TA 21 CLOSURE PROJECT
LOS ALAMOS NATIONAL LABORATORY
MAIL STOP C 349
231-0727
FAX 606-1526

DATE 1-23-08

TO Katie Roberts **FAX#** 476-6030

ORGANIZATION NMED **PHONE** _____

FROM M. Thacker **RETURN FAX** _____

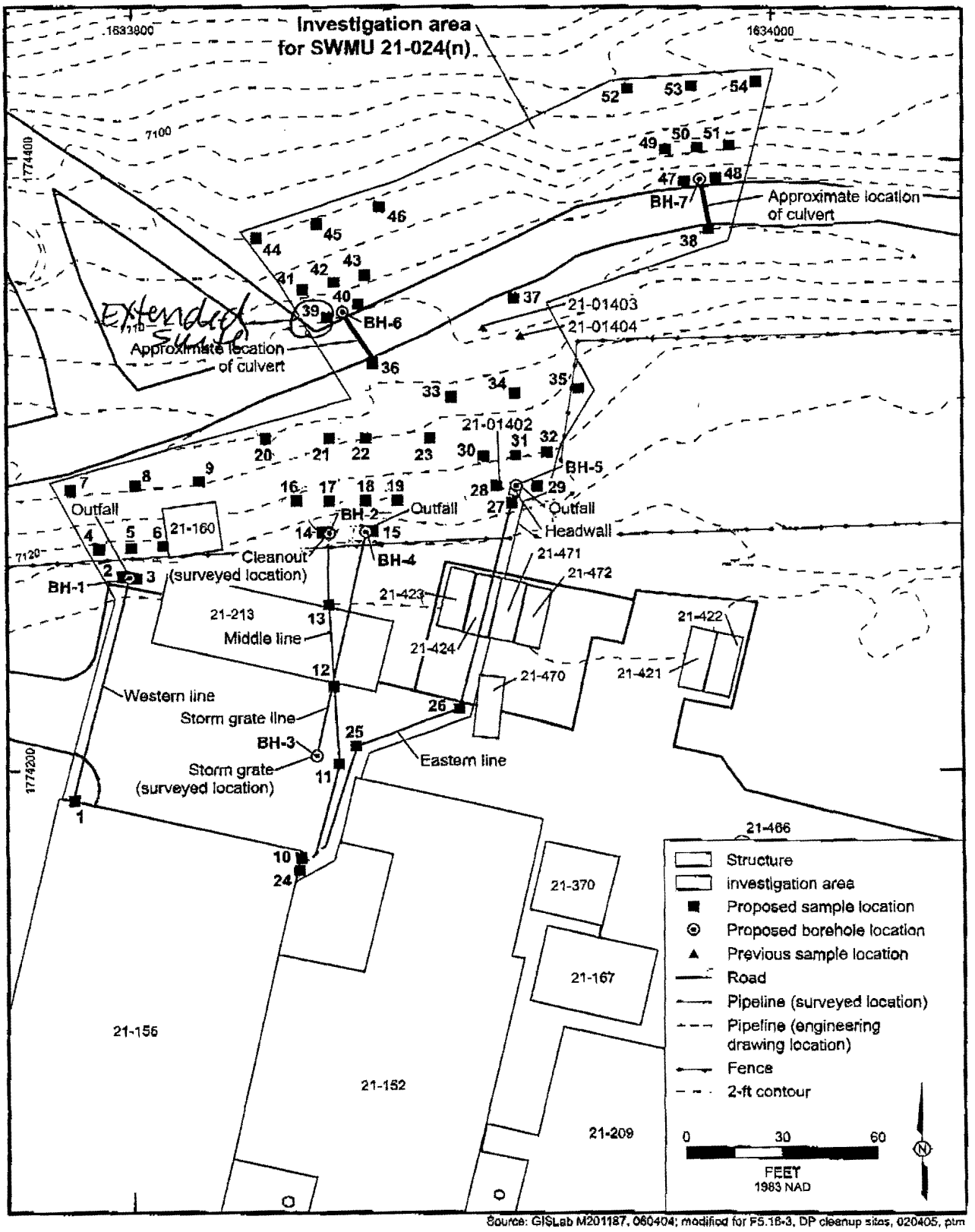
PHONE _____

#PAGES INCL. COVER 13

MESSAGE:

Extended suite results from ~~21-006(c[redacted])~~ and ~~[redacted]~~.

