

TABLE 2-1  
SUMMARY OF CONSTRUCTION DATA FOR NEW GROUNDWATER MONITORING WELLS  
Gude Landfill Nature and Extent Study Amendment No.1

Well ID	Permit #	Date Installed	Drilling Method	Diameter (inches)	Total Depth (ft bgs)	Casing Depth (ft bgs)	Screen Depth (ft bgs)	Depth to GW - August 2011 (nearest ft bgs)	Geology
MW-14A	MO100151	8/1/2011	HSA and Air Hammer	2	40	30	30-40	21	0-2 ft: asphalt and fill; 2-40 ft: brown silt and fine sand
MW-14B	MO100149	8/2/2011	HSA and Air Hammer	2	98	88	88-98	23	0-2 ft: asphalt and fill; 2-40 ft: brown silt and fine sand; 40-70 ft: weathered rock; 70-100 ft: rock
MW-15	MO100150	8/3/2011	HSA	2	40	30	30-40	6	0-2 ft: asphalt and fill; 2-40 ft: brown silt and fine sand
TGW-1	NA	8/22/2011	Power Auger	1	8	3	3-8	4	Boring locations was installed using a 4" power auger. As such, soils were highly disturbed and unconsolidated. In general, soils consisted of brown clayey silt with clay content increasing with depth.
TGW-2	NA	8/23/2011	Power Auger	1	8	3	3-8	5	Boring locations was installed using a 4" power auger. As such, soils were highly disturbed and unconsolidated. In general, soils consisted of brown clayey silt with clay content increasing with depth.
TGW-3	NA	8/23/2011	Power Auger	1	8	3	3-8	5	Boring locations was installed using a 4" power auger. As such, soils were highly disturbed and unconsolidated. In general, soils consisted of brown clayey silt with clay content increasing with depth.
TGW-4	NA	8/22/2011	Power Auger	1	8	3	3-8	5	Boring locations was installed using a 4" power auger. As such, soils were highly disturbed and unconsolidated. In general, soils consisted of brown clayey silt with clay content increasing with depth.
TGW-5	NA	8/22/2011	Power Auger	1	8	3	3-8	7	Boring locations was installed using a 4" power auger. As such, soils were highly disturbed and unconsolidated. In general, soils consisted of brown clayey silt with clay content increasing with depth.
TGW-6	NA	8/8/2011	Hand and Power Augers	1	7	2	2-7	3	0-0.5 ft: topsoil; 0.5-1 ft: brown silt and clay; 1-3 ft: clay; 3-4 ft: clay and soft cobbles; 4-7 ft: cobbles
TGW-7	NA	8/8/2011	Hand and Power Augers	1	7	2	2-7	4	0-0.5 ft: topsoil; 0.5-1 ft: brown silt and clay; 1-3 ft: clay; 3-4 ft: clay and soft cobbles; 4-7 ft: cobbles
TGW-8	NA	8/8/2011	Hand and Power Augers	1	7	2	2-7	3	0-0.5 ft: topsoil; 0.5-2 ft: brown silt; 2-4 ft: clay; 4-7 ft: cobbles
TGW-9	NA	8/8/2011	Hand and Power Augers	1	6	1	1-6	2	0-0.5 ft: topsoil; 0.5-1 ft: brown silt and clay; 1-3 ft: clay; 3-6 ft: cobbles and sand
TGW-10	NA	8/5/2011	Hand Auger	1	6	2.5	2.5-6	3	0-0.5 ft: topsoil; 0.5-1 ft: brown silt and clay; 1-4 ft: clay; 4-6 ft: clay and gravel

Notes:  
(1) Abbreviations:  
GW = groundwater  
ft = feet  
HSA = hollow stem auger  
bgs = below ground surface  
NA = Not Applicable

TABLE 2-2  
 SEPTEMBER 2011 SAMPLING EVENT ANALYSES  
 Gude Landfill Nature and Extent Study Amendment No.1

