

SCHEDULE 3.1 – PART 1^{1,2}

Notes

- 1 All values in µg/g unless otherwise stated.
- 2 NS – No Standard.

MATRIX 1 – NUMERICAL SOIL STANDARDS ANTHRACENE (CHEMICAL ABSTRACT SERVICE NUMBER 120-12-7)

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WLN)	Wildlands Reverted (WLR)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RLLD)	Residential High Density (RLHD)	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION Intake of contaminated soil Groundwater used for drinking water	25 000 NS	25 000 NS	10 000 NS	25 000 NS	10 000 NS	25 000 NS	75 000 NS	> 1 000 mg/g NS	
ENVIRONMENTAL PROTECTION Toxicity to soil invertebrates and plants Livestock ingesting soil and fodder Major microbial functional impairment Groundwater flow to surface water used by aquatic life Groundwater used for livestock watering Groundwater used for irrigation	1.5 NS	2.5 NS	2.5 NS	2.5 NS	2.5 NS	30 NS	30 NS	30 NS	

**MATRIX 2 – NUMERICAL SOIL STANDARDS
ARSENIC (CHEMICAL ABSTRACT SERVICE NUMBER 7440-38-2)**

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WL_N)	Wildlands Reverted (WL_R)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RL_{LD})	Residential High Density (RL_{HD})	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION									
Intake of contaminated soil	40	40	20	40	20	40	150	400	
Groundwater used for drinking water	10	10	10	10	10	10	10	10	
ENVIRONMENTAL PROTECTION									
Toxicity to soil invertebrates and plants	15	25	25	25	25	40	40	40	
Livestock ingesting soil and fodder			25						
Major microbial functional impairment			NS						
Groundwater flow to surface water used by aquatic life									
Freshwater	10	10	10	10	10	10	10	10	
Marine	10	10	10	10	10	10	10	10	
Groundwater used for livestock watering			10						
Groundwater used for irrigation			10	10	10	10			

**MATRIX 3 – NUMERICAL SOIL STANDARDS
BARIUM (CHEMICAL ABSTRACT SERVICE NUMBER 7440-39-3)**

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WL _N)	Wildlands Reverted (WL _R)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RL _{LD})	Residential High Density (RL _{HD})	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION Intake of contaminated soil	15 000	15 000	8 500	15 000	8 500	15 000	50 000	> 1 000 mg/g	
Groundwater used for drinking water	350	350	350	350	350	350	350	350	
ENVIRONMENTAL PROTECTION Toxicity to soil invertebrates and plants	350	700	700	700	700	1 500	1 500	1 500	
Livestock ingesting soil and fodder			400						
Major microbial functional impairment			NS						
Groundwater flow to surface water used by aquatic life									
Freshwater	3 500	3 500	3 500	3 500	3 500	3 500	3 500	3 500	
Marine	1 500	1 500	1 500	1 500	1 500	1 500	1 500	1 500	
Groundwater used for livestock watering			NS						
Groundwater used for irrigation			NS	NS	NS	NS			

MATRIX 4 – NUMERICAL SOIL STANDARDS¹
BENZENE (CHEMICAL ABSTRACT SERVICE NUMBER 71-43-2)

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WL _N)	Wildlands Reverted (WL _R)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RL _{LD})	Residential High Density (RL _{HD})	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION Intake of contaminated soil	350	350	150	350	150	350	1 000	6 500	
Groundwater used for drinking water	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	
ENVIRONMENTAL PROTECTION Toxicity to soil invertebrates and plants	35	100	100	100	100	250	250	250	
Livestock ingesting soil and fodder			NS						
Major microbial functional impairment			NS						
Groundwater flow to surface water used by aquatic life									
Freshwater	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
Marine	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	
Groundwater used for livestock watering			NS						
Groundwater used for irrigation			NS	NS	NS	NS			

MATRIX 5 – NUMERICAL SOIL STANDARDS
BENZO(A)PYRENE (CHEMICAL ABSTRACT SERVICE NUMBER 50-32-8)

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WLN)	Wildlands Reverted (WLR)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RLD)	Residential High Density (RLHD)	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION Intake of contaminated soil Groundwater used for drinking water	10	10	5	10	5	10	30	50	
	NS	NS	NS	NS	NS	NS	NS	NS	
ENVIRONMENTAL PROTECTION Toxicity to soil invertebrates and plants Livestock ingesting soil and fodder Major microbial functional impairment Groundwater flow to surface water used by aquatic life Groundwater used for livestock watering Groundwater used for irrigation	15	20	20	20	20	70	70	70	
			NS		NS				
			NS		NS				
	NS	NS	NS	NS	NS	NS	NS	NS	
			NS	NS					

MATRIX 6 – NUMERICAL SOIL STANDARDS

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WL _N)	Wildlands Reverted (WL _R)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RL _{LD})	Residential High Density (RL _{HD})	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION	Intake of contaminated soil	150	85	150	85	150	500	15 000	
	Groundwater used for drinking water								
	pH < 5.5	1	1	1	1	1	1	1	1
	pH 5.5 – < 6.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1
	pH 6.0 – < 6.5	4	4	4	4	4	4	4	1
	pH 6.5 – < 7.0	20	20	20	20	20	20	20	1
	pH 7.0 – < 7.5	150	150	150	150	150	150	150	1
	pH 7.5 – < 8.0	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1
pH ≥ 8.0	2 500	2 500	2 500	2 500	2 500	2 500	2 500	1	
ENVIRONMENTAL PROTECTION									
	Toxicity to soil invertebrates and plants	75	150	150	150	150	350	350	
	Livestock ingesting soil and fodder			NS					
	Major microbial functional impairment			NS					
	Groundwater flow to surface water used by aquatic life								
	Freshwater								
	pH < 6.5	1	1	1	1	1	1	1	1
	pH 6.5 – < 7.0	4	4	4	4	4	4	4	1
pH 7.0 – < 7.5	30	30	30	30	30	30	30	1	
pH 7.5 – < 8.0	250	250	250	250	250	250	250	1	

