



TABLE 3-1 SUMMARY OF CONSTRUCTION DATA FOR PREVIOUSLY CONSTRUCTED GROUNDWATER MONITORING WELLS
600 EAST GUDE DRIVE, ROCKVILLE, MARYLAND 20850

Well ID	Permit #	Date Installed	Drilling Method	Diameter (inches)	Reported Total Depth (ft bgs)	Measured Total Depth - 10/22/2009 and 10/23/2009 (ft bgs)	Casing Depth (ft bgs)	Screen Depth (ft bgs)	Historical Depth to GW (ft bgs)	Geology
OB01	MO880058	4/26/88	HSA / Mud Rotary	2	75	76.42	35	35-75	10-15	0-30 feet : unknown, 30-77 feet : rock
OB02	MO880059	5/20/88	Mud Rotary	2	121	113.25	71	no screen - open from 71-121'	10-17	0-21 feet : red clay & saprolite, 21-121 feet : rock
OB02A	MO880060	5/13/88	Mud Rotary	2	77	76.4	37	37-77	10-17	0-26.5 feet : unknown, 26.5-77 feet : rock
OB03	MO880061	6/30/88	Mud Rotary	2	154	133.13	104	104-154	16-24	0-54 feet : red clay & saprolite, 54- 154 feet : rock
OB03A	MO880062	7/8/88	Mud Rotary	2	97	94.55	50	50-97	15-25	0-47 feet : red clay & saprolite, 47-97 feet : rock
OB04	MO880063	7/22/88	Mud Rotary	2	136	131.66	86	86-136	1-3	0-30 feet : red clay & saprolite, 30-36 feet : decomposed rock, 36-136 feet : rock
OB04A	MO880064	7/29/88	Mud Rotary	2	83	81.92	33	33-83	1-4	0-3 feet : fill, 3-33 feet sandy silt with rock & quartz, 33-83 feet : rock
OB06	MO880065 *			2		66.63	Well Completion Report Missing		4-10	
OB07	MO880066 *	8/7/88	Mud Rotary	2	81	142.87	31	31-81	2-10	0-31 feet : saprolite, 31-81 feet : rock
OB07A	MO880067 *	8/30/88	Mud Rotary	2	76	97.17	26	26-76	2-8	0-26 feet : clay & saprolite, 26-76 feet : rock
OB08	MO880068 *	8/26/88	Mud Rotary	2	109	137.01	59	59-109	0-5	0-57 feet : saprolite, 57-109 feet : rock
OB08A	MO880069 *	10/5/88	Mud Rotary	2	145	79.25	95	95-145	1-6	0-40 feet : saprolite, 40-145 feet : rock
OB10	MO880070 *			2		66.82	Well Completion Report Missing		1-5	
OB11	MO880071 *	10/12/88	Mud Rotary	2	90	100.9	40	40-90	4-7	0-40 feet : saprolite, 40-90 feet : rock
OB11A	MO880072*			2		64.3	Well Completion Report Missing		3-7	
OB12	MO880073*			2		25.58	Well Completion Report Missing		12-17	
OB15	*			4	27.5	22.79	Well Completion Report Missing		16-21	
OB25	*			4	15	15.46	Well Completion Report Missing		3-7	
OB102	*			4	24.5	22.2	Well Completion Report Missing		7-11	
OB105	*			4	13	16.5	Well Completion Report Missing		0-2	

Notes:
 GW=groundwater
 ft=feet
 HSA=hollow stem auger
 bgs=below ground surface
 * indicates missing well completion reports or reports that indicate conflicting well identification information and total depth measurements that do not match the total depths on the completion reports
 Reported total depth data is from well completion reports. For wells OB15, OB25, OB102 and OB105 the total reported total depth data was provided by Montgomery County



TABLE 3-2 SUMMARY OF CONSTRUCTION DATA FOR NEW GROUNDWATER MONITORING WELLS
600 EAST GUDE DRIVE, ROCKVILLE, MARYLAND 20850

Well ID	Permit #	Date Installed	Drilling Method	Diameter (inches)	Total Depth (ft bgs)	Casing Depth (ft bgs)	Screen Depth (ft bgs)	Depth to GW - July 2010 (nearest ft bgs)	Geology
MW-1	MO951146	6/4/2010	HSA and Air Rotary	2	98	78	78-98	45	0-40 ft: brown-yellow, dry fine sand and silt, 40-98 ft: rock
MW-2A	MO951137	6/9/2010	HSA and Air Rotary	2	78	55	55-75	62	0-28 ft: brown, dry fine sand and silt, 28-75 ft: rock
MW-2B	MO951138	6/17/2010	HSA and Air Rotary	2	110	89	88-108	61	0-22 ft: brown, dry fine sand and silt, 22-108 ft: rock
MW-3A	MO951140	6/18/2010	HSA	2	25	5	5-25	10	0-25 ft: brown, moist to wet, fine to medium sand and silt
MW-3B	MO951139	6/22/2010	HSA and Air Rotary	2	96	76	76-96	11	0-35 ft: brown, moist to wet fine sand and silt; 35-96 ft: rock
MW-4	MO951151	7/6/2010	HSA	2	25	5	5-25	7	0-25 ft: brown, wet fine sand and silt
MW-6	MO951149	6/22/2010	HSA	2	25	5	5-25	16	0-10 ft: brown, dry fine sand and silt, 10-26 ft: brown and white, wet sand and clay
MW-7	MO951147	6/24/2010	HSA and Air Rotary	2	53	33	33-53	43	0-16 ft: brown and white, moist to dry fine sand and silt, 16-58 ft: rock
MW-8	MO951148	6/23/2010	HSA and Air Rotary	2	30	10	10-30	24	0-25 ft: brown fine sand and silt (moist 0-10 ft), 25-30 ft: rock
MW-9	MO951141	7/6/2010	HSA	2	25	5	5-25	19	0-1 ft: asphalt and base, 1-25 ft: brown sand and silt (moist 15-25 ft)
MW-10	MO951142	7/2/2010	HSA	2	25	5	5-25	8	0-9 ft: gray-brown, dry clay and silt, 9-25 ft: brown, moist fine sand and silt
MW-11A	MO951143	6/30/2010	HSA	2	30	10	10-30	17	0-31 ft: brown dry silt with fine sand (moist 15-31 ft)
MW-11B	MO951136	6/30/2010	HSA and Air Rotary	2	93	73	73-93	18	0-35 ft: brown fine sand and silt (some moist 15-30 ft), 35-93 ft: rock
MW-12	MO951144	7/6/2010	HSA	2	25	5	5-25	15	0-1 ft: asphalt and base, 1-25 ft: brown fine sand and silt (moist 13-25 ft)
MW-13A	MO951150	6/25/2010	HSA	2	25	5	5-25	7	0-25 ft: brown, moist to wet, fine sand and silt
MW-13B	MO951152	6/29/2010	HSA and Air Rotary	2	95	75	75-95	6	0-49 ft: brown fine sand and silt (moist to wet below 6 ft); 49-95 ft: rock

Notes:

GW = groundwater

ft = feet

HSA = hollow stem auger

bgs=below ground surface

TABLE 3-3 SUMMARY OF CONTAMINANTS OF CONCERN THAT EXCEED MAXIMUM CONTAMINANT LEVELS (MCLs) IN HISTORICAL GROUNDWATER SAMPLES

Location	Constituent of Concern	MCL	Units	Maximum Result	Date	Minimum Result	Date
OB01	Trichloroethene	5	µg/L	12.71	10/08/03	0.73	09/21/09
OB01	Vinyl Chloride	2	µg/L	6.02	10/08/03	0.55	09/21/09
OB02	Trichloroethene	5	µg/L	8.04	10/08/03	0.32	09/21/09
OB02A	cis-1,2-Dichloroethene	70	µg/L	189.59	10/08/03	0.56	03/26/08
OB02A	Tetrachloroethene	5	µg/L	12.1	10/08/03	0.45	09/21/09
OB02A	Trichloroethene	5	µg/L	30.84	10/08/03	1.01	03/05/09
OB02A	Vinyl Chloride	2	µg/L	11.19	10/08/03	1.39	04/05/05
OB03	1,2-Dichloropropane	5	µg/L	16.14	03/09/09	6.32	06/02/03
OB03	Benzene	5	µg/L	9.03	03/12/02	2.4	04/05/05
OB03	cis-1,2-Dichloroethene	70	µg/L	164.77	03/09/09	46.23	10/08/03
OB03	Tetrachloroethene	5	µg/L	90.52	03/12/02	0.61	09/21/09
OB03	Trichloroethene	5	µg/L	132.6	03/25/08	47.33	06/02/03
OB03	Vinyl Chloride	2	µg/L	31.39	10/03/07	11.67	04/04/06
OB03A	1,2-Dichloropropane	5	µg/L	16.5	03/12/02	1.27	10/08/03
OB03A	Benzene	5	µg/L	11.29	03/12/02	2.73	04/04/06
OB03A	cis-1,2-Dichloroethene	70	µg/L	168.82	03/25/08	2.57	06/02/03
OB03A	Tetrachloroethene	5	µg/L	102.1	03/12/02	1.65	06/02/03
OB03A	Trichloroethene	5	µg/L	141.41	03/25/08	1.26	06/02/03
OB03A	Vinyl Chloride	2	µg/L	30.58	10/03/07	1.47	04/05/05
OB04A	Vinyl Chloride	2	µg/L	2.12	09/21/09	1.06	04/17/07
OB102	Vinyl Chloride	2	µg/L	2.98	09/21/04	0.1	03/24/04
OB105	Vinyl Chloride	2	µg/L	2.04	10/03/07	0.04	03/23/04
OB08	Tetrachloroethene	5	µg/L	28.07	09/16/02	28.07	09/16/02
OB08	Trichloroethene	5	µg/L	21.35	09/16/02	0.44	09/21/09
OB08	Vinyl Chloride	2	µg/L	2.98	10/02/07	0.04	03/25/04
OB08A	1,2-Dichloropropane	5	µg/L	6.61	09/16/02	0.94	09/24/08
OB08A	Benzene	5	µg/L	10.31	09/16/02	0.52	03/26/08
OB08A	cis-1,2-Dichloroethene	70	µg/L	72.56	09/16/02	2.46	03/25/04
OB08A	Tetrachloroethene	5	µg/L	58.78	09/16/02	1.12	06/03/03
OB08A	Trichloroethene	5	µg/L	61.1	09/16/02	0.84	03/26/08
OB08A	Vinyl Chloride	2	µg/L	6.5	09/21/09	0.06	03/25/04
OB10	cis-1,2-Dichloroethene	70	µg/L	85.97	09/05/01	4.81	04/05/06
OB10	Tetrachloroethene	5	µg/L	12.02	03/13/02	1.03	09/21/09
OB10	Trichloroethene	5	µg/L	50.56	09/05/01	1.31	03/27/08
OB10	Vinyl Chloride	2	µg/L	16.03	10/04/07	2.13	10/09/03
OB11	1,2-Dichloropropane	5	µg/L	8.28	03/09/09	1.25	04/27/01
OB11	Benzene	5	µg/L	10.69	10/03/07	1.07	06/03/03
OB11	cis-1,2-Dichloroethene	70	µg/L	190.55	03/09/09	1.7	09/16/02
OB11	Methylene Chloride	5	µg/L	42.44	09/25/06	2.51	04/04/06
OB11	Tetrachloroethene	5	µg/L	67.92	03/09/09	15.38	04/27/01
OB11	Trichloroethene	5	µg/L	59.1	10/03/07	10.45	04/27/01
OB11	Vinyl Chloride	2	µg/L	20.3	09/21/09	1.75	04/04/06
OB11A	1,2-Dichloropropane	5	µg/L	10.71	03/13/02	1.19	09/16/02
OB11A	Benzene	5	µg/L	17.54	03/13/02	4.7	06/03/03
OB11A	cis-1,2-Dichloroethene	70	µg/L	189.64	10/03/07	13.44	09/16/02

MCL = Maximum Contaminant Level
µg/L = micrograms per liter = ppb

**TABLE 3-3 SUMMARY OF CONTAMINANTS OF CONCERN THAT EXCEED MAXIMUM
CONTAMINANT LEVELS (MCLs) IN HISTORICAL GROUNDWATER SAMPLES**

Location	Constituent of Concern	MCL	Units	Maximum Result	Date	Minimum Result	Date
OB11A	Methylene Chloride	5	µg/L	52.22	03/13/02	1.73	09/24/08
OB11A	Tetrachloroethene	5	µg/L	115.7	03/13/02	15.44	03/25/04
OB11A	Trichloroethene	5	µg/L	101.67	03/13/02	7.41	09/16/02
OB11A	Vinyl Chloride	2	µg/L	18.34	10/03/07	0.96	03/25/04
OB12	1,2-Dichloropropane	5	µg/L	7.25	10/04/07	1.13	04/18/07
OB12	Methylene Chloride	5	µg/L	12.3	09/26/06	1	04/06/05
OB12	Tetrachloroethene	5	µg/L	23.67	10/04/07	4.85	04/06/05
OB12	Trichloroethene	5	µg/L	24.95	10/04/07	6.22	03/10/09
OB12	Vinyl Chloride	2	µg/L	6.99	03/10/09	1.01	04/06/05
OB015	Vinyl Chloride	2	µg/L	18.4	04/18/07	2.78	03/10/09
OB025	Vinyl Chloride	2	µg/L	5.29	10/03/07	0.12	03/30/04

TABLE 5-1: CONCENTRATIONS OF CONSTITUENTS DETECTED IN SUBSURFACE SOIL AND COMPARISON TO MDE RESIDENTIAL CLEANUP STANDARDS FOR SOIL
GUDE LANDFILL