Analysis	MW-14A	MW-14B	MW-15	TGW-1	TGW-2	TGW-3	TGW-4	TGW-5	TGW-6	TGW-7	TGW-8	TGW-9	TGW-10
Volatile Organic Compounds	X	X	X	X	X	X	X	X	X	X	X	X	X
Total Metals plus Hardness	X	X	X	X	X	X	X	X	X	X	X	X	X
Dissolved Metals	X	X	X	X	X	X	X	X	X	*	X	X	X
Leachate Indicator Parameters	X	X	X	*	X	X	X	X	*	*	*	*	X
Compounds	X	X	X	X	X	X	X	X	X	X	X	X	X
Chlorinated Herbicides	X	X	X	*	X	X	X	X	*	X	*	*	X
Polychlorinated Biphenyls	X	X	X	*	X	X	X	X	X	*	X	*	X
Cyanide	X	X	X	*	X	X	X	X	*	*	*	*	X
Organochlorine Pesticides	X	X	X	*	X	X	X	X	X	*	X	*	X
Organophosphate Pesticides	X	X	X	*	X	X	X	X	*	*	*	*	X

Notes:

(1) Abbreviations:

X = Sampled

\* = Not Sampled Due to Insufficient Volume

TABLE 3-1  
TOTAL METALS VS DISSOLVED METAL MCL EXCEEDANCES IN GROUNDWATER  
Gude Landfill Nature and Extent Study Amendment No.1

Event Date	Location	Constituent	MCL	Total	Dissolved	Units
April 2011	MW-3B	Lead	0.015	<b>0.0410</b>	0.005 U	mg/L
April 2011	MW-11A	Lead	0.015	<b>0.0156</b>	0.005 U	mg/L
April 2011	OB06	Lead	0.015	<b>0.0474</b>	0.005 U	mg/L
April 2011	OB06	Mercury	0.002	<b>0.00852</b>	0.0002 U	mg/L
April 2011	OB11	Cadmium	0.005	<b>0.0100</b>	<b>0.0106</b>	mg/L
April 2011	OB11A	Beryllium	0.004	<b>0.0102</b>	0.005 U	mg/L
April 2011	OB11A	Cadmium	0.005	<b>0.0059</b>	0.005 U	mg/L
April 2011	OB11A	Lead	0.015	<b>0.0723</b>	0.005 U	mg/L
Sept 2011	TGW-01	Lead	0.015	<b>0.0890</b>	0.001 U	mg/L
Sept 2011	TGW-03	Lead	0.015	<b>0.0380</b>	0.001 U	mg/L
Sept 2011	TGW-05	Arsenic	0.01	<b>0.012</b>	0.001 U	mg/L
Sept 2011	TGW-05	Beryllium	0.004	<b>0.0085</b>	0.001 U	mg/L
Sept 2011	TGW-05	Lead	0.015	<b>0.1200</b>	0.001 U	mg/L
Sept 2011	TGW-06	Beryllium	0.004	<b>0.0047</b>	0.001 U	mg/L
Sept 2011	TGW-06	Lead	0.015	<b>0.0690</b>	0.001 U	mg/L
Sept 2011	TGW-07	Arsenic	0.01	<b>0.054</b>	0.0012	mg/L
Sept 2011	TGW-07	Beryllium	0.004	<b>0.0430</b>	0.001 U	mg/L
Sept 2011	TGW-07	Cadmium	0.005	<b>0.0073</b>	0.001 U	mg/L
Sept 2011	TGW-07	Chromium	0.1	<b>0.330</b>	0.001 U	mg/L
Sept 2011	TGW-07	Lead	0.015	<b>0.5400</b>	0.001 U	mg/L
Sept 2011	TGW-08	Beryllium	0.004	<b>0.0041</b>	0.005 U	mg/L
Sept 2011	TGW-08	Lead	0.015	<b>0.1000</b>	0.001 U	mg/L

Notes:

- (1) Data consists of County semi-annual sampling event (April 2011) and NES Amendment No.1 sampling event (September 2011) only
- (2) Dissolved metals concentrations (i.e. analytical results from field-filtered samples) are more representative of groundwater conditions than total metals concentrations.
- (3) Bolded values exceed MCLs.
- (4) Abbreviations: MCL = Maximum Contaminant Level, mg/L = milligrams per liter equivalent to ppm

TABLE 3-2  
MCL EXCEEDANCES IN GROUNDWATER BY LOCATION  
Gude Landfill Nature and Extent Study Amendment No.1

