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I N T E R O F F I C E M E M O R A N D U M

Sensitivity: COMPANY CONFIDENTIAL

Date: 03-Jan-1997 09:40am EST
From: Jeffrey Gould FTM
GOULD_J@A1@FTM1
Dept: South District Office
Tel No: 941/332-6975

TO: Richard Tedder TAL

(TEDDER_R@A1@DER)

CC: 5 addressees

Subject: Re: Lee County WTE Total Ash Analysis

Richard,

Thanks for the quick response and assistance. Based on the information provided, we will keep an eye on concentration trends for the next monitoring period, which in fact, has just concluded. We will respond to the latest results with a brief letter, mainly about QA, but, mention we anticipate the 1996 results in the near future. Although the rule (62-702) does not specify when annual reports are due, I would think that by the end of February, they could have them in.

I will send you the summary tables provided with the 1995 analyticals, so you can have Lee County data for compilation purposes. We will also forward 1996 data when it is received. Thanks again for your help. If there's anything we can do on our end please don't hesitate to ring. Jeff.

To: RBT
cc: Phil, Bill K., Lisa Schall, MJ, Chris

12/31/96
Re: Lee County WTE Total Ash Analysis from RBT

Jeff, attached is a quick cut and paste summary (EXCEL 4.0) of the total metals analysis for Florida WTE ash that I have immediately available. It includes data from 8 facilities but does not include Lee County, Dade, McKay Bay or Southernmost WTEs. While this summary doesn't include all the Florida facility data, I believe the information is a good indication of what ash total metal concentrations are like in Florida. In 1994 we planned on preparing a report on ash which would summarize all this stuff in much clearer format but that is another project left uncompleted. Hopefully we can finish that someday and can also get more current information.

Anyway, at the bottom of the table are summary statistics: min, max, ave, standard deviation and number of detects. In the table, non-detects are either left blank or reported as "less than" values. You will notice that for lead the maximum reported value for the time period, approximately 1991 to 1994, is 36,000 mg/kg. This occurred in Hillsborough County. North Broward had a lead hit of 6,500 mg/kg. South Broward reports a high of 5,700 mg/kg. Bay County reported a high of 9,800 mg/kg. The average for lead is 2,019 mg/kg with a value for one standard deviation of 3254 mg/kg.

So, the Lee County value of 10,000 mg/kg is within 2-3 standard deviations of the average for the table values. This would be the second highest reported value that I have seen. This is not particularly close to the table average but not the worst reported single value either. I recommend waiting for more data from Lee County. The high value they have reported is very similar to that experienced by Bay County, and I imagine the waste feeds are similar. So this may just reflect elevated levels we will see from time to time.

Regarding ash leachate testing, I do not know of any data submitted for leachate from a WTE facility itself. We do have some leachate data from ash monofils however.

