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Technical Memorandum

To: Mark Umholtz, Doug Day
From: Evan Christianson, PG; John Greer, PG
Subject: Groundwater Transport Simulations for Future Conditions at Freeway Landfill
Date: August 31, 2015
Project: 23/19-1283 Freeway Landfill Groundwater Modeling
Minnesota Pollution Control Agency (MPCA) contract number 93979

1.0 Introduction

Barr Engineering conducted groundwater model simulations to estimate the potential future impacts in groundwater beneath the Freeway Landfill in Burnsville, Minnesota. As shown on Figure 1, the landfill is located between the Minnesota River (north) and the Kramer Quarry (south). Currently, the groundwater near the landfill is heavily influenced by the significant, long-term dewatering operations at the Kraemer Quarry located to the south of Freeway landfill. Barr has been working with the City of Burnsville and the MPCA to estimate future groundwater conditions near the landfill that are anticipated when the quarry ceases operation and discontinues pumping.

The modeling presented in this memo involves simulations of contaminant transport associated with contaminants leaching from waste to shallow groundwater and migrating towards the Minnesota River and a future pit-lake that will form when dewatering cease at the Kraemer Quarry. These simulations used the groundwater analytical results from a recent MPCA groundwater investigation and built off previous groundwater modeling work completed by Barr Engineering for the City. The previous modeling was conducted to assess future water table conditions near Freeway Landfill after dewatering ceases. In general, the previous modeling effort indicated that groundwater elevations will rise after the Kramer Quarry operations cease and that the shallow water table will intercept the waste in the landfill in some areas. The previous modeling work was described in a Technical Memorandum dated May 22, 2015 (Barr Engineering, 2015), which provides descriptions of model development, calibration, simulation of various potential pit-lake stages, and assessment of the potential for the water table to rise above the bottom of the waste in the landfill.

2.0 Simulation of Groundwater Contaminant Concentrations Under Future Conditions (Post-Pit Dewatering)

The potential transport of contaminants leaching from the Landfill to shallow groundwater was simulated for two future conditions; a long term average condition (steady-state) and a 100-year flood condition (transient).

2.1 Changes to Groundwater Flow Model

The groundwater flow model as described in the May 22, 2015 Technical Memorandum (Barr Engineering, 2015) was used to generate the groundwater flow field for both the average and 100-year flood conditions. The following changes were made to the model:

- All simulations assumed a pit-lake stage of 690 feet; the lowest stage that they city of Burnsville believes they will be able to maintain. Based on results presented in the May 2015 memo, and current infrastructure in place at the quarry, additional mechanical methods (i.e. pumping) would be necessary to maintain a pit-lake stage below 690 feet. For the 100-year flood scenario the pit-lake stage was initially at a stage of 690-feet and allowed to rise during the flood event and then fall back to 690 feet after the flood.
- For the 100-year flood scenario the Minnesota River was simulated with the Reservoir Package of MODFLOW instead of the River Package. The Reservoir Package allows for the stage and areal extent of the river to be adjusted through time, whereas the River Package uses a fixed stage and area. The stage of the river was allowed to rise to an elevation of 716 feet, which is the 100 year flood stage for the reach of the Minnesota River near the Landfill (FEMA, 2011). The total flood time was based on review of previous floods of similar magnitude and set at 120 days, 60 day rise and 60 day fall.
- Transient simulations of the 100-year flood scenario require the inclusion of storage parameters (specific yield and specific storage). Storage parameter values were obtained from the Twin Cities Metropolitan Area Regional Groundwater Flow Model, Version 3 (Metro Model 3, Metropolitan Council, 2014). As described in the May 2015 memo, Metro Model 3 was the base model used in the construction of the model used for this study.

2.2 Groundwater Transport

The groundwater transport model MT3DMS (Zheng and Wang, 1999; Zheng, 2010) was used to simulate the transport of contaminants in groundwater. MT3DMS interfaces directly with MODFLOW,which was used to simulate groundwater flow. Conservative groundwater transport was simulated (i.e. dispersion was included but contaminant attenuation or degradation were not included). Contaminants of concern were mostly metals and no data exists to suggest significant retardation of dissolved metals at the Landfill site. Attenuation and degradation may be important for groundwater transport of some other constituents, such as VOCs. However, simulation of these constituents was not part of the scope of this work and the VOCs present less concern based on monitoring data collected in June, 2015 (See Section 2.2.1).

2.2.1 Source Concentration

The MPCA installed ten temporary monitoring wells at eight locations at the Landfill in June, 2015. At each location, a monitoring well was installed within the landfill waste with the bottom of the wells set at or near the top of Prairie du Chien (the uppermost bedrock unit beneath the site). At two of the locations, a paired deeper well was installed in the Prairie du Chien beneath the water. The locations of the monitoring wells (Figure 1) were chosen to try and target areas where previous data indicated the waste was wet (Gorman Surveying, 2005). Eight of the ten wells yielded sufficient volumes of water to allow collection of groundwater samples. Wells MW-02 and MW-03 were dry and samples were not collected from these locations. Two rounds of groundwater sampling were conducted by MPCA; June 17-18, 2015 and June 23-24, 2015. Results from these sampling events are summarized in Attachment A.

The results from the June 2015 sampling events were used to define source concentrations for the transport simulations. The following method was used:

- The average concentration for each constituent was calculated from all shallow well locations were water was present in the waste (the data from the deeper wells was not used and two of the shallow wells did not have data because they were dry). This average concentration was used as a constant source concentration for the MT3DMS transport model.
- The constant source was applied at the water table for areas where the water table is predicted to rise above the bottom of waste.
- For flood simulations, areas where additional waste will become wet during a flood event were set as source areas at the same average concentrations. However, these areas were only active as a contaminant source during the flood event.
- Transport simulations were conducted for those constituents that were present at elevated concentrations with respect to the corresponding water quality standards and were present in most samples. Results from these transport simulations were used to estimate concentrations for other constituents (see Section 2.4)

2.3 Uncertainty Analysis

To address uncertainty in the model predictions, simulations were conducted using numerous parameter sets. A subset of parameter sets used for previous modeling uncertainty analysis described in the May 22, 2015 memo were used. Latin hypercube sampling (Swiler and Wyss, 2004; Watermark Numerical Computing, 2012) was used to generate 1000 unique parameter sets, allowing parameters to vary over expected ranges. Model simulations were then conducted using these parameter sets and the results were compared to the calibration dataset. Parameter combinations that resulted in no more than a 5% increase in the calibration objective function (error of best-fit model to measured data) were deemed acceptable and used to assess potential future conditions. Parameter sets that resulted in more than a 5%

increase in the calibration objective function were deemed unacceptable (i.e. poor model fit to observations) and excluded from further analysis. A total of 298 unique parameter combinations, out of 1000 possible, were ultimately deemed acceptable. For previous assessments of future water table elevations, described in the May 22, 2105 memo, all 298 parameter sets were used for uncertainty analysis. However, for transport simulations a random subset of 20 parameter sets was used because of the much longer model runtimes associated with transport simulations. Using all 298 parameter sets was deemed not practical given project time constraints and computing resources.

The 20 parameter sets described above account for variations in only hydraulic parameters (e.g. hydraulic conductivity). They do not account for uncertainty in transport parameters. Because conservative transport was simulated, the main parameter controlling groundwater concentrations is dispersivity. Simulations were conducted using each of the 20 hydraulic parameter datasets while also varying the longitudinal dispersivity from 1, to 10, to 100. The ratios of longitudinal to transverse dispersivity and longitudinal to vertical dispersivity were 10 and 100 respectively for all simulations. In total 60 parameter sets were developed for assessing the uncertainty in transport simulations.

2.4 Results

Results from the groundwater transport simulations for average, steady-state, conditions are presented in Table 1. Four constituents were simulated with MODFLOW-MT3DMS: chromium, cobalt, copper, and chloride. Based on sampling data from June 2015, these constituents were prevalent in all samples and of most concern since they exceed surface water standards (Attachment A). Transport of the remaining constituents was estimated based on the simulations of chromium, cobalt, copper, and chloride (Table 1). Because the transport simulations assume conservative transport (i.e. no degradation or retardation) and use the same source area (area where water table predicted to rise into the waste) results for other constituents and source concentrations can be estimated by assuming conservative transport and applying the same ratio between source concentration and maximum concentration at a receptor determined by the MODFLOW-MT3DMS simulations. Maximum concentrations discharging to the river and pit-lake (Table 1) represent the maximum simulated concentration at any model cell that discharges into each receptor. Values are presented as a range and represent the range of maximum values determined through 60 separate simulations with 60 different parameter sets as described in Section 2.3. Groundwater discharging to either the pit-lake or river exceeds water quality standards for the following constituents (purple and blue highlights in Table 1): chromium, cobalt, chloride, antimony, arsenic, cadmium, iron, lead, manganese, mercury, nickel, zinc, and perfluorooctanoic acid (PFOA). It is noted that water quality standards for chromium are based on hexavalent chromium; samples for chromium were not analyzed for hexavalent chromium.

Results from the 100-yr flood scenario are presented in Table 2. Maximum concentrations discharging to the river and pit lake increase slightly simply because of a larger source area during the flood event as the water table rises.

2.5 Limitations of Model Simulations

The model simulations conducted for this study were designed to simulate conditions at the Landfill that do not currently exist but are anticipated in the future after dewatering at the Kraemer Quarry stops. Groundwater sample data collected in June 2015 were used as a surrogate for what groundwater concentrations may be in the future when the water table is in contact with the waste. The June 2015 sampling locations were targeted at locations previously identified to have wet waste. As the water table rises beneath the Landfill, more waste is predicted to come into contact with groundwater. Concentrations of contaminants in groundwater for the areas where waste will intersect the water table in the future are unknown. The June 2015 data provides a current estimate of source concentrations for groundwater, but likely does not capture the full range of potential concentrations (both higher and lower) that will occur when future conditions emerge.

Conservative transport was used for all simulations. This assumption was deemed to be valid given the contaminants of most concern are dissolved metals and no data exists to suggest that significant attenuation of these metals will occur during transport from the Landfill to either the future pit-lake or the river. Other potential contaminants, such as VOCs, may degrade or be attenuated during transport to the pit-lake or river.

3.0 References

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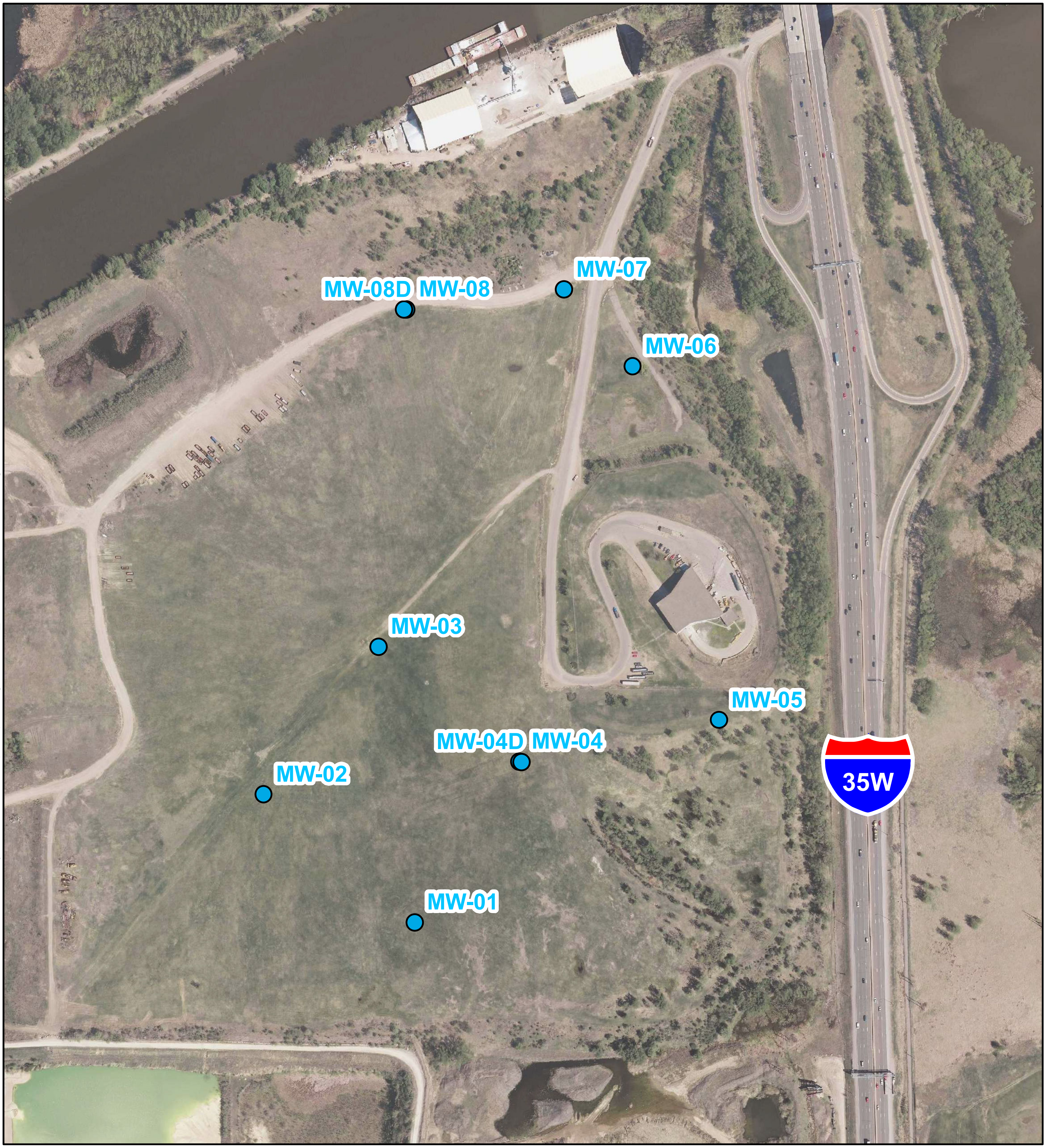
Zheng, C., 2010, MT3DMS v5.3 Supplemental User's Guide, Department of Geological Sciences, University of Alabama, Tuscaloosa, Alabama.



Monitoring Well Location

N

Feet

500 0 500

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Figure 1

MONITORING WELLS INSTALLED JUNE 2015
Freeway Landfill
Dakota County, Minnesota

Table 1

Results of Groundwater Transport Simulations for Average Steady-State Conditions

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Model Simulations, Steady-State Flow Field, Conservative Constituents[e]												
				Water Quality Standards								
	Avg. Concentration from June 2015[a]	**Range of Simulated Maximum Concentration to River[d]**	**Range of Simulated Maximum Concentration to Pit Lake[d]**	**Class 2A Chronic (350 Hardness)**	**Class 2A Maximum (350 Hardness)**	**Class 2A Acute (350 Hardness)**	**Class 2B Chronic (350 Hardness)**	**Class 2B Maximum (350 Hardness)**	**Class 2B Acute (350 Hardness)**	**EPA Secondary Drinking Water Regulations**	**MDH Human Health Based Water Guidance**	**EPA Maximum Contaminant Levels**
Chromium (µg/L)[b]	35.7	8.7 - 21.0	7.4 - 33.8	11 (CR6)	16 (CR6)	31 (CR6)	11 (CR6)	16 (CR6)	31 (CR6)	--	100 (CR6)	100
Cobalt (µg/L)	89.5	21.9 - 52.5	18.5 - 84.6	2.8	436	872	5	436	872	--	--	--
Copper (µg/L)	17.8	4.5-10.5	3.7 - 16.8	21	55	111	21	55	111	1000	--	1300
Chloride (mg/L)	759.2	189 - 446	161 - 718	230	860	1720	230	860	1720	250	--	--
Estimated Concentrations Based on Model Simulations of Conservative Constituents												
Sulfate, as SO4 (µg/L)	274.5	68.6 - 161.4	54.9 - 260.8	--	--	--	--	--	--	250	--	--
Antimony (µg/L)	7.0	1.8 - 4.1	1.4 - 6.7	5.5	90	180	31	90	180	--	6	6
Arsenic (µg/L)	5.2	1.3 - 3.1	1.0 - 4.9	2	360	720	53	360	720	--	--	10
Barium (µg/L)	644.4	161 - 379	129 - 612	--	--	--	--	--	--	--	2000	2000
Cadmium (µg/L)	1.5	0.4 - 0.9	0.3 - 1.4	2.8	15	30	2.8	130	260	--	0.5	5
Calcium (µg/L)	708000.0	177000 - 416304	141600 - 672600	--	--	--	--	--	--	--	--	--
Iron (µg/L)	479504.8	119876 - 281949	95901 - 455530	--	--	--	--	--	--	300	--	--
Lead (µg/L)	15.0	3.7 - 8.8	3.0 - 14.2	12	318	638	12	318	638			15
Magnesium (µg/L)	221225.0	55306 - 130080	44245 - 210164	--	--	--	--	--	--	--	--	--
Manganese (µg/L)	7420.1	1855 - 4363	1484 - 7049	--	--	--	--	--	--	50	100	
Mercury (µg/L)[c]	0.2[c]	0.04 - 0.1[c]	0.03 - 0.1[c]	0.0069[c]	2.0	4.2	0.0069[c]	2.0	4.2	--	--	2
Nickel (µg/L)	397.3	99.3 - 233.6	79.5 - 377.4	296	4085	8169	454	4085	8169	--	100	
Potassium (µg/L)	229183.3	57296 - 134760	45837 - 217724	--	--	--	--	--	--	--	--	--
Selenium (µg/L)	1.5	0.4 - 0.9	0.3 - 1.4	5	20	40	5	20	40	--	30	50
Sodium (µg/L)	528108.3	132027 - 310528	105622 - 501703	--	--	--	--	--	--	--	--	--
Zinc (µg/L)	15253.1	3813 - 8969	3051 - 14490	302	331	662	306	338	677	5000	2000	--
Perfluorinated Compounds												
Perfluorobutane sulfonate (PFBS) (µg/L)	0.1	0.02 - 0.04	0.01 - 0.1	--	--	--	--	--	--	--	7	--
Perfluorobutyric acid (µg/L)	2.7	0.7 - 1.6	0.5 - 2.6	--	--	--	--	--	--	--	7	
Perfluorohexane sulfonate (µg/L)	0.1	0.0 - 0.1	0.02 - 0.1	--	--	--	--	--	--	--	--	--
Perfluorohexanoic acid (µg/L)	0.4	0.1 - 0.3	0.1 - 0.4	--	--	--	--	--	--	--	--	--
Perfluorooctane sulfonate (PFOS) (µg/L)	0.1	0.0 - 0.1	0.02 - 0.1	--	--	--	--	--	--	--	0.3	--
Perfluorooctanoic acid (PFOA) (µg/L)	1.0	0.2 - 0.6	0.2 - 0.9	--	--	--	--	--	--	--	0.3	--
Perfluoropentanoic acid (µg/L)	0.4	0.1 - 0.2	0.1 - 0.3	--	--	--	--	--	--	--		

Key:

Prediction to pit-lake exceeds standard

Prediction to both pit-lake and river exceed standard

Notes:

[a]The average concentration for June 2015 was calculated using two sampling rounds conducted by the MPCA and included only shallow wells where nested. Non-detects were assumed to be one-half the reporting limit.
Individual compounds not detected in all wells.

[b]Water quality standards for chromium are based on hexavalent chromium (CR6). Samples for chromium were not analyzed for hexavalent chromium.
Based on pH data from June, 2015 samples it is likely that much of the chromium is not hexavalent chromium.

[c]Reporting limits for mercury above the chronic surface water standard. Actual concentrations unknown. One-half reporting limit used for analysis.

[d]All simulations assume conservative transport (i.e. no degradation or retardation); data are not available to support simulation of these transport mechanism. Only dispersivity was included in transport simulations.
The range for maximum concentration to the river and pit-lake based on model simulations with varying input parameters that bracket uncertainty in the data.
These include hydraulic parameters (hydraulic conductivity, recharge) and dispersivity.
All simulations assume the same source area based on area where water table would rise into the waste
Pit-lake assumed to be held at elevation of 690 feet

[e]Estimated concentrations based on same underlying assumptions of conservative transport mechanisms and same source area.
Minnesota River hardness data from *MPCA, 2006. Working Draft, Surface Water Pathway Evaluation user's Guide, Appendix E*

Table 2

Results of Groundwater Transport Simulations for 100-Year Flood Conditions

Model Simulations, 100 Year Flood Condition, Concervative Constituents												
				Water Quality Standards								
DRAFT	Avg. Concentration from June 2015 [a]	Range of Maximum Concentration to River [c]	Range of Maximum Concentration to Pit Lake [c]	Class 2A Chronic (350 Hardness)	Class 2A Maximum (350 Hardness)	Class 2A Acute (350 Hardness)	Class 2B Chronic (350 Hardness)	Class 2B Maximum (350 Hardness)	Class 2B Acute (350 Hardness)	EPA Secondary Drinking Water Regulations	MDH Human Health Based Water Guidance	EPA Maximum Contaminant Levels
Chromium (µg/L)[b]	35.7	15.6 - 24.8	8.7 - 33.8	11 (CR6)	16 (CR6)	31 (CR6)	11 (CR6)	16 (CR6)	31 (CR6)	--	100 (CR6)	100
Cobalt (µg/L)	89.5	39.1 - 62.1	21.9 - 84.6	2.8	436	872	5	436	872	--	--	--
Chloride (mg/L)	759.2	332 - 527	186 - 718	230	860	1720	230	860	1720	250	--	--

Key:

Prediction to pit-lake exceeds standard

Prediction to both pit-lake and river exceed standard

Notes:

[a]The average concentration for June 2015 was calculated using two sampling rounds conducted by the MPCA and included only shallow wells where nested. Non-detects were assumed to be one-half the reporting limit.
Individual compounds not detected in all wells.

[b]Water quality standards for chromium are based on hexavalent chromium (CR6). Samples for chromium were not analyzed for hexavalent chromium.
Based on pH data from June 2015 samples it is likely that much of the chromium is not hexavalent chromium.

[c]All simulations assume conservative transport (i.e. no degradation or retardation); data are not available to support simulation of these transport mechanism. Only dispersivity was included in transport simulations.
The range for maximum concentration to the river and pit-lake based on model simulations with varying input parameters that bracket uncertainty in the data.
These include hydraulic parameters (hydraulic conductivity, recharge) and dispersivity.
All simulations assume the same source area based on area where water table would rise into the waste
Pit-lake assumed to be at elevation of 690 feet prior to flood

Minnesota River hardness data from *MPCA, 2006. Working Draft, Surface Water Pathway Evaluation user's Guide, Appendix E*

