/16/09 20:32
QC1201995439 LCS											
Strontium-90	38.1				37.2 +/-2.08	pCi/g		97.5	(75%-125%)		12/16/09 20:36
QC1201995436 MB											
Strontium-90				U	0.326 +/-0.676	pCi/g					12/16/09 20:32
QC1201995438 242623008 MS											
Strontium-90	38.4	U	0.446 +/-0.555		43.4 +/-2.43	pCi/g		113	(75%-125%)		12/16/09 20:32
Batch 934102											
QC1201998545 242623014 DUP											
Chlorine-36		U	-5.28 +/-24.7	U	-9.2 +/-20.8	pCi/L	0.00		N/A	DXM2	12/23/09 18:12
QC1201998547 LCS											
Chlorine-36	4790				4900 +/-223	pCi/L		102	(75%-125%)		12/23/09 18:12
QC1201998544 MB											
Chlorine-36				U	19.5 +/-19.0	pCi/L					12/23/09 18:12
QC1201998546 242623014 MS											
Chlorine-36	9580	U	-5.28 +/-24.7		12000 +/-484	pCi/L		125	(75%-125%)		12/24/09 09:48
Rad Liquid Scintillation											
Batch 932585											
QC1201994908 242623008 DUP											
Technetium-99		U	-3.27 +/-2.61	U	-2.61 +/-2.14	pCi/g	0.00		N/A	AXW2	12/22/09 15:04
QC1201994910 LCS											
Technetium-99	148				133 +/-4.46	pCi/g		90.1	(75%-125%)		12/22/09 04:32
QC1201994907 MB											
Technetium-99				U	-2.42 +/-1.74	pCi/g					12/22/09 02:57
QC1201994909 242623008 MS											
Technetium-99	149	U	-3.27 +/-2.61		138 +/-6.10	pCi/g		92.8	(75%-125%)		12/22/09 04:01
Batch 932592											
QC1201994936 242623008 DUP											
Calcium-45		U	-11.8 +/-22.1	U	-4.64 +/-23.1	pCi/g	0.00		N/A	GXR1	12/21/09 23:37
QC1201994938 LCS											

QC Summary

Workorder: 242623

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Liquid Scintillation											
Batch 932592											
Calcium-45	134				111 +/-24.3	pCi/g		82.6	(75%-125%)	GXR1	12/22/09 00:20
QC1201994935 MB											
Calcium-45				U	-13.2 +/-19.7	pCi/g					12/21/09 23:16
QC1201994937 242623008 MS											
Calcium-45	149	U	-11.8 +/-22.1		123 +/-25.6	pCi/g		82.3	(75%-125%)		12/21/09 23:59
Batch 932593											
QC1201994944 242623008 DUP											
Nickel-63		U	-0.372 +/-1.54	U	0.235 +/-1.48	pCi/g	0.00		N/A	DXM2	12/17/09 21:11
QC1201994946 LCS											
Nickel-63	117				112 +/-5.30	pCi/g		95.9	(75%-125%)		12/17/09 22:09
QC1201994943 MB											
Nickel-63				U	-0.434 +/-1.11	pCi/g					12/17/09 20:29
QC1201994945 242623008 MS											
Nickel-63	165	U	-0.372 +/-1.54		161 +/-7.83	pCi/g		98.1	(75%-125%)		12/17/09 21:53
Batch 932595											
QC1201994948 242623014 DUP											
Phosphorus-32		HU	-16.1 +/-75.5	HU	-59.5 +/-73.2	pCi/L	0.00		N/A	GXR1	12/27/09 08:35
QC1201994950 LCS											
Phosphorus-32	165				199 +/-47.8	pCi/L		121	(75%-125%)		12/27/09 09:08
QC1201994947 MB											
Phosphorus-32				U	-30.4 +/-38.4	pCi/L					12/27/09 08:18
QC1201994949 242623014 MS											
Phosphorus-32	302	HU	-16.1 +/-75.5		343 +/-88.1	pCi/L		113	(75%-125%)		12/27/09 08:51
Batch 932597											
QC1201994956 242623014 DUP											
Calcium-45		U	20.3 +/-24.3	U	5.68 +/-25.0	pCi/L	0.00		N/A	GXR1	12/27/09 03:10
QC1201994958 LCS											
Calcium-45	296				240 +/-26.8	pCi/L		81.1	(75%-125%)		12/27/09 04:44
QC1201994955 MB											
Calcium-45				U	1.65 +/-22.6	pCi/L					12/27/09 02:23
QC1201994957 242623014 MS											
Calcium-45	313	U	20.3 +/-24.3		259 +/-29.1	pCi/L		82.9	(75%-125%)		12/27/09 03:57
Batch 932599											

QC Summary

Workorder: 242623

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Liquid Scintillation										
Batch 932599										
QC1201994964 242623014 DUP										
Technetium-99	U	2.73 +/-19.3	U	5.17 +/-18.7	pCi/L	0.00			N/A AXW2	12/28/09 11:31
QC1201994966 LCS										
Technetium-99	1810			1570 +/-68.2	pCi/L		86.4	(75%-125%)		12/28/09 12:24
QC1201994963 MB										
Technetium-99			U	4.26 +/-17.0	pCi/L					12/28/09 10:54
QC1201994965 242623014 MS										
Technetium-99	1810	U 2.73 +/-19.3		1620 +/-70.5	pCi/L		89.3	(75%-125%)		12/28/09 12:07
Batch 933028										
QC1201996046 242623002 DUP										
Tritium	U	-0.0065 +/-0.157	U	0.0393 +/-0.160	pCi/mL	0.00			N/A KXK2	12/27/09 02:10
QC1201996048 LCS										
Tritium	5.60			5.93 +/-0.365	pCi/mL		106	(75%-125%)		12/27/09 03:43
QC1201996045 MB										
Tritium			U	-0.14 +/-0.147	pCi/mL					12/27/09 01:24
QC1201996047 242623002 MS										
Tritium	11.2	U -0.0065 +/-0.157		12.1 +/-0.501	pCi/mL		108	(75%-125%)		12/27/09 02:57
Batch 934622										
QC1201999611 242623015 DUP										
Nickel-63	U	-8.13 +/-20.4	U	-14.7 +/-18.6	pCi/L	0.00			N/A DXM2	12/22/09 18:42
QC1201999613 LCS										
Nickel-63	1450			1490 +/-51.3	pCi/L		103	(75%-125%)		12/22/09 19:45
QC1201999610 MB										
Nickel-63			U	-4.77 +/-18.1	pCi/L					12/22/09 18:11
QC1201999612 242623015 MS										
Nickel-63	2900	U -8.13 +/-20.4		2980 +/-103	pCi/L		103	(75%-125%)		12/22/09 19:14
Batch 935783										
QC1202002314 242623001 DUP										
Carbon-14	U	-0.834 +/-0.885	U	-0.957 +/-0.879	pCi/g	0.00			N/A EXK2	12/24/09 11:34
QC1202002316 LCS										
Carbon-14	66.9			64.2 +/-3.61	pCi/g		95.9	(75%-125%)		12/24/09 12:43
QC1202002313 MB										
Carbon-14			U	-1.04 +/-0.865	pCi/g					12/24/09 10:41

