Environmental Impact Statement/Environment Effects Statement

Appendix N

Contaminated land and acid sulfate soils Part 6



IMAGERY INSIGHT

Historic Aerial Photograph - 1969





1kı





















IMAGERY INSIGHT

Historic Aerial Photograph - 2009





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APPENDIX D - HISTORICAL AERIAL PHOTOGRAPH SUMMARIES

APPENDIX D

Historical aerials and environmental screen reports were selected for key features of interest based on a potential for contamination on or within close proximity to the HVDC trench alignment. The historical aerials and environmental screen reports are titled as '*LI-XXXXX*' in **Appendix C** and the parcel identifiers labelled as '*VXXXX*'.

The below sections review historical aerials selected for 23 key features of interest within or in close proximity to the trench alignment based on the potential for or to cause contamination issues that may impact on the proposed installation of HVDC. Observations based on the key features of interest were recorded within the alignment corridor, referred to as *on-site* and within close proximity to the alignment corridor, referred to as *off-site*. Parcel has been used to identify the lot of land where a key feature of interest was identified and may be referred to within the current proposed trench alignment, or within close proximity.

1.1 V0008 – PARCEL 1

The aerials reviewed for this parcel are located within Land Insight report LI-02089 in Appendix C.

Aerial	Colour and	Observations				
Year	Quality	On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)			
1972	Black and White, Average	 The parcel exists as large scale, generally vacant agricultural land. Cattel yards and a small shed and water tank are located on the western edge or the project alignment (the shed is to the west of the proposed alignment), but approximately 20m off proposed trenching area. A drainage channel runs from east to west in the southern portion of the land parcel that bisects the proposed alignment 	 A collection of 3 visible buildings (a house and outbuildings) were located in the top north-western corner of the parcel, to the south of the of the alignment corridor. Surrounding region is vacant agricultural land with scattered dams, sheds and unconsolidated roads. Most activity occurred immediately west of the land parcel, on the western side of Waratah Road. 			
1981	Black and White, Average	No significant changes to property	Surrounding region remains relatively unchanged.			
1987	Colour, Poor	No significant changes to property	 Surrounding region remains relatively unchanged. A large structure is visible in the central portion of the parcel of land, well outside the current proposed trench alignment. Its exact use is unknown. 			
1991	Colour, Average	• The cattle yards adjacent the alignment appear unchanged, but a new shed appears to have been constructed in the corner of the yards (off the project alignment)	• Large structure within the central portion of the parcel now removed. Surrounding region remains relatively unchanged.			
2009	Colour, Good	No significant changes to property	 Additional shed visible, adjacent to Waratah Road and south of the current proposed trench alignment. Surrounding region remains relatively unchanged. 			

 Table 1-1:
 Historical Aerial Photograph Summary for Parcel V0008

Aerial	Colour and Quality	Observations				
Year		On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)			
2014	Colour, Good	No significant changes to property	Surrounding region remains relatively unchanged.			
2015	Colour, Good	No significant changes to property	Surrounding region remains relatively unchanged.			
2019	Colour, Good	No significant changes to property	 Surrounding region remains relatively unchanged. 			
2020	Colour, Good	• New agricultural shed and cattle yards replacing the former sheds on the western edge of the alignment has been constructed.	Surrounding region remains relatively unchanged.			
2021*	Colour, Good	Area where current proposed trench alignment remains relatively unchanged.	Surrounding region remains relatively unchanged.			

- Parcel has remained relatively unchanged since 1972. Notable features have included:
 - The cattle yards and milking shed in the north-western portion of the parcel, which is partially within the project alignment has been present onsite since at least 1972. This facility underwent a redevelopment between 2019 and 2020.
- Surrounding region has remained relatively unchanged since 1972. The most notable activity occurs immediately west of the land parcel on the western side of Waratah Road, and has continued since 1972.

1.2 V0013 - PARCEL 2

The aerials reviewed for this parcel are located within Land Insight report LI-02090 in Appendix C.