Attachment A

Draft

Table A-1
Water Analytical Data Summary
MPCA - Freeway Landfill

Parameter	Total or Dissolved	Analysis Location	Minnesota Surface Water 2A Chronic 7050 - 350 Hardness	Minnesota Surface Water 2A Maximum 7050 - 350 Hardness	Minnesota Surface Water 2A Final Acute Value 7050 - 350 Hardness	Location: Duplicate Date: 6/17/2015	Duplicate-2 6/23/2015	MW-1 6/17/2015	MW-1 6/18/2015	MW-1 6/24/2015	MW-4 6/17/2015	MW-4 6/24/2015	MW-4D 6/17/2015	MW-4D 6/24/2015	MW-5 6/16/2015	MW-5 6/23/2015	MW-6 6/17/2015
Effective Date			01/24/2012	01/24/2012	01/24/2012												
Exceedance Key			**Bold**	*Italic*	Underline												
General Parameters																	
Alkalinity, bicarbonate, as CaCO3	NA	Lab				1090 mg/l	1190 mg/l	--	8270 mg/l	40100 mg/l	2430 mg/l	6880 mg/l	1100 mg/l	2920 mg/l	6160 mg/l	5790 mg/l	--
Alkalinity, bicarbonate, as HCO3	NA	Lab				1330 mg/l	1450 mg/l	--	10100 mg/l	48900 mg/l	2970 mg/l	8400 mg/l	1340 mg/l	3560 mg/l	7520 mg/l	7060 mg/l	--
Alkalinity, carbonate, as CaCO3	NA	Lab				< 5.0 mg/l	< 5.0 mg/l	--	< 25.0 mg/l	< 25.0 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 5.0 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 12.5 mg/l	--
Alkalinity, carbonate, as CO3	NA	Lab				< 5.0 mg/l	< 5.0 mg/l	--	< 25.0 mg/l	< 25.0 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 5.0 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 12.5 mg/l	--
Alkalinity, hydroxide, as CaCO3	NA	Lab				< 5.0 mg/l	< 5.0 mg/l	--	< 25.0 mg/l	< 25.0 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 5.0 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 12.5 mg/l	--
Alkalinity, hydroxide, as OH	NA	Lab				< 5.0 mg/l	< 5.0 mg/l	--	< 25.0 mg/l	< 25.0 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 5.0 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 12.5 mg/l	--
Alkalinity, total, as CaCO3	NA	Lab				1090 mg/l	1190 mg/l	--	8270 mg/l	40100 mg/l	2430 mg/l	6880 mg/l	1100 mg/l	2920 mg/l	6160 mg/l	5790 mg/l	--
Anions	NA	Lab				44.4 meq/l	25.1 meq/l	--	234 meq/l	243 meq/l	85.2 meq/l	89.1 meq/l	44.6 meq/l	43.8 meq/l	159 meq/l	86.1 meq/l	--
Biochemical Oxygen Demand (5-day)	NA	Lab				< 60.0 mg/l	26.9 mg/l	--	19500 mg/l	28900 mg/l	< 200 mg/l	44.5 mg/l	< 60.0 mg/l	< 12.0 mg/l	< 120 mg/l	56.6 mg/l	--
Carbon, total organic	NA	Lab				63.7 mg/l	34.9 mg/l	--	12400 mg/l	13000 mg/l	172 mg/l	156 mg/l	63.4 mg/l	56.6 mg/l	244 mg/l	249 mg/l	--
Cation-Anion balance	NA	Lab				-7.20 %	-6.06 %	--	10.29 %	0.86 %	-10.33 %	-8.81 %	-5.08 %	-8.66 %	-43.42 %	-13.11 %	--
Cations	NA	Lab				38.5 meq/l	22.2 meq/l	--	287 meq/l	247 meq/l	69.2 meq/l	74.7 meq/l	40.3 meq/l	36.8 meq/l	62.6 meq/l	66.1 meq/l	--
Chloride	NA	Lab	**230 mg/l**	*860 mg/l*	1720 mg/l	**729 mg/l**	46.8 mg/l	--	***1540 mg/l***	***1560 mg/l***	***1290 mg/l***	***1210 mg/l***	**727 mg/l**	**648 mg/l**	***1200 mg/l***	***1320 mg/l***	--
Dissolved oxygen	NA	Field	(4)	(4)		--	--	--	12.2 mg/l	12.7 mg/l	0.3 mg/l	0.1 mg/l	5.8 mg/l	0.2 mg/l	0.1 mg/l	0.1 mg/l	--
Nitrogen, Nitrate + Nitrite, as N	NA	Lab				< 0.10 mg/l	< 0.10 mg/l	--	< 0.50 mg/l	< 1.0 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	--
Nitrogen, Nitrate as N	NA	Lab				< 0.10 mg/l	< 0.10 mg/l	--	< 0.50 mg/l	< 1.0 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	--
Nitrogen, Nitrite as N	NA	Lab				< 0.10 mg/l	< 0.10 mg/l	--	0.57 mg/l	0.53 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	--
pH	NA	Field	8.5 pH units			--	--	--	6.3 pH units	6.3 pH units	7.3 pH units	7.4 pH units	6.9 pH units	7.3 pH units	7.5 pH units	7.8 pH units	--
Redox (oxidation potential)	NA	Field				--	--	--	7 mV	-39 mV	2 mV	137 mV	169 mV	150 mV	-97 mV	36 mV	--
Specific Conductance @ 25 ºC	NA	Field				--	--	--	19000 umhos/cm	19100 umhos/cm	7490 umhos/cm	7570 umhos/cm	4130 umhos/cm	4180 umhos/cm	7560 umhos/cm	8100 umhos/cm	--
Static Water Level	NA	Field				--	--	--	37.20 ft	37.30 ft	46.60 ft	46.55 ft	58.96 ft	59.29 ft	33.21 ft	33.70 ft	--
Sulfate, as SO4	NA	Lab				100 mg/l	< 2.5 mg/l	--	1200 mg/l	1870 mg/l	8.8 mg/l	< 2.5 mg/l	101 mg/l	103 mg/l	85.4 mg/l	118 mg/l	--
Temperature, ºC	NA	Field				--	--	--	12.5 deg C	12.5 deg C	18.0 deg C	17.5 deg C	19.5 deg C	17.5 deg C	17.0 deg C	15.0 deg C	--
Metals																	
Antimony	Dissolved	Lab	**5.5 ug/l**	90 ug/l	180 ug/l	0.65 ug/l	< 0.50 ug/l	--	**8.3 ug/l**	**12.2 ug/l**	**55.1 ug/l**	2.7 ug/l	0.70 ug/l	0.55 ug/l	0.60 ug/l	< 2.5 ug/l	--
Antimony	Total	Lab	**5.5 ug/l**	*90 ug/l*	180 ug/l	0.73 ug/l	< 0.50 ug/l	--	**11.3 ug/l**	< 10.0 ug/l	< 2.5 ug/l	**9.9 ug/l**	0.72 ug/l	< 0.50 ug/l	***271 ug/l***	< 2.5 ug/l	--
Arsenic	Dissolved	Lab	**2.0 ug/l**	360 ug/l	720 ug/l	**4.3 ug/l**	1.1 ug/l	--	**20.0 ug/l**	< 10.0 ug/l	**6.0 ug/l**	**4.9 ug/l**	**4.5 ug/l**	**6.9 ug/l**	**4.1 ug/l**	**4.8 ug/l**	--
Arsenic	Total	Lab	**2.0 ug/l**	360 ug/l	720 ug/l	**4.9 ug/l**	1.2 ug/l	--	**15.0 ug/l**	< 10.0 ug/l	**10.4 ug/l**	**6.8 ug/l**	**4.8 ug/l**	**7.2 ug/l**	**17.0 ug/l**	**5.6 ug/l**	--
Barium	Dissolved	Lab				700 ug/l	950 ug/l	--	984 ug/l	220 ug/l	423 ug/l	422 ug/l	774 ug/l	936 ug/l	466 ug/l	515 ug/l	--
Barium	Total	Lab				699 ug/l	953 ug/l	--	521 ug/l	50.3 ug/l	605 ug/l	582 ug/l	717 ug/l	1030 ug/l	830 ug/l	559 ug/l	--
Cadmium	Dissolved	Lab	**2.8 HD CF ug/l**	15 HD CF ug/l	30 HD CF ug/l	< 0.080 ug/l	< 0.080 ug/l	--	**4.1 ug/l**	**11.3 ug/l**	1.4 ug/l	< 0.40 ug/l	< 0.080 ug/l	< 0.080 ug/l	< 0.080 ug/l	< 0.40 ug/l	--
Cadmium	Total	Lab	**3.0 HD ug/l**	16 HD ug/l	32 HD ug/l	< 0.080 ug/l	< 0.080 ug/l	--	**8.9 ug/l**	2.6 ug/l	2.9 ug/l	2.0 ug/l	< 0.080 ug/l	< 0.080 ug/l	**9.2 ug/l**	0.96 ug/l	--
Calcium	Dissolved	Lab				115000 ug/l	241000 ug/l	--	3390000 ug/l	2840000 ug/l	203000 ug/l	204000 ug/l	145000 ug/l	140000 ug/l	188000 ug/l	197000 ug/l	--
Calcium	Total	Lab				123000 ug/l	243000 ug/l	--	3190000 ug/l	564000 ug/l	214000 ug/l	246000 ug/l	126000 ug/l	178000 ug/l	301000 ug/l	214000 ug/l	--
Chromium	Dissolved	Lab	**11 CF CR6 ug/l**	*16 CF CR6 ug/l*	31 CF CR6 ug/l	**14.1 ug/l**	6.8 ug/l	--	***215 ug/l***	***120 ug/l***	**13.7 ug/l**	9.1 ug/l	***17.2 ug/l***	6.9 ug/l	8.8 ug/l	9.0 ug/l	--
Chromium	Total	Lab	**11 CR6 ug/l**	*16 CR6 ug/l*	32 CR6 ug/l	***16.1 ug/l***	7.4 ug/l	--	***164 ug/l***	***27.6 ug/l***	***52.4 ug/l***	***33.2 ug/l***	***16.3 ug/l***	***18.5 ug/l***	***86.7 ug/l***	***16.4 ug/l***	--
Cobalt	Dissolved	Lab	**2.8 ug/l**	*436 ug/l*	872 ug/l	**6.3 ug/l**	1.4 ug/l	--	***497 ug/l***	***497 ug/l***	**9.4 ug/l**	**7.3 ug/l**	**6.6 ug/l**	**5.9 ug/l**	**11.2 ug/l**	**11.0 ug/l**	--
Cobalt	Total	Lab	**2.8 ug/l**	*436 ug/l*	872 ug/l	**6.5 ug/l**	1.6 ug/l	--	***485 ug/l***	**114 ug/l**	**18.0 ug/l**	**8.1 ug/l**	**6.4 ug/l**	**6.6 ug/l**	**14.6 ug/l**	**12.4 ug/l**	--
Copper	Dissolved	Lab	**21 HD CF ug/l**	*55 HD CF ug/l*	111 HD CF ug/l	12.2 ug/l	< 1.0 ug/l	--	***108 ug/l***	< 20.0 ug/l	11.7 ug/l	< 5.0 ug/l	13.0 ug/l	< 1.0 ug/l	1.8 ug/l	< 5.0 ug/l	--
Copper	Total	Lab	**21 HD ug/l**	*58 HD ug/l*	115 HD ug/l	12.7 ug/l	< 1.0 ug/l	--	**47.9 ug/l**	< 20.0 ug/l	***91.8 ug/l***	11.0 ug/l	12.6 ug/l	5.9 ug/l	***65.1 ug/l***	11.4 ug/l	--
Iron	Dissolved	Lab				473 ug/l	47700 ug/l	--	2590000 ug/l	2920000 ug/l	15000 ug/l	15500 ug/l	1290 ug/l	4150 ug/l	15900 ug/l	21100 ug/l	--
Iron	Total	Lab				479 ug/l	49100 ug/l	--	2670000 ug/l	634000 ug/l	41100 ug/l	27300 ug/l	< 1000 ug/l	5910 ug/l	49300 ug/l	28800 ug/l	--
Lead	Dissolved	Lab	**12 HD CF ug/l**	318 HD CF ug/l	638 HD CF ug/l	0.24 ug/l	< 0.10 ug/l	--	**92.6 ug/l**	**18.1 ug/l**	**45.3 ug/l**	0.64 ug/l	0.50 ug/l	< 0.10 ug/l	2.1 ug/l	8.5 ug/l	--
Lead	Total	Lab	**16 HD ug/l**	402 HD ug/l	807 HD ug/l	0.24 ug/l	1.2 ug/l	--	**92.1 ug/l**	5.2 ug/l	**172 ug/l**	**82.4 ug/l**	0.22 ug/l	1.0 ug/l	**327 ug/l**	**64.4 ug/l**	--
Magnesium	Dissolved	Lab				127000 ug/l	72500 ug/l	--	655000 ug/l	388000 ug/l	238000 ug/l	248000 ug/l	145000 ug/l	118000 ug/l	165000 ug/l	164000 ug/l	--
Magnesium	Total	Lab				134000 ug/l	74100 ug/l	--	504000 ug/l	91000 ug/l	175000 ug/l	290000 ug/l	136000 ug/l	140000 ug/l	287000 ug/l	193000 ug/l	--
Manganese	Dissolved	Lab				266 ug/l	621 ug/l	--	38900 ug/l	40000 ug/l	835 ug/l	530 ug/l	339 ug/l	467 ug/l	1420 ug/l	1080 ug/l	--
Manganese	Total	Lab				284 ug/l	631 ug/l	--	43800 ug/l	8950 ug/l	1830 ug/l	804 ug/l	295 ug/l	756 ug/l	1920 ug/l	1120 ug/l	--
Mercury	Dissolved	Lab	0.0069 CF ug/l	2.0 CF (1) ug/l	4.2 CF (1) ug/l	< 0.20 ug/l	< 0.20 ug/l	--	< 0.60 ug/l	< 0.60 ug/l	< 0.60 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	--
Mercury	Total	Lab	**0.0069 ug/l**	2.4 (1) ug/l	4.9 (1) ug/l	< 0.20 ug/l	< 0.20 ug/l	--	< 0.60 ug/l	< 0.20 ug/l	**0.33 ug/l**	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	**0.75 ug/l**	< 0.20 ug/l	--
Nickel	Dissolved	Lab	**296 HD CF ug/l**	4085 HD CF ug/l	8169 HD CF ug/l	73.8 ug/l	3.5 ug/l	--	**2090 ug/l**	**2370 ug/l**	40.6 ug/l	47.7 ug/l	76.2 ug/l	63.6 ug/l	23.3 ug/l	23.7 ug/l	--
Nickel	Total	Lab	**297 HD ug/l**	4093 HD ug/l	8185 HD ug/l	79.7 ug/l	3.9 ug/l	--	**2240 ug/l**	**543 ug/l**	53.0 ug/l	45.6 ug/l	78.4 ug/l	70.6 ug/l	75.8 ug/l	29.6 ug/l	--
Potassium	Dissolved	Lab				107000 ug/l	61400 ug/l	--	566000 ug/l	620000 ug/l	259000 ug/l	290000 ug/l	116000 ug/l	97400 ug/l	281000 ug/l	289000 ug/l	--
Potassium	Total	Lab				117000 ug/l	61600 ug/l	--	673000 ug/l	141000 ug/l	298000 ug/l	315000 ug/l	119000 ug/l	99900 ug/l	276000 ug/l	331000 ug/l	--
Selenium	Dissolved	Lab	**5.0 ug/l**	20 ug/l	40 ug/l	0.77 ug/l	< 0.50 ug/l	--	**5.7 ug/l**	< 10.0 ug/l	0.68 ug/l	< 2.5 ug/l	0.75 ug/l	< 0.50 ug/l	0.59 ug/l	< 2.5 ug/l	--

Draft

Table A-1
Water Analytical Data Summary
MPCA - Freeway Landfill

Parameter	Total or Dissolved	Analysis Location	Minnesota Surface Water 2A Chronic 7050 - 350 Hardness	Minnesota Surface Water 2A Maximum 7050 - 350 Hardness	Minnesota Surface Water 2A Final Acute Value 7050 - 350 Hardness	Duplicate 6/17/2015	Duplicate-2 6/23/2015	MW-1 6/17/2015	MW-1 6/18/2015	MW-1 6/24/2015	MW-4 6/17/2015	MW-4 6/24/2015	MW-4D 6/17/2015	MW-4D 6/24/2015	MW-5 6/16/2015	MW-5 6/23/2015	MW-6 6/17/2015
Effective Date			01/24/2012	01/24/2012	01/24/2012												
Exceedance Key			**Bold**	*Italic*	Underline												
Selenium	Total	Lab	5.0 ug/l	20 ug/l	40 ug/l	0.89 ug/l	< 0.50 ug/l	--	< 10.0 ug/l	< 10.0 ug/l	< 2.5 ug/l	< 2.5 ug/l	0.86 ug/l	< 0.50 ug/l	< 2.5 ug/l	< 2.5 ug/l	--
Sodium	Dissolved	Lab				449000 ug/l	61000 ug/l	--	1110000 ug/l	1220000 ug/l	755000 ug/l	843000 ug/l	417000 ug/l	405000 ug/l	746000 ug/l	813000 ug/l	--
Sodium	Total	Lab				445000 ug/l	62700 ug/l	--	1320000 ug/l	281000 ug/l	787000 ug/l	915000 ug/l	440000 ug/l	420000 ug/l	838000 ug/l	969000 ug/l	--
Zinc	Dissolved	Lab	**302 HD CF ug/l**	*331 HD CF ug/l*	662 HD CF ug/l	< 5.0 ug/l	< 5.0 ug/l	--	***73600 ug/l***	***109000 ug/l***	124 ug/l	< 25.0 ug/l	6.4 ug/l	7.2 ug/l	17.3 ug/l	54.0 ug/l	--
Zinc	Total	Lab	**306 HD ug/l**	*338 HD ug/l*	677 HD ug/l	< 5.0 ug/l	9.0 ug/l	--	***101000 ug/l***	***22600 ug/l***	***1040 ug/l***	221 ug/l	< 5.0 ug/l	12.3 ug/l	***854 ug/l***	***460 ug/l***	--
SVOCs																	
1,2,4-Trichlorobenzene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
1,2-Dichlorobenzene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
1,2-Diphenylhydrazine	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
1,3-Dichlorobenzene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
1,4-Dichlorobenzene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	11.9 ug/l	--
1-Methylnaphthalene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2,2-oxybis (1-chloropropane)	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2,4,5-Trichlorophenol	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2,4,6-Trichlorophenol	NA	Lab	2.0 ug/l	102 ug/l	203 ug/l	< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2,4-Dichlorophenol	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2,4-Dimethylphenol	NA	Lab				< 51.0 ug/l	< 52.1 ug/l	--	< 128000 ug/l	< 125000 ug/l	< 51.0 ug/l	< 51.3 ug/l	< 51.0 ug/l	< 51.8 ug/l	< 102 ug/l	< 50.8 ug/l	--
2,4-Dinitrophenol	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2,4-Dinitrotoluene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2,6-Dinitrotoluene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2-Chloronaphthalene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2-Chlorophenol	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2-Methyl-4,6-dinitrophenol	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2-Methylnaphthalene	NA	Lab				< 10.2 ug/l	11.0 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2-Methylphenol (o-cresol)	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2-Nitroaniline	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2-Nitrophenol	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
3,3`-Dichlorobenzidine	NA	Lab				< 51.0 ug/l	< 52.1 ug/l	--	< 128000 ug/l	< 125000 ug/l	< 51.0 ug/l	< 51.3 ug/l	< 51.0 ug/l	< 51.8 ug/l	< 102 ug/l	< 50.8 ug/l	--
3,4-Methylphenol (m,p cresols)	NA	Lab				< 20.4 ug/l	< 20.8 ug/l	--	< 51000 ug/l	< 50000 ug/l	< 20.4 ug/l	< 20.5 ug/l	< 20.4 ug/l	< 20.7 ug/l	< 40.8 ug/l	24.6 ug/l	--
3-Nitroaniline	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
4-Bromophenyl phenyl ether	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
4-Chloro-3-methylphenol	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
4-Chloroaniline	NA	Lab				< 51.0 ug/l	< 52.1 ug/l	--	< 128000 ug/l	< 125000 ug/l	< 51.0 ug/l	< 51.3 ug/l	< 51.0 ug/l	< 51.8 ug/l	< 102 ug/l	< 50.8 ug/l	--
4-Chlorophenyl phenyl ether	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
4-Nitroaniline	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
4-Nitrophenol	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Acenaphthene	NA	Lab	20 ug/l	56 ug/l	112 ug/l	< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Acenaphthylene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Anthracene	NA	Lab	0.035 ug/l	0.32 ug/l	0.63 ug/l	< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Benz(a)anthracene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Benzo(a)pyrene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Benzo(b)fluoranthene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Benzo(g,h,i)perylene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Benzo(k)fluoranthene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Bis(2-chloroethoxy)methane	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Bis(2-chloroethyl)ether	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Bis(2-ethylhexyl)phthalate	NA	Lab	1.9 ug/l	(1)	(1)	< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Butyl benzyl phthalate	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Carbazole	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	21.5 ug/l	14.4 ug/l	--
Chrysene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Dibenz(a,h)anthracene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Dibenzofuran	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Diethyl phthalate	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	15.7 ug/l	--
Dimethyl phthalate	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Di-n-butyl phthalate	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Di-n-octyl phthalate	NA	Lab	30 ug/l	825 ug/l	1650 ug/l	< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--

Table A-1
Water Analytical Data Summary
MPCA - Freeway Landfill

Location / Date						Duplicate 6/17/2015	Duplicate-2 6/23/2015	MW-1 6/17/2015	MW-1 6/18/2015	MW-1 6/24/2015	MW-4 6/17/2015	MW-4 6/24/2015	MW-4D 6/17/2015	MW-4D 6/24/2015	MW-5 6/16/2015	MW-5 6/23/2015	MW-6 6/17/2015
Parameter	Total or Dissolved	Analysis Location	Minnesota Surface Water 2A Chronic 7050 - 350 Hardness	Minnesota Surface Water 2A Maximum 7050 - 350 Hardness	Minnesota Surface Water 2A Final Acute Value 7050 - 350 Hardness												
Effective Date			01/24/2012	01/24/2012	01/24/2012												
Exceedance Key			**Bold**	*Italic*	Underline												
Fluoranthene	NA	Lab	1.9 ug/l	3.5 ug/l	6.9 ug/l	< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Fluorene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Hexachlorobenzene	NA	Lab	0.061 ug/l	(1)	(1)	< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Hexachlorobutadiene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Hexachloroethane	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Indeno(1,2,3-cd)pyrene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Isophorone	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Naphthalene	NA	Lab	**65 ug/l**	409 ug/l	818 ug/l	< 10.2 ug/l	17.3 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	**139 ug/l**	**93.2 ug/l**	--
Nitrobenzene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
N-Nitrosodimethylamine	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
N-Nitrosodi-n-propylamine	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
N-Nitrosodiphenylamine	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Pentachlorophenol	NA	Lab	0.93 PD ug/l	9.1 PD ug/l	18 PD ug/l	< 20.4 ug/l	< 20.8 ug/l	--	< 51000 ug/l	< 50000 ug/l	< 20.4 ug/l	< 20.5 ug/l	< 20.4 ug/l	< 20.7 ug/l	< 40.8 ug/l	< 20.3 ug/l	--
Phenanthrene	NA	Lab	**3.6 ug/l**	32 ug/l	64 ug/l	< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	**23.1 ug/l**	**18.5 ug/l**	--
Phenol	NA	Lab	123 ug/l	2214 ug/l	4428 ug/l	< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Pyrene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
VOCs																	
1,1,1,2-Tetrachloroethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,1,1-Trichloroethane	NA	Lab	329 ug/l	2957 ug/l	5913 ug/l	< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,1,2,2-Tetrachloroethane	NA	Lab	1.1 ug/l	1127 (1) ug/l	2253 (1) ug/l	< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,1,2-Trichloroethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,1-Dichloro-1-propene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,1-Dichloroethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,1-Dichloroethylene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,2,3-Trichlorobenzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,2,3-Trichloropropane	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	--
1,2,4-Trichlorobenzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,2,4-Trimethylbenzene	NA	Lab				< 1.0 ug/l	2.2 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	1.3 ug/l	< 1.0 ug/l	< 1.0 ug/l	11.3 ug/l	14.9 ug/l	--
1,2-Dibromo-3-chloropropane	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	--
1,2-Dibromoethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,2-Dichlorobenzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,2-Dichloroethane	NA	Lab	3.5 ug/l	45050 (1) ug/l	90100 (1) ug/l	< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,2-Dichloroethylene, cis	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	66.0 ug/l	173 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,2-Dichloroethylene, trans	NA	Lab				< 4.0 ug/l	< 1.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 5.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,2-Dichloropropane	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	--
1,3,5-Trimethylbenzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	3.4 ug/l	3.7 ug/l	--
1,3-Dichloro-1-propene, cis	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	--
1,3-Dichloro-1-propene, trans	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	--
1,3-Dichlorobenzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,3-Dichloropropane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,4-Dichlorobenzene	NA	Lab				2.1 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	2.7 ug/l	1.9 ug/l	1.9 ug/l	9.3 ug/l	13.7 ug/l	--
2,2-Dichloropropane	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	--
Acetone	NA	Lab				< 20.0 ug/l	< 20.0 ug/l	--	4850 ug/l	6600 ug/l	< 100 ug/l	< 20.0 ug/l	< 20.0 ug/l	< 20.0 ug/l	< 20.0 ug/l	22.3 ug/l	--
Allyl Chloride	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	--
Benzene	NA	Lab	**5.1 ug/l**	4487 (1) ug/l	8974 (1) ug/l	< 1.0 ug/l	**8.1 ug/l**	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	3.0 ug/l	1.2 ug/l	< 1.0 ug/l	**5.2 ug/l**	**5.2 ug/l**	--
Bromobenzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Bromochloromethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Bromodichloromethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	--
Bromoform	NA	Lab	33 ug/l	2900 ug/l	5800 ug/l	< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	--
Bromomethane	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	--
Butyl benzene	NA	Lab				< 1.0 ug/l	2.2 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	1.2 ug/l	< 1.0 ug/l	--
Butylbenzene, sec	NA	Lab				< 1.0 ug/l	2.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	1.1 ug/l	< 1.0 ug/l	--
Butylbenzene, tert	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Carbon tetrachloride	NA	Lab	1.9 ug/l	1750 (1) ug/l	3500 (1) ug/l	< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Chlorobenzene	NA	Lab	20 ug/l	423 ug/l	846 ug/l	16.9 ug/l	2.7 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	5.9 ug/l	8.8 ug/l	17.2 ug/l	16.3 ug/l	3.2 ug/l	2.4 ug/l	--
Chlorodibromomethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	--

Draft

Table A-1
Water Analytical Data Summary
MPCA - Freeway Landfill

Parameter	Total or Dissolved	Analysis Location	Minnesota Surface Water 2A Chronic 7050 - 350 Hardness	Minnesota Surface Water 2A Maximum 7050 - 350 Hardness	Minnesota Surface Water 2A Final Acute Value 7050 - 350 Hardness	Location: Duplicate Date: 6/17/2015	Duplicate-2 6/23/2015	MW-1 6/17/2015	MW-1 6/18/2015	MW-1 6/24/2015	MW-4 6/17/2015	MW-4 6/24/2015	MW-4D 6/17/2015	MW-4D 6/24/2015	MW-5 6/16/2015	MW-5 6/23/2015	MW-6 6/17/2015
Effective Date			01/24/2012	01/24/2012	01/24/2012												
Exceedance Key			**Bold**	*Italic*	<u>Underline</u>												
Chloroethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Chloroform	NA	Lab	53 ug/l	1392 ug/l	2784 ug/l	< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Chloromethane	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	--
Chlorotoluene, o	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	2.1 ug/l	--
Chlorotoluene, p	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Cumene (isopropyl benzene)	NA	Lab				< 1.0 ug/l	4.2 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	2.1 ug/l	< 1.0 ug/l	1.0 ug/l	4.1 ug/l	4.0 ug/l	--
Cymene p- (Toluene isopropyl p-)	NA	Lab				< 4.0 ug/l	< 1.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 5.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	5.5 ug/l	5.8 ug/l	--
Dibromomethane (methylene bromide)	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	--
Dichlorodifluoromethane (CFC-12)	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Dichlorofluoromethane (CFC-21)	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Ethyl benzene	NA	Lab	**68 ug/l**	1859 ug/l	3717 ug/l	< 1.0 ug/l	< 1.0 ug/l	--	22.5 ug/l	**78.2 ug/l**	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	**123 ug/l**	**118 ug/l**	--
Ethyl ether	NA	Lab				12.9 ug/l	11.4 ug/l	--	71.7 ug/l	< 200 ug/l	21.7 ug/l	17.6 ug/l	17.3 ug/l	13.3 ug/l	< 4.0 ug/l	< 4.0 ug/l	--
Hexachlorobutadiene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 2.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Methyl ethyl ketone	NA	Lab				< 5.0 ug/l	< 5.0 ug/l	--	5780 ug/l	7630 ug/l	< 25.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	--
Methyl isobutyl ketone	NA	Lab				< 5.0 ug/l	< 5.0 ug/l	--	1290 ug/l	1340 ug/l	< 25.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 20.0 ug/l	< 5.0 ug/l	--
Methyl tertiary butyl ether (MTBE)	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	1.4 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Methylene chloride	NA	Lab	**45 ug/l**	13875 (1) ug/l	27749 (1) ug/l	< 4.0 ug/l	< 4.0 ug/l	--	**45.9 ug/l**	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	--
Naphthalene	NA	Lab	**65 ug/l**	409 ug/l	818 ug/l	< 4.0 ug/l	30.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	6.4 ug/l	< 4.0 ug/l	< 4.0 ug/l	**185 ug/l**	**125 ug/l**	--
Propylbenzene	NA	Lab				< 1.0 ug/l	5.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	1.5 ug/l	< 1.0 ug/l	< 1.0 ug/l	2.4 ug/l	< 1.0 ug/l	--
Styrene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	10.4 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Tetrachloroethylene	NA	Lab	**3.8 ug/l**	428 (1) ug/l	857 (1) ug/l	< 1.0 ug/l	< 1.0 ug/l	--	**27.6 ug/l**	**294 ug/l**	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Tetrahydrofuran	NA	Lab				40.4 ug/l	12.1 ug/l	--	< 100 ug/l	< 500 ug/l	130 ug/l	123 ug/l	50.6 ug/l	44.5 ug/l	210 ug/l	189 ug/l	--
Toluene	NA	Lab	**253 ug/l**	1352 ug/l	2703 ug/l	< 1.0 ug/l	< 1.0 ug/l	--	228 ug/l	**766 ug/l**	< 5.0 ug/l	1.0 ug/l	1.0 ug/l	< 1.0 ug/l	155 ug/l	84.0 ug/l	--
Trichloroethylene	NA	Lab	**25 ug/l**	6988 (1) ug/l	13976 (1) ug/l	< 0.40 ug/l	< 0.40 ug/l	--	**50.2 ug/l**	**343 ug/l**	< 2.0 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	--
Trichlorofluoromethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Trichlorotrifluoroethane (Freon 113)	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Vinyl chloride	NA	Lab	**0.17 ug/l**	(1)	(1)	< 0.40 ug/l	**0.77 ug/l**	--	< 4.0 ug/l	< 20.0 ug/l	< 2.0 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	**0.58 ug/l**	--
Xylene, m & p	NA	Lab				< 2.0 ug/l	< 2.0 ug/l	--	43.2 ug/l	174 ug/l	< 10.0 ug/l	2.6 ug/l	< 2.0 ug/l	< 2.0 ug/l	318 ug/l	309 ug/l	--
Xylene, o	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	22.9 ug/l	75.1 ug/l	< 5.0 ug/l	2.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	122 ug/l	115 ug/l	--
Xylene, total	NA	Lab	**166 ug/l**	1407 ug/l	2814 ug/l	< 3.0 ug/l	< 3.0 ug/l	--	66.1 ug/l	**249 ug/l**	< 15.0 ug/l	4.6 ug/l	< 3.0 ug/l	< 3.0 ug/l	**439 ug/l**	**424 ug/l**	--
PCBs																	
Aroclor 1016	NA	Lab				< 0.10 ug/l	< 0.10 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.11 ug/l	< 1.0 ug/l	< 0.10 ug/l	--
Aroclor 1221	NA	Lab				< 0.10 ug/l	< 0.10 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.11 ug/l	< 1.0 ug/l	< 0.10 ug/l	--
Aroclor 1232	NA	Lab				< 0.10 ug/l	< 0.10 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.11 ug/l	< 1.0 ug/l	< 0.10 ug/l	--
Aroclor 1242	NA	Lab				< 0.10 ug/l	< 0.10 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.11 ug/l	< 1.0 ug/l	< 0.10 ug/l	--
Aroclor 1248	NA	Lab				< 0.10 ug/l	< 0.10 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.11 ug/l	< 1.0 ug/l	0.17 ug/l	--
Aroclor 1254	NA	Lab				< 0.10 ug/l	< 0.10 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.11 ug/l	< 1.0 ug/l	< 0.10 ug/l	--
Aroclor 1260	NA	Lab				< 0.10 ug/l	< 0.10 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.11 ug/l	< 1.0 ug/l	< 0.10 ug/l	--
Aroclor 1262	NA	Lab				< 0.10 ug/l	< 0.10 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.11 ug/l	< 1.0 ug/l	< 0.10 ug/l	--
Aroclor 1268	NA	Lab				< 0.10 ug/l	< 0.10 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.11 ug/l	< 1.0 ug/l	< 0.10 ug/l	--
Total Petroleum Hydrocarbons																	
Gasoline Range Organics, C6-C10	NA	Lab				< 100 ug/l	128 ug/l	--	4430 ug/l	5530 ug/l	173 ug/l	140 ug/l	< 100 ug/l	< 100 ug/l	1110 ug/l	923 ug/l	--
Total Petroleum Hydrocarbons C10-C28	NA	Lab				3.0 mg/l	3.1 mg/l	--	79.0 mg/l	172 mg/l	3.8 mg/l	3.4 mg/l	3.2 mg/l	1.3 mg/l	5.1 mg/l	2.9 mg/l	--
Perfluorinated Compounds																	
Perfluorobutane sulfonate (PFBS)	NA	Lab				0.12 ug/l	0.011 j ug/l	0.11 ug/l	--	0.075 j ug/l	0.16 ug/l	0.19 ug/l	0.11 ug/l	0.12 ug/l	0.019 j ug/l	0.050 j ug/l	0.024 j ug/l
Perfluorobutyric acid	NA	Lab				0.81 ug/l	0.069 ug/l	2.7 ug/l	--	2.8 ug/l	2.1 ug/l	2.1 ug/l	0.76 ug/l	0.84 ug/l	7.8 ug/l	14 ug/l	0.40 ug/l
Perfluorohexane sulfonate	NA	Lab				0.39 ug/l	0.029 j ug/l	0.13 ug/l	--	0.15 j ug/l	0.25 ug/l	0.24 ug/l	0.41 ug/l	0.28 ug/l	0.23 ug/l	0.20 ug/l	0.025 j ug/l
Perfluorohexanoic acid	NA	Lab				0.34 ug/l	0.11 ug/l	0.48 ug/l	--	0.48 ug/l	0.91 ug/l	0.94 ug/l	0.33 ug/l	0.39 ug/l	0.81 ug/l	0.90 ug/l	0.11 ug/l
Perfluorooctane sulfonate (PFOS)	NA	Lab				0.031 j ug/l	0.14 ug/l	0.023 j ug/l	--	< 0.25 ug/l	0.21 ug/l	0.15 ug/l	0.029 j ug/l	0.059 ug/l	0.088 ug/l	0.073 j ug/l	0.010 j ug/l
Perfluorooctanoic acid (PFOA)	NA	Lab				0.33 ug/l	2.5 ug/l	0.27 ug/l	--	0.36 ug/l	0.82 ug/l	0.77 ug/l	0.32 ug/l	0.30 ug/l	0.57 ug/l	0.49 ug/l	0.45 ug/l
Perfluoropentanoic acid	NA	Lab				0.25 ug/l	0.019 j ug/l	0.43 ug/l	--	0.46 ug/l	0.74 ug/l	0.79 ug/l	0.25 ug/l	0.31 ug/l	0.89 ug/l	0.82 ug/l	0.043 j ug/l

