

US EPA ARCHIVE DOCUMENT

	B	C
1	Source Description	
2		
3	Phase I ID No.	3010
4	EPA ID No.	NED981723513
5	Facility Name	Clean Harbors Environmental Services, Inc.
6	Facility Location	
7	City	Kimball County
8	State	Nebraska
9	Unit ID Name/No.	Thermal Oxidation Unit (TOU)
10	Other Sister Facilities	None
11	Number of Sister Facilities	0
12	Combustor Class	Commercial incinerator
13	Combustor Type	Fluid bed
14	Combustor Characteristics	Fluidized bed incinerator. Equiped with four wastes feeding. Including primary comb chamber, SRC and a pre-quench chamber.
15	Capacity (MMBtu/hr)	57.79
16	Soot Blowing	
17	APCS Detailed Acronym	HE/SDA/CI/FF
18	APCS General Class	HE, CI, FF, LEWS
19	APCS Characteristics	Heat exchanger recuperator, spray dryer absorber, activated carbon injected, fabric filter.
20	Hazardous Wastes	Solid and liq
21	Haz Waste Description	
22	Supplemental Fuel	
23		
24	Stack Characteristics	
25	Diameter (ft)	6.25
26	Height (ft)	
27	Gas Velocity (ft/sec)	27.0
28	Gas Temperature (°F)	290
29		
30	Permitting Status	
31	HWC Burn Status (Date if Terminated)	

	B	C
1	Condition Description	
2		
3	3010C10	
4		
5	Report Name/Date	1994 Trial Burn Report, June 1995
6	Report Prepare	Science Applications International Corporation
7	Testing Firm	Entropy, Inc.
8	Testing Dates	December 12, 1994
9	Cond Dates	Dec-94
10	Condition Descr	Trial burn, high waste feedrate, min temp oper
11	Content	PM, HCl, DRE, PCDD/F
12		
13	3010C11	
14		
15	Report Name/Date	1994 Trial Burn Report, June 1995
16	Report Prepare	Science Applications International Corporation
17	Testing Firm	Entropy, Inc.
18	Testing Dates	December 8-9, 1994
19	Cond Dates	Dec-94
20	Condition Descr	Trial burn, high wet solids feed rate, low temp oper
21	Content	PM, HCl, DRE
22		
23	3010C12	
24		
25	Report Name/Date	1994 Trial Burn Report, June 1995
26	Report Prepare	Science Applications International Corporation
27	Testing Firm	Entropy, Inc.
28	Testing Dates	December 13-14, 1994
29	Cond Dates	Dec-94
30	Condition Descr	Trial burn, high viscous liquid feed rate, low temp oper
31	Content	PM, HCl, DRE, PCDD/F
32		
33	3010C13	
34		
35	Report Name/Date	1994 Trial Burn Report, June 1995
36	Report Prepare	Science Applications International Corporation
37	Testing Firm	Entropy, Inc.
38	Testing Dates	December 15-17, 1994
39	Cond Dates	Dec-94
40	Condition Descr	Trial burn, high nonviscous liquid feed rate, max comb temp
41	Content	PM, HCl, PCDD/F, metals, Cr+6
42		
43	3010C14	
44		
45	Report Name/Date	Clean Harbors Technology Corp 1995 Annual Performance Test Report, January 15, 1996
46	Report Prepare	DRE Technologies
47	Testing Firm	Entropy, Inc.
48	Testing Dates	November 8-9, 1995
49	Cond Dates	Nov-95
50	Condition Descr	Annual, normal performance test
51	Content	PM, HCl, DRE, PCDD/F, Hg
52		
53	3010C15	
54		
55	Report Name/Date	Clean Harbors Technology Corporation 1996 Annual Performance Test Report, December 3, 1996
56	Report Prepare	DRE Technologies
57	Testing Firm	METCO
58	Testing Dates	Sept 25-26, 1996
59	Cond Dates	Sep-96
60	Condition Descr	Annual, normal performance test
61	Content	PM, CO, HCl, DRE, metals, PCDD/F
62		
63	3010C16	
64		
65	Report Name/Date	Annual Performance Test Program on Fluidized Bed Incinerator, Prepared by TRC Environmental Corporation, Report No. EM 97-14, December 3, 1997
66	Report Prepare	TRC Environmental Corp
67	Testing Firm	TRC Environmental Corp

	B	C
68	Testing Dates	September 16-17, 1997
69	Cond Dates	Sep-97
70	Condition Descr	Annual, normal performance test
71	Content	PM, HCl, PCDD/F, metals, DRE
72		
73	3010C17	
74		
75	Report Name/Date	Compliance Test Report for Clean Harbors Env. Services, IN., Kimball, Nebraska Facility, Test Dates: November 16-19, 1999
76	Report Prepare	Air Pollution Testing
77	Testing Firm	Air Pollution Testing
78	Testing Dates	November 16-19, 1999
79	Cond Dates	Nov-99
80	Condition Descr	Annual, normal performance test
81	Content	PM, HCl, PCDD/F
82		
83	3010C18	
84		
85	Report Name/Date	Source Emissions Testing Report for Clean Harbors Environmental Services, Kimball, NE Incinerator Facility, Comprehensive Performance Test, November 2000, Project No. CLH0387
86	Report Prepare	Air Pollution Testing
87	Testing Firm	Air Pollution Testing
88	Testing Dates	November 14-16, 2000
89	Cond Dates	Nov-00
90	Condition Descr	Annual, comprehensive performance test
91	Content	PM, HCl, PCDD/F, metals

	B	C	D	E	F	G	H	I	J	K	L	M
1	Stack Gas Emissions 1											
2												
3		Comme Units		7% O2								
4												
5												
6	3010C10	1994 Trial Burn				R1		R2		R3		Cond Avg
7												
8	PM	E1	gr/dscf	y		0.0036		0.0014		0.0032		0.0027
9	CO (RA)	E1	ppmv	y								55.6
10	HC (RA)	E1	ppmv	y								2.2
11	NOx	E2	ppmv	y								288
12	SO2	E2	ppmv	y								1.2
13												
14	HCl		lb/hr			0.1387		0.1391		0.138		
15	HCl	E1	ppmv	y		2.6		2.6		2.4		2.52
16												
17	POHC DRE	PERC										
18	POHC Feedrate		lb/hr			76.37		124.9		55.75		
19	Emissions Rate	E2	lb/hr			6.84E-04		6.61E-04		6.41E-04		
20	DRE	E2	%			99.99914		99.99947		99.999287		
21												
22	POHC DRE	Carbon tetrachloride										
23	POHC Feedrate		lb/hr			70.88		104.28		81.11		
24	Emissions Rate	E2	lb/hr			6.52E-04		7.44E-04		6.56E-04		
25	DRE	E2	%			99.999021		99.999429		99.999211		
26												
27	POHC DRE	Napthalene										
28	POHC Feedrate		lb/hr			43.91		44.19		44.20		
29	Emissions Rate	E2	lb/hr			5.48E-05		5.51E-05		1.01E-04		
30	DRE	E2	%			99.9999		99.9999		99.9998		
31												
32	POHC DRE	DCB										
33	POHC Feedrate		lb/hr			55.57		55.91		59.90		
34	Emissions Rate	E2	lb/hr			5.48E-05		5.51E-05		1.01E-04		
35	DRE	E2	%			99.999901		99.9999		99.9998		
36												
37	Sampling Train	PM, HCE1										
38	Stack Gas Flowrate		dscfm			20502		20468		21714		20894.67
39	O2		%			14.4		14.5		14.3		14.40
40	Moisture		%			30.9		30.3		30.8		30.67
41	Temperature		°F			284		291		291		288.67
42												
43	Sampling Train	DRE, N E2										
44	Stack Gas Flowrate		dscfm			21236		21236		21236		21236.00
45	O2		%									
46	Moisture		%									
47	Temperature		°F									
48												
49	Sampling Train	PCDD/F E3										
50	Stack Gas Flowrate		dscfm			21236		21460		21276		21324.00
51	O2		%			14.4		14.5		14.3		14.40
52	Moisture		%			29.3		29.1		30.2		29.53
53	Temperature		°F			289		285		290		288.00
54												
55	Sampling Train	Semivo E4										
56	Stack Gas Flowrate		dscfm			21010		20868		21379		21085.67
57	O2		%			14.4		14.3		14.3		14.33
58	Moisture		%			30.2		30.2		30.7		30.37
59	Temperature		°F			281		282		287		283.33
60												
61	3010C11	1994 Trial Burn				R1		R2		R3		Cond Avg
62												
63	PM	E1	gr/dscf	y		0.0078		0.001		0.0017		0.0035
64	CO (RA)	E1	ppmv	y								13.6
65	HC (RA)	E1	ppmv	y								1.2
66	NOx	E2	ppmv	y								109.2
67	SO2											0.1
68												
69	HCl		lb/hr			0.132		0.142		0.396		
70	HCl	E1	ppmv	y		2.6		2.3		6.5		3.8
71												