Location	Constituent *	MCL	Result	Units	Event Date
MW-4	Trichloroethene	5	5.6	µg/L	April 2011
MW-7	Nitrate	10	14.59	mg/L	April 2011
MW-7	Trichloroethene	5	11	µg/L	April 2011
MW-8	Nitrate	10	13.85	mg/L	April 2011
MW-13A	1,2-Dichloropropane	5	6.6	µg/L	April 2011
MW-13A	cis-1,2-Dichloroethene	70	96	µg/L	April 2011
MW-13A	Methylene Chloride	5	10	µg/L	April 2011
MW-13A	Tetrachloroethene	5	17	µg/L	April 2011
MW-13A	Trichloroethene	5	23	µg/L	April 2011
MW-13A	Vinyl Chloride	2	14	µg/L	April 2011
OB03	Trichloroethene	5	21	µg/L	April 2011
OB03	Vinyl Chloride	2	11	µg/L	April 2011
OB04A	Methylene Chloride	5	7.7	µg/L	April 2011
OB04A	Tetrachloroethene	5	13	µg/L	April 2011
OB04A	Trichloroethene	5	17	µg/L	April 2011
OB11	1,1-Dichloroethene	7	25	µg/L	April 2011
OB11	1,2-Dichloropropane	5	5.1	µg/L	April 2011
OB11	Benzene	5	5.2	µg/L	April 2011
OB11	Cadmium, dissolved	0.005	0.0106	mg/L	April 2011
OB11	Methylene Chloride	5	16	µg/L	April 2011
OB11	Tetrachloroethene	5	26	µg/L	April 2011
OB11	Trichloroethene	5	28	µg/L	April 2011
OB11	Vinyl Chloride	2	14	µg/L	April 2011
OB11A	1,2-Dibromoethane	0.05	1.8	µg/L	April 2011
OB11A	cis-1,2-Dichloroethene	70	76	µg/L	April 2011
OB11A	Tetrachloroethene	5	14	µg/L	April 2011
OB11A	Trichloroethene	5	17	µg/L	April 2011
OB11A	Vinyl Chloride	2	11	µg/L	April 2011
OB12	Methylene Chloride	5	10	µg/L	April 2011
OB12	Tetrachloroethene	5	12	µg/L	April 2011
OB12	Trichloroethene	5	9.4	µg/L	April 2011
TGW-05	Trichloroethene	5	8	µg/L	Sept 2011
TGW-05	Vinyl Chloride	2	3	µg/L	Sept 2011
TGW-06	Vinyl Chloride	2	4	µg/L	Sept 2011

Notes:

- (1) Data consists of County semi-annual sampling event (April 2011) and NES Amendment No.1 sampling event (September 2011) only
- (2) \*Based on reported concentrations of dissolved metals, it was concluded that the presence of suspended sediment in unfiltered groundwater samples resulted in reported total metals concentrations that are not representative of groundwater conditions. Therefore, total metals concentrations are omitted from this table (see **Table 3-1**).
- (3) Abbreviations: MCL = Maximum Contaminant Level, mg/L = milligrams per liter equivalent to ppm, µg/L = micrograms per liter equivalent to ppb

TABLE 3-3  
MCL EXCEEDANCES IN GROUNDWATER BY CONSTITUENT  
Gude Landfill Nature and Extent Study Amendment No.1

Constituent *	Location	MCL	Result	Units	Event Date
1,1-Dichloroethene	OB11	7	25	µg/L	April 2011
1,2-Dibromoethane	OB11A	0.05	1.8	µg/L	April 2011
1,2-Dichloropropane	MW-13A	5	6.6	µg/L	April 2011
1,2-Dichloropropane	OB11	5	5.1	µg/L	April 2011
Benzene	OB11	5	5.2	µg/L	April 2011
Cadmium, dissolved	OB11	0.005	0.0106	mg/L	April 2011
cis-1,2-Dichloroethene	MW-13A	70	96	µg/L	April 2011
cis-1,2-Dichloroethene	OB11A	70	76	µg/L	April 2011
Methylene Chloride	MW-13A	5	10	µg/L	April 2011
Methylene Chloride	OB04A	5	7.7	µg/L	April 2011
Methylene Chloride	OB11	5	16	µg/L	April 2011
Methylene Chloride	OB12	5	10	µg/L	April 2011
Nitrate	MW-7	10	14.59	mg/L	April 2011
Nitrate	MW-8	10	13.85	mg/L	April 2011
Tetrachloroethene	MW-13A	5	17	µg/L	April 2011
Tetrachloroethene	OB04A	5	13	µg/L	April 2011
Tetrachloroethene	OB11	5	26	µg/L	April 2011
Tetrachloroethene	OB11A	5	14	µg/L	April 2011
Tetrachloroethene	OB12	5	12	µg/L	April 2011
Trichloroethene	MW-4	5	5.6	µg/L	April 2011
Trichloroethene	MW-7	5	11	µg/L	April 2011
Trichloroethene	MW-13A	5	23	µg/L	April 2011
Trichloroethene	OB03	5	21	µg/L	April 2011
Trichloroethene	OB04A	5	17	µg/L	April 2011
Trichloroethene	OB11	5	28	µg/L	April 2011
Trichloroethene	OB11A	5	17	µg/L	April 2011
Trichloroethene	OB12	5	9.4	µg/L	April 2011
Trichloroethene	TGW-05	5	8	µg/L	Sept 2011
Vinyl Chloride	MW-13A	2	14	µg/L	April 2011
Vinyl Chloride	OB03	2	11	µg/L	April 2011
Vinyl Chloride	OB11	2	14	µg/L	April 2011
Vinyl Chloride	OB11A	2	11	µg/L	April 2011
Vinyl Chloride	TGW-05	2	3	µg/L	Sept 2011
Vinyl Chloride	TGW-06	2	4	µg/L	Sept 2011

