Table 29

DAM 10: HUMAN RISK ASSESSMENT • DAM WATER • SAMPLE NO. 7S [INORGANIC - MICRO'S & MACRO'S]

[ISCOR VANDERBIJLPARK STEEL - MASTER PLAN]

SAMPLE NUMBER: 7S

COMPOUNDS INORGANICS Micro's and Macro's	[6] RfD/ ADI / GV mg/kg/day	[7] EPA RfD/ EPA DWEL/ RSA RfD/ WHO GV	RISK TO HUMAN: RISK OF DAM WATER AS IS — [8] Conc. in Dam water ppm	[9] PDI Dam water exposure mg/kg/day	[10] Margin of Safety %	RISK OF DILUTED DAM WATER IN RIVER — [11] Conc. in River water (EEC) ppb	[12] PDI river water exposure mg/kg/day	[10] Margin of Safety %	RISK OF DAM WATER FOR GROUNDWATER — [13] Conc. in groundwater (EEC) ppb	[14] PDI groundwater exposure mg/kg/day	[10] Margin of Safety %
Aluminium as Al	0.005	RSA RfD	< 0.100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arsenic as As	0.0003	EPA RfD	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barium as Ba	0.07	EPA RfD	< 0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cadmium as Cd	0.0005	EPA RfD	< 0.010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chromium^{3+} as Cr^{3+}	1.50	EPA RfD	0.053	0.0018	0.118	1.8	0.00006	0.004	23	0.0008	0.053
Chromium^{6+} as Cr^{6+}	0.003	EPA RfD	< 0.025	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cobalt as Co	0.008	RSA RfD	0.026	0.0009	10.9	0.87	0.00003	0.363	12	0.0004	5.04
Copper as Cu	0.04	EPA RfD	< 0.025	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cyanide as CN	0.04	EPA RfD	< 0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron as Fe	0.003	RSA RfD	0.734	0.024	816	24	0.0008	26.7	325	0.011	361
Lead as Pb	0.002	RSA RfD	< 0.050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese as Mn	0.046	EPA RfD	3.36	0.112	243	112	0.0037	8.12	1488	0.050	108
Mercury as Hg	0.0003	EPA RfD	< 0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nickel as Ni	0.02	EPA RfD	0.038	0.0013	6.33	1.3	0.00004	0.217	17	0.0006	2.83
Selenium as Se	0.005	EPA RfD	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Titanium as Ti	0.003	RSA RfD	0.23	0.0077	256	7.7	0.0003	8.56	102	0.0034	113
Vanadium as V	0.009	EPA RfD	< 0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc as Zn	0.3	EPA RfD	0.280	0.0093	3.11	9.3	0.00031	0.103	124	0.0041	1.38
Calcium as Ca	5.0	RSA RfD	581	19.4	387	19367	0.646	12.9	257228	8.57	171
Chloride as Cl	8.3	RSA RfD	1211	40.4	486	40367	1.35	16.2	536149	17.9	215
Fluoride as F	0.06	EPA RfD	7.4	0.247	411	247	0.0082	13.7	3276	0.109	182
Magnesium as Mg	2.3	RSA RfD	81	2.70	117	2700	0.09	3.91	35861	1.20	52
Potassium as K	6.7	RSA RfD	91	3.03	45.3	3033	0.101	1.51	40289	1.34	20.0
Sodium as Na	3.3	RSA RfD	369	12.3	373	12300	0.410	12.4	163368	5.45	165
Sulphate as SO_4	6.7	RSA RfD	1039	34.6	517	34633	1.15	17.2	459999	15.3	229
Boron as B	0.09	EPA RfD	0.71	0.024	26.3	24	0.0008	0.874	314	0.010	11.6
Nitrate as N	1.6	EPA RfD	4.4	0.147	9.17	147	0.0049	0.306	1948	0.065	4.06
RISK / ACCEPTABLE RISK TO: HUMAN				Dam water	R		River water	AR		Groundwater	R

Table 30

DAM 10: HUMAN RISK ASSESSMENT • DAM WATER • SAMPLE NO. 7D [INORGANIC - MICRO'S & MACRO'S]

[ISCOR VANDERBIJLPARK STEEL - MASTER PLAN]

SAMPLE NUMBER: 7D

COMPDUNDS INDRGANICS Micro's and Macro's	[6] RfD/ ADI / GV mg/kg/day	[7] EPA RfD/ EPA DWEL/ RSA RfD/ WHO GV	RISK TO HUMAN								
			RISK OF DAM WATER AS IS			RISK OF DILUTED DAM WATER IN RIVER			RISK OF DAM WATER FOR GROUNDWATER		
			[8] Conc. in Dam water ppm	[9] PDI Dam water exposure mg/kg/day	[10] Margin of Safety %	[11] Conc. in River water (EEC) ppb	[12] PDI river water exposure mg/kg/day	[10] Margin of Safety %	[13] Conc. in groundwater (EEC) ppb	[14] PDI groundwater exposure mg/kg/day	[10] Margin of Safety %
Aluminium as Al	0.005	RSA RfD	< 0.100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arsenic as As	0.0003	EPA RfD	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barium as Ba	0.07	EPA RfD	< 0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cadmium as Cd	0.0005	EPA RfD	< 0.010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chromium $^{3+}$ as Cr^{3+}	1.50	EPA RfD	0.832	0.028	1.85	28	0.0009	0.062	368	0.012	0.810
Chromium $^{6+}$ as Cr^{6+}	0.003	EPA RfD	< 0.025	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cobalt as Co	0.008	RSA RfD	0.054	0.0018	22.5	1.8	0.00006	0.750	24	0.0008	10.0
Copper as Cu	0.04	EPA RfD	< 0.025	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cyanide as CN	0.04	EPA RfD	< 0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron as Fe	0.003	RSA RfD	34	1.13	37778	1133	0.038	1259	15053	0.502	16726
Lead as Pb	0.002	RSA RfD	< 0.050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese as Mn	0.046	EPA RfD	4.35	0.145	315	145	0.0048	10.5	1926	0.064	140
Mercury as Hg	0.0003	EPA RfD	< 0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nickel as Ni	0.02	EPA RfD	0.085	0.0028	14.3	2.8	0.00009	0.467	38	0.0013	6.33
Selenium as Se	0.005	EPA RfD	0.006	0.0002	4.0	0.20	0.000007	0.133	2.70	0.00009	1.80
Titanium as Ti	0.003	RSA RfD	0.39	0.013	433	13	0.0004	14.4	173	0.0058	192
Vanadium as V	0.009	EPA RfD	< 0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc as Zn	0.3	EPA RfD	3.08	0.103	34.2	103	0.0034	1.14	1364	0.045	15.2
Calcium as Ca	5.0	RSA RfD	581	19.4	387	19367	0.646	12.9	257228	8.57	171
Chloride as Cl	8.3	RSA RfD	1223	40.8	491	40767	1.36	16.4	541462	18.0	217
Fluoride as F	0.06	EPA RfD	7.8	0.260	433	260	0.0087	14.4	3453	0.115	192
Magnesium as Mg	2.3	RSA RfD	83	2.77	120	2767	0.092	4.01	36747	1.22	53.3
Potassium as K	6.7	RSA RfD	91	3.03	45.3	3033	0.101	1.5	40289	1.34	20.0
Sodium as Na	3.3	RSA RfD	390	13.0	394	13000	0.433	13.1	172666	5.76	174
Sulphate as SD_4	6.7	RSA RfD	1058	35.3	526	35267	1.18	17.5	468411	15.6	233
Boron as B	0.09	EPA RfD	0.38	0.013	14.1	13	0.0004	0.467	168	0.0056	6.22
Nitrate as N	1.6	EPA RfD	3.9	0.130	8.13	130	0.0043	0.271	1727	0.058	3.60
RISK / ACCEPTABLE RISK TO: HUMAN			Dam water	R		River water	R		Groundwater	R	

Table 31

DAM 10: HUMAN RISK ASSESSMENT • DAM WATER • SAMPLE NO. 8S [INORGANIC - MICRO'S & MACRO'S]

[ISCOR VANDERBIJLPARK STEEL - MASTER PLAN]

SAMPLE NUMBER: 8S

COMPOUNDS INORGANICS Micro's and Macro's	[6] RfD/ ADI / GV mg/kg/day	[7] EPA RfD/ EPA DWEL/ RSA RfD/ WHO GV	RISK TO HUMAN: RISK OF DAM WATER AS IS — [8] Conc. in Dam water ppm	[9] PDI Dam water exposure mg/kg/day	[10] Margin of Safety %	RISK OF DILUTED DAM WATER IN RIVER — [11] Conc. in River water (EEC) ppb	[12] PDI river water exposure mg/kg/day	[10] Margin of Safety %	RISK OF DAM WATER FOR GROUNDWATER — [13] Conc. in groundwater (EEC) ppb	[14] PDI groundwater exposure mg/kg/day	[10] Margin of Safety %
Aluminium as Al	0.005	RSA RfD	< 0.100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arsenic as As	0.0003	EPA RfD	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barium as Ba	0.07	EPA RfD	< 0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cadmium as Cd	0.0005	EPA RfD	< 0.010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chromium^{3+} as Cr^{3+}	1.50	EPA RfD	0.055	0.0018	0.12	1.8	0.00006	0.004	24	0.0008	0.053
Chromium^{6+} as Cr^{6+}	0.003	EPA RfD	< 0.025	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cobalt as Co	0.008	RSA RfD	0.041	0.0014	17.1	1.4	0.00005	0.58	18	0.0006	7.50
Copper as Cu	0.04	EPA RfD	< 0.025	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cyanide as CN	0.04	EPA RfD	< 0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron as Fe	0.003	RSA RfD	0.660	0.022	733	22	0.0007	24.4	292	0.0097	324
Lead as Pb	0.002	RSA RfD	< 0.050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese as Mn	0.046	EPA RfD	3.35	0.112	243	112	0.0037	8.12	1483	0.049	107
Mercury as Hg	0.0003	EPA RfD	< 0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nickel as Ni	0.02	EPA RfD	0.048	0.0016	8.0	1.6	0.00005	0.267	21	0.0007	3.50
Selenium as Se	0.005	EPA RfD	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Titanium as Ti	0.003	RSA RfD	0.23	0.0077	256	7.7	0.0003	8.56	102	0.0034	113
Vanadium as V	0.009	EPA RfD	< 0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc as Zn	0.3	EPA RfD	0.289	0.0096	3.2	9.6	0.0003	0.107	128	0.0043	1.42
Calcium as Ca	5.0	RSA RfD	585	19.5	390	19500	0.650	13.0	258999	8.63	173
Chloride as Cl	8.3	RSA RfD	1223	40.8	491	40767	1.36	16.4	541462	18.0	217
Fluoride as F	0.06	EPA RfD	7.6	0.253	422	253	0.0084	14.1	3365	0.112	187
Magnesium as Mg	2.3	RSA RfD	78	2.60	113	2600	0.087	3.77	34533	1.15	50.0
Potassium as K	6.7	RSA RfD	92	3.07	45.8	3067	0.102	1.53	40731	1.36	20.3
Sodium as Na	3.3	RSA RfD	389	13.0	393	12967	0.432	13.1	172223	5.74	174
Sulphate as SD_4	6.7	RSA RfD	1092	36.4	543	36400	1.21	18.1	483464	16.1	241
Boron as B	0.09	EPA RfD	0.73	0.024	27	24	0.0008	0.900	323	0.011	12.0
Nitrate as N	1.6	EPA RfD	3.8	0.127	7.9	127	0.0042	0.264	1682	0.056	3.50
		RISK / ACCEPTABLE RISK TO: HUMAN		Dam water	R		River water	AR		Groundwater	R

