

Client Reference: Malbec Properties Mundamia

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Benzo(a)pyrene	mg/kg	84007-46	<0.05 <0.05	84007-21	85%
Indeno(1,2,3-c,d)pyrene	mg/kg	84007-46	<0.1 <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	84007-46	<0.1 <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	84007-46	<0.1 <0.1	[NR]	[NR]
Benzo(a)pyrene TEQ	mg/kg	84007-46	<0.5 <0.5	[NR]	[NR]
Surrogate p-Terphenyl- d ₁₄	%	84007-46	107 99 RPD: 8	84007-21	95%
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	84007-46	14/01/2013 14/01/2013	LCS-3	14/01/2013
Date analysed	-	84007-46	14/01/2013 14/01/2013	LCS-3	14/01/2013
HCB	mg/kg	84007-46	<0.1 <0.1	[NR]	[NR]
alpha-BHC	mg/kg	84007-46	<0.1 <0.1	LCS-3	99%
gamma-BHC	mg/kg	84007-46	<0.1 <0.1	[NR]	[NR]
beta-BHC	mg/kg	84007-46	<0.1 <0.1	LCS-3	110%
Heptachlor	mg/kg	84007-46	<0.1 <0.1	LCS-3	76%
delta-BHC	mg/kg	84007-46	<0.1 <0.1	[NR]	[NR]
Aldrin	mg/kg	84007-46	<0.1 <0.1	LCS-3	115%
Heptachlor Epoxide	mg/kg	84007-46	<0.1 <0.1	LCS-3	103%
gamma-Chlordane	mg/kg	84007-46	<0.1 <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	84007-46	<0.1 <0.1	[NR]	[NR]
Endosulfan I	mg/kg	84007-46	<0.1 <0.1	[NR]	[NR]
pp-DDE	mg/kg	84007-46	<0.1 <0.1	LCS-3	102%
Dieldrin	mg/kg	84007-46	<0.1 <0.1	LCS-3	99%
Endrin	mg/kg	84007-46	<0.1 <0.1	LCS-3	85%
pp-DDD	mg/kg	84007-46	<0.1 <0.1	LCS-3	91%
Endosulfan II	mg/kg	84007-46	<0.1 <0.1	[NR]	[NR]
pp-DDT	mg/kg	84007-46	<0.1 <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	84007-46	<0.1 <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	84007-46	<0.1 <0.1	LCS-3	108%
Methoxychlor	mg/kg	84007-46	<0.1 <0.1	[NR]	[NR]
Surrogate TCMX	%	84007-46	110 102 RPD: 8	LCS-3	100%

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QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	84007-63	14/01/2013 14/01/2013	LCS-3	14/01/2013
Date analysed	-	84007-63	14/01/2013 14/01/2013	LCS-3	14/01/2013
Diazinon	mg/kg	84007-63	<0.1 <0.1	[NR]	[NR]
Dimethoate	mg/kg	84007-63	<0.1 <0.1	[NR]	[NR]
Chlorpyrifos-methyl	mg/kg	84007-63	<0.1 <0.1	[NR]	[NR]
Ronnel	mg/kg	84007-63	<0.1 <0.1	[NR]	[NR]
Chlorpyrifos	mg/kg	84007-63	<0.1 <0.1	LCS-3	105%
Fenitrothion	mg/kg	84007-63	<0.1 <0.1	LCS-3	104%
Bromophos-ethyl	mg/kg	84007-63	<0.1 <0.1	[NR]	[NR]
Ethion	mg/kg	84007-63	<0.1 <0.1	LCS-3	112%
Surrogate TCMX	%	84007-63	102 92 RPD: 10	LCS-3	106%
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	84007-46	14/01/2013 14/01/2013	84007-21	14/01/2013
Date analysed	-	84007-46	14/01/2013 14/01/2013	84007-21	14/01/2013
Arochlor 1016	mg/kg	84007-46	<1 <1	[NR]	[NR]
Arochlor 1221	mg/kg	84007-46	<1 <1	[NR]	[NR]
Arochlor 1232	mg/kg	84007-46	<1 <1	[NR]	[NR]
Arochlor 1242	mg/kg	84007-46	<1 <1	[NR]	[NR]
Arochlor 1248	mg/kg	84007-46	<1 <1	[NR]	[NR]
Arochlor 1254	mg/kg	84007-46	<1 <1	84007-21	131%
Arochlor 1260	mg/kg	84007-46	<1 <1	[NR]	[NR]
Surrogate TCLMX	%	84007-46	110 102 RPD: 8	84007-21	92%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	84007-46	14/01/2013 14/01/2013	LCS-2	14/01/2013
Date analysed	-	84007-46	14/01/2013 14/01/2013	LCS-2	14/01/2013
Arsenic	mg/kg	84007-46	6 6 RPD: 0	LCS-2	91%
Cadmium	mg/kg	84007-46	<0.5 <0.5	LCS-2	93%
Chromium	mg/kg	84007-46	19 25 RPD: 27	LCS-2	98%
Copper	mg/kg	84007-46	39 38 RPD: 3	LCS-2	97%
Lead	mg/kg	84007-46	19 35 RPD: 59	LCS-2	94%
Mercury	mg/kg	84007-46	<0.1 <0.1	LCS-2	106%
Nickel	mg/kg	84007-46	13 12 RPD: 8	LCS-2	97%
Zinc	mg/kg	84007-46	62 61 RPD: 2	LCS-2	96%

