

US EPA ARCHIVE DOCUMENT

Data Summary Table
Dioxin/Furan Analysis - Soil Samples
(ng/Kg, Dry.wt.)

SITE: Merino Park Site - Providence, RI
CASE NO. 40414 SDG No. D24240
LABORATORY: AGAT Laboratories - Calgary, AB

SAMPLE NUMBER:	Toxicity	D24240		D24241		D24242		D24243		D24244	
STATION LOCATION:	Equivalency	SS-01		SS-02		SS-03		SS-04		SS-05	
MATRIX:	Factors #	SOIL		SOIL		SOIL		SOIL		SOIL	
TCDD/TCDF CONC.:		ng/Kg	DL/EMPC*	ng/Kg	DL/EMPC*	ng/Kg	DL/EMPC*	ng/Kg	DL/EMPC*	ng/Kg	DL/EMPC*
2,3,7,8-TCDD	1	33.5 J		135 J		59.7 J		222 J		314 J	
2,3,7,8-TCDF	0.1	2.69 J		7.02 J		14.7 J		10.9 J		11.2 J	
1,2,3,7,8-PeCDF	0.03	2.82 J		U	0.432	U	0.279	U	0.221	U	0.330
1,2,3,7,8-PeCDD	1	3.86 J		1.39 J		4.11 J		4.31 J		3.61 J	
2,3,4,7,8-PeCDF	0.3	4.03 J		2.40 J		5.18 J		4.76 J		3.53 J	
1,2,3,4,7,8-HxCDF	0.1	5.53		5.49		16.3		10.7		7.21	
1,2,3,6,7,8-HxCDF	0.1	5.03 J		3.73 J		11.3		6.22		6.61	
1,2,3,4,7,8-HxCDD	0.1	4.84 J		1.85 J		5.56 J		3.11 J		3.50 J	
1,2,3,6,7,8-HxCDD	0.1	4.90 J		3.64 J		16.6		7.13		8.44	
1,2,3,7,8,9-HxCDD	0.1	6.93 J		4.70 J		17.2 J		12.7 J		9.50 J	
2,3,4,6,7,8-HxCDF	0.1	4.91 J		4.46 J		12.1		10.3		7.81	
1,2,3,7,8,9-HxCDF	0.1	3.52 J			0.490 *	1.89		7.03		2.56 J	
1,2,3,4,6,7,8-HpCDF	0.01	18.7 J		26.4 J		121 J		44.4 J		67.7 J	
1,2,3,4,6,7,8-HpCDD	0.01	51.0 J		67.1 J		434 J		117 J		183 J	
1,2,3,4,7,8,9-HpCDF	0.01	6.02 J		2.68 J		9.13 J		7.23 J		6.16 J	
OCDD	0.0003	364 J		526 J		4410 J		898 J		1320 J	
OCDF	0.0003	33.4 J		41.0 J		220 J		86.3 J		121 J	
TOTAL TCDD		40.7 J		151 J		84.3 J		255 J		341 J	
TOTAL PeCDD		91.8 J		282 J		54.6 J		52.4 J		256 J	
TOTAL HxCDD		28.5 J		36.8 J		193 J		74.3 J		90.2 J	
TOTAL HpCDD		88.4 J		132 J		943 J		235 J		370 J	
TOTAL TCDF		81.5 J		342 J		359 J		360 J		498 J	
TOTAL PeCDF		87.2 J		269 J		510 J		337 J		418 J	
TOTAL HxCDF		58.6 J		126 J		586 J		221 J		308 J	
TOTAL HpCDF		41.3 J		60.2 J		564 J		105 J		176 J	
TOXIC EQUIVALENT #:		43.3 J		141 J		82.0 J		236 J		328 J	
PERCENT SOLIDS:		95.3		91.4		84.1		96.5		81.8	
DILUTION FACTOR:		1.0		1.0		1.0		1.0		1.0	
COLLECTION DATE:		8/18/2010		8/18/2010		8/18/2010		8/18/2010		8/18/2010	
EXTRACTION DATE:		9/14/2010		9/14/2010		9/14/2010		9/14/2010		9/15/2010	
ANALYSIS DATE:		10/4/2010		10/4/2010		10/4/2010		10/4/2010		10/5/2010	
LAB SAMPLE ID:		1965028A		1965040A		1965041A		1965046A		1965050A	



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Data Summary Table
Dioxin/Furan Analysis - Soil Samples
(ng/Kg, Dry wt.)

