

TABLE 6.1

SOIL ANALYTICAL RESULTS - FORMER CLEANING SHED AREA

Location Consultant Sample Location Sample Depth (metres)	CLEANING SHED AREA									
	CH2M HILL TP19 0.00-0.10	CH2M HILL BH21 0.2	CH2M HILL BH22 0.2	CH2M HILL BH22 0.6	CH2M HILL BH23 0.2	CH2M HILL BH23 0.6	CH2M HILL BH22 0.2	CH2M HILL BH22 0.6	CH2M HILL BH23 0.2	CH2M HILL BH23 0.6
Analyte	Units	LOR	NEHRF - Level 1		NSW EPA		Guidelines for the Assessment of Service Station Sites (1994)			
			Monographs (1996)							
4-Chlorotoluene	mg/kg	1					nd	na	nd	nd
Dibromochloromethane	mg/kg	1					nd	na	nd	nd
1,2-Dibromo-3-Chloropropane	mg/kg	1					nd	na	nd	nd
1,2-Dibromomethane (EDB)	mg/kg	1					nd	na	nd	nd
Dibromomethane	mg/kg	1					nd	na	nd	nd
1,2-Dichlorobenzene	mg/kg	1					nd	na	nd	nd
1,3-Dichlorobenzene	mg/kg	1					nd	na	nd	nd
1,4-Dichlorobenzene	mg/kg	1					nd	na	nd	nd
Dichlorodifluoromethane	mg/kg	1					nd	na	nd	nd
1,1-Dichloroethene	mg/kg	1					nd	na	nd	nd
1,2-Dichloroethane	mg/kg	1					nd	na	nd	nd
1,1-Dichloroethane	mg/kg	1					nd	na	nd	nd
cis-1,2-Dichloroethene	mg/kg	1					nd	na	nd	nd
trans-1,2-Dichloroethene	mg/kg	1					nd	na	nd	nd
1,2-Dichloropropane	mg/kg	1					nd	na	nd	nd
1,3-Dichloropropane	mg/kg	1					nd	na	nd	nd
2,2-Dichloropropane	mg/kg	1					nd	na	nd	nd
1,1-Dichloropropylene	mg/kg	1					nd	na	nd	nd
cis-1,3-Dichloropropylene	mg/kg	1					nd	na	nd	nd
trans-1,3-Dichloropropylene	mg/kg	1					nd	na	nd	nd
Ethylbenzene	mg/kg	1					nd	na	nd	nd
Hexachlorobutadiene	mg/kg	1					nd	na	nd	nd
Isopropylene	mg/kg	1					nd	na	nd	nd
p-Isopropyltoluene	mg/kg	1					nd	na	nd	nd
Methylene chloride	mg/kg	1					nd	na	nd	nd
Naphthalene	mg/kg	1					nd	na	nd	nd
n-Propylbenzene	mg/kg	1					nd	na	nd	nd

TABLE 13.1
SOIL ANALYTICAL RESULTS - MACDONALD TOWN TRIANGLE - EAST BURREN STREET / RESIDENCE:

Consultant	Sample Location	Sample Depth (metres)	CH2M HILL MW14S090100 Fill 1.4-1.5	CH2M HILL MW14D140150 Natural 1.4-1.5	CH2M HILL MW16S090100 Fill 0.9-1.0	CH2M HILL MW16D140150 Natural 1.4-1.5	CH2M HILL MW15S090100 Natural 0.9-1.0	CH2M HILL MW15D140150 Natural 1.4-1.5	CH2M HILL MW06S130140 Natural 1.3-1.4	CH2M HILL A31 BURREN ST Fill 0.0-0.1	CH2M HILL MW19S120130 Natural 1.2-1.3	CH2M HILL A29 BURREN ST Fill 0.0-0.1	CH2M HILL MW10S090110 Fill 0.9-1.1	CH2M HILL A25 BURREN ST Fill 0.0-0.1	CH2M HILL MW11S060060 Fill 0.6-0.8
Analysed	Units	LOR													
Physical Moisture	%	0.1													
Metals	mg/kg	1													
Arsenic	mg/kg	1	100	500	20	4	9	5	9	7	14	14	15	14	18
Cadmium	mg/kg	1	20	100	3	nd	nd	nd	nd	nd	2	1	1	2	nd
Chromium	mg/kg	1	100	500	400**	13	27	16	37	26	35	21	23	22	10
Copper	mg/kg	1	1,000	5,000	100	7	2	6	1	3	57	161	117	207	149
Nickel	mg/kg	1	600	3,000	50	2	1	3	1	nd	6	11	17	13	18
Lead	mg/kg	1	300	1,500	600	83	14	31	19	14	16	453	1100	1220	1160
Zinc	mg/kg	1	7,000	35,000	200	169	15	24	15	15	8	383	451	593	512
Mercury	mg/kg	0.1	15	50	-	0.2	nd	nd	nd	nd	0.3	0.5	0.6	0.7	0.5
Total Organic Carbon	%	0.02				1.15	0.16	0.71	0.33	0.15	0.15	0.71	5.23	2.52	8.13
Total Petroleum Hydrocarbons (TPH)	mg/kg	2				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
C6 - C9 Fraction	mg/kg	250				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
C10 - C36 Fraction	mg/kg	1000				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BTEX	mg/kg	0.2				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Benzene	mg/kg	0.2	1.4	-	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Toluene	mg/kg	0.2	-	-	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Chlorobenzene	mg/kg	0.2	3.1	-	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ethylbenzene	mg/kg	0.2	-	-	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Xylene	mg/kg	0.4	14	-	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Furans	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
2,2-Dichloropropane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-Dichloropropane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
cis-1,3-Dichloropropylene	mg/kg	1				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
trans-1,3-Dichloropropylene	mg/kg	1				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB)	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Halogenated Aliphatic Hydrocarbons (VOL)	mg/kg	5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Dichlorodifluoromethane	mg/kg	5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Chloromethane	mg/kg	5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Vinyl chloride	mg/kg	5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Bromomethane	mg/kg	5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Chloroethane	mg/kg	5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trichlorofluoromethane	mg/kg	5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Iodomethane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
cis-1,2-Dichloroethane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-Dichloropropylene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Carbon tetrachloride	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-Dichloroethane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trichloroethane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Dibromomethane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,3-Dichloropropane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloroethane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
trans-1,4-Dichloro-2-butene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
cis-1,4-Dichloro-2-butene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-Dibromo-3-chloropropane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Hexachlorobutadiene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Halogenated Aromatic Hydrocarbons	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Chlorobenzene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Bromobenzene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
2-Chlorotoluene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
4-Chlorotoluene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trichlorobenzene (Volatiles)	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Chloroform	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Bromodichloromethane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Dibromochloromethane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Bromotoluene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Phenols	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Phenol	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
2-Chlorophenol	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
2-Methylphenol	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
3- & 4-Methylphenol	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
2-Nitrophenol	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
2,4-Dimethylphenol	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
2,4-Dichlorophenol	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
2,6-Dichlorophenol	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
4-Chloro-3-methylphenol	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
2,4,6-Trichlorophenol	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
2,4,5-Trichlorophenol	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Pentachlorophenol	mg/kg	1				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total Phenols	mg/kg	6.5	8500	42500		0	0	0	0	0	0	0	0	0	0
Polynuclear Aromatics	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Naphthalene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
2-Methylnaphthalene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
2-Chloronaphthalene	mg/kg	0.5				nd	nd	0.7	nd	nd	nd	nd	nd	nd	nd
Acenaphthylene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Acenaphthene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Fluorene	mg/kg	0.5				nd	nd	3.5	nd	nd	nd	nd	nd	nd	nd
Phenanthrene	mg/kg	0.5				nd	nd	0.9	nd	nd	nd	nd	nd	nd	nd
Anthracene	mg/kg	0.5				0.7	nd	4.1	nd	nd	nd	nd	nd	nd	nd
Fluoranthene	mg/kg	0.5				0.6	nd	3.8	nd	nd	nd	nd	nd	nd	nd
Pyrene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
N-2-Fluorenylacetylarnide	mg/kg	0.5				nd	nd	1.8	nd	nd	nd	nd	nd	nd	nd
Benz(a)anthracene	mg/kg	0.5				nd	nd	1.5	nd	nd	nd	nd	nd	nd	nd
Chrysene	mg/kg	0.5				nd	nd	2	nd	nd	nd	nd	nd	nd	nd
Benzo(b) & (k)fluoranthene	mg/kg	1				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
7,12-Dimethylbenz(a)anthracene	mg/kg	0.5				nd	nd	1.8	nd	nd	nd	nd	nd	nd	nd
Benzo(a)pyrene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
3-Methylcholanthrene	mg/kg	0.5				nd	nd	0.7	nd	nd	nd	nd	nd	nd	nd
Indeno(1,2,3-cd)pyrene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Dibenz(a,h)anthracene	mg/kg	0.5				nd	nd	0.8	nd	nd	nd	nd	nd	nd	nd
Benzo(g,h,i)perylene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total PAHs	mg/kg	10.5	20	100		1.3	0	21.5	0	0	0	54.3	18.1	131.3	64.5