Table 1-2:	Historical Aerial F	Photograph Summary	y for Parcel V0	013
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Aerial	Colour and	Observations					
Year	Quality	On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)				
1972	Black and White, Average	• A forest of trees extends north-west to south-east across the central portion of the parcel. This forest tapers out in the central portion of the parcel and thickens in the south-east portion of the parcel. This was present where the current trench alignment is proposed.	 Broader parcel of land consisted of several dams scattered across the parcel. Surrounding region consisted of agricultural land, a banded forest extending north-west from the parcel and an additional banded forest north and east of the parcel. Some structures are visible within the western portion of the parcel. 				
1981	Black and White, Good	• Some logging has taken place within the north-western section of the forest, within the current proposed trench alignment.	Surrounding region remains relatively unchanged.				
1991	Colour, Average	• Logging continued within the north- western section of the forest and expanded into the south-eastern portion of the parcel, within the current proposed trench alignment.	Surrounding region remains relatively unchanged.				
2009	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	• Structure previously visible within the western portion of the parcel, now a dam.				

Aerial	Colour and	Observations				
Year	Quality	On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)			
			 Some development has taken place immediately north-east of the parcel. Surrounding region remains relatively unchanged. 			
2010	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.			
2014	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.			
2015	Colour, Average	 Some minor ground disturbance (linear wheel ruts?) in north-western portion of alignment adjacent tree line is apparent on the ground 	Surrounding region remains relatively unchanged.			
2019	Colour, Good	 Band of trees in the north-western corner of the parcel has been logged. This is within the current proposed trench alignment. Some structures (logs?) are present on the ground to the immediate west of the trench alignment. 	Surrounding region remains relatively unchanged.			
2020	Colour, Good	 Logging continued in the north-western corner of the parcel, within current proposed trench alignment. The structures appear to be small buildings of an unknown type or purpose. 	Surrounding region remains relatively unchanged.			
2021*	Colour, Good	 Logging in north-western corner of the parcel ceased. 	 Surrounding region remains relatively unchanged. 			

- The area where the current proposed trench alignment is located has experienced some logging of the banded forest located between 1981 and 2021.
- The parcel has remained relatively unchanged since 1972. Notable features have included:
 - Small building type structures have been constructed in the north-western portion of the alignment near where the trees were removed.
- Surrounding region has remained relatively unchanged since 1972. The most notable activity has been some intermittent logging taking place since 1972.

1.3 V0018 - PARCEL 3

The aerials reviewed for this parcel are located within Land Insight report LI-02091 in Appendix C.

Aerial	Colour and	Observations					
Year	Quality	On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)				
1972	Black and White, Average	• The parcel was generally vacant, except for two small, banded forests running north-west to south-east through the central portion of the parcel. This is located within the current proposed trench alignment.	 Surrounding region consisted of agricultural land, with some banded forests north west of the parcel. Two dams were located in the western corner and eastern section of the parcel. A large scale agricultural facility was located about 500m north of the parcel, approximately 100m north of the current proposed trench alignment. 				
1981	Black and White, Average	• A small structure was present at the intersection between the two banded forests, within the current proposed trench alignment.	Surrounding region remains relatively unchanged.				
2009	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	 Parcel remains relatively unchanged, except for some sheds in the eastern corner of the parcel. Surrounding region remains relatively unchanged, with the exception of some dams south-west of the parcel. 				
2010	Colour, Average	 A section of the bush area in the northwestern portion of the land parcel has been cleared (immediately adjacent the alignment to the south). The agricultural shed visible in the 1981 image has been re-roofed, and cattle yards are visible surrounding the shed. Some plastic wrapped round hay-bales are visible adjacent to the alignment in the central portion of the land parcel Ploughed ground is present in the northwestern portion of the land parcel and intersects the trench line. 	• Surrounding region remains relatively unchanged, except for some continued development of the dams.				
2013	Colour, Good	 The cleared area appears the have small stockpiles present in it. The hay bales have been removed. An area of irrigate pasture is present tot eh north and south of the alignment (as evidenced by longer grasses in strips), but outside of the alignment. 	Surrounding region remains relatively unchanged.				
2015	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	 Surrounding region remains relatively unchanged. 				
2019	Colour, Average	 Some storage of materials (potential waste) located within the cleared land area – adjacent the proposed alignment. 	Surrounding region remains relatively unchanged.				

