

TABLES

TABLE 1
Historical Soil Analytical Data - Heavy Metals
Preliminary Site Investigation
Collieround House Redevelopment Area

Sample ID	Sample Date	Sample Depth (m)		Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Mercury	Nickel	Vanadium	Zinc
Assessment Criteria	HSL-A Residential (Low) ¹			NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	IMW ¹			NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	HIL-A ²			100	NE	60	20	100	100	6000	300	3800	40	400	NE	7400
		EIL- URPOS ²		100	NE	NE	NE	190	NE	60	1100	NE	NE	30	NE	70
Units			mg/kg													
Golders (2013) ³																
LOR			5	10	1	1	2	2	5	5	5	0.1	2	5	5	
Sample 1	22/08/2013	-	<5	40	<1	<1	7	2	16	16	59	<0.1	4	10	12	
Sample 2	22/08/2013	-	<5	330	1	<1	17	5	75	50	97	<0.1	18	43	84	
Sample 3	22/08/2013	-	<5	230	1	<1	24	4	35	28	43	<0.1	12	16	97	
Sample 4	22/08/2013	-	<5	280	1	<1	11	8	225	66	105	<0.1	21	16	42	
Sample 5	22/08/2013	-	<5	30	<1	<1	<2	<2	9	8	10	<0.1	<2	<5	11	
Sample 10	22/08/2013	-	<5	20	<1	<1	12	<2	9	26	17	<0.1	4	28	33	
Sample 11	22/08/2013	-	<5	180	<1	<1	9	5	94	77	52	<0.1	18	14	60	
Golders (2007) ⁴																
LOR			5	-	-	1	-	-	5	5	-	0.1	2	-	5	
B	11/12/2006	Surface	<5	-	-	<1	31	-	41	354	-	<0.1	26	-	224	
C	11/12/2006	Surface	<5	-	-	<1	190	-	18	305	-	<0.1	5	-	407	
D	11/12/2006	Surface	<5	-	-	<1	221	-	26	302	-	0.7	3	-	1450	
E	11/12/2006	Surface	<5	-	-	1	69	-	41	204	-	<0.1	9	-	502	
Golders (2002) ⁵																
LOR			0.5	-	-	0.5	5	-	5	5	-	0.05	5	-	5	
SA-1	19/12/2001	0.1	1.5	-	-	<0.5	20	-	58	51	-	0.8	20	-	69	
SA-2	19/12/2001	0.1	2.4	-	-	<0.5	19	-	200	84	-	<0.05	28	-	280	
SA-3	19/12/2001	0.1	2	-	-	<0.5	11	-	53	27	-	<0.05	9	-	26	
SA-5	19/12/2001	0.1	<0.5	-	-	<0.5	5	-	<5	<5	-	<0.05	<5	-	<5	
SA-6	19/12/2001	0.1	1.6	-	-	<0.5	110	-	44	48	-	<0.05	14	-	46	
HGM (2002) ⁶																
LOR			5	-	-	1	5	-	5	5	-	0.02	1	-	1	
COL-A1_01	16-19 July 2002	0-0.1	<5	-	-	<1	17	-	1	<1	-	<0.02	4	-	<1	
COL-A4_01		0-0.1	<5	-	-	<1	3	-	<1	1	-	<0.02	<1	-	1	
COL-A5_01		0-0.1	<5	-	-	<1	20	-	4	5	-	<0.02	2	-	5	
COL-A8_01		0-0.1	<5	-	-	<1	27	-	<1	2	-	0.02	2	-	2	
COL-A9_01		0-0.1	<5	-	-	<1	26	-	1	2	-	0.02	1	-	2	
COL-A11_01		0-0.1	<5	-	-	<1	60	-	10	16	-	0.02	6	-	9	
COL-A14_01		0-0.1	<5	-	-	<1	15	-	3	3	-	<0.02	1	-	2	
COL-A17_01		0-0.1	<5	-	-	<1	6	-	1	<1	-	<0.02	<1	-	5	
COL-A20_01		0-0.1	<5	-	-	<1	20	-	6	20	-	0.1	5	-	41	
COL-B1_01		0-0.1	<5	-	-	<1	42	-	2	11	-	0.02	1	-	4	
COL-B1_02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-B2_01		0-0.1	<5	-	-	<1	9	-	<1	<1	-	0.05	<1	-	<1	
COL-B4_01		0-0.1	<5	-	-	<1	22	-	1	1	-	0.03	2	-	<1	
COL-B7_01		0-0.1	<5	-	-	<1	2	-	4	7	-	<0.02	<1	-	10	
COL-B8_01		0-0.1	<5	-	-	<1	21	-	2	2	-	0.02	3	-	2	
COL-B11_01		0-0.1	<5	-	-	<1	10	-	2	3	-	<0.02	2	-	5	
COL-B14_01		0-0.1	<5	-	-	<1	2	-	2	<1	-	<0.02	2	-	2	
COL-B17_01		0-0.1	<5	-	-	<1	10	-	8	10	-	0.02	3	-	14	
COL-B19_01		0-0.1	<5	-	-	<1	16	-	3	2	-	<0.02	1	-	4	
COL-B21_01		0-0.1	<5	-	-	<1	28	-	4	8	-	0.02	2	-	4	
COL-C1_01		0-0.1	<5	-	-	<1	63	-	7	18	-	0.04	5	-	6	
COL-C3_01		0-0.1	<5	-	-	<1	88	-	10	6	-	<0.02	2	-	6	
COL-C6_01		0-0.1	<5	-	-	<1	17	-	3	<1	-	<0.02	<1	-	3	
COL-C9_01		0-0.1	<5	-	-	<1	9	-	16	4	-	<0.02	6	-	4	
COL-C11_01		0-0.1	<5	-	-	<1	16	-	38	19	-	0.02	7	-	15	

Notes and Abbreviations

mg/kg- milligrams per kilogram

HSL - Health Screening Level

IMW - Intrusive Maintenance Worker

HIL - Health Investigation level, residential land use (HIL-A)

- No Data/LOR

EIL - Ecological Investigation Level

URPOS - Urban Residential and Public Open Space

LOR - Limit of Reporting

m -Metres

NE - Not Established

References

- CRC Care Technical Report No. 10, Friebe, E., & Nadebaum, P. (2011). Health Screening Levels for Petroleum Hydrocarbons in Soils and groundwater. Part 2: Application Document.
- Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater, National Environment Protection (Assessment of Site Contamination) Measure (NEPM) (NEPC, 1999 as amended 2013).
- Golders Associates (2013), Data Gap Analysis and Work Plan Collie Roundhouse, Coalfields Road Collie Western Australia, February 2013.
- Golders Associates (2007) Preliminary Environmental Site Investigation, Collie Roundhouse, Coalfields Road Collie, Western Australia, January 2007.
- Golders Associates (2002) Phase I Environmental Site Investigation Former Collie Railway, Collie WA, January 2002.
- Halpern Glick Maunsell (2002) Detailed Site Investigation – Collie Railway Yard, Collie, WA, Western Australia Government Railways Commission, October 2002.

Exceedances

x	Cells bolded indicate an exceedance of laboratory LORs
x	Cells bolded and shaded indicate an exceedance of HSL - A Residential (low)
x	Cells bolded and shaded indicate an exceedance of IMW
x	Cells bolded and shaded indicate an exceedance of HIL - A Residential
x	Cells bolded and shaded indicate an exceedance of EIL - URPOS

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Preliminary Site Investigation
Collieround House Redevelopment Area

Sample ID	Sample Date	Sample Depth (m)	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Mercury	Nickel	Vanadium	Zinc
Assessment Criteria	HSL-A Residential (Low) ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	IMW ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	HIL-A ²		100	NE	60	20	100	100	6000	300	3800	40	400	NE	7400
	EIL- URPOS ²		100	NE	NE	NE	190	NE	60	1100	NE	NE	30	NE	70
HGM DSI (2002)⁶															
COL-C12_01	16-19 July 2002	0-0.1	<5	-	-	<1	10	-	50	27	-	<0.02	30	-	24
COL-C12_02		1	<5	-	-	<1	9	-	16	15	-	0.02	4	-	5
COL-C12_03		2	<5	-	-	<1	4	-	4	1	-	<0.02	4	-	3
COL-C13_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C13_02		0.6	<5	-	-	<1	<1	-	<1	<1	-	<0.02	<1	-	1
COL-C14_01		0-0.1	<5	-	-	<1	8	-	76	27	-	<0.02	22	-	29
COL-C14_02		0.7	<5	-	-	<1	<1	-	<1	<1	-	<0.02	2	-	1
COL-C15_01		0-0.1	<5	-	-	-	5	-	35	8	-	0.02	8	-	15
COL-C21_01		0-0.1	<5	-	-	0.4	26	-	97	190	-	0.19	11	-	310
COL-C23_01		0-0.1	<5	-	-	<1	58	-	23	14	-	0.07	4	-	17
COL-C25_01		0-0.1	<5	-	-	<1	46	-	41	39	-	0.07	7	-	18
COL-C29_01		0-0.1	<5	-	-	<1	11	-	23	24	-	<0.02	6	-	18
COL-D1_01		0-0.1	<5	-	-	<1	67	-	21	27	-	0.03	5	-	25
COL-D13_01		0-0.1	<5	-	-	<1	11	-	13	8	-	<0.02	9	-	18
COL-D14_01		0-0.1	<5	-	-	<1	9	-	11	4	-	<0.02	5	-	14
COL-D15_01		0-0.1	<5	-	-	<1	18	-	26	10	-	<0.02	5	-	33
COL-D16_01		0-0.1	<5	-	-	<1	12	-	34	7	-	0.02	13	-	17
COL-D17_01		0-0.1	<5	-	-	<1	10	-	19	12	-	0.02	5	-	22
COL-E2_01		0-0.1	<5	-	-	<1	6	-	7	7	-	0.02	4	-	20
COL-E4_01		0-0.1	<5	-	-	<1	19	-	24	18	-	<0.02	4	-	16
COL-E6_01		0-0.1	<5	-	-	<1	8	-	7	6	-	<0.02	2	-	7
COL-E8_01		0-0.1	<5	-	-	<1	6	-	4	8	-	0.02	2	-	24
COL-E10_01		0-0.1	<5	-	-	<1	19	-	25	28	-	0.04	13	-	27
COL-E10_02		1	<5	-	-	<1	26	-	1	2	-	0.02	3	-	<1
COL-E10_03		2	<5	-	-	<1	7	-	<1	2	-	0.04	<1	-	2
COL-F2_01		0-0.1	<5	-	-	<1	24	-	4	5	-	0.02	3	-	2
COL-F9_01		0-0.1	<5	-	-	<1	30	-	10	9	-	0.02	16	-	19
COL-JS01_01		0-0.1	<5	-	-	<1	13	-	160	31	-	<0.02	15	-	160
COL-JS02_01		0-0.1	<5	-	-	0.1	1	-	4	3	-	<0.02	2	-	19
COL-JS03_01		-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS04_01		0-0.1	<5	-	-	<1	5	-	70	12	-	<0.02	14	-	22
COL-JS04_02		0.4	<5	-	-	<1	12	-	76	4	-	<0.02	22	-	15
COL-JS04_03		0.9	<5	-	-	<1	3	-	3	<1	-	<0.02	4	-	1
COL-JS05_01		0-0.1	<5	-	-	<1	24	-	96	31	-	<0.02	21	-	38
COL-JS05_02		0.5	<5	-	-	<1	9	-	330	6	-	<0.02	15	-	34
COL-JS05_03		1.1	<5	-	-	<1	7	-	1	<1	-	<0.02	5	-	4
COL-JS07_01		0-0.1	<5	-	-	<1	11	-	67	110	-	<0.02	19	-	22
COL-JS07_02		0.5	<5	-	-	<1	9	-	25	3	-	<0.02	15	-	10
COL-JS07_03		0.9	<5	-	-	<1	<1	-	6	<1	-	<0.02	<1	-	1
COL-JS08_01		0-0.1	<5	-	-	<1	9	-	7	7	-	0.02	3	-	4
COL-JS08_02		0.7	<5	-	-	0.1	12	-	110	16	-	0.02	42	-	40
COL-JS08_03		1.8	<5	-	-	<1	14	-	<1	3	-	0.03	5	-	2
COL-JS09_01		0-0.1	<5	-	-	<1	21	-	89	100	-	0.04	14	-	41
COL-JS10_01		0-0.1	27	-	-	<1	12	-	230	7	-	0.02	18	-	44
COL-JS10_02		0.5	<5	-	-	<1	<1	-	<1	<1	-	<0.02	<1	-	<1
COL-JS11_01		0-0.1	<5	-	-	<1	23	-	1	2	-	0.02	<1	-	2
COL-JS12_01		0-0.1	<5	-	-	<1	22	-	1	2	-	0.02	2	-	1
COL-JS12_02		-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS13_01		0-0.1	<5	-	-	<1	17	-	79	120	-	0.04	15	-	56
COL-JS13_03		-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS13_02		1	<5	-	-	0.2	6	-	<1	2	-	0.03	2	-	2
COL-JS14_01		0-0.1	<5	-	-	<1	24	-	33	14	-	0.03	10	-	19
COL-JS15_01		0-0.1	<5	-	-	<1	22	-	44	20	-	0.02	10	-	26
COL-JS16_01		0-0.1	<5	-	-	<1	11	-	91	62	-	0.05	14	-	110