LOR Limit of Reporting
na Not Analysed
nd None Detected above Laboratory Limit of Reporting
* Based on NSW EPA "Guidelines for the NSW Site Auditor Scheme", Health Based Investigation Level for Aldrin + Dieldrin.
** Chromium (III) criteria used as values assumed to represent background levels. NSW background chromium levels estimated at 17.83 mg/kg (Langley and Van Alphen, 1993).
Shaded indicates result above NEHL.
Bold indicates result above NEHL.
Underlined indicates result above Phytotoxicity based level.

TABLE 13.2
SOIL ANALYTICAL RESULTS - MACDONALD TOWN TRIANGLE - FORMER GASWORKS AREA

Consultant
Sample Location
File Natural
Sample Depth (metres)

CH2M HILL MW07D140150 Natural 1.4-1.5	CH2M HILL MW08D140150 Natural 1.4-1.5	CH2M HILL MW12D140150 Fill 1.4-1.5	CH2M HILL MW13S090100 Fill 0.9-1.0	CH2M HILL MW13D140150 Fill 1.4-1.5	CH2M HILL MW17D140150 Fill 1.4-1.5	CH2M HILL MW18D140150 Natural 1.4-1.5	CH2M HILL MW20S090100 Fill 0.9-1.0
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Analyte	Units	LOR	NEHFA Guideline mg/kg	NEHFA Guideline mg/kg	NEHFA Guideline mg/kg	CH2M HILL MW07D140150 Natural 1.4-1.5	CH2M HILL MW08D140150 Natural 1.4-1.5	CH2M HILL MW12D140150 Fill 1.4-1.5	CH2M HILL MW13S090100 Fill 0.9-1.0	CH2M HILL MW13D140150 Fill 1.4-1.5	CH2M HILL MW17D140150 Fill 1.4-1.5	CH2M HILL MW18D140150 Natural 1.4-1.5	CH2M HILL MW20S090100 Fill 0.9-1.0
Physical Moisture	%	0.1				21.4	13.6	30.4	10.3	10.8	22.3	17.9	20.2
Metals	mg/kg	1	100	500	20	4	11	4	178	7	10	10	13
Arsenic	mg/kg	1	20	100	3	nd	nd	nd	nd	nd	nd	nd	nd
Cadmium	mg/kg	1	100	500	400	13	50	12	14	4	8	31	5
Chromium	mg/kg	1	1,000	5,000	100	12	7	17	85	28	64	19	64
Copper	mg/kg	1	600	3,000	60	2	3	nd	9	2	6	nd	3
Nickel	mg/kg	1	300	1,500	600	100	129	32	474	27	223	30	394
Lead	mg/kg	1	7,000	35,000	200	31	21	55	177	75	157	22	166
Zinc	mg/kg	0.1	15	50	125	0.2	nd	na	na	na	na	na	na
Mercury	mg/kg	0.02				2.86	0.66	na	na	na	na	0.5	na
Total Organic Carbon	%	0.02				nd	nd	nd	nd	nd	nd	nd	nd
Total Petroleum Hydrocarbons (TPH)	mg/kg	2	65	162.5	-	nd	nd	nd	nd	nd	nd	nd	nd
C6 - C9 Fraction	mg/kg	250	1000	2,500	-	nd	nd	nd	nd	nd	nd	nd	nd
BTEX	mg/kg	0.2	1	2.5	-	nd	nd	nd	nd	nd	nd	nd	nd
Benzene	mg/kg	0.2	1.4	3.5	-	nd	nd	nd	nd	nd	nd	nd	nd
Toluene	mg/kg	0.2	3.1	7.75	-	nd	nd	nd	nd	nd	nd	nd	nd
Chlorobenzene	mg/kg	0.2	14	35	-	nd	nd	nd	nd	nd	nd	nd	nd
Ethylbenzene	mg/kg	0.4				na	na	nd	nd	nd	na	na	nd
Xylene	mg/kg	0.5				na	na	nd	nd	nd	na	na	nd
Monocyclic Aromatic Hydrocarbons	mg/kg	0.5				na	na	nd	nd	nd	na	na	nd
Benzene	mg/kg	0.5				na	na	nd	nd	nd	na	na	nd
Toluene	mg/kg	0.5				na	na	nd	nd	nd	na	na	nd
Ethylbenzene	mg/kg	0.5				na	na	nd	nd	nd	na	na	nd