pH ≥ 8.0	500	500	500	500	500	500	500	1
Marine								
pH < 5.0	85	85	85	85	85	85	85	1
pH 5.0 – < 5.5	100	100	100	100	100	100	100	1
pH 5.5 – < 6.0	200	200	200	200	200	200	200	1
pH 6.0 – < 6.5	550	550	550	550	550	550	550	1
pH 6.5 – < 7.0	2 500	2 500	2 500	2 500	2 500	2 500	2 500	1
pH 7.0 – < 7.5	20 000	20 000	20 000	20 000	20 000	20 000	20 000	1
pH 7.5 – < 8.0	150 000	150 000	150 000	150 000	150 000	150 000	150 000	1
pH ≥ 8.0	350 000	350 000	350 000	350 000	350 000	350 000	350 000	1
Groundwater used for livestock watering								
pH < 5.0								1
pH 5.0 – < 5.5								1
pH 5.5 – < 6.0								1
pH 6.0 – < 6.5								1
pH 6.5 – < 7.0								1
pH 7.0 – < 7.5								1
pH 7.5 – < 8.0								1
pH ≥ 8.0								1
Groundwater used for irrigation								
pH < 5.0								1
pH 5.0 – < 5.5								1
pH 5.5 – < 6.0								1
pH 6.0 – < 6.5								1
pH 6.5 – < 7.0								1
pH 7.0 – < 7.5								1
pH 7.5 – < 8.0								1
pH ≥ 8.0								1

Notes

1 The pH is the pH of the soil at a site.

MATRIX 7 – NUMERICAL SOIL STANDARDS

[illegible]

pH 6.0 – < 6.5	2	2	2	2	2	2	2	2	1
pH 6.5 – < 7.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	1
pH 7.0 – < 7.5	15	15	15	15	15	15	15	15	1
pH 7.5 – < 8.0	95	95	95	95	95	95	95	95	1
pH ≥ 8.0	200	200	200	200	200	200	200	200	1
Groundwater used for livestock watering									
pH < 5.0						4.5			1
pH 5.0 – < 5.5						6			1
pH 5.5 – < 6.0						8.5			1
pH 6.0 – < 6.5						10			1
pH 6.5 – < 7.0						20			1
pH 7.0 – < 7.5						75			1
pH 7.5 – < 8.0						500			1
pH ≥ 8.0						1 000			1
Groundwater used for irrigation									
pH < 7.0						1	1	1	1
pH 7.0 – < 7.5						4.5	4.5	4.5	1
pH 7.5 – < 8.0						30	30	30	1
pH ≥ 8.0						70	70	70	1

Notes

- 1 The pH is the pH of the soil at a site.
- 2 Standard varies with receiving water hardness (H). H = 150 to < 210 mg/L as CaCO₃ is assumed. If the receiving water hardness is outside of this specified range, modify the standard in accordance with a director's protocol.

MATRIX 8 – NUMERICAL SOIL STANDARDS
CHLORIDE ION (CHEMICAL ABSTRACT SERVICE NUMBER 16887-00-6)

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WLN)	Wildlands Reverted (WLR)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RLD)	Residential High Density (RLHD)	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION Intake of contaminated soil	> 1 000 mg/g	> 1 000 mg/g	> 1 000 mg/g	> 1 000 mg/g	> 1 000 mg/g	> 1 000 mg/g	> 1 000 mg/g	> 1 000 mg/g	
Groundwater used for drinking water	100	100	100	100	100	100	100	100	1
ENVIRONMENTAL PROTECTION Toxicity to soil invertebrates and plants	200	350	350	350	350	2 500	2 500	2 500	
Livestock ingesting soil and fodder			NS						
Major microbial functional impairment			NS						
Groundwater flow to surface water used by aquatic life, freshwater	600	600	600	600	600	600	600	600	1
Groundwater used for livestock watering			250						1
Groundwater used for irrigation			40	40	40	40			1

Notes

- Standard varies with Kd (partition coefficient) for chloride ion in the soil of a site. Standard is appropriate to a chloride:soil Kd range of 0 to 0.1 mL/g. If the Kd for chloride is outside of this specified range, modify the standard in accordance with a director's protocol.

**MATRIX 9 – NUMERICAL SOIL STANDARDS
CHROMIUM (CHEMICAL ABSTRACT SERVICE NUMBER 7440-47-3)**

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WL _N)	Wildlands Reverted (WL _R)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RL _{LD})	Residential High Density (RL _{HD})	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION									
Intake of contaminated soil	250	250	100	250	100	250	750	20 000	1
Groundwater used for drinking water	60 > 1 000 mg/g	60 > 1 000 mg/g	60 > 1 000 mg/g	60 > 1 000 mg/g	60 > 1 000 mg/g	60 > 1 000 mg/g	60 > 1 000 mg/g	60 > 1 000 mg/g	2 3
ENVIRONMENTAL PROTECTION									
Toxicity to soil invertebrates and plants	100	200	200	200	200	250	250	250	1
Livestock ingesting soil and fodder			150 60						2 3
Major microbial functional impairment			60						
Groundwater flow to surface water used by aquatic life									
Freshwater	60 300 000	60 300 000	60 300 000	60 300 000	60 300 000	60 300 000	60 300 000	60 300 000	2 3
Marine	60 > 1 000 mg/g	60 > 1 000 mg/g	60 > 1 000m g/g	60 > 1 000 mg/g	60 > 1 000 mg/g	60 > 1 000 mg/g	60 > 1 000 mg/g	60 > 1 000 mg/g	2 3
Groundwater used for livestock watering			60 150 000						2 3

Groundwater used for irrigation			60 15 000	60 15 000	60 15 000	60 15 000	60 15 000			2 3
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Notes

- 1 Standard is based on chromium (all species).
- 2 Standard is for chromium, hexavalent.
- 3 Standard is for chromium, trivalent.