Table A-1
Water Analytical Data Summary
MPCA - Freeway Landfill

Parameter	Total or Dissolved	Analysis Location	Minnesota Surface Water 2A Chronic 7050 - 350 Hardness	Minnesota Surface Water 2A Maximum 7050 - 350 Hardness	Minnesota Surface Water 2A Final Acute Value 7050 - 350 Hardness	MW-6 6/18/2015	MW-6 6/24/2015	MW-7 6/16/2015	MW-7 6/23/2015	MW-8 6/16/2015	MW-8 6/23/2015	MW-8D 6/16/2015	MW-8D 6/23/2015
Effective Date			01/24/2012	01/24/2012	01/24/2012								
Exceedance Key			**Bold**	*Italic*	Underline								
General Parameters													
Alkalinity, bicarbonate, as CaCO3	NA	Lab				1530 mg/l	3920 mg/l	3280 mg/l	2150 mg/l	1200 mg/l	1200 mg/l	910 mg/l	919 mg/l
Alkalinity, bicarbonate, as HCO3	NA	Lab				1860 mg/l	4780 mg/l	4000 mg/l	2620 mg/l	1470 mg/l	1460 mg/l	1110 mg/l	1120 mg/l
Alkalinity, carbonate, as CaCO3	NA	Lab				< 12.5 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 8.3 mg/l	< 5.0 mg/l	< 5.0 mg/l	< 5.0 mg/l	< 5.0 mg/l
Alkalinity, carbonate, as CO3	NA	Lab				< 12.5 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 8.3 mg/l	< 5.0 mg/l	< 5.0 mg/l	< 5.0 mg/l	< 5.0 mg/l
Alkalinity, hydroxide, as CaCO3	NA	Lab				< 12.5 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 8.3 mg/l	< 5.0 mg/l	< 5.0 mg/l	< 5.0 mg/l	< 5.0 mg/l
Alkalinity, hydroxide, as OH	NA	Lab				< 12.5 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 8.3 mg/l	< 5.0 mg/l	< 5.0 mg/l	< 5.0 mg/l	< 5.0 mg/l
Alkalinity, total, as CaCO3	NA	Lab				1530 mg/l	3920 mg/l	3280 mg/l	2150 mg/l	1200 mg/l	1200 mg/l	910 mg/l	919 mg/l
Anions	NA	Lab				40.9 meq/l	39.8 meq/l	69.0 meq/l	29.1 meq/l	25.4 meq/l	25.3 meq/l	26.1 meq/l	25.9 meq/l
Biochemical Oxygen Demand (5-day)	NA	Lab				< 200 mg/l	< 60.0 mg/l	< 24.0 mg/l	< 12.0 mg/l	< 24.0 mg/l	31.1 mg/l	< 12.0 mg/l	< 6.0 mg/l
Carbon, total organic	NA	Lab				102 mg/l	50.3 mg/l	34.0 mg/l	28.3 mg/l	38.2 mg/l	35.3 mg/l	23.9 mg/l	22.6 mg/l
Cation-Anion balance	NA	Lab				10.08 %	-1.63 %	-39.46 %	-3.87 %	-4.46 %	-6.73 %	-0.26 %	-2.83 %
Cations	NA	Lab				50.1 meq/l	38.5 meq/l	30.0 meq/l	26.9 meq/l	23.3 meq/l	22.1 meq/l	25.9 meq/l	24.5 meq/l
Chloride	NA	Lab	**230 mg/l**	*860 mg/l*	1720 mg/l	**365 mg/l**	**296 mg/l**	118 mg/l	117 mg/l	48.1 mg/l	45.7 mg/l	**279 mg/l**	**266 mg/l**
Dissolved oxygen	NA	Field	(4)	(4)		12.7 mg/l	2.9 mg/l	0.2 mg/l	0.2 mg/l	0.2 mg/l	0.2 mg/l	0.4 mg/l	0.4 mg/l
Nitrogen, Nitrate + Nitrite, as N	NA	Lab				< 1.0 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 1.0 mg/l
Nitrogen, Nitrate as N	NA	Lab				< 1.0 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 1.0 mg/l
Nitrogen, Nitrite as N	NA	Lab				< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l
pH	NA	Field	8.5 pH units			7.3 pH units	6.8 pH units	6.7 pH units	7.0 pH units	7.0 pH units	6.9 pH units	7.0 pH units	7.0 pH units
Redox (oxidation potential)	NA	Field				16 mV	57 mV	-18 mV	148 mV	-74 mV	84 mV	-33 mV	67 mV
Specific Conductance @ 25 ºC	NA	Field				3920 umhos/cm	3570 umhos/cm	2690 umhos/cm	2600 umhos/cm	2300 umhos/cm	2280 umhos/cm	2380 umhos/cm	2340 umhos/cm
Static Water Level	NA	Field				38.10 ft	38.15 ft	35.83 ft	35.51 ft	27.23 ft	27.30 ft	42.65 ft	42.78 ft
Sulfate, as SO4	NA	Lab				< 2.5 mg/l	< 2.5 mg/l	2.5 mg/l	< 2.5 mg/l	3.6 mg/l	< 2.5 mg/l	< 2.5 mg/l	< 2.5 mg/l
Temperature, ºC	NA	Field				12.5 deg C	12.5 deg C	15.5 deg C	15.5 deg C	14.5 deg C	15.5 deg C	15.0 deg C	16.5 deg C
Metals													
Antimony	Dissolved	Lab	**5.5 ug/l**	90 ug/l	180 ug/l	2.1 ug/l	0.83 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l
Antimony	Total	Lab	**5.5 ug/l**	*90 ug/l*	180 ug/l	1.3 ug/l	0.65 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l
Arsenic	Dissolved	Lab	**2.0 ug/l**	360 ug/l	720 ug/l	**5.5 ug/l**	**3.2 ug/l**	**3.0 ug/l**	**3.9 ug/l**	0.93 ug/l	1.1 ug/l	**10.1 ug/l**	**11.2 ug/l**
Arsenic	Total	Lab	**2.0 ug/l**	360 ug/l	720 ug/l	**4.2 ug/l**	**2.8 ug/l**	**3.3 ug/l**	**3.7 ug/l**	1.5 ug/l	1.2 ug/l	**10.0 ug/l**	**11.0 ug/l**
Barium	Dissolved	Lab				901 ug/l	836 ug/l	539 ug/l	542 ug/l	924 ug/l	961 ug/l	2780 ug/l	3110 ug/l
Barium	Total	Lab				782 ug/l	903 ug/l	572 ug/l	533 ug/l	955 ug/l	956 ug/l	2830 ug/l	3060 ug/l
Cadmium	Dissolved	Lab	**2.8 HD CF ug/l**	15 HD CF ug/l	30 HD CF ug/l	0.70 ug/l	0.18 ug/l	< 0.080 ug/l	< 0.080 ug/l	< 0.080 ug/l	< 0.080 ug/l	< 0.080 ug/l	< 0.080 ug/l
Cadmium	Total	Lab	**3.0 HD ug/l**	16 HD ug/l	32 HD ug/l	0.43 ug/l	0.38 ug/l	0.11 ug/l	0.14 ug/l	0.097 ug/l	< 0.080 ug/l	< 0.080 ug/l	< 0.080 ug/l
Calcium	Dissolved	Lab				325000 ug/l	198000 ug/l	222000 ug/l	231000 ug/l	259000 ug/l	239000 ug/l	138000 ug/l	124000 ug/l
Calcium	Total	Lab				242000 ug/l	231000 ug/l	244000 ug/l	207000 ug/l	271000 ug/l	238000 ug/l	139000 ug/l	123000 ug/l
Chromium	Dissolved	Lab	**11 CF CR6 ug/l**	*16 CF CR6 ug/l*	31 CF CR6 ug/l	***33.2 ug/l***	1.8 ug/l	2.7 ug/l	2.2 ug/l	6.6 ug/l	6.3 ug/l	1.5 ug/l	1.0 ug/l
Chromium	Total	Lab	**11 CR6 ug/l**	*16 CR6 ug/l*	32 CR6 ug/l	**15.9 ug/l**	5.0 ug/l	3.5 ug/l	2.6 ug/l	9.4 ug/l	7.1 ug/l	2.0 ug/l	1.1 ug/l
Cobalt	Dissolved	Lab	**2.8 ug/l**	*436 ug/l*	872 ug/l	**20.2 ug/l**	**14.6 ug/l**	1.5 ug/l	0.93 ug/l	1.8 ug/l	1.5 ug/l	**12.0 ug/l**	**12.0 ug/l**
Cobalt	Total	Lab	**2.8 ug/l**	*436 ug/l*	872 ug/l	**15.5 ug/l**	**14.9 ug/l**	1.6 ug/l	1.0 ug/l	1.9 ug/l	1.5 ug/l	**12.0 ug/l**	**12.0 ug/l**
Copper	Dissolved	Lab	**21 HD CF ug/l**	*55 HD CF ug/l*	111 HD CF ug/l	***69.9 ug/l***	4.9 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Copper	Total	Lab	**21 HD ug/l**	*58 HD ug/l*	115 HD ug/l	**40.8 ug/l**	**36.2 ug/l**	< 1.0 ug/l	< 1.0 ug/l	1.6 ug/l	< 1.0 ug/l	1.8 ug/l	< 1.0 ug/l
Iron	Dissolved	Lab				22400 ug/l	757 ug/l	28500 ug/l	30600 ug/l	47200 ug/l	47100 ug/l	6320 ug/l	7730 ug/l
Iron	Total	Lab				13400 ug/l	5050 ug/l	31600 ug/l	31600 ug/l	49100 ug/l	48000 ug/l	7140 ug/l	7680 ug/l
Lead	Dissolved	Lab	**12 HD CF ug/l**	318 HD CF ug/l	638 HD CF ug/l	**12.0 ug/l**	0.14 ug/l	< 0.10 ug/l	0.15 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l	0.10 ug/l
Lead	Total	Lab	**16 HD ug/l**	402 HD ug/l	807 HD ug/l	6.4 ug/l	3.5 ug/l	2.6 ug/l	3.2 ug/l	2.8 ug/l	1.3 ug/l	2.3 ug/l	0.13 ug/l
Magnesium	Dissolved	Lab				255000 ug/l	187000 ug/l	106000 ug/l	102000 ug/l	74700 ug/l	72000 ug/l	126000 ug/l	118000 ug/l
Magnesium	Total	Lab				208000 ug/l	197000 ug/l	117000 ug/l	103000 ug/l	78900 ug/l	72400 ug/l	130000 ug/l	119000 ug/l
Manganese	Dissolved	Lab				2570 ug/l	1740 ug/l	420 ug/l	285 ug/l	651 ug/l	610 ug/l	254 ug/l	141 ug/l
Manganese	Total	Lab				1760 ug/l	2170 ug/l	503 ug/l	291 ug/l	720 ug/l	618 ug/l	274 ug/l	142 ug/l
Mercury	Dissolved	Lab	0.0069 CF ug/l	2.0 CF (1) ug/l	4.2 CF (1) ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l
Mercury	Total	Lab	**0.0069 ug/l**	2.4 (1) ug/l	4.9 (1) ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l
Nickel	Dissolved	Lab	**296 HD CF ug/l**	4085 HD CF ug/l	8169 HD CF ug/l	89.2 ug/l	62.5 ug/l	7.0 ug/l	5.9 ug/l	3.6 ug/l	3.6 ug/l	44.3 ug/l	43.4 ug/l
Nickel	Total	Lab	**297 HD ug/l**	4093 HD ug/l	8185 HD ug/l	77.9 ug/l	66.5 ug/l	8.1 ug/l	6.3 ug/l	5.2 ug/l	3.9 ug/l	44.8 ug/l	43.4 ug/l
Potassium	Dissolved	Lab				85400 ug/l	102000 ug/l	69200 ug/l	66000 ug/l	61600 ug/l	61000 ug/l	26400 ug/l	25100 ug/l
Potassium	Total	Lab				93800 ug/l	95200 ug/l	77700 ug/l	65900 ug/l	65500 ug/l	60600 ug/l	26600 ug/l	25000 ug/l
Selenium	Dissolved	Lab	**5.0 ug/l**	20 ug/l	40 ug/l	2.1 ug/l	0.58 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l

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Table A-1
Water Analytical Data Summary
MPCA - Freeway Landfill

					Location Date	MW-6 6/18/2015	MW-6 6/24/2015	MW-7 6/16/2015	MW-7 6/23/2015	MW-8 6/16/2015	MW-8 6/23/2015	MW-8D 6/16/2015	MW-8D 6/23/2015
Parameter	Total or Dissolved	Analysis Location	Minnesota Surface Water 2A Chronic 7050 - 350 Hardness	Minnesota Surface Water 2A Maximum 7050 - 350 Hardness	Minnesota Surface Water 2A Final Acute Value 7050 - 350 Hardness								
Effective Date			01/24/2012	01/24/2012	01/24/2012								
Exceedance Key			**Bold**	*Italic*	Underline								
Selenium	Total	Lab	5.0 ug/l	20 ug/l	40 ug/l	0.88 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l
Sodium	Dissolved	Lab				243000 ug/l	242000 ug/l	123000 ug/l	122000 ug/l	59300 ug/l	61000 ug/l	183000 ug/l	181000 ug/l
Sodium	Total	Lab				247000 ug/l	239000 ug/l	141000 ug/l	124000 ug/l	65900 ug/l	61200 ug/l	199000 ug/l	182000 ug/l
Zinc	Dissolved	Lab	**302 HD CF ug/l**	*331 HD CF ug/l*	662 HD CF ug/l	188 ug/l	28.2 ug/l	5.7 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	5.3 ug/l	5.3 ug/l
Zinc	Total	Lab	**306 HD ug/l**	*338 HD ug/l*	677 HD ug/l	90.5 ug/l	47.9 ug/l	14.6 ug/l	13.3 ug/l	14.4 ug/l	9.0 ug/l	6.5 ug/l	5.9 ug/l
SVOCs													
1,2,4-Trichlorobenzene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
1,2-Dichlorobenzene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
1,2-Diphenylhydrazine	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
1,3-Dichlorobenzene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
1,4-Dichlorobenzene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
1-Methylnaphthalene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2,2-oxybis (1-chloropropane)	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2,4,5-Trichlorophenol	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2,4,6-Trichlorophenol	NA	Lab	2.0 ug/l	102 ug/l	203 ug/l	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2,4-Dichlorophenol	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2,4-Dimethylphenol	NA	Lab				< 556 ug/l	< 52.1 ug/l	< 51.0 ug/l	< 51.8 ug/l	< 50.8 ug/l	< 51.5 ug/l	< 50.5 ug/l	< 51.3 ug/l
2,4-Dinitrophenol	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2,4-Dinitrotoluene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2,6-Dinitrotoluene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2-Chloronaphthalene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2-Chlorophenol	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2-Methyl-4,6-dinitrophenol	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2-Methylnaphthalene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	10.5 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2-Methylphenol (o-cresol)	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2-Nitroaniline	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2-Nitrophenol	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
3,3`-Dichlorobenzidine	NA	Lab				< 556 ug/l	< 52.1 ug/l	< 51.0 ug/l	< 51.8 ug/l	< 50.8 ug/l	< 51.5 ug/l	< 50.5 ug/l	< 51.3 ug/l
3,4-Methylphenol (m,p cresols)	NA	Lab				< 222 ug/l	< 20.8 ug/l	< 20.4 ug/l	< 20.7 ug/l	< 20.3 ug/l	< 20.6 ug/l	< 20.2 ug/l	< 20.5 ug/l
3-Nitroaniline	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
4-Bromophenyl phenyl ether	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
4-Chloro-3-methylphenol	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
4-Chloroaniline	NA	Lab				< 556 ug/l	< 52.1 ug/l	< 51.0 ug/l	< 51.8 ug/l	< 50.8 ug/l	< 51.5 ug/l	< 50.5 ug/l	< 51.3 ug/l
4-Chlorophenyl phenyl ether	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
4-Nitroaniline	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
4-Nitrophenol	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Acenaphthene	NA	Lab	20 ug/l	56 ug/l	112 ug/l	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Acenaphthylene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Anthracene	NA	Lab	0.035 ug/l	0.32 ug/l	0.63 ug/l	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Benz(a)anthracene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Benzo(a)pyrene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Benzo(b)fluoranthene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Benzo(g,h,i)perylene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Benzo(k)fluoranthene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Bis(2-chloroethoxy)methane	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Bis(2-chloroethyl)ether	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Bis(2-ethylhexyl)phthalate	NA	Lab	1.9 ug/l	(1)	(1)	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Butyl benzyl phthalate	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Carbazole	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Chrysene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Dibenz(a,h)anthracene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Dibenzofuran	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Diethyl phthalate	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Dimethyl phthalate	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Di-n-butyl phthalate	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Di-n-octyl phthalate	NA	Lab	30 ug/l	825 ug/l	1650 ug/l	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l

Draft

Table A-1
Water Analytical Data Summary
MPCA - Freeway Landfill

					Location	MW-6	MW-6	MW-7	MW-7	MW-8	MW-8	MW-8D	MW-8D
					Date	6/18/2015	6/24/2015	6/16/2015	6/23/2015	6/16/2015	6/23/2015	6/16/2015	6/23/2015
Parameter	Total or Dissolved	Analysis Location	Minnesota Surface Water 2A Chronic 7050 - 350 Hardness	Minnesota Surface Water 2A Maximum 7050 - 350 Hardness	Minnesota Surface Water 2A Final Acute Value 7050 - 350 Hardness								
Effective Date			01/24/2012	01/24/2012	01/24/2012								
Exceedance Key			**Bold**	*Italic*	Underline								
Fluoranthene	NA	Lab	1.9 ug/l	3.5 ug/l	6.9 ug/l	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Fluorene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Hexachlorobenzene	NA	Lab	0.061 ug/l	(1)	(1)	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Hexachlorobutadiene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Hexachloroethane	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Indeno(1,2,3-cd)pyrene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Isophorone	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Naphthalene	NA	Lab	**65 ug/l**	409 ug/l	818 ug/l	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	17.1 ug/l	14.5 ug/l	< 10.1 ug/l	< 10.3 ug/l
Nitrobenzene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
N-Nitrosodimethylamine	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
N-Nitrosodi-n-propylamine	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
N-Nitrosodiphenylamine	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Pentachlorophenol	NA	Lab	0.93 PD ug/l	9.1 PD ug/l	18 PD ug/l	< 222 ug/l	< 20.8 ug/l	< 20.4 ug/l	< 20.7 ug/l	< 20.3 ug/l	< 20.6 ug/l	< 20.2 ug/l	< 20.5 ug/l
Phenanthrene	NA	Lab	**3.6 ug/l**	32 ug/l	64 ug/l	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Phenol	NA	Lab	123 ug/l	2214 ug/l	4428 ug/l	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Pyrene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
VOCs													
1,1,1,2-Tetrachloroethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,1,1-Trichloroethane	NA	Lab	329 ug/l	2957 ug/l	5913 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,1,2,2-Tetrachloroethane	NA	Lab	1.1 ug/l	1127 (1) ug/l	2253 (1) ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,1,2-Trichloroethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,1-Dichloro-1-propene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,1-Dichloroethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,1-Dichloroethylene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2,3-Trichlorobenzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2,3-Trichloropropane	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
1,2,4-Trichlorobenzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2,4-Trimethylbenzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	2.1 ug/l	1.5 ug/l	2.6 ug/l	2.3 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2-Dibromo-3-chloropropane	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
1,2-Dibromoethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2-Dichlorobenzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2-Dichloroethane	NA	Lab	3.5 ug/l	45050 (1) ug/l	90100 (1) ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2-Dichloroethylene, cis	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	6.9 ug/l	7.6 ug/l
1,2-Dichloroethylene, trans	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2-Dichloropropane	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
1,3,5-Trimethylbenzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,3-Dichloro-1-propene, cis	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
1,3-Dichloro-1-propene, trans	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
1,3-Dichlorobenzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,3-Dichloropropane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,4-Dichlorobenzene	NA	Lab				1.6 ug/l	1.9 ug/l	1.9 ug/l	2.1 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
2,2-Dichloropropane	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
Acetone	NA	Lab				167 ug/l	61.1 ug/l	< 20.0 ug/l	< 20.0 ug/l	< 20.0 ug/l	< 20.0 ug/l	< 20.0 ug/l	< 20.0 ug/l
Allyl Chloride	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
Benzene	NA	Lab	**5.1 ug/l**	4487 (1) ug/l	8974 (1) ug/l	**6.0 ug/l**	2.7 ug/l	**14.7 ug/l**	**14.1 ug/l**	**7.9 ug/l**	**7.6 ug/l**	< 1.0 ug/l	< 1.0 ug/l
Bromobenzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Bromochloromethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Bromodichloromethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	< 1.0 ug/l
Bromoform	NA	Lab	33 ug/l	2900 ug/l	5800 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
Bromomethane	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
Butyl benzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	1.6 ug/l	1.4 ug/l	2.3 ug/l	2.4 ug/l	< 1.0 ug/l	< 1.0 ug/l
Butylbenzene, sec	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	1.9 ug/l	1.8 ug/l	2.3 ug/l	2.1 ug/l	< 1.0 ug/l	< 1.0 ug/l
Butylbenzene, tert	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Carbon tetrachloride	NA	Lab	1.9 ug/l	1750 (1) ug/l	3500 (1) ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Chlorobenzene	NA	Lab	20 ug/l	423 ug/l	846 ug/l	8.7 ug/l	6.2 ug/l	6.8 ug/l	6.9 ug/l	2.7 ug/l	2.5 ug/l	2.0 ug/l	2.0 ug/l
Chlorodibromomethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	< 1.0 ug/l

Draft

Table A-1
Water Analytical Data Summary
MPCA - Freeway Landfill

Parameter	Total or Dissolved	Analysis Location	Minnesota Surface Water 2A Chronic 7050 - 350 Hardness	Minnesota Surface Water 2A Maximum 7050 - 350 Hardness	Minnesota Surface Water 2A Final Acute Value 7050 - 350 Hardness	MW-6 6/18/2015	MW-6 6/24/2015	MW-7 6/16/2015	MW-7 6/23/2015	MW-8 6/16/2015	MW-8 6/23/2015	MW-8D 6/16/2015	MW-8D 6/23/2015
Effective Date			01/24/2012	01/24/2012	01/24/2012								
Exceedance Key			**Bold**	*Italic*	Underline								
Chloroethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Chloroform	NA	Lab	53 ug/l	1392 ug/l	2784 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Chloromethane	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
Chlorotoluene, o	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Chlorotoluene, p	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Cumene (isopropyl benzene)	NA	Lab				2.3 ug/l	1.5 ug/l	14.1 ug/l	16.0 ug/l	4.0 ug/l	4.3 ug/l	< 1.0 ug/l	< 1.0 ug/l
Cymene p- (Toluene isopropyl p-)	NA	Lab				6.5 ug/l	< 4.0 ug/l	1.1 ug/l	< 1.0 ug/l	1.1 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Dibromomethane (methylene bromide)	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
Dichlorodifluoromethane (CFC-12)	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Dichlorofluoromethane (CFC-21)	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Ethyl benzene	NA	Lab	**68 ug/l**	1859 ug/l	3717 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Ethyl ether	NA	Lab				30.6 ug/l	27.3 ug/l	47.8 ug/l	41.6 ug/l	11.9 ug/l	11.7 ug/l	20.4 ug/l	18.0 ug/l
Hexachlorobutadiene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Methyl ethyl ketone	NA	Lab				73.2 ug/l	22.8 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 5.0 ug/l
Methyl isobutyl ketone	NA	Lab				6.3 ug/l	< 5.0 ug/l	< 20.0 ug/l	< 5.0 ug/l	< 20.0 ug/l	< 5.0 ug/l	< 20.0 ug/l	< 5.0 ug/l
Methyl tertiary butyl ether (MTBE)	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Methylene chloride	NA	Lab	**45 ug/l**	13875 (1) ug/l	27749 (1) ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
Naphthalene	NA	Lab	**65 ug/l**	409 ug/l	818 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	4.6 ug/l	27.7 ug/l	28.3 ug/l	< 4.0 ug/l	< 4.0 ug/l
Propylbenzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	6.4 ug/l	7.8 ug/l	4.5 ug/l	4.8 ug/l	< 1.0 ug/l	< 1.0 ug/l
Styrene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Tetrachloroethylene	NA	Lab	**3.8 ug/l**	428 (1) ug/l	857 (1) ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Tetrahydrofuran	NA	Lab				51.7 ug/l	49.2 ug/l	37.4 ug/l	43.1 ug/l	12.3 ug/l	11.2 ug/l	37.4 ug/l	35.2 ug/l
Toluene	NA	Lab	**253 ug/l**	1352 ug/l	2703 ug/l	3.1 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Trichloroethylene	NA	Lab	**25 ug/l**	6988 (1) ug/l	13976 (1) ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l
Trichlorofluoromethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Trichlorotrifluoroethane (Freon 113)	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Vinyl chloride	NA	Lab	**0.17 ug/l**	(1)	(1)	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	**1.0 ug/l**	**0.72 ug/l**	< 0.40 ug/l	**231 ug/l**
Xylene, m & p	NA	Lab				< 2.0 ug/l	< 2.0 ug/l	3.0 ug/l	2.2 ug/l	< 2.0 ug/l	< 2.0 ug/l	< 2.0 ug/l	< 2.0 ug/l
Xylene, o	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Xylene, total	NA	Lab	**166 ug/l**	1407 ug/l	2814 ug/l	< 3.0 ug/l	< 3.0 ug/l	3.0 ug/l	< 3.0 ug/l	< 3.0 ug/l	< 3.0 ug/l	< 3.0 ug/l	< 3.0 ug/l
PCBs													
Aroclor 1016	NA	Lab				< 0.21 ug/l	< 0.11 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
Aroclor 1221	NA	Lab				< 0.21 ug/l	< 0.11 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
Aroclor 1232	NA	Lab				< 0.21 ug/l	< 0.11 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
Aroclor 1242	NA	Lab				< 0.21 ug/l	< 0.11 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
Aroclor 1248	NA	Lab				< 0.21 ug/l	< 0.11 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
Aroclor 1254	NA	Lab				< 0.21 ug/l	< 0.11 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
Aroclor 1260	NA	Lab				< 0.21 ug/l	< 0.11 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
Aroclor 1262	NA	Lab				< 0.21 ug/l	< 0.11 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
Aroclor 1268	NA	Lab				< 0.21 ug/l	< 0.11 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
Total Petroleum Hydrocarbons													
Gasoline Range Organics, C6-C10	NA	Lab				119 ug/l	< 100 ug/l	145 ug/l	157 ug/l	108 ug/l	122 ug/l	< 100 ug/l	< 100 ug/l
Total Petroleum Hydrocarbons C10-C28	NA	Lab				1.3 mg/l	1.5 mg/l	1.9 mg/l	2.4 mg/l	2.6 mg/l	3.0 mg/l	1.0 mg/l	1.4 mg/l
Perfluorinated Compounds													
Perfluorobutane sulfonate (PFBS)	NA	Lab				--	0.020 j ug/l	0.039 j ug/l	0.023 j ug/l	0.019 j ug/l	0.026 j ug/l	0.023 j ug/l	0.014 j ug/l
Perfluorobutyric acid	NA	Lab				--	0.37 ug/l	0.15 ug/l	0.15 ug/l	0.079 ug/l	0.079 ug/l	0.21 ug/l	0.20 ug/l
Perfluorohexane sulfonate	NA	Lab				--	0.023 j ug/l	0.039 j ug/l	0.042 j ug/l	0.035 j ug/l	0.032 j ug/l	0.030 j ug/l	0.023 j ug/l
Perfluorohexanoic acid	NA	Lab				--	0.11 ug/l	0.086 ug/l	0.10 ug/l	0.12 ug/l	0.13 ug/l	0.12 ug/l	0.11 ug/l
Perfluorooctane sulfonate (PFOS)	NA	Lab				--	0.020 j ug/l	0.10 ug/l	0.11 ug/l	0.14 ug/l	0.14 ug/l	0.070 ug/l	0.076 ug/l
Perfluorooctanoic acid (PFOA)	NA	Lab				--	0.69 ug/l	1.1 ug/l	1.0 ug/l	2.7 ug/l	2.7 ug/l	0.61 ug/l	0.66 ug/l
Perfluoropentanoic acid	NA	Lab				--	0.041 j ug/l	0.021 j ug/l	0.035 j ug/l	0.022 j ug/l	0.021 j ug/l	0.037 j ug/l	0.045 j ug/l