Notes and Abbreviations

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URPOS - Urban Residential and Public Open Space

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Historical Leachate Data
Preliminary Site Investigation
Collie Roundhouse Redevelopment Area

Sample ID	Sample Date	Sample Depth (m)	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Mercury	Nickel	Vanadium	Zinc
Assessment Criteria	NPUG ¹ (mg/l)		0.1	20	0.6	0.02	NE	NE	20	0.1	5	0.01	0.2	5	3
	LTI ² (mg/l)		0.1	NE	0.1	0.1	0.1	0.1	0.2	2	0.2	0.002	0.2	0.1	2
	STI ² (mg/l)		2	NE	0.5	0.05	1	0.05	5	5	10	0.002	3	0.5	5
	Freshwater ³ (mg/l)		0.013	NE	NE	0.0002	NE	NE	0.0014	0.0034	1.9	0.00006	0.011	1.9	0.008
Units			mg/L												
Golders Associates (2013)															
LOR			0.01	0.2	0.01	0.005	0.01	0.01	0.01	0.01	0.01	0.0001	0.01	0.01	0.01
Sample 1	22/08/2013	-	<0.01	0.2	<0.01	<0.005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0001	<0.01	<0.01	0.14
Sample 2		-	<0.01	0.2	<0.01	<0.005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0001	<0.01	<0.01	0.23
Sample 3		-	<0.01	0.2	<0.01	<0.005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0001	<0.01	<0.01	0.21
Sample 4		-	<0.01	0.3	<0.01	<0.005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0001	<0.01	<0.01	0.3
Sample 5		-	<0.01	0.4	0.01	<0.005	<0.01	<0.01	<0.01	<0.01	0.01	<0.0001	<0.01	<0.01	0.27
Sample 10		-	<0.01	0.2	<0.01	<0.005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0001	<0.01	<0.01	0.06
Sample 11	-	<0.01	0.3	<0.01	<0.005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0001	<0.01	<0.01	0.3	
HGM (2002)															
LOR			0.001	-	-	-	0.001	-	0.001	0.001	-	-	0.001	-	0.01
COL-A14_01	16-19 July 2002	0-0.1	NT	-	-	-	<0.001	-	NT	NT	-	-	<0.001	-	NT
COL-C1_01		0-0.1	NT	-	-	-	<0.001	-	NT	NT	-	-	<0.001	-	NT
COL-C3_01		0-0.1	NT	-	-	-	<0.001	-	NT	NT	-	-	0.001	-	NT
COL-C14_01		0-0.1	0.001	-	-	-	<0.001	-	<0.001	0.002	-	-	<0.001	-	0.02
COL-C21_01		0-0.1	0.001	-	-	-	<0.001	-	0.002	0.003	-	-	<0.001	-	0.06
COL-D1_01		0-0.1	NT	-	-	-	<0.001	-	NT	NT	-	-	<0.001	-	NT
COL-JS01_01		0-0.1	0.001	-	-	-	<0.001	-	0.002	0.002	-	-	<0.001	-	0.02
COL-JS04_01		0-0.1	0.001	-	-	-	0.001	-	<0.001	<0.001	-	-	0.001	-	0.01
COL-JS04_02		0.4	0.001	-	-	-	0.001	-	0.001	<0.001	-	-	0.012	-	0.03
COL-JS05_01		0-0.1	0.001	-	-	-	0.001	-	<0.001	<0.001	-	-	0.002	-	0.02
COL-JS05_02		0.5	<0.001	-	-	-	<0.001	-	0.002	<0.001	-	-	0.008	-	0.05
COL-JS06_01		0-0.1	<0.001	-	-	-	0.001	-	<0.001	<0.001	-	-	0.003	-	0.02
COL-JS06_02		0.5	0.001	-	-	-	<0.001	-	0.002	<0.001	-	-	0.022	-	0.06
COL-JS08_02		0.7	<0.001	-	-	-	<0.001	-	<0.001	<0.001	-	-	0.003	-	0.03
COL-JS09_01		0-0.1	0.001	-	-	-	0.001	-	0.001	<0.001	-	-	0.001	-	0.03
COL-JS10_01	0-0.1	<0.001	-	-	-	<0.001	-	<0.001	<0.001	-	-	<0.001	-	0.04	

Notes and Abbreviations

LOR - Limit of Reporting
mg/l - milligrams per litre

LOR - Limit of Reporting
- No Data/LOR

m - meters

Reference

1. DER Assessment and Mangement of Contaminated Sites - Contaminated Sites Guidelines (DER, 2014)
2. Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater, amended NEPM (NEPC, 1999).
3. ANZECC (2000) Australian and New Zealand Guidelines forFresh and Marine Water Quality, October 2000.
4. Golder Associates (2013) Groundwater Assessment Collie Roundhouse, Coalfields Road Collie Western Australia, November 2013.
5. Halpern Glick Maunsell (2002) Detailed Site Investigation – Collie Railway Yard, Collie, WA, Western Australia Government Railways Commission, October 2002.

Exceedances:

x	Cells bolded indicate an exceedance of laboratory LORs
x	Cells bolded and shaded indicate an exceedance of NPUG
x	Cells bolded and shaded indicate an exceedance of LTI
x	Cells bolded and shaded indicate an exceedance of STI
x	Cells bolded and shaded indicate an exceedance of Freshwater

TABLE 3
Historical Soil Analytical Data - TRH, TPH and BTEX
Preliminary Site Investigation
Collieround House Redevelopment Area

			TPH					TRH					BTEX				
Sample ID	Sample Date	Sample Depth (m)	TPH C6 - C9 Fraction	TPH C10 - C14 Fraction	TPH C15 - C28 Fraction	TPH C29-C36 Fraction	TPH+C10 - C36 (Sum of total) (Lab Reported)	C6 - C10	>C10 - C16 Fraction	>C16 - C34 Fraction	>C34 - C40 Fraction	>C10 - C40 Fraction (sum)	Benzene	Toluene	Ethylbenzene	meta - & para-Xylene	ortho-Xylene
Assessment Criteria	HSL-A Residential (Low) ¹		NE	NE	NE	NE	NE	4440	3300	4500	6300	NE	100	21000	4500	12000	
	IMW ¹		NE	NE	NE	NE	NE	82000	62000	85000	120000	NE	1100	120000	85000	130000	
	HIL-A ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	EIL- URPOS ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Units			mg/kg					mg/kg					mg/kg				
Golders Associates (2013)																	
LOR			-	50	100	100	50	-	50	100	100	50	-	-	-	-	-
Sample 1	22/08/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sample 2		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sample 3		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sample 4		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sample 5		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sample 10		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sample 11		-	-	<50	110	130	240	-	<50	210	<100	210	-	-	-	-	-
Golders Associates (2007)																	
LOR			10	50	100	100	-	-	-	-	-	-	0.2	0.2	0.2	0.2	0.2
B	11/12/2006	Surface	<10	<50	510	580	-	-	-	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2
C			<10	<50	490	1780	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	
D			<10	<50	24800	34400	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	
E			<10	<50	270	500	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	
Golders Associates (2002)																	
LOR			20	20	50	100	-	-	-	-	-	-	-	-	-	-	-
SA-1	19/12/2001	0.1	<20	<20	130	<100	-	-	-	-	-	-	-	-	-	-	-
SA-2		0.1	<20	<20	<50	<100	-	-	-	-	-	-	-	-	-	-	-
SA-3		0.1	<20	<20	<50	<100	-	-	-	-	-	-	-	-	-	-	-
SA-5		0.1	<20	<20	<50	<100	-	-	-	-	-	-	-	-	-	-	-
SA-6		0.1	<20	<20	50	<100	-	-	-	-	-	-	-	-	-	-	-