meta- & para-Xylene	mg/kg	0.5				na	na	nd	nd	nd	na	na	nd
Styrene	mg/kg	0.5				na	na	nd	nd	nd	na	na	nd
ortho-Xylene	mg/kg	0.5				na	na	nd	nd	nd	na	na	nd
Isopropylbenzene	mg/kg	0.5				na	na	nd	nd	nd	na	na	nd
n-Propylbenzene	mg/kg	0.5				na	na	nd	nd	nd	na	na	nd
1,3,5-Trimethylbenzene	mg/kg	0.5				na	na	nd	nd	nd	na	na	nd
sec-Butylbenzene	mg/kg	0.5				na	na	nd	nd	nd	na	na	nd
1,2,4-Trimethylbenzene	mg/kg	0.5				na	na	nd	nd	nd	na	na	nd
tert-Butylbenzene	mg/kg	0.5				na	na	nd	nd	nd	na	na	nd
p-Isopropyltoluene	mg/kg	0.5				na	na	nd	nd	nd	na	na	nd
n-Butylbenzene	mg/kg	0.5				na	na	nd	nd	nd	na	na	nd
Organic Acid Compounds	mg/kg	5				na	na	nd	nd	nd	na	na	nd
Vinyl Acetate	mg/kg	5				na	na	nd	nd	nd	na	na	nd
2-Butanone (MEK)	mg/kg	5				na	na	nd	nd	nd	na	na	nd
4-Methyl-2-pentanone (MIBK)	mg/kg	5				na	na	nd	nd	nd	na	na	nd
2-Hexanone (MBK)	mg/kg	5				na	na	nd	nd	nd	na	na	nd
Sulfonated Compounds	mg/kg	0.5				na	na	nd	nd	nd	na	na	nd
Carbon disulfide	mg/kg	0.5				na	na	nd	nd	nd	na	na	nd
Fumigants	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
2,2-Dichloropropane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
1,2-Dichloropropane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
cis-1,3-Dichloropropylene	mg/kg	1				nd	nd	nd	nd	nd	nd	nd	nd
trans-1,3-Dichloropropylene	mg/kg	1				nd	nd	nd	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB)	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
Halogenated Aliphatic Hydrocarbons (VOL)	mg/kg	5				nd	nd	nd	nd	nd	nd	nd	nd
Dichlorodifluoromethane	mg/kg	5				nd	nd	nd	nd	nd	nd	nd	nd
Chloromethane	mg/kg	5				nd	nd	nd	nd	nd	nd	nd	nd
Vinyl chloride	mg/kg	5				nd	nd	nd	nd	nd	nd	nd	nd
Bromomethane	mg/kg	5				nd	nd	nd	nd	nd	nd	nd	nd
Chloroethane	mg/kg	5				nd	nd	nd	nd	nd	nd	nd	nd
Trichlorofluoromethane	mg/kg	5				nd	nd	nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
Iodomethane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
cis-1,2-Dichloroethane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
1,1-Dichloropropylene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
Carbon tetrachloride	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
1,2-Dichloroethane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
Trichloroethene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
Dibromomethane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
1,3-Dichloropropane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloroethene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
trans-1,4-Dichloro-2-butene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
cis-1,4-Dichloro-2-butene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