MATRIX 10 – NUMERICAL SOIL STANDARDS
COBALT (CHEMICAL ABSTRACT SERVICE NUMBER 7440-48-4)

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WL _N)	Wildlands Reverted (WL _R)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RL _{LD})	Residential High Density (RL _{HD})	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION									
Intake of contaminated soil	25	25	25	25	25	25	75	2 000	
Groundwater used for drinking water	25	25	25	25	25	25	25	25	
ENVIRONMENTAL PROTECTION									
Toxicity to soil invertebrates and plants	25	45	45	45	45	200	200	200	
Livestock ingesting soil and fodder			250						
Major microbial functional impairment			NS						
Groundwater flow to surface water used by aquatic life	25	25	25	25	25	25	25	25	
Groundwater used for livestock watering			150						
Groundwater used for irrigation			25	25	25	25			

MATRIX 11 – NUMERICAL SOIL STANDARDS COPPER (CHEMICAL ABSTRACT SERVICE NUMBER 7440-50-8)

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WLN)	Wildlands Reverted (WLR)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RLD)	Residential High Density (RLHD)	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION Intake of contaminated soil Groundwater used for drinking water pH < 5.0 pH 5.0 – < 5.5 pH 5.5 – < 6.0 pH 6.0 – < 6.5 pH 6.5 – < 7.0 pH ≥ 7.0	7 500 250 500 2 000 10 000 50 000 100 000	7 500 250 500 2 000 10 000 50 000 100 000	3 500 250 500 2 000 10 000 50 000 100 000	7 500 250 500 2 000 10 000 50 000 100 000	3 500 250 500 2 000 10 000 50 000 100 000	7 500 250 500 2 000 10 000 50 000 100 000	25 000 250 500 2 000 10 000 50 000 100 000	700 000 250 500 2 000 10 000 50 000 100 000	1 1 1 1 1 1 1
ENVIRONMENTAL PROTECTION Toxicity to soil invertebrates and plants Livestock ingesting soil and fodder Major microbial functional impairment Groundwater flow to surface water used by aquatic life Freshwater pH < 5.5 pH 5.5 – < 6.0 pH 6.0 – < 6.5 pH 6.5 – < 7.0 pH 7.0 – < 7.5	85 75 100 700 3 000 6 500	150 75 100 700 3 000 6 500	150 150 350 75 100 700 3 000 6 500	150 75 100 700 3 000 6 500	150 75 100 700 3 000 6 500	300 75 100 700 3 000 6 500	300 75 100 700 3 000 6 500	300 75 100 700 3 000 6 500	1,2 1,2 1,2 1,2 1,2 1,2

pH ≥ 7.5	7 500	7 500	7 500	7 500	7 500	7 500	7 500	1,2
Marine								
pH < 6.0	75	75	75	75	75	75	75	1
pH 6.0 – < 6.5	150	150	150	150	150	150	150	1
pH 6.5 – < 7.0	650	650	650	650	650	650	650	1
pH ≥ 7.0	1 500	1 500	1 500	1 500	1 500	1 500	1 500	1
Groundwater used for livestock watering								
pH < 5.0								
pH 5.0 – < 5.5	75	75	75	75	75	75	75	1
pH 5.5 – < 6.0	100							1
pH 6.0 – < 6.5	400							1
pH 6.5 – < 7.0	2 500							1
pH 7.0 – < 7.5	10 000							1
pH ≥ 7.5	20 000							1
	25 000							1
Groundwater used for irrigation								
pH < 5.5								
pH 5.5 – < 6.0	75	75	75	75	75	75	75	1
pH 6.0 – < 6.5	300	300	300	300	300	300	300	1
pH 6.5 – < 7.0	1 500	1 500	1 500	1 500	1 500	1 500	1 500	1
pH ≥ 7.0	6 500	6 500	6 500	6 500	6 500	6 500	6 500	1
	15 000	15 000	15 000	15 000	15 000	15 000	15 000	1

Notes

- 1 The pH is the pH of the soil at a site.
- 2 Standard varies with receiving water hardness (H). H ≥ 200 mg/L as CaCO₃ is assumed. If the receiving water hardness is outside of this specified range, modify the standard in accordance with a director's protocol.

**MATRIX 12 – NUMERICAL SOIL STANDARDS
CYANIDE (CHEMICAL ABSTRACT SERVICE NUMBER 57-12-5)**

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WLN)	Wildlands Reverted (WLR)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RLD)	Residential High Density (RLHD)	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION Intake of contaminated soil	50	50	25	50	25	50	150	4 000	
Groundwater used for drinking water	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	
ENVIRONMENTAL PROTECTION Toxicity to soil invertebrates and plants	2	3	3	3	3	10	10	10	
Livestock ingesting soil and fodder			11						
Major microbial functional impairment			NS						
Groundwater flow to surface water used by aquatic life									
Freshwater	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Marine	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	
Groundwater used for livestock watering			NS						
Groundwater used for irrigation			NS	NS	NS	NS			

MATRIX 13 – NUMERICAL SOIL STANDARDS¹
DICHLORODIPHENYLTRICHLOROETHANE, TOTAL [DDT]
(CHEMICAL ABSTRACT SERVICE NUMBER NOT APPLICABLE)

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WL _N)	Wildlands Reverted (WL _R)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RL _{LD})	Residential High Density (RL _{HD})	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION									
Intake of contaminated soil	40	40	20	40	20	40	150	1 000	
Groundwater used for drinking water	NS	NS	NS	NS	NS	NS	NS	NS	
ENVIRONMENTAL PROTECTION									
Toxicity to soil invertebrates and plants	0.45	0.7	0.7	0.7	0.7	10	10	10	
Livestock ingesting soil and fodder			NS						
Major microbial functional impairment			NS						
Groundwater flow to surface water used by aquatic life	NS	NS	NS	NS	NS	NS	NS	NS	
Groundwater used for livestock watering			NS						
Groundwater used for irrigation			NS	NS	NS	NS			