QC Summary

Workorder: 242623

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Liquid Scintillation											
Batch 935783											
QC1202002315 242623001 MS											
Carbon-14	71.4	U	-0.834 +/-0.885		68.6 +/-3.87	pCi/g		96	(75%-125%)	EXK2	12/24/09 12:26
Batch 937120											
QC1202005277 242623008 DUP											
Phosphorus-32/33		HU	8.11 +/-46.6	HU	19.6 +/-56.9	pCi/g	0.00		N/A	GXR1	12/31/09 10:13
QC1202005279 LCS											
Phosphorus-32/33	131				128 +/-18.4	pCi/g		97.5			12/31/09 10:45
QC1202005276 MB											
Phosphorus-32/33				U	-2.13 +/-13.7	pCi/g					12/31/09 09:56
QC1202005278 242623008 MS											
Phosphorus-32/33	486	HU	8.11 +/-46.6		382 +/-66.2	pCi/g		78.6			12/31/09 10:29
Batch 937122											
QC1202005285 242292023 DUP											
Sulfur-35		U	22.1 +/-27.8	U	-7.33 +/-26.3	pCi/g	0.00		N/A	GXR1	01/04/10 12:46
QC1202005287 LCS											
Sulfur-35	8080				6120 +/-124	pCi/g		75.8	(75%-125%)		12/31/09 20:35
QC1202005284 MB											
Sulfur-35				U	-3.23 +/-21.0	pCi/g					12/31/09 19:55
QC1202005286 242292023 MS											
Sulfur-35	11700	U	22.1 +/-27.8		11200 +/-225	pCi/g		95.7	(75%-125%)		12/31/09 20:28
Batch 937401											
QC1202005893 242623008 DUP											
Sulfur-35		U	16.2 +/-21.2	U	14.5 +/-24.4	pCi/g	11.1		N/A	GXR1	12/31/09 13:59
QC1202005895 LCS											
Sulfur-35	8910				7140 +/-144	pCi/g		80.2	(75%-125%)		12/30/09 19:25
QC1202005892 MB											
Sulfur-35				U	-5.08 +/-18.4	pCi/g					12/30/09 18:35
QC1202005894 242623008 MS											
Sulfur-35	12300	U	16.2 +/-21.2		10700 +/-216	pCi/g		87.1	(75%-125%)		12/30/09 19:18
Batch 937402											
QC1202005897 242623015 DUP											
Sulfur-35		U	5.97 +/-38.1	U	21.7 +/-36.8	pCi/L	0.00		N/A	GXR1	12/30/09 21:20
QC1202005899 LCS											

QC Summary

Workorder: 242623

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Liquid Scintillation										
Batch 937402										
Sulfur-35	19100			17800 +/-355	pCi/L		93.3	(75%-125%)		12/30/09 21:49
QC1202005896 MB										
Sulfur-35			U	8.84 +/-38.9	pCi/L				GXR1	12/30/09 20:58
QC1202005898 242623015 MS										
Sulfur-35	22300	U 5.97 +/-38.1		15500 +/-313	pCi/L		69.7*	(75%-125%)		12/30/09 21:41

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

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the 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
- F Estimated Value
- H Analytical holding time was exceeded
- J Value is estimated
- M M if above MDC and less than LLD
- M Matrix Related Failure
- N/A RPD or %Recovery limits do not apply.
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- 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.
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- h Preparation or preservation holding time was exceeded

QC Summary

Workorder: **242623**

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.
* Indicates that a Quality Control parameter was not within specifications.
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.

COMPANY – WIDE NONCONFORMANCE REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
28−DEC−09	Radiochemistry	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
LSC	GL−RAD−A−019	Liquid	PIKA
Batch ID:	**Sample Numbers:**		
932595	See Below		

Potentially affected work order(s)(SDG): 242623

Application Issues:

Sample Analyzed out of Holding

Specification and Requirements Nonconformance Description:	NRG Disposition:
1. Samples, 242623014, 242623015, 242623016, 1201994948, and 1201994949, were received within holding period but were analyzed out of holding.	1. Reporting results

Originator's Name:

Takesha Mungo 28−DEC−09

Data Validator/Group Leader:

Layota Yom 28−DEC−09

COMPANY – WIDE NONCONFORMANCE REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
31−DEC−09	Radiochemistry	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
LSC	GL−RAD−A−019	Solid	PIKA
Batch ID:	**Sample Numbers:**		
937120	See Below		

Potentially affected work order(s)(SDG): 242623

Application Issues:

Sample Analyzed out of Holding

Specification and Requirements Nonconformance Description:	NRG Disposition:
1. Samples, 242623008, 242623009, 242623010, 242623011, 242623012, 242623013, 1202005277, and 1202005278, were received within the holding period but were analyzed out of holding.	1. Reporting results

Originator's Name:

Takesha Mungo 31−DEC−09

Data Validator/Group Leader:

Lesley Anderson 31−DEC−09

COMPANY – WIDE NONCONFORMANCE REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
31–DEC–09	Radiochemistry	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
LSC	NAS–NS–3054	Solid	PIKA
Batch ID:	**Sample Numbers:**		
937401	See Below		

Potentially affected work order(s)(SDG): 242623

Application Issues:

Container scanning event for custody missed

Specification and Requirements Nonconformance Description:	NRG Disposition:
1. The analyst did not scan samples 242623008, 242623009, 242623010, and 242623013 into his/her custody. The analyst had physical custody of the samples during analysis.	1. The analyst has been instructed on proper scanning procedures. Reporting results.