1,2,3-Trichloropropane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
Pentachloroethane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
1,2-Dibromo-3-chloropropane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
Hexachlorobutadiene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
Halogenated Aromatic Hydrocarbons	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
Chlorobenzene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
Bromobenzene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
2-Chlorotoluene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
4-Chlorotoluene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
Trihalomethanes (Volatiles)	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
Chloroform	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
Bromochloromethane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
Dibromochloromethane	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
Bromoform	mg/kg	0.5				na	na	nd	nd	nd	na	na	nd
Naphthalene	mg/kg	5				nd	nd	nd	1.5	nd	nd	nd	nd
Phenols	mg/kg	0.5				nd	nd	nd	1	nd	nd	nd	nd
Phenol	mg/kg	0.5				nd	nd	nd	1.7	nd	nd	nd	nd
2-Chlorophenol	mg/kg	0.5				nd	nd	nd	1.7	nd	nd	nd	nd
2-Methylphenol	mg/kg	0.5				nd	nd	nd	1.7	nd	nd	nd	nd
3,4,4-Methylphenol	mg/kg	0.5				nd	nd	nd	1.7	nd	nd	nd	nd
2-Nitrophenol	mg/kg	0.5				nd	nd	nd	1.7	nd	nd	nd	nd
2,4-Dimethylphenol	mg/kg	0.5				nd	nd	nd	1.7	nd	nd	nd	nd
2,4-Dichlorophenol	mg/kg	0.5				nd	nd	nd	1.7	nd	nd	nd	nd
2,6-Dichlorophenol	mg/kg	0.5				nd	nd	nd	1.7	nd	nd	nd	nd
4-Chloro-3-methylphenol	mg/kg	0.5				nd	nd	nd	1.7	nd	nd	nd	nd
2,4,6-Trichlorophenol	mg/kg	0.5				nd	nd	nd	1.7	nd	nd	nd	nd
2,4,5-Trichlorophenol	mg/kg	0.5				nd	nd	nd	1.7	nd	nd	nd	nd
2,4,6-Trichlorophenol	mg/kg	1				0	0	0	5.9	0	0	0	0
Total Phenols	mg/kg	6.5	8,500	42,500	106,250	0	0	0	5.9	0	0	0	0
Polynuclear Aromatics	mg/kg	0.5				nd	nd	nd	5.7	nd	nd	nd	nd
Naphthalene	mg/kg	0.5				nd	nd	nd	4	nd	nd	nd	nd
2-Methylnaphthalene	mg/kg	0.5				nd	nd	nd	nd	nd	nd	nd	nd
2-Chloronaphthalene	mg/kg	0.5				nd	nd	nd	0.7	nd	nd	nd	nd
Acenaphthylene	mg/kg	0.5				nd	nd	nd	0.7	nd	nd	nd	nd
Acenaphthene	mg/kg	0.5				nd	nd	nd	0.7	nd	nd	nd	nd
Fluorene	mg/kg	0.5				nd	nd	nd	0.7	nd	nd	nd	nd
Phenanthrene	mg/kg	0.5				nd	nd	nd	1.5	nd	nd	nd	nd
Anthracene	mg/kg	0.5				nd	nd	nd	1.5	nd	nd	nd	nd
Fluoranthene	mg/kg	0.5				nd	nd	nd	1.5	nd	nd	nd	nd
Pyrene	mg/kg	0.5				nd	nd	nd	1.5	nd	nd	nd	nd
N-2-Fluorenylacetylamine	mg/kg	0.5				nd	nd	nd	1.5	nd	nd	nd	nd
Benz(a)anthracene	mg/kg	0.5				nd	nd	nd	1.5	nd	nd	nd	nd
Chrysene	mg/kg	0.5				nd	nd	nd	1.5	nd	nd	nd	nd
Benzo(b) & (k)fluoranthene	mg/kg	0.5				nd	nd	nd	1.5	nd	nd	nd	nd