Notes

1 Standards are for the sum of DDT (2,4' + 4,4' isomers), DDD (2,4' + 4,4' isomers) and DDE (2,4' + 4,4' isomers).

MATRIX 14 – NUMERICAL SOIL STANDARDS
DIISOPROPANOLAMINE [DIPA] (CHEMICAL ABSTRACT SERVICE NUMBER 110-97-4)

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WLN)	Wildlands Reverted (WLR)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RLD)	Residential High Density (RLHD)	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION Intake of contaminated soil	30 000	30 000	15 000	30 000	15 000	30 000	100 000	> 1 000 mg/g	
Groundwater used for drinking water	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1
ENVIRONMENTAL PROTECTION Toxicity to soil invertebrates and plants	600	750	750	750	750	1 000	1 000	1 000	
Livestock ingesting soil and fodder			NS						
Major microbial functional impairment			NS						
Groundwater flow to surface water used by aquatic life	6	6	6	6	6	6	6	6	1
Groundwater used for livestock watering			15						1
Groundwater used for irrigation			15	15	15	15			1

Notes

1 Standards apply to a site used for an industrial or commercial purpose or activity set out in Schedule 2 as item F2, F3, F7 or F10.

**MATRIX 15 – NUMERICAL SOIL STANDARDS
ETHYLBENZENE (CHEMICAL ABSTRACT SERVICE NUMBER 100-41-4)**

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WLN)	Wildlands Reverted (WLR)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RLD)	Residential High Density (RLHD)	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION Intake of contaminated soil	8 500	8 500	4 000	8 500	4 000	8 500	25 000	700 000	
Groundwater used for drinking water	15	15	15	15	15	15	15	15	
ENVIRONMENTAL PROTECTION Toxicity to soil invertebrates and plants	100	200	200	200	200	650	650	650	
Livestock ingesting soil and fodder			NS						
Major microbial functional impairment			NS						
Groundwater flow to surface water used by aquatic life									
Freshwater	200	200	200	200	200	200	200	200	
Marine	200	200	200	200	200	200	200	200	
Groundwater used for livestock watering			NS						
Groundwater used for irrigation			NS	NS	NS	NS			

MATRIX 16 – NUMERICAL SOIL STANDARDS
ETHYLENE GLYCOL (CHEMICAL ABSTRACT SERVICE NUMBER 107-21-1)

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WLN)	Wildlands Reverted (WLR)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RLD)	Residential High Density (RLHD)	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION Intake of contaminated soil	150 000	150 000	85 000	150 000	85 000	150 000	500 000	> 1 000 mg/g	
Groundwater used for drinking water	10	10	10	10	10	10	10	10	
ENVIRONMENTAL PROTECTION Toxicity to soil invertebrates and plants	3 000	4 000	4 000	4 000	4 000	6 000	6 000	6 000	
Livestock ingesting soil and fodder			NS						
Major microbial functional impairment			NS						
Groundwater flow to surface water used by aquatic life	700	700	700	700	700	700	700	700	
Groundwater used for livestock watering			NS						
Groundwater used for irrigation			NS	NS	NS	NS			

MATRIX 17 – NUMERICAL SOIL STANDARDS

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WL _N)	Wildlands Reverted (WL _R)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RL _{LD})	Residential High Density (RL _{HD})	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION Intake of contaminated soil	3 500	3 500	1 500	3 500	1 500	3 500	10 000	300 000	
Groundwater used for drinking water	NS	NS	NS	NS	NS	NS	NS	NS	
ENVIRONMENTAL PROTECTION Toxicity to soil invertebrates and plants	30	50	50	50	50	200	200	200	
Livestock ingesting soil and fodder			NS						
Major microbial functional impairment			NS						
Groundwater flow to surface water used by aquatic life	NS	NS	NS	NS	NS	NS	NS	NS	
Groundwater used for livestock watering			NS						
Groundwater used for irrigation			NS	NS	NS	NS			

MATRIX 18 – NUMERICAL SOIL STANDARDS

[illegible]

MATRIX 19 – NUMERICAL SOIL STANDARDS
MANGANESE (CHEMICAL ABSTRACT SERVICE NUMBER 7439-96-5)

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WL-N)	Wildlands Reverted (WL-R)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RL-LD)	Residential High Density (RL-HD)	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION									
Intake of contaminated soil	10 000	10 000	6 000	10 000	6 000	10 000	35 000	> 1 000 mg/g	
Groundwater used for drinking water	2 000	2 000	2 000	2 000	2 000	2 000	2 000	2 000	1,2
ENVIRONMENTAL PROTECTION									
Toxicity to soil invertebrates and plants	2 000	2 000	2 000	2 000	2 000	2 000	2 000	2 000	
Livestock ingesting soil and fodder			NS						
Major microbial functional impairment			NS						
Groundwater flow to surface water used by aquatic life	NS	NS	NS	NS	NS	NS	NS	NS	
Groundwater used for livestock watering			NS						
Groundwater used for irrigation			2 000	2 000	2 000	2 000			1,2

Notes

- Standards apply to a site used for an industrial or commercial purpose or activity set out in Schedule 2 as
 - item B1,
 - item C1, C3 or C4,
 - item D2, D3, D5 or D6,
 - item E4, or
 - item H12
- Standards apply to a site used for an industrial or commercial purpose or activity set out in Schedule 2 as item H9 or H18 but only if the site was used for that purpose or activity in conjunction with or as a result of the site also being used for at least one of the purposes or activities set out in Note 1.