 Table 1-3:
 Historical Aerial Photograph Summary for Parcel V0018

Aerial	Colour and	Observations			
Year	Quality	On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)		
		 The area of the clearing has been extended to the north-west a small distance. The Cattle yards appear to have either had an additional shed built, or a concrete pad added to the south-east of the yards. 			
2020	Colour, Good	• One of the sheds within the intersection to the two banded forests, and within the current proposed trench alignment has been removed.	Surrounding region remains relatively unchanged.		
2021*	Colour, Good	 Some miscellaneous goods present within the location of the former shed on eastern side of intersection to banded forest. Storage of materials (waste) within the cleared area have been moved around. This is located within the current proposed trench alignment. 	Surrounding region remains relatively unchanged.		

- The area where the current proposed trench alignment is located has seen some minor activity since 1972. This has included:
 - Construction of and agricultural shed and cattle yards at the intersection of the two small forests around 1981, with additional structures added periodically. Some miscellaneous goods were present within the cattley yards in 2021.
 - A cleared area of land in the north-western tree area appeared in the 2000s which appears to have contained at various points small stockpiles and other piles of covered materials, that may include wastes.
- The parcel has remained relatively unchanged since 1972. Notable features included:
 - Agricultural pasture farming and irrigation surrounding the alignment
- Surrounding region has remained relatively unchanged since 1972. The most notable activity was some development of several dams immediately south-west of the parcel.

The cleared area in the tree portion of the parcel where wastes may have been stored and the agricultural sheds represent potential sources of contamination.

1.4 V0031 – PARCEL 4

The aerials reviewed for this parcel are located within report LI-02092 in Appendix C.

Aerial	Colour and	Observations					
Year	Quality	On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)				
1972	Black and White, Average	• The parcel was generally vacant agricultural land with some bare patches of soil indicating ground disturbance on the area where the alignment turns the corner to the west.	• The surrounding parcel was made up of vacant agricultural land with some scattered trees in the north- west portion of the parcel. Dense forest was located south-west and east of the parcel.				
1975	Black and White, Good	• The area of ground disturbance has been enlarged to the south, with a second disturbance some 50m further to the south.	Surrounding region remains relatively unchanged.				
1985	Black and White, Poor	• The ground disturbance area is now grassed, but some indication of the disturbance remains visible in the area.	• Surrounding region remains relatively unchanged.				
1991	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.				
2009	Colour, Good	 A house and a small shed has been constructed to the west of the alignment in the area of the former ground disturbance. An area of ground disturbance on the corner of the alignment has appeared. A agricultural shed and cattle yards has been constructed to the south of the alignment in the far west of the property parcel. 	 A new forest was planted and developed adjacent to the west of the parcel (and adjacent to the current proposed trench alignment). A small shed immediately west of the current proposed trench alignment at the north-western tip of the forest was also present. 				
2014	Colour, Average	 Where the trench alignment turns the corner to the west, a ground disturbance is evident the aerial photograph. Review of the Google Earth 2013 imagery shows what appears to be an area of soil being dumped with a vehicle visible in the photograph. A line of haybales is present to the south in the 2013 image. By the 2014 Google earth image, a soil mound is visible in the aerial photograph. The ground disturbance identified in the 2010 image has a small fill mound to the north and south of it. 	Surrounding region remains relatively unchanged.				
2015	Colour – good	• Google earth imagery from November 2015 shows the fill mound area to have been disturbed somewhat, and some areas of potential wastes are visible in the photograph.	Surrounding region remains relatively unchanged.				
2019	Colour, Good	• The fill mound does not appear visible in the photograph	Surrounding region remains relatively unchanged.				

Table 1-4: Historical Aerial Photograph Summary for Parcel V0031

Aerial	Colour and Quality	Observations		
Year		On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)	
2020	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
2021*	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	

- The area where the current proposed trench alignment is located has remained relatively unchanged since 1972. Notable features included:
 - Disturbed soil areas on the proposed trenching area at the corner where the alignment bends to the west.
 - A new fill mound appeared in approximately 2013 and may have been removed (or grassed over) by 2019.
 - \circ $\,$ A cattle shed was constructed at the far west of the land parcel in the 2000s $\,$

1.5 V0033 – PARCEL 5

The aerials reviewed for this parcel are located within report LI-02093 in Appendix C.

