ENSR | AECOM

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client/Project Name: **Source Area Investigation**	Project Location: **Henderson, NV**
Project Number: **04020-023-401**	Field Logbook No.:
Sampler (Print Name)/(Affiliation): Eric Nelson/(ENSR)	Client Contact: **Robert Kennedy, 2 Technology Park Dr, Westford, MA 01886-3140**
Signature: [signature]	Send Results/Report to: **Robert Kennedy, rkennedy@ensr.aecom.com** — TAT: STD

Analysis Requested: ~~Asbestos EPA/540/R-97/028~~; HRGCMS Dioxin/Furan Screen

Container Type: P – Plastic; A – Amber Glass; G – Clear Glass; V – VOA Vial; O – Other; E – Encore

Preservation: 1 – HCl, 4°; 2 – H2SO4, 4°; 3 – HNO3, 4°; 4 – NaOH, 4°; 5 – NaOH/ZnAc, 4°; 6 – Na2S2O3, 4°; 7 – 4°

Matrix Codes: DW – Drinking Water; WW – Wastewater; GW – Groundwater; SW – Surface Water; ST – Storm Water; W – Water; S – Soil; SL – Sludge; SD – Sediment; SO – Solid; A – Air; L – Liquid; P – Product

Field Sample No./Identification	Date	Time	COMP	GRAB	Sample Container (Size/Mat'l)	Matrix	Preserv.	Field Filtered	~~Asbestos EPA/540/R-97/028~~	HRGCMS Dioxin/Furan Screen	Lab I.D.	Remarks
SA8-0.5	11/17/06	0645		X		Soil				X		
EB111706	11/17/06	1165		X		Water				X		
SA13-0.5	11/17/06	1255		X		Soil				X		MS/MSD
SA13-0.5D	11/17/06	—		X		Soil				X		

Relinquished by: (Print Name)/(Affiliation)	Date/Time	Received by: (Print Name)/(Affiliation)	Date/Time
Eric Nelson/(ENSR) Signature: [signature]	Date: 11/17/06 Time: 1630	Gisela Cruz 2°C Signature: Gisela Cruz	Date: 11/18/06 Time: 10:50
Signature:	Date: Time:	Signature:	Date: Time:
Signature:	Date: Time:	Signature:	Date: Time:

Analytical Laboratory (Destination): ~~EMSL Analytical, Inc. Attn: Sample Receiving 107 Hadden Avenue Westmont, NJ 08108~~ CAS-Houston

800-220-3675

Sample Shipped Via: UPS (FedEx) Courier Other

Temp blank: (Yes) No

J:\2006 Projects\04020 - KerrMcGee\023-Tronox Henderson\401 Source Area Field work\Chain-of-Custody_AECOM_EMSL.doc

White: Original (to Lab) Yellow: Lab Pink: Sampler **Serial No.** 111706-15

Form 3

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

CLIENT ID.
SA8-0.5

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS Method: Screen(2) Lab Sample ID: E0600845-001

Client Name: ENSR Sample Wt/Vol: 13.697 g or mL: g

Matrix (Aqueous/Solid/Leachate): Solid Initial Calibration Date: 10/23/06

Sample Receipt Date: 11/18/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 11/21/06 GC Column ID: DB-5

Ext.Vol(ul):20.0 Inj.Vol(ul):1.0 Sample Data Filename: U17993#1

Analysis Date: 29-NOV-06 Time: 23:59:34 Blank Data Filename: U27424#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17986#1