	B	C	D	E	F	G	H	I	J	K	L	M
72	POHC DRE	PERC										
73	POHC Feedrate		lb/hr			55.75		55.75		43.95		
74	Emissions Rate	E2	lb/hr			8.64E-04		9.09E-04		7.17E-04		
75	DRE	E2	%			99.99845		99.99837		99.9987139		
76												
77	POHC DRE	Carbon tetrachloride										
78	POHC Feedrate		lb/hr			42.17		42.17		32.39		
79	Emissions Rate	E2	lb/hr			7.36E-04		6.71E-04		5.29E-04		
80	DRE	E2	%			99.998255		99.998409		99.9979422		
81												
82	POHC DRE	Napthalene										
83	POHC Feedrate		lb/hr			68.48		53.91		67.89		
84	Emissions Rate	E2	lb/hr			5.51E-05		5.51E-05		1.01E-04		
85	DRE	E2	%			99.9999		99.9999		99.9999		
86												
87	POHC DRE	DCB										
88	POHC Feedrate		lb/hr			55.57		55.91		59.90		
89	Emissions Rate	E2	lb/hr			5.51E-05		5.51E-05		1.01E-04		
90	DRE	E2	%			99.9999		99.9999		99.9999		
91												
92	Sampling Train	PM, HCE1										
93	Stack Gas Flowrate		dscfm			18202		23021		22849		21357.33
94	O2		%			14.1		14.2		14.3		14.20
95	Moisture		%			38.2		32.1		32		34.10
96	Temperature		°F			282		283		283		282.67
97												
98	Sampling Train	DRE, N E2										
99	Stack Gas Flowrate		dscfm			22655		22655		22655		22655.00
100	O2		%									
101	Moisture		%									
102	Temperature		°F									
103												
104	Sampling Train	Semivo E3										
105	Stack Gas Flowrate		dscfm			20194		22884		23948		22342.00
106	O2		%			14.1		14.2		14.3		14.20
107	Moisture		%			32.2		31.9		31		31.70
108	Temperature		°F			284		291		285		286.67
109												
110												
111	3010C12	1994 Trial Burn					R1	R2		R3		Cond Avg
112												
113	PM	E1	gr/dscf	y		0.0042		0.0048		0.0036		0.0042
114	CO (RA)	E1	ppmv	y								25.60
115	HC (RA)	E1	ppmv	y								1.60
116	NOx	E2	ppmv	y								113.1
117	SO2	E2	ppmv	y								0.9
118												
119	HCl		lb/hr	n		0.135		0.173		0.286		
120	HCl	E1	ppmv	y		2.3		3.0		4.8		3.3
121												
122	POHC DRE	PERC										
123	POHC Feedrate		lb/hr			524.92		625.74		564.51		
124	Emissions Rate	E2	lb/hr			5.92E-04		6.45E-04		6.68E-04		
125	DRE	E2	%			99.999888		99.999897		99.99988167		
126												
127	POHC DRE	Carbon tetrachloride										
128	POHC Feedrate		lb/hr			88.48		84.27		88.49		
129	Emissions Rate	E2	lb/hr			5.92E-04		6.31E-04		6.45E-04		
130	DRE	E2	%			99.999331		99.999252		99.99927157		
131												
132	POHC DRE	Napthalene										
133	POHC Feedrate		lb/hr			49.59		56.93		51.09		
134	Emissions Rate	E2	lb/hr			5.51E-05		5.51E-05		1.01E-04		
135	DRE	E2	%			99.9999		99.9999		99.9999		
136												
137	POHC DRE	DCB										
138	POHC Feedrate		lb/hr			64.90		69.89		69.89		
139	Emissions Rate	E2	lb/hr			5.51E-05		5.51E-05		1.01E-04		
140	DRE	E2	%			99.9999		99.9999		99.9999		
141												
142	Sampling Train	PM, HCE1										

	B	C	D	E	F	G	H	I	J	K	L	M
143	Stack Gas Flowrate		dscfm			21087		20074		20850		20670.33
144	O2		%			14		13.7		13.8		13.83
145	Moisture		%			35.5		37.1		36.5		36.37
146	Temperature		°F			297		303		300		300.00
147												
148	Sampling Train	DRE, N E2										
149	Stack Gas Flowrate		dscfm			21061		21061		21061		21061.00
150	O2		%									
151	Moisture		%									
152	Temperature		°F									
153												
154	Sampling Train	PCDD/F E3										
155	Stack Gas Flowrate		dscfm			21134		21393		20966		21164.33
156	O2		%			14		13.7		13.8		13.83
157	Moisture		%			35.4		36.5		36.7		36.20
158	Temperature		°F			298		297		300		298.33
159												
160	Sampling Train	Semivo E4										
161	Stack Gas Flowrate		dscfm			21089		20568		21069		20908.67
162	O2		%			14		13.7		13.8		13.83
163	Moisture		%			35.6		37.2		36.7		36.50
164	Temperature		°F			290		300		293		294.33
165												
166												
167	3010C13	1994 Trial Burn				R1		R2		R3		Cond Avg
168												
169	PM	E1	gr/dscf	y		0.0037		0.0024		0.0024		0.0028
170	CO (RA)	E1	ppmv	y								6.5
171	HC	E1	ppmv	y								1.8
172	NOx	E1	ppmv	y								223.3
173	SO2	E1	ppmv	y								1.2
174												
175	HCl		lb/hr	n		0.759		0.523		0.331		
176	HCl	E1	ppmv	y		12.87		8.95		6.05		9.29
177												
178	Antimony		lb/hr			8.99E-04		8.98E-04		8.72E-04		
179	Arsenic		lb/hr			7.47E-05		7.45E-05		7.21E-05		
180	Barium		lb/hr			1.62E-04		2.07E-04		2.01E-04		
181	Beryllium		lb/hr			2.99E-05		2.98E-05		2.92E-05		
182	Cadmium		lb/hr			8.11E-05		4.50E-04		7.52E-05		
183	Chromium		lb/hr			2.14E-04		2.46E-04		1.94E-04		
184	Chromium (Hex)		lb/hr			2.50E-05		1.56E-04		7.97E-05		
185	Lead		lb/hr			9.35E-04		1.25E-03		1.17E-03		
186	Mercury		lb/hr			1.15E-01		2.25E-02		2.45E-02		
187	Nickel		lb/hr			6.00E-04		5.99E-04		5.80E-04		
188	Selenium		lb/hr			7.47E-05		7.45E-05		7.21E-05		
189	Silver		lb/hr			1.49E-04		1.49E-04		1.44E-04		
190	Thallium		lb/hr			7.47E-05		7.45E-05		7.21E-05		
191												
192												
193	Sampling Train	PM, HCE1										
194	Stack Gas Flowrate		dscfm			18196		18259		17091		17848.7
195	O2		%			12.9		13		13		13.0
196	Moisture		%			40.1		38.2		36.1		38.1
197	Temperature		°F			302		291		279		290.7
198												
199	Sampling Train	Metals E2										
200	Stack Gas Flowrate		dscfm			19657		18846		18002		18835.00
201	O2		%			14		13.7		13.8		13.83
202	Moisture		%			35.60		37.2		36.7		36.50
203	Temperature		°F			294		284		288		288.67
204												
205	Sampling Train	Cr+6 E3										
206	Stack Gas Flowrate		dscfm			19134		18611		18168		18637.67
207	O2		%			12.9		12.9		12.9		12.90
208	Moisture		%			40.3		40.1		40.4		40.27
209	Temperature		°F			296		289		290		291.67
210												
211	Sampling Train	PCDD/F E4										
212	Stack Gas Flowrate		dscfm			18547		17632		17254		17811.00
213	O2		%			12.9		13		13.6		13.17