Notes:

- (1) Data consists of County semi-annual sampling event (April 2011) and NES Amendment No.1 sampling event (September 2011) only
- (2) \*Based on reported concentrations of dissolved metals, it was concluded that the presence of suspended sediment in unfiltered groundwater samples resulted in reported total metals concentrations that are not representative of groundwater conditions. Therefore, total metals concentrations are omitted from this table (see **Table 3-1**).
- (3) Abbreviations: MCL = Maximum Contaminant Level, mg/L = milligrams per liter equivalent to ppm, µg/L = micrograms per liter equivalent to ppb

TABLE 3-4  
MCL EXCEEDANCES IN GROUNDWATER EVENT COMPARISON  
Gude Landfill Nature and Extent Study Amendment No.1

Location	Constituent*	MCL	July/Aug 2010	April 2011	Units
MW-4	Trichloroethene	5	1U	<b>5.6</b>	µg/L
MW-6	Vinyl Chloride	2	<b>7</b>	1U	µg/L
MW-7	Nitrate	10	-	<b>14.59</b>	mg/L
MW-7	Trichloroethene	5	2	<b>5.6</b>	µg/L
MW-7	Vinyl Chloride	2	<b>5</b>	1U	µg/L
MW-8	Nitrate	10	-	<b>13.85</b>	mg/L
MW-9	Tetrachloroethene	5	<b>14</b>	5	µg/L
MW-13A	1,2-Dichloropropane	5	<b>6</b>	<b>6.6</b>	µg/L
MW-13A	cis-1,2-Dichloroethene	70	<b>100</b>	<b>96</b>	µg/L
MW-13A	Methylene Chloride	5	<b>10</b>	<b>10</b>	µg/L
MW-13A	Tetrachloroethene	5	<b>35</b>	<b>17</b>	µg/L
MW-13A	Trichloroethene	5	<b>33</b>	<b>23</b>	µg/L
MW-13A	Vinyl Chloride	2	<b>8</b>	<b>14</b>	µg/L
MW-13B	1,2-Dichloropropane	5	<b>9</b>	1U	µg/L
MW-13B	Benzene	5	<b>6</b>	1U	µg/L
MW-13B	cis-1,2-Dichloroethene	70	<b>140</b>	3.9	µg/L
MW-13B	Methylene Chloride	5	<b>11</b>	1U	µg/L
MW-13B	Tetrachloroethene	5	<b>38</b>	1U	µg/L
MW-13B	Trichloroethene	5	<b>38</b>	1U	µg/L
MW-13B	Vinyl Chloride	2	<b>13</b>	1U	µg/L
OB01	Vinyl Chloride	2	<b>4</b>	1U	µg/L
OB015	Vinyl Chloride	2	<b>3</b>	1U	µg/L
OB025	Vinyl Chloride	2	<b>3</b>	1U	µg/L
OB03	1,2-Dichloropropane	5	<b>13</b>	4.1	µg/L
OB03	Benzene	5	<b>6</b>	1U	µg/L
OB03	cis-1,2-Dichloroethene	70	<b>160</b>	38	µg/L
OB03	Tetrachloroethene	5	<b>28</b>	1U	µg/L
OB03	Trichloroethene	5	<b>92</b>	<b>21</b>	µg/L
OB03	Vinyl Chloride	2	<b>23</b>	<b>11</b>	µg/L
OB03A	1,2-Dichloropropane	5	<b>10</b>	1U	µg/L
OB03A	cis-1,2-Dichloroethene	70	<b>110</b>	1U	µg/L
OB03A	Tetrachloroethene	5	<b>15</b>	1U	µg/L
OB03A	Trichloroethene	5	<b>70</b>	1U	µg/L
OB03A	Vinyl Chloride	2	<b>18</b>	1U	µg/L