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	HIL-A ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
	EIL- URPOS ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
HGM (2002)																		
LOR			0.2	0.2	0.4	0.4	-	-	-	-	-	-	-	-	-	-	-	
COL-A1_01	16-19 July 2002	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-A4_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-A5_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-A8_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-A9_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-A11_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-A14_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-A17_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-A20_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-B1_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-B1_02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-B2_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-B4_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-B7_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-B8_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-B11_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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	HIL-A ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	EIL- URPOS ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
HGM (2002)																	
COL-B14_01	16-19 July 2002	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-B17_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-B19_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-B21_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C1_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C3_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C6_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C9_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C11_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C12_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C12_02		1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C12_03		2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C13_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C13_02		0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C14_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C14_02		0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C15_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C21_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C23_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C25_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C29_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-D1_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-D13_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-D14_01		0-0.1	<0.2	<0.2	<0.4	<0.4	-	-	-	-	-	-	-	-	-	-	-
COL-D15_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-D16_01		0-0.1	<0.2	<0.2	<0.4	<0.4	-	-	-	-	-	-	-	-	-	-	-
COL-D17_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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HGM (2002)																	
COL-E2_01	16-19 July 2002	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-E4_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-E6_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-E8_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-E10_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-E10_02		1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-E10_03		2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-F2_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-F9_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS01_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS02_01		0-0.1	<0.2	<0.2	<0.4	<0.4	-	-	-	-	-	-	-	-	-	-	-
COL-JS03_01		-	<0.2	<0.2	<0.4	<0.4	-	-	-	-	-	-	-	-	-	-	-
COL-JS04_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS04_02		0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS04_03		0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS05_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS05_02		0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS05_03		1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS07_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS07_02		0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS07_03		0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS08_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS08_02		0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS08_03		1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS09_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS10_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS10_02		0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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	HIL-A ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	EIL- URPOS ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
HGM (2002)			HGM (2002)														
COL-JS11_01	16-19 July 2002	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS12_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS12_02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS13_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS13_03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS13_02		1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS14_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS15_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS16_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes and Abbreviations

mg/kg- milligrams per kilogram

HSL - Health Screening Level

IMW - Intrusive Maintenance Worker

EIL - Ecological Investigation Level

URPOS - Urban Residential and Public Open Space

NE - Not Established

LOR - Limit of Reporting

m -Metres

- No Data/LOR

TPH - Total Petroleum Hydrocarbons

TPH - Total Recoverable Hydrocarbons

BTEX - Benzene, Toluene, Ethylbenzene and Xylenes

References

1. CRC Care Technical Report No. 10, Friebe, E., & Nadebaum, P. (2011). Health Screening Levels for Petroleum Hydrocarbons in Soils and groundwater. Part 2: Application Document.
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Exceedances:

x	Cells bolded indicate an exceedance of laboratory LORs
x	Cells bolded and shaded indicate an exceedance of HSL - A Residential (low)
x	Cells bolded and shaded indicate an exceedance of IMW

x	Cells bolded and shaded indicate an exceedance of HIL - A Residential
x	Cells bolded and shaded indicate an exceedance of EIL - URPOS

TABLE 4
Historical Soil Analytical Data - PAHs
Preliminary Site Investigation
Collieround House Redevelopment Area

Sample ID	Sample Date	Sample Depth (m)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	2-Methyl-naphthalene	Phenanthrene	Pyrene	*Sum Polycyclic Aromatic Hydrocarbons	Benzo(a)pyrene TEQ (WHO)	Polychlorinated biphenyl (PCB)	
Assessment Criteria	HSL-A Residential (Low) ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	1400	NE	NE	NE	NE	NE	NE	
	IMW ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	29000	NE	NE	NE	NE	NE	NE	
	HIL-A ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	300	NE	NE
	EIL- URPOS ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	170	NE	NE	NE	NE	NE	NE
Units			mg/kg																				
Golders Associates (2013)																							
LOR			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	-	0.5	0.5	0.5	0.5	-	
Sample 1	22/08/2013	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-
Sample 2		-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-
Sample 3		-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-
Sample 4		-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-
Sample 5		-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-
Sample 10		-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-
Sample 11	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	
Golders Associates (2007)																							
LOR			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	-	0.5	0.5	2.5	-	-	
B	11/12/2006	Surface	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<2.5	-	-	
C			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<2.5	-	-	
D			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	1	0.8	3.5	-	-	
E			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<2.5	-	-	
Golders Associates (2002)																							
LOR			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-	0.1	0.1	2.5	-	-	
SA-1	19/12/2001	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	0.2	<0.1	<0.1	0.2	-	0.2	0.1	2.9	-	-	
SA-2		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	-	<0.1	<0.1	2.6	-	-	
SA-3		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	-	<0.1	<0.1	2.5	-	-	
SA-5		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<2.5	-	-	
SA-6		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.5	<0.1	0.1	<0.1	<0.1	0.6	<0.1	<0.1	0.2	-	0.3	0.3	3.9	-	-	

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x	Cells bolded and shaded indicate an exceedance of HSL - A Residential (low)	x	Cells bolded and shaded indicate an exceedance of EIL - URPOS
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Assessment Criteria	HSL-A Residential (Low) ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	1400	NE	NE	NE	NE	NE	NE
	IMW ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	29000	NE	NE	NE	NE	NE	NE
	HIL-A ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	300	NE	NE
	EIL-URPOS ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	170	NE	NE	NE	NE	NE	NE
HGM (2002)																						
LOR			0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	<.1	0.2	0.1	0.1	0.1	0.1	-	-	0.2
COL-A1_01	16-19 July 2002	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-A4_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-A5_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-A8_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-A9_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-A11_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-A14_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-A17_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-A20_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-B1_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-B1_02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-B2_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-B4_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-B7_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-B8_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-B11_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-B14_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-B17_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-B19_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-B21_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C1_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes and Abbreviations

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Assessment Criteria:

x	Cells bolded indicate an exceedance of laboratory LORs	x	Cells bolded and shaded indicate an exceedance of HIL - A Residential
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Preliminary Site Investigation
Collieround House Redevelopment Area

Sample ID	Sample Date	Sample Depth (m)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	2-Methyl-naphthalene	Phenanthrene	Pyrene	*Sum Polycyclic Aromatic Hydrocarbons	Benzo(a)pyrene TEQ (WHO)	Polychlorinated biphenyl (PCB)
Assessment Criteria	HSL-A Residential (Low) ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	1400	NE	NE	NE	NE	NE	NE
	IMW ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	29000	NE	NE	NE	NE	NE	NE
	HIL-A ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	300	NE	NE
	EIL-URPOS ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	170	NE	NE	NE	NE	NE	NE
HGM (2002)																						
COL-C3_01	16-19 July 2002	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C6_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C9_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C11_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C12_01		0-0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-
COL-C12_02		1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C12_03		2	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-
COL-C13_01		0-0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-
COL-C13_02		0.6	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-
COL-C14_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C14_02		0.7	<0.1	<0.1	0.1	<0.2	<0.2	<0.2	<0.2	0.2	0.2	<0.2	0.2	<0.1	<0.2	<0.1	<0.1	0.1	<0.1	-	-	-
COL-C15_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C21_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C23_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C25_01		0-0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-
COL-C29_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-D1_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-D13_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.2
COL-D14_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.2
COL-D15_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-D16_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-D17_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Sample ID	Sample Date	Sample Depth (m)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	2-Methyl-naphthalene	Phenanthrene	Pyrene	*Sum Polycyclic Aromatic Hydrocarbons	Benzo(a)pyrene TEQ (WHO)	Polychlorinated biphenyl (PCB)
Assessment Criteria	HSL-A Residential (Low) ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	1400	NE	NE	NE	NE	NE	NE
	IMW ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	29000	NE	NE	NE	NE	NE	NE
	HIL-A ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	300	NE	NE
	EIL-URPOS ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	170	NE	NE	NE	NE	NE	NE
HGM (2002)																						
COL-E2_01	16-19 July 2002	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-E4_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-E6_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-E8_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-E10_01		0-0.1	<0.1	<0.1	<0.1	0.2	<0.2	0.3	<0.2	0.3	0.2	<0.2	0.4	<0.1	<0.2	<0.1	<0.1	<0.1	0.4	-	-	-
COL-E10_02		1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-
COL-E10_03		2	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-
COL-F2_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-F9_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS01_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS02_01		0-0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	<0.2
COL-JS03_01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS04_01		0-0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-
COL-JS04_02		0.4	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-
COL-JS04_03		0.9	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-
COL-JS05_01		0-0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-
COL-JS05_02		0.5	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-
COL-JS05_03		1.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-
COL-JS07_01		0-0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-
COL-JS07_02		0.5	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-
COL-JS07_03		0.9	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-
COL-JS08_01		0-0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-
COL-JS08_02		0.7	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-
COL-JS08_03		1.8	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-
COL-JS09_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS10_01		0-0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-
COL-JS10_02		0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes and Abbreviations

mg/kg- milligrams per kilogram

HSL - Health Screening Level

IMW - Intrusive Maintenance Worker

EIL - Ecological Investigation Level

URPOS - Urban Residential and Public Open Space

NE - Not Established

LOR - Limit of Reporting

m -Metres

- No Data/LOR

PAHs - Polycyclic Aromatic Hydrocarbon

References

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5. Golder Associates (2002) Phase I Environmental Site Investigation Former Collie Railway, Collie WA, January 2002.
6. Halpern Glick Maunsell (2002) Detailed Site Investigation – Collie Railway Yard, Collie, WA, Western Australia Government Railways Commission, October 2002.

Assessment Criteria:

x	Cells bolded indicate an exceedance of laboratory LORs
x	Cells bolded and shaded indicate an exceedance of HSL - A Residential (low)
x	Cells bolded and shaded indicate an exceedance of IMW

x	Cells bolded and shaded indicate an exceedance of HIL - A Residential
x	Cells bolded and shaded indicate an exceedance of EIL - URPOS

TABLE 4
Historical Soil Analytical Data - PAHs
Preliminary Site Investigation
Collieround House Redevelopment Area

Sample ID	Sample Date	Sample Depth (m)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	2-Methyl-naphthalene	Phenanthrene	Pyrene	*Sum Polycyclic Aromatic Hydrocarbons	Benzo(a)pyrene TEQ (WHO)	Polychlorinated biphenyl (PCB)
Assessment Criteria	HSL-A Residential (Low) ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	1400	NE	NE	NE	NE	NE	NE
	IMW ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	29000	NE	NE	NE	NE	NE	NE
	HIL-A ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	300	NE	NE
	EIL-URPOS ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	170	NE	NE	NE	NE	NE	NE
HGM (2002)																						
COL-JS11_01	16-19 July 2002	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS12_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS12_02		-	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-
COL-JS13_01		0-0.1	<0.1	<0.1	<0.1	<0.2	<0.2	0.2	<0.2	0.2	<0.2	<0.2	0.1	<0.1	<0.2	<0.1	<0.1	<0.1	0.1	-	-	-
COL-JS13_03		-																		-	-	-
COL-JS13_02		1	<0.1	<0.1	0.1	0.2	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	0.2	<0.1	<0.2	<0.1	<0.1	0.1	0.2	-	-	-
COL-JS14_01		0-0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-
COL-JS15_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS16_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS17_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.2
COL-JS17_02		0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.2
COL-JS18_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.2
COL-JS18_02		0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.2
COL-JS19_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.2
COL-JS19_02		0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.2

Notes and Abbreviations

mg/kg- milligrams per kilogram

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IMW - Intrusive Maintenance Worker

EIL - Ecological Investigation Level

URPOS - Urban Residential and Public Open Space

NE - Not Established

LOR - Limit of Reporting

m -Metres

- No Data/LOR

PAHs - Polycyclic Aromatic Hydrocarbon

References

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6. Halpern Glick Maunsell (2002) Detailed Site Investigation – Collie Railway Yard, Collie, WA, Western Australia Government Railways Commission, October 2002.

Assessment Criteria:

x	Cells bolded indicate an exceedance of laboratory LORs	x	Cells bolded and shaded indicate an exceedance of HIL - A Residential
x	Cells bolded and shaded indicate an exceedance of HSL - A Residential (low)	x	Cells bolded and shaded indicate an exceedance of EIL - URPOS
x	Cells bolded and shaded indicate an exceedance of IMW		

TABLE 5
Historical Soil Analytical Data - Organophosphate Pesticides
Preliminary Site Investigation
Collieround House Redevelopment Area

			OPP's																				Base Neutral Pesticides								
Sample ID	Sample Date	Sample Depth (m)	Azinphos-methyl	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenamiphos	Fenthion	Fenthrothion	Malathion	Parathion-methyl	Monocrotophos	Parathion	Pirimphos-ethyl	Prothiofos	Demeton-s-methyl	Atrazine	Simazine	Metsulfuron Methyl	Sulfometuron Methyl	Propazine	Prometryne	Diuron	Molinate	Trifluralin
Assessment Criteria	HSL-A Residential (Low) ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	IMW ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	HIL-A ²		NE	NE	NE	NE	160	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	EIL- URPOS ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Units			mg/kg																				mg/kg								
Golders Associates (2013)																															
LOR			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	0.05	0.2	0.2	0.2	0.05	0.05	0.05	-	-	-	-	-	-	-	-	-
Sample 1	22/08/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sample 2	22/08/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sample 3	22/08/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sample 4	22/08/2013	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-
Sample 5	22/08/2013	-	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-
Sample 10	22/08/2013	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-
Sample 11	22/08/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Golders Associates (2007)																															
LOR			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	0.05	0.2	0.2	0.2	0.05	0.05	0.05	-	-	-	-	-	-	-	-	-
B	11/12/2006	Surface	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<0.50	<2.0	<2.0	<2.0	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-
C	11/12/2006	Surface	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-
D	11/12/2006	Surface	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	-	<2.50	<10.0	<10.0	<10.0	<2.50	<2.50	<2.50	-	-	-	-	-	-	-	-	-
E	11/12/2006	Surface	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-

Notes and Abbreviations

mg/kg- milligrams per kilogram

HSL - Health Screening Level

IMW - Intrusive Maintenance Worker

EIL - Ecological Investigation Level

URPOS - Urban Residential and Public Open Space

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- No Data/LOR

References

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Exceedances

x	Cells bolded indicate an exceedance of laboratory LORs	x	Cells bolded and shaded indicate an exceedance of HIL - A Residential
x	Cells bolded and shaded indicate an exceedance of HSL - A Residential (low)	x	Cells bolded and shaded indicate an exceedance of EIL - URPOS
x	Cells bolded and shaded indicate an exceedance of IMW		

TABLE 5
Historical Soil Analytical Data - Organophosphate Pesticides
Preliminary Site Investigation
Collieround House Redevelopment Area

			OPP's																				Base Neutral Pesticides									
Sample ID	Sample Date	Sample Depth (m)	Azinphos-methyl	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenamiphos	Fenthion	Fenthrothion	Malathion	Parathion-methyl	Monocrotophos	Parathion	Pirimphos-ethyl	Prothiofos	Demeton-s-methyl	Atrazine	Simazine	Metsulfuron Methyl	Sulfometuron Methyl	Propazine	Prometryne	Diuron	Molinate	Trifluralin	
Assessment Criteria	HSL-A Residential (Low) ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
	IMW ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
	HIL-A ²		NE	NE	NE	NE	160	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
	EIL- URPOS ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
Golders Associates (2002)																																
LOR			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SA-1	19/12/2001	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SA-2	19/12/2001	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SA-3	19/12/2001	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SA-5	19/12/2001	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SA-6	19/12/2001	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HGM (2002)																																
LOR			-	0.05	-	-	0.02	-	0.1	-	-	0.05	-	-	0.1	0.1	-	-	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.1	0.1	
COL-A1_01	16-19 July 2002	0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	
COL-A4_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-A5_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-A8_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-A9_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	
COL-A11_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-A14_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-A17_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	
COL-A20_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-B1_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-B1_02		-	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes and Abbreviations

mg/kg- milligrams per kilogram

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TABLE 5
Historical Soil Analytical Data - Organophosphate Pesticides
Preliminary Site Investigation
Collieround House Redevelopment Area

			OPP's																				Base Neutral Pesticides									
Sample ID	Sample Date	Sample Depth (m)	Azinphos-methyl	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenamiphos	Fenthion	Fenthrothion	Malathion	Parathion-methyl	Monocrotophos	Parathion	Pirimphos-ethyl	Prothiofos	Demeton-s-methyl	Atrazine	Simazine	Metsulfuron Methyl	Sulfometuron Methyl	Propazine	Prometryne	Diuron	Molinate	Trifluralin	
Assessment Criteria	HSL-A Residential (Low) ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
	IMW ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
	HIL-A ²		NE	NE	NE	NE	160	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
	EIL- URPOS ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
HGM (2002)																																
COL-B2_01	16-19 July 2002	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-B4_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	
COL-B7_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	
COL-B8_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-B11_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	
COL-B14_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-B17_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-B19_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
COL-B21_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	
COL-C1_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C3_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	
COL-C6_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C9_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	
COL-C11_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C12_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C12_02		1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C12_03		2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C13_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C13_02		0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C14_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	
COL-C14_02		0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C15_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Historical Soil Analytical Data - Organophosphate Pesticides
Preliminary Site Investigation
Collieround House Redevelopment Area

			OPP's																				Base Neutral Pesticides									
Sample ID	Sample Date	Sample Depth (m)	Azinphos-methyl	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyriphos	Chlorpyriphos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenamiphos	Fenthion	Fenthrothion	Malathion	Parathion-methyl	Monocrotophos	Parathion	Pirimphos-ethyl	Prothiofos	Demeton-s-methyl	Atrazine	Simazine	Metsulfuron Methyl	Sulfometuron Methyl	Propazine	Prometryne	Diuron	Molinate	Trifluralin	
Assessment Criteria	HSL-A Residential (Low) ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
	IMW ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
	HIL-A ²		NE	NE	NE	NE	160	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
	EIL- URPOS ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
HGM (2002)																																
COL-C21_01	16-19 July 2002	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
COL-C23_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-C25_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
COL-C29_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
COL-D1_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
COL-D13_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
COL-D14_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-D15_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-D16_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-D17_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
COL-E2_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-E4_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-E6_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
COL-E8_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-E10_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
COL-E10_02		1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-E10_03		2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-F2_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
COL-F9_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS01_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS02_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS03_01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Collieround House Redevelopment Area



			OPP's																				Base Neutral Pesticides									
Sample ID	Sample Date	Sample Depth (m)	Azinphos-methyl	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenamiphos	Fenthion	Fenthrothion	Malathion	Parathion-methyl	Monocrotophos	Parathion	Pirimphos-ethyl	Prothiofos	Demeton-s-methyl	Atrazine	Simazine	Metsulfuron Methyl	Sulfometuron Methyl	Propazine	Prometryne	Diuron	Molinate	Trifluralin	
Assessment Criteria	HSL-A Residential (Low) ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
	IMW ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
	HIL-A ²		NE	NE	NE	NE	160	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
	EIL- URPOS ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
HGM (2002)																																
COL-JS04_01	16-19 July 2002	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-JS04_02		0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
COL-JS04_03		0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
COL-JS05_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
COL-JS05_02		0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
COL-JS05_03		1.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-JS07_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
COL-JS07_02		0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
COL-JS07_03		0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
COL-JS08_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
COL-JS08_02		0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
COL-JS08_03		1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
COL-JS09_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-JS10_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
COL-JS10_02		0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
COL-JS11_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-JS12_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-JS12_02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
COL-JS13_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-JS13_03		-	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-JS13_02		1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-JS14_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-JS15_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-JS16_01		0-0.1	-	<0.05	-	-	<0.02	-	<0.1	-	-	<0.05	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Notes and Abbreviations

mg/kg- milligrams per kilogram

HSL - Health Screening Level

IMW - Intrusive Maintenance Worker

EIL - Ecological Investigation Level

URPOS - Urban Residential and Public Open Space

NE - Not Established

LOR - Limit of Reporting

m -Metres

- No Data/LOR

References

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Exceedances

x	Cells bolded indicate an exceedance of laboratory LORs	x	Cells bolded and shaded indicate an exceedance of HIL - A Residential
x	Cells bolded and shaded indicate an exceedance of HSL - A Residential (low)	x	Cells bolded and shaded indicate an exceedance of EIL - URPOS
x	Cells bolded and shaded indicate an exceedance of IMW		

TABLE 6
Historical Soil Analytical Data - Organochloride Pesticides
Preliminary Site Investigation
Collieround House Redevelopment Area

Sample ID	Sample Date	Sample Depth (m)	a-BHC	Aldrin	Dieldrin	b-BHC	cis-Chlordane	trans-Chlordane	alpha-Chlordane	gamma-Chlordane	Chlordane	d-BHC	DDD	DDE	DDT	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC	HCB	Heptachlor	Heptachlor epoxide	Lindane	Methoxychlor	Hexachlorobenzene	
Assessment Criteria	HSL-A Residential (Low) ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
	IMW ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
	HIL-A ²		NE	6			NE	NE	NE	NE	NE	50	NE	240			270	NE	NE	10	NE	NE	NE	10	6	NE	NE	300	NE
	EIL- URPOS ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	180	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Units			mg/kg																										
Golders Associates (2013)																													
LOR			0.05	0.05	0.05	0.05	0.05	0.05	-	-	-	0.05	0.05	0.05	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	0.05	0.05	-	0.2	0.05	
Sample 1	22/08/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Sample 2		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Sample 3		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Sample 4		-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	-	<0.2	<0.05
Sample 5		-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	-	<0.2	<0.05
Sample 10		-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.2	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	-	<0.2	<0.05
Sample 11		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Golders Associates (2007)																													
LOR			0.05	0.05	0.05	0.05	0.05	0.05	-	-	-	0.05	0.05	0.05	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	0.05	0.05	-	0.2	0.05	
B	11/12/2006	Surface	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<0.50	<0.50	-	<2.0	<0.50	
C		Surface	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	-	<0.2	<0.05	
D		Surface	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	-	-	-	<2.50	<2.50	<2.50	<10.0	<2.50	<2.50	<2.50	<2.50	<2.50	<2.50	-	<2.50	<2.50	-	<10.0	<2.50	
E		Surface	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	-	<0.2	<0.05

Notes and Abbreviations

mg/kg- milligrams per kilogram

HSL - Health Screening Level

IMW - Intrusive Maintenance Worker

EIL - Ecological Investigation Level

URPOS - Urban Residential and Public Open Space

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m -Metres

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Exceedances

x	Cells bolded indicate an exceedance of laboratory LORs
x	Cells bolded and shaded indicate an exceedance of HSL - A Residential (low)
x	Cells bolded and shaded indicate an exceedance of IMW

x	Cells bolded and shaded indicate an exceedance of HIL - A Residential
x	Cells bolded and shaded indicate an exceedance of EIL - URPOS

TABLE 6
Historical Soil Analytical Data - Organochloride Pesticides
Preliminary Site Investigation
Collieround House Redevelopment Area

Sample ID	Sample Date	Sample Depth (m)	a-BHC	Aldrin	Dieldrin	b-BHC	cis-Chlordane	trans-Chlordane	alpha-Chlordane	gamma-Chlordane	Chlordane	d-BHC	DDD	DDE	DDT	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC	HCB	Heptachlor	Heptachlor epoxide	Lindane	Methoxychlor	Hexachlorobenzene	
Assessment Criteria	HSL-A Residential (Low) ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
	IMW ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
	HIL-A ²		NE	6			NE	NE	NE	NE	NE	50	NE	240			270	NE	NE	10	NE	NE	NE	10	6	NE	NE	300	NE
	EIL- URPOS ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	180	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Golders Associates (2002)																													
LOR			0.1	0.1	0.1	0.1	-	-	0.1	0.1	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-	0.1	-	-	-	0.1	0.1	0.1	-	
SA-1	19/12/2001	0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	-	<0.1	<0.1	<0.1	-	
SA-2	19/12/2001	0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	-	<0.1	<0.1	<0.1	-	
SA-3	19/12/2001	0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	-	<0.1	<0.1	<0.1	-	
SA-5	19/12/2001	0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	-	<0.1	<0.1	<0.1	-	
SA-6	19/12/2001	0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	-	<0.1	<0.1	<0.1	-	
HGM (2002)																													
LOR			0.01	0.01	0.01	0.01	-	-	-	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-	-	-	0.01	0.01	0.01	0.01	-	-	-	
COL-A1_01	16-19 July 2002	0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-	
COL-A4_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-	
COL-A5_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-	
COL-A8_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-	
COL-A9_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-	
COL-A11_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-	
COL-A14_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-	
COL-A17_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-	
COL-B1_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-	
COL-A20_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-	
COL-B1_01	0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-		

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Collieround House Redevelopment Area

Sample ID	Sample Date	Sample Depth (m)	a-BHC	Aldrin	Dieldrin	b-BHC	cis-Chlordane	trans-Chlordane	alpha-Chlordane	gamma-Chlordane	Chlordane	d-BHC	DDD	DDE	DDT	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC	HCB	Heptachlor	Heptachlor epoxide	Lindane	Methoxychlor	Hexachlorobenzene
Assessment Criteria	HSL-A Residential (Low) ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
	IMW ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
	HIL-A ²		NE	6		NE	NE	NE	NE	NE	50	NE	240			270	NE	NE	10	NE	NE	NE	10	6	NE	NE	300	NE
	EIL- URPOS ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	180	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
HGM (2002)																												
COL-B1_02	16-19 July 2002	-	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-B2_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-B4_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-B7_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-B8_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-B11_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-B14_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-B17_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-B19_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-B21_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-C1_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-C3_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-C6_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-C9_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-C11_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-C12_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C12_02		1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-C12_03		2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C13_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C13_02		0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C14_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C14_02		0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C15_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-C21_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-C23_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-

Notes and Abbreviations

mg/kg- milligrams per kilogram

HSL - Health Screening Level

IMW - Intrusive Maintenance Worker

EIL - Ecological Investigation Level

URPOS - Urban Residential and Public Open Space

NE - Not Established

LOR - Limit of Reporting

m -Metres

- No Data/LOR

References

1. CRC Care Technical Report No. 10, Friebel, E., & Nadebaum, P. (2011). Health Screening Levels for Petroleum Hydrocarbons in Soils and groundwater. Part 2: Application Document.
2. Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater, National Environment Protection(Assessment of Site Contamination) Measure (NEPM) (NEPC, 1999 as amended 2013).
3. Golder Associates (2013), Data Gap Analysis and Work Plan Collie Roundhouse, Coalfields Road Collie Western Australia, February 2013.
4. Golders Associates (2007) Preliminary Environmental Site Investigation, Collie Roundhopuse, Coalfields Road Collie, Western Australia, January 2007.
5. Golder Associates (2002) Phase I Environmental Site Investigation Former Collie Railyard, Collie WA, January 2002.
6. Halpern Glick Maunsell (2002) Detailed Site Investigation – Collie Railway Yard, Collie, WA, Western Australia Government Railways Commission, October 2002.

Exceedances

x	Cells bolded indicate an exceedance of laboratory LORs
x	Cells bolded and shaded indicate an exceedance of HSL - A Residential (low)
x	Cells bolded and shaded indicate an exceedance of IMW

x	Cells bolded and shaded indicate an exceedance of HIL - A Residential
x	Cells bolded and shaded indicate an exceedance of EIL - URPOS

TABLE 6
Historical Soil Analytical Data - Organochloride Pesticides
Preliminary Site Investigation
Collieround House Redevelopment Area

Sample ID	Sample Date	Sample Depth (m)	a-BHC	Aldrin	Dieldrin	b-BHC	cis-Chlordane	trans-Chlordane	alpha-Chlordane	gamma-Chlordane	Chlordane	d-BHC	DDD	DDE	DDT	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC	HCB	Heptachlor	Heptachlor epoxide	Lindane	Methoxychlor	Hexachlorobenzene	
Assessment Criteria	HSL-A Residential (Low) ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
	IMW ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
	HIL-A ²		NE	6			NE	NE	NE	NE	NE	50	NE	240			270	NE	NE	10	NE	NE	NE	10	6	NE	NE	300	NE
	EIL- URPOS ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	180	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
HGM (2002)																													
COL-C25_01	16-19 July 2002	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-C29_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-	
COL-D1_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-	
COL-D13_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-D14_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-D15_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-D16_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-D17_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-E2_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-E4_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-E6_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-E8_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-E10_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-E10_02		1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-E10_03		2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-F2_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-F9_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-JS01_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-JS02_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-JS03_01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS04_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS04_02		0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS04_03		0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS05_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS05_02		0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes and Abbreviations

mg/kg- milligrams per kilogram

HSL - Health Screening Level

IMW - Intrusive Maintenance Worker

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URPOS - Urban Residential and Public Open Space

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LOR - Limit of Reporting

m -Metres

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References

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x
x

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Historical Soil Analytical Data - Organochloride Pesticides
Preliminary Site Investigation
Collieround House Redevelopment Area

Sample ID	Sample Date	Sample Depth (m)	a-BHC	Aldrin	Dieldrin	b-BHC	cis-Chlordane	trans-Chlordane	alpha-Chlordane	gamma-Chlordane	Chlordane	d-BHC	DDD	DDE	DDT	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC	HCB	Heptachlor	Heptachlor epoxide	Lindane	Methoxychlor	Hexachlorobenzene	
Assessment Criteria	HSL-A Residential (Low) ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
	IMW ¹		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
	HIL-A ²		NE	6			NE	NE	NE	NE	NE	50	NE	240			270	NE	NE	10	NE	NE	NE	10	6	NE	NE	300	NE
	EIL- URPOS ²		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	180	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
HGM (2002)																													
COL-JS05_03	16-19 July 2002	1.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-	
COL-JS07_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-JS07_02		0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-JS07_03		0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-JS08_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-JS08_02		0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-JS08_03		1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
COL-JS09_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-JS10_01		0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS10_02		0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS11_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-JS12_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-JS12_02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COL-JS13_01		0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-JS13_03		-	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-JS13_02		1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-
COL-JS14_01	0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-	
COL-JS15_01	0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-	
COL-JS16_01	0-0.1	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	-	-	-	

Notes and Abbreviations

mg/kg- milligrams per kilogram

HSL - Health Screening Level

IMW - Intrusive Maintenance Worker

EIL - Ecological Investigation Level

URPOS - Urban Residential and Public Open Space

NE - Not Established

LOR - Limit of Reporting

m -Metres

- No Data/LOR

References

1. CRC Care Technical Report No. 10, Friebe, E., & Nadebaum, P. (2011). Health Screening Levels for Petroleum Hydrocarbons in Soils and groundwater. Part 2: Application Document.
2. Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater, National Environment Protection(Assessment of Site Contamination) Measure (NEPM) (NEPC, 1999 as amended 2013).
3. Golder Associates (2013), Data Gap Analysis and Work Plan Collie Roundhouse, Coalfields Road Collie Western Australia, February 2013.
4. Golder Associates (2007) Preliminary Environmental Site Investigation, Collie Roundhouse, Coalfields Road Collie, Western Australia, January 2007.
5. Golder Associates (2002) Phase I Environmental Site Investigation Former Collie Railway, Collie WA, January 2002.
6. Halpern Glick Maunsell (2002) Detailed Site Investigation – Collie Railway Yard, Collie, WA, Western Australia Government Railways Commission, October 2002.