	B	C	D	E	F	G	H	I	J	K	L	M		
214	Moisture		%			38.4		35.6		36.3		36.77		
215	Temperature		°F			294		274		271		279.67		
216														
217	Antimony	E2	ug/dscm	y		24.5		24.4		25.2		24.69		
218	Arsenic	E2	ug/dscm	y		2.0		2.0		2.1		2.05		
219	Barium	E2	ug/dscm	y		4.4		5.6		5.8		5.28		
220	Beryllium	E2	ug/dscm	y		0.8		0.8		0.8		0.82		
221	Cadmium	E2	ug/dscm	y		2.2		12.2		2.2		5.54		
222	Chromium	E2	ug/dscm	y		5.8		6.7		5.6		6.04		
223	Chromium (Hex)	E3	ug/dscm	y		0.60		3.87		2.03		2.17		
224	Lead	E2	ug/dscm	y		25.4		34.0		33.8		31.08		
225	Mercury	E2	ug/dscm	y		3128.4		612.2		707.6		1482.73		
226	Nickel	E2	ug/dscm	y		16.3		16.3		16.8		16.46		
227	Selenium	E2	ug/dscm	y		2.0		2.0		2.1		2.05		
228	Silver	E2	ug/dscm	y		4.1		4.1		4.2		4.09		
229	Thallium	E2	ug/dscm	y		2.0		2.0		2.1		2.05		
230	SVM	E2	ug/dscm	y		27.6		46.3		36.0		36.62		
231	LVM	E2	ug/dscm	y		8.7		9.5		8.5		8.91		
232														
233	3010C14					1995 Annual Performance Test		R1		R2		R3		Cond Avg
234														
235	PM	E1	gr/dscf	y		0.00261		0.00391		0.00294		0.00315		
236	CO (RA)	E1	ppmv	y		47		21.6		55.2		41.2667		
237	NOx		lb/hr			5.8		6.2		7.3				
238	SO2		lb/hr			6.6								
239	NOx	E1	ppmv	y		186.2		203.1		226.8		205.35		
240	SO2	E1	ppmv	y		0.5								
241														
242	HCl		lb/hr			1.03		0.83		0.92				
243	Cl2		lb/hr			0.08		0.116		0.136				
244	HCl	E1	ppmv	y		17.93		14.74		15.50		16.1		
245	Cl2	E1	ppmv	y		1.39		2.06		2.29		1.9		
246	Total Chlorine	E1	ppmv	y		20.7		18.9		20.1		19.9		
247														
248	Mercury		lb/hr			0.44		0.487		0.659				
249	Mercury	E2	ug/dscm	y		12036.4		13493.6		17320.2		14283.4		
250														
251	POHC DRE		Trichloroethane											
252	POHC Feedrate		lb/hr			128.1		130		129.4				
253	Emissions Rate	E3	lb/hr			5.31E-04		1.09E-03		5.79E-04				
254	DRE	E3	%			99.9996		99.9992		99.9996				
255														
256	POHC DRE		Tetrachloroethene											
257	POHC Feedrate		lb/hr			1116		997		923.6				
258	Emissions Rate	E3	lb/hr			5.83E-04		8.69E-04		6.55E-04				
259	DRE	E3	%			99.9999		99.9999		99.9999				
260														
261	POHC DRE		Napthalene											
262	POHC Feedrate		lb/hr											
263	Emissions Rate		lb/hr			5.55E-04		7.13E-04		5.61E-04				
264	DRE		%			99.99995		99.99928		99.99939				
265														
266	POHC DRE		DCB											
267	POHC Feedrate		lb/hr			65.02		65.86		65.84				
268	Emissions Rate	E3	lb/hr			2.23E-05		2.26E-05		3.01E-05				
269	DRE	E3	%			99.999966		99.999966		99.999954				
270														
271	POHC DRE		1,1,1-Trichloroethane											
272	POHC Feedrate		lb/hr											
273	Emissions Rate	E3	lb/hr			4.83E-04		8.93E-04		4.96E-04				
274	DRE	E3	%			99.999623		99.999213		99.999617				
275														
276	Sampling Train		PM, HC E1											
277	Stack Gas Flowrate		dscfm			20515		21654		21506		21225.00		
278	O2		%			14		14.5		14.1		14.20		
279	Moisture		%			36.6		35.4		35.6		35.87		
280	Temperature		°F			291		289		288		289.33		
281														
282	Sampling Train		Hg E2											
283	Stack Gas Flowrate		dscfm			20123		21109		20641		20624.33		
284	O2		%			14.2		14.6		14.1		14.30		

	B	C	D	E	F	G	H	I	J	K	L	M
285	Moisture		%			36.4		36		36.1		36.17
286	Temperature		°F			293		291		285		289.67
287												
288	Sampling Train		PCDD/F E3									
289	Stack Gas Flowrate		dscfm			21365		21568		21045		21326.00
290	O2		%			14.2		14.6		14.1		14.30
291	Moisture		%			36.5		36.2		36.5		36.40
292	Temperature		°F			290		290		285		288.33
293												
294												
295	3010C15		1996 Annual Performance Te			R1		R2		R3		Cond Avg
296												
297	PM	E1	gr/dscf	y		0.004		0.0046		0.001		0.00320
298	CO (RA)	E1	ppmv	y		5.3		6		6.8		6.0
299	HC (RA)	E1	ppmv	y		1.5		1.5		0.3		1.1
300	HCl		lb/hr	n		1.99		1.08		2.62		
301	HCl	E1	ppmv	y		33.53		18.26		42.43		31.4
302												
303	Antimony		lb/hr			5.40E-04		6.47E-04		6.58E-04		
304	Arsenic		lb/hr			3.01E-04		2.97E-04		2.96E-04		
305	Barium		lb/hr			0.004		0.003		0.004		
306	Beryllium		lb/hr			4.42E-06		3.50E-06		4.36E-06		
307	Cadmium		lb/hr			7.08E-05		3.85E-05		2.62E-05		
308	Chromium		lb/hr			6.19E-05		1.05E-04		3.05E-05		
309	Chromium (Hex)		lb/hr			2.12E-04		4.50E-05		1.55E-04		
310	Lead		lb/hr			4.29E-04		1.57E-04		8.72E-06		
311	Mercury		lb/hr			5.35E-04		0.002		0.002		
312	Nickel		lb/hr			3.54E-05		1.27E-04		3.49E-05		
313	Selenium		lb/hr			3.80E-04		3.76E-04		3.75E-04		
314	Silver		lb/hr			2.12E-05		2.10E-05		2.09E-05		
315	Thallium		lb/hr			5.53E-05		5.47E-05		5.45E-05		
316												
317	POHC DRE		PERC									
318	POHC Feedrate		lb/hr			422		395		575		
319	Emissions Rate	E3	lb/hr		nd	0.001	nd	0.001	nd	0.001		
320	DRE	E3	%		>	99.999763	>	99.999747	>	99.99982609		
321												
322	POHC DRE		1,2-dichlorobenzene									
323	POHC Feedrate		lb/hr			82.5		81		82		
324	Emissions Rate	E3	lb/hr		nd	2.25E-05	nd	2.51E-05	nd	2.56E-05		
325	DRE	E3	%		>	99.999973	>	99.999969	>	99.99996878		
326												
327	Sampling Train		PM, HCE1									
328	Stack Gas Flowrate		dscfm			21196.8		20827.4		21739.4		21254.5
329	O2		%			14		13.9		13.9		13.9
330	Moisture		%									#DIV/0!
331	Temperature		°F									#DIV/0!
332												
333	Sampling Train		PCDD/F E3									
334	Stack Gas Flowrate		dscfm			21196.8		20827.4		21739.4		21254.53
335	O2		%			14		13.9		13.9		13.93
336	Moisture		%									#DIV/0!
337	Temperature		°F									#DIV/0!
338												
339	Sampling Train		Metals E2									
340	Stack Gas Flowrate		dscfm			21196.8		20827.4		21739.4		21254.53
341	O2		%			14		13.9		13.9		13.93
342	Moisture		%									#DIV/0!
343	Temperature		°F									#DIV/0!
344												
345	Antimony	E2	ug/dscm	y		13.6		16.4		16.0		15.32
346	Arsenic	E2	ug/dscm	y		7.6		7.5		7.2		7.43
347	Barium	E2	ug/dscm	y		100.9		75.9		97.0		91.29
348	Beryllium	E2	ug/dscm	y		0.1		0.1		0.1		0.10
349	Cadmium	E2	ug/dscm	y		1.8		1.0		0.6		1.13
350	Chromium	E2	ug/dscm	y		1.6		2.7		0.7		1.65
351	Chromium (Hex)	E2	ug/dscm	y		5.3		1.1		3.8		3.42
352	Lead	E2	ug/dscm	y		10.8		4.0		0.2		5.00
353	Mercury	E2	ug/dscm	y		13.5		50.6		48.5		37.54
354	Nickel	E2	ug/dscm	y		0.9		3.2		0.8		1.65
355	Selenium	E2	ug/dscm	y		9.6		9.5		9.1		9.40