Notes:

- (1) September data limited to new groundwater monitoring well locations MW-14A, MW-14B, and MW-15 and TGW-1 through TGW-10.
- (2) \*Based on reported concentrations of dissolved metals, it was concluded that the presence of suspended sediment in unfiltered groundwater samples resulted in reported total metals concentrations that are not representative of groundwater conditions. Therefore, total metals concentrations are omitted from this table (see Table 3-1).
- (3) Bolded values exceed MCLs.
- (4) Abbreviations: MCL = Maximum Contaminant Level, µg/L = micrograms per liter = ppb, mg/L = milligrams per liter = ppm, U = Not Detected, J = Value is estimated.

TABLE 3-4  
MCL EXCEEDANCES IN GROUNDWATER EVENT COMPARISON  
Gude Landfill Nature and Extent Study Amendment No.1

Location	Constituent*	MCL	July/Aug 2010	April 2011	Units
OB04A	Methylene Chloride	5	4	<b>7.7</b>	µg/L
OB04A	Tetrachloroethene	5	2	<b>13.0</b>	µg/L
OB04A	Trichloroethene	5	1.07 J	<b>17.0</b>	µg/L
OB04A	Vinyl Chloride	2	2	1U	µg/L
OB08A	Vinyl Chloride	2	<b>3</b>	1U	µg/L
OB10	Trichloroethene	5	<b>16</b>	1U	µg/L
OB10	Vinyl Chloride	2	<b>7</b>	1U	µg/L
OB11	1,1-Dichloroethene	7	0.93 J	<b>25.0</b>	µg/L
OB11	1,2-Dichloropropane	5	<b>8</b>	<b>5.1</b>	µg/L
OB11	Benzene	5	<b>8</b>	<b>5</b>	µg/L
OB11	Cadmium, Dissolved	0.005	-	<b>0.016</b>	mg/L
OB11	cis-1,2-Dichloroethene	70	<b>210</b>	1U	µg/L
OB11	Methylene Chloride	5	<b>28</b>	<b>16</b>	µg/L
OB11	Tetrachloroethene	5	<b>58</b>	<b>26</b>	µg/L
OB11	Trichloroethene	5	<b>48</b>	<b>28</b>	µg/L
OB11	Vinyl Chloride	2	<b>13</b>	<b>14</b>	µg/L
OB11A	1,2-Dichloropropane	5	<b>7</b>	3.7	µg/L
OB11A	1,2-Dibromoethane	0.05	2U	<b>1.8</b>	µg/L
OB11A	Benzene	5	<b>7</b>	3.5	µg/L
OB11A	cis-1,2-Dichloroethene	70	<b>180</b>	<b>76</b>	µg/L
OB11A	Tetrachloroethene	5	<b>46</b>	<b>14</b>	µg/L
OB11A	Trichloroethene	5	<b>41</b>	<b>17</b>	µg/L
OB11A	Vinyl Chloride	2	<b>15</b>	<b>11</b>	µg/L
OB12	1,2-Dichloropropane	5	<b>7</b>	3.3	µg/L
OB12	Methylene Chloride	5	<b>9</b>	<b>10</b>	µg/L
OB12	Tetrachloroethene	5	<b>29</b>	<b>12</b>	µg/L
OB12	Trichloroethene	5	<b>22</b>	<b>9.4</b>	µg/L
OB12	Vinyl Chloride	2	<b>4</b>	1U	µg/L

Notes:

- (1) September data limited to new groundwater monitoring well locations MW-14A, MW-14B, and MW-15 and TGW-1 through TGW-10.
- (2) \*Based on reported concentrations of dissolved metals, it was concluded that the presence of suspended sediment in unfiltered groundwater samples resulted in reported total metals concentrations that are not representative of groundwater conditions. Therefore, total metals concentrations are omitted from this table (see Table 3-1).
- (3) Bolded values exceed MCLs.
- (4) Abbreviations: MCL = Maximum Contaminant Level, µg/L = micrograms per liter = ppb, mg/L = milligrams per liter = ppm, U = Not Detected, J = Value is estimated.

