MSW PA_996-C_RP_20150315_1st Quarter Methane Monitoring 2015

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Grand Prairie
TEXAS

March 15, 2015

Mr. Fred Meyers, Environmental Project Manager, MC-124
Mail Code 124
Municipal Solid Waste Permits Section
Texas Commission on Environmental Quality
P. O. Box 13087
Austin, Texas 78711-3087

DUE DATE 6/16/2015
ARTS # 19134002
PM Elizabeth Lara

RE: **Monthly Methane Monitoring Report – March 2015**
1st Quarter Methane Monitoring Report 2015 (For quarter containing January, February, and March 2015)
City of Grand Prairie Landfill – Permit No. 996-C
Grand Prairie, Dallas County, Texas

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TCEQ
CENTRAL FILE ROOM

Dear Mr. Meyers:

In accordance with the City of Grand Prairie Landfill Methane Gas Remediation Plan please accept this monthly/quarterly monitoring report. This monitoring report includes measurements for the twelve permanent probe locations (see attached Drawing No. 1-R). Additionally, this report contains information on the progress to remediate the landfill gas regulatory exceedance. A copy of this report will be placed in the Site Operating Record.

FIELD SAMPLING

During the month of March, the City of Grand Prairie Landfill personnel conducted the onsite quarterly monitoring of methane gas in the twelve permanent probe locations around the perimeter of Tracts I, III, and VI at the landfill. Additionally, during the months of January and February, the City of Grand Prairie Landfill personnel conducted the onsite monthly monitoring of methane gas in GMP12d.

Probe monitoring included methane concentrations, oxygen concentrations, carbon dioxide concentrations, gas pressure, barometric pressure, probe temperature, ambient air temperature and groundwater levels. Tabulated results of the measurements from the permanent probes are shown on the attached data sheets. To fulfill the monitoring requirement found in the Remediation Plan, measurements were also obtained from the interior of office building #1, office building #2, the gatehouse, conference room, storage building and maintenance building.

Weather conditions at the time of sampling were seasonal with a temperature of 50 ° degrees and no rainfall was recorded in March. In January and February, weather conditions were seasonal with temperature and rainfall readings of 46 ° with .02" of rainfall for January and 74 ° and 0" of rainfall in February. Groundwater levels for all

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monitoring points are presented on the attached Quarterly and Monthly Methane Monitoring Sheet.

Readings were obtained using a LandTec GEM 2000+ calibrated for the measurement of methane gas. Methane concentrations are presented as percent LEL (Lower Explosive Limit) and as percent gas by volume. Gas samples were collected via an inlet hose and an internal pump contained in the GEM 2000+. Data recorded and presented are in accordance with the "Landfill Gas Management Plan" Attachment 14 of the modified permit.

As shown on the attached data sheets, the measurements of methane concentrations reflect the following:

STRUCTURES

Methane levels measured in all buildings were at 0% of the LEL (undetectable). No methane detection within these buildings has occurred to date. The gatehouse, storage building, office building #1, office building #2, maintenance building and conference room have continuous monitoring devices to detect the presence of methane gas.

GAS MONITORING PROBES

Methane levels in monitoring probe GMP(R)-12d did not exceeded the action level of 100% LEL during the January, February or March 2015 monitoring events. All other probes were compliant through the January and February 2015 monitoring period. However during the March monitoring period GMP(R)-11d and GMP(R)-11s exceeded the action level of 100% LEL.

CONCLUSIONS

Measured methane levels were below the action level in all probe locations including GMP(R)-12d through the January and February monitoring periods. During March Methane levels measured above the action level for probes GMP(R)-11d and GMP(R)-11s. In accordance with the facility's Landfill Gas Management Plan, notification procedures were performed and a written remediation plan for probes GMP(R)-11d and GMP(R)-11s will be submitted to TCEQ within 60 days of the exceedance.

REMEDIATION PROGRESS

The city received TNRCC Standard Permit No. 43841, Grand Prairie, Dallas County, and Account ID No. DB-4814-O dated April 18, 2000 for the installation and operation of a landfill gas flare and collection system.

On November 29, 2000, with the installation of gas collection system and flare complete, start up and training took place. The flare has been in operation since start up.

Replacement of the perimeter gas monitoring system was completed on August 28, 2002.

A permit modification request dated June 6, 2002 was submitted to the TNRCC and approval issued June 21, 2002 for expansion of the landfill gas collection system. Construction was completed with 14 additional gas wells in operation on April 18, 2003.