Originator's Name:

Lyndsey Pace 31–DEC–09

Data Validator/Group Leader:

Layota Yom 03–JAN–10

COMPANY – WIDE NONCONFORMANCE REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
02–JAN–10	Radiochemistry	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
LSC	NAS–NS–3054	Solid	PIKA
Batch ID:	**Sample Numbers:**		
937122	242623011, 242623012		

Potentially affected work order(s)(SDG): 242292,242623

Application Issues:

Container scanning event for custody missed

Specification and Requirements Nonconformance Description:	NRG Disposition:
1. The analyst did not scan samples 242623011 and 242632012 into his/her custody. The analyst had physical custody of the samples during the analysis.	1. The analyst has been instructed on proper scanning procedures. Reporting results.

Originator's Name:

Dana Hunt 02–JAN–10

Data Validator/Group Leader:

Lesley Anderson 04–JAN–10

COMPANY – WIDE NONCONFORMANCE REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
04–JAN–10	Radiochemistry	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
LSC	NAS–NS–3054	Liquid	PIKA
Batch ID:	**Sample Numbers:**		
937402	See Below		

Potentially affected work order(s)(SDG): 242623

Application Issues:

Failed Recovery for MS/PS

Specification and Requirements Nonconformance Description:	NRG Disposition:
1. The matrix spike, 1202005898, did not meet the recovery requirement due to matrix interference.	1. Reporting results

Originator's Name:

Takesha Mungo 04–JAN–10

Data Validator/Group Leader:

Lesley Anderson 04–JAN–10

PIKA
International, Inc.

242623

Chain of Custody Record

Quote Number	GELP08-0262rev3	Project Fax	510-268-8654
Project Name	GLAVA	Req'd Report Date	
Project Manager	Joel I. Cehn	Lab Contact	Anne Skradski
Project Phone	510-914-6262	Lab Phone	843-556-8171

BILLING ADDRESS:	SEND REPORT TO:	LAB ADDRESS:
Pika Int'l., Inc. 12723 Capricorn Drive Stafford, TX 77477	Pika Int'l., Inc. Joel Cehn 5025 Arnold Ave. Sacramento, CA 95652	Gen. Eng. Labs 2040 Savage Rd. Charleston, SC 29407 843-556-8171

#	Sample ID# and Description	MAT-RIX: AQUEOUS	MAT-RIX: SOIL	CONTAINER TYPE (G, P)	VOLUME	NO. OF CONTAINERS	ANALYSIS REQUESTED: H-3 (vacuum	C-14	Cl-36		Total Carbon						DATE & TIME COLLECTED	SPECIAL INSTRUCTIONS / NOTES
1	SB27-20R		x	P			x	x	x		x						12/4/2009	
2	SB28-20R		x	P			x	x	x		x						12/4/2009	
3	SB32-20R		x	P			x	x	x		x						12/4/2009	
4	SB33-20R		x	P			x	x	x		x						12/4/2009	
5	MW1-20R		x	P			x	x	x		x						12/7/2009	
6	MW2-40R		x	P			x	x	x		x						12/7/2009	
7	MW3-20R		x	P			x	x	x		x						12/7/2009	
			x	P			x	x	x		x							

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Sample TAT Req'd: 21d	Sample Disposal:	☐ Archive for _____ Months.	☒ Disposal by Lab	☐ Return to origin
Notes/Comments:				QC Requirements: per quotation

CUSTODY TRACKING

1) Relinquished By:	Joel Cehn	Date: 12-9-09	Time: 1300	Received By:	Richard Arthur	Date: 12/10/09	Time: 0850
2) Relinquished By:		Date:	Time:	Received By:		Date:	Time:
3) Relinquished By:		Date:	Time:	Received By:		Date:	Time:

(7)

PIKA
International, Inc.

Chain of Custody Record

Quote Number	GELP08-0262rev3	Project Fax	510-268-8654
Project Name	GLAVA	Req'd Report Date	
Project Manager	Joel I. Cehn	Lab Contact	Anne Skradski
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#	Sample ID# and Description	MAT-RIX		CONTAINER TYPE (G, P)	VOLUME	NO. OF CONTAINERS	ANALYSIS REQUESTED											DATE & TIME COLLECTED	SPECIAL INSTRUCTIONS / NOTES
		AQUEOUS	SOIL				Gamma spec	H-3 (vacuum	C-14	Cl-36	S-35	Ca-45	Ni-63	P-32	Sr-90	Tc-99	Total Carbon		
8	SB28-40R		x	P			x	x	x	x	x	x	x	x	x	x	x	12/4/2009	
9	SB32-40R		x	P			x	x	x	x	x	x	x	x	x	x	x	12/4/2009	
10	SB33-40R		x	P			x	x	x	x	x	x	x	x	x	x	x	12/4/2009	
11	MW1-40R		x	P			x	x	x	x	x	x	x	x	x	x	x	12/7/2009	
12	MW2-60R		x	P			x	x	x	x	x	x	x	x	x	x	x	12/7/2009	
13	MW3-40R		x	P			x	x	x	x	x	x	x	x	x	x	x	12/7/2009	
			x	P			x	x	x	x	x	x	x	x	x	x	x	12/7/2009	
			x	P			x	x	x	x	x	x	x	x	x	x	x	12/7/2009	

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Sample TAT Req'd: 21d	Sample Disposal:	☐ Archive for _____ Months.	☒ Disposal by Lab	☐ Return to origin
Notes/Comments:				QC Requirements: per quotation

CUSTODY TRACKING

1)	Relinquished By: Joel Cehn	Date: 12-9-09	Time: 1300	Received By: [illegible]	Date: 12/10/09	Time: 0850
2)	Relinquished By:	Date:	Time:	Received By:	Date:	Time:
3)	Relinquished By:	Date:	Time:	Received By:	Date:	Time:

PIKA
International, Inc.

Chain of Custody Record

Quote Number	GELP08-0262rev3	Project Fax	510-268-8654
Project Name	GLAVA	Req'd Report Date	
Project Manager	Joel I. Cehn	Lab Contact	Anne Skradski
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#	Sample ID# and Description	MAT-RIX: AQUEOUS	MAT-RIX: SOIL	CONTAINER TYPE (G, P)	VOLUME	NO. OF CONTAINERS	ANALYSIS REQUESTED: Gamma spec	Cl-36	S-35	Ca-45	Ni-63	P-32	Sr-90	Tc-99	DATE & TIME COLLECTED	SPECIAL INSTRUCTION NOTES
1	MW1	x		P	2L	x2	x	x	x	x	x	x	x	x	12-9-09	
2	MW2	x		P	2L	x2	x	x	x	x	x	x	x	x	12-9-09	
	MW3	x		P	2L	x2	x	x	x	x	x	x	x	x	12-9-09	
		x														
		x														
		x														
		x														
		x														

