30 August 2013

Ms Ebony Knight

LM & LM Knight Pty Ltd
38-40 Korong Road,
HEIDELBERG WEST VIC 3081

Dear Ebony

Re: Cut and Clean Facility in Heidelberg West
Slurry by-product and Filtered Wastewater Sampling

Monarc Environmental Pty Ltd ('Monarc') was engaged by LM & LM Knight Pty Ltd to collect and test slurry by-product and filtered wastewater from their "Cut and Clean" facility located at 38-40 Korong Road, Heidelberg West, Victoria 3081.

This Letter Report presents the findings of Monarc's investigation of the slurry by-product and filtered wastewater samples that were collected on 29 July 2013.

BACKGROUND

This Letter Report (a third in a series of 3 Letter Reports commencing March 2010) has been prepared in conjunction with:

- *"Slurry and Filtered Waste Water Sampling, Heidelberg West" 27 April 2011*, which includes an expanded discussion of the slurry drum and filtrate samples. The slurry sample in this letter report was analysed as a solid matrix.
- "*Slurry and Water sampling from Cut and Clean, Heidelberg West" 9 March 2010*, which includes an expanded discussion of the background information.

  Cut and Clean perform concrete and asphalt cutting activities and generate a slurry by-product which is transferred to their facility in Korong Road, Heidelberg West via vacuum trucks. At the facility, the slurry undergoes a separation and filtration process which generates solids which are collected into nearby bins for collection by Alex Fraser Recycling Group and wastewater which is filtered and reused for the concrete and asphalt cutting process.

SCOPE OF WORKS

The project objective is to identify the chemical properties of the slurry by-product sample before the separation process and to identify the chemical properties of the wastewater after the separation and filtration process. Monarc has been instructed to undertake the sampling as follows:

- Carry out a visual and olfactory observation of both samples;
- Sampling of slurry by-product and filtered wastewater for laboratory testing, targeting analytes covered in an EPA Screen (Table 2 of EPA Publication **IWRG 621** *Soil Hazard Categorisation and Management* (July 2009) as per past investigations.

METHODOLOGY

Slurry by-product and filtered wastewater were collected in accordance with the Monarc Quality Management System for sampling protocols (refer ***WI-011-1*** *Sample Collection, Handling and Transportation*). Standard procedures used by all sampling staff were cognisant of EPA guidelines and **AS4482.1** and included:

- Both hand grab samples were assessed at time of collection and ranked based on evidence of odour and visual contamination. For this purpose, the following rating system adopted from Monarc's standard sampling procedures (*WI-011-1*) was used:

  0: No visible evidence of contamination / No offensive odour, ranging through to
  5: Grossly contaminated / highly offensive, identifiable odour, pungent at source.

- The use of laboratory washed sample jars and headspace vials with appropriate preservatives applicable to the nominated analyte as provided by the nominated NATA certified laboratory;

- Clear labelling of all sample bottles/vials cross-referenced to a chain-of-custody (CoC) form;

- Appropriate storage of all samples in cool boxes immediately following sampling and immediate delivery to the nominated laboratory.

All samples were placed on ice within an insulated cool-box and delivered to a NATA certified laboratory (Eurofins-mgt), under Chain-of-Custody procedures, for analysis for the nominated analytes under a standard turnaround time. The Chain-of-Custody, Sample Receipt Notice and Laboratory Certificate of Analysis are attached to this report (see *Attachment 1*).

SCREENING CRITERIA

The slurry by-product and filtered wastewater results were compared to the criteria set by the:-

1. *Australian and New Zealand Environment and Conservation Council (ANZECC) 2000,* for:
   - Ecosystem Protection (Freshwater)
   - Agriculture water supply (Irrigation);
   - Agriculture water supply (Livestock);
   - Primary contact recreation;
   - Building and Structures;

   Note: While no criteria currently exist for petroleum hydrocarbons within the ANZECC guidelines, the Dutch have published Intervention Values for mineral oil (0.6mg/L) which have been adopted as an indicative guideline.

2. *National Health and Medical Research Council ('NHMRC') - National Resources Management Ministerial Council ('NRMMC') - Australian Drinking Water Guideline 6 (2011 vol. 1)*

3. *City West Water Standards for trade waste discharge to the Sewerage System* (*Attachment 2*).

FIELD OBSERVATION AND SAMPLING

An appropriately qualified and experienced environmental scientist from Monarc undertook slurry by-product and filtered wastewater sampling on 29 July 2013. A total of two samples were collected in laboratory supplied bottles and labelled using the following convention:

- A slurry by-product sample (LMK-SS1) generated from the concrete and asphalt cutting process was collected from a large tank called the "slurry drum" before the separation and filtration process.

  The slurry was dark grey, very highly turbid with a slight petroleum odour.

- A filtered wastewater sample (LMK-SW1) was collected from an "iso-tank" after the separation and filtration process carried out at the Cut and Clean facility.

  The filtered wastewater was clear with a slightly yellow tint and no odour.

Refer to *Attachment 3* for site sample photos.

ANALYTICAL SUMMARY FOR SLURRY BY-PRODUCT AND FILTERED WASTEWATER

A summary of the analytical results is provided in *Attachment 4* and the Laboratory Certificates of Analysis and Chain of Custody forms are contained in *Attachment 1*. The results were assessed with respect to whether they:

- Were below laboratory reporting limit;
- Recorded detections of analytes; or
- Exceeded the adopted screening criteria.

Below laboratory reporting limit

The following analytes were reported at concentrations below the laboratory reporting limit in both samples analysed. Although these samples were reported at concentrations below laboratory reporting limits it does not necessarily indicate that they are not present, but exist at very low concentrations below the laboratory reporting limit.

Slurry by-product sample (LMK-SS1):

- Polyaromatic Hydrocarbons (PAHs)
- Total Petroleum Hydrocarbons (TPHs): TPH(C_6-C_{10}) less BTEX (F1),
- Monoaromatic Hydrocarbons (MAHs): Benzene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, Isopropylbenzene (Cumene), Styrene
- Polychlorinated Biphenyls (PCBs)
- Phenols (total Halogenated)
- Phenols (total Non-Halogenated): 2,4-dinitrophenol, 2-methylphenol, 2-nitrophenol, 3-&4-methylphenol, 4,6-Dinitro-2-methylphenol, 4,6-Dinitro-o-cyclohexyl phenol, 4-nitrophenol, Dinoseb, Phenol
- Filtered Metals: Cadmium, Lead, Mercury, Silver, Tin
- Total Metals: Tin
- Organochlorine pesticides IWRG621
- Chlorinated Hydrocarbons (CHCs)
- Halogenated Volatiles (HVOLs)
- Solvents: 4-Methyl-2-pentanone, Acetone

Filtered wastewater sample (LMK-SW1):

- Polyaromatic Hydrocarbons (PAHs)
- Total Petroleum Hydrocarbons (TPHs): TPH (C_6-C_{10}) less BTEX (F1), (C_6-C_{10}), (C_{34}-C_{40}), (C_6-C_9)
- Monoaromatic Hydrocarbons (MAHs)
- Polychlorinated Biphenyls (PCBs)
- Phenols (total Halogenated)
- Phenols (total Non-Halogenated)
- Filtered Metals: Cadmium, Lead, Mercury, Silver, Tin
- Organochlorine pesticides IWRG621
- Chlorinated Hydrocarbons (CHCs)
- Halogenated Volatiles (HVOLs)
- Solvents: 4-Methyl-2-pentanone, Acetone

Recorded detections of analytes

The following analytes were reported at concentrations exceeding the laboratory reporting limit in at least one of the samples analysed. However, it should be noted that these concentrations were within the acceptable levels of the adopted screening criteria.

Slurry by-product sample (LMK-SS1) – ***water***:

- Total Petroleum Hydrocarbons (TPHs): F2-Naphthalene, (C_6-C_{10}), (C_{10}-C_{16}), (C_{16}-C_{34}), (C_{34}-C_{40}), (C_6-C_9), (C_{10}-C_{14}), (C_{15}-C_{28}), (C_{16}-C_{35} Aliphatic), (C_{29}-C_{36}), (C_{10}-C_{36})
- Monoaromatic Hydrocarbons (MAHs): Ethylbenzene, Toluene, Xylene (m & p), Xylene (o), Monocylic aromatic hydrocarbons IWRG621
- Phenols (total Non-Halogenated): 2,4-dimethylphenol
- Filtered Metals: Arsenic, Nickel, Selenium, Zinc
- Fluoride
- Solvents: Methyl Ethyl Ketone, Acetone

Filtered wastewater sample (LMK-SW1):

- Total Petroleum Hydrocarbons (TPHs): F2-Naphthalene, (C_{10}-C_{16}), (C_{16}-C_{34}), (C_{10}-C_{14}), (C_{15}-C_{28}), (C_{16}-C_{35} Aliphatic), (C_{29}-C_{36}), (C_{10}-C_{36})
- Filtered Metals: Arsenic, Nickel, Selenium
- Fluoride
- Solvents: Methyl Ethyl Ketone, Acetone

Exceeded the adopted screening criteria

All slurry by-product and filtered wastewater results have been assessed against the adopted screening criteria in the ANZECC 2000 Guidelines. Original NATA certified laboratory results and Chain-of-Custody forms are presented in *Attachment 1*.

The summarised data in *Summary of Results: Slurry and Water Classification* indicates exceedances of:

1. *Australian and New Zealand Environment and Conservation Council (ANZECC) 2000,* for:

   Ecosystem Protection (Freshwater)

   - Concentrations for the ***Slurry by-product*** exceeded the criteria for *Ecosystem Protection (Freshwater)* for total TPHs, xylenes total, filtered metals (chromium (III+VI), copper, molybdenum, zinc), total metals (arsenic, chromium (III+VI), copper, lead, nickel, zinc), pH (lab) and Cyanide.

   - Concentrations for the ***filtered wastewater*** exceeded the criteria for *Ecosystem Protection (Freshwater)* for total TPHs, filtered metals ((chromium (III+VI), copper, lead, molybdenum, zinc), pH (lab) and Cyanide.

   Agriculture Water Supply (Irrigation)

   - Concentrations for the ***Slurry by-product*** exceeded the criteria for *Agricultural Water Supply (Irrigation)* for total TPHs, filtered metals (molybdenum), total metals (arsenic, chromium (III+VI), copper, lead, nickel, zinc), and pH (lab).

   - Concentrations for the ***filtered wastewater*** exceeded the criteria for *Agricultural Water Supply (Irrigation)* for total TPHs, filtered metals (molybdenum) and pH (lab).