The City of Grand Prairie retained Weaver Boos Consultants to perform an evaluation of the noncompliant landfill gas monitoring probes, prepare a summary report addressing LFG migration characteristics of the site and to recommended corrective measures. In March 2004, landfill gas samples were collected from the landfill by Weaver Boos Consultants for laboratory analysis to assess whether the source of the methane is from the landfill or potentially from other biological sources. Weaver Boos Consultants submitted the completed summary report to the City of Grand Prairie presenting their findings and recommendations. Weaver Boos Consultants then prepared a Landfill Gas Remediation Plan for submittal to the TCEQ in which the findings from the summary report were presented, along with proposed remedial measures and a timetable for their implementation. The Landfill Gas Remediation Plan was submitted to the TCEQ on July 21, 2004.

The City of Grand Prairie retained Weaver Boos Consultants to prepare design and construction documents for the landfill gas collection system expansion outlined in the Landfill Gas Remediation Plan submitted to the TCEQ July 21, 2004. The landfill gas collection system expansion, which added another 15 gas wells to the system, was completed April 25, 2005.

The next phase of remediation was completed in September 2007. This included twelve additional LFG extraction wells on the east side of the landfill and twenty-four new soil vapor extraction (SVE) wells on the northwest side of the facility. The installation of a larger blower and the conversion of six existing passive vents to active SVE wells were completed January 2008.

Phase IV of the landfill gas collection system expansion design and construction documents were prepared by Weaver Boos Consultants. This fourth phase of the gas collection and control system, completed December 2008, added 8 additional wells and moved an orifice plate in preparation for a gas-to-energy project.

The City of Grand Prairie had been working under a remediation plan for GMP(R)-12 submitted to the TCEQ by Weaver Boos Consultants on June 5, 2009 and approved on July 9, 2009. Due to the fact that methane levels in GMP(R)-12 had not dropped below the regulatory limit, the City of Grand Prairie developed a new remediation plan and submitted it to the TCEQ. A permit modification request was submitted to the TCEQ on October 2, 2009 to expand the well field adjacent to GMP(R)-12 by adding 8 additional extraction wells. Expansion of the GCCS adding new extraction wells was completed in December 2009.

Despite these efforts, LFG monitoring probes continued to show elevated methane levels. The City of Grand Prairie began an investigation into potential causes of elevated

methane levels at each monitoring probe in order to develop appropriate remediation measures. A report was submitted to the TCEQ on February 5, 2010 detailing suspected causes of migration at each LFG monitoring probe and the planned remedies. These included improvements at the flare facility to decrease the downtime of the flare as well as to increase the amount of the vacuum that can be applied to the field. The results of this investigation have shown that the existing system is capable of eliminating gas migration when run consistently at full capacity. Without the improvements to the flare facility, full capacity could only be achieved on an intermittent basis resulting in a buildup of gas within the landfill and gas migration. All of the improvements to the flare facility have been completed. As requested in the July 29, 2010 letter from the TCEQ, the following is a list of the improvements completed with the associated timeline:

- Completed electrical improvements on blower to improve performance (April 2010)
- Installation of additional thermocouple on flare to decrease shutdowns due to high winds (July 2010)
- Installation of larger pipe between blower and flare (July 2010)
- Replacement of pilot gas piping for flare (July 2010)

The City of Grand Prairie requested and received verbal approval from the TCEQ on April 28, 2010 to conduct monthly monitoring of probes that have been in compliance for a period of 3 consecutive months or more. As a result, the monitoring frequency for probe GMP-11 was monthly for a period of time.

It is the City's goal to return all probes to quarterly monitoring with approval of the TCEQ once all monitoring probes are in compliance for a minimum of 6 consecutive months. Probes GMP-3 and GMP-4 returned to quarterly monitoring in May, per approval from the TCEQ in a letter dated April 7, 2010 and probe GMP-6 returned to quarterly monitoring in August per approval in a letter dated July 15, 2010. Probes GMP-9 and GMP-12 also returned to quarterly monitoring in August per approval in a letter dated July 29, 2010. Probes GMP-1, GMP-8 and GMP-10 returned to quarterly monitoring in the first quarter of 2011, per approval from the TCEQ in a letter dated September 22, 2010. In the September Methane Monitoring Report the City requested approval to return probes GMP-2, GMP-7, and GMP-11 to quarterly monitoring since they had been below the regulatory limit for six consecutive months as well. Probes GMP-7 and GMP-11 returned to quarterly monitoring in the first quarter of 2011, per approval from the TCEQ in a letter dated December 16, 2010. GMP-5 returned to quarterly in April 2011, per approval from the TCEQ in a letter dated February 11, 2011. As a result of the methane exceedance in gas monitoring probe GMP-2s during the November monitoring event, the City requested the TCEQ not return this probe to quarterly monitoring in a letter to the TCEQ dated December 16, 2010. The City continued monthly monitoring of gas monitoring probe GMP-2. Upon methane levels in GMP-2 returning to compliant levels in January, 2011, and remaining there for over six months, the City requested and received approval from the TCEQ, in a letter dated August 16, 2011, to return gas monitoring probe GMP-2 to quarterly monitoring.