Sample Name:		MW1A-SO-14 to 18	MW2A-SO-12 to 14	MW2B-SO-14 to 16	MW3A-SO- 0 to 2	MW3B-SO- 12 to 14	SO-DUP-2	MW4-SO-2 to 4	MW6-SO-12 to 14	
Depth (ft)		14-18	12-14	14-16	0-2	12-14	12-14	2-4	12-14	
Parent Sample Name:							MW3B-SO- 12 to 14			
Sample Date:		6/3/2010	6/8/2010	6/9/2010	6/18/2010	6/18/2010	6/18/2010	7/6/2010	6/22/2010	
Analyte	MDE Residential Cleanup Standard for Soil ¹	Units								
METALS										
ARSENIC	0.43	mg/kg	2.5	3	1.1	4.5	3.4	3.3	3.1	3.3
BARIUM	1600	mg/kg	19	29	31	39	62	50	40	39
BERYLLIUM	16	mg/kg	2.6 U	2.6 U	2.8 U	3	1.3	3.2	2.3 U	2.6 U
CHROMIUM	23	mg/kg	30	32	31	32	32	28	52	44
COBALT	2.3	mg/kg	11	5.4	6.8	7.5	17	15	16	28
COPPER	310	mg/kg	22	15	9.4	25	56	39	25	55
LEAD	400	mg/kg	7.4	21	8.5	15	14	12	31	14
MERCURY	2.3	mg/kg	0.11 U	0.1 U	0.11 U	0.06	0.09	0.1	0.09 U	0.11 U
NICKEL	160	mg/kg	15	12	16	15	28	23	63	28
VANADIUM	7.8	mg/kg	22	24	21	35	33	31	30	41
ZINC	2300	mg/kg	22	11	11 J	110	91	70	64	37
POLYCYCLIC AROMATIC HYDROCARBONS										
FLUORANTHENE	310	mg/kg	0.2 U	0.2 U	0.19 U	0.2 U	0.23 U	0.22 U	0.16 J	0.21 U
PYRENE	230	mg/kg	0.2 U	0.2 U	0.19 U	0.2 U	0.23 U	0.22 U	0.12 J	0.21 U
POLYCHLORINATED BIPHENYLS										
AROCLOR 1254	0.32	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1.7	0.1 U
PESTICIDES										
4,4-DDE	1.9	mg/kg	0.023 U	0.024 U	0.022 U	0.013 J	0.026 U	0.026 U	0.11 U	0.024 U
DIMETHOATE	1.2	mg/kg	0.039 U	0.039 U	0.038 U	0.044 U	0.042 U	0.039 U	0.041 U	0.041 U
SEMIVOLATILE ORGANIC COMPOUNDS										
BIS(2-ETHYLHEXYL) PHTHALATE	46	mg/kg	0.2 U	0.2 U	0.19 U	0.2 U	0.23 U	0.22 U	2.5	0.21 U
VOLATILE ORGANIC COMPOUNDS										
2-BUTANONE (MEK)	4700	mg/kg	0.022 U	0.022 U	0.021 U	0.022 U	0.022 U	0.024 U	0.02 U	0.017 J
ACETONE	7000	mg/kg	0.077	0.022 U	0.021 U	0.012 J	0.022 U	0.024 U	0.027	0.068

(1) Maryland Department of the Environment (MDE). 2008. Cleanup Standards for Soil and Groundwater. Interim Final Guidance (Update No. 2.1). June.

Bolded and shaded results represent concentrations that exceed MDE Residential Cleanup Standard for Soil.

MDE = Maryland Department of the Environment.

ft = feet

mg/kg = milligram per kilogram

Data Qualifiers:

J = Value is estimated.

U = Not Detected

TABLE 5-1: CONCENTRATIONS OF CONSTITUENTS DETECTED IN SUBSURFACE SOIL AND COMPARISON TO MDE RESIDENTIAL CLEANUP STANDARDS FOR SOIL
GUDE LANDFILL

Analyte	MDE Residential Cleanup Standard for Soil ¹	Units	Sample Name:	MW7-SO-8 to 10	MW8-SO-8 to 10	MW9-SO-20 to 22	MW10-SO-18 to 20	MW11A-SO-14 to 16	MW11B-SO-18 to 20	SO-Dup3	MW12-SO-22 to 24
			Depth (ft)	8-10	8-10	20-22	18-20	14-16	18-20	18-20	22-24
			Parent Sample Name:							MW11B-SO-18 to 20	
			Sample Date:	6/23/2010	6/23/2010	7/6/2010	7/2/2010	6/29/2010	6/30/2010	6/30/2010	7/6/2010
METALS											
ARSENIC	0.43	mg/kg	3.1	3.8	1.9	1.3	1.8	1.3	1.1	1.1	
BARIUM	1600	mg/kg	57	50	97	160	120	270 E	220	110	
BERYLLIUM	16	mg/kg	2.6 U	2.3 U	1.3 J	2.4 U	2.4 U	2.8 U	2.4 U	2.4 U	
CHROMIUM	23	mg/kg	11	35	39	36	29	54	46	26	
COBALT	2.3	mg/kg	36	23	15	14	19	24	18	13	
COPPER	310	mg/kg	63	38	9.1	49	33	65	50	35	
LEAD	400	mg/kg	16	17	13	7.4	15	11	7.5	17	
MERCURY	2.3	mg/kg	0.1 U	0.09 U	0.1 U	0.1 U	0.1 U	0.11 U	0.09 U	0.09 U	
NICKEL	160	mg/kg	26	20	32	27	42	49	36	25	
VANADIUM	7.8	mg/kg	14	44	38	52	43	75	61	23	
ZINC	2300	mg/kg	14	49	100	81	75	130	87	97	
POLYCYCLIC AROMATIC HYDROCARBONS											
FLUORANTHENE	310	mg/kg	0.2 U	0.21 U	0.2 U	0.21 U	0.2 U	0.21 U	0.21 U	0.21 U	
PYRENE	230	mg/kg	0.2 U	0.21 U	0.2 U	0.21 U	0.2 U	0.21 U	0.21 U	0.21 U	
POLYCHLORINATED BIPHENYLS											
AROCLOR 1254	0.32	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
PESTICIDES											
4,4-DDE	1.9	mg/kg	0.023 U	0.024 U	0.023 U	0.024 U	0.024 U	0.024 U	0.024 U	0.024 U	
DIMETHOATE	1.2	mg/kg	0.007 J	0.04 U	0.042 U	0.044 U	0.044 U	0.044 U	0.044 U	0.044 U	
SEMIVOLATILE ORGANIC COMPOUNDS											
BIS(2-ETHYLHEXYL) PHTHALATE	46	mg/kg	0.2 U	0.21 U	0.2 U	0.21 U	0.2 U	0.21 U	0.21 U	0.21 U	
VOLATILE ORGANIC COMPOUNDS											
2-BUTANONE (MEK)	4700	mg/kg	0.021 U	0.023 U	0.021 U	0.022 U	0.021 U	0.023 U	0.023 U	0.021 U	
ACETONE	7000	mg/kg	0.021 U	0.036	0.021 U	0.022 U	0.021 U	0.023 U	0.023 U	0.021 U	

(1) Maryland Department of the Environment (MDE). 2008. Clear

Bolded and shaded results represent concentrations that exceed MI

MDE = Maryland Department of the Environment.

ft = feet

mg/kg = milligram per kilogram

Data Qualifiers:

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U = Not Detected

TABLE 5-1: CONCENTRATIONS OF CONSTITUENTS DETECTED IN SUBSURFACE SOIL AND COMPARISON TO MDE RESIDENTIAL CLEANUP STANDARDS FOR SOIL
GUDE LANDFILL

Analyte	MDE Residential Cleanup Standard for Soil ¹	Units	Sample Name:	SO-DUP4	MW13A-SO-4 to 6	MW13B-SO-2 to 4
			Depth (ft)	22-24	4-6	2-4
			Parent Sample Name:	MW12-SO-22 to 24		
			Sample Date:	7/6/2010	6/25/2010	6/25/2010
METALS						
ARSENIC	0.43	mg/kg	1.1	3.5	3.8	
BARIUM	1600	mg/kg	100	52	110	
BERYLLIUM	16	mg/kg	2.4 U	2.7 U	2.6 U	
CHROMIUM	23	mg/kg	23	33	26	
COBALT	2.3	mg/kg	11	29	25	
COPPER	310	mg/kg	32	61	35	
LEAD	400	mg/kg	15	16	23	
MERCURY	2.3	mg/kg	0.1 U	0.11 U	0.1 U	
NICKEL	160	mg/kg	22	28	19	
VANADIUM	7.8	mg/kg	21	49	64	
ZINC	2300	mg/kg	73	100	68	
POLYCYCLIC AROMATIC HYDROCARBONS						
FLUORANTHENE	310	mg/kg	0.21 U	0.2 U	0.19 U	
PYRENE	230	mg/kg	0.21 U	0.2 U	0.19 U	
POLYCHLORINATED BIPHENYLS						
AROCLOR 1254	0.32	mg/kg	0.1 U	0.1 U	0.1 U	
PESTICIDES						
4,4-DDE	1.9	mg/kg	0.025 U	0.024 U	0.022 U	
DIMETHOATE	1.2	mg/kg	0.047 U	0.04 U	0.037 U	
SEMIVOLATILE ORGANIC COMPOUNDS						
BIS(2-ETHYLHEXYL) PHTHALATE	46	mg/kg	0.21 U	0.2 U	0.19 U	
VOLATILE ORGANIC COMPOUNDS						
2-BUTANONE (MEK)	4700	mg/kg	0.021 U	0.021 U	0.024 U	
ACETONE	7000	mg/kg	0.021 U	0.055	0.084	

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TABLE 5-2: CONCENTRATIONS OF CONSTITUENTS DETECTED IN GROUNDWATER AND COMPARISON TO MAXIMUM CONTAMINANT LIMITS (MCLs)
 GUDE LANDFILL

Analyte	MCL	Units	Well:																		
			MW-1	MW-2A	MW-2B	MW-3A	MW-3B	MW-4	DUP2	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11A	MW-11B	MW-12	MW-13A	MW-13B	OB01	OB02
			Parent Sample Name:	Parent Sample Name:	Parent Sample Name:	Parent Sample Name:	Parent Sample Name:	Parent Sample Name:	Parent Sample Name:	Parent Sample Name:	Parent Sample Name:	Parent Sample Name:	Parent Sample Name:	Parent Sample Name:	Parent Sample Name:	Parent Sample Name:	Parent Sample Name:	Parent Sample Name:	Parent Sample Name:	Parent Sample Name:	Parent Sample Name:
			7/28/2010	7/27/2010	7/27/2010	7/29/2010	7/29/2010	7/30/2010	7/30/2010	7/28/2010	8/2/2010	7/30/2010	8/2/2010	8/2/2010	8/2/2010	8/2/2010	8/2/2010	7/30/2010	7/30/2010	7/28/2010	7/28/2010
HERBICIDES																					
2,4,5-TP (SILVEX)	50	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 J	0.2 U	0.2 U
METALS																					
ANTIMONY	6	µg/L	1 U	1 U	1 U	1 U	0.6 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
ARSENIC	10	µg/L	1 J	2.2	0.8 J	2.6	9.1	0.6 J	0.7 J	3.1	1.2	4.1	3.8	0.9 J	1.1	0.6 J	1.9	2	0.7 J	0.9 J	2.4
BARIIUM	2000	µg/L	6.2	31	8.8	61	210	27	27	280	80	290	200	92	90	24	760	230	57	170	150
BERYLLIUM	4	µg/L	1	1	1	0.6	2	1	1	1	1 U	3.2	0.7 J	1 U	1 U	1 U	1 U	0.9	1	1	1
CADMIUM	5	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.6 J	1 U	1 U	1 U	1.2
CHROMIUM	100	µg/L	19	21	1.2	47	74	0.8 J	0.9 J	8.5	1.8	71	140	7	21	2.9	64	18	1 U	0.7 J	10
COBALT	NSL	µg/L	2.4	7.9	2.2	16	27	1.1	1.1	200	16	110	28	3.4	8.6	0.9	19	16	1 U	11	8.1
COPPER	NSL	µg/L	9.5	16	1.5	48	86	1 U	0.5 J	11	18	78	35	19	19	2.2	39	58	0.8 J	2.6	29
LEAD	NSL	µg/L	1.7	6.8	0.5 J	13	49	1 U	1 U	3.7	1 U	27	26	2.3	4.9	1 U	16	6.5	1 U	1 U	9.6
MERCURY	2	µg/L	0.2	0.1	0.2	0.2	0.2	0.2 U	0.2 U	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2	0.2	0.2	0.2
NICKEL	NSL	µg/L	14	18	3.8	39	64	20	21	33	9.9	100	110	8.6	21	2.1	60	23	2.2	32	13
SELENIUM	50	µg/L	1 U	1 U	1 U	1 U	1.6	1 U	1 U	1.2	1 U	0.7	1 U	1 U	1 U	1 U	0.5 J	1 U	1 U	1 U	1 U
SILVER	NSL	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
THALLIUM	2	µg/L	1 U	1 U	1 U	0.5 J	0.8 J	1 U	1 U	1 U	1 U	1 U	0.7 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TIN	NSL	µg/L	5 U	5 U	5 U	5 U	5.6	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
VANADIUM	NSL	µg/L	5.9	7.3	5 U	35	56	5 U	5 U	6.7	5 U	47	63	18	23	7.3	28	54	5 U	5 U	15
ZINC	NSL	µg/L	26	31	13	90	190	13	17	68	13	280	130	28	50	12	110	70	14	16	43
VOLATILE ORGANIC COMPOUNDS																					
1,1-DICHLOROETHANE	NSL	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	7	2	1 U	1 U	1 U	1 U	1 U	1 U	23	23	2	1 U
1,1-DICHLOROETHENE	7	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-TRICHLOROBENZENE	70	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROETHANE	600	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1	1 U	1 U
1,2-DICHLOROETHANE	5	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2	1	1 U	1 U	1 U	1 U	1 U	1 U	2	3	1 U	1 U
1,2-DICHLOROPROPANE	5	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	6	9	1 U	1 U
1,3-DICHLOROBENZENE	NSL	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-DICHLOROBENZENE	75	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	10	9	1 U	1 U	1 U	1 U	1 U	1 U	5	12	2	1 U
BENZENE	5	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1	2	1 U	1 U	1 U	1 U	1 U	1 U	3	6	1 U	1 U
CHLOROBENZENE	100	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	7	3	0.9 J	1 U	1 U	1 U	1 U	1 U	1	2	2	1 U
CHLOROETHANE	NSL	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	NSL	µg/L	1 U	1 U	1 U	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.8 J	1 U
CIS-1,2-DICHLOROETHENE	70	µg/L	1 U	1 U	1 U	1 U	0.9 J	0.5 J	0.6 J	41	31	1 U	1 U	1 U	1 U	1 U	1 U	100	140	13	1 U
DICHLORODIFLUOROMETHANE	NSL	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	8	8	1 U	1 U
METHYLENE CHLORIDE	5	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	10	11	1 U	1 U
NAPHTHALENE	NSL	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TETRACHLOROETHENE	5	µg/L	1 U	3	3	1 U	1 U	1 U	1 U	1 U	1	1 U	14	1 U	1 U	2	1 U	35	38	1 U	1 U
TRANS-1,2-DICHLOROETHENE	100	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	3	1 U	1 U	1 U	1 U	1 U	1 U	1 U	4	5	1 U	1 U
TRICHLOROETHENE	5	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2	2	1 U	0.7 J	1 U	1 U	1 U	1 U	33	38	0.5 J	1 U
TRICHLOROFUOROMETHANE	NSL	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2	1 U	1 U
VINYL CHLORIDE	2	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	7	5	1 U	1 U	1 U	1 U	1 U	1 U	8	13	4	1 U