Exceedances

x	Cells bolded indicate an exceedance of laboratory LORs
x	Cells bolded and shaded indicate an exceedance of HSL - A Residential (low)
x	Cells bolded and shaded indicate an exceedance of IMW

x	Cells bolded and shaded indicate an exceedance of HIL - A Residential
x	Cells bolded and shaded indicate an exceedance of EIL - URPOS

Table 7
Historical Groundwater Analytical Data - Metals
Preliminary Site Investigation
Collie Roundhouse Redevelopment Area

			Heavy Metals									
Sample ID	Well ID	Sample Date	Arsenic (Filtered)	Cadmium (Filtered)	Chromium (Filtered)	Chromium (hexavalent) (Filtered)	Chromium (trivalent) (Filtered)	Copper (Filtered)	Lead (Filtered)	Mercury (Filtered)	Nickel (Filtered)	Zinc (Filtered)
Assessment Criteria	NPUG ¹ (mg/l)		0.1	0.02	NE	0.5	NE	20	0.1	0.01	0.2	3
	LTI ² (mg/l)		0.1	0.1	0.1	NE	NE	0.2	2	0.002	0.2	2
	STI ² (mg/l)		2	0.05	1	NE	NE	5	5	0.002	3	5
	Freshwater ³ (mg/l)		0.013	0.0002	NE	0.001	NE	0.0014	0.0034	0.00006	0.011	0.008
Units			mg/L									
Golders Associates (2013)												
LOR			0.001	0.0001	0.001	0.01	0.01	0.001	0.001	0.0001	0.001	0.005
MB01	MB01	29/08/2013	<0.001	<0.0001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.0001	<0.001	<0.005
MB02	MB02	29/08/2013	<0.001	<0.0001	<0.001	<0.01	<0.01	0.002	<0.001	<0.0001	<0.001	0.012
MB03	MB03	29/08/2013	<0.001	<0.0001	<0.001	<0.01	<0.01	0.002	<0.001	<0.0001	<0.001	0.012
MB04	MB04	29/08/2013	<0.001	<0.0001	<0.001	<0.01	<0.01	0.001	<0.001	<0.0001	0.006	0.019
MB05	MB05	29/08/2013	<0.001	<0.0001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.0001	0.005	0.015
HGM (2003)												
LOR			0.001	0.002	0.005	-	-	0.002	0.001	0.0002	0.01	0.005
Col-MW1-01	MB1	7/03/2003	<0.001	<0.002	<0.005	-	-	0.007	0.002	<0.0002	<0.01	0.016
Col-MW2-01	MB2	7/03/2003	<0.001	<0.002	<0.005	-	-	<0.002	<0.001	<0.0002	<0.01	0.01
Col-MW3-01	MB3	7/03/2003	<0.001	<0.002	<0.005	-	-	<0.002	<0.001	<0.0002	<0.01	<0.005
HGM (2002)												
LOR			0.001	0.0002	0.001	-	-	0.001	0.001	0.0001	0.001	0.01
Col-Water-01	MB1	20/07/2002	0.001	<0.0002	<0.001	-	-	0.09	0.003	<0.0001	0.06	0.01
Col-Water-02	MB1	20/07/2002	0.002	<0.0002	0.008	-	-	0.051	<0.001	<0.0001	0.02	0.02
Col-Water-04	MB2	20/07/2002	<0.001	<0.0002	0.005	-	-	0.01	0.001	<0.0001	0.07	<0.01
Col-Water-05	MB3	20/07/2002	<0.001	<0.0002	<0.001	-	-	0.004	0.001	<0.0001	0.16	0.03

Notes and Abbreviations

mg/l - milligrams per litre
 NPUG - Non-Potable Groundwater Use
 LTI - Long-Term Irrigation
 STI - Short-Term Irrigation
 NE - Not Established

LOR - Limit of Reporting
 - No Data/LOR

Exceedances:

x	Cells bolded indicate an exceedance of laboratory LORs
x	Cells bolded and shaded indicate an exceedance of NPUG
x	Cells bolded and shaded indicate an exceedance of LTI
x	Cells bolded and shaded indicate an exceedance of STI
x	Cells bolded and shaded indicate an exceedance of Freshwater

Reference

- DER Assessment and Management of Contaminated Sites - Contaminated Sites Guidelines (DER, 2014)
- Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater, amended NEPM (NEPC, 1999).
- ANZECC (2000) Australian and New Zealand Guidelines for Fresh and Marine Water Quality, October 2000.
- Golder Associates (2013) Groundwater Assessment Collie Roundhouse, Coalfields Road Collie Western Australia, November 2013.
- Halpern Glick Maunsell (2003) Groundwater Monitoring – Collie Railway Yard, Collie, WA, Western Australia Government Railways Commission, May 2003.
- Halpern Glick Maunsell (2002) Detailed Site Investigation – Collie Railway Yard, Collie, WA, Western Australia Government Railways Commission, October 2002.

Table 8
Historical Groundwater Analytical Data - Hydrocarbons
Preliminary Site Investigation
Collie Roundhouse Redevelopment Area



			TPH					TRH						MAH																
Sample ID	Well ID	Sample Date	TPH C6 - C9	TPH C10 - C14	TPH C15 - C28	TPH C29 - C36	TRH + C10 - C36 (Total)	TRH + C10 - C40 (Total)	TRH C ₆ - C ₁₀	TRH C ₆ - C ₁₀ minus BTEX (F1)	TRH C ₁₀ - C ₁₆ (F2)	TRH C ₁₆ - C ₃₄ (F3)	TRH C ₃₄ - C ₄₀ (F4)	1,2,4-trimethylbenzene	1,3,5-Trimethylbenzene	Benzene	Ethylbenzene	Isopropylbenzene	n-Butylbenzene	n-Propylbenzene	p-Isopropyltoluene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Toluene	Xylenes (m & p)	Xylene (o)	Xylenes	Total BTEX	
Assessment Criteria	NPUG ¹ (mg/l)		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	0.01	0.003	NE	NE	NE	NE	NE	0.004	NE	0.025	0.02		NE	NE	
	LTI ² (mg/l)		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	STI ² (mg/l)		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	Freshwater ³ (mg/l)		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	0.95	NE	NE	NE	NE	NE	NE	NE	NE	NE	0.2	0.35	NE	NE
Units			mg/L					mg/L						mg/L																
Golders Associates (2013)																														
LOR			0.02	0.05	0.1	0.05	0.05	0.1	0.02	0.02	0.1	0.1	0.1	0.005	0.005	0.001	0.002	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.002	0.002	0.002	0.002	0.001
MB01	MB01	29/08/2013	<0.02	<0.05	<0.1	<0.05	<0.05	<0.1	<0.02	<0.02	<0.1	<0.1	<0.1	<0.005	<0.005	<0.001	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.001
MB02	MB02	29/08/2013	<0.02	<0.05	<0.1	<0.05	<0.05	<0.1	<0.02	<0.02	<0.1	<0.1	<0.1	<0.005	<0.005	<0.001	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.001
MB03	MB03	29/08/2013	<0.02	<0.05	<0.1	<0.05	<0.05	<0.1	<0.02	<0.02	<0.1	<0.1	<0.1	<0.005	<0.005	<0.001	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.001
MB04	MB04	29/08/2013	<0.02	<0.05	<0.1	<0.05	<0.05	<0.1	<0.02	<0.02	<0.1	<0.1	<0.1	<0.005	<0.005	<0.001	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.001
MB05	MB05	29/08/2013	<0.02	<0.05	<0.1	<0.05	<0.05	<0.1	<0.02	<0.02	<0.1	<0.1	<0.1	<0.005	<0.005	<0.001	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.001
HGM (2003)																														
LOR			0.02	0.02	0.04	0.04	-	-	-	-	-	-	-	-	-	0.001	0.001	-	-	-	-	-	-	-	-	0.001	-	-	0.003	-
Col-MW1-01	MB1	7/03/2003	0.2	0.18	<0.04	<0.04	-	-	-	-	-	-	-	-	-	<0.001	<0.001	-	-	-	-	-	-	-	-	<0.001	-	-	<0.003	-
Col-MW2-01	MB2	7/03/2003	<0.02	<0.02	<0.04	<0.04	-	-	-	-	-	-	-	-	-	<0.001	<0.001	-	-	-	-	-	-	-	<0.001	-	-	<0.003	-	
Col-MW3-01	MB3	7/03/2003	<0.02	<0.02	<0.04	<0.04	-	-	-	-	-	-	-	-	-	<0.001	<0.001	-	-	-	-	-	-	-	<0.001	-	-	<0.003	-	
HGM (2002)																														
LOR			0.02	0.02	0.04	0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Col-Water-01	MB1	20/07/2002	<0.02	<0.02	<0.04	<0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Col-Water-02	MB1	20/07/2002	<0.02	<0.02	<0.04	<0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Col-Water-04	MB2	20/07/2002	<0.02	<0.02	<0.04	<0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Col-Water-05	MB3	20/07/2002	<0.02	<0.02	<0.04	<0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes and Abbreviations

mg/l - milligrams per litre

NPUG - Non-Potable Groundwater Use

LTI - Long-Term Irrigation

STI - Short-Term Irrigation

NE - Not Established

LOR - Limit of Reporting

- No Data/LOR

TPH - Total Petroleum hydrocarbons

TRH - Total Recoverable hydrocarbons

MAH - Monocyclic Aromatic Hydrocarbons

PAH - Polycyclic Aromatic Hydrocarbons

Exceedances:

x	Cells bolded indicate an exceedance of laboratory LORs
x	Cells bolded and shaded indicate an exceedance of NPUG
x	Cells bolded and shaded indicate an exceedance of LTI
x	Cells bolded and shaded indicate an exceedance of STI
x	Cells bolded and shaded indicate an exceedance of Freshwater

Reference

1. DER Assessment and Mangement of Contaminated Sites - Contaminated Sites Guidelines (DER, 2014)

2. Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater, amended NEPM (NEPC, 1999).

3. ANZECC (2000) Australian and New Zealand Guidelines for Fresh and Marine Water Quality, October 2000.

4. Golder Associates (2013) Groundwater Assessment Collie Roundhouse, Coalfields Road Collie Western Australia, November 2013.

5. Halpern Glick Maunsell (2003) Groundwater Monitoring – Collie Railway Yard, Collie, WA, Western Australia Government Railways Commission, May 2003.

6. Halpern Glick Maunsell (2002) Detailed Site Investigation – Collie Railway Yard, Collie, WA, Western Australia Government Railways Commission, October 2002.

Table 8
Historical Groundwater Analytical Data - Hydrocarbons
Preliminary Site Investigation
Collie Roundhouse Redevelopment Area



			PAH																			Halogenated Benzenes										
Sample ID	Well ID	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene (TEQs)	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	2-Methyl-naphthalene	Phenanthrene	Pyrene	PAH (Sum of Common 16 PAHs - Lab Reported)	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	2-Chlorotoluene	4-Chlorotoluene	Bromobenzene	Chlorobenzene	Hexachlorobenzene	
Assessment Criteria	NPUG ¹ (mg/l)		NE	NE	NE	NE	0.0001	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	0.005	NE	0.001	0.02	0.0003	NE	NE	NE	NE	NE	
	LTI ² (mg/l)		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE		
	STI ² (mg/l)		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE		
	Freshwater ³ (mg/l)		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	0.016	NE	NE	NE	NE	0.003	0.085	0.16	0.26	0.06	NE	NE	NE	NE	NE
Units			mg/L																			mg/L										
Golders Associates (2013)																																
LOR			0.001	0.001	0.001	0.001	0.0005	0.0005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-	0.001	0.001	0.0005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.00001	
MB01	MB01	29/08/2013	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.00001	
MB02	MB02	29/08/2013	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.00001	
MB03	MB03	29/08/2013	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.00001	
MB04	MB04	29/08/2013	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.00001	
MB05	MB05	29/08/2013	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.00001	
HGM (2003)																																
LOR			0.0001	0.0001	0.0001	0.0002	0.0002	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	-	-	-	-	-	-	-	-	-	-	-
Col-MW1-01	MB1	7/03/2003	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	-	-	-	-	-	-	-	-	
Col-MW2-01	MB2	7/03/2003	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	-	-	-	-	-	-	-	-	
Col-MW3-01	MB3	7/03/2003	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	-	-	-	-	-	-	-	-	
HGM (2002)																																
LOR			0.0001	0.0001	0.0001	0.0002	0.0002	-	0.0002	0.0002	0.0002	0.0002	0.0002	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	-	-	-	-	-	-	-	-	-	-	-
Col-Water-01	MB1	20/07/2002	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	-	-	-	-	-	-	-	-	
Col-Water-02	MB1	20/07/2002	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	-	-	-	-	-	-	-	-	
Col-Water-04	MB2	20/07/2002	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	-	-	-	-	-	-	-	-	
Col-Water-05	MB3	20/07/2002	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	-	-	-	-	-	-	-	-	-	