30309



Source: GISLab M201187, 060404; modified for F5.16-3, DP cleanup sites, 020405, ptm

Figure 5.16-3. SWMU 21-024(n) proposed sample locations

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 119 **EVENT NAME:** Surface&Subsurface SWMU 21-024(n) DP Site Aggregate Area. Spring 2007.

SAMPLE ID: RE21-07-3188

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		07/02/2007	MEDIA:	~~ALLH~~ rcv 7/2/07	QBT3
TIME COLLECTED (HH:MM)		15:45	SUB-MEDIA:	UA	OK
PRS ID:	21-024(n)	OK	SAMPLE TECH CODE:	~~SS~~ rcv 7/2/07	HA
LOCATION ID:	~~UNK~~ 07/06/26/07	21-600676/39b	FIELD QC TYPE:	NG	OK
LOCATION TYPE:	GENERIC	OK	FIELD PREP:	NA	↓
TOP DEPTH:	[illegible] 06/26/07	2.0 ft	SAMPLE USAGE:	INV	↓
BOTTOM DEPTH:	[illegible] 06/26/07	3.0 ft	SCREEN/PORT DESC:	NA	
FIELD MATRIX:	rcv 7/2/07 ~~S~~ R		EXCAVATED: YES/NO/NA		

COMPOSITE TYPE: — COMPOSITE TIME INTERVAL: — WATER FLOWING: YES/NO/NA

BOREHOLE: YES/NO/NA BOREHOLE DECLINATION: — BOREHOLE DIRECTION:

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	COMMENTS
2		8082	125 ML GLASS	Ice	Y	
2		8290	125 ML GLASS	Ice	Y	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	Y	

SAMPLE DESC:

Gray tuff with clay.

LOCATION DESC:

39b. 5ft. west of BH-6.

FIELD SCREENING/MEASUREMENT RESULTS:

α - 36dpm β - 35dpm PID - 5.3ppm

COLLECTED BY (PRINT) Mwhitaker **REVIEWED BY (PRINT)** Eric K Tosa

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name)	7/3/07	(Printed Name)	7/3/07
(Signature) [signature]	16:50	(Signature) [signature]	16:50
RELINQUISHED BY	**Date/Time**	**RECEIVED BY**	**Date/Time**
(Printed Name)		(Printed Name)	
(Signature)		(Signature)	

Sample ID: RE21-07-3188 **EPA Method 8290**

Client Data		Sample Data		Laboratory Data			
Name:	Los Alamos National Laboratory	Matrix:	Soil	Lab Sample:	29173-001	Date Received:	10-Jul-07
Project:	07-248C	Sample Size:	10.8 g	QC Batch No.:	9183	Date Extracted:	14-Jul-07
Date Collected:	2-Jul-07	%Solids:	92.7	Date Analyzed DB-5:	19-Jul-07	Date Analyzed DB-225:	NA
Time Collected:	1545						

Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
2,3,7,8-TCDD	0.317			J
1,2,3,7,8-PeCDD	ND		0.287	
1,2,3,4,7,8-HxCDD	1.21			J
1,2,3,6,7,8-HxCDD	8.25			
1,2,3,7,8,9-HxCDD	1.78			J
1,2,3,4,6,7,8-HpCDD	249			
OCDD	2540			
2,3,7,8-TCDF	0.208			J
1,2,3,7,8-PeCDF	0.168			J
2,3,4,7,8-PeCDF	0.287			J
1,2,3,4,7,8-HxCDF	1.06			J
1,2,3,6,7,8-HxCDF	0.742			J
2,3,4,6,7,8-HxCDF	1.39			J
1,2,3,7,8,9-HxCDF	ND	0.333		
1,2,3,4,6,7,8-HpCDF	31.0			
1,2,3,4,7,8,9-HpCDF	2.42			J
OCDF	90.4			