**MATRIX 20 – NUMERICAL SOIL STANDARDS
MERCURY (CHEMICAL ABSTRACT SERVICE NUMBER 7439-97-6)**

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WL-N)	Wildlands Reverted (WL-R)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RL-LD)	Residential High Density (RL-HD)	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION Intake of contaminated soil	25	25	10	25	10	25	75	2 000	
Groundwater used for drinking water	NS	NS	NS	NS	NS	NS	NS	NS	
ENVIRONMENTAL PROTECTION Toxicity to soil invertebrates and plants	25	40	40	40	40	75	75	75	
Livestock ingesting soil and fodder			0.6						
Major microbial functional impairment			20						
Groundwater flow to surface water used by aquatic life	NS	NS	NS	NS	NS	NS	NS	NS	
Groundwater used for livestock watering			NS						
Groundwater used for irrigation			NS	NS	NS	NS			

**MATRIX 21 – NUMERICAL SOIL STANDARDS
METHANOL (CHEMICAL ABSTRACT SERVICE NUMBER 67-56-1)**

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WLN)	Wildlands Reverted (WLR)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RLD)	Residential High Density (RLHD)	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION Intake of contaminated soil	40 000	40 000	20 000	40 000	20 000	40 000	150 000	> 1 000 mg/g	
Groundwater used for drinking water	15	15	15	15	15	15	15	15	
ENVIRONMENTAL PROTECTION Toxicity to soil invertebrates and plants	750	1 000	1 000	1 000	1 000	1 500	1 500	1 500	
Livestock ingesting soil and fodder			NS						
Major microbial functional impairment			NS						
Groundwater flow to surface water used by aquatic life	NS	NS	NS	NS	NS	NS	NS	NS	
Groundwater used for livestock watering			NS						
Groundwater used for irrigation			NS	NS	NS	NS			

**MATRIX 22 – NUMERICAL SOIL STANDARDS
MOLYBDENUM (CHEMICAL ABSTRACT SERVICE NUMBER 7439-98-7)**

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WLN)	Wildlands Reverted (WLR)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RLD)	Residential High Density (RLHD)	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION Intake of contaminated soil	400	400	200	400	200	400	1 500	35 000	
Groundwater used for drinking water	15	15	15	15	15	15	15	15	
ENVIRONMENTAL PROTECTION Toxicity to soil invertebrates and plants	60	80	80	80	80	150	150	150	
Livestock ingesting soil and fodder			NS						
Major microbial functional impairment			NS						
Groundwater flow to surface water used by aquatic life	650	650	650	650	650	650	650	650	
Groundwater used for livestock watering			3.5						
Groundwater used for irrigation			3	3	3	3			

MATRIX 23 – NUMERICAL SOIL STANDARDS
NAPHTHALENE (CHEMICAL ABSTRACT SERVICE NUMBER 91-20-3)

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WLN)	Wildlands Reverted (WLR)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RLD)	Residential High Density (RLHD)	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION Intake of contaminated soil Groundwater used for drinking water	1 500	1 500	850	1 500	850	1 500	5 000	150 000	
	100	100	100	100	100	100	100	100	
ENVIRONMENTAL PROTECTION Toxicity to soil invertebrates and plants Livestock ingesting soil and fodder Major microbial functional impairment Groundwater flow to surface water used by aquatic life Groundwater used for livestock watering Groundwater used for irrigation	0.4	0.6	0.6	0.6	0.6	20	20	20	
			NS						
			NS						
	75	75	75	75	75	75	75	75	
			NS	NS	NS	NS			

MATRIX 24 – NUMERICAL SOIL STANDARDS¹

[illegible]

Marine	70	70	70	70	70	70	70	70	70	1
pH < 7.5	250	250	250	250	250	250	250	250	250	1
pH 7.5 – < 8.0	500	500	500	500	500	500	500	500	500	1
pH ≥ 8.0										1
Groundwater used for livestock watering										
pH < 5.0		70								1
pH 5.0 – < 5.5		80								1
pH 5.5 – < 6.0		100								1
pH 6.0 – < 6.5		150								1
pH 6.5 – < 7.0		200								1
pH 7.0 – < 7.5		600								1
pH 7.5 – < 8.0		3 500								1
pH ≥ 8.0		6 500								1
Groundwater used for irrigation										
pH < 7.0		70	70	70	70	70	70	70	70	1
pH 7.0 – < 7.5		100	100	100	100	100	100	100	100	1
pH 7.5 – < 8.0		650	650	650	650	650	650	650	650	1
pH ≥ 8.0		1 500	1 500	1 500	1 500	1 500	1 500	1 500	1 500	1

Notes

- 1 The pH is the pH of the soil at a site.
- 2 Standard varies with receiving water hardness (H). H > 180 mg/L as CaCO₃ is assumed. If the receiving water hardness is outside of this specified range, modify the standard in accordance with a director's protocol.

MATRIX 25 – NUMERICAL SOIL STANDARDS¹
NONYLPHENOL AND NONYLPHENOL ETHOXYLATES
(CHEMICAL ABSTRACT SERVICE NUMBER N/A)

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WL _N)	Wildlands Reverted (WL _R)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RL _{LD})	Residential High Density (RL _{HD})	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION									
Intake of contaminated soil	400	400	200	400	200	400	1 000	35 000	
Groundwater used for drinking water	20	20	20	20	20	20	20	20	2
ENVIRONMENTAL PROTECTION									
Toxicity to soil invertebrates and plants	3.5	5.5	5.5	5.5	5.5	15	15	15	
Livestock ingesting soil and fodder			NS						
Major microbial functional impairment			NS						
Groundwater flow to surface water used by aquatic life									
Freshwater	4	4	4	4	4	4	4	4	2
Marine	3	3	3	3	3	3	3	3	2
Groundwater used for livestock watering			NS						
Groundwater used for irrigation			NS	NS	NS	NS			

Notes

- 1 Nonylphenol includes related nonylphenolic and octylphenolic compounds, including ethoxylates.
- 2 Standards apply to a site used for an industrial or commercial purpose or activity set out in Schedule 2 as
 - (a) item A6, A8, A10 or A12,
 - (b) item H9, H16 or H17, or
 - (c) item I2 or I3.