Table	1-5	Historical	Aerial	Photograph	Summary	, for	Parcel	V0033
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Aerial	Colour and	Observations				
Year	Quality	On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)			
1972	Black and White, Poor	• The current proposed trench alignment is trends east-west along the northern boundary to the parcel. Generally, this area was made up of a combination of dense forest and vacant agricultural land.	• The parcel was generally made up of dense forest dense forest in the north-western arm of the parcel and vacant agricultural land with scattered trees in the south-western arm of the parcel.			
1975	Black and White, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.			
1979	Black and White, Poor	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.			
1985	Black and White, Poor	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.			
1991	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.			
2009	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	• A small shed was located in the vacant patch of land bordered by dense forest. This is located immediately adjacent to the south of the current trench alignment is proposed. Dense forest was developed to the west of this shed.			

Aerial	Colour and Quality	Observations			
Year		On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)		
2014	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	• A dam was in the process of being constructed next to the shed, on the border of the current proposed trench alignment.		
2017	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Dam has been constructed.Surrounding region remains relatively unchanged.		
2020	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Dam has been removed.Surrounding region remains relatively unchanged.		
2021*	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.		

- The area where the current proposed trench alignment is located has remained unchanged since 1972.
- Parcel has remained relatively unchanged since 1972. Notable features have included:
 - Construction of a small shed located in the vacant patch of land bordered by dense forest in 2009. This is located immediately adjacent to the south of the area where current trench alignment is proposed.
 - A dam was also constructed next to the shed around 2014 and removed by 2020.
- Surrounding region has remained relatively unchanged since 1972.

1.6 V0040 - PARCEL 6

The aerials reviewed for this parcel are located within report LI-02094 in Appendix C.

Table 1-6: Historical Aerial Photograph Summary for Parcel V0040

Aerial Year	Colour and Quality	Observations		
		On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)	
1972	Black and White, Average	• The parcel was made up of vacant agricultural land with scattered patches of trees and dams, and the current proposed trench alignment runs east-west through the lower section of the parcel where the land was vacant.	 The surrounding region was generally vacant agricultural land with scattered dams and patches of trees. A road entered onto the parcel in the north-east corner. 	
1975	Black and White, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
1979	Black and White, Poor	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
1981	Black and White, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	

Aerial	Colour	Observations	
Year	and Quality	On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)
1991	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	 Surrounding region remains relatively unchanged. Some minor structures (sheds, etc.) were built throughout the region.
2009	Colour, Good	 Some development of intensive farming land took place where the trench alignment is proposed. 	Surrounding region remains relatively unchanged.
2014	Colour, Average	• A new road running north-south was constructed within the parcel, extending into the area of intensive farming, where the current trench alignment is proposed.	Surrounding region remains relatively unchanged.
2017	Colour, Average	• A new shed was constructed within the current proposed trench alignment.	Surrounding region remains relatively unchanged.
2020	Colour, Average	• Area where trench alignment is proposed remains relatively unchanged.	Surrounding region remains relatively unchanged.
2021*	Colour, Good	 Area where trench alignment is proposed remains relatively unchanged. 	 Surrounding region remains relatively unchanged.

* *Imagery sourced from Aerometrex, 19 Feb 2021* The area where the current proposed trench alignment is located has remained relatively unchanged since 1972, with the exception of some intensive farming that commenced from 2014.

• The parcel and surrounding region have remained relatively unchanged since 1972, although some sheds and other structures were constructed around 1991.

1.7 V0041 – PARCEL 7

The aerials reviewed for this parcel are located within report LI-02095 in Appendix C.