Hope this is of some help. - RT

to: Jeff
cc: Phil, Bill K., Ludwig, (MT) Chris

SUMMARY OF ALL FACILITIES

TOTAL METALS ANALYSIS

SAMPLE DATE	ANALYTICAL PARAMETERS						
	Arsenic mg/kg - dry	Cadmium mg/kg - dry	Chromium mg/kg - dry	Lead mg/kg - dry	Mercury mg/kg - dry	Selenium mg/kg - dry	Silver mg/kg - dry
N. BROWARD							
11/26/91	58.0	1.3	40.0	800	<	7.9	2.3
3/12/92	43.0	43.0	57.0	1,700	4.7	<	12.0
7/23/92	53.0	32.0	53.0	1,000	7.0	<	4.6
7/23/92	48.0	32.0	45.0	1,300	6.8	<	4.2
7/23/92	49.0	32.0	50.0	880	5.2	<	4.0
7/23/92	70.0	38.0	52.0	1,100	5.4	<	5.3
7/23/92	44.0	38.0	52.0	1,000	4.2	<	5.1
7/30/92	27.0	49.0	57.0	3,100	7.8	<	4.5
7/30/92	26.0	40.0	60.0	4,400	7.2	<	5.5
7/30/92	42.0	22.0	40.0	1,300	6.0	<	2.9
7/30/92	29.0	33.0	57.0	2,300	7.8	<	5.3
7/30/92	31.0	43.0	47.0	1,300	8.4	<	5.5
10/8/92	28.0	32.0	92.0	4,000	7.9	<	21.0
10/8/92	24.0	35.0	54.0	1,800	7.5	<	7.8
10/8/92	20.0	38.0	68.0	2,400	9.0	<	7.7
10/8/92	22.0	31.0	51.0	2,100	6.5	<	7.0
10/8/92	22.0	31.0	53.0	1,700	5.7	<	12.0
12/22/92	22.0	28.0	48.0	940	5.5	<	4.7
12/22/92	21.0	30.0	48.0	1,400	1.8	<	8.7
12/22/92	22.0	22.0	39.0	790	2.3	<	6.4
12/22/92	28.0	27.0	40.0	920	3.8	<	5.2
12/22/92	25.0	25.0	39.0	940	5.8	<	4.9
3/30/93	32.0	32.0	44.0	5,100	8.3	<	7.9
3/30/93	32.0	39.0	75.0	1,400	6.2	<	6.1
3/30/93	29.0	27.0	40.0	930	8.6	<	4.7
3/30/93	28.0	37.0	51.0	2,100	5.6	<	5.5
3/30/93	28.0	35.0	47.0	2,100	3.8	<	5.1
7/7/93	29.0	38.0	50.0	1,600	5.9	<	5.7
7/7/93	33.0	48.0	56.0	1,600	12.0	<	9.9
7/7/93	27.0	51.0	150.0	1,500	9.2	<	8.1
7/7/93	31.0	46.0	68.0	2,100	11.0	<	26.0
7/7/93	28.0	52.0	170.0	2,300	12.0	<	8.2
12/27/93	30.0	45.0	59.0	6,500	9.0		7.3
12/27/93	28.0	43.0	69.0	4,800	9.3		6.4
12/27/93	31.0	34.0	60.0	1,900	10.0		4.8
12/27/93	23.0	38.0	58.0	3,600	7.7		4.9
12/27/93	24.0	39.0	62.0	1,400	9.8		3.0
4/29/94	12.0	14.0	150.0	740	2.6		4.0
6/22/94	21.0	27.0	100.0	910	5.7		4.9
S. BROWARD							
7/18/91	33.0	13.0	15.0	1,100	0.0	15.0	1.2
10/1/91	62.0	8.8	190.0	1,100	<	9.2	5.0
1/7/92	7.0	5.5	<	1,100	<	1.5	4.1
4/8/92	20.0	18.0	50.0	2,400	3.4	<	1.5
7/17/92	26.0	16.0	85.0	940	4.4	<	3.1
10/19/92	21.0	13.0	54.0	2,000	4.4	<	3.2
1/12/93	24.0	16.0	61.0	1,400	3.8	<	3.4
4/23/93	21.0	18.0	54.0	1,700	4.2	<	3.4
7/19/93	6.7	12.0	51.0	5,700	1.3	<	2.6
10/26/93	16.0	10.0	58.0	1,100	2.1	<	110.0