	B	C	D	E	F	G	H	I	J	K	L	M	
356	Silver	E2	ug/dscm	y		0.5		0.5		0.5		0.52	
357	Thallium	E2	ug/dscm	y		1.4		1.4		1.3		1.37	
358	SVM	E2	ug/dscm	y		12.6		4.9		0.8		6.13	
359	LVM	E2	ug/dscm	y		9.3		10.3		8.0		9.19	
360													
361													
362	3010C16					1997 Annual Performance Test		R1		R2		R3	Cond Avg
363													
364	PM	E1	gr/dscf	y		0.0019		0.0009		0.0019		0.0016	
365	HC (RA)	E1	ppmv	y		2.03		0.75		0.6		1.1	
366	HCl		lb/hr	n		5.17		3.55		2.2			
367	HCl	E1	ppmv	y		73.84		53.98		31.63		53.15	
368													
369	Antimony		ug/dscm	n	nd	2.41E-01	nd	2.31E-01	nd	2.49E-01			
370	Arsenic		ug/dscm	n	nd	2.41E-01	nd	2.31E-01	nd	2.49E-01			
371	Barium		ug/dscm	n		1.19E+01		1.10E+01		1.14E+01			
372	Beryllium		ug/dscm	n	nd	1.22E-01	nd	1.18E-01	nd	1.26E-01			
373	Cadmium		ug/dscm	n		2.33E-01		1.44E-01		5.71E-01			
374	Chromium		ug/dscm	n		1.23E+00		1.02E+00		1.39E+00			
375	Chromium (Hex)		ug/dscm	n		9.61E-01		7.85E-01		6.50E-01			
376	Lead		ug/dscm	n		9.48E+00		7.21E-01		8.97E+00			
377	Mercury		ug/dscm	n		7.21E+00		3.31E+00		2.15E+00			
378	Nickel		ug/dscm	n		1.86E+00		1.48E+00		1.67E+00			
379	Selenium		ug/dscm	n	nd	5.93E-01	nd	5.69E-01	nd	6.11E-01			
380	Silver		ug/dscm	n		3.16E-01		2.43E-01		2.41E-01			
381	Thallium		ug/dscm	n	nd	1.22E-01	nd	1.18E-01	nd	1.22E-01			
382													
383													
384	POHC DRE												
385	POHC Feedrate		PERC (tetrachloroethylene)										
386	Emissions Rate	E4	lb/hr			153		144.1		167.2			
387	DRE	E4	%			99.99986		99.99967		99.99927			
388													
389	Sampling Train		PM, HCE1										
390	Stack Gas Flowrate		dscfm			21344		20549		19760		20551.0	
391	O2		%			12.8		13		12.2		12.7	
392	Moisture		%			36.1		40.2		38.9		38.4	
393	Temperature		°F			329		334		329		330.7	
394													
395	Sampling Train		Metals	E2									
396	Stack Gas Flowrate		dscfm			20909		21394		19550		20617.67	
397	O2		%			12.8		13		12.2		12.67	
398	Moisture		%			37.10		39.3		39		38.47	
399	Temperature		°F			330		333		330		331.00	
400													
401	Sampling Train		Cr+6	E3									
402	Stack Gas Flowrate		dscfm			24430		25364		23303		24365.67	
403	O2		%			12.8		13		12.2		12.67	
404	Moisture		%			33		34.6		33.2		33.60	
405	Temperature		°F			326		330		330		328.67	
406													
407	Sampling Train		DRE	E4									
408	Stack Gas Flowrate		dscfm			18043		17749		16130		17307.33	
409	O2		%										
410	Moisture		%										
411	Temperature		°F										
412													
413	Sampling Train		PCDD/F E5										
414	Stack Gas Flowrate		dscfm			22296		24424		21789		22836.33	
415	O2		%			12.8		13		12.2		12.67	
416	Moisture		%			37.9		37.3		39.9		38.37	
417	Temperature		°F			329		331		328		329.33	
418													
419	Antimony	E2	ug/dscm	y	nd	0.4	nd	0.4	nd	0.4	100	0.40	
420	Arsenic	E2	ug/dscm	y	nd	0.4	nd	0.4	nd	0.4	100	0.40	
421	Barium	E2	ug/dscm	y		20.2		19.3		18.2		19.22	
422	Beryllium	E2	ug/dscm	y	nd	0.2	nd	0.2	nd	0.2	100	0.21	
423	Cadmium	E2	ug/dscm	y		0.4		0.3		0.9		0.52	
424	Chromium	E2	ug/dscm	y		2.1		1.8		2.2		2.03	
425	Chromium (Hex)	E3	ug/dscm	y		1.6		1.4		1.0		1.35	
426	Lead	E2	ug/dscm	y		16.2		1.3		14.3		10.57	

	B	C	D	E	F	G	H	I	J	K	L	M
427	Mercury	E2	ug/dscm	y		12.3		5.8		3.4		7.17
428	Nickel	E2	ug/dscm	y		3.2		2.6		2.7		2.81
429	Selenium	E2	ug/dscm	y	nd	1.0	nd	1.0	nd	1.0	100	0.99
430	Silver	E2	ug/dscm	y		0.5		0.4		0.4		0.45
431	Thallium	E2	ug/dscm	y	nd	0.2	nd	0.2	nd	0.2	100	0.20
432	SVM	E2	ug/dscm	y		16.6		1.5		15.2		11.09
433	LVM	E2	ug/dscm	y	23	2.7	25	2.4	21	2.8	23	2.64
434												
435												
436	3010C17					1999 Annual Performance Test	R1	R2		R3		Cond Avg
437												
438	PM	E1	gr/dscf	y		0.0017		0.0019		0.005		0.0029
439	HCl		ppmv	n		2.1		3.1		2.9		
440	HCl	E1	ppmv	y		3.50		5.43		4.95		4.6
441												
442	Sampling Train		PM, HCE1									
443	Stack Gas Flowrate		dscfm			26083		26483		23226		25264.0
444	O2		%			12.6		13		12.8		12.8
445	Moisture		%			38.1		34.6		36.5		36.4
446	Temperature		°F			320		321		321		320.7
447												
448	Sampling Train		PCDD/F E2									
449	Stack Gas Flowrate		dscfm			26071		23757		19186		23004.67
450	O2		%			12.6		12.6		12.9		12.70
451	Moisture		%			38.1		36.1		38.8		37.67
452	Temperature		°F			320		319		317		318.67
453												
454	3010C18					2000 Annual Performance Test	R1	R2		R3		Cond Avg
455												
456	PM	E1	gr/dscf	y		0.0007		0.0007		0.0009		0.0008
457	HCl		lb/hr	n		0.2		0.53		0.27		
458	HCl	E1	ppmv	y		3.75		6.74		4.39		5.0
459												
460	Antimony		ug			1		0.85		0.56		
461	Arsenic		ug			2.10E+00		1		0.71		
462	Barium		ug			4.20E+00		3.90E+00		3.40E+00		
463	Beryllium		ug			0.31		0.31		0.31		
464	Cadmium		ug			3.4		0.84		0.77		
465	Chromium		ug			5.8		3.1		3.4		
466	Lead		ug			51.9		17		16.1		
467	Mercury		ug			18.02		28.01		15.79		
468	Nickel		ug			7.5		3.7		4.5		
469	Selenium		ug			1		0.34		0.61		
470	Silver		ug			0.46		0.59		1.4		
471	Thallium		ug			0.66		0.31		0.23		
472	Chromium (Hex)		ug			0.8		0.96		0.96		
473												
474	Metals sample train volume		dscf			74.24		75.62		89.38		
475												
476	Sampling Train		PM, HCE1									
477	Stack Gas Flowrate		dscfm			19315		20052		19697		19688.0
478	O2		%			14.1		11.2		13.2		12.8
479	Moisture		%			37		35.9		36.9		36.6
480	Temperature		°F			320		319		322		320.3
481												
482	Sampling Train		PCDD/F E3									
483	Stack Gas Flowrate		dscfm			19933		20023		19588		19848.00
484	O2		%			14.1		11.2		13.2		12.83
485	Moisture		%			36.3		37.5		36.9		36.90
486	Temperature		°F			320		314		316		316.67
487												
488	Sampling Train		Metals E2									
489	Stack Gas Flowrate		dscfm			18396		17941		19103		18480.00
490	O2		%			14.1		11.2		13.2		12.83
491	Moisture		%			37.5		40.9		37.1		38.50
492	Temperature		°F			320		319		322		320.33
493												
494	Antimony	E2	ug/dscm	y		1.0		0.8		0.4		0.72
495	Arsenic	E2	ug/dscm	y		2.0		0.9		0.6		1.16
496	Barium	E2	ug/dscm	y		4.0		3.6		2.7		3.41
497	Beryllium	E2	ug/dscm	y		0.3		0.3		0.2		0.27

	B	C	D	E	F	G	H	I	J	K	L	M
498	Cadmium	E2	ug/dscm	y		3.2		0.8		0.6		1.54
499	Chromium	E2	ug/dscm	y		5.5		2.9		2.7		3.68
500	Lead	E2	ug/dscm	y		49.4		15.7		12.6		25.87
501	Mercury	E2	ug/dscm	y		17.2		25.8		12.3		18.42
502	Nickel	E2	ug/dscm	y		7.1		3.4		3.5		4.69
503	Selenium	E2	ug/dscm	y		1.0		0.3		0.5		0.58
504	Silver	E2	ug/dscm	y		0.4		0.5		1.1		0.69
505	Thallium	E2	ug/dscm	y		0.6		0.3		0.2		0.36
506	Chromium (Hex)	E2	ug/dscm	y		0.8		0.9		0.7		0.80
507	SVM	E2	ug/dscm	y		52.6		16.4		13.2		27.41
508	LVM	E2	ug/dscm	y		7.8		4.1		3.4		5.11