Bolded and shaded results represent concentrations that exceed the maximum contaminant levels (MCLs).
 MCL=Maximum Contaminant Level.
 NSL = No Screening Level
 µg/L = micrograms per liter
 Data Qualifiers:
 J = Value is estimated.
 U = Not Detected

TABLE 5-2: CONCENTRATIONS OF CONSTITUENTS DETECTED IN GROUNDWATER AND COMPARISON TO MAXIMUM CONTAMINANT LIMITS (MCLs)
 GUDE LANDFILL

Well:		OB02A	OB03	DUP-4	OB03A	OB04	OB04A	OB06	OB07	OB07A	OB08	OB08A	OB10	OB11	DUP1	OB11A	OB12	OB015	OB025	OB102	OB105	
Parent Sample Name:				OB03											OB11							
Sample Date:		7/28/2010	7/30/2010	7/30/2010	7/30/2010	7/29/2010	7/29/2010	7/26/2010	7/26/2010	7/26/2010	7/27/2010	7/27/2010	7/29/2010	7/26/2010	7/26/2010	7/28/2010	7/28/2010	7/26/2010	7/27/2010	7/30/2010		
Analyte	MCL	Units																				
HERBICIDES																						
2,4,5-TP (SILVEX)	50	µg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1 J	0.2 U	0.2 U	0.2 U	0.2 U	0.1 J	0.1 J	0.1 J	0.2 U	0.2 J	0.2 U	0.2	0.2 J	0.2 U
METALS																						
ANTIMONY	6	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
ARSENIC	10	µg/L	1 J	3.4	3.6	4.8	1.4	1.2	3.7	0.5 J	1 U	1.9	3.2	1.5	1.3	1.3	1.3	0.9 J	1.5	0.9 J	2.8	5.2
BARIIUM	2000	µg/L	350	550	550	560	250	51	220	19	31	120	76	53	22	21	150	13	72	150	340	200
BERYLLIUM	4	µg/L	1	1	1	1	1	1	0.8 J	1 U	1 U	1	1	1	1 U	1 U	1 U	1	1	1 U	1	1.4
CADMIUM	5	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	10	10	3.2	1 U	1 U	0.6 J	1.7	1 U
CHROMIUM	100	µg/L	1 U	2.1	1.8	1 U	0.5 J	1.2	25	1 J	1	0.6 J	0.6 J	0.8 J	1.9	1.5	3	0.6 J	3.5	3.5	8.2	72
COBALT	NSL	µg/L	1 U	61	60	69	0.7 J	1.1	9.4	1 U	1.5	8.1	17	6.7	1.8	1.7	34	1 U	6.8	41	86	46
COPPER	NSL	µg/L	1	4	4.3	1 U	40	26	43	2.4 B	2.9 B	1.7	0.5	1.6	4.5 B	4.2 B	3 B	0.6	2.2	8.5	100	43
LEAD	NSL	µg/L	1 U	1.1	0.8 J	1 U	1 U	1 U	15	1 U	1 U	1 U	1 U	1.4	1 U	1 U	1 U	1 U	0.7 J	1.3	3.5	8.8
MERCURY	2	µg/L	0.2	0.2 U	0.2 U	0.2 U	0.3	0.2	1.9	0.7	1.2	0.2	0.2	0.2	3.5	3.3	0.2	0.2	0.2	0.1	0.2	1.3
NICKEL	NSL	µg/L	9.9	20	20	20	11	18	29	0.8 J	3.6	7.1	6.7	7.2	37	36	25	6.6	10	22	97	110
SELENIUM	50	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.5 J	0.7 J
SILVER	NSL	µg/L	1 U	1 U	1 U	1 U	1 U	0.9 J	2.7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
THALLIUM	2	µg/L	1 U	1.6	1.6	1.1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.5	1 U
TIN	NSL	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	3 J
VANADIUM	NSL	µg/L	5 U	5 U	5 U	5 U	2.6 J	5 U	25	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	8.1	34
ZINC	NSL	µg/L	12	25	29	23	16	28	89	13	11	14	11	14	51	50	27	14	20	46	39	170
VOLATILE ORGANIC COMPOUNDS																						
1,1-DICHLOROETHANE	NSL	µg/L	1 U	50	49	38	1 U	1 U	1 U	1 U	1 U	1	1	6	34	35	29	25	3	2	1 U	1 U
1,1-DICHLOROETHENE	7	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.8 J	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-TRICHLOROBENZENE	70	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.5 J	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROETHANE	600	µg/L	1 U	2	2	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	3	3	2	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROETHANE	5	µg/L	1 U	4	4	3	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	4	4	4	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROPROPANE	5	µg/L	1 U	13	13	10	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	8	8	7	7	1 U	1 U	1 U	1 U
1,3-DICHLOROBENZENE	NSL	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.9 J	0.9 J	0.7 J	1 U	1 U	1 U	1 U	1 U
1,4-DICHLOROBENZENE	75	µg/L	1 U	15	15	12	6	7	1 U	1 U	1 U	3	4	6	14	14	15	5	1 U	3	1 U	3
BENZENE	5	µg/L	1 U	6	6	5	2	2	1 U	1 U	1 U	0.8 J	0.9 J	2	8	8	7	3	1 U	1	1 U	1 U
CHLOROETHANE	100	µg/L	1 U	3	3	4	1	1	1 U	1 U	1 U	4	5	1	44	44	34	2	1 U	3	2	1 U
CHLOROETHANE	NSL	µg/L	1 U	1	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1	1 U	1 U	1 U	1 U
CHLOROFORM	NSL	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	70	µg/L	1 U	160	160	110	20	25	2	2	3	11	16	29	210	210	180	29	0.9 J	11	1	13
DICHLORODIFLUOROMETHANE	NSL	µg/L	1 U	15	14	11	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	4	22	24	17	23	1 U	1 U	1 U
METHYLENE CHLORIDE	5	µg/L	1 U	1 U	1 U	1 U	2	4	1 U	1 U	1 U	1 U	1 U	1 U	28	28	3	9	1 U	1 U	1 U	1 U
NAPHTHALENE	NSL	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1	1	1 U	1 U	1 U	1 U	1 U	1 U
TETRACHLOROETHENE	5	µg/L	1 U	28	28	15	2	2	0.6 J	1	2	1 U	1 U	4	58	59	46	29	1 U	1 U	1 U	1 U
TRANS-1,2-DICHLOROETHENE	100	µg/L	1 U	9	8	6	1 U	1 U	1 U	1 U	1 U	0.9 J	4	6	6	5	2	1 U	1 U	1 U	1 U	1 U
TRICHLOROETHENE	5	µg/L	1 U	92	92	70	2	2	1 U	1 U	0.8 J	1 U	0.8 J	16	48	48	41	22	2	2	1 U	1
TRICHLOROFUOROMETHANE	NSL	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
VINYL CHLORIDE	2	µg/L	1 U	23	22	18	2	2	1 U	1 U	1 U	3	3	7	13	13	15	4	3	3	1 U	1 U

Bolded and shaded results represent concentrations that exceed the maximum contaminant levels (MCLs).
 MCL=Maximum Contaminant Level.
 NSL = No Screening Level
 µg/L = micrograms per liter
 Data Qualifiers:
 J = Value is estimated.
 U = Not Detected

TABLE 5-2: CONCENTRATIONS OF CONSTITUENTS DETECTED IN GROUNDWATER AND COMPARISON TO MAXIMUM CONTAMINANT LIMITS (MCLs)
 GUDE LANDFILL

	Well:	DUP3	
	Parent Sample Name:	OB105	
	Sample Date:	7/30/2010	
Analyte	MCL	Units	
HERBICIDES			
2,4,5-TP (SILVEX)	50	µg/L	0.2 U
METALS			
ANTIMONY	6	µg/L	1 U
ARSENIC	10	µg/L	4.7
BARIUM	2000	µg/L	190
BERYLLIUM	4	µg/L	1.1
CADMIUM	5	µg/L	1 U
CHROMIUM	100	µg/L	58
COBALT	NSL	µg/L	46
COPPER	NSL	µg/L	38
LEAD	NSL	µg/L	7.2
MERCURY	2	µg/L	1
NICKEL	NSL	µg/L	97
SELENIUM	50	µg/L	0.7 J
SILVER	NSL	µg/L	1 U
THALLIUM	2	µg/L	1 U
TIN	NSL	µg/L	3 J
VANADIUM	NSL	µg/L	28
ZINC	NSL	µg/L	140
VOLATILE ORGANIC COMPOUNDS			
1,1-DICHLOROETHANE	NSL	µg/L	1 U
1,1-DICHLOROETHENE	7	µg/L	1 U
1,2,4-TRICHLOROBENZENE	70	µg/L	1 U
1,2-DICHLOROETHANE	600	µg/L	1 U
1,2-DICHLOROETHANE	5	µg/L	1 U
1,2-DICHLOROPROPANE	5	µg/L	1 U
1,3-DICHLOROBENZENE	NSL	µg/L	1 U
1,4-DICHLOROBENZENE	75	µg/L	3
BENZENE	5	µg/L	1 U
CHLOROBENZENE	100	µg/L	1 U
CHLOROETHANE	NSL	µg/L	1 U
CHLOROFORM	NSL	µg/L	1 U
CIS-1,2-DICHLOROETHENE	70	µg/L	13
DICHLORODIFLUOROMETHANE	NSL	µg/L	1 U
METHYLENE CHLORIDE	5	µg/L	1 U
NAPHTHALENE	NSL	µg/L	1 U
TETRACHLOROETHENE	5	µg/L	1 U
TRANS-1,2-DICHLOROETHENE	100	µg/L	1 U
TRICHLOROETHENE	5	µg/L	1
TRICHLOROFLUOROMETHANE	NSL	µg/L	1 U
VINYL CHLORIDE	2	µg/L	0.7 J

Bolded and shaded results represent concentrations that exceed the maximum contaminant levels (MCLs).
 MCL=Maximum Contaminant Level.
 NSL = No Screening Level
 µg/L = micrograms per liter
 Data Qualifiers:
 J = Value is estimated.
 U = Not Detected

TABLE 5-3: MAXIMUM CONTAMINANT LEVEL (MCL) EXCEEDANCES IN GROUNDWATER DURING TWO 2010 SAMPLING EVENTS

Location	Parameter	MCL	Reported Concentration		Units
			July 2010	September 2010	
MW-6	Beryllium, total	0.004	0.001 U	0.007	mg/L
MW-6	Cadmium, total	0.005	0.001 U	0.008	mg/L
MW-6	Vinyl Chloride	2	7	2 U	µg/L
MW-7	Vinyl Chloride	2	5	2 U	µg/L
MW-9	Chromium, total	0.1	0.140	0.059	mg/L
MW-9	Tetrachloroethene	5	14	9	µg/L
MW-10	Chromium, total	0.1	0.007	0.125	mg/L
MW-11A	Chromium, total	0.1	0.021	0.144	mg/L
MW-13A	1,2-Dichloropropane	5	6	2 U	µg/L
MW-13A	cis-1,2-Dichloroethene	70	100	77	µg/L
MW-13A	Methylene Chloride	5	10	8	µg/L
MW-13A	Tetrachloroethene	5	35	22	µg/L
MW-13A	Trichloroethene	5	33	27	µg/L
MW-13A	Vinyl Chloride	2	8	11	µg/L
MW-13B	1,2-Dichloropropane	5	9	7	µg/L
MW-13B	Benzene	5	6	6	µg/L
MW-13B	cis-1,2-Dichloroethene	70	140	101	µg/L
MW-13B	Methylene Chloride	5	11	9	µg/L
MW-13B	Tetrachloroethene	5	38	23	µg/L
MW-13B	Trichloroethene	5	38	32	µg/L
MW-13B	Vinyl Chloride	2	13	17	µg/L
OB01	Vinyl Chloride	2	4	5	µg/L
OB015	Vinyl Chloride	2	3	10	µg/L
OB025	1,2-Dibromo-3-chloropropane	0.2	10 U	143	µg/L
OB025	Vinyl Chloride	2	3	4	µg/L
OB03	1,2-Dibromo-3-chloropropane	0.2	10 U	1.5 J	µg/L
OB03	1,2-Dichloropropane	5	13	10	µg/L
OB03	Benzene	5	6	4.24	µg/L
OB03	cis-1,2-Dichloroethene	70	160	117	µg/L
OB03	Tetrachloroethene	5	28	11	µg/L
OB03	Trichloroethene	5	92	82	µg/L
OB03	Vinyl Chloride	2	23	28	µg/L
OB03A	1,2-Dichloropropane	5	10	11	µg/L
OB03A	cis-1,2-Dichloroethene	70	110	98	µg/L
OB03A	Tetrachloroethene	5	15	18	µg/L
OB03A	Trichloroethene	5	70	19	µg/L
OB03A	Vinyl Chloride	2	18	24	µg/L

MCL = Maximum Contaminant Level

µg/L = micrograms per liter = ppb

mg/L = milligrams per liter = ppm

U = Not Detected

J = Value is estimated.

Bolded values exceed MCLs.