Table A-2
Water Analytical Data Summary
MPCA - Freeway Landfill

Parameter	Total or Dissolved	Analysis Location	Minnesota Surface Water 2B Chronic 7050 - 350 Hardness	Minnesota Surface Water 2B Maximum 7050 - 350 Hardness	Minnesota Surface Water 2B Final Acute Value 7050 - 350 Hardness	Location: Duplicate Date: 6/17/2015	Duplicate-2 6/23/2015	MW-1 6/17/2015	MW-1 6/18/2015	MW-1 6/24/2015	MW-4 6/17/2015	MW-4 6/24/2015	MW-4D 6/17/2015	MW-4D 6/24/2015	MW-5 6/16/2015	MW-5 6/23/2015
Effective Date			01/24/2012	01/24/2012	01/24/2012											
Exceedance Key			**Bold**	*Italic*	Underline											
General Parameters																
Alkalinity, bicarbonate, as CaCO3	NA	Lab				1090 mg/l	1190 mg/l	--	8270 mg/l	40100 mg/l	2430 mg/l	6880 mg/l	1100 mg/l	2920 mg/l	6160 mg/l	5790 mg/l
Alkalinity, bicarbonate, as HCO3	NA	Lab				1330 mg/l	1450 mg/l	--	10100 mg/l	48900 mg/l	2970 mg/l	8400 mg/l	1340 mg/l	3560 mg/l	7520 mg/l	7060 mg/l
Alkalinity, carbonate, as CaCO3	NA	Lab				< 5.0 mg/l	< 5.0 mg/l	--	< 25.0 mg/l	< 25.0 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 5.0 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 12.5 mg/l
Alkalinity, carbonate, as CO3	NA	Lab				< 5.0 mg/l	< 5.0 mg/l	--	< 25.0 mg/l	< 25.0 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 5.0 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 12.5 mg/l
Alkalinity, hydroxide, as CaCO3	NA	Lab				< 5.0 mg/l	< 5.0 mg/l	--	< 25.0 mg/l	< 25.0 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 5.0 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 12.5 mg/l
Alkalinity, hydroxide, as OH	NA	Lab				< 5.0 mg/l	< 5.0 mg/l	--	< 25.0 mg/l	< 25.0 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 5.0 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 12.5 mg/l
Alkalinity, total, as CaCO3	NA	Lab				1090 mg/l	1190 mg/l	--	8270 mg/l	40100 mg/l	2430 mg/l	6880 mg/l	1100 mg/l	2920 mg/l	6160 mg/l	5790 mg/l
Anions	NA	Lab				44.4 meq/l	25.1 meq/l	--	234 meq/l	243 meq/l	85.2 meq/l	89.1 meq/l	44.6 meq/l	43.8 meq/l	159 meq/l	86.1 meq/l
Biochemical Oxygen Demand (5-day)	NA	Lab				< 60.0 mg/l	26.9 mg/l	--	19500 mg/l	28900 mg/l	< 200 mg/l	44.5 mg/l	< 60.0 mg/l	< 12.0 mg/l	< 120 mg/l	56.6 mg/l
Carbon, total organic	NA	Lab				63.7 mg/l	34.9 mg/l	--	12400 mg/l	13000 mg/l	172 mg/l	156 mg/l	63.4 mg/l	56.6 mg/l	244 mg/l	249 mg/l
Cation-Anion balance	NA	Lab				-7.20 %	-6.06 %	--	10.29 %	0.86 %	-10.33 %	-8.81 %	-5.08 %	-8.66 %	-43.42 %	-13.11 %
Cations	NA	Lab				38.5 meq/l	22.2 meq/l	--	287 meq/l	247 meq/l	69.2 meq/l	74.7 meq/l	40.3 meq/l	36.8 meq/l	62.6 meq/l	66.1 meq/l
Chloride	NA	Lab	**230 mg/l**	*860 mg/l*	1720 mg/l	**729 mg/l**	46.8 mg/l	--	***1540 mg/l***	***1560 mg/l***	***1290 mg/l***	***1210 mg/l***	**727 mg/l**	**648 mg/l**	***1200 mg/l***	***1320 mg/l***
Dissolved oxygen	NA	Field	(4)	(4)	0 - 5.0 mg/l	--	--	--	12.2 mg/l	12.7 mg/l	0.3 mg/l	0.1 mg/l	5.8 mg/l	0.2 mg/l	0.1 mg/l	0.1 mg/l
Nitrogen, Nitrate + Nitrite, as N	NA	Lab				< 0.10 mg/l	< 0.10 mg/l	--	< 0.50 mg/l	< 1.0 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l
Nitrogen, Nitrate as N	NA	Lab				< 0.10 mg/l	< 0.10 mg/l	--	< 0.50 mg/l	< 1.0 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l
Nitrogen, Nitrite as N	NA	Lab				< 0.10 mg/l	< 0.10 mg/l	--	0.57 mg/l	0.53 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l
pH	NA	Field	**6.5 - 9.0 pH units**			--	--	--	**6.3 pH units**	**6.3 pH units**	7.3 pH units	7.4 pH units	6.9 pH units	7.3 pH units	7.5 pH units	7.8 pH units
Redox (oxidation potential)	NA	Field				--	--	--	7 mV	-39 mV	2 mV	137 mV	169 mV	150 mV	-97 mV	36 mV
Specific Conductance @ 25 ºC	NA	Field				--	--	--	19000 umhos/cm	19100 umhos/cm	7490 umhos/cm	7570 umhos/cm	4130 umhos/cm	4180 umhos/cm	7560 umhos/cm	8100 umhos/cm
Static Water Level	NA	Field				--	--	--	37.20 ft	37.30 ft	46.60 ft	46.55 ft	58.96 ft	59.29 ft	33.21 ft	33.70 ft
Sulfate, as SO4	NA	Lab				100 mg/l	< 2.5 mg/l	--	1200 mg/l	1870 mg/l	8.8 mg/l	< 2.5 mg/l	101 mg/l	103 mg/l	85.4 mg/l	118 mg/l
Temperature, ºC	NA	Field	TEM	TEM	TEM	--	--	--	12.5 deg C	12.5 deg C	18.0 deg C	17.5 deg C	19.5 deg C	17.5 deg C	17.0 deg C	15.0 deg C
Metals																
Antimony	Dissolved	Lab	**31 ug/l**	90 ug/l	180 ug/l	0.65 ug/l	< 0.50 ug/l	--	8.3 ug/l	12.2 ug/l	**55.1 ug/l**	2.7 ug/l	0.70 ug/l	0.55 ug/l	0.60 ug/l	< 2.5 ug/l
Antimony	Total	Lab	**31 ug/l**	*90 ug/l*	180 ug/l	0.73 ug/l	< 0.50 ug/l	--	11.3 ug/l	< 10.0 ug/l	< 2.5 ug/l	9.9 ug/l	0.72 ug/l	< 0.50 ug/l	***271 ug/l***	< 2.5 ug/l
Arsenic	Dissolved	Lab	53 ug/l	360 ug/l	720 ug/l	4.3 ug/l	1.1 ug/l	--	20.0 ug/l	< 10.0 ug/l	6.0 ug/l	4.9 ug/l	4.5 ug/l	6.9 ug/l	4.1 ug/l	4.8 ug/l
Arsenic	Total	Lab	53 ug/l	360 ug/l	720 ug/l	4.9 ug/l	1.2 ug/l	--	15.0 ug/l	< 10.0 ug/l	10.4 ug/l	6.8 ug/l	4.8 ug/l	7.2 ug/l	17.0 ug/l	5.6 ug/l
Barium	Dissolved	Lab				700 ug/l	950 ug/l	--	984 ug/l	220 ug/l	423 ug/l	422 ug/l	774 ug/l	936 ug/l	466 ug/l	515 ug/l
Barium	Total	Lab				699 ug/l	953 ug/l	--	521 ug/l	50.3 ug/l	605 ug/l	582 ug/l	717 ug/l	1030 ug/l	830 ug/l	559 ug/l
Cadmium	Dissolved	Lab	**2.8 HD CF ug/l**	130 HD CF ug/l	260 HD CF ug/l	< 0.080 ug/l	< 0.080 ug/l	--	**4.1 ug/l**	**11.3 ug/l**	1.4 ug/l	< 0.40 ug/l	< 0.080 ug/l	< 0.080 ug/l	< 0.080 ug/l	< 0.40 ug/l
Cadmium	Total	Lab	**3.0 HD ug/l**	137 HD ug/l	275 HD ug/l	< 0.080 ug/l	< 0.080 ug/l	--	**8.9 ug/l**	2.6 ug/l	2.9 ug/l	2.0 ug/l	< 0.080 ug/l	< 0.080 ug/l	**9.2 ug/l**	0.96 ug/l
Calcium	Dissolved	Lab				115000 ug/l	241000 ug/l	--	3390000 ug/l	2840000 ug/l	203000 ug/l	204000 ug/l	145000 ug/l	140000 ug/l	188000 ug/l	197000 ug/l
Calcium	Total	Lab				123000 ug/l	243000 ug/l	--	3190000 ug/l	564000 ug/l	214000 ug/l	246000 ug/l	126000 ug/l	178000 ug/l	301000 ug/l	214000 ug/l
Chromium	Dissolved	Lab	**11 CF CR6 ug/l**	*16 CF CR6 ug/l*	31 CF CR6 ug/l	**14.1 ug/l**	6.8 ug/l	--	***215 ug/l***	***120 ug/l***	**13.7 ug/l**	9.1 ug/l	***17.2 ug/l***	6.9 ug/l	8.8 ug/l	9.0 ug/l
Chromium	Total	Lab	**11 CR6 ug/l**	*16 CR6 ug/l*	32 CR6 ug/l	***16.1 ug/l***	7.4 ug/l	--	***164 ug/l***	***27.6 ug/l***	***52.4 ug/l***	***33.2 ug/l***	***16.3 ug/l***	***18.5 ug/l***	***86.7 ug/l***	***16.4 ug/l***
Cobalt	Dissolved	Lab	**5.0 ug/l**	*436 ug/l*	872 ug/l	**6.3 ug/l**	1.4 ug/l	--	***497 ug/l***	***497 ug/l***	**9.4 ug/l**	**7.3 ug/l**	**6.6 ug/l**	**5.9 ug/l**	**11.2 ug/l**	**11.0 ug/l**
Cobalt	Total	Lab	**5.0 ug/l**	*436 ug/l*	872 ug/l	**6.5 ug/l**	1.6 ug/l	--	***485 ug/l***	**114 ug/l**	**18.0 ug/l**	**8.1 ug/l**	**6.4 ug/l**	**6.6 ug/l**	**14.6 ug/l**	**12.4 ug/l**
Copper	Dissolved	Lab	**21 HD CF ug/l**	*55 HD CF ug/l*	111 HD CF ug/l	12.2 ug/l	< 1.0 ug/l	--	***108 ug/l***	< 20.0 ug/l	11.7 ug/l	< 5.0 ug/l	13.0 ug/l	< 1.0 ug/l	1.8 ug/l	< 5.0 ug/l
Copper	Total	Lab	**21 HD ug/l**	*58 HD ug/l*	115 HD ug/l	12.7 ug/l	< 1.0 ug/l	--	**47.9 ug/l**	< 20.0 ug/l	***91.8 ug/l***	11.0 ug/l	12.6 ug/l	5.9 ug/l	***65.1 ug/l***	11.4 ug/l
Iron	Dissolved	Lab				473 ug/l	47700 ug/l	--	2590000 ug/l	2920000 ug/l	15000 ug/l	15500 ug/l	1290 ug/l	4150 ug/l	15900 ug/l	21100 ug/l
Iron	Total	Lab				479 ug/l	49100 ug/l	--	2670000 ug/l	634000 ug/l	41100 ug/l	27300 ug/l	< 1000 ug/l	5910 ug/l	49300 ug/l	28800 ug/l
Lead	Dissolved	Lab	**12 HD CF ug/l**	318 HD CF ug/l	638 HD CF ug/l	0.24 ug/l	< 0.10 ug/l	--	**92.6 ug/l**	**18.1 ug/l**	**45.3 ug/l**	0.64 ug/l	0.50 ug/l	< 0.10 ug/l	2.1 ug/l	8.5 ug/l
Lead	Total	Lab	**16 HD ug/l**	402 HD ug/l	807 HD ug/l	0.24 ug/l	1.2 ug/l	--	**92.1 ug/l**	5.2 ug/l	**172 ug/l**	**82.4 ug/l**	0.22 ug/l	1.0 ug/l	**327 ug/l**	**64.4 ug/l**
Magnesium	Dissolved	Lab				127000 ug/l	72500 ug/l	--	655000 ug/l	388000 ug/l	238000 ug/l	248000 ug/l	145000 ug/l	118000 ug/l	165000 ug/l	164000 ug/l
Magnesium	Total	Lab				134000 ug/l	74100 ug/l	--	504000 ug/l	91000 ug/l	175000 ug/l	290000 ug/l	136000 ug/l	140000 ug/l	287000 ug/l	193000 ug/l
Manganese	Dissolved	Lab				266 ug/l	621 ug/l	--	38900 ug/l	40000 ug/l	835 ug/l	530 ug/l	339 ug/l	467 ug/l	1420 ug/l	1080 ug/l
Manganese	Total	Lab				284 ug/l	631 ug/l	--	43800 ug/l	8950 ug/l	1830 ug/l	804 ug/l	295 ug/l	756 ug/l	1920 ug/l	1120 ug/l
Mercury	Dissolved	Lab	0.0069 CF ug/l	2.0 HD CF (1) ug/l	4.2 CF (1) ug/l	< 0.20 ug/l	< 0.20 ug/l	--	< 0.60 ug/l	< 0.60 ug/l	< 0.60 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l
Mercury	Total	Lab	**0.0069 ug/l**	2.4 HD (1) ug/l	4.9 (1) ug/l	< 0.20 ug/l	< 0.20 ug/l	--	< 0.60 ug/l	< 0.20 ug/l	**0.33 ug/l**	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	**0.75 ug/l**	< 0.20 ug/l
Nickel	Dissolved	Lab	**454 HD CF ug/l**	4085 HD CF ug/l	8169 HD CF ug/l	73.8 ug/l	3.5 ug/l	--	**2090 ug/l**	**2370 ug/l**	40.6 ug/l	47.7 ug/l	76.2 ug/l	63.6 ug/l	23.3 ug/l	23.7 ug/l
Nickel	Total	Lab	**455 HD ug/l**	4093 HD ug/l	8185 HD ug/l	79.7 ug/l	3.9 ug/l	--	**2240 ug/l**	**543 ug/l**	53.0 ug/l	45.6 ug/l	78.4 ug/l	70.6 ug/l	75.8 ug/l	29.6 ug/l
Potassium	Dissolved	Lab				107000 ug/l	61400 ug/l	--	566000 ug/l	620000 ug/l	259000 ug/l	290000 ug/l	116000 ug/l	97400 ug/l	281000 ug/l	289000 ug/l
Potassium	Total	Lab				117000 ug/l	61600 ug/l	--	673000 ug/l	141000 ug/l	298000 ug/l	315000 ug/l	119000 ug/l	99900 ug/l	276000 ug/l	331000 ug/l
Selenium	Dissolved	Lab	**5.0 ug/l**	20 ug/l	40 ug/l	0.77 ug/l	< 0.50 ug/l	--	**5.7 ug/l**	< 10.0 ug/l	0.68 ug/l	< 2.5 ug/l	0.75 ug/l	< 0.50 ug/l	0.59 ug/l	< 2.5 ug/l

Table A-2
Water Analytical Data Summary
MPCA - Freeway Landfill

Parameter	Total or Dissolved	Analysis Location	Minnesota Surface Water 2B Chronic 7050 - 350 Hardness	Minnesota Surface Water 2B Maximum 7050 - 350 Hardness	Minnesota Surface Water 2B Final Acute Value 7050 - 350 Hardness	Duplicate 6/17/2015	Duplicate-2 6/23/2015	MW-1 6/17/2015	MW-1 6/18/2015	MW-1 6/24/2015	MW-4 6/17/2015	MW-4 6/24/2015	MW-4D 6/17/2015	MW-4D 6/24/2015	MW-5 6/16/2015	MW-5 6/23/2015
Effective Date			01/24/2012	01/24/2012	01/24/2012											
Exceedance Key			**Bold**	*Italic*	Underline											
Selenium	Total	Lab	5.0 ug/l	20 ug/l	40 ug/l	0.89 ug/l	< 0.50 ug/l	--	< 10.0 ug/l	< 10.0 ug/l	< 2.5 ug/l	< 2.5 ug/l	0.86 ug/l	< 0.50 ug/l	< 2.5 ug/l	< 2.5 ug/l
Sodium	Dissolved	Lab				449000 ug/l	61000 ug/l	--	1110000 ug/l	1220000 ug/l	755000 ug/l	843000 ug/l	417000 ug/l	405000 ug/l	746000 ug/l	813000 ug/l
Sodium	Total	Lab				445000 ug/l	62700 ug/l	--	1320000 ug/l	281000 ug/l	787000 ug/l	915000 ug/l	440000 ug/l	420000 ug/l	838000 ug/l	969000 ug/l
Zinc	Dissolved	Lab	**302 HD CF ug/l**	*331 HD CF ug/l*	662 HD CF ug/l	< 5.0 ug/l	< 5.0 ug/l	--	***73600 ug/l***	***109000 ug/l***	124 ug/l	< 25.0 ug/l	6.4 ug/l	7.2 ug/l	17.3 ug/l	54.0 ug/l
Zinc	Total	Lab	**306 HD ug/l**	*338 HD ug/l*	677 HD ug/l	< 5.0 ug/l	9.0 ug/l	--	***101000 ug/l***	***22600 ug/l***	***1040 ug/l***	221 ug/l	< 5.0 ug/l	12.3 ug/l	***854 ug/l***	***460 ug/l***
SVOCs																
1,2,4-Trichlorobenzene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
1,2-Dichlorobenzene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
1,2-Diphenylhydrazine	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
1,3-Dichlorobenzene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
1,4-Dichlorobenzene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	11.9 ug/l
1-Methylnaphthalene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
2,2-oxybis (1-chloropropane)	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
2,4,5-Trichlorophenol	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
2,4,6-Trichlorophenol	NA	Lab	2.0 ug/l	102 ug/l	203 ug/l	< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
2,4-Dichlorophenol	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
2,4-Dimethylphenol	NA	Lab				< 51.0 ug/l	< 52.1 ug/l	--	< 128000 ug/l	< 125000 ug/l	< 51.0 ug/l	< 51.3 ug/l	< 51.0 ug/l	< 51.8 ug/l	< 102 ug/l	< 50.8 ug/l
2,4-Dinitrophenol	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
2,4-Dinitrotoluene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
2,6-Dinitrotoluene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
2-Chloronaphthalene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
2-Chlorophenol	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
2-Methyl-4,6-dinitrophenol	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
2-Methylnaphthalene	NA	Lab				< 10.2 ug/l	11.0 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
2-Methylphenol (o-cresol)	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
2-Nitroaniline	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
2-Nitrophenol	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
3,3`-Dichlorobenzidine	NA	Lab				< 51.0 ug/l	< 52.1 ug/l	--	< 128000 ug/l	< 125000 ug/l	< 51.0 ug/l	< 51.3 ug/l	< 51.0 ug/l	< 51.8 ug/l	< 102 ug/l	< 50.8 ug/l
3,4-Methylphenol (m,p cresols)	NA	Lab				< 20.4 ug/l	< 20.8 ug/l	--	< 51000 ug/l	< 50000 ug/l	< 20.4 ug/l	< 20.5 ug/l	< 20.4 ug/l	< 20.7 ug/l	< 40.8 ug/l	24.6 ug/l
3-Nitroaniline	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
4-Bromophenyl phenyl ether	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
4-Chloro-3-methylphenol	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
4-Chloroaniline	NA	Lab				< 51.0 ug/l	< 52.1 ug/l	--	< 128000 ug/l	< 125000 ug/l	< 51.0 ug/l	< 51.3 ug/l	< 51.0 ug/l	< 51.8 ug/l	< 102 ug/l	< 50.8 ug/l
4-Chlorophenyl phenyl ether	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
4-Nitroaniline	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
4-Nitrophenol	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
Acenaphthene	NA	Lab	20 ug/l	56 ug/l	112 ug/l	< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
Acenaphthylene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
Anthracene	NA	Lab	0.035 ug/l	0.32 ug/l	0.63 ug/l	< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
Benz(a)anthracene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
Benzo(a)pyrene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
Benzo(b)fluoranthene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
Benzo(g,h,i)perylene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
Benzo(k)fluoranthene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
Bis(2-chloroethoxy)methane	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
Bis(2-chloroethyl)ether	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
Bis(2-ethylhexyl)phthalate	NA	Lab	2.1 ug/l	(1)	(1)	< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
Butyl benzyl phthalate	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
Carbazole	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	21.5 ug/l	14.4 ug/l
Chrysene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
Dibenz(a,h)anthracene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
Dibenzofuran	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
Diethyl phthalate	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	15.7 ug/l
Dimethyl phthalate	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
Di-n-butyl phthalate	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
Di-n-octyl phthalate	NA	Lab	30 ug/l	825 ug/l	1650 ug/l	< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l

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Table A-2
Water Analytical Data Summary
MPCA - Freeway Landfill

Parameter	Total or Dissolved	Analysis Location	Minnesota Surface Water 2B Chronic 7050 - 350 Hardness	Minnesota Surface Water 2B Maximum 7050 - 350 Hardness	Minnesota Surface Water 2B Final Acute Value 7050 - 350 Hardness	Duplicate	Duplicate-2	MW-1	MW-1	MW-1	MW-4	MW-4	MW-4D	MW-4D	MW-5	MW-5
					Location / Date	6/17/2015	6/23/2015	6/17/2015	6/18/2015	6/24/2015	6/17/2015	6/24/2015	6/17/2015	6/24/2015	6/16/2015	6/23/2015
Effective Date			01/24/2012	01/24/2012	01/24/2012											
Exceedance Key			**Bold**	*Italic*	Underline											
Fluoranthene	NA	Lab	1.9 ug/l	3.5 ug/l	6.9 ug/l	< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
Fluorene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
Hexachlorobenzene	NA	Lab	0.00024 ug/l	(1)	(1)	< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
Hexachlorobutadiene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
Hexachloroethane	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
Indeno(1,2,3-cd)pyrene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
Isophorone	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
Naphthalene	NA	Lab	**81 ug/l**	409 ug/l	818 ug/l	< 10.2 ug/l	17.3 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	**139 ug/l**	**93.2 ug/l**
Nitrobenzene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
N-Nitrosodimethylamine	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
N-Nitrosodi-n-propylamine	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
N-Nitrosodiphenylamine	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
Pentachlorophenol	NA	Lab	5.5 PD ug/l	9.1 PD ug/l	18 PD ug/l	< 20.4 ug/l	< 20.8 ug/l	--	< 51000 ug/l	< 50000 ug/l	< 20.4 ug/l	< 20.5 ug/l	< 20.4 ug/l	< 20.7 ug/l	< 40.8 ug/l	< 20.3 ug/l
Phenanthrene	NA	Lab	**3.6 ug/l**	32 ug/l	64 ug/l	< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	**23.1 ug/l**	**18.5 ug/l**
Phenol	NA	Lab	123 ug/l	2214 ug/l	4428 ug/l	< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
Pyrene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l
VOCs																
1,1,1,2-Tetrachloroethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,1,1-Trichloroethane	NA	Lab	329 ug/l	2957 ug/l	5913 ug/l	< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,1,2,2-Tetrachloroethane	NA	Lab	13 ug/l	1127 ug/l	2253 ug/l	< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,1,2-Trichloroethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,1-Dichloro-1-propene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,1-Dichloroethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,1-Dichloroethylene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2,3-Trichlorobenzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2,3-Trichloropropane	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
1,2,4-Trichlorobenzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2,4-Trimethylbenzene	NA	Lab				< 1.0 ug/l	2.2 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	1.3 ug/l	< 1.0 ug/l	< 1.0 ug/l	11.3 ug/l	14.9 ug/l
1,2-Dibromo-3-chloropropane	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
1,2-Dibromoethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2-Dichlorobenzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2-Dichloroethane	NA	Lab	190 ug/l	45050 (1) ug/l	90100 (1) ug/l	< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2-Dichloroethylene, cis	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	66.0 ug/l	173 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2-Dichloroethylene, trans	NA	Lab				< 4.0 ug/l	< 1.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 5.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2-Dichloropropane	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
1,3,5-Trimethylbenzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	3.4 ug/l	3.7 ug/l
1,3-Dichloro-1-propene, cis	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
1,3-Dichloro-1-propene, trans	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
1,3-Dichlorobenzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,3-Dichloropropane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,4-Dichlorobenzene	NA	Lab				2.1 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	2.7 ug/l	1.9 ug/l	1.9 ug/l	9.3 ug/l	13.7 ug/l
2,2-Dichloropropane	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
Acetone	NA	Lab				< 20.0 ug/l	< 20.0 ug/l	--	4850 ug/l	6600 ug/l	< 100 ug/l	< 20.0 ug/l	< 20.0 ug/l	< 20.0 ug/l	< 20.0 ug/l	22.3 ug/l
Allyl Chloride	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
Benzene	NA	Lab	98 ug/l	4487 ug/l	8974 ug/l	< 1.0 ug/l	8.1 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	3.0 ug/l	1.2 ug/l	< 1.0 ug/l	5.2 ug/l	5.2 ug/l
Bromobenzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Bromochloromethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Bromodichloromethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	< 1.0 ug/l
Bromoform	NA	Lab	466 ug/l	2900 ug/l	5800 ug/l	< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
Bromomethane	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
Butyl benzene	NA	Lab				< 1.0 ug/l	2.2 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	1.2 ug/l	< 1.0 ug/l
Butylbenzene, sec	NA	Lab				< 1.0 ug/l	2.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	1.1 ug/l	< 1.0 ug/l
Butylbenzene, tert	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Carbon tetrachloride	NA	Lab	5.9 ug/l	1750 (1) ug/l	3500 (1) ug/l	< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Chlorobenzene	NA	Lab	20 ug/l	423 ug/l	846 ug/l	16.9 ug/l	2.7 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	5.9 ug/l	8.8 ug/l	17.2 ug/l	16.3 ug/l	3.2 ug/l	2.4 ug/l
Chlorodibromomethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	< 1.0 ug/l

Table A-2
Water Analytical Data Summary
MPCA - Freeway Landfill

					Location	Duplicate	Duplicate-2	MW-1	MW-1	MW-1	MW-4	MW-4	MW-4D	MW-4D	MW-5	MW-5
					Date	6/17/2015	6/23/2015	6/17/2015	6/18/2015	6/24/2015	6/17/2015	6/24/2015	6/17/2015	6/24/2015	6/16/2015	6/23/2015
Parameter	Total or Dissolved	Analysis Location	Minnesota Surface Water 2B Chronic 7050 - 350 Hardness	Minnesota Surface Water 2B Maximum 7050 - 350 Hardness	Minnesota Surface Water 2B Final Acute Value 7050 - 350 Hardness											
Effective Date			01/24/2012	01/24/2012	01/24/2012											
Exceedance Key			**Bold**	*Italic*	Underline											
Chloroethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Chloroform	NA	Lab	155 ug/l	1392 ug/l	2784 ug/l	< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Chloromethane	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
Chlorotoluene, o	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	2.1 ug/l
Chlorotoluene, p	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Cumene (isopropyl benzene)	NA	Lab				< 1.0 ug/l	4.2 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	2.1 ug/l	< 1.0 ug/l	1.0 ug/l	4.1 ug/l	4.0 ug/l
Cymene p- (Toluene isopropyl p-)	NA	Lab				< 4.0 ug/l	< 1.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 5.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	5.5 ug/l	5.8 ug/l
Dibromomethane (methylene bromide)	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
Dichlorodifluoromethane (CFC-12)	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Dichlorofluoromethane (CFC-21)	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Ethyl benzene	NA	Lab	**68 ug/l**	1859 ug/l	3717 ug/l	< 1.0 ug/l	< 1.0 ug/l	--	22.5 ug/l	**78.2 ug/l**	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	**123 ug/l**	**118 ug/l**
Ethyl ether	NA	Lab				12.9 ug/l	11.4 ug/l	--	71.7 ug/l	< 200 ug/l	21.7 ug/l	17.6 ug/l	17.3 ug/l	13.3 ug/l	< 4.0 ug/l	< 4.0 ug/l
Hexachlorobutadiene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 2.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Methyl ethyl ketone	NA	Lab				< 5.0 ug/l	< 5.0 ug/l	--	5780 ug/l	7630 ug/l	< 25.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 5.0 ug/l
Methyl isobutyl ketone	NA	Lab				< 5.0 ug/l	< 5.0 ug/l	--	1290 ug/l	1340 ug/l	< 25.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 20.0 ug/l	< 5.0 ug/l
Methyl tertiary butyl ether (MTBE)	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	1.4 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Methylene chloride	NA	Lab	1940 ug/l	13875 ug/l	27749 ug/l	< 4.0 ug/l	< 4.0 ug/l	--	45.9 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
Naphthalene	NA	Lab	**81 ug/l**	409 ug/l	818 ug/l	< 4.0 ug/l	30.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	6.4 ug/l	< 4.0 ug/l	< 4.0 ug/l	**185 ug/l**	**125 ug/l**
Propylbenzene	NA	Lab				< 1.0 ug/l	5.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	1.5 ug/l	< 1.0 ug/l	< 1.0 ug/l	2.4 ug/l	< 1.0 ug/l
Styrene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	10.4 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Tetrachloroethylene	NA	Lab	**8.9 ug/l**	428 ug/l	857 ug/l	< 1.0 ug/l	< 1.0 ug/l	--	**27.6 ug/l**	**294 ug/l**	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Tetrahydrofuran	NA	Lab				40.4 ug/l	12.1 ug/l	--	< 100 ug/l	< 500 ug/l	130 ug/l	123 ug/l	50.6 ug/l	44.5 ug/l	210 ug/l	189 ug/l
Toluene	NA	Lab	**253 ug/l**	1352 ug/l	2703 ug/l	< 1.0 ug/l	< 1.0 ug/l	--	228 ug/l	**766 ug/l**	< 5.0 ug/l	1.0 ug/l	1.0 ug/l	< 1.0 ug/l	155 ug/l	84.0 ug/l
Trichloroethylene	NA	Lab	**120 ug/l**	6988 ug/l	13976 ug/l	< 0.40 ug/l	< 0.40 ug/l	--	50.2 ug/l	**343 ug/l**	< 2.0 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l
Trichlorofluoromethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Trichlorotrifluoroethane (Freon 113)	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Vinyl chloride	NA	Lab	**9.2 ug/l**	(1)	(1)	< 0.40 ug/l	0.77 ug/l	--	< 4.0 ug/l	< 20.0 ug/l	< 2.0 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	0.58 ug/l
Xylene, m & p	NA	Lab				< 2.0 ug/l	< 2.0 ug/l	--	43.2 ug/l	174 ug/l	< 10.0 ug/l	2.6 ug/l	< 2.0 ug/l	< 2.0 ug/l	318 ug/l	309 ug/l
Xylene, o	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	22.9 ug/l	75.1 ug/l	< 5.0 ug/l	2.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	122 ug/l	115 ug/l
Xylene, total	NA	Lab	**166 ug/l**	1407 ug/l	2814 ug/l	< 3.0 ug/l	< 3.0 ug/l	--	66.1 ug/l	**249 ug/l**	< 15.0 ug/l	4.6 ug/l	< 3.0 ug/l	< 3.0 ug/l	**439 ug/l**	**424 ug/l**
PCBs																
Aroclor 1016	NA	Lab				< 0.10 ug/l	< 0.10 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.11 ug/l	< 1.0 ug/l	< 0.10 ug/l
Aroclor 1221	NA	Lab				< 0.10 ug/l	< 0.10 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.11 ug/l	< 1.0 ug/l	< 0.10 ug/l
Aroclor 1232	NA	Lab				< 0.10 ug/l	< 0.10 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.11 ug/l	< 1.0 ug/l	< 0.10 ug/l
Aroclor 1242	NA	Lab				< 0.10 ug/l	< 0.10 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.11 ug/l	< 1.0 ug/l	< 0.10 ug/l
Aroclor 1248	NA	Lab				< 0.10 ug/l	< 0.10 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.11 ug/l	< 1.0 ug/l	0.17 ug/l
Aroclor 1254	NA	Lab				< 0.10 ug/l	< 0.10 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.11 ug/l	< 1.0 ug/l	< 0.10 ug/l
Aroclor 1260	NA	Lab				< 0.10 ug/l	< 0.10 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.11 ug/l	< 1.0 ug/l	< 0.10 ug/l
Aroclor 1262	NA	Lab				< 0.10 ug/l	< 0.10 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.11 ug/l	< 1.0 ug/l	< 0.10 ug/l
Aroclor 1268	NA	Lab				< 0.10 ug/l	< 0.10 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.11 ug/l	< 1.0 ug/l	< 0.10 ug/l
Total Petroleum Hydrocarbons																
Gasoline Range Organics, C6-C10	NA	Lab				< 100 ug/l	128 ug/l	--	4430 ug/l	5530 ug/l	173 ug/l	140 ug/l	< 100 ug/l	< 100 ug/l	1110 ug/l	923 ug/l
Total Petroleum Hydrocarbons C10-C28	NA	Lab				3.0 mg/l	3.1 mg/l	--	79.0 mg/l	172 mg/l	3.8 mg/l	3.4 mg/l	3.2 mg/l	1.3 mg/l	5.1 mg/l	2.9 mg/l
Perfluorinated Compounds																
Perfluorobutane sulfonate (PFBS)	NA	Lab				0.12 ug/l	0.011 j ug/l	0.11 ug/l	--	0.075 j ug/l	0.16 ug/l	0.19 ug/l	0.11 ug/l	0.12 ug/l	0.019 j ug/l	0.050 j ug/l
Perfluorobutyric acid	NA	Lab				0.81 ug/l	0.069 ug/l	2.7 ug/l	--	2.8 ug/l	2.1 ug/l	2.1 ug/l	0.76 ug/l	0.84 ug/l	7.8 ug/l	14 ug/l
Perfluorohexane sulfonate	NA	Lab				0.39 ug/l	0.029 j ug/l	0.13 ug/l	--	0.15 j ug/l	0.25 ug/l	0.24 ug/l	0.41 ug/l	0.28 ug/l	0.23 ug/l	0.20 ug/l
Perfluorohexanoic acid	NA	Lab				0.34 ug/l	0.11 ug/l	0.48 ug/l	--	0.48 ug/l	0.91 ug/l	0.94 ug/l	0.33 ug/l	0.39 ug/l	0.81 ug/l	0.90 ug/l
Perfluorooctane sulfonate (PFOS)	NA	Lab				0.031 j ug/l	0.14 ug/l	0.023 j ug/l	--	< 0.25 ug/l	0.21 ug/l	0.15 ug/l	0.029 j ug/l	0.059 ug/l	0.088 ug/l	0.073 j ug/l
Perfluorooctanoic acid (PFOA)	NA	Lab				0.33 ug/l	2.5 ug/l	0.27 ug/l	--	0.36 ug/l	0.82 ug/l	0.77 ug/l	0.32 ug/l	0.30 ug/l	0.57 ug/l	0.49 ug/l
Perfluoropentanoic acid	NA	Lab				0.25 ug/l	0.019 j ug/l	0.43 ug/l	--	0.46 ug/l	0.74 ug/l	0.79 ug/l	0.25 ug/l	0.31 ug/l	0.89 ug/l	0.82 ug/l