TABL E13.3
95% UCL ANALYSIS - MACDONALDTOWN TRIANGLE - EBR - NEHF A - INSITU NATURAL

Consultant Sample Location Sample Depth (metres)			CH2M HILL MW09S130140 1.3-1.4	CH2M HILL MW19S120130 1.2-1.3	CH2M HILL MW14D140150 1.4-1.5	CH2M HILL MW16D140150 1.4-1.5	CH2M HILL MW15S090100 0.9-1.0	CH2M HILL MW15D140150 1.4-1.5										
Analyte	Units	LOR							Count	Maximum	Minimum	Mean	SD	$t_{\alpha=0.05, n-1}$	Distribution	95% UCL	Site SIL	Hotspot Criteria (2.5 times SIL)
Metals																		
Arsenic	mg/kg	1	14	15	9	9	9	7	6	15	7	10.50	3.21	2.02	normal	13.14	100	250
Cadmium	mg/kg	1	2	1	0.5	0.5	0.5	0.5	6	2	0.5	0.83	0.61	2.02	normal	1.33	20	50
Chromium	mg/kg	1	35	23	27	37	30	26	6	37	23	29.67	5.43	2.02	normal	34.13	100	250
Copper	mg/kg	1	57	117	2	1	6	3	6	117	1	31.00	47.38	2.02	normal	69.97	1,000	2500
Nickel	mg/kg	1	6	17	1	1	0.5	0.5	6	17	0.5	4.33	6.55	2.02	normal	9.73	600	1500
Lead	mg/kg	1	453		14	19	14	16	6	1030	14	257.67	416.84	2.02	normal	600.57	300	750
Zinc	mg/kg	1	383	593	15	15	15	8	6	593	8	171.50	254.01	2.02	normal	380.46	7,000	17500
Mercury	mg/kg	0.1	0.3	0.6	0.05	0.05	0.05	0.05	6	0.6	0.05	0.18	0.23	2.02	normal	0.37	15	37.5
Polynuclear Aromatics																		
Naphthalene	mg/kg	0.5	0.25	0.25	0.25	0.25	0.25	0.25	6	0.25	0.25	0.25	0.00	2.02	normal	0.25	na	na
2-Methylnaphthalene	mg/kg	0.5	0.25	0.25	0.25	0.25	0.25	0.25	6	0.25	0.25	0.25	0.00	2.02	normal	0.25	na	na
2-Chloronaphthalene	mg/kg	0.5	0.25	0.25	0.25	0.25	0.25	0.25	6	0.25	0.25	0.25	0.00	2.02	normal	0.25	na	na
Acenaphthylene	mg/kg	0.5	0.25	0.25	0.25	0.25	0.25	0.25	6	0.25	0.25	0.25	0.00	2.02	normal	0.25	na	na
Acenaphthene	mg/kg	0.5	0.25	0.25	0.25	0.25	0.25	0.25	6	0.25	0.25	0.25	0.00	2.02	normal	0.25	na	na
Fluorene	mg/kg	0.5	0.25	0.25	0.25	0.25	0.25	0.25	6	0.25	0.25	0.25	0.00	2.02	normal	0.25	na	na
Phenanthrene	mg/kg	0.5	0.25	1.5	0.25	0.25	0.25	0.25	6	1.5	0.25	0.46	0.51	2.02	normal	0.88	na	na
Anthracene	mg/kg	0.5	0.25	0.25	0.25	0.25	0.25	0.25	6	0.25	0.25	0.25	0.00	2.02	normal	0.25	na	na
Fluoranthene	mg/kg	0.5	0.25	3.2	0.25	0.25	0.25	0.25	6	3.2	0.25	0.74	2.83	2.02	lognormal	5.22	na	na
Pyrene	mg/kg	0.5	0.25	3.6	0.25	0.25	0.25	0.25	6	3.6	0.25	0.81	2.97	2.02	lognormal	6.71	na	na
N-2-Fluorenylacetamide	mg/kg	0.5	0.25	0.25	0.25	0.25	0.25	0.25	6	0.25	0.25	0.25	0.00	2.02	normal	0.25	na	na
Benz(a)anthracene	mg/kg	0.5	0.25	1.9	0.25	0.25	0.25	0.25	6	1.9	0.25	0.53	2.25	2.02	lognormal	1.95	na	na
Chrysene	mg/kg	0.5	0.25	1.8	0.25	0.25	0.25	0.25	6	1.8	0.25	0.51	2.24	2.02	lognormal	1.78	na	na
Benzo(b) & (k)fluoranthene	mg/kg	1	0.5	3	0.5	0.5	0.5	0.5	6	3	0.5	0.92	1.02	2.02	normal	1.76	na	na
7,12-Dimethylbenz(a)anthracene	mg/kg	0.5	0.25	0.25	0.25	0.25	0.25	0.25	6	0.25	0.25	0.25	0.00	2.02	normal	0.25	na	na
Benzo(a)pyrene	mg/kg	0.5	0.25	1.6	0.25	0.25	0.25	0.25	6	1.6	0.25	0.48	0.55	2.02	normal	0.93	1	2.5
3-Methylcholanthrene	mg/kg	0.5	0.25	0.25	0.25	0.25	0.25	0.25	6	0.25	0.25	0.25	0.00	2.02	normal	0.25	na	na
Indeno(1,2,3-cd)pyrene	mg/kg	0.5	0.25	0.7	0.25	0.25	0.25	0.25	6	0.7	0.25	0.33	0.18	2.02	normal	0.48	na	na
Dibenz(a,h)anthracene	mg/kg	0.5	0.25	0.25	0.25	0.25	0.25	0.25	6	0.25	0.25	0.25	0.00	2.02	normal	0.25	na	na
Benzo(g,h,i)perylene	mg/kg	0.5	0.25	0.8	0.25	0.25	0.25	0.25	6	0.8	0.25	0.34	0.22	2.02	normal	0.53	na	na
Total PAHs	mg/kg	10.5	5.25	20.85	5.25	5.25	5.25	5.25	6	20.85	5.25	7.85	6.37	2.02	normal	13.09	20	50