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QUALITY CONTROL Trazine Herbicides in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Atrazine	mg/kg	[NT]	[NT]	[NR]	[NR]
Hexazinone	mg/kg	[NT]	[NT]	[NR]	[NR]
Metribuzine	mg/kg	[NT]	[NT]	[NR]	[NR]
Prometryne	mg/kg	[NT]	[NT]	[NR]	[NR]
Simazine	mg/kg	[NT]	[NT]	84007-37	96%
QUALITY CONTROL Phenoxy Acid Herbicides in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	84007-15	16/01/2013
Date analysed	-	[NT]	[NT]	84007-15	18/01/2013
Dicamba	mg/kg	[NT]	[NT]	84007-15	84%
MCPA	mg/kg	[NT]	[NT]	84007-15	96%
Dichlorprop	mg/kg	[NT]	[NT]	84007-15	105%
2,4-D	mg/kg	[NT]	[NT]	84007-15	112%
2,4,5-T	mg/kg	[NT]	[NT]	84007-15	108%
2,4,5-TP	mg/kg	[NT]	[NT]	84007-15	115%
2,4-DB	mg/kg	[NT]	[NT]	84007-15	113%
MCPP	mg/kg	[NT]	[NT]	84007-15	111%
Triclopyr	mg/kg	[NT]	[NT]	84007-15	112%
Picloram	mg/kg	[NT]	[NT]	[NR]	[NR]
Clopyralid	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluroxypyr	mg/kg	[NT]	[NT]	84007-15	61%
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	84007-53	14/01/2013 14/01/2013	84007-21	14/01/2013
Date analysed	-	84007-53	14/01/2013 14/01/2013	84007-21	14/01/2013
HCB	mg/kg	84007-53	<0.1 <0.1	[NR]	[NR]
alpha-BHC	mg/kg	84007-53	<0.1 <0.1	84007-21	100%
gamma-BHC	mg/kg	84007-53	<0.1 <0.1	[NR]	[NR]
beta-BHC	mg/kg	84007-53	<0.1 <0.1	84007-21	107%
Heptachlor	mg/kg	84007-53	<0.1 <0.1	84007-21	98%
delta-BHC	mg/kg	84007-53	<0.1 <0.1	[NR]	[NR]
Aldrin	mg/kg	84007-53	<0.1 <0.1	84007-21	118%
Heptachlor Epoxide	mg/kg	84007-53	<0.1 <0.1	84007-21	104%
gamma-Chlordane	mg/kg	84007-53	<0.1 <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	84007-53	<0.1 <0.1	[NR]	[NR]
Endosulfan I	mg/kg	84007-53	<0.1 <0.1	[NR]	[NR]
pp-DDE	mg/kg	84007-53	<0.1 <0.1	84007-21	87%
Dieldrin	mg/kg	84007-53	<0.1 <0.1	84007-21	86%
Endrin	mg/kg	84007-53	<0.1 <0.1	84007-21	102%
pp-DDD	mg/kg	84007-53	<0.1 <0.1	84007-21	100%