	B	C	D	E	F	G	H	I	J	K	L
1	Feedstream 1										
2											
3											
4	3010C13				Cond Avg						
5											
6	Feedstream Number				F1						
7	Feed Class				Total						
8	Feed Class 2				Total						
9	Feedstream Description										
10	Feed Rate	gpm									
11	Heating Value	MMBtu/hr			49.1						
12	Ash	% wt									
13	Chlorine	lb/hr			2118						
14	Antimony	lb/hr			10.677						
15	Arsenic	lb/hr			0.703						
16	Barium	lb/hr			40.8						
17	Beryllium	lb/hr			0.21						
18	Cadmium	lb/hr			1.817						
19	Chromium	lb/hr			55.127						
20	Lead	lb/hr			53.833						
21	Mercury	lb/hr			1.987						
22	Nickel	lb/hr			145.507						
23	Selenium	lb/hr			2.9						
24	Silver	lb/hr			2.277						
25	Thallium	lb/hr			0.273						
26											
27	Stack Gas Flowrate	dscfm			18835						
28	Oxygen	%			13.8						
29											
30	Thermal Feedrate	MMBtu/hr									
31	Estimated Firing Rate	MMBtu/hr									
32											
33	<i>Feedrate MTEC Calculations</i>										
34	Ash	mg/dscm			0.00						
35	Chlorine	ug/dscm			58733966						
36	Antimony	ug/dscm			296082						
37	Arsenic	ug/dscm			19495						
38	Barium	ug/dscm			1131419						
39	Beryllium	ug/dscm			5823						
40	Cadmium	ug/dscm			50387						
41	Chromium	ug/dscm			1528719						
42	Lead	ug/dscm			1492836						
43	Mercury	ug/dscm			55101						
44	Nickel	ug/dscm			4035035						
45	Selenium	ug/dscm			80420						
46	Silver	ug/dscm			63143						
47	Thallium	ug/dscm			7571						
48											
49	SVM	ug/dscm			1543222						
50	LVM	ug/dscm			1554038						
51											
52	3010C14	1995 Annual Perform:			R1	R2	R3	Cond Avg			
53											
54	Feedstream Number				F1	F1	F1	F1			
55	Feed Class				Total	Total	Total	Total			
56	Feed Class 2				Total	Total	Total	Total			
57	Feedstream Description				Total	Total	Total	Total			
58	Mercury	lb/hr			1.76	1.77	1.8	1.78			
59	Chlorine	lb/hr			807	662	767	745.33			
60											
61	Stack Gas Flowrate	dscfm			20123.00	21109.00	20641.00	20624.33			
62	Oxygen	%			14.20	14.60	14.10	14.30			
63											
64	<i>Feedrate MTEC Calculations</i>										
65	Mercury	ug/dscm y			48145.7	49042.4	47308.5	48165.52			
66	Chlorine	ug/dscm y			22075884	18342417	20158664	20192321			
67											
68	3010C15	1996 Annual Perform:			R1	R2	R3	Cond Avg			
69											
70	Feedstream Number				F1	F1	F1	F1			
71	Feed Class				Total	Total	Total	Total			

	B	C	D	E	F	G	H	I	J	K	L
72	Feed Class 2				Total		Total		Total		Total
73	Feedstream Description				Total		Total		Total		Total
74	Ash	lb/hr			5332.4		4867.5		5363.6		
75	Chlorine	lb/hr			615		595		640		
76	Mercury	lb/hr			0.0263		0.0253		0.03		
77	Lead	lb/hr			1.27		1.2		1.353		
78	Cadmium	lb/hr			0.187		0.177		0.193		
79	Chromium	lb/hr			1.19		1.12		1.27		
80	Arsenic	lb/hr			0.052		0.0502		0.0551		
81	Beryllium	lb/hr			0.004		0.004		0.004		
82	SVM	lb/hr			1.457		1.44		1.44		
83	LVM	lb/hr			1.246		1.18		1.18		
84											
85	Stack Gas Flowrate	dscfm			21196.8421		20827.368		21739.3684		
86	Oxygen	%			14		13.9		13.9		
87											
88	<i>Feedrate MTEC Calculations</i>										
89	Ash	mg/dscm			134524.0		123213.8		130076.0		129271.3
90	Chlorine	ug/dscm			15515011.9		15061576.1		15521043.1		15365877.0
91	Mercury	ug/dscm			663.5		640.4		727.5		677.2
92	Lead	ug/dscm			32039.1		30376.3		32812.5		
93	Cadmium	ug/dscm			4717.6		4480.5		4680.6		
94	Chromium	ug/dscm			30020.9		28351.2		30799.6		
95	Arsenic	ug/dscm			1311.8		1270.7		1336.3		
96	Beryllium	ug/dscm			100.9		101.3		97.0		
97	SVM	ug/dscm			36756.7		36451.5		34922.3		36043.5
98	LVM	ug/dscm			31433.7		29870.0		28616.9		29973.5
99											
100	3010C16		1997 Annual Perform:		R1		R2		R3		Cond Avg
101											
102	Feedstream Number				F1		F1		F1		F1
103	Feed Class				Total		Total		Total		Total
104	Feed Class 2				Total		Total		Total		Total
105	Feedstream Description				Total Wastes		Total Wastes		Total Wastes		Total Wastes
106	Feed Rate	lb/hr			14983		14967.34		13568.6		14506.3
107	Ash	lb/hr			6552.69		6602.58		5914.76		6356.7
108	Chlorine	lb/hr			500.04		587.09		600.39		562.5
109											
110	Stack Gas Flowrate	dscfm			21344		20549		19760		20551.0
111	Oxygen	%			12.8		13		12.2		12.7
112											
113	<i>Feedrate MTEC Calculations</i>										
114											
115	Ash	mg/dscm			140144.533		150341.61		127325.01		139270.4
116	Chlorine	ug/dscm			10694519.7		13368116		12924389.6		12329008.4

	B	C	D
1	Process Information		
2			Cond Avg
3	3010C10		
4			
5			
6			
7			
8	3010C11		
9			
10			
11			
12			
13	3010C12		
14			
15			
16			
17			
18	3010C13		
19			
20			
21			
22			
23	3010C14		
24			
25			
26			
27			
28	3010C15		
29			
30			
31			
32			
33	3010C16		
34			
35	Bed Temperature	F	1484
36	SRC Temperature	F	1614
37	SRC Velocity	ft/sec	11.5
38	Baghouse Pressure Drop	in. H2O	4.7

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	PCDD/PCDF																	
2	N																	
3	Facility Name and ID:		Clean Harbors Environmental Services, Inc.															
4	Condition ID:		3010C10															
5	Condition/Test Date:		Trial burn, high waste feedrate, min temp oper															
6																		
7	I-TEF																	
8	Wght Fact																	
9	Total Full ND																	
10	Detected in sample volume (pg)																	
11	2,3,7,8-TCDD 1																	
12	Total TCDD 0																	
13	1,2,3,7,8-PCDD 0.5																	
14	Total PCDD 0																	
15	1,2,3,4,7,8-HxCDD 0.1																	
16	1,2,3,6,7,8-HxCDD 0.1																	
17	1,2,3,7,8,9-HxCDD 0.1																	
18	Total HxCDD 0																	
19	1,2,3,4,6,7,8-HpCDD 0.01																	
20	Total HpCDD 0																	
21	OCDD 0.001																	
22	2,3,7,8-TCDF 0.1																	
23	Total TCDF 0																	
24	1,2,3,7,8-PCDF 0.05																	
25	2,3,4,7,8-PCDF 0.5																	
26	Total PCDF 0																	
27	1,2,3,4,7,8-HxCDF 0.1																	
28	1,2,3,6,7,8-HxCDF 0.1																	
29	2,3,4,6,7,8-HxCDF 0.1																	
30	1,2,3,7,8,9-HxCDF 0.1																	
31	Total HxCDF 0																	
32	1,2,3,4,6,7,8-HpCDF 0.01																	
33	1,2,3,4,7,8,9-HpCDF 0.01																	
34	Total HpCDF 0																	
35	OCDF 0.001																	
36																		
37	Gas sample volume (dscf)																	
38	O2 (%)																	
39																		
40	PCDD/PCDF (pg in sample)																	
41	PCDD/PCDF (ng/dscm @ 7% O2)																	
42																		
43	TEQ Cond Avg		0.290															
44	Total Cond Avg		15.28															

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	PCDD/PCDF																	
2	N																	
3	Facility Name and ID:		Clean Harbors Environmental Services, Inc.															
4	Condition ID:		3010C12															
5	Condition/Test Date:		Trial burn, high viscous liquid feed rate, low temp oper															
6																		
7	I-TEF																	
8	Run 1																	
9	Run 2																	
10	Run 3																	
11		Wght Fact	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ
12			Full ND	Full ND	1/2 ND	1/2 ND	Full ND	Full ND	1/2 ND	1/2 ND	Full ND	Full ND	1/2 ND	1/2 ND	Full ND	Full ND	1/2 ND	1/2 ND
13	Detected in sample volume (pg)																	
14	2,3,7,8-TCDD 1																	
15	Total TCDD 0																	
16	1,2,3,7,8-PCDD 0.5																	
17	Total PCDD 0																	
18	1,2,3,4,7,8-HxCDD 0.1																	
19	1,2,3,6,7,8-HxCDD 0.1																	
20	1,2,3,7,8,9-HxCDD 0.1																	
21	Total HxCDD 0																	
22	1,2,3,4,6,7,8-HpCDD 0.01																	
23	Total HpCDD 0																	
24	OCDD 0.001																	
25	2,3,7,8-TCDF 0.1																	
26	Total TCDF 0																	
27	1,2,3,7,8-PCDF 0.05																	
28	2,3,4,7,8-PCDF 0.5																	
29	Total PCDF 0																	
30	1,2,3,4,7,8-HxCDF 0.1																	
31	1,2,3,6,7,8-HxCDF 0.1																	
32	2,3,4,6,7,8-HxCDF 0.1																	
33	1,2,3,7,8,9-HxCDF 0.1																	
34	Total HxCDF 0																	
35	1,2,3,4,6,7,8-HpCDF 0.01																	
36	1,2,3,4,7,8,9-HpCDF 0.01																	
37	Total HpCDF 0																	
38	OCDF 0.001																	
39																		
40	Gas sample volume (dscf)																	
41	O2 (%)																	
42																		
43	PCDD/PCDF (pg in sample)																	
44	PCDD/PCDF (ng/dscm @ 7% O2) 2.62 0.0700 2.42 0.0400 2.43 0.0600																	
45																		
46	TEQ Cond Avg 0.057																	
47	Total Cond Avg 2.49																	