Bold shading indicates "hotspot"

Indicates result greater than 2.5 times SIL

95% UCL calculated for analyte results above the LOR.

Insufficient samples to recalculate 95% UCL after removal of "hotspots". All remaining results significantly below site criteria or

TAB LE13.4
95% UCL ANALYSIS - MACDONALDTOWN TRIANGLE - EBR - NEHF A - FILL

Consultant Sample Location Sample Depth (metres)			CH2M HILL A31 BURREN ST 0.0-0.1	CH2M HILL A29 BURREN ST 0.0-0.1	CH2M HILL MW10S090110 0.9-1.1	CH2M HILL A25 BURREN ST 0.0-0.1	CH2M HILL MW11S060080 0.6-0.8	CH2M HILL MW14S090100 1.4-1.5	CH2M HILL MW16S090100 0.9-1.0										
Analyte	Units	LOR								Count	Maximum	Minimum	Mean	SD	$t_{\alpha/2, n-1}$	Distribution	95% UCL	Site SIL	Hotspot Criteria (2.5 times SIL)
Metals																			
Arsenic	mg/kg	1	14	14	18	5	14	4	5	7	18	4	10.57	5.71	1.94	normal	14.77	100	250
Cadmium	mg/kg	1	1	2	2	0.5	2	0.5	0.5	7	2	0.5	1.21	0.76	1.94	normal	1.77	20	50
Chromium	mg/kg	1	21	22	24	10	17	13	16	7	24	10	17.57	5.06	1.94	normal	21.29	100	250
Copper	mg/kg	1	161	207	149	35	77	7	6	7	207	6	91.71	80.96	1.94	normal	151.18	1,000	2500
Nickel	mg/kg	1	11	13	18	6	10	2	3	7	18	2	9.00	5.72	1.94	normal	13.20	600	1500
Lead	mg/kg	1				146		83	31	7	1220	31	643.14	540.16	1.94	normal	1039.86	300	750
Zinc	mg/kg	1	451	512	545	184	818	169	24	7	818	24	386.14	274.15	1.94	normal	587.49	7,000	17500
Mercury	mg/kg	0.1	0.5	0.7	0.5	0.1	0.4	0.2	0.05	7	0.7	0.05	0.35	0.24	1.94	normal	0.53	15	37.5
Total Petroleum Hydrocarbons (TPH)																			
C6 - C9 Fraction	mg/kg	2	1	1	1	1	1	1	1	7	1	1	1.00	0.00	1.94	normal	1.00	65	162.5
C10 - C36 Fraction	mg/kg	250	558	1654	352	792	125	125	125	7	1654	125	533.00	556.25	1.94	normal	941.54	1000	2500
Polynuclear Aromatics																			
Naphthalene	mg/kg	0.5	0.25	0.6	0.25	0.25	0.25	0.25	0.25	7	0.6	0.25	0.30	0.13	1.94	normal	0.40	na	na
2-Methylnaphthalene	mg/kg	0.5	0.25	0.25	0.25	0.25	0.25	0.25	0.25	7	0.25	0.25	0.25	0.00	1.94	normal	0.25	na	na
2-Chloronaphthalene	mg/kg	0.5	0.25	0.25	0.25	0.25	0.25	0.25	0.25	7	2.6	0.25	0.97	0.80	1.94	normal	1.56	na	na