Labeled Standard		%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	89.7	40 - 135	
	13C-1,2,3,7,8-PeCDD	97.2	40 - 135	
	13C-1,2,3,4,7,8-HxCDD	95.7	40 - 135	
	13C-1,2,3,6,7,8-HxCDD	86.3	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDD	79.0	40 - 135	
	13C-OCDD	92.8	40 - 135	
	13C-2,3,7,8-TCDF	86.1	40 - 135	
	13C-1,2,3,7,8-PeCDF	95.8	40 - 135	
	13C-2,3,4,7,8-PeCDF	96.6	40 - 135	
	13C-1,2,3,4,7,8-HxCDF	115	40 - 135	
	13C-1,2,3,6,7,8-HxCDF	91.8	40 - 135	
	13C-2,3,4,6,7,8-HxCDF	96.7	40 - 135	
	13C-1,2,3,7,8,9-HxCDF	95.4	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDF	76.5	40 - 135	
	13C-1,2,3,4,7,8,9-HpCDF	120	40 - 135	
	13C-OCDF	91.6	40 - 135	
CRS	37Cl-2,3,7,8-TCDD	88.5	40 - 135	

Totals	
Total TCDD	1.20
Total PeCDD	1.33
Total HxCDD	34.1
Total HpCDD	421
Total TCDF	1.14
Total PeCDF	5.06
Total HxCDF	41.0
Total HpCDF	112

Toxic Equivalent Quotient (TEQ) Data [e]	
TEQ (Min):	7.39

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. TEQ based on (1989) International Toxic Equivalent Factors (ITEF).
The results are reported in dry weight. The sample size is reported in wet weight.

Analyst: MAS

Approved By: William J. Luksemburg 20-Jul-2007 12:59

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High Explosives Analysis Data Sheet

Lab Name: General Engineering Laboratories

Client Sample ID: RB21-07-3188

Lab Code: GEL

GEL Job No (SDG) 07-247

Matrix: SOIL

GEL Sample ID: 189080001

Sample Amount 2

Moisture: 6.9

Amount Units g

Date Received: 06-JUL-07

Extraction Type Sonication

Extraction Batch ID: 649175

Concentrated Extract Volume (mL) 10

Date Extracted: 10-JUL-07

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0714020a

Date Analyzed: 14-JUL-07 22:44

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	500	U
121-14-2	2,4-Dinitrotoluene	500	U
121-82-4	RDX	500	U
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U
2691-41-0	HMX	500	U
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U
479-45-8	Tetryl	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Sample Amoun}} \times \text{Dilution Factor}$$

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1

High Explosives Analysis Data Sheet

Lab Name: General Engineering Laboratories

Client Sample ID: RR21-07-3188

Lab Code: GEL

GEL Job No (SDG) 07-247

Matrix: SOIL

GEL Sample ID: 189080001

Sample Amount 2

Moisture: 6.9

Amount Units g

Date Received: 06-JUL-07

Extraction Type Sonication

Extraction Batch ID: 649175

Concentrated Extract Volume (mL) 10

Date Extracted: 10-JUL-07

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS0712016.wiff

Date Analyzed: 12-JUL-07 19:23

Units: ug/kg

Cas No.	Compound	Concentration*	Q
3058-38-6	TATB	1000	U
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	U
618-87-1	3,5-Dinitroaniline	1000	U
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U
78-30-8	tris(o-cresyl) phosphate	1000	U

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Sample Amoun}} \times \text{Dilution Factor}$$