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R								
1	PCDD/PCDF																									
2	N																									
3	Facility Name and ID:		Clean Harbors Environmental Services, Inc.																							
4	Condition ID:		3010C13																							
5	Condition/Test Date:		Trial burn, high nonviscous liquid feed rate, max comb temp																							
6																										
7			I-TEF				Run 1				Run 2				Run 3											
8			Wght Fact	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ									
9				Full ND	Full ND	1/2 ND	1/2 ND	Full ND	Full ND	1/2 ND	1/2 ND	Full ND	Full ND	1/2 ND	1/2 ND	Full ND	Full ND	1/2 ND	1/2 ND							
10	Detected in sample volume (pg)																									
11	2,3,7,8-TCDD		1																							
12	Total TCDD		0																							
13	1,2,3,7,8-PCDD		0.5																							
14	Total PCDD		0																							
15	1,2,3,4,7,8-HxCDD		0.1																							
16	1,2,3,6,7,8-HxCDD		0.1																							
17	1,2,3,7,8,9-HxCDD		0.1																							
18	Total HxCDD		0																							
19	1,2,3,4,6,7,8-HpCDD		0.01																							
20	Total HpCDD		0																							
21	OCDD		0.001																							
22	2,3,7,8-TCDF		0.1																							
23	Total TCDF		0																							
24	1,2,3,7,8-PCDF		0.05																							
25	2,3,4,7,8-PCDF		0.5																							
26	Total PCDF		0																							
27	1,2,3,4,7,8-HxCDF		0.1																							
28	1,2,3,6,7,8-HxCDF		0.1																							
29	2,3,4,6,7,8-HxCDF		0.1																							
30	1,2,3,7,8,9-HxCDF		0.1																							
31	Total HxCDF		0																							
32	1,2,3,4,6,7,8-HpCDF		0.01																							
33	1,2,3,4,7,8,9-HpCDF		0.01																							
34	Total HpCDF		0																							
35	OCDF		0.001																							
36																										
37	Gas sample volume (dscf)																									
38	O2 (%)																									
39																										
40	PCDD/PCDF (pg in sample)																									
41	PCDD/PCDF (ng/dscm @ 7% O2)		5.27				0.0800				0.95				0.0200				24.16				0.4500			
42																										
43	TEQ Cond Avg		0.183																							
44	Total Cond Avg		10.13																							

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	
1	PCDD/PCDF																	
2	N																	
3	Facility Name and ID:	Clean Harbors Environmental Services, Inc.																
4	Condition ID:	3010C14																
5	Condition/Test Date:	Annual, normal performe 1995 Performance Test 1995 Performance Test																
6																		
7	I-TEF																	
8	Wght Fact																	
9																		
10	Detected in sample volume (pg)																	
11	2,3,7,8-TCDD	1	nd	7.2	7.2	4	3.6	nd	4.5	4.5	2.3	2.3	nd	5	4.5	2	2.3	
12	Total TCDD	0		2300.0	0.0	2300	0.0		1900	0	1900.0	0		1400	0.0	1400	0.0	
13	1,2,3,7,8-PCDD	0.5		65.0	32.50	65	32.50		25.00	12.50	25.0	12.50		29	14.5	29	14.5	
14	Total PCDD	0		3100.0	0	3100	0		1900	0	1900.0	0		1600	0.0	1600	0.0	
15	1,2,3,4,7,8-HxCDD	0.1		150.0	15.00	150	15.00		50.0	5.00	50.0	5.00		78.0	7.80	78	7.80	
16	1,2,3,6,7,8-HxCDD	0.1		590.0	59.00	590	59.00		95.0	9.50	95.0	9.50		300.0	30.0	300	30.0	
17	1,2,3,7,8,9-HxCDD	0.1		350.0	35.00	350	35.00		49.0	4.90	49.0	4.90		160.0	16.0	160	16.0	
18	Total HxCDD	0		7500.0	0	7500	0		3100	0	3100	0		4000	0	4000	0	
19	1,2,3,4,6,7,8-HpCDD	0.01		5700.0	57.00	5700	57.00		520	5.20	520	5.20		3000	30.00	3000	30.00	
20	Total HpCDD	0		9800.0	0	9800	0		1000	0	1000	0		5100	0	5100	0	
21	OCDD	0.001		11000.0	11.000	11000	11.000		680	0.68	680	0.68		5900	5.900	5900	5.900	
22	2,3,7,8-TCDF	0.1		29.0	2.90	29	2.90		25	3	25	3		21	2	21	2	
23	Total TCDF	0		1500.0	0	1500	0		1100	0	1100	0		920	0	920	0	
24	1,2,3,7,8-PCDF	0.05		58.0	2.90	58	2.90		34	1.7	34	1.7		39	2	39	2	
25	2,3,4,7,8-PCDF	0.5		150.0	75.00	150	75.00		66	33	66	33		110	55.0	110	55.0	
26	Total PCDF	0		1800.0	0.0	1800	0.0		820	0	820	0		1100	0	1100	0	
27	1,2,3,4,7,8-HxCDF	0.1		170.0	17.00	170	17.00		43	4	43	4		140	14	140	14	
28	1,2,3,6,7,8-HxCDF	0.1		240.0	24.00	240	24.00		51	5.1	51	5.1		170	17	170	17	
29	2,3,4,6,7,8-HxCDF	0.1		590.0	59.00	590	59.00		73	7.3	73	7.3		530	53.0	530	53.0	
30	1,2,3,7,8,9-HxCDF	0.1		100.0	10.00	100	10.00		23	2	23	2		120	12.0	120	12.0	
31	Total HxCDF	0		2800.0	0	2800.0	0		560	0	560	0		2200	0	2200	0	
32	1,2,3,4,6,7,8-HpCDF	0.01		1800.0	18.0	1800	18.0		120	1.20	120	1.20		1500	15.00	1500	15.00	
33	1,2,3,4,7,8,9-HpCDF	0.01		350.0	3.50	350	3.50		31	0.31	31	0.31		500	5.00	500	5.00	
34	Total HpCDF	0		3500.0	0	3500	0		260	0	260	0		3600	0	3600	0	
35	OCDF	0.001		1900.0	1.90	1900	1.90		89	0.089	89	0.089		2600	2.600	2600	2.600	
36																		
37	Gas sample volume (dscf)				127.21	127.21	127.21		126.41	126.41	126.41			92.42	92.42	92.42		
38	O2 (%)				14.2	14.2	14.2		14.6	14.6	14.6			14.1	14.1	14.1		
39																		
40	PCDD/PCDF (pg in sample)				430.90	45200.0	427.30		100.079	11409.0	97.829			286.35	28420.0	284.10		
41	PCDD/PCDF (ng/dscm @ 7% O	1.7			0.246	25.849	0.244	4.5		0.06	6.977	0.06	1.6		0.222	22.048	0.220	
42																		
43	TEQ Cond Avg	0.175																
44	Total Cond Avg	18.29																