TABLE 5-3: MAXIMUM CONTAMINANT LEVEL (MCL) EXCEEDANCES IN GROUNDWATER DURING TWO 2010 SAMPLING EVENTS

Location	Parameter	MCL	Reported Concentration		Units
			July 2010	September 2010	
OB04	Vinyl Chloride	2	2	2.2	µg/L
OB04A	Vinyl Chloride	2	2	3	µg/L
OB06	Chromium, total	0.1	0.025	0.127	mg/L
OB08	Vinyl Chloride	2	3	3	µg/L
OB08A	Vinyl Chloride	2	3	5	µg/L
OB10	Trichloroethene	5	16	13	µg/L
OB10	Vinyl Chloride	2	7	12	µg/L
OB105	Arsenic, total	0.01	0.0052	0.0109	mg/L
OB105	Mercury, total	0.002	0.0013	0.0031	mg/L
OB105	Vinyl Chloride	2	1 U	3.03	µg/L
OB11	1,2-Dichloropropane	5	8	6	µg/L
OB11	Benzene	5	8	8	µg/L
OB11	Cadmium, total	0.005	0.010	0.009	mg/L
OB11	cis-1,2-Dichloroethene	70	210	74	µg/L
OB11	Mercury, total	0.002	0.0035	0.0025	mg/L
OB11	Methylene Chloride	5	28	24	µg/L
OB11	Tetrachloroethene	5	58	20	µg/L
OB11	Trichloroethene	5	48	34	µg/L
OB11	Vinyl Chloride	2	13	21	µg/L
OB11A	1,2-Dichloropropane	5	7	4	µg/L
OB11A	Benzene	5	7	4	µg/L
OB11A	cis-1,2-Dichloroethene	70	180	82	µg/L
OB11A	Methylene Chloride	5	3	5.5	µg/L
OB11A	Tetrachloroethene	5	46	11	µg/L
OB11A	Trichloroethene	5	41	22	µg/L
OB11A	Vinyl Chloride	2	15	32	µg/L
OB12	1,2-Dichloropropane	5	7	6	µg/L
OB12	Methylene Chloride	5	9	8	µg/L
OB12	Tetrachloroethene	5	29	17	µg/L
OB12	Trichloroethene	5	22	20	µg/L
OB12	Vinyl Chloride	2	4	6	µg/L

MCL = Maximum Contaminant Level

µg/L = micrograms per liter = ppb

mg/L = milligrams per liter = ppm

U = Not Detected

J = Value is estimated.

Bolded values exceed MCLs.

TABLE 5-4: CONCENTRATIONS OF CONSTITUENTS DETECTED IN SURFACE WATER AND COMPARISON TO MDE GROUNDWATER CLEANUP STANDARDS
GUDE LANDFILL

		Sample Name:	SW-1	SW-2	SW-3	SW-4	SW-5	ST015	ST065	ST70	DUP5	ST80	ST120
		Parent Sample Name:									ST70		
		Sample Date:	8/3/2010	8/3/2010	8/3/2010	8/3/2010	8/3/2010	8/3/2010	8/3/2010	8/3/2010	8/3/2010	8/3/2010	8/3/2010
Analyte	MDE Groundwater Cleanup Standard ¹	Units											
METALS													
ARSENIC	10	µg/L	0.7 J	0.8 J	1.5	0.7 J	0.6 J	0.8 J	0.6 J	0.7 J	0.6 J	1.2	0.7 J
BARIUM	2000	µg/L	39	41	230	56	37	60	35	59	58	40	41
CHROMIUM	100	µg/L	1 U	1 U	2.6	1 U	0.6 J	0.7 J	2.6	1 U	1 U	1 U	1 U
COBALT	1.1²	µg/L	1 U	0.5 J	39	0.8 J	1 U	0.8 J	1 U	0.5 J	0.5 J	1 U	1 U
COPPER	1300	µg/L	1 U	0.8 JB	9 B	1.5 B	1.4 B	2.3 B	0.8 JB	2 B	1.6 B	1 JB	0.7 JB
LEAD	15	µg/L	1 U	1 U	1.3	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
NICKEL*	73	µg/L	4.7	5.2	56	6.6	2.6	6.5	2.9	8.1	8.2	2.5	5
THALLIUM	2	µg/L	1 U	1 U	1 U	1 U	1 U	0.5 J	1 U	1 U	1 U	1 U	1 U
VANADIUM*	3.7	µg/L	5 U	5 U	2.6 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
ZINC*	5000	µg/L	11	12	15	14	13	23	11	16	17	12	11
VOLATILE ORGANIC COMPOUNDS													
CIS-1,2-DICHLOROETHENE	70	µg/L	1	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1
TETRACHLOROETHENE	5	µg/L	0.6 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TRICHLOROETHENE	5	µg/L	0.5 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

(1) Maryland Department of the Environment (MDE). 2008. Cleanup Standards for Soil and Groundwater. Interim Final Guidance (Update No. 2.1). June.

(2) There is no MDE Cleanup Standard for cobalt. The EPA Regional Screening Level is used for screening cobalt.

* These metals do not have EPA maximum contaminant levels (MCLs). For all other metals, the MCLs are equal to the MDE Cleanup Standards

Bolded and shaded results represent concentrations that exceed MDE Residential Cleanup Standard for Groundwater.

MDE = Maryland Department of the Environment.

µg/L = micrograms per liter

Data Qualifiers:

B = Analyte detected in method blank.

J = Value is estimated.

U = Not Detected

TABLE 5-5: CONCENTRATIONS OF CONSTITUENTS DETECTED IN SURFACE SOIL AND COMPARISON TO MDE RESIDENTIAL CLEANUP STANDARD FOR SOIL
GUDE LANDFILL

		Sample Name:	SS1-SO-0 to 1	SS2-SO-0 to 1	SS3-SO-0 to 1	SS4-SO-0 to 1	SS5-SO-0 to 1	SS6-SO-0 to 1	SS7-SO-0 to 1
		Parent Sample Name:							
		Sample Date:	6/11/2010	6/11/2010	6/11/2010	6/11/2010	6/11/2010	6/11/2010	6/11/2010
Analyte	MDE Residential Cleanup Standard for Soil ¹	Units							
METALS									
ARSENIC	0.43	mg/kg	3.5	2.3	5.1	5.5	5	5.3	4
BARIUM	1600	mg/kg	82	71	78	140	89	94	100
BERYLLIUM	16	mg/kg	3.4 U	2.8 U	2.9 U	2.9 U	2.3 U	2.9 U	2.7 U
CHROMIUM	23	mg/kg	34	32	40	54	41	47	51
COBALT	2.3	mg/kg	21	27	18	24	20	27	22
COPPER	310	mg/kg	28	39	31	42	31	38	43
LEAD	400	mg/kg	20	13	23	31	23	19	26
MERCURY	2.3	mg/kg	0.13	0.11	0.12	0.07	0.05	0.12	0.05
NICKEL	160	mg/kg	32	25	26	31	26	26	34
VANADIUM	7.8	mg/kg	49	63	49	72	65	66	64
ZINC	2300	mg/kg	60	86	63	91	63	82	89
POLYCYCLIC AROMATIC HYDROCARBONS									
BENZO(A)ANTHRACENE	0.22	mg/kg	0.15 JB	0.2 U	0.22 U	0.21 U	0.19 U	0.21 U	0.22 U
BENZO(A)PYRENE	0.022	mg/kg	0.12 JB	0.2 U	0.22 U	0.21 U	0.19 U	0.21 U	0.22 U
BENZO(B)FLUORANTHENE	0.22	mg/kg	0.11 JB	0.2 U	0.22 U	0.21 U	0.19 U	0.21 U	0.22 U
BENZO(G,H,I)PERYLENE	230	mg/kg	0.22 U	0.2 U	0.22 U	0.21 U	0.19 U	0.21 U	0.22 U
BENZO(K)FLUORANTHENE	2.2	mg/kg	0.12 JB	0.2 U	0.22 U	0.21 U	0.19 U	0.21 U	0.22 U
CHRYSENE	22	mg/kg	0.15 JB	0.2 U	0.22 U	0.21 U	0.19 U	0.21 U	0.22 U
FLUORANTHENE	310	mg/kg	0.26	0.2 U	0.22 U	0.12 J	0.19 U	0.21 U	0.22 U
INDENO(1,2,3-C,D)PYRENE	0.22	mg/kg	0.22 U	0.2 U	0.22 U	0.21 U	0.19 U	0.21 U	0.22 U
PHENANTHRENE	2300	mg/kg	0.18 JB	0.2 U	0.22 U	0.21 U	0.19 U	0.21 U	0.22 U
PYRENE	230	mg/kg	0.25	0.2 U	0.22 U	0.13 J	0.19 U	0.21 U	0.22 U
POLYCHLORINATED BIPHENYLS									
AROCLOR 1260	0.32	mg/kg	0.1 U	0.1 U	1.6	0.1 U	0.1 U	0.1 U	0.1 U
PESTICIDES									
DIMETHOATE	1.2	mg/kg	0.038 J	0.046	0.048	0.045 U	0.036 U	0.042 U	0.043 U
VOLATILE ORGANIC COMPOUNDS									
ACETONE	7000	mg/kg	0.099	0.058	0.057	0.076	0.058	0.059	0.019 J

(1) Maryland Department of the Environment (MDE). 2008. Cleanup Standards for Soil and Groundwater. Interim Final Guidance (Update No. 2.1). June.

Bolded and shaded results represent concentrations that exceed MDE Residential Cleanup Standard for Soil.

MDE = Maryland Department of the Environment.

mg/kg = milligrams per kilogram

Data Qualifiers:

B = Analyte detected in method blank.

J = Value is estimated.

U = Not Detected

TABLE 5-5: CONCENTRATIONS OF CONSTITUENTS DETECTED IN SURFACE SOIL AND COMPARISON TO MDE RESIDENTIAL CLEANUP STANDARD FOR SOIL
GUDE LANDFILL

Analyte	MDE Residential Cleanup Standard for Soil ¹	Units	Sample Name:	SS8-SO-0 to 1	SO-DUP-1	SS9-SO-0 to 1	SS10-SO-0 to 1	SS11-SO-0 to 1
			Parent Sample Name:		SS8-SO-0 to 1			
			Sample Date:	6/11/2010	6/11/2010	6/11/2010	6/11/2010	6/11/2010
METALS								
ARSENIC	0.43	mg/kg	4.9	5.4	4.7	5	3.4	
BARIUM	1600	mg/kg	73	71	160	96	66	
BERYLLIUM	16	mg/kg	2.6 U	2.6	2	3.1	2.5	
CHROMIUM	23	mg/kg	38	41	22	42	51	
COBALT	2.3	mg/kg	18	19	40	17	29	
COPPER	310	mg/kg	40	39	61	41	37	
LEAD	400	mg/kg	25	27	22	25	16	
MERCURY	2.3	mg/kg	0.1	0.06	0.05	0.07	0.1	
NICKEL	160	mg/kg	19	21	23	25	63	
VANADIUM	7.8	mg/kg	89	85	220	150	38	
ZINC	2300	mg/kg	48	48	100	65	70	
POLYCYCLIC AROMATIC HYDROCARBONS								
BENZO(A)ANTHRACENE	0.22	mg/kg	0.22 U	0.22 U	0.22	0.21 U	0.19 U	
BENZO(A)PYRENE	0.022	mg/kg	0.22 U	0.22 U	0.19 JB	0.21 U	0.19 U	
BENZO(B)FLUORANTHENE	0.22	mg/kg	0.22 U	0.22 U	0.18 JB	0.21 U	0.19 U	
BENZO(G,H,I)PERYLENE	230	mg/kg	0.22 U	0.22 U	0.11 JB	0.21 U	0.19 U	
BENZO(K)FLUORANTHENE	2.2	mg/kg	0.22 U	0.22 U	0.17 JB	0.21 U	0.19 U	
CHRYSENE	22	mg/kg	0.22 U	0.22 U	0.23	0.21 U	0.19 U	
FLUORANTHENE	310	mg/kg	0.22 U	0.22 U	0.4	0.21 U	0.19 U	
INDENO(1,2,3-C,D)PYRENE	0.22	mg/kg	0.22 U	0.22 U	0.13 JB	0.21 U	0.19 U	
PHENANTHRENE	2300	mg/kg	0.22 U	0.22 U	0.38	0.21 U	0.19 U	
PYRENE	230	mg/kg	0.22 U	0.22 U	0.39	0.21 U	0.19 U	
POLYCHLORINATED BIPHENYLS								
AROCLOR 1260	0.32	mg/kg	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
PESTICIDES								
DIMETHOATE	1.2	mg/kg	0.046 U	0.043 U	0.04 U	0.04 U	0.038 U	
VOLATILE ORGANIC COMPOUNDS								
ACETONE	7000	mg/kg	0.057	0.058	0.079	0.094	0.035	

(1) Maryland Department of the Environment (MDE). 2008. Cleanup

Bolded and shaded results represent concentrations that exceed MDE Residential Cleanup Standard for Soil.

MDE = Maryland Department of the Environment.

mg/kg = milligrams per kilogram

Data Qualifiers:

B = Analyte detected in method blank.

J = Value is estimated.

U = Not Detected

**TABLE 6-8
ECOLOGICAL RISK SCREENING VALUES
GUDE LANDFILL**

Chemical	Screening value	Source	Comments
Surface Soil			
Arsenic	18 mg/kg	EcoSSL ¹	Plants
Barium	330 mg/kg	EcoSSL ¹	Soil invertebrates
Beryllium	21 mg/kg	EcoSSL ¹	Mammals
Chromium	26 mg/kg	EcoSSL ¹	Birds
Cobalt	13 mg/kg	EcoSSL ¹	Plants
Copper	28 mg/kg	EcoSSL ¹	Birds
Lead	11 mg/kg	EcoSSL ¹	Birds
Mercury	0.1 mg/kg	Efroymson et. al. 1997a ²	
Nickel	38 mg/kg	EcoSSL ¹	Plants
Vanadium	7.8 mg/kg	EcoSSL ¹	Birds
Zinc	46 mg/kg	EcoSSL ¹	Birds
Benz(a)anthracene	NA	NA	Use HPAH
Chrysene	NA	NA	Use HPAH
Fluoranthene	NA	NA	Use HPAH
Phenanthrene	NA	NA	Use LPAH
Pyrene	NA	NA	Use HPAH
High Molecular Weight PAH (HPAH)	1.1 mg/kg	EcoSSL ¹	Mammals
Low Molecular Weight PAH (HPAH)	29 mg/kg	EcoSSL ¹	Soil invertebrates
PCB-1260	40 mg/kg	Efroymson et. al. 1997b ³	
Dimethoate	None Available	NA	
Acetone	None Available	NA	
Surface Water			
Arsenic	3.1 µg/L	USEPA Region 3 BTAG ⁴	Assumed As ⁺⁵
Barium	4 µg/L	USEPA Region 3 BTAG ⁴	
Chromium	11 µg/L	USEPA Region 3 BTAG ⁴	Assumed Cr ⁺⁶
Cobalt	23 µg/L	USEPA Region 3 BTAG ⁴	
Copper	9 µg/L	USEPA Region 3 BTAG ⁴	
Lead	2.5 µg/L	USEPA Region 3 BTAG ⁴	
Nickel	52 µg/L	USEPA Region 3 BTAG ⁴	
Thallium	0.8 µg/L	USEPA Region 3 BTAG ⁴	
Vanadium	20 µg/L	USEPA Region 3 BTAG ⁴	
Zinc	120 µg/L	USEPA Region 3 BTAG ⁴	
2-Butanone	14,000 µg/L	USEPA Region 3 BTAG ⁴	
Acetone	12,000 µg/L	USEPA Region 3 BTAG ⁴	
Chloromethane	NSV	NA	No Screening Value
Cis-1,2-dichloroethene	590 µg/L	USEPA Region 3 BTAG ⁴	
Dichlorodifluoromethane	NSV	NA	No Screening Value
Hexachlorobutadiene	1.3 µg/L	USEPA Region 3 BTAG ⁴	
Methyltertbutylether	11,070 µg/L	USEPA Region 3 BTAG ⁴	
Tetrachloroethene	111 µg/L	USEPA Region 3 BTAG ⁴	
Trichloroethene	21 µg/L	USEPA Region 3 BTAG ⁴	

NSV = No Screening Value
NA = Not Appropriate

TABLE 6-8
ECOLOGICAL RISK SCREENING VALUES
GUDE LANDFILL

1. Lowest Ecological Soil Screening Level found at <http://www.epa.gov/ecotox/ecossl/>, receptor protected shown in “Comments”.
2. Efroymsen, R.A., M.E. Will, G.W. Suter. 1997a. Toxicological Benchmarks for Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and heterotrophic Processes: 1997 Revision. ES/ER/TM-126/R2.
3. Efroymsen, R.A., M.E. Will, G.W. Suter, A.C. Wooten. 1997b. Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Terrestrial Plants: 1997 Revision. Es/ER/TM-85/R3.
4. Freshwater screening values from USEPA Region 3 BTAG listing found at <http://www.epa.gov/reg3hwmd/risk/eco/btag/sbv/fw/screenbench.htm>.