   Agriculture Water Supply (Livestock)

   - Concentrations for the ***Slurry by-product*** exceeded the criteria for *Agricultural Water Supply (Livestock)* for total TPHs, filtered metals (molybdenum), total metals (arsenic, chromium (III+VI), copper, lead, nickel, zinc), pH (lab) and Cyanide total.

   - Concentrations for the ***filtered wastewater*** exceeded the criteria for *Agricultural Water Supply (Livestock)* for total TPHs, filtered metals (molybdenum), pH (lab) and Cyanide total.

   Primary Contact Recreation

   - Concentrations for the ***Slurry by-product*** exceeded the criteria for *Primary Contact and Recreation* for total TPHs, filtered metals (molybdenum), total metals (arsenic, chromium (III+VI), copper, lead, nickel), and pH (lab).

   - Concentrations for the ***filtered wastewater*** exceeded the criteria for *Primary Contact and Recreation* for total TPHs, filtered metals (molybdenum), pH (lab).

   Buildings & Structures

   - Concentrations for the ***Slurry by-product*** and ***filtered wastewater*** exceeded the criteria for *buildings and Structures for* total TPHs and pH (lab).

2. *National Health and Medical Research Council ('NHMRC') - National Resources Management Ministerial Council ('NRMMC') - Australian Drinking Water Guideline 6 (2011 vol. 1)*

   - Concentrations for the ***Slurry by-product*** exceeded the criteria for *Drinking Water Guideline 6* for total TPHs, xylenes total, filtered metals (molybdenum), total metals (arsenic, chromium (III+VI), copper, lead, nickel, zinc) and pH (lab).

   - Concentrations for the ***filtered wastewater*** exceeded the criteria for *Drinking Water Guideline 6* for total TPHs, filtered metals (molybdenum) and pH (lab).

3. *City West Water Standards for trade waste discharge to the Sewerage System (Attachment 2).*

- Concentrations for the ***Slurry by-product*** exceeded the *criteria for City West Water Trade Waste Criteria* for filtered metals (molybdenum), total metals (chromium (III+VI), copper, nickel, zinc) and pH (lab).

- Concentrations for the ***filtered wastewater*** were within the *criteria for City West Water Trade Waste Criteria.*

SLURRY BY-PRODUCT AND FILTERED WASTEWATER DISCUSSION

The scope of this round of testing was primarily to collect and analyse the samples for potential contamination.

- The ***Slurry by-product*** sample (LMK-SS1) exceeds all the screening criteria discussed above if released into the receiving environment such as stormwater drains, pastoral drainage lines, creeks or other water bodies.

  This material is not suitable for disposal in accordance with City West Water's standard trade waste requirements.

- The ***filtered wastewater*** sample (LMK-SW1) exceeds all the screening criteria for total TPHs, molybdenum (filtered) and pH (lab) if released into the receiving environment such as stormwater drains, pastoral drainage lines, creeks or other water bodies.

  Further treatment is required to reduce the concentration of total TPHs, molybdenum (filtered) and pH (lab).

  This material is however within the City West Water's standard trade waste requirements. It is noted that a trade waste agreement will be required prior to disposal, if required.

The filtration process undertaken by Cut and Clean has removed the suspended solids in the water and appears to effectively reduce contaminant concentrations in the process. However, not all the contaminants have been removed by the filtration process, in particular total TPHs, molybdenum (filtered) and pH (lab). Further treatment of the wastewater is required to reduce risk to the environment.

Given the concentrations of total TPHs, molybdenum (filtered) and pH (lab) in the samples, it is recommended that this filtered wastewater is only used for the purposes of concrete and asphalt cutting and ensuring there is no run-off into environmental receptors such as stormwater drains, pastoral drainage lines, creeks or other water bodies.

This is the third of three sampling events over an approximate 12 month period. The analytical data collected to date indicate presence of naphthalene, total petroleum/recoverable hydrocarbons, BTEX, phenols, metals, pH, cyanide, fluoride and solvents in one or both of the samples tested. Any further comment on trends is beyond the scope of this "collect and test" exercise.

RECOMMENDATIONS

Recommendations for the next round of sampling include:

- To assist with determining the applicable protected environmental values of the filtered wastewater to surface waters, future sampling should include analytical request for total dissolved solids ('TDS').

- Future analytical schedules should take into account lower level of reporting for the following analytes; benzo(*a*)pyrene, PCBs (sum of total), phenol, hexachlorobutadiene, 1,1-dichlorothene and vinyl chloride which could be present in the samples but at very low levels.

- Continued sampling and testing to gain greater confidence in the repeatability, reliability and accuracy of results on the ***slurry by-product*** and ***filtered wastewater*** and to comment on trends (if present).

- Sampling and analysis of the solid waste by-product generated from the filtration process against the Solid industrial waste hazard criteria set in EPA Publication **IWRG 631** – *Solid Industrial Waste Hazard Categorisation & Management* (June 2009). This solid waste by-product is collected for recycling.

- Preparation of an Environmental Management Plan (EMP) to identify key environmental issues associated with the concrete and asphalt cutting and filtering process performed by Cut and Clean and to provide strategies and plans for managing them effectively.

For further discussion or additional information please contact either Jim Nikolareas or myself on phone 8809 1800.

Yours sincerely

Channy Tong
Environmental Consultant
Monarc Environmental Pty Ltd
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Jim Nikolareas
Managing Director
Monarc Environmental Pty Ltd

ATTACHMENTS

Attachment 1: Chains of Custody and Certificate of Analysis
Attachment 2: City West Water Standards for trade waste discharge to the Sewerage System
Attachment 3: Site Sampling Photos
Attachment 4: Summary of Results, Slurry by-product and Filtered Wastewater at Cut and Clean Facility

LIMITATIONS OF THIS LETTER REPORT

Monarc Environmental Pty Ltd ('Monarc') has prepared this letter report LM & LM Knight Pty Ltd to collect and test slurry by-product and filtered wastewater from their "Cut and Clean" facility located at 38-40 Korong Road, Heidelberg West, Victoria 3081.

The letter report includes a review of certain information that was obtained from the sources and contacts noted by methods described in the letter report, including information obtained from LM & LM Knight Pty Ltd.

Monarc has exercised care in checking and interpreting the data and information referred to in this letter report. The letter report program has been designed and managed in good faith in a manner that seeks to confirm the information available and test its accuracy and completeness. However, Monarc cannot guarantee the accuracy or completeness of that data and information. Accordingly, while our conclusions are based on the information available to us during our final assessment of the project, some of those conclusions could be different if the information upon which they are based is determined to be inaccurate or incomplete.

This letter report has been prepared specifically for LM & LM Knight Pty Ltd to determine if the filtration process is suitable for their intended use. Any other persons seeking to rely upon this report should only do so after seeking approval from LM & LM Knight Pty Ltd and independent expert advice from an Environmental Auditor accredited by the Victorian EPA, or other appropriately qualified person. The extent of any environmental, health and safety or financial risks associated with the slurry by-product and filtered wastewater may vary significantly according to the proposed use of the slurry by-product and filtered wastewater.

Therefore, any representation, statement, opinion or advice expressed or implied in this letter report is made in good faith but on the basis that Monarc, its agents and employees are not liable to any other person for any damage or loss whatsoever which has occurred or may occur in relation to that person taking or not taking (as the case may be) action in respect of any representation, statement or advice referred to above.

Monarc disclaims any obligation to update the letter report for events taking place or information becoming available or known to us, after the preparation of this letter report.

REFERENCES

Reference 1: Environment Protection Authority of Victoria. June 2009. Industrial Waste Resource Guidelines (IWRG621) *Soil Hazard Categorisation & Management*

Reference 2: Environment Protection Authority of Victoria. June 2009. Industrial Waste Resource Guidelines (IWRG701) *Sampling and Analysis of Waters, Wastewaters, Soils and Wastes*

Reference 3: Monarc Environmental Pty Ltd, 2012, *Sampling Procedures. WI-011-1 Sample Collection, Handling & Transportation*

Reference 4: Standards Australia. 2005. AS4482.1, *Guide to the sampling and investigation of potentially contaminated soil, Part 1: Non-volatile compounds*. Standards Association of Australia

Attachment 1: Chains of Custody and Certificate of Analysis

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eurofins | mgt

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Monarc Environmental P/L
Suite 3, 259 Whitehorse Rd
Bawlyn
VIC 3103

Attention: **Channy Tong**

Report **387606-W-V2**
Client Reference SLURRY AND WATER SAMPLING LMK-1860
Received Date Jul 30, 2013

Client Sample ID			**LMK-SS1**	**LMK-SW1**
Sample Matrix			**Water**	**Water**
Eurofins | mgt Sample No.			**M13-Jl22743**	**M13-Jl22744**
Date Sampled			**Jul 29, 2013**	**Jul 29, 2013**
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	0.02	mg/L	0.04	< 0.02
TRH C10-C14	0.05	mg/L	11	0.78
TRH C15-C28	0.1	mg/L	40	2.5
TRH C29-C36	0.1	mg/L	65	0.2
TRH C10-36 (Total)	0.1	mg/L	120	3.5
Volatile Organics				
1.2.4-Trichlorobenzene	0.02	mg/L	< 0.02	< 0.02
Hexachlorobutadiene	0.02	mg/L	< 0.02	< 0.02
1.1-Dichloroethane	0.001	mg/L	< 0.001	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001
1.3-Dichloropropane	0.001	mg/L	< 0.001	< 0.001
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001
2-Butanone (MEK)	0.001	mg/L	0.002	0.005
2-Propanone (Acetone)	0.001	mg/L	0.010	0.020
4-Chlorotoluene	0.001	mg/L	< 0.001	< 0.001
4-Methyl-2-pentanone (MIBK)	0.001	mg/L	< 0.001	< 0.001
Allyl chloride	0.001	mg/L	< 0.001	< 0.001
Benzene	0.001	mg/L	< 0.001	< 0.001
Bromobenzene	0.001	mg/L	< 0.001	< 0.001
Bromochloromethane	0.001	mg/L	< 0.001	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001	< 0.001
Bromoform	0.001	mg/L	< 0.001	< 0.001
Bromomethane	0.001	mg/L	< 0.001	< 0.001
Carbon disulfide	0.001	mg/L	< 0.001	< 0.001