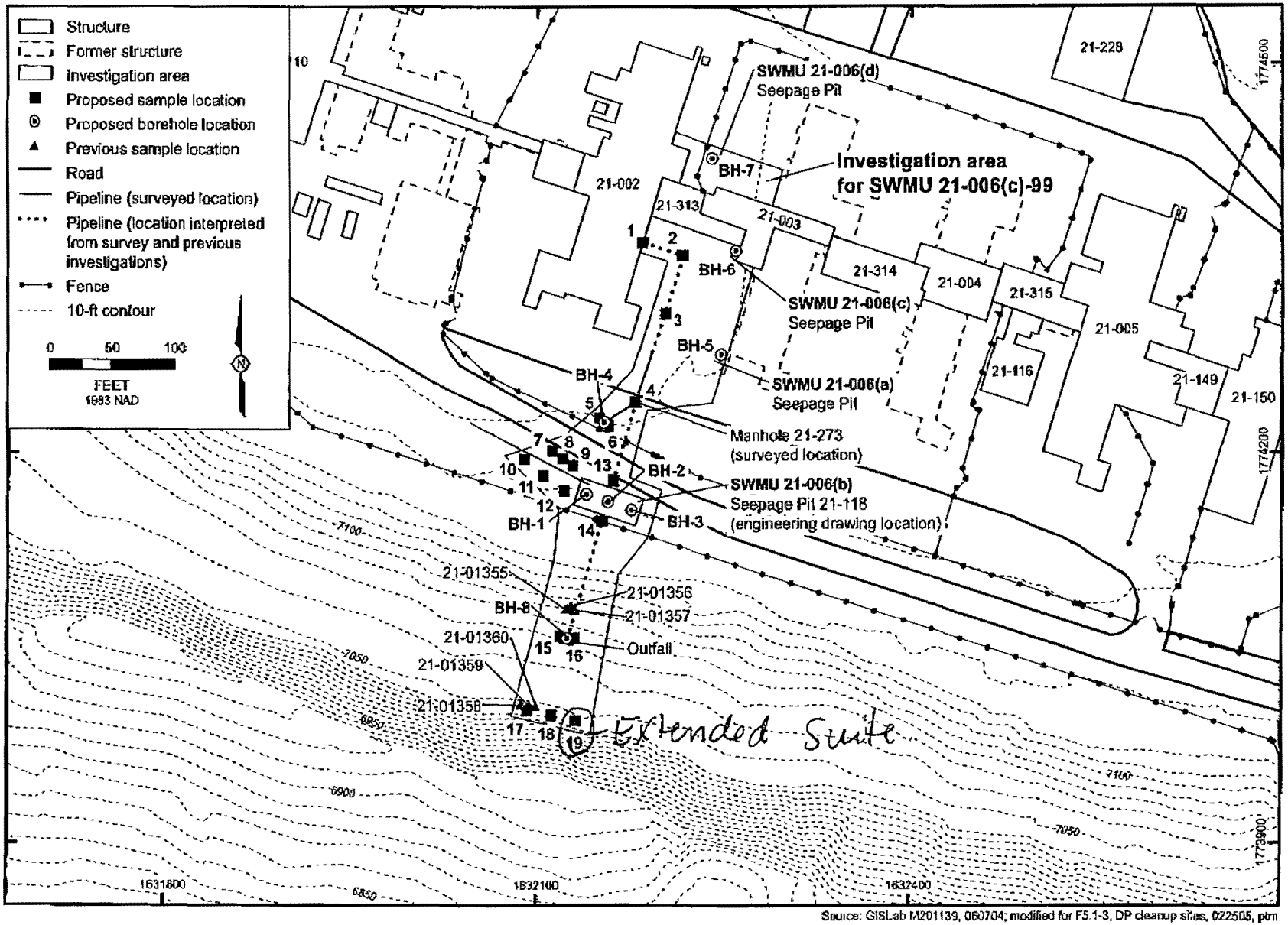
GEL Laboratories LLC

Report Date: July 16, 2007

PCB
Certificate of Analysis
Sample Summary

SDG Number:	07-247	Date Collected:	07/02/2007 12:00	Matrix:	SOIL
Lab Sample ID:	189080001	Date Received:	07/06/2007 10:00	%Moisture:	6.9
Client Sample:	1,2	Client:	LANL006	Project:	LANL00600
Client ID:	RE21-07-3188	Method:	SW846 8082	SOP Ref:	GL-OA-E-040
Batch ID:	649941	Inst:	ECD2A.I	Dilution:	1
Run Date:	07/12/2007 12:57	Analyst:	JXM	Inj. Vol:	1 uL
Prep Date:	07/11/2007 20:54	Aliquot:	30 g	Final Volume:	1 mL
Data File:	013f1301.d	Column:	1 CLP1	Level:	LOW
	013b1301.d		2 CLP2		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.58	ug/kg	1.19	3.58	1
11104-28-2	Aroclor-1221	U	3.58	ug/kg	1.19	3.58	1
11141-16-5	Aroclor-1232	U	3.58	ug/kg	1.19	3.58	1
53469-21-9	Aroclor-1242	U	3.58	ug/kg	1.19	3.58	1
12672-29-6	Aroclor-1248	U	3.58	ug/kg	1.19	3.58	1
11097-69-1	Aroclor-1254		6.50	ug/kg	1.19	3.58	2
11096-82-5	Aroclor-1260	U	3.58	ug/kg	1.19	3.58	1



Source: GISLab M201139, 060704; modified for F5.1-3, DP cleanup sites, 022505, ptm

Figure 5.1-3. Consolidated Unit 21-006(c)-99 proposed sample locations

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 74 **EVENT NAME:** Surface_Subsurface sampling CU 21-006(c)-99 DP Site Aggregate Area. Spring 2007