TABLE 6-9
ECOLOGICAL RISK SCREEN-IDENTIFICATION OF COPCs
GUDE LANDFILL

Chemical	Maximum Concentration	Screening Value	Hazard Quotient ¹
Surface Soil (mg/kg)			
Arsenic	5.5	18	0.31
Barium	160	330	0.48
Beryllium	2	21	0.10
Chromium	54	26	2.08
Cobalt	40	13	3.08
Copper	61	28	2.18
Lead	31	11	2.82
Mercury	0.07	0.1	0.70
Nickel	63	38	1.66
Vanadium	220	7.8	28
Zinc	100	46	2.17
High Molecular Weight PAH (HPAH)	1.24	1.1	1.13
Low Molecular Weight PAH (LPAH)	0.38	29	0.01
PCB-1260	1.6	40	0.04
Dimethoate	0.048	NA	
Acetone	0.099	NA	
Surface Water (µg/L)			
Arsenic	1.5	3.1	0.48
Barium	230	4	57.5
Chromium	2.6	11	0.24
Cobalt	39	23	1.70
Copper	9	9	1.00
Lead	1.3	2.5	0.52
Nickel	56	52	1.08
Thallium	0.5	0.8	0.63
Vanadium	2.6	20	0.13
Zinc	23	120	0.19
2-Butanone	0.56	14,000	< 0.01
Acetone	1.49	12,000	< 0.01
Chloromethane	0.87	NSV	NA
Cis-1,2-dichloroethene	1.26	590	0.002
Dichlorodifluoromethane	0.82	NSV	NA
Hexachlorobutadiene	0.55	1.3	0.43
Methyltertbutylether	1.04	11,070	<0.01
Tetrachloroethene	1.1	111	0.01
Trichloroethene	0.9	21	0.04

1. Hazard Quotient (HQ) = maximum detected concentration/screening value. NSV = No Screening Value, NA = Not appropriate. **Bold** contaminants are designated as COPCs.

TABLE 6-10
SURFACE SOIL COPC SUMMARY
GUDE LANDFILL

Chemical	Minimum Detected Concentration (mg/kg)	Maximum Detected Concentration (mg/kg)	Screening Value (mg/kg)	# Samples Exceed SV	MD (Central) Background (mg/kg)	USGS Average (mg/kg)
Chromium	22	54	26	10/11	30	54
Cobalt	17	40	13	11/11	33	91
Copper	28	61	28	10/11	42	25
Lead	13	31	11	11/11	61	19
Nickel	20	63	38	1/11	22	19
Vanadium	38	220	7.8	11/11	35	80
Zinc	38	100	46	11/11	73	60

**TABLE 6-1
OCCURRENCE, DISTRIBUTION AND SELECTION OF CONSTITUENTS OF POTENTIAL CONCERN
GUDE LANDFILL - SURFACE SOIL - RESIDENTIAL**

Scenario Timeframe: Current-Residential Medium: Surface soil Exposure Medium: Surface soil Exposure Point: Gude Landfill

CAS Number	Chemical	Minimum ⁽¹⁾ Concentration	Minimum Qualifier	Maximum ⁽¹⁾ Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration ⁽²⁾ Used for Screening	Background ⁽³⁾ Value	Screening ⁽⁴⁾ Toxicity Value	Potential ⁽⁵⁾ ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for ⁽⁶⁾ Contaminant Deletion or	
INORGANICS																	
7440-38-2	ARSENIC	2.30E+00		5.50E+00		mg/kg	SS4	11/11	4.00E-01 - 7.00E-01	5.50E+00	4.90E+00	4.30E-01	C	3.90E-01	RSL	Yes	ASL
7440-39-3	BARIUM	6.60E+01		1.60E+02		mg/kg	SS9	11/11	2.10E+00 - 3.40E+00	1.60E+02	9.90E+01	1.60E+03	N	1.50E+03	RSL	No	BSL
7440-41-7	BERYLLIUM	2.00E+00		2.00E+00		mg/kg	SS9	1/11	2.10E+00 - 3.40E+00	2.00E+00	1.60E+00	1.60E+01	N	1.60E+01	RSL	No	BSL
7440-47-3	CHROMIUM	2.20E+01		5.40E+01		mg/kg	SS4	11/11	2.10E+00 - 3.40E+00	5.40E+01	3.00E+01	2.30E+01	C	2.90E-01	RSL	Yes	ASL
7440-48-4	COBALT	1.70E+01		4.00E+01		mg/kg	SS9	11/11	2.10E+00 - 3.40E+00	4.00E+01	3.30E+01	NA		2.30E+00	RSL	Yes	ASL
7440-50-8	COPPER	2.80E+01		6.10E+01		mg/kg	SS9	11/11	2.10E+00 - 3.40E+00	6.10E+01	4.20E+01	3.10E+02	N	3.10E+02	RSL	No	BSL
7439-92-1	LEAD	1.30E+01		3.10E+01		mg/kg	SS4	11/11	2.10E+00 - 3.40E+00	3.10E+01	6.10E+01	4.00E+02	N	4.00E+02	RSL	No	BSL
7439-97-6	MERCURY	5.00E-02		7.00E-02		mg/kg	SS10 / SS4	6/11	8.00E-02 - 1.30E-01	7.00E-02	1.40E-01	2.30E+00	N	7.80E-01	RSL	No	BSL
7440-02-0	NICKEL	2.00E+01		6.30E+01		mg/kg	SS11	11/11	2.10E+00 - 3.40E+00	6.30E+01	2.20E+01	1.60E+02	N	1.50E+02	RSL	No	BSL
7440-62-2	VANADIUM	3.80E+01		2.20E+02		mg/kg	SS9	11/11	2.10E+00 - 3.40E+00	2.20E+02	3.50E+01	7.80E+00	N	5.50E-01	RSL	Yes	ASL
7440-66-6	ZINC	4.80E+01		1.00E+02		mg/kg	SS9	11/11	8.20E+00 - 1.30E+01	1.00E+02	7.30E+01	2.30E+03	N	2.30E+03	RSL	No	BSL
POLYCYCLIC AROMATIC HYDROCARBONS																	
56-55-3	BENZO(A)ANTHRACENE	2.20E-01		2.20E-01		mg/kg	SS9	1/11	1.90E-01 - 2.20E-01	2.20E-01	NA	2.20E-01	C	1.50E-01	RSL	No	BSL
218-01-9	CHRYSENE	2.30E-01		2.30E-01		mg/kg	SS9	1/11	1.90E-01 - 2.20E-01	2.30E-01	NA	2.20E+01	C	1.50E+01	RSL	No	BSL
206-44-0	FLUORANTHENE	1.20E-01	J	4.00E-01		mg/kg	SS9	3/11	1.90E-01 - 2.20E-01	4.00E-01	NA	3.10E+02	N	2.30E+02	RSL	No	BSL
85-01-8	PHENANTHRENE	3.80E-01		3.80E-01		mg/kg	SS9	1/11	1.90E-01 - 2.20E-01	3.80E-01	NA	2.30E+03	N	1.70E+03	RSL	No	BSL
129-00-0	PYRENE	1.30E-01	J	3.90E-01		mg/kg	SS9	3/11	1.90E-01 - 2.20E-01	3.90E-01	NA	2.30E+02	N	1.70E+02	RSL	No	BSL
POLYCHLORINATED BIPHENYLS																	
11096-82-5	PCB-1260	1.60E+00		1.60E+00		mg/kg	SS3	1/11	1.00E-01 - 6.00E-01	1.60E+00	NA	3.20E-01	C	2.20E-01	RSL	Yes	ASL
PESTICIDES																	
60-51-5	DIMETHOATE	3.80E-02	J	4.80E-02		mg/kg	SS3	3/11	3.60E-02 - 4.60E-02	4.80E-02	NA	NA		1.20E+00	RSL	No	BSL
VOLATILE ORGANIC COMPOUNDS																	
67-64-1	ACETONE	1.90E-02	J	9.90E-02		mg/kg	SS1	11/11	2.20E-02 - 5.20E-02	9.90E-02	NA	7.00E+03	N	6.10E+03	RSL	No	BSL

(1) Minimum/maximum detected concentration.

(2) Maximum concentration used as screening value.

(3) Background values are not included as part of the COPC selection process. Values presented are the Anticipated Typical Concentration for Central Maryland (ATC). State of Maryland Department of the Environment Cleanup Standards for Soil and Groundwater, June 2008.

(4) Screening Toxicity Value - Taken from State of Maryland Department of the Environment Residential Cleanup Standard for Soil, June 2008.

(5) USEPA Regional Screening Levels, USEPA, May 2010. For non-carcinogens, value shown is equal to 1/10 the residential soil value. For carcinogens the value shown is equal to the

(6) Rationale Codes

Selection Reason:

Deletion Reason:

ASL = Above Screening Toxicity Level

BSL = Below Screening Toxicity Level

NSL = No Screening Toxicity Level

NUT = Essential Nutrient

Definitions:

C = Carcinogenic

COPC = Constituent of Potential Concern

N = Non-Carcinogenic

NA = Not Available

RSL=Regional Screening Level

Data Qualifiers:

J = Value is estimated.

Surrogates used: Chromium(VI) for Total Chromium, Methyl Mercury for Mercury, and Anthracene for Phenanthrene.

**TABLE 6-2
OCCURRENCE, DISTRIBUTION AND SELECTION OF CONSTITUENTS OF POTENTIAL CONCERN
GUDE LANDFILL - SURFACE SOIL - INDUSTRIAL**

Scenario Timeframe: Current-Industrial
Medium: Surface soil
Exposure Medium: Surface soil
Exposure Point: Gude Landfill

CAS Number	Chemical	Minimum ⁽¹⁾ Concentration	Minimum Qualifier	Maximum ⁽¹⁾ Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration ⁽²⁾ Used for Screening	Background ⁽³⁾ Value	Screening ⁽⁴⁾ Toxicity Value	Potential ⁽⁵⁾ ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for ⁽⁶⁾ Contaminant Deletion or Selection
INORGANICS																
7440-38-2	ARSENIC	2.30E+00		5.50E+00		mg/kg	SS4	11/11	4.00E-01 - 7.00E-01	5.50E+00	4.90E+00	1.90E+00 C	1.60E+00	RSL	Yes	ASL
7440-39-3	BARIUM	6.60E+01		1.60E+02		mg/kg	SS9	11/11	2.10E+00 - 3.40E+00	1.60E+02	9.90E+01	2.00E+04 N	1.90E+04	RSL	No	BSL
7440-41-7	BERYLLIUM	2.00E+00		2.00E+00		mg/kg	SS9	1/11	2.10E+00 - 3.40E+00	2.00E+00	1.60E+00	2.00E+02 N	2.00E+02	RSL	No	BSL
7440-47-3	CHROMIUM	2.20E+01		5.40E+01		mg/kg	SS4	11/11	2.10E+00 - 3.40E+00	5.40E+01	3.00E+01	3.10E+02 C	5.60E+00	RSL	No	BSL
7440-48-4	COBALT	1.70E+01		4.00E+01		mg/kg	SS9	11/11	2.10E+00 - 3.40E+00	4.00E+01	3.30E+01	NA	3.00E+01	RSL	Yes	ASL
7440-50-8	COPPER	2.80E+01		6.10E+01		mg/kg	SS9	11/11	2.10E+00 - 3.40E+00	6.10E+01	4.20E+01	4.10E+03 N	4.10E+03	RSL	No	BSL
7439-92-1	LEAD	1.30E+01		3.10E+01		mg/kg	SS4	11/11	2.10E+00 - 3.40E+00	3.10E+01	6.10E+01	1.00E+03 N	8.00E+02	RSL	No	BSL
7439-97-6	MERCURY	5.00E-02		7.00E-02		mg/kg	SS10 / SS4	6/11	8.00E-02 - 1.30E-01	7.00E-02	1.40E-01	3.10E+01 N	1.00E+01	RSL	No	BSL
7440-02-0	NICKEL	2.00E+01		6.30E+01		mg/kg	SS11	11/11	2.10E+00 - 3.40E+00	6.30E+01	2.20E+01	2.00E+03 N	2.00E+03	RSL	No	BSL
7440-62-2	VANADIUM	3.80E+01		2.20E+02		mg/kg	SS9	11/11	2.10E+00 - 3.40E+00	2.20E+02	3.50E+01	1.00E+02 N	7.20E+00	RSL	Yes	ASL
7440-66-6	ZINC	4.80E+01		1.00E+02		mg/kg	SS9	11/11	8.20E+00 - 1.30E+01	1.00E+02	7.30E+01	3.10E+04 N	3.10E+04	RSL	No	BSL
POLYCYCLIC AROMATIC HYDROCARBONS																
56-55-3	BENZO(A)ANTHRACENE	2.20E-01		2.20E-01		mg/kg	SS9	1/11	1.90E-01 - 2.20E-01	2.20E-01	NA	3.90E+00 C	2.10E+00	RSL	No	BSL
218-01-9	CHRYSENE	2.30E-01		2.30E-01		mg/kg	SS9	1/11	1.90E-01 - 2.20E-01	2.30E-01	NA	3.90E+02 C	2.10E+02	RSL	No	BSL
206-44-0	FLUORANTHENE	1.20E-01	J	4.00E-01		mg/kg	SS9	3/11	1.90E-01 - 2.20E-01	4.00E-01	NA	4.10E+03 N	2.20E+03	RSL	No	BSL
85-01-8	PHENANTHRENE	3.80E-01		3.80E-01		mg/kg	SS9	1/11	1.90E-01 - 2.20E-01	3.80E-01	NA	3.10E+04 N	1.70E+04	RSL	No	BSL
129-00-0	PYRENE	1.30E-01	J	3.90E-01		mg/kg	SS9	3/11	1.90E-01 - 2.20E-01	3.90E-01	NA	3.10E+03 N	1.70E+03	RSL	No	BSL
POLYCHLORINATED BIPHENYLS																
11096-82-5	PCB-1260	1.60E+00		1.60E+00		mg/kg	SS3	1/11	1.00E-01 - 6.00E-01	1.60E+00	NA	1.40E+00 C	7.40E-01	RSL	Yes	ASL
PESTICIDES																
60-51-5	DIMETHOATE	3.80E-02	J	4.80E-02		mg/kg	SS3	3/11	3.60E-02 - 4.60E-02	4.80E-02	NA	NA	1.20E+01	RSL	No	BSL
VOLATILE ORGANIC COMPOUNDS																
67-64-1	ACETONE	1.90E-02	J	9.90E-02		mg/kg	SS1	11/11	2.20E-02 - 5.20E-02	9.90E-02	NA	9.20E+04 N	6.30E+04	RSL	No	BSL

(1) Minimum/maximum detected concentration.