Client Sample ID			LMK-SS1	LMK-SW1
Sample Matrix			Water	Water
Eurofins | mgt Sample No.			M13-Jl22743	M13-Jl22744
Date Sampled			Jul 29, 2013	Jul 29, 2013
Test/Reference	LOR	Unit		
Volatile Organics				
Carbon Tetrachloride	0.001	mg/L	< 0.001	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001	< 0.001
Chloroethane	0.001	mg/L	< 0.001	< 0.001
Chloroform	0.005	mg/L	< 0.005	< 0.005
Chloromethane	0.001	mg/L	< 0.001	< 0.001
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001
Dibromochloromethane	0.001	mg/L	< 0.001	< 0.001
Dibromomethane	0.001	mg/L	< 0.001	< 0.001
Dichlorodifluoromethane	0.001	mg/L	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	0.003	< 0.001
Iodomethane	0.001	mg/L	< 0.001	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	0.017	< 0.002
Methylene Chloride	0.001	mg/L	< 0.001	< 0.001
o-Xylene	0.001	mg/L	0.011	< 0.001
Styrene	0.001	mg/L	< 0.001	< 0.001
Tetrachloroethene	0.001	mg/L	< 0.001	< 0.001
Toluene	0.001	mg/L	0.002	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001
Trichloroethene	0.001	mg/L	< 0.001	< 0.001
Trichlorofluoromethane	0.001	mg/L	< 0.001	< 0.001
Vinyl chloride	0.001	mg/L	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	0.027	< 0.003
Fluorobenzene (surr.)	1	%	67	92
4-Bromofluorobenzene (surr.)	1	%	62	88
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.02	mg/L	< 0.02	< 0.02
TRH C6-C10	0.02	mg/L	0.04	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	12	1.3
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	1.3	1.3
TRH >C16-C34	0.1	mg/L	69	2.1
TRH >C34-C40	0.1	mg/L	71	< 0.1
Polycyclic Aromatic Hydrocarbons				
Acenaphthene	0.001	mg/L	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001

Client Sample ID			LMK-SS1	LMK-SW1
Sample Matrix			Water	Water
Eurofins | mgt Sample No.			M13-Jl22743	M13-Jl22744
Date Sampled			Jul 29, 2013	Jul 29, 2013
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001
Total PAH	0.001	mg/L	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	95	106
p-Terphenyl-d14 (surr.)	1	%	88	101
Organochlorine Pesticides				
4.4'-DDD	0.0001	mg/L	< 0.0001	< 0.0001
4.4'-DDE	0.0001	mg/L	< 0.0001	< 0.0001
4.4'-DDT	0.0001	mg/L	< 0.0001	< 0.0001
a-BHC	0.0001	mg/L	< 0.0001	< 0.0001
Aldrin	0.0001	mg/L	< 0.0001	< 0.0001
b-BHC	0.0001	mg/L	< 0.0001	< 0.0001
Chlordane	0.001	mg/L	< 0.001	< 0.001
d-BHC	0.0001	mg/L	< 0.0001	< 0.0001
Dieldrin	0.0001	mg/L	< 0.05	< 0.0001
Endosulfan I	0.0001	mg/L	< 0.0001	< 0.0001
Endosulfan II	0.0001	mg/L	< 0.0001	< 0.0001
Endosulfan sulphate	0.0001	mg/L	< 0.0001	< 0.0001
Endrin	0.0001	mg/L	< 0.0001	< 0.0001
Endrin aldehyde	0.0001	mg/L	< 0.0001	< 0.0001
Endrin ketone	0.0001	mg/L	< 0.0001	< 0.0001
g-BHC (Lindane)	0.0001	mg/L	< 0.0001	< 0.0001
Heptachlor	0.0001	mg/L	< 0.0001	< 0.0001
Heptachlor epoxide	0.0001	mg/L	< 0.0001	< 0.0001
Hexachlorobenzene	0.0001	mg/L	< 0.0001	< 0.0001
Methoxychlor	0.0001	mg/L	< 0.0001	< 0.0001
Toxaphene	0.001	mg/L	< 0.001	< 0.001
Dibutylchlorendate (surr.)	1	%	116	88
Tetrachloro-m-xylene (surr.)	1	%	148	68
Polychlorinated Biphenyls				
Aroclor-1016	0.001	mg/L	< 0.001	< 0.001
Aroclor-1221	0.001	mg/L	< 0.001	< 0.001
Aroclor-1232	0.001	mg/L	< 0.001	< 0.001
Aroclor-1242	0.001	mg/L	< 0.001	< 0.001
Aroclor-1248	0.001	mg/L	< 0.001	< 0.001
Aroclor-1254	0.001	mg/L	< 0.001	< 0.001
Aroclor-1260	0.001	mg/L	< 0.001	< 0.001
Total PCB	0.001	mg/L	0	< 0.001
Dibutylchlorendate (surr.)	1	%	116	88
Tetrachloro-m-xylene (surr.)	1	%	148	68
Phenols (Halogenated)				
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003

Client Sample ID			LMK-SS1	LMK-SW1
Sample Matrix			Water	Water
Eurofins | mgt Sample No.			M13-Jl22743	M13-Jl22744
Date Sampled			Jul 29, 2013	Jul 29, 2013
Test/Reference	LOR	Unit		
Phenols (Halogenated)				
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03
Total Halogenated Phenol	0.01	mg/L	< 0.01	< 0.01
Phenols (non-Halogenated)				
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	0.006	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003
Total Non-Halogenated Phenol	0.1	mg/L	< 0.1	< 0.1
Phenol-d6 (surr.)	1	%	42	47
Chromium (hexavalent)	0.001	mg/L	< 0.01	< 0.01
Cyanide (total)	0.005	mg/L	0.077	0.068
Fluoride	0.5	mg/L	0.52	0.60
pH	0.1	units	11	10
Heavy Metals				
Arsenic	0.001	mg/L	6.5	-
Arsenic (filtered)	0.001	mg/L	0.007	0.006
Cadmium	0.0002	mg/L	< 0.4	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002
Chromium	0.001	mg/L	13	-
Chromium (filtered)	0.001	mg/L	0.010	0.009
Copper	0.001	mg/L	50	-
Copper (filtered)	0.001	mg/L	0.048	0.049
Lead	0.001	mg/L	6.0	-
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001
Mercury	0.0001	mg/L	< 0.1	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001
Molybdenum	0.005	mg/L	< 10	-
Molybdenum (filtered)	0.005	mg/L	0.10	0.10
Nickel	0.001	mg/L	51	-
Nickel (filtered)	0.001	mg/L	0.011	0.011
Selenium	0.001	mg/L	< 2	-
Selenium (filtered)	0.001	mg/L	0.005	0.006
Silver	0.005	mg/L	< 5	-
Silver (filtered)	0.005	mg/L	< 0.005	< 0.005
Tin	0.005	mg/L	< 10	-
Tin (filtered)	0.005	mg/L	< 0.005	< 0.005
Zinc	0.001	mg/L	34	-
Zinc (filtered)	0.001	mg/L	0.004	0.026

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Aug 02, 2013	7 Day
- Method: TRH C6-C36 - MGT 100A			
Volatile Organics	Melbourne	Jul 31, 2013	7 Day
- Method: USEPA 8260 - MGT 350A Volatile Organics by GCMS			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Aug 02, 2013	7 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Melbourne	Aug 02, 2013	7 Day
- Method: USEPA 8270 Polycyclic Aromatic Hydrocarbons			
Organochlorine Pesticides	Melbourne	Aug 02, 2013	7 Day
- Method: USEPA 8081 Organochlorine Pesticides			
Polychlorinated Biphenyls	Melbourne	Aug 02, 2013	7 Day
- Method: USEPA 8082 Polychlorinated Biphenyls			
Phenols (Halogenated)	Melbourne	Aug 02, 2013	7 Day
- Method: USEPA 8270 Phenols			
Phenols (non-Halogenated)	Melbourne	Aug 02, 2013	7 Day
- Method: USEPA 8270 Phenols			
Chromium (hexavalent)	Melbourne	Jul 30, 2013	1 Day
- Method: APHA 3500-Cr Hexavalent Chromium			
Cyanide (total)	Melbourne	Jul 31, 2013	14 Day
- Method: USEPA 9010 Cyanide			
Fluoride	Melbourne	Jul 31, 2013	28 Day
- Method: LM-LTM-INO-4300 (Fluoride by Ion Chromatography)			
IWRG 621 Metals : Metals M12 filtered	Melbourne	Jul 31, 2013	28 Day
- Method: USEPA 6010/6020 Heavy Metals & USEPA 7470/71 Mercury			
pH	Melbourne	Jul 31, 2013	0 Hours
- Method: APHA 4500 pH by Direct Measurement - ** Samples analysed outside holding time. Analysis should be performed in situ. Results for reference only.			
Vic EPA IWRG 621 (Solids)			
IWRG 621 Metals : Metals M12	Melbourne	Aug 13, 2013	28 Day
- Method: USEPA 6010/6020 Heavy Metals & USEPA 7470/71 Mercury			