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Table A-2
Water Analytical Data Summary
MPCA - Freeway Landfill

Parameter	Total or Dissolved	Analysis Location	Minnesota Surface Water 2B Chronic 7050 - 350 Hardness	Minnesota Surface Water 2B Maximum 7050 - 350 Hardness	Minnesota Surface Water 2B Final Acute Value 7050 - 350 Hardness	MW-6 6/17/2015	MW-6 6/18/2015	MW-6 6/24/2015	MW-7 6/16/2015	MW-7 6/23/2015	MW-8 6/16/2015	MW-8 6/23/2015	MW-8D 6/16/2015	MW-8D 6/23/2015
Effective Date			01/24/2012	01/24/2012	01/24/2012									
Exceedance Key			**Bold**	*Italic*	Underline									
General Parameters														
Alkalinity, bicarbonate, as CaCO3	NA	Lab				--	1530 mg/l	3920 mg/l	3280 mg/l	2150 mg/l	1200 mg/l	1200 mg/l	910 mg/l	919 mg/l
Alkalinity, bicarbonate, as HCO3	NA	Lab				--	1860 mg/l	4780 mg/l	4000 mg/l	2620 mg/l	1470 mg/l	1460 mg/l	1110 mg/l	1120 mg/l
Alkalinity, carbonate, as CaCO3	NA	Lab				--	< 12.5 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 8.3 mg/l	< 5.0 mg/l	< 5.0 mg/l	< 5.0 mg/l	< 5.0 mg/l
Alkalinity, carbonate, as CO3	NA	Lab				--	< 12.5 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 8.3 mg/l	< 5.0 mg/l	< 5.0 mg/l	< 5.0 mg/l	< 5.0 mg/l
Alkalinity, hydroxide, as CaCO3	NA	Lab				--	< 12.5 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 8.3 mg/l	< 5.0 mg/l	< 5.0 mg/l	< 5.0 mg/l	< 5.0 mg/l
Alkalinity, hydroxide, as OH	NA	Lab				--	< 12.5 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 8.3 mg/l	< 5.0 mg/l	< 5.0 mg/l	< 5.0 mg/l	< 5.0 mg/l
Alkalinity, total, as CaCO3	NA	Lab				--	1530 mg/l	3920 mg/l	3280 mg/l	2150 mg/l	1200 mg/l	1200 mg/l	910 mg/l	919 mg/l
Anions	NA	Lab				--	40.9 meq/l	39.8 meq/l	69.0 meq/l	29.1 meq/l	25.4 meq/l	25.3 meq/l	26.1 meq/l	25.9 meq/l
Biochemical Oxygen Demand (5-day)	NA	Lab				--	< 200 mg/l	< 60.0 mg/l	< 24.0 mg/l	< 12.0 mg/l	< 24.0 mg/l	31.1 mg/l	< 12.0 mg/l	< 6.0 mg/l
Carbon, total organic	NA	Lab				--	102 mg/l	50.3 mg/l	34.0 mg/l	28.3 mg/l	38.2 mg/l	35.3 mg/l	23.9 mg/l	22.6 mg/l
Cation-Anion balance	NA	Lab				--	10.08 %	-1.63 %	-39.46 %	-3.87 %	-4.46 %	-6.73 %	-0.26 %	-2.83 %
Cations	NA	Lab				--	50.1 meq/l	38.5 meq/l	30.0 meq/l	26.9 meq/l	23.3 meq/l	22.1 meq/l	25.9 meq/l	24.5 meq/l
Chloride	NA	Lab	**230 mg/l**	*860 mg/l*	1720 mg/l	--	**365 mg/l**	**296 mg/l**	118 mg/l	117 mg/l	48.1 mg/l	45.7 mg/l	**279 mg/l**	**266 mg/l**
Dissolved oxygen	NA	Field	(4)	(4)	0 - 5.0 mg/l	--	12.7 mg/l	2.9 mg/l	0.2 mg/l	0.2 mg/l	0.2 mg/l	0.2 mg/l	0.4 mg/l	0.4 mg/l
Nitrogen, Nitrate + Nitrite, as N	NA	Lab				--	< 1.0 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 1.0 mg/l
Nitrogen, Nitrate as N	NA	Lab				--	< 1.0 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 1.0 mg/l
Nitrogen, Nitrite as N	NA	Lab				--	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l
pH	NA	Field	**6.5 - 9.0 pH units**			--	7.3 pH units	6.8 pH units	6.7 pH units	7.0 pH units	7.0 pH units	6.9 pH units	7.0 pH units	7.0 pH units
Redox (oxidation potential)	NA	Field				--	16 mV	57 mV	-18 mV	148 mV	-74 mV	84 mV	-33 mV	67 mV
Specific Conductance @ 25 ºC	NA	Field				--	3920 umhos/cm	3570 umhos/cm	2690 umhos/cm	2600 umhos/cm	2300 umhos/cm	2280 umhos/cm	2380 umhos/cm	2340 umhos/cm
Static Water Level	NA	Field				--	38.10 ft	38.15 ft	35.83 ft	35.51 ft	27.23 ft	27.30 ft	42.65 ft	42.78 ft
Sulfate, as SO4	NA	Lab				--	< 2.5 mg/l	< 2.5 mg/l	2.5 mg/l	< 2.5 mg/l	3.6 mg/l	< 2.5 mg/l	< 2.5 mg/l	< 2.5 mg/l
Temperature, ºC	NA	Field	TEM	TEM	TEM	--	12.5 deg C	12.5 deg C	15.5 deg C	15.5 deg C	14.5 deg C	15.5 deg C	15.0 deg C	16.5 deg C
Metals														
Antimony	Dissolved	Lab	**31 ug/l**	90 ug/l	180 ug/l	--	2.1 ug/l	0.83 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l
Antimony	Total	Lab	**31 ug/l**	*90 ug/l*	180 ug/l	--	1.3 ug/l	0.65 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l
Arsenic	Dissolved	Lab	53 ug/l	360 ug/l	720 ug/l	--	5.5 ug/l	3.2 ug/l	3.0 ug/l	3.9 ug/l	0.93 ug/l	1.1 ug/l	10.1 ug/l	11.2 ug/l
Arsenic	Total	Lab	53 ug/l	360 ug/l	720 ug/l	--	4.2 ug/l	2.8 ug/l	3.3 ug/l	3.7 ug/l	1.5 ug/l	1.2 ug/l	10.0 ug/l	11.0 ug/l
Barium	Dissolved	Lab				--	901 ug/l	836 ug/l	539 ug/l	542 ug/l	924 ug/l	961 ug/l	2780 ug/l	3110 ug/l
Barium	Total	Lab				--	782 ug/l	903 ug/l	572 ug/l	533 ug/l	955 ug/l	956 ug/l	2830 ug/l	3060 ug/l
Cadmium	Dissolved	Lab	**2.8 HD CF ug/l**	130 HD CF ug/l	260 HD CF ug/l	--	0.70 ug/l	0.18 ug/l	< 0.080 ug/l	< 0.080 ug/l	< 0.080 ug/l	< 0.080 ug/l	< 0.080 ug/l	< 0.080 ug/l
Cadmium	Total	Lab	**3.0 HD ug/l**	137 HD ug/l	275 HD ug/l	--	0.43 ug/l	0.38 ug/l	0.11 ug/l	0.14 ug/l	0.097 ug/l	< 0.080 ug/l	< 0.080 ug/l	< 0.080 ug/l
Calcium	Dissolved	Lab				--	325000 ug/l	198000 ug/l	222000 ug/l	231000 ug/l	259000 ug/l	239000 ug/l	138000 ug/l	124000 ug/l
Calcium	Total	Lab				--	242000 ug/l	231000 ug/l	244000 ug/l	207000 ug/l	271000 ug/l	238000 ug/l	139000 ug/l	123000 ug/l
Chromium	Dissolved	Lab	**11 CF CR6 ug/l**	*16 CF CR6 ug/l*	31 CF CR6 ug/l	--	***33.2 ug/l***	1.8 ug/l	2.7 ug/l	2.2 ug/l	6.6 ug/l	6.3 ug/l	1.5 ug/l	1.0 ug/l
Chromium	Total	Lab	**11 CR6 ug/l**	*16 CR6 ug/l*	32 CR6 ug/l	--	**15.9 ug/l**	5.0 ug/l	3.5 ug/l	2.6 ug/l	9.4 ug/l	7.1 ug/l	2.0 ug/l	1.1 ug/l
Cobalt	Dissolved	Lab	**5.0 ug/l**	*436 ug/l*	872 ug/l	--	**20.2 ug/l**	**14.6 ug/l**	1.5 ug/l	0.93 ug/l	1.8 ug/l	1.5 ug/l	**12.0 ug/l**	**12.0 ug/l**
Cobalt	Total	Lab	**5.0 ug/l**	*436 ug/l*	872 ug/l	--	**15.5 ug/l**	**14.9 ug/l**	1.6 ug/l	1.0 ug/l	1.9 ug/l	1.5 ug/l	**12.0 ug/l**	**12.0 ug/l**
Copper	Dissolved	Lab	**21 HD CF ug/l**	*55 HD CF ug/l*	111 HD CF ug/l	--	***69.9 ug/l***	4.9 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Copper	Total	Lab	**21 HD ug/l**	*58 HD ug/l*	115 HD ug/l	--	**40.8 ug/l**	**36.2 ug/l**	< 1.0 ug/l	< 1.0 ug/l	1.6 ug/l	< 1.0 ug/l	1.8 ug/l	< 1.0 ug/l
Iron	Dissolved	Lab				--	22400 ug/l	757 ug/l	28500 ug/l	30600 ug/l	47200 ug/l	47100 ug/l	6320 ug/l	7730 ug/l
Iron	Total	Lab				--	13400 ug/l	5050 ug/l	31600 ug/l	31600 ug/l	49100 ug/l	48000 ug/l	7140 ug/l	7680 ug/l
Lead	Dissolved	Lab	**12 HD CF ug/l**	318 HD CF ug/l	638 HD CF ug/l	--	**12.0 ug/l**	0.14 ug/l	< 0.10 ug/l	0.15 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l	0.10 ug/l
Lead	Total	Lab	**16 HD ug/l**	402 HD ug/l	807 HD ug/l	--	6.4 ug/l	3.5 ug/l	2.6 ug/l	3.2 ug/l	2.8 ug/l	1.3 ug/l	2.3 ug/l	0.13 ug/l
Magnesium	Dissolved	Lab				--	255000 ug/l	187000 ug/l	106000 ug/l	102000 ug/l	74700 ug/l	72000 ug/l	126000 ug/l	118000 ug/l
Magnesium	Total	Lab				--	208000 ug/l	197000 ug/l	117000 ug/l	103000 ug/l	78900 ug/l	72400 ug/l	130000 ug/l	119000 ug/l
Manganese	Dissolved	Lab				--	2570 ug/l	1740 ug/l	420 ug/l	285 ug/l	651 ug/l	610 ug/l	254 ug/l	141 ug/l
Manganese	Total	Lab				--	1760 ug/l	2170 ug/l	503 ug/l	291 ug/l	720 ug/l	618 ug/l	274 ug/l	142 ug/l
Mercury	Dissolved	Lab	0.0069 CF ug/l	2.0 HD CF (1) ug/l	4.2 CF (1) ug/l	--	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l
Mercury	Total	Lab	**0.0069 ug/l**	2.4 HD (1) ug/l	4.9 (1) ug/l	--	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l
Nickel	Dissolved	Lab	**454 HD CF ug/l**	4085 HD CF ug/l	8169 HD CF ug/l	--	89.2 ug/l	62.5 ug/l	7.0 ug/l	5.9 ug/l	3.6 ug/l	3.6 ug/l	44.3 ug/l	43.4 ug/l
Nickel	Total	Lab	**455 HD ug/l**	4093 HD ug/l	8185 HD ug/l	--	77.9 ug/l	66.5 ug/l	8.1 ug/l	6.3 ug/l	5.2 ug/l	3.9 ug/l	44.8 ug/l	43.4 ug/l
Potassium	Dissolved	Lab				--	85400 ug/l	102000 ug/l	69200 ug/l	66000 ug/l	61600 ug/l	61000 ug/l	26400 ug/l	25100 ug/l
Potassium	Total	Lab				--	93800 ug/l	95200 ug/l	77700 ug/l	65900 ug/l	65500 ug/l	60600 ug/l	26600 ug/l	25000 ug/l
Selenium	Dissolved	Lab	**5.0 ug/l**	20 ug/l	40 ug/l	--	2.1 ug/l	0.58 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l

Table A-2
Water Analytical Data Summary
MPCA - Freeway Landfill

					Location	MW-6	MW-6	MW-6	MW-7	MW-7	MW-8	MW-8	MW-8D	MW-8D
					Date	6/17/2015	6/18/2015	6/24/2015	6/16/2015	6/23/2015	6/16/2015	6/23/2015	6/16/2015	6/23/2015
Parameter	Total or Dissolved	Analysis Location	Minnesota Surface Water 2B Chronic 7050 - 350 Hardness	Minnesota Surface Water 2B Maximum 7050 - 350 Hardness	Minnesota Surface Water 2B Final Acute Value 7050 - 350 Hardness									
Effective Date			01/24/2012	01/24/2012	01/24/2012									
Exceedance Key			**Bold**	*Italic*	Underline									
Selenium	Total	Lab	5.0 ug/l	20 ug/l	40 ug/l	--	0.88 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l
Sodium	Dissolved	Lab				--	243000 ug/l	242000 ug/l	123000 ug/l	122000 ug/l	59300 ug/l	61000 ug/l	183000 ug/l	181000 ug/l
Sodium	Total	Lab				--	247000 ug/l	239000 ug/l	141000 ug/l	124000 ug/l	65900 ug/l	61200 ug/l	199000 ug/l	182000 ug/l
Zinc	Dissolved	Lab	**302 HD CF ug/l**	*331 HD CF ug/l*	662 HD CF ug/l	--	188 ug/l	28.2 ug/l	5.7 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	5.3 ug/l	5.3 ug/l
Zinc	Total	Lab	**306 HD ug/l**	*338 HD ug/l*	677 HD ug/l	--	90.5 ug/l	47.9 ug/l	14.6 ug/l	13.3 ug/l	14.4 ug/l	9.0 ug/l	6.5 ug/l	5.9 ug/l
SVOCs														
1,2,4-Trichlorobenzene	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
1,2-Dichlorobenzene	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
1,2-Diphenylhydrazine	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
1,3-Dichlorobenzene	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
1,4-Dichlorobenzene	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
1-Methylnaphthalene	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2,2-oxybis (1-chloropropane)	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2,4,5-Trichlorophenol	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2,4,6-Trichlorophenol	NA	Lab	2.0 ug/l	102 ug/l	203 ug/l	--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2,4-Dichlorophenol	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2,4-Dimethylphenol	NA	Lab				--	< 556 ug/l	< 52.1 ug/l	< 51.0 ug/l	< 51.8 ug/l	< 50.8 ug/l	< 51.5 ug/l	< 50.5 ug/l	< 51.3 ug/l
2,4-Dinitrophenol	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2,4-Dinitrotoluene	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2,6-Dinitrotoluene	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2-Chloronaphthalene	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2-Chlorophenol	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2-Methyl-4,6-dinitrophenol	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2-Methylnaphthalene	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	10.5 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2-Methylphenol (o-cresol)	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2-Nitroaniline	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2-Nitrophenol	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
3,3`-Dichlorobenzidine	NA	Lab				--	< 556 ug/l	< 52.1 ug/l	< 51.0 ug/l	< 51.8 ug/l	< 50.8 ug/l	< 51.5 ug/l	< 50.5 ug/l	< 51.3 ug/l
3,4-Methylphenol (m,p cresols)	NA	Lab				--	< 222 ug/l	< 20.8 ug/l	< 20.4 ug/l	< 20.7 ug/l	< 20.3 ug/l	< 20.6 ug/l	< 20.2 ug/l	< 20.5 ug/l
3-Nitroaniline	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
4-Bromophenyl phenyl ether	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
4-Chloro-3-methylphenol	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
4-Chloroaniline	NA	Lab				--	< 556 ug/l	< 52.1 ug/l	< 51.0 ug/l	< 51.8 ug/l	< 50.8 ug/l	< 51.5 ug/l	< 50.5 ug/l	< 51.3 ug/l
4-Chlorophenyl phenyl ether	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
4-Nitroaniline	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
4-Nitrophenol	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Acenaphthene	NA	Lab	20 ug/l	56 ug/l	112 ug/l	--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Acenaphthylene	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Anthracene	NA	Lab	0.035 ug/l	0.32 ug/l	0.63 ug/l	--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Benz(a)anthracene	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Benzo(a)pyrene	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Benzo(b)fluoranthene	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Benzo(g,h,i)perylene	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Benzo(k)fluoranthene	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Bis(2-chloroethoxy)methane	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Bis(2-chloroethyl)ether	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Bis(2-ethylhexyl)phthalate	NA	Lab	2.1 ug/l	(1)	(1)	--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Butyl benzyl phthalate	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Carbazole	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Chrysene	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Dibenz(a,h)anthracene	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Dibenzofuran	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Diethyl phthalate	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Dimethyl phthalate	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Di-n-butyl phthalate	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Di-n-octyl phthalate	NA	Lab	30 ug/l	825 ug/l	1650 ug/l	--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l

Table A-2
Water Analytical Data Summary
MPCA - Freeway Landfill

					Location	MW-6	MW-6	MW-6	MW-7	MW-7	MW-8	MW-8	MW-8D	MW-8D
					Date	6/17/2015	6/18/2015	6/24/2015	6/16/2015	6/23/2015	6/16/2015	6/23/2015	6/16/2015	6/23/2015
Parameter	Total or Dissolved	Analysis Location	Minnesota Surface Water 2B Chronic 7050 - 350 Hardness	Minnesota Surface Water 2B Maximum 7050 - 350 Hardness	Minnesota Surface Water 2B Final Acute Value 7050 - 350 Hardness									
Effective Date			01/24/2012	01/24/2012	01/24/2012									
Exceedance Key			**Bold**	*Italic*	Underline									
Fluoranthene	NA	Lab	1.9 ug/l	3.5 ug/l	6.9 ug/l	--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Fluorene	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Hexachlorobenzene	NA	Lab	0.00024 ug/l	(1)	(1)	--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Hexachlorobutadiene	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Hexachloroethane	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Indeno(1,2,3-cd)pyrene	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Isophorone	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Naphthalene	NA	Lab	**81 ug/l**	409 ug/l	818 ug/l	--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	17.1 ug/l	14.5 ug/l	< 10.1 ug/l	< 10.3 ug/l
Nitrobenzene	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
N-Nitrosodimethylamine	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
N-Nitrosodi-n-propylamine	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
N-Nitrosodiphenylamine	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Pentachlorophenol	NA	Lab	5.5 PD ug/l	9.1 PD ug/l	18 PD ug/l	--	< 222 ug/l	< 20.8 ug/l	< 20.4 ug/l	< 20.7 ug/l	< 20.3 ug/l	< 20.6 ug/l	< 20.2 ug/l	< 20.5 ug/l
Phenanthrene	NA	Lab	**3.6 ug/l**	32 ug/l	64 ug/l	--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Phenol	NA	Lab	123 ug/l	2214 ug/l	4428 ug/l	--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Pyrene	NA	Lab				--	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
VOCs														
1,1,1,2-Tetrachloroethane	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,1,1-Trichloroethane	NA	Lab	329 ug/l	2957 ug/l	5913 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,1,2,2-Tetrachloroethane	NA	Lab	13 ug/l	1127 ug/l	2253 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,1,2-Trichloroethane	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,1-Dichloro-1-propene	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,1-Dichloroethane	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,1-Dichloroethylene	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2,3-Trichlorobenzene	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2,3-Trichloropropane	NA	Lab				--	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
1,2,4-Trichlorobenzene	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2,4-Trimethylbenzene	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	2.1 ug/l	1.5 ug/l	2.6 ug/l	2.3 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2-Dibromo-3-chloropropane	NA	Lab				--	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
1,2-Dibromoethane	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2-Dichlorobenzene	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2-Dichloroethane	NA	Lab	190 ug/l	45050 (1) ug/l	90100 (1) ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2-Dichloroethylene, cis	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	6.9 ug/l	7.6 ug/l
1,2-Dichloroethylene, trans	NA	Lab				--	< 4.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2-Dichloropropane	NA	Lab				--	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
1,3,5-Trimethylbenzene	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,3-Dichloro-1-propene, cis	NA	Lab				--	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
1,3-Dichloro-1-propene, trans	NA	Lab				--	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
1,3-Dichlorobenzene	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,3-Dichloropropane	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,4-Dichlorobenzene	NA	Lab				--	1.6 ug/l	1.9 ug/l	1.9 ug/l	2.1 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
2,2-Dichloropropane	NA	Lab				--	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
Acetone	NA	Lab				--	167 ug/l	61.1 ug/l	< 20.0 ug/l	< 20.0 ug/l	< 20.0 ug/l	< 20.0 ug/l	< 20.0 ug/l	< 20.0 ug/l
Allyl Chloride	NA	Lab				--	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
Benzene	NA	Lab	98 ug/l	4487 ug/l	8974 ug/l	--	6.0 ug/l	2.7 ug/l	14.7 ug/l	14.1 ug/l	7.9 ug/l	7.6 ug/l	< 1.0 ug/l	< 1.0 ug/l
Bromobenzene	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Bromochloromethane	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Bromodichloromethane	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	< 1.0 ug/l
Bromoform	NA	Lab	466 ug/l	2900 ug/l	5800 ug/l	--	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
Bromomethane	NA	Lab				--	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
Butyl benzene	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	1.6 ug/l	1.4 ug/l	2.3 ug/l	2.4 ug/l	< 1.0 ug/l	< 1.0 ug/l
Butylbenzene, sec	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	1.9 ug/l	1.8 ug/l	2.3 ug/l	2.1 ug/l	< 1.0 ug/l	< 1.0 ug/l
Butylbenzene, tert	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Carbon tetrachloride	NA	Lab	5.9 ug/l	1750 (1) ug/l	3500 (1) ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Chlorobenzene	NA	Lab	20 ug/l	423 ug/l	846 ug/l	--	8.7 ug/l	6.2 ug/l	6.8 ug/l	6.9 ug/l	2.7 ug/l	2.5 ug/l	2.0 ug/l	2.0 ug/l
Chlorodibromomethane	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	< 1.0 ug/l