TABLE 4-1  
GROUNDWATER ELEVATION DATA  
Gude Landfill Nature and Extent Study Amendment No.1

Well ID	Reference Elevation (ft MSL)	Depth to Water (feet)	Groundwater Elevation (ft MSL)
OB01	415.90	15.07	400.83
OB02	418.48	18.16	400.32
OB02A	418.61	18.14	400.47
OB03	409.86	26.07	383.79
OB03A	410.06	26.29	383.77
OB04	364.21	5.29	358.92
OB04A	365.37	5.86	359.51
OB06	339.78	11.81	327.97
OB07	329.49	10.23	319.26
OB07A	328.44	9.67	318.77
OB08	325.11	7.45	317.66
OB08A	325.31	7.96	317.35
OB10	325.77	7.29	318.48
OB11	362.56	9.27	353.29
OB11A	361.90	8.96	352.94
OB12	405.01	19.05	385.96
OB015	410.01	23.42	386.59
OB025	361.89	9.01	352.88
OB102	363.17	12.88	350.29
OB105	363.45	3.2	360.25
MW-1	434.00	48.2	385.80
MW-2A	445.53	67.54	377.99
MW-2B	444.45	66.5	377.95
MW-3A	324.54	10.17	314.37
MW-3B	324.73	8.52	316.21
MW-4	324.75	6.8	317.95
MW-6	417.29	16.67	400.62
MW-7	433.81	46.21	387.60
MW-8	410.16	25.83	384.33
MW-9	417.69	20.38	397.31
MW-10	394.03	10.11	383.92

Notes:

- (1) Groundwater elevation data recorded August 30, 2011.
- (2) Stream Gauge elevation references groundwater table (See Figure 4-1 Inferred Groundwater Flow Map).
- (3) Abbreviations: ft= feet, MSL = Mean Sea Level



TABLE 4-1  
GROUNDWATER ELEVATION DATA  
Gude Landfill Nature and Extent Study Amendment No.1

Well ID	Reference Elevation (ft MSL)	Depth to Water (feet)	Groundwater Elevation (ft MSL)
MW-11A	393.45	17.92	375.53
MW-11B	393.40	18.52	374.88
MW-12	397.55	16.31	381.24
MW-13A	373.37	7.24	366.13
MW-13B	373.35	6.22	367.13
MW-14A	412.31	21.13	391.18
MW-14B	412.34	23.38	388.96
MW-15	414.45	5.81	408.64
TGW-01	325.76	4.81	320.95
TGW-02	357.16	4.72	352.44
TGW-03	388.08	4.92	383.16
TGW-04	391.29	5.05	386.24
TGW-05	393.1	6.78	386.32
TGW-06	371.04	3.35	367.69
TGW-07	372.36	3.99	368.37
TGW-08	369.87	3.17	366.70
TGW-09	364.42	2.76	361.66
TGW-10	360.99	3.08	357.91
SG-1	NA	NA	DRY
SG-2	NA	NA	310.85
SG-3	NA	NA	317.58
SG-4	NA	NA	331.1
SG-5	NA	NA	335.08
SG-6	NA	NA	352.66
SG-7	NA	NA	373.8
SG-8	NA	NA	386.46
SG-9	NA	NA	367.39
SG-10	NA	NA	364.62
SG-11	NA	NA	362.77
SG-12	NA	NA	360.31
SG-13	NA	NA	358.63
SG-14	NA	NA	356.89
SG-15	NA	NA	346.25

Notes:

- (1) Groundwater elevation data recorded August 30, 2011.
- (2) Stream Gauge elevation references groundwater table (See Figure 4-1 Inferred Groundwater Flow Map).
- (3) Abbreviations: ft= feet, MSL = Mean Sea Level

TABLE 4-2  
VERTICAL EXTENT OF MCL EXCEEDANCES IN GROUNDWATER  
Gude Landfill Nature and Extent Study Amendment No.1