Table 32

DAM 10: HUMAN RISK ASSESSMENT • DAM WATER • SAMPLE NO. 80 [INORGANIC - MICRO'S & MACRO'S]
[ISCOR VANDERBIJL - MASTER PLAN]

SAMPLE NUMBER: 80

COMPOUNDS INORGANICS Micro's and Macro's	[6] RfD/ ADI / GV mg/kg/day	[7] EPA RfD/ EPA DWEL/ RSA RfD/ WHO GV	RISK TO HUMAN								
			RISK OF DAM WATER AS IS			RISK OF DILUTED DAM WATER IN RIVER			RISK OF DAM WATER FOR GROUNDWATER		
			[8] Conc. in Dam water ppm	[9] PDI Dam water exposure mg/kg/day	[10] Margin of Safety %	[11] Conc. in River water (EEC) ppb	[12] PDI river water exposure mg/kg/day	[10] Margin of Safety %	[13] Conc. in groundwater (EEC) ppb	[14] PDI groundwater exposure mg/kg/day	[10] Margin of Safety %
Aluminium as Al	0.005	RSA RfD	< 0.100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arsenic as As	0.0003	EPA RfD	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barium as Ba	0.07	EPA RfD	< 0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cadmium as Cd	0.0005	EPA RfD	< 0.010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chromium^{3+} as Cr^{3+}	1.50	EPA RfD	1.96	0.065	4.33	65	0.0022	0.14	868	0.029	1.93
Chromium^{6+} as Cr^{6+}	0.003	EPA RfD	< 0.025	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cobalt as Co	0.008	RSA RfD	0.056	0.0019	23.3	1.9	0.00006	0.752	25	0.001	10.4
Copper as Cu	0.04	EPA RfD	< 0.025	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cyanide as CN	0.04	EPA RfD	< 0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron as Fe	0.003	RSA RfD	57	1.9	63333	1900	0.063	2111	25236	0.841	28040
Lead as Pb	0.002	RSA RfD	1.01	0.034	1683	34	0.0011	56.7	2.70	0.0001	4.5
Manganese as Mn	0.046	EPA RfD	4.87	0.162	353	162	0.0054	11.7	2156	0.072	156
Mercury as Hg	0.0003	EPA RfD	< 0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nickel as Ni	0.02	EPA RfD	0.091	0.003	15.2	3.0	0.0001	0.5	40	0.001	6.67
Selenium as Se	0.005	EPA RfD	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Titanium as Ti	0.003	RSA RfD	1.7	0.057	1889	57	0.0019	63.3	753	0.025	837
Vanadium as V	0.009	EPA RfD	< 0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc as Zn	0.3	EPA RfD	18	0.600	200	600	0.020	6.67	7969	0.266	89
Calcium as Ca	5.0	RSA RfD	583	19.4	389	19433	0.648	13.0	258113	8.60	172
Chloride as Cl	8.3	RSA RfD	1223	40.77	491	40767	1.36	16.4	541462	18.0	217
Fluoride as F	0.06	EPA RfD	7.6	0.253	422	253	0.0084	14.1	3365	0.112	187
Magnesium as Mg	2.3	RSA RfD	80	2.67	116	2667	0.089	3.87	35419	1.18	51.3
Potassium as K	6.7	RSA RfD	93	3.1	46.3	3100	0.103	1.5	41174	1.37	20.5
Sodium as Na	3.3	RSA RfD	357	11.9	361	11900	0.397	12.0	158056	5.3	160
Sulphate as SO_4	5.7	RSA RfD	1043	34.77	519	34767	1.16	17.3	461770	15.4	230
Boron as B	0.09	EPA RfD	0.79	0.026	29.3	26	0.0009	0.974	350	0.012	13.0
Nitrate as N	1.6	EPA RfD	0.9	0.030	1.9	30	0.001	0.063	398	0.013	0.829
RISK / ACCEPTABLE RISK TO: HUMAN			Dam water	R		River water	R		Groundwater	R	

Table 33

DAM 10: HUMAN RISK ASSESSMENT • DAM WATER • SAMPLE NO. 9S [INORGANIC - MICRO'S & MACRO'S]
[ISCOR VANDERBIJLPARK STEEL - MASTER PLAN]

SAMPLE NUMBER: 9S

COMPOUNDS INORGANICS Micro's and Macro's	[6] RfD/ ADI / GV mg/kg/day	[7] EPA RfD/ EPA DWEL/ RSA RfD/ WHO GV	RISK TO HUMAN: RISK OF DAM WATER AS IS [8] Conc. in Dam water ppm	[9] PDI Dam water exposure mg/kg/day	[10] Margin of Safety %	RISK OF DILUTED DAM WATER IN RIVER [11] Conc. in River water (EEC) ppb	[12] PDI river water exposure mg/kg/day	[10] Margin of Safety %	RISK OF DAM WATER FOR GROUNDWATER [13] Conc. in groundwater (EEC) ppb	[14] PDI groundwater exposure mg/kg/day	[10] Margin of Safety %
Aluminium as Al	0.005	RSA RfD	< 0.100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arsenic as As	0.0003	EPA RfD	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barium as Ba	0.07	EPA RfD	< 0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cadmium as Cd	0.0005	EPA RfD	< 0.010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chromium^{3+} as Cr^{3+}	1.50	EPA RfD	0.072	0.0024	0.16	2.4	0.00008	0.005	32	0.0011	0.07
Chromium^{6+} as Cr^{6+}	0.003	EPA RfD	< 0.025	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cobalt as Co	0.008	RSA RfD	0.028	0.0009	11.7	0.93	0.00003	0.375	12	0.0004	5.00
Copper as Cu	0.04	EPA RfD	< 0.025	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cyanide as CN	0.04	EPA RfD	< 0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Iron as Fe	0.003	RSA RfD	0.583	0.019	644	19	0.0006	21.4	257	0.0086	286
Lead as Pb	0.002	RSA RfD	< 0.050	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese as Mn	0.046	EPA RfD	3.37	0.112	244	112	0.0037	8.1	1492	0.050	108
Mercury as Hg	0.0003	EPA RfD	< 0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nickel as Ni	0.02	EPA RfD	0.045	0.0015	7.5	1.5	0.00005	0.25	20	0.0007	3.50
Selenium as Se	0.005	EPA RfD	0.002	0.00007	1.4	0.07	0.000002	0.04	3.1	0.0001	2.07
Titanium as Ti	0.003	RSA RfD	0.21	0.0070	233	7.0	0.00023	7.78	93	0.0031	103
Vanadium as V	0.009	EPA RfD	< 0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc as Zn	0.3	EPA RfD	0.257	0.0086	2.9	8.6	0.0003	0.10	114	0.0038	1.27
Calcium as Ca	5.0	RSA RfD	585	19.5	390	19500	0.650	13.0	258999	8.63	173
Chloride as Cl	8.3	RSA RfD	1235	41.17	496	41167	1.37	16.5	546775	18.2	220
Fluoride as F	0.06	EPA RfD	7.3	0.243	406	243	0.0081	13.5	3232	0.108	180
Magnesium as Mg	2.3	RSA RfD	80	2.667	116	2667	0.0889	3.87	35419	1.18	51.3
Potassium as K	6.7	RSA RfD	93	3.10	46.3	3100	0.103	1.54	41174	1.37	20.5
Sodium as Na	3.3	RSA RfD	364	12.13	368	12133	0.404	12.3	161155	5.37	163
Sulphate as SO_4	6.7	RSA RfD	1159	38.63	577	38633	1.29	19.2	513127	17.1	255
Boron as B	0.09	EPA RfD	0.81	0.027	30	27	0.0009	1.0	359	0.012	13.3
Nitrate as N	1.6	EPA RfD	1.2	0.040	2.5	40	0.0013	0.081	531	0.018	1.11
	RISK / ACCEPTABLE RISK TO: HUMAN			Dam water	R		River water	AR		Groundwater	R

Table 34

DAM 10: HUMAN RISK ASSESSMENT • DAM WATER • SAMPLE NO. 9 [INORGANIC - MICRO'S & MACRO'S]

[ISCOR VANDERBIJLPARK STEEL - MASTER PLAN]

SAMPLE NUMBER: 9

COMPOUNDS INORGANICS Micro's and Macro's	[6] RfD/ ADI / GV mg/kg/day	[7] EPA RfD/ EPA DWEL/ RSA RfD/ WHO GV	RISK TO HUMAN								
			RISK OF DAM WATER AS IS			RISK OF DILUTED DAM WATER IN RIVER			RISK OF DAM WATER FOR GROUNDWATER		
			[8] Conc. in Dam water ppm	[9] PDI Dam water exposure mg/kg/day	[10] Margin of Safety %	[11] Conc. in River water (EEC) ppb	[12] PDI river water exposure mg/kg/day	[10] Margin of Safety %	[13] Conc. in groundwater (EEC) ppb	[14] PDI groundwater exposure mg/kg/day	[10] Margin of Safety %
Aluminium as Al	0.005	RSA RfD	< 0.100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arsenic as As	0.0003	EPA RfD	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barium as Ba	0.07	EPA RfD	< 0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cadmium as Cd	0.0005	EPA RfD	< 0.010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chromium^{3+} as Cr^{3+}	1.50	EPA RfD	0.072	0.0024	0.16	2.4	0.00008	0.005	32	0.0011	0.071
Chromium^{6+} as Cr^{6+}	0.003	EPA RfD	< 0.025	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cobalt as Co	0.008	RSA RfD	0.033	0.0011	13.8	1.1	0.00004	0.458	15	0.0005	6.25
Copper as Cu	0.04	EPA RfD	< 0.025	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cyanide as CN	0.04	EPA RfD	0.05	0.0017	4.17	1.7	0.00006	0.142	22	0.0007	1.83
Iron as Fe	0.003	RSA RfD	0.732	0.024	813	24	0.0008	26.7	324	0.011	360
Lead as Pb	0.002	RSA RfD	< 0.050	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese as Mn	0.046	EPA RfD	3.43	0.114	249	114	0.0038	8.3	1519	0.051	110
Mercury as Hg	0.0003	EPA RfD	< 0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nickel as Ni	0.02	EPA RfD	0.043	0.0014	7.17	1.4	0.00005	0.23	19	0.0006	3.17
Selenium as Se	0.005	EPA RfD	< 0.005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Titanium as Ti	0.003	RSA RfD	0.23	0.0077	256	7.7	0.0003	8.6	102	0.0034	113
Vanadium as V	0.009	EPA RfD	< 0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc as Zn	0.3	EPA RfD	0.307	0.0102	3.41	10.2	0.0003	0.113	136	0.0045	1.51
Calcium as Ca	5.0	RSA RfD	581	19.4	387	19367	0.646	12.9	257228	8.57	171
Chloride as Cl	8.3	RSA RfD	1211	40.4	486	40367	1.35	16.2	536149	17.9	215
Fluoride as F	0.06	EPA RfD	7.1	0.237	394	237	0.0079	13.2	3143	0.105	175
Magnesium as Mg	2.3	RSA RfD	83	2.77	120	2767	0.092	4.01	36747	1.22	53.3
Potassium as K	6.7	RSA RfD	91	3.03	45	3033	0.101	1.5	40289	1.34	20.1
Sodium as Na	3.3	RSA RfD	358	11.9	362	11933	0.398	12.1	158498	5.28	160
Sulphate as SO_4	6.7	RSA RfD	1058	35.3	526	35267	1.18	17.5	468411	15.6	233
Boron as B	0.09	EPA RfD	0.73	0.024	27	24	0.0008	0.900	323	0.011	12.0
Nitrate as N	1.6	EPA RfD	1.3	0.043	2.7	43	0.0014	0.900	576	0.019	1.20
RISK / ACCEPTABLE RISK TO: HUMAN				Dam water	R			River water AR			Groundwater R