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Sample TAT Req'd: 21d

Sample Disposal: ☐ Archive for _____ Months. ☒ Disposal by Lab ☐ Return to origin

QC Requirements: per quotation

Notes/Comments:

CUSTODY TRACKING

1)	Relinquished By: Joel Cehn	Date: 12-9-09	Time: 1300	Received By: [illegible]	Date: 12/10/09	Time: 0850
2)	Relinquished By:	Date:	Time:	Received By:	Date:	Time:
3)	Relinquished By:	Date:	Time:	Received By:	Date:	Time:

SAMPLE RECEIPT & REVIEW CONTINUATION FORM

GEL LABORATORIES LLC

Client: PIKA **Date Received:** 12/10/09 **Page** 1 **of** 1

	ID	Time on sample
Pg 1	SB27-20R	0835
	SB28-20R	0720
	SB32-20R	1015
	SB33-20R	1145
	MW1-20R	No time on sample
	MW2-40R	1030
	MW3-20R	1330
Pg 2	SB28-40R	0730
	SB32-40R	1030
	SB33-40R	1200
	MW1-40R	~~1150~~ RA No time on sample
	MW2-60R	~~1420~~ RA 1150
	MW3-40R	1420
Pg 3	MW1	1020, 720 } Containers have different times
	MW2	0800, 820 }
	MW3	1125, 1210 }

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: PIKA	**SDG/ARCOC/Work Order:** 242623
Received By: Ricky Albee	**Date Received:** 12/10/09

Suspected Hazard Information	**Yes**	**No**	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further investigation.
COC/Samples marked as radioactive?		✓	Maximum Counts Observed*: 60 cpm
Classified Radioactive II or III by RSO?		✓	
COC/Samples marked containing PCBs?		✓	
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		✓	

	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 0 ≤ 6 deg. C?	✓			Preservation Method: ice bags blue ice dry ice none other (describe) 5°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: If Preservation added, Lot#:
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 Volatiles 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: See cont. sheet for times
11	Number of containers received match number indicated on COC?			✓	Sample ID's affected: 1 container per soil
12	COC form is properly signed in relinquished/received sections?	✓			

Comments: FedEx 8715 5879 9991

PM (or PMA) review: Initials AMS Date 12/10/09

List of current GEL Certifications as of 04 January 2010

State	Certification
Arizona	AZ0668
Arkansas	88–0651
CLIA	42D0904046
California – NELAP	01151CA
Colorado	GEL
Connecticut	PH–0169
Dept. of Navy	NFESC 413
EPA Region 5	WG–15J
Florida – NELAP	E87156
Georgia	E87156 (FL/NELAP)
Georgia DW	967
Hawaii	N/A
ISO 17025	2567.01
Idaho	SC00012
Illinois – NELAP	200029
Indiana	C–SC–01
Kansas – NELAP	E–10332
Kentucky	90129
Louisiana – NELAP	03046
Maryland	270
Massachusetts	M–SC012
Nevada	SC00012
New Jersey – NELAP	SC002
New Mexico	FL NELAP E87156
New York – NELAP	11501
North Carolina	233
North Carolina DW	45709
Oklahoma	9904
Pennsylvania – NELAP	68–00485
South Carolina	10120001/10120002
Tennessee	TN 02934
Texas – NELAP	T104704235–07B–TX
U.S. Dept. of Agriculture	S–52597
Utah – NELAP	GEL
Vermont	VT87156
Virginia	00151
Washington	C1641

GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171 F 843.766.1178
www.gel.com

January 25, 2010

Mr. Joel Cehn
PIKA International, Inc.
5025 Arnold Ave.
Mcclellan Afb, California 95652

Re: GLAVA - PIKA International
Work Order: 244878

Dear Mr. Cehn:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on December 10, 2010. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4512.

Sincerely,

Ann Skradski
Project Manager

Purchase Order: 0990103-001
Enclosures

problem solved

GEL LABORATORIES LLC

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

Certificate of Analysis Report
for

PIKA003 Joel Cehn – PIKA International

Client SDG: 244878 GEL Work Order: 244878

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.

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.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the detection limit.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Ann Skradski.

Note:

Groundwater samples MW-2 and MW-3 were re-submitted for radium analysis. Results are below.

Reviewed by Ann M Skradski

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

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 25, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	MW2	Project:	PIKA00109
Sample ID:	244878001	Client ID:	PIKA003
Matrix:	Water		
Collect Date:	09–DEC–10 08:00		
Receive Date:	10–DEC–10		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Ra228, Liquid "As Received"											
Radium–228		3.43	+/–1.07	1.21	3.00	pCi/L		MXS2 01/22/10	0933	943102	1
Rad Radium–226											
Lucas Cell, Ra226, liquid "As Received"											
Radium–226		4.87	+/–0.858	0.491	1.00	pCi/L		KSD1 01/25/10	0835	942348	2

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium–133 Tracer	GFPC, Ra228, Liquid "As Received"			85.1	(15%–125%)

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

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: January 25, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA – PIKA International**

Client Sample ID:	MW3	Project:	PIKA00109
Sample ID:	244878002	Client ID:	PIKA003
Matrix:	Water		
Collect Date:	09–DEC–10 11:25		
Receive Date:	10–DEC–10		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Ra228, Liquid "As Received"											
Radium–228		3.89	+/–1.16	1.25	3.00	pCi/L		MXS2 01/22/10	0933	943102	1
Rad Radium–226											
Lucas Cell, Ra226, liquid "As Received"											
Radium–226		3.87	+/–0.786	0.584	1.00	pCi/L		KSD1 01/25/10	0835	942348	2

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium–133 Tracer	GFPC, Ra228, Liquid "As Received"			82.7	(15%–125%)

QC Summary

Report Date: January 25, 2010
Page 1 of 2

PIKA International, Inc.
5025 Arnold Ave.
Mcclellan Afb, California

Contact: **Mr. Joel Cehn**

Workorder: **244878**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gas Flow										
Batch 943102										
QC1202019216 244937001 DUP										
Radium-228		U 0.313 +/-0.339		0.710 +/-0.420	pCi/L	77.7		(0% - 100%)	MXS2	01/22/10 09:34
QC1202019218 LCS										
Radium-228	11.0			9.61 +/-1.16	pCi/L		87.5	(75%-125%)		01/22/10 09:34
QC1202019215 MB										
Radium-228			U	0.244 +/-0.328	pCi/L					01/22/10 09:34
Rad Ra-226										
Batch 942348										
QC1202017334 244326001 DUP										
Radium-226		1.07 +/-0.459		0.587 +/-0.295	pCi/L	58.2		(0% - 100%)	KSD1	01/25/10 08:35
QC1202017336 LCS										
Radium-226	24.2			24.7 +/-1.88	pCi/L		102	(75%-125%)		01/25/10 09:10
QC1202017333 MB										
Radium-226			U	0.284 +/-0.310	pCi/L					01/25/10 08:35
QC1202017335 244326001 MS										
Radium-226	121	1.07 +/-0.459		139 +/-10.1	pCi/L		114	(75%-125%)		01/25/10 09:10