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Table 1-7: Historical	Aeriai Photograph	n Summary to	or Parcel V0041

Aerial	Colour and Quality	Observations		
Year		On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)	
1972	Black and White, Poor	The area where the current proposed alignment corridor is located generally consisted of vacant agricultural land.	 The parcel was made up of vacant agricultural land with scattered patches of trees and dams. The surrounding region is generally vacant agricultural land with scattered dams and patches of trees. 	
1975	Black and White, Good	 Area where current proposed trench alignment is remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
1979	Black and White, Poor	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
1981	Black and White, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	

Aerial	Colour	Observations	
Year	and Quality	On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)
1991	Colour, Average	• Area where current proposed trench alignment is located has had clearing of trees and evidence of a small shed.	Surrounding region remains relatively unchanged.
2009	Colour, Good	• Last remaining patch of trees within current proposed trench alignment have been logged.	Surrounding region remains relatively unchanged.
2014	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.
2017	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	 Surrounding region remains relatively unchanged.
2020	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.
2021*	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	 Surrounding region remains relatively unchanged.

- The area where the current proposed trench alignment is located has remained relatively unchanged since 1972, with the exception of some logging from 1991 to 2009.
- The parcel and surrounding region have remained relatively unchanged since 1972.

1.8 V0081 – PARCEL 8

The aerials reviewed for this parcel are located within report LI-02096 in Appendix C.

Aerial	Colour and Quality	Observations		
Year		On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)	
1972	Black and White, Poor	• The trench alignment does not run through the parcel but borders the eastern boundary. It was made up of vacant agricultural land with scattered trees and a dam to the south.	• The parcel was made up of vacant agricultural land with one dam and scattered trees. An unsealed road (Moores Road) and tree line ran along the northern boundary to the parcel, approximately east west.	
			Buffalo Creek and associated riparian zone vegetation were present along the southern boundary of the parcel. Surrounding region exists as vacant agricultural land with scattered dams.	
			• Several buildings were located to the North East of the parcel along Moores Road. These buildings were inferred to be an agricultural facility (i.e., farm buildings) and residence.	
			 East of the parcel a rail track ran in a North East to South West alignment, surrounded by a tree band. Buffulo creek intersected the 	

 Table 1-8:
 Historical Aerial Photograph Summary for Parcel V0081

Aerial	Colour and Quality	Observations		
Year		On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)	
			tracks at same latitude to the southern boundary of the parcel.	
1975	Black and White, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	 Surrounding region and parcel remains relatively unchanged. 	
1981	Black and White, Poor	• Area where current proposed trench alignment located remains relatively unchanged.	 Logging surrounding rail track bordering the south east corner of parcel. Earthworks occurred west of parcel. 	
1985	Black and White, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	 Building constructed adjacent to the rail track North of the parcel. Some minor development occurring west of the parcel 	
1991	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region and parcel remains relatively unchanged.	
2009	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	 Construction of access road and residential housing with attached shed/s adjacent to a dam occurred in the northern portion of the parcel. Some minor development has taken place across the region, particularly to the west. 	
2012	Colour, Good	Area where current proposed trench alignment located remains relatively unchanged.	 Construction of additional access loop and large shed adjacent to Moores Road in the northern portion of the parcel. Some storage tanks potentially constructed adjacent to shed, (may have contained fuels). Additional dam constructed in the central western portion of the parcel. Continued development west of the parcel. 	
2015	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	 Infrastructure associated with former trucking company and access loop adjacent to Moores Road in the North of the parcel has been removed. Surrounding region remains relatively unchanged. 	
2019	Colour, Good	• Area where current proposed trench alignment located remains relatively unchanged.	 New shed and storage tank constructed on the parcel. Surrounding region remains relatively unchanged. 	
2020	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
2021*	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	

- The area where the current proposed trench alignment is located has remained relatively unchanged since 1972.
 - The parcel remained relatively unchanged up until approximately 2009 when the parcel was developed from agricultural land. Notable features have included:
 - A residence, large shed, a smaller shed and storage tank located in the northern portion of the parcel since at least 2009. The parcel is known to have been a former trucking company. The sheds may have been used for the storage, maintenance, refuelling, and loading/unloading of trucks.
 - In 2012 an additional large shed with adjacent storage tanks and access loop were present in the north of the parcel near Moores Road. By 2015 this shed, storage tanks and access loop had been removed.
 - In 2019 an additional large shed and storage tank was constructed adjacent to the access road north of the parcel.
- Surrounding region has remained relatively unchanged since 1972. The most notable activity was the minor development of vacant agricultural land and residences west of the parcel.

