Thomas Hilbert
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Winnebago Reclamation
8403 Lindenwood Rd.
Rockford, IL 61109
(815) 874-4806
May 11,1993

US EPA RECORDS CENTER REGION 5
473889

Mr. Bernard Schorle
Remedial Project Manager
USEPA Region V
77 West Jackson Boulevard
Chicago, IL 60604-3590
Re: Pagels Landfill

Dear Bernie:

Enclosed are the results of a gas analysis that was taken at the header pipe that runs into the gas processing building. The sample could be considered a rough composite of the gas within the landfill. It is not a true composite since the applied vacuum in each well varies with location. The notes on the side indicate that the person analyzing the gas felt the levels of vinyl chloride, Dichlorodifluoromethane, and trichloroethane are relatively low compared to other landfills he has sampled. I have no information with which to make such a comparison and cannot vouch for the veracity of all the side comments. If you have any questions or would like additional information regarding the site please feel free to contact me.

Sincerely,

Thomas Hilbert

IGT_ANALYTICAL REPORT

Work Order # 90-11-038

Received: 11/16/90

12/07/90 15:31:14

REPORT TO
NRG Technologies, Inc.
4920 Forest Hills Road
Loves Park, Illinois, 61111
(815) 874-4806
ATTEN Mr. Brent Cummings

PREPARED BY
Chemical Research Services
Institute of Gas Technology
3424 S. State Street
Chicago, IL 60616-3896
ATTEN S. S. Chao ; Business Phone
PHONE 312-567-5739 ; 312-567-3650

CERTIFIED BY

CONTACT KONCAR 3815

CLIENT NRG_TECH SAMPLES 1
COMPANY NRG Technologies, Inc.
FACILITY 8403 Lindenwood Road
Rockford, Illinois, 61109

(For additional information, phone the CONTACT above.)
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WORK ID Landfill gas sample
TAKEN
TRANS
TYPE
P.O. # 1667
INVOICE under separate cover

SAMPLE IDENTIFICATION

01 Landfill gas sample

TEST CODES and NAMES used on this workorder

GAS2 GAS ANALYSIS

IGT_ANALYTICAL REPORT Work Order # 90-11-038

11/16/90 12/07/90 14:52:05

nologies, Inc.

ple Description: Landfill Gas Sample

GC/MS Determination of Target Trace Halocarbons in Gas

COMPONENT	FORMULA	CONCENTRATION ppm by volume
1. Tetrafluoromethane (CFC-14)	CF(4)	BDL
2. Difluoroethene (CFC-1132A)	C(2)F(2)H(2)	BDL
3. Chlorodifluoromethane (CFC-22)	CClF(2)H	0.3
4. Dichlorodifluoromethane (CFC-12) ✓	CCl(2)F(2)	1.8
5. Chlorotetrafluoroethane	C(2)ClF(4)H	BDL
6. Chloromethane	CClH(3)	BDL
7. Dichlorotetrafluoroethane	C(2)Cl(2)F(4)	BDL
8. Chlorofluoromethane	CClFH(2)	0.09
9. Chloroethene (Vinyl Chloride) ✓	C(2)ClH(3)	2.5
10. Chloroethane	C(2)ClH(5)	0.09
11. Dichlorofluoromethane (CFC-21)	CCl(2)FH	0.1
12. Trichlorofluoromethane (CFC-11)	CCl(3)F	0.07
13. Trichlorotrifluoroethane (CFC-113)	C(2)Cl(3)F(3)	0.03
14. Dichloromethane	CCl(2)H(2)	0.05
15. 1,1-Dichloroethane	C(2)Cl(2)H(4)	0.2
16. Dichloroethene	C(2)Cl(2)H(2)	0.6
17. Trichloromethane	CCl(3)H	BDL
18. 1,1,1-Trichloroethane	C(2)Cl(3)H(3)	0.03
19. Tetrachloromethane	CCl(4)	BDL
20. 1,2-Dichloropropane	C(3)Cl(2)H(6)	BDL
21. Trichloroethene	C(2)Cl(3)H	0.2
22. Dibromochloromethane	CClBr(2)H	BDL
23. Tetrachloroethene	C(2)Cl(4)	0.06
24. Chlorobenzene	C(6)ClH(5)	BDL
25. Dichlorobenzene	C(6)Cl(2)H(4)	0.04

Halocarbon

— 10-50 ppm High samples. that analyst has seen in landfill gas (raw)(#4 + #9)

— 0.5 ppm Have been seen in samples that have been cleaned

#4 and #9 in air results are low #s with regard to other landfills.

solvents, detected on run #18 is also a low #.

26. OTHERS none detected

Notes:

BDL-Below Detection Limit, less than 0.02ppmv

Compounds 1-25 are those searched for and do not necessarily include all compounds present. Estimated uncertainties are >10 ppm; +/- 10%
.1-10 ppm; +/- 30%
<.1 ppm; +/-100%

Analyst: Gerald J. Koncar

IGT_ANALYTICAL REPORT Work Order # 90-11-038

11/16/90 Results by Sample

ID Landfill gas sample FRACTION 01A TEST CODE GAS2 NAME GAS ANALYSIS

Date & Time Collected not specified Category

COMPONENT	MOLE%	D. L.	WEIGHT%
Helium	ND		
Hydrogen	BDL	0.01	
Oxygen & Argon	3.77	0.01	4.22
Nitrogen	35.6 ?	0.01	35.0
Carbon Dioxide	27.2	0.01	41.9
Carbon Monoxide	BDL	0.01	
Methane	33.4	0.01	18.8
Ethane	BDL	0.01	
Ethene	BDL	0.01	
Ethyne (Acetylene)	BDL	0.01	
Propane	BDL	0.01	
Propene	BDL	0.01	
Propyne	BDL	0.01	
Propadiene	BDL	0.01	
i-Butane	BDL	0.01	
n-Butane	BDL	0.01	
1-Butene	BDL	0.01	
iso-Butene	BDL	0.01	
trans-2-Butene	BDL	0.01	
cis-2-Butene	BDL	0.01	
Butadiene	BDL	0.0	
neo-Pentane	BDL	0.0	
i-Pentane	BDL	0.01	
n-Pentane	BDL	0.01	
Pentenes	BDL	0.01	
Pentadienes	BDL	0.01	
C-6 & Heavier	BDL	0.01	
Hydrogen sulfide	ND		
	99.97		99.92
Total	100.0		100.0

— oxygen and Nitrogen exis in the atmosphere in a rati of ≈4:1 (N_2 : O_2) The indica ratio of this analysis is ≈8:1 (N_2 : O_2)

— Nitrogen # is elevated indicating that O_2 is still infiltrating the landfill. The O_2 is being depleted by aerobic digestion, leaving an increased Nitrogen level. This is supported by the fact that no Hydrogen sulfide was detected.

CALCULATED PROPERTIES at 60 F / 14.73 psia (ASTM 3588)

Specific Gravity : 0.985

Compressibility [z] : 0.9985

Gross Heating Value (BTU/SCF)		Net Heating Value (BTU/SCF)	
-- dry -- :	339	-- dry -- :	305
-- sat.-- :	333	-- sat.-- :	300

Analyst : Robert Bigwood

NOTES: BDL= below detection limit (D.L.); ND= Component not determined

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