Due to methane exceedance in gas monitoring probe GMP-11 during a quarterly monitoring period the City requested that the TCEQ return this probe to monthly monitoring in a letter to the TCEQ dated April 12, 2011. The City initiated remediation measures in this area along with continued monthly monitoring of gas monitoring probe GMP-11. However, methane levels continued to remain above the regulatory limit and as a result, the City prepared a new remediation plan for GMP-11 which was approved on April 4, 2012. Construction on the redrills/system expansion was completed on July 18, 2012. GMP-11 returned to quarterly monitoring during the February 2013 monitoring event after six consecutive months of methane levels below the regulatory limit.

During the 2nd Quarter 2012 monitoring event, methane levels in GMP-12 exceeded regulatory limits. As a result, notifications were made to the TCEQ and surrounding landowners in compliance with the site's Landfill Gas Management Plan. A remediation plan describing these efforts was submitted to the TCEQ on November 13, 2012 and approved on November 29, 2012. Redrilling of the underperforming wells was completed in late April 2013. GMP-11d and GMP-11s have been monitored monthly until methane levels were below the regulatory limit for at least two consecutive quarters. In a letter dated March 13, 2015, our request to have GMP-12 returned to quarterly reporting was accepted.

Should you have any comments or concerns please contact me at (972) 237-4555. Your time and assistance in this matter are greatly appreciated.

Sincerely,

Rose Chavez
Operations and Maintenance Supervisor

Cc: Sam Barrett, TCEQ, Region 4

Quarterly Methane Monitoring Sheet
Grand Prairie Landfill, Dallas County, Texas
Permit No. 996C

Device ID	Date/Time	CH4	CO2	O2	Balance	%LEL	Init. Static Press.	Init. Gas Temp.	Depth (ft) To	Total	Baro. Press.	Serial Number
		%	%	%	%	%	inches H2O	DegF	Groundwater	Depth	inches Hg	
000GMP1s	3/16/2015 8:08	0	0.4	20.8	78.8	0	-23.4	51	4.65	9.4	29.79	GM11906
000GMP1d	3/16/2015 8:12	0	0.6	20.8	78.6	0	-9.5	51	4.61	22.06	29.79	GM11906
000GMP2s	3/16/2015 8:36	0	0.6	19.9	79.5	0	-33.9	53	6.75	9.99	29.78	GM11906
000GMP2d	3/16/2015 8:39	0	1.3	15.5	83.2	0	-10.8	53	18.19	29.54	29.79	GM11906
000GMP3s	3/16/2015 8:49	0	0.6	20.2	79.2	0	0	60	Empty	9.72	29.78	GM11906
000GMP3d	3/16/2015 8:53	0	1.4	19.6	79	0	0	51	19.41	23.71	29.78	GM11906
000GMP4s	3/16/2015 9:01	0	0	20.9	79.1	0	-1.9	62	Empty	9.88	29.78	GM11906
000GMP4d	3/16/2015 9:04	0	0	21	79	0	-1.9	62	16.44	21.55	29.78	GM11906
000GMP5s	3/16/2015 9:12	0.3	3.7	20	76	6	-6.7	69	6.62	9.73	29.79	GM11906
000GMP5d	3/16/2015 9:15	2.3	1.8	19.7	76.2	46	0	65	Empty	25.72	29.78	GM11906
000GMP6s	3/16/2015 9:27	0	0.5	19.9	79.6	0	0	59	Empty	9.96	29.79	GM11906
000GMP6d	3/16/2015 9:31	0	3.5	17.2	79.3	0	-1.6	62	Empty	20.51	29.79	GM11906
000GMP7s	3/16/2015 9:41	0	0.2	20.8	79	0	-0.1	65	Empty	9.82	29.79	GM11906
000GMP7d	3/17/2015 9:19	0.4	0.8	20.2	78.6	8	-0.6	73			29.7	GM11906
000GMP8s	3/16/2015 10:00	0	0	20.7	79.3	0	0	51	Empty	9.6	29.8	GM11906
000GMP8d	3/16/2015 10:03	4.1	2.1	13.3	80.5	82	0	49	24.35	26.32	29.8	GM11906
000GMP9s	3/16/2015 10:14	1.8	1.2	15.1	81.9	36	0	64	Empty	6.65	29.8	GM11906
000GMP9d	3/16/2015 10:18	0	2.8	13.5	83.7	0	0	71	Empty	23.4	29.8	GM11906
00GMP10s	3/16/2015 10:26	0	0.2	20.4	79.4	0	-2.6	70	7.37	9.91	29.8	GM11906
00GMP10d	3/16/2015 10:28	0	1.1	18.3	80.6	0	0	70	22.79	27.14	29.8	GM11906
00GMP11s	3/18/2015 12:29	13.8	4.8	10.8	70.6	276	-0.4	48			29.57	GM11906
00GMP11d	3/18/2015 1:34	32.8				656					29.57	GM11906
00GMP12s	3/16/2015 10:57	2.6	3.3	18	76.1	52	-25.7	79	6.63	9.8	29.8	GM11906
00GMP12d	3/16/2015 11:00	2.2	7	11.7	79.1	44	0	71	28.11	33.5	29.79	GM11906
Maintenance	3/17/2015 9:54	0	0	20.7	79.3	0	0	79	N/A		29.68	GM11906
Office1	3/17/2015 9:58	0	0	20.9	79.1	0	0	77	N/A		29.69	GM11906
storage	3/17/2015 10:03	0	0	20.9	79.1	0	0	78	N/A		29.69	GM11906
Office2	3/17/2015 10:07	0	0	21	79	0	0	78	N/A		29.69	GM11906
Conference	3/17/2015 10:10	0	0	21	79	0	0	78	N/A		29.69	GM11906
Gatehouse	3/17/2015 10:13	0	0.1	21	78.9	0	0	78	N/A		29.7	GM11906