1.9 V0105 - PARCEL 9

The aerials reviewed for the township of Buffalo are located within report LI-02097 in Appendix C.

Aerial	Colour and	Observations		
Year	Quality	On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)	
1972	Black and White, Average	• The area where the current proposed trench alignment is located generally consisted of vacant agricultural land with attached dwellings.	 The township of buffalo was generally made up of a small township with several buildings along Main street. The remaining lots of land were used for agricultural purposes. A small forest was located south of Main Street. The remaining surrounding area consisted of largely vacant agricultural land with scattered dams and sheds. 	
1975	Black and White, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
1981	Black and White, Poor	 Area where current proposed trench alignment located remains relatively unchanged. 	• Some minor development of Buffalo took place, notably with subdivision of lots of lands and some clearing of the forest.	
1985	Black and White, Poor	Area where current proposed trench alignment located remains relatively unchanged.	 Continued development of township. Some logging of forest adjacent to the rail track, immediately east of the current proposed trench alignment. 	
1991	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	 Development of large sheds potentially associated with an agricultural facility occurred east of the current proposed trench alignment. Further development of the township to the east of current 	

 Table 1-9:
 Historical Aerial Photograph Summary for Parcel V0105

Aerial	Colour and Quality	Observations		
Year		On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)	
			proposed trench alignment, including construction of multiple houses, large sheds, and access roads.	
2009	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	 New shed and some development of a lot of land (use unknown) immediately north of Main Street at the intersection of the railway. Development also included some storage tanks and a small dam. This was located immediately east of the current proposed trench alignment. Further development of the township, predominately the construction of houses and smaller sheds. Removal of facility adjacent to the rail track, south of Main Street, adjacent immediately to the east of the parcel. 	
2012	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
2015	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
2019	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
2020	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
2021*	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	

- The area where the current trench alignment is proposed has remained relatively unchanged since 1972.
- Notable features associated with the Township of Buffalo have included:
 - Some minor development and subdivision of land around 1972 to 2009. During this period some logging took place in 1982 and development of some sheds and facilities adjacent to the east of the railway line (east of the current proposed trench alignment). By 1991 a facility (it's use is not known) was constructed on the north side of Main Street, adjacent to the east of the railway. This
 - A facility was developed adjacent to the rail track south of the township since at least 1985 and removed in 2009.

1.10 V0145 - PARCEL 10

The aerials reviewed for the parcel V0145 are located within report LI-02098 in Appendix C.

Aerial	Colour and	Observations		
Year	Quality	On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)	
1967	Black and White, Poor	• The area where the current proposed alignment corridor is located consisted of vacant agricultural land.	 The parcel consisted of a small group of buildings. Stony Creek runs south-west to north-east across the north-west tip of the parcel. Surrounding region existed as vacant agricultural land, with sheds and residential housing sparsely scattered throughout. 	
1972	Black and White, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
1975	Black and White, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
1981	Black and White, Poor	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
1999	Colour, Poor	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
2009	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	 Surrounding region remains relatively unchanged, except for some minor development north- west of the parcel. 	
2012	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
2015	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
2020	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
2021*	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	 An additional shed constructed within the central portion of the parcel. Some scattered objects also identified on the surface may include vehicles, machinery and miscellaneous materials. Surrounding region remains relatively unchanged. 	

Table 1-10: Historical Aerial Photograph Summary for Parcel V0145

* Imagery sourced from Aerometrex, 19 Feb 2021

• The area where the current trench alignment is proposed has remained relatively unchanged since 1967.

• The parcel has remained relatively unchanged since 1967. Notable features have included:

- Minor development of the parcel including a farmhouse and shed around 2009 and again 2021 (as well as some objects remaining of the surface of the parcel).
- Surrounding region has remained relatively unchanged since 1967.

1.11 V0152 - PARCEL 11

The aerials reviewed for the parcel V0152 are located within report LI-02099 in Appendix C.