Table A-2
Water Analytical Data Summary
MPCA - Freeway Landfill

Parameter	Total or Dissolved	Analysis Location	Minnesota Surface Water 2B Chronic 7050 - 350 Hardness	Minnesota Surface Water 2B Maximum 7050 - 350 Hardness	Minnesota Surface Water 2B Final Acute Value 7050 - 350 Hardness	MW-6 6/17/2015	MW-6 6/18/2015	MW-6 6/24/2015	MW-7 6/16/2015	MW-7 6/23/2015	MW-8 6/16/2015	MW-8 6/23/2015	MW-8D 6/16/2015	MW-8D 6/23/2015
Effective Date			01/24/2012	01/24/2012	01/24/2012									
Exceedance Key			**Bold**	*Italic*	Underline									
Chloroethane	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Chloroform	NA	Lab	155 ug/l	1392 ug/l	2784 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Chloromethane	NA	Lab				--	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
Chlorotoluene, o	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Chlorotoluene, p	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Cumene (isopropyl benzene)	NA	Lab				--	2.3 ug/l	1.5 ug/l	14.1 ug/l	16.0 ug/l	4.0 ug/l	4.3 ug/l	< 1.0 ug/l	< 1.0 ug/l
Cymene p- (Toluene isopropyl p-)	NA	Lab				--	6.5 ug/l	< 4.0 ug/l	1.1 ug/l	< 1.0 ug/l	1.1 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Dibromomethane (methylene bromide)	NA	Lab				--	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
Dichlorodifluoromethane (CFC-12)	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Dichlorofluoromethane (CFC-21)	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Ethyl benzene	NA	Lab	**68 ug/l**	1859 ug/l	3717 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Ethyl ether	NA	Lab				--	30.6 ug/l	27.3 ug/l	47.8 ug/l	41.6 ug/l	11.9 ug/l	11.7 ug/l	20.4 ug/l	18.0 ug/l
Hexachlorobutadiene	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Methyl ethyl ketone	NA	Lab				--	73.2 ug/l	22.8 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 5.0 ug/l
Methyl isobutyl ketone	NA	Lab				--	6.3 ug/l	< 5.0 ug/l	< 20.0 ug/l	< 5.0 ug/l	< 20.0 ug/l	< 5.0 ug/l	< 20.0 ug/l	< 5.0 ug/l
Methyl tertiary butyl ether (MTBE)	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Methylene chloride	NA	Lab	1940 ug/l	13875 ug/l	27749 ug/l	--	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
Naphthalene	NA	Lab	**81 ug/l**	409 ug/l	818 ug/l	--	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	4.6 ug/l	27.7 ug/l	28.3 ug/l	< 4.0 ug/l	< 4.0 ug/l
Propylbenzene	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	6.4 ug/l	7.8 ug/l	4.5 ug/l	4.8 ug/l	< 1.0 ug/l	< 1.0 ug/l
Styrene	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Tetrachloroethylene	NA	Lab	**8.9 ug/l**	428 ug/l	857 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Tetrahydrofuran	NA	Lab				--	51.7 ug/l	49.2 ug/l	37.4 ug/l	43.1 ug/l	12.3 ug/l	11.2 ug/l	37.4 ug/l	35.2 ug/l
Toluene	NA	Lab	**253 ug/l**	1352 ug/l	2703 ug/l	--	3.1 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Trichloroethylene	NA	Lab	**120 ug/l**	6988 ug/l	13976 ug/l	--	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l
Trichlorofluoromethane	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Trichlorotrifluoroethane (Freon 113)	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Vinyl chloride	NA	Lab	**9.2 ug/l**	(1)	(1)	--	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	1.0 ug/l	0.72 ug/l	< 0.40 ug/l	**231 ug/l**
Xylene, m & p	NA	Lab				--	< 2.0 ug/l	< 2.0 ug/l	3.0 ug/l	2.2 ug/l	< 2.0 ug/l	< 2.0 ug/l	< 2.0 ug/l	< 2.0 ug/l
Xylene, o	NA	Lab				--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Xylene, total	NA	Lab	**166 ug/l**	1407 ug/l	2814 ug/l	--	< 3.0 ug/l	< 3.0 ug/l	3.0 ug/l	< 3.0 ug/l	< 3.0 ug/l	< 3.0 ug/l	< 3.0 ug/l	< 3.0 ug/l
PCBs														
Aroclor 1016	NA	Lab				--	< 0.21 ug/l	< 0.11 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
Aroclor 1221	NA	Lab				--	< 0.21 ug/l	< 0.11 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
Aroclor 1232	NA	Lab				--	< 0.21 ug/l	< 0.11 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
Aroclor 1242	NA	Lab				--	< 0.21 ug/l	< 0.11 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
Aroclor 1248	NA	Lab				--	< 0.21 ug/l	< 0.11 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
Aroclor 1254	NA	Lab				--	< 0.21 ug/l	< 0.11 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
Aroclor 1260	NA	Lab				--	< 0.21 ug/l	< 0.11 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
Aroclor 1262	NA	Lab				--	< 0.21 ug/l	< 0.11 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
Aroclor 1268	NA	Lab				--	< 0.21 ug/l	< 0.11 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
Total Petroleum Hydrocarbons														
Gasoline Range Organics, C6-C10	NA	Lab				--	119 ug/l	< 100 ug/l	145 ug/l	157 ug/l	108 ug/l	122 ug/l	< 100 ug/l	< 100 ug/l
Total Petroleum Hydrocarbons C10-C28	NA	Lab				--	1.3 mg/l	1.5 mg/l	1.9 mg/l	2.4 mg/l	2.6 mg/l	3.0 mg/l	1.0 mg/l	1.4 mg/l
Perfluorinated Compounds														
Perfluorobutane sulfonate (PFBS)	NA	Lab				0.024 j ug/l	--	0.020 j ug/l	0.039 j ug/l	0.023 j ug/l	0.019 j ug/l	0.026 j ug/l	0.023 j ug/l	0.014 j ug/l
Perfluorobutyric acid	NA	Lab				0.40 ug/l	--	0.37 ug/l	0.15 ug/l	0.15 ug/l	0.079 ug/l	0.079 ug/l	0.21 ug/l	0.20 ug/l
Perfluorohexane sulfonate	NA	Lab				0.025 j ug/l	--	0.023 j ug/l	0.039 j ug/l	0.042 j ug/l	0.035 j ug/l	0.032 j ug/l	0.030 j ug/l	0.023 j ug/l
Perfluorohexanoic acid	NA	Lab				0.11 ug/l	--	0.11 ug/l	0.086 ug/l	0.10 ug/l	0.12 ug/l	0.13 ug/l	0.12 ug/l	0.11 ug/l
Perfluorooctane sulfonate (PFOS)	NA	Lab				0.010 j ug/l	--	0.020 j ug/l	0.10 ug/l	0.11 ug/l	0.14 ug/l	0.14 ug/l	0.070 ug/l	0.076 ug/l
Perfluorooctanoic acid (PFOA)	NA	Lab				0.45 ug/l	--	0.69 ug/l	1.1 ug/l	1.0 ug/l	2.7 ug/l	2.7 ug/l	0.61 ug/l	0.66 ug/l
Perfluoropentanoic acid	NA	Lab				0.043 j ug/l	--	0.041 j ug/l	0.021 j ug/l	0.035 j ug/l	0.022 j ug/l	0.021 j ug/l	0.037 j ug/l	0.045 j ug/l

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Table A-3
Water Analytical Data Summary
MPCA - Freeway Landfill

Parameter	Total or Dissolved	Analysis Location	EPA Secondary Drinking Water Regulations	MDH Human Health-Based Water Guidance Table	EPA Maximum Contaminant Levels	Duplicate 6/17/2015	Duplicate-2 6/23/2015	MW-1 6/17/2015	MW-1 6/18/2015	MW-1 6/24/2015	MW-4 6/17/2015	MW-4 6/24/2015	MW-4D 6/17/2015	MW-4D 6/24/2015	MW-5 6/16/2015	MW-5 6/23/2015	MW-6 6/17/2015
Effective Date			06/20/2002	03/10/2015	05/01/2009												
Exceedance Key			**Bold**	Underline	*Italic*												
General Parameters																	
Alkalinity, bicarbonate, as CaCO3	NA	Lab				1090 mg/l	1190 mg/l	--	8270 mg/l	40100 mg/l	2430 mg/l	6880 mg/l	1100 mg/l	2920 mg/l	6160 mg/l	5790 mg/l	--
Alkalinity, bicarbonate, as HCO3	NA	Lab				1330 mg/l	1450 mg/l	--	10100 mg/l	48900 mg/l	2970 mg/l	8400 mg/l	1340 mg/l	3560 mg/l	7520 mg/l	7060 mg/l	--
Alkalinity, carbonate, as CaCO3	NA	Lab				< 5.0 mg/l	< 5.0 mg/l	--	< 25.0 mg/l	< 25.0 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 5.0 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 12.5 mg/l	--
Alkalinity, carbonate, as CO3	NA	Lab				< 5.0 mg/l	< 5.0 mg/l	--	< 25.0 mg/l	< 25.0 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 5.0 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 12.5 mg/l	--
Alkalinity, hydroxide, as CaCO3	NA	Lab				< 5.0 mg/l	< 5.0 mg/l	--	< 25.0 mg/l	< 25.0 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 5.0 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 12.5 mg/l	--
Alkalinity, hydroxide, as OH	NA	Lab				< 5.0 mg/l	< 5.0 mg/l	--	< 25.0 mg/l	< 25.0 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 5.0 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 12.5 mg/l	--
Alkalinity, total, as CaCO3	NA	Lab				1090 mg/l	1190 mg/l	--	8270 mg/l	40100 mg/l	2430 mg/l	6880 mg/l	1100 mg/l	2920 mg/l	6160 mg/l	5790 mg/l	--
Anions	NA	Lab				44.4 meq/l	25.1 meq/l	--	234 meq/l	243 meq/l	85.2 meq/l	89.1 meq/l	44.6 meq/l	43.8 meq/l	159 meq/l	86.1 meq/l	--
Biochemical Oxygen Demand (5-day)	NA	Lab				< 60.0 mg/l	26.9 mg/l	--	19500 mg/l	28900 mg/l	< 200 mg/l	44.5 mg/l	< 60.0 mg/l	< 12.0 mg/l	< 120 mg/l	56.6 mg/l	--
Carbon, total organic	NA	Lab				63.7 mg/l	34.9 mg/l	--	12400 mg/l	13000 mg/l	172 mg/l	156 mg/l	63.4 mg/l	56.6 mg/l	244 mg/l	249 mg/l	--
Cation-Anion balance	NA	Lab				-7.20 %	-6.06 %	--	10.29 %	0.86 %	-10.33 %	-8.81 %	-5.08 %	-8.66 %	-43.42 %	-13.11 %	--
Cations	NA	Lab				38.5 meq/l	22.2 meq/l	--	287 meq/l	247 meq/l	69.2 meq/l	74.7 meq/l	40.3 meq/l	36.8 meq/l	62.6 meq/l	66.1 meq/l	--
Chloride	NA	Lab	**250 mg/l**			**729 mg/l**	46.8 mg/l	--	**1540 mg/l**	**1560 mg/l**	**1290 mg/l**	**1210 mg/l**	**727 mg/l**	**648 mg/l**	**1200 mg/l**	**1320 mg/l**	--
Dissolved oxygen	NA	Field				--	--	--	12.2 mg/l	12.7 mg/l	0.3 mg/l	0.1 mg/l	5.8 mg/l	0.2 mg/l	0.1 mg/l	0.1 mg/l	--
Nitrogen, Nitrate + Nitrite, as N	NA	Lab			1 N mg/l	< 0.10 mg/l	< 0.10 mg/l	--	< 0.50 mg/l	< 1.0 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	--
Nitrogen, Nitrate as N	NA	Lab		10 HRLMCL mg/l	10 mg/l	< 0.10 mg/l	< 0.10 mg/l	--	< 0.50 mg/l	< 1.0 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	--
Nitrogen, Nitrite as N	NA	Lab			1 mg/l	< 0.10 mg/l	< 0.10 mg/l	--	0.57 mg/l	0.53 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	--
pH	NA	Field	**6.5 - 8.5 pH units**			--	--	--	**6.3 pH units**	**6.3 pH units**	7.3 pH units	7.4 pH units	6.9 pH units	7.3 pH units	7.5 pH units	7.8 pH units	--
Redox (oxidation potential)	NA	Field				--	--	--	7 mV	-39 mV	2 mV	137 mV	169 mV	150 mV	-97 mV	36 mV	--
Specific Conductance @ 25 ºC	NA	Field				--	--	--	19000 umhos/cm	19100 umhos/cm	7490 umhos/cm	7570 umhos/cm	4130 umhos/cm	4180 umhos/cm	7560 umhos/cm	8100 umhos/cm	--
Static Water Level	NA	Field				--	--	--	37.20 ft	37.30 ft	46.60 ft	46.55 ft	58.96 ft	59.29 ft	33.21 ft	33.70 ft	--
Sulfate, as SO4	NA	Lab	**250 mg/l**			100 mg/l	< 2.5 mg/l	--	**1200 mg/l**	**1870 mg/l**	8.8 mg/l	< 2.5 mg/l	101 mg/l	103 mg/l	85.4 mg/l	118 mg/l	--
Temperature, ºC	NA	Field				--	--	--	12.5 deg C	12.5 deg C	18.0 deg C	17.5 deg C	19.5 deg C	17.5 deg C	17.0 deg C	15.0 deg C	--
Metals																	
Antimony	Dissolved	Lab		6 HRL93 ug/l	*6 ug/l*	0.65 ug/l	< 0.50 ug/l	--	*8.3 ug/l*	*12.2 ug/l*	*55.1 ug/l*	2.7 ug/l	0.70 ug/l	0.55 ug/l	0.60 ug/l	< 2.5 ug/l	--
Antimony	Total	Lab		6 HRL93 ug/l	*6 ug/l*	0.73 ug/l	< 0.50 ug/l	--	*11.3 ug/l*	< 10.0 ug/l	< 2.5 ug/l	*9.9 ug/l*	0.72 ug/l	< 0.50 ug/l	*271 ug/l*	< 2.5 ug/l	--
Arsenic	Dissolved	Lab			*10 ug/l*	4.3 ug/l	1.1 ug/l	--	*20.0 ug/l*	< 10.0 ug/l	6.0 ug/l	4.9 ug/l	4.5 ug/l	6.9 ug/l	4.1 ug/l	4.8 ug/l	--
Arsenic	Total	Lab			*10 ug/l*	4.9 ug/l	1.2 ug/l	--	*15.0 ug/l*	< 10.0 ug/l	*10.4 ug/l*	6.8 ug/l	4.8 ug/l	7.2 ug/l	*17.0 ug/l*	5.6 ug/l	--
Barium	Dissolved	Lab		2000 HRL93 ug/l	*2000 ug/l*	700 ug/l	950 ug/l	--	984 ug/l	220 ug/l	423 ug/l	422 ug/l	774 ug/l	936 ug/l	466 ug/l	515 ug/l	--
Barium	Total	Lab		2000 HRL93 ug/l	*2000 ug/l*	699 ug/l	953 ug/l	--	521 ug/l	50.3 ug/l	605 ug/l	582 ug/l	717 ug/l	1030 ug/l	830 ug/l	559 ug/l	--
Cadmium	Dissolved	Lab		0.5 HBV14 (1) ug/l	*5 ug/l*	< 0.080 ug/l	< 0.080 ug/l	--	4.1 ug/l	*11.3 ug/l*	1.4 ug/l	< 0.40 ug/l	< 0.080 ug/l	< 0.080 ug/l	< 0.080 ug/l	< 0.40 ug/l	--
Cadmium	Total	Lab		0.5 HBV14 (1) ug/l	*5 ug/l*	< 0.080 ug/l	< 0.080 ug/l	--	*8.9 ug/l*	2.6 ug/l	2.9 ug/l	2.0 ug/l	< 0.080 ug/l	< 0.080 ug/l	*9.2 ug/l*	0.96 ug/l	--
Calcium	Dissolved	Lab				115000 ug/l	241000 ug/l	--	3390000 ug/l	2840000 ug/l	203000 ug/l	204000 ug/l	145000 ug/l	140000 ug/l	188000 ug/l	197000 ug/l	--
Calcium	Total	Lab				123000 ug/l	243000 ug/l	--	3190000 ug/l	564000 ug/l	214000 ug/l	246000 ug/l	126000 ug/l	178000 ug/l	301000 ug/l	214000 ug/l	--
Chromium	Dissolved	Lab		100 CR HRL93 ug/l	*100 ug/l*	14.1 ug/l	6.8 ug/l	--	*215 ug/l*	*120 ug/l*	13.7 ug/l	9.1 ug/l	17.2 ug/l	6.9 ug/l	8.8 ug/l	9.0 ug/l	--
Chromium	Total	Lab		100 CR HRL93 ug/l	*100 ug/l*	16.1 ug/l	7.4 ug/l	--	*164 ug/l*	27.6 ug/l	52.4 ug/l	33.2 ug/l	16.3 ug/l	18.5 ug/l	86.7 ug/l	16.4 ug/l	--
Cobalt	Dissolved	Lab				6.3 ug/l	1.4 ug/l	--	497 ug/l	497 ug/l	9.4 ug/l	7.3 ug/l	6.6 ug/l	5.9 ug/l	11.2 ug/l	11.0 ug/l	--
Cobalt	Total	Lab				6.5 ug/l	1.6 ug/l	--	485 ug/l	114 ug/l	18.0 ug/l	8.1 ug/l	6.4 ug/l	6.6 ug/l	14.6 ug/l	12.4 ug/l	--
Copper	Dissolved	Lab	1000 ug/l		1300 TT (7) ug/l	12.2 ug/l	< 1.0 ug/l	--	108 ug/l	< 20.0 ug/l	11.7 ug/l	< 5.0 ug/l	13.0 ug/l	< 1.0 ug/l	1.8 ug/l	< 5.0 ug/l	--
Copper	Total	Lab	1000 ug/l		1300 TT (7) ug/l	12.7 ug/l	< 1.0 ug/l	--	47.9 ug/l	< 20.0 ug/l	91.8 ug/l	11.0 ug/l	12.6 ug/l	5.9 ug/l	65.1 ug/l	11.4 ug/l	--
Iron	Dissolved	Lab	**300 ug/l**			**473 ug/l**	**47700 ug/l**	--	**2590000 ug/l**	**2920000 ug/l**	**15000 ug/l**	**15500 ug/l**	**1290 ug/l**	**4150 ug/l**	**15900 ug/l**	**21100 ug/l**	--
Iron	Total	Lab	**300 ug/l**			**479 ug/l**	**49100 ug/l**	--	**2670000 ug/l**	**634000 ug/l**	**41100 ug/l**	**27300 ug/l**	< 1000 ug/l	**5910 ug/l**	**49300 ug/l**	**28800 ug/l**	--
Lead	Dissolved	Lab			*15 TT (7) ug/l*	0.24 ug/l	< 0.10 ug/l	--	*92.6 ug/l*	*18.1 ug/l*	*45.3 ug/l*	0.64 ug/l	0.50 ug/l	< 0.10 ug/l	2.1 ug/l	8.5 ug/l	--
Lead	Total	Lab			*15 TT (7) ug/l*	0.24 ug/l	1.2 ug/l	--	*92.1 ug/l*	5.2 ug/l	*172 ug/l*	*82.4 ug/l*	0.22 ug/l	1.0 ug/l	*327 ug/l*	*64.4 ug/l*	--
Magnesium	Dissolved	Lab				127000 ug/l	72500 ug/l	--	655000 ug/l	388000 ug/l	238000 ug/l	248000 ug/l	145000 ug/l	118000 ug/l	165000 ug/l	164000 ug/l	--
Magnesium	Total	Lab				134000 ug/l	74100 ug/l	--	504000 ug/l	91000 ug/l	175000 ug/l	290000 ug/l	136000 ug/l	140000 ug/l	287000 ug/l	193000 ug/l	--
Manganese	Dissolved	Lab	**50 ug/l**	100 HRL93 ug/l		**266 ug/l**	**621 ug/l**	--	**38900 ug/l**	**40000 ug/l**	**835 ug/l**	**530 ug/l**	**339 ug/l**	**467 ug/l**	**1420 ug/l**	**1080 ug/l**	--
Manganese	Total	Lab	**50 ug/l**	100 HRL93 ug/l		**284 ug/l**	**631 ug/l**	--	**43800 ug/l**	**8950 ug/l**	**1830 ug/l**	**804 ug/l**	**295 ug/l**	**756 ug/l**	**1920 ug/l**	**1120 ug/l**	--
Mercury	Dissolved	Lab			2 ug/l	< 0.20 ug/l	< 0.20 ug/l	--	< 0.60 ug/l	< 0.60 ug/l	< 0.60 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	--
Mercury	Total	Lab			2 ug/l	< 0.20 ug/l	< 0.20 ug/l	--	< 0.60 ug/l	< 0.20 ug/l	0.33 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	0.75 ug/l	< 0.20 ug/l	--
Nickel	Dissolved	Lab		100 HRL93 ug/l		73.8 ug/l	3.5 ug/l	--	2090 ug/l	2370 ug/l	40.6 ug/l	47.7 ug/l	76.2 ug/l	63.6 ug/l	23.3 ug/l	23.7 ug/l	--
Nickel	Total	Lab		100 HRL93 ug/l		79.7 ug/l	3.9 ug/l	--	2240 ug/l	543 ug/l	53.0 ug/l	45.6 ug/l	78.4 ug/l	70.6 ug/l	75.8 ug/l	29.6 ug/l	--
Potassium	Dissolved	Lab				107000 ug/l	61400 ug/l	--	566000 ug/l	620000 ug/l	259000 ug/l	290000 ug/l	116000 ug/l	97400 ug/l	281000 ug/l	289000 ug/l	--
Potassium	Total	Lab				117000 ug/l	61600 ug/l	--	673000 ug/l	141000 ug/l	298000 ug/l	315000 ug/l	119000 ug/l	99900 ug/l	276000 ug/l	331000 ug/l	--
Selenium	Dissolved	Lab		30 HRL93 ug/l	50 ug/l	0.77 ug/l	< 0.50 ug/l	--	5.7 ug/l	< 10.0 ug/l	0.68 ug/l	< 2.5 ug/l	0.75 ug/l	< 0.50 ug/l	0.59 ug/l	< 2.5 ug/l	--
Selenium	Total	Lab		30 HRL93 ug/l	50 ug/l	0.89 ug/l	< 0.50 ug/l	--	< 10.0 ug/l	< 10.0 ug/l	< 2.5 ug/l	< 2.5 ug/l	0.86 ug/l	< 0.50 ug/l	< 2.5 ug/l	< 2.5 ug/l	--

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Table A-3
Water Analytical Data Summary
MPCA - Freeway Landfill

					Location	Duplicate	Duplicate-2	MW-1	MW-1	MW-1	MW-4	MW-4	MW-4D	MW-4D	MW-5	MW-5	MW-6
					Date	6/17/2015	6/23/2015	6/17/2015	6/18/2015	6/24/2015	6/17/2015	6/24/2015	6/17/2015	6/24/2015	6/16/2015	6/23/2015	6/17/2015
Parameter	Total or Dissolved	Analysis Location	EPA Secondary Drinking Water Regulations	MDH Human Health-Based Water Guidance Table	EPA Maximum Contaminant Levels												
Effective Date			06/20/2002	03/10/2015	05/01/2009												
Exceedance Key			**Bold**	Underline	*Italic*												
Sodium	Dissolved	Lab				449000 ug/l	61000 ug/l	--	1110000 ug/l	1220000 ug/l	755000 ug/l	843000 ug/l	417000 ug/l	405000 ug/l	746000 ug/l	813000 ug/l	--
Sodium	Total	Lab				445000 ug/l	62700 ug/l	--	1320000 ug/l	281000 ug/l	787000 ug/l	915000 ug/l	440000 ug/l	420000 ug/l	838000 ug/l	969000 ug/l	--
Zinc	Dissolved	Lab	**5000 ug/l**	2000 HRL94 ug/l		< 5.0 ug/l	< 5.0 ug/l	--	**73600 ug/l**	**109000 ug/l**	124 ug/l	< 25.0 ug/l	6.4 ug/l	7.2 ug/l	17.3 ug/l	54.0 ug/l	--
Zinc	Total	Lab	**5000 ug/l**	2000 HRL94 ug/l		< 5.0 ug/l	9.0 ug/l	--	**101000 ug/l**	**22600 ug/l**	1040 ug/l	221 ug/l	< 5.0 ug/l	12.3 ug/l	854 ug/l	460 ug/l	--
SVOCs																	
1,2,4-Trichlorobenzene	NA	Lab		4 HRL13 (1) ug/l	70 ug/l	< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
1,2-Dichlorobenzene	NA	Lab		600 HRL93 ug/l	600 ug/l	< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
1,2-Diphenylhydrazine	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
1,3-Dichlorobenzene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
1,4-Dichlorobenzene	NA	Lab		10 HRL94 ug/l	75 ug/l	< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	11.9 ug/l	--
1-Methylnaphthalene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2,2-oxybis (1-chloropropane)	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2,4,5-Trichlorophenol	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2,4,6-Trichlorophenol	NA	Lab		30 HRL93 ug/l		< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2,4-Dichlorophenol	NA	Lab		20 HRL93 ug/l		< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2,4-Dimethylphenol	NA	Lab		100 HRL93 ug/l		< 51.0 ug/l	< 52.1 ug/l	--	< 128000 ug/l	< 125000 ug/l	< 51.0 ug/l	< 51.3 ug/l	< 51.0 ug/l	< 51.8 ug/l	< 102 ug/l	< 50.8 ug/l	--
2,4-Dinitrophenol	NA	Lab		10 HRL94 ug/l		< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2,4-Dinitrotoluene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2,6-Dinitrotoluene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2-Chloronaphthalene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2-Chlorophenol	NA	Lab		30 HRL93 ug/l		< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2-Methyl-4,6-dinitrophenol	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2-Methylnaphthalene	NA	Lab		8 RAA13 ug/l		< 10.2 ug/l	11.0 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2-Methylphenol (o-cresol)	NA	Lab		30 HRL93 ug/l		< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2-Nitroaniline	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
2-Nitrophenol	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
3,3`-Dichlorobenzidine	NA	Lab		0.8 HRL93 ug/l		< 51.0 ug/l	< 52.1 ug/l	--	< 128000 ug/l	< 125000 ug/l	< 51.0 ug/l	< 51.3 ug/l	< 51.0 ug/l	< 51.8 ug/l	< 102 ug/l	< 50.8 ug/l	--
3,4-Methylphenol (m,p cresols)	NA	Lab		3 MP HRL94 ug/l		< 20.4 ug/l	< 20.8 ug/l	--	< 51000 ug/l	< 50000 ug/l	< 20.4 ug/l	< 20.5 ug/l	< 20.4 ug/l	< 20.7 ug/l	< 40.8 ug/l	24.6 ug/l	--
3-Nitroaniline	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
4-Bromophenyl phenyl ether	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
4-Chloro-3-methylphenol	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
4-Chloroaniline	NA	Lab				< 51.0 ug/l	< 52.1 ug/l	--	< 128000 ug/l	< 125000 ug/l	< 51.0 ug/l	< 51.3 ug/l	< 51.0 ug/l	< 51.8 ug/l	< 102 ug/l	< 50.8 ug/l	--
4-Chlorophenyl phenyl ether	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
4-Nitroaniline	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
4-Nitrophenol	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Acenaphthene	NA	Lab		400 HRL93 ug/l		< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Acenaphthylene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Anthracene	NA	Lab		2000 HRL93 ug/l		< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Benz(a)anthracene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Benzo(a)pyrene	NA	Lab		0.06 HBV12 (1) ug/l	0.2 ug/l	< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Benzo(b)fluoranthene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Benzo(g,h,i)perylene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Benzo(k)fluoranthene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Bis(2-chloroethoxy)methane	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Bis(2-chloroethyl)ether	NA	Lab		0.3 HRL93 ug/l		< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Bis(2-ethylhexyl)phthalate	NA	Lab		6 HRLMCL (1) ug/l	6 ug/l	< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Butyl benzyl phthalate	NA	Lab		100 HRL93 ug/l		< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Carbazole	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	21.5 ug/l	14.4 ug/l	--
Chrysene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Dibenz(a,h)anthracene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Dibenzofuran	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Diethyl phthalate	NA	Lab		6000 HRL93 ug/l		< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	15.7 ug/l	--
Dimethyl phthalate	NA	Lab		70000 HRL94 ug/l		< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Di-n-butyl phthalate	NA	Lab		20 HBV12 ug/l		< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Di-n-octyl phthalate	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Fluoranthene	NA	Lab		300 HRL93 ug/l		< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Fluorene	NA	Lab		300 HRL93 ug/l		< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--

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Table A-3
Water Analytical Data Summary
MPCA - Freeway Landfill

Parameter	Total or Dissolved	Analysis Location	EPA Secondary Drinking Water Regulations	MDH Human Health-Based Water Guidance Table	EPA Maximum Contaminant Levels	Duplicate 6/17/2015	Duplicate-2 6/23/2015	MW-1 6/17/2015	MW-1 6/18/2015	MW-1 6/24/2015	MW-4 6/17/2015	MW-4 6/24/2015	MW-4D 6/17/2015	MW-4D 6/24/2015	MW-5 6/16/2015	MW-5 6/23/2015	MW-6 6/17/2015
Effective Date			06/20/2002	03/10/2015	05/01/2009												
Exceedance Key			**Bold**	Underline	*Italic*												
Hexachlorobenzene	NA	Lab		0.2 HRL93 ug/l	1 ug/l	< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Hexachlorobutadiene	NA	Lab		1 HRL93 ug/l		< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Hexachloroethane	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Indeno(1,2,3-cd)pyrene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Isophorone	NA	Lab		100 HRL93 ug/l		< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Naphthalene	NA	Lab		70 HRL13 (1) ug/l		< 10.2 ug/l	17.3 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	139 ug/l	93.2 ug/l	--
Nitrobenzene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
N-Nitrosodimethylamine	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
N-Nitrosodi-n-propylamine	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
N-Nitrosodiphenylamine	NA	Lab		70 HRL93 ug/l		< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Pentachlorophenol	NA	Lab		0.3 HBV13 (1) ug/l	1 ug/l	< 20.4 ug/l	< 20.8 ug/l	--	< 51000 ug/l	< 50000 ug/l	< 20.4 ug/l	< 20.5 ug/l	< 20.4 ug/l	< 20.7 ug/l	< 40.8 ug/l	< 20.3 ug/l	--
Phenanthrene	NA	Lab				< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	23.1 ug/l	18.5 ug/l	--
Phenol	NA	Lab		4000 HRL93 ug/l		< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
Pyrene	NA	Lab		200 HRL93 ug/l		< 10.2 ug/l	< 10.4 ug/l	--	< 25500 ug/l	< 25000 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 20.4 ug/l	< 10.2 ug/l	--
VOCs																	
1,1,1,2-Tetrachloroethane	NA	Lab		70 HRL93 ug/l		< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,1,1-Trichloroethane	NA	Lab		9000 HRL09 (1) ug/l	200 ug/l	< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,1,2,2-Tetrachloroethane	NA	Lab		2 HRL94 ug/l		< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,1,2-Trichloroethane	NA	Lab		3 HRL93 ug/l	5 ug/l	< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,1-Dichloro-1-propene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,1-Dichloroethane	NA	Lab		100 RAA09 (1) ug/l		< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,1-Dichloroethylene	NA	Lab		200 HRL11 ug/l	7 ug/l	< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,2,3-Trichlorobenzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,2,3-Trichloropropane	NA	Lab		0.003 HRL13 (1) ug/l		< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	--
1,2,4-Trichlorobenzene	NA	Lab		4 HRL13 (1) ug/l	70 ug/l	< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,2,4-Trimethylbenzene	NA	Lab		100 RAA10 ug/l		< 1.0 ug/l	2.2 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	1.3 ug/l	< 1.0 ug/l	< 1.0 ug/l	11.3 ug/l	14.9 ug/l	--
1,2-Dibromo-3-chloropropane	NA	Lab			0.2 ug/l	< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	--
1,2-Dibromoethane	NA	Lab		0.004 HRL93 ug/l	0.05 ug/l	< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,2-Dichlorobenzene	NA	Lab		600 HRL93 ug/l	600 ug/l	< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,2-Dichloroethane	NA	Lab		1 HRL13 (1) ug/l	5 ug/l	< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,2-Dichloroethylene, cis	NA	Lab		6 HBV14 (1) ug/l	*70 ug/l*	< 1.0 ug/l	< 1.0 ug/l	--	66.0 ug/l	*173 ug/l*	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,2-Dichloroethylene, trans	NA	Lab		40 HRL13 (1) ug/l	100 ug/l	< 4.0 ug/l	< 1.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 5.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,2-Dichloropropane	NA	Lab		5 HRL94 ug/l	5 ug/l	< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	--
1,3,5-Trimethylbenzene	NA	Lab		100 HRL09 ug/l		< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	3.4 ug/l	3.7 ug/l	--
1,3-Dichloro-1-propene, cis	NA	Lab		2 DCP HRL94 ug/l		< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	--
1,3-Dichloro-1-propene, trans	NA	Lab		2 DCP HRL94 ug/l		< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	--
1,3-Dichlorobenzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,3-Dichloropropane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
1,4-Dichlorobenzene	NA	Lab		10 HRL94 ug/l	75 ug/l	2.1 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	2.7 ug/l	1.9 ug/l	1.9 ug/l	9.3 ug/l	13.7 ug/l	--
2,2-Dichloropropane	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	--
Acetone	NA	Lab		4000 HRL11 (1) ug/l		< 20.0 ug/l	< 20.0 ug/l	--	4850 ug/l	6600 ug/l	< 100 ug/l	< 20.0 ug/l	< 20.0 ug/l	< 20.0 ug/l	< 20.0 ug/l	22.3 ug/l	--
Allyl Chloride	NA	Lab		30 HRL94 ug/l		< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	--
Benzene	NA	Lab		2 HRL09 (1) ug/l	*5 ug/l*	< 1.0 ug/l	*8.1 ug/l*	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	3.0 ug/l	1.2 ug/l	< 1.0 ug/l	*5.2 ug/l*	*5.2 ug/l*	--
Bromobenzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Bromochloromethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Bromodichloromethane	NA	Lab		6 HRL93 ug/l	80 (6) ug/l	< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	--
Bromoform	NA	Lab		40 HRL93 ug/l	80 (6) ug/l	< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	--
Bromomethane	NA	Lab		10 HRL93 ug/l		< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	--
Butyl benzene	NA	Lab				< 1.0 ug/l	2.2 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	1.2 ug/l	< 1.0 ug/l	--
Butylbenzene, sec	NA	Lab				< 1.0 ug/l	2.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	1.1 ug/l	< 1.0 ug/l	--
Butylbenzene, tert	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Carbon tetrachloride	NA	Lab		1 HRL13 (1) ug/l	5 ug/l	< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Chlorobenzene	NA	Lab		100 HRL93 ug/l	100 ug/l	16.9 ug/l	2.7 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	5.9 ug/l	8.8 ug/l	17.2 ug/l	16.3 ug/l	3.2 ug/l	2.4 ug/l	--
Chlorodibromomethane	NA	Lab		10 HRL93 ug/l	80 (6) ug/l	< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	--
Chloroethane	NA	Lab		ND RAA09		< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Chloroform	NA	Lab		30 HRL09 ug/l	80 (6) ug/l	< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Chloromethane	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	--