SITE: Merino Park Site - Providence, RI
CASE NO: 40414 SDG No. D24240
LABORATORY: AGAT Laboratories - Calgary, AB

SAMPLE NUMBER:	Toxicity	D24245	D24246	D24247	D24248	D24249			
STATION LOCATION:	Equivalency	SS-06	SS-07	SS-08	SS-09	SS-10			
MATRIX:	Factors #	SOIL	SOIL	SOIL	SOIL	SOIL			
TCDD/TCDF CONC.:		ng/Kg	DL/EMPC*	ng/Kg	DL/EMPC*	ng/Kg	DL/EMPC*		
2,3,7,8-TCDD	1	179 J		163 J		114 J	54.7 J		
2,3,7,8-TCDF	0.1	10.6 J		7.05 J		4.48 J	5.08 J		
1,2,3,7,8-PeCDF	0.03	U	0.162	U	0.209	U	0.117	U	0.0975
1,2,3,7,8-PeCDD	1	2.04 J		1.77 J		0.830 J	1.24 J	1.01 J	
2,3,4,7,8-PeCDF	0.3	2.44 J		3.05 J		1.38 J	1.69 J	2.05 J	
1,2,3,4,7,8-HxCDF	0.1	7.89		10.3		2.84 J	3.99 J	4.93 J	
1,2,3,6,7,8-HxCDF	0.1	4.78 J		4.40 J		1.90 J	2.26 J	3.09 J	
1,2,3,4,7,8-HxCDD	0.1	2.12 J		1.88 J		1.17 J	1.62 J	1.09 J	
1,2,3,6,7,8-HxCDD	0.1	6.32		4.76 J		2.06 J	3.47 J	2.59 J	
1,2,3,7,8,9-HxCDD	0.1	5.90 J		5.11 J		3.33 J	4.13 J	3.77 J	
2,3,4,6,7,8-HxCDF	0.1	5.63		3.57 J		2.12 J	2.94 J	2.98 J	
1,2,3,7,8,9-HxCDF	0.1	1.80 J		1.18 J		0.580 J	0.721 J	0.528 J	
1,2,3,4,6,7,8-HpCDF	0.01	51.1 J		36.2 J		14.8 J	26.8 J	19.2 J	
1,2,3,4,6,7,8-HpCDD	0.01	149 J		97.4 J		38.5 J	85.1 J	47.3 J	
1,2,3,4,7,8,9-HpCDF	0.01	3.56 J		2.79 J		1.89 J	1.96 J	1.41 J	
OCDD	0.0003	1180 J		697 J		291 J	658 J	366 J	
OCDF	0.0003	95.5 J		53.9 J		24.7 J	53.1 J	26.6 J	
TOTAL TCDD		216 J		198 J		39.3 J	125 J	71.0 J	
TOTAL PeCDD		43.2 J		102 J		58.4 J	247 J	16.8 J	
TOTAL HxCDD		64.2 J		51.2 J		16.4 J	33.1 J	29.1 J	
TOTAL HpCDD		296 J		188 J		71.1 J	172 J	89.9 J	
TOTAL TCDF		351 J		299 J		71.5 J	205 J	171 J	
TOTAL PeCDF		310 J		344 J		65.0 J	196 J	171 J	
TOTAL HxCDF		212 J		166 J		46.5 J	124 J	80.8 J	
TOTAL HpCDF		132 J		79.3 J		33.5 J	70.0 J	38.4 J	
TOXIC EQUIVALENT #:		188 J		171 J		38.6 J	120 J	59.5 J	
PERCENT SOLIDS:		95.2		96.4		98.7	85.7	97.3	
DILUTION FACTOR:		1.0		1.0		1.0	1.0	1.0	
COLLECTION DATE:		8/18/2010		8/18/2010		8/18/2010	8/18/2010	8/18/2010	
EXTRACTION DATE:		9/15/2010		9/15/2010		9/15/2010	9/15/2010	9/15/2010	
ANALYSIS DATE:		10/5/2010		10/5/2010		10/5/2010	10/5/2010	10/5/2010	
LAB SAMPLE ID:		1965051A		1965052A		1965053A	1965054A	1965055A	

Data Summary Table
Dioxin/Furan Analysis - Soil Samples
(ng/Kg, Dry wt.)