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environment Protection Authority
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Polycyclic Aromatic Hydrocarbons USEPA 8270 Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Organochlorine Pesticides USEPA 8081 Organochlorine Pesticides							
4.4'-DDD	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDE	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDT	mg/L	< 0.0001			0.0001	Pass	
a-BHC	mg/L	< 0.0001			0.0001	Pass	
Aldrin	mg/L	< 0.0001			0.0001	Pass	
b-BHC	mg/L	< 0.0001			0.0001	Pass	
Chlordane	mg/L	< 0.001			0.001	Pass	
d-BHC	mg/L	< 0.0001			0.0001	Pass	
Dieldrin	mg/L	< 0.0001			0.0001	Pass	
Endosulfan I	mg/L	< 0.0001			0.0001	Pass	
Endosulfan II	mg/L	< 0.0001			0.0001	Pass	
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Toxaphene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Polychlorinated Biphenyls USEPA 8082 Polychlorinated Biphenyls							
Aroclor-1016	mg/L	< 0.001			0.001	Pass	
Aroclor-1221	mg/L	< 0.001			0.001	Pass	
Aroclor-1232	mg/L	< 0.001			0.001	Pass	
Aroclor-1242	mg/L	< 0.001			0.001	Pass	
Aroclor-1248	mg/L	< 0.001			0.001	Pass	
Aroclor-1254	mg/L	< 0.001			0.001	Pass	
Aroclor-1260	mg/L	< 0.001			0.001	Pass	
Total PCB	mg/L	< 0.001			0.001	Pass	
Method Blank							
Phenols (Halogenated) USEPA 8270 Phenols							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	
2.4-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Tetrachlorophenols - Total	mg/L	< 0.03			0.03	Pass	
Method Blank							
Phenols (non-Halogenated) USEPA 8270 Phenols							
2-Cyclohexyl-4.6-dinitrophenol	mg/L	< 0.1			0.1	Pass	
2-Methyl-4.6-dinitrophenol	mg/L	< 0.03			0.03	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
2-Nitrophenol	mg/L	< 0.01			0.01	Pass	
2.4-Dimethylphenol	mg/L	< 0.003			0.003	Pass	
2.4-Dinitrophenol	mg/L	< 0.03			0.03	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
4-Nitrophenol	mg/L	< 0.03			0.03	Pass	
Dinoseb	mg/L	< 0.1			0.1	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions TRH C6-C36 - MGT 100A							
TRH C6-C9	%	103			70-130	Pass	
LCS - % Recovery							
Volatile Organics USEPA 8260 - MGT 350A Volatile Organics by GCMS							
1.1-Dichloroethene	%	86			70-130	Pass	
1.1.1-Trichloroethane	%	90			70-130	Pass	
1.2-Dichloroethane	%	113			70-130	Pass	
Benzene	%	102			70-130	Pass	
Ethylbenzene	%	96			70-130	Pass	
m&p-Xylenes	%	104			70-130	Pass	
Toluene	%	102			70-130	Pass	
Trichloroethene	%	93			70-130	Pass	
Xylenes - Total	%	106			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions LM-LTM-ORG2010							
TRH C6-C10	%	103			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides USEPA 8081 Organochlorine Pesticides							
4.4'-DDD	%	95			70-130	Pass	
4.4'-DDE	%	94			70-130	Pass	
4.4'-DDT	%	130			70-130	Pass	
a-BHC	%	82			70-130	Pass	
Aldrin	%	77			70-130	Pass	
b-BHC	%	95			70-130	Pass	
d-BHC	%	91			70-130	Pass	
Dieldrin	%	98			70-130	Pass	
Endosulfan I	%	83			70-130	Pass	
Endosulfan II	%	101			70-130	Pass	
Endosulfan sulphate	%	112			70-130	Pass	
Endrin	%	99			70-130	Pass	
Endrin aldehyde	%	73			70-130	Pass	
Endrin ketone	%	122			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
g-BHC (Lindane)			%	82			70-130	Pass	
Heptachlor			%	90			70-130	Pass	
Heptachlor epoxide			%	91			70-130	Pass	
Hexachlorobenzene			%	77			70-130	Pass	
Methoxychlor			%	130			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
				Result 1					
Fluoride	M13-Jl22744	CP	%	102			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
Fluoride	M13-Jl22744	CP	mg/L	0.60	0.6	5.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Andrew Thexton	Client Services
Carroll Lee	Senior Analyst-Volatile (VIC)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)
Stacey Jenkins	Senior Analyst-Organic (VIC)

Glenn Jackson

Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

CHAIN OF CUSTODY

Project Number : LMK-1860 **Project Name :** Slurry and water sampling **COC Number :** LMK1860 130729 01

Client Company : LMK **Location :** 38-40 Korong Road, Heidleberge West

Consultant Name & Email Address : channyt@monarcenviro.com.au

Client Providing Samples:

Monarc Environmental Pty Ltd
Suite 3, 259 Whitehorse Road
BALWYN VIC 3103
Phone : 03 8809 1800
Fax : 03 9836 0801
Email : mail@monarcenviro.com.au

Please provide report in the following format(s) : PDF format ✓ Excel (xls) ✓ ESDAT (CSV) ✓

LOCATION REFERENCE	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX *	CONTAINER TYPE	CONTAINER SIZE	PRESERVATIVE	SAMPLED BY	EPA IWRG 621 Screen	Total Petroleum Hydrocarbons (TPHs)	pH									Lab filtering required	Storage	Turn-Around-Time (TAT) REMARKS/SPECIFIC INSTRUCTIONS
LMK-SS1	29/7/2013	11:00	Slurry	as per lab	as per lab	as per lab + ice	Channy	✓		✓											
LMK-SW1	↓	11:30	water	as per lab	as per lab	↓	Channy	✓		✓											
																					standard turnaround time

RELINQUISHED BY	TO	DATE	TIME

TRANSFER TO LABORATORY BY	TO	DATE	TIME
Channy		30/7/13	6:05pm

LABORATORY: Eurofins MGT

QUOTE NUMBER:- mgtlabmark-pricelist-1-jan-2012

387606

METHOD OF SAMPLE REMOVAL: directly from containers

SAMPLES REMOVED BY: Channy

Metals:

Al	Sb	As	B	Be	Cd	Cr	Co	Cu	Fe	Pb	
Mn	**Mo**	**Ni**	**Se**	**Ag**	**Sr**	**Tl**	**Sn**	**Ti**	**V**	**Zn**	**Hg**

* MATRIX : (S) soil; (W) water; (G) gas

Attachment 2: City West Water Standards for trade waste discharge to the Sewerage System

Monarc Environmental Pty Ltd
Suite 3, 259 Whitehorse Road
Balwyn VIC 3103

ABN 84 835 629 245
Telephone (03) 8809 1800
Fax (03) 9836 0801
Email mail@monarcenviro.com.au

City West Water
LIMITED

Approved Acceptance Criteria

for discharge to the sewerage system

Sewage Quality and Environment

Trade waste must comply with the Approved Acceptance Criteria set out in this document.

Contents:

1 Physical characteristics

1.1 Temperature

The Occupier must not discharge trade waste with a temperature greater than 38°C.

1.2 Solids

a) The Occupier must not discharge trade waste containing gross solids, suspended solids or total dissolved solids except in accordance with this clause.

b) Gross solids contained in trade waste must:
(i) be able to pass through a bar screen with 13mm spaces between bars, and
(ii) have a quiescent settling velocity of not more than 3m/hour.

c) Where the total mass load of suspended solids exceeds 1,000 kg/day, the concentration of suspended solids must not exceed 10,000 mg/litre.

d) The total mass load of total dissolved solids must not exceed 200 kg/day.

e) The Occupier must not discharge waste containing fibrous material which, in the opinion of the Authorised Person is likely to cause obstructions in a drain or sewer.

1.3 Oils, fats and grease

a) The Occupier must not discharge trade waste containing any free or floating layer of oil, fat or grease.

b) The Occupier may discharge trade waste containing emulsified oil, fat or grease which, in the opinion of the Authorised Person, is biodegradable, if the emulsion is stable:
(i) at a temperature of 15° C, and
(ii) when it is in contact with raw sewage, and the resulting mixture has a pH no less than 4.5 and no greater than 10.0.

c) The Occupier must not discharge trade waste containing emulsified oil, fat or grease which, in the opinion of the Authorised Person is not biodegradable, if it contains more than 1,000 mg/litre of material recovered by a solvent prescribed by the Authorised Person as extractable matter when the emulsion:
(i) is stable at a temperature of 15° C, and
(ii) is in contact with raw sewage, and the resulting mixture has a pH no less than 4.5 and no greater than 10.0.

d) The Occupier must not discharge trade waste containing emulsified oil, fat or grease if it contains more than 200 mg/litre of material recovered by a solvent prescribed by the Authorised Person as extractable matter when the emulsion:
(i) is unstable at a temperature of 15°C, and
(ii) is in contact with raw sewage, and the resulting mixture has a pH no less than 4.5 and no greater than 10.0.

1.4 Organic liquids

a) The Occupier must not discharge trade waste containing any free or floating layer of organic liquid.

b) The Occupier must not discharge any trade waste which, in the opinion of the Authorised Person, may be:
(i) flammable, or
(ii) toxic or otherwise harmful or damaging to any person, drain, the sewerage system, any sewage treatment process, or any element of the environment which receives effluent after it has been treated.

c) The Authorised Person may, in writing, authorise the Occupier to undertake an act which would otherwise contravene sub-clause (b).

1.5 Latex emulsions

a) In this clause:

- **"biodegradable"** in relation to trade waste means that, in the opinion of the Authorised Person, the total organic carbon content of the trade waste would decrease by at least 90% when submitted to the sewage treatment process employed by City West Water or Melbourne Water for that waste
- **"latex emulsion"** includes an emulsion containing paint, adhesive, rubber, plastic or similar materials
- **"stable latex emulsion"** means a latex emulsion in which the solids deposited in a filter do not increase by more than 200 mg/litre when the emulsion:
  (i) is at 15° C, and
  (ii) is in contact with raw sewage, and the resulting mixture has a pH no less than 4.5 and no greater than 10.0.

b) The Occupier may discharge trade waste containing a biodegradable stable latex emulsion.

c) The Occupier must not discharge trade waste containing a stable latex emulsion which is not biodegradable at a concentration greater than 1,000 mg/litre of total solids.

d) The Occupier must not discharge trade waste containing an unstable latex emulsion.

1.6 Radioactive waste

The Occupier must only discharge trade waste which complies in all respects with the *Health (Radiation Safety) Regulations 1984,* as amended from time to time.[1]

1.7 Colour

The Occupier must not discharge trade waste containing colour greater than 9 Adams-Nickerson (42) units, determined from the most pronounced colour obtained from a sample adjusted to a pH of not less than 7.0 and no greater than 8.0, following biological treatment by an activated sludge process.

[1] The Occupier must only discharge trade waste which complies with all aspects of the current radiation regulations available from www.health.vic.gov.au.

2 Chemical characteristics

2.1 pH value

The Occupier must not discharge trade waste with a pH value less than 6.0 or greater than 10.0, except as provided by Clause 2.3 (b) (ii).

2.2 Organic concentration

The Occupier must not discharge trade waste with a total mass load of 5-day biochemical oxygen demand in excess of 1,000 kg/day, unless its concentration is no greater than 4,000 mg/litre.

2.3 Nitrogen

The Occupier must not discharge trade waste with a concentration of -

a) total Kjeldahl nitrogen greater than 500 mg/litre; or

b) ammonia, plus ammoniacal ion (expressed as 'N') greater than:
(i) 50 mg/litre, except as provided by this clause.
(ii) 200 mg/litre, where –
A) the trade waste discharge can only be recived by Melbourne Water's Western Treatment Plant
B) a risk assessment has been conducted
C) the occupier can comply with a restricted pH range of 6.0 to 8.0 and
D) the occupier has demonstrated to the Authorised Person, that commonly available waste minimisation technology has been applied to the best extent practicable.

2.4 Sulphur substances

a) Oxidised sulphur
(i) For the purposes of this clause, "oxidised sulphur" means the chemical substances expressed as S and known as sulphates, sulphites and thiosulphates.
(ii) The Occupier must not discharge trade waste containing oxidised sulphur with a concentration of 100 mg/litre or more, except as provided in this clause.
(iii) The Occupier must treat any trade waste with a concentration of oxidised sulphur greater than 600 mg/litre, before it is discharged.
(iv) Where trade waste prior to discharge would have a total concentration of oxidised sulphur of not less than 100 mg/litre and not more than 600 mg/litre, the Occupier must treat any stream of waste contributing to the discharge which has a concentration of oxidised sulphur greater than 600 mg/litre.
(v) The Occupier must use the best available technology, as determined by the Authorised Person, to treat any trade waste under sub-clause (iii) or (iv).

b) The Occupier must not discharge trade waste containing sulphide in a concentration greater than 1 mg/litre.