Table 9
Historical Groundwater Analytical Data - Herbicides and Pesticides
Preliminary Site Investigation
Collie Roundhouse Redevelopment Area



			Herbicides																OCP's																								
Sample ID	Well ID	Sample Date	2,4,5-Trichlorophenoxy Acetic Acid	2,4-D	2,4-Dichloroprop	2,6-D	2-Methyl-4-chlorophenoxyacetic acid	2-Methyl-4-Chlorophenoxy Butanoic Acid	4-Chlorophenoxyacetic acid	Clpyralid	Dicamba	Diquat	Fenoprop	Fluroxpyr	Mecoprop	Paraquat	Picloram	Triclopyr	24-DB	a-BHC	Aldrin	Dieldrin	b-BHC	cis-Chlordane	trans-Chlordane	Chlordane	d-BHC	DDD	DDE	DDT	DDT+DDE+DDD (Sum of total) [Lab Reported]	Endosulfan	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone					
Assessment Criteria	NPUG ¹ (mg/l)		0.3	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	0.03			NE	NE	NE	NE	0.02	NE	NE	NE	0.09	NE	0.2			NE	NE	NE	NE		
	LTI ² (mg/l)		-	-	-	-	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE			NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE		
	STI ³ (mg/l)		-	-	-	-	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE			NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
	Freshwater ⁴ (mg/l)		0.28	-	-	-	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE			NE	NE	NE	NE	NE	NE	0.000006	NE	0.00003	NE	NE	NE	NE	0.00001	NE	NE	NE	
Units			mg/L																		mg/L																						
Golders Associates (2013)																																											
LOR			0.00001	0.00001	0.00001	0.0001	0.00001	0.00001	0.00001	0.00005	0.00001	0.00005	0.00001	0.00005	0.00001	0.0001	0.00005	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
MB01	MB01	29/08/2013	<0.00001	<0.00001	<0.00001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00005	<0.00001	<0.00005	<0.00001	<0.00005	<0.00001	<0.0001	<0.00005	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
MB02	MB02	29/08/2013	<0.00001	<0.00001	<0.00001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00005	<0.00001	<0.00005	<0.00001	<0.00005	<0.00001	<0.0001	<0.00005	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
MB03	MB03	29/08/2013	<0.00001	<0.00001	<0.00001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00005	<0.00001	<0.00005	<0.00001	<0.00005	<0.00001	<0.0001	<0.00005	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
MB04	MB04	29/08/2013	<0.00001	<0.00001	<0.00001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00005	<0.00001	<0.00005	<0.00001	<0.00005	<0.00001	<0.0001	<0.00005	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
MB05	MB05	29/08/2013	<0.00001	<0.00001	<0.00001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00005	<0.00001	<0.00005	<0.00001	<0.00005	<0.00001	<0.0001	<0.00005	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
HGM (2003)																																											
LOR			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.000001	0.000001	0.000001	0.000001	-	-	0.000001	0.000001	0.000001	0.000001	0.000001	-	-	0.000001	0.000001	0.000001	-	-	-	-			
Col-MW1-01	MB1	7/03/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000001	<0.000001	<0.000001	<0.000001	-	-	<0.000001	<0.000001	<0.000001	<0.000001	<0.000001	<0.000001	<0.000001	-	-	<0.000001	<0.000001	<0.000001	-	-	-	-	
Col-MW2-01	MB2	7/03/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000001	<0.000001	<0.000001	<0.000001	-	-	<0.000001	<0.000001	<0.000001	<0.000001	<0.000001	<0.000001	<0.000001	-	-	<0.000001	<0.000001	<0.000001	-	-	-	-	
Col-MW3-01	MB3	7/03/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.000001	<0.000001	0.000002	<0.000001	-	-	<0.000001	<0.000001	<0.000001	<0.000001	<0.000001	<0.000001	<0.000001	-	-	<0.000001	<0.000001	<0.000001	-	-	-	-	
HGM (2002)																																											
LOR			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Col-Water-01	MB1	20/07/2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Col-Water-02	MB1	20/07/2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Col-Water-04	MB2	20/07/2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Col-Water-05	MB3	20/07/2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Notes and Abbreviations

mg/l - milligrams per litre

NPUG - Non-Potable Groundwater Use - No Data/LOR

LTI - Long-Term Irrigation

STI - Short-Term Irrigation

NE - Not Established

LOR - Limit of Reporting

OCP - Organochlorine Pesticides

OPP - Organophosphate Pesticides

Exceedances

x	Cells bolded indicate an exceedance of laboratory LORs
x	Cells bolded and shaded indicate an exceedance of NPUG
x	Cells bolded and shaded indicate an exceedance of LTI
x	Cells bolded and shaded indicate an exceedance of STI
x	Cells bolded and shaded indicate an exceedance of Freshwater

Reference

- DER Assessment and Mangement of Contaminated Sites - Contaminated Sites Guidelines (DER, 2014)
- Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater, amended NEPM (NEPC, 1999).
- ANZEEC (2000) Australian and New Zealand Guidelines for Fresh and Marine Water Quality, October 2000.
- Golder Associates (2013) Groundwater Assessment Collie Roundhouse, Coalfields Road Collie Western Australia, November 2013.
- Halpern Glick Maunsell (2003) Groundwater Monitoring – Collie Railway Yard, Collie, WA, Western Australia Government Railways Commission, May 2003.
- Halpern Glick Maunsell (2002) Detailed Site Investigation – Collie Railway Yard, Collie, WA, Western Australia Government Railways Commission, October 2002.

Table 9
Historical Groundwater Analytical Data - Herbicides and Pesticides
Preliminary Site Investigation
Collie Roundhouse Redevelopment Area



			OCP's																									Pesticides - Carbamates									
Sample ID	Well ID	Sample Date	β-BHC	Heptachlor	Heptachlor epoxide	HBC	Methoxychlor	Oxychlorane	Azinphos-methyl	Bromophos-ethyl	Carbophenothion	Chlorpyrifos	Chlorpyrifos-methyl	dis-Chlorfenvinphos	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenamiphos	Fenitron	Malathion	Parathion-methyl	Monocrotophos	Parathion	Prinphos-ethyl	Prothiofos	Aldicarb	Bendiocarb	Carbaryl	Carbofuran	Demeton-s-methyl	Methomyl	Oxamyl	Thiodicarb	Methiocarb		
Assessment Criteria	NPUG ¹ (mg/l)		NE	NE	NE	NE	NE	NE	NE	NE	NE	0.01	NE	NE	NE	0.4	0.05	0.07	0.04	0.005	0.07	0.7	0.9	NE	0.2	NE	NE	0.04	NE	0.3	0.1	NE	0.2	0.07	NE	0.07	
	LTI ² (mg/l)		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
	STI ² (mg/l)		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	Freshwater ³ (mg/l)		NE	0.00001	NE	NE	NE	NE	NE	NE	NE	NE	0.00001	NE	NE	NE	0.00015	NE	NE	NE	NE	0.00005	NE	NE	0.000004	NE	NE	NE	NE	NE	0.00006	NE	0.0035	NE	NE	NE	NE
Units			mg/L																									mg/L									
Golders Associates (2013)																																					
LOR			0.00001	0.000005	0.00001	-	0.00001	0.00001	0.0001	0.0001	0.0001	0.00005	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0001	0.0002	0.0002	0.0002	0.0002
MB01	MB01	29/08/2013	<0.00001	<0.000005	<0.00001	-	<0.00001	<0.00001	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0001	<0.0002	<0.0002	<0.0002	<0.0002
MB02	MB02	29/08/2013	<0.00001	<0.000005	<0.00001	-	<0.00001	<0.00001	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0001	<0.0002	<0.0002	<0.0002	<0.0002
MB03	MB03	29/08/2013	<0.00001	<0.000005	<0.00001	-	<0.00001	<0.00001	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0001	<0.0002	<0.0002	<0.0002	<0.0002
MB04	MB04	29/08/2013	<0.00001	<0.000005	<0.00001	-	<0.00001	<0.00001	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0001	<0.0002	<0.0002	<0.0002	<0.0002
MB05	MB05	29/08/2013	<0.00001	<0.000005	<0.00001	-	<0.00001	<0.00001	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0001	<0.0002	<0.0002	<0.0002	<0.0002
HGM (2003)																																					
LOR			-	0.000001	0.000001	0.000001	-	0.000001	-	0.000005	-	0.000005	-	-	0.00001	-	-	0.00001	-	0.00001	0.00001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Col-MW1-01	MB1	7/03/2003	-	<0.000001	<0.000001	<0.000001	-	<0.000001	-	<0.000005	-	<0.000005	-	-	<0.00001	-	-	<0.00001	-	<0.00001	<0.00001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Col-MW2-01	MB2	7/03/2003	-	<0.000001	<0.000001	<0.000001	-	<0.000001	-	<0.000005	-	<0.000005	-	-	<0.00001	-	-	<0.00001	-	<0.00001	<0.00001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Col-MW3-01	MB3	7/03/2003	-	<0.000001	<0.000001	<0.000001	-	<0.000001	-	<0.000005	-	<0.000005	-	-	<0.00001	-	-	<0.00001	-	<0.00001	<0.00001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HGM (2002)																																					
LOR			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Col-Water-01	MB1	20/07/2002	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Col-Water-02	MB1	20/07/2002	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Col-Water-04	MB2	20/07/2002	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Col-Water-05	MB3	20/07/2002	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Notes and Abbreviations

mg/l - milligrams per litre
NPUG - Non-Potable Groundwater Use
LTI - Long-Term Irrigation
STI - Short-Term Irrigation
NE - Not Established

LOR - Limit of Reporting
- No Data/LOR

OCP - Organochlorine Pesticides
OPP - Organophosphate Pesticides

Exceedances:

x	Cells bolded indicate an exceedance of laboratory LORs
x	Cells bolded and shaded indicate an exceedance of NPUG
x	Cells bolded and shaded indicate an exceedance of LTI
x	Cells bolded and shaded indicate an exceedance of STI
x	Cells bolded and shaded indicate an exceedance of Freshwater

- Reference**
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 - Halpern Glick Maunsell (2003) Groundwater Monitoring – Collie Railway Yard, Collie, WA, Western Australia Government Railways Commission, May 2003.
 - Halpern Glick Maunsell (2002) Detailed Site Investigation – Collie Railway Yard, Collie, WA, Western Australia Government Railways Commission, October 2002.