TABLES 35 - 51

DAM 10: WATERS ORGANIC
ENVIRONMENTAL RISK QUANTIFICATION

Table 35

DAM 10: ENVIRONMENTAL RISK QUANTIFICATION • DAM WATER • SAMPLE NO. 1S [ORGANICS - PAH & VOC]
[ISCOR VANDERBIJLPARK STEEL – MASTER PLAN]

SAMPLE NUMBER: 1S — DAM 10: Current Volume = 670,807 kg/ha/m — Total Volume = 1,085,683 kg/ha/m

ORGANIC COMPOUNDS PAH[3] & VOC[3]	Acc. Risk Value (MR) ppb	RISK TO ENVIRONMENT																	
		RISK OF DAM WATER AS IS					RISK OF DILUTED DAM WATER IN RIVER				RISK OF DAM WATER FOR GROUNDWATER								
		TOTAL ANALYSIS			[4]PROBIT MODEL		DILUTED WATER		[4]PROBIT MODEL		CURRENT VOLUME		[4]PROBIT MODEL		TOTAL VOLUME		[4]PROBIT MODEL		
		[1]Lab Conc. ppm	[2]EEC ppb	[3]Risk R / AR	Risk Quantification %	[3]Risk R / AR	[2]EEC ppb	[3]Risk R / AR	Risk Quantification %	[3]Risk R / AR	[2]EEC ppb	[3]Risk R / AR	Risk Quantification %	[3]Risk R / AR	[2]EEC ppb	[3]Risk R / AR	Risk Quantification %	[3]Risk R / AR
Naphthalene	460	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Acenaphthylene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Acenaphthene	170	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Dibenzofuran	190	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Fluorene	160	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Phenanthrene	80	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Anthracene	0.[illegible]	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Di-n-butylphthalate	2[illegible]	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Fluoranthene	14	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Pyrene	200	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[a]anthracene	[illegible]	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Chrysene	[illegible]	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
bis[2-ethylhexyl]phthalate	[illegible]	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[b]&[k]fluoranthene	[illegible]	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[a]pyrene	[illegible]	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Indeno[1,2,3-cd]pyrene	[illegible]	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[g,h,i]perylene	[illegible]	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
RISK / ACCEPTABLE RISK TO: ENVIRONMENT				AR		AR		AR		AR		AR		AR		AR		AR

Table 36

DAM 10: ENVIRONMENTAL RISK QUANTIFICATION • DAM WATER • SAMPLE NO. 2S [ORGANICS - PAH* & VOC*]
[ISCOR VANDERBIJLPARK STEEL – MASTER PLAN]

SAMPLE NUMBER: 2S

ORGANIC COMPOUNDS PAH* & VOC*	Target Risk Value (MR) ppb	RISK TO ENVIRONMENT															
		RISK OF DAM WATER AS IS					RISK OF DILUTED DAM WATER IN RIVER				RISK OF DAM WATER FOR GROUNDWATER						
		TOTAL ANALYSIS			[4] PROBIT MODEL		DILUTED WATER		[4] PROBIT MODEL		CURRENT VOLUME		[4] PROBIT MODEL		TOTAL VOLUME		[4] PROBIT MODEL
		[1] Lab Conc. ppm	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR
Naphthalene	460	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Acenaphthylene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Acenaphthene	170	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Dibenzofuran	190	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Fluorene	160	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Phenanthrene	80	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Anthracene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Di-n-butylphthalate	200	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Fluoranthene	14	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Pyrene	200	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[a]anthracene	1.0	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Chrysene	100	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
bis(2-ethylhexyl)phthalate	14400	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[b]&[k]fluoranthene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo(a)pyrene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Indeno[1,2,3-cd]pyrene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[g,h,i]perylene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
RISK / ACCEPTABLE RISK TO: ENVIRONMENT		AR		AR			AR					AR		AR		AR		AR

Table 37

DAM 1D: ENVIRONMENTAL RISK QUANTIFICATION • DAM WATER • SAMPLE NO. 2D (ORGANICS - PAH & VOC)

[ISCOR VANDERBIJLPARK STEEL – MASTER PLAN]

SAMPLE NUMBER: 2D

ORGANIC COMPOUNDS PAH[4] & VOC[5]	Risk Value (MRL) ppb	RISK TO ENVIRONMENT															
		RISK OF DAM WATER AS IS					RISK OF DILUTED DAM WATER IN RIVER				RISK OF DAM WATER FOR GROUNDWATER						
		TOTAL ANALYSIS			[4] PROBIT MODEL		DILUTED WATER		[4] PROBIT MODEL		CURRENT VOLUME		[4] PROBIT MODEL		TOTAL VOLUME		[4] PROBIT MODEL	
		[1] Lab Conc. ppm	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR
Naphthalene	460	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Acenaphthylene	0.5	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Acenaphthene	170	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Dibenzofuran	190	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Fluorene	160	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Phenanthrene	80	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Anthracene	0.5	0.002	2.0	R	3.67E+00	R	0.067	AR	2.22E-14	AR	0.89	R	3.72E-02	R	1.43	R	7.22E-01	R
Di-n-butylphthalate	200	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Fluoranthene	14	0.020	20.0	R	7.16E-03	R	0.667	AR	0.00E+00	AR	8.90	AR	3.97E-06	AR	14.3	R	4.18E-04	R
Pyrene	200	0.015	15.0	AR	0.00E+00	AR	0.50	AR	0.00E+00	AR	6.64	AR	0.00E+00	AR	10.7	AR	0.00E+00	AR
Benzo[a]anthracene	1.0	0.006	6.0	R	1.59E+01	R	0.20	AR	4.22E-12	AR	2.66	R	4.83E-01	R	4.30	R	4.95E+00	R
Chrysene	100	0.005	5.0	AR	0.00E+00	AR	0.167	AR	0.00E+00	AR	2.21	AR	0.00E+00	AR	3.58	AR	0.00E+00	AR
bis(2-ethylhexyl)phthalate	14400	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Benzo[b]&[k]fluoranthene	0.5	0.004	4.0	R	3.31E+01	R	0.133	AR	1.57E-10	AR	1.77	R	2.12E+00	R	2.87	R	1.39E+01	R
Benzo(a)pyrene	0.5	0.004	4.0	R	3.31E+01	R	0.133	AR	1.57E-10	AR	1.77	R	2.12E+00	R	2.87	R	1.39E+01	R
Indeno[1,2,3-cd]pyrene	0.5	0.003	3.0	R	1.59E+01	R	0.10	AR	4.22E-12	AR	1.33	R	4.83E-01	R	2.15	R	4.95E+00	R
Benzo[g,h,i]perylene	0.5	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
RISK / ACCEPTABLE RISK TO: ENVIRONMENT		R		R				AR		AR		R		R		R		R

Table 38

DAM 10: ENVIRONMENTAL RISK QUANTIFICATION • DAM WATER • SAMPLE NO. 3S [ORGANIC - PAH's & VOC's]
[ISCOR VANDERBIJLPARK STEEL – MASTER PLAN]

SAMPLE NUMBER: 3S

ORGANIC COMPOUNDS PAH's & VOC's	Acc. Risk Value (MH) ppb	RISK TO ENVIRONMENT																
		RISK OF DAM WATER AS IS					RISK OF DILUTED DAM WATER IN RIVER				RISK OF DAM WATER FOR GROUNDWATER							
		TOTAL ANALYSIS			[4] PROBIT MODEL		DILUTED WATER		[4] PROBIT MODEL		CURRENT VOLUME		[4] PROBIT MODEL		TOTAL VOLUME		[4] PROBIT MODEL	
		[1] Lab Conc. ppm	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR
Naphthalene	460	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Acenaphthylene	0.3	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Acenaphthene	170	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Dibenzofuran	190	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Fluorene	160	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Phenanthrene	80	0.002	2.00	AR	0.00E+00	AR	0.067	AR	0.00E+00	AR	0.89	AR	0.00E+00	AR	1.43	AR	0.00E+00	AR
Anthracene	6.5	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Di-n-butylphthalate	200	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Fluoranthene	14	0.011	11.0	AR	3.47E-05	AR	0.367	AR	0.00E+00	AR	4.9	AR	4.55E-09	AR	7.9	AR	1.10E-06	AR
Pyrene	200	0.000	0.0	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Benzo[a]anthracene	1.0	0.004	4.0	R	3.67E+00	R	0.133	AR	2.22E-14	AR	1.77	R	3.57E-02	R	2.87	R	7.35E-01	R
Chrysene	100	0.004	4.0	AR	0.00E+00	AR	0.133	AR	0.00E+00	AR	1.77	AR	0.00E+00	AR	2.87	AR	0.00E+00	AR
bis(2-ethylhexyl)phthalate	14400	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Benzo[b]&[k]fluoranthene	0.5	0.006	6.0	R	6.39E+01	R	0.20	AR	2.23E-08	AR	2.66	R	1.09E+01	R	4.30	R	3.84E+01	R
Benzo(a)pyrene	0.5	0.004	4.0	R	3.31E+01	R	0.133	AR	1.57E-10	AR	1.77	R	2.12E+00	R	2.87	R	1.39E+01	R
Indeno[1,2,3-cd]pyrene	0.5	0.004	4.0	R	3.31E+01	R	0.133	AR	1.57E-10	AR	1.77	R	2.12E+00	R	2.87	R	1.39E+01	R
Benzo[g,h,i]perylene	0.5	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
RISK / ACCEPTABLE RISK TO: ENVIRONMENT		R		R		R		AR		AR		R		R		R		R