SITE: Merino Park Site - Providence, RI
CASE NO. 40414 SDG No. D24240
LABORATORY: AGAT Laboratories - Calgary, AB

SAMPLE NUMBER:	Toxicity	D24250		D24251		D24252		D24253		D24254	
STATION LOCATION:	Equivalency	SS-11		SS-12		SS-13		SS-14		SS-15	
MATRIX:	Factors #	SOIL		SOIL		SOIL		SOIL		SOIL	
TCDD/TCDF CONC.:		ng/Kg	DL/EMPC*	ng/Kg	DL/EMPC*	ng/Kg	DL/EMPC*	ng/Kg	DL/EMPC*	ng/Kg	DL/EMPC*
2,3,7,8-TCDD	1	39.0 J		1.28 J		263 J		13.7 J		44.6 J	
2,3,7,8-TCDF	0.1	4.45 J		3.09 J		7.63 J		1.96 J		4.12 J	
1,2,3,7,8-PeCDF	0.03	U	0.945	U	0.0864	U	0.324	U	0.0685	U	0.0544
1,2,3,7,8-PeCDD	1	U	1.36	0.530 J		2.57 J		0.528 J		2.24 J	
2,3,4,7,8-PeCDF	0.3		2.07 *	1.54 J		2.09 J		0.901 J		1.99 J	
1,2,3,4,7,8-HxCDF	0.1	4.16 J		3.13 J		6.27 J		1.43 J		3.51 J	
1,2,3,6,7,8-HxCDF	0.1	3.99 J		1.96 J		6.14 J		1.00 J		3.05 J	
1,2,3,4,7,8-HxCDD	0.1		2.16 *	0.666 J		3.51 J		0.613 J		2.58 J	
1,2,3,6,7,8-HxCDD	0.1	3.99 J		1.26 J		6.81 J		0.980 J		3.67 J	
1,2,3,7,8,9-HxCDD	0.1	6.52 J		1.55 J		9.10 J		2.16 J		4.81 J	
2,3,4,6,7,8-HxCDF	0.1	4.02 J		2.25 J		5.59 J		1.20 J		2.93 J	
1,2,3,7,8,9-HxCDF	0.1		1.47 *	0.464 J		2.37 J		0.548 J		2.00 J	
1,2,3,4,6,7,8-HpCDF	0.01	21.1 J		9.56 J		56.2 J		5.32 J		16.7 J	
1,2,3,4,6,7,8-HpCDD	0.01	54.7 J		15.4 J		155 J		16.8 J		48.2 J	
1,2,3,4,7,8,9-HpCDF	0.01	4.44 J		1.31 J		4.00 J		1.08 J		4.19 J	
OCDD	0.0003	372 J		110 J		1160 J		177 J		394 J	
OCDF	0.0003	33.0 J		12.3 J		102 J		11.9 J		38.3 J	
TOTAL TCDD		48.1 J		12.9 J		288 J		18.8 J		56.2 J	
TOTAL PeCDD		10.3 J		8.87 J		147 J		69.3 J		134 J	
TOTAL HxCDD		30.7 J		14.7 J		70.4 J		12.6 J		25.3 J	
TOTAL HpCDD		97.0 J		31.8 J		320 J		33.2 J		91.1 J	
TOTAL TCDF		86.3 J		164 J		377 J		88.0 J		145 J	
TOTAL PeCDF		25.3 J		151 J		324 J		66.3 J		108 J	
TOTAL HxCDF		67.2 J		61.8 J		234 J		26.2 J		66.8 J	
TOTAL HpCDF		41.5 J		19.0 J		142 J		12.3 J		41.9 J	
TOXIC EQUIVALENT #:		43.6 J		4.01 J		274 J		15.8 J		51.0 J	
PERCENT SOLIDS:		94.8		96.8		61.2		94.1		81.3	
DILUTION FACTOR:		1.0		1.0		1.0		1.0		1.0	
COLLECTION DATE:		8/18/2010		8/18/2010		8/18/2010		8/18/2010		8/18/2010	
EXTRACTION DATE:		9/15/2010		9/16/2010		9/16/2010		9/16/2010		9/16/2010	
ANALYSIS DATE:		10/5/2010		10/5/2010		10/5/2010		10/5/2010		10/5/2010	
LAB SAMPLE ID:		1965056A		1965057A		1965058A		1965059A		1965060A	

Data Summary Table
Dioxin/Furan Analysis - Soil Samples
(ng/Kg, Dry wt.)