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

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the 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
- F Estimated Value
- H Analytical holding time was exceeded
- J Value is estimated
- M M if above MDC and less than LLD

QC Summary

Workorder: **244878**

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

M	Matrix Related Failure
N/A	RPD or %Recovery limits do not apply.
ND	Analyte concentration is not detected above the detection limit
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
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. Qualifier Not Applicable for Radiochemistry.
h	Preparation or preservation holding time was exceeded

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.
* Indicates that a Quality Control parameter was not within specifications.
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.

There are no "Data Exception Reports" associated with this analytical report.

PIKA
International, Inc.

242623

Chain of Custody Record

Quote Number	GELP08-0262rev3	Project Fax	510-268-8654
Project Name	GLAVA	Req'd Report Date	
Project Manager	Joel I. Cehn	Lab Contact	Anne Skradski
Project Phone	510-914-6262	Lab Phone	843-556-8171

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2	SB28-20R		x	P			x	x	x		x						12/4/2009	
3	SB32-20R		x	P			x	x	x		x						12/4/2009	
4	SB33-20R		x	P			x	x	x		x						12/4/2009	
5	MW1-20R		x	P			x	x	x		x						12/7/2009	
6	MW2-40R		x	P			x	x	x		x						12/7/2009	
7	MW3-20R		x	P			x	x	x		x						12/7/2009	
			x	P			x	x	x		x							

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Sample TAT Req'd: 21d	Sample Disposal:	☐ Archive for _____ Months.	☒ Disposal by Lab	☐ Return to origin
Notes/Comments:				QC Requirements: per quotation

CUSTODY TRACKING

1) Relinquished By:	Joel Cehn	Date: 12-9-09	Time: 1300	Received By:	Richard Arthur	Date: 12/10/09	Time: 0850
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3) Relinquished By:		Date:	Time:	Received By:		Date:	Time:

(7)

PIKA
International, Inc.

Chain of Custody Record

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Project Name	GLAVA	Req'd Report Date	
Project Manager	Joel I. Cehn	Lab Contact	Anne Skradski
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#	Sample ID# and Description	MAT-RIX		CONTAINER TYPE (G, P)	VOLUME	NO. OF CONTAINERS	ANALYSIS REQUESTED											DATE & TIME COLLECTED	SPECIAL INSTRUCTIONS / NOTES
		AQUEOUS	SOIL				Gamma spec	H-3 (vacuum	C-14	Cl-36	S-35	Ca-45	Ni-63	P-32	Sr-90	Tc-99	Total Carbon		
8	SB28-40R		x	P			x	x	x	x	x	x	x	x	x	x	x	12/4/2009	
9	SB32-40R		x	P			x	x	x	x	x	x	x	x	x	x	x	12/4/2009	
10	SB33-40R		x	P			x	x	x	x	x	x	x	x	x	x	x	12/4/2009	
11	MW1-40R		x	P			x	x	x	x	x	x	x	x	x	x	x	12/7/2009	
12	MW2-60R		x	P			x	x	x	x	x	x	x	x	x	x	x	12/7/2009	
13	MW3-40R		x	P			x	x	x	x	x	x	x	x	x	x	x	12/7/2009	
			x	P			x	x	x	x	x	x	x	x	x	x	x	12/7/2009	
			x	P			x	x	x	x	x	x	x	x	x	x	x	12/7/2009	

Page 9 of 13

Sample TAT Req'd: 21d	Sample Disposal:	☐ Archive for _____ Months.	☒ Disposal by Lab	☐ Return to origin
Notes/Comments:				QC Requirements: per quotation

CUSTODY TRACKING

1)	Relinquished By: Joel Cehn	Date: 12-9-09	Time: 1300	Received By: [illegible]	Date: 12/10/09	Time: 0850
2)	Relinquished By:	Date:	Time:	Received By:	Date:	Time:
3)	Relinquished By:	Date:	Time:	Received By:	Date:	Time:

PIKA
International, Inc.

Chain of Custody Record

Quote Number	GELP08-0262rev3	Project Fax	510-268-8654
Project Name	GLAVA	Req'd Report Date	
Project Manager	Joel I. Cehn	Lab Contact	Anne Skradski
Project Phone	510-914-6262	Lab Phone	843-556-8171

BILLING ADDRESS:	SEND REPORT TO:	LAB ADDRESS:
Pika Int'l., Inc. 5025 Arnold Ave. Stafford, TX 77477	Pika Int'l., Inc. Joel Cehn 5025 Arnold Ave. Sacramento, CA 95652	Gen. Eng. Labs 2040 Savage Rd. Charleston, SC 29407 843-556-8171

#	Sample ID# and Description	MAT-RIX: AQUEOUS	MAT-RIX: SOIL	CONTAINER TYPE (G, P)	VOLUME	NO. OF CONTAINERS	ANALYSIS REQUESTED: Gamma spec	Cl-36	S-35	Ca-45	Ni-63	P-32	Sr-90	Tc-99	DATE & TIME COLLECTED	SPECIAL INSTRUCTION NOTES
1	MW1	x		P	2L	x2	x	x	x	x	x	x	x	x	12-9-09	
2	MW2	x		P	2L	x2	x	x	x	x	x	x	x	x	12-9-09	
	MW3	x		P	2L	x2	x	x	x	x	x	x	x	x	12-9-09	
		x														
		x														
		x														
		x														
		x														

Page 10 of 13

Sample TAT Req'd: 21d

Sample Disposal: ☐ Archive for _____ Months. ☒ Disposal by Lab ☐ Return to origin

QC Requirements: per quotation

Notes/Comments:

CUSTODY TRACKING

1)	Relinquished By: Joel Cehn	Date: 12-9-09	Time: 1300	Received By: [illegible]	Date: 12/10/09	Time: 0850
2)	Relinquished By:	Date:	Time:	Received By:	Date:	Time:
3)	Relinquished By:	Date:	Time:	Received By:	Date:	Time:

SAMPLE RECEIPT & REVIEW CONTINUATION FORM

GEL LABORATORIES LLC

Client: PIKA **Date Received:** 12/10/09 **Page** 1 **of** 1

	ID	Time on sample
Pg 1	SB27-20R	0835
	SB28-20R	0720
	SB32-20R	1015
	SB33-20R	1145
	MW1-20R	No time on sample
	MW2-40R	1030
	MW3-20R	1330
Pg 2	SB28-40R	0730
	SB32-40R	1030
	SB33-40R	1200
	MW1-40R	~~1150~~ RA No time on sample
	MW2-60R	~~1420~~ RA 1150
	MW3-40R	1420
Pg 3	MW1	1020, 720 } Containers have different times
	MW2	0800, 820 }
	MW3	1125, 1210 }

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: PIKA	**SDG/ARCOC/Work Order:** 242623
Received By: Ricky Albee	**Date Received:** 12/10/09

Suspected Hazard Information	**Yes**	**No**	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further investigation.
COC/Samples marked as radioactive?		✓	Maximum Counts Observed*: 60 cpm
Classified Radioactive II or III by RSO?		✓	
COC/Samples marked containing PCBs?		✓	
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		✓	

	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 0 ≤ 6 deg. C?	✓			Preservation Method: ice bags (blue ice) dry ice none other (describe) 5°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: If Preservation added, Lot#:
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 Volatiles 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: See cont. sheet for times
11	Number of containers received match number indicated on COC?			✓	Sample ID's affected: 1 container per soil
12	COC form is properly signed in relinquished/received sections?	✓			

Comments: FedEx 8715 5879 9991

PM (or PMA) review: Initials AMS Date 12/10/09

List of current GEL Certifications as of 25 January 2010

State	Certification
Arizona	AZ0668
Arkansas	88–0651
CLIA	42D0904046
California – NELAP	01151CA
Colorado	GEL
Connecticut	PH–0169
Dept. of Navy	NFESC 413
EPA Region 5	WG–15J
Florida – NELAP	E87156
Georgia	E87156 (FL/NELAP)
Georgia DW	967
Hawaii	N/A
ISO 17025	2567.01
Idaho	SC00012
Illinois – NELAP	200029
Indiana	C–SC–01
Kansas – NELAP	E–10332
Kentucky	90129
Louisiana – NELAP	03046
Maryland	270
Massachusetts	M–SC012
Nevada	SC00012
New Jersey – NELAP	SC002
New Mexico	FL NELAP E87156
New York – NELAP	11501
North Carolina	233
North Carolina DW	45709
Oklahoma	9904
Pennsylvania – NELAP	68–00485
South Carolina	10120001/10120002
Tennessee	TN 02934
Texas – NELAP	T104704235–07B–TX
U.S. Dept. of Agriculture	S–52597
Utah – NELAP	GEL
Vermont	VT87156
Virginia	00151
Washington	C1641

UNIVERSITY OF Miami
THE ROSENSTIEL SCHOOL

August 19, 2010

TRITIUM LABORATORY

Data Release #10-102
Job # 2806

PIKA INTERNATIONAL, INC.
TRITIUM SAMPLES

Dr. James D. Happell
Associate Research Professor

Distribution:
Pika International, Inc.
Attn: Joel Cehn
5025 Arnold Avenue
Sacramento, CA 95652

Rosenstiel School of Marine and Atmospheric Science
Tritium Laboratory
4600 Rickenbacker Causeway • Miami, Florida 33149-1098
Phone: 305-421-4100 • Fax: 305- 421-4112
E-mail: tritium@rsmas.miami.edu
www.rsmas.miami.edu/groups/tritium/

Revised 1 January 2002

GENERAL COMMENTS ON TRITIUM RESULTS

Tritium Scale New Half-life

Tritium concentrations are expressed in TU, where 1 TU indicates a T/H abundance ratio of 10^{-18}. The values refer to the tritium scale recommended by U.S. National Institute of Science and Technology (NIST, formerly NBS), and International Atomic Energy Agency (IAEA). The TU-numbers are based on the NIST tritium water standard #4926E. Age corrections and conversions are made using the recommended half-life of **12.32 years**, i.e., a decay rate of $\lambda = 5.626\%\ \text{year}^{-1}$. In this scale, 1 TU is equivalent to 7.151 dpm/kg H_2O, or 3.222 pCi/kg H_2O, or 0.1192 Bq/kg H_2O (Bq = disint/sec).

TU values are calculated for date of sample collection, REFDATE in the table, as provided by the submitter. If no such date is available, date of sample arrival at our laboratory is used.

The stated errors, eTU, are one standard deviation (1 sigma) including all conceivable contributions. In the table, QUANT is quantity of sample received, and ELYS is the amount of water taken for electrolytic enrichment. DIR means direct run (no enrichment).

Remark: From 1 Jan 1994 through 31 Dec 2001 we used the previously recommended value for the half-life, 12.43 years. The use of the new number, 12.32 years will in practice increase the reported TU-values by 0.9 %. This is insignificant since our reported values carry 1 sigma uncertainties of 3 % or more.

It is interesting to note that before 1994 we used the older, then recommended value of 12.26 years.

Very low tritium values

In some cases, negative TU values are listed. Such numbers can occur because the net tritium count rate is, in principle the difference between the count rate of the sample and that of a tritium-free sample (background count or blank sample). Given a set of "unknown" samples with no tritium, the distribution of net results should become symmetrical around 0 TU. The negative values are reported as such for the benefit of allowing the user unbiased statistical treatment of sets of the data. For other applications, 0 TU should be used.

Additional information

Refer to Services Rendered (Tritium), Section II.8, in the "Tritium Laboratory Price Schedule; Procedures and Standards; Advice on Sampling", and our Web-site www.rsmas.edu/groups/tritium.

Tritium efficiencies and background values are somewhat different in each of the nine counters and values are corrected for cosmic intensity, gas pressure and other parameters. For tritium, the efficiency is typically 1.00 cpm per 100 TU (direct counting). At 50× enrichment, the efficiency is equivalent to 1.00 cpm per 2.4 TU. The background is typically 0.3 cpm, known to about ± 0.02 cpm. Our reported results include not only the Poisson statistics, but also other experimental uncertainties such as enrichment error, etc.