2.5 Metals

a) The Occupier must not discharge any element listed in Column 1 of Table A, except in accordance with this clause.

b) Where the daily mass load of any element discharged is between the lower limit specified in Column 2 and the upper limit specified in Column 3 for that element, trade waste must not exceed the concentration specified in Column 4.

c) Where the daily mass load of any element discharged is either lower than the limit specified in Column 2 or greater than the limit specified in Column 3, the Authorised Person must determine the maximum concentration of that element which the Occupier may discharge.

d) Where no entry is made in Column 2 and 3 for any element, trade waste must not exceed the concentration for that element specified in Column 4.

e) Where the occupier has demonstrated to the Authorised Person, that it is unable to limit the concentration of the boron (as B) to the concentration specified in Table A, Column 4 using commonly available waste minimisation technology to the best extent practicable, the occupier may discharge trade waste containing boron in a concentration no greater than 100 mg/litre.

f) Where the occupier has demonstrated to the Authorised Person, that it is unable to limit the concentration of the manganese (as Mn) to the concentration specified in Table A, Column 4 using commonly available waste minimisation technology to the best extent practicable, the occupier may discharge trade waste containing manganese in a concentration no greater than 100 mg/litre.

Table A »

Column 1: Element	Column 2: Grams/day	Column 3: Grams/day	Column 4: Milligrams per litre
Arsenic			1
Boron as B			25
Barium			150
Beryllium			30
Cadmium	0.4	20	2
Chromium	100	5,000	10
Cobalt			10
Copper	100	5,000	10
Iron	2,000	100,000	100
Lead	100	5,000	10
Manganese			10
Mercury	0.2	10	1
Molybdenum			10
Nickel	10	500	10
Selenium			10
Silver (based on analysis using aqua regis)	0.2	50	5
Thallium			20
Tin			10
Uranium (238)			30
Zinc	200	15 000	10

2.6 Halogens and halides

The Occupier must not discharge trade waste containing a substance listed in Table B with a concentration greater than is listed for that substance.

Table B »

Substance	Maximum allowable concentration (milligrams per litre)
Bromine (expressed as Br_2)	5
Chlorine (expressed as Cl_2)	5
Fluoride	30
Iodine (expressed as I_2)	5

2.7 Cyanide

The Occupier must not discharge trade waste containing a cyanide concentration greater than 10 mg/litre.

2.8 Inhibitory chemicals

(a) The Occupier must not discharge any trade waste which, when diluted to a 5% solution with sewage, would inhibit the microbiological sewage treatment process applicable to that trade waste by more than 20%.

(b) The Authorised Person must determine the microbiological sewage treatment process referred to in sub-clause (a).

2.9 Organic acids

The Occupier must not discharge trade waste containing total phenoxyacetic acids and chemical derivatives (expressed as phenoxyacetic acid) at a concentration greater than 1,000 mg/litre.

2.10 Phenolic substances

The Occupier must not discharge trade waste containing a substance listed in Table C with a concentration greater than is listed for that substance.

Table C »

Substance	Maximum allowable concentration (milligrams per litre)
Sum of phenol, monochlorophenol, dichlorophenol and their isomers	300
Trichlorophenol	50
Tetrachlorophenol	5
Pentachlorophenol	5

2.11 Aldehydes and ketones

The Occupier must not discharge trade waste containing a substance listed in Table D with a concentration greater than is listed for that substance.

Table D »

Substance	Maximum allowable concentration (milligrams per litre)
Acetone	50
Acrolein	0.1
Formaldehyde (expressed as HCHO)	200

2.12 Nitriles

The Occupier must not discharge trade waste containing acrylonitrile at a concentration greater than 1.0 mg/litre.

2.13 Mononuclear aromatic hydrocarbon

The Occupier must not discharge trade waste containing a mononuclear aromatic hydrocarbon listed in Table E in a concentration greater than is listed for that substance.

Table E »

Substance	Maximum allowable concentration (milligrams per litre)
Benzene	1.0
Cumene	3.0
2,4 Dinitrotoluene	10.0
2,6 Dinitrotoluene	10.0
Ethylbenzene	2.0
Nitrotoluene	5.0
Styrene	2.0
Toluene	2.0
Total xylenes	2.0

2.14 Halogenated aliphatic hydrocarbons

The Occupier must not discharge trade waste containing an halogenated aliphatic hydrocarbon listed in Table F in a concentration greater than is listed for that substance.

Table F »

Substance	Maximum allowable concentration (milligrams per litre, except as otherwise indicated)
1,1 Dichloroethane	5.0
1,2 Dichlorethane	5.0
1,1,1 Trichloroethane	3.0
1,1,2 Trichloroethane	3.0
1,1,2,2 Tetrachloroethane	2.0
Hexachloroethane	1.0
Chloroethene (vinyl chloride monomer)	0.5
1,2 Dichloroethylene	5.0
Trichloroethylene	1.0
Tetrachloroethylene	1.0
Carbon tetrachloride	1.0
Methylene chloride	5.0
Methyl chloride	1.0 ug/L
Methyl bromide	1.0 ug/L
Trichloromethane (chloroform)	1.0
Bromodichloromethane	1.0
Trichlorofluoromethane	1.0
Dichlorodifluoromethane	1.0
Chlorodibromomethane	5.0
1,1 Dichloropropane	5.0
1,2 Dichloropropane	5.0
1,3 Dichloropropane	1.0 ug/L
Hexachlorobutadiene	1.0 ug/L

2.15 Aliphatic hydrocarbons

The Occupier must not discharge trade waste containing aliphatic hydrocarbons C5 to C9 at a concentration greater than 1.0 mg/litre.

2.16 Esters

The Occupier must not discharge trade waste containing a substance listed in Table G in a concentration greater than is listed for that substance.

Table G »

Substance	Maximum allowable concentration (milligrams per litre)
Ethyl acrylate	1.5
Methyl methacrylate	30.0

2.17 Ethers

The Occupier must not discharge trade waste containing diethylene glycol monobutyl ether (butyl carbitol) in a concentration greater than 2,000 mg/litre.

2.18 Other organics

The Occupier must not discharge trade waste containing a substance listed in Table H with a concentration greater than is listed for that substance.

Table H »

Substance	Maximum allowable concentration (milligrams per litre)
Glyphosate	10
Trifluralin	10
Epichlorohydrin	0.3

2.19 Persistent organochlorine pesticides

(a) The Occupier must not discharge trade waste containing persistent organochlorine pesticides, except in accordance with this clause.

(b) The Occupier must not discharge trade waste containing pesticides listed in Table I in a concentration greater than is listed for that pesticide.

Table I »

Pesticide	Maximum allowable concentration (milligrams per litre)
Aldrin	0.001
Chlordane	0.006
DDT	0.003
Dieldrin	0.001
Heptachlor	0.003
Lindane	0.100

2.20 Halogenated aromatic hydrocarbons

(a) The Occupier must not discharge trade waste containing halogenated aromatic hydrocarbons, except in accordance with this clause.

(b) The Occupier must not discharge trade waste containing a substance listed in Table J in a concentration greater than is listed for that substance.

Table J »

Substance	Maximum allowable concentration (milligrams per litre)
Polychlorinated biphenyls (PCB's)	0.002
Polybrominated biphenyls (PBB's)	0.002

2.21 Chlorodibenzo-p-dioxins and chlorodibenzo-furans

a) The Occupier must not discharge any trade waste containing any of the full range of chlorodibenzo-p-dioxin and chlorodibenzo-furan congeners, except in accordance with this clause.

b) Subject to sub-clauses (c), (d) and (e), the Occupier must not discharge trade waste containing any of the full range of chlorodibenzo-p-dioxin and chlorodibenzo-furan congeners in a concentration greater than the NATO total toxic equivalent of 40.0 ng/l.

c) Notwithstanding sub-clause (b), the Authorised Person may at any time in writing require the Occupier not to discharge trade waste containing any of the full range of chlorodibenzop-dioxin and chlorodibenzo-furan congeners in a concentration greater than the NATO total toxic equivalent of 20.0 ng/l.

d) Subject to sub-clause (e), the Occupier must not discharge trade waste containing any 2, 3, 7, 8 tetrachlorodibenzo-p-dioxin congeners in a concentration greater than the NATO total toxic equivalent of 20.0 ng/l.

e) Notwithstanding sub-clause (d), the Authorised Person may at any time require the Occupier not to discharge any 2, 3, 7, 8 tetrachlorodibenzo-p-dioxin congeners in a concentration greater than the NATO total toxic equivalent of 5.0 ng/l.

2.22 Headspace air

The Occupier must not discharge trade waste to a sewer, which at the nearest point of the sewer accessible by humans from the point of discharge, in any respect fails to comply with every relevant Work Safe Australia Exposure Standard relating to short term exposure levels.

2.23 Other substances

An occupier must not discharge trade waste containing any substance not otherwise mentioned in this document:

a) in a concentration greater than 1µg/l

b) where the discharge or release of which to any element of the environment is restricted or prohibited by any legislation applying in Victoria

c) in quantities or of a quality that in the opinion of the Authorised Person would or is reasonably likely to endanger human life, compromise the safety of a person or of the works, or significantly adversely affect the operation of a sewage treatment plant or any part of the environment.