TABLE 10
Historical Groundwater Analytical Data - Nutrients
Preliminary Site Investigation
Collie Roundhouse Redevelopment Area

			Nutrients				
Sample ID	Well ID	Sample Date	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total Oxidised)	Ammonia (as N)	Reactive Phosphorus (as P)
Assessment Criteria	NPUG ¹ (mg/l)		113^	9^	NE	0.4^	NE
	LTI ² (mg/l)		NE	NE	5	NE	NE
	STI ² (mg/l)		NE	NE	NE	NE	NE
	Freshwater ³ (mg/l)		0.7	NE	NE	0.9	0.005
Units			mg/L				
Golders Associates (2013)							
LOR			0.01	0.01	0.01	0.01	0.01
MB01	MB01	29/08/2013	4.44	0.06	4.5	0.02	<0.01
MB02	MB02	29/08/2013	1.61	<0.01	1.61	0.02	<0.01
MB03	MB03	29/08/2013	1.74	-	1.74	0.02	<0.01
MB04	MB04	29/08/2013	2.9	0.01	2.91	0.04	<0.01
MB05	MB05	29/08/2013	0.09	-	0.09	0.04	<0.01
HGM (2003)							
LOR			-	-	-	-	-
Col-MW1-01	MB1	7/03/2003	-	-	-	-	-
Col-MW2-01	MB2	7/03/2003	-	-	-	-	-
Col-MW3-01	MB3	7/03/2003	-	-	-	-	-
HGM (2002)							
LOR			-	-	-	-	-
Col-Water-01	MB1	20/07/2002	-	-	-	-	-
Col-Water-02	MB1	20/07/2002	-	-	-	-	-
Col-Water-04	MB2	20/07/2002	-	-	-	-	-
Col-Water-05	MB3	20/07/2002	-	-	-	-	-

Notes and Abbreviations

mg/l - milligrams per litre

NPUG - Non-Potable Groundwater Use

LTI - Long-Term Irrigation

STI - Short-Term Irrigation

NE - Not Established

LOR - Limit of Reporting

- No Data/LOR

[^]Nitrogen-Ion Conversion as follows:

Ammonia: $\text{NH}_3 = \text{NH}_3\text{-N} / 1.21589$

Nitrate: $\text{NO}_3 = \text{NO}_3\text{-N} / 4.42664$

Nitrite: $\text{NO}_2 = \text{NO}_2\text{-N} / 3.28443$

Exceedances:

x	Cells bolded indicate an exceedance of laboratory LORs
x	Cells bolded and shaded indicate an exceedance of NPUG
x	Cells bolded and shaded indicate an exceedance of LTI
x	Cells bolded and shaded indicate an exceedance of STI
x	Cells bolded and shaded indicate an exceedance of Freshwater

Reference

1. DER Assessment and Management of Contaminated Sites - Contaminated Sites Guidelines (DER, 2014)
2. Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater, amended NEPM (NEPC, 1999).
3. ANZECC (2000) Australian and New Zealand Guidelines for Fresh and Marine Water Quality, October 2000.
4. Golder Associates (2013) Groundwater Assessment Collie Roundhouse, Coalfields Road Collie Western Australia, November 2013.
5. Halpern Glick Maunsell (2003) Groundwater Monitoring – Collie Railway Yard, Collie, WA, Western Australia Government Railways Commission, May 2003.
6. Halpern Glick Maunsell (2002) Detailed Site Investigation – Collie Railway Yard, Collie, WA, Western Australia Government Railways Commission, October 2002.

TABLE 11
Historical Groundwater Analytical Data - Other Analytes
Preliminary Site Investigation
Collie Roundhouse Redevelopment Area



			VOC's																					
Sample ID	Well ID	Sample Date	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,2,3-Trichloropropane	1,2-Dibromo-3-chloropropane	1,2-Dibromoethane	1,1-Dichloroethane	1,2-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-dichloroethene	1,2-Dichloropropane	1,3-Dichloropropane	2,2-Dichloropropane	1,1-Dichloropropene	cis-1,3-Dichloropropene	trans-1,3-dichloropropene	cis-1,4-Dichloro-2-butene	trans-1,4-Dichloro-2-butene	Bromodichloromethane	Bromoform	Bromomethane
Assessment Criteria	NPUG ¹ (mg/l)		NE	NE	NE	NE	NE	NE	NE	0.3	0.6	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	LTI ² (mg/l)		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	STI ² (mg/l)		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	Freshwater ³ (mg/l)		NE	NE	NE	6.5	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Units			mg/L					mg/L																
Golders Associates (2013)																								
LOR			0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.05
MB01	MB01	29/08/2013	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05
MB02	MB02	29/08/2013	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05
MB03	MB03	29/08/2013	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05
MB04	MB04	29/08/2013	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05
MB05	MB05	29/08/2013	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05
HGM (2003)																								
LOR			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Col-MW1-01	MB1	7/03/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Col-MW2-01	MB2	7/03/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Col-MW3-01	MB3	7/03/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HGM (2002)																								
LOR			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Col-Water-01	MB1	20/07/2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Col-Water-02	MB1	20/07/2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Col-Water-04	MB2	20/07/2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Col-Water-05	MB3	20/07/2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes and Abbreviations

mg/l - milligrams per litre

NPUG - Non-Potable Groundwater Use

LTI - Long-Term Irrigation

STI - Short-Term Irrigation

NE - Not Established

LOR - Limit of Reporting

- No Data/LOR

VOC - Volatile Organic Compounds

Exceedances:

x	Cells bolded indicate an exceedance of laboratory LORs
x	Cells bolded and shaded indicate an exceedance of NPUG
x	Cells bolded and shaded indicate an exceedance of LTI
x	Cells bolded and shaded indicate an exceedance of STI
x	Cells bolded and shaded indicate an exceedance of Freshwater

Reference

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2. Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater, amended NEPM (NEPC, 1999).

3. ANZECC (2000) Australian and New Zealand Guidelines for Fresh and Marine Water Quality, October 2000.

4. Golder Associates (2013) Groundwater Assessment Collie Roundhouse, Coalfields Road Collie Western Australia, November 2013.

5. Halpern Glick Maunsell (2003) Groundwater Monitoring – Collie Railway Yard, Collie, WA, Western Australia Government Railways Commission, May 2003.

6. Halpern Glick Maunsell (2002) Detailed Site Investigation – Collie Railway Yard, Collie, WA, Western Australia Government Railways Commission, October 2002.

TABLE 11
Historical Groundwater Analytical Data - Other Analytes
Preliminary Site Investigation
Collie Roundhouse Redevelopment Area



			VOC's															Solvents			
Sample ID	Well ID	Sample Date	Carbon disulfide	Carbon tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	Dibromomethane	Dichlorodifluoromethane	Hexachlorobutadiene	Iodomethane	Pentachloroethane	Trichloroethene	Tetrachloroethene	Trichlorofluoromethane	Vinyl chloride	Methyl Ethyl ketone	2-Hexanone	4-Methyl-2-pentanone	Vinyl acetate
Assessment Criteria	NPUG ¹ (mg/l)		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	0.5	NE	0.003	NE	NE	NE	NE
	LTI ² (mg/l)		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	STI ² (mg/l)		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	Freshwater ³ (mg/l)		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Units			mg/L															mg/L			
Golders Associates (2013)																					
LOR			0.005	0.005	0.005	0.05	0.005	0.05	0.005	0.05	0.005	0.005	0.005	0.005	0.005	0.05	0.05	0.05	0.05	0.05	0.05
MB01	MB01	29/08/2013	<0.005	<0.005	<0.005	<0.05	<0.005	<0.05	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MB02	MB02	29/08/2013	<0.005	<0.005	<0.005	<0.05	<0.005	<0.05	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MB03	MB03	29/08/2013	<0.005	<0.005	<0.005	<0.05	<0.005	<0.05	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MB04	MB04	29/08/2013	<0.005	<0.005	<0.005	<0.05	<0.005	<0.05	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MB05	MB05	29/08/2013	<0.005	<0.005	<0.005	<0.05	<0.005	<0.05	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HGM (2003)																					
LOR			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Col-MW1-01	MB1	7/03/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Col-MW2-01	MB2	7/03/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Col-MW3-01	MB3	7/03/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HGM (2002)																					
LOR			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Col-Water-01	MB1	20/07/2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Col-Water-02	MB1	20/07/2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Col-Water-04	MB2	20/07/2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Col-Water-05	MB3	20/07/2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes and Abbreviations
mg/l - milligrams per litre
NPUG - Non-Potable Groundwater Use
LTI - Long-Term Irrigation
STI - Short-Term Irrigation
NE - Not Established
LOR - Limit of Reporting
No Data/LOR
VOC - Volatile Organic Compounds

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x	Cells bolded and shaded indicate an exceedance of NPUG
x	Cells bolded and shaded indicate an exceedance of LTI
x	Cells bolded and shaded indicate an exceedance of STI
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TABLE 11
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Preliminary Site Investigation
Collie Roundhouse Redevelopment Area



			Phenolics					Phenolics-Halogenated							Polychlorinated Biphenyls									
Sample ID	Well ID	Sample Date	2,4-Dimethylphenol	2-methylphenol	2-Nitrophenol	3- &4- methylphenol	Phenols	2,4,5 - Trichlorophenol	2,4,6 - Trichlorophenol	2,4 - Dichlorophenol	2,6 - Dichlorophenol	2 - Chlorophenol	4 - Chloro-3-methylphenol	Pentachlorophenol	Aroclor 1016	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1221	PCB (Sum of Total-Lab Reported)		
Assessment Criteria	NPUG ¹ (mg/l)		NE	NE	NE	NE	NE	NE	0.2	2	NE	3	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE		
	LTI ² (mg/l)		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE		
	STI ² (mg/l)		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE		
	Freshwater ³ (mg/l)		NE	NE	NE	NE	0.32	NE	0.003	0.12	NE	0.34	NE	0.0036	NE	NE	0.0003	NE	0.00001	NE	NE	NE		
Units			mg/L					mg/L							mg/L									
Golders Associates (2013)																								
LOR			0.001	0.001	0.001	0.002	0.001	0.001	0.0001	0.001	0.001	0.001	0.001	0.001	0.002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001		
MB01	MB01	29/08/2013	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		
MB02	MB02	29/08/2013	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		
MB03	MB03	29/08/2013	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		
MB04	MB04	29/08/2013	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		
MB05	MB05	29/08/2013	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		
HGM (2003)																								
LOR			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00002	-	-	-		
Col-MW1-01	MB1	7/03/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00002	-	-	-		
Col-MW2-01	MB2	7/03/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00002	-	-	-		
Col-MW3-01	MB3	7/03/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.00002	-	-	-		
HGM (2002)																								
LOR			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Col-Water-01	MB1	20/07/2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Col-Water-02	MB1	20/07/2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Col-Water-04	MB2	20/07/2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Col-Water-05	MB3	20/07/2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

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