Table 1-11: Historical Aerial Photograph Summary for Parcel V0152

Aerial	Colour and	Observations		
Year	Quality	On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)	
1967	Black and White, Average	• The area where the current proposed alignment corridor comprises vacant agricultural land.	 Surrounding region existed as vacant agricultural land, sparsely scattered with sheds, dams and loosely populated bushland. A dense forest exists within the parcel. 	
1972	Black and White, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
1975	Black and White, Average	• Two sheds (potential sheep dippers) constructed at northern portion of southern parcel, within the trench alignment, at the boundary to South Gippsland Highway.	Surrounding region remains relatively unchanged.	
1981	Black and White, Average	 Two sheds removed from parcel within trench alignment. Some logging has also taken place within and surrounding the trench alignment. 	Surrounding region remains relatively unchanged.	
1999	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
2009	Colour, Good	 Some development of the northern parcel within the current proposed trench alignment including a dirt road and small shed. 	Development of the northern parcel for agricultural purposes has taken place.	
2012	Colour, Good	• Some development of the area within the current proposed trench alignment at the location where two former sheds were.	Surrounding region remains relatively unchanged.	
2015	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
2020	Colour, Good	• Some minor activity present on the small section of land within the current proposed trench alignment in southern parcel.	Surrounding region remains relatively unchanged.	
2021*	Colour, Good	• Some minor activity present on the small section of land within the current proposed trench alignment in northern parcel.	Surrounding region remains relatively unchanged.	

* Imagery sourced from Aerometrex, 19 Feb 2021

- The area where the current trench alignment is proposed has remained relatively unchanged since 1967. Notable features include:
 - Construction of two sheds (potential sheep dippers) in 1975 within the southern parcel (removed by 1981). Some minor development and activity within this area also took place in 2012.
 - o Minor development of a potential agricultural facility within the northern parcel in 2009.
- The parcels have remained relatively unchanged since 1967, except for the development of small area within the northern parcel for agricultural purposes in 2009.
- Surrounding region has remained relatively unchanged since 1967.

1.12 V0175 - PARCEL 12

The aerials reviewed for the parcel V0175 are located within report LI-02100 in Appendix C

Aerial	Colour and	Observations		
Year	Quality	On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)	
1972	Black and White, Average	• A small agricultural shed and stock yards is present on the western boundary of the land parcel, within the proposed alignment.	 Surrounding region consisted of vast agricultural land with large patches of trees/bushland, notably to the north east. A farmhouse located within the southwest portion of the parcel is immediately adjacent to the west of the current proposed trench alignment. 	
1975	Black and White, Poor	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
1980	Black and White, Poor	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
1985	Black and White, Poor	 Some hay bales are stored to the north of the agricultural shed Some localised logging of trees within the proposed alignment took place. 	• Some localised logging of trees surrounding farmhouse, the region remains relatively unchanged.	
1991	Colour, Poor	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
2009	Colour, Average	 Area where trench alignment is proposed remains relatively unchanged, with the exception of some continued logging of trees. 	 Bushland surrounding farmhouse has been completely logged. Construction of sheds, and storage now present. 	
2012	Colour, Average	 The original shed and stock yards have been replaced with new yards and a shed 	• Further logging of trees surrounding farmhouse in the southwest portion of the parcel.	
2015	Colour, Average	 Area surrounding and within the trench alignment have been completely logged. 	 Construction of an agricultural facility west of south western portion of the parcel. 	
2020	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	• Surrounding region remains relatively unchanged.	

Table 1-12: Historical Aerial Photograph Summary for Parcel V0175

Aerial	Colour and Quality	Observations	
Year		On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)
2021*	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.

- The area where the current trench alignment is proposed has remained relatively unchanged since 1972 except for the logging of a cluster of trees between 1985 and 2012.
- The parcel has remained relatively unchanged since 1972. Notable features include:
 - Logging between 1985 and 2012.
 - An agricultural shed and stock yards are present in the alignment, adjacent the proposed trench area and have been present in this area since 1972, but re-built between 2009 and 2012.
- Surrounding region has remained relatively unchanged since 1972. Notable features have included:
 - The development of agricultural facility west of the south western portion of the parcel.

1.13 V0199 - PARCEL 13

The aerials reviewed for the parcel V0175 are located within report LI-02101 in Appendix C.