End

Client: PIKA INTERNATIONAL, INC
Recvd : 10/08/13
Job# : 2806
Final : 10/08/19

Project Name: GLAVA

Purchase Order: NEED IT
Contact: Joel Cehn, 510/914-6262
5025 Arnold Ave.
Sacramento, CA 95652

Cust	LABEL INFO	JOB.SX	REFDATE	QUANT	ELYS	TU	eTU
PIKA -	GLAVA MW-1 DIRECT	2806.01	100806	500	DIR	7	2
PIKA -	GLAVA MW-2 DIRECT	2806.02	100806	500	DIR	16	3
PIKA -	GLAVA MW-3 DIRECT	2806.03	100806	500	DIR	2	2

Note:

The above low-level tritium analytical results are given in units of "tritium units" (TU). "eTU " is analytical error in tritium units.

GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171 F 843.766.1178

www.gel.com

August 31, 2010

Mr. Joel Cehn
PIKA International, Inc.
5025 Arnold Ave.
Mcclellan Afb, California 95652

Re: GLAVA - PIKA International
Work Order: 258847

Dear Mr. Cehn:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on August 12, 2010. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4512.

Sincerely,

Ann Skradski
Project Manager

Purchase Order: 0990103-001
Enclosures

GEL LABORATORIES LLC

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

Certificate of Analysis Report
for

PIKA003 Joel Cehn – PIKA International

Client SDG: 258847 GEL Work Order: 258847

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.

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.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the detection limit.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Ann Skradski.

Reviewed by _____

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: August 31, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA - PIKA International**

Client Sample ID:	MW-1	Project:	PIKA00109
Sample ID:	258847001	Client ID:	PIKA003
Matrix:	Water		
Collect Date:	06-AUG-10 09:00		
Receive Date:	12-AUG-10		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Chlorine-36 liquid "As Received"												
Chlorine-36	U	-23.8	+/-120	213	100	pCi/L		JXR1	08/26/10	1726	1014218	1
GFPC, Ra228, Liquid "As Received"												
Radium-228	U	-1.04	+/-0.591	1.36	3.00	pCi/L		AYB1	08/27/10	1224	1014214	2
Rad Liquid Scintillation Analysis												
Liquid Scint C14, Liquid "As Received"												
Carbon-14	U	-2.49	+/-19.6	34.3	50.0	pCi/L		EXK2	08/21/10	0645	1014482	3
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.504	+/-0.320	0.453	1.00	pCi/L		KSD1	08/24/10	1640	1014283	4

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL-RAD-A-033	
2	EPA 904.0/SW846 9320 Modified	
3	EPA EERF C-01 Modified	
4	EPA 903.1 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine-36 liquid "As Received"			99.6	(25%-125%)
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			99.1	(15%-125%)

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: August 31, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA - PIKA International**

Client Sample ID:	MW-2	Project:	PIKA00109
Sample ID:	258847002	Client ID:	PIKA003
Matrix:	Water		
Collect Date:	06-AUG-10 10:00		
Receive Date:	12-AUG-10		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Chlorine-36 liquid "As Received"												
Chlorine-36	U	1.49	+/-146	257	100	pCi/L		JXR1	08/26/10	1727	1014218	1
GFPC, Ra228, Liquid "As Received"												
Radium-228	U	1.23	+/-1.04	1.67	3.00	pCi/L		AYB1	08/27/10	1247	1014214	2
Rad Liquid Scintillation Analysis												
Liquid Scint C14, Liquid "As Received"												
Carbon-14	U	0.00	+/-19.6	34.1	50.0	pCi/L		EXK2	08/21/10	0711	1014482	3
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226	U	0.316	+/-0.256	0.393	1.00	pCi/L		KSD1	08/24/10	1640	1014283	4

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL-RAD-A-033	
2	EPA 904.0/SW846 9320 Modified	
3	EPA EERF C-01 Modified	
4	EPA 903.1 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine-36 liquid "As Received"			75.6	(25%-125%)
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			103	(15%-125%)

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : PIKA International, Inc.
Address : 5025 Arnold Ave.
Mcclellan Afb, California 95652

Report Date: August 31, 2010

Contact: Mr. Joel Cehn
Project: **GLAVA - PIKA International**

Client Sample ID:	MW-3	Project:	PIKA00109
Sample ID:	258847003	Client ID:	PIKA003
Matrix:	Water		
Collect Date:	06-AUG-10 12:00		
Receive Date:	12-AUG-10		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Chlorine-36 liquid "As Received"											
Chlorine-36	U	-146	+/-191	348	100	pCi/L		JXR1 08/26/10	1727	1014218	1
GFPC, Ra228, Liquid "As Received"											
Radium-228		1.46	+/-0.881	1.36	3.00	pCi/L		AYB1 08/27/10	1215	1014214	2
Rad Liquid Scintillation Analysis											
Liquid Scint C14, Liquid "As Received"											
Carbon-14	U	1.75	+/-19.6	34.1	50.0	pCi/L		EXK2 08/21/10	0737	1014482	3
Rad Radium-226											
Lucas Cell, Ra226, liquid "As Received"											
Radium-226		0.519	+/-0.261	0.304	1.00	pCi/L		KSD1 08/24/10	1640	1014283	4

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	GL-RAD-A-033	
2	EPA 904.0/SW846 9320 Modified	
3	EPA EERF C-01 Modified	
4	EPA 903.1 Modified	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine-36 liquid "As Received"			55.8	(25%-125%)
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			97.4	(15%-125%)