SITE: Merino Park Site - Providence, RI
CASE NO. 40414 SDG No. D24240
LABORATORY: AGAT Laboratories - Calgary, AB

SAMPLE NUMBER:	Toxicity	D24255		D24256		D24257	
STATION LOCATION:	Equivalency	SS-16		SS-17		SS-18	
MATRIX:	Factors #	SOIL		SOIL		SOIL	
TCDD/TCDF CONC.:		ng/Kg	DL/EMPC*	ng/Kg	DL/EMPC*	ng/Kg	DL/EMPC*
2,3,7,8-TCDD	1	33.2 J		12.1 J		54.2 J	
2,3,7,8-TCDF	0.1	2.83 J		4.32 J		4.88 J	
1,2,3,7,8-PeCDF	0.03	U	0.0713	U	0.0954	U	0.144
1,2,3,7,8-PeCDD	1	1.28 J		8.16		2.88 J	
2,3,4,7,8-PeCDF	0.3	1.49 J		4.24 J		2.79 J	
1,2,3,4,7,8-HxCDF	0.1	2.44 J		35.0		4.53 J	
1,2,3,6,7,8-HxCDF	0.1	1.73 J		44.9		4.15 J	
1,2,3,4,7,8-HxCDD	0.1	1.40 J		22.6		3.51 J	
1,2,3,6,7,8-HxCDD	0.1	2.23 J		40.3		4.81 J	
1,2,3,7,8,9-HxCDD	0.1	3.38 J		45.2 J		8.84 J	
2,3,4,6,7,8-HxCDF	0.1	2.03 J		42.7		4.21 J	
1,2,3,7,8,9-HxCDF	0.1	0.992 J		18.9		2.00 J	
1,2,3,4,6,7,8-HpCDF	0.01	11.3 J		1000 J		24.2 J	
1,2,3,4,6,7,8-HpCDD	0.01	31.0 J		1400 J		93.0 J	
1,2,3,4,7,8,9-HpCDF	0.01	2.59 J		68.0 J		6.77 J	
OCDD	0.0003	260 J		11400 J		815 J	
OCDF	0.0003	20.9 J		3520 J		90.7 J	
TOTAL TCDD		40.5 J		29.5 J		68.0 J	
TOTAL PeCDD		87.2 J		38.0 J		146 J	
TOTAL HxCDD		16.7 J		336 J		34.4 J	
TOTAL HpCDD		55.2 J		2410 J		150 J	
TOTAL TCDF		112 J		158 J		116 J	
TOTAL PeCDF		87.1 J		642 J		116 J	
TOTAL HxCDF		43.8 J		2610 J		88.1 J	
TOTAL HpCDF		26.7 J		3020 J		65.3 J	
TOXIC EQUIVALENT #:		37.2 J		76.1 J		83.1 J	
PERCENT SOLIDS:		92.8		96.8		85.2	
DILUTION FACTOR:		1.0		1.0		1.0	
COLLECTION DATE:		8/18/2010		8/18/2010		8/18/2010	
EXTRACTION DATE:		9/16/2010		9/16/2010		9/16/2010	
ANALYSIS DATE:		10/5/2010		10/5/2010		10/6/2010	
LAB SAMPLE ID:		1965061A		1965062A		1965063A	

* = The values in this column are either the Detection Limits (DL) or the Estimated Maximum Possible Concentration (EMPC). The EMPC results are marked with a "*". The DL values are unmarked.

The EMPC values are not qualified with a "J", because the values are already estimated.

= The Toxic Equivalent concentrations are calculated with the Toxicity Equivalency Factors (TEFs) found in "The 2005 World Health Organization Re-evaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds", Society of Toxicology, July 7, 2006. Concentrations reported by the laboratory below the CRQL are flagged (J) on the Data Summary Table as estimated values.

DATA VALIDATION STATEMENTS:

- (1) 2378-TCDD, 2378-TCDF, 123789-HxCDD, 1234678-HpCDF, 1234678-HpCDD, 1234789-HpCDF, OCDD, OCDF: All positive results are estimated (J) due to "Action High" PE scores.
- (2) OCDF: CCV %D criteria exceeded. All results are estimated (J, UJ) for samples D024248 through D024257.
- (3) 23478-PeCDF, 1234789-HpCDF, OCDD, OCDF: Associated labeled compound CCV %D criteria exceeded. All results are estimated (J, UJ) for samples D024248 through D024257.
- (4) 123789-HxCDD, 1234789-HpCDF, 1234678-HpCDD, OCDD, OCDF: Field duplicate precision outside criteria. Positive results are estimated (J) for samples D24254 and D24257.
- (5) OCDD, OCDF, 1234678-HpCDF, 1234789-HpCDF/Sample D24242: Associated labeled compound recovery criteria exceeded. Results are estimated (J, UJ).
- (6) 2378-TCDF/Samples D24246, D24249, D24251: Associated labeled compound ion ratio criteria exceeded. Results are estimated (J, UJ).