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	PCDD/PCDF																
2	N																
3	Facility Name and ID:	Clean Harbors Environmental Services, Inc.															
4	Condition ID:	3010C15															
5	Condition/Test Date:	Annual, normal perform: 1996 Performance Test 1996 Performance Test															
6																	
7	I-TEF	Run 1				Run 2				Run 3							
8	Wght Fact	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ
9		Full ND	Full ND	1/2 ND	1/2 ND	Full ND	Full ND	1/2 ND	1/2 ND	Full ND	Full ND	1/2 ND	1/2 ND	Full ND	Full ND	1/2 ND	1/2 ND
10	Detected in sample volume (ng)																
11	2,3,7,8-TCDD	1	0	0.0		0	0.0			0	0.0			0	0.0		
12	Total TCDD	0	0.55	0.0	1	0.0	0.37	0	0.4	0	0.4	0.0	0	0.0	0	0.0	
13	1,2,3,7,8-PCDD	0.5	0.03	0.02	0	0.02	0	0.00			0.02	0.0	0	0.0			
14	Total PCDD	0	1.3	0	1	0	0.62	0	0.6	0	0.7	0.0	1	0.0			
15	1,2,3,4,7,8-HxCDD	0.1	0.04	0.00	0	0.00	0.01	0.00	0.0	0.00	0.03	0.00	0	0.00			
16	1,2,3,6,7,8-HxCDD	0.1	0.1	0.01	0	0.01	0.05	0.01	0.1	0.01	0.07	0.0	0	0.0			
17	1,2,3,7,8,9-HxCDD	0.1	0.1	0.01	0	0.01	0.04	0.00	0.0	0.00	0.07	0.0	0	0.0			
18	Total HxCDD	0	2.4	0	2	0	1.6	0	2	0	2.1	0	2	0			
19	1,2,3,4,6,7,8-HpCDD	0.01	0.62	0.01	1	0.01	0.31	0.00	0	0.00	0.45	0.00	0	0.00			
20	Total HpCDD	0	1.3	0	1	0	0.65	0	1	0	0.96	0	1	0			
21	OCDD	0.001	1	0.001	1	0.001	0.44	0.00	0	0.00	0.68	0.001	1	0.001			
22	2,3,7,8-TCDF	0.1	0.04	0.00	0	0.00	0.01	0	0	0	0.016	0	0	0			
23	Total TCDF	0	1.1	0	1	0	0.53	0	1	0	0.84	0	1	0			
24	1,2,3,7,8-PCDF	0.05	0.09	0.00	0	0.00	0	0.0			0.05	0	0	0			
25	2,3,4,7,8-PCDF	0.5	0.16	0.08	0	0.08	0.05	0	0	0	0.09	0.0	0	0.0			
26	Total PCDF	0	1.3	0.0	1	0.0	0.32	0	0	0	0.74	0	1	0			
27	1,2,3,4,7,8-HxCDF	0.1	0.57	0.06	1	0.06	0.09	0	0	0	0.25	0	0	0			
28	1,2,3,6,7,8-HxCDF	0.1	0.26	0.03	0	0.03	0.04	0.0	0	0.0	0.11	0	0	0			
29	2,3,4,6,7,8-HxCDF	0.1	0.27	0.03	0	0.03	0.06	0.0	0	0.0	0.13	0.0	0	0.0			
30	1,2,3,7,8,9-HxCDF	0.1	0.03	0.00	0	0.00	0.01	0	0	0	0.01	0.0	0	0.0			
31	Total HxCDF	0	2.3	0	2.3	0	0.23	0	0	0	1	0	1	0			
32	1,2,3,4,6,7,8-HpCDF	0.01	1.2	0.0	1	0.0	0.14	0.00	0	0.00	0.42	0.00	0	0.00			
33	1,2,3,4,7,8,9-HpCDF	0.01	0.23	0.00	0	0.00	0.04	0.00	0	0.00	0.09	0.00	0	0.00			
34	Total HpCDF	0	2.1	0	2	0	0.28	0	0	0	0.78	0	1	0			
35	OCDF	0.001	1.2	0.00	1	0.00	0.48	0.000	0	0.000	0.38	0.000	0	0.000			
36																	
37	Gas sample volume (dscf)			128.12	128.12	128.12			126.58	126.58	126.58			134.23	134.23	134.23	
38	O2 (%)			14.0	14.0	14.0			13.9	13.9	13.9			13.9	13.9	13.9	
39																	
40	PCDD/PCDF (ng in sample)			0.26	14.6	0.26			0.062	5.5	0.062			0.14	8.6	0.14	
41	PCDD/PCDF (ng/dscm @ 7% O ₂)			0.145	8.026	0.145	0.0		0.034	3.038	0.034	0.0		0.071	4.454	0.071	
42																	
43	TEQ Cond Avg	0.083															
44	Total Cond Avg	5.17															

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	PCDD/PCDF																	
2	N																	
3	Facility Name and ID:		Clean Harbors Environmental Services, Inc.															
4	Condition ID:		3010C16															
5	Condition/Test Date:		Annual, normal performanc 1997 Performance Testin 1997 Performance Testing															
6																		
7	I-TEF		Run 1				Run 2				Run 3							
8	Wght Fact		Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ		
9			Full ND	Full ND	1/2 ND	1/2 ND	Full ND	Full ND	1/2 ND	1/2 ND	Full ND	Full ND	1/2 ND	1/2 ND	Full ND	Full ND	1/2 ND	1/2 ND
10	Detected in sample volume (pg)																	
11	2,3,7,8-TCDD	1	nd	52.0	52.0	26	26.0	nd	28.0	28.0	14.0	14.0	nd	34	34.0	17	17.0	
12	Total TCDD	0		400.0	0.0	400	0.0		320	0	320.0	0		360	0.0	360	0.0	
13	1,2,3,7,8-PCDD	0.5	nd	68.0	34.00	34	17.00	nd	51.00	25.50	25.5	12.75	nd	52	26.0	26	13.0	
14	Total PCDD	0		410.0	0	410	0		230	0	230.0	0		290	0.0	290	0.0	
15	1,2,3,4,7,8-HxCDD	0.1	nd	23.0	2.30	12	1.15	nd	22.0	2.20	11.0	1.10	nd	190.0	19.00	95	9.50	
16	1,2,3,6,7,8-HxCDD	0.1	nd	78.0	7.80	39	3.90	nd	65.0	6.50	32.5	3.25	nd	160.0	16.0	80	8.0	
17	1,2,3,7,8,9-HxCDD	0.1	nd	62.0	6.20	31	3.10	nd	82.0	8.20	41.0	4.10	nd	180.0	18.0	90	9.0	
18	Total HxCDD	0		1900.0	0	1900	0		1800	0	1800	0		1500	0	1500	0	
19	1,2,3,4,6,7,8-HpCDD	0.01		720.0	7.20	720	7.20		640	6.40	640	6.40		510	5.10	510	5.10	
20	Total HpCDD	0		1500.0	0	1500	0		1300	0	1300	0		1100	0	1100	0	
21	OCDD	0.001		940.0	0.940	940	0.940		810	0.81	810	0.81	nd	710	0.710	355	0.355	
22	2,3,7,8-TCDF	0.1	nd	25.0	2.50	13	1.25	nd	27	3	14	1	nd	25	3	13	1	
23	Total TCDF	0		260.0	0	260	0		320	0	320	0		120	0	120	0	
24	1,2,3,7,8-PCDF	0.05	nd	48.0	2.40	24	1.20	nd	18	0.9	9	0.5	nd	30	2	15	1	
25	2,3,4,7,8-PCDF	0.5	nd	58.0	29.00	29	14.50	nd	57	29	29	14	nd	35	17.5	18	8.8	
26	Total PCDF	0	nd	150.0	0.0	75	0.0	nd	110	0	55	0	nd	86	0	43	0	
27	1,2,3,4,7,8-HxCDF	0.1	nd	100.0	10.00	50	5.00	nd	82	8	41	4	nd	57	6	29	3	
28	1,2,3,6,7,8-HxCDF	0.1	nd	57.0	5.70	29	2.85	nd	42	4.2	21	2.1	nd	37	4	19	2	
29	2,3,4,6,7,8-HxCDF	0.1	nd	150.0	15.00	75	7.50	nd	140	14.0	70	7.0	nd	110	11.0	55	5.5	
30	1,2,3,7,8,9-HxCDF	0.1	nd	22.0	2.20	11	1.10	nd	41	4	21	2	nd	20	2.0	10	1.0	
31	Total HxCDF	0	nd	220.0	0	110.0	0	nd	140	0	70	0	nd	120	0	60	0	
32	1,2,3,4,6,7,8-HpCDF	0.01	nd	240.0	2.4	120	1.2	nd	220	2.20	110	1.10	nd	180	1.80	90	0.90	
33	1,2,3,4,7,8,9-HpCDF	0.01	nd	65.0	0.65	33	0.33	nd	67	0.67	34	0.34	nd	48	0.48	24	0.24	
34	Total HpCDF	0	nd	240.0	0	120	0	nd	220	0	110	0	nd	180	0	90	0	
35	OCDF	0.001	nd	150.0	0.15	75	0.08	nd	160	0.160	80	0.080	nd	130	0.130	65	0.065	
36																		
37	Gas sample volume (dscf)				142.04	142.04	142.04			151.17	151.17	151.17			138.96	138.96	138.96	
38	O2 (%)				12.8	12.8	12.8			13.0	13.0	13.0			12.2	12.2	12.2	
39																		
40	PCDD/PCDF (pg in sample)				180.44	5790.0	94.29			143.240	5095.0	75.225			165.12	3983.0	85.11	
41	PCDD/PCDF (ng/dscm @ 7% O		95.5		0.077	2.459	0.040	95.0		0.06	2.084	0.03	96.9		0.067	1.611	0.034	
42																		
43	TEQ Cond Avg		0.035															
44	Total Cond Avg		2.05															