Table 39

DAM 10: ENVIRONMENTAL RISK QUANTIFICATION • DAM WATER • SAMPLE NO. 3S [ORGANIC - PAH[*] & VOC[*]]

[ISCOR VANDERBIJLPARK STEEL – MASTER PLAN]

SAMPLE NUMBER: 3D

ORGANIC COMPOUNDS PAH[*] & VOC[*]	[5] [illegible]	RISK TO ENVIRONMENT																
		RISK OF DAM WATER AS IS					RISK OF DILUTED DAM WATER IN RIVER				RISK OF DAM WATER FOR GROUNDWATER							
		TOTAL ANALYSIS			[4] PROBIT MODEL		DILUTED WATER		[4] PROBIT MODEL		CURRENT VOLUME		[4] PROBIT MODEL		TOTAL VOLUME		[4] PROBIT MODEL	
		[1] Lab Conc. ppm	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR
Naphthalene	480	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Acenaphthylene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Acenaphthene	170	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Dibenzofuran	190	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Fluorene	160	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Phenanthrene	80	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Anthracene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Di-n-butylphthalate	200	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Fluoranthene	14	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Pyrene	200	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[a]anthracene	1.0	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Chrysene	100	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
bis(2-ethylhexyl)phthalate	14400	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[b]&[k]fluoranthene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo(a)pyrene	0.1	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Indeno[1,2,3-cd]pyrene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[g,h,i]perylene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
RISK / ACCEPTABLE RISK TO: ENVIRONMENT				AR		AR		AR		AR		AR		AR		AR		AR

Table 40

DAM 10: ENVIRONMENTAL RISK QUANTIFICATION • DAM WATER • SAMPLE NO. 4S [ORGANICS - PAH[5] & VOC[5]]
[ISCOR VANDERBIJLPARK STEEL – MASTER PLAN]

SAMPLE NUMBER: 4S

ORGANIC COMPOUNDS PAH[5] & VOC[5]	[6] Acc. Risk (MR) ppb	RISK TO ENVIRONMENT																
		RISK OF DAM WATER AS IS					RISK OF DILUTED DAM WATER IN RIVER				RISK OF DAM WATER FOR GROUNDWATER							
		TOTAL ANALYSIS			[4] PROBIT MODEL		DILUTED WATER		[4] PROBIT MODEL		CURRENT VOLUME		[4] PROBIT MODEL		TOTAL VOLUME		[4] PROBIT MODEL	
		[1] Lab Conc. ppm	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR
Naphthalene	460	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Acenaphthylene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Acenaphthene	170	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Dibenzofuran	190	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Fluorene	160	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Phenanthrene	80	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Anthracene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Di-n-butylphthalate	200	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Fluoranthene	14	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Pyrene	200	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[a]anthracene	1.0	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Chrysene	100	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
bis(2-ethylhexyl)phthalate	14400	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[b]&[k]fluoranthene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo(a)pyrene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Indeno[1,2,3-cd]pyrene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[g,h,i]perylene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
RISK / ACCEPTABLE RISK TO: ENVIRONMENT				AR		AR		AR		AR		AR		AR		AR		AR

Table 41

DAM 10: ENVIRONMENTAL RISK QUANTIFICATION • DAM WATER • SAMPLE NO. 4D [ORGANICS - PAH[5] & VOC[5]]

[ISCOR VANDERBIJLPARK STEEL – MASTER PLAN]

SAMPLE NUMBER: 4D

ORGANIC COMPOUNDS PAH[5] & VOC[5]	[5] Acc. Risk Value (MR) r_{ij}	RISK TO ENVIRONMENT																
		RISK OF DAM WATER AS IS					RISK DF DILUTED DAM WATER IN RIVER				RISK OF DAM WATER FOR GRDUNDWATER							
		TOTAL ANALYSIS			[4] PROBIT MODEL		DILUTED WATER		[4] PROBIT MODEL		CURRENT VOLUME		[4] PROBIT MODEL		TOTAL VDLUME		[4] PROBIT MDDEL	
		[1] Lab Conc. ppm	[2] EEC ppb	[3] Risk R / AR	Risk Quan-tification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quan-tification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quan-tification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quan-tification %	[3] Risk R / AR
Naphthalene	460	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Acenaphthylene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Acenaphthene	170	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Dibenzofuran	190	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Fluorene	160	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Phenanthrene	80	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Anthracene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Di-n-butylphthalate	200	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Fluoranthene	14	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Pyrene	200	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[a]anthracene	1.0	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Chrysene	100	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
bis(2-ethylhexyl)phthalate	14400	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[b]&[k]fluoranthene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo(a)pyrene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Indeno[1,2,3-cd]pyrene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[g,h,i]perylene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
RISK / ACCEPTABLE RISK TO: ENVIRONMENT				AR		AR		AR		AR		AR		AR		AR		AR

Table 42

DAM 10: ENVIRONMENTAL RISK QUANTIFICATION • DAM WATER • SAMPLE NO. 5S [ORGANICS - PAH's & VOC's]
[ISCOR VANDERBIJLPARK STEEL – MASTER PLAN]

SAMPLE NUMBER: 5S

ORGANIC COMPOUNDS PAH's & VOC's	Acc. Risk Value (MR) ppb	RISK TO ENVIRONMENT															
		RISK OF DAM WATER AS IS					RISK OF DILUTED DAM WATER IN RIVER				RISK DF DAM WATER FOR GROUNDWATER						
		TOTAL ANALYSIS			[4] PROBIT MODEL		DILUTED WATER		[4] PROBIT MODEL		CURRENT VOLUME		[4] PROBIT MODEL		TOTAL VOLUME		[4] PROBIT MODEL	
		[1] Lab Conc. ppm	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR
Naphthalene	460	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Acenaphthylene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Acenaphthene	170	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Dibenzofuran	100	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Fluorene	150	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Phenanthrene	80	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Anthracene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Di-n-butylphthalate	200	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Fluoranthene	14	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Pyrene	200	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[a]anthracene	1.0	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Chrysene	100	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
bis(2-ethylhexyl)phthalate	14490	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[b]&[k]fluoranthene	0.9	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo(a)pyrene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Indeno[1,2,3-cd]pyrene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[g,h,i]perylene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
RISK / ACCEPTABLE RISK TO: ENVIRONMENT				AR		AR		AR		AR		AR		AR		AR		AR

Table 43

DAM 16: ENVIRONMENTAL RISK QUANTIFICATION • DAM WATER • SAMPLE NO. 50 [ORGANICS - PAH & VOC]

[ISCOR VANDERBIJLPARK STEEL – MASTER PLAN]

SAMPLE NUMBER: 50

ORGANIC COMPOUNDS PAH[5] & VOC[5]	Target Reporting Limit (MRL) ppb	RISK TO ENVIRONMENT															
		RISK OF DAM WATER AS IS					RISK OF DILUTED DAM WATER IN RIVER				RISK OF DAM WATER FOR GROUNDWATER						
		TOTAL ANALYSIS			[4] PROBIT MODEL		DILUTED WATER		[4] PROBIT MODEL		CURRENT VOLUME		[4] PROBIT MODEL		TOTAL VOLUME		[4] PROBIT MODEL	
		[1] Lab Conc. ppm	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR
Naphthalene	460	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Acenaphthylene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Acenaphthene	170	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Dibenzofuran	190	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Fluorene	160	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Phenanthrene	80	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Anthracene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Di-n-butylphthalate	200	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Fluoranthene	14	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Pyrene	200	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[a]anthracene	1.0	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Chrysene	100	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
bis(2-ethylhexyl)phthalate	14400	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[b]&[k]fluoranthene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo(a)pyrene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Indeno[1,2,3-cd]pyrene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[g,h,i]perylene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
RISK / ACCEPTABLE RISK TO: ENVIRONMENT		AR		AR		AR		AR		AR		AR		AR		AR		AR

Table 44

DAM 10: ENVIRONMENTAL RISK QUANTIFICATION • DAM WATER • SAMPLE NO. 6S [ORGANICS - PAH* & VOC*]
[ISCOR VANDERBIJLPARK STEEL – MASTER PLAN]

SAMPLE NUMBER: 6S

DRGANICS COMPOUNDS PAH* & VDC*	[5] Acc. Risk Value Mg ppb	RISK TO ENVIRONMENT																
		RISK DF DAM WATER AS IS					RISK DF DILUTED DAM WATER IN RIVER				RISK OF DAM WATER FOR GROUNDWATER							
		TOTAL ANALYSIS			[4] PROBIT MODEL		DILUTED WATER		[4] PROBIT MODEL		CURRENT VOLUME		[4] PROBIT MODEL		TOTAL VOLUME		[4] PROBIT MODEL	
		[1] Lab Conc. ppm	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR
Naphthalene	460	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Acenaphthylene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Acenaphthene	170	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Dibenzofuran	190	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Fluorene	160	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Phenanthrene	80	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Anthracene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Di-n-butylphthalate	200	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Fluoranthene	14	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Pyrene	200	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[a]anthracene	1.0	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Chrysene	100	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
bis(2-ethylhexyl)phthalate	14400	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[b]&[k]fluoranthene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo(a)pyrene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Indeno[1,2,3-cd]pyrene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[g,h,i]perylene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
RISK / ACCEPTABLE RISK TO: ENVIRONMENT				AR		AR		AR		AR		AR		AR		AR		AR

Table 45

DAM 10: ENVIRONMENTAL RISK QUANTIFICATION • DAM WATER • SAMPLE NO. 6D [ORGANICS - PAH'S VOC']

[ISCOR VANDERBIJLPARK STEEL – MASTER PLAN]