Attachment 3: Site Sampling Photos

Photographs taken 29 July 2013

Photo IMAG0172R:

Slurry drums

Photo IMAG0172R:

Slurry by-product before filtration process

Photo IMAG0176R:

Filtration process

Photo IMAG0175R:

Filtered wastewater after the filtration process

Photo IMAG0177R:

Solids removed during the filtration process

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Attachment 4: Summary of Results, Slurry by-product and Filtered Wastewater at Cut and Clean Facility

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Attachment 4: Summary of Result, slurry by-product and filtered wastewater at 38-40 Korong Road, Heidelberg West

	Carcinogenic PAHs (as BaP TEQ)	Polycyclic aromatic hydrocarbons (PAHs)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Benzo[b+j]fluoranthene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene
	Polyaromatic Hydrocarbons (PAHs)																		
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL		0.001	0.001	0.001	0.001	0.001	0.0005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
ANZECC 2000 FW 95%		**0.003**															**0.016**		
Agricultural Water Supply (Irrigation, ANZECC 2000)																			
Agricultural Water Supply (Livestock, ANZECC 2000)							**0.00001**												
Primary Contact Recreation (ANZECC 2000)							**0.00001**												
Criteria for Buildings and Structures																			
NHMRC - NRMMC - Drinking Water Guideline 6 (2011 vol 1)							**0.00001**												
City West Water Trade Waste Criteria																			

LocCode	Field_ID	Sampled_Date-Time																		
slurry-by product	LMK-SS1	29/07/2013	<0.00242	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
filtered wastewater	LMK-SW1	29/07/2013	<0.00242	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
filtered wastewater	LMK-2	7/03/2011	<0.00182	0.0017	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	0.0017	<0.001	<0.001
slurry-by product	LLK-1	25/02/2010	<0.00232	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
slurry-by product	LLK-1 1/10 Digest 1	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1 1/10 Digest 2	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1 1/10 Digest 3	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1-1/100 Digest 1	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1-1/100 Digest 2	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1-1/100 Digest 3	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
filtered wastewater	LLK-2	25/02/2010	<0.00232	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001

			C6-C10 less BTEX (F1)	F2-NAPHTHALENE	C6-C10	C10-C16	C16-C34	C34-C40	C6 - C9	C10 - C14	C15 - C28	C29-C36	C10 - C36 (total)	total TPHs	Benzene	Ethylbenzene	Toluene	Xylene (m & p)	Xylene (o)	Xylene Total	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Isopropylbenzene (Cumene)	Styrene	Monocylic aromatic hydrocarbons IWRG621
			Total Petroleum Hydrocarbons (TPHs)												BTEX						Monoaromatic Hydrocarbons (MAHs)				
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.02	0.05	0.02	0.05	0.1	0.1	0.02	0.05	0.1	0.05	0.05		0.001	0.001	0.001	0.002	0.001	0.003	0.001	0.001	0.001	0.001	
ANZECC 2000 FW 95%														0.6	0.95		0.3			0.55					
Agricultural Water Supply (Irrigation, ANZECC 2000)														0.6											
Agricultural Water Supply (Livestock, ANZECC 2000)														0.6	0.01	0.3	0.8			0.6				0.03	
Primary Contact Recreation (ANZECC 2000)														0.6	0.01	0.3	0.8			0.6				0.03	
Criteria for Buildings and Structures														0.6											
NHMRC - NRMMC - Drinking Water Guideline 6 (2011 vol 1)														0.6	0.01	0.003	0.025			0.02				0.004	
City West Water Trade Waste Criteria									*1*						*1*	*2*	*2*			*2*			*3*	*2*	
LocCode	Field_ID	Sampled_Date-																							
slurry-by product	LMK-SS1	29/07/2013	<0.02	1.3	0.04	12	69	71	0.04	11	40	65	116	116	<0.001	0.003	0.002	0.017	0.011	0.028	<0.001	<0.001	<0.001	<0.001	0.061
filtered wastewater	LMK-SW1	29/07/2013	<0.02	1.3	<0.02	1.3	2.1	<0.1	<0.02	0.78	2.5	0.2	3.48	3.48	<0.001	<0.001	<0.001	<0.002	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.01
filtered wastewater	LMK-2	7/03/2011	-	-	-	-	-	-	<0.02	0.64	1.54	0.17	2.35	2.35	<0.001	<0.002	<0.002	0.003	0.002	0.005	-	-	-	<0.005	0.01
slurry-by product	LLK-1	25/02/2010	-	-	-	-	-	-	<0.5	<0.5	0.6	<0.5	1.45	0.6	<0.002	<0.002	<0.002	-	-	<0.004	<0.002	-	<0.002	<0.002	<0.012
slurry-by product	LLK-1 1/10 Digest 1	5/03/2010	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1 1/10 Digest 2	5/03/2010	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1 1/10 Digest 3	5/03/2010	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1-1/100 Digest 1	5/03/2010	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1-1/100 Digest 2	5/03/2010	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1-1/100 Digest 3	5/03/2010	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
filtered wastewater	LLK-2	25/02/2010	-	-	-	-	-	-	<0.1	0.3	0.5	<0.1	1.35	0.8	<0.001	<0.001	0.002	-	-	<0.003	<0.001	-	<0.001	<0.001	0.005

			Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Sum of total)	2,3,4,5-tetrachlorophenol	2,3,4,6-tetrachlorophenol	2,3,5,6-Tetrachlorophenol	2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,6-dichlorophenol	2-chlorophenol	4-chloro-3-methylphenol	Pentachlorophenol	tetrachlorophenols	Phenols (Total Halogenated)
			Polychlorinated Biphenyls (PCBs)								Phenols (halogenated)											
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.03	0.001
ANZECC 2000 FW 95%						**0.0006**		**0.00003**		**0.000001**		**0.02**			**0.02**	**0.16**		**0.49**		**0.01**	**0.001**	
Agricultural Water Supply (Irrigation, ANZECC 2000)																						
Agricultural Water Supply (Livestock, ANZECC 2000)										**0.0001**		**0.001**		**0.001**	**0.01**	**0.2**		**0.3**		**0.01**		
Primary Contact Recreation (ANZECC 2000)										**0.0001**		**0.001**		**0.001**	**0.01**	**0.2**		**0.3**		**0.01**		
Criteria for Buildings and Structures																						
NHMRC - NRMMC - Drinking Water Guideline 6 (2011 vol 1)										**0.0001**		**0.001**		**0.001**	**0.002**	**0.0003**		**0.0001**		**0.01**		
City West Water Trade Waste Criteria										***0.002***	***5***	***5***	***5***	***50***	***50***					***5***		***300***
LocCode	**Field_ID**	**Sampled_Date-**																				
slurry-by product	LMK-SS1	29/07/2013	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	<0.01	<0.01	<0.003	<0.003	<0.003	<0.01	<0.01	<0.03	<0.01
filtered wastewater	LMK-SW1	29/07/2013	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	<0.01	<0.01	<0.003	<0.003	<0.003	<0.01	<0.01	<0.03	<0.01
filtered wastewater	LMK-2	7/03/2011	-	-	-	-	-	-	-	<0.001	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	-	-
slurry-by product	LLK-1	25/02/2010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001
slurry-by product	LLK-1 1/10 Digest 1	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1 1/10 Digest 2	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1 1/10 Digest 3	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1-1/100 Digest 1	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1-1/100 Digest 2	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1-1/100 Digest 3	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
filtered wastewater	LLK-2	25/02/2010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.003	-	0.003

			2,4-dimethylphenol	2,4-dinitrophenol	2-methylphenol	2-nitrophenol	3-&4-methylphenol	3-Methylphenol	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	4-methylphenol	4-nitrophenol	Dinoseb	Phenol	Phenols (Total Non Halogenated)	Arsenic (Filtered)	Cadmium (Filtered)	Chromium (hexavalent) (Filtered)	Chromium (III+VI) (Filtered)	Copper (Filtered)	Lead (Filtered)	Mercury (Filtered)	Molybdenum (Filtered)
			Phenols (non-halogenated)													Filtered Metals							
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.001	0.03	0.001	0.001	0.002	0.001	0.03	0.1	0.001	0.001	0.1	0.001	0.001	0.001	0.0001	0.01	0.001	0.001	0.001	0.0001	0.001
ANZECC 2000 FW 95%														0.32		0.013	0.0002	0.001	0.001	0.0014	0.0034	0.0006	
Agricultural Water Supply (Irrigation, ANZECC 2000)																0.1	0.01	0.1	1	0.2	0.2	0.002	0.01
Agricultural Water Supply (Livestock, ANZECC 2000)														0.002	0.002	0.5	0.01	1	1	0.5	0.1	0.002	0.01
Primary Contact Recreation (ANZECC 2000)														0.002	0.002	0.05	0.005	0.05	0.05	1	0.05	0.001	0.05
Criteria for Buildings and Structures																							
NHMRC - NRMMC - Drinking Water Guideline 6 (2011 vol 1)														0.002	0.002	0.01	0.002	0.05	0.05	1	0.01	0.001	0.05
City West Water Trade Waste Criteria																*1*	*2*	*10*	*10*	*10*	*10*	*1*	*10*
LocCode	Field_ID	Sampled_Date-																					
slurry-by product	LMK-SS1	29/07/2013	0.006	<0.03	<0.003	<0.01	<0.006	-	<0.03	<0.1	-	<0.03	<0.1	<0.003	0.006	0.007	<0.0002	-	0.01	0.048	<0.001	<0.0001	0.1
filtered wastewater	LMK-SW1	29/07/2013	<0.003	<0.03	<0.003	<0.01	<0.006	-	<0.03	<0.1	-	<0.03	<0.1	<0.003	<0.1	0.006	<0.0002	-	0.009	0.049	<0.001	<0.0001	0.1
filtered wastewater	LMK-2	7/03/2011	0.0104	-	0.0066	<0.001	0.0044	-	-	-	-	-	-	0.0015	0.019	0.003	<0.0001	<0.01	-	0.039	<0.001	0.0017	0.087
slurry-by product	LLK-1	25/02/2010	0.005	-	0.005	<0.001	-	0.043	-	-	0.033	<0.001	-	0.029	0.12	-	-	0.01	-	-	-	-	-
slurry-by product	LLK-1 1/10 Digest 1	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1 1/10 Digest 2	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1 1/10 Digest 3	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1-1/100 Digest 1	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1-1/100 Digest 2	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1-1/100 Digest 3	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
filtered wastewater	LLK-2	25/02/2010	0.006	-	0.005	<0.001	-	0.046	-	-	0.036	<0.001	-	0.031	0.12	0.005	<0.0002	<0.01	-	0.072	0.002	0.014	0.12

Attachment 4: Summary of Result, slurry by-product and filtered wastewater at 38-40 Korong Road, Heidelberg West