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	PCDD/PCDF																	
2	N																	
3	Facility Name and ID:		Clean Harbors Environmental Services, Inc.															
4	Condition ID:		3010C17															
5	Condition/Test Date:		Annual, comprehensive pe 1999 Performance Test 1999 Performance Test															
6																		
7	I-TEF		Run 1				Run 2				Run 3							
8	Wght Fact		Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ
9			Full ND	Full ND	1/2 ND	1/2 ND	Full ND	Full ND	1/2 ND	1/2 ND	Full ND	Full ND	1/2 ND	1/2 ND	Full ND	Full ND	1/2 ND	1/2 ND
10	Detected in sample volume (pg)																	
11	Total TCDD	0	8800	0.0	8800	0.0	5900	0	5900.0	0	10000	0.0	10000	0.0	10000	0.0	10000	0.0
12	Total PCDD	0	15000	0	15000	0	11000	0	11000.0	0	19000	0.0	19000	0.0	19000	0.0	19000	0.0
13	Total HxCDD	0	32000	0	32000	0	24000	0	24000	0	42000	0	42000	0	42000	0	42000	0
14	Total HpCDD	0	24000	0	24000	0	17000	0	17000	0	28000	0	28000	0	28000	0	28000	0
15	OCDD	0.001	19000	19.000	19000	19.000	13000	13.00	13000	13.00	21000	21.000	21000	21.000	21000	21.000	21000	21.000
16	Total TCDF	0	9800	0	9800	0	6800	0	6800	0	11000	0	11000	0	11000	0	11000	0
17	Total PCDF	0	18000	0.0	18000	0.0	13000	0	13000	0	22000	0	22000	0	22000	0	22000	0
18	Total HxCDF	0	21000	0	21000.0	0	15000	0	15000	0	25000	0	25000	0	25000	0	25000	0
19	Total HpCDF	0	16000	0	16000	0	11000	0	11000	0	16000	0	16000	0	16000	0	16000	0
20	OCDF	0.001	4500	4.50	4500	4.50	2800	2.800	2800	2.800	4100	4.100	4100	4.100	4100	4.100	4100	4.100
21	2,3,7,8-TCDD	1	160	160.0	160	160.0	99	99.0	99.0	99.0	150	150.0	150	150.0	150	150.0	150	150.0
22	1,2,3,7,8-PCDD	0.5	430	215.00	430	215.00	280	140.00	280.0	140.00	470	235.0	470	235.0	470	235.0	470	235.0
23	1,2,3,4,7,8-HxCDD	0.1	590	59.00	590	59.00	460	46.00	460.0	46.00	720	72.00	720	72.00	720	72.00	720	72.00
24	1,2,3,6,7,8-HxCDD	0.1	1900	190.00	1900	190.00	1400	140.00	1400.0	140.00	2300	230.0	2300	230.0	2300	230.0	2300	230.0
25	1,2,3,7,8,9-HxCDD	0.1	890	89.00	890	89.00	690	69.00	690.0	69.00	1100	110.0	1100	110.0	1100	110.0	1100	110.0
26	1,2,3,4,6,7,8-HpCDD	0.01	12000	120.00	12000	120.00	8300	83.00	8300	83.00	13000	130.00	13000	130.00	13000	130.00	13000	130.00
27	2,3,7,8-TCDF	0.1	180	18.00	180	18.00	130	13	130	13	210	21	210	21	210	21	210	21
28	1,2,3,7,8-PCDF	0.05	490	24.50	490	24.50	340	17.0	340	17.0	540	27	540	27	540	27	540	27
29	2,3,4,7,8-PCDF	0.5	1400	700.00	1400	700.00	1000	500	1000	500	1700	850.0	1700	850.0	1700	850.0	1700	850.0
30	1,2,3,4,7,8-HxCDF	0.1	1300	130.00	1300	130.00	930	93	930	93	1600	160	1600	160	1600	160	1600	160
31	1,2,3,6,7,8-HxCDF	0.1	1500	150.00	1500	150.00	1000	100.0	1000	100.0	1700	170	1700	170	1700	170	1700	170
32	2,3,4,6,7,8-HxCDF	0.1	3100	310.00	3100	310.00	2200	220.0	2200	220.0	3500	350.0	3500	350.0	3500	350.0	3500	350.0
33	1,2,3,7,8,9-HxCDF	0.1	690	69.00	690	69.00	460	46	460	46	690	69.0	690	69.0	690	69.0	690	69.0
34	1,2,3,4,6,7,8-HpCDF	0.01	7700	77.0	7700	77.0	5400	54.00	5400	54.00	8400	84.00	8400	84.00	8400	84.00	8400	84.00
35	1,2,3,4,7,8,9-HpCDF	0.01	1300	13.00	1300	13.00	900	9.00	900	9.00	1200	12.00	1200	12.00	1200	12.00	1200	12.00
36																		
37	Gas sample volume (dscf)			88.27	88.27	88.27		71.76	71.76	71.76		84.1	84.1	84.1		84.1	84.1	84.1
38	O2 (%)			12.6	12.6	12.6		12.6	12.6	12.6		12.9	12.9	12.9		12.9	12.9	12.9
39																		
40	PCDD/PCDF (pg in sample)			2324.50	168100.0	2324.50		1629.000	119500.0	1629.000		2670.00	198100.0	2670.00		2670.00	198100.0	2670.00
41	PCDD/PCDF (ng/dscm @ 7% O2)		0.0	1.551	112.155	1.551	0.0	1.34	98.073	1.34	0.0	1.939	143.862	1.939		1.939	143.862	1.939
42																		
43	TEQ Cond Avg		1.609															
44	Total Cond Avg		118.03															

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	PCDD/PCDF																
2	N																
3	Facility Name and ID:	Clean Harbors Environmental Services, Inc.															
4	Condition ID:	3010C18															
5	Condition/Test Date:	Annual, comprehensive performance test								2000 Performance Test							
6																	
7	I-TEF																
8	Wght Fact	Run 1				Run 2				Run 3							
9		Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ	Total	TEQ
10	Detected in sample volume (pg)	Full ND	Full ND	1/2 ND	1/2 ND	Full ND	Full ND	1/2 ND	1/2 ND	Full ND	Full ND	1/2 ND	1/2 ND	Full ND	Full ND	1/2 ND	1/2 ND
11	Total TCDD	0	13800	0.0	13800	0.0	4600	0.0	4600.0	0	3970	0.0	3970	0.0	5580	0.0	5580
12	Total PCDD	0	22200	0.0	22200	0	5890	0.0	5890.0	0	11100	0	11100	0	2260	0	2260
13	Total HxCDD	0	42300	0	42300	0	11600	0	11600	0	11100	0	11100	0	2260	0	2260
14	Total HpCDD	0	6410	0	6410	0	2640	0	2640	0	2260	0	2260	0	2260	0	2260
15	OCDD	0.001	2850	2.850	2850	2.850	1630	1.630	1630	1.63	1220	1.220	1220	1.220	1220	1.220	1220
16	Total TCDF	0	2580	0	2580	0	1060	0	1060	0	974	0	974	0	974	0	974
17	Total PCDF	0	2760	0	2760	0.0	1080	0	1080	0	992	0	992	0	992	0	992
18	Total HxCDF	0	2400	0	2400.0	0	912	0	912	0	711	0	711	0	711	0	711
19	Total HpCDF	0	913	0	913	0	415	0	415	0	280	0	280	0	280	0	280
20	OCDF	0.001	196	0.196	196	0.20	119	0.119	119	0.119	74.6	0.075	75	0.075	75	0.075	75
21	2,3,7,8-TCDD	1	5.77	5.8	6	5.8	1.34	1.3	1.3	1.3	1.17	1.2	1	1.2	1	1.2	1
22	1,2,3,7,8-PCDD	0.5	103	51.5	103	51.50	39.2	19.6	39.2	19.60	52.6	26.3	53	26.3	53	26.3	26.3
23	1,2,3,4,7,8-HxCDD	0.1	189	18.90	189	18.90	69.9	6.99	69.9	6.99	77.6	7.76	78	7.76	78	7.76	7.76
24	1,2,3,6,7,8-HxCDD	0.1	787	78.7	787	78.70	271	27.1	271.0	27.10	268	26.8	268	26.8	268	26.8	26.8
25	1,2,3,7,8,9-HxCDD	0.1	339	33.9	339	33.90	121	12.1	121.0	12.10	141	14.1	141	14.1	141	14.1	14.1
26	1,2,3,4,6,7,8-HpCDD	0.01	3160	31.60	3160	31.60	1300	13.00	1300	13.00	1110	11.10	1110	11.10	1110	11.10	11.10
27	2,3,7,8-TCDF	0.1	41.1	4	41	4.11	16.5	2	17	2	15.9	2	16	2	16	2	2
28	1,2,3,7,8-PCDF	0.05	62.6	3	63	3.13	26.1	1	26	1.3	24.7	1	25	1	25	1	1
29	2,3,4,7,8-PCDF	0.5	206	103.0	206	103.00	76	38.0	76	38	77.4	38.7	77	38.7	77	38.7	38.7
30	1,2,3,4,7,8-HxCDF	0.1	109	11	109	10.90	48.4	5	48	5	40	4	40	4	40	4	4
31	1,2,3,6,7,8-HxCDF	0.1	125	13	125	12.50	60.4	6	60	6.0	50.4	5	50	5	50	5	5
32	2,3,4,6,7,8-HxCDF	0.1	325	32.5	325	32.50	136	13.6	136	13.6	104	10.4	104	10.4	104	10.4	10.4
33	1,2,3,7,8,9-HxCDF	0.1	64.5	6.5	65	6.45	25	2.5	25	3	17.4	1.7	17	1.7	17	1.7	1.7
34	1,2,3,4,6,7,8-HpCDF	0.01	316	3.16	316	3.2	180	1.80	180	1.80	133	1.33	133	1.33	133	1.33	1.33
35	1,2,3,4,7,8,9-HpCDF	0.01	88.9	0.89	89	0.89	42.9	0.43	43	0.43	25.2	0.25	25	0.25	25	0.25	0.25
36																	
37	Gas sample volume (dscf)			97.04	97.04	97.04		99.73	99.73	99.73		100.5	100.5	100.5		100.5	100.5
38	O2 (%)			14.1	14.1	14.1		11.2	11.2	11.2		13.2	13.2	13.2		13.2	13.2
39																	
40	PCDD/PCDF (pg in sample)			397.01	96409.0	397.01		150.29	29946.0	150.294		151.52	27161.6	151.52		151.52	151.52
41	PCDD/PCDF (ng/dscm @ 7% O2)	0.0		0.293	71.229	0.293	0.0	0.076	15.158	0.08	0.0	0.096	17.141	0.096		17.141	0.096
42																	
43	TEQ Cond Avg	0.155															
44	Total Cond Avg	34.51															