SAMPLE NUMBER: 6D

ORGANIC COMPOUNDS PAH[5] & VDC[5]	Acc. Limits	RISK TO ENVIRONMENT															
		RISK OF DAM WATER AS IS					RISK OF DILUTED DAM WATER IN RIVER				RISK OF DAM WATER FOR GROUNDWATER						
		TOTAL ANALYSIS			[4] PROBIT MODEL		DILUTED WATER		[4] PROBIT MODEL		CURRENT VOLUME		[4] PROBIT MODEL		TOTAL VOLUME		[4] PROBIT MODEL
		[1] Lab Conc. ppm	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR
Naphthalene	400	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Acenaphthylene	1.5	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Acenaphthene	170	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Oibenzofuran	150	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Fluorene	160	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Phenanthrene	10	0.004	4.0	AR	0.00E+00	AR	0.133	AR	0.00E+00	AR	1.77	AR	0.00E+00	AR	2.87	AR	0.00E+00	AR
Anthracene	0.5	0.003	3.0	R	1.59E+01	R	0.10	AR	4.22E-12	AR	1.33	R	4.83E-01	R	2.15	R	4.95E+00	R
Di-n-butylphthalate	200	0.007	7.0	AR	0.00E+00	AR	0.233	AR	0.00E+00	AR	3.10	AR	0.00E+00	AR	5.02	AR	0.00E+00	AR
Fluoranthene	14	0.017	17.0	R	1.90E-03	R	0.567	AR	0.00E+00	AR	7.53	AR	6.52E-07	AR	12.2	AR	9.38E-05	AR
Pyrene	200	0.008	8.0	AR	0.00E+00	AR	0.267	AR	0.00E+00	AR	3.54	AR	0.00E+00	AR	5.73	AR	0.00E+00	AR
Benzo[a]anthracene	1.0	0.005	5.0	R	8.78E+00	R	0.167	AR	4.11E-13	AR	2.21	R	1.59E-01	R	3.58	R	2.24E+00	R
Chrysene	10.1	0.005	5.0	AR	0.00E+00	AR	0.167	AR	0.00E+00	AR	2.21	AR	0.00E+00	AR	3.58	AR	0.00E+00	AR
bis(2-ethylhexyl)phthalate	14400	0.015	15.0	AR	0.00E+00	AR	0.50	AR	0.00E+00	AR	6.64	AR	0.00E+00	AR	10.8	AR	0.00E+00	AR
Benzo[b]&[k]fluoranthene	0.5	0.007	7.0	R	7.45E+01	R	0.233	AR	1.31E-07	AR	3.10	R	1.75E+01	R	5.02	R	5.03E+01	R
Benzo(a)pyrene	0.5	0.004	4.0	R	3.31E+01	R	0.133	AR	1.57E-10	AR	1.77	R	2.12E+00	R	2.87	R	1.39E+01	R
Indeno[1,2,3-cd]pyrene	0.5	0.003	3.0	R	1.59E+01	R	0.10	AR	4.22E-12	AR	1.33	R	4.83E-01	R	2.15	R	4.95E+00	R
Benzo[g,h,i]perylene	0.5	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
RISK / ACCEPTABLE RISK TO: ENVIRONMENT		R		R			AR		AR		R		R		R		R

Table 46

DAM 18: ENVIRONMENTAL RISK QUANTIFICATION • DAM WATER • SAMPLE NO. 7S [ORGANICS - PAH[5] & VOC[5]]

[ISCOR VANDERBIJLPARK STEEL – MASTER PLAN]

SAMPLE NUMBER: 7S

ORGANIC COMPOUNDS PAH[5] & VOC[5]	[5] Acc. Risk Value (MR) ppm	RISK TO ENVIRONMENT															
		RISK OF DAM WATER AS IS					RISK OF DILUTED DAM WATER IN RIVER				RISK OF DAM WATER FOR GROUNDWATER						
		TOTAL ANALYSIS			[4] PROBIT MODEL		DILUTED WATER		[4] PROBIT MODEL		CURRENT VOLUME		[4] PROBIT MODEL		TOTAL VOLUME		[4] PROBIT MODEL
		[1] Lab Conc. ppm	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR
Naphthalene	490	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Acenaphthylene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Acenaphthene	170	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Dibenzofuran	190	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Fluorene	160	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Phenanthrene	80	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Anthracene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Di-n-butylphthalate	200	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Fluoranthene	14	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Pyrene	200	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[a]anthracene	1.0	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Chrysene	100	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
bis(2-ethylhexyl)phthalate	14400	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[b]&[k]fluoranthene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo(a)pyrene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Indeno[1,2,3-cd]pyrene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[g,h,i]perylene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
RISK / ACCEPTABLE RISK TO: ENVIRONMENT				AR		AR		AR		AR		AR		AR		AR		AR

Table 47

DAM 10: ENVIRONMENTAL RISK QUANTIFICATION • DAM WATER • SAMPLE NO. 7D [ORGANICS - PAH & VOC]

[ISCOR VANDERBIJLPARK STEEL – MASTER PLAN]

SAMPLE NUMBER: 7D

ORGANIC COMPOUNDS PAH[3] & VOC[3]	Acc. Risk Value (MR) ppb	RISK TO ENVIRONMENT																	
		RISK OF DAM WATER AS IS					RISK OF DILUTED DAM WATER IN RIVER				RISK OF DAM WATER FOR GROUNDWATER								
		TOTAL ANALYSIS			[4] PROBIT MODEL		DILUTED WATER		[4] PROBIT MODEL		CURRENT VOLUME		[4] PROBIT MODEL		TOTAL VOLUME		[4] PROBIT MODEL		
		[1] Lab Conc. ppm	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR
Naphthalene	460	0.004	4.00	AR	0.00E+00	AR	0.133	AR	0.00E+00	AR	1.77	AR	0.00E+00	AR	2.87	AR	0.00E+00	AR
Acenaphthylene	0.5	0.003	3.00	R	1.59E+01	R	0.10	AR	4.22E-12	AR	1.33	R	4.83E-01	R	2.15	R	4.95E+00	R
Acenaphthene	170	0.003	3.00	AR	0.00E+00	AR	0.10	AR	0.00E+00	AR	1.33	AR	0.00E+00	AR	2.15	AR	0.00E+00	AR
Dibenzofuran	190	0.004	4.00	AR	0.00E+00	AR	0.133	AR	0.00E+00	AR	1.77	AR	0.00E+00	AR	2.87	AR	0.00E+00	AR
Fluorene	160	0.008	8.00	AR	0.00E+00	AR	0.267	AR	0.00E+00	AR	3.54	AR	0.00E+00	AR	5.73	AR	0.00E+00	AR
Phenanthrene	30	0.013	13.0	AR	2.89E-13	AR	0.433	AR	0.00E+00	AR	5.76	AR	0.00E+00	AR	9.32	AR	0.00E+00	AR
Anthracene	0.5	0.008	8.0	R	8.21E+01	R	0.267	AR	6.03E-07	AR	3.54	R	2.50E+01	R	5.73	R	6.05E+01	R
Di-n-butylphthalate	200	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Fluoranthene	14	0.037	37.0	R	4.65E-01	R	1.23	AR	0.00E+00	AR	16.4	R	1.40E-03	R	26.5	R	5.71E-02	R
Pyrene	200	0.018	18.0	AR	0.00E+00	AR	0.60	AR	0.00E+00	AR	7.97	AR	0.00E+00	AR	12.9	AR	0.00E+00	AR
Benzo[a]anthracene	0.5	0.012	12.0	R	6.39E+01	R	0.40	AR	2.23E-08	AR	5.31	R	1.08E+01	R	8.60	R	3.84E+01	R
Chrysene	140	0.012	12.0	AR	0.00E+00	AR	0.40	AR	0.00E+00	AR	5.31	AR	0.00E+00	AR	8.60	AR	0.00E+00	AR
bis(2-ethylhexyl)phthalate	14400	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Benzo[b]&[k]fluoranthene	0.5	0.019	19.0	R	9.96E+01	R	0.633	R	2.70E-03	R	8.41	R	8.45E+01	R	13.6	R	9.75E+01	R
Benzo(a)pyrene	0.5	0.011	11.0	R	9.38E+01	R	0.367	AR	1.76E-05	AR	4.87	R	4.80E+01	R	7.88	R	8.13E+01	R
Indeno[1,2,3-cd]pyrene	0.5	0.006	6.0	R	6.39E+01	R	0.20	AR	2.23E-08	AR	2.66	R	1.09E+01	R	4.30	R	3.84E+01	R
Benzo[g,h,i]perylene	0.5	0.005	5.0	R	5.00E+01	R	0.167	AR	2.59E-09	AR	2.21	R	5.53E+00	R	3.58	R	2.57E+01	R
RISK / ACCEPTABLE RISK TO: ENVIRONMENT		R				R		R		R		R		R		R		R

Table 48

DAM 10: ENVIRONMENTAL RISK QUANTIFICATION • DAM WATER • SAMPLE NO. 8S [ORGANICS - PAH[5] & VOC[5]]

[ISCOR VANDERBIJLPARK STEEL – MASTER PLAN]

SAMPLE NUMBER: 8S

ORGANIC COMPOUNDS PAH[5] & VOC[5]	Acc. Risk Value (NR) ppb	RISK TO ENVIRONMENT															
		RISK OF DAM WATER AS IS					RISK OF DILUTED DAM WATER IN RIVER				RISK OF DAM WATER FOR GROUNDWATER						
		TOTAL ANALYSIS			[4] PROBIT MODEL		DILUTED WATER		[4] PROBIT MODEL		CURRENT VOLUME		[4] PROBIT MODEL		TOTAL VOLUME		[4] PROBIT MODEL
		[1] Lab Conc. ppm	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR
Naphthalene	460	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Acenaphthylene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Acenaphthene	170	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Dibenzofuran	100	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Fluorene	100	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Phenanthrene	90	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Anthracene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Di-n-butylphthalate	200	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Fluoranthene	1.1	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Pyrene	200	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[a]anthracene	1.0	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Chrysene	100	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
bis(2-ethylhexyl)phthalate	14400	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[b]&[k]fluoranthene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo(a)pyrene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Indeno[1,2,3-cd]pyrene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[g,h,i]perylene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
RISK / ACCEPTABLE RISK TO: ENVIRONMENT				AR		AR		AR		AR		AR		AR		AR		AR

Table 49

DAM 18: ENVIRONMENTAL RISK QUANTIFICATION • DAM WATER • SAMPLE NO. 8D [ORGANICS - PAH & VOC]
[ISCOR VANDERBIJLPARK STEEL – MASTER PLAN]