Calibration: yes

Rain: 0

Ambient Temp.: 50

Monthly Methane Monitoring Sheet
Grand Prairie Landfill, Dallas County, Texas
Permit No. 996C

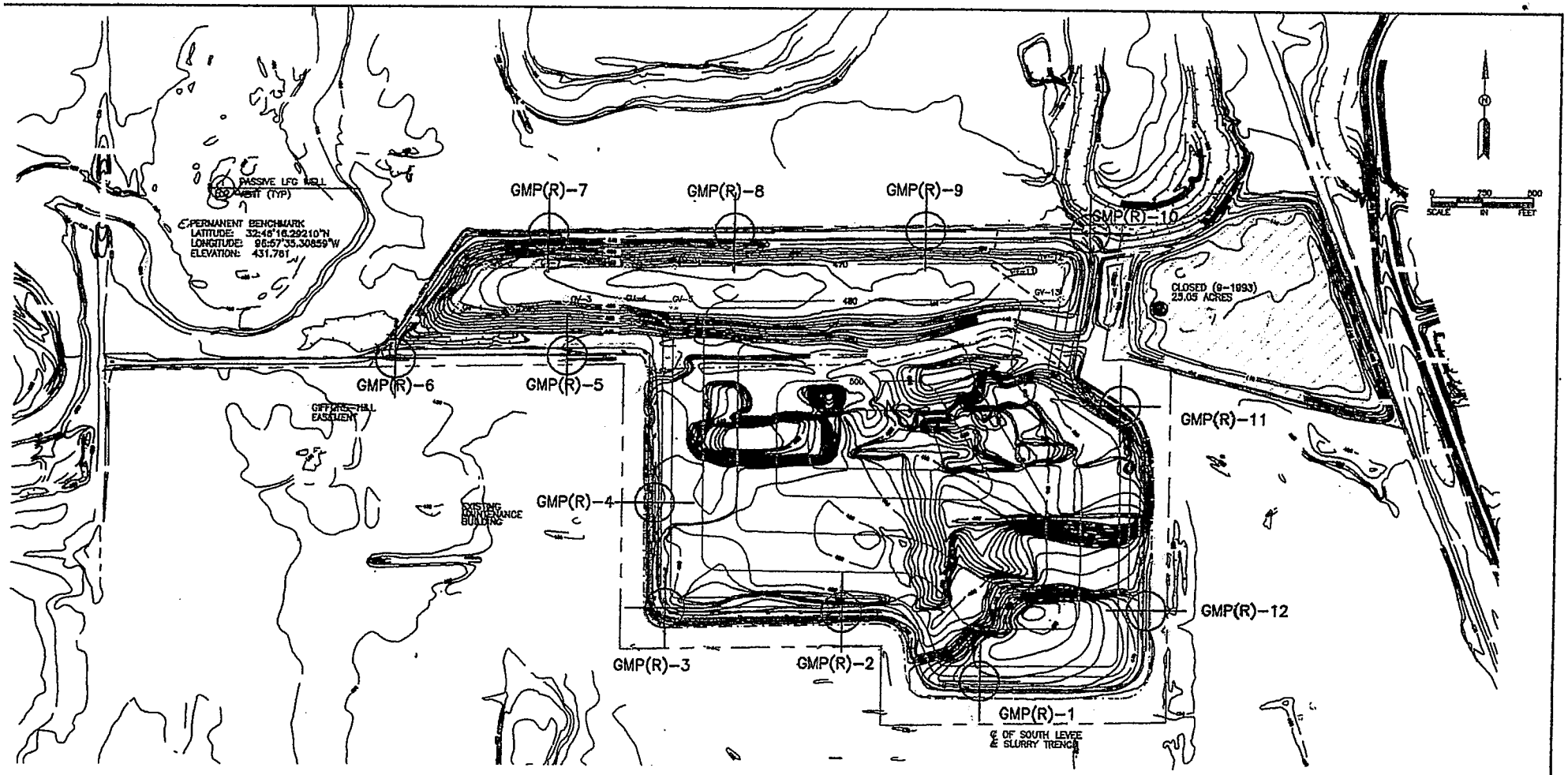
Device ID	Date/Time	CH4	CO2	O2	Balance	%LEL	Init. Static Press.	Init. Gas Temp.	Baro. Press.	Depth (ft) To	Total	Serial Number
		%	%	%	%	%	inches H2O	DegF	inches Hg	Groundwater	Depth	
GMP12s	1/23/2015 10:34	0	5	13.8	81.2	0	0	51	29.79	Empty	9.83	GM11906
GMP12d	1/23/2015 10:36	1.3	5.8	13.6	79.3	26	0	48	29.79	28.44	33.59	GM11906
Office 1	1/23/2015 10:51	0	0.1	22	77.9	0	0	69	29.79	N/A	N/A	GM11906
Maintenance	1/23/2015 10:53	0	0	22	78	0	0	70	29.78	N/A	N/A	GM11906
Storage	1/23/2015 10:59	0	0	22	78	0	0	56	29.78	N/A	N/A	GM11906
Gatehouse	1/23/2015 11:04	0	0.1	21.8	78.1	0	0	64	29.79	N/A	N/A	GM11906
Conference	1/23/2015 11:06	0	0	21.9	78.1	0	0	67	29.79	N/A	N/A	GM11906
Office 2	1/23/2015 11:10	0	0.1	21.9	78	0	0	67	29.79	N/A	N/A	GM11906

calibration - yes Temp 46° Tech. - JJ Rain 0.02"