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			Nickel (Filtered)	Selenium (Filtered)	Silver (Filtered)	Tin (Filtered)	Zinc (Filtered)	Arsenic	Cadmium	Chromium (hexavalent)	Chromium (III+VI)	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Tin	Zinc
			Filtered Metals					Total Metals												
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.001	0.001	0.001	0.001	0.001	0.001	0.0002	0.001	0.001	0.001	0.001	0.0001	0.001	0.001	0.001	0.001	0.001	0.001
ANZECC 2000 FW 95%			0.011	0.011	0.00005		0.008	0.013	0.0002	0.001	0.001	0.0014	0.0034	0.0006		0.011	0.011	0.00005		0.008
Agricultural Water Supply (Irrigation, ANZECC 2000)			0.2	0.02			2	0.1	0.01	0.1	1	0.2	0.2	0.002	0.01	0.2	0.02			2
Agricultural Water Supply (Livestock, ANZECC 2000)			1	0.02			20	0.5	0.01	1	1	0.5	0.1	0.002	0.01	1	0.02			20
Primary Contact Recreation (ANZECC 2000)			0.1	0.01	0.05			0.05	0.005	0.05	0.05	1	0.05	0.001	0.05	0.1	0.01	0.05		
Criteria for Buildings and Structures																				
NHMRC - NRMMC - Drinking Water Guideline 6 (2011 vol 1)			0.02	0.01	0.1		3	0.01	0.002	0.05	0.05	1	0.01	0.001	0.05	0.02	0.01	0.1		3
City West Water Trade Waste Criteria			*10*	*10*	*5*	*10*	*10*	*1*	*2*	*10*	*10*	*10*	*10*	*1*	*10*	*10*	*10*	*5*	*10*	*10*
LocCode	**Field_ID**	**Sampled_Date-**																		
slurry-by product	LMK-SS1	29/07/2013	0.011	0.005	<0.005	<0.005	0.004	6.5	<0.4	<0.01	13	50	6	<0.1	<10	51	<2	<5	<10	34
filtered wastewater	LMK-SW1	29/07/2013	0.011	0.006	<0.005	<0.005	0.026	-	-	<0.01	-	-	-	-	-	-	-	-	-	-
filtered wastewater	LMK-2	7/03/2011	0.009	<0.01	<0.01	0.005	0.011	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1	25/02/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1 1/10 Digest 1	5/03/2010	-	-	-	-	-	0.14	0.008	-	-	10	18	0.036	0.08	9.8	0.12	<0.01	0.13	5.7
slurry-by product	LLK-1 1/10 Digest 2	5/03/2010	-	-	-	-	-	0.15	0.009	-	-	10	19	0.036	0.08	9	0.14	0.01	0.12	5.8
slurry-by product	LLK-1 1/10 Digest 3	5/03/2010	-	-	-	-	-	0.14	0.009	-	-	9.9	21	0.041	0.07	8.9	0.11	<0.01	0.12	6
slurry-by product	LLK-1-1/100 Digest 1	5/03/2010	-	-	-	-	-	0.66	0.035	-	-	47	16	0.03	0.19	43	0.83	0.03	0.61	25
slurry-by product	LLK-1-1/100 Digest 2	5/03/2010	-	-	-	-	-	0.67	0.036	-	-	47	17	0.028	0.19	42	0.88	0.03	0.6	24
slurry-by product	LLK-1-1/100 Digest 3	5/03/2010	-	-	-	-	-	0.72	0.038	-	-	51	19	0.034	0.19	44	0.95	0.03	0.59	27
filtered wastewater	LLK-2	25/02/2010	0.018	0.006	<0.001	0.002	0.006	-	-	-	-	-	-	-	-	-	-	-	-	-

Attachment 4: Summary of Result, slurry by-product and filtered wastewater at 38-40 Korong Road, Heidelberg West

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			pH (Lab)	Cyanide Total	Fluoride	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	chlordane	Chlordane (cis)	Chlordane (trans)	d-BHC
			Physical Parameters	Inorganics/Nutrients	Cations/Anions	Organochlorine Pesticides (OCPs)								
			pH_Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.1	0.005	0.05	0.0001	0.0001	0.0001		0.0001	0.001	0.0005	0.0005	0.0001
ANZECC 2000 FW 95%			8-6.5	0.007				0.00001			0.00008			
Agricultural Water Supply (Irrigation, ANZECC 2000)			9-4.5		1									
Agricultural Water Supply (Livestock, ANZECC 2000)			8.5-6.5	0.07	2			0.001	0.0003		0.006			
Primary Contact Recreation (ANZECC 2000)			9-5	0.1	1.5			0.001	0.0003		0.006			
Criteria for Buildings and Structures			9-5											
NHMRC - NRMMC - Drinking Water Guideline 6 (2011 vol 1)			8.5-6.5	0.08	1.5			0.001	0.0003		0.002			
City West Water Trade Waste Criteria			*6-10*	*10*	*30*			*0.001*				*0.006*	*0.006*	
LocCode	**Field_ID**	**Sampled_Date-**												
slurry-by product	LMK-SS1	29/07/2013	11	0.077	0.52	<0.0001	<0.0001	<0.0001	<0.0501	<0.0001	<0.001	-	-	<0.0001
filtered wastewater	LMK-SW1	29/07/2013	10	0.068	0.6	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.001	-	-	<0.0001
filtered wastewater	LMK-2	7/03/2011	-	-	0.2	<0.0005	<0.0005	<0.0005	<0.001	-	-	<0.0005	<0.0005	<0.0005
slurry-by product	LLK-1	25/02/2010	11.6	0.021	0.45	<0.001	<0.001	<0.001	<0.002	<0.001	-	<0.001	<0.001	<0.001
slurry-by product	LLK-1 1/10 Digest 1	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1 1/10 Digest 2	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1 1/10 Digest 3	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1-1/100 Digest 1	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1-1/100 Digest 2	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1-1/100 Digest 3	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-
filtered wastewater	LLK-2	25/02/2010	11.6	0.015	0.38	<0.001	<0.001	<0.001	<0.002	<0.001	-	<0.001	<0.001	<0.001

			DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene	Organochlorine pesticides IWRG621
			Organochlorine Pesticides (OCPs) (Continued)																
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			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	0.001	
ANZECC 2000 FW 95%				**0.00001**		**0.000002**				**0.00002**			**0.0002**	**0.00009**		**0.000007**	**0.00004**	**0.0002**	
Agricultural Water Supply (Irrigation, ANZECC 2000)																			
Agricultural Water Supply (Livestock, ANZECC 2000)				**0.003**		**0.001**				**0.001**			**0.01**	**0.003**	**0.0003**		**0.3**		
Primary Contact Recreation (ANZECC 2000)				**0.003**		**0.001**				**0.001**			**0.01**	**0.003**	**0.0003**		**0.3**		
Criteria for Buildings and Structures																			
NHMRC - NRMMC - Drinking Water Guideline 6 (2011 vol 1)				0.009		0.001				0.001			0.01	0.0003	0.0003		0.3		
City West Water Trade Waste Criteria				***0.003***		***0.001***							***0.1***	***0.003***					
LocCode	**Field_ID**	**Sampled_Date-**																	
slurry-by product	LMK-SS1	29/07/2013	<0.0001	<0.0001	<0.0003	<0.05	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.001	<0.0527
filtered wastewater	LMK-SW1	29/07/2013	<0.0001	<0.0001	<0.0003	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.001	<0.0028
filtered wastewater	LMK-2	7/03/2011	<0.0005	<0.002	<0.003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	-	<0.0115
slurry-by product	LLK-1	25/02/2010	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.018
slurry-by product	LLK-1 1/10 Digest 1	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1 1/10 Digest 2	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1 1/10 Digest 3	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1-1/100 Digest 1	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1-1/100 Digest 2	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1-1/100 Digest 3	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
filtered wastewater	LLK-2	25/02/2010	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.018

			1,2,3,4-tetrachlorobenzene	1,2,3,5-Tetrachlorobenzene	1,2,3-trichlorobenzene	1,2,4,5-tetrachlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene*	1,3,5-Trichlorobenzene	1,3-dichlorobenzene*	1,4-dichlorobenzene	2-chloronaphthalene	Benzal Chloride	Benzotrichloride	Benzyl chloride	Chloroethane	cis-1,2-dichloroethene	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Pentachlorobenzene	trans-1,2-dichloroethene
			Chlorinated Hydrocarbons (CHCs)																			
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
ANZECC 2000 FW 95%			0.0001	0.0001	0.01	0.0002	0.17	0.16	0.0007	0.26	0.06							0.0001		0.36	0.00003	
Agricultural Water Supply (Irrigation, ANZECC 2000)																						
Agricultural Water Supply (Livestock, ANZECC 2000)								1.5			0.04						0.06	0.0007				
Primary Contact Recreation (ANZECC 2000)								1.5			0.04						0.06	0.0007				
Criteria for Buildings and Structures																						
NHMRC - NRMMC - Drinking Water Guideline 6 (2011 vol 1)								0.001		0.02	0.0003						0.06	0.0007				
City West Water Trade Waste Criteria																		*0.0001*		*1*		
LocCode	Field_ID	Sampled_Date-																				
slurry-by product	LMK-SS1	29/07/2013	-	-	-	-	<0.02	<0.001	-	<0.001	<0.001	-	-	-	-	<0.001	<0.001	<0.02	-	-	-	<0.001
filtered wastewater	LMK-SW1	29/07/2013	-	-	-	-	<0.02	<0.001	-	<0.001	<0.001	-	-	-	-	<0.001	<0.001	<0.02	-	-	-	<0.001
filtered wastewater	LMK-2	7/03/2011	-	-	-	-	<0.005	<0.005	-	-	<0.005	-	-	-	-	-	<0.005	<0.005	-	-	-	<0.005
slurry-by product	LLK-1	25/02/2010	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	-	-	<0.003	<0.003	<0.003	<0.003	-
slurry-by product	LLK-1 1/10 Digest 1	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1 1/10 Digest 2	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1 1/10 Digest 3	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1-1/100 Digest 1	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1-1/100 Digest 2	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1-1/100 Digest 3	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
filtered wastewater	LLK-2	25/02/2010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	-