SAMPLE NUMBER: 8D

ORGANIC COMPOUNDS PAH[5] & VOC[5]	[illegible]	RISK TO ENVIRONMENT																
		RISK OF DAM WATER AS IS					RISK OF DILUTED DAM WATER IN RIVER				RISK OF DAM WATER FOR GROUNDWATER							
		TOTAL ANALYSIS			[4] PROBIT MODEL		DILUTED WATER		[4] PROBIT MODEL		CURRENT VOLUME		[4] PROBIT MODEL		TOTAL VOLUME		[4] PROBIT MODEL	
	NR [illegible]	[1] Lab Conc. ppm	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR
Naphthalene	460	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Acenaphthylene	0.5	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Acenaphthene	170	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Dibenzofuran	140	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Fluorene	150	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Phenanthrene	56	0.004	4.00	AR	0.00E+00	AR	0.133	AR	0.00E+00	AR	1.77	AR	0.00E+00	AR	2.87	AR	0.00E+00	AR
Anthracene	0.5	0.003	3.0	R	1.59E+01	R	0.10	AR	4.22E-12	AR	1.33	R	4.83E-01	R	2.15	R	4.95E+00	R
Di-n-butylphthalate	300	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Fluoranthene	14	0.018	18.0	R	3.06E-03	R	0.60	AR	0.00E+00	AR	8.00	AR	1.27E-06	AR	12.9	AR	1.62E-04	AR
Pyrene	200	0.000	0.0	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Benzo[a]anthracene	1.0	0.005	5.0	R	8.78E+00	R	0.167	AR	4.11E-13	AR	2.21	R	1.59E-01	R	3.58	R	2.24E+00	R
Chrysene	100	0.005	5.0	AR	0.00E+00	AR	0.167	AR	0.00E+00	AR	2.21	AR	0.00E+00	AR	3.58	AR	0.00E+00	AR
bis(2-ethylhexyl)phthalate	14400	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
Benzo[b]&[k]fluoranthene	0.5	0.006	6.0	R	6.39E+01	R	0.20	AR	2.23E-08	AR	2.66	R	1.09E+01	R	4.30	R	3.84E+01	R
Benzo(a)pyrene	0.5	0.005	5.0	R	5.00E+01	R	0.167	AR	2.59E-09	AR	2.21	R	5.53E+00	R	3.58	R	2.57E+01	R
Indeno[1,2,3-cd]pyrene	0.5	0.003	3.0	R	1.59E+01	R	0.10	AR	4.22E-12	AR	1.33	R	4.83E-01	R	2.15	R	4.95E+00	R
Benzo[g,h,i]perylene	0.5	0.000	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR	0.00	AR	0.00E+00	AR
RISK / ACCEPTABLE RISK TO: ENVIRONMENT		R		R			AR			R		R			R		R	

Table 50

DAM 10: ENVIRONMENTAL RISK QUANTIFICATION • DAM WATER • SAMPLE NO. 9S [ORGANICS - PAH & VOC]

[ISCOR VANDERBIJLPARK STEEL – MASTER PLAN]

SAMPLE NUMBER: 9S

ORGANIC COMPOUNDS PAH[5] & VDC[6]	[5] & [6] Value (MR) ppb	RISK TO ENVIRONMENT															
		RISK DF DAM WATER AS IS					RISK OF DILUTED DAM WATER IN RIVER				RISK OF DAM WATER FOR GROUNDWATER						
		TOTAL ANALYSIS			[4] PROBIT MODEL		DILUTED WATER		[4] PROBIT MODEL		CURRENT VOLUME		[4] PROBIT MODEL		TOTAL VOLUME		[4] PROBIT MODEL
		[1] Lab Conc. ppm	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR
Naphthalene	430	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Acenaphthylene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Acenaphthene	170	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Dibenzofuran	150	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Fluorene	150	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Phenanthrene	90	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Anthracene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Di-n-butylphthalate	200	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Fluoranthene	14	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Pyrene	300	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[a]anthracene	1.0	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Chrysene	100	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
bis(2-ethylhexyl)phthalate	14400	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[b]&[k]fluoranthene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo(a)pyrene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Indeno(1,2,3-cd)pyrene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[g,h,i]perylene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
RISK / ACCEPTABLE RISK TO: ENVIRONMENT		AR		AR			AR			AR		AR		AR		AR		AR

Table 51

DAM 10: ENVIRONMENTAL RISK QUANTIFICATION • DAM WATER • SAMPLE NO. 9D [ORGANICS - PAH's & VOC's]
[ISCOR VANDERBIJLPARK STEEL – MASTER PLAN]

SAMPLE NUMBER: 9D

ORGANIC COMPOUNDS PAH's & VOC's	Target Risk Limit (MR) ppb	RISK TO ENVIRONMENT																	
		RISK OF DAM WATER AS IS					RISK OF DILUTED DAM WATER IN RIVER				RISK OF DAM WATER FOR GROUNDWATER								
		TOTAL ANALYSIS			[4] PROBIT MODEL		DILUTED WATER		[4] PROBIT MODEL		CURRENT VOLUME		[4] PROBIT MODEL		TOTAL VOLUME		[4] PROBIT MODEL		
		[1] Lab Conc. ppm	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR	[2] EEC ppb	[3] Risk R / AR	Risk Quantification %	[3] Risk R / AR
Naphthalene	480	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Acenaphthylene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Acenaphthene	170	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Dibenzofuran	130	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Fluorene	160	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Phenanthrene	30	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Anthracene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Di-n-butylphthalate	200	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Fluoranthene	14	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Pyrene	200	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo(a)anthracene	1.0	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Chrysene	100	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
bis(2-ethylhexyl)phthalate	14400	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[b]&[k]fluoranthene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo(a)pyrene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Indeno[1,2,3-cd]pyrene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
Benzo[g,h,i]perylene	0.5	0.000	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR	0.00	AR	0E+00	AR
RISK / ACCEPTABLE RISK TO: ENVIRONMENT				AR		AR		AR		AR		AR		AR		AR		AR

TABLES 52 – 66

DAM 10: WATERS ORGANIC
HUMAN RISK ASSESSMENT

Table 52

DAM 1S: HUMAN RISK ASSESSMENT • DAM WATER • SAMPLE NO. 1S (ORGANICS - PAH's & VOC's)
[ISCOR VANDERBIJLPARK STEEL - MASTER PLAN]

SAMPLE NUMBER: 1S

ORGANIC COMPOUNDS PAH's & VOC's	[6] RfD/ ADI / GV mg/kg/day	[7] EPA RfD/ EPA DWEL/ RSA RfD/ WHO GV	RISK TO HUMAN								
			RISK OF DAM WATER AS IS			RISK OF DILUTED DAM WATER IN RIVER			RISK OF DAM WATER FOR GROUNDWATER		
			[8] Conc. in Dam water ppm	[9] PDI Dam water exposure mg/kg/day	[10] Margin of Safety %	[11] Conc. in River water (EEC) ppb	[12] PDI river water exposure mg/kg/day	[10] Margin of Safety %	[13] Conc. in groundwater (EEC) ppb	[14] PDI groundwater exposure mg/kg/day	[10] Margin of Safety %
Naphthalene	0.04	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acenaphthylene	0.00004	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acenaphthene	0.06	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dibenzofuran	0.004	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluorene	0.04	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phenanthrene	0.0002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anthracene	0.3	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Di-n-butylphthalate	0.1	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluoranthene	0.04	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pyrene	0.03	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[a]anthracene	0.00004	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chrysene	0.00004	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bis(2-ethylhexyl)phthalate	0.02	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[b]&[k]fluoranthene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo(a)pyrene	0.0002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Indeno[1,2,3-cd]pyrene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[g,h,i]perylene	0.0002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RISK / ACCEPTABLE RISK TO: HUMAN				Dam water	AR		River water	AR		Groundwater	AR

Table 53

DAM 10: HUMAN RISK ASSESSMENT • DAM WATER • SAMPLE NO. 2S [ORGANICS - PAH's & VOC's]

[ISCOR VANDERBIJLPARK STEEL - MASTER PLAN]

SAMPLE NUMBER: 2S

ORGANIC COMPOUNDS PAH's & VOC's	[6] RfD/ ADI / GV mg/kg/day	[7] EPA RfD/ EPA DWEL/ RSA RfD/ WHO GV	RISK TO HUMAN								
			RISK DF DAM WATER AS IS			RISK OF DILUTED DAM WATER IN RIVER			RISK OF DAM WATER FOR GROUNDWATER		
			[8] Conc. in Dam water ppm	[9] PDI Dam water exposure mg/kg/day	[10] Margin of Safety %	[11] Conc. in River water (EEC) ppb	[12] PDI river water exposure mg/kg/day	[10] Margin of Safety %	[13] Conc. in groundwater (EEC) ppb	[14] PDI groundwater exposure mg/kg/day	[10] Margin of Safety %
Naphthalene	0.02	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acenaphthylene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acenaphthene	0.06	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dibenzofuran	0.004	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluorene	0.04	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phenanthrene	0.0032	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anthracene	0.3	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Di-n-butylphthalate	0.1	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluoranthene	0.04	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pyrene	0.03	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[a]anthracene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chrysene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bis(2-ethylhexyl)phthalate	0.02	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[b]&[k]fluoranthene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo(a)pyrene	0.0002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Indeno[1,2,3-cd]pyrene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[g,h,i]perylene	0.0002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RISK / ACCEPTABLE RISK TO: HUMAN				Dam water	AR		River water	AR		Groundwater	AR

Table 54

DAM 10: HUMAN RISK ASSESSMENT • DAM WATER • SAMPLE NO. 2D [ORGANICS - PAH' & VOC']

[ISCOR VANDERBIJLPARK STEEL - MASTER PLAN]

SAMPLE NUMBER: 2D

ORGANIC COMPDUNDS PAH[4] & VOC[5]	[6] RfD/ ADI / GV mg/kg/day	[7] EPA RfD/ EPA DWEL/ RSA RfD/ WHO GV	RISK TO HUMAN								
			RISK OF DAM WATER AS IS			RISK OF DILUTED DAM WATER IN RIVER			RISK OF DAM WATER FOR GROUNDWATER		
			[8] Conc. in Dam water ppm	[9] PDI Dam water exposure mg/kg/day	[10] Margin of Safety %	[11] Conc. in River water (EEC) ppb	[12] PDI river water exposure mg/kg/day	[10] Margin of Safety %	[13] Conc. in groundwater (EEC) ppb	[14] PDI groundwater exposure mg/kg/day	[10] Margin of Safety %
Naphthalene	0.02	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acenaphthylene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acenaphthene	0.06	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dibenzofuran	0.004	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluorene	0.04	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phenanthrene	0.0002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anthracene	0.3	EPA RfD	0.002	0.00007	0.023	0.067	0.000002	0.0003	0.890	0.00003	0.010
Di-n-butylphthalate	0.1	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluoranthene	0.04	EPA RfD	0.020	0.0007	1.67	0.667	0.00002	0.05	8.90	0.0003	0.743
Pyrene	0.03	EPA RfD	0.015	0.0005	1.67	0.50	0.00002	0.06	6.64	0.0002	0.700
Benzo[a]anthracene	0.00002	WHO GV	0.006	0.0002	1000	0.20	0.00001	33.3	2.66	0.00009	443
Chrysene	0.00002	WHO GV	0.005	0.0002	833	0.167	0.00001	27.8	2.21	0.00007	369
bis(2-ethylhexyl)phthalate	0.02	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[b]&[k]fluoranthene	0.00002	WHO GV	0.004	0.00013	667	0.133	0.000004	22.2	1.77	0.00006	295
Benzo(a)pyrene	0.00[illegible]	WHO GV	0.004	0.00013	67	0.133	0.000004	2.2	1.77	0.00006	29.5
Indeno[1,2,3-cd]pyrene	0.00002	WHO GV	0.003	0.0001	500	0.10	0.000003	16.7	1.33	0.00004	222
Benzo[g,h,i]perylene	0.0002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RISK / ACCEPTABLE RISK TO: HUMAN				Dam water	R		River water	AR		Groundwater	R