Table A-3
Water Analytical Data Summary
MPCA - Freeway Landfill

Parameter	Total or Dissolved	Analysis Location	EPA Secondary Drinking Water Regulations	MDH Human Health-Based Water Guidance Table	EPA Maximum Contaminant Levels	Duplicate 6/17/2015	Duplicate-2 6/23/2015	MW-1 6/17/2015	MW-1 6/18/2015	MW-1 6/24/2015	MW-4 6/17/2015	MW-4 6/24/2015	MW-4D 6/17/2015	MW-4D 6/24/2015	MW-5 6/16/2015	MW-5 6/23/2015	MW-6 6/17/2015
Effective Date			06/20/2002	03/10/2015	05/01/2009												
Exceedance Key			**Bold**	Underline	*Italic*												
Chlorotoluene, o	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	2.1 ug/l	--
Chlorotoluene, p	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Cumene (isopropyl benzene)	NA	Lab		300 HRL93 ug/l		< 1.0 ug/l	4.2 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	2.1 ug/l	< 1.0 ug/l	1.0 ug/l	4.1 ug/l	4.0 ug/l	--
Cymene p- (Toluene isopropyl p-)	NA	Lab				< 4.0 ug/l	< 1.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 5.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	5.5 ug/l	5.8 ug/l	--
Dibromomethane (methylene bromide)	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	--
Dichlorodifluoromethane (CFC-12)	NA	Lab		700 HRL11 ug/l		< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Dichlorofluoromethane (CFC-21)	NA	Lab		ND RAA09		< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Ethyl benzene	NA	Lab		50 HRL11 ug/l	700 ug/l	< 1.0 ug/l	< 1.0 ug/l	--	22.5 ug/l	78.2 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	123 ug/l	118 ug/l	--
Ethyl ether	NA	Lab		200 RAA10 (1) ug/l		12.9 ug/l	11.4 ug/l	--	71.7 ug/l	< 200 ug/l	21.7 ug/l	17.6 ug/l	17.3 ug/l	13.3 ug/l	< 4.0 ug/l	< 4.0 ug/l	--
Hexachlorobutadiene	NA	Lab		1 HRL93 ug/l		< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 2.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Methyl ethyl ketone	NA	Lab		4000 HRL94 ug/l		< 5.0 ug/l	< 5.0 ug/l	--	5780 ug/l	7630 ug/l	< 25.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	--
Methyl isobutyl ketone	NA	Lab		300 HRL94 ug/l		< 5.0 ug/l	< 5.0 ug/l	--	1290 ug/l	1340 ug/l	< 25.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 20.0 ug/l	< 5.0 ug/l	--
Methyl tertiary butyl ether (MTBE)	NA	Lab		60 RAA13 (1) ug/l		< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	1.4 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Methylene chloride	NA	Lab		5 HRLMCL ug/l	*5 ug/l*	< 4.0 ug/l	< 4.0 ug/l	--	*45.9 ug/l*	< 200 ug/l	< 20.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	--
Naphthalene	NA	Lab		70 HRL13 (1) ug/l		< 4.0 ug/l	30.0 ug/l	--	< 40.0 ug/l	< 200 ug/l	< 20.0 ug/l	6.4 ug/l	< 4.0 ug/l	< 4.0 ug/l	185 ug/l	125 ug/l	--
Propylbenzene	NA	Lab				< 1.0 ug/l	5.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	1.5 ug/l	< 1.0 ug/l	< 1.0 ug/l	2.4 ug/l	< 1.0 ug/l	--
Styrene	NA	Lab			100 ug/l	< 1.0 ug/l	< 1.0 ug/l	--	10.4 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Tetrachloroethylene	NA	Lab		4 HBV14 ug/l	*5 ug/l*	< 1.0 ug/l	< 1.0 ug/l	--	*27.6 ug/l*	*294 ug/l*	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Tetrahydrofuran	NA	Lab				40.4 ug/l	12.1 ug/l	--	< 100 ug/l	< 500 ug/l	130 ug/l	123 ug/l	50.6 ug/l	44.5 ug/l	210 ug/l	189 ug/l	--
Toluene	NA	Lab		200 HRL11 ug/l	1000 ug/l	< 1.0 ug/l	< 1.0 ug/l	--	228 ug/l	766 ug/l	< 5.0 ug/l	1.0 ug/l	1.0 ug/l	< 1.0 ug/l	155 ug/l	84.0 ug/l	--
Trichloroethylene	NA	Lab		0.4 HBV13 (1) ug/l	*5 ug/l*	< 0.40 ug/l	< 0.40 ug/l	--	*50.2 ug/l*	*343 ug/l*	< 2.0 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	--
Trichlorofluoromethane	NA	Lab		2000 HRL93 ug/l		< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Trichlorotrifluoroethane (Freon 113)	NA	Lab		200000 HRL93 ug/l		< 1.0 ug/l	< 1.0 ug/l	--	< 10.0 ug/l	< 50.0 ug/l	< 5.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	--
Vinyl chloride	NA	Lab		0.2 HRL09 (1) ug/l	*2 ug/l*	< 0.40 ug/l	0.77 ug/l	--	< 4.0 ug/l	< 20.0 ug/l	< 2.0 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	0.58 ug/l	--
Xylene, m & p	NA	Lab		300 XYL HRL11 (1) ug/l		< 2.0 ug/l	< 2.0 ug/l	--	43.2 ug/l	174 ug/l	< 10.0 ug/l	2.6 ug/l	< 2.0 ug/l	< 2.0 ug/l	318 ug/l	309 ug/l	--
Xylene, o	NA	Lab		300 XYL HRL11 (1) ug/l		< 1.0 ug/l	< 1.0 ug/l	--	22.9 ug/l	75.1 ug/l	< 5.0 ug/l	2.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	122 ug/l	115 ug/l	--
Xylene, total	NA	Lab		300 XYL HRL11 (1) ug/l	10000 ug/l	< 3.0 ug/l	< 3.0 ug/l	--	66.1 ug/l	249 ug/l	< 15.0 ug/l	4.6 ug/l	< 3.0 ug/l	< 3.0 ug/l	439 ug/l	424 ug/l	--
PCBs																	
Aroclor 1016	NA	Lab				< 0.10 ug/l	< 0.10 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.11 ug/l	< 1.0 ug/l	< 0.10 ug/l	--
Aroclor 1221	NA	Lab				< 0.10 ug/l	< 0.10 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.11 ug/l	< 1.0 ug/l	< 0.10 ug/l	--
Aroclor 1232	NA	Lab				< 0.10 ug/l	< 0.10 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.11 ug/l	< 1.0 ug/l	< 0.10 ug/l	--
Aroclor 1242	NA	Lab				< 0.10 ug/l	< 0.10 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.11 ug/l	< 1.0 ug/l	< 0.10 ug/l	--
Aroclor 1248	NA	Lab				< 0.10 ug/l	< 0.10 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.11 ug/l	< 1.0 ug/l	0.17 ug/l	--
Aroclor 1254	NA	Lab				< 0.10 ug/l	< 0.10 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.11 ug/l	< 1.0 ug/l	< 0.10 ug/l	--
Aroclor 1260	NA	Lab				< 0.10 ug/l	< 0.10 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.11 ug/l	< 1.0 ug/l	< 0.10 ug/l	--
Aroclor 1262	NA	Lab				< 0.10 ug/l	< 0.10 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.11 ug/l	< 1.0 ug/l	< 0.10 ug/l	--
Aroclor 1268	NA	Lab				< 0.10 ug/l	< 0.10 ug/l	--	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.11 ug/l	< 1.0 ug/l	< 0.10 ug/l	--
Total Petroleum Hydrocarbons																	
Gasoline Range Organics, C6-C10	NA	Lab				< 100 ug/l	128 ug/l	--	4430 ug/l	5530 ug/l	173 ug/l	140 ug/l	< 100 ug/l	< 100 ug/l	1110 ug/l	923 ug/l	--
Total Petroleum Hydrocarbons C10-C28	NA	Lab				3.0 mg/l	3.1 mg/l	--	79.0 mg/l	172 mg/l	3.8 mg/l	3.4 mg/l	3.2 mg/l	1.3 mg/l	5.1 mg/l	2.9 mg/l	--
Perfluorinated Compounds																	
Perfluorobutane sulfonate (PFBS)	NA	Lab		7 HRL11 (1) ug/l		0.12 ug/l	0.011 j ug/l	0.11 ug/l	--	0.075 j ug/l	0.16 ug/l	0.19 ug/l	0.11 ug/l	0.12 ug/l	0.019 j ug/l	0.050 j ug/l	0.024 j ug/l
Perfluorobutyric acid	NA	Lab		7 HRL11 ug/l		0.81 ug/l	0.069 ug/l	2.7 ug/l	--	2.8 ug/l	2.1 ug/l	2.1 ug/l	0.76 ug/l	0.84 ug/l	7.8 ug/l	14 ug/l	0.40 ug/l
Perfluorohexane sulfonate	NA	Lab		ND RAA09		0.39 ug/l	0.029 j ug/l	0.13 ug/l	--	0.15 j ug/l	0.25 ug/l	0.24 ug/l	0.41 ug/l	0.28 ug/l	0.23 ug/l	0.20 ug/l	0.025 j ug/l
Perfluorohexanoic acid	NA	Lab				0.34 ug/l	0.11 ug/l	0.48 ug/l	--	0.48 ug/l	0.91 ug/l	0.94 ug/l	0.33 ug/l	0.39 ug/l	0.81 ug/l	0.90 ug/l	0.11 ug/l
Perfluorooctane sulfonate (PFOS)	NA	Lab		0.3 HRL09 ug/l		0.031 j ug/l	0.14 ug/l	0.023 j ug/l	--	< 0.25 ug/l	0.21 ug/l	0.15 ug/l	0.029 j ug/l	0.059 ug/l	0.088 ug/l	0.073 j ug/l	0.010 j ug/l
Perfluorooctanoic acid (PFOA)	NA	Lab		0.3 HRL09 ug/l		0.33 ug/l	2.5 ug/l	0.27 ug/l	--	0.36 ug/l	0.82 ug/l	0.77 ug/l	0.32 ug/l	0.30 ug/l	0.57 ug/l	0.49 ug/l	0.45 ug/l
Perfluoropentanoic acid	NA	Lab				0.25 ug/l	0.019 j ug/l	0.43 ug/l	--	0.46 ug/l	0.74 ug/l	0.79 ug/l	0.25 ug/l	0.31 ug/l	0.89 ug/l	0.82 ug/l	0.043 j ug/l

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Table A-3
Water Analytical Data Summary
MPCA - Freeway Landfill

Parameter	Total or Dissolved	Analysis Location	EPA Secondary Drinking Water Regulations	MDH Human Health-Based Water Guidance Table	EPA Maximum Contaminant Levels	MW-6 6/18/2015	MW-6 6/24/2015	MW-7 6/16/2015	MW-7 6/23/2015	MW-8 6/16/2015	MW-8 6/23/2015	MW-8D 6/16/2015	MW-8D 6/23/2015
Effective Date			06/20/2002	03/10/2015	05/01/2009								
Exceedance Key			**Bold**	Underline	*Italic*								
General Parameters													
Alkalinity, bicarbonate, as CaCO3	NA	Lab				1530 mg/l	3920 mg/l	3280 mg/l	2150 mg/l	1200 mg/l	1200 mg/l	910 mg/l	919 mg/l
Alkalinity, bicarbonate, as HCO3	NA	Lab				1860 mg/l	4780 mg/l	4000 mg/l	2620 mg/l	1470 mg/l	1460 mg/l	1110 mg/l	1120 mg/l
Alkalinity, carbonate, as CaCO3	NA	Lab				< 12.5 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 8.3 mg/l	< 5.0 mg/l	< 5.0 mg/l	< 5.0 mg/l	< 5.0 mg/l
Alkalinity, carbonate, as CO3	NA	Lab				< 12.5 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 8.3 mg/l	< 5.0 mg/l	< 5.0 mg/l	< 5.0 mg/l	< 5.0 mg/l
Alkalinity, hydroxide, as CaCO3	NA	Lab				< 12.5 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 8.3 mg/l	< 5.0 mg/l	< 5.0 mg/l	< 5.0 mg/l	< 5.0 mg/l
Alkalinity, hydroxide, as OH	NA	Lab				< 12.5 mg/l	< 12.5 mg/l	< 12.5 mg/l	< 8.3 mg/l	< 5.0 mg/l	< 5.0 mg/l	< 5.0 mg/l	< 5.0 mg/l
Alkalinity, total, as CaCO3	NA	Lab				1530 mg/l	3920 mg/l	3280 mg/l	2150 mg/l	1200 mg/l	1200 mg/l	910 mg/l	919 mg/l
Anions	NA	Lab				40.9 meq/l	39.8 meq/l	69.0 meq/l	29.1 meq/l	25.4 meq/l	25.3 meq/l	26.1 meq/l	25.9 meq/l
Biochemical Oxygen Demand (5-day)	NA	Lab				< 200 mg/l	< 60.0 mg/l	< 24.0 mg/l	< 12.0 mg/l	< 24.0 mg/l	31.1 mg/l	< 12.0 mg/l	< 6.0 mg/l
Carbon, total organic	NA	Lab				102 mg/l	50.3 mg/l	34.0 mg/l	28.3 mg/l	38.2 mg/l	35.3 mg/l	23.9 mg/l	22.6 mg/l
Cation-Anion balance	NA	Lab				10.08 %	-1.63 %	-39.46 %	-3.87 %	-4.46 %	-6.73 %	-0.26 %	-2.83 %
Cations	NA	Lab				50.1 meq/l	38.5 meq/l	30.0 meq/l	26.9 meq/l	23.3 meq/l	22.1 meq/l	25.9 meq/l	24.5 meq/l
Chloride	NA	Lab	**250 mg/l**			**365 mg/l**	**296 mg/l**	118 mg/l	117 mg/l	48.1 mg/l	45.7 mg/l	**279 mg/l**	**266 mg/l**
Dissolved oxygen	NA	Field				12.7 mg/l	2.9 mg/l	0.2 mg/l	0.2 mg/l	0.2 mg/l	0.2 mg/l	0.4 mg/l	0.4 mg/l
Nitrogen, Nitrate + Nitrite, as N	NA	Lab			1 N mg/l	< 1.0 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 1.0 mg/l
Nitrogen, Nitrate as N	NA	Lab		10 HRLMCL mg/l	10 mg/l	< 1.0 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 1.0 mg/l
Nitrogen, Nitrite as N	NA	Lab			1 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l	< 0.10 mg/l
pH	NA	Field	**6.5 - 8.5 pH units**			7.3 pH units	6.8 pH units	6.7 pH units	7.0 pH units	7.0 pH units	6.9 pH units	7.0 pH units	7.0 pH units
Redox (oxidation potential)	NA	Field				16 mV	57 mV	-18 mV	148 mV	-74 mV	84 mV	-33 mV	67 mV
Specific Conductance @ 25 ºC	NA	Field				3920 umhos/cm	3570 umhos/cm	2690 umhos/cm	2600 umhos/cm	2300 umhos/cm	2280 umhos/cm	2380 umhos/cm	2340 umhos/cm
Static Water Level	NA	Field				38.10 ft	38.15 ft	35.83 ft	35.51 ft	27.23 ft	27.30 ft	42.65 ft	42.78 ft
Sulfate, as SO4	NA	Lab	**250 mg/l**			< 2.5 mg/l	< 2.5 mg/l	2.5 mg/l	< 2.5 mg/l	3.6 mg/l	< 2.5 mg/l	< 2.5 mg/l	< 2.5 mg/l
Temperature, ºC	NA	Field				12.5 deg C	12.5 deg C	15.5 deg C	15.5 deg C	14.5 deg C	15.5 deg C	15.0 deg C	16.5 deg C
Metals													
Antimony	Dissolved	Lab		6 HRL93 ug/l	*6 ug/l*	2.1 ug/l	0.83 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l
Antimony	Total	Lab		6 HRL93 ug/l	*6 ug/l*	1.3 ug/l	0.65 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l
Arsenic	Dissolved	Lab			*10 ug/l*	5.5 ug/l	3.2 ug/l	3.0 ug/l	3.9 ug/l	0.93 ug/l	1.1 ug/l	*10.1 ug/l*	*11.2 ug/l*
Arsenic	Total	Lab			*10 ug/l*	4.2 ug/l	2.8 ug/l	3.3 ug/l	3.7 ug/l	1.5 ug/l	1.2 ug/l	*10.0 ug/l*	*11.0 ug/l*
Barium	Dissolved	Lab		2000 HRL93 ug/l	*2000 ug/l*	901 ug/l	836 ug/l	539 ug/l	542 ug/l	924 ug/l	961 ug/l	*2780 ug/l*	*3110 ug/l*
Barium	Total	Lab		2000 HRL93 ug/l	*2000 ug/l*	782 ug/l	903 ug/l	572 ug/l	533 ug/l	955 ug/l	956 ug/l	*2830 ug/l*	*3060 ug/l*
Cadmium	Dissolved	Lab		0.5 HBV14 (1) ug/l	*5 ug/l*	0.70 ug/l	0.18 ug/l	< 0.080 ug/l	< 0.080 ug/l	< 0.080 ug/l	< 0.080 ug/l	< 0.080 ug/l	< 0.080 ug/l
Cadmium	Total	Lab		0.5 HBV14 (1) ug/l	*5 ug/l*	0.43 ug/l	0.38 ug/l	0.11 ug/l	0.14 ug/l	0.097 ug/l	< 0.080 ug/l	< 0.080 ug/l	< 0.080 ug/l
Calcium	Dissolved	Lab				325000 ug/l	198000 ug/l	222000 ug/l	231000 ug/l	259000 ug/l	239000 ug/l	138000 ug/l	124000 ug/l
Calcium	Total	Lab				242000 ug/l	231000 ug/l	244000 ug/l	207000 ug/l	271000 ug/l	238000 ug/l	139000 ug/l	123000 ug/l
Chromium	Dissolved	Lab		100 CR HRL93 ug/l	*100 ug/l*	33.2 ug/l	1.8 ug/l	2.7 ug/l	2.2 ug/l	6.6 ug/l	6.3 ug/l	1.5 ug/l	1.0 ug/l
Chromium	Total	Lab		100 CR HRL93 ug/l	*100 ug/l*	15.9 ug/l	5.0 ug/l	3.5 ug/l	2.6 ug/l	9.4 ug/l	7.1 ug/l	2.0 ug/l	1.1 ug/l
Cobalt	Dissolved	Lab				20.2 ug/l	14.6 ug/l	1.5 ug/l	0.93 ug/l	1.8 ug/l	1.5 ug/l	12.0 ug/l	12.0 ug/l
Cobalt	Total	Lab				15.5 ug/l	14.9 ug/l	1.6 ug/l	1.0 ug/l	1.9 ug/l	1.5 ug/l	12.0 ug/l	12.0 ug/l
Copper	Dissolved	Lab	1000 ug/l		1300 TT (7) ug/l	69.9 ug/l	4.9 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Copper	Total	Lab	1000 ug/l		1300 TT (7) ug/l	40.8 ug/l	36.2 ug/l	< 1.0 ug/l	< 1.0 ug/l	1.6 ug/l	< 1.0 ug/l	1.8 ug/l	< 1.0 ug/l
Iron	Dissolved	Lab	**300 ug/l**			**22400 ug/l**	**757 ug/l**	**28500 ug/l**	**30600 ug/l**	**47200 ug/l**	**47100 ug/l**	**6320 ug/l**	**7730 ug/l**
Iron	Total	Lab	**300 ug/l**			**13400 ug/l**	**5050 ug/l**	**31600 ug/l**	**31600 ug/l**	**49100 ug/l**	**48000 ug/l**	**7140 ug/l**	**7680 ug/l**
Lead	Dissolved	Lab			*15 TT (7) ug/l*	12.0 ug/l	0.14 ug/l	< 0.10 ug/l	0.15 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l	0.10 ug/l
Lead	Total	Lab			*15 TT (7) ug/l*	6.4 ug/l	3.5 ug/l	2.6 ug/l	3.2 ug/l	2.8 ug/l	1.3 ug/l	2.3 ug/l	0.13 ug/l
Magnesium	Dissolved	Lab				255000 ug/l	187000 ug/l	106000 ug/l	102000 ug/l	74700 ug/l	72000 ug/l	126000 ug/l	118000 ug/l
Magnesium	Total	Lab				208000 ug/l	197000 ug/l	117000 ug/l	103000 ug/l	78900 ug/l	72400 ug/l	130000 ug/l	119000 ug/l
Manganese	Dissolved	Lab	**50 ug/l**	100 HRL93 ug/l		**2570 ug/l**	**1740 ug/l**	**420 ug/l**	**285 ug/l**	**651 ug/l**	**610 ug/l**	**254 ug/l**	**141 ug/l**
Manganese	Total	Lab	**50 ug/l**	100 HRL93 ug/l		**1760 ug/l**	**2170 ug/l**	**503 ug/l**	**291 ug/l**	**720 ug/l**	**618 ug/l**	**274 ug/l**	**142 ug/l**
Mercury	Dissolved	Lab			2 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l
Mercury	Total	Lab			2 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l	< 0.20 ug/l
Nickel	Dissolved	Lab		100 HRL93 ug/l		89.2 ug/l	62.5 ug/l	7.0 ug/l	5.9 ug/l	3.6 ug/l	3.6 ug/l	44.3 ug/l	43.4 ug/l
Nickel	Total	Lab		100 HRL93 ug/l		77.9 ug/l	66.5 ug/l	8.1 ug/l	6.3 ug/l	5.2 ug/l	3.9 ug/l	44.8 ug/l	43.4 ug/l
Potassium	Dissolved	Lab				85400 ug/l	102000 ug/l	69200 ug/l	66000 ug/l	61600 ug/l	61000 ug/l	26400 ug/l	25100 ug/l
Potassium	Total	Lab				93800 ug/l	95200 ug/l	77700 ug/l	65900 ug/l	65500 ug/l	60600 ug/l	26600 ug/l	25000 ug/l
Selenium	Dissolved	Lab		30 HRL93 ug/l	50 ug/l	2.1 ug/l	0.58 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l
Selenium	Total	Lab		30 HRL93 ug/l	50 ug/l	0.88 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l	< 0.50 ug/l

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Table A-3
Water Analytical Data Summary
MPCA - Freeway Landfill

					Location	MW-6	MW-6	MW-7	MW-7	MW-8	MW-8	MW-8D	MW-8D
					Date	6/18/2015	6/24/2015	6/16/2015	6/23/2015	6/16/2015	6/23/2015	6/16/2015	6/23/2015
Parameter	Total or Dissolved	Analysis Location	EPA Secondary Drinking Water Regulations	MDH Human Health-Based Water Guidance Table	EPA Maximum Contaminant Levels								
Effective Date			06/20/2002	03/10/2015	05/01/2009								
Exceedance Key			**Bold**	Underline	*Italic*								
Sodium	Dissolved	Lab				243000 ug/l	242000 ug/l	123000 ug/l	122000 ug/l	59300 ug/l	61000 ug/l	183000 ug/l	181000 ug/l
Sodium	Total	Lab				247000 ug/l	239000 ug/l	141000 ug/l	124000 ug/l	65900 ug/l	61200 ug/l	199000 ug/l	182000 ug/l
Zinc	Dissolved	Lab	**5000 ug/l**	2000 HRL94 ug/l		188 ug/l	28.2 ug/l	5.7 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	5.3 ug/l	5.3 ug/l
Zinc	Total	Lab	**5000 ug/l**	2000 HRL94 ug/l		90.5 ug/l	47.9 ug/l	14.6 ug/l	13.3 ug/l	14.4 ug/l	9.0 ug/l	6.5 ug/l	5.9 ug/l
SVOCs													
1,2,4-Trichlorobenzene	NA	Lab		4 HRL13 (1) ug/l	70 ug/l	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
1,2-Dichlorobenzene	NA	Lab		600 HRL93 ug/l	600 ug/l	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
1,2-Diphenylhydrazine	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
1,3-Dichlorobenzene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
1,4-Dichlorobenzene	NA	Lab		10 HRL94 ug/l	75 ug/l	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
1-Methylnaphthalene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2,2-oxybis (1-chloropropane)	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2,4,5-Trichlorophenol	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2,4,6-Trichlorophenol	NA	Lab		30 HRL93 ug/l		< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2,4-Dichlorophenol	NA	Lab		20 HRL93 ug/l		< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2,4-Dimethylphenol	NA	Lab		100 HRL93 ug/l		< 556 ug/l	< 52.1 ug/l	< 51.0 ug/l	< 51.8 ug/l	< 50.8 ug/l	< 51.5 ug/l	< 50.5 ug/l	< 51.3 ug/l
2,4-Dinitrophenol	NA	Lab		10 HRL94 ug/l		< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2,4-Dinitrotoluene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2,6-Dinitrotoluene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2-Chloronaphthalene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2-Chlorophenol	NA	Lab		30 HRL93 ug/l		< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2-Methyl-4,6-dinitrophenol	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2-Methylnaphthalene	NA	Lab		8 RAA13 ug/l		< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	10.5 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2-Methylphenol (o-cresol)	NA	Lab		30 HRL93 ug/l		< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2-Nitroaniline	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
2-Nitrophenol	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
3,3`-Dichlorobenzidine	NA	Lab		0.8 HRL93 ug/l		< 556 ug/l	< 52.1 ug/l	< 51.0 ug/l	< 51.8 ug/l	< 50.8 ug/l	< 51.5 ug/l	< 50.5 ug/l	< 51.3 ug/l
3,4-Methylphenol (m,p cresols)	NA	Lab		3 MP HRL94 ug/l		< 222 ug/l	< 20.8 ug/l	< 20.4 ug/l	< 20.7 ug/l	< 20.3 ug/l	< 20.6 ug/l	< 20.2 ug/l	< 20.5 ug/l
3-Nitroaniline	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
4-Bromophenyl phenyl ether	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
4-Chloro-3-methylphenol	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
4-Chloroaniline	NA	Lab				< 556 ug/l	< 52.1 ug/l	< 51.0 ug/l	< 51.8 ug/l	< 50.8 ug/l	< 51.5 ug/l	< 50.5 ug/l	< 51.3 ug/l
4-Chlorophenyl phenyl ether	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
4-Nitroaniline	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
4-Nitrophenol	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Acenaphthene	NA	Lab		400 HRL93 ug/l		< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Acenaphthylene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Anthracene	NA	Lab		2000 HRL93 ug/l		< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Benz(a)anthracene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Benzo(a)pyrene	NA	Lab		0.06 HBV12 (1) ug/l	0.2 ug/l	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Benzo(b)fluoranthene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Benzo(g,h,i)perylene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Benzo(k)fluoranthene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Bis(2-chloroethoxy)methane	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Bis(2-chloroethyl)ether	NA	Lab		0.3 HRL93 ug/l		< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Bis(2-ethylhexyl)phthalate	NA	Lab		6 HRLMCL (1) ug/l	6 ug/l	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Butyl benzyl phthalate	NA	Lab		100 HRL93 ug/l		< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Carbazole	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Chrysene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Dibenz(a,h)anthracene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Dibenzofuran	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Diethyl phthalate	NA	Lab		6000 HRL93 ug/l		< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Dimethyl phthalate	NA	Lab		70000 HRL94 ug/l		< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Di-n-butyl phthalate	NA	Lab		20 HBV12 ug/l		< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Di-n-octyl phthalate	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Fluoranthene	NA	Lab		300 HRL93 ug/l		< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Fluorene	NA	Lab		300 HRL93 ug/l		< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l

Draft

Table A-3
Water Analytical Data Summary
MPCA - Freeway Landfill

Parameter	Total or Dissolved	Analysis Location	EPA Secondary Drinking Water Regulations	MDH Human Health-Based Water Guidance Table	EPA Maximum Contaminant Levels	MW-6	MW-6	MW-7	MW-7	MW-8	MW-8	MW-8D	MW-8D
					Date	6/18/2015	6/24/2015	6/16/2015	6/23/2015	6/16/2015	6/23/2015	6/16/2015	6/23/2015
Effective Date			06/20/2002	03/10/2015	05/01/2009								
Exceedance Key			**Bold**	Underline	*Italic*								
Hexachlorobenzene	NA	Lab		0.2 HRL93 ug/l	1 ug/l	< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Hexachlorobutadiene	NA	Lab		1 HRL93 ug/l		< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Hexachloroethane	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Indeno(1,2,3-cd)pyrene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Isophorone	NA	Lab		100 HRL93 ug/l		< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Naphthalene	NA	Lab		70 HRL13 (1) ug/l		< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	17.1 ug/l	14.5 ug/l	< 10.1 ug/l	< 10.3 ug/l
Nitrobenzene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
N-Nitrosodimethylamine	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
N-Nitrosodi-n-propylamine	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
N-Nitrosodiphenylamine	NA	Lab		70 HRL93 ug/l		< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Pentachlorophenol	NA	Lab		0.3 HBV13 (1) ug/l	1 ug/l	< 222 ug/l	< 20.8 ug/l	< 20.4 ug/l	< 20.7 ug/l	< 20.3 ug/l	< 20.6 ug/l	< 20.2 ug/l	< 20.5 ug/l
Phenanthrene	NA	Lab				< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Phenol	NA	Lab		4000 HRL93 ug/l		< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
Pyrene	NA	Lab		200 HRL93 ug/l		< 111 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.4 ug/l	< 10.2 ug/l	< 10.3 ug/l	< 10.1 ug/l	< 10.3 ug/l
VOCs													
1,1,1,2-Tetrachloroethane	NA	Lab		70 HRL93 ug/l		< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,1,1-Trichloroethane	NA	Lab		9000 HRL09 (1) ug/l	200 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,1,2,2-Tetrachloroethane	NA	Lab		2 HRL94 ug/l		< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,1,2-Trichloroethane	NA	Lab		3 HRL93 ug/l	5 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,1-Dichloro-1-propene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,1-Dichloroethane	NA	Lab		100 RAA09 (1) ug/l		< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,1-Dichloroethylene	NA	Lab		200 HRL11 ug/l	7 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2,3-Trichlorobenzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2,3-Trichloropropane	NA	Lab		0.003 HRL13 (1) ug/l		< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
1,2,4-Trichlorobenzene	NA	Lab		4 HRL13 (1) ug/l	70 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2,4-Trimethylbenzene	NA	Lab		100 RAA10 ug/l		< 1.0 ug/l	< 1.0 ug/l	2.1 ug/l	1.5 ug/l	2.6 ug/l	2.3 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2-Dibromo-3-chloropropane	NA	Lab			0.2 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
1,2-Dibromoethane	NA	Lab		0.004 HRL93 ug/l	0.05 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2-Dichlorobenzene	NA	Lab		600 HRL93 ug/l	600 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2-Dichloroethane	NA	Lab		1 HRL13 (1) ug/l	5 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2-Dichloroethylene, cis	NA	Lab		6 HBV14 (1) ug/l	*70 ug/l*	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	6.9 ug/l	7.6 ug/l
1,2-Dichloroethylene, trans	NA	Lab		40 HRL13 (1) ug/l	100 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,2-Dichloropropane	NA	Lab		5 HRL94 ug/l	5 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
1,3,5-Trimethylbenzene	NA	Lab		100 HRL09 ug/l		< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,3-Dichloro-1-propene, cis	NA	Lab		2 DCP HRL94 ug/l		< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
1,3-Dichloro-1-propene, trans	NA	Lab		2 DCP HRL94 ug/l		< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
1,3-Dichlorobenzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,3-Dichloropropane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
1,4-Dichlorobenzene	NA	Lab		10 HRL94 ug/l	75 ug/l	1.6 ug/l	1.9 ug/l	1.9 ug/l	2.1 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
2,2-Dichloropropane	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
Acetone	NA	Lab		4000 HRL11 (1) ug/l		167 ug/l	61.1 ug/l	< 20.0 ug/l	< 20.0 ug/l	< 20.0 ug/l	< 20.0 ug/l	< 20.0 ug/l	< 20.0 ug/l
Allyl Chloride	NA	Lab		30 HRL94 ug/l		< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
Benzene	NA	Lab		2 HRL09 (1) ug/l	*5 ug/l*	*6.0 ug/l*	2.7 ug/l	*14.7 ug/l*	*14.1 ug/l*	*7.9 ug/l*	*7.6 ug/l*	< 1.0 ug/l	< 1.0 ug/l
Bromobenzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Bromochloromethane	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Bromodichloromethane	NA	Lab		6 HRL93 ug/l	80 (6) ug/l	< 1.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	< 1.0 ug/l
Bromoform	NA	Lab		40 HRL93 ug/l	80 (6) ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
Bromomethane	NA	Lab		10 HRL93 ug/l		< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
Butyl benzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	1.6 ug/l	1.4 ug/l	2.3 ug/l	2.4 ug/l	< 1.0 ug/l	< 1.0 ug/l
Butylbenzene, sec	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	1.9 ug/l	1.8 ug/l	2.3 ug/l	2.1 ug/l	< 1.0 ug/l	< 1.0 ug/l
Butylbenzene, tert	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Carbon tetrachloride	NA	Lab		1 HRL13 (1) ug/l	5 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Chlorobenzene	NA	Lab		100 HRL93 ug/l	100 ug/l	8.7 ug/l	6.2 ug/l	6.8 ug/l	6.9 ug/l	2.7 ug/l	2.5 ug/l	2.0 ug/l	2.0 ug/l
Chlorodibromomethane	NA	Lab		10 HRL93 ug/l	80 (6) ug/l	< 1.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	< 1.0 ug/l	< 4.0 ug/l	< 1.0 ug/l
Chloroethane	NA	Lab		ND RAA09		< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Chloroform	NA	Lab		30 HRL09 ug/l	80 (6) ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Chloromethane	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l

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Table A-3
Water Analytical Data Summary
MPCA - Freeway Landfill

Parameter	Total or Dissolved	Analysis Location	EPA Secondary Drinking Water Regulations	MDH Human Health-Based Water Guidance Table	EPA Maximum Contaminant Levels	MW-6	MW-6	MW-7	MW-7	MW-8	MW-8	MW-8D	MW-8D
					Location / Date	6/18/2015	6/24/2015	6/16/2015	6/23/2015	6/16/2015	6/23/2015	6/16/2015	6/23/2015
Effective Date			06/20/2002	03/10/2015	05/01/2009								
Exceedance Key			**Bold**	Underline	*Italic*								
Chlorotoluene, o	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Chlorotoluene, p	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Cumene (isopropyl benzene)	NA	Lab		300 HRL93 ug/l		2.3 ug/l	1.5 ug/l	14.1 ug/l	16.0 ug/l	4.0 ug/l	4.3 ug/l	< 1.0 ug/l	< 1.0 ug/l
Cymene p- (Toluene isopropyl p-)	NA	Lab				6.5 ug/l	< 4.0 ug/l	1.1 ug/l	< 1.0 ug/l	1.1 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Dibromomethane (methylene bromide)	NA	Lab				< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
Dichlorodifluoromethane (CFC-12)	NA	Lab		700 HRL11 ug/l		< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Dichlorofluoromethane (CFC-21)	NA	Lab		ND RAA09		< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Ethyl benzene	NA	Lab		50 HRL11 ug/l	700 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Ethyl ether	NA	Lab		200 RAA10 (1) ug/l		30.6 ug/l	27.3 ug/l	47.8 ug/l	41.6 ug/l	11.9 ug/l	11.7 ug/l	20.4 ug/l	18.0 ug/l
Hexachlorobutadiene	NA	Lab		1 HRL93 ug/l		< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Methyl ethyl ketone	NA	Lab		4000 HRL94 ug/l		73.2 ug/l	22.8 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 5.0 ug/l	< 5.0 ug/l
Methyl isobutyl ketone	NA	Lab		300 HRL94 ug/l		6.3 ug/l	< 5.0 ug/l	< 20.0 ug/l	< 5.0 ug/l	< 20.0 ug/l	< 5.0 ug/l	< 20.0 ug/l	< 5.0 ug/l
Methyl tertiary butyl ether (MTBE)	NA	Lab		60 RAA13 (1) ug/l		< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Methylene chloride	NA	Lab		5 HRLMCL ug/l	*5 ug/l*	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l
Naphthalene	NA	Lab		70 HRL13 (1) ug/l		< 4.0 ug/l	< 4.0 ug/l	< 4.0 ug/l	4.6 ug/l	27.7 ug/l	28.3 ug/l	< 4.0 ug/l	< 4.0 ug/l
Propylbenzene	NA	Lab				< 1.0 ug/l	< 1.0 ug/l	6.4 ug/l	7.8 ug/l	4.5 ug/l	4.8 ug/l	< 1.0 ug/l	< 1.0 ug/l
Styrene	NA	Lab			100 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Tetrachloroethylene	NA	Lab		4 HBV14 ug/l	*5 ug/l*	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Tetrahydrofuran	NA	Lab				51.7 ug/l	49.2 ug/l	37.4 ug/l	43.1 ug/l	12.3 ug/l	11.2 ug/l	37.4 ug/l	35.2 ug/l
Toluene	NA	Lab		200 HRL11 ug/l	1000 ug/l	3.1 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Trichloroethylene	NA	Lab		0.4 HBV13 (1) ug/l	*5 ug/l*	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l
Trichlorofluoromethane	NA	Lab		2000 HRL93 ug/l		< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Trichlorotrifluoroethane (Freon 113)	NA	Lab		200000 HRL93 ug/l		< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Vinyl chloride	NA	Lab		0.2 HRL09 (1) ug/l	*2 ug/l*	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	< 0.40 ug/l	1.0 ug/l	0.72 ug/l	< 0.40 ug/l	*231 ug/l*
Xylene, m & p	NA	Lab		300 XYL HRL11 (1) ug/l		< 2.0 ug/l	< 2.0 ug/l	3.0 ug/l	2.2 ug/l	< 2.0 ug/l	< 2.0 ug/l	< 2.0 ug/l	< 2.0 ug/l
Xylene, o	NA	Lab		300 XYL HRL11 (1) ug/l		< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
Xylene, total	NA	Lab		300 XYL HRL11 (1) ug/l	10000 ug/l	< 3.0 ug/l	< 3.0 ug/l	3.0 ug/l	< 3.0 ug/l	< 3.0 ug/l	< 3.0 ug/l	< 3.0 ug/l	< 3.0 ug/l
PCBs													
Aroclor 1016	NA	Lab				< 0.21 ug/l	< 0.11 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
Aroclor 1221	NA	Lab				< 0.21 ug/l	< 0.11 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
Aroclor 1232	NA	Lab				< 0.21 ug/l	< 0.11 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
Aroclor 1242	NA	Lab				< 0.21 ug/l	< 0.11 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
Aroclor 1248	NA	Lab				< 0.21 ug/l	< 0.11 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
Aroclor 1254	NA	Lab				< 0.21 ug/l	< 0.11 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
Aroclor 1260	NA	Lab				< 0.21 ug/l	< 0.11 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
Aroclor 1262	NA	Lab				< 0.21 ug/l	< 0.11 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
Aroclor 1268	NA	Lab				< 0.21 ug/l	< 0.11 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 1.0 ug/l	< 0.10 ug/l	< 0.10 ug/l	< 0.10 ug/l
Total Petroleum Hydrocarbons													
Gasoline Range Organics, C6-C10	NA	Lab				119 ug/l	< 100 ug/l	145 ug/l	157 ug/l	108 ug/l	122 ug/l	< 100 ug/l	< 100 ug/l
Total Petroleum Hydrocarbons C10-C28	NA	Lab				1.3 mg/l	1.5 mg/l	1.9 mg/l	2.4 mg/l	2.6 mg/l	3.0 mg/l	1.0 mg/l	1.4 mg/l
Perfluorinated Compounds													
Perfluorobutane sulfonate (PFBS)	NA	Lab		7 HRL11 (1) ug/l		--	0.020 j ug/l	0.039 j ug/l	0.023 j ug/l	0.019 j ug/l	0.026 j ug/l	0.023 j ug/l	0.014 j ug/l
Perfluorobutyric acid	NA	Lab		7 HRL11 ug/l		--	0.37 ug/l	0.15 ug/l	0.15 ug/l	0.079 ug/l	0.079 ug/l	0.21 ug/l	0.20 ug/l
Perfluorohexane sulfonate	NA	Lab		ND RAA09		--	0.023 j ug/l	0.039 j ug/l	0.042 j ug/l	0.035 j ug/l	0.032 j ug/l	0.030 j ug/l	0.023 j ug/l
Perfluorohexanoic acid	NA	Lab				--	0.11 ug/l	0.086 ug/l	0.10 ug/l	0.12 ug/l	0.13 ug/l	0.12 ug/l	0.11 ug/l
Perfluorooctane sulfonate (PFOS)	NA	Lab		0.3 HRL09 ug/l		--	0.020 j ug/l	0.10 ug/l	0.11 ug/l	0.14 ug/l	0.14 ug/l	0.070 ug/l	0.076 ug/l
Perfluorooctanoic acid (PFOA)	NA	Lab		0.3 HRL09 ug/l		--	0.69 ug/l	1.1 ug/l	1.0 ug/l	2.7 ug/l	2.7 ug/l	0.61 ug/l	0.66 ug/l
Perfluoropentanoic acid	NA	Lab				--	0.041 j ug/l	0.021 j ug/l	0.035 j ug/l	0.022 j ug/l	0.021 j ug/l	0.037 j ug/l	0.045 j ug/l

Data Footnotes and Qualifiers

Barr Standard Footnotes and Qualifiers

--	Not analyzed/Not available.
N	Sample Type: Normal
FD	Sample Type: Field Duplicate
NA	NA (not applicable) indicates that a fractional portion of the sample is not part of the analytical testing or field collection procedures.
ND	Not detected.
TIC	Tentatively identified compound.
Validated	Laboratory data has been evaluated following Barr QA/QC procedures and/or project-specific data review requirements. Field data has been verified for transcription errors, consistency and completeness. Data transferred from the previous database (9/2009) were categorized as validated, but may comprise any of the following data status categories: Validated, SSource, No QC or Legacy.
No QC	Laboratory data has been excluded from Barr QA/QC procedures.
SSource	Laboratory and/or field data obtained from a secondary source external to Barr. Second source QA/QC evaluation procedures may or may not have been performed beyond the original data generator.
Legacy	Historical laboratory data (internal at Barr). QA/QC evaluation procedures may or may not have been performed beyond the original data generator.
j	Estimated detected value. The reported value is less than the stated laboratory quantitation limit but greater than the laboratory method detection limit.

Minnesota Surface Water 2A Chronic 7050 - 350 Hardness

(4)	5.0 mg/l as a daily minimum. This dissolved oxygen standard may be modified on a site-specific basis according to part 7050.0220, subpart 7, except that no site-specific standard shall be less than 5 mg/l as a daily average and 4 mg/l as a daily minimum. Compliance with this standard is required 50 percent of the days at which the flow of the receiving water is equal to the 7Q. This standard applies to all Class 2B waters except for those portions of the Mississippi River from the outlet of the Metro Wastewater Treatment Works in Saint Paul (River Mile 835) to Lock and Dam No. 2 at Hastings (River Mile 815). For this reach of the Mississippi River, the standard is not less than 5 mg/l as a daily average from April 1 through November 30, and not less than 4 mg/l at other times.
CF	Conversion Factor.
CF CR6	Conversion Factor., Value represents the criteria for Hexavalent Chromium.
CR6	Value represents the criteria for Hexavalent Chromium.
HD	Hardness Dependent.
HD CF	Hardness Dependent., Conversion Factor.
PD	pH Dependent. Based on a pH value of 7.0.

Minnesota Surface Water 2A Final Acute Value 7050 - 350 Hardness

(1)	The provisions of this item apply to maximum standards (MS), final acure values (FAV), and double dashes in this part and part 7050.0220 are marked with an asterik. For carcinogenic or highly bioaccumulative chemicals with BCFs greater than 5000 or log K values greater than 5.19, the human health-based chronic standard (CS) may be two or more orders of magnitude smaller than the acute toxicity-based MS. If the commissioner finds that a very large MS and FAV, relative to the CS for such pollutants is not protective of the public health, the MS and FAV shall be reduced according to the following guidelines: If the ration of the MS to the CS is greater than 100, the CS times 100 should be substituted for the applicable MS, and the CS times 200 should be substituted for the applicable FAV. Any effluent limit derived using the procedures of this item shall only be required after the discharger has been given notice of the specific proposed effluent limits and an opportunity to request a hearing as provided in part 7000.1800.
CF (1)	Conversion Factor., The provisions of this item apply to maximum standards (MS), final acure values (FAV), and double dashes in this part and part 7050.0220 are marked with an asterik. For carcinogenic or highly bioaccumulative chemicals with BCFs greater than 5000 or log K values greater than 5.19, the human health-based chronic standard (CS) may be two or more orders of magnitude smaller than the acute toxicity-based MS. If the commissioner finds that a very large MS and FAV, relative to the CS for such pollutants is not protective of the public health, the MS and FAV shall be reduced according to the following guidelines: If the ration of the MS to the CS is greater than 100, the CS times 100 should be substituted for the applicable MS, and the CS times 200 should be substituted for the applicable FAV. Any effluent limit derived using the procedures of this item shall only be required after the discharger has been given notice of the specific proposed effluent limits and an opportunity to request a hearing as provided in part 7000.1800.
CF CR6	Conversion Factor., Value represents the criteria for Hexavalent Chromium.
CR6	Value represents the criteria for Hexavalent Chromium.
HD	Hardness Dependent.
HD CF	Hardness Dependent., Conversion Factor.
PD	pH Dependent. Based on a pH value of 7.0.

Data Footnotes and Qualifiers

Minnesota Surface Water 2A Maximum 7050 - 350 Hardness

(4)	5.0 mg/l as a daily minimum. This dissolved oxygen standard may be modified on a site-specific basis according to part 7050.0220, subpart 7, except that no site-specific standard shall be less than 5 mg/l as a daily average and 4 mg/l as a daily minimum. Compliance with this standard is required 50 percent of the days at which the flow of the receiving water is equal to the 7Q. This standard applies to all Class 2B waters except for those portions of the Mississippi River from the outlet of the Metro Wastewater Treatment Works in Saint Paul (River Mile 835) to Lock and Dam No. 2 at Hastings (River Mile 815). For this reach of the Mississippi River, the standard is not less than 5 mg/l as a daily average from April 1 through November 30, and not less than 4 mg/l at other times.
(1)	The provisions of this item apply to maximum standards (MS), final acure values (FAV), and double dashes in this part and part 7050.0220 are marked with an asterik. For carcinogenic or highly bioaccumulative chemicals with BCFs greater than 5000 or log K values greater than 5.19, the human health-based chronic standard (CS) may be two or more orders of magnitude smaller than the acute toxicity-based MS. If the commissioner finds that a very large MS and FAV, relative to the CS for such pollutants is not protective of the public health, the MS and FAV shall be reduced according to the following guidelines: If the ration of the MS to the CS is greater than 100, the CS times 100 should be substituted for the applicable MS, and the CS times 200 should be substituted for the applicable FAV. Any effluent limit derived using the procedures of this item shall only be required after the discharger has been given notice of the specific proposed effluent limits and an opportunity to request a hearing as provided in part 7000.1800.
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CF CR6	Conversion Factor., Value represents the criteria for Hexavalent Chromium.
CR6	Value represents the criteria for Hexavalent Chromium.
HD	Hardness Dependent.
HD CF	Hardness Dependent., Conversion Factor.
PD	pH Dependent. Based on a pH value of 7.0.

Minnesota Surface Water 2B Chronic 7050 - 350 Hardness

(4)	5.0 mg/l as a daily minimum. This dissolved oxygen standard may be modified on a site-specific basis according to part 7050.0220, subpart 7, except that no site-specific standard shall be less than 5 mg/l as a daily average and 4 mg/l as a daily minimum. Compliance with this standard is required 50 percent of the days at which the flow of the receiving water is equal to the 7Q. This standard applies to all Class 2B waters except for those portions of the Mississippi River from the outlet of the Metro Wastewater Treatment Works in Saint Paul (River Mile 835) to Lock and Dam No. 2 at Hastings (River Mile 815). For this reach of the Mississippi River, the standard is not less than 5 mg/l as a daily average from April 1 through November 30, and not less than 4 mg/l at other times.
CF	Conversion Factor.
CF CR6	Conversion Factor., Value represents the criteria for Hexavalent Chromium.
CR6	Value represents the criteria for Hexavalent Chromium.
HD	Hardness Dependent.
HD CF	Hardness Dependent., Conversion Factor.
PD	pH Dependent. Based on a pH value of 7.0.
TEM	5 degrees F above natural in streams and 3 degrees F above natural in lakes, based on monthly average of the maximum daily temperatures, except in no case shall it exceed the daily average temperature of 86 degrees F.

Minnesota Surface Water 2B Final Acute Value 7050 - 350 Hardness

(1)	The provisions of this item apply to maximum standards (MS), final acure values (FAV), and double dashes in this part and part 7050.0220 are marked with an asterik. For carcinogenic or highly bioaccumulative chemicals with BCFs greater than 5000 or log K values greater than 5.19, the human health-based chronic standard (CS) may be two or more orders of magnitude smaller than the acute toxicity-based MS. If the commissioner finds that a very large MS and FAV, relative to the CS for such pollutants is not protective of the public health, the MS and FAV shall be reduced according to the following guidelines: If the ration of the MS to the CS is greater than 100, the CS times 100 should be substituted for the applicable MS, and the CS times 200 should be substituted for the applicable FAV. Any effluent limit derived using the procedures of this item shall only be required after the discharger has been given notice of the specific proposed effluent limits and an opportunity to request a hearing as provided in part 7000.1800.

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CR6	Value represents the criteria for Hexavalent Chromium.
HD	Hardness Dependent.
HD CF	Hardness Dependent., Conversion Factor.
PD	pH Dependent. Based on a pH value of 7.0.
TEM	5 degrees F above natural in streams and 3 degrees F above natural in lakes, based on monthly average of the maximum daily temperatures, except in no case shall it exceed the daily average temperature of 86 degrees F.

Minnesota Surface Water 2B Maximum 7050 - 350 Hardness

(4)	5.0 mg/l as a daily minimum. This dissolved oxygen standard may be modified on a site-specific basis according to part 7050.0220, subpart 7, except that no site-specific standard shall be less than 5 mg/l as a daily average and 4 mg/l as a daily minimum. Compliance with this standard is required 50 percent of the days at which the flow of the receiving water is equal to the 7Q. This standard applies to all Class 2B waters except for those portions of the Mississippi River from the outlet of the Metro Wastewater Treatment Works in Saint Paul (River Mile 835) to Lock and Dam No. 2 at Hastings (River Mile 815). For this reach of the Mississippi River, the standard is not less than 5 mg/l as a daily average from April 1 through November 30, and not less than 4 mg/l at other times.
(1)	The provisions of this item apply to maximum standards (MS), final acure values (FAV), and double dashes in this part and part 7050.0220 are marked with an asterik. For carcinogenic or highly bioaccumulative chemicals with BCFs greater than 5000 or log K values greater than 5.19, the human health-based chronic standard (CS) may be two or more orders of magnitude smaller than the acute toxicity-based MS. If the commissioner finds that a very large MS and FAV, relative to the CS for such pollutants is not protective of the public health, the MS and FAV shall be reduced according to the following guidelines: If the ration of the MS to the CS is greater than 100, the CS times 100 should be substituted for the applicable MS, and the CS times 200 should be substituted for the applicable FAV. Any effluent limit derived using the procedures of this item shall only be required after the discharger has been given notice of the specific proposed effluent limits and an opportunity to request a hearing as provided in part 7000.1800.
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CR6	Value represents the criteria for Hexavalent Chromium.
HD	Hardness Dependent.
HD (1)	Hardness Dependent., The provisions of this item apply to maximum standards (MS), final acure values (FAV), and double dashes in this part and part 7050.0220 are marked with an asterik. For carcinogenic or highly bioaccumulative chemicals with BCFs greater than 5000 or log K values greater than 5.19, the human health-based chronic standard (CS) may be two or more orders of magnitude smaller than the acute toxicity-based MS. If the commissioner finds that a very large MS and FAV, relative to the CS for such pollutants is not protective of the public health, the MS and FAV shall be reduced according to the following guidelines: If the ration of the MS to the CS is greater than 100, the CS times 100 should be substituted for the applicable MS, and the CS times 200 should be substituted for the applicable FAV. Any effluent limit derived using the procedures of this item shall only be required after the discharger has been given notice of the specific proposed effluent limits and an opportunity to request a hearing as provided in part 7000.1800.
HD CF	Hardness Dependent., Conversion Factor.
HD CF (1)	Hardness Dependent., Conversion Factor., The provisions of this item apply to maximum standards (MS), final acure values (FAV), and double dashes in this part and part 7050.0220 are marked with an asterik. For carcinogenic or highly bioaccumulative chemicals with BCFs greater than 5000 or log K values greater than 5.19, the human health-based chronic standard (CS) may be two or more orders of magnitude smaller than the acute toxicity-based MS. If the commissioner finds that a very large MS and FAV, relative to the CS for such pollutants is not protective of the public health, the MS and FAV shall be reduced according to the following guidelines: If the ration of the MS to the CS is greater than 100, the CS times 100 should be substituted for the applicable MS, and the CS times 200 should be substituted for the applicable FAV. Any effluent limit derived using the procedures of this item shall only be required after the discharger has been given notice of the specific proposed effluent limits and an opportunity to request a hearing as provided in part 7000.1800.
PD	pH Dependent. Based on a pH value of 7.0.
TEM	5 degrees F above natural in streams and 3 degrees F above natural in lakes, based on monthly average of the maximum daily temperatures, except in no case shall it exceed the daily average temperature of 86 degrees F.

Data Footnotes and Qualifiers

EPA Maximum Contaminant Levels

(6)	Although there is no collective MCLG for this contaminant group, there are individual MCLGs for some of the individual contaminants: Trihalomethanes: bromodichloromethane (zero), bromoform (zero); dibromochloromethane (0.06 mg/l); chloroform (0.07 mg/l). Haloacetic acids: dichloroacetic acid (zero); trichloroacetic acid (0.02 mg/l); monochloroacetic acid (0.07 mg/l). Bromoacetic acid and dibromoacetic acid are regulated with this group but have no MCLGs.
N	Based on the criteria for Nitrogen, Nitrite as N.
TT (7)	Treatment Technique - A required process intended to reduce the level of a contaminant in drinking water., Lead and copper are regulated by a Treatment Technique that requires systems to control the corrosiveness of their water. If more than 10% of tap water samples exceed the action level, water systems must take additional steps. For copper, the action level is 1.3 mg/l, and for lead is 0.015 mg/l.

MDH Human Health-Based Water Guidance Table

CR HRL93	Value represents the criteria for Chromium, hexavalent., Health Risk Limit 1993.
DCP HRL94	Value shown is 1,3-dichloropropene in the MDH criterion, however, the laboratory reports cis and trans isomers individually., Health Risk Limit 1994.
HBV12	Health Based Value 2012.
HBV12 (1)	Health Based Value 2012., Value is representative of the lowest exposure duration published in the Minnesota Department of Health Human Health Advisory Table.
HBV13 (1)	Health Based Value 2013., Value is representative of the lowest exposure duration published in the Minnesota Department of Health Human Health Advisory Table.
HBV14	Health-Based Value 2014.
HBV14 (1)	Health Risk Limit 2014.
HRL09	Health Risk Limit 2009.
HRL09 (1)	Health Risk Limit 2009., Value is representative of the lowest exposure duration published in the Minnesota Department of Health Human Health Advisory Table.
HRL11	Health Risk Limit 2011.
HRL11 (1)	Health Risk Limit 2011., Value is representative of the lowest exposure duration published in the Minnesota Department of Health Human Health Advisory Table.
HRL13 (1)	Health Risk Limit 2013., Value is representative of the lowest exposure duration published in the Minnesota Department of Health Human Health Advisory Table.
HRL93	Health Risk Limit 1993.
HRL94	Health Risk Limit 1994.
HRLMCL	Health Risk Limit., Maximum Contaminant Level.
HRLMCL (1)	Health Risk Limit/Maximum Contaminant Level., Value is representative of the lowest exposure duration published in the Minnesota Department of Health Human Health Advisory Table.
MP HRL94	Laboratory reports 3-methylphenol and 4-methylphenol as co-eluting compounds. The criteria in the table represents 4-methylphenol which is the more stringent criteria., Health Risk Limit 1994.
ND RAA09	Not Detected., Risk Assessment Advice 2009.
RAA09 (1)	Risk Assessment Advice 2009., Value is representative of the lowest exposure duration published in the Minnesota Department of Health Human Health Advisory Table.
RAA10	Risk Assessment Advice 2010.
RAA10 (1)	Risk Assessment Advice 2010., Value is representative of the lowest exposure duration published in the Minnesota Department of Health Human Health Advisory Table.
RAA13	Risk Assessment Advice 2013.
RAA13 (1)	Risk Assessment Advice 2013., Value is representative of the lowest exposure duration published in the Minnesota Department of Health Human Health Advisory Table.
XYL HRL11 (1)	Value shown is for the sum of the mixed o,m and p xylene isomers., Health Risk Limit 2011., Value is representative of the lowest exposure duration published in the Minnesota Department of Health Human Health Advisory Table.