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 16.20

	DETECTION LIMITS	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	0.028	*	X 1.0	*
1,2,3,7,8-PeCDD	0.030	*	X 1.0	*
1,2,3,4,7,8-HxCDD	0.043	*	X 0.1	*
1,2,3,6,7,8-HxCDD	0.036	*	X 0.1	*
1,2,3,7,8,9-HxCDD	0.040	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	0.065	0.714	X 0.01	7.14e-03
OCDD	0.119	6.973	X 0.0001	6.97e-04
2,3,7,8-TCDF	0.043	*	X 0.1	*
1,2,3,7,8-PeCDF	0.023	*	X 0.05	*
2,3,4,7,8-PeCDF	0.022	*	X 0.5	*
1,2,3,4,7,8-HxCDF	0.034	*	X 0.1	*
1,2,3,6,7,8-HxCDF	0.030	*	X 0.1	*
1,2,3,7,8,9-HxCDF	0.041	*	X 0.1	*
2,3,4,6,7,8-HxCDF	0.034	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	0.053	0.479	X 0.01	4.79e-03
1,2,3,4,7,8,9-HpCDF	0.075	*	X 0.01	*
OCDF	0.113	1.403	X 0.0001	1.40e-04
			Total:	1.28e-02

(1) World Health Organization (WHO) adopted TEF's, taken from: Van der Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCCDD, PCDFs for Humans and Wildlife (Environ Health Perspect. 106:775-792 (1988).

(2) This is a high resolution GC/MS screening method for PCDDs/PCDFs.

Form 3

CLIENT ID.

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

SA13-0.5

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS Method: Screen(2) Lab Sample ID: E0600845-002

Client Name: ENSR Sample Wt/Vol: 15.527 g or mL: g

Matrix (Aqueous/Solid/Leachate): Solid Initial Calibration Date: 10/23/06

Sample Receipt Date: 11/18/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 11/21/06 GC Column ID: DB-5

Ext.Vol(ul):20.0 Inj.Vol(ul):1.0 Sample Data Filename: U17994#1

Analysis Date: 30-NOV-06 Time: 00:47:46 Blank Data Filename: U27424#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17986#1

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 17.91

	DETECTION LIMITS	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	0.036	*	X 1.0	*
1,2,3,7,8-PeCDD	0.023	*	X 1.0	*
1,2,3,4,7,8-HxCDD	0.041	*	X 0.1	*
1,2,3,6,7,8-HxCDD	0.035	*	X 0.1	*
1,2,3,7,8,9-HxCDD	0.038	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	0.054	*	X 0.01	*
OCDD	0.112	0.666	X 0.0001	6.70e-05
2,3,7,8-TCDF	0.055	*	X 0.1	*
1,2,3,7,8-PeCDF	0.028	*	X 0.05	*
2,3,4,7,8-PeCDF	0.027	*	X 0.5	*
1,2,3,4,7,8-HxCDF	0.035	*	X 0.1	*
1,2,3,6,7,8-HxCDF	0.031	*	X 0.1	*
1,2,3,7,8,9-HxCDF	0.042	*	X 0.1	*
2,3,4,6,7,8-HxCDF	0.035	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	0.047	*	X 0.01	*
1,2,3,4,7,8,9-HpCDF	0.067	*	X 0.01	*
OCDF	0.109	*	X 0.0001	*
			Total:	6.70e-05

(1) World Health Organization (WHO) adopted TEF's, taken from: Van der Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCCDD, PCDFs for Humans and Wildlife (Environ Health Perspect. 106:775-792 (1988).

(2) This is a high resolution GC/MS screening method for PCDDs/PCDFs.

SCF3w

Form 3

CLIENT ID.

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

SA13-0.5D

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS Method: Screen(2) Lab Sample ID: E0600845-003

Client Name: ENSR Sample Wt/Vol: 11.072 g or mL: g

Matrix (Aqueous/Solid/Leachate): Solid Initial Calibration Date: 10/23/06

Sample Receipt Date: 11/18/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 11/21/06 GC Column ID: DB-5

Ext.Vol(ul):20.0 Inj.Vol(ul):1.0 Sample Data Filename: U17985#1

Analysis Date: 29-NOV-06 Time: 16:59:14 Blank Data Filename: U27424#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17977#1

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 7.67

	DETECTION LIMITS	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	0.141	*	X 1.0	*
1,2,3,7,8-PeCDD	0.055	*	X 1.0	*
1,2,3,4,7,8-HxCDD	0.060	*	X 0.1	*
1,2,3,6,7,8-HxCDD	0.055	*	X 0.1	*
1,2,3,7,8,9-HxCDD	0.058	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	0.136	0.736	X 0.01	7.37e-03
OCDD	0.152	3.166	X 0.0001	3.17e-04
2,3,7,8-TCDF	0.158	*	X 0.1	*
1,2,3,7,8-PeCDF	0.050	*	X 0.05	*
2,3,4,7,8-PeCDF	0.049	*	X 0.5	*
1,2,3,4,7,8-HxCDF	0.084	*	X 0.1	*
1,2,3,6,7,8-HxCDF	0.079	*	X 0.1	*
1,2,3,7,8,9-HxCDF	0.113	*	X 0.1	*
2,3,4,6,7,8-HxCDF	0.092	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	0.099	0.325	X 0.01	3.25e-03
1,2,3,4,7,8,9-HpCDF	0.140	*	X 0.01	*
OCDF	0.140	0.670	X 0.0001	6.70e-05
			Total:	1.10e-02

(1) World Health Organization (WHO) adopted TEF's, taken from: Van der Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCCDD, PCDFs for Humans and Wildlife (Environ Health Perspect. 106:775-792 (1988).

(2) This is a high resolution GC/MS screening method for PCDDs/PCDFs.

SCF3w

Form 3

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

CLIENT ID.
EB111706

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS Method: Screen(2) Lab Sample ID: E0600845-004

Client Name: ENSR Sample Wt/Vol: 1090 g or mL: mL

Matrix (Aqueous/Solid/Leachate): Aqueous Initial Calibration Date: 11/04/04

Sample Receipt Date: 11/18/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 11/20/06 GC Column ID: DB-5

Ext.Vol(ul):20.0 Inj.Vol(ul):1.0 Sample Data Filename: U27413#1

Analysis Date: 22-NOV-06 Time: 18:51:56 Blank Data Filename: U27409#1

Dilution Factor: 1 Cal. Ver. Data Filename: U27408#1

Concentration Units (pg/L or ng/Kg dry weight): pg/L % Moisture:

	DETECTION LIMITS	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	0.230	*	X 1.0	*
1,2,3,7,8-PeCDD	0.302	*	X 1.0	*
1,2,3,4,7,8-HxCDD	0.281	*	X 0.1	*
1,2,3,6,7,8-HxCDD	0.252	*	X 0.1	*
1,2,3,7,8,9-HxCDD	0.261	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	0.317	1.319	X 0.01	1.32e-02
OCDD	0.656	5.049	X 0.0001	5.05e-04
2,3,7,8-TCDF	0.341	2.441	X 0.1	2.44e-01
1,2,3,7,8-PeCDF	0.294	1.821	X 0.05	9.11e-02
2,3,4,7,8-PeCDF	0.275	0.987	X 0.5	4.94e-01
1,2,3,4,7,8-HxCDF	0.214	3.320	X 0.1	3.32e-01
1,2,3,6,7,8-HxCDF	0.211	2.514	X 0.1	2.51e-01
1,2,3,7,8,9-HxCDF	0.253	0.555	X 0.1	5.55e-02
2,3,4,6,7,8-HxCDF	0.226	1.214	X 0.1	1.21e-01
1,2,3,4,6,7,8-HpCDF	0.227	9.012	X 0.01	9.01e-02
1,2,3,4,7,8,9-HpCDF	0.294	3.246	X 0.01	3.25e-02
OCDF	0.502	27.133	X 0.0001	2.71e-03
			Total:	1.73e+00

(1) World Health Organization (WHO) adopted TEF's, taken from: Van der Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCCDD, PCDFs for Humans and Wildlife (Environ Health Perspect. 106:775-792 (1988).

(2) This is a high resolution GC/MS screening method for PCDDs/PCDFs.