Table 55

DAM 10: HUMAN RISK ASSESSMENT • DAM WATER • SAMPLE NO. 3S [ORGANICS - PAH[4] & VOC[5]]

[ISCOR VANDERBIJLPAR STEEL - MASTER PLAN]

SAMPLE NUMBER: 3S

ORGANIC COMPOUNDS PAH[4] & VOC[5]	[8] RfD/ ADI / GV mg/kg/day	[7] EPA RfD/ EPA DWEL/ RSA RfD/ WHO GV	RISK TO HUMAN								
			RISK OF DAM WATER AS IS			RISK OF DILUTED DAM WATER IN RIVER			RISK OF DAM WATER FOR GROUNDWATER		
			[8] Conc. in Dam water ppm	[9] PDI Dam water exposure mg/kg/day	[10] Margin of Safety %	[11] Conc. in River water (EEC) ppb	[12] PDI river water exposure mg/kg/day	[10] Margin of Safety %	[13] Conc. in groundwater (EEC) ppb	[14] PDI groundwater exposure mg/kg/day	[10] Margin of Safety %
Naphthalene	0.04	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acenaphthylene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acenaphthene	0.06	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dibenzofuran	0.004	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluorene	0.04	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phenanthrene	0.0003	WHO GV	0.002	0.00007	33	0.067	0.000002	1.17	0.89	0.00003	14.6
Anthracene	0.3	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Di-n-butylphthalate	0.1	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluoranthene	0.04	EPA RfD	0.011	0.0004	0.917	0.367	0.00001	0.03	4.90	0.0002	0.408
Pyrene	0.03	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
Benzo[a]anthracene	0.00002	WHO GV	0.004	0.00013	667	0.133	0.000004	22.2	1.77	0.00006	295
Chrysene	0.00002	WHO GV	0.004	0.00013	667	0.133	0.000004	22.2	1.77	0.00006	295
bis(2-ethylhexyl)phthalate	0.02	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[b]&[k]fluoranthene	0.00002	WHO GV	0.006	0.0002	1000	0.20	0.000007	33.3	2.66	0.00009	443
Benzo(a)pyrene	0.0002	WHO GV	0.004	0.00013	67	0.133	0.000004	2.22	1.77	0.00006	29.5
Indeno[1,2,3-cd]pyrene	0.00002	WHO GV	0.004	0.0001	667	0.133	0.000004	22.2	1.77	0.00006	295
Benzo[g,h,i]perylene	0.0002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RISK / ACCEPTABLE RISK TO: HUMAN				Dam water	R		River water	AR		Groundwater	R

Table 56

DAM 10: HUMAN RISK ASSESSMENT • DAM WATER • SAMPLE NO. 3D [ORGANICS - PAH[5] & VOC[5]]
[ISCOR VANDERBIJLPARK STEEL - MASTER PLAN]

SAMPLE NUMBER: 3D

ORGANIC COMPOUNDS PAH[5] & VOC[5]	[6] RfD/ ADI / GV mg/kg/day	[7] EPA RfD/ EPA DWEL/ RSA RfD/ WHO GV	RISK TO HUMAN								
			RISK OF DAM WATER AS IS			RISK OF DILUTED DAM WATER IN RIVER			RISK OF DAM WATER FOR GROUNDWATER		
			[8] Conc. in Dam water ppm	[9] PDI Dam water exposure mg/kg/day	[10] Margin of Safety %	[11] Conc. in River water (EEC) ppb	[12] PDI river water exposure mg/kg/day	[10] Margin of Safety %	[13] Conc. in groundwater (EEC) ppb	[14] PDI groundwater exposure mg/kg/day	[10] Margin of Safety %
Naphthalene	0.02	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acenaphthylene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acenaphthene	0.06	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dibenzofuran	0.004	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluorene	0.04	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phenanthrene	0.0002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anthracene	0.3	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Di-n-butylphthalate	0.1	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluoranthene	0.04	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pyrene	0.03	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[a]anthracene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chrysene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bis(2-ethylhexyl)phthalate	0.02	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[b]&[k]fluoranthene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo(a)pyrene	0.0002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Indeno[1,2,3-cd]pyrene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[g,h,i]perylene	0.0002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RISK / ACCEPTABLE RISK TO: HUMAN				Dam water	AR		River water	AR		Groundwater	AR

Table 57

DAM 10: HUMAN RISK ASSESSMENT • DAM WATER • SAMPLE NO. 4S [ORGANICS - PAH's & VOC's]

[ISCOR VANDERBIJLPARK STEEL - MASTER PLAN]

SAMPLE NUMBER: 4S

ORGANIC COMPOUNDS PAH[5] & VOC[5]	[6] RfD/ ADI / GV mg/kg/day	[7] EPA RfD/ EPA DWEL/ RSA RfD/ WHO GV	RISK TO HUMAN								
			RISK OF DAM WATER AS IS			RISK OF DILUTED DAM WATER IN RIVER			RISK OF DAM WATER FOR GROUNDWATER		
			[8] Conc. in Dam water ppm	[9] PDI Dam water exposure mg/kg/day	[10] Margin of Safety %	[11] Conc. in River water (EEC) ppb	[12] PDI river water exposure mg/kg/day	[10] Margin of Safety %	[13] Conc. in groundwater (EEC) ppb	[14] PDI groundwater exposure mg/kg/day	[10] Margin of Safety %
Naphthalene	0.02	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acenaphthylene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acenaphthene	0.06	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dibenzofuran	0.004	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluorene	0.04	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phenanthrene	0.0002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anthracene	0.3	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Di-n-butylphthalate	0.1	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluoranthene	0.04	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pyrene	0.03	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[a]anthracene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chrysene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bis(2-ethylhexyl)phthalate	0.02	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[b]&[k]fluoranthene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo(a)pyrene	0.0002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Indeno[1,2,3-cd]pyrene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[g,h,i]perylene	0.0002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RISK / ACCEPTABLE RISK TO: HUMAN				Dam water	AR		River water	AR		Groundwater	AR

Table 58

DAM 10: HUMAN RISK ASSESSMENT • DAM WATER • SAMPLE NO. 40 [ORGANICS - PAH's & VOC's]
[ISCOR VANDERBIJLPARK STEEL - MASTER PLAN]

SAMPLE NUMBER: 40

ORGANIC COMPOUNDS PAH's & VOC's	[6] RfD/ ADI / GV mg/kg/day	[7] EPA RfD/ EPA DWEL/ RSA RfD/ WHO GV	RISK TO HUMAN								
			RISK OF DAM WATER AS IS			RISK OF DILUTED DAM WATER IN RIVER			RISK OF DAM WATER FOR GROUNDWATER		
			[8] Conc. in Dam water ppm	[9] PDI Dam water exposure mg/kg/day	[10] Margin of Safety %	[11] Conc. in River water (EEC) ppb	[12] PDI river water exposure mg/kg/day	[10] Margin of Safety %	[13] Conc. in groundwater (EEC) ppb	[14] PDI groundwater exposure mg/kg/day	[10] Margin of Safety %
Naphthalene	0.02	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acenaphthylene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acenaphthene	0.06	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dibenzofuran	0.004	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluorene	0.04	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phenanthrene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anthracene	0.3	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Di-n-butylphthalate	0.1	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluoranthene	0.04	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pyrene	0.03	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[a]anthracene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chrysene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bis(2-ethylhexyl)phthalate	0.02	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[b]&[k]fluoranthene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo(a)pyrene	0.0002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Indeno[1,2,3-cd]pyrene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[g,h,i]perylene	0.0002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RISK / ACCEPTABLE RISK TO: HUMAN				Dam water	AR		River water	AR		Groundwater	AR

Table 59

DAM 10: HUMAN RISK ASSESSMENT • DAM WATER • SAMPLE NO. 6S [ORGANICS - PAH[4] & VOC[5]]
[ISCOR VANDERBIJLPARK STEEL - MASTER PLAN]

SAMPLE NUMBER: 6S

ORGANIC COMPOUNDS PAH[4] & VOC[5]	[6] RfD/ ADI / GV mg/kg/day	[7] EPA RfD/ EPA DWEL/ RSA RfD/ WHO GV	RISK TO HUMAN								
			RISK OF DAM WATER AS IS			RISK OF DILUTED DAM WATER IN RIVER			RISK OF DAM WATER FOR GROUNDWATER		
			[8] Conc. in Dam water ppm	[9] PDI Dam water exposure mg/kg/day	[10] Margin of Safety %	[11] Conc. in River water (EEC) ppb	[12] PDI river water exposure mg/kg/day	[10] Margin of Safety %	[13] Conc. in groundwater (EEC) ppb	[14] PDI groundwater exposure mg/kg/day	[10] Margin of Safety %
Naphthalene	0.02	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acenaphthylene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acenaphthene	0.06	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dibenzofuran	0.004	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluorene	0.04	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phenanthrene	0.0002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anthracene	0.3	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Di-n-butylphthalate	0.1	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluoranthene	0.04	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pyrene	0.03	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[a]anthracene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chrysene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bis(2-ethylhexyl)phthalate	0.02	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[b]&[k]fluoranthene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo(a)pyrene	0.0002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Indeno[1,2,3-cd]pyrene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[g,h,i]perylene	0.0002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RISK / ACCEPTABLE RISK TO: HUMAN				Dam water	AR		River water	AR		Groundwater	AR

Table 60

DAM 10: HUMAN RISK ASSESSMENT • DAM WATER • SAMPLE NO. 6D [ORGANICS : PAH[5] & VOC[5]]

[ISCOR VANDERBIJLPARK STEEL - MASTER PLAN]

SAMPLE NUMBER: 6D

ORGANIC COMPOUNDS PAH[5] & VOC[5]	[6] RfD/ ADI / GV mg/kg/day	[7] EPA RfD/ EPA DWEL/ RSA RfD/ WHO GV	RISK TO HUMAN								
			RISK DF DAM WATER AS IS			RISK OF DILUTED DAM WATER IN RIVER			RISK OF DAM WATER FOR GROUNDWATER		
			[8] Conc. in Dam water ppm	[9] PDI Dam water exposure mg/kg/day	[10] Margin of Safety %	[11] Conc. in River water (EEC) ppb	[12] PDI river water exposure mg/kg/day	[10] Margin of Safety %	[13] Conc. in groundwater (EEC) ppb	[14] PDI groundwater exposure mg/kg/day	[10] Margin of Safety %
Naphthalene	0.02	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acenaphthylene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acenaphthene	0.06	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dibenzofuran	0.004	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluorene	0.04	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phenanthrene	0.0002	WHO GV	0.004	0.00013	67	0.133	0.000004	2.22	1.77	0.00006	29.5
Anthracene	0.3	EPA RfD	0.003	0.0001	0.03	0.10	0.000003	0.00	1.33	0.00004	0.01
Di-n-butylphthalate	0.1	EPA RfD	0.007	0.0002	0.23	0.233	0.000008	0.00	3.10	0.00010	0.103
Fluoranthene	0.04	EPA RfD	0.017	0.0006	1.42	0.567	0.00002	0.05	7.53	0.0003	0.628
Pyrene	0.03	EPA RfD	0.008	0.0003	0.889	0.267	0.000009	0.03	3.54	0.00012	0.396
Benzo[a]anthracene	0.00002	WHO GV	0.005	0.0002	833	0.167	0.000006	27.8	2.21	0.00007	368
Chrysene	0.00002	WHO GV	0.005	0.0002	833	0.167	0.000006	27.8	2.21	0.00007	368
bis(2-ethylhexyl)phthalate	0.02	EPA RfD	0.015	0.0005	2.50	0.50	0.00002	0.08	6.64	0.0002	1.11
Benzo[b]&[k]fluoranthene	0.00002	WHO GV	0.007	0.0002	1167	0.233	0.000008	38.9	3.10	0.00010	517
Benzo(a)pyrene	0.0002	WHO GV	0.004	0.00013	67	0.133	0.000004	2.22	1.77	0.00006	29.5
Indeno[1,2,3-cd]pyrene	0.00002	WHO GV	0.003	0.0001	500	0.10	0.000003	16.67	1.33	0.00004	222
Benzo[g,h,i]perylene	0.0002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		RISK / ACCEPTABLE RISK TO: HUMAN		Dam water	R		River water	AR		Groundwater	R