Well ID	Reference Elevation (ft MSL)	Approximate Surface Elevation (ft MSL)	Total Depth (ft bgs)	Approximate Well Bottom Elevation (ft MSL)	Screen Depth Top (ft bgs)	Screen Depth Bottom (ft bgs)	Screen Elevation Top (ft MSL)	Screen Elevation Bottom (ft MSL)	MCL Exceedance Frequency (July/Aug. 2010)	MCL Exceedance Frequency (April/Sept. 2011)	Designation
OB01	415.90	413	75	338	35	75	378	338	1	0	Southwest
OB02	418.48	415	121	294	71	121	344	294	0	0	Southwest
OB02A	418.61	416	77	339	37	77	379	339	0	0	Southwest
OB03	409.86	407	154	253	104	154	303	253	6	2	Northwest
OB03A	410.06	407	97	310	50	97	357	310	5	0	Northwest
OB04	364.21	361	136	225	86	136	275	225	0	0	Northeast
OB04A	365.37	362	83	279	33	83	329	279	0	3	Northeast
OB06	339.78	337	67	270	26	66	311	271	0	0	Northeast
OB07	329.49	326	81	245	31	81	295	245	0	0	Northeast
OB07A	328.44	325	76	249	26	76	299	249	0	0	Northeast
OB08	325.11	322	109	213	59	109	263	213	1	0	Southeast
OB08A	325.31	322	145	177	95	154	227	168	1	0	Southeast
OB10	325.77	323	67	256	27	67	296	256	2	0	Southeast
OB11	362.56	360	90	270	40	90	320	270	7	8	Southeast
OB11A	361.90	359	64	295	24	64	335	295	6	5	Southeast
OB12	405.01	402	26	376	16	26	386	376	2	3	Southwest
OB015	410.01	407	28	380	18	28	389	379	1	0	Southwest
OB025	361.89	359	15	344	5	15	354	344	1	0	Southeast
OB102	363.17	360	25	336	15	25	345	335	0	0	Northeast
OB105	363.45	360	13	347	5	13	355	347	0	0	Northeast
MW-1B	434.00	432.00	98	334	78	98	354	334	0	0	Northeast
MW-2A	445.53	443.53	78	366	55	75	389	369	0	0	Northeast
MW-2B	444.45	442.45	110	332	88	108	354	334	0	0	Northeast
MW-3A	324.54	322.54	25	298	5	25	318	298	0	0	Southeast
MW-3B	324.73	322.73	96	227	76	96	247	227	0	0	Southeast
MW-4	324.75	322.75	25	298	5	25	318	298	0	1	Southeast
MW-6	417.29	415.29	25	390	5	25	410	390	1	0	Southwest
MW-7	433.81	431.81	53	379	33	53	399	379	1	2	Northwest
MW-8	410.16	408.16	30	378	10	30	398	378	0	1	Northwest
MW-9	417.69	418.19	25	393	5	25	413	393	1	0	Northwest
MW-10	394.03	394.53	25	370	5	25	390	370	0	0	Northwest
MW-11A	393.45	393.95	30	364	10	30	384	364	0	0	Northwest
MW-11B	393.40	393.90	93	301	73	93	321	301	0	0	Northwest

Notes:

- (1) Well Completion Reports were not available for OB06, OB10, OB11A, and OB12. Total depth for these groundwater monitoring wells based on measured total on October 22 and 23, 2009. Screen depths and ranges assumed.
- (2) OBO2 is open with no screen.
- (3) Assumed 3 ft casing stick-up above ground surface for OB groundwater monitoring wells; 2 ft casing stick-up for MW groundwater monitoring wells, except MW-9, MW-10, MW-11A, MW-11B, MW-14A, MW-14B and MW-15 which are flush mounted and 0.5 ft bgs; and 2 ft casing stick-up for TGW groundwater monitoring wells.
- (4) Abbreviations: bgs= below ground surface, ft= feet, MSL = Mean Sea Level, NA = Not Applicable

TABLE 4-2  
 VERTICAL EXTENT OF MCL EXCEEDANCES IN GROUNDWATER  
 Gude Landfill Nature and Extent Study Amendment No.1