	1,1,1,2-tetrachloroethane*	1,1,1-trichloroethane*	1,1,2,2-tetrachloroethane*	1,1,2-trichloroethane*	1,1-dichloroethane*	1,1-dichloroethene*	1,1-dichloropropene	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dibromoethane	1,2-dichloroethane*	1,2-Dichloroethene [cis]	1,2-Dichloroethene [trans]	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	2-chlorotoluene	4-chlorotoluene	Bromobenzene*	Bromochloromethane*	Bromodichloromethane*
	Halogenated Volatiles (HVOLs)																				
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
ANZECC 2000 FW 95%			**2.4**	**6.5**							**20**										
Agricultural Water Supply (Irrigation, ANZECC 2000)																					
Agricultural Water Supply (Livestock, ANZECC 2000)						**0.0003**			**0.001**		**0.01**			**0.04**							**0.06**
Primary Contact Recreation (ANZECC 2000)						**0.0003**			**0.001**		**0.01**			**0.04**							**0.06**
Criteria for Buildings and Structures																					
NHMRC - NRMMC - Drinking Water Guideline 6 (2011 vol 1)						**0.03**			**0.001**		**0.003**			**0.04**							**0.06**
City West Water Trade Waste Criteria		***3***	***2***	***3***		***5***					***5***			***5***	***0.0001***						***1***
slurry-by product LMK-SS1 29/07/2013	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	-	<0.001	<0.001	-	-	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	<0.001
filtered wastewater LMK-SW1 29/07/2013	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	-	<0.001	<0.001	-	-	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	<0.001
filtered wastewater LMK-2 7/03/2011	<0.005	<0.005	<0.005	<0.005	-	<0.005	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-
slurry-by product LLK-1 25/02/2010	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
slurry-by product LLK-1 1/10 Digest 1 5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product LLK-1 1/10 Digest 2 5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product LLK-1 1/10 Digest 3 5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product LLK-1-1/100 Digest 1 5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product LLK-1-1/100 Digest 2 5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product LLK-1-1/100 Digest 3 5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
filtered wastewater LLK-2 25/02/2010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Attachment 4: Summary of Result, slurry by-product and filtered wastewater at 38-40 Korong Road, Heidelberg West

monarc ENVIRONMENTAL

			Bromoform	Bromomethane	Carbon tetrachloride*	Chlorobenzene*	Chlorodibromomethane	Chloroform	Chloromethane	cis-1,3-dichloropropene	Dibromomethane	Dichlorodifluoromethane	Dichloromethane*	Iodomethane	Trichloroethene*	Tetrachloroethene*	trans-1,3-dichloropropene	Trichlorofluoromethane	Vinyl chloride	Methyl Ethyl Ketone	4-Methyl-2-pentanone	Acetone	Allyl chloride	Carbon disulfide
			Halogenated Volatiles (HVOLs) (continued)																	Solvents				
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
ANZECC 2000 FW 95%						0.055																		
Agricultural Water Supply (Irrigation, ANZECC 2000)																								
Agricultural Water Supply (Livestock, ANZECC 2000)			0.1		0.003	0.3		0.3					0.004		0.03	0.01			0.0003					
Primary Contact Recreation (ANZECC 2000)			0.1		0.003	0.3		0.3					0.004		0.03	0.01			0.0003					
Criteria for Buildings and Structures																								
NHMRC - NRMMC - Drinking Water Guideline 6 (2011 vol 1)			0.1		0.003	0.01		0.3					0.004			0.05			0.0003					
City West Water Trade Waste Criteria					*1*		*5*	*1*	*0.5*			*1*						*1*				*50*		
LocCode	**Field_ID**	**Sampled_Date-**																						
slurry-by product	LMK-SS1	29/07/2013	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	0.01	<0.001	<0.001
filtered wastewater	LMK-SW1	29/07/2013	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.005	<0.001	0.02	<0.001	<0.001
filtered wastewater	LMK-2	7/03/2011	-	-	<0.005	<0.005	-	<0.005	-	-	-	-	<0.005	-	<0.005	<0.005	-	-	<0.05	-	-	-	-	-
slurry-by product	LLK-1	25/02/2010	<0.002	-	<0.002	<0.002	<0.002	<0.002	-	<0.002	<0.002	-	<0.004	-	<0.002	<0.002	<0.002	<0.004	<0.004	-	-	-	-	-
slurry-by product	LLK-1 1/10 Digest 1	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1 1/10 Digest 2	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1 1/10 Digest 3	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1-1/100 Digest 1	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1-1/100 Digest 2	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
slurry-by product	LLK-1-1/100 Digest 3	5/03/2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
filtered wastewater	LLK-2	25/02/2010	<0.001	-	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	-	<0.002	-	<0.001	<0.001	<0.001	<0.002	<0.002	-	-	-	-	-

NOTES

Maintenance of Ecosystems

Freshwater **95% LOP**

1 Primary reference:		ANZECC (2000) Australian Water Quality Guidelinesfor Fresh and Marine Waters for:
	PAHs	Total PAHs
	Phenols	Monochlorophenols, Trichlorophenols, Tetrachlorophenols
	Metals	Antimony, Beryllium, Iron, Tributylin, Thallium
	MAHs	Toluene, Xylene (o + p-xylene)
	PCBs	Total PCBs
	Solvents & Phthalates	Bis(2-ethylhexyl) phthalate
	OCPs & OPPs	Aldrin, DDE, Dieldrin, Methoxychlor, Endosulfan
	HVOLs & CHCs	1,2-dichloroethane, Chlorobenzene, 1,1,2,2-tetrachloroethane, 1,2,3,4-tetrachlorobenzene, 1,2,3,5-Tetrachlorobenzene
		1,2,3-trichlorobenzene, Trichlorobenzene, 1,2,4,5-tetrachlorobenzene, 1,3,5-Trichlorobenzene, Hexachlorobenzene
		Hexachlorobutadiene, Pentachlorobenzene, Pentachloroethane
2 secondary reference:		Dutch Intervention Value for 'Mineral Oil' (1999) for:
	TPHs	Total TPHs

Notes *1. Anzecc 2000, "low reliability" trigger value was used for chlorobenzene*

Drinking Water

1 Primary reference:		NHMRC - NRMMC - Drinking Water Guideline 6 (2011 vol 1) for:
	MAHS	Toluene, Xylenes (o + p), Ethyl Benzene, Styrene
	Phenols	2 Chloro phenol, 2,4 Dichloro phenol
	metal	Antimony, Chromium (hexavalent), Barium, Magnesium, Molybdenum,
	HVOLS	Chloro benzene, 1,2Dichloro benzene,1,3Dichloro benzene, 1,4Dichloro benzene, Bromodichloromethane, Vinyl chloride
	CHLORINATED HYDROCARBONS	Hexachloro butadiene, Dichloro benzene, Trichloro benzene
	Other Inorganics	Fluoride
	PHTHALATES	Bis 2-ethylhexyl phthalate (DEHP)
	ORGANOCHLORINE PESTICIDES	Aldrin + Dieldrin, Heptachlor-epoxide, Methoxychlor
2 secondary reference:		Dutch Intervention Value for 'Mineral Oil' (1999) for:
	TPHs	Total TPHs

Agricultural Water Supply, Parks and Gardens

1 Primary reference:		ANZECC (2000) Australian Water Quality Guidelinesfor Fresh and Marine Waters for:
2 secondary reference:		Dutch Intervention Value for 'mineral oil' (1999)
	TPHs	Total TPHs

Notes *1. The most sensitive criteria has been used when sensitivity of the crop defines the appropriate guideline eg. boron [0.5-6mg/L], chloride [30-700mg/L)*

NOTES

Stock Watering

1 primary reference:		ANZECC (2000) Australian Water Quality Guidelinesfor Fresh and Marine Waters (Stock):
2 secondary reference:		ANZECC (1992) Australian Water Quality Guidelinesfor Fresh and Marine Waters (Drinking Water):
	HVOLs	1,2Dichloro ethane (DCA), 1,1Dichloro ethene (DCE), Tetra chloro ethene (PCE), Trichloro ethene (TCE), Carbon tetra chloride
	MAHS	Benzene
	PAHS	Benzo (a) pyrene
	Phenols	Total phenols (non-halogenated), Phenol, Penta chloro phenol, 2346 tetra chloro phenol, 245 Tri chloro phenol, 246 Tri chloro phenol
	ORGANOCHLORINE PESTICIDES	Lindane, Hepta-chlor, Aldrin, Dieldrin, DDT, Endrin, Chlordane, Endosulphan
	ORGANO-PHOSPHOROUS PESTICIDES	Mevinphos, Diazinon, Chlor-pyriphos, Ethion, Dichlorvos, Parathion
	PCBS	Total PCB's
3 Tertiary reference:		National Water Quality Management Strategy. Australian Drinking Water Guidelines (Health).
	HVOLs	Bromodichloromethane, Vinyl chloride, 1,2Dichloro ethene (DCE), 1,2Dichloro ethene (CIS), Chloro benzene, 1,2Dichloro benzene, 1,4Dichloro benzene
	CHLORINATED HYDROCARBONS	Hexachloro butadiene, Dichloro benzene, Trichloro benzene
	MAHS	Toluene, Xylenes (o + p), Ethyl Benzene, Styrene
	Phenols	2 Chloro phenol, 2,4 Dichloro phenol
	ORGANOCHLORINE PESTICIDES	Aldrin + Dieldrin, Heptachlor-epoxide, Methoxychlor
4 Quaternary reference:		WHO (2004) Guidelines for Drinking- Water Quality
	Metals	Antimony, Barium, Manganese
	Other Inorganics	Cyanide (Total)
	HVOLS	Trichloro methane, bromo dichloro methane, 1,2 Dichloro propane (DCP), 1,2Dibromo 3chloro propane, Bromoform
5 Quinary reference:		Dutch Intervention Value for 'mineral oil' (1999)
	TPHs	Total TPHs

Notes *1. The most conservative value has been selected where several are available for a variety of livestock e.g. nitrate, TDS*

2. metals hierarchy of guidelines is ANZECC 1992 stock then WHO

Primary Contact Recreation

1 primary refernce:		ANZECC (2000) Australian Water Quality Guidelinesfor Fresh and Marine Waters (Drinking Water):
2 secondary reference:		National Water Quality Management Strategy. Australian Drinking Water Guidelines (Health).
	Phenols	2 Chloro phenol, 2,4 Dichloro phenol
	Metal	Antimony, Chromium (hexavalent), Molybdenum, Barium, Magnesium
	MAHS	Toluene, Xylenes (o + p), Ethyl Benzene, Styrene
	Other Inorganics	Fluoride
	PHTHALATES	Bis 2-ethylhexyl phthalate (DEHP)
	ORGANOCHLORINE PESTICIDES	Aldrin + Dieldrin, Heptachlor-epoxide, Methoxychlor
	HVOLs	Bromodichloromethane, Vinyl chloride, 1,2Dichloro ethene (DCE), 1,2Dichloro ethene (CIS), Chloro benzene, 1,2Dichloro benzene, 1,4Dichloro benzene
	CHLORINATED HYDROCARBONS	Hexachloro butadiene, Dichloro benzene, Trichloro benzene
3 Tertiary reference:		WHO (2004) Guidelines for Drinking- Water Quality
	HVOLS	Trichloro methane, bromo dichloro methane, 1,2 Dichloro propane (DCP), 1,2Dibromo 3chloro propane, Bromoform
4 Quaternary reference:		Dutch Intervention Value for 'mineral oil' (1999)
	TPHs	Total TPHs

Notes *1. PCR criteria for toxicants (nitrates) are the same as for drinking water, with allowance (by a factor multiple of up to 20) for short duration exposure*

Criteria for Buildings & Structures

1 primary reference:		Australian Standard (AS) 2159-2009 Piling - Design & Installation
2 secondary reference:		Dutch Intervention Value for 'mineral oil' (1999)
	TPHs	Total TPHs

General Notes

1 Results expressed as mg/l. A blank space indicates no test performed.

2 Primary laboratory **Eurofins-MGT Environmental Consulting Pty Ltd**