Table 61

DAM 10: HUMAN RISK ASSESSMENT • DAM WATER • SAMPLE NO. 7S [ORGANICS - PAH[5] & VOC[5]]
[ISCOR VANDERBIJLPARK STEEL - MASTER PLAN]

SAMPLE NUMBER: 7S

ORGANIC COMPOUNDS PAH[5] & VOC[5]	[6] RfD/ ADI / GV mg/kg/day	[7] EPA RfD/ EPA OWEL/ RSA RfD/ WHO GV	RISK TO HUMAN								
			RISK OF DAM WATER AS IS			RISK OF DILUTED DAM WATER IN RIVER			RISK OF DAM WATER FOR GROUNDWATER		
			[8] Conc. in Dam water ppm	[9] PDI Dam water exposure mg/kg/day	[10] Margin of Safety %	[11] Conc. in River water (EEC) ppb	[12] PDI river water exposure mg/kg/day	[10] Margin of Safety %	[13] Conc. in groundwater (EEC) ppb	[14] PDI groundwater exposure mg/kg/day	[10] Margin of Safety %
Naphthalene	0.02	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acenaphthylene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acenaphthene	0.06	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dibenzofuran	0.004	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluorene	0.04	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phenanthrene	0.0002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anthracene	0.3	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Di-n-butylphthalate	0.1	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluoranthene	0.04	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pyrene	0.03	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[a]anthracene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chrysene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bis(2-ethylhexyl)phthalate	0.02	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[b]&[k]fluoranthene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo(a)pyrene	0.0002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Indeno[1,2,3-cd]pyrene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[g,h,i]perylene	0.0002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RISK / ACCEPTABLE RISK TO: HUMAN				Dam water	AR		River water	AR		Groundwater	AR

Table 62

DAM 10: HUMAN RISK ASSESSMENT • DAM WATER • SAMPLE NO. 7D [ORGANICS - PAH[5] & VOC[5]]

[ISCOR VANDERBIJLPARK STEEL - MASTER PLAN]

SAMPLE NUMBER: 7D

ORGANIC COMPOUNDS PAH[5] & VOC[5]	[6] RfD/ ADI / GV mg/kg/day	[7] EPA RfD/ EPA DWEL/ RSA RfD/ WHO GV	RISK TO HUMAN								
			RISK OF DAM WATER AS IS			RISK OF DILUTED DAM WATER IN RIVER			RISK OF DAM WATER FOR GROUNDWATER		
			[8] Conc. in Dam water ppm	[9] PDI Dam water exposure mg/kg/day	[10] Margin of Safety %	[11] Conc. in River water (EEC) ppb	[12] PDI river water exposure mg/kg/day	[10] Margin of Safety %	[13] Conc. in groundwater (EEC) ppb	[14] PDI groundwater exposure mg/kg/day	[10] Margin of Safety %
Naphthalene	0.02	EPA RfD	0.004	0.00013	0.65	0.133	0.000004	0.02	1.77	0.00006	0.295
Acenaphthylene	0.00002	WHO GV	0.003	0.0001	500	0.100	0.000003	16.67	1.33	0.00004	222
Acenaphthene	0.06	EPA RfD	0.003	0.0001	0.167	0.100	0.000003	0.006	1.33	0.00004	0.074
Oibenzofuran	0.004	EPA RfD	0.004	0.00013	3.33	0.133	0.000004	0.11	1.77	0.00006	1.48
Fluorene	0.04	EPA RfD	0.008	0.0003	0.667	0.267	0.000009	0.02	3.54	0.00012	0.295
Phenanthrene	0.0002	WHO GV	0.013	0.0004	217	0.433	0.000014	7.2	5.76	0.00019	96
Anthracene	0.3	EPA RfD	0.008	0.0003	0.09	0.267	0.000009	0.003	3.54	0.00012	0.04
Oi-n-butylphthalate	0.1	EPA RfD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluoranthene	0.04	EPA RfD	0.037	0.0012	3.33	1.23	0.00004	0.103	16.4	0.0005	1.37
Pyrene	0.03	EPA RfD	0.018	0.0006	2.0	0.600	0.00002	0.067	7.97	0.0003	0.886
Benzo[a]anthracene	0.00002	WHO GV	0.012	0.0004	2000	0.400	0.000013	67	5.31	0.00018	885
Chrysene	0.00002	WHO GV	0.012	0.0004	2000	0.400	0.000013	67	5.31	0.00018	885
bis(2-ethylhexyl)phthalate	0.02	EPA RfD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[b]&[k]fluoranthene	0.00002	WHO GV	0.019	0.0006	3167	0.633	0.000021	106	8.41	0.0003	1402
Benzo(a)pyrene	0.0002	WHO GV	0.011	0.0004	183	0.367	0.000012	6.1	4.87	0.00016	81.2
Indeno[1,2,3-cd]pyrene	0.00002	WHO GV	0.006	0.0002	1000	0.200	0.000007	33.3	2.66	0.00009	443
Benzo[g,h,i]perylene	0.0002	WHO GV	0.005	0.0002	83	0.167	0.000006	2.78	2.21	0.00007	36.8
RISK / ACCEPTABLE RISK TO: HUMAN				Dam water	R		River water	R		Groundwater	R

Table 63

DAM 1Q: HUMAN RISK ASSESSMENT • DAM WATER • SAMPLE NO. 8S [ORGANICS - PAH[5] & VOC[3]]

[ISCOR VANDERBIJLPARK STEEL - MASTER PLAN]

SAMPLE NUMBER: 8S

ORGANIC COMPOUNDS PAH[5] & VOC[3]	[6] RfD/ ADI / SV mg/kg/day	[7] EPA RfD/ EPA DWEL/ RSA RfD/ WHO GV	RISK TO HUMAN								
			RISK OF DAM WATER AS IS			RISK OF DILUTED DAM WATER IN RIVER			RISK OF DAM WATER FOR GROUNDWATER		
			[8] Conc. in Dam water ppm	[9] PDI Dam water exposure mg/kg/day	[10] Margin of Safety %	[11] Conc. in River water (EEC) ppb	[12] PDI river water exposure mg/kg/day	[10] Margin of Safety %	[13] Conc. in groundwater (EEC) ppb	[14] PDI groundwater exposure mg/kg/day	[10] Margin of Safety %
Naphthalene	0.02	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acenaphthylene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acenaphthene	0.06	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dibenzofuran	0.004	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluorene	0.04	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phenanthrene	0.0002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Anthracene	0.3	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Di-n-butylphthalate	0.1	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluoranthene	0.04	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pyrene	0.03	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[a]anthracene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chrysene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bis(2-ethylhexyl)phthalate	0.02	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[b]&[k]fluoranthene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo(a)pyrene	0.0002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Indeno[1,2,3-cd]pyrene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[g,h,i]perylene	0.0002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RISK / ACCEPTABLE RISK TO: HUMAN				Dam water	AR		River water	AR		Groundwater	AR

Table 64

DAM 10: HUMAN RISK ASSESSMENT • DAM WATER • SAMPLE NO. 8D [ORGANICS - PAH's & VOC's]

[ISCOR VANDERBIJLPARK STEEL - MASTER PLAN]

SAMPLE NUMBER: 8D

ORGANIC COMPOUNDS PAH[5] & VOC[5]	[6] RfD/ ADI / GV mg/kg/day	[7] EPA RfD/ EPA DWEL/ RSA RfD/ WHO GV	RISK TO HUMAN								
			RISK OF DAM WATER AS IS			RISK OF DILUTED DAM WATER IN RIVER			RISK OF DAM WATER FOR GROUNDWATER		
			[8] Conc. in Dam water ppm	[9] PDI Dam water exposure mg/kg/day	[10] Margin of Safety %	[11] Conc. in River water (EEC) ppb	[12] PDI river water exposure mg/kg/day	[10] Margin of Safety %	[13] Conc. in groundwater (EEC) ppb	[14] PDI groundwater exposure mg/kg/day	[10] Margin of Safety %
Naphthalene	0.02	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acenaphthylene	0.00002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Acenaphthene	0.06	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dibenzofuran	0.004	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluorene	0.04	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phenanthrene	0.0002	WHO GV	0.004	0.00013	67	0.133	0.000004	2.22	1.77	0.00006	29.5
Anthracene	0.3	EPA RfD	0.003	0.0001	0.033	0.10	0.000003	0.001	1.33	0.00004	0.01
Di-n-butylphthalate	0.1	EPA RfD	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluoranthene	0.04	EPA RfD	0.018	0.0006	1.5	0.60	0.00002	0.05	8.0	0.0003	0.667
Pyrene	0.03	EPA RfD	0.000	0.0000	0.000	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[a]anthracene	0.00002	WHO GV	0.005	0.00017	833	0.167	0.00001	27.83	2.21	0.00007	368
Chrysene	0.00002	WHO GV	0.005	0.00017	833	0.167	0.00001	27.83	2.21	0.00007	368
bis(2-ethylhexyl)phthalate	0.02	EPA RfD	0.000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzo[b]&[k]fluoranthene	0.00002	WHO GV	0.006	0.0002	1000	0.20	0.00001	33.3	2.66	0.00009	443
Benzo(a)pyrene	0.0002	WHO GV	0.005	0.00017	83	0.167	0.00001	2.78	2.21	0.00007	37
Indeno[1,2,3-cd]pyrene	0.00002	WHO GV	0.003	0.0001	500	0.10	0.000003	16.67	1.33	0.00004	222
Benzo[g,h,i]perylene	0.0002	WHO GV	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RISK / ACCEPTABLE RISK TO: HUMAN				Dam water	R		River water	AR		Groundwater	R