SUMMARY OF ALL FACILITIES

TOTAL METALS ANALYSIS

SAMPLE DATE	ANALYTICAL PARAMETERS						
	Arsenic mg/kg - dry	Cadmium mg/kg - dry	Chromium mg/kg - dry	Lead mg/kg - dry	Mercury mg/kg - dry	Selenium mg/kg - dry	Silver mg/kg - dry
1/6/94	20.0	20.0	56.0	5,400	4.6	<	22.0
BAY COUNTY							
12/15/91	61.4	31.9	29.9	854	6.1		
12/16/91	26.6	64.6	33.6	2,360	2.8		4.9
12/17/91	40.0	43.2	39.8	1,040	3.0		
3/31/92	103.0	128.0	55.6	2,420	38.3	71.3	
3/31/92	61.3	98.4	66.4	2,380	25.5	51.0	
3/31/92	154.0	220.0	110.0	3,690	48.3	64.4	
3/31/92	102.0	108.0	53.3	2,500	45.4	51.0	
3/31/92	85.8	61.3	46.5	5,130	15.5		
6/30/92	50.4	30.0	35.2	1,100	6.7	5.0	
6/30/92	77.0	37.9	32.0	1,770	7.6		
6/30/92	66.4	23.8	20.6	990	4.3		
6/30/92	87.0	21.2	27.2	863	3.3	2.4	
6/30/92	105.0	17.5	32.7	2,240	3.1	2.4	
9/30/92		84.2	36.6	3,080	11.8		3.5
9/30/92		58.3	289.0	1,830	10.5		2.9
9/30/92		78.4	30.4	2,120	15.2		2.8
9/30/92		115.0	38.2	2,650	19.1		4.6
9/30/92		99.2	45.7	2,730	14.4		6.7
12/1/92	38.9	45.6	32.8	2,180	10.8		
12/1/92	59.4	86.6	47.0	2,340	10.8		4.6
12/1/92	35.9	53.3	37.2	1,090	6.6		
12/1/92		45.2	68.6	1,540	8.9		
12/1/92		28.3	28.0	1,140	5.1		
12/1/92	36.0	53.0	44.6	1,940	5.8		
3/31/93	32.0	20.0	20.0	1,300	6.0		
3/31/93	52.0	28.0	23.0	930	3.3		
3/31/93	28.0	23.0	30.0	690	5.9		
3/31/93	17.0	9.4	15.0	650	2.4		
3/31/93	56.0	88.0	36.0	1,400	11.0		
6/30/93	62.0	520.0	40.0	1,900	12.0		6.2
6/30/93	87.0	660.0	60.0	2,500	24.0	88.0	7.4
6/30/93	11.0	240.0	43.0	860	7.4	87.0	4.3
6/30/93	37.0	190.0	46.0	1,100	11.0	20.0	4.6
6/30/93	33.0	310.0	35.0	1,500	5.3		6.1
9/27/93	67.0	140.0	36.0	4,500	8.4	24.0	7.4
9/27/93	71.0	150.0	42.0	9,800	15.0	4.6	8.1
9/27/93	11.0	33.0	17.0	1,000	1.9	4.7	
9/27/93	70.0	150.0	47.0	2,200	20.0	2.0	
9/27/93	19.0	27.0	16.0	540	5.0		
12/15/93	9.0	703.0	6.2	310	1.0	2.7	
12/15/93	43.0	59.0	29.0	1,900	4.5		4.7
12/15/93	29.0	69.0	41.0	1,300	1.9		6.5
12/15/93	35.0	37.0	34.0	1,800	1.5	2.3	4.7
12/15/93	55.0	74.0	47.0	1,700	4.3	2.0	6.9
HILLSBOROUGH							
5/22/92	<	40.0	35.0	1,100	0.4	<	5.0
8/20/92	550.0	36.0	49.0	650	0.4	<	4.0
8/20/92	37.0	NA	NA	NA	0.4	<	NA
12/22/92	<	48.0	54.0	3,200	<	<	8.0

SUMMARY OF ALL FACILITIES

TOTAL METALS ANALYSIS

SAMPLE DATE	ANALYTICAL PARAMETERS						
	Arsenic mg/kg - dry	Cadmium mg/kg - dry	Chromium mg/kg - dry	Lead mg/kg - dry	Mercury mg/kg - dry	Selenium mg/kg - dry	Silver mg/kg - dry
12/22/92	<	45.0	24.0	36,000	<	<	11.0
2/24/93	54.0	42.0	43.0	1,200	<	<	4.0
6/5/93	39.0	36.0	54.0	1,000	0.2	<	4.0
8/17/93	39.0	43.0	57.0	4,930	0.3	<	11.0
11/4/93	46.0	79.0	53.0	800	0.1	<	4.0
1/30/94	41.0	36.0	160.0	680	0.1		3.0
6/29/94	66.0	24.0	30.0	540	2.0		3.0
8/30/94	36.0	44.0	43.0	1,000	2.0		3.0
9/30/94	53.0	37.0	640.0	1,200	0.3		4.0
12/19/94	38.0	35.0	34.0	890	0.3		4.0
PINELLAS CO							
11/9/92	20.8	34.9	33.5	766	<	<	6.7
2/9/93	38.8	34.6	90.5	1,130	0.4	<	6.7
5/4/93	19.5	22.2	64.3	617	0.7	<	5.2
8/13/93	36.9	37.5	50.6	928	0.1	11.0	5.2
11/9/93	38.3	23.5	69.0	3,820	0.2	<	4.2
2/2/94	24.8	37.8	55.3	1,870	1.7	<	5.2
5/2/94	28.5	24.6	61.9	656	0.3	23.6	4.3
8/16/94	24.8	30.6	68.7	949	0.4	<	5.6
TAMPA							
6/9/94	<	45.5	18.3	984	0.1	<	<
6/9/94					0.1		
9/22/94	<	44.0	34.1	1,410	0.2	<	4.38
9/22/94					<		
12/6/94	170.0	27.8	24.6	754	0.05	120	1.58
1/30/95	21.0	36.0	28.0	920	0.05		1.7
LAKE CO							
12/12/91	<	22.0	24.0	470	0.9	< 10.0	<
2/11/92	<	34.0	32.0	740	3.5	< 10.0	2.0
4/24/92	<	21.0	49.0	510	1.4	< 10.0	<
7/8/92	<	21.0	23.0	330	1.5	< 1.0	<
1/18/93	15.0	<	36.0	4,400	<	< 50.0	9.0
6/30/94	24.0	14.0	34.0	420	1.6	50.0	4.0
8/30/94	36.0	44.0	43.0	1,000	2.0	<	3.0
9/30/94	36.0	41.0	36.0	590	1.8	60.0	6.0
12/12/94	39.0	31.0	34.0	650	1.7	50.0	3.0
PASCO CO							
3/24/92	23.0	34.0	26.0	800	2.3	<	3.0
8/20/92	130.0	26.0	54.0	1,500	1.5	<	3.0
8/20/92	8.7				1.5	<	
12/22/92	<	39.0	38.0	1,200	4.9	<	9.0
12/22/92	<	33.0	43.0	630	3.1	<	8.0
3/23/94	43.4	62.9	59.4	1,270	4.2	3.7	6.9
6/21/94	55.0	37.0	43.0	690	0.4		5.0
8/30/94	36.0	44.0	43.0	1,000	2.0	58.0	3.0
12/8/94	32.0	44.0	70.0	790	2.0		8.0
MIN OF DETECTS	6.7	1.3	6.2	310	0.0	1.0	1.2
MAX OF DETECTS	550.0	703.0	640.0	36,000	48.3	120.0	110.0
AVE OF DETECTS	44.9	60.4	56.5	2,019	6.3	28.7	6.8
STAND. DEV.	53.8	96.9	61.4	3253.9	7.6	31.6	10.8
# OF DETECTS	120	135	135	136	131	34	106

Date: 12/30/96 2:18:06 PM
From: Jeffrey Gould FTM
Subject: Lee County Resource Recovery Facility
To: Richard Tedder TAL
CC: Phil Barbaccia FTM
CC: Bill Krumbholz FTM
CC: Lisa Schall FTM

Hi Richard,

I had to resort to Microsoft Word just to include a small table of lab results. This silly e-mail system won't let me create anything other than just plain typing I guess. Any assistance you can provide will be appreciated. Thanks, Jeff.

Hi Richard,

I was asked to consult with you on the results of ash testing from the Lee County RRF, done to comply with the provisions of F.A.C. Rule 62-702. Of concern are the levels of lead found in the ash during 1995. We did not receive the annual report until 9/13/96, then had to wait for the QA Section to make a determination whether or not we should accept the results (due to some very strange QA data from the tests).

Below is a summary of the lead concentrations. They reported on a "dry metal basis" and on an "as received basis." The "dry weight" concentration is the analyte's concentration that results from the crushed, dried, and riffled ash samples. The "as received" values represent the ash condition as delivered to the landfill, which includes moisture.

ALL RESULTS EXPRESSED AS MG/KG (PARTS PER MILLION)

1st Quarter	560 (dry)	453 (as received)
2nd Quarter	770	646
3rd Quarter	10,000	8100
4th Quarter	1600	1280

Ave = 3232.5
σ =

As you can see, the results for the third quarter are extremely high. In accordance with 62-702.570(4) effective 09-02-91, if the ash analyses indicate significantly elevated levels of metal concentrations compared to metal concentrations in ash at other facilities in the State, the facility, following notification by the Department, shall carry out an investigation to determine the source(s) of these metals in the waste stream.

Our request for assistance is to help determine whether or not these lead levels are significantly elevated compared to other facilities in Florida. If so, what do we do next? Since this is Lee County's first annual report, we have nothing else to compare it with. Also, when they did their ash characterization following EPA's guidance, they did not run a "total" metals test, only the TCLP procedure as required.

In addition to complying with 62-702, we may need to consider whether the facility should run another seven day test for TCLP. As far as we understand, there is no requirement for routine TCLP testing, so long as the waste stream into the facility remains consistent.

As a matter of interest, are you aware of any facilities performing leachate tests that are regulated by 62-702? We did not receive any for this facility, and Bill Krumbholz has not heard any talk about leachate quality from solid waste combustors. Any assistance you can provide on these issues will be greatly appreciated. We can be reached at Suncom 748-6975 or via e-mail. Thanks, Jeff.

1995
data