Groundwater used for livestock watering										
pH < 5.0							300			1
pH 5.0 – < 5.5							200			1
pH 5.5 – < 6.0							65			1
pH 6.0 – < 6.5							4.5			1
pH 6.5 – < 7.0							1.5			1
pH ≥ 7.0							0.75			1
Groundwater used for irrigation							NS	NS	NS	

Notes

- The pH is the pH of the soil at a site.
- Water standard varies with the temperature of the receiving surface water. A surface water temperature of 20°C or below was assumed. If the receiving water temperature is outside of this range, modify the standard in accordance with a director's protocol.

MATRIX 27 – NUMERICAL SOIL STANDARDS
PERFLUOROOCTANE SULFONATE [PFOS] (CHEMICAL ABSTRACT SERVICE NUMBER 1763-23-1)

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WLN)	Wildlands Reverted (WLR)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RLD)	Residential High Density (RLHD)	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION									
Intake of contaminated soil	2.5	2.5	1	2.5	1	2.5	7.5	200	
Groundwater used for drinking water	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	1
ENVIRONMENTAL PROTECTION									
Toxicity to soil invertebrates and plants	40	70	70	70	70	150	150	150	
Livestock ingesting soil and fodder			NS						
Major microbial functional impairment			NS						
Groundwater flow to surface water used by aquatic life	9	9	9	9	9	9	9	9	1
Groundwater used for livestock watering			NS						
Groundwater used for irrigation			NS	NS	NS	NS			

Notes

- 1 Standards apply to a site used for an industrial or commercial purpose or activity set out in Schedule 2 as
 - (a) item A4,
 - (b) item C3,
 - (c) item E10, or
 - (d) item G1.

**MATRIX 28 – NUMERICAL SOIL STANDARDS
PHENOL (CHEMICAL ABSTRACT SERVICE NUMBER 108-95-2)**

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WLN)	Wildlands Reverted (WLR)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RLD)	Residential High Density (RLHD)	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION Intake of contaminated soil	25 000	25 000	10 000	25 000	10 000	25 000	75 000	> 1 000 mg/g	
Groundwater used for drinking water	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	
ENVIRONMENTAL PROTECTION Toxicity to soil invertebrates and plants	80	150	150	150	150	200	200	200	
Livestock ingesting soil and fodder			NS						
Major microbial functional impairment			NS						
Groundwater flow to surface water used by aquatic life	15	15	15	15	15	15	15	15	
Groundwater used for livestock watering			NS						
Groundwater used for irrigation			NS	NS	NS	NS			

MATRIX 29 – NUMERICAL SOIL STANDARDS¹
POLYCHLORINATED BIPHENYLS, TOTAL [PCBs]
(CHEMICAL ABSTRACT SERVICE NUMBER 1336-36-3)

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WLN)	Wildlands Reverted (WLR)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RLD)	Residential High Density (RLHD)	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION									
Intake of contaminated soil	10	10	5	10	5	10	35	900	
Groundwater used for drinking water	NS	NS	NS	NS	NS	NS	NS	NS	
ENVIRONMENTAL PROTECTION									
Toxicity to soil invertebrates and plants	0.8	1.5	1.5	1.5	1.5	35	35	35	
Livestock ingesting soil and fodder			NS						
Major microbial functional impairment			NS						
Groundwater flow to surface water used by aquatic life	NS	NS	NS	NS	NS	NS	NS	NS	
Groundwater used for livestock watering			NS						
Groundwater used for irrigation			NS	NS	NS	NS			

Notes

- 1 PCBs, total in soil represent the sum of Aroclors 1016, 1221, 1232, 1242, 1248, 1254, 1260, 1262, and 1268. Dioxin-like polychlorinated biphenyls must also be evaluated as polychlorinated dioxins and furans.

MATRIX 30 – NUMERICAL SOIL STANDARDS¹
POLYCHLORINATED DIOXINS AND FURANS, TOTAL [PCDDs AND PCDFs]
(CHEMICAL ABSTRACT SERVICE NUMBER 1746-01-6)

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WL _N)	Wildlands Reverted (WL _R)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RL _{LD})	Residential High Density (RL _{HD})	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION Intake of contaminated soil	0.0002	0.0002	0.000095	0.0002	0.000095	0.0002	0.0006	0.015	
Groundwater used for drinking water	NS	NS	NS	NS	NS	NS	NS	NS	
ENVIRONMENTAL PROTECTION Toxicity to soil invertebrates and plants	0.00065	0.001	0.00001	0.001	0.001	0.0025	0.0025	0.0025	
Livestock ingesting soil and fodder			NS						
Major microbial functional impairment			NS						
Groundwater flow to surface water used by aquatic life	NS	NS	NS	NS	NS	NS	NS	NS	
Groundwater used for livestock watering			NS						
Groundwater used for irrigation			NS	NS	NS	NS			

Notes

- 1 Polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) expressed as 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) toxicity equivalent includes those substances for which 2,3,7,8-TCDD Toxicity Equivalency Factors (IPCS-TEFs) are provided below:

2,3,7,8-TCDD Toxicity Equivalency Factors (IPCS-TEFs) for Dioxins, Furans and Dioxin-like Polychlorinated Biphenyls (PCBs)			
Polychlorinated dibenzo-p-dioxins	IPCS-TEF	Polychlorinated dibenzofurans	IPCS-TEF
2,3,7,8-T ₄ CDD	1.0	2,3,7,8-T ₄ CDF	0.1
1,2,3,7,8-P ₅ CDD	1.0	1,2,3,7,8-P ₅ CDF	0.03
1,2,3,4,7,8-H ₆ CDD	0.1	2,3,4,7,8-P ₅ CDF	0.3
1,2,3,6,7,8-H ₆ CDD	0.1	1,2,3,4,7,8-H ₆ CDF	0.1
1,2,3,7,8,9-H ₆ CDD	0.1	1,2,3,6,7,8-H ₆ CDF	0.1
1,2,3,4,6,7,8,-H ₇ CDD	0.01	1,2,3,7,8,9-H ₆ CDF	0.1
O ₈ CDD	0.0003	2,3,4,6,7,8-H ₆ CDF	0.1
		1,2,3,4,6,7,8-H ₇ CDF	0.01
		1,2,3,4,7,8,9-H ₇ CDF	0.01
		O ₈ CDF	0.0003
Non-ortho substituted PCBs	IPCS-TEF	Mono-ortho substituted PCBs	IPCS-TEF
3,3',4,4'- T ₄ CB (PCB 77)	0.0001	2,3,3',4,4'-P ₅ CB (PCB 105)	0.00003
3,4,4',5'- T ₄ CB (PCB 81)	0.0003	2,3,4,4',5-P ₅ CB (PCB 114)	0.00003
3,3',4,4',5-P ₅ CB (PCB 126)	0.1	2,3',4,4',5-P ₅ CB (PCB 118)	0.00003
3,3',4,4',5,5'-H ₆ CB (PCB 169)	0.03	2',3,4,4',5-H ₆ CB (PCB 123)	0.00003
		2,3,3',4,4',5-H ₆ CB (PCB 156)	0.00003
		2,3,3',4,4',5'-H ₆ CB (PCB 157)	0.00003
		2,3',4,4',5,5'-H ₆ CB (PCB 167)	0.00003
		2,3,3',4,4',5,5'-H ₇ CB (PCB 189)	0.00003

**MATRIX 31 – NUMERICAL SOIL STANDARDS
SELENIUM (CHEMICAL ABSTRACT SERVICE NUMBER 7782-49-2)**

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WLN)	Wildlands Reverted (WLR)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RLLD)	Residential High Density (RLHD)	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION Intake of contaminated soil	400	400	200	400	200	400	1 500	35 000	
Groundwater used for drinking water	1	1	1	1	1	1	1	1	
ENVIRONMENTAL PROTECTION Toxicity to soil invertebrates and plants	1.5	1.5	1.5	1.5	1.5	2	2	2	
Livestock ingesting soil and fodder			2						
Major microbial functional impairment			NS						
Groundwater flow to surface water used by aquatic life	1	1	1	1	1	1	1	1	
Groundwater used for livestock watering			1						
Groundwater used for irrigation			1	1	1	1			1

Notes

- Standard applies where irrigation water is used for continuous or intermittent irrigation of crops.

MATRIX 32 – NUMERICAL SOIL STANDARDS
SODIUM ION (CHEMICAL ABSTRACT SERVICE NUMBER 17341-25-2)

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WLN)	Wildlands Reverted (WLR)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RLD)	Residential High Density (RLHD)	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION Intake of contaminated soil	> 1 000 mg/g	> 1 000 mg/g	> 1 000 mg/g	> 1 000 mg/g	> 1 000 mg/g	> 1 000 mg/g	> 1 000 mg/g	> 1 000 mg/g	
Groundwater used for drinking water	15 000	15 000	15 000	15 000	15 000	15 000	15 000	15 000	
ENVIRONMENTAL PROTECTION Toxicity to soil invertebrates and plants	150	200	200	200	200	1 000	1 000	1 000	
Livestock ingesting soil and fodder			NS						
Major microbial functional impairment			NS						
Groundwater flow to surface water used by aquatic life	NS	NS	NS	NS	NS	NS	NS	NS	
Groundwater used for livestock watering			NS						
Groundwater used for irrigation			NS	NS	NS	NS			

**MATRIX 33 – NUMERICAL SOIL STANDARDS
SULFOLANE (CHEMICAL ABSTRACT SERVICE NUMBER 126-33-0)**

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WLN)	Wildlands Reverted (WLR)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RLD)	Residential High Density (RLHD)	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION Intake of contaminated soil	800	800	400	800	400	800	2 500	70 000	
Groundwater used for drinking water	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1
ENVIRONMENTAL PROTECTION Toxicity to soil invertebrates and plants	250	350	350	350	350	500	500	500	
Livestock ingesting soil and fodder			NS						
Major microbial functional impairment			NS						
Groundwater flow to surface water used by aquatic life	200	200	200	200	200	200	200	200	1
Groundwater used for livestock watering			5.5						1
Groundwater used for irrigation			3	3	3	3			1

Notes

- 1 Standards apply to a site used for an industrial or commercial purpose or activity set out in Schedule 2 as item F2, F3, F7 or F10.

MATRIX 34 – NUMERICAL SOIL STANDARDS
TETRACHLOROETHYLENE (CHEMICAL ABSTRACT SERVICE NUMBER 127-18-4)

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WLN)	Wildlands Reverted (WLR)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RLD)	Residential High Density (RLHD)	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION Intake of contaminated soil Groundwater used for drinking water	500	500	250	500	250	500	1 500	40 000	
ENVIRONMENTAL PROTECTION Toxicity to soil invertebrates and plants Livestock ingesting soil and fodder Major microbial functional impairment	6	15	15 NS NS	15	15	30	30	30	
Groundwater flow to surface water used by aquatic life Groundwater used for livestock watering Groundwater used for irrigation	2.5	2.5	2.5 NS	2.5	2.5	2.5	2.5	2.5	

**MATRIX 35 – NUMERICAL SOIL STANDARDS
TOLUENE (CHEMICAL ABSTRACT SERVICE NUMBER 108-88-3)**

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WL _N)	Wildlands Reverted (WL _R)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RL _{LD})	Residential High Density (RL _{HD})	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION Intake of contaminated soil	6 500	6 500	3 500	6 500	3 500	6 500	20 000	550 000	
Groundwater used for drinking water	6	6	6	6	6	6	6	6	
ENVIRONMENTAL PROTECTION Toxicity to soil invertebrates and plants	90	150	150	150	150	450	450	450	
Livestock ingesting soil and fodder			NS						
Major microbial functional impairment			NS						
Groundwater flow to surface water used by aquatic life									
Freshwater	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Marine	200	200	200	200	200	200	200	200	
Groundwater used for livestock watering			NS						
Groundwater used for irrigation			NS	NS	NS	NS			

MATRIX 36 – NUMERICAL SOIL STANDARDS

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WL _N)	Wildlands Reverted (WL _R)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RL _{LD})	Residential High Density (RL _{HD})	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION Intake of contaminated soil	40	40	20	40	20	40	150	3 500	
Groundwater used for drinking water									
ENVIRONMENTAL PROTECTION Toxicity to soil invertebrates and plants	8	15	15	15	15	25	25	25	
Livestock ingesting soil and fodder			NS						
Major microbial functional impairment			NS						
Groundwater flow to surface water used by aquatic life	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
Groundwater used for livestock watering				NS		NS			
Groundwater used for irrigation			NS	NS	NS	NS			

**MATRIX 37 – NUMERICAL SOIL STANDARDS
URANIUM (CHEMICAL ABSTRACT SERVICE NUMBER 7440-61-1)**

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WL _N)	Wildlands Reverted (WL _R)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RL _{LD})	Residential High Density (RL _{HD})	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION									
Intake of contaminated soil	250	250	100	250	100	250	750	20 000	
Groundwater used for drinking water	30	30	30	30	30	30	30	30	
ENVIRONMENTAL PROTECTION									
Toxicity to soil invertebrates and plants	300	500	500	500	500	2 000	2 000	2 000	
Livestock ingesting soil and fodder			35						
Major microbial functional impairment			NS						
Groundwater flow to surface water used by aquatic life	150	150	150	150	150	150	150	150	
Groundwater used for livestock watering			300						
Groundwater used for irrigation			15	15	15	15			

**MATRIX 38 – NUMERICAL SOIL STANDARDS
VANADIUM (CHEMICAL ABSTRACT SERVICE NUMBER 7440-62-2)**

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WLN)	Wildlands Reverted (WLR)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RLD)	Residential High Density (RLHD)	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION Intake of contaminated soil	400	400	200	400	200	400	1 500	35 000	
Groundwater used for drinking water	100	100	100	100	100	100	100	100	
ENVIRONMENTAL PROTECTION Toxicity to soil invertebrates and plants	100	150	150	150	150	300	300	300	
Livestock ingesting soil and fodder			NS						
Major microbial functional impairment			250						
Groundwater flow to surface water used by aquatic life	NS	NS	NS	NS	NS	NS	NS	NS	
Groundwater used for livestock watering			350						
Groundwater used for irrigation			350	350	350	350			

**MATRIX 39 – NUMERICAL SOIL STANDARDS
XYLENES (CHEMICAL ABSTRACT SERVICE NUMBER 1330-20-7)**

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7	COLUMN 8	COLUMN 9	Note
Site-specific Factor	Wildlands Natural (WLN)	Wildlands Reverted (WLR)	Agricultural (AL)	Urban Park (PL)	Residential Low Density (RLD)	Residential High Density (RLHD)	Commercial (CL)	Industrial (IL)	
HUMAN HEALTH PROTECTION Intake of contaminated soil	15 000	15 000	8 500	15 000	8 500	15 000	50 000	> 1 000 mg/g	
Groundwater used for drinking water	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	
ENVIRONMENTAL PROTECTION Toxicity to soil invertebrates and plants	100	150	150	150	150	600	600	600	
Livestock ingesting soil and fodder			NS						
Major microbial functional impairment			NS						
Groundwater flow to surface water used by aquatic life	20	20	20	20	20	20	20	20	
Groundwater used for livestock watering			NS						
Groundwater used for irrigation			NS	NS	NS	NS			

MATRIX 40 – NUMERICAL SOIL STANDARDS

[illegible]

pH 7.0 – < 7.5 pH 7.5 – < 8.0 pH ≥ 8.0	600 1 500 3 000	600 1 500 3 000	600 1 500 3 000	600 1 500 3 000	600 1 500 3 000	600 1 500 3 000	600 1 500 3 000	1,2 1,2 1,2
Marine pH < 8.0 pH ≥ 8.0	150 200	150 200	150 200	150 200	150 200	150 200	150 200	1 1
Groundwater used for livestock watering pH < 5.5 pH 5.5 – < 6.0 pH 6.0 – < 6.5 pH 6.5 – < 7.0 pH 7.0 – < 7.5 pH 7.5 – < 8.0 pH ≥ 8.0	150 200 300 400 750 2 000 3 500	150 200 300 400 750 2 000 3 500	150 200 300 400 750 2 000 3 500	150 200 300 400 750 2 000 3 500	150 200 300 400 750 2 000 3 500	150 200 300 400 750 2 000 3 500	150 200 300 400 750 2 000 3 500	1 1 1 1 1 1 1 1
Groundwater used for irrigation pH < 6.0 pH 6.0 – < 6.5 pH 6.5 – < 7.0 pH 7.0 – < 7.5 pH 7.5 – < 8.0 pH ≥ 8.0	150 300 400 2 000 5 000 9 000	150 300 400 2 000 5 000 9 000	150 300 400 2 000 5 000 9 000	150 300 400 2 000 5 000 9 000	150 300 400 2 000 5 000 9 000	150 300 400 2 000 5 000 9 000	150 300 400 2 000 5 000 9 000	1 1 1 1 1 1 1

Notes

- 1 The pH is the pH of the soil at a site.
- 2 Standard varies with receiving water hardness (H). H = 200 to < 300 mg/L as CaCO₃ is assumed. If the receiving water hardness is outside of this specified range, identify the applicable standard using a director's protocol.