Aerial Year	Colour and Quality	Observations	
		On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)
1967	Black and White, Average	• The area where the current proposed alignment corridor is located consisted of vacant agricultural land.	• Township of Dumbalk is present and surrounded by vacant agricultural land. Dumbalk township consisted of rows of residential houses in line with Mirboo North- Meeniyan Rd, Miller St and Narrena Rd. Larger scale buildings were located around the intersection of Mirboo North-Meeniyan Rd and Narrena Rd.
1972	Black and White, Average	Area where current proposed trench alignment located remains relatively unchanged.	 Minor developments to township such as construction of sporting field. Development of larger buildings South-east of site along Nerrena Road.
1981	Black and White, Poor	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.
1991	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.
2009	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	 Continued expansion of the township. Increase in the number of buildings within the township, including the construction of some larger buildings at the southern end of the township.

 Table 1-13: Historical Aerial Photograph Summary for Parcel V0199

Aerial	Colour and Quality	Observations	
Year		On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)
2011	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.
2014	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.
2015	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.
2020	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.
2021*	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	 Surrounding region remains relatively unchanged.

- The area where the current trench alignment is proposed has remained relatively unchanged since 1967.
- The township of Dumbalk has remained relatively unchanged since 1967, however some minor development of the township took place between 1967 and 2009, primarily to the south.
- An active petrol station is located 350 m east of the current proposed trench alignment.

1.14 V0279 - PARCEL 14

The aerials reviewed for the parcel V0279 are located within report LI-02102 in Appendix C.

Aerial	Colour and Quality	Observations	
Year		On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)
1967	Black and White, Poor	• Agricultural buildings (stock sheds) and stock yards are present in the alignment, but to the east of the proposed trenching area.	 Parcel consisted of a farmhouse in the northern corner, along Meeniyan-Mirboo North Road. An agricultural building with stockyards is present within the Some sheds were present in the eastern corner. Surrounding region made up of hilly agricultural land with scattered dams, sheds, and farmhouses.
1972	Black and White, Average	• Two sheds located within the eastern corner of the parcel, within the current proposed trench alignment. Likely utilised for agricultural purposes.	 Shed/structures visible within the western portion of the parcel. Surrounding region remains relatively unchanged.
1978	Colour, Average	Area where current proposed trench alignment located remains relatively unchanged.	Surrounding region remains relatively unchanged.
1981	Black and White, Poor	• Due to quality of photograph indications of any activity are unable to be discerned.	• Due to quality of photograph indications of any activity are unable to be discerned.

Aerial Year	Colour and Quality	Observations		
		On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)	
1991	Colour, Average	• Some minor development to the eastern area of the parcel (within project alignment) including some small structures being built.	Surrounding region remains relatively unchanged.	
2009	Colour, Good	 Area where current proposed project alignment located remains relatively unchanged. 	 Large storage area (potentially hay bales) visible on eastern side of Meeniyan-Mirboo North Rd. Sheep/cattle present on farm. Two large structures (potential sheds) constructed next to farmhouse/agricultural facility (within parcel) immediately adjacent to north of the parcel. 	
2011	Colour, Poor	 Area where current proposed project alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
2014	Colour, Average	 Area where current proposed project alignment located remains relatively unchanged. 	• Surrounding region remains relatively unchanged.	
2020	Colour, Average	 Area where current proposed project alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
2021*	Colour, Good	• Circular pile (potentially waste area) and storage tank visible within active area east of the parcel (within current proposed project alignment) .Rows of crops also growing here.	 Increase in items (potentially hay bales and smaller sheds/structures in storage area on east side of Meeniyan-Mirboo North Rd. 	

- The area where the current trench alignment is proposed has had some minor activity occur since 1967. This has included:
 - Development of the area for agricultural purposes in 1972 within the eastern corner of the parcel (within the proposed project alignment). Some minor development to this area appeared to take place around 1991 and again in 2021. Some potential waste was also identified within this area in 2021.
- The parcel has remained relatively unchanged since 1967 with the exception of some minor development as discussed above. Notable features also included:
 - The presence of a farmhouse and some sheds in the northern corner of the parcel since 1972.
- Surrounding region has remained relatively unchanged since 1967. Notable features have included:
 - