TERRA
ENGINEERING & CONSTRUCTION CORPORATION
ENVIRONMENTAL REMEDIATION
MUNICIPAL & UTILITY CONSTRUCTION
SPECIALTY EARTHWORK

ANNUAL REPORT

1996

Refuse Hideaway Landfill
Town of Middleton
Dane County, Wisconsin

Prepared For:

Wisconsin Department of Natural Resources
101 South Webster Street
Madison, Wisconsin

Prepared by:

Terra Engineering and Construction Corp.
2201 Vondron Road
Madison, Wisconsin

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MADISON, WI 53704-6795
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February 7, 1997

Wisconsin Department
of Natural Resources
Environmental Response and
Repair Section
Bureau of Solid and Hazardous
Waste Management
101 South Webster Street,
GEF II, SE/3
Madison, Wisconsin 53707

Attn: Ms. Theresa Evanson

Re: Operation and Maintenance
Summary - Annual Report 1996
Landfill Gas and Leachate
Extraction System
Refuse Hideaway Landfill
Middleton, Wisconsin
Terra Job #468

Dear Ms. Evanson:

This report summarizes operation and maintenance (O&M) activities performed by Terra Engineering & Construction Corporation (Terra), during 1996 at the Refuse Hideaway Landfill.

Included in this report are five (5) tables which summarize gas extraction well monitoring, gas probe monitoring, leachate head monitoring, leachate/condensate loadout volumes and monthly alarm conditions encountered. Also included are the leachate analytical results for Quarterly and Annual sampling events. A brief discussion of each aspect of the gas and leachate extraction system including notable highlights are presented in the following sections. Previously submitted reports can be referenced for further details.

Alarms/Remedial Action

There was a total of eighty-one (81) alarm conditions alerted. (SEE TABLE 5).

Of the eighty-one (81) alarms, one (1) was attributed to power interruptions due to thunderstorms in the area. The remaining eighty (80) alarms for flame failure were like due to: Low Landfill Gas Content.

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Efforts to decrease blower/flare down time included the inspection of the following:

- Red Jacket Control Panel & Interstitial Tank Leak Sensor Repair (March 1996)
- Leachate Extraction System Upgrade (May 1996)
- Thermocouple (October 1996)

The results of the above mentioned inspections were as follows:

- A new interstitial tank leak sensor was installed and the high leachate sensor was connected to the control panel. This was done to correct the false tank leak and high leachate alarms. The panel was re-energized and is currently working as intended.
- The leachate extraction system and main power supply were both upgraded. See the leachate extraction system upgrade construction observation report for details. The installations of the new leachate extraction system will lower maintenance of leachate pumps and more reliability pump leachate from the landfill.
- The thermocouple was replaced due to erratic temperature readings. The new thermocouple is working as intended.
- Terra has also been in contact with Mr. John Gwinn of Linklater Corp. Mr. Gwinn suggested keeping the South Damper partially open at all times. If the Landfill Flare is running out of landfill gas, you will see a gradual temperature drop in the flare. The flare will then go into a low temperature alarm. By opening the South Damper, this is exactly what was experienced. By the studying the temperature recorder tape, you see a gradual temperature drop and eventually a flame failure.

Gas Extraction System

Table 1 is an annual summary of the monthly data collected from the blower/flare and from each of the thirteen (13) wells. The landfill monitoring for the months of August and September, 1996 were omitted due to a power outage.

The valves at gas wells GW-1 and GW-2 remained closed through-out the year due to high oxygen content and minimal gas production i.e., no positive pressure was observed with the control valves closed. Upon opening the control valves, the system would shut down likely due to the dilution of the landfill gas.

The above ground lateral on GW-8 was broken due to settlement of the underground header pipe. The gas well was temporarily fixed in October 1996. A more permanent repair will be made in Spring 1997.

Leachate Extraction System

Table 3 is an annual summary of leachate head measurements.

The following is a summary of work performed on the leachate extraction system.

April 1996: Leachate extraction system upgrade consisted of the following:

- Installation of approximately 2,450 linear feet of 1" HDPE air line.
- Replace all electrical pumps with Solo II air driven pumps.
- Install regulators & counters to all existing leachate pump control panels.
- Install air compressor and air drier.
- Install prefabricated building to house compressor and air drier.

May 1996: Upgrade main power service so air compressor & blower can operate simultaneously.

June 1996: Install soft start to air compressor so blower will not shut down when the air compressor is starting.

October 1996: GW-11's leachate extraction pumps vent was plugged with insect debris. The obstruction was cleared and the pump is operational.

Note: For more information on the leachate extraction system upgrade see the construction observation report submitted to the DNR.

Gas Probes

Table 2 is an annual summary of the monthly gas probe readings. The only gas probes that exhibited any methane reading were GP-11s, GP-11d, GP-1s and GP-1d.

Gas probes GP-11s and GP-11d have historically shown methane readings exceeding 100% of the lower explosive limit (LEL) in a cyclical basis. Typically during the period from the end of May to the end of September.

Gas probe GP-1s showed methane contents exceeding 100% of the LEL during the monthly monitoring events for July and August. Gas probe GP-1d exhibited lesser quantity of methane during July. But the LEL exceeded 100% for the month of September. GP-1s and GP-1d also are showing a cyclical patter of gas detection. The readings may also be due to extended blower/flare down time during the month of August and September.

The WDNR was contacted and informed of the gas probe readings following the monthly monitoring events.

Leachate/Condensate Loadout

Table 4 contains a summary of leachate/condensate loadout as well as a copy of the pumping report provided by Al's Modern Sewer Service.

Analytical Results

Appendix 1 contains the Quarterly and Annual Leachate Analytical results.

Leachate continues to be disposed of at the Madison Metropolitan Sewerage District. A copy of the discharge permit is attached as Appendix 2.

Other Work Performed

August 1996 - A lightening strike caused a power failure at the landfill and in the processed damage 2 of 3 buck boosters. The buck boosters were replaced along with a new main electrical power cable. A conduit was installed so the main power cable can be replaced more easily if needed. In the process of installing the conduit, the tank telemetry, phone service and air line for the leachate pumps were all damaged. All damaged utilities were repaired or replaced within one (1) week and are all currently operational.

November 1996 - Quadrennial monitoring was conducted during the month of November by Clean Air Engineering. The results will be forwarded to the DNR in February 1997.

November 1996 - Flare would not restart due to igniter failure. New electrical sparker contacts were installed. Igniter is working as it was intended.

A new permit was issued by the MMSD in August of 1996. The permit II is NTO5D and Expires in September of 1997.

If you have any questions or comments, please do not hesitate to contact us.

Sincerely,
TERRA ENGINEERING & CONSTRUCTION CORP.

James A. Falbo
Safety Director

TABLE 1

GAS EXTRACTION

MONITORING SUMMARY

REFUSE HIDEAWAY LANDFILL

GROUND FLARE INLET SAMPLE PORT MONITORING

DATE	PRESSURE (in WC)	GAS TEMP (F)	METHANE (CH_4%)	OXYGEN (O_2%)	CARBON DIOXIDE (CO_2%)	BALANCE (%)	VELOCITY (fpm)	CALCULATED FLOW (cfm)	METHANE FLOW (cfm)
01-23-96	+3.0	58.0	59.0	0.0	37.7	3.9	2,000	370.0	218.3
03-14-96	+3.5	65.3	47.9	0.8	39.8	11.3	2,450	453.25	217.1
04-09-96	+3.5	64.4	42.2	0.6	30.6	26.0	2,150	397.8	167.8
05-30-96	+3.5	80.0	52.5	0.0	44.4	4.0	2,400	444.0	233.1
07-10-96	+3.0	93.5	56.0	0.0	44.0	0.0	2,450	453.3	253.8
08-01-96	+3.0	90.0	48.6	0.1	40.3	10.0	2,300	425.5	206.8
08-23-96	←				POWER FAILURE				→
09-30-96	←				POWER FAILURE				→
11-04-96	+4.5	67.8	38.5	0.9	32.2	28.5	2,500	462.5	178.1
12-04-96	+3.5	58.4	42.1	0.1	34.9	22.9	2,500	462.5	194.7
01-02-97	+2.5	57.5	40.5	34.9	0.3	24.3	2,300	425.5	172.3

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REFUSE HIDEAWAY LANDFILL GAS EXTRACTION SYSTEM-WELL HEAD MONITORING

WELL NUMBER: GW-1

DATE	HEADER PRESSURE (IN W.C.)	WELL PRESSURE (IN W.C.)	GAS TEMP. (F)	METHANE (CH_4%)	OXYGEN (O_2%)	CARBON DIOXIDE (CO_2%)	BALANCE (%)	VELOCITY (FPM)	CALCULATED FLOW[1] (CFM)	METHANE FLOW (CFM)
01-23-96	-24	0	21.1	3.2	18.6	4.5	73.7	0	0	0
03-14-96	NA	NA	NA	NA	NA	NA	NA	0	0	0
04-09-96	-23	0	40.1	3.1	18.7	4.5	73.7	0	0	0
05-03-96	-25	-1	70.0	0.7	20.1	0.0	79.3	0	0	0
07-10-96	-20	-1	74.5	0.6	20.2	0.0	79.2	0	0	0
07-31-96	-19	-1	65.3	0.5	20.2	0.0	79.3	0	0	0
08-23-96	←				POWER	FAILURE				→
09-30-96	←				POWER	FAILURE				→
11-04-96	-19	-1	65.7	0.3	20.8	0.0	78.9	0	0	0
12-04-96	-11	0	33.4	0.1	20.9	0.0	79.0	0	0	0
01-02-97	-8	0	43.3	0.0	20.8	0.0	79.2	0	0	0

(1) Calculated Flow = Velocity (FPM) x .045
NA: Not Available

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REFUSE HIDEAWAY LANDFILL GAS EXTRACTION SYSTEM-WELL HEAD MONITORING

WELL NUMBER: GW-2

DATE	HEADER PRESSURE (IN W.C.)	WELL PRESSURE (IN W.C.)	GAS TEMP. (F)	METHANE (CH_4%)	OXYGEN (O_2%)	CARBON DIOXIDE (CO_2%)	BALANCE (%)	VELOCITY (FPM)	CALCULATED FLOW[1] (CFM)	METHANE FLOW (CFM)
01-23-96	-24	0	23.0	3.5	18.6	6.0	71.9	0	0	0
03-14-96	NA	NA	NA	NA	NA	NA	NA	0	0	0
04-09-96	-23	0	40.1	3.2	18.5	6.0	72.3	0	0	0
05-30-96	-25	-1	70.0	0.8	20.2	0.0	79.1	0	0	0
07-10-96	-20	-1	75.3	0.8	20.2	0.0	79.0	0	0	0
07-31-96	-19	-1	65.4	0.7	20.1	0.0	79.2	0	0	0
08-23-96	←				POWER	FAILURE →				
09-30-96	←				POWER	FAILURE →				
11-04-96	-20	-1	65.9	0.7	20.3	0.0	79.0	0	0	0
12-04-96	-11	0	32.3	0.0	21.0	0.0	79.0	0	0	0
01-02-97	-8	0	45.2	0.0	20.5	0.0	79.5	0	0	0

(1) Calculated Flow = Velocity (FPM) x .045
NA: Not Available

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REFUSE HIDEAWAY LANDFILL GAS EXTRACTION SYSTEM-WELL HEAD MONITORING

WELL NUMBER: GW-3

DATE	HEADER PRESSURE (IN W.C.)	WELL PRESSURE (IN W.C.)	GAS TEMP. (F)	METHANE (CH_4%)	OXYGEN (O_2%)	CARBON DIOXIDE (CO_2%)	BALANCE (%)	VELOCITY (FPM)	CALCULATED FLOW[(1)] (CFM)	METHANE FLOW (CFM)
01-23-96	-24	NA	68.1	68.9	0.6	30.6	0.0	1,150	51.75	35.6
03-14-96	-22	-2	61.0	53.5	0.3	46.3	0.2	1,100	49.5	26.5
04-09-96	-23	-5	59.7	52.7	0.4	36.2	10.3	1,100	49.5	26.1
05-30-96	-25	-4	65.3	58.9	0.0	41.2	0.0	1,500	67.5	39.76
07-10-96	-20	-5	77.5	62.2	0.0	37.8	0.0	1,500	67.5	45.4
07-31-96	-19	-3	65.6	55.4	0.8	39.9	4.9	1,000	45.0	24.9
08-23-96	←				POWER	FAILURE				→
09-30-96	←				POWER	FAILURE				→
11-04-96	-22	-3	62.1	44.8	0.5	36.1	18.5	1,500	67.5	30.2
12-04-96	-11	-7	68.4	47.6	0.0	40.4	12.0	1,000	45.0	21.42
01-02-97	-8	-5.5	62.3	39.9	0.0	36.4	23.7	1,500	67.5	26.9

(1) Calculated Flow = Velocity (FPM) x .045
NA: Not Available

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REFUSE HIDEAWAY LANDFILL GAS EXTRACTION SYSTEM-WELL HEAD MONITORING

WELL NUMBER: GW-4

DATE	HEADER PRESSURE (IN W.C.)	WELL PRESSURE (IN W.C.)	GAS TEMP. (F)	METHANE (CH_4%)	OXYGEN (O_2%)	CARBON DIOXIDE (CO_2%)	BALANCE (%)	VELOCITY (FPM)	CALCULATED FLOW[1] (CFM)	METHANE FLOW (CFM)
01-23-96	-25	-17	70.0	60.0	1.2	39.1	0.0	500	22.5	13.5
03-14-96	-22	-16	61.7	39.3	0.9	37.0	22.8	900	40.5	15.9
04-09-96	-19	-16	58.6	41.0	0.8	31.0	7.9	800	36.0	14.8
05-30-96	-26	-18	66.5	52.2	0.0	42.9	3.5	500	22.5	11.75
07-10-96	-20	-15	76.6	54.0	0.0	46.0	0.0	625	28.1	15.2
07-31-96	-18	-14	65.8	52.1	1.4	37.4	9.8	600	27.0	14.1
08-23-96	←				POWER	FAILURE				→
09-30-96	←				POWER	FAILURE				→
11-04-96	-20	-12	62.5	43.2	0.9	34.4	22.1	1,100	49.5	21.4
12-04-96	-11	-11	52.8	46.2	1.0	34.9	17.9	500	22.5	10.4
01-02-97	-9	-5	56.3	51.6	0.6	37.5	10.3	800	36.0	18.6

(1) Calculated Flow = Velocity (FPM) x .045
NA: Not Available

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REFUSE HIDEAWAY LANDFILL GAS EXTRACTION SYSTEM-WELL HEAD MONITORING

WELL NUMBER: GW-5

DATE	HEADER PRESSURE (IN W.C.)	WELL PRESSURE (IN W.C.)	GAS TEMP. (F)	METHANE (CH_4%)	OXYGEN (O_2%)	CARBON DIOXIDE (CO_2%)	BALANCE (%)	VELOCITY (FPM)	CALCULATED FLOW[1] (CFM)	METHANE FLOW (CFM)
01-23-96	-25	-19	70.0	69.1	0.0	31.0	0.0	1,000	45.0	31.1
03-14-96	-22	-9	76.2	50.0	1.9	47.1	1.3	400	18.0	9.0
04-09-96	-19	-15	66.7	44.4	4.4	33.7	18.6	650	29.25	13.0
05-30-96	-26	-13	69.6	52.7	1.3	44.7	1.8	500	22.5	11.86
07-10-96	-20	-5	81.5	57.7	0.5	41.6	0.0	400	18.0	10.4
07-31-96	-16	-16	73.5	54.6	2.9	39.4	7.8	850	38.3	20.8
08-23-96	←				POWER	FAILURE				→
09-30-96	←				POWER	FAILURE				→
11-04-96	-20	-17	70.5	42.8	4.8	31.3	20.9	1,200	54.0	23.1
12-04-96	-11	-11	64.0	51.2	2.1	41.8	4.9	1,900	85.5	43.8
01-02-97	-7	-7	63.0	53.2	1.4	41.7	3.7	650	29.25	15.6

(1) Calculated Flow = Velocity (FPM) x .045
NA: Not Available

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REFUSE HIDEAWAY LANDFILL GAS EXTRACTION SYSTEM-WELL HEAD MONITORING

WELL NUMBER: GW-6

DATE	HEADER PRESSURE (IN W.C.)	WELL PRESSURE (IN W.C.)	GAS TEMP. (F)	METHANE (CH_4%)	OXYGEN (O_2%)	CARBON DIOXIDE (CO_2%)	BALANCE (%)	VELOCITY (FPM)	CALCULATED FLOW[(1)] (CFM)	METHANE FLOW (CFM)
01-23-96	-28	-3	63.1	60.1	0.1	40.5	0.0	800	36.0	21.6
03-14-96	-26	-2	57.0	50.3	0.5	44.7	4.9	800	36.0	18.1
04-09-96	-27	-20	67.1	41.5	1.1	33.6	5.6	1,700	76.5	31.8
05-30-96	-23	-16	67.1	46.0	0.0	37.7	15.6	2,000	90.0	41.4
07-10-96	-21	-14	73.5	57.0	0.0	43.0	0.0	1,100	49.5	28.2
07-31-96	-20	-17	66.7	54.0	1.0	37.1	7.8	2,100	94.5	51.0
08-23-96	←				POWER	FAILURE				→
09-30-96	←				POWER	FAILURE				→
11-04-96	-21	-18	64.9	33.2	0.4	34.9	31.5	2,000	90.0	29.9
12-04-96	-16	-13.5	64.0	38.9	0.1	38.0	23.0	1,200	54.0	21.0
01-02-97	-13	-9.5	60.8	28.7	0.0	33.6	37.7	1,500	67.5	19.4

(1) Calculated Flow = Velocity (FPM) x .045
NA: Not Available

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REFUSE HIDEAWAY LANDFILL GAS EXTRACTION SYSTEM-WELL HEAD MONITORING

WELL NUMBER: GW-7

DATE	HEADER PRESSURE (IN W.C.)	WELL PRESSURE (IN W.C.)	GAS TEMP. (F)	METHANE (CH_4%)	OXYGEN (O_2%)	CARBON DIOXIDE (CO_2%)	BALANCE (%)	VELOCITY (FPM)	CALCULATED FLOW[1] (CFM)	METHANE FLOW (CFM)
01-23-96	-30	-30	72.1	66.7	0.2	33.0	0.0	500	22.5	15.0
03-14-96	-26	-24	68.7	52.5	0.0	41.7	6.2	800	36.0	18.9
04-09-96	-25	-25	66.3	54.4	0.9	33.7	11.6	800	36.0	19.6
05-30-96	-23	-23	72.5	63.1	0.0	37.0	0.0	600	27.0	17.0
07-10-96	-21	-20	79.6	65.5	0.0	34.5	0.0	600	27.0	17.7
07-31-96	-20	-20	73.5	60.4	0.8	36.1	2.9	500	22.5	13.6
08-23-96	←				POWER	FAILURE				→
09-30-96	←				POWER	FAILURE				→
11-04-96	-22	-22	73.7	53.3	0.6	36.1	10.0	1,400	63.0	33.6
12-04-96	-17	-17	69.2	53.3	0.3	40.0	6.4	800	36.0	19.2
01-02-97	-13	-13	69.5	55.3	0.0	38.1	6.6	1,200	54.0	29.9

(1) Calculated Flow = Velocity (FPM) x .045
NA: Not Available

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REFUSE HIDEAWAY LANDFILL GAS EXTRACTION SYSTEM-WELL HEAD MONITORING

WELL NUMBER: GW-8

DATE	HEADER PRESSURE (IN W.C.)	WELL PRESSURE (IN W.C.)	GAS TEMP. (F)	METHANE (CH_4%)	OXYGEN (O_2%)	CARBON DIOXIDE (CO_2%)	BALANCE (%)	VELOCITY (FPM)	CALCULATED FLOW[1] (CFM)	METHANE FLOW (CFM)
01-23-96	-29	-17	94.1	70.0	0.0	30.0	0.0	1,000	45.0	31.5
03-14-96	-25	-25	83.0	55.7	0.8	43.8	0.0	500	22.5	12.5
04-09-96	-25	-25	74.5	54.3	1.4	37.8	7.7	700	31.5	17.1
05-30-96	-23	-23	84.0	63.5	0.0	36.8	0.0	500	22.5	14.3
07-10-96	-21	NA	NA	NA	NA	NA	NA	NA	NA	NA
07-31-96	-21	-21	93.0	56.4	0.8	38.1	4.9	1,400	63.0	35.5
08-23-96	←				POWER	FAILURE				→
09-30-96	←				POWER	FAILURE				→
11-04-96	-24	-24	72.3	57.0	0.7	41.0	0.9	500	22.5	12.8
12-04-96	-15	-12	63.8	57.4	0.5	42.1	0.0	800	36.0	20.7
01-02-97	-13	-10.5	67.5	58.3	0.1	41.1	0.5	600	27.0	15.7

(1) Calculated Flow = Velocity (FPM) x .045
NA: Not Available

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REFUSE HIDEAWAY LANDFILL GAS EXTRACTION SYSTEM-WELL HEAD MONITORING

WELL NUMBER: GW-9

DATE	HEADER PRESSURE (IN W.C.)	WELL PRESSURE (IN W.C.)	GAS TEMP. (F)	METHANE (CH_4%)	OXYGEN (O_2%)	CARBON DIOXIDE (CO_2%)	BALANCE (%)	VELOCITY (FPM)	CALCULATED FLOW[1] (CFM)	METHANE FLOW (CFM)
01-23-96	-28	-28	60.0	75.1	0.4	25.0	0.0	1,200	54.0	40.5
03-14-96	-25	-25	64.0	58.5	0.5	41.4	0.0	650	29.25	17.1
04-09-96	-25	-25	53.4	51.4	2.2	32.5	12.0	800	36.0	18.5
05-30-96	-24	-24	73.2	58.8	0.7	40.4	0.0	600	27.0	15.9
07-10-96	-21	-21	83.4	59.1	0.0	40.9	0.0	700	31.5	18.6
07-31-96	-18	-18	73.6	54.4	2.1	38.2	5.7	400	18.0	9.8
08-23-96	←				POWER	FAILURE →				
09-30-96	←				POWER	FAILURE →				
11-04-96	-22	-22	65.4	54.9	1.6	36.4	7.5	700	31.5	17.3
12-04-96	-15	-15	42.5	56.3	1.1	41.8	0.8	500	22.5	12.7
01-02-97	-11	-7	52.9	59.3	0.2	40.5	0.0	600	27.0	16.0

(1) Calculated Flow = Velocity (FPM) x .045
NA: Not Available

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REFUSE HIDEAWAY LANDFILL GAS EXTRACTION SYSTEM-WELL HEAD MONITORING

WELL NUMBER: GW-10

DATE	HEADER PRESSURE (IN W.C.)	WELL PRESSURE (IN W.C.)	GAS TEMP. (F)	METHANE (CH_4%)	OXYGEN (O_2%)	CARBON DIOXIDE (CO_2%)	BALANCE (%)	VELOCITY (FPM)	CALCULATED FLOW[(1)] (CFM)	METHANE FLOW (CFM)
01-23-96	-25	-15	102.0	50.4	0.0	46.4	4.3	1,100	49.5	24.9
03-14-96	-24	-13	108.0	40.5	0.2	38.5	21.3	1,000	45.0	18.2
04-09-96	-24	-15	109.7	33.3	1.3	30.7	5.0	900	40.5	13.5
05-30-96	-23	-15	111.0	37.0	0.0	37.4	25.5	600	27.0	10.0
07-10-96	-21	-11	109.7	43.4	0.0	42.9	14.0	1,050	47.3	20.5
07-31-96	-19	-12	104.5	50.3	0.8	35.2	13.9	850	38.3	19.2
08-23-96	←				POWER	FAILURE				→
09-30-96	←				POWER	FAILURE				→
11-04-96	-20	-12	105.2	30.0	0.6	30.3	39.4	1,000	45.0	13.5
12-04-96	-16	-12	103.1	30.8	0.3	34.3	34.6	800	36.0	11.1
01-02-97	-13	-7.5	104.3	31.0	0.0	32.3	36.7	750	33.8	10.5

(1) Calculated Flow = Velocity (FPM) x .045
NA: Not Available

REFUSE\cim07.tab

REFUSE HIDEAWAY LANDFILL GAS EXTRACTION SYSTEM-WELL HEAD MONITORING

WELL NUMBER: GW-11

DATE	HEADER PRESSURE (IN W.C.)	WELL PRESSURE (IN W.C.)	GAS TEMP. (F)	METHANE (CH_4%)	OXYGEN (O_2%)	CARBON DIOXIDE (CO_2%)	BALANCE (%)	VELOCITY (FPM)	CALCULATED FLOW[1] (CFM)	METHANE FLOW (CFM)
01-23-96	-27	-27	75.0	73.6	0.0	26.9	0.0	700	31.5	23.2
03-14-96	-22	-22	84.0	31.9	9.2	25.4	33.0	450	20.25	6.5
04-09-96	-22	-22	71.6	57.6	1.1	34.3	7.1	700	31.5	18.1
05-30-96	-22	-21	70.6	68.3	0.0	31.6	0.0	500	22.5	15.4
07-10-96	-19	-19	81.3	68.0	0.0	32.0	0.0	110	4.9	3.3
07-31-96	-14	-14	70.7	59.8	1.4	32.9	9.7	400	18.0	10.8
08-23-96	←				POWER	FAILURE				→
09-30-96	←				POWER	FAILURE				→
11-04-96	-20	-20	59.0	62.2	0.6	36.6	1.2	2,200	99.0	61.6
12-04-96	-15	-15	60.5	57.8	0.2	36.2	5.8	600	27.0	15.6
01-02-97	-12	-12	52.0	61.9	0.0	37.5	0.6	700	31.5	19.5

(1) Calculated Flow = Velocity (FPM) x .045
NA: Not Available

REFUSE\cim07.tab

REFUSE HIDEAWAY LANDFILL GAS EXTRACTION SYSTEM-WELL HEAD MONITORING

WELL NUMBER: GW-12

DATE	HEADER PRESSURE (IN W.C.)	WELL PRESSURE (IN W.C.)	GAS TEMP. (F)	METHANE (CH_4%)	OXYGEN (O_2%)	CARBON DIOXIDE (CO_2%)	BALANCE (%)	VELOCITY (FPM)	CALCULATED FLOW[(1)] (CFM)	METHANE FLOW (CFM)
01-23-96	-25	-7	110.4	55.8	0.0	44.0	0.0	800	36.0	20.1
03-14-96	-22	-5	104.5	45.4	0.3	42.1	13.5	1,000	45.0	20.4
04-09-96	-22	-8	101.1	44.2	0.8	32.5	22.3	1,200	54.0	23.9
05-30-96	-24	-6	103.4	52.5	0.0	41.8	5.1	1,200	54.0	28.4
07-10-96	-19	-7	102.2	58.2	0.0	41.8	0.0	1,100	49.5	28.8
07-31-96	-18	-5	104.0	54.9	0.8	36.6	8.2	800	36.0	19.8
08-23-96	←				POWER	FAILURE →				
09-30-96	←				POWER	FAILURE →				
11-04-96	-22	-17	101.1	32.7	0.7	29.7	36.9	2,200	99.0	32.4
12-04-96	-15	-15	100.2	33.3	0.0	32.4	34.3	1,200	54.0	18.0
01-02-97	-12	-10	97.4	34.1	0.0	31.7	34.2	1,500	67.5	23.0

(1) Calculated Flow = Velocity (FPM) x .045
NA: Not Available

REFUSE\cim07.tab

REFUSE HIDEAWAY LANDFILL GAS EXTRACTION SYSTEM-WELL HEAD MONITORING

WELL NUMBER: GW-13

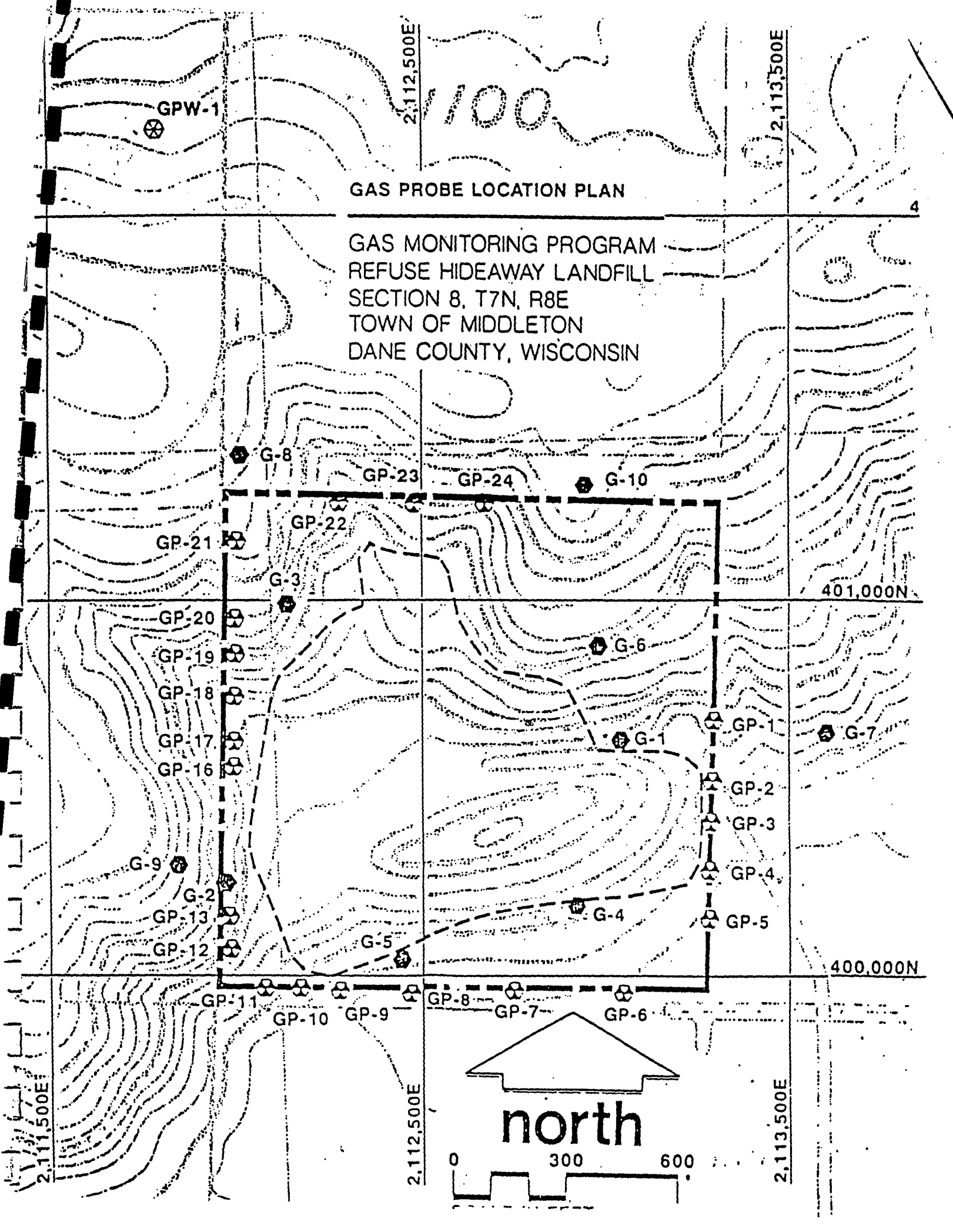
DATE	HEADER PRESSURE (IN W.C.)	WELL PRESSURE (IN W.C.)	GAS TEMP. (F)	METHANE (CH_4%)	OXYGEN (O_2%)	CARBON DIOXIDE (CO_2%)	BALANCE (%)	VELOCITY (FPM)	CALCULATED FLOW[(1)] (CFM)	METHANE FLOW (CFM)
01-23-96	-25	-25	74.1	70.3	0.2	30.1	0.0	1,000	45.0	31.6
03-14-96	-22	-22	60.0	56.0	0.4	43.1	0.0	400	18.0	10.1
04-09-96	-22	-22	64.9	56.0	0.9	37.7	4.9	800	36.0	20.2
05-30-96	-22	-13	71.6	63.0	0.0	37.1	0.0	600	27.0	17.0
07-10-96	-20	-19	78.8	64.5	0.0	35.5	0.0	400	18.0	11.6
07-31-96	-18	-18	73.4	57.6	0.8	38.8	2.4	400	18.0	10.4
08-23-96	←				POWER	FAILURE				→
09-30-96	←				POWER	FAILURE				→
11-04-96	-20	-20	69.6	57.4	0.4	39.7	2.6	600	27.0	15.5
12-04-96	-16	-16	62.9	54.7	0.2	42.4	2.7	500	22.5	12.3
01-02-97	-12	-12	62.3	55.3	0.0	40.7	4.0	600	27.0	14.9

(1) Calculated Flow = Velocity (FPM) x .045
NA: Not Available

REFUSE\cim07.tab

TABLE 2

GAS PROBE MONITORING SUMMARY


GAS PROBE LOCATION PLAN
GAS MONITORING PROGRAM
REFUSE HIDEAWAY LANDFILL
SECTION 8, T7N, R8E
TOWN OF MIDDLETON
DANE COUNTY, WISCONSIN
GPW-1
G-8
GP-23
GP-24
G-10
GP-22
GP-21
G-3
GP-20
GP-19
GP-18
GP-17
GP-16
G-6
G-1
GP-1
G-7
GP-2
GP-3
GP-4
GP-5
G-9
G-2
GP-13
GP-12
G-5
G-4
GP-11
GP-10
GP-9
GP-8
GP-7
GP-6
401,000N
400,000N
2,111,500E
2,112,500E
2,113,500E
north
0
300
600

REFUSE HIDEAWAY LANDFILL

GAS PROBE MONITORING SUMMARY 1996

GAS PROBE G-1S

DATE	PRESSURE (in. WC)	METHANE (%CH4)	METHANE (%LEL)[1]	OXYGEN (%02)
01-25-96	0.0	0.0	0.0	20.5
03-14-96	0.0	0.0	0.0	22.0
04-05-96	0.0	0.0	0.0	21.8
05-30-96	0.0	0.0	0.0	19.9
07-12-96	0.0	6.8	>100	15.4
08-01-96	0.0	0.0	0	21.5
08-23-96	0.0	51.8	>100	0.9
09-30-96	0.0	0.0	0.0	20.6
11-01-96	0.0	0.0	0.0	20.9
12-03-96	0.0	0.0	0.0	21.1
12-31-96	0.0	0.0	0.0	20.9

[1] Percent of lower explosive limit of Methane (100% LEL = 5% CH4 by volume)

NA: Not Available
Not Applicable

REFUSE\gaspro96.tbl

REFUSE HIDEAWAY LANDFILL

GAS PROBE MONITORING SUMMARY 1996

GAS PROBE G-1D

DATE	PRESSURE (in. WC)	METHANE (%CH4)	METHANE (%LEL)[1]	OXYGEN (%02)
01-25-96	0.0	0.0	0.0	20.6
03-14-96	0.0	0.0	0.0	21.9
04-05-96	0.0	0.0	0.0	21.8
05-30-96	0.0	0.0	0.0	20.1
07-12-96	0.0	2.4	48.0	20.1
08-01-96	0.0	0.0	0.0	21.5
08-23-96	0.0	44.5	7,100	0.9
09-30-96	0.0	0.0	0.0	21.2
11-01-96	0.0	0.0	0.0	20.9
12-03-96	0.0	0.0	0.0	21.0
12-31-96	0.0	0.0	0.0	21.0

[1] Percent of lower explosive limit of Methane (100% LEL = 5% CH4 by volume)

NA: Not Available
Not Applicable

REFUSE\gaspro96.tbl

REFUSE HIDEAWAY LANDFILL

GAS PROBE MONITORING SUMMARY 1996

GAS PROBE G-6

DATE	PRESSURE (in. WC)	METHANE (%CH4)	METHANE (%LEL)[1]	OXYGEN (%02)
01-25-96	0.0	0.0	0.0	20.3
03-14-96	0.0	0.0	0.0	22.3
04-05-96	0.0'	0.0	0.0	21.8
05-30-96	0.0	0.0	0.0	20.1
07-12-96	0.0	0.0	0.0	21.5
08-01-96	0.0	0.0	0.0	21.1
08-23-96	0.0	0.0	0.0	21.6
09-30-96	0.0	0.0	0.0	21.1
11-01-96	0.0	0.0	0.0	20.9
12-03-96	0.0	0.0	0.0	18.9
12-31-96	0.0	0.0	0.0	20.5

[1] Percent of lower explosive limit of Methane (100% LEL = 5% CH4 by volume)

NA: Not Available
Not Applicable

REFUSE\gaspro96.tbl

REFUSE HIDEAWAY LANDFILL

GAS PROBE MONITORING SUMMARY 1996

GAS PROBE G-8

DATE	PRESSURE (in. WC)	METHANE (%CH4)	METHANE (%LEL)[1]	OXYGEN (%02)
01-25-96	0.0	0.0	0.0	20.3
03-14-96	0.0	0.0	0.0	21.9
04-05-96	0.0	0.0	0.0	22.3
05-30-96	0.0	0.0	0.0	20.3
07-12-96	0.0	0.0	0.0	21.8
08-01-96	0.0	0.0	0.0	21.6
08-23-96	0.0	0.0	0.0	21.6
09-30-96	0.0	0.0	0.0	21.2
11-01-96	0.0	0.0	0.0	21.0
12-03-96	0.0	0.0	0.0	20.5
12-31-96	0.0	0.0	0.0	20.3

[1] Percent of lower explosive limit of Methane (100% LEL = 5% CH4 by volume)

NA: Not Available
Not Applicable

REFUSE\gaspro96.tbl

REFUSE HIDEAWAY LANDFILL

GAS PROBE MONITORING SUMMARY 1996

GAS PROBE G-9

DATE	PRESSURE (in. WC)	METHANE (%CH4)	METHANE (%LEL)[1]	OXYGEN (%02)
01-25-96	0.0	0.0	0.0	19.6
03-14-96	0.0	0.0	0.0	21.2
04-05-96	0.0	0.0	0.0	22.0
05-30-96	0.0	0.0	0.0	20.3
07-12-96	0.0	0.0	0.0	21.5
08-01-96	0.0	0.0	0.0	21.4
08-23-96	0.0	0.0	0.0	21.6
09-30-96	0.0	0.0	0.0	21.2
11-01-96	0.0	0.0	0.0	21.0
12-03-96	0.0	0.0	0.0	20.8
12-31-96	0.0	0.0	0.0	19.9

[1] Percent of lower explosive limit of Methane (100% LEL = 5% CH4 by volume)

NA: Not Available
Not Applicable

REFUSE\gaspro96.tbl

REFUSE HIDEAWAY LANDFILL

GAS PROBE MONITORING SUMMARY 1996

GAS PROBE G-10

DATE	PRESSURE (in. WC)	METHANE (%CH4)	METHANE (%LEL)[1]	OXYGEN (%02)
01-25-96	0.0	0.0	0.0	20.3
03-14-96	0.0	0.0	0.0	20.3
04-05-96	0.0	0.0	0.0	21.9
05-30-96	0.0	0.0	0.0	20.2
07-12-96	0.0	0.0	0.0	21.9
08-01-96	0.0	0.0	0.0	21.5
08-23-96	0.0	0.0	0.0	21.6
09-30-96	0.0	0.0	0.0	21.2
11-01-96	0.0	0.0	0.0	20.9
12-03-96	0.0	0.0	0.0	20.5
12-31-96	0.5	0.0	0.0	20.3

[1] Percent of lower explosive limit of Methane (100% LEL = 5% CH4 by volume)

NA: Not Available
Not Applicable

REFUSE\gaspro96.tbl

REFUSE HIDEAWAY LANDFILL

GAS PROBE MONITORING SUMMARY 1996

GAS PROBE GP-11S

DATE	PRESSURE (in. WC)	METHANE (%CH4)	METHANE (%LEL)[1]	OXYGEN (%02)
01-25-96	←	LOCK FROZEN		→
03-14-96	0.0	0.0	0.0	22.1
04-05-96	0.0	0.0	0.0	21.9
05-30-96	0.0	0.1	2.0	18.3
07-12-96	0.0	13.6	7,100	2.1
08-01-96	0.0	6.5	7,100	1.9
08-23-96	0.0	3.9	78	1.6
09-30-96	0.0	0.0	0.0	19.8
11-01-96	0.0	0.0	0.0	20.3
12-03-96	0.0	0.0	0.0	20.3
12-31-96	0.0	0.0	0.0	19.9

[1] Percent of lower explosive limit of Methane (100% LEL = 5% CH4 by volume)

NA: Not Available
Not Applicable

REFUSE\gaspro96.tbl

REFUSE HIDEAWAY LANDFILL

GAS PROBE MONITORING SUMMARY 1996

GAS PROBE GP-11D

DATE	PRESSURE (in. WC)	METHANE (%CH4)	METHANE (%LEL)[1]	OXYGEN (%02)
01-25-96	←	LOCK FROZEN		→
03-14-96	0.0	0.0	0.0	22.0
04-05-96	0.0	0.0	0.0	22.0
05-30-96	0.0	0.0	0.0	19.2
07-12-96	0.0	8.2	7,100	0.9
08-01-96	0.0	12.7	7,100	2.8
08-23-96	0.0	13.8	7,100	1.9
09-30-96	0.0	0.0	0.0	18.9
11-01-96	0.0	0.0	0.0	20.5
12-03-96	0.0	0.0	0.0	20.5
12-31-96	0.0	0.0	0.0	20.4

[1] Percent of lower explosive limit of Methane (100% LEL = 5% CH4 by volume)

NA: Not Available
Not Applicable

REFUSE\gaspro96.tbl

REFUSE HIDEAWAY LANDFILL

GAS PROBE MONITORING SUMMARY 1996

GAS PROBE GPW-1S

DATE	PRESSURE (in. WC)	METHANE (%CH4)	METHANE (%LEL)[1]	OXYGEN (%02)
01-25-96	←	LOCK FROZEN		→
03-14-96	0.0	0.0	0.0	21.1
04-05-96	0.0	0.0	0.0	21.3
05-30-96	0.0	0.0	0.0	20.0
07-12-96	0.0	0.0	0.0	21.5
08-01-96	0.0	0.0	0.0	21.3
08-23-96	0.0	0.0	0.0	21.1
09-30-96	0.0	0.0	0.0	19.9
11-01-96	0.0	0.0	0.0	20.7
12-03-96	0.0	0.0	0.0	20.1
12-31-96	0.0	0.0	0.0	20.2

[1] Percent of lower explosive limit of Methane (100% LEL = 5% CH4 by volume)

NA: Not Available
Not Applicable

REFUSE\gaspro96.tbl

REFUSE HIDEAWAY LANDFILL

GAS PROBE MONITORING SUMMARY 1996

GAS PROBE GPW-1M

DATE	PRESSURE (in. WC)	METHANE (%CH4)	METHANE (%LEL)[1]	OXYGEN (%02)
01-25-96	←	LOCK FROZEN		→
03-14-96	-0.25	0.0	0.0	22.0
04-05-96	0.0	0.0	0.0	21.8
05-30-96	0.0	0.0	0.0	20.1
07-12-96	0.0	0.0	0.0	19.7
08-01-96	0.0	0.0	0.0	21.5
08-23-96	0.0	0.0	0.0	21.4
09-30-96	0.0	0.0	0.0	19.3
11-01-96	0.0	0.0	0.0	20.5
12-03-96	0.0	0.0	0.0	20.8
12-31-96	0.0	0.0	0.0	20.1

[1] Percent of lower explosive limit of Methane (100% LEL = 5% CH4 by volume)

NA: Not Available
Not Applicable

REFUSE\gaspro96.tbl

REFUSE HIDEAWAY LANDFILL

GAS PROBE MONITORING SUMMARY 1996

GAS PROBE GPW-1D

DATE	PRESSURE (in. WC)	METHANE (%CH4)	METHANE (%LEL)[1]	OXYGEN (%02)
01-25-96	←	LOCK FROZEN		→
03-14-96	-0.25	0.0	0.0	21.8
04-05-96	0.0	0.0	0.0	21.8
05-30-96	0.0	0.0	0.0	20.2
07-12-96	0.0	0.0	0.0	20.8
08-01-96	0.0	0.0	0.0	21.5
08-23-96	0.0	0.0	0.0	19.6
09-30-96	0.0	0.0	0.0	19.5
11-01-96	0.0	0.0	0.0	20.7
12-03-96	0.0	0.0	0.0	19.3
12-31-96	0.0	0.0	0.0	19.1

[1] Percent of lower explosive limit of Methane (100% LEL = 5% CH4 by volume)

NA: Not Available
Not Applicable

REFUSE\gaspro96.tbl

REFUSE HIDEAWAY LANDFILL

GAS PROBE MONITORING SUMMARY 1996

GAS PROBE - SCALE HOUSE

DATE	PRESSURE (in. WC)	METHANE (%CH4)	METHANE (%LEL)[1]	OXYGEN (%02)
01-25-96	NA	0.0	0.0	20.5
03-14-96	NA	0.0	0.0	21.1
04-05-96	NA	0.0	0.0	21.9
05-30-96	NA	0.0	0.0	20.1
07-12-96	NA	0.0	0.0	21.9
08-01-96	NA	0.0	0.0	21.5
08-23-96	NA	0.0	0.0	21.6
09-30-96	NA	0.0	0.0	21.2
11-01-96	NA	0.0	0.0	21.4
12-03-96	NA	0.0	0.0	20.9
12-31-96	NA	0.0	0.0	20.8

[1] Percent of lower explosive limit of Methane (100% LEL = 5% CH4 by volume)

NA: Not Available
Not Applicable

REFUSE\gaspro96.tbl

REFUSE HIDEAWAY LANDFILL

GAS PROBE MONITORING SUMMARY 1996

GAS PROBE - SHOP

DATE	PRESSURE (in. WC)	METHANE (%CH4)	METHANE (%LEL)[1]	OXYGEN (%02)
01-25-96	NA	0.0	0.0	20.4
03-14-96	NA	0.0	0.0	22.0
04-05-96	NA	0.0	0.0	21.9
05-30-96	NA	0.0	0.0	20.1
07-12-96	NA	0.0	0.0	21.9
08-01-96	NA	0.0	0.0	21.5
08-23-96	NA	0.0	0.0	21.6
09-30-96	NA	0.0	0.0	21.2
11-01-96	NA	0.0	0.0	21.3
12-03-96	NA	0.0	0.0	20.7
12-31-96	NA	0.0	0.0	20.8

[1] Percent of lower explosive limit of Methane (100% LEL = 5% CH4 by volume)

NA: Not Available
Not Applicable

REFUSE\gaspro96.tbl

TABLE 3

LEACHATE HEAD SUMMARY

REFUSE HIDEAWAY LANDFILL
LEACHATE HEAD MONITORING
SUMMARY 1996

DATE	LEACHATE HEAD (FEET)												
	GW-1	GW-2	GW-3	GW-4 (1)	GW-5 (1)	GW-6	GW-7 (1)	GW-8 (1)	GW-9 (1)	GW-10	GW-11 (1)	GW-12 (1)	GW-13 (1)
01-25-96	0.1	0.0	1.8	7.7	5.7	1.6	13.9	21.7	13.1	3.7	4.6	8.3	17.0
03-04-96	0.0	0.0	2.5	11.9	17.9	1.7	11.4	22.0	21.5	7.7	6.0	NR	11.5
04-08-96	0.0	0.0	0.6	9.9	14.6	3.0	NR	22.4	21.9	5.6	0.9	22.9	11.9
05-30-96	0.7	0.3	1.1	12.9	18.1	2.8	12.8	22.2	24.4	7.3	12.8	24.4	NR
07-10-96	0.0	0.0	1.1	7.5	NR	2.6	11.4	16.7	7.9	6.6	6.7	NR	8.2
07-31-96	0.1	0.0	2.7	7.7	7.6	1.6	10.9	5.6	2.8	6.4	4.1	7.0	4.8
08-23-96	0.2	0.1	0.3	10.9	9.7	1.5	10.0	18.7	10.2	5.8	15.2	24.6	10.8
09-30-96	0.2	0.1	0.1	11.8	10.4	1.3	9.8	19.2	10.8	6.5	15.9	25.9	11.7
11-01-96	0.1	0.1	0.7	0.5	0.5	1.1	0.4	0.5	0.2	6.7	0.5	0.5	0.5
12-03-96	0.1	0.1	0.5	0.5	0.4	0.8	0.4	0.5	0.4	4.5	0.5	0.5	0.5
12-31-96	0.1	0.1	0.7	0.4	0.5	1.5	0.4	0.5	0.4	4.6	0.5	0.5	0.5

(1) Wells with permanent pumps
NA: Not Available
NR: No Response

REFUSE\cim09.tab

TABLE 4

LEACHATE/CONDENSATE

LOAD OUT SUMMARY

#2488

Attn: Jim

1996

PUMPING REPORT

Property Owner: Town Engineering - Refuse Hideaway Landfill

Owner Mailing Address: 2201 Vondron Rd

Madison WI ZIP 53704-6795

Holding Tank Location:
Street Address: Hwy 14

Township: Middleton Section

CSM/Subdiv: Lot #

Tax Parcel Number:

Pumper's Name: Al's Modern Sewer Service License #5546

Disposal Site: Nine Springs - Madison Metro Sewerage

PUMPING INFORMATION

Give date of pumping and volume pumped.

JAN		GAL	JUL	11,15,18,22,26,27	GAL 32959
FEB	27	GAL 9919	AUG	5,6,7,15	GAL 17160
MAR	14,15,27	GAL 14274	SEP		GAL
APR	23	GAL 7385	OCT	23,25,28,30	GAL 27,024
MAY	10	GAL 3294	NOV	4,8,11,13,20,25,15	GAL 35,889
JUN	10,24	GAL 7850	DEC	5,9,11,8,23,31	GAL 41,632

COMMENTS:

This form completed by: Lisa M Thompson

NOTE: REPORTS ARE DUE NO LATER THAN JULY 10 AND JANUARY 10

RETURN REPORTS TO: Dane County Environmental Health, 1206 Northport Drive, Rm. 107, Madison, WI., 53704-2088. If you have any questions call us at (608) 242-6515.

REFUSE HIDEAWAY LANDFILL

LEACHATE LOADOUT SUMMARY FOR 1996

DATE	GALLONS	MONTHLY TOTAL (Gals)	
JANUARY		JANUARY	0
02-27-96	5,257		
02-27-96	4,662	FEBRUARY	9,919
03-14-96	4,859		
03-15-96	4,790		
03-27-96	4,625	MARCH	14,274
04-23-96	4,385	APRIL	4,385
05-10-96	3,294	MAY	3,294
06-10-96	4,025		
06-24-96	3,831	JUNE	7,856
07-11-96	4,585		
07-11-96	4,900		
07-15-96	4,894		
07-15-96	4,679		
07-18-96	3,922		
07-22-96	3,831		
07-26-96	3,647		
07-26-96	4,071		
07-31-96	5,430	JULY	39,959
08-05-96	4,388		
08-06-96	4,239		
08-07-96	4,598		
08-15-96	3,735	AUGUST	22,390
SEPTEMBER		SEPTEMBER	0
10-23-96	3,901		
10-28-96	9,514		
10-30-96	4,061		
10-31-96	9,648	OCTOBER	27,124

REFUSE HIDEAWAY LANDFILL
LEACHATE LOADOUT SUMMARY FOR 1996

DATE	GALLONS	MONTHLY TOTAL (Gals)
11-01-96	4,827	
11-04-96	4,679	
11-08-96	4,669	
11-11-96	4,580	
11-12-96	4,616	
11-15-96	4,616	
11-20-96	4,962	
11-25-96	2,940	NOVEMBER 35,889
12-05-96	14,056	
12-09-96	9,344	
12-17-96	4,679	
12-18-96	4,693	
12-23-96	4,430	DECEMBER 37,202
TOTAL = 202,292 GALLONS		

TABLE 5

ALARM CONDITION

SUMMARY

TABLE 5

REFUSE HIDEAWAY LANDFILL
MONTHLY SUMMARY OF SYSTEM ALARM LOG
Date: January 1996

ALARM DATE	ALARM CAUSE	SOLUTION (HOURS FLARE NOT OPERATIONAL)
01/10/96 (4:30AM)	FLAME FAILURE. CAUSE NOT DETERMINED	RE-START BLOWER/FLARE 4:00PM ON 01/10/96 (11.5 HRS)
01/13/96 (6:45AM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLAME 9:00AM ON 01/16/96. (74.25 HRS)
01/20/96 (3:15AM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE 8:45AM ON 01/22/96 (41.5 HRS)
01/31/96 (3:30AM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE 9:30AM ON 01/31/96 (6.0 HRS)

TABLE 5

REFUSE HIDEAWAY LANDFILL
MONTHLY SUMMARY OF SYSTEM ALARM LOG
Date: February 1996

ALARM DATE	ALARM CAUSE	SOLUTION (HOURS FLARE NOT OPERATIONAL)
02/02/96 (8:00 AM)	FLAME FAILURE. CAUSE NOT DETERMINED	RE-START BLOWER/FLARE 10:30 AM ON 02/02/96 (2.5 HRS)
02/03/96 (4:30 AM)	FLAME FAILURE. CAUSE NOT DETERMINED. POSSIBLY -20°F AIR TEMPERATURE.	RE-START BLOWER/FLAME 1:45 PM ON 02/05/96. (57.25 HRS)
02/09/96 (7:00 AM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE 8:15 AM ON 02/09/96 (1.25 HRS)
02/09/96 (5:15 PM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE 9:00 AM ON 02/12/96 (63.75 HRS)
02/15/96 (4:50 PM)	FLAME FAILURE. CAUSE NOT DETERMINED	RE-START BLOWER/FLARE 11:50 AM ON 02/16/96 (19.0 HRS)
02/17/96 (11:15 AM)	FLAME FAILURE. CAUSE NOT DETERMINED	RE-START BLOWER/FLARE 7:15 AM ON 02/19/96 (32.0 HRS)
02/20/96 (12:00 PM)	FLAME FAILURE. CAUSE NOT DETERMINED	RE-START BLOWER/FLARE, CHANGE RSET RPM FROM 6.0 TO 6.25 12:30 PM ON 02/20/96 (0.5 HRS)
02/20/96 (4:30 PM)	FLAME FAILURE. CAUSE NOT DETERMINED	RE-START BLOWER/FLARE, CHANGE RSET RPM FROM 6.25 TO 6.0 5:00 PM ON 02/20/96 (0.5 HRS)
02/24/96 (9:30 AM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE 9:30 AM ON 02/26/96 (36.0 HRS)
02/27/96 (2:15 AM)	FLAME FAILURE. CAUSE NOT DETERMINED	RE-START BLOWER/FLARE 8:15 AM ON 02/27/96 (6.0 HRS)
03/05/96 (1:00 AM)	FLAME FAILURE. CAUSE NOT DETERMINED	RE-START BLOWER/FLARE 8:30 AM ON 03/05/96 (7.5 HRS)
03/06/96 (3:30 AM)	FLAME FAILURE. ELECTRICAL CIRCUIT BREAKER TRIPPED.	RE-START BLOWER/FLARE 8:30AM ON 03/07/96 (29.0 HRS)
03/13/96 (1:00 AM)	FLAME FAILURE. CAUSE NOT DETERMINED	RE-START BLOWER/FLARE 8:30 AM ON 03/13/96 (7.5 HRS)
03/13/96 (6:30 PM)	FLAME FAILURE. CAUSE NOT DETERMINED	RE-START BLOWER/FLARE 9:30 AM ON 03/14/96 (15.0 HRS)

TABLE 5

REFUSE HIDEAWAY LANDFILL
MONTHLY SUMMARY OF SYSTEM ALARM LOG
Date: March 1996

ALARM DATE	ALARM CAUSE	SOLUTION (HOURS FLARE NOT OPERATIONAL)
03/15/96 (6:30 PM)	FLAME FAILURE. CAUSE NOT DETERMINED	RE-START BLOWER/FLARE 8:30 AM. ON 03/18/96 (62.0 HRS)
03/22/96 (8:00 PM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLAME 8:00 AM. ON 03/25/96. (60.5 HRS)
03/27/96 (10:00 PM)	FLAME FAILURE. CAUSE NOT DETERMINED. POSSIBLE LOW FLOWS	RE-START BLOWER/FLARE 8:15 AM. ON 03/28/96 (10.25 HRS)
04/01/96 (3:30 AM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE 5:30 PM. ON 04/01/96 (14.0 HRS)
04/02/96 (8:00 AM)	FLAME FAILURE. CAUSE NOT DETERMINED	RE-START BLOWER/FLARE 1:15 PM. ON 04/03/96 (17.25 HRS)
04/05/96 (2:30 AM)	FLAME FAILURE. CAUSE NOT DETERMINED	RE-START BLOWER/FLARE 8:30 AM. ON 04/05/96. CHANGED PROP BD FROM 17.5 TO 17.0. CHANGED RATE MIN FROM 0.20 TO 0.25 (6.0 HRS)
04/05/96 (1:30 PM)	FLAME FAILURE. CAUSE NOT DETERMINED	RE-START BLOWER/FLARE, 4:30 PM. ON 04/05/96 AND RETURNED ABOVE MENTIONED PARAMETERS TO ORIGINAL VALUES (3.0 HRS)
04/06/96 (1:00 AM)	FLAME FAILURE. CAUSE NOT DETERMINED	RE-START BLOWER/FLARE, 8:30 AM. ON 04/08/96 (55.5 HRS)

TABLE 5

REFUSE HIDEAWAY LANDFILL
MONTHLY SUMMARY OF SYSTEM ALARM LOG
Date: April 1996

ALARM DATE	ALARM CAUSE	SOLUTION (HOURS FLARE NOT OPERATIONAL)
04/11/96 (8:00 PM)	FLAME FAILURE. CAUSE NOT DETERMINED	RE-START BLOWER/FLARE, 9:00 AM. ON 04/12/96 (13.0 HRS)
04/15/96 (8:30 PM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, 10:30 AM. ON 04/17/96 (38.0 HRS)
04/19/96 (6:30 AM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, 9:30 AM. ON 04/19/96 (3.0 HRS)
04/19/96 (7:30 PM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, 8:15 AM. ON 04/22/96 (60.75 HRS)
04/25/96 (3:30 PM)	FLAME FAILURE. CAUSE NOT DETERMINED	RE-START BLOWER/FLARE, 8:00 AM. ON 04/26/96 (16.5 HRS)
04/27/96 (2:00 AM)	FLAME FAILURE. CAUSE NOT DETERMINED	RE-START BLOWER/FLARE, 7:15 AM. ON 04/29/96 (53.25 HRS)
05/05/96 (10:45 PM)	FLAME FAILURE. CAUSE NOT DETERMINED	RE-START BLOWER/FLARE, 9:15 AM. ON 05/06/96 (10.5 HRS)
05/07/96 (9:15 PM)	FLAME FAILURE. CAUSE NOT DETERMINED	RE-START BLOWER/FLARE, 8:15 PM. ON 05/08/96 (11.0 HRS)
05/09/96 (12:15 AM)	FLAME FAILURE. CAUSE NOT DETERMINED. POSSIBLY DUE TO HEAVY RAINS.	RE-START BLOWER/FLARE, 9:45 AM. ON 05/09/96 (9.5 HRS)

TABLE 5

REFUSE HIDEAWAY LANDFILL
MONTHLY SUMMARY OF SYSTEM ALARM LOG
Date: May 1996

ALARM DATE	ALARM CAUSE	SOLUTION (HOURS FLARE NOT OPERATIONAL)
05/11/96 (7:30 PM)	FLAME FAILURE, POSSIBLY DUE TO DECREASED FLOWS.	RE-START BLOWER/FLARE, 8:45 AM. ON 05/15/96 (97.25 HRS) * RE-START DELAYED DUE TO ELECTRICAL WORK ON AIR COMPRESSOR
05/18/96 (8:30 PM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, 4:30 PM. ON 05/22/96 (92.0 HRS)
05/25/96 (10:45 AM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, 7:45 AM. ON 05/28/96 (69.0 HRS)
05/29/96 (10:30 AM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, 1:45 PM. ON 05/29/96 (3.25 HRS)
05/30/96 (3:00 AM)	FLAME FAILURE. CAUSE NOT DETERMINED	RE-START BLOWER/FLARE, 9:00 AM. ON 05/30/96. CHANGED PROP BD FROM 17.5 TO 18.0 (6.0 HRS)
05/30/96 (8:00 PM)	FLAME FAILURE. CAUSE NOT DETERMINED	RE-START BLOWER/FLARE, 8:00 AM. ON 05/31/96. CHANGED PROP BD FROM 18.0 TO 17.5 (12.0 HRS)

TABLE 5

REFUSE HIDEAWAY LANDFILL
MONTHLY SUMMARY OF SYSTEM ALARM LOG
Date: June 1996

ALARM DATE	ALARM CAUSE	SOLUTION (HOURS FLARE NOT OPERATIONAL)
05/31/96 (10:30 AM)	FLAME FAILURE. CAUSE NOT DETERMINED, POSSIBLY DUE TO DECREASED FLOWS DUE TO ELEVATED LEACHATE LEVELS.	RE-START BLOWER/FLARE AT 10:30 AM. ON 06/03/96 (60.5 HRS)
06/05/96 (12:00 AM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, AT 8:30 AM ON 06/05/96 (8.0 HRS)
06/05/96 (6:30 PM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, AT 9:00 AM ON 06/06/96 (14.5 HRS)
06/07/96 (6:30 AM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, AT 8:00 AM ON 06/07/96 (1.5 HRS) ADJUSTED UDC CONTROLLER PARAMETER RATE MIN .20 TO .15 RSET RPM 6.0 TO 5.0
06/07/96 (2:30 PM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, AT 8:00 AM ON 06/10/96. (65.5 HRS) RE-SET UDC CONTROLLER PARAMETERS RATE MIN .15 TO .20 RSET RPM 5.0 TO 6.0
06/12/96 (9:00 PM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, AT 8:00 AM ON 06/13/96. (11.0 HRS)
06/13/96 (10:00 PM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, AT 1:15 PM ON 06/14/96 (15.25 HRS)
06/14/96 (11:30 PM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, AT 8:15 AM ON 06/17/96 (56.75 HRS)
06/18/96 (7:00 PM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, AT 3:00 PM ON 06/24/96 (152.0 HRS) DELAYED RESTART DUE TO ELECTRICAL SERVICE WORK.
06/25/96 (8:15 PM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, AT 5:00 PM ON 06/27/96 (44.75 HRS)
06/30/96 (8:00 PM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, AT 9:00 AM ON 07/01/96 (13.0 HRS)
07/02/96 (7:30 PM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, AT 1:00 PM ON 07/03/96 (18.5 HRS)
07/03/96 (7:30 PM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, AT 10:00 AM ON 07/04/96 (14.5 HRS)
07/04/96 (9:30 PM)	FLAME FAILURE. CAUSE NOT DETERMINED	RE-START BLOWER/FLARE, AT 8:00 AM ON 07/08/96 (82.5 HRS)
07/10/96 (2:30 PM)	FLAME FAILURE. CAUSE NOT DETERMINED	RE-START BLOWER/FLARE, AT 7:45 AM ON 07/10/96 (5.25 HRS)

TABLE 5

REFUSE HIDEAWAY LANDFILL
MONTHLY SUMMARY OF SYSTEM ALARM LOG
Date: July 1996

ALARM DATE	ALARM CAUSE	SOLUTION (HOURS FLARE NOT OPERATIONAL)
07/10/96 (8:30 PM)	FLAME FAILURE. CAUSE NOT DETERMINED	RE-START BLOWER/FLARE, AT 5:00 PM. ON 07/11/96 (20.5 HRS)
07/14/96 (5:00 AM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, AT 1:45 PM. ON 07/15/96 (32.75 HRS)
07/16/96 (8:30 PM)	FLAME FAILURE. CAUSE NOT DETERMINED. TEMP. RECORDER TAPE SHOWS STEADY TEMPS. PRIOR TO SHUT DOWN	RE-START BLOWER/FLARE, AT 8:15 AM. ON 07/17/96 (11.75 HRS)
07/17/96 (9:30 AM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, AT 1:15 PM. ON 07/19/96 (51.75 HRS)
07/21/96 (7:30 AM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, AT 2:30 PM. ON 07/22/96 (31.0 HRS)
07/24/96 (7:30 PM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, AT 7:30 AM. ON 07/25/96 (12.0 HRS)
07/25/96 (11:30 PM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, AT 7:30 AM. ON 07/29/96 (56.0 HRS)
07/30/96 (9:30 PM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, AT 10:30 AM. ON 07/31/96 (13.0 HRS)

TABLE 5

REFUSE HIDEAWAY LANDFILL
MONTHLY SUMMARY OF SYSTEM ALARM LOG
Date: August 1996

ALARM DATE	ALARM CAUSE	SOLUTION (HOURS FLARE NOT OPERATIONAL)
08/01/96 (9:30 PM)	FLAME FAILURE, CAUSE NOT DETERMINED	RESTART BLOWER/FLARE AT 9:30 AM. ON 08/02/96 (12.0 HRS) TURNED LOW TEMPERATURE SHUT DOWN SWITCH TO "OFF"
08/02/96 (8:30 PM)	FLAME FAILURE, CAUSE NOT DETERMINED	RESTART BLOWER/FLARE AT 8:00 AM. ON 08/05/96. TURNED LOW TEMPERATURE SHUT DOWN SWITCH TO "ON" (59.5 HRS)
08/05/96 (8:30 AM)	FLAME FAILURE, POWER FAILURE. DUE TO LIGHTENING STRIKE.	"BUCK BOOSTER" TRANSFORMERS SHORTED OUT. POWER TO SYSTEM SHUT DOWN. RESTART PENDING REPAIR OF ELECTRICAL SYSTEM.

TABLE 5

REFUSE HIDEAWAY LANDFILL
MONTHLY SUMMARY OF SYSTEM ALARM LOG
Date: October 1996

ALARM DATE	ALARM CAUSE	SOLUTION (HOURS FLARE NOT OPERATIONAL)
10/19/96 (3:45 AM)	FLAME FAILURE. CAUSE NOT DETERMINED	RE-START BLOWER/FLARE, AT 8:40 AM. ON 10/21/96 (29.0 HRS)
10/24/96 (10:15 PM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, AT 9:46 AM. ON 10/26/96 (35.5 HRS)
10/28/96 (8:15 PM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, AT 8:35 AM. ON 10/29/96 (12.25 HRS)
11/1/96 (8:00 AM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, AT 12:20 PM. ON 11/01/96 (4.25 HRS)
11/02/96 (3:45 AM.)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, AT 10:05 AM. ON 11/03/96 (33.25 HRS)
11/04/96 (8:45 PM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, AT 2:25 PM. ON 11/06/96 (41.5 HRS)

TABLE 5

REFUSE HIDEAWAY LANDFILL
MONTHLY SUMMARY OF SYSTEM ALARM LOG
Date: November 1996

ALARM DATE	ALARM CAUSE	SOLUTION (HOURS FLARE NOT OPERATIONAL)
11/09/96 (10:15 AM)	FLAME FAILURE. CAUSE NOT DETERMINED	RE-START BLOWER/FLARE, AT 8:35 AM. ON 11/11/96 (46.25 HRS)
11/13/96 (7:45 AM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, AT 10:25 AM. ON 11/14/96 (26.5 HRS)
11/17/96 (10:45 AM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, AT 3:55 PM. ON 11/18/96 (29.0 HRS)
11/21/96 (2:00 AM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, AT 1:48 PM. ON 11/27/96 (156.0 HRS)
12/02/96 (9:17 AM)	FLAME FAILURE. CAUSE NOT DETERMINED.	RE-START BLOWER/FLARE, AT 11:48 AM. ON 12/03/96 (26.5 HRS)

TABLE 5

REFUSE HIDEAWAY LANDFILL
MONTHLY SUMMARY OF SYSTEM ALARM LOG
Date: December 1996

ALARM DATE	ALARM CAUSE	SOLUTION (HOURS FLARE NOT OPERATIONAL)
12/08/96 (9:00 AM)	FLAME FAILURE. DUE TO LOW LANDFILL GAS CONTENT	RE-START BLOWER/FLARE, AT 1:30 PM. ON 12/09/96 (28.50 HRS)
12/14/96 (1:30 AM)	FLAME FAILURE. DUE TO LOW LANDFILL GAS CONTENT	RE-START BLOWER/FLARE, AT 12:55 PM. ON 12/16/96 (59.50 HRS)
12/26/96 (2:45 AM)	FLAME FAILURE. DUE TO LOW LANDFILL GAS CONTENT	RE-START BLOWER/FLARE, AT 10:30 AM ON 12/27/96 (32.50 HRS)

APPENDIX 1

LEACHATE ANALYTICAL RESULTS

Commonwealth Technology, Inc.

Formerly the Laboratory Division of Mid-State Associates, Inc.

RECEIVED
OCT 30 1996
TERRA ENGINEERING

ANALYTICAL REPORT

Client I.D. No.: LT2000000010
Work Order No.: 9610000217
Report Date: 10/29/96
Date Received: 10/08/96
Arrival Temperature: On Ice

TERRA ENGINEERING
KIRK SOLBERG
2201 VONDRON RD.
MADISON, WI 53704

Project Name: **REFUSE HIDEAWAY** Project Number: **468**

Sample I.D. #:138454 **Sample Description:**LANDFILL LEACHATE **Date Sampled:**10/08/96

Analyte	Result	Units	LOD	LOQ
Selenium	<2	µg/L	1	3
Result obtained by "Method of Standard Addition". Elevated detection limit due to sample dilution presence of matrix interference.				
Hexavalent Chromium	91	µg/L	5	17
Metals Sample Preparation	10/10/96			
Chromium, Total, Low Level (Cr6+ Confirmation)	80	µg/L	1	3
Metals Sample Preparation	10/10/96			
Copper	10	µg/L	10	30
Lead	<20	µg/L	20	70
Cadmium	<5	µg/L	5	17
Chromium	210	µg/L	50	170
Nickel	80	µg/L	10	30
Zinc	<5	µg/L	5	17
Mercury	<0.4	µg/L	0.2	0.7
Elevated detection limit due to sample dilution; presence of matrix interference.				
Silver	<0.5	µg/L	0.1	0.3
Elevated detection limit due to sample dilution; presence of matrix interference.				

Comments for entire Work Order:
None

Submitted By:

Commonwealth Technology, Inc.

Formerly the Laboratory Division of Mid-State Associates, Inc.

1230 LANGE COURT
BARABOO, WI 53913
(608) 356-2760 FAX: (608) 356-2766

Project#: 468 Proj. Name: Refuse Hideaway

Client Name/Number:

Terra Eng & Const Corp

Date	Time	Comp	Grab	Sample Description	Sample#	Number of Containers	VOCs + 6	Copper, Lead, Selenium
10-8-96	7:33am		✓	landfille leachate	[redacted]	2	X	X
				temp Blank		1		

FILL IN ANALYSIS NEEDED BELOW

Remarks: Quarterly Recample

217

Shaded Area For Lab Use

Pres.	Sample I.D. #'s:
	138454

Sampled By: Jim Falbo

Relinquished By: Kathy Hurst

Date:

Time:

Received By: [signature]

Date: 10/8/96

Time: 9:29am

Received By Lab: [signature]

Date: 10-8-96

Time: 10:55

Remarks: Quarterly Analytical
Results TO: Jim Falbo c/o Terra Eng & Const. Corp
2201 Vondron Rd
Madison, WI 53704

CHECKED

Sample Shipped Via: ___UPS
___Fed. Exp. X Hand ___U.S. Mail

Sample Status:
Deg. C: on ice pH:

ANALYTICAL REPORT

Client I.D. No.: LT2000000010
Work Order No.: 9610000112
Report Date: 10/23/96
Date Received: 10/03/96
Arrival Temperature: On Ice

TERRA ENGINEERING
KIRK SOLBERG
2201 VONDRON RD.
MADISON, WI 53704

Project Name: **REFUSE HIDEAWAY** Project Number: **468**

Sample I.D. #:138018 **Sample Description:**LEACHATE **Date Sampled:**10/02/96

Analyte	Result	Units	LOD	LOQ
Cyanide, Total	<5	µg/L	5	17
Elevated detection limit due to sample dilution presence of matrix interference.				
Hexavalent Chromium	72	µg/L	5	17
Sample received beyond acceptable holding time.				
Metals Sample Preparation	10/08/96			
Chromium, Total, Low Level (Cr6+ Confirmation)	160	µg/L	1	3
Oil and Grease-- EPA 413.1	<4	mg/L	4	13
pH (Lab)	7.38	S.U.'s	NA	NA

Comments for entire Work Order:
None

Submitted By: DO

Commonwealth Technology, Inc.

Formerly the Laboratory Division of Mid-State Associates, Inc.

1230 LANGE COURT
BARABOO, WI 53913
(608) 356–2760 FAX: (608) 356–2766

Project#: 468 | Proj. Name: Refuse Hideaway

Client Name/Number:

Terra Engr & const corp

Date	Time	Comp	Grab	Sample Description	Sample#	Number of Containers	Oil & Grease	pH	Cr+6	Mercury, Nickel, Zinc	Cadmium, Chromium	Copper, Lead, Selenium	Silver, Cyanide
10-2-96	3:00pm		X	leachate		5	✓	✓	✓	✓	✓	✓	✓
				Temp Blank		1							
				* Need to Resample Bottle that contained Nitric Acid									
				(Cr+6 past hold time) DD									

Remarks: Quarterly sampling

112

Shaded Area For Lab Use

Pres.	Sample I.D. #'s:
	138018

Sampled By: Jim Falbo

Relinquished By: Kathy Mast

Date: | Time:

Received By: Hellmandt

Date: 10/3/96 | Time: 9:20

Received By Lab: D. Dill

Date: 10-3-96 | Time: 3:55

Remarks: Quarterly Analytical
Results to Jim Falbo C/O Terra Engr & const corp
2201 Vondron Rd
Madison, WI 53704

*No sample for metals. DD

CHECKED

Sample Shipped Via: __UPS
__Fed. Exp. X Hand __U.S. Mail

Sample Status: Ice

Deg. C: pH

MID-STATE ASSOCIATES, INC.

ANALYTICAL REPORT

Client I.D. No.: LT2000000010
Work Order No.: 9607000254
Report Date: 07/31/96
Date Received: 07/12/96
Arrival Temperature: 16.3

TERRA ENGINEERING
KIRK SOLBERG
2201 VONDRON RD.
MADISON, WI 53704

Project Name: **REFUSE HIDEAWAY** Project Number:

Sample I.D. #:131024 **Sample Description:**LEACHATE **Date Sampled:**07/10/96

Analyte	Result	Units	LOD	LOQ
Extraction - TCLP	7/22/96			
TCLP Barium	1.49	mg/L	0.10	0.33
Result obtained by "Method of Standard Addition". Matrix interference.				
TCLP Cadmium	<0.005	mg/L	0.005	0.017
TCLP Chromium	0.180	mg/L	0.05	0.17
TCLP Lead	<0.02	mg/L	0.02	0.07
TCLP Silver	<0.002	mg/L	0.002	0.007
Matrix interference. Result obtained by "Method of Standard Addition".				
TCLP Arsenic	55	mg/L	0.001	0.003
TCLP Selenium	<5	mg/L	0.001	0.003
Elevated detection limit due to sample dilution; presence of matrix interference. Result obtained by "Method of Standard Addition".				
TCLP Mercury	<0.0008	mg/L	0.0002	0.0007
Elevated detection limit due to sample dilution; presence of matrix interference.				
Metals Sample Preparation	7/22/96			
Analysis Date TCLP SVOC's	7/22/96			
See attached report for results.				
Analysis Date TCLP Pesticides	7/22/96			
See attached report for results.				
Analysis Date TCLP VOC's	7/21/96			
See attached report for results.				

Comments for entire Work Order:
None

Submitted By: AL DO

MID-STATE ASSOCIATES, INC.
ENVIRONMENTAL AND ANALYTICAL SERVICES
1230 LANGE COURT
BARABOO, WI 53913
(608) 356-1777 FAX: (608) 356-7340

Project#:

Proj. Name: Refuse Hideaway LF

Client Name/Number: Terra Engineering & Const.

FILL IN ANALYSIS NEEDED BELOW

Remarks: Annual Analysis 254
Arsenic
Barium
Cadmium
Chromium
Lead
Mercury
Selenium
Silver
} TCLP Metals

Date	Time	Comp	Grab	Sample Description	Sample#	Number of Containers	TCLP VOCs	TCLP SVOC	TCLP Pesticides	TCLP Herbicides	TCLP Metals	Pres.	Sample I.D. #'s:
7/10/96	12:00		✓	LEACHATE		4	✓	✓	✓	✓	✓		131024
7/10/96	12:00		✓	LEACHATE		3 Vials	✓						↓
			✓	PUMP BLANK		1							

Space Below For Laboratory Use

Sampled By: Kirk Solberg

Relinquished By:

Date:

Time:

Received By:

Date:

Time:

Received By Lab: 0.0 in

Date: 7/11/96

Time: 1050

Remarks: ANNUAL Analysis
Results to Terra Engineering & Const
2202 Vondron Rd
Madison WI 53704 ATTN Kirk Solberg

Date Sample Disposed of:

Sample Shipped Via: ___UPS
___Fed. Exp. ✗ Hand ___U.S. Mail

Sample Status:
Deg. C: 16.3 pH:

MONTGOMERY WATSON LABORATORIES

July 26, 1996

Ms. Michelle Maxwell
Mid-State Associates, Inc.
Environmental and Analytical Services
1230 Lange Court
Baraboo, Wisconsin 53913

Re: Terra-Refuse Hideaway

Dear Ms. Maxwell:

Enclosed are the analytical results, chain-of-custody and Invoice No. ML13389 for the sample collected July 10, 1996. Please feel free to call if you have any questions.

Sincerely,

MONTGOMERY WATSON LABORATORIES

Sheila M. Tauschek
Laboratory Director

Enclosures: As stated

dsk/SMT
G:\GLAB\DMGMT\LETTERS\40140530.DOC
L13389

Pasadena Division
555 East Walnut Street
Pasadena, California 91101
Tel: 818 568 6400
Fax: 818 568 6324

Madison Division
1 Science Court
Madison, Wisconsin 53711
Tel: 608 231 4747
Fax: 608 231 4777

METHOD REFERENCES

Compounds	Soil/Groundwater	Wastewater
Alcohol	8015*	8015*
BEXT	8020***	602
DRO	Modified DRO	Modified DRO
GRO	Modified GRO***	Modified GRO
Fatty Acids	8015*	8015*
Herbicides	8150	8150
Pesticides	8080	608
Pesticide/PCBs	8080	608
PCBs	8080**	608
PCBs	8080****	608
PCP/PHEN	8040****	8040****
PNA (GC/MS)	8270	8270
PNA (HPLC)	8310	8310
PVOCs	8020***	8020
SVOCs	8270	8270
TPH	D-3328-78*	D-3328-78*
TRPH	418.1 & 9073	418.1 & 9073
VOCs	8021	8021
GC/MS-VOC	8260	8260
VOCs	8010/8020***	601/602
Solids, Total	160.3	160.3

SW846, "Test Methods for Evaluating Solid Waste", 3rd Ed., December 1987.

EPA-600, "Methods for Organic Chemical Analysis of Water and Wastes", March, 1984.

ASTM, "Annual Book of ASTM Standards", 1990.

Wisconsin DNR Modified 9073 TRPH, PUBL-SW-140, Wisconsin DNR, April 1992.

Wisconsin DNR Modified DRO, PUBL-SW-141, Wisconsin DNR, July 1993.

Wisconsin DNR Modified GRO, PUBL-SW-140, Wisconsin DNR, July 1993.

* With Modifications
** With Modfications for Oil Matrix
*** With Modfications for Soil Gas Matrix
**** With Modifications for Wipe Matrix

MONTGOMERY WATSON LABORATORIES

Madison Division
1 Science Court
Madison, Wisconsin 53711
Tel: 608 231 4747
Fax: 608 231 4777

TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP)
METHOD 1311
PESTICIDE REPORT

MID-STATE ASSOC./TERRA-REFUSE HIDEAWAY
BARABOO WI
Project Number: 4014.0530

Lab Sample # : L13389-001
Description : 131024
Sample Date : 10-JUL-96
Extraction Date : 18-JUL-96
Analysis Date : 22-JUL-96

Test	Regulatory Limit (mg/L)	Analytical Result (mg/L)	Reporting Limit (mg/L)	Matrix Spike Recovery (%)	Footnote
Chlordane	0.03	< 0.020	0.020	0	
Endrin	0.02	< 0.010	0.010	186	
gamma-BHC (Lindane)	0.4	< 0.20	0.20	310	
Heptachlor	0.008	< 0.0050	0.0050	102	
Heptachlor epoxide	0.008	< 0.0050	0.0050	141	
Methoxychlor	10	< 5.0	5.0	70	
Toxaphene	0.5	< 0.25	0.25	0	

Chk'd: [illegible] App'd: [illegible]
Date App'd: 7/26/96

WI Lab Certification ID#: 113138300

MONTGOMERY WATSON LABORATORIES

Madison Division
1 Science Court
Madison, Wisconsin 53711
Tel: 608 231 4747
Fax: 608 231 4777

TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP)
METHOD 1311
SEMIVOLATILE

MID-STATE ASSOC./TERRA-REFUSE HIDEAWAY
BARABOO WI
Project Number: 4014.0530

Laboratory Sample # : L13389-001
Sample Description : 131024
Matrix of Sample : LEACHATE
Sampling Date : 10-JUL-96
TCLP Leaching Date : Not performed due to Solids less than 0.5 %

Compound	Regulatory Limit (mg/L)	Result (mg/L)	Reporting Limit (mg/L)	Matrix Spike(%)	Extraction Date	Analysis Date	Footnote
1,4-Dichlorobenzene	7.5	< 0.10	0.10	63	18-JUL-96	22-JUL-96	
2,4-Dinitrotoluene	0.13	< 0.10	0.10	95	18-JUL-96	22-JUL-96	
Hexachlorobenzene	0.13	< 0.10	0.10	88	18-JUL-96	22-JUL-96	
Hexachloroethane	3	< 0.10	0.10	58	18-JUL-96	22-JUL-96	
Hexachlorobutadiene	0.5	< 0.10	0.10	50	18-JUL-96	22-JUL-96	
Nitrobenzene	2	< 0.10	0.10	74	18-JUL-96	22-JUL-96	
Pentachlorophenol	100	< 0.50	0.50	114	18-JUL-96	22-JUL-96	
Pyridine	5	< 0.50	0.50	35	18-JUL-96	22-JUL-96	
2,4,5-Trichlorophenol	400	< 0.10	0.10	105	18-JUL-96	22-JUL-96	
2,4,6-Trichlorophenol	2	< 0.10	0.10	103	18-JUL-96	22-JUL-96	
2-Methylphenol	200	< 0.10	0.10	64	18-JUL-96	22-JUL-96	
3&4-Methylphenol	200	< 0.10	0.10	63	18-JUL-96	22-JUL-96	

Method Reference : SW846 Method 8270
Method Reference : SW846, Method 8270

Chk'd: App'd:
Date App'd:

WI Lab Certification ID#: 113138300

MONTGOMERY WATSON LABORATORIES

Madison Division
1 Science Court
Madison, Wisconsin 53711
Tel: 608 231 4747
Fax: 608 231 4777

TOTAL ANALYSIS REPORT
VOLATILE
MID-STATE ASSOC./TERRA-REFUSE HIDEAWAY
BARABOO WI
Project Number: 4014.0530

Laboratory Sample # : L13389-001
Sample Description : 131024
Matrix of Sample : LEACHATE
Sampling Date : 10-JUL-96
TCLP Leaching Date : ** NOT PERFORMED **

Compound	TCLP Regulatory Limit (mg/L)	Result (mg/kg)	Reporting Limit (mg/kg)	Extraction Date	Analysis Date	Footnote
Benzene	0.5	< 0.20	0.20	-	21-JUL-96	
Carbon tetrachloride	0.5	< 0.20	0.20	-	21-JUL-96	
Chlorobenzene	100	< 0.20	0.20	-	21-JUL-96	
Chloroform	6	< 0.20	0.20	-	21-JUL-96	
1,2-Dichloroethane	0.5	< 0.20	0.20	-	21-JUL-96	
1,1-Dichloroethene	0.7	< 0.20	0.20	-	21-JUL-96	
Methyl ethyl ketone	200	< 0.20	0.20	-	21-JUL-96	
Tetrachloroethene	0.7	< 0.20	0.20	-	21-JUL-96	
Trichloroethene	0.5	< 0.20	0.20	-	21-JUL-96	
Vinyl chloride	0.2	< 0.20	0.20	-	21-JUL-96	

Note: Results in mg/kg are reported on an "as received" or wet weight basis.

Method Reference : SW846, Method 8021

Chk'd: RSL App'd: AMT
Date App'd: 7/26/96

WI Lab Certification ID#: 113138300

MID-STATE ASSOCIATES, INC.

ANALYTICAL REPORT

Client I.D. No.: LT2000000010
Work Order No.: 9607000625
Report Date: 08/13/96
Date Received: 07/30/96
Arrival Temperature: On Ice

TERRA ENGINEERING
KIRK SOLBERG
2201 VONDRON RD.
MADISON, WI 53704

Project Name: **REFUSE HIDEAWAY** Project Number: **468**

Sample I.D. #:132298 **Sample Description:**LEACHATE **Date Sampled:**07/29/96

Analyte	Result	Units	LOD	LOQ
Analysis Date TCLP Herbicides See attached report for results.	8/08/96			

Comments for entire Work Order:
None

Submitted By

MID-STATE ASSOCIATES, INC.
ENVIRONMENTAL AND ANALYTICAL SERVICES
1230 LANGE COURT
BARABOO, WI 53913
(608) 356-1777 FAX: (608) 356-7340

FILL IN ANALYSIS NEEDED BELOW

TCLP - Herbicides

Remarks: 625

Project#: 468

Proj. Name: Refuse Hideaway Landfill

Client Name/Number: Terra Engineering & Const

Date	Time	Comp	Grab	Sample Description	Sample#	Number of Containers	Pres.	Space Below For Laboratory Use Sample I.D. #'s:
7/29/96	4:00		X	LEACHATE		1		132298

Sampled By: Jim Fulbo

Relinquished By: J Falb — Date: 7-30 — Time:

Received By: — Date: — Time:

Received By Lab: — Date: 7/31/96 — Time: 10:00 AM

Remarks: Re-sampling for TCLP-Herbicides
Results to Terra Engineering & Const
2201 Vondron Rd Madison WI

Date Sample Disposed of:

Sample Shipped Via: ___UPS ___Fed. Exp. X Hand ___U.S. Mail

Sample Status:

Deg. C: pH:

ENVIROSCAN

ENVIRONMENTAL AND
ANALYTICAL SERVICES

August 12, 1996

Mid State Associates
1230 Lange Court
Baraboo, WI 53913

Attn: Patti Boehlke/ Michelle Mixwell

Re: 468

Please find enclosed the analytical results for the sample received July 31, 1996.

All analyses were completed in accordance with appropriate EPA methodologies. Methods and dates of analysis are included in the report tables.

The chain of custody document is enclosed.

If you have any questions about the results, please call. Thank you for using US Filter/Enviroscan for your analytical needs.

Sincerely,

US Filter/Enviroscan

Cindy K. Varga
Senior Analytical Chemist

ANALYTICAL REPORT

Mid State Associates
1230 Lange Court
Baraboo, WI 53913

CUST NUMBER: 468
SAMPLED BY: Client
DATE REC'D: 07/31/96
REPORT DATE: 08/12/96
PREPARED BY: CKV
REVIEWED BY:

Attn: Patti Boehlke/ Michelle Mixwell

	Units	Reporting Limit	LEACHATE 07/29/96	Qualifiers	Date Analyzed
EPA 8151					
2,4-D	µg/l	10.0	X		08/08/96
2,4,5-TP (Silvex)	µg/l	1.0	X		08/08/96
Org Ext - Herbicides		-	COMP		08/05/96
Analytical No.:			73407		

X = Analyzed but not detected.

All analyses conducted in accordance with Enviroscan Quality Assurance Program.

midstas 21-0412 ~~3153-8~~ 3153-8 8-21-96

MSA
MID-STATE ASSOCIATES, INC.

ENVIRONMENTAL AND ANALYTICAL SERVICES

1230 LANGE COURT
BARABOO, WI 53913
(608) 356-2760 FAX: (608) 356-2766

Project#: 4168

Proj. Name: Terra Eng. (Refuse)

Client Name/Number: Mid-State Assoc.

FILL IN ANALYSIS NEEDED BELOW: TCLP Herbicides; 24D 245TP Herb

Date	Time	Comp	Grab	Sample Description	Sample#	Number of Containers	TCLP Herbicides	24D 245TP Herb									
7/29/96				Leachate	132298	1	X			07073407							

Remarks:

Space Below For Laboratory Use

Pres.	Sample I.D. #'s:

Sampled By:	Relinquished By:	Date:	Time:
	[signature]	7/30/96	2:33

Received By:	Date:	Time:	Received By Lab:	Date:	Time:
Sharon K Mattes	7-31-96	9:30			

Remarks:

Sublab: E-Scan

rec'd on ice

Date Sample Disposed of:

Sample Shipped Via: ___UPS ___Fed. Exp. ___Hand ___U.S. Mail

Sample Status:
Deg. C: pH:

UPS DELIVERYTRAC II SHIPPER RECEIPT
1Z 584 076 05 0237 900 6
PLACE ON YOUR SHIPPING RECORD

MID-STATE ASSOCIATES, INC.

ANALYTICAL REPORT

Client I.D. No.: LT2000000010
Work Order No.: 9607000224
Report Date: 07/29/96
Date Received: 07/11/96
Arrival Temperature: 16.3

TERRA ENGINEERING
KIRK SOLBERG
2201 VONDRON RD.
MADISON, WI 53704

Project Name: **REFUSE HIDEWAWY** Project Number:

Sample I.D. #:130914 **Sample Description:**LEACHATE **Date Sampled:**07/10/96

Analyte	Result	Units	LOD	LOQ
Cyanide, Total	34	µg/L	5	17
Hexavalent Chromium	176	µg/L	5	17
Metals Sample Preparation	7/12/96			
Mercury	<0.4	µg/L	0.2	0.7
Elevated detection limit due to sample dilution; presence of matrix interference.				
Metals Sample Preparation	7/12/96			
Nickel	110	µg/L	10	30
Oil and Grease-- EPA 413.1	5	mg/L	4	13
Zinc	34	µg/L	5	17
pH (Lab)	7.57	S.U.'s	NA	NA
Cadmium	<5	µg/L	5	17
Chromium	190	µg/L	50	170
Copper	20	µg/L	10	30
Lead	<20	µg/L	20	70
Selenium	<5	µg/L	1	3
Elevated detection limit due to sample dilution; presence of matrix interference. Result obtained by "Method of Standard Addition".				
Silver	1.0	µg/L	0.1	0.3
Matrix interference. Result obtained by "Method of Standard Addition".				

Comments for entire Work Order:
None

Submitted By: DO

MID-STATE ASSOCIATES, INC.
ENVIRONMENTAL AND ANALYTICAL SERVICES
1230 LANGE COURT
BARABOO, WI 53913
(608) 356-1777 FAX: (608) 356-7340

Project#:

Proj. Name: Refuse Hideaway L.F.

Client Name/Number: Terra Engineering & Const

Date	Time	Comp	Grab	Sample Description	Sample#	Number of Containers	Oil & Grease	pH	Cr+6, Chromium Hex	Mercury, Nickel, Zinc	Cadmium, Chromium	Copper, Lead, Selenium	Silver, Cyanide	Pres.	Sample I.D. #'s:
7/10/96	1215		X	LEACHATE		5	1	1	1	1	1	1	1		130912
				TEMP BLANK		1									

FILL IN ANALYSIS NEEDED BELOW

Remarks: Qtrly analysis 224

Space Below For Laboratory Use

Sampled By: Kirk Solberg

Relinquished By: Date: Time:

Received By: Date: Time:

Received By Lab: Date: 7/11/96 Time: 10:50

Remarks: Qtrly Analysis
Results to Kirk Solberg c/o Terra Engineering & Const
2201 Vondron Rd
Madison WI 53704

DD

Date Sample Disposed of:

Sample Shipped Via: ___UPS ___Fed. Exp. X Hand ___U.S. Mail

Sample Status:
Deg. C: 16.3 pH:

MID-STATE ASSOCIATES, INC.

ANALYTICAL REPORT

RECEIVED
APR 1 3 1996
TERRA ENGINEERING

Client I.D. No.: LT2000000010
Work Order No.: 9603000354
Report Date: 04/12/96
Date Received: 03/19/96
Arrival Temperature: On Ice

TERRA ENGINEERING
KIRK SOLBERG
2201 VONDRON RD.
MADISON, WI 53704

Project Name: **REFUSE HIDEAWAY** Project Number: **468**

Sample I.D. #:122421 **Sample Description:**LEACHATE **Date Sampled:**03/19/96

Analyte	Result	Units	LOD	LOQ
Cyanide, Total	8	µg/L	5	17
Metals Sample Preparation	3/20/96			
Chromium, Total, Low Level (Cr6+ Confirmation)	33	µg/L	1	3
Hexavalent Chromium	141	µg/L	5	17
Mercury	<0.4	µg/L	0.2	0.7
Elevated detection limit due to sample dilution; presence of matrix interference. Quality control for accuracy was not within acceptable limits for this test.				
Metals Sample Preparation	3/20/96			
Oil and Grease-- EPA 413.1	5	mg/L	4	13
Selenium	<2	µg/L	1	3
Elevated detection limit due to sample dilution; presence of matrix interference.				
Silver	<0.1	µg/L	0.1	0.3
Elevated detection limit due to sample dilution; presence of matrix interference.				
Zinc	13	ug/L	5	17
pH (Lab)	7.42	S.U.'s	NA	NA
Cadmium	<5	µg/L	5	17
Chromium	490	µg/L	50	167
Copper	10	µg/L	10	30
Lead	<20	µg/L	20	67
Nickel	80	µg/L	10	33

Comments for entire Work Order:
None

Submitted By:

MID-STATE ASSOCIATES, INC.
ENVIRONMENTAL AND ANALYTICAL SERVICES
1230 LANGE COURT
BARABOO, WI 53913
(608) 356-1777 FAX: (608) 356-7340

Project#: 468

Proj. Name: Refuse Hideaway L.F.

Client Name/Number: Terra Engineering & Construction

Number of Containers

FILL IN ANALYSIS NEEDED BELOW: Oil & Grease; pH; Cr+6, Common Haz; Mercury, Nickel, Zinc; Cadmium, Chromium; Copper, Lead, Selenium; Silver, Cyanide

Remarks: 354

Space Below For Laboratory Use

Date	Time	Comp	Grab	Sample Description	Sample#	Number of Containers	Pres.	Sample I.D. #'s:
3/19/96	9 AM		✓	LEACHATE	[illegible]	4		122421
			✓	TEMP BLANK	[illegible]	1		

Sampled By: Kirk Solberg

Relinquished By: Kirk Solberg — Date: 3/19/96 — Time:

Received By: Charles F. Bongard — Date: 3-19-96 — Time: 10:15 AM

Received By Lab: [signature] — Date: 3/19/96 — Time: 1:22

Remarks: Results To: Terra Engineering & Const
2201 Vondron Rd
Madison WI 53704
ATN: Kirk Solberg

Date Sample Disposed of:

Sample Shipped Via: ___UPS ___Fed. Exp. X Hand ___U.S. Mail

Sample Status:

Deg. C: on ice pH:

MID-STATE ASSOCIATES, INC.
ENVIRONMENTAL AND ANALYTICAL SERVICES
1230 LANGE COURT
BARABOO, WI 53913
(608) 356-2760 FAX: (608) 356-2766

Project#: 468 | Proj. Name: Lemke Highway Landfill

Client Name/Number: Terra Engineering & Const

FILL IN ANALYSIS NEEDED BELOW

Cyanide

Remarks: This is A Re-Sample for Cyanide. Original sample collected 3/19/96

Date	Time	Comp	Grab	Sample Description	Sample#	Number of Containers	Shaded Area For Lab Use: Pres.	Sample I.D. #'s:
3/27/96	900		X	Lemke Highway LEACHATE	1	1		122421
				TEMP BLANK		1		

Sampled By: Kirk Solberg

Relinquished By: | Date: | Time:

Received By: W. Krueger | Date: 3/28/96 | Time: 9:50

Received By Lab: D. Dull | Date: 3/28/96 | Time: 11:22

Remarks: Results to Kirk Solberg c/o Terra Engineering & Const. 2201 Vondron Rd Madison WI 53704 - prior log-in

Sample Shipped Via: ___UPS ___Fed. Exp. X Hand ___U.S. Mail

Sample Status:

Deg. C: Mice pH:

APPENDIX 2

MADISON METROPOLITAN

SEWERAGE DISTRICT

DISCHARGE PERMIT

Permit NTO 5D
Copy

MADISON METROPOLITAN SEWERAGE DISTRICT

1610 Moorland Road
Madison, WI 53713-3398
Telephone (608) 222-1201
Fax (608) 222-2703

James L. Nemke
Chief Engineer & Director

August 29, 1996

Mr. Kirk J. Solberg
Terra Engineering and Construction Corporation
2201 Vondron Road
Madison, WI 53704-6795

Dear Mr. Solberg:

I am writing in response to your letter of August 13, 1996 concerning extension of the leachate discharge permit for the Refuse Hide-Away Landfill in Middleton, Wisconsin. Enclosed with this letter is a permit which provides for a one-year extension of the existing permit.

Please be aware that the permit expires in September of 1997. Application for renewal of this permit should be made prior to the expiration date.

Sincerely,

Paul H. Nehm
Director of Operations and Maintenance

:dms
Enclosure as stated

K:\LETTERS\AUG-96\SOLB0829.DOC

Permit No. NTO-5D

WASTEWATER DISCHARGE PERMIT

In compliance with the provisions of Articles 5 and 6 of the Madison Metropolitan Sewer District Sewer Use Ordinance and the District's Policy on Acceptance of Wastewater Containing Non-Typical Organic and Inorganic Constituents,

Department of Natural Resources
Post Office Box 7921
Madison, WI 53707

is hereby authorized to discharge contaminated groundwater from the above identified facility into the District sewerage system in accordance with the effluent limitations, monitoring requirements, and other conditions set forth in this permit.

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit.

This permit shall become effective on September 25, 1996, and shall expire at midnight, September 24, 1997. Any appeals to the conditions of this permit must be made to the Chief Engineer and Director within thirty days of the signature date.

The permittee shall not discharge after the date of expiration. If the permittee wishes to continue to discharge after this expiration date an application shall be filed for reissuance of this permit in accordance with the requirements of Article 5 of the Madison Metropolitan Sewerage District Sewer Use Ordinance, at least thirty days prior to the expiration date.

In accordance with Articles 5 and 6 of the Madison Metropolitan Sewerage District Sewer Use Ordinance, the District reserves the right to amend this permit from time to time or to revoke the permit.

By: James L. Nemke
James L. Nemke
Chief Engineer and Director

Dated this 29th day of August, 1996.

PART 1--APPLICABLE EFFLUENT LIMITATIONS

SECTION 1--MMSD Pretreatment Standards

(a) All wastewaters discharged to the MMSD shall not exceed the following effluent limitations:

0.25 mg/l cadmium
0.5 mg/l hexavalent chromium
10.0 mg/l total chromium
1.5 mg/l copper
0.1 mg/l cyanide
5.0 mg/l lead
0.02 mg/l mercury
2.0 mg/l nickel
0.3 mg/l selenium
3.0 mg/l silver
8.0 mg/l zinc

(b) The limitations listed in paragraph (a) apply to twenty-four hour flow proportionate samples collected from the total discharge of the permittee.

(c) In addition, the permittee shall comply with all other applicable regulations and standards contained in the MMSD Sewer Use Ordinance. Included in these regulations are limitations on pH, slug loads, and oil and grease content.

SECTION 2--Toxicity Characteristics Leaching Procedure Requirements

(a) All wastewaters discharged to the MMSD shall not exceed the limitations of the Toxicity Characteristics Leaching Procedure (TLCP) as specified in the Federal Register of March 29, 1990.

PART 2--MONITORING AND REPORTING REQUIREMENTS

SECTION 1--Monitoring Requirements

The permittee shall monitor its wastewater discharges subject to regulations under Part 1 of this permit to ascertain compliance with the applicable limitations. Said monitoring to determine compliance with the standards specified in Part 1 shall be conducted each calendar quarter. The monitoring shall consist of sampling of the regulated wastewaters for those pollutants regulated under Part 1 of this permit and reporting of the results to the District. Samples shall be obtained by collecting a representative sample of the contents of the on-site 25,000 gallon storage tank. Samples shall be collected on a quarterly basis to show compliance with Part I Section 1 and on an annual basis to show compliance with Part I Section 2.

Laboratory analysis of samples collected shall be performed in accordance with 40 CFR Part 136 or other such methods as approved by the District.

SECTION 2--Reporting Requirements

Self-monitoring results shall be reported to the District within three days of the end of the calendar quarter.

If the permittee monitors any pollutant more frequently than required by this permit, the results of such monitoring shall be submitted to the District.

If sampling performed by the permittee indicates a violation of any provisions of this permit, the permittee must notify the District of the violation within 24 hours of becoming aware of it. The permittee must also repeat the sampling and analysis and submit the results of the repeat analysis to the District within 30 days after becoming aware of the violation.

All reports shall be signed and sworn by a responsible corporate officer of the permittee. A responsible corporate officer is defines as:

1. A president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy-or decision-making functions for the permittee, or

2. The manager of one or more manufacturing, production, or operation facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million, if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

The individual signing the report shall make the following certification:

> "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations."

All reports required by this permit shall be submitted to:

> Madison Metropolitan Sewerage District
> 1610 Moorland Road
> Madison, Wisconsin 53713

The Madison Metropolitan Sewerage District will randomly collect and analyze samples of leachate to verify leachate quality.

PART 3--MONITORING AND SAMPLING FACILITIES

SECTION 1--Sampling Facilities

In order to permit monitoring of the leachate, by the District, the permittee shall construct facilities to allow for collection of a representative sample from the on-site 25,000 gallon storage tank.

SECTION 2--Discharge Permit

Since the Refuse Hideaway Landfill is outside the District's service area, all wastewater from the site shall be hauled to the Nine Springs Wastewater Treatment Plant and disposed of at a designated location at this plant. The hauler shall have in effect a Septage Disposal Permit issued by the District.

PART 4--GENERAL CONDITIONS

1. Right of Entry

The permittee shall, after reasonable notification by the District, allow the District or its representatives, exhibiting proper credentials and identification, to enter upon the premises of the permittee at all reasonable hours, for the purposes of inspection, sampling, or records inspection. Reasonable hours in the context of inspection and sampling includes any time the permittee is operating any process which results in collection of wastewater in the on-site storage tank.

2. Records Retention

a) The permittee shall retain and preserve for no less than three (3) years, any records, books, documents, memoranda, reports, correspondence and any and all summaries thereof, relating to monitoring, sampling and chemical analyses made or by or in behalf of the permittee in connection with its discharge.

b) All records that pertain to matters that are the subject of special orders or any other enforcement or litigation activities brought by the District shall be retained and preserved by the permittee until all enforcement activities have concluded and all periods of limitation with respect to any and all appeals have expired.

3. Severability

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

4. Confidential Information

Except for data determined to be confidential under Article 7.2 MMSD Sewer Use Ordinance, all reports required by this permit shall be available for public inspection at the headquarters of the District.

5. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

a) The exact place, date, and time of sampling;
b) The dates the analyses were performed;

c) The person(s) who performed the analyses;
d) The analytical techniques or methods used; and
e) The results of all required analyses.

6. Falsifying Information

Knowingly making any false statement on any report or other document required by this permit or knowingly rendering any monitoring device or method inaccurate, may result in punishment under the criminal laws of Wisconsin as well as being subjected to civil penalties and relief.

7. Modification or Revision of Permit

a) The terms and conditions of this permit may be subject to modification by the District at any time as limitations or requirements as identified in the MMSD Sewer Use Ordinance are modified or other just cause exists.

b) This permit may also be modified to incorporate special conditions resulting from the issuance of a special order.

c) Any modifications which result in new conditions in the permit shall include a reasonable time schedule for compliance if necessary.

8. Dilution

No permittee shall increase the use of potable or process water or, in any way, attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with the limitations contained in this permit.

9. Accidental Discharges

The permittee shall provide protection from the accidental discharge of prohibited or regulated materials or substances established by the MMSD Sewer Use Ordinance. Where necessary, facilities to prevent the accidental discharge of prohibited materials shall be provided and maintained at the permittee's expense. Permittees shall notify the District immediately upon the occurrence of an accidental discharges of substances prohibited by the MMSD Sewer Use Ordinance. The District should be notified by telephone at 222-1201. During normal business hours the modification shall be made to the Director of Wastewater Treatment Operations. During other times, the notification shall be made to the operator on duty. The notification shall include location of discharge, date and time thereof, type of waste, concentration and volume, and corrective actions taken. The permittee shall also provide such notification to the appropriate local municipal officials. In addition, the

permittee should immediately notify the State of Wisconsin of the accidental spill at (608) 266-3232 (twenty-four hour number).

40 CFR 403.8(f) (v) requires the District to evaluate each significant industrial user at least once every two years to determine whether a plan to control slug discharges is necessary. If it is determined that such a plan is necessary, the plan shall contain the following:

1. A description of discharge practices including non-routine batch discharges.

2. A description of stored chemicals.

3. Procedures for immediately notifying the District of a slug discharge and procedures for follow-up written notification within five days.

4. Procedures to prevent adverse impact from accidental spills.

10. Notice of Intent

Any permittee planning to alter or change any activity at the permittee's facility that would significantly increase or decrease the volume or alter the content of any existing source of industrial wastewater discharge into the District sewerage system must file a written Request to Discharge Form in accordance with Article 5 of the MMSD Sewer Use Ordinance. A significant increase or decrease shall be defined at a twenty-five percent increase or decrease in the volume of industrial wastewater currently being discharged by a permittee. An alteration shall be defined as any change in chemicals utilized with a process which will significantly alter the characteristics of the industrial waste discharge or the addition of any new process or production wastewater discharges.

11. Proper Disposal of Pretreatment Sludges

The disposal of sludges generated within wastewater pretreatment systems shall be done in accordance with Section 405 of the Clean Water Act and Subtitles C and D of the Resource Conservation and Recovery Act.

12. Operating Upsets

Any permittee that experiences an upset in operations that places the permittee in a temporary state of noncompliance with the provisions of either this permit or the MMSD Sewer Use Ordinance shall inform the District thereof within twenty-four hours of first awareness of the commencement of the upsets in accordance with Article 5.5.5 of the MMSD Sewer Use Ordinance.

13. Limitations on Permit Transfer

Wastewater discharge permits are issued to a specific user for a specific operation and are not assignable to another user or transferable to any other location without prior written approval of the District. Sale of a user shall obligate the purchaser to seek prior written approval of the District for continued discharge to the District sewerage system.

14. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

15. Fees

The permittee will incur all costs billed by the District for leachate discharged to the District's sewerage system for leachate quantities and strengths as reported by the permittee to the District and as ascertained by the District through additional sampling. The costs shall include charges for the volume, CBOD, Total Suspended Solids, and Total Kjeldahl Nitrogen discharged and for ten (10) equivalent meters and one (1) actual customer and shall be based on the then prevailing District service charge rates. In accordance with the District's Policy on Acceptance of Wastewater Generated Outside of the District, a cumulative 10 percent surcharge shall be imposed on the discharge cost each quarter until such surcharge reaches 100 percent.

16. Hazardous Waste Notification

The permittee shall notify the District, the Department of Natural Resources, and the EPA Regional Waste Management Division Director in writing of any discharge to the sanitary sewer system of a substance which, if otherwise disposed of, would be hazardous water under 40 CFR Part 261. Such notification must include the name of the hazardous waste as set forth in 40 CFR Part 261, the EPA hazardous waste number, and the type of discharge. If the permittee discharges to the sanitary sewer more than 100 kilograms of such waste per calendar month, the additional notification requirements of 40 CFR 403.12 (p) apply. In the case of any notification made under this section, the permittee shall certify that it has a program in place to reduce the volume and toxicity of hazardous wastes generated to the degree it has determined to be economically practical.

17. Penalties

Violations of this permit are enforceable under Article XIII of the District's Sewer Use Ordinance. Included as enforcement remedies are special orders, injunctive relief, fines, and termination of service.

18. Bypass of Pretreatment Facilities

Bypassing of any permittee pretreatment facilities is only allowed in accordance with the provisions of 40 CFR 403.17. If the permittee knows in advance of the need for a bypass, it shall submit notice to the District, if possible at least ten days before the date of the bypass.