SAMPLE ID: RE21-07-1646

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
DATE COLLECTED(MM/DD/YYYY):		6-5-07	MEDIA:	ALLH	OK
TIME COLLECTED (HH:MM)		1550	SUB-MEDIA:	UA	
PRS ID:	21-006(c)-99	OK	SAMPLE TECH CODE:	SS	
LOCATION ID:	UNK	21-600392	FIELD QC TYPE:	NA	
LOCATION TYPE:	GENERIC	OK	FIELD PREP:	NA	
TOP DEPTH:	0	OK aet 06/13/07	SAMPLE USAGE:	INV	
BOTTOM DEPTH:	0	~~OK~~ 0.5 ft	SCREEN/PORT DESC:		NA
FIELD MATRIX:	S	OK	EXCAVATED: YES / NO / NA		

COMPOSITE TYPE: – COMPOSITE TIME INTERVAL: – WATER FLOWING: YES / NO / NA

BOREHOLE: YES / NO / NA BOREHOLE DECLINATION: – BOREHOLE DIRECTION: –

#	PRIORITY	ORDER	CNTNR	PRESERVATIVE	COLLECTED Y/N	COMMENTS
2		8082	125 ML GLASS	Ice	Y	
2		8290	125 ML GLASS	Ice	Y	
1		NMED Explosives list	250 ML AMBER GLASS	Ice	Y	

SAMPLE DESC:

Brown Soil

LOCATION DESC: aet 06/13/07
location 19a - 20 ft east of sample location 18

FIELD SCREENING/MEASUREMENT RESULTS:

α- 7 dpm aet 06/13/07 β- 608 dpm aet 06/13/07 PID - 0.3 ppm

COLLECTED BY (PRINT) Eric K Tosa **REVIEWED BY (PRINT)** Antoinette E. Torres

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time
(Printed Name) Erickson	6-5-07	(Printed Name)	6-5-07
(Signature)	1641	(Signature)	1645
RELINQUISHED BY	**Date/Time**	**RECEIVED BY**	**Date/Time**
(Printed Name)		(Printed Name)	
(Signature)		(Signature)	