Acenaphthylene	mg/kg	0.5	1	2.6	1.2	0.25	0.8	0.25	0.7	7	0.6	0.25	0.30	0.13	1.94	normal	0.40	na	na
Acenaphthene	mg/kg	0.5	0.25	0.6	0.25	0.25	0.25	0.25	0.25	7	0.5	0.25	0.29	0.09	1.94	normal	0.36	na	na
Fluorene	mg/kg	0.5	0.25	0.5	0.25	0.25	0.25	0.25	0.25	7	0.5	0.25	0.29	0.09	1.94	normal	0.36	na	na
Phenanthrene	mg/kg	0.5	4.4	7.5	5	0.25	3.6	0.25	3.5	7	7.5	0.25	3.50	2.59	1.94	normal	5.40	na	na
Anthracene	mg/kg	0.5	1.3	2.7	1.5	0.25	0.9	0.25	0.9	7	2.7	0.25	1.11	0.84	1.94	normal	1.73	na	na
Fluoranthene	mg/kg	0.5	8.6	20.3	10.6	0.25	4.9	0.7	4.1	7	20.3	0.25	7.06	6.96	1.94	normal	12.17	na	na
Pyrene	mg/kg	0.5	9.7	24.7	12	0.25	4.9	0.6	3.8	7	24.7	0.25	7.99	8.56	1.94	normal	14.28	na	na
N-2-Fluorenylacetamide	mg/kg	0.5	0.25	0.25	0.25	0.25	0.25	0.25	0.25	7	0.25	0.25	0.25	0.00	1.94	normal	0.25	na	na
Benz(a)anthracene	mg/kg	0.5	4.8	13.6	6.7	0.25	2.4	0.25	1.9	7	13.6	0.25	4.27	4.74	1.94	normal	7.75	na	na
Chrysene	mg/kg	0.5	5.6	12.7	6.7	0.25	2.4	0.25	1.5	7	12.7	0.25	4.20	4.51	1.94	normal	7.51	na	na
Benzo(b) & (k)fluoranthene	mg/kg	1	8	20	9	0.25	3	0.25	2	7	20	0.25	6.07	7.07	1.94	normal	11.27	na	na
7,12-Dimethylbenz(a)anthracene	mg/kg	0.5	0.25	0.25	0.25	0.25	0.25	0.25	0.25	7	0.25	0.25	0.25	0.00	1.94	normal	0.25	na	na
Benzo(a)pyrene	mg/kg	0.5				0.25	1.9	0.25	1.6	7	12.3	0.25	3.86	4.30	1.94	normal	7.02	1	2.5
3-Methylcholanthrene	mg/kg	0.5	0.25	0.25	0.25	0.25	0.25	0.25	0.25	7	0.25	0.25	0.25	0.00	1.94	normal	0.25	na	na
Indeno(1,2,3-cd)pyrene	mg/kg	0.5	2.4	5.6	2.5	0.25	0.8	0.25	0.7	7	5.6	0.25	1.79	1.93	1.94	normal	3.20	na	na
Dibenz(a,h)anthracene	mg/kg	0.5	0.7	1.9	0.8	0.25	0.25	0.25	0.25	7	1.9	0.25	0.63	0.61	1.94	normal	1.08	na	na
Benzo(g,h,i)perylene	mg/kg	0.5	2.8	6.1	2.8	0.25	0.8	0.25	0.8	7	6.1	0.25	1.97	2.12	1.94	normal	3.53	na	na
Total PAHs	mg/kg	10.5				5	28.65	1.3	21.5	7	132.95	1.3	44.60	45.92	1.94	normal	78.33	20	50

Bold shading indicates "hotspot"

indicates result greater than 2.5 times SIL

95% UCL calculated for analyte results above the LOR.

Insufficient samples to recalculate 95% UCL after removal of "hotspots". All remaining results significantly below site criteria or LOR.