GEL LABORATORIES LLC

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

QC Summary

Report Date: August 31, 2010

PIKA International, Inc.
5025 Arnold Ave.
Mcclellan Afb, California

Contact: **Mr. Joel Cehn**

Workorder: **258847**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gas Flow										
Batch 1014214										
QC1202190487 258847001 DUP										
Radium-228	U	-1.04	U	0.862	pCi/L	0.00		N/A	AYB1	08/27/10 12:25
	Uncertainty	+/-0.591		+/-0.822						
QC1202190489 LCS										
Radium-228	23.9			27.1	pCi/L		114	(75%-125%)		08/27/10 12:54
	Uncertainty			+/-3.19						
QC1202190486 MB										
Radium-228			U	0.945	pCi/L					08/27/10 12:24
	Uncertainty			+/-1.02						
QC1202190488 258847001 MS										
Radium-228	48.0 U	-1.04		52.0	pCi/L		108	(75%-125%)		08/27/10 12:54
	Uncertainty	+/-0.591		+/-6.43						
Batch 1014218										
QC1202190508 258763001 DUP										
Chlorine-36	U	-15.5	U	58.7	pCi/L	0.00		N/A	JXR1	08/26/10 17:26
	Uncertainty	+/-99.7		+/-222						
QC1202190510 LCS										
Chlorine-36	47300			58200	pCi/L		123	(75%-125%)		08/26/10 14:24
	Uncertainty			+/-3410						
QC1202190507 MB										
Chlorine-36			U	-142	pCi/L					08/26/10 17:26
	Uncertainty			+/-296						
QC1202190509 258763001 MS										
Chlorine-36	47300 U	-15.5		42500	pCi/L		89.7	(75%-125%)		08/26/10 14:24
	Uncertainty	+/-99.7		+/-2380						
Rad Liquid Scintillation										
Batch 1014482										
QC1202191253 258847001 DUP										
Carbon-14	U	-2.49	U	19.3	pCi/L	0.00		N/A	EXK2	08/21/10 08:30
	Uncertainty	+/-19.6		+/-20.2						
QC1202191255 LCS										
Carbon-14	1200			1180	pCi/L		99	(75%-125%)		08/21/10 09:22
	Uncertainty			+/-47.5						
QC1202191252 MB										
Carbon-14			U	12.5	pCi/L					08/21/10 08:04
	Uncertainty			+/-20.1						
QC1202191254 258847001 MS										
Carbon-14	1200 U	-2.49		1200	pCi/L		100	(75%-125%)		08/21/10 08:56
	Uncertainty	+/-19.6		+/-48.0						
Rad Ra-226										
Batch 1014283										
QC1202190709 258865001 DUP										
Radium-226		8.51		5.83	pCi/L	37.4*		(0% - 20%)	KSD1	08/24/10 16:40

GEL LABORATORIES LLC

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QC Summary

Workorder: 258847

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Ra-226										
Batch 1014283										
	Uncertainty									
		+/-1.03		+/-0.750						
QC1202190711 LCS										
Radium-226	24.2			23.2	pCi/L		95.8	(75%-125%)	KSD1	08/24/10 17:15
	Uncertainty			+/-1.55						
QC1202190708 MB										
Radium-226			U	0.0466	pCi/L					08/24/10 16:40
	Uncertainty			+/-0.129						
QC1202190710 258865001 MS										
Radium-226	121	8.51		130	pCi/L		101	(75%-125%)		08/24/10 17:15
	Uncertainty	+/-1.03		+/-7.70						

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

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the 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
- F Estimated Value
- H Analytical holding time was exceeded
- J Value is estimated
- M M if above MDC and less than LLD
- M Matrix Related Failure
- N/A RPD or %Recovery limits do not apply.
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- UJ 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. Qualifier Not Applicable for Radiochemistry.

QC Summary

Workorder: 258847

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

h Preparation or preservation holding time was exceeded

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.
* Indicates that a Quality Control parameter was not within specifications.
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.

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
27−AUG−10	Radiochemistry	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
GFPC	GL−RAD−A−033	Liquid	PIKA, URSC
Batch ID:	**Sample Numbers:**		
1014218	See Below		

Potentially affected work order(s)(SDG): 258763,258847

Application Issues:

RDL less than MDA

Specification and Requirements Exception Description:	DER Disposition:
1. Samples 258763001, 258847001(MW−1), 258847002(MW−2), 258847003(MW−3), and 1202190508 do not meet the required Cl−36 detection limit due to reduced sample aliquots. Sample aliquots have been reduced due to the matrix of the samples. The samples counted for 500 minutes.	1. Reporting results.

Originator's Name:

Van Culpepper 27−AUG−10

Data Validator/Group Leader:

Nat Long 27−AUG−10

PIKA
International, Inc.

Chain of Custody Record

258847

Page ____ of ____

Quote Number	GELP08-0262rev6	Project Fax	510-268-8654
Project Name	GLAVA	Req'd Report Date	
Project Manager	Joel I. Cehn	Lab Contact	Anne Skradski
Project Phone	510-914-6262	Lab Phone	843-556-8171

BILLING ADDRESS:	SEND REPORT TO:	LAB ADDRESS:
Pika Int'l., Inc. 12723 Capricorn Dr. #500 Stafford, TX 77477	Pika Int'l., Inc. Joel Cehn 5025 Arnold Ave. Sacramento, CA 95652	Gen. Eng. Labs 2040 Savage Rd. Charleston, SC 29407 843-556-8171

#	Sample ID# and Description	MAT-RIX		CONTAINER TYPE (G, P)	VOLUME	PRESERV-ATIVE	ANALYSIS REQUESTED										DATE & TIME COLLECTED	SPECIAL INSTRUCTIONS / NOTES
		AQUEOUS	SOIL					C-14	Cl-36	Ra-226	Ra-228							
	MW-1	x			2L	Yes		x		x	x						8-6-2010, 9:00AM	
	MW-1	x			1L	No			x								"	
	MW-2	x			2L	Yes		x		x	x						8-6-2010, 10:00AM	
	MW-2	x			1L	No			x								"	
	MW-3	x			2L	Yes		x		x	x						8-6-2010, 12:00PM	
	MW-3	x			1L	No			x								"	
		x			2L	Yes		x		x	x							
		x			1L	No			x									

Sample TAT Req'd: 21d	Sample Disposal:	☐ Archive for _____ Months.	☒ Disposal by Lab	☐ Return to origin	QC Requirements: per quotation
Notes/Comments:					
Samples collected by Romeo Balbas, ~~951-284-7100~~ 951-888-5424					

CUSTODY TRACKING

1) Relinquished By:	[signature]	Date: 8-10-2010	Time: 15:30	Received By:	[signature]	Date: 81210	Time: 850
2) Relinquished By:		Date:	Time:	Received By:		Date:	Time:
3) Relinquished By:		Date:	Time:	Received By:		Date:	Time:

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: PIKA	SDG/AR/COC/Work Order: 258847
Received By: H. Taylor	Date Received: 12AUG10

Suspected Hazard Information	Yes	No	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?		✓	Maximum Counts Observed*: 4cpm
Classified Radioactive II or III by RSO?		✓	
COC/Samples marked containing PCBs?		✓	
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		✓	

	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 (0 ≤ 6 deg. C)?		✓		Preservation Method: Ice bags Blue ice Dry ice None Other (describe) 23
2a	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: 41502209 Secondary Temperature Device Serial # (If Applicable):
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: If Preservation added, Lot#:
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 Volatiles 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: no date and time on containers
11	Number of containers received match number indicated on COC?	✓			Sample ID's affected:
12	COC form is properly signed in relinquished/received sections?	✓			
13	Carrier and tracking number.	✓			Circle Applicable: FedEx Air FedEx Ground UPS Field Services Courier Other 8341 0289 8717

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials AMS Date 8/12/10 Page 1 of 1