

Page : 17 of 32  
 Work Order : EM1512339  
 Client : PITT & SHERRY  
 Project : Chugg



**Analytical Results**

Sub-Matrix: SOIL (Matrix: SOIL)	Client sample ID	Client sampling date / time		SP4_1		SP4_2		SP4_3		SP4_4		Dup01	
		SP4_1 TCLP leachate	SP4_2 TCLP leachate	SP4_3 TCLP leachate	SP4_4 TCLP leachate	[21-Jul-2015]	Result	Result	Result	Result	Result	Result	Result
Compound	LOR	Unit	EM1512339-011	EM1512339-012	EM1512339-013	EM1512339-014	EM1512339-015	Result	Result	Result	Result	Result	Result
<b>EP080S: TPH(V)/BTX Surrogates - Continued</b>													
Toluene-D8	2037-26-5	0.2	%	89.1	86.0	89.0	80.6	87.0	89.1	86.0	89.0	80.6	87.0
4-Bromofluorobenzene	460-00-4	0.2	%	76.5	70.4	82.5	68.6	75.3	76.5	70.4	82.5	68.6	75.3



**Analytical Results**

Sub-Matrix: SOIL  
 (Matrix: SOIL)

Compound	Client sample ID	Client sampling date / time	SP1_1		SP1_2		SP1_3		SP2_1		SP2_2	
			DI leachate	Result	DI leachate	Result	DI leachate	Result	DI leachate	Result	DI leachate	Result
<b>EA055: Moisture Content</b>												
Moisture Content (dried @ 103°C)			1	%								
<b>EN33: TCLP Leach</b>												
Initial pH			0.1	pH Unit								
After HCl pH			0.1	pH Unit								
Extraction Fluid Number			1	-								
Final pH			0.1	pH Unit								
<b>EN60: Bottle Leaching Procedure</b>												
Final pH			0.1	pH Unit			6.3				6.9	
<b>EP066: Polychlorinated Biphenyls (PCB)</b>												
Subtotal Polychlorinated biphenyls			0.1	mg/kg								
<b>EP075(SIMB): Polynuclear Aromatic Hydrocarbons</b>												
Naphthalene			91-20-3	0.5	mg/kg							
Acenaphthylene			208-96-8	0.5	mg/kg							
Acenaphthene			83-32-9	0.5	mg/kg							
Fluorene			86-73-7	0.5	mg/kg							
Phenanthrene			85-01-8	0.5	mg/kg							
Anthracene			120-12-7	0.5	mg/kg							
Fluoranthene			206-44-0	0.5	mg/kg							
Pyrene			129-00-0	0.5	mg/kg							
Benz(a)anthracene			56-55-3	0.5	mg/kg							
Chrysene			218-01-9	0.5	mg/kg							
Benzof(b+h)fluoranthene			205-99-2	0.5	mg/kg							
Benzof(k)fluoranthene			207-08-9	0.5	mg/kg							
Benzof(a)pyrene			50-32-8	0.5	mg/kg							
Indeno(1,2,3-cd)pyrene			193-39-5	0.5	mg/kg							
Dibenz(a,h)anthracene			53-70-3	0.5	mg/kg							
Benzof(g,h,i)perylene			191-24-2	0.5	mg/kg							
<b>Sum of polycyclic aromatic hydrocarbons</b>												
Benzof(a)pyrene TEQ (zero)				0.5	mg/kg							
Benzof(a)pyrene TEQ (half LOR)				0.5	mg/kg							
Benzof(a)pyrene TEQ (LOR)				0.5	mg/kg							
<b>EP080/071: Total Petroleum Hydrocarbons</b>												
C6 - C9 Fraction			10	mg/kg								
C10 - C14 Fraction			50	mg/kg								





**Analytical Results**

Sub-Matrix: SOIL  
 (Matrix: SOIL)

Client sample ID  
 Client sampling date / time  
 LOR Unit

Compound	SP1_1 DI leachate 21-Jul-2015 10:30 EM1512339-016 Result	SP1_2 DI leachate 21-Jul-2015 10:35 EM1512339-017 Result	SP1_3 DI leachate 21-Jul-2015 10:40 EM1512339-018 Result	SP2_1 DI leachate 21-Jul-2015 10:45 EM1512339-019 Result	SP2_2 DI leachate 21-Jul-2015 10:50 EM1512339-020 Result
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EP080/071: Total Petroleum Hydrocarbons - Continued					
C15 - C28 Fraction	100	mg/kg			
C29 - C36 Fraction	100	mg/kg			
^ C10 - C36 Fraction (sum)	50	mg/kg			

EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions					
^ C6 - C10 Fraction	10	mg/kg			
^ C6 - C10 Fraction minus BTEX (F1)	10	mg/kg			
>C10 - C16 Fraction	50	mg/kg			
>C16 - C34 Fraction	100	mg/kg			
^ C34 - C40 Fraction	100	mg/kg			
^ C10 - C40 Fraction (sum)	50	mg/kg			
^ C10 - C16 Fraction minus Naphthalene (F2)	50	mg/kg			

EP080: BTEXN					
Benzene	71-43-2	0.2	mg/kg		
Toluene	108-88-3	0.5	mg/kg		
Ethylbenzene	100-41-4	0.5	mg/kg		
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		
ortho-Xylene	95-47-6	0.5	mg/kg		
^ Sum of BTEX		0.2	mg/kg		
^ Total Xylenes	1330-20-7	0.5	mg/kg		
Naphthalene	91-20-3	1	mg/kg		

EP066S: PCB Surrogate					
Decachlorobiphenyl	2051-24-3	0.1	%		

EP075(SIM)S: Phenolic Compound Surrogates					
Phenol-d6	13127-88-3	0.5	%		
2-Chlorophenol-D4	93951-73-6	0.5	%		
2,4,6-Tribromophenol	118-79-6	0.5	%		

EP075(SIM)T: PAH Surrogates					
2-Fluorobiphenyl	321-60-8	0.5	%		
Anthracene-d10	1719-06-8	0.5	%		
4-Terphenyl-d14	1718-51-0	0.5	%		

EP080S: TPH(V)/BTEX Surrogates					
1,2-Dichloroethane-D4	17060-07-0	0.2	%		

Page : 20 of 32  
 Work Order : EM1512339  
 Client : PITT & SHERRY  
 Project : Chug9



**Analytical Results**

Sub-Matrix: SOIL (Matrix: SOIL)	Client sample ID	SP1_1		SP1_2		SP1_3		SP2_1		SP2_2	
		DI leachate	Result	DI leachate	Result	DI leachate	Result	DI leachate	Result	DI leachate	Result
Compound	Client sampling date / time	21-Jul-2015 10:30		21-Jul-2015 10:35		21-Jul-2015 10:40		21-Jul-2015 10:45		21-Jul-2015 10:50	
	LOR	Unit	EM1512339-016	EM1512339-017	EM1512339-018	EM1512339-019	EM1512339-019	EM1512339-019	EM1512339-020	EM1512339-020	EM1512339-020
<b>EP0809: TPH(W)/BTX Surrogates - Continued</b>											
Toluene-D8	2037-26-5	0.2	%	.....	.....	.....	.....	.....	.....	.....	.....
4-Bromofluorobenzene	460-00-4	0.2	%	.....	.....	.....	.....	.....	.....	.....	.....





**Analytical Results**

Sub-Matrix: SOIL  
 (Matrix: SOIL)

Compound	Client sample ID	Client sampling date / time	SP			
			SP2_3 DI leachate	SP3_1 DI leachate	SP3_2 DI leachate	SP3_3 DI leachate
			21-Jul-2015 10:55	21-Jul-2015 11:00	21-Jul-2015 11:05	21-Jul-2015 11:10
			EM1512339-021	EM1512339-022	EM1512339-023	EM1512339-024
			Result	Result	Result	Result
						SP3_4 DI leachate
						21-Jul-2015 11:15
						EM1512339-025
						Result

EA055: Moisture Content  
 Moisture Content (dried @ 103°C)

EN33: TCLP Leach

Initial pH	0.1	pH Unit				
After HCl pH	0.1	pH Unit				
Extraction Fluid Number	1					
Final pH	0.1	pH Unit				

EN60: Bottle Leaching Procedure

Final pH	0.1	pH Unit	7.5	7.4	7.2	7.1	7.3
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EP066: Polychlorinated Biphenyls (PCB)

LOB: Total Polychlorinated biphenyls

EP075(SIM): Polynuclear Aromatic Hydrocarbons

Naphthalene	91-20-3	0.5	mg/kg				
Acenaphthylene	208-96-8	0.5	mg/kg				
Acenaphthene	83-32-9	0.5	mg/kg				
Fluorene	86-73-7	0.5	mg/kg				
Phenanthrene	85-01-8	0.5	mg/kg				
Anthracene	120-12-7	0.5	mg/kg				
Fluoranthene	206-44-0	0.5	mg/kg				
Pyrene	129-00-0	0.5	mg/kg				
Benzo(a)anthracene	56-55-3	0.5	mg/kg				
Chrysene	218-01-9	0.5	mg/kg				
Benzo(b+g)fluoranthene	205-99-2	0.5	mg/kg				
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg				
Benzo(a)pyrene	50-32-8	0.5	mg/kg				
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg				
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg				
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg				
Sum of polycyclic aromatic hydrocarbons		0.5	mg/kg				
Benzo(a)pyrene TEQ (zero)		0.5	mg/kg				
Benzo(a)pyrene TEQ (half LOR)		0.5	mg/kg				
Benzo(a)pyrene TEQ (LOR)		0.5	mg/kg				
<b>EP080/071: Total Petroleum Hydrocarbons</b>							
C6 - C9 Fraction		10	mg/kg				
C10 - C14 Fraction		50	mg/kg				





**Analytical Results**

Sub-Matrix: SOIL  
 (Matrix: SOIL)

Client sample ID  
 Client sampling date / time  
 LOR Unit

Compound	SP2_3 DI leachate 21-Jul-2015 10:55 EM1512339-021 Result	SP3_1 DI leachate 21-Jul-2015 11:00 EM1512339-022 Result	SP3_2 DI leachate 21-Jul-2015 11:05 EM1512339-023 Result	SP3_3 DI leachate 21-Jul-2015 11:10 EM1512339-024 Result	SP3_4 DI leachate 21-Jul-2015 11:15 EM1512339-025 Result
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**EP080/071: Total Petroleum Hydrocarbons - Continued**

C15 - C28 Fraction	100	mg/kg							
C29 - C36 Fraction	100	mg/kg							
^ C10 - C36 Fraction (sum)	50	mg/kg							

**EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions**

C6 - C10 Fraction	10	mg/kg							
^ C6 - C10 Fraction minus BTEX (F1)	10	mg/kg							
>C10 - C16 Fraction	50	mg/kg							
>C16 - C34 Fraction	100	mg/kg							
^ C34 - C40 Fraction	100	mg/kg							
^ C34 - C40 Fraction (sum)	50	mg/kg							
^ C10 - C16 Fraction minus Naphthalene (F2)	50	mg/kg							

**EP080: BTEXN**

Benzene	71-43-2	0.2	mg/kg						
Toluene	108-88-3	0.5	mg/kg						
Ethylbenzene	100-41-4	0.5	mg/kg						
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg						
ortho-Xylene	95-47-6	0.5	mg/kg						
^ Sum of BTEX		0.2	mg/kg						
^ Total Xylenes	1330-20-7	0.5	mg/kg						
Naphthalene	91-20-3	1	mg/kg						

**EP066S: PCB Surrogate**

Decachlorobiphenyl	2051-24-3	0.1	%						
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**EP075(SIM)S: Phenolic Compound Surrogates**

Phenol-d6	13127-88-3	0.5	%						
2-Chlorophenol-D4	93951-73-6	0.5	%						
2,4,6-Tribromophenol	118-79-6	0.5	%						

**EP075(SIM)T: PAH Surrogates**

2-Fluorobiphenyl	321-60-8	0.5	%						
Anthracene-d10	1719-06-8	0.5	%						
4-Terphenyl-d14	1718-51-0	0.5	%						

**EP080S: TPH(V)/BTEX Surrogates**

1,2-Dichloroethane-D4	17060-07-0	0.2	%						
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Page : 23 of 32  
 Work Order : EM1512339  
 Client : PITT & SHERRY  
 Project : Chung9



**Analytical Results**

Sub-Matrix: SOIL  
 (Matrix: SOIL)

Compound	Client sample ID	Client sampling date / time	LOR	Unit	SP2_3	SP3_1	SP3_2	SP3_3	SP3_4
					DI leachate	DI leachate	DI leachate	DI leachate	DI leachate
<b>EP0805 - TPH(V)/BTEX Surrogates - Continued</b>									
Toluene-D8	2037-26-5	0.2		%	*****	*****	*****	*****	*****
4-Bromofluorobenzene	460-00-4	0.2		%	*****	*****	*****	*****	*****
					Result	Result	Result	Result	Result
					EM1512339-021	EM1512339-022	EM1512339-023	EM1512339-024	EM1512339-025





**Analytical Results**

Sub-Matrix: SOIL  
 (Matrix: SOIL)

Client sample ID

Client sampling date / time

Compound	LOR	Unit	SP4_1 DI leachate 21-Jul-2015 11:20 EM1512339-026 Result	SP4_2 DI leachate 21-Jul-2015 11:25 EM1512339-027 Result	SP4_3 DI leachate 21-Jul-2015 11:30 EM1512339-028 Result	SP4_4 DI leachate 21-Jul-2015 11:35 EM1512339-029 Result	Result
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**EA055: Moisture Content**

Moisture Content (dried @ 103°C)

**EN33: TCLP Leach**

Initial pH

After HCl pH

Extraction Fluid Number

Final pH

**EN60: Bottle Leaching Procedure**

Final pH

**EP066: Polychlorinated Biphenyls (PCB)**

Octal Polychlorinated biphenyls

**EP075(SIM)B: Polynuclear Aromatic Hydrocarbons**

Naphthalene

Acenaphthylene

Acenaphthene

Fluorene

Phenanthrene

Anthracene

Fluoranthene

Pyrene

Benz(a)anthracene

Chrysene

Benzo(b+g)fluoranthene

Benzo(k)fluoranthene

Benzo(a)pyrene

Indeno(1,2,3-cd)pyrene

Dibenz(a,h)anthracene

Benz(g,h,i)perylene

Sum of polycyclic aromatic hydrocarbons

Benzo(a)pyrene TEQ (zero)

Benzo(a)pyrene TEQ (half LOR)

Benzo(a)pyrene TEQ (LOR)

**EP080/071: Total Petroleum Hydrocarbons**

C6 - C9 Fraction

C10 - C14 Fraction

1	%						
0.1	pH Unit						
0.1	pH Unit						
1							
0.1	pH Unit						
0.1	pH Unit						
0.1	pH Unit						
0.1	mg/kg						
0.1	mg/kg						
0.5	mg/kg						
0.5	mg/kg						
0.5	mg/kg						
0.5	mg/kg						
0.5	mg/kg						
0.5	mg/kg						
0.5	mg/kg						
0.5	mg/kg						
0.5	mg/kg						
0.5	mg/kg						
0.5	mg/kg						
0.5	mg/kg						
0.5	mg/kg						
0.5	mg/kg						
0.5	mg/kg						
0.5	mg/kg						
10	mg/kg						
50	mg/kg						





**Analytical Results**

Sub-Matrix: SOIL  
 (Matrix: SOIL)

Compound	Client sample ID	Client sampling date / time	LOR	Unit	SP4_1	SP4_2	SP4_3	SP4_4	Result
					DI leachate	DI leachate	DI leachate	DI leachate	
		21-Jul-2015 11:20			EM1512339-026	EM1512339-027	EM1512339-028	EM1512339-029	
					Result	Result	Result	Result	

**EP080/071: Total Petroleum Hydrocarbons - Continued**

C15 - C28 Fraction	100	mg/kg							
C29 - C36 Fraction	100	mg/kg							
^ C10 - C36 Fraction (sum)	50	mg/kg							

**EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions**

C6 - C10 Fraction	10	mg/kg							
^ C6 - C10 Fraction minus BTEX (F1)	10	mg/kg							
>C10 - C16 Fraction	50	mg/kg							
>C16 - C34 Fraction	100	mg/kg							
^ C34 - C40 Fraction	100	mg/kg							
^ C34 - C40 Fraction (sum)	50	mg/kg							
^ C10 - C16 Fraction minus Napthalene (F2)	50	mg/kg							

**EP080: BTEXN**

Benzene	71.43-2	0.2	mg/kg						
Toluene	108.88-3	0.5	mg/kg						
Ethylbenzene	100.41-4	0.5	mg/kg						
meta- & para-Xylene	108.38-3 106.42-3	0.5	mg/kg						
ortho-Xylene	95.47-6	0.5	mg/kg						
^ Sum of BTEX	---	0.2	mg/kg						
^ Total Xylenes	1330.20-7	0.5	mg/kg						
Napthalene	91.20-3	1	mg/kg						

**EP066S: PCB Surrogate**

Decachlorobiphenyl	2051-24-3	0.1	%						
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**EP075(SIM)S: Phenolic Compound Surrogates**

Phenol-d6	13127-88-3	0.5	%						
2-Chlorophenol-D4	93951-73-6	0.5	%						
2,4,6-Tribromophenol	118-79-6	0.5	%						

**EP075(SIM)T: PAH Surrogates**

2-Fluorobiphenyl	321-60-8	0.5	%						
Anthracene-d10	1719-06-8	0.5	%						
4-Terphenyl-d14	1718-51-0	0.5	%						

**EP080S: TPH(V)/BTEX Surrogates**

1,2-Dichloroethane-D4	17060-07-0	0.2	%						
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Page : 26 of 32  
 Work Order : EM1512339  
 Client : PITT & SHERRY  
 Project : Chug9



**Analytical Results**

Sub-Matrix: SOIL  
 (Matrix: SOIL)

Compound	Client sample ID	Client sampling date / time	LOR	Unit	SP4_1	SP4_2	SP4_3	SP4_4	
					DI leachate	DI leachate	DI leachate	DI leachate	Result
<b>EP0805: TPH(V)/BTEX Surrogates - Continued</b>									
Toluene-D8	2037-26-5	0.2		%	****	****	****	****	****
4-Bromofluorobenzene	460-00-4	0.2		%	****	****	****	****	****





**Analytical Results**

Sub-Matrix: TCLP LEACHATE  
 (Matrix: WATER)

Compound	LOR	Unit	Client sample ID						
			Client sampling date / time	SP1_1 TCLP leachate	SP1_2 TCLP leachate	SP1_3 TCLP leachate	SP2_1 TCLP leachate	SP2_2 TCLP leachate	
<b>EG005C: Leachable Metals by ICPAES</b>									
Arsenic	7440-38-2	0.1	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Cadmium	7440-43-9	0.05	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chromium	7440-47-3	0.1	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Copper	7440-50-8	0.1	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	7439-92-1	0.1	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	2.3
Nickel	7440-02-0	0.1	mg/L	0.1	0.2	0.1	0.1	<0.1	<0.1
Zinc	7440-66-6	0.1	mg/L	63.3	83.9	67.1	50.3	55.8	55.8
<b>EG035C: Leachable Mercury by FIMS</b>									
Mercury	7439-97-6	0.001	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b)fluoranthene	205-99-2	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1,2,3-cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons									
^ Benzo(a)pyrene TEQ (zero)									
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	33.7	37.9	35.9	37.2	35.9	35.9
2-Chlorophenol-D4	93951-73-6	1	%	68.8	67.9	68.0	63.9	65.4	65.4
2,4,6-Tribromophenol	118-79-6	1	%	55.6	56.0	47.3	49.2	47.6	47.6
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	71.8	78.9	76.8	66.9	66.3	66.3



Page : 28 of 32  
 Work Order : EM1512339  
 Client : PITT & SHERRY  
 Project : Chu99



**Analytical Results**

Sub-Matrix: TCLP LEACHATE  
 (Matrix: WATER)

Compound	Client sample ID	Client sampling date / time	LOR	Unit	SP1_1		SP1_2		SP1_3		SP2_1		SP2_2	
					TCLP leachate	Result	TCLP leachate	Result	TCLP leachate	Result	TCLP leachate	Result	TCLP leachate	Result
<b>EP075(SIM)T - PAH Surrogates - Continued</b>														
Anthracene-d10		1719-06-8	1	%	81.7		87.9		79.5		79.2		82.7	
4-Terphenyl-d14		1718-51-0	1	%	66.3		77.2		64.6		73.6		59.5	





**Analytical Results**

Sub-Matrix: TCLP LEACHATE  
 (Matrix: WATER)

Compound	LOR	Unit	Client sample ID				
			TCLP leachate 21-Jul-2015 10:55 EM1512339-006	TCLP leachate 21-Jul-2015 11:00 EM1512339-007	TCLP leachate 21-Jul-2015 11:05 EM1512339-008	TCLP leachate 21-Jul-2015 11:10 EM1512339-009	TCLP leachate 21-Jul-2015 11:15 EM1512339-010
<b>EG005C: Leachable Metals by ICPAES</b>							
Arsenic	0.1	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Cadmium	0.05	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Chromium	0.1	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Copper	0.1	mg/L	0.1	<0.1	0.2	<0.1	<0.1
Lead	0.1	mg/L	9.4	<0.1	<0.1	<0.1	<0.1
Nickel	0.1	mg/L	<0.1	0.1	0.1	0.1	<0.1
Zinc	0.1	mg/L	88.4	95.6	102	89.9	84.7
<b>EG035C: Leachable Mercury by FIMS</b>							
Mercury	0.001	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>							
Naphthalene	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benz(b+)fluoranthene	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benz(k)fluoranthene	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)pyrene	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1,2,3-cd)pyrene	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a,h)anthracene	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzol(g,h,i)benzylene	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Sum of polycyclic aromatic hydrocarbons	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons TEQ (zero)	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>							
Phenol-d6	1	%	37.2	34.4	35.8	36.3	36.3
2-Chlorophenol-D4	1	%	72.8	55.2	65.5	53.5	73.7
2,4,6-Tribromophenol	1	%	50.7	41.3	45.2	42.2	56.6
<b>EP075(SIM)T: PAH Surrogates</b>							
2-Fluorobiphenyl	1	%	74.3	62.3	67.9	54.5	77.9



Page : 30 of 32  
 Work Order : EM1512339  
 Client : PITT & SHERRY  
 Project : Chu99



**Analytical Results**

Sub-Matrix: TCLP LEACHATE  
 (Matrix: WATER)

Compound	Client sample ID	Client sampling date / time	LOR	Unit	SP2				SP3			
					SP2_3 TCLP leachate 21-Jul-2015 10:55 EM1512339-006 Result	SP3_1 TCLP leachate 21-Jul-2015 11:00 EM1512339-007 Result	SP2_2 TCLP leachate 21-Jul-2015 11:05 EM1512339-008 Result	SP3_3 TCLP leachate 21-Jul-2015 11:10 EM1512339-009 Result	SP3_4 TCLP leachate 21-Jul-2015 11:15 EM1512339-010 Result			
<b>EP075(SIM)T: PAH Surrogates - Continued</b>												
Anthracene-d10		1719-06-8	1	%	83.8	72.1	82.3	71.7	90.2			
4-Terphenyl-d14		1718-51-0	1	%	91.6	70.3	78.1	60.6	74.1			





**Analytical Results**

Sub-Matrix: TCLP LEACHATE  
 (Matrix: WATER)

Compound	Client sample ID	Client sampling date / time	SP4				Dup01
			SP4_1 TCLP leachate 21-Jul-2015 11:20 EM1512339-011 Result	SP4_2 TCLP leachate 21-Jul-2015 11:25 EM1512339-012 Result	SP4_3 TCLP leachate 21-Jul-2015 11:30 EM1512339-013 Result	SP4_4 TCLP leachate 21-Jul-2015 11:35 EM1512339-014 Result	
<b>EG005C: Leachable Metals by ICPAES</b>							
Arsenic			<0.1	<0.1	<0.1	<0.1	<0.1
Cadmium			<0.05	<0.05	<0.05	<0.05	<0.05
Chromium			<0.1	<0.1	<0.1	<0.1	<0.1
Copper			<0.1	0.2	0.1	0.1	<0.1
Lead			<0.1	<0.1	<0.1	<0.1	<0.1
Nickel			<0.1	0.2	0.1	0.2	0.2
Zinc			72.4	132	77.2	81.8	102
<b>EG035C: Leachable Mercury by FIMS</b>							
Mercury			<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
<b>EG075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>							
1-Naphthalene			<1.0	<1.0	<1.0	<1.0	<1.0
2-Naphthalene			<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene			<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene			<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene			<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene			<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene			<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene			<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene			<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene			<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene			<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene		205.99-2.205-82-3	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene		207-08-9	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene		50-32-8	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1,2,3-cd)pyrene		133-39-5	<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a,h)anthracene		53-70-3	<1.0	<1.0	<1.0	<1.0	<1.0
Benzol(g,h,i)perylene		191-24-2	<1.0	<1.0	<1.0	<1.0	<1.0
Sum of polycyclic aromatic hydrocarbons			<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons TEQ (zero)			0.5	<0.5	<0.5	<0.5	<0.5
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>							
Phenol-d6		13127-88-3	38.8	35.4	36.6	37.3	37.9
2-Chlorophenol-D4		93951-73-6	61.4	59.8	66.1	69.7	56.5
2,4,6-Tribromophenol		118-79-6	47.6	44.1	47.8	49.3	41.9
<b>EP075(SIM)T: PAH Surrogates</b>							
2-Fluorobiphenyl		321-60-8	79.4	65.5	71.5	72.5	59.7



Page : 32 of 32  
 Work Order : EM1512339  
 Client : PITT & SHERRY  
 Project : Chug9



**Analytical Results**

Sub-Matrix: TCLP LEACHATE  
 (Matrix: WATER)

Compound	Client sample ID	Client sampling date / time	SP4_1		SP4_2		SP4_3		SP4_4		Dup01	
			TCLP Leachate	Result	TCLP Leachate	Result	TCLP Leachate	Result	TCLP Leachate	Result	[21-Jul-2015]	Result
<b>EP075(SIM)1: PAH Surrogates - Continued</b>												
Anthracene-d10		1719-06-8	1	%	87.4		75.7		84.0		90.6	68.6
4-Terphenyl-d14		1718-61-0	1	%	67.4		72.2		63.3		85.9	62.6





# Environmental

## QUALITY CONTROL REPORT

Work Order

EM1512339

Page

1 of 11

Client

: PITT & SHERRY

Laboratory

: Environmental Division Melbourne

Contact

: MR DOUGLAS TANGNEY

Contact

: Shirley LeCornu

Address

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Project

: Chugg

QC Level

: NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Order number

: LNL3586

Date Samples Received

: 22-Jul-2015

C-O-C number

: ---

Date Analysis Commenced

: 23-Jul-2015

Sampler

: DOUGLAS TANGNEY

Issue Date

: 28-Jul-2015

Site

: ---

No. of samples received

: 29

Quote number

: ---

No. of samples analysed

: 29

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

### Signatories

NATA Accredited  
Laboratory 825

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.



Accredited for  
compliance with  
ISO/IEC 17025.

**Signatories**

Chris Lemaitre
Dilani Fernando
Nancy Wang
Nancy Wang

**Position**

Non-Metals Team Leader
Senior Inorganic Chemist
Senior Semivolatile Instrument Chemist
Senior Semivolatile Instrument Chemist

**Accreditation Category**

Melbourne Inorganics
Melbourne Inorganics
Melbourne Inorganics
Melbourne Organics

WORLD RECOGNISED  
ACCREDITATION



Page : 2 of 11  
Work Order : EM1512339  
Client : PITT & SHERRY  
Project : Chugg



**General Comments**

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.  
Where moisture determination has been performed, results are reported on a dry weight basis.

- Key :
- Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
  - CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
  - LOR = Limit of reporting
  - RPD = Relative Percentage Difference
  - # = Indicates failed QC





### Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting. Result < 10 times LOR. No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: SOIL

Laboratory sample ID	Client sample ID	Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	
<b>EA055: Moisture Content (QC Lot: 162423)</b>									
EM1512339-001	SP1_1 TCLP leachate	EA055-103: Moisture Content (dried @ 103°C)	----	1	%	14.0	14.0	0.00	0% - 50%
EM1512339-010	SP3_4 TCLP leachate	EA055-103: Moisture Content (dried @ 103°C)	----	1	%	24.0	24.2	0.771	0% - 20%
<b>EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 162395)</b>									
EM1512339-001	SP1_1 TCLP leachate	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EM1512339-011	SP4_1 TCLP leachate	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
<b>EP075(SIM): Polynuclear Aromatic Hydrocarbons (QC Lot: 162393)</b>									
EM1512339-001	SP1_1 TCLP leachate	EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<1.1	<1.1	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<1.1	<1.1	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<1.1	<1.1	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<1.1	<1.1	0.00	No Limit
		EP075(SIM): Benz(a)pyrene	50-32-8	0.5	mg/kg	<1.1	<1.1	0.00	No Limit
		EP075(SIM): Benz(b+j)fluoranthene		0.5	mg/kg	1.2	1.1	0.00	No Limit
		EP075(SIM): Benz(g,h,i)perylene	191-24-2	0.5	mg/kg	<1.1	<1.1	0.00	No Limit
		EP075(SIM): Benzofluoranthene	207-08-9	0.5	mg/kg	1.2	<1.1	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<1.1	<1.1	0.00	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<1.1	<1.1	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	1.4	1.3	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<1.1	<1.1	0.00	No Limit
		EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<1.1	<1.1	0.00	No Limit
		EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	2.5	2.6	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	1.7	1.7	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	2.5	2.3	7.81	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	0.5	0.5	0.00	No Limit
		EP075(SIM): Benz(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(b+j)fluoranthene		0.5	mg/kg	0.8	0.7	19.1	No Limit
		EP075(SIM): Benz(g,h,i)perylene	191-24-2	0.5	mg/kg	0.6	<0.5	0.00	No Limit
		EP075(SIM): Benzofluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	1.0	1.0	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

1-219





Sub-Matrix: SOIL	Laboratory sample ID	Client sample ID	Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Laboratory Duplicate (DUP) Report
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 162393) - continued</b>										
EM1512339-011	SP4_1 TCLP leachate	EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	0.00	No Limit
		EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	2.2	2.5	11.2	11.2	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	1.6	1.6	0.00	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	2.0	1.9	5.11	5.11	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 162317)</b>										
EM1512339-001	SP1_1 TCLP leachate	EP080: C6 - C9 Fraction	EP080: C6 - C9 Fraction	10	mg/kg	<10	<10	0.00	0.00	No Limit
EM1512339-011	SP4_1 TCLP leachate	EP080: C6 - C9 Fraction	EP080: C6 - C9 Fraction	10	mg/kg	<10	<10	0.00	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 162394)</b>										
EM1512339-001	SP1_1 TCLP leachate	EP071: C15 - C28 Fraction	EP071: C15 - C28 Fraction	100	mg/kg	3060	2940	3.75	3.75	0% - 20%
		EP071: C29 - C36 Fraction	EP071: C29 - C36 Fraction	100	mg/kg	2400	2500	3.77	3.77	0% - 20%
		EP071: C10 - C14 Fraction	EP071: C10 - C14 Fraction	50	mg/kg	120	150	23.8	23.8	No Limit
		EP071: C10 - C36 Fraction (sum)	EP071: C10 - C36 Fraction (sum)	50	mg/kg	5580	5590	0.179	0.179	0% - 20%
EM1512339-011	SP4_1 TCLP leachate	EP071: C15 - C28 Fraction	EP071: C15 - C28 Fraction	100	mg/kg	3740	3330	11.5	11.5	0% - 20%
		EP071: C29 - C36 Fraction	EP071: C29 - C36 Fraction	100	mg/kg	4000	3350	17.6	17.6	0% - 20%
		EP071: C10 - C14 Fraction	EP071: C10 - C14 Fraction	50	mg/kg	160	150	0.00	0.00	No Limit
		EP071: C10 - C36 Fraction (sum)	EP071: C10 - C36 Fraction (sum)	50	mg/kg	7900	6830	14.5	14.5	0% - 20%
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 162317)</b>										
EM1512339-001	SP1_1 TCLP leachate	EP080: C6 - C10 Fraction	EP080: C6 - C10 Fraction	10	mg/kg	<10	<10	0.00	0.00	No Limit
EM1512339-011	SP4_1 TCLP leachate	EP080: C6 - C10 Fraction	EP080: C6 - C10 Fraction	10	mg/kg	<10	<10	0.00	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 162394)</b>										
EM1512339-001	SP1_1 TCLP leachate	EP071: >C16 - C34 Fraction	EP071: >C16 - C34 Fraction	100	mg/kg	4810	4750	1.41	1.41	0% - 20%
		EP071: >C34 - C40 Fraction	EP071: >C34 - C40 Fraction	100	mg/kg	1380	1600	15.0	15.0	0% - 50%
		EP071: >C10 - C16 Fraction	EP071: >C10 - C16 Fraction	50	mg/kg	250	260	4.98	4.98	No Limit
		EP071: >C10 - C40 Fraction (sum)	EP071: >C10 - C40 Fraction (sum)	50	mg/kg	6440	6610	2.60	2.60	0% - 20%
EM1512339-011	SP4_1 TCLP leachate	EP071: >C16 - C34 Fraction	EP071: >C16 - C34 Fraction	100	mg/kg	6650	5780	14.0	14.0	0% - 20%
		EP071: >C34 - C40 Fraction	EP071: >C34 - C40 Fraction	100	mg/kg	2820	2340	18.2	18.2	0% - 20%
		EP071: >C10 - C16 Fraction	EP071: >C10 - C16 Fraction	50	mg/kg	270	260	4.79	4.79	No Limit
		EP071: >C10 - C40 Fraction (sum)	EP071: >C10 - C40 Fraction (sum)	50	mg/kg	9740	8380	15.0	15.0	0% - 20%
<b>EP080: BTEXN (QC Lot: 162317)</b>										
EM1512339-001	SP1_1 TCLP leachate	EP080: Benzene	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Ethylbenzene	EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	EP080: meta- & para-Xylene	0.5	mg/kg	<0.5	<0.5	0.00	0.00	No Limit
		EP080: ortho-Xylene	EP080: ortho-Xylene	96-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Toluene	EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EM1512339-011	SP4_1 TCLP leachate	EP080: Benzene	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Ethylbenzene	EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit





Sub-Matrix: SOIL	Laboratory sample ID	Client sample ID	Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Laboratory Duplicate (DUP) Report
<b>EP080: BTEXN (QC Lot: 162317) - continued</b>										
EM1512339-011	SP4_1 TCLP leachate	EP080: meta- & para-Xylene			0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6		0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Toluene	108-88-3		0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3		1	mg/kg	<1	<1	0.00	No Limit
<b>Sub-Matrix: WATER</b>										
<b>Laboratory sample ID : Compound</b>										
<b>EG005C: Leachable Metals by ICPAES (QC Lot: 165042)</b>										
EM1512339-001	SP1_1 TCLP leachate	EG005C: Cadmium	7440-43-9		0.05	mg/L	<0.05	<0.05	0.00	No Limit
		EG005C: Arsenic	7440-38-2		0.1	mg/L	<0.1	<0.1	0.00	No Limit
		EG005C: Chromium	7440-47-3		0.1	mg/L	<0.1	<0.1	0.00	No Limit
		EG005C: Copper	7440-50-8		0.1	mg/L	<0.1	<0.1	0.00	No Limit
		EG005C: Lead	7439-92-1		0.1	mg/L	<0.1	<0.1	0.00	No Limit
		EG005C: Nickel	7440-02-0		0.1	mg/L	0.1	0.1	0.00	No Limit
		EG005C: Zinc	7440-66-6		0.1	mg/L	63.3	65.1	2.88	0% - 20%
		EG005C: Cadmium	7440-43-9		0.05	mg/L	<0.05	<0.05	0.00	No Limit
		EG005C: Arsenic	7440-38-2		0.1	mg/L	<0.1	<0.1	0.00	No Limit
		EG005C: Chromium	7440-47-3		0.1	mg/L	<0.1	<0.1	0.00	No Limit
		EG005C: Copper	7440-50-8		0.1	mg/L	<0.1	<0.1	0.00	No Limit
		EG005C: Lead	7439-92-1		0.1	mg/L	<0.1	<0.1	0.00	No Limit
		EG005C: Nickel	7440-02-0		0.1	mg/L	<0.1	<0.1	0.00	No Limit
		EG005C: Zinc	7440-66-6		0.1	mg/L	84.7	83.1	1.87	0% - 20%
<b>EG005W: Water Leachable Metals by ICPAES (QC Lot: 165041)</b>										
EM1512339-016	SP1_1 DI leachate	EG005W: Cadmium	7440-43-9		0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG005W: Arsenic	7440-38-2		0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG005W: Chromium	7440-47-3		0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG005W: Copper	7440-50-8		0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG005W: Lead	7439-92-1		0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG005W: Nickel	7440-02-0		0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG005W: Zinc	7440-66-6		0.01	mg/L	1.54	1.54	0.00	0% - 20%
		EG005W: Cadmium	7440-43-9		0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG005W: Arsenic	7440-38-2		0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG005W: Chromium	7440-47-3		0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG005W: Copper	7440-50-8		0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG005W: Lead	7439-92-1		0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG005W: Nickel	7440-02-0		0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG005W: Zinc	7440-66-6		0.01	mg/L	0.43	0.43	0.00	0% - 20%
<b>EG035C: Leachable Mercury by FIIMS (QC Lot: 165094)</b>										
EM1512339-001	SP1_1 TCLP leachate	EG035C: Mercury	7439-97-6		0.0001	mg/L	<0.0010	<0.0010	0.00	No Limit
EM1512339-010	SP3_4 TCLP leachate	EG035C: Mercury	7439-97-6		0.0001	mg/L	<0.0010	<0.0010	0.00	No Limit



Page : 6 of 11  
 Work Order : EMI512339  
 Client : PITT & SHERRY  
 Project : Chu99



Sub-Matrix: WATER

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	
<b>EG035W: Water Leachable Mercury by FIMS (QC Lot: 165095)</b>									
EMI512339-016	SP1_1 DI leachate	EG035W: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EMI512339-026	SP4_1 DI leachate	EG035W: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit





**Method Blank (MB) and Laboratory Control Spike (LCS) Report**

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: SOL

Compound	CAS Number	LOR	Unit	Method Blank (MB) Report		Laboratory Control Spike (LCS) Report			
				Result	Spike Concentration	LCS	Recovery (%)	Low	High
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 162395)</b>									
EP066: Total Polychlorinated biphenyls	---	0.1	mg/kg	<0.1	1 mg/kg	114	55	135	
<b>EP075(SIM): Polynuclear Aromatic Hydrocarbons (QCLot: 162393)</b>									
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	3 mg/kg	105	68	114	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	3 mg/kg	95.7	61	125	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	3 mg/kg	110	68	116	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	3 mg/kg	95.9	62	116	
EP075(SIM): Benzofluoranthene	50-32-8	0.5	mg/kg	<0.5	3 mg/kg	88.6	64	114	
EP075(SIM): Benzofluoranthene	---	0.5	mg/kg	<0.5	3 mg/kg	94.8	64	114	
<b>EP075(SIM): Benzofluoranthene</b>									
EP075(SIM): Benzofluoranthene	191-24-2	0.5	mg/kg	<0.5	3 mg/kg	62.3	59	117	
EP075(SIM): Benzofluoranthene	207-08-9	0.5	mg/kg	<0.5	3 mg/kg	97.2	67	115	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	3 mg/kg	110	63	119	
EP075(SIM): Dibenzo(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	3 mg/kg	66.5	62	114	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	3 mg/kg	114	67	115	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	3 mg/kg	112	62	120	
EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	3 mg/kg	67.1	62	116	
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	3 mg/kg	113	65	119	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	3 mg/kg	107	69	113	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	3 mg/kg	116	66	116	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 162317)</b>									
EP080: C6 - C9 Fraction	---	10	mg/kg	<10	36 mg/kg	90.8	66	130	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 162394)</b>									
EP071: C10 - C14 Fraction	---	50	mg/kg	<50	658 mg/kg	103	65	131	
EP071: C15 - C36 Fraction (sum)	---	50	mg/kg	<50	---	---	---	---	
EP071: C15 - C28 Fraction	---	100	mg/kg	<100	3160 mg/kg	102	70	126	
EP071: C29 - C36 Fraction	---	100	mg/kg	<100	1448 mg/kg	98.7	70	122	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 162317)</b>									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	45 mg/kg	87.8	64	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 162394)</b>									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	1051 mg/kg	103	68	130	
EP071: >C10 - C40 Fraction (sum)	---	50	mg/kg	<50	---	---	---	---	
EP071: >C16 - C34 Fraction	---	100	mg/kg	<100	4124 mg/kg	101	72	116	
EP071: >C34 - C40 Fraction	---	100	mg/kg	<100	181 mg/kg	51.4	38	132	
<b>EP080: BTEXN (QCLot: 162317)</b>									





Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Spike Concentration	Laboratory Control Spike (LCS) Report		
						Spike Recovery (%)	LCS	Low
<b>Method: BTEXN (QCLot: 162317) - continued</b>								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	2 mg/kg	88.8	74	124
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2 mg/kg	80.6	72	124
EP080: meta- & para-Xylene		0.5	mg/kg	<0.5	4 mg/kg	82.9	72	132
EP080: Naphthalene	91-20-3	1	mg/kg	<1	0.5 mg/kg	83.4	66	132
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2 mg/kg	85.4	76	130
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	2 mg/kg	87.7	75	129

Sub-Matrix: WATER

: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Spike Concentration	Laboratory Control Spike (LCS) Report		
						Spike Recovery (%)	LCS	Low
<b>EG005C: Leachable Metals by ICPAES (QCLot: 165042)</b>								
EG005C: Arsenic	7440-38-2	0.1	mg/L	<0.1	1 mg/L	106	89	121
EG005C: Cadmium	7440-43-9	0.05	mg/L	<0.05	1 mg/L	102	90	116
EG005C: Chromium	7440-47-3	0.1	mg/L	<0.1	1 mg/L	97.8	89	115
EG005C: Copper	7440-50-8	0.1	mg/L	<0.1	1 mg/L	106	89	119
EG005C: Lead	7439-92-1	0.1	mg/L	<0.1	1 mg/L	101	89	117
EG005C: Nickel	7440-02-0	0.1	mg/L	<0.1	1 mg/L	99.3	90	112
EG005C: Zinc	7440-66-6	0.1	mg/L	<0.1	1 mg/L	102	87	121
<b>EG005W: Water Leachable Metals by ICPAES (QCLot: 165041)</b>								
EG005W: Arsenic	7440-38-2	0.01	mg/L	<0.01	1 mg/L	108	86	120
EG005W: Cadmium	7440-43-9	0.005	mg/L	<0.005	1 mg/L	106	86	116
EG005W: Chromium	7440-47-3	0.01	mg/L	<0.01	1 mg/L	101	83	117
EG005W: Copper	7440-50-8	0.01	mg/L	<0.01	1 mg/L	104	85	117
EG005W: Lead	7439-92-1	0.01	mg/L	<0.01	1 mg/L	106	83	121
EG005W: Nickel	7440-02-0	0.01	mg/L	<0.01	1 mg/L	102	87	115
EG005W: Zinc	7440-66-6	0.01	mg/L	<0.01	1 mg/L	106	81	127
<b>EG035C: Leachable Mercury by FIMS (QCLot: 165094)</b>								
EG035C: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	105	84	116
<b>EG035W: Water Leachable Mercury by FIMS (QCLot: 165095)</b>								
EG035W: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	106	80	122
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 165044)</b>								
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	78.7	46	120
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	97.5	40	124
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	81.1	53	127
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	65.6	52	136
EP075(SIM): Benzofluoranthene	50-32-8	0.5	µg/L	<0.5	5 µg/L	81.0	55	133
EP075(SIM): Benzofluoranthene		1	µg/L	<1.0	5 µg/L	76.7	48	142





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report		Laboratory Control Spike (LCS) Report			
				Result	Spike Concentration	Spike Recovery (%)	LCS	Low	High
<b>EP075(SIM)/B: Polynuclear Aromatic Hydrocarbons (QCLot: 165044) - continued</b>									
EP075(SIM): Benzo(g,h)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	81.5	52	142	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	84.9	54	134	
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	63.6	54	132	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	81.3	52	142	
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	64.0	56	130	
EP075(SIM): Indeno(1,2,3-cd)pyrene	86-73-7	1	µg/L	<1.0	5 µg/L	70.6	47	125	
EP075(SIM): Naphthalene	193-39-5	1	µg/L	<1.0	5 µg/L	81.6	49	143	
EP075(SIM): Phenanthrene	91-20-3	1	µg/L	<1.0	5 µg/L	78.7	39	115	
EP075(SIM): Pyrene	85-01-8	1	µg/L	<1.0	5 µg/L	82.4	55	125	
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	64.0	56	132	
<b>EP075(SIM)/B: Polynuclear Aromatic Hydrocarbons (QCLot: 165045)</b>									
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	87.3	46	120	
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	89.8	40	124	
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	93.6	53	127	
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	98.7	52	136	
EP075(SIM): Benz(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	97.8	55	133	
EP075(SIM): Benzo(b+h)fluoranthene		1	µg/L	<1.0	5 µg/L	95.4	48	142	
EP075(SIM): Benzo(g,h)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	103	52	142	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	99.6	54	134	
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	90.9	54	132	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	102	52	142	
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	98.6	56	130	
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	90.2	47	125	
EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	102	49	143	
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	84.2	39	115	
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	94.9	55	125	
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	95.5	56	132	

### Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report		
				Spike Concentration	SpikeRecovery(%) MS	Recovery Limits (%) Low High
EM1512339-004	SP2_1 TCLP leachate	EP066: Total Polychlorinated biphenyls	---	1 mg/kg	80.5	44 144





Sub-Matrix: SOIL

Laboratory sample ID	Client sample ID	Compound	Matrix Spike (MS) Report				
			Spike Concentration	MS	Recovery Limits (%)	Low	High
<b>EP075(SIM): Polynuclear Aromatic Hydrocarbons (QCLot: 162393)</b>							
EM1512339-003	SP1_3 TCLP leachate	EP075(SIM): Acenaphthene	83-32-9	3 mg/kg	103	67	117
		EP075(SIM): Pyrene	129-00-0	3 mg/kg	98.1	52	148
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 162317)</b>							
EM1512339-002	SP1_2 TCLP leachate	EP080: C6 - C9 Fraction	-----	28 mg/kg	68.6	42	131
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 162394)</b>							
EM1512339-002	SP1_2 TCLP leachate	EP071: C10 - C14 Fraction	-----	658 mg/kg	89.4	53	123
		EP071: C15 - C28 Fraction	-----	3160 mg/kg	86.7	70	124
		EP071: C29 - C36 Fraction	-----	1448 mg/kg	91.3	64	118
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 162317)</b>							
EM1512339-002	SP1_2 TCLP leachate	EP080: C6 - C10 Fraction	C6_C10	33 mg/kg	60.8	39	129
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 162394)</b>							
EM1512339-002	SP1_2 TCLP leachate	EP071: >C10 - C16 Fraction	>C10_C16	1051 mg/kg	94.8	65	123
		EP071: >C16 - C34 Fraction	-----	4124 mg/kg	86.3	67	121
		EP071: >C34 - C40 Fraction	-----	161 mg/kg	# Not Determined	44	126
<b>EP080: BTEXN (QCLot: 162317)</b>							
EM1512339-002	SP1_2 TCLP leachate	EP080: Benzene	71-43-2	2 mg/kg	101	50	136
		EP080: Toluene	108-88-3	2 mg/kg	109	56	139
Sub-Matrix: WATER							
<b>EG005C: Leachable Metals by ICPAES (QCLot: 165042)</b>							
EM1512339-002	SP1_2 TCLP leachate	: Compound					
		EG005C: Arsenic	7440-38-2	1 mg/L	108	88	124
		EG005C: Cadmium	7440-43-9	1 mg/L	101	89	115
		EG005C: Chromium	7440-47-3	1 mg/L	97.2	89	115
		EG005C: Copper	7440-50-8	1 mg/L	104	91	121
		EG005C: Lead	7439-92-1	1 mg/L	99.3	86	118
		EG005C: Nickel	7440-02-0	1 mg/L	100	88	116
		EG005C: Zinc	7440-66-6	1 mg/L	# Not Determined	85	123
<b>EG005W: Water Leachable Metals by ICPAES (QCLot: 165041)</b>							
EM1512339-017	SP1_2 DI leachate	: Compound					
		EG005W: Arsenic	7440-38-2	1 mg/L	101	83	121
		EG005W: Cadmium	7440-43-9	1 mg/L	99.2	93	113
		EG005W: Chromium	7440-47-3	1 mg/L	99.9	87	117
		EG005W: Copper	7440-50-8	1 mg/L	97.8	84	120
		EG005W: Lead	7439-92-1	1 mg/L	99.3	87	115



Page : 11 of 11  
 Work Order : EM1512339  
 Client : PITT & SHERRY  
 Project : Chung



Sub-Matrix: WATER

Laboratory sample ID	Client sample ID	Compound	CAS Number	Matrix Spike (MS) Report			
				Spike Concentration	Spike/Recovery(%) MS	Recovery Limits (%) Low High	
<b>EG005W: Water Leachable Metals by ICPAES (QCLot: 165041) - continued</b>							
EM1512339-017	SP1_2 DI leachate	EG005W: Nickel	7440-02-0	1 mg/L	96.4	87	115
		EG005W: Zinc	7440-66-6	1 mg/L	# Not Determined	90	112
<b>EG035C: Leachable Mercury by FIMS (QCLot: 165094)</b>							
EM1512339-002	SP1_2 TCLP leachate	EG035C: Mercury	7439-97-6	0.01 mg/L	99.2	84	118
<b>EG035W: Water Leachable Mercury by FIMS (QCLot: 165095)</b>							
EM1512339-017	SP1_2 DI leachate	EG035W: Mercury	7439-97-6	0.01 mg/L	108	78	120





# Environmental

## QA/QC Compliance Assessment for DQO Reporting

Work Order : EM1512339

Page : 1 of 9

Client : PITT & SHERRY  
 Contact : MR DOUGLAS TANGNEY  
 Project : Chugg  
 Site :  
 Sampler : DOUGLAS TANGNEY  
 Order number : LNL3586

Laboratory : Environmental Division Melbourne  
 Telephone : +61-3-8549 9630  
 Date Samples Received : 22-Jul-2015  
 Issue Date : 28-Jul-2015  
 No. of samples received : 29  
 No. of samples analysed : 29

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

1-228

### Summary of Outliers

#### Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- NO Method Blank value outliers occur.
- NO Duplicate outliers occur.
- NO Laboratory Control outliers occur.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, NO surrogate recovery outliers occur.

#### Outliers : Analysis Holding Time Compliance

- NO Analysis Holding Time Outliers exist.

#### Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.





**Outliers : Quality Control Samples**  
 Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: SOIL

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
<b>Matrix Spike (MS) Recoveries</b>							
	EM1512339--002	SP1_2 TCLP leachate	>C34 - C40 Fraction	----	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.

Matrix: WATER

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
<b>Matrix Spike (MS) Recoveries</b>							
EG005C: Leachable Metals by ICPAES	EM1512339--002	SP1_2 TCLP leachate	Zinc	7440-66-6	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EG005W: Water Leachable Metals by ICPAES	EM1512339--017	SP1_2 DI leachate	Zinc	7440-66-6	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.

**Outliers : Frequency of Quality Control Samples**

Matrix: WATER

Quality Control Sample Type	Method	QC	Count		Rate (%)		Quality Control Specification
			Regular	Actual	Expected	Actual	
Laboratory Duplicates (DUP)	PAH/Phenols (GC/MS - SIM)	0	15	0.00	10.00	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
Matrix Spikes (MS)	PAH/Phenols (GC/MS - SIM)	0	15	0.00	5.00	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	

**Analysis Holding Time Compliance**

VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method	Container / Client Sample ID(s)	Sample Date	Extraction / Preparation		Analysis	
			Date extracted	Due for extraction	Date analysed	Due for analysis



Page : 3 of 9  
 Work Order : EM1512339  
 Client : PITT & SHERRY  
 Project : Chu99



Matrix: SOIL

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EA055: Moisture Content</b>							
SP1_1 - TCLP leachate,	21-Jul-2015						✓
SP1_3 - TCLP leachate,							
SP2_2 - TCLP leachate,							
SP3_1 - TCLP leachate,							
SP3_3 - TCLP leachate,							
SP4_1 - TCLP leachate,							
SP4_3 - TCLP leachate,							
Dup01							
<b>EP066: Polychlorinated Biphenyls (PCB)</b>							
SP1_1 - TCLP leachate,	21-Jul-2015			✓	24-Jul-2015		✓
SP1_3 - TCLP leachate,							
SP2_2 - TCLP leachate,							
SP3_1 - TCLP leachate,							
SP3_3 - TCLP leachate,							
SP4_1 - TCLP leachate,							
SP4_3 - TCLP leachate,							
Dup01							
<b>EP080/071: Total Petroleum Hydrocarbons</b>							
SP1_1 - TCLP leachate,	21-Jul-2015			✓	24-Jul-2015		✓
SP1_3 - TCLP leachate,							
SP2_2 - TCLP leachate,							
SP3_1 - TCLP leachate,							
SP3_3 - TCLP leachate,							
SP4_1 - TCLP leachate,							
SP4_3 - TCLP leachate,							
Dup01							
<b>EP079(SIM)B: Polynuclear Aromatic Hydrocarbons</b>							
SP1_1 - TCLP leachate,	21-Jul-2015			✓	24-Jul-2015		✓
SP1_3 - TCLP leachate,							
SP2_2 - TCLP leachate,							
SP3_1 - TCLP leachate,							
SP3_3 - TCLP leachate,							
SP4_1 - TCLP leachate,							
SP4_3 - TCLP leachate,							
Dup01							





Matrix: SOIL

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP080/071 - Total Petroleum Hydrocarbons</b>							
SP1_1 - TCLP leachate, SP1_3 - TCLP leachate, SP2_2 - TCLP leachate, SP3_1 - TCLP leachate, SP3_3 - TCLP leachate, SP4_1 - TCLP leachate, SP4_3 - TCLP leachate, Dup01	21-Jul-2015	23-Jul-2015		✓	24-Jul-2015		✓

Matrix: WATER

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EG005C- Leachable Metals by ICPAES</b>							
SP1_1 - TCLP leachate, SP1_3 - TCLP leachate, SP2_2 - TCLP leachate, SP3_1 - TCLP leachate, SP3_3 - TCLP leachate, SP4_1 - TCLP leachate, SP4_3 - TCLP leachate, Dup01	24-Jul-2015	27-Jul-2015		✓	27-Jul-2015		✓

EG005W- Water Leachable Metals by ICPAES

SP1_1 - DI leachate, SP1_3 - DI leachate, SP2_2 - DI leachate, SP3_1 - DI leachate, SP3_3 - DI leachate, SP4_1 - DI leachate, SP4_3 - DI leachate,	24-Jul-2015	27-Jul-2015		✓	27-Jul-2015		✓
--	-------------	-------------	--	---	-------------	--	---

EG035C- Leachable Mercury by FIMS

SP1_1 - TCLP leachate, SP1_3 - TCLP leachate, SP2_2 - TCLP leachate, SP3_1 - TCLP leachate, SP3_3 - TCLP leachate, SP4_1 - TCLP leachate, SP4_3 - TCLP leachate, Dup01	24-Jul-2015	.....			27-Jul-2015		✓
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Page : 5 of 9  
 Work Order : EM1512339  
 Client : PITT & SHERRY  
 Project : Chugq



Matrix: WATER

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method	Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EG035W: Water Leachable Mercury by FIMS</b>								
SP1_1 - DI leachate,		24-Jul-2015	----			27-Jul-2015		✓
SP1_3 - DI leachate,								
SP2_2 - DI leachate,								
SP3_1 - DI leachate,								
SP3_3 - DI leachate,								
SP4_1 - DI leachate,								
SP4_3 - DI leachate,								
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
SP1_1 - TCLP leachate,		24-Jul-2015	27-Jul-2015		✓	28-Jul-2015		✓
SP1_3 - TCLP leachate,								
SP2_2 - TCLP leachate,								
SP3_1 - TCLP leachate,								
SP3_3 - TCLP leachate,								
SP4_1 - TCLP leachate,								
SP4_3 - TCLP leachate,								
Dup01,								
SP1_2 - DI leachate,								
SP2_1 - DI leachate,								
SP2_3 - DI leachate,								
SP3_2 - DI leachate,								
SP3_4 - DI leachate,								
SP4_2 - DI leachate,								
SP4_4 - DI leachate,								





## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: SOIL

Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	QC	Count		Actual	Rate (%)		Evaluation	Quality Control Specification
			Regular	Reular		Expected	Actual		
<b>Laboratory Duplicates (DUP)</b>									
Moisture Content	EA055-103	2	20	15	10.00	10.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
PAH/Phenols (SIM)	EP075(SIM)	2	15	15	13.33	10.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
Polychlorinated Biphenyls (PCB)	EP066	2	15	15	13.33	10.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
TRH - Semivolatile Fraction	EP071	2	16	16	12.50	10.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
TRH Volatiles/BTEX	EP080	2	15	15	13.33	10.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
<b>Laboratory Control Samples (LCS)</b>									
PAH/Phenols (SIM)	EP075(SIM)	1	15	15	6.67	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
Polychlorinated Biphenyls (PCB)	EP066	1	15	15	6.67	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
TRH - Semivolatile Fraction	EP071	1	16	16	6.25	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
TRH Volatiles/BTEX	EP080	1	15	15	6.67	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
<b>Method Blanks (MB)</b>									
PAH/Phenols (SIM)	EP075(SIM)	1	15	15	6.67	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
Polychlorinated Biphenyls (PCB)	EP066	1	15	15	6.67	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
TRH - Semivolatile Fraction	EP071	1	16	16	6.25	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
TRH Volatiles/BTEX	EP080	1	15	15	6.67	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
<b>Matrix Spikes (MS)</b>									
PAH/Phenols (SIM)	EP075(SIM)	1	15	15	6.67	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
Polychlorinated Biphenyls (PCB)	EP066	1	15	15	6.67	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
TRH - Semivolatile Fraction	EP071	1	16	16	6.25	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
TRH Volatiles/BTEX	EP080	1	15	15	6.67	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
<b>Matrix: WATER</b>									
Evaluation: * = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.									
<b>Quality Control Sample Type</b>									
<b>Analytical Methods</b>									
<b>Laboratory Duplicates (DUP)</b>									
Leachable Mercury by FIMS	EG035C	2	15	15	13.33	10.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
Leachable Metals by ICPAES	EG005C	2	16	16	12.50	10.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	15	15	0.00	10.00	✗	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
Water Leachable Mercury by FIMS	EG035W	2	14	14	14.29	10.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
Water Leachable Metals by ICPAES	EG005W	2	14	14	14.29	10.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
<b>Laboratory Control Samples (LCS)</b>									
Leachable Mercury by FIMS	EG035C	1	15	15	6.67	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
Leachable Metals by ICPAES	EG005C	1	16	16	6.25	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	15	15	6.67	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
Water Leachable Mercury by FIMS	EG035W	1	14	14	7.14	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
Water Leachable Metals by ICPAES	EG005W	1	14	14	7.14	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	



Page : 7 of 9  
 Work Order : EM1512339  
 Client : PITT & SHERRY  
 Project : Chungg



Matrix: WATER

Quality Control Sample Type

Analytical Methods

Method

QC

Count

Regular

Actual

Expected

Rate (%)

Evaluation

Quality Control Specification

Method Blanks (MB)

Leachable Mercury by FIMS

EG035C

1

15

6.67

5.00

✓

NEPM 2013 Schedule B(3) and ALS QCSS3 requirement

Leachable Mercury by FIMS

EG005C

1

16

6.25

5.00

✓

NEPM 2013 Schedule B(3) and ALS QCSS3 requirement

PAH/Phenols (GC/MS - SIM)

EP075(SIM)

0

0.00

5.00

✗

NEPM 2013 Schedule B(3) and ALS QCSS3 requirement

Water Leachable Mercury by FIMS

EG035W

1

14

7.14

5.00

✓

NEPM 2013 Schedule B(3) and ALS QCSS3 requirement

Water Leachable Mercury by FIMS

EG005W

1

14

7.14

5.00

✓

NEPM 2013 Schedule B(3) and ALS QCSS3 requirement

Evaluation: ✗ = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.





## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055-103	SOIL	In-house. A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Leachable Metals by ICPAES	EG005C	SOIL	In house: referenced to APHA 3120: USEPA SW 846 - 6010: The ICPAES technique ionises leachate sample atoms emitting a characteristic spectrum. This spectrum is then compared against matrix matched standards for quantification. This method is compliant with NEPM (2013) Schedule B(3)
Water Leachable Metals by ICPAES	EG005W	SOIL	In house: Referenced to APHA 3120: USEPA SW 846 - 6010. The ICPAES technique ionises leachate sample atoms emitting a characteristic spectrum. This spectrum is then compared against matrix matched standards for quantification. This method is compliant with NEPM (2013) Schedule B(3)
Leachable Mercury by FIMS	EG035C	SOIL	In house: referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the TCLP solution. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Water Leachable Mercury by FIMS	EG035W	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the TCLP solution. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504)
TRH - Semivolatile Fraction	EP071	SOIL	(USEPA SW 846 - 8015A) Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40.
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	SOIL	USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
TRH Volatiles/BTEX	EP080	SOIL	(USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve.
<b>Preparation Methods</b>			
TCLP for Non & Semivolatile Analytes	EN33a	SOIL	In house QWL-EN/33 referenced to USEPA SW846-1311: The TCLP procedure is designed to determine the mobility of both organic and inorganic analytes present in wastes. The standard TCLP leach is for non-volatile and Semivolatile test parameters.
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.



Page : 9 of 9  
Work Order : EM1512339  
Client : PITT & SHERRY  
Project : Chu99



Preparation Methods	Method	Matrix	Method Descriptions
Tumbler Extraction of Solids	ORG17	SOIL	In-house, Mechanical agitation (tumbler), 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

1-236



COL received by JOT, 21/11/05

CHAIN OF CUSTODY		DATE RECEIVED BY:		DATE RECEIVED BY:		DATE RECEIVED BY:	
ORDER NUMBER: LNL388 CONTACT PH: 0438 710 693 ORDER NUMBER: LNL388 CONTACT PH: 0438 710 693		DATE RECEIVED BY: [Signature] DATE: 21/11/05		DATE RECEIVED BY: [Signature] DATE: 21/11/05		DATE RECEIVED BY: [Signature] DATE: 21/11/05	
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (codes below)	TOTAL CONTAINERS	ASLP PAH / 6m	Additional Information
1	SP1-1	21/11/05 1030	S	N1	2	✓	
2	SP1-2	1035			✓	✓	
3	SP1-3	1040			✓	✓	
4	SP2-1	1045			✓	✓	
5	SP2-2	1050			✓	✓	
6	SP2-3	1055			✓	✓	
7	SP3-1	1100			✓	✓	
8	SP3-2	1105			✓	✓	
9	SP3-3	1110			✓	✓	
10	SP3-4	1115			✓	✓	
11	SP4-1	1120			✓	✓	
12	SP4-2	1125			✓	✓	

Environmental Division  
 Melbourne  
 Work Order Reference  
 EM1512339

Telephone : +61-3-8549 9600





**CHAIN OF CUSTODY**

ALS Laboratory  
Please tick ->

UNITED AESTETIc Road Poola SA 5005  
Phone 0800 080 080  
ADDRESS: 1000 E. Adelaide Road, Adelaide SA 5000  
POSTAL: 2222 E. Marryatville Rd, Adelaide SA 5000  
DISPOSITOR: 40 Cambridge Drive, Camberley VIC 3168  
Phone 741 1388 or 1800 000 000

DUNEDIN 721 Highbury Road, Dunedin 9010  
Phone 0800 401 177  
DUNEDIN 214 Waihai Road, Dunedin 9010  
Phone 0800 401 177  
DUNEDIN 272 Albany Road, Dunedin 9010  
Phone 0800 401 177

CHRISTCHURCH 15 Ross Drive, Christchurch 8001  
Phone 0800 401 177  
CHRISTCHURCH 413 Camp Place, Christchurch 8001  
Phone 0800 401 177  
CHRISTCHURCH 1000 Waimata Road, Christchurch 8001  
Phone 0800 401 177

WELLINGTON 277 28th Woodhead Road, Woodhead 5114  
Phone 0800 401 177  
WELLINGTON 14-15 Sturges Court, Lower Hutt 5010  
Phone 0800 401 177  
WELLINGTON 1000 Waimata Road, Wellington 6000  
Phone 0800 401 177

CLIENT: phiteberry TURNAROUND REQUIREMENTS:  Standard (XAT last day deliv)  Non Standard or urgent (XAT last day deliv)  
(Standard XAT may be longer for some tests e.g. Ultra Trace Organics)

OFFICE: Linneston PROJECT: TRT-Whaiwhai Chug Chug ALSO QUOTE NO.: ME-36415

ORDER NUMBER: LML3536 PROJECT MANAGER: D Tangney CONTACT PH: 0488 710 038 SAMPLE MOBILE:  RELINQUISHED BY:  DATE/TIME:

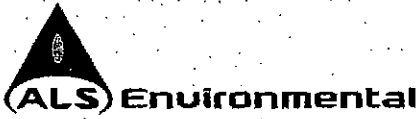
SAMPLER: D Tangney EDD FORMAT (for default): default DATE/TIME:  RECEIVED BY:  DATE/TIME:

COC emailed to ALS? (YES)  Email Reports to (will default to PM if no other addresses are listed): claughey@phite.com.au DATE/TIME:  RECEIVED BY:  DATE/TIME:

COMMENT/SPECIAL HANDLING/STORAGE OR DISPOSAL: Handle with care

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE <small>(in codes below)</small>	TOTAL CONTAINERS	ANALYSIS REQUIRED (including SUITES/MS, State Codes must be listed to allow auto price) <small>When Metals are required, specify Total (unless other specified) or Dispersed (lead stored bottle required).</small>	Additional Information
13	SP4-3	21/11/15 1130	S	N1	2	✓	
14	SP4-4	1135	S		2	✓	Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
15	Dup01	AM	S		1	✓	example: likely to be contaminated with hydrocarbons - very odorous
TOTAL					5		





**Tailored Analytical Services & Charges – Soils**

MATRIX	TEST PARAMETER	ALS Code	TECHNIQUE / METHOD REFERENCE	LIMIT OF REPORTING	NUMBER OF SAMPLES	PRICE PER SAMPLE (\$) Ex. GST	TOTAL COST (\$) Ex. GST
LEACH	TCLP (non-volatile)	EN33	USEPA 1311	N/A	26		
LEACH	PAH - Standard level (16 analytes)	EP075B (SIM)	USEPA 3510/8270, GC/MS	0.5-1 µg/L	26		
LEACH	8 Metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Hg)	EG005C / EG035C	USEPA 6010 ICP/AES / APHA 3112 Hg-B CV/FIMS	0.05-0.1 Hg: 0.0001	26		
LEACH	<b>TOTAL PROJECT COST FOR LEACH SAMPLES – STD TAT (EX GST):</b>						
	TRH(C6-C40)/BTEXN /PAH	S-7	Various	Various	26		
	PCB - Standard level	EP066	USEPA 3510/8270	0.1 mg/kg	26		
	<b>TOTAL PROJECT COST FOR SOIL SAMPLES – STD TAT (EX GST):</b>						
	<b>TOTAL PROJECT COST FOR ALL SAMPLES (EX GST)</b>						



## Appendix C LMRS Revegetation Plan



**TYRE RECYCLE TASMANIA**

**Soil Remediation at Woolmers Lane, Longford**

*Revegetation Plan*

**February 2016**





## 1.0 Introduction

LMRS Pty Ltd has been requested to provide technical advice regarding pasture establishment for a proposed contaminated soil remediation project at Woolmers Lane, Longford, Tasmania. Approximately 300 m<sup>3</sup> of soil containing various metal and hydrocarbon contaminants is to be spread on agricultural land and planted with pasture species, fertilised then slashed to encourage bio-remediation of the contaminated soil and maintain metal concentrations.

## 2.0 Project Brief

### *Scope*

*The scope of works for LMRS is:*

- *Provided a revegetation plan for the soil, appropriate to the Longford location and select a grass or tree species that is shallow rooting and proven to be effective in bioremediation of metal and hydrocarbon soils either by 'locking up' contaminants or consuming them over time*
- *The preferred species needs to be unattractive to grazing species or protected from grazing species based on your recommendations*
- *The plan is to include:*
  - *Planting guide*
  - *Maintenance requirements for growth and continued effectiveness to bioremediate the soil*
  - *Discussion of alternative species and why they are unsuitable*

## 3.0 Bio-Remediation and Proposed Treatment

The establishment of a vigorous pasture cover, well-drained aerobic soil conditions and adequate available soil nutrients can promote healthy soil conditions conducive to rapid bio-remediation.

The area selected for bioremediation is a gently sloping, free-draining site with established rough pasture. It is not currently used as part of existing cropping or farming operations and is excess to current requirements. Following contaminated soil spreading ryegrass pasture will be established for the following reasons:

- Rapid and easy to establish and provides a competitive vegetation cover with maximum weed suppression.
- Ryegrass has already been used on the Alinta Gas Pipeline (close proximity to the site) and therefore is known to be suitable for local conditions.
- Ryegrass var. Victorian is known to tolerate elevated heavy metal contamination (particularly zinc), following trials, application and observations at the Hobart zinc smelter and Rossarden tailings deposits.



- The grass treatment is readily available.
- The capacity of native tree and shrub species from the local area to cope with elevated levels of hydro-carbon and metals is unknown. Their use would constitute a risk.

#### 4.0 Contaminated Material Spreading

A total area of approximately 1.1 hectares is available for spreading of the ~300 m<sup>3</sup> of contaminated material (refer to Figure 1). The contaminated material will be spread evenly (approximately 30 mm deep) over the entire available area. No prior preparation (spraying, cultivation etc.) of the existing pasture (refer to Plate 1) is required.



**Plate 1.** Existing pasture at the proposed soil remediation site on Woolmers Lane, Longford







**Figure 1.** Location of 1.1 ha area for proposed soil remediation treatment.

### 5.0 Cultivation

Following spreading, cultivate the entire area to a minimum depth of 150 mm to combine contaminated and non-contaminated soils and prepare a seed bed. Standard agricultural equipment such as discs or cultivators should be used.



## 6.0 Seed application

Pasture varieties and application rates that provide a balance between organic material productivity, longevity and disease resistance have been selected based on previous experience and discussions with Roberts Ltd agronomist Brendan Green.

Immediately following cultivation apply the following mix of grass seed, inoculated clover and cereal ryecorn seed at the listed rates:-

Barberia Ryegrass	5 kg/ha
Victorian Ryegrass	5 kg/ha
Tama Ryegrass	5 kg/ha
Howlong Cocksfoot	4 kg/ha
Subclover Bindoon	2 kg/ha
Subclover Rosenbrook	2 kg/ha
Cereal Ryecorn	15 kg/ha

## 7.0 Fertiliser

Nitrogen and phosphorus are required for healthy pasture establishment. Their addition is known to encourage bioremediation by soil microbes to remediate organic and inorganic contaminants. A high nitrogen and phosphorus fertiliser will be applied to the entire area, e.g. NPK 14:16:11 at 300 kg/ha or equivalent during or immediately after seed application.

## 8.0 Timing

In the absence of irrigation, cultivation and seeding should be conducted during autumn of any one year following the first good autumn rainfalls, when soil moisture levels are suitable for both cultivation and germination, after the cessation of lengthy hot sunny summer days. Exact timing will vary depending on the season but is likely to be April/May.

## 9.0 Stock Exclusion (Fencing)

Construct a stock-proof fence around the entire area with a gate/access point. No stock will be allowed to access or graze within the fenced area.

## 10.0 Ongoing Maintenance and Monitoring

### 10.1 Annual slashing

Annual slashing will be required in summer for both pasture health and fire hazard reduction purposes. Slashing should be conducted with a mulching slasher rather than a





hay mower to expedite decomposition of the slash. The slash should be left in situ to encourage bioremediation as they decompose. (Organic matter accumulation is known to contribute to bio-remediation.)

### 10.2 Contaminant, Nutrient and pH Testing

Annual soil testing to determine the levels of nutrients and pH should be conducted. Soil testing should be conducted in November of any one year following annual periods of growth but prior annual slashing. The first soil testing should not be conducted within 12 months of sowing (i.e. the second November following initial sowing). The key macronutrients (nitrogen and phosphorus) and pH should be maintained within the ranges identified in Table 1.

**Table 1.** Key nutrient and pH ranges.

<i>Nutrient/Factor</i>	<i>Concentration Range (total) ppm</i>	<i>Concentration Range (available) ppm</i>
Nitrogen	500-3000	500-1800
Phosphorus	200-1500	4-20
pH	6.0-7.0	

*Source: Charmen and Murphy (Eds) 1991*

Annual nutrient and/or lime addition may be required to maintain soil nutrient and pH conditions within the ranges listed in Table 1. Fertiliser and lime types and application rates will be tailored to any identified deficiencies.

### 11.0 Reference:

Charmen, P.E.V. & Murphy, B.W. (Editors) 1991 *Soils, Their Properties and Management. A Soil Conservation Handbook for New South Wales*. Soil Conservation Council of New South Wales. Sydney University Press



SEARCH OF TORRENS TITLE

VOLUME 105810	FOLIO 1
EDITION 6	DATE OF ISSUE 21-Aug-2015

SEARCH DATE : 12-May-2016

SEARCH TIME : 01.20 PM

DESCRIPTION OF LAND

Parish of CHICHESTER, Land District of SOMERSET  
 Lot 1 on Diagram 105810  
 Being the land described in Conveyance No. 68/4093  
 Derivation : Part of 1 410-0-0 and 67-0-0, and Whole of  
 544-0-0 and 724-0-0 Granted to T. Walker, and Whole of 329-0-0  
 Granted to J. B. Toosey and Others  
 Derived from Y16101

SCHEDULE 1

C600919 KEITH GUY GATENBY Registered 21-Nov-2005 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any  
 C441152 SUBJECT to the Gas Pipeline right set forth in  
 Memorandum of Provisions No. M260 acquired by the  
 Crown in accordance with the Land Acquisition Act  
 1993 freed and discharged from all estates, statutory  
 reservations and dedications in so far as they affect  
 the said Gas Pipeline right over the land marked "Gas  
 Supply Easement" shown on Plan No. P137105 as passing  
 through the said land within described. Registered  
 27-Aug-2004 at noon  
 D4401 Transfer of the "Gas Pipeline Right" created by  
 Instrument C441152 in favour of Tasmanian Gas  
 Pipeline Pty Ltd Registered 02-May-2012 at noon  
 C299550 NOTICE of Notified Corridor under Section 15 of the  
 Major Infrastructure Development Approvals Act 1999  
 affecting the land therein described Registered  
 23-May-2001 at noon  
 C601766 Notice of Permit Corridor under S15 of the Major  
 Infrastructure Development Act 1999 affecting the  
 said land within described. Registered 12-Nov-2004  
 at noon  
 D50574 LEASE to HIRT AGRI PTY. LTD. of a leasehold estate  
 for the term of Five (5) years from 1-Apr-2011 (of  
 Lot 1 on Plan 163536) Registered 06-Jul-2012 at noon



Leasehold Title(s) issued: 163536/1, 163536/1 and  
163536/1

D138571 MORTGAGE to Commonwealth Bank of Australia  
Registered 26-Aug-2014 at 12.01 PM

UNREGISTERED DEALINGS AND NOTATIONS

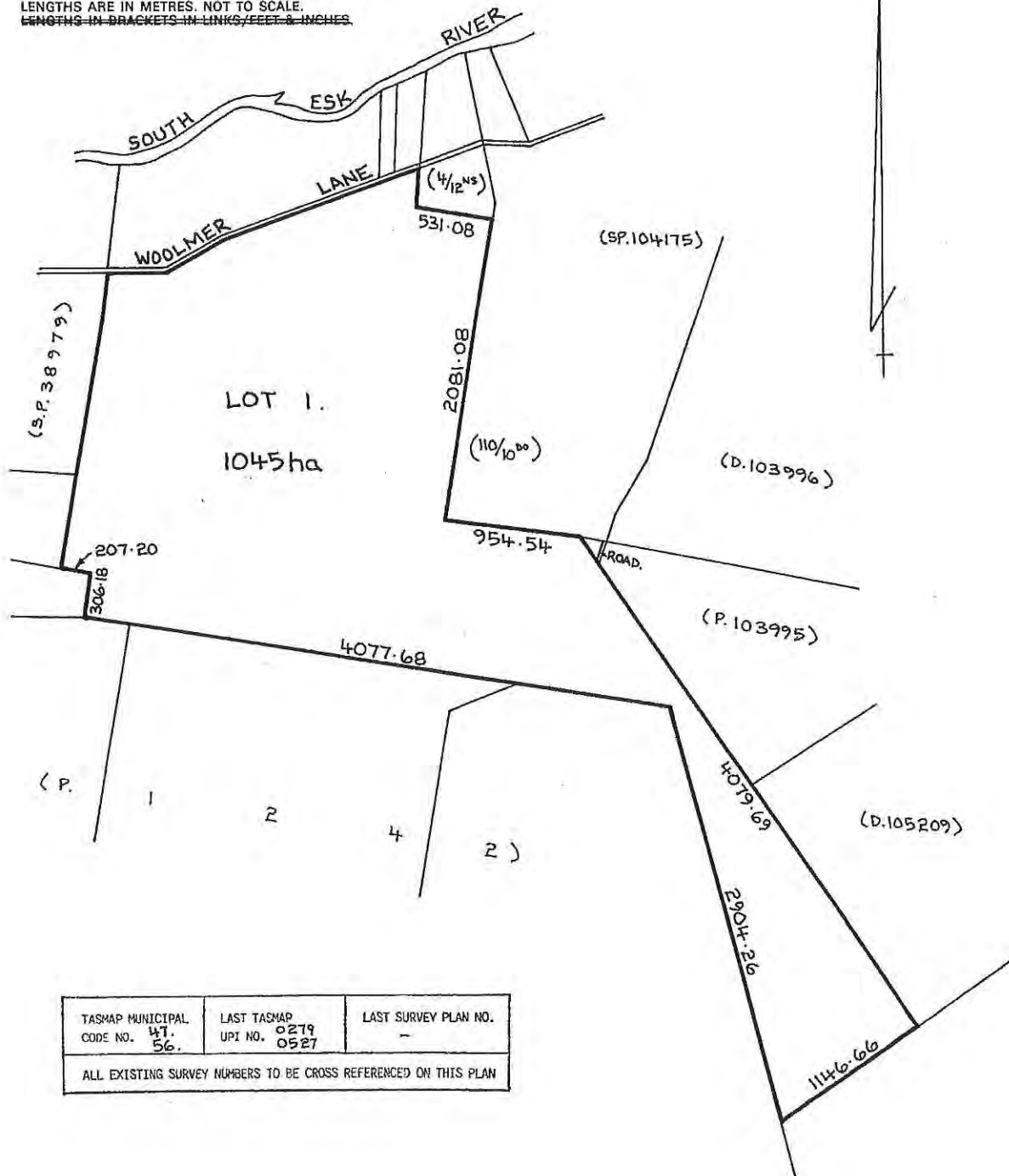
No unregistered dealings or other notations

APPROVED 25 MAY 1993 <i>Michael Dine</i> RECORDER OF TITLES	CONVERSION PLAN CONVERTED FROM 68/4093	REGISTERED NUMBER <b>D.105810</b>
FILE NUMBER Y.16101	GRANTEE: PART OF 1410-0-0 & 67-0-0 AND WHOLE OF 544-0-0 & 724-0-0 GTD TO THOMAS WALKER, WHOLE OF LOT 6. 329-0-0 GTD TO J. B. TOOSEY & ORS	DRAWN P. PAGE 24-5-93

05-K 2002

SKETCH BY WAY OF ILLUSTRATION ONLY

~~CITY/TOWN OF~~  
LAND DISTRICT OF SOMERSET  
PARISH OF CHICHESTER & ESKDALE  
LENGTHS ARE IN METRES. NOT TO SCALE.  
~~LENGTHS IN BRACKETS IN LINKS, FEET & INCHES~~



TASMAR MUNICIPAL CODE NO. 41.56.	LAST TASMAR UPI NO. 0279 0527	LAST SURVEY PLAN NO. -
ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN		



Paul Godier

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**From:** Douglas Tangney <dtangney@pittsh.com.au>  
**Sent:** Monday, 1 February 2016 8:13 AM  
**To:** Paul Godier  
**Subject:** RE: further to telephone discussion re soil remediation

Hi Paul

I think we will apply for a DA, we will seek EPA approval first.

Thank you for your help.

Regards

Doug

Douglas Tangney | Environmental Scientist BSc Hons | [pitt&sherry](#) |  
P: (03) 6323 1973 | M: 0458 710 098 | E: [dtangney@pittsh.com.au](mailto:dtangney@pittsh.com.au) | W: [www.pittsh.com.au](http://www.pittsh.com.au)

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---

**From:** Paul Godier [<mailto:paul.godier@nmc.tas.gov.au>]  
**Sent:** Friday, 15 January 2016 11:09 AM  
**To:** Douglas Tangney  
**Cc:** Duncan Payton  
**Subject:** RE: further to telephone discussion re soil remediation

Hello Doug,

I have discussed this matter with Duncan Payton.

We retain the view that the use class is Recycling and waste disposal, and requires a permit under LUPA.

If you were to provide a legal opinion that the use class is something other than Recycling and waste disposal, we would refer that opinion to council's solicitor.

If council's solicitor formed a view that agreed with the opinion you provided, we would, at officer level, accept that opinion.

Please contact me if you wish to discuss this further.

Regards,

*Paul Godier*



Senior Planner | Northern Midlands Council  
Council Office, 13 Smith Street (PO Box 156), Longford Tasmania 7301  
T: (03) 6397 7303 | F: (03) 6397 7331  
E: [paul.godier@nmc.tas.gov.au](mailto:paul.godier@nmc.tas.gov.au) | W: [www.northernmidlands.tas.gov.au](http://www.northernmidlands.tas.gov.au)

*T a s m a n i a ' s H i s t o r i c H e a r t*



**From:** Douglas Tangney [mailto:dtangney@pittsh.com.au]  
**Sent:** Wednesday, 23 December 2015 7:43 AM  
**To:** Paul Godier <paul.godier@nmc.tas.gov.au>  
**Subject:** further to telephone discussion re soil remediation

Hi Paul

Thank you for your time, as we discussed I am having a hard time understanding the need for a DA to place the soil at 437 Woolmers Lane, given soil placement and growing ryegrass does not require approval and the current storage location did not require approval. We will be seeking EPA approval (Reg 12 under the waste regulations) which will be a comprehensive assessment with conditions. We can send council the EPA submission and approval to you, but I can't really see what use or development the council will be regulating. All environmental issues will be handled under the EPA approval.

An approach may be that council can tell me what conditions they may have used and I include actions required by the conditions in our EPA submission, which will be approved by the EPA.

The level of council regulation will be the same as what is currently occurring at the existing storage site. Issues with weeds, pests or runoff will be handled under this approval.

If we have to commit to a DA:

I don't see the soil placement and remediation as 'Recycling and waste disposal' (below) as we are not going to collect, dismantle etc and the soil could not be 'refuse' because it is a growing media (if it was refuse or every farmer in the state would be taking refuse). The use and development could not be a 'waste transfer station' as this implies a continuous operation with pure waste dumped for money. Our proposal is a once off event and not done for money, but to achieve an environmental outcome. The soil cannot be deemed a waste as it can support ryegrass and other species.

	offices, and a wharf.
Recycling and waste disposal	use of land to collect, dismantle, store, dispose of, recycle or sell used or scrap material. Examples include a recycling depot, refuse disposal site, scrap yard, vehicle wrecking yard and waste transfer station.

I think a better description would be 'Resource Development' as we are growing ryegrass – that is the point of the EPA approval. We must be able to show the soil can support ryegrass in order to get EPA approval.

Resource development	use of land for propagating, cultivating or harvesting plants or for keeping and breeding of livestock or fishstock. If the land is so used, the use may include the handling, packing or storing of produce for dispatch to processors. Examples include agricultural use, aquaculture, bee keeping, controlled environment agriculture, crop production, horse stud, intensive animal husbandry, plantation forestry and turf growing.
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The existing storage location along Illawarra Road was established during the initial 24-36 hours into the response to the fire at Union St. EPA officers visited the site with Tim and approved the storage area. Due to the emergency nature of the event, there was no need for a formal approval and approval was not sought later by the EPA.

If you can respond ASAP with your thoughts on whether the activity actually needs a DA that would be great - I appreciate the time of year, but due to the sale of the property currently storing the soil, we need to act quickly and get the EPA approval by early Feb for implementation and completion by mid Feb 2016.

Hope to hear from you soon.

Regards

Doug

**Douglas Tangney** BSc (Hons)

Environmental Scientist

**pitt&sherry**

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A: Level 4, 113 Cimitiere Street, Launceston TAS 7250



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For more information regarding this service, please contact your service provider.

**From:** Gorrie, John (Environment) <John.Gorrie@environment.tas.gov.au>  
**Sent:** Friday, 5 August 2016 4:27 PM  
**To:** Paul Godier  
**Cc:** Management, Waste (Environment); Brown, Gary (Environment)  
**Subject:** Referral of Level 1 Activity - P16-105 437 Woolmers Lane, Longford  
**Attachments:** Referral of Level 1 Activity - P16-105 437 Woolmers Lane, Longford

Hello Paul,

I have reviewed the proposal and consider that based on the report, this activity can be managed to avoid environmental impact.

This material is a controlled waste, but as you know, a LUPAA permit can approve the management of controlled wastes, therefore no approval is required from the EPA. Transport of the material to Woolmers Lane does require that the transporter is approved under the *Environmental Management and Pollution (Controlled Waste Tracking) Regulations 2010*.

The following is what we use, if you wished to point this out to the proponent in correspondence.

*If controlled waste is to be moved to or off site, the transporter must be registered in accordance with the requirements of the Environmental Management and Pollution Control (Controlled Waste Tracking) Regulations 2010. To determine which transporters are suitably approved, please contact the EPA Division's Waste Transport Officer on 6165 4572.*

I have thought about potential monitoring requirements, but as regards leaching, consider that the testing conducted is very conservative, and I agree that material that would leach, probably has by now. I did not observe any impacts when I visited the site at Carrick. There is potential for the grasses to take up contaminants. The fencing would be expected to keep domestic grazing stock out of the area. It was not clear if native animals would also be excluded based on the description of the fence (wire and pole). I imagine if hydrocarbons were taken up, the animals would find them unpalatable if they were in high concentrations. I not basing this on any literature, merely that it is a consideration.

Requiring a sample of grass for analyses for zinc and TPH would address this.

If you were to request this a condition could read

A sample of grasses growing in the remediated soil must be submitted to a NATA approved laboratory for analyses for metals and total petroleum hydrocarbons (TPH), and polycyclic aromatic hydrocarbons (PAH). The results of the analyses must be provided to the GM?? NMC within 14 days of receipt of the results.

If you chose this condition, I am happy to have a look at the results. As I noted above, it probably isn't a major issue, but it would provide reassurance that the grass wasn't presenting a risk to wildlife.

I am in Melbourne all next week but will be intermittently checking emails if you have any queries.

Thanks for the opportunity to comment on this proposal.

John Gorrie PhD  
Senior Environmental Officer  
Waste Section  
EPA Division  
Department of Primary Industries, Parks, Water and Environment

---

Level 7, 134 Macquarie Street, Hobart.





DEPARTMENT of *TOURISM, ARTS,*  
and the ENVIRONMENT

ENVIRONMENT DIVISION

**INFORMATION BULLETIN No. 108**

**LANDFARMING PETROLEUM CONTAMINATED SOIL**  
**August 2006**

### **1. Introduction**

This bulletin provides information and guidance on landfarming procedures and notification obligations for waste producers and environmental consultants. The information provided here is intended to apply to a 'one-off' landfarm and not for permanent or commercial landfarms. The latter will require further management and monitoring procedures to ensure the medium- to long-term landfarming activities do not impact on the environment.

Under suitable conditions, landfarming is an effective bioremediation technology for reducing concentrations of nearly all of the constituents of petroleum products typically found at petroleum storage sites. In the hierarchy of remedial options, this Division favours appropriately managed landfarming over the option of off-site soil disposal.

Landfarming is an above ground remediation technology for petroleum contaminated soil that reduces petroleum concentrations through biodegradation. This technology usually involves spreading excavated contaminated soil in a thin layer on the ground surface and stimulating aerobic microbial activity within the soils through aeration and/or the addition of minerals, nutrients and moisture. The optimal rate of application of each of these parameters to achieve efficient biodegradation will depend on a number of factors, including but not limited to: the type of petroleum hydrocarbons to be remediated; the level of hydrocarbon contamination; the hydrocarbon-degrading bacteria present; and the soil matrix.

### **2. Environmental Consultants**

It is recommended that an environmental consultant experienced in landfarming of hydrocarbon impacted soils supervise the works described herein. Further, it is recommended that the environmental consultant undertake the following:

- all sampling; and
- all reporting including the writing and submission of the environmental approval (see Section 3) and the final disposal or re-use approval applications (see Section 5.4) to the Division after the completion of the landfarming activity.

The Environment Division's Information Bulletin No. 107 *Environmental Consultants with Experience in Contaminated Site Assessment*, contains a list of consultants that may have experience in landfarming projects.

### 3. Notification & Approvals

Notification of all landfarms must be given to both local government and the Environment Division.

Local government should also be asked for advice on whether they have any requirements for landfarm approvals.

The Environment Division issues approvals for landfarming operations under Part 4 of the *Environmental Management and Pollution Control (Waste Management) Regulations 2000* ('the Regulations'). The application for an environmental approval must be submitted to the Environment Division in the form of a Landfarm Environmental Management Plan. The information that must be included in the EMP to achieve approval to conduct the landfarming operation is detailed in Section 4 of this Bulletin.

For large landfarms or landfarms in environmentally sensitive areas, the proposed landfarm management as outlined in the EMP may be formalised in an Environment Protection Notice (EPN) issued by the Director of Environmental Management. The applicant will be notified prior to the drafting of the EPN and please note that the issuing of an EPN will incur a fee.

### 4. Landfarm Environmental Management Plan (EMP)

The EMP must demonstrate planned, appropriate management of potential environmental harm that may arise from the emission of contaminated leachate, hydrocarbon vapours, dust and potential soil contamination from the landfarm operation. Specifically the EMP should, as a minimum, include the following information:

- The origin of the soil including:
  - the name and address of the impacted soil producer;
  - the address and description of where the contaminated soil originated; and
  - a brief description of the event that led to soil contamination
- A description of the soil.
- The volume of soil to be treated.
- Analysis for any contaminants that may reasonably be expected in the soil.
- Classification of the soil in accordance with the Environment Division's Information Bulletin No. 105 *Classification and Management of Contaminated Soil for Disposal*.
- Location and layout plans of the proposed landfarm showing its proximity to sensitive receptors (residences, business, water courses etc).
- Photographs of the proposed landfarm area.
- A suitability assessment of the proposed treatment location, with consideration given to physical characteristics and local hydrogeology (e.g. local depth to groundwater).
- Details of the stormwater, leachate and run-off management.
- Details of the proposed soil sampling and analysis program.
- Any other details of the design and management of the landfarm that meet those requirements outlined in Section 5 of this document.
- Air quality monitoring or an explanation for why monitoring is not required.
- Groundwater and/or surface water monitoring or an explanation for why monitoring is not required.



- Remediation target levels and predicted time frame for completion of the landfarm activity.
- Anticipated submission date for final disposal or re-use approval application to the Environment Division.

## 5. Landfarm Design and Management

The following information is provided as a guide for planning landfarm activities.

### 5.1 Soil Transport

- Dust generation should be prevented during transport of soil to and from the landfarm by ensuring adequate moisture levels are maintained in the soil.
- If soil classified as controlled waste (as defined in the Regulations) and is to be transported for fee or reward, a Waste Transport Business holding a current Environment Protection Notice issued under the *Environmental Management and Pollution Control Act 1994* is required.

Please note that soil and other material reasonably suspected to be a controlled waste must be sampled and analysed to determine whether it is a controlled waste before the waste can be removed from the site. Please see the Environment Division's Information Bulletin 105: *Classification and Management of Contaminated Soil for Disposal* for further details.

### 5.2 Landfarm Design and Operation

- The landfarming site should be adequately demarcated and include appropriate signage to prevent unauthorised access and to indicate that the soil in the landfarm area is undergoing remediation. Additionally signs relating to site safety should be erected as necessary.
- The landfarm must be bunded on all sides<sup>1</sup> with a berm at least 0.8 metres high and 0.5 metres thick and constructed of compacted clay, or some other impermeable material, to a permeability equal to or less than  $10^{-9}$  m/s.
- The base of the landfarm must be of a minimum thickness of 0.3 metres and constructed of compacted clay, or some other impermeable material, to a permeability of equal to or less than  $10^{-9}$  m/s.
- The base should be constructed with a gentle slope (between approximately 2 and 10°) towards a leachate collection point.
- The soil within the landfarm should be arranged into windrows of not more than 0.5 metres height. Ideally, the width of each windrow and distance between windrows

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<sup>1</sup> In some cases it may only be necessary to bund three sides allowing easy access of machinery to the landfarming area. However, measures must be taken to prevent contaminated leachate from discharging out, and prevent stormwater entering the landfarm from the un-bunded side.

would be sufficient to allow easy access of machinery for the purpose of aeration of the soil contained within the windrows.

- All soil in the landfarm should be turned over on a regular basis in order to aerate the soil and promote microbial activity.
- Stormwater should be prevented from coming into contact with the contaminated soil and should be diverted away from the landfarm area using earthen berms or interceptor trenches.
- Overflow of leachate from the landfarm must be prevented and thus all leachate collected must be either recycled onto the material being treated in the landfarm area or directed to, and contained within, an impermeable leachate collection system of adequate capacity.
- Should any leachate contained within the leachate collection system require disposal, a licensed waste contractor should be engaged to remove and dispose of the leachate appropriately. The waste transport officer can be contacted on 03 6233 6273 for information on licensed waste transporters.
- The use of water sprinklers may be required from time to time to ensure that the soil remains damp (but it should not be saturated with water).
- Nutrients and/or minerals may need to be added to enhance the efficiency of microbial activity.
- Lighter (more volatile) petroleum products (*e.g.* petrol) may evaporate during landfarm aeration processes. Emission of volatile organic compounds (VOCs) may need to be controlled and/or captured and treated.
- In order to minimise volatile emissions, it is recommended that the soil in a landfarm is covered with a heavy duty plastic liner that is adequately secured. This liner can be temporarily removed for the purpose of turning over the soil for aeration. Covering the soil may also prevent excessive rain infiltration and assist in maintaining optimum moisture levels and/or would assist in preventing erosion and dust emissions from the landfarm.

### 5.3 Monitoring

- Sampling and analysis of the soil should occur on a regular basis to ensure that biodegradation is occurring. Samples should be analysed for:
  - Contaminant levels (*e.g.* typical contaminants in petroleum-contaminated soil may be total petroleum hydrocarbons, benzene, toluene, ethyl-benzene, xylenes);
  - Nutrient levels;
  - Moisture levels; and
  - pH levels.
- Air monitoring may be required if houses or other occupied buildings are located in the vicinity of the landfarm. Air monitoring should assess the atmospheric ground



level concentrations of all volatile contaminants that may be emitted from the landfarm soil.

- The landfarm should be inspected on a regular basis to ensure that environmental controls (e.g. plastic covers, odour controls, dust controls, drainage, leachate and run-off management systems) are operating correctly.
- Additional monitoring events may also be necessary in response to adverse weather such as high rainfall events (e.g. monitoring of drainage and leachate collection) or strong winds (e.g. monitoring of plastic covers, odour controls) to ensure that environmental controls are operating properly when subject to the adverse conditions.
- Depending on the volume of the contaminated soil, the location of the landfarm, the degree of contamination, and the hydrological and hydrogeological settings, additional environmental sampling may be required. This sampling may include surface water, groundwater and/ or soil sampling.

#### 5.4 Completion

- Treatment of the petroleum contaminated soil will be deemed complete when the results of compound-specific testing demonstrates that based on the classification of soil from the Environment Division's Information Bulletin 105: *Classification and Management of Contaminated Soil for Disposal*:
  - the levels for contaminants of concern will not pose a risk to human health or the environment for the future re-use of the soil; or
  - levels of contaminants of concern allow the disposal of the material (as Level 1-fill material, Level 2- low level contaminated soil, or Level 3- contaminated soil).
- An application for the approval of re-use or disposal of the soil must be submitted to the Environment Division. Approval to re-use or dispose of the soil must be obtained prior to the treated soil's removal from the approved landfarming area.
- After removal of the treated (landfarmed) soil, the site should be validated by taking samples from the material underlying the landfarm to confirm that contamination has not migrated vertically through the sub-surface.
- Failure of the landfarming operation to remediate the soil to acceptable levels after 24 months may result in an Environment Protection Notice being served to require further treatment and/or removal of the soil to a more suitable site for further treatment and then disposal.

**6. Further Information**

For further information relating to this bulletin contact:

Contaminated Sites Unit  
Waste Management Section  
Environment Division  
Department of Tourism, Arts, and Environment  
GPO Box 1751, Hobart TASMANIA 7001

Waste Management Officer.....	Environment Division
Contaminated Sites Officer.....	Telephone: (03) 6233 6518
Controlled Waste Transport Officer .....	Facsimile: (03) 6233 3800

Legislation may be viewed on the Internet at <http://www.thelaw.tas.gov.au>.  
General information can be viewed at <http://www.environment.tas.gov.au>.

**7. Currency of this Bulletin**

This bulletin may be subject to amendment and persons relying on this bulletin should check with the Environment Division to ensure that it is current at any given time.

**Disclaimer**

*This document has been prepared to assist those involved in the bioremediation of contaminated soil by landfarming. The contents are based on the best information available to the Environment Division at the time of publication and are subject to revision based upon further advice received by the Division. No warranty is given as to the correctness of this information and no liability is accepted for any statement or opinion or for any error or omission.*



## ATTACHMENT C

<b>RURAL RESOURCE ZONE</b>	
<b>ZONE PURPOSE</b>	
26.1.1	<p><i>To provide for the sustainable use or development of resources for agriculture, aquaculture, forestry, mining and other primary industries, including opportunities for resource processing.</i></p> <p>The proposal does not conflict with this purpose.</p>
26.1.2	<p><i>To provide for other use or development that does not constrain or conflict with resource development uses.</i></p> <p>The proposal complies with this purpose.</p>
26.1.3	<p><i>To provide for economic development that is compatible with primary industry, environmental and landscape values.</i></p> <p>The proposal does not conflict with this purpose.</p>
26.1.4	<p><i>To provide for tourism-related use and development where the sustainable development of rural resources will not be compromised.</i></p> <p>Not applicable to this proposal.</p>
<b>26.1.5</b>	<b>Local Area Objectives</b>
a)	<p><i>Primary Industries:</i>  <i>Resources for primary industries make a significant contribution to the rural economy and primary industry uses are to be protected for long-term sustainability.</i>  <i>The prime and non-prime agricultural land resource provides for variable and diverse agricultural and primary industry production which will be protected through individual consideration of the local context.</i>  <i>Processing and services can augment the productivity of primary industries in a locality and are supported where they are related to primary industry uses and the long-term sustainability of the resource is not unduly compromised.</i></p> <p>The proposal does not conflict with this objective.</p>
b)	<p><i>Tourism</i>  <i>Tourism is an important contributor to the rural economy and can make a significant contribution to the value adding of primary industries through visitor facilities and the downstream processing of produce. The continued enhancement of tourism facilities with a relationship to primary production is supported where the long-term sustainability of the resource is not unduly compromised.</i>  <i>The rural zone provides for important regional and local tourist routes and destinations such as through the promotion of environmental features and values, cultural heritage and landscape. The continued enhancement of tourism facilities that capitalise on these attributes is supported where the long-term sustainability of primary industry resources is not unduly compromised.</i></p> <p>The proposal does not conflict with this objective.</p>
	The proposal does not conflict with this objective.

c)	<p><i>Rural Communities</i>  <i>Services to the rural locality through provision for home-based business can enhance the sustainability of rural communities. Professional and other business services that meet the needs of rural populations are supported where they accompany a residential or other established use and are located appropriately in relation to settlement activity centres and surrounding primary industries such that the integrity of the activity centre is not undermined and primary industries are not unreasonably confined or restrained.</i></p>
	<p>Not applicable to this application.</p>
<b>26.1.6</b>	<b>Desired Future Character Statements</b>
26.1.4	<p><i>The visual impacts of use and development within the rural landscape are to be minimised such that the effect is not obtrusive.</i></p>
	<p>The proposal complies with this statement.</p>

<b>USE STANDARDS</b>	
<b>26.3.1</b>	<p><b>DISCRETIONARY USES IF NOT A SINGLE DWELLING</b></p> <p>a) <i>To provide for an appropriate mix of uses that support the Local Area Objectives and the location of discretionary uses in the rural resources zone does not unnecessarily compromise the consolidation of commercial and industrial uses to identified nodes of settlement or purpose built precincts.</i></p> <p>b) <i>To protect the long term productive capacity of prime agricultural land by minimising conversion of the land to non-agricultural uses or uses not dependent on the soil as a growth medium, unless an overriding benefit to the region can be demonstrated.</i></p> <p>c) <i>To minimise the conversion of non-prime land to a non-primary industry use except where that land cannot be practically utilised for primary industry purposes.</i></p> <p>d) <i>Uses are located such that they do not unreasonably confine or restrain the operation of primary industry uses.</i></p> <p>e) <i>Uses are suitable within the context of the locality and do not create an unreasonable adverse impact on existing sensitive uses or local infrastructure.</i></p> <p>f) <i>The visual impacts of use are appropriately managed to integrate with the surrounding rural landscape.</i></p>
A1	<p><i>If for permitted or no permit required uses.</i></p>
	<p>Does not comply.</p>
P1.1	<p><i>It must be demonstrated that the use is consistent with local area objectives for the provision of non-primary industry uses in the zone, if applicable; and</i></p>
	<p>Complies. See Local Area Objectives above.</p>
P1.2	<p><i>Business and professional services and general retail and hire must not exceed a combined gross floor area of 250m<sup>2</sup> over the site.</i></p>



	Not applicable.
A2	<i>If for permitted or no permit required uses.</i>
	Does not comply.
P2.1	<p><i>Utilities, extractive industries and controlled environment agriculture located on prime agricultural land must demonstrate that the:</i></p> <p><i>i) amount of land alienated/converted is minimised; and</i></p> <p><i>ii) location is reasonably required for operational efficiency; and</i></p> <p>Complies. Not prime agricultural land.</p>
P2.2	<p><i>Uses other than utilities, extractive industries or controlled environment agriculture located on prime agricultural land, must demonstrate that the conversion of prime agricultural land to that use will result in a significant benefit to the region having regard to the economic, social and environmental costs and benefits.</i></p> <p>Complies. Not prime agricultural land.</p>
A3	<i>If for permitted or no permit required uses.</i>
	Does not comply.
P3	<p><i>The conversion of non-prime agricultural to non-agricultural use must demonstrate that:</i></p> <p><i>a) the amount of land converted is minimised having regard to:</i></p> <p><i>i) existing use and development on the land; and</i></p> <p><i>ii) surrounding use and development; and</i></p> <p><i>iii) topographical constraints; or</i></p> <p><i>b) the site is practically incapable of supporting an agricultural use or being included with other land for agricultural or other primary industry use, due to factors such as:</i></p> <p><i>i) limitations created by any existing use and/or development surrounding the site; and</i></p> <p><i>ii) topographical features; and</i></p> <p><i>iii) poor capability of the land for primary industry; or</i></p> <p><i>c) the location of the use on the site is reasonably required for operational efficiency.</i></p> <p>Comment – The proposed site will eventually return to agricultural production. The proposal complies.</p>
A4	<i>If for permitted or no permit required uses.</i>
	Does not comply.
P4	<p><i>It must be demonstrated that:</i></p> <p><i>a) emissions are not likely to cause an environmental nuisance; and</i></p> <p><i>b) primary industry uses will not be unreasonably confined or restrained from conducting normal operations; and</i></p> <p><i>c) the capacity of the local road network can accommodate the traffic</i></p>

	<p><i>generated by the use.</i></p> <p>Assessment – The EPA has advised that based on the applicant’s report, this activity can be managed to avoid environmental impact.</p>
A5	<p><i>The use must:</i></p> <p>a) <i>be permitted or no permit required; or</i></p> <p>b) <i>be located in an existing building.</i></p> <p>Does not comply.</p>
P5	<p><i>It must be demonstrated that the visual appearance of the use is consistent with the local area having regard to:</i></p> <p>a) <i>the impacts on skylines and ridgelines; and</i></p> <p>b) <i>visibility from public roads; and</i></p> <p>c) <i>the visual impacts of storage of materials or equipment; and</i></p> <p>d) <i>the visual impacts of vegetation clearance or retention; and</i></p> <p>e) <i>the desired future character statements.</i></p> <p>Comment: The proposal complies.</p>
26.3.2	<p><b>DWELLINGS</b></p> <p><i>To ensure that dwellings are:</i></p> <p>a) <i>incidental to resource development; or</i></p> <p>b) <i>located on land with limited rural potential where they do not constrain surrounding agricultural operations.</i></p>
A1.1	<p><i>Development must be for the alteration, extension or replacement of existing dwellings; or.</i></p> <p>NA</p>
A1.2	<p><i>Ancillary dwellings must be located within the curtilage of the existing dwelling on the property; or</i></p> <p>NA</p>
A1.3	<p><i>New dwellings must be within the resource development use class and on land that has a minimum current capital value of \$1 million as demonstrated by a valuation report or sale price less than two years old.</i></p> <p>NA</p>
P1.1	<p><i>A dwelling may be constructed where it is demonstrated that:</i></p> <p>a) <i>it is integral and subservient to resource development, as demonstrated in a report prepared by a suitably qualified person, having regard to:</i></p> <p>i) <i>scale; and</i></p> <p>ii) <i>complexity of operation; and</i></p> <p>iii) <i>requirement for personal attendance by the occupier; and</i></p> <p>iv) <i>proximity to the activity; and</i></p> <p>v) <i>any other matters as relevant to the particular activity; or</i></p> <p>b) <i>the site is practically incapable of supporting an agricultural use or being included with other land for agricultural or other primary industry use, having regard to:</i></p> <p>i) <i>limitations created by any existing use and/or development surrounding the site; and</i></p>



	<ul style="list-style-type: none"> <li>ii) <i>topographical features; and</i></li> <li>iii) <i>poor capability of the land for primary industry operations (including a lack of capability or other impediments); and</i></li> </ul>
	NA
P1.2	<i>A dwelling may be constructed where it is demonstrated that wastewater treatment for the proposed dwelling can be achieved within the lot boundaries, having regard to the rural operation of the property and provision of reasonable curtilage to the proposed dwelling; and</i>
	NA
P1.3	<i>A dwelling may be constructed where it is demonstrated that the lot has frontage to a road or a Right of Carriageway registered over all relevant titles.</i>
	NA
<b>26.3.3</b>	<b>IRRIGATION DISTRICTS</b> <i>To ensure that land within irrigation districts proclaimed under Part 9 of the Water Management Act 1999 is not converted to uses that will compromise the utilisation of water resources.</i>
A1	<i>Non-agricultural uses are not located within an irrigation district proclaimed under Part 9 of the Water Management Act 1999.</i>
	NA
P1	<i>Non-agricultural uses within an irrigation district proclaimed under Part 9 of the Water Management Act 1999 must demonstrate that the current and future irrigation potential of the land is not unreasonably reduced having regard to:</i> <ul style="list-style-type: none"> <li>a) <i>the location and amount of land to be used; and</i></li> <li>b) <i>the operational practicalities of irrigation systems as they relate to the land; and</i></li> <li>c) <i>any management or conservation plans for the land.</i></li> </ul>
	NA

<b>DEVELOPMENT STANDARDS</b>	
<b>26.4.1</b>	<b>BUILDING LOCATION AND APPEARANCE</b> <i>To ensure that the:</i> <ul style="list-style-type: none"> <li>a) <i>ability to conduct extractive industries and resource development will not be constrained by conflict with sensitive uses; and</i></li> <li>b) <i>development of buildings is unobtrusive and complements the character of the landscape.</i></li> </ul>
A1	<i>Building height must not exceed:</i> <ul style="list-style-type: none"> <li>a) <i>8m for dwellings; or</i></li> <li>b) <i>12m for other purposes.</i></li> </ul>
	NA

P1	<p><i>Building height must:</i></p> <p>a) <i>be unobtrusive and complement the character of the surrounding landscape; and</i></p> <p>b) <i>protect the amenity of adjoining uses from adverse impacts as a result of the proposal.</i></p>
	NA
A2	<p><i>Buildings must be set back a minimum of:</i></p> <p>a) <i>50m where a non-sensitive use or extension to existing sensitive use buildings is proposed; or</i></p> <p>b) <i>200m where a sensitive use is proposed; or</i></p> <p>c) <i>the same as existing for replacement of an existing dwelling.</i></p>
	NA
P2	<p><i>Buildings must be setback so that the use is not likely to constrain adjoining primary industry operations having regard to:</i></p> <p>a) <i>the topography of the land; and</i></p> <p>b) <i>buffers created by natural or other features; and</i></p> <p>c) <i>the location of development on adjoining lots; and</i></p> <p>d) <i>the nature of existing and potential adjoining uses; and</i></p> <p>e) <i>the ability to accommodate a lesser setback to the road having regard to:</i></p> <p>i) <i>the design of the development and landscaping; and</i></p> <p>ii) <i>the potential for future upgrading of the road; and</i></p> <p>iii) <i>potential traffic safety hazards; and</i></p> <p>iv) <i>appropriate noise attenuation.</i></p>
	NA
<b>26.4.2</b>	<p><b>SUBDIVISION</b></p> <p><i>To ensure that subdivision is only to:</i></p> <p>a) <i>improve the productive capacity of land for resource development and extractive industries; and</i></p> <p>b) <i>enable subdivision for environmental and cultural protection or resource processing where compatible with the zone; and</i></p> <p>c) <i>facilitate use and development for allowable uses by enabling subdivision subsequent to appropriate development.</i></p>
A1	<p><i>Lots must be:</i></p> <p>a) <i>for the provision of utilities and is required for public use by the Crown, public authority or a municipality; or</i></p> <p>b) <i>for the consolidation of a lot with another lot with no additional titles created; or</i></p> <p>c) <i>to align existing titles with zone boundaries and no additional lots are created.</i></p>
	NA
P1	<p><i>The subdivision</i></p> <p>a) <i>must demonstrate that the productive capacity of the land will be improved as a result of the subdivision; or</i></p> <p>b) <i>is for the purpose of creating a lot for an approved non-agricultural</i></p>



	<i>use, other than a residential use, and the productivity of the land will not be materially diminished.</i>
	NA

<b>26.4.3</b>	<b>STRATA DIVISION</b>
26.4.3.1	<i>In this scheme, division of land by stratum title is prohibited in the Rural Resource Zone.</i>

CODES	
BUSHFIRE PRONE AREAS CODE	The code does not apply
POTENTIALLY CONTAMINATED LAND	The code does not apply (only applies to proposal for sensitive use)
LANDSLIP CODE	N/a
ROAD AND RAILWAY ASSETS CODE	N/a – does not require a new access or intensify the use of an existing access
FLOOD PRONE AREAS CODE	N/a
CAR PARKING AND SUSTAINABLE TRANSPORT CODE	Complies
SCENIC MANAGEMENT CODE	N/a
BIODIVERSITY CODE	N/a
WATER QUALITY CODE	N/a
RECREATION AND OPEN SPACE CODE	N/a
ENVIRONMENTAL IMPACTS & ATTENUATION CODE	N/a
AIRPORTS IMPACT MANAGEMENT CODE	N/a
LOCAL HISTORIC HERITAGE CODE	N/a
COASTAL CODE	N/a
SIGNS CODE	N/a

**ASSESSMENT AGAINST E6.0  
CAR PARKING & SUSTAINABLE TRANSPORT CODE**

**E6.6 Use Standards**

**E6.6.1 Car Parking Numbers**

Objective: To ensure that an appropriate level of car parking is provided to service use.	
Acceptable Solutions	Performance Criteria
<p>A1 The number of car parking spaces must not be less than the requirements of:</p> <p>a) Table E6.1; or</p> <p>b) a parking precinct plan contained in Table E6.6: Precinct Parking Plans (except for</p>	<p>P1 The number of car parking spaces provided must have regard to:</p> <p>a) the provisions of any relevant location specific car parking plan; and</p> <p>b) the availability of public car parking spaces within reasonable walking distance; and</p> <p>c) any reduction in demand due to sharing of spaces by multiple uses either because of variations in peak demand or by efficiencies gained by consolidation;</p>

<p>dwellings in the General Residential Zone).</p>	<p>and</p> <p>d) the availability and frequency of public transport within reasonable walking distance of the site; and</p> <p>e) site constraints such as existing buildings, slope, drainage, vegetation and landscaping; and</p> <p>f) the availability, accessibility and safety of on-road parking, having regard to the nature of the roads, traffic management and other uses in the vicinity; and</p> <p>g) an empirical assessment of the car parking demand; and</p> <p>h) the effect on streetscape, amenity and vehicle, pedestrian and cycle safety and convenience; and</p> <p>i) the recommendations of a traffic impact assessment prepared for the proposal; and</p> <p>j) any heritage values of the site; and</p> <p>k) for residential buildings and multiple dwellings, whether parking is adequate to meet the needs of the residents having regard to:</p> <p>i) the size of the dwelling and the number of bedrooms; and</p> <p>ii) the pattern of parking in the locality; and</p> <p>iii) any existing structure on the land.</p>
<p><b>Comment:</b> The site of the landfarming has an area of 1.1ha, requiring 22 spaces. The site is on a farm and its management will be undertaken as part of the farm management. No additional parking spaces are required.</p>	

**Table E6.1: Parking Space Requirements**

<i>Use</i>	<i>Parking Requirement</i>	
	<i>Vehicle</i>	<i>Bicycle</i>
<i>Recycling and Waste Disposal</i>	<i>1 space per 500m<sup>2</sup> of the site + 1 space per employee</i>	<i>1 space per 5 employees</i>
	Site of 11,000m <sup>2</sup> = 22 car parking spaces required. No dedicated spaces proposed	1 employee – 1 space required.

**E6.6.2 Bicycle Parking Numbers**

<p><b>Objective:</b> To encourage cycling as a mode of transport within areas subject to urban speed zones by ensuring safe, secure and convenient parking for bicycles.</p>	
<b>Acceptable Solutions</b>	<b>Performance Criteria</b>
<p>A1.1 Permanently accessible bicycle parking or storage spaces must be provided either on the site or within 50m of the site in accordance with the requirements of Table E6.1; or</p> <p>A1.2 The number of spaces must be in accordance with a parking precinct plan contained in Table E6.6: Precinct</p>	<p>P1 Permanently accessible bicycle parking or storage spaces must be provided having regard to the:</p> <p>a) likely number and type of users of the site and their opportunities and likely preference for bicycle travel; and</p> <p>b) location of the site and the distance a cyclist would need to travel to reach</p>



Parking Plans.	c) the site; and availability and accessibility of existing and planned parking facilities for bicycles in the vicinity.
Comment: The site is on a farm and its management will be undertaken as part of the farm management. No additional parking spaces are required.	

### E6.6.3 Taxi Drop-off and Pickup

Objective: To ensure that taxis can adequately access developments.	
Acceptable Solutions	Performance Criteria
A1 One dedicated taxi drop-off and pickup space must be provided for every 50 car spaces required by Table E6.1 or part thereof (except for dwellings in the General Residential Zone).	P1 No performance criteria.
Comment: Not required.	

### E6.6.4 Motorbike Parking Provisions

Objective: To ensure that motorbikes are adequately provided for in parking considerations.	
Acceptable Solutions	Performance Criteria
A1 One motorbike parking space must be provided for each 20 car spaces required by Table E6.1 or part thereof.	P1 No performance criteria.
Comment: Not required.	

## E6.7 Development Standards

### E6.7.1 Construction of Car Parking Spaces and Access Strips

Objective: To ensure that car parking spaces and access strips are constructed to an appropriate standard.	
Acceptable Solutions	Performance Criteria
A1 All car parking, access strips manoeuvring and circulation spaces must be: <ul style="list-style-type: none"> <li>a) formed to an adequate level and drained; and</li> <li>b) except for a single dwelling, provided with an impervious all weather seal; and</li> <li>c) except for a single dwelling, line marked or provided with other clear physical means to delineate car spaces.</li> </ul>	P1 All car parking, access strips manoeuvring and circulation spaces must be readily identifiable and constructed to ensure that they are useable in all weather conditions.
Comment: Complies with P1.	

### E6.7.2 Design and Layout of Car Parking

Objective: To ensure that car parking and manoeuvring space are designed and laid out to an appropriate standard.	
Acceptable Solutions	Performance Criteria
A1.1 Where providing for 4 or more spaces, parking areas (other than for parking located in garages and carports for dwellings in the General	P1 The location of car parking and manoeuvring spaces must not be detrimental to the streetscape or the amenity of the surrounding areas,

<p>A1.2 Residential Zone) must be located behind the building line; and Within the General residential zone, provision for turning must not be located within the front setback for residential buildings or multiple dwellings.</p>	<p>a) having regard to: the layout of the site and the location of existing buildings; and b) views into the site from the road and adjoining public spaces; and c) the ability to access the site and the rear of buildings; and d) the layout of car parking in the vicinity; and e) the level of landscaping proposed for the car parking.</p>
<p>Comment: Complies.</p>	
<p>A2.1 Car parking and manoeuvring space must: a) have a gradient of 10% or less; and b) where providing for more than 4 cars, provide for vehicles to enter and exit the site in a forward direction; and c) have a width of vehicular access no less than prescribed in Table E6.2 and Table E6.3, and A2.2 The layout of car spaces and access ways must be designed in accordance with <i>Australian Standards AS 2890.1 - 2004 Parking Facilities, Part 1: Off Road Car Parking.</i></p>	<p>P2 Car parking and manoeuvring space must: a) be convenient, safe and efficient to use having regard to matters such as slope, dimensions, layout and the expected number and type of vehicles; and b) provide adequate space to turn within the site unless reversing from the site would not adversely affect the safety and convenience of users and passing traffic.</p>
<p>Comment: Complies.</p>	

**Table E6.2: Access Widths for Vehicles**

<i>Number of parking spaces served</i>	<i>Access width (see note 1)</i>	<i>Passing bay (2.0m wide by 5.0m long plus entry and exit tapers) (see note 2)</i>
1 to 5	3.0m	Every 30m

**E6.7.3 Car Parking Access, Safety and Security**

<p>Objective: To ensure adequate access, safety and security for car parking and for deliveries.</p>	
<b>Acceptable Solutions</b>	<b>Performance Criteria</b>
<p>A1 Car parking areas with greater than 20 parking spaces must be: a) secured and lit so that unauthorised persons cannot enter or; b) visible from buildings on or adjacent to the site during the times when parking occurs.</p>	<p>P1 Car parking areas with greater than 20 parking spaces must provide for adequate security and safety for users of the site, having regard to the: a) levels of activity within the vicinity; and b) opportunities for passive surveillance for users of adjacent building and public spaces adjoining the site.</p>
<p>Comment: Not applicable.</p>	



**E6.7.4 Parking for Persons with a Disability**

Objective: To ensure adequate parking for persons with a disability.	
Acceptable Solutions	Performance Criteria
A1 All spaces designated for use by persons with a disability must be located closest to the main entry point to the building.	P1 No performance criteria.
A2 One of every 20 parking spaces or part thereof must be constructed and designated for use by persons with disabilities in accordance with <i>Australian Standards AS/NZ 2890.6 2009</i> .	P2 No performance criteria.
Comment: Not required.	

**E6.7.6 Loading and Unloading of Vehicles, Drop-off and Pickup**

Objective: To ensure adequate access for people and goods delivery and collection and to prevent loss of amenity and adverse impacts on traffic flows.	
Acceptable Solutions	Performance Criteria
A1 For retail, commercial, industrial, service industry or warehouse or storage uses: a) at least one loading bay must be provided in accordance with Table E6.4; and b) loading and bus bays and access strips must be designed in accordance with <i>Australian Standard AS/NZS 2890.3 2002</i> for the type of vehicles that will use the site.	P1 For retail, commercial, industrial, service industry or warehouse or storage uses adequate space must be provided for loading and unloading the type of vehicles associated with delivering and collecting people and goods where these are expected on a regular basis.
Comment: Not applicable.	

**E6.8 Provisions for Sustainable Transport****E6.8.1 Bicycle End of Trip Facilities**

Not used in this planning scheme

**E6.8.2 Bicycle Parking Access, Safety and Security**

Objective To ensure that parking and storage facilities for bicycles are safe, secure and convenient.	
Acceptable Solutions	Performance Criteria
A1.1 Bicycle parking spaces for customers and visitors must: a) be accessible from a road, footpath or cycle track; and b) include a rail or hoop to lock a bicycle to that meets <i>Australian Standard AS 2890.3 1993</i> ; and c) be located within 50m of and visible or signposted from the entrance to the activity they serve; and d) be available and adequately lit in accordance with <i>Australian Standard AS/NZS 1158 2005 Lighting Category C2</i> during the times they will be used; and A1.2 Parking space for residents' and employees' bicycles must be under cover and capable of being secured by lock or bicycle lock.	P1 Bicycle parking spaces must be safe, secure, convenient and located where they will encourage use.

<p>A2 Bicycle parking spaces must have:</p> <p>a) minimum dimensions of:</p> <p>i) 1.7m in length; and</p> <p>ii) 1.2m in height; and</p> <p>iii) 0.7m in width at the handlebars; and</p> <p>b) unobstructed access with a width of at least 2m and a gradient of no more 5% from a public area where cycling is allowed.</p>	<p>P2 Bicycle parking spaces and access must be of dimensions that provide for their convenient, safe and efficient use.</p>
<p>Comment: Not required.</p>	

**E6.8.5 Pedestrian Walkways**

<p><b>Objective</b> To ensure pedestrian safety is considered in development</p>	
<b>Acceptable Solution</b>	<b>Performance Criteria</b>
<p>A1 Pedestrian access must be provided for in accordance with Table E6.5.</p>	<p>P1 Safe pedestrian access must be provided within car park and between the entrances to buildings and the road.</p>
<p>Comment: Not required.</p>	

**Table E6.5: Pedestrian Access**

<b>Number of Parking Spaces Required</b>	<b>Pedestrian Facility</b>
1-10	No separate access required (i.e. pedestrians may share the driveway). [Note (a) applies].
11 or more	A 1m wide footpath separated from the driveway and parking aisles except at crossing points. [Notes (a) and (b) apply].

**Notes**

- a) In parking areas containing spaces allocated for disabled persons, a footpath having a minimum width of 1.5m and a gradient not exceeding 1 in 14 is required from those spaces to the principal building.
- b) Separation is deemed to be achieved by:
  - i) a horizontal distance of 2.5m between the edge of the driveway and the footpath; or
  - ii) protective devices such as bollards, guard rails or planters between the driveway and the footpath; and
  - iii) signs and line marking at points where pedestrians are intended to cross driveways or parking aisles.



SPECIFIC AREA PLANS	
TRANSLINK SPECIFIC AREA PLAN	N/a
HERITAGE PRECINCTS SPECIFIC AREA PLAN	N/a

SPECIAL PROVISIONS	
9.1 Changes to an Existing Non-conforming Use	N/a
9.2 Development for Existing Discretionary Uses	N/a
9.3 Adjustment of a Boundary	N/a
9.4 Demolition	N/a
9.5 Subdivision	N/a

STATE POLICIES
The proposal is consistent with all State Policies.

OBJECTIVES OF LAND USE PLANNING & APPROVALS ACT 1993
The proposal is consistent with the objectives of the <i>Land Use Planning &amp; Approvals Act 1993</i> .

STRATEGIC PLAN/ANNUAL PLAN/COUNCIL POLICIES
<b><i>Strategic Plan 2007-2017</i></b> <i>4.3 – Development Control</i>

**PLAN 3**

**PLANNING APPLICATION P16-119**

**75 WELLINGTON STREET, LONGFORD**

**ATTACHMENTS**

- A**      Application & plans, correspondence with applicant
  
- B**      Representation
  
- C**      Planning scheme assessment



PLANNING APPLICATION  
Proposal

EXHIBITED

ATTACHMENT A

Description of proposal: ..... CHANGE USE TO WAREHOUSE  
ON EXISTING BUILDING

(attach additional sheets if necessary)

Site address: ..... 75 WELLINGTON STREET  
LONGFORD

ID no: ..... 6737839 ..... and/or Council's property no: .....  
AND/OR

Area of land: ..... ha/m<sup>2</sup> and/or CT no: .....

Estimated cost of project \$ ..... N/A .....  
(include cost of landscaping, car parks etc for commercial/industrial uses)

Are there any existing buildings on this property? (Yes) / No  
If yes – main building is used as .....

If variation to Planning Scheme provisions requested, justification to be provided:  
N/A

(attach additional sheets if necessary)

If outbuilding has a floor area of over 56m<sup>2</sup>, or there will be over 56m<sup>2</sup> of outbuildings on the lot, or is over 3m at apex in residential zone, details of the use of the outbuilding to be provided:

N/A

External colours: .....  
(attach additional sheets if necessary)

Is any signage required? ..... NO ..... YES ..... 7 METRES X 1.5 WIDE .....  
BEHIND NEW FRONT FENCE  
(if yes, provide details)

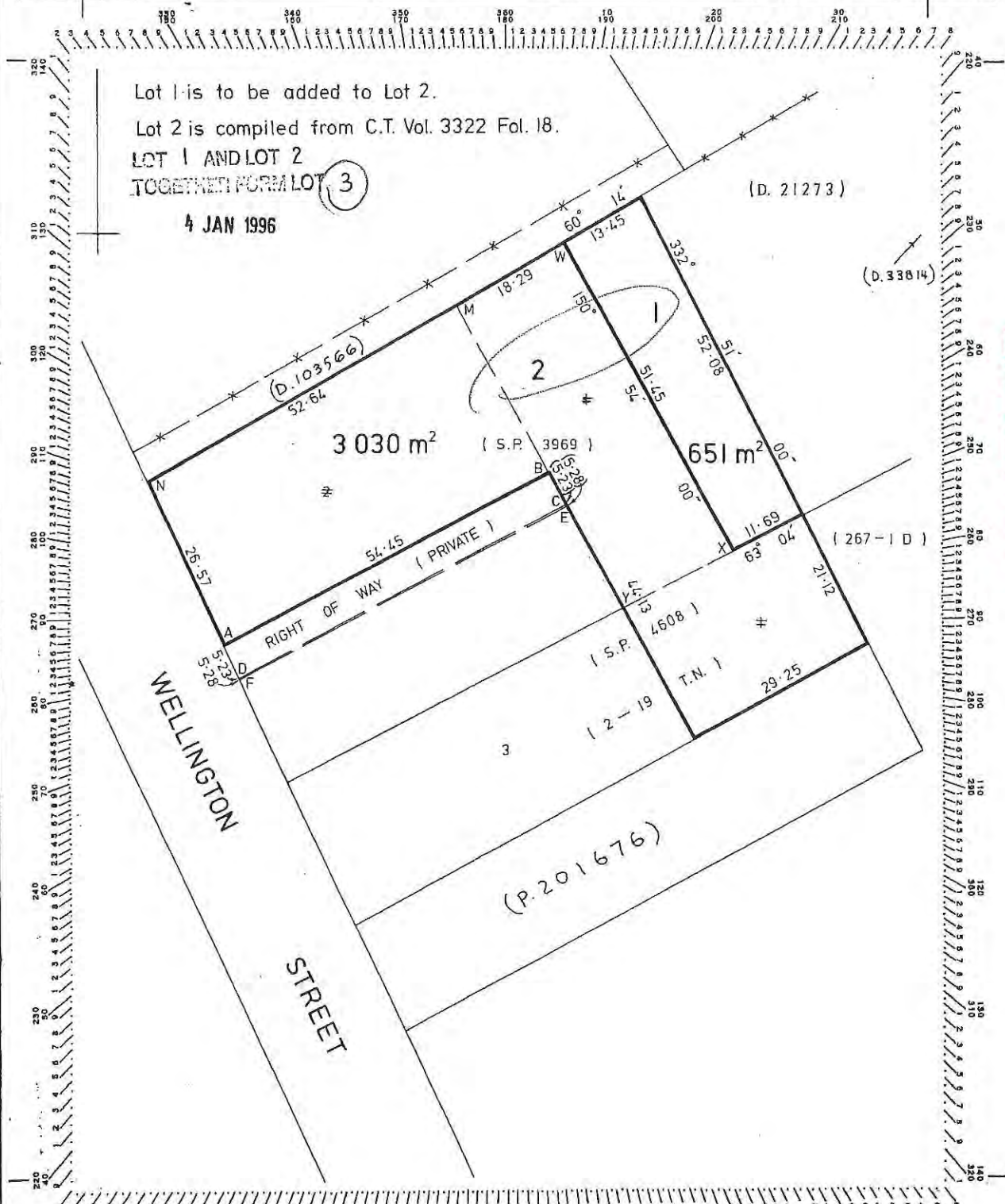
SIGNAGE PAINTED ON GABLE ABOVE  
FRONT OFFICE (BRICK ABOVE FRONT  
WINDOW HEIGHT ON COLOUR BOND  
FACIA

17 AUG 1983 25/51

<p><b>Owner:</b> Lot 1 Charles Arthur Hay Harrison. Lot 2 Dunlop Australia Limited.</p>	<p><b>PLAN OF SURVEY</b> by Surveyor <u>R.V. Tait</u> of land situated in the</p>	<p>Registered Number: <b>S.P.21215</b></p>
<p><b>Title Reference:</b> Lot 1, C.T. Vol. 3280 Fol. 47. Lot 2, C.T. Vol. 3322 Fol. 18.</p>	<p>TOWN OF LONGFORD</p>	<p>Effective from: <u>-2 FEB 1984</u></p>
<p><b>Grantee:</b> Part of 0a, 1r. 35p, granted to William Mason, Arthur Whitfield &amp; William Bonnyly &amp; part of 2a. 0r. 24p, granted to Peter Jacob.</p>	<p>SCALE 1: 500 MEASUREMENTS IN METRES</p>	<p><i>J. Brandy</i> <b>ACTING DEPUTY Recorder of titles</b></p>

Lot 1 is to be added to Lot 2.  
Lot 2 is compiled from C.T. Vol. 3322 Fol. 18.  
**LOT 1 AND LOT 2 TOGETHER FORM LOT 3**

4 JAN 1996

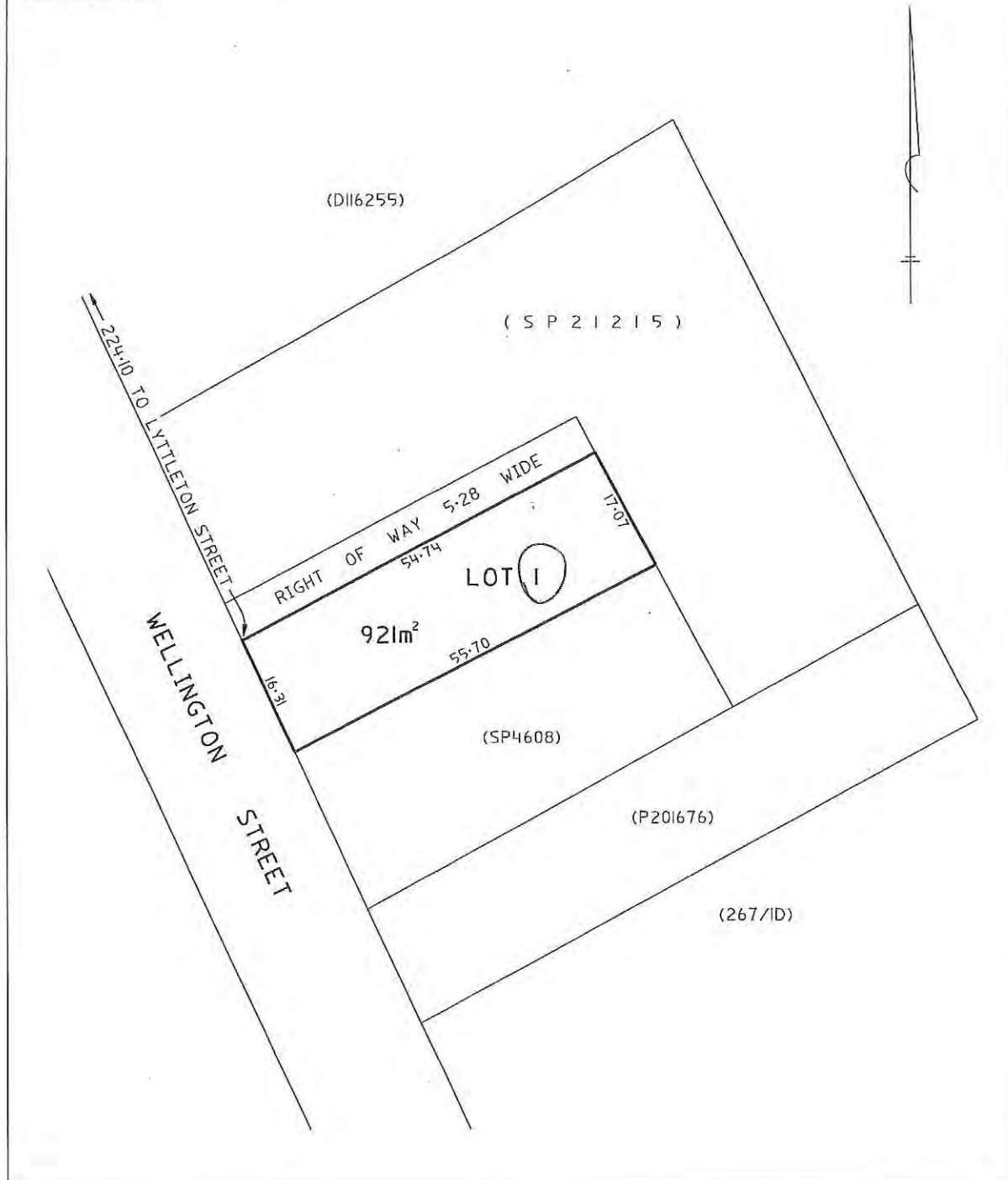


EXHIBITED



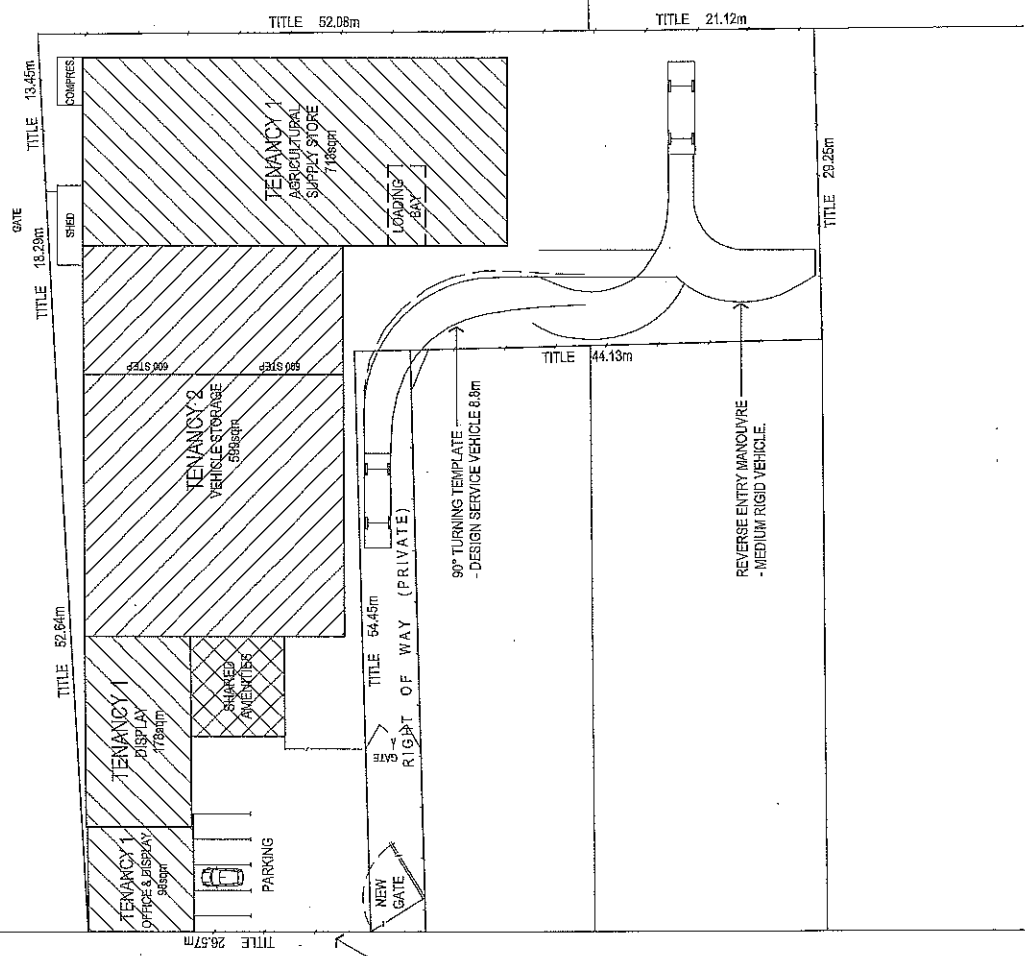
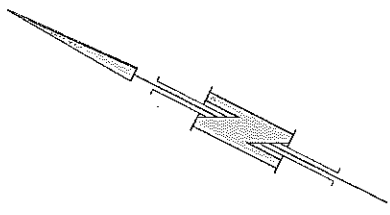
FILE NUMBER A.18330  GRANTEE  PART OF (2-0-24), GRANTED TO PETER JACOB		<b>CONVERSION PLAN</b>  LOCATION  TOWN OF LONGFORD  CONVERTED FROM CONV 53/7429  NOT TO SCALE                      LENGTHS IN METRES		Registered Number  <b>P.138652</b>  APPROVED 29 NOV 2002  <i>Alice Kawa</i> Recorder of Titles
MAPSHEET MUNICIPAL CODE No. 123 (5039-33)	LAST UPI No.    5602542	ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN		DRAWN DJB

SKETCH BY WAY OF ILLUSTRATION ONLY  
 "EXCEPTED LANDS"



EXHIBITED

1-277



WELLINGTON STREET

NEW 1800 HIGH BLACK WROUGHT IRON FRONT SECURITY FENCE.

Site Plan

tmk Design Solutions
   
 Building Designers & Drafters (Registered)
   
 70 Hawke Street
   
 Longford TAS 7301

Client: John Talbot
   
 Project: Change of Use
   
 75 Wellington Street
   
 Longford TAS 7301

Issue	Date	Description	Rev.
01	05.07.16	Development Approval	-

MEMBER
   

 bdav
   
 Building Designers
   
 Association Victoria

Drawing: Site Plan
   
 Designed: TONY M KEEGAN
   
 Scale: 1:500
   
 Project No.: 16.007
   
 Accreditation No.: CC5853K
   
 Dwg No.: Ad01



Mr Paul Godier,  
Senior Planner,  
Northern Midlands Council  
PO Box 156  
LONGFORD Tas 7301

08 July 2016

Dear Paul,

**Additional Information Request – P16-119, 75 Wellington St.  
Longford**

We act on behalf of Mr John Talbot in regard to responding to the request for further information dated 3<sup>rd</sup> June 2016.

Please find attached a copy of a revised site plan showing the following:

- The various uses of the parts of the building
- The current car parking arrangement
- A loading bay (existing)
- Vehicle turning template for a 6m rigid truck.

In regard to the operation of the site the following is supplied:

- The operation can be classed as storage. Currently the owner stores his classic car collection in the area marked Tenancy 2 on the site plan. That use will continue. The area marked Tenancy 1 – will be leased to an agricultural supply company. They will store their supplies – mainly pipes and frames for irrigation systems in the large shed to the rear of the site. They will operate an office and display area to the front of the building (currently a shop). The display/storage will flow through to a section behind the office/display area. Both tenancies will share the toilets and kitchen area. Note that Mr Talbot's use of his section of the site is very infrequent and normally outside the hours the agricultural supply place will function.
- Stored on the site will be the classic cars and the supplies for the irrigation systems.
- Supplies will arrive and leave the site on a 6m rigid truck.

- Two people will be employed on site – front office/sales/admin person and a warehouse/delivery person. The business will operate 9.00am – 5.00pm Monday to Friday and 9.00am – 12 (noon) Saturdays (open for sales). Commercial vehicles will operate 7.30am – 6.00pm Monday to Friday.
- In terms of vehicle movements – it is estimated there will be 6 light vehicle movements per day (employees) and 12 commercial vehicle movements per day. Customer interaction on the site will be low as sales will come from internet, phone and on-farm sales (agents).
- A 1.8m black steel picket type security fence and gate will be erected along the site frontage. The gate will be recessed to align with a drop in fence height with the neighbouring property. The panels will be made up of 25mm square section steel welded into a similar sized frame. The panels will be powder coated black. Alternative security fences would be a chain mesh or a colourbond solid fence – both of which would be out of character with the area.

Kind Regards,



Ian Abernethy

Principal Planning Consultant  
m – 0417233732  
e – [iabernethy@pittsh.com.au](mailto:iabernethy@pittsh.com.au)



# ATTACHMENT B.

Untitled

General Manager,  
Northern Midlands Council.

Dear Sir,

In reference to planning application P16-119.I live next door at 77 Wellington St and wish to voice concern over the closing time listed for the area marked as Tenancy 1 in the Planning Application.I feel that 6pm is too late(bordering on night time operation) and at odds with clause;2.10.4 of the Planning Application guidelines as the previous business never operated until 6pm.If feel a slightly earlier close time would be preferable so as to not impact on the amenity of the area.

Regards,  
David Chugg



NORTH MIDLANDS COUNCIL	
Location	
File	
Proc	
Attachments	
REC'D 25 JUL 2016	
CA	
EA	
WA	
HA	

ATTACHMENT C

GENERAL BUSINESS ZONE
<b>ZONE PURPOSE</b>
<p><i>To provide for business, community, food, professional and retail facilities serving a town or group of suburbs.</i></p> <p><i>To create through good urban design:</i></p> <p>a) <i>an attractive and safe environment; and</i></p> <p>b) <i>activity at pedestrian levels with active road frontages offering interest and engagement to shoppers and; and</i></p> <p>c) <i>appropriate provision for car parking, pedestrian access and traffic circulation.</i></p>
<p><b>Assessment:</b> The proposal is consistent with the zone purpose.</p>

LOCAL AREA OBJECTIVES
<p><i>To consolidate growth within the existing urban land use framework of the towns of Campbell Town, Longford and Perth.</i></p> <p><i>To manage development in the General business zone so as to conserve and enhance the quality of the Heritage Precincts in the Campbell Town, Longford, and Perth town centres.</i></p> <p><i>To ensure developments within street reservations contribute positively to the context of the Heritage Precincts in each settlement.</i></p>
<p><b>Assessment:</b> The proposal is consistent with the local area objectives.</p>

USE STANDARDS
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**21.3.1 Amenity**

<p><i>Objective: To ensure that the use of land is not detrimental to the amenity of the surrounding area in terms of noise, emissions, operating hours or transport.</i></p>	
<b>Acceptable Solutions</b>	<b>Performance Criteria</b>
<p>A1 <i>Commercial vehicles (except for visitor accommodation and recreation) must only operate between 6.00am and 10.00pm Monday to Sunday.</i></p>	<p>P1 <i>Commercial vehicles (except for visitor accommodation and recreation) must not cause or be likely to cause an environmental nuisance through emissions including noise and traffic movement, odour, dust and illumination.</i></p>
<p><b>Comment:</b> The proposal is for commercial vehicles to operate 7.30 a.m. to 6 p.m. Monday to Friday. This complies with the acceptable solution and a condition limiting vehicles to these hours will be placed on the permit.</p>	<p>Not applicable.</p>
<p>A2 <i>Noise levels at the boundary of the site with any adjoining land must not exceed:</i></p> <p>a) <i>50dB(A) day time; and</i></p> <p>b) <i>40dB(A) night time; and</i></p> <p>c) <i>5dB(A) above background for intrusive noise.</i></p>	<p>P2 <i>Noise must not cause unreasonable loss of amenity to nearby sensitive uses.</i></p>



<b>Comment:</b> A condition will be placed on the permit limiting noise to these levels.	Not applicable.
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CODES		
E1.0	BUSHFIRE PRONE AREAS CODE	N/a
E2.0	POTENTIALLY CONTAMINATED LAND	N/a
E3.0	LANDSLIP CODE	N/a
E4.0	ROAD AND RAILWAY ASSETS CODE	See code assessment
E.5.0	FLOOD PRONE AREAS CODE	N/a
E6.0	CAR PARKING AND SUSTAINABLE TRANSPORT CODE	See code assessment
E7.0	SCENIC MANAGEMENT CODE	N/a
E8.0	BIODIVERSITY CODE	N/a
E9.0	WATER QUALITY CODE	N/a
E10.0	RECREATION AND OPEN SPACE CODE	N/a
E11.0	ENVIRONMENTAL IMPACTS & ATTENUATION CODE	N/a
E12.0	AIRPORTS IMPACT MANAGEMENT CODE	N/a
E13.0	LOCAL HISTORIC HERITAGE CODE	Proposed fence prohibited by Heritage Precincts Specific Area Plan
E14.0	COASTAL CODE	N/a
E15.0	SIGNS CODE	N/a

**ASSESSMENT AGAINST E4.0  
ROAD AND RAILWAY ASSETS CODE**

This code applies to use or development of land that:

- a) requires a new access, junction or level crossing; or
- b) intensifies the use of an existing access, junction or level crossing; or
- c) involves a sensitive use, a building, works or subdivision on or within 50 metres of a railway or land shown in this planning scheme as:
  - i) a future road or railway; or
  - ii) a category 1 or 2 road where such road is subject to a speed limit of more than 60 kilometres per hour.

**E4.6 Use Standards**

**E4.6.1 Use and road or rail infrastructure**

**Objective**

To ensure that the safety and efficiency of road and rail infrastructure is not reduced by the creation of new accesses and junctions or increased use of existing accesses and junctions.

Acceptable Solutions	Performance Criteria
<p>A1 Sensitive use on or within 50m of a category 1 or 2 road, in an area subject to a speed limit of more than 60km/h, a railway or future road or railway must not result in an increase to the annual average daily traffic (AADT) movements to or from the site by more than 10%.</p>	<p>P1 Sensitive use on or within 50m of a category 1 or 2 road, in an area subject to a speed limit of more than 60km/h, a railway or future road or railway must demonstrate that the safe and efficient operation of the infrastructure will not be detrimentally affected.</p>
<p>Not applicable</p>	<p>Not applicable</p>
<p>A2 For roads with a speed limit of 60km/h or less the use must not generate more than a total of 40 vehicle entry and exit movements per day</p>	<p>P2 For roads with a speed limit of 60km/h or less, the level of use, number, location, layout and design of accesses and junctions must maintain an acceptable level of safety for all road users, including pedestrians and cyclists.</p>
<p>It is estimated that there will be 6 light vehicle movements per day (employees) and 12 commercial vehicle movements per day. The proposal complies</p>	<p>Not applicable.</p>



<p>A3 For roads with a speed limit of more than 60km/h the use must not increase the annual average daily traffic (AADT) movements at the existing access or junction by more than 10%.</p>	<p>P3 For limited access roads and roads with a speed limit of more than 60km/h:</p> <ul style="list-style-type: none"> <li>a) access to a category 1 road or limited access road must only be via an existing access or junction or the use or development must provide a significant social and economic benefit to the State or region; and</li> <li>b) any increase in use of an existing access or junction or development of a new access or junction to a limited access road or a category 1, 2 or 3 road must be for a use that is dependent on the site for its unique resources, characteristics or locational attributes and an alternate site or access to a category 4 or 5 road is not practicable; and</li> <li>c) an access or junction which is increased in use or is a new access or junction must be designed and located to maintain an adequate level of safety and efficiency for all road users.</li> </ul>
<p>Not applicable</p>	<p>Not applicable.</p>

**E4.7 Development Standards**

**E4.7.1 Development on and adjacent to Existing and Future Arterial Roads and Railways**

<p>Objective</p> <p>To ensure that development on or adjacent to category 1 or 2 roads (outside 60km/h), railways and future roads and railways is managed to:</p> <ul style="list-style-type: none"> <li>a) ensure the safe and efficient operation of roads and railways; and</li> <li>b) allow for future road and rail widening, realignment and upgrading; and</li> <li>c) avoid undesirable interaction between roads and railways and other use or development.</li> </ul>	
<p><b>Acceptable Solutions</b></p>	<p><b>Performance Criteria</b></p>
<p>A1 The following must be at least 50m from a railway, a future road or railway, and a category 1 or 2 road in an area subject to a speed limit of more than 60km/h:</p>	<p>P1 Development including buildings, road works, earthworks, landscaping works and level crossings on or within 50m of a category 1 or 2 road, in an area subject to a speed limit of more than 60km/h, a railway or future road or railway must be</p>

<p>a) new road works, buildings, additions and extensions, earthworks and landscaping works; and</p> <p>b) building envelopes on new lots; and</p> <p>c) outdoor sitting, entertainment and children's play areas</p>	<p>sited, designed and landscaped to:</p> <p>a) maintain or improve the safety and efficiency of the road or railway or future road or railway, including line of sight from trains; and</p> <p>b) mitigate significant transport-related environmental impacts, including noise, air pollution and vibrations in accordance with a report from a suitably qualified person; and</p> <p>c) ensure that additions or extensions of buildings will not reduce the existing setback to the road, railway or future road or railway; and</p> <p>d) ensure that temporary buildings and works are removed at the applicant's expense within three years or as otherwise agreed by the road or rail authority.</p>
<p>Complies.</p>	<p>Not applicable.</p>

**E4.7.2 Management of Road Accesses and Junctions**

<p><b>Objective</b></p> <p>To ensure that the safety and efficiency of roads is not reduced by the creation of new accesses and junctions or increased use of existing accesses and junctions.</p>	
<p><b>Acceptable Solutions</b></p>	<p><b>Performance Criteria</b></p>
<p>A1 For roads with a speed limit of 60km/h or less the development must include only one access providing both entry and exit, or two accesses providing separate entry and exit.</p>	<p>P1 For roads with a speed limit of 60km/h or less, the number, location, layout and design of accesses and junctions must maintain an acceptable level of safety for all road users, including pedestrians and cyclists.</p>
<p>Complies.</p>	<p>Not applicable.</p>
<p>A2 For roads with a speed limit of more than 60km/h the development must not</p>	<p>P2 For limited access roads and roads with a</p>



<p>include a new access or junction.</p>	<p>speed limit of more than 60km/h:</p> <ul style="list-style-type: none"> <li>a) access to a category 1 road or limited access road must only be via an existing access or junction or the development must provide a significant social and economic benefit to the State or region; and</li> <li>b) any increase in use of an existing access or junction or development of a new access or junction to a limited access road or a category 1, 2 or 3 road must be dependent on the site for its unique resources, characteristics or locational attributes and an alternate site or access to a category 4 or 5 road is not practicable; and</li> <li>c) an access or junction which is increased in use or is a new access or junction must be designed and located to maintain an adequate level of safety and efficiency for all road users.</li> </ul>
<p>Not applicable.</p>	<p>Not applicable.</p>

**E4.7.3 Management of Rail Level Crossings**

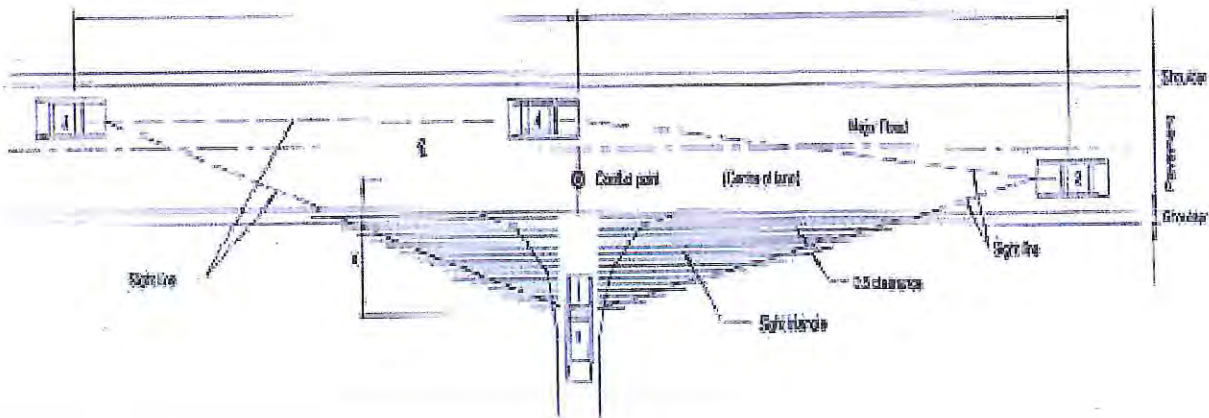
<p>Objective</p> <p>To ensure that the safety and the efficiency of a railway is not unreasonably reduced by access across the railway.</p>
---

Acceptable Solutions	Performance Criteria
<p>A1 Where land has access across a railway:</p> <p>a) development does not include a level crossing; or</p> <p>b) development does not result in a material change onto an existing level crossing.</p>	<p>P1 Where land has access across a railway:</p> <p>a) the number, location, layout and design of level crossings maintain or improve the safety and efficiency of the railway; and</p> <p>b) the proposal is dependent upon the site due to unique resources, characteristics or location attributes and the use or development will have social and economic benefits that are of State or regional significance; or</p> <p>c) it is uneconomic to relocate an existing use to a site that does not require a level crossing; and</p> <p>d) an alternative access or junction is not practicable.</p>
Not applicable	Not applicable.



**E4.7.4 Sight Distance at Accesses, Junctions and Level Crossings**

<p>Objective</p> <p>To ensure that use and development involving or adjacent to accesses, junctions and level crossings allows sufficient sight distance between vehicles and between vehicles and trains to enable safe movement of traffic.</p>	
Acceptable Solutions	Performance Criteria
<p>A1 Sight distances at</p> <p>a) an access or junction must comply with the Safe Intersection Sight Distance shown in Table E4.7.4; and</p> <p>b) rail level crossings must comply with <i>AS1742.7 Manual of uniform traffic control devices - Railway crossings</i>, Standards Association of Australia; or</p> <p>c) If the access is a temporary access, the written consent of the relevant authority has been obtained.</p>	<p>P1 The design, layout and location of an access, junction or rail level crossing must provide adequate sight distances to ensure the safe movement of vehicles.</p>
Complies.	Not applicable.



**Figure E4.7.4 Sight Lines for Accesses and Junctions**

X is the distance of the driver from the conflict point.

For category 1, 2 and 3 roads X = 7m minimum and for other roads X = 5m minimum.

Table E4.7.4 Safe Intersection Sight Distance (SISD)

<i>Vehicle Speed</i>	<i>Safe Intersection Sight Distance (SISD) metres, for speed limit of:</i>	
<i>km/h</i>	<i>60 km/h or less</i>	<i>Greater than 60 km/h</i>
50	80	90
60	105	115
70	130	140
80	165	175
90		210
100		250
110		290

**Notes:**

- (a) Vehicle speed is the actual or recorded speed of traffic passing along the road and is the speed at or below which 85% of passing vehicles travel.
- (b) For safe intersection sight distance (SISD):
- (i) All sight lines (driver to object vehicle) are to be between points 1.2 metres above the road and access surface at the respective vehicle positions with a clearance to any sight obstruction of 0.5 metres to the side and below, and 2.0 metres above all sight lines;
  - (ii) These sight line requirements are to be maintained over the full sight triangle for vehicles at any point between positions 1, 2 and 3 in Figure E4.7.4 and the access junction;
  - (iii) A driver at position 1 must have sight lines to see cars at any point between the access and positions 3 and 2 in Figure E4.7.4;
  - (iv) A driver at any point between position 3 and the access must have sight lines to see a car at position 4; and
  - (v) A driver at position 4 must have sight lines to see a car at any point between position 2 and the access.



**ASSESSMENT AGAINST E6.0  
CAR PARKING & SUSTAINABLE TRANSPORT CODE**

**E6.6 Use Standards**

**E6.6.1 Car Parking Numbers**

Objective: To ensure that an appropriate level of car parking is provided to service use.	
Acceptable Solutions	Performance Criteria
<p>A1 The number of car parking spaces must not be less than the requirements of:</p> <ul style="list-style-type: none"> <li>a) Table E6.1; or</li> <li>b) a parking precinct plan contained in Table E6.6: Precinct Parking Plans (except for dwellings in the General Residential Zone).</li> </ul>	<p>P1 The number of car parking spaces provided must have regard to:</p> <ul style="list-style-type: none"> <li>a) the provisions of any relevant location specific car parking plan; and</li> <li>b) the availability of public car parking spaces within reasonable walking distance; and</li> <li>c) any reduction in demand due to sharing of spaces by multiple uses either because of variations in peak demand or by efficiencies gained by consolidation; and</li> <li>d) the availability and frequency of public transport within reasonable walking distance of the site; and</li> <li>e) site constraints such as existing buildings, slope, drainage, vegetation and landscaping; and</li> <li>f) the availability, accessibility and safety of on-road parking, having regard to the nature of the roads, traffic management and other uses in the vicinity; and</li> <li>g) an empirical assessment of the car parking demand; and</li> <li>h) the effect on streetscape, amenity and vehicle, pedestrian and cycle safety and convenience; and</li> <li>i) the recommendations of a traffic impact assessment prepared for the proposal; and</li> <li>j) any heritage values of the site; and</li> <li>k) for residential buildings and multiple dwellings, whether parking is adequate to meet the needs of the residents having regard to:                         <ul style="list-style-type: none"> <li>i) the size of the dwelling and the number of bedrooms; and</li> <li>ii) the pattern of parking in the locality; and</li> <li>iii) any existing structure on the land.</li> </ul> </li> </ul>
<p>Comment:</p> <ul style="list-style-type: none"> <li>a) There is no relevant location specific car parking plan.</li> <li>b) There are public car parking spaces within reasonable walking distance in Wellington St.</li> <li>c) There is no reduction in demand due to sharing of spaces by multiple uses.</li> <li>d) Tassielink runs a bus service along Marlborough Street approximately hourly between 7 am and 6pm Weekdays.</li> <li>e) Existing buildings and doorways constrain the number of parking spaces that can be provided.</li> <li>f) There are on-road parking in Wellington Street.</li> <li>g) There will be two staff employed on site requiring a maximum of 2 spaces. The total of 4 spaces is considered adequate for staff, customers and sales reps given the nature of the business.</li> <li>h) Use of existing sealed area for parking won't have a negative effect on streetscape, amenity and vehicle, pedestrian and cycle safety and convenience.</li> </ul>	

- i) the proposal did not require a traffic impact assessment.
- k) NA

**Table E6.1: Parking Space Requirements**

<b>Use</b>	<b>Parking Requirement</b>	
	<b>Vehicle</b>	<b>Bicycle</b>
<i>(vehicle/caravan/boat store, cold store, wood yard / fuel depot, warehouse)</i>	<i>1 space per 200m<sup>2</sup> of the site or 1 space per 2 employees; whichever is greater</i>	<i>No requirement</i>
	<i>Site area of 3,681m<sup>2</sup> requires 18.4 spaces. 4 parking spaces are proposed</i>	

**E6.6.2 Bicycle Parking Numbers**

Objective: To encourage cycling as a mode of transport within areas subject to urban speed zones by ensuring safe, secure and convenient parking for bicycles.	
<b>Acceptable Solutions</b>	<b>Performance Criteria</b>
<p>A1.1 Permanently accessible bicycle parking or storage spaces must be provided either on the site or within 50m of the site in accordance with the requirements of Table E6.1; or</p> <p>A1.2 The number of spaces must be in accordance with a parking precinct plan contained in Table E6.6: Precinct Parking Plans.</p>	<p>P1 Permanently accessible bicycle parking or storage spaces must be provided having regard to the:</p> <ul style="list-style-type: none"> <li>a) likely number and type of users of the site and their opportunities and likely preference for bicycle travel; and</li> <li>b) location of the site and the distance a cyclist would need to travel to reach the site; and</li> <li>c) availability and accessibility of existing and planned parking facilities for bicycles in the vicinity.</li> </ul>
Comment: No bicycle parking is required.	

**E6.6.3 Taxi Drop-off and Pickup**

Objective: To ensure that taxis can adequately access developments.	
<b>Acceptable Solutions</b>	<b>Performance Criteria</b>
A1 One dedicated taxi drop-off and pickup space must be provided for every 50 car spaces required by Table E6.1 or part thereof (except for dwellings in the General Residential Zone).	P1 No performance criteria.
Comment: No taxi spaces are required.	

**E6.6.4 Motorbike Parking Provisions**

Objective: To ensure that motorbikes are adequately provided for in parking considerations.	
<b>Acceptable Solutions</b>	<b>Performance Criteria</b>
A1 One motorbike parking space must be provided for each 20 car spaces required by Table E6.1 or part thereof.	P1 No performance criteria.
Comment: No motorbike parking is required.	



**E6.7 Development Standards****E6.7.1 Construction of Car Parking Spaces and Access Strips**

Objective: To ensure that car parking spaces and access strips are constructed to an appropriate standard.	
Acceptable Solutions	Performance Criteria
<p>A1 All car parking, access strips manoeuvring and circulation spaces must be:</p> <p>a) formed to an adequate level and drained; and</p> <p>b) except for a single dwelling, provided with an impervious all weather seal; and</p> <p>c) except for a single dwelling, line marked or provided with other clear physical means to delineate car spaces.</p>	<p>P1 All car parking, access strips manoeuvring and circulation spaces must be readily identifiable and constructed to ensure that they are useable in all weather conditions.</p>
Comment: Complies.	

**E6.7.2 Design and Layout of Car Parking**

Objective: To ensure that car parking and manoeuvring space are designed and laid out to an appropriate standard.	
Acceptable Solutions	Performance Criteria
<p>A1.1 Where providing for 4 or more spaces, parking areas (other than for parking located in garages and carports for dwellings in the General Residential Zone) must be located behind the building line; and</p> <p>A1.2 Within the General residential zone, provision for turning must not be located within the front setback for residential buildings or multiple dwellings.</p>	<p>P1 The location of car parking and manoeuvring spaces must not be detrimental to the streetscape or the amenity of the surrounding areas, having regard to:</p> <p>a) the layout of the site and the location of existing buildings; and</p> <p>b) views into the site from the road and adjoining public spaces; and</p> <p>c) the ability to access the site and the rear of buildings; and</p> <p>d) the layout of car parking in the vicinity; and</p> <p>e) the level of landscaping proposed for the car parking.</p>
Comment: Complies.	
<p>A2.1 Car parking and manoeuvring space must:</p> <p>a) have a gradient of 10% or less; and</p> <p>b) where providing for more than 4 cars, provide for vehicles to enter and exit the site in a forward direction; and</p> <p>c) have a width of vehicular access no less than prescribed in Table E6.2 and Table E6.3, and</p> <p>A2.2 The layout of car spaces and access ways must be designed in accordance with <i>Australian Standards AS 2890.1 - 2004 Parking Facilities, Part 1: Off Road Car Parking</i>.</p>	<p>P2 Car parking and manoeuvring space must:</p> <p>a) be convenient, safe and efficient to use having regard to matters such as slope, dimensions, layout and the expected number and type of vehicles; and</p> <p>b) provide adequate space to turn within the site unless reversing from the site would not adversely affect the safety and convenience of users and passing traffic.</p>

Comment: Complies.

**Table E6.2: Access Widths for Vehicles**

<i>Number of parking spaces served</i>	<i>Access width (see note 1)</i>	<i>Passing bay (2.0m wide by 5.0m long plus entry and exit tapers) (see note 2)</i>
1 to 5	3.0m	Every 30m

**E6.7.3 Car Parking Access, Safety and Security**

Objective: To ensure adequate access, safety and security for car parking and for deliveries.	
Acceptable Solutions	Performance Criteria
<p>A1 Car parking areas with greater than 20 parking spaces must be:</p> <p>a) secured and lit so that unauthorised persons cannot enter or;</p> <p>b) visible from buildings on or adjacent to the site during the times when parking occurs.</p>	<p>P1 Car parking areas with greater than 20 parking spaces must provide for adequate security and safety for users of the site, having regard to the:</p> <p>a) levels of activity within the vicinity; and</p> <p>b) opportunities for passive surveillance for users of adjacent building and public spaces adjoining the site.</p>
Comment: Not applicable.	

**E6.7.4 Parking for Persons with a Disability**

Objective: To ensure adequate parking for persons with a disability.	
Acceptable Solutions	Performance Criteria
A1 All spaces designated for use by persons with a disability must be located closest to the main entry point to the building.	P1 No performance criteria.
A2 One of every 20 parking spaces or part thereof must be constructed and designated for use by persons with disabilities in accordance with <i>Australian Standards AS/NZ 2890.6 2009</i> .	P2 No performance criteria.
Comment: Not required.	

**E6.7.6 Loading and Unloading of Vehicles, Drop-off and Pickup**

Objective: To ensure adequate access for people and goods delivery and collection and to prevent loss of amenity and adverse impacts on traffic flows.	
Acceptable Solutions	Performance Criteria
<p>A1 For retail, commercial, industrial, service industry or warehouse or storage uses:</p> <p>a) at least one loading bay must be provided in accordance with Table E6.4; and</p> <p>b) loading and bus bays and access strips must be designed in accordance with <i>Australian Standard AS/NZS 2890.3 2002</i> for the type of vehicles that will use the site.</p>	<p>P1 For retail, commercial, industrial, service industry or warehouse or storage uses adequate space must be provided for loading and unloading the type of vehicles associated with delivering and collecting people and goods where these are expected on a regular basis.</p>
Comment: Complies.	

**E6.8 Provisions for Sustainable Transport**

**E6.8.1 Bicycle End of Trip Facilities**

Not used in this planning scheme

**E6.8.2 Bicycle Parking Access, Safety and Security**

Objective	
To ensure that parking and storage facilities for bicycles are safe, secure and convenient.	
Acceptable Solutions	Performance Criteria
A1.1 Bicycle parking spaces for customers and visitors must: a) be accessible from a road, footpath or cycle track; and b) include a rail or hoop to lock a bicycle to that meets <i>Australian Standard AS 2890.3 1993</i> ; and c) be located within 50m of and visible or signposted from the entrance to the activity they serve; and d) be available and adequately lit in accordance with <i>Australian Standard AS/NZS 1158 2005 Lighting Category C2</i> during the times they will be used; and A1.2 Parking space for residents' and employees' bicycles must be under cover and capable of being secured by lock or bicycle lock.	P1 Bicycle parking spaces must be safe, secure, convenient and located where they will encourage use.
A2 Bicycle parking spaces must have: a) minimum dimensions of: i) 1.7m in length; and ii) 1.2m in height; and iii) 0.7m in width at the handlebars; and b) unobstructed access with a width of at least 2m and a gradient of no more 5% from a public area where cycling is allowed.	P2 Bicycle parking spaces and access must be of dimensions that provide for their convenient, safe and efficient use.
Comment: Not required.	

**E6.8.5 Pedestrian Walkways**

Objective: To ensure pedestrian safety is considered in development	
Acceptable Solution	Performance Criteria
A1 Pedestrian access must be provided for in accordance with Table E6.5.	P1 Safe pedestrian access must be provided within car park and between the entrances to buildings and the road.
Comment: Not required.	

**Table E6.5: Pedestrian Access**

Number of Parking Spaces Required	Pedestrian Facility
1-10	No separate access required (i.e. pedestrians may share the driveway). [Note (a) applies].
11 or more	A 1m wide footpath separated from the driveway and parking aisles except at crossing points. [Notes (a) and (b) apply].



**Notes**

- a) *In parking areas containing spaces allocated for disabled persons, a footpath having a minimum width of 1.5m and a gradient not exceeding 1 in 14 is required from those spaces to the principal building.*
- b) *Separation is deemed to be achieved by:*
  - i) *a horizontal distance of 2.5m between the edge of the driveway and the footpath; or*
  - ii) *protective devices such as bollards, guard rails or planters between the driveway and the footpath; and*
  - iii) *signs and line marking at points where pedestrians are intended to cross driveways or parking aisles.*

**ASSESSMENT AGAINST F2.0  
HERITAGE PRECINCTS SPECIFIC AREA PLAN**

F2.5.15 Fences and Gates

<p><b>Objective</b></p> <p>To ensure that original fences are retained and restored where possible and that the design and materials of any replacement complement the setting and the architectural style of the main building on the site.</p>	
<b>Acceptable Solutions</b>	<b>Performance Criteria</b>
<p>A1.1 Replacement of front fence must be in the same design, materials and scale; or</p> <p>A1.2</p> <ul style="list-style-type: none"> <li>a) Front fence must be a timber vertical picket fence with a maximum height of 1200mm.</li> <li>b) Side and rear fences must be vertical timber palings to a maximum height of 1800mm.</li> </ul>	<p>P1 No performance criteria</p>
<p><b>Comment:</b> The application variously proposes, on the plans, a 1800mm high black wrought iron front security fence, and in the description, a 1800mm high black steel picket type security fence and gate along the frontage. Whilst either has the potential to be appropriate to the heritage streetscape, the scheme does not allow consideration of either. As such the permit will have to be conditioned to against the construction of the proposed fence.</p>	<p>Not applicable.</p>

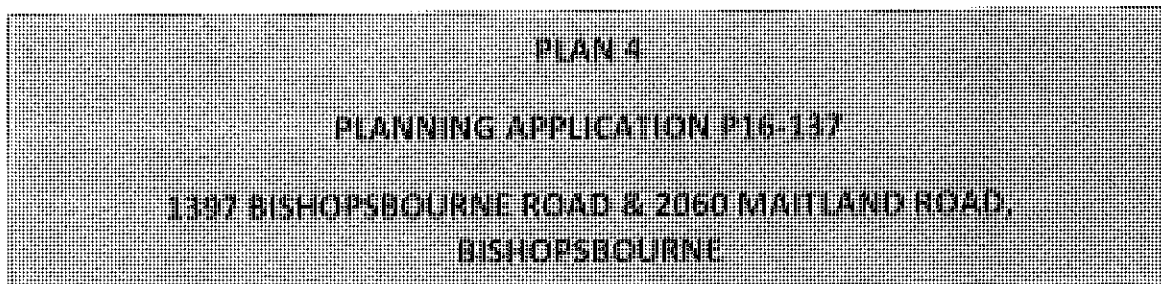
<b>SPECIFIC AREA PLANS</b>	
F1.0 TRANSLINK SPECIFIC AREA PLAN	N/a
F2.0 HERITAGE PRECINCTS SPECIFIC AREA PLAN	Proposed fence prohibited by Heritage Precincts Specific Area Plan

SPECIAL PROVISIONS	
9.1 Changes to an Existing Non-conforming Use	N/a
9.2 Development for Existing Discretionary Uses	N/a
9.3 Adjustment of a Boundary	N/a
9.4 Demolition	N/a
9.5 Subdivision	N/a

STATE POLICIES
The proposal is consistent with all State Policies.

OBJECTIVES OF LAND USE PLANNING & APPROVALS ACT 1993
The proposal is consistent with the objectives of the <i>Land Use Planning &amp; Approvals Act 1993</i> .

STRATEGIC PLAN/ANNUAL PLAN/COUNCIL POLICIES
<i>Strategic Plan 2007-2017</i> 4.3 – <i>Development Control</i>



**ATTACHMENTS**

- A Application & plans



# PLANNING APPLICATION Proposal

Description of proposal: SUBDIVISION (BOUNDARY ADJUSTMENT)  
3 LOTS FROM 3 TITLES. SEE PLANNING  
APPLICATION.

(attach additional sheets if necessary)

Site address: 1397 BISHOPSBOURNE ROAD  
TOIBERRY

ID no: ..... and/or Council's property no: .....

AND/OR LOT 1 10.5ha  
Area of land: LOT 2 48.5ha ha/m<sup>2</sup> and/or CT no: F/R 167829/2, F/R 204482/1,  
LOT 3 157ha. 1/2 F/R 65985/1  
Estimated cost of project \$ N.A. (include cost of landscaping,  
car parks etc for commercial/industrial uses)

Are there any existing buildings on this property? (Yes) / No  
If yes - main building is used as RESIDENCE

If variation to Planning Scheme provisions requested, justification to be provided:  
N.A.

(attach additional sheets if necessary)

If outbuilding has a floor area of over 56m<sup>2</sup>, or there will be over 56m<sup>2</sup> of outbuildings on the lot,  
or is over 3m at apex in residential zone, details of the use of the outbuilding to be provided:  
N.A.

External colours: N.A.  
(attach additional sheets if necessary)

Is any signage required? N.A.  
(if yes, provide details)

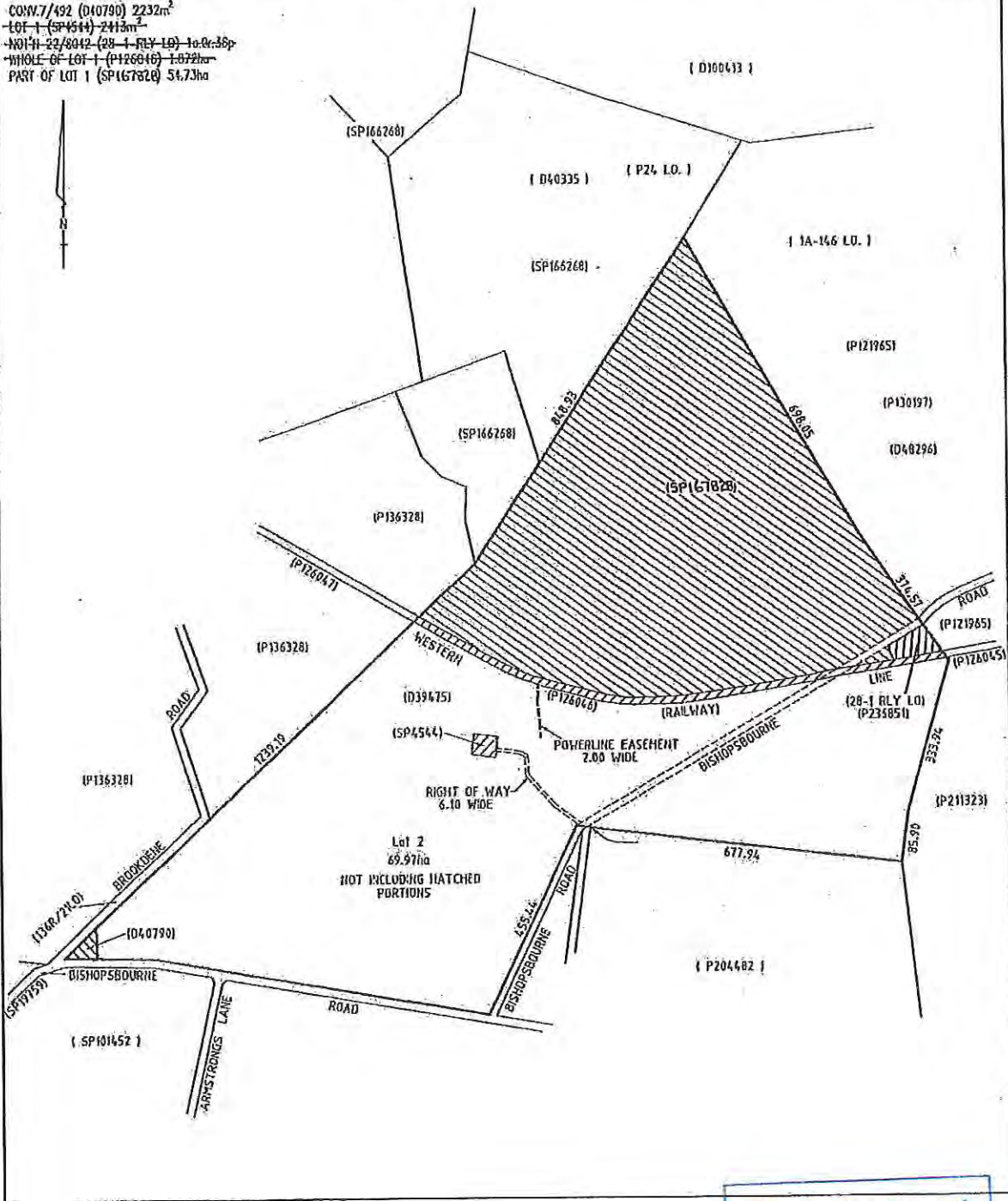


OWNER READER INVESTMENTS PTY. LTD.		<b>PLAN OF TITLE</b>		REGISTERED NUMBER <b>P167829</b>	
FOLIO REFERENCE F/R 39475-1				LOCATION LAND DISTRICT OF WESTMORLAND PARISH OF LITTLE HAMPTON AND LONGFORD CONVERTED BY PLAN No. D.39475	
GRANTEE Part of 2246 Acres Located to William Pritchard Weston Part of 2032a-Or-Op Acres Granted to George Briscoe Skardon		COMPILED BY MICHELL HODGETTS & ASSOC. P/L		Recorder of Titles <i>Alice Kawa</i>	
MAPSHEET MUNICIPAL CODE No. 123-(5039)	LAST UPI No	LAST PLAN No D39475	ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN		

SKETCH BY WAY OF ILLUSTRATION ONLY  
"EXCEPTED LANDS"

**BALANCE PLAN**

CONV. 7/492 (D10790) 2232m<sup>2</sup>  
LOT 1 (SP4544) 2413m<sup>2</sup>  
NOT IN 22/8042 (28-1 RLY LO) 3a.0r.36p  
WHOLE OF LOT 1 (P126046) 1.872ha  
PART OF LOT 1 (SP167829) 54.73ha



Exhibited