Monthly Methane Monitoring Sheet
Grand Prairie Landfill, Dallas County, Texas
Permit No. 996C

Device ID	Date/Time	CH4	CO2	O2	Balance	%LEL	Init. Static Press.	Init. Gas Temp.	Baro. Press.	Depth (ft) To	Total	Serial Number
		%	%	%	%	%	inches H2O	DegF	inches Hg	Groundwater	Depth	
GMP12s	2/13/2015 13:37	0	5.1	13.1	81.8	0	0	69	29.77	Empty	9.82	GM11906
GMP12d	2/13/2015 13:39	0	7.4	8.6	84	0	0	66	29.77	28.5	33.61	GM11906
Office 1	2/13/2015 13:50	0	0	21.5	78.5	0	0	74	29.76	N/A	N/A	GM11906
Maintenance	2/13/2015 13:56	0	0	21.8	78.2	0	0	74	29.75	N/A	N/A	GM11906
Storage	2/13/2015 14:00	0	0	21.9	78.1	0	0	50	29.75	N/A	N/A	GM11906
Gatehouse	2/13/2015 14:09	0	0.1	21.8	78.1	0	0	75	29.76	N/A	N/A	GM11906
Conference	2/13/2015 14:11	0	0	21.9	78.1	0	0	70	29.75	N/A	N/A	GM11906
Office 2	2/13/2015 14:14	0	0	21.9	78.1	0	0	76	29.75	N/A	N/A	GM11906

calibration - yes Temp 74° Tech. - JJ Rain 0.00"



CITY OF GRAND PRAIRIE LANDFILL LANDFILL GAS MONITORING PROBES	DRAWING NO. 1—R