Vista

Sample ID: RE21-07-1646 **EPA Method 8290**

Client Data		Sample Data		Laboratory Data			
Name:	Los Alamos National Laboratory	Matrix:	Soil	Lab Sample:	29070-001	Date Received:	8-Jun-07
Project:	07-144C	Sample Size:	10.4 g	QC Batch No.:	9113	Date Extracted:	11-Jun-07
Date Collected:	5-Jun-07	%Solids:	97.8	Date Analyzed DB-5:	12-Jun-07	Date Analyzed DB-225:	NA
Time Collected:	1550						

Analyte	Conc. (pg/g)	DL [a]	EMPC[b]	Qualifiers
2,3,7,8-TCDD	ND	0.0800		
1,2,3,7,8-PeCDD	ND		0.227	
1,2,3,4,7,8-HxCDD	0.300			J
1,2,3,6,7,8-HxCDD	0.857			J
1,2,3,7,8,9-HxCDD	0.893			J
1,2,3,4,6,7,8-HpCDD	21.9			
OCDD	241			
2,3,7,8-TCDF	0.212			J
1,2,3,7,8-PeCDF	0.0964			J
2,3,4,7,8-PeCDF	0.190			J
1,2,3,4,7,8-HxCDF	0.251			J
1,2,3,6,7,8-HxCDF	0.246			J
2,3,4,6,7,8-HxCDF	0.268			J
1,2,3,7,8,9-HxCDF	ND	0.130		
1,2,3,4,6,7,8-HpCDF	5.17			
1,2,3,4,7,8,9-HpCDF	0.289			J
OCDF	15.9			

	Labeled Standard	%R	LCL-UCL[d]	Qualifiers
IS	13C-2,3,7,8-TCDD	77.3	40 - 135	
	13C-1,2,3,7,8-PeCDD	81.3	40 - 135	
	13C-1,2,3,4,7,8-HxCDD	80.1	40 - 135	
	13C-1,2,3,6,7,8-HxCDD	84.5	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDD	72.8	40 - 135	
	13C-OCDD	64.1	40 - 135	
	13C-2,3,7,8-TCDF	79.9	40 - 135	
	13C-1,2,3,7,8-PeCDF	73.1	40 - 135	
	13C-2,3,4,7,8-PeCDF	74.9	40 - 135	
	13C-1,2,3,4,7,8-HxCDF	79.9	40 - 135	
	13C-1,2,3,6,7,8-HxCDF	80.1	40 - 135	
	13C-2,3,4,6,7,8-HxCDF	80.6	40 - 135	
	13C-1,2,3,7,8,9-HxCDF	81.1	40 - 135	
	13C-1,2,3,4,6,7,8-HpCDF	70.7	40 - 135	
	13C-1,2,3,4,7,8,9-HpCDF	74.5	40 - 135	
	13C-OCDF	65.0	40 - 135	
CRS	37Cl-2,3,7,8-TCDD	84.8	40 - 135	

Totals		
Total TCDD	ND	0.0800
Total PeCDD	0.181	0.408
Total HxCDD	7.81	
Total HpCDD	55.2	
Total TCDF	0.721	
Total PeCDF	1.98	
Total HxCDF	4.11	4.56
Total HpCDF	15.1	

Toxic Equivalent Quotient (TEQ) Data [e]

TEQ (Min): 0.933

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. TEQ based on (1989) International Toxic Equivalent Factors (ITEF).
The results are reported in dry weight. The sample size is reported on wet weight.