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QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Endosulfan II	mg/kg	84007-53	<0.1 <0.1	[NR]	[NR]
pp-DDT	mg/kg	84007-53	<0.1 <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	84007-53	<0.1 <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	84007-53	<0.1 <0.1	84007-21	112%
Methoxychlor	mg/kg	84007-53	<0.1 <0.1	[NR]	[NR]
Surrogate TCMX	%	84007-53	100 100 RPD: 0	84007-21	112%
QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	84007-63	14/01/2013 14/01/2013	84007-21	14/01/2013
Date analysed	-	84007-63	14/01/2013 14/01/2013	84007-21	14/01/2013
Diazinon	mg/kg	84007-63	<0.1 <0.1	[NR]	[NR]
Dimethoate	mg/kg	84007-63	<0.1 <0.1	[NR]	[NR]
Chlorpyrifos-methyl	mg/kg	84007-63	<0.1 <0.1	[NR]	[NR]
Ronnel	mg/kg	84007-63	<0.1 <0.1	[NR]	[NR]
Chlorpyrifos	mg/kg	84007-63	<0.1 <0.1	84007-21	121%
Fenitrothion	mg/kg	84007-63	<0.1 <0.1	84007-21	110%
Bromophos-ethyl	mg/kg	84007-63	<0.1 <0.1	[NR]	[NR]
Ethion	mg/kg	84007-63	<0.1 <0.1	84007-21	73%
Surrogate TCMX	%	84007-63	102 92 RPD: 10	84007-21	121%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	84007-53	14/01/2013 14/01/2013	LCS-3	14/01/2013
Date analysed	-	84007-53	14/01/2013 14/01/2013	LCS-3	14/01/2013
Arsenic	mg/kg	84007-53	<4 <4	LCS-3	92%
Cadmium	mg/kg	84007-53	<0.5 <0.5	LCS-3	95%
Chromium	mg/kg	84007-53	11 12 RPD: 9	LCS-3	100%
Copper	mg/kg	84007-53	12 11 RPD: 9	LCS-3	99%
Lead	mg/kg	84007-53	6 5 RPD: 18	LCS-3	96%
Mercury	mg/kg	84007-53	<0.1 <0.1	LCS-3	103%
Nickel	mg/kg	84007-53	2 3 RPD: 40	LCS-3	98%
Zinc	mg/kg	84007-53	18 17 RPD: 6	LCS-3	97%

Client Reference: Malbec Properties Mundamia

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	84007-63	14/01/2013 14/01/2013	84007-54	14/01/2013
Date analysed	-	84007-63	14/01/2013 14/01/2013	84007-54	14/01/2013
HCB	mg/kg	84007-63	<0.1 <0.1	[NR]	[NR]
alpha-BHC	mg/kg	84007-63	<0.1 <0.1	84007-54	102%
gamma-BHC	mg/kg	84007-63	<0.1 <0.1	[NR]	[NR]
beta-BHC	mg/kg	84007-63	<0.1 <0.1	84007-54	111%
Heptachlor	mg/kg	84007-63	<0.1 <0.1	84007-54	81%
delta-BHC	mg/kg	84007-63	<0.1 <0.1	[NR]	[NR]
Aldrin	mg/kg	84007-63	<0.1 <0.1	84007-54	116%
Heptachlor Epoxide	mg/kg	84007-63	<0.1 <0.1	84007-54	102%
gamma-Chlordane	mg/kg	84007-63	<0.1 <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	84007-63	<0.1 <0.1	[NR]	[NR]
Endosulfan I	mg/kg	84007-63	<0.1 <0.1	[NR]	[NR]
pp-DDE	mg/kg	84007-63	<0.1 <0.1	84007-54	99%
Dieldrin	mg/kg	84007-63	<0.1 <0.1	84007-54	99%
Endrin	mg/kg	84007-63	<0.1 <0.1	84007-54	81%
pp-DDD	mg/kg	84007-63	<0.1 <0.1	84007-54	97%
Endosulfan II	mg/kg	84007-63	<0.1 <0.1	[NR]	[NR]
pp-DDT	mg/kg	84007-63	<0.1 <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	84007-63	<0.1 <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	84007-63	<0.1 <0.1	84007-54	105%
Methoxychlor	mg/kg	84007-63	<0.1 <0.1	[NR]	[NR]
Surrogate TCMX	%	84007-63	102 92 RPD: 10	84007-54	97%

Client Reference: Malbec Properties Mundamia

QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	84007-54	14/01/2013
Date analysed	-	[NT]	[NT]	84007-54	14/01/2013
Diazinon	mg/kg	[NT]	[NT]	[NR]	[NR]
Dimethoate	mg/kg	[NT]	[NT]	[NR]	[NR]
Chlorpyrifos-methyl	mg/kg	[NT]	[NT]	[NR]	[NR]
Ronnel	mg/kg	[NT]	[NT]	[NR]	[NR]
Chlorpyrifos	mg/kg	[NT]	[NT]	84007-54	100%
Fenitrothion	mg/kg	[NT]	[NT]	84007-54	95%
Bromophos-ethyl	mg/kg	[NT]	[NT]	[NR]	[NR]
Ethion	mg/kg	[NT]	[NT]	84007-54	91%
Surrogate TCMX	%	[NT]	[NT]	84007-54	104%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	84007-63	14/01/2013 14/01/2013	84007-21	14/01/2013
Date analysed	-	84007-63	14/01/2013 14/01/2013	84007-21	14/01/2013
Arsenic	mg/kg	84007-63	<4 <4	84007-21	98%
Cadmium	mg/kg	84007-63	<0.5 <0.5	84007-21	95%
Chromium	mg/kg	84007-63	11 15 RPD: 31	84007-21	97%
Copper	mg/kg	84007-63	50 57 RPD: 13	84007-21	130%
Lead	mg/kg	84007-63	110 130 RPD: 17	84007-21	129%
Mercury	mg/kg	84007-63	<0.1 <0.1	84007-21	102%
Nickel	mg/kg	84007-63	3 3 RPD: 0	84007-21	96%
Zinc	mg/kg	84007-63	960 1000 RPD: 4	84007-21	103%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	[NT]	[NT]	84007-54	14/01/2013
Date analysed	-	[NT]	[NT]	84007-54	14/01/2013
Arsenic	mg/kg	[NT]	[NT]	84007-54	91%
Cadmium	mg/kg	[NT]	[NT]	84007-54	92%
Chromium	mg/kg	[NT]	[NT]	84007-54	99%
Copper	mg/kg	[NT]	[NT]	84007-54	108%
Lead	mg/kg	[NT]	[NT]	84007-54	92%
Mercury	mg/kg	[NT]	[NT]	84007-54	112%
Nickel	mg/kg	[NT]	[NT]	84007-54	98%
Zinc	mg/kg	[NT]	[NT]	84007-54	97%