Well ID	Reference Elevation (ft MSL)	Approximate Surface Elevation (ft MSL)	Total Depth (ft bgs)	Approximate Well Bottom Elevation (ft MSL)	Screen Depth Top (ft bgs)	Screen Depth Bottom (ft bgs)	Screen Elevation Top (ft MSL)	Screen Elevation Bottom (ft MSL)	MCL Exceedance Frequency (July/Aug. 2010)	MCL Exceedance Frequency (April/Sept. 2011)	Designation
MW-12	397.55	395.55	25	371	5	25	391	371	0	0	Northwest
MW-13A	373.37	371.37	25	346	5	25	366	346	6	6	Northwest
MW-13B	373.35	371.35	95	276	75	95	296	276	7	0	Northwest
MW-14A	412.31	412.81	40	373	30	40	383	373	NA	0	Northwest
MW-14B	412.34	412.84	98	315	88	98	325	315	NA	0	Northwest
MW-15	414.45	414.95	40	375	30	40	385	375	NA	0	Northwest
TGW-1	325.76	327.76	8	320	3	8	325	320	NA	0	Southeast
TGW-2	357.16	359.16	8	351	3	8	356	351	NA	0	Southeast
TGW-3	388.08	390.08	8	382	3	8	387	382	NA	0	Southwest
TGW-4	391.29	393.29	8	385	3	8	390	385	NA	0	Southwest
TGW-5	393.1	395.1	8	387	3	8	392	387	NA	2	Southwest
TGW-6	371.04	373.04	7	366	2	7	371	366	NA	1	Northwest
TGW-7	372.36	374.36	7	367	2	7	372	367	NA	0	Northwest
TGW-8	369.87	371.87	7	365	2	7	370	365	NA	0	Northwest
TGW-9	364.42	366.42	6	360	1	6	365	360	NA	0	Northwest
TGW-10	360.99	362.99	6	357	3	6	360	357	NA	0	Northeast

Notes:

- (1) Well Completion Reports were not available for OB06, OB10, OB11A, and OB12. Total depth for these groundwater monitoring wells based on measured total on October 22 and 23, 2009. Screen depths and ranges assumed.
- (2) OBO2 is open with no screen.
- (3) Assumed 3 ft casing stick-up above ground surface for OB groundwater monitoring wells; 2 ft casing stick-up for MW groundwater monitoring wells, except MW-9, MW-10, MW-11A, MW-11B, MW-14A, MW-14B and MW-15 which are flush mounted and 0.5 ft bgs; and 2 ft casing stick-up for TGW groundwater monitoring wells.
- (4) Abbreviations: bgs= below ground surface, ft= feet, MSL = Mean Sea Level, NA = Not Applicable

TABLE 6-1  
 CONSTITUENTS IDENTIFIED IN LANDFILL GAS AND GROUNDWATER  
 Gude Landfill Nature and Extent Study Amendment No.1

No.	Constituent	Landfill Gas Units	Landfill Gas Concentration	Landfill Gas Concentration	Frequency of Detections in Groundwater	Comments
1	1,1-Dichloroethane	ug/m3	84.9	21.0	6	---
2	1,2-Dichloropropane	ug/m3	61.1	13.2	6	See Note 5
3	Acetone	ug/m3	1,480.0	622.8	7	---
4	Benzene	ug/m3	352.0	110.2	7	See Note 5
5	Chlorobenzene	ug/m3	986.0	214.1	7	---
6	Chloroethane	ug/m3	60.9	23.1	1	---
7	cis-1,2-Dichloroethene	ug/m3	1,140.0	287.5	12	See Note 5
8	Methylene Chloride	ug/m3	83.9	24.2	6	See Note 5
9	Tetrachloroethene	ug/m3	2,170.0	319.9	9	See Note 5
10	Toluene	ug/m3	3,970.0	1,053.9	1	---
11	trans-1,2-Dichloroethene	ug/m3	89.5	22.6	6	---
12	Trichloroethene	ug/m3	635.0	118.2	9	See Note 5
13	Trichlorofluoromethane	ug/m3	71.1	12.7	5	---
14	Vinyl Chloride	ug/m3	1,710.0	669.0	4	See Note 5
15	Total Xylenes	ug/m3	5,680.0	1,307.7	1	---

Notes:

- (1) The landfill gas analyses were performed by SCS Engineers on behalf of the Montgomery County Division of Solid Waste Services in February 2008 in accordance with EPA Method TO-15 for volatile organic compounds (VOCs) in air for the Gude Landfill.
- (2) The groundwater analyses were performed by the Montgomery County Department of Environmental Protection in April 2011 as part of the Semi-Annual Groundwater and Surface Water Sampling Event in accordance with the Groundwater and Surface Water Monitoring Plan for the Gude Landfill.
- (3) Landfill gas concentrations were converted to Parts Per Billion (PPB), which is a standard unit of measure for analyses of groundwater constituents.
- (4) The "frequency of detections in groundwater" refers to the number of groundwater monitoring wells that had detections of the same constituents that were detected in landfill gas during the above referenced analyses at the Gude Landfill.
- (5) For the noted constituents, there were one (1) or more detections in the groundwater monitoring wells that exceeded the Maximum Contaminant Levels (MCLs) in groundwater for the above referenced groundwater analyses at the Gude Landfill.