Analyst: JMH

Approved By: William J. Luksemburg 13-Jun-2007 11:15

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High Explosives Analysis Data Sheet

Lab Name: General Engineering Laboratories

Client Sample ID: RE21-07-1646

Lab Code: GEL

GEL Job No (SDG) 07-143

Matrix: SOIL

GEL Sample ID: 187304001

Sample Amount 2

Moisture: 3.1

Amount Units g

Date Received: 07-JUN-07

Extraction Type Sonication

Extraction Batch ID: 641094

Concentrated Extract Volume (mL) 10

Date Extracted: 19-JUN-07

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXP0621039a

Date Analyzed: 22-JUN-07 04:18

Units: ug/kg

Cas No.	Compound	Concentration*	Q
118-96-7	2,4,6-Trinitrotoluene	500	U
121-14-2	2,4-Dinitrotoluene	500	U
121-82-4	RDX	500	U
19406-51-0	4-Amino-2,6-dinitrotoluene	500	U
2691-41-0	HMX	500	U
35572-78-2	2-Amino-4,6-dinitrotoluene	500	U
479-45-8	Tetryl	500	U
606-20-2	2,6-Dinitrotoluene	500	U
78-11-5	PETN	1000	U
88-72-2	o-Nitrotoluene	500	U
98-95-3	Nitrobenzene	500	U
99-08-1	m-Nitrotoluene	500	U
99-35-4	1,3,5-Trinitrobenzene	500	U
99-65-0	m-Dinitrobenzene	500	U
99-99-0	p-Nitrotoluene	500	U

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Sample Amoun}} \times \text{Dilution Factor}$$

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1

High Explosives Analysis Data Sheet

Lab Name: General Engineering Laboratories

Client Sample ID: RE21-07-1646

Lab Code: GEL

GEL Job No (SDG) 07-143

Matrix: SOIL

GEL Sample ID: 187304001

Sample Amount 2

Moisture: 3.1

Amount Units g

Date Received: 07-JUN-07

Extraction Type Sonication

Extraction Batch ID: 641094

Concentrated Extract Volume (mL) 10

Date Extracted: 19-JUN-07

Dilution Factor: 2

Injection Volume (uL): 50

GEL data file: EXS0621031.wiff

Date Analyzed: 22-JUN-07 02:14

Units: ug/kg

Cas No.	Compound	Concentration*	Q
3058-38-6	TATB	1000	U
59229-75-3	2,6-Diamino-4-nitrotoluene	2000	U
618-87-1	3,5-Dinitroaniline	1000	U
6629-29-4	2,4-Diamino-6-nitrotoluene	2000	U
78-30-8	tris(o-cresyl) phosphate	1000	U

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Sample Amoun}} \times \text{Dilution Factor}$$

GEL Laboratories LLC

Report Date: June 20, 2007

PCB
Certificate of Analysis
Sample Summary

SDG Number:	07-143	Date Collected:	06/05/2007 12:00	Matrix:	SOIL
Lab Sample ID:	187304001	Date Received:	06/07/2007 09:45	%Moisture:	3.1
Client Sample:	1,2	Client:	LANL006	Project:	LANL00600
Client ID:	RE21-07-1646	Method:	SW846 8082	SOP Ref:	GL-OA-E-040
Batch ID:	641738	Inst:	ECD1A.I	Dilution:	10
Run Date:	06/14/2007 19:13	Analyst:	RAW2	Inj. Vol:	1 uL
Prep Date:	06/11/2007 20:25	Aliquot:	30 g	Final Volume:	1 mL
Data File:	050f5001.d	Column:	1 CLP1	Level:	LOW
	0S0b5001.d		2 CLP2		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	34.4	ug/kg	11.5	34.4	1
11104-28-2	Aroclor-1221	U	34.4	ug/kg	11.5	34.4	1
11141-16-5	Aroclor-1232	U	34.4	ug/kg	11.5	34.4	1
53469-21-9	Aroclor-1242	U	34.4	ug/kg	11.5	34.4	1
12672-29-6	Aroclor-1248	U	34.4	ug/kg	11.5	34.4	1
11097-69-1	Aroclor-1254	U	34.4	ug/kg	11.5	34.4	1
11096-82-5	Aroclor-1260	U	34.4	ug/kg	11.5	34.4	1