Report Comments:

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 84007-46 for Pb. Therefore a triplicate result has been issued as laboratory sample number 84007-68.

Total Recoverable Hydrocarbons in soil (NEPM):# Percent recovery is not possible to report as the high concentration of analytes in the sample/s have caused interference.

PAH's in soil:PQL has been raised due to the sample matrix requiring dilution.
Percent recovery is not possible to report as the high concentration of analytes in the sample/s have caused interference.

OC/PCB's in soil:PQL has been raised due to interference from analytes(other than those being tested) in the sample/s.

Asbestos: A portion of the supplied sample was sub-sampled for asbestos analysis according to Envirolab procedures. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 40-50g of sample in its own container.

Triazine Herbicides & Phenoxy acid herbicides analysed by NMI. Report No.RN953495.

Asbestos ID was analysed by Approved Identifier: Alex Tam

Asbestos ID was authorised by Approved Signatory: Lulu Guo

INS: Insufficient sample for this test

NA: Test not required

<: Less than

PQL: Practical Quantitation Limit

RPD: Relative Percent Difference

>: Greater than

NT: Not tested

NA: Test not required

LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batched of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

SOIL ANALYSIS CHAIN OF CUSTODY FORM

Project												
Name	Contamination Assessment: Malbec Properties Mundamia											
Martens Contact Officer	Gray Taylor					Contact Email	gtaylor@martens.com					
Sampling and Shipping	Sample Date	10/01/13		Dispatch Date	11/01/13		Turnaround Time	Normal				
	Our Reference	P0802193JC03V01 COC				Shipping Method (X)	Hand		Post		Courier	X
	On Ice (X)	X	No Ice (X)		Other (X)							
Laboratory												
Name	Envirolab Services P/L											
Sample Delivery Address	12 Ashley St, Chatswood											
Delivery Contact	Name	Aileen Hie		Phone	02 9910 6200		Fax		Email	ahie@envirolabservices.com.au		
Please Send Report By (X)	Post		Fax		Email	X	Reporting Email Address	gtaylor@martens.com				

Sample ID	Combo 5A (soil)	Combo 3 (Soil)	BTEX	ASBESTOS	HERBICIDES	8HM	OCP/OPP	COMPOSITE	Ferric Iron, and Total Iron	Sulfate	Phosphorous	Hold	Date Sampled
1 2193/401/0.05								53 C1					
2 2193/402/0.05						X	X	Y					
3 2193/403/0.05													
4 2193/404/0.05								54 C2					
5 2193/405/0.05						X	X	Y					
6 2193/406/0.05													
7 2193/407/0.05								55 C3					
8 2193/408/0.05						X	X	Y					
9 2193/409/0.05													
10 2193/410/0.05								56 C4					
11 2193/411/0.05						X	X	Y					
12 2193/412/0.05													
13 2193/DAM01/A					X			57 C5					
14 2193/DAM01/B						X	X	Y					

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 84007

Date Received: 11/1/13
Time Received: 12:30
Received by: JHie
Temp: Cool/Ambient
Cooling: Icepack
Security: Intact/Damaged/None

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SOIL ANALYSIS CHAIN OF CUSTODY

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Sample ID	Combo 5A (soil)	Combo 3 (Soil)	BTEX	ASBESTOS	HERBICIDES	BHM	OCP/OPP	COMPOSITE	Ferric Iron, and Total Iron	Sulfate	Phosphorous	Hold	Date Sampled
45 2193/RP07/B	X												
46 2193/SP01/A	X												
47 2193/SP01/B	X												
48 2193/SP02/A	X												
49 DUP01						X							
50 DUP02						X							
51 Trip Blank		X											
52 Trip Spike			X										

Notes

Herbicides are Phenoxy Acid and Triazine