(2) Maximum concentration used as screening value.

(3) Background values are not included as part of the COPC selection process. Values presented are the Anticipated Typical Concentration for Central Maryland (ATC). State of Maryland Department of the Environment Cleanup Standards for Soil and Groundwater, June 2008.

(4) Screening Toxicity Value - Taken from State of Maryland Department of the Environment Non-Residential Cleanup Standard for Soil, June 2008.

(5) USEPA Regional Screening Levels, USEPA, May 2010. For non-carcinogens, value shown is equal to 1/10 the industrial soil value. For carcinogens the value shown is equal to the

(6) Rationale Codes

Selection Reason: ASL = Above Screening Toxicity Level
 Deletion Reason: BSL = Below Screening Toxicity Level
 NSL = No Screening Toxicity Level
 NUT = Essential Nutrient

Definitions:

C = Carcinogenic
 COPC = Constituent of Potential Concern
 N = Non-Carcinogenic
 NA = Not Available
 RSL=Regional Screening Level

Data Qualifiers:

J = Value is estimated.

Surrogates used: Chromium(VI) for Total Chromium, Methyl Mercury for Mercury, and Anthracene for Phenanthrene.

**TABLE 6-3
OCCURRENCE, DISTRIBUTION AND SELECTION OF CONSTITUENTS OF POTENTIAL CONCERN
GUDE LANDFILL - SUBSURFACE SOIL - RESIDENTIAL**

Scenario Timeframe: Current-Residential Medium: Subsurface soil Exposure Medium: Subsurface soil Exposure Point: Gude Landfill

CAS Number	Chemical	Minimum ⁽¹⁾ Concentration	Minimum Qualifier	Maximum ⁽¹⁾ Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration ⁽²⁾ Used for Screening	Background ⁽³⁾ Value	Screening ⁽⁴⁾ Toxicity Value	Potential ⁽⁵⁾ ARAR/TBC Value	Potential ARAR/TB C Source	COPC Flag	Rationale for ⁽⁶⁾ Contaminant	
INORGANICS																	
7440-38-2	ARSENIC	1.10E+00		4.50E+00		mg/kg	MW3A	16/16	5.00E-01 - 6.00E-01	4.50E+00	4.90E+00	4.30E-01	C	3.90E-01	RSL	Yes	ASL
7440-39-3	BARIUM	1.90E+01		2.45E+02	E	mg/kg	MW11B	16/16	2.30E+00 - 3.00E+00	2.45E+02	9.90E+01	1.60E+03	N	1.50E+03	RSL	No	BSL
7440-41-7	BERYLLIUM	1.30E+00	J	1.30E+00	J	mg/kg	MW3B / MW9	2/16	2.30E+00 - 3.00E+00	1.30E+00	1.60E+00	1.60E+01	N	1.60E+01	RSL	No	BSL
7440-47-3	CHROMIUM	1.10E+01		5.20E+01		mg/kg	MW4	16/16	2.30E+00 - 3.00E+00	5.20E+01	3.00E+01	2.30E+01	C	2.90E-01	RSL	Yes	ASL
7440-48-4	COBALT	5.40E+00		3.60E+01		mg/kg	MW7	16/16	2.30E+00 - 3.00E+00	3.60E+01	3.30E+01	NA		2.30E+00	RSL	Yes	ASL
7440-50-8	COPPER	9.10E+00		6.30E+01		mg/kg	MW7	16/16	2.30E+00 - 3.00E+00	6.30E+01	4.20E+01	3.10E+02	N	3.10E+02	RSL	No	BSL
7439-92-1	LEAD	7.40E+00		3.10E+01		mg/kg	MW4	16/16	2.30E+00 - 3.00E+00	3.10E+01	6.10E+01	4.00E+02	N	4.00E+02	RSL	No	BSL
7439-97-6	MERCURY	6.00E-02		9.50E-02		mg/kg	MW3B	2/16	9.00E-02 - 1.20E-01	9.50E-02	1.40E-01	2.30E+00	N	7.80E-01	RSL	No	BSL
7440-02-0	NICKEL	1.20E+01		6.30E+01		mg/kg	MW4	16/16	2.30E+00 - 3.00E+00	6.30E+01	2.20E+01	1.60E+02	N	1.50E+02	RSL	No	BSL
7440-62-2	VANADIUM	1.40E+01		6.80E+01		mg/kg	MW11B	16/16	2.30E+00 - 3.00E+00	6.80E+01	3.50E+01	7.80E+00	N	5.50E-01	RSL	Yes	ASL
7440-66-6	ZINC	1.10E+01	J	1.10E+02		mg/kg	MW3A	16/16	9.20E+00 - 1.20E+01	1.10E+02	7.30E+01	2.30E+03	N	2.30E+03	RSL	No	BSL
POLYCYCLIC AROMATIC HYDROCARBONS																	
206-44-0	FLUORANTHENE	1.60E-01	J	1.60E-01	J	mg/kg	MW4	1/16	1.90E-01 - 2.25E-01	1.60E-01	NA	3.10E+02	N	2.30E+02	RSL	No	BSL
129-00-0	PYRENE	1.20E-01	J	1.20E-01	J	mg/kg	MW4	1/16	1.90E-01 - 2.25E-01	1.20E-01	NA	2.30E+02	N	1.70E+02	RSL	No	BSL
POLYCHLORINATED BIPHENYLS																	
11097-69-1	PCB-1254	1.70E+00		1.70E+00		mg/kg	MW4	1/16	1.00E-01 - 5.00E-01	1.70E+00	NA	3.20E-01	N	1.12E-01	RSL	Yes	ASL
PESTICIDES																	
72-55-9	4,4-DDE	1.30E-02	J	1.30E-02	J	mg/kg	MW3A	1/16	2.20E-02 - 1.10E-01	1.30E-02	NA	1.90E+00	C	1.40E+00	RSL	No	BSL
60-51-5	DIMETHOATE	7.00E-03	J	7.00E-03	J	mg/kg	MW7	1/16	3.70E-02 - 4.55E-02	7.00E-03	NA	NA		1.20E+00	RSL	No	BSL
SEMIVOLATILE ORGANIC COMPOUNDS																	
117-81-7	BIS(2-ETHYLHEXYL)	2.50E+00		2.50E+00		mg/kg	MW4	1/16	1.90E-01 - 2.25E-01	2.50E+00	NA	4.60E+01	C	3.50E+01	RSL	No	BSL
VOLATILE ORGANIC COMPOUNDS																	
78-93-3	2-BUTANONE (MEK)	1.70E-02	J	1.70E-02	J	mg/kg	MW6	1/16	1.90E-02 - 2.40E-02	1.70E-02	NA	4.70E+03	N	2.80E+03	RSL	No	BSL
67-64-1	ACETONE	1.20E-02	J	8.40E-02		mg/kg	MW13B	7/16	1.90E-02 - 2.40E-02	8.40E-02	NA	7.00E+03	N	6.10E+03	RSL	No	BSL

(1) Minimum/maximum detected concentration.
(2) Maximum concentration used as screening value.
(3) Background values are not included as part of the COPC selection process. Values presented are the Anticipated Typical Concentration for Central Maryland (ATC). State of Maryland Department of the Environment Cleanup Standards for Soil and Groundwater, June 2008.
(4) Screening Toxicity Value - Taken from State of Maryland Department of the Environment Residential Cleanup Standard for Soil, June 2008.
(5) USEPA Regional Screening Levels, USEPA, May 2010. For non-carcinogens, value shown is equal to 1/10 the residential soil value. For carcinogens the value shown is equal
(6) Rationale Codes
Selection Reason: ASL = Above Screening Toxicity Level
Deletion Reason: BSL = Below Screening Toxicity Level
NSL = No Screening Toxicity Level
NUT = Essential Nutrient

Definitions: C = Carcinogenic
COPC = Constituent of Potential Concern
N = Non-Carcinogenic
NA = Not Available
RSL=Regional Screening Level
Data Qualifiers: E = Reported value is estimated because of presence of interference.
J = Value is estimated.

Surrogates used: Chromium(VI) for Total Chromium, and Methyl Mercury for Mercury.

**TABLE 6-4
OCCURRENCE, DISTRIBUTION AND SELECTION OF CONSTITUENTS OF POTENTIAL CONCERN
GUDE LANDFILL - SUBSURFACE SOIL - INDUSTRIAL**

Scenario Timeframe: Current-Industrial Medium: Subsurface soil Exposure Medium: Subsurface soil Exposure Point: Gude Landfill
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CAS Number	Chemical	Minimum ⁽¹⁾ Concentration	Minimum Qualifier	Maximum ⁽¹⁾ Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration ⁽²⁾ Used for Screening	Background ⁽³⁾ Value	Screening ⁽⁴⁾ Toxicity Value	Potential ⁽⁵⁾ ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for ⁽⁶⁾ Contaminant Deletion or Selection	
INORGANICS																	
7440-38-2	ARSENIC	1.10E+00		4.50E+00		mg/kg	MW3A	16/16	5.00E-01 - 6.00E-01	4.50E+00	4.90E+00	1.90E+00	C	1.60E+00	RSL	Yes	ASL
7440-39-3	BARIUM	1.90E+01		2.45E+02	E	mg/kg	MW11B	16/16	2.30E+00 - 3.00E+00	2.45E+02	9.90E+01	2.00E+04	N	1.90E+04	RSL	No	BSL
7440-41-7	BERYLLIUM	1.30E+00	J	1.30E+00	J	mg/kg	MW3B / MW9	2/16	2.30E+00 - 3.00E+00	1.30E+00	1.60E+00	2.00E+02	N	2.00E+02	RSL	No	BSL
7440-47-3	CHROMIUM	1.10E+01		5.20E+01		mg/kg	MW4	16/16	2.30E+00 - 3.00E+00	5.20E+01	3.00E+01	3.10E+02	C	5.60E+00	RSL	No	BSL
7440-48-4	COBALT	5.40E+00		3.60E+01		mg/kg	MW7	16/16	2.30E+00 - 3.00E+00	3.60E+01	3.30E+01	NA		3.00E+01	RSL	Yes	ASL
7440-50-8	COPPER	9.10E+00		6.30E+01		mg/kg	MW7	16/16	2.30E+00 - 3.00E+00	6.30E+01	4.20E+01	4.10E+03	N	4.10E+03	RSL	No	BSL
7439-92-1	LEAD	7.40E+00		3.10E+01		mg/kg	MW4	16/16	2.30E+00 - 3.00E+00	3.10E+01	6.10E+01	1.00E+03	N	8.00E+02	RSL	No	BSL
7439-97-6	MERCURY	6.00E-02		9.50E-02		mg/kg	MW3B	2/16	9.00E-02 - 1.20E-01	9.50E-02	1.40E-01	3.10E+01	N	1.00E+01	RSL	No	BSL
7440-02-0	NICKEL	1.20E+01		6.30E+01		mg/kg	MW4	16/16	2.30E+00 - 3.00E+00	6.30E+01	2.20E+01	2.00E+03	N	2.00E+03	RSL	No	BSL
7440-62-2	VANADIUM	1.40E+01		6.80E+01		mg/kg	MW11B	16/16	2.30E+00 - 3.00E+00	6.80E+01	3.50E+01	1.00E+02	N	7.20E+00	RSL	No	BSL
7440-66-6	ZINC	1.10E+01	J	1.10E+02		mg/kg	MW3A	16/16	9.20E+00 - 1.20E+01	1.10E+02	7.30E+01	3.10E+04	N	3.10E+04	RSL	No	BSL
POLYCYCLIC AROMATIC HYDROCARBONS																	
206-44-0	FLUORANTHENE	1.60E-01	J	1.60E-01	J	mg/kg	MW4	1/16	1.90E-01 - 2.25E-01	1.60E-01	NA	4.10E+03	N	2.20E+03	RSL	No	BSL
129-00-0	PYRENE	1.20E-01	J	1.20E-01	J	mg/kg	MW4	1/16	1.90E-01 - 2.25E-01	1.20E-01	NA	3.10E+03	N	1.70E+03	RSL	No	BSL
POLYCHLORINATED BIPHENYLS																	
11097-69-1	PCB-1254	1.70E+00		1.70E+00		mg/kg	MW4	1/16	1.00E-01 - 5.00E-01	1.70E+00	NA	1.40E+00	C	7.40E-01	RSL	Yes	ASL
PESTICIDES																	
72-55-9	4,4-DDE	1.30E-02	J	1.30E-02	J	mg/kg	MW3A	1/16	2.20E-02 - 1.10E-01	1.30E-02	NA	8.40E+00	C	5.10E+00	RSL	No	BSL
60-51-5	DIMETHOATE	7.00E-03	J	7.00E-03	J	mg/kg	MW7	1/16	3.70E-02 - 4.55E-02	7.00E-03	NA	NA		1.20E+01	RSL	No	BSL
SEMIVOLATILE ORGANIC COMPOUNDS																	
117-81-7	BIS(2-ETHYLHEXYL)	2.50E+00		2.50E+00		mg/kg	MW4	1/16	1.90E-01 - 2.25E-01	2.50E+00	NA	2.00E+02	C	1.20E+02	RSL	No	BSL
VOLATILE ORGANIC COMPOUNDS																	
78-93-3	2-BUTANONE (MEK)	1.70E-02	J	1.70E-02	J	mg/kg	MW6	1/16	1.90E-02 - 2.40E-02	1.70E-02	NA	6.10E+04	N	2.00E+04	RSL	No	BSL
67-64-1	ACETONE	1.20E-02	J	8.40E-02		mg/kg	MW13B	7/16	1.90E-02 - 2.40E-02	8.40E-02	NA	9.20E+04	N	6.30E+04	RSL	No	BSL

- (1) Minimum/maximum detected concentration.
(2) Maximum concentration used as screening value.
(3) Background values are not included as part of the COPC selection process. Values presented are the Anticipated Typical Concentration for Central Maryland (ATC). State of Maryland Department of the Environment Cleanup Standards for Soil and Groundwater, June 2008.
(4) Screening Toxicity Value - Taken from State of Maryland Department of the Environment Non-Residential Cleanup Standard for Soil, June 2008.
(5) USEPA Regional Screening Levels, USEPA, May 2010. For non-carcinogens, value shown is equal to 1/10 the industrial soil value. For carcinogens the value shown is equal to the
(6) Rationale Codes
Selection Reason: ASL = Above Screening Toxicity Level
Deletion Reason: BSL = Below Screening Toxicity Level
NSL = No Screening Toxicity Level
NUT = Essential Nutrient

Definitions:
C = Carcinogenic
COPC = Constituent of Potential Concern
N = Non-Carcinogenic
NA = Not Available
RSL=Regional Screening Level

Data Qualifiers:
E = Reported value is estimated because of presence of interference.
J = Value is estimated.

Surrogates used: Chromium(VI) for Total Chromium, and Methyl Mercury for Mercury.

**TABLE 6-5
OCCURRENCE, DISTRIBUTION AND SELECTION OF CONSTITUENTS OF POTENTIAL CONCERN
GUDE LANDFILL - SURFACE WATER**

Scenario Timeframe: Current
Medium: Surface water
Exposure Medium: Surface water
Exposure Point: Gude Landfill

CAS Number	Chemical	Minimum ⁽¹⁾ Concentration	Minimum Qualifier	Maximum ⁽¹⁾ Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration ⁽²⁾ Used for Screening	Background ⁽³⁾ Value	Screening ⁽⁴⁾ Toxicity Value	Potential ⁽⁵⁾ ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for ⁽⁶⁾ Contaminant Deletion or Selection
INORGANICS																
7440-38-2	ARSENIC	6.00E-01	J	1.50E+00		ug/L	SW3	10/15	1.00E+00 - 5.00E+00	1.50E+00	NA	1.00E+01 C	4.50E-02	RSL	No	BSL
7440-39-3	BARIUM	3.11E+01		2.30E+02		ug/L	SW3	15/15	1.00E+00 - 5.00E+00	2.30E+02	NA	2.00E+03 N	7.30E+02	RSL	No	BSL
7440-47-3	CHROMIUM	6.00E-01	J	2.60E+00		ug/L	ST065 / SW3	4/15	1.00E+00 - 5.00E+00	2.60E+00	NA	1.00E+02 C	4.30E-02	RSL	No	BSL
7440-48-4	COBALT	5.00E-01	J	3.90E+01		ug/L	SW3	5/15	1.00E+00 - 5.00E+00	3.90E+01	NA	NA N	1.10E+00	RSL	Yes	ASL
7440-50-8	COPPER	7.00E-01	JB	9.00E+00	B	ug/L	SW3	14/15	1.00E+00 - 5.00E+00	9.00E+00	NA	1.30E+03 N	1.50E+02	RSL	No	BSL
7439-89-6	IRON	2.86E+02	J	8.63E+02		ug/L	ST80	5/5	5.00E+02 - 5.00E+02	8.63E+02	NA	2.60E+03 N	2.60E+03	RSL	No	BSL
7439-92-1	LEAD	1.30E+00		1.30E+00		ug/L	SW3	1/15	1.00E+00 - 5.00E+00	1.30E+00	NA	1.50E+01	1.50E+01	RSL	No	BSL
7440-02-0	NICKEL	2.50E+00		5.60E+01		ug/L	SW3	13/15	1.00E+00 - 5.00E+00	5.60E+01	NA	7.30E+01 N	7.30E+01	RSL	No	BSL
7440-28-0	THALLIUM	5.00E-01	J	5.00E-01	J	ug/L	ST015	1/15	1.00E+00 - 5.00E+00	5.00E-01	NA	2.00E+00	NA	NA	No	BSL
7440-62-2	VANADIUM	2.60E+00	J	2.60E+00	J	ug/L	SW3	1/15	5.00E+00 - 5.00E+00	2.60E+00	NA	3.70E+00 N	2.60E-01	RSL	No	BSL
7440-66-6	ZINC	6.61E+00		2.30E+01		ug/L	ST015	12/15	5.00E+00 - 1.00E+01	2.30E+01	NA	1.10E+03 N	1.10E+03	RSL	No	BSL
VOLATILE ORGANIC COMPOUNDS																
78-93-3	2-BUTANONE (MEK)	5.60E-01	J	5.60E-01	J	ug/L	ST15	1/15	2.00E+00 - 1.00E+01	5.60E-01	NA	7.00E+02 N	7.10E+02	RSL	No	BSL
67-64-1	ACETONE	1.49E+00	J	1.49E+00	J	ug/L	ST80	1/15	2.00E+00 - 5.00E+00	1.49E+00	NA	5.50E+02 N	2.20E+03	RSL	No	BSL
74-87-3	CHLOROMETHANE	8.10E-01	J	8.70E-01	J	ug/L	ST120	2/15	1.00E+00 - 2.00E+00	8.70E-01	NA	1.90E+01 N	1.90E+01	RSL	No	BSL
156-59-2	CIS-1,2-DICHLOROETHENE	1.00E+00		1.26E+00	J	ug/L	ST120	4/15	1.00E+00 - 2.00E+00	1.26E+00	NA	7.00E+01 N	3.70E+01	RSL	No	BSL
75-71-8	DICHLORODIFLUOROMETH	8.20E-01	J	8.20E-01	J	ug/L	ST120	1/15	1.00E+00 - 2.00E+00	8.20E-01	NA	NA N	3.90E+01	RSL	No	BSL
87-68-3	HEXACHLOROBUTADIENE	5.50E-01	J	5.50E-01	J	ug/L	ST70	1/15	2.00E+00 - 5.00E+00	5.50E-01	NA	8.60E-01 C	8.60E-01	RSL	No	BSL
1634-04-4	METHYL-TERT-BUTYL	1.04E+00	J	1.04E+00	J	ug/L	ST70	1/5	2.00E+00 - 2.00E+00	1.04E+00	NA	2.00E+01 C	1.20E+01	RSL	No	BSL
127-18-4	TETRACHLOROETHENE	6.00E-01	J	1.10E+00	J	ug/L	ST120	2/15	1.00E+00 - 2.00E+00	1.10E+00	NA	5.00E+00 C	1.10E-01	RSL	No	BSL
79-01-6	TRICHLOROETHENE	5.00E-01	J	9.00E-01	J	ug/L	ST120	2/15	1.00E+00 - 2.00E+00	9.00E-01	NA	5.00E+00 C	2.00E+00	RSL	No	BSL

(1) Minimum/maximum detected concentration.

(2) Maximum concentration used as screening value.

(3) Background values are not included as part of the COPC selection process.

(4) Screening Toxicity Value - Taken from State of Maryland Department of the Environment Residential Cleanup Standard for Groundwater, June 2008.

(5) USEPA Regional Screening Levels, USEPA, May 2010. For non-carcinogens, value shown is equal to 1/10 the tap water value. For carcinogens the value shown is equal to the

(6) Rationale Codes

Selection Reason:

Deletion Reason:

ASL = Above Screening Toxicity Level

BSL = Below Screening Toxicity Level

NSL = No Screening Toxicity Level

NUT = Essential Nutrient

Definitions:

C = Carcinogenic

COPC = Constituent of Potential Concern

N = Non-Carcinogenic

NA = Not Available

RSL=Regional Screening Level

Data Qualifiers:

B = Analyte was identified in the method blank.

J = Value is estimated.

Surrogates used: Chromium(VI) for Total Chromium.

TABLE 6-6
 OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
 GUDE LANDFILL - GROUNDWATER
 GUDE LANDFILL MONITORING WELLS

Scenario Timeframe: Current
 Medium: Groundwater
 Exposure Medium: Groundwater
 Exposure Point: Gude Landfill

CAS Number	Chemical	Minimum ⁽¹⁾ Concentration	Minimum Qualifier	Maximum ⁽¹⁾ Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration ⁽²⁾ Used for Screening	Background ⁽³⁾ Value	Screening ⁽⁴⁾ Toxicity Value	Potential ⁽⁵⁾ ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for ⁽⁶⁾ Contaminant Deletion or Selection	
HERBICIDES																	
93-72-1	2,4,5-TP (SILVEX)	1.00E-01	J	2.00E-01	J	ug/L	OB12 / OB025 /	8/31	2.00E-01 - 2.00E-01	2.00E-01	NA	NA	N	2.90E+01	RSL	No	BSL
INORGANICS																	
7440-36-0	ANTIMONY	6.00E-01	J	6.00E-01	J	ug/L	MW3B	1/62	1.00E+00 - 5.00E+00	6.00E-01	NA	6.00E+00	N	1.50E+00	RSL	No	BSL
7440-38-2	ARSENIC	5.00E-01	J	1.09E+01		ug/L	OB105	35/62	1.00E+00 - 5.00E+00	1.09E+01	NA	1.00E+01	C	4.50E-02	RSL	Yes	ASL
7440-39-3	BARIUM	5.70E+00		5.92E+02		ug/L	OB03	62/62	1.00E+00 - 1.00E+01	5.92E+02	NA	2.00E+03	N	7.30E+02	RSL	No	BSL
7440-41-7	BERYLLIUM	6.00E-01		7.00E+00		ug/L	MW06	7/62	1.00E+00 - 5.00E+00	7.00E+00	NA	4.00E+00	N	7.30E+00	RSL	Yes	ASL
7440-43-9	CADMIUM	6.00E-01	J	1.00E+01		ug/L	OB11	7/62	1.00E+00 - 5.00E+00	1.00E+01	NA	5.00E+00	N	1.80E+00	RSL	Yes	ASL
7440-47-3	CHROMIUM	5.00E-01	J	1.27E+02		ug/L	OB06	39/62	1.00E+00 - 5.00E+00	1.27E+02	NA	1.00E+02	C	4.30E-02	RSL	Yes	ASL
7440-48-4	COBALT	7.00E-01	J	2.70E+02		ug/L	MW06	44/62	1.00E+00 - 5.00E+00	2.70E+02	NA	NA	N	1.10E+00	RSL	Yes	ASL
7440-50-8	COPPER	5.00E-01	J	2.07E+02		ug/L	OB06	61/62	1.00E+00 - 5.00E+00	2.07E+02	NA	1.30E+03	N	1.50E+02	RSL	No	BSL
7439-89-6	IRON	2.28E+02	J	1.11E+05		ug/L	OB06	30/31	5.00E+02 - 5.00E+02	1.11E+05	NA	2.60E+03	N	2.60E+03	RSL	Yes	ASL
7439-92-1	LEAD	5.00E-01	J	5.03E+01		ug/L	OB06	23/62	1.00E+00 - 5.00E+00	5.03E+01	NA	1.50E+01	N	1.50E+01	RSL	Yes	ASL
7439-97-6	MERCURY	1.00E-01		3.40E+00		ug/L	OB11	19/62	2.00E-01 - 2.00E-01	3.40E+00	NA	2.00E+00	N	3.70E+01	RSL	Yes	ASL
7440-02-0	NICKEL	8.00E-01	J	2.28E+02		ug/L	OB105	57/62	1.00E+00 - 5.00E+00	2.28E+02	NA	7.30E+01	N	7.30E+01	RSL	Yes	ASL
7782-49-2	SELENIUM	5.00E-01	J	2.92E+01		ug/L	MW06	16/62	1.00E+00 - 5.00E+00	2.92E+01	NA	5.00E+01	N	1.80E+01	RSL	No	BSL
7440-22-4	SILVER	9.00E-01	J	2.70E+00		ug/L	OB06	2/62	1.00E+00 - 5.00E+00	2.70E+00	NA	1.80E+01	N	1.80E+01	RSL	No	BSL
7440-28-0	THALLIUM	5.00E-01	J	1.60E+00		ug/L	OB03	5/62	1.00E+00 - 5.00E+00	1.60E+00	NA	2.00E+00	N	NA	NA	No	BSL
7440-31-5	TIN	3.00E+00	J	5.60E+00		ug/L	MW3B	2/31	5.00E+00 - 5.00E+00	5.60E+00	NA	2.20E+03	N	2.20E+03	RSL	No	BSL
7440-62-2	VANADIUM	2.60E+00	J	1.36E+02		ug/L	OB105	21/62	5.00E+00 - 5.00E+00	1.36E+02	NA	3.70E+00	N	2.60E-01	RSL	Yes	ASL
7440-66-6	ZINC	5.33E+00		7.65E+02		ug/L	OB105	59/62	5.00E+00 - 1.00E+01	7.65E+02	NA	1.10E+03	N	1.10E+03	RSL	No	BSL
VOLATILE ORGANIC COMPOUNDS																	
75-34-3	1,1-DICHLOROETHANE	8.70E-01	J	4.95E+01		ug/L	OB03	29/59	1.00E+00 - 2.00E+00	4.95E+01	NA	9.00E+01	C	2.40E+00	RSL	No	BSL
75-35-4	1,1-DICHLOROETHENE	5.40E-01	J	1.07E+00	J	ug/L	OB011A	6/59	1.00E+00 - 2.00E+00	1.07E+00	NA	7.00E+00	N	3.40E+01	RSL	No	BSL
87-61-6	1,2,3-TRICHLOROBENZENE	5.10E-01	J	9.68E+00		ug/L	OB01	5/59	1.00E+00 - 2.00E+00	9.68E+00	NA	NA	N	2.90E+00	RSL	No	BSL
120-82-1	1,2,4-TRICHLOROBENZENE	5.00E-01	J	5.78E+00		ug/L	OB01	6/59	1.00E+00 - 2.00E+00	5.78E+00	NA	7.00E+01	N	4.10E+01	RSL	No	BSL
95-63-6	1,2,4-TRIMETHYLBENZENE	5.20E-01	J	5.90E+01	J	ug/L	OB01	2/28	2.00E+00 - 2.00E+00	5.90E+01	NA	NA	N	1.50E+00	RSL	No	BSL
96-12-8	1,2-DIBROMO-3-	1.52E+00	J	1.43E+02		ug/L	OB25	2/59	2.00E+00 - 1.00E+01	1.43E+02	NA	NA	C	3.20E-04	RSL	No	BSL
95-50-1	1,2-DICHLOROBENZENE	5.40E-01	J	3.00E+00		ug/L	OB11	12/59	1.00E+00 - 2.00E+00	3.00E+00	NA	6.00E+02	N	3.70E+01	RSL	No	BSL
107-06-2	1,2-DICHLOROETHANE	6.40E-01	J	4.00E+00		ug/L	OB11A / OB11 /	17/59	1.00E+00 - 2.00E+00	4.00E+00	NA	5.00E+00	C	1.50E-01	RSL	No	BSL
78-87-5	1,2-DICHLOROPROPANE	5.10E-01	J	1.30E+01		ug/L	OB03	20/59	1.00E+00 - 2.00E+00	1.30E+01	NA	5.00E+00	C	3.90E-01	RSL	Yes	ASL
541-73-1	1,3-DICHLOROBENZENE	5.50E-01	J	1.12E+00	J	ug/L	OB03	5/59	1.00E+00 - 2.00E+00	1.12E+00	NA	1.80E+00	N	NA	NA	No	BSL
106-46-7	1,4-DICHLOROBENZENE	9.30E-01	J	1.50E+01		ug/L	OB03 / OB11A	35/59	1.00E+00 - 2.00E+00	1.50E+01	NA	7.50E+01	C	4.30E-01	RSL	No	BSL
78-93-3	2-BUTANONE (MEK)	6.50E-01	J	9.50E+01	J	ug/L	OB011	5/59	2.00E+00 - 1.00E+01	9.50E+01	NA	7.00E+02	N	7.10E+02	RSL	No	BSL
99-87-6	4-ISOPROPYLTOLUENE	5.20E-01	J	1.47E+00	J	ug/L	OB03	2/28	2.00E+00 - 2.00E+00	1.47E+00	NA	NA	N	NA	NA	No	BSL
67-64-1	ACETONE	5.30E-01	J	3.11E+01		ug/L	OB105	11/59	2.00E+00 - 5.00E+00	3.11E+01	NA	5.50E+02	N	2.20E+03	RSL	No	BSL
71-43-2	BENZENE	6.60E-01	J	8.29E+00		ug/L	OB011	30/59	1.00E+00 - 2.00E+00	8.29E+00	NA	5.00E+00	C	4.10E-01	RSL	Yes	ASL
108-90-7	CHLOROBENZENE	5.10E-01	J	4.40E+01		ug/L	OB11	37/59	1.00E+00 - 2.00E+00	4.40E+01	NA	1.00E+02	N	9.10E+00	RSL	No	BSL
75-00-3	CHLOROETHANE	5.50E-01	J	1.64E+00	J	ug/L	OB12	17/59	1.00E+00 - 2.00E+00	1.64E+00	NA	3.60E+00	N	2.10E+03	RSL	No	BSL
67-66-3	CHLOROFORM	7.40E-01	J	1.46E+00		ug/L	MW3A	4/59	1.00E+00 - 2.00E+00	1.46E+00	NA	8.00E+01	C	1.90E-01	RSL	No	BSL
74-87-3	CHLOROMETHANE	5.80E-01	J	1.98E+00	J	ug/L	MW08	9/59	1.00E+00 - 2.00E+00	1.98E+00	NA	1.90E+01	N	1.90E+01	RSL	No	BSL
156-59-2	CIS-1,2-DICHLOROETHENE	5.50E-01	J	2.10E+02		ug/L	OB11	45/59	1.00E+00 - 2.00E+00	2.10E+02	NA	7.00E+01	N	3.70E+01	RSL	Yes	ASL
75-71-8	DICHLORODIFLUOROMETH	7.10E-01	J	1.32E+02		ug/L	OB12	26/59	1.00E+00 - 2.00E+00	1.32E+02	NA	NA	N	3.90E+01	RSL	No	BSL
87-68-3	HEXACHLOROBTADIENE	6.00E-01	J	1.08E+01		ug/L	OB01	8/59	2.00E+00 - 5.00E+00	1.08E+01	NA	8.60E-01	C	8.60E-01	RSL	Yes	ASL
75-09-2	METHYLENE CHLORIDE	5.65E-01	J	2.80E+01		ug/L	OB11	16/59	1.00E+00 - 2.00E+00	2.80E+01	NA	5.00E+00	C	4.80E+00	RSL	Yes	ASL
1634-04-4	METHYL-TERT-BUTYL	6.10E-01	J	5.07E+00		ug/L	MW06	8/28	2.00E+00 - 2.00E+00	5.07E+00	NA	2.00E+01	C	1.20E+01	RSL	No	BSL
91-20-3	NAPHTHALENE	8.60E-01	J	5.95E+00		ug/L	OB01	4/59	1.00E+00 - 2.00E+00	5.95E+00	NA	6.50E-01	C	1.40E-01	RSL	Yes	ASL
104-51-8	N-BUTYLBENZENE	1.05E+00	J	1.16E+00	J	ug/L	OB03	2/28	2.00E+00 - 2.00E+00	1.16E+00	NA	NA	N	NA	NA	No	BSL
135-98-8	SEC-BUTYLBENZENE	5.30E-01	J	7.00E-01	J	ug/L	OB03	2/28	2.00E+00 - 2.00E+00	7.00E-01	NA	NA	N	NA	NA	No	BSL
127-18-4	TETRACHLOROETHENE	5.40E-01	J	5.85E+01		ug/L	OB11	31/59	1.00E+00 - 2.00E+00	5.85E+01	NA	5.00E+00	C	1.10E-01	RSL	Yes	ASL
156-60-5	TRANS-1,2-	6.60E-01	J	8.50E+00		ug/L	OB03	22/59	1.00E+00 - 2.00E+00	8.50E+00	NA	1.00E+02	N	1.10E+01	RSL	No	BSL
79-01-6	TRICHLOROETHENE	5.00E-01	J	9.20E+01		ug/L	OB03	36/59	1.00E+00 - 2.00E+00	9.20E+01	NA	5.00E+00	C	2.00E+00	RSL	Yes	ASL
75-69-4	TRICHLOROFUOROMETHA	1.50E+00	J	3.80E+00		ug/L	OB12	7/59	1.00E+00 - 2.00E+00	3.80E+00	NA	NA	N	1.30E+02	RSL	No	BSL
75-01-4	VINYL CHLORIDE	7.00E-01	J	3.16E+01		ug/L	OB011A	35/59	1.00E+00 - 2.00E+00	3.16E+01	NA	2.00E+00	C	1.60E-02	RSL	Yes	ASL

(1) Minimum/maximum detected concentration.
 (2) Maximum concentration used as screening value.
 (3) Background values are not included as part of the COPC selection process.
 (4) Screening Toxicity Value - Taken from State of Maryland Department of the Environment Residential Cleanup Standard for Groundwater, June 2008.
 (5) USEPA Regional Screening Levels, USEPA, May 2010. For non-carcinogens, value shown is equal to 1/10 the tap water value. For carcinogens the value shown is equal to the tap
 (6) Rationale Codes
 Selection Reason: ASL = Above Screening Toxicity Level
 Deletion Reason: BSL = Below Screening Toxicity Level
 NSL = No Screening Toxicity Level
 NUT = Essential Nutrient

Definitions: C = Carcinogenic
 COPC = Chemical of Potential Concern
 N = Non-Carcinogenic
 NA = Not Applicable
 RSL=Regional Screening Level
 Data Qualifiers: J = Value is estimated.

Surrogates used: Chromium(VI) for Total Chromium, and Methyl Mercury for Mercury.

**TABLE 6-7
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
GUDE LANDFILL - GROUNDWATER
DERWOOD STATION MONITORING WELLS**

Scenario Timeframe: Current Medium: Groundwater Exposure Medium: Groundwater Exposure Point: Derwood Station

CAS Number	Chemical	Minimum ⁽¹⁾ Concentration	Minimum Qualifier	Maximum ⁽¹⁾ Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration ⁽²⁾ Used for Screening	Background ⁽³⁾ Value	Screening ⁽⁴⁾ Toxicity Value	Potential ⁽⁵⁾ ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for ⁽⁶⁾ Contaminant Deletion or Selection
INORGANICS																
7440-38-2	ARSENIC	6.00E-01	J	3.80E+00		ug/L	MW9	5/10	1.00E+00 - 5.00E+00	3.80E+00	NA	1.00E+01 C	4.50E-02	RSL	No	BSL
7440-39-3	BARIUM	2.40E+01		1.49E+03		ug/L	MW10	10/10	1.00E+00 - 1.00E+01	1.49E+03	NA	2.00E+03 N	7.30E+02	RSL	No	BSL
7440-41-7	BERYLLIUM	7.00E-01	J	7.00E-01	J	ug/L	MW9	1/10	1.00E+00 - 5.00E+00	7.00E-01	NA	4.00E+00 N	7.30E+00	RSL	No	BSL
7440-43-9	CADMIUM	6.00E-01	J	6.00E-01	J	ug/L	MW12	1/10	1.00E+00 - 5.00E+00	6.00E-01	NA	5.00E+00 N	1.80E+00	RSL	No	BSL
7440-47-3	CHROMIUM	2.90E+00		1.44E+02		ug/L	MW11A	10/10	1.00E+00 - 5.00E+00	1.44E+02	NA	1.00E+02 C	4.30E-02	RSL	Yes	ASL
7440-48-4	COBALT	9.00E-01		6.95E+01		ug/L	MW11A	10/10	1.00E+00 - 5.00E+00	6.95E+01	NA	NA N	1.10E+00	RSL	Yes	ASL
7440-50-8	COPPER	2.20E+00		1.97E+02		ug/L	MW10	10/10	1.00E+00 - 5.00E+00	1.97E+02	NA	1.30E+03 N	1.50E+02	RSL	No	BSL
7439-89-6	IRON	6.97E+03		2.01E+05		ug/L	MW10	5/5	5.00E+02 - 5.00E+02	2.01E+05	NA	2.60E+03 N	2.60E+03	RSL	Yes	ASL
7439-92-1	LEAD	2.30E+00		6.16E+01		ug/L	MW12	8/10	1.00E+00 - 5.00E+00	6.16E+01	NA	1.50E+01 N	1.50E+01	RSL	Yes	ASL
7439-96-5	MANGANESE	1.67E+02		3.59E+03		ug/L	MW10	5/5	5.00E+00 - 5.00E+00	3.59E+03	NA	7.30E+01 N	8.80E+01	RSL	Yes	ASL
7440-02-0	NICKEL	2.10E+00		1.45E+02		ug/L	MW11A	10/10	1.00E+00 - 5.00E+00	1.45E+02	NA	7.30E+01 N	7.30E+01	RSL	Yes	ASL
7782-49-2	SELENIUM	5.00E-01	J	8.50E+00		ug/L	MW10	4/10	1.00E+00 - 5.00E+00	8.50E+00	NA	5.00E+01 N	1.80E+01	RSL	No	BSL
7440-28-0	THALLIUM	7.00E-01	J	7.00E-01	J	ug/L	MW9	1/10	1.00E+00 - 5.00E+00	7.00E-01	NA	2.00E+00 N	NA	NA	No	BSL
7440-62-2	VANADIUM	7.30E+00		1.89E+02		ug/L	MW10	10/10	5.00E+00 - 5.00E+00	1.89E+02	NA	3.70E+00 N	2.60E-01	RSL	Yes	ASL
7440-66-6	ZINC	1.20E+01		3.37E+02		ug/L	MW10	10/10	5.00E+00 - 1.00E+01	3.37E+02	NA	1.10E+03 N	1.10E+03	RSL	No	BSL
VOLATILE ORGANIC COMPOUNDS																
75-71-8	DICHLORODIFLUOROMET	5.30E-01	J	5.48E+00		ug/L	MW11B	3/10	1.00E+00 - 2.00E+00	5.48E+00	NA	NA N	3.90E+01	RSL	No	BSL
127-18-4	TETRACHLOROETHENE	9.70E-01	J	1.40E+01		ug/L	MW9	4/10	1.00E+00 - 2.00E+00	1.40E+01	NA	5.00E+00 C	1.10E-01	RSL	Yes	ASL
79-01-6	TRICHLOROETHENE	7.00E-01	J	7.30E-01	J	ug/L	MW9	2/10	1.00E+00 - 2.00E+00	7.30E-01	NA	5.00E+00 C	2.00E+00	RSL	No	BSL

(1) Minimum/maximum detected concentration.

(2) Maximum concentration used as screening value.

(3) Background values are not included as part of the COPC selection process.

(4) Screening Toxicity Value - Taken from State of Maryland Department of the Environment Residential Cleanup Standard for Groundwater, June 2008.

(5) USEPA Regional Screening Levels, USEPA, May 2010. For non-carcinogens, value shown is equal to 1/10 the tap water value. For carcinogens the value shown is equal to the tap

(6) Rationale Codes

Selection Reason:

Deletion Reason:

ASL = Above Screening Toxicity Level

BSL = Below Screening Toxicity Level

NSL = No Screening Toxicity Level

NUT = Essential Nutrient

Definitions:

C = Carcinogenic

COPC = Chemical of Potential Concern

N = Non-Carcinogenic

NA = Not Applicable

RSL=Regional Screening Level

Data Qualifiers:

J = Value is estimated.

Surrogates used: Chromium(VI) for Total Chromium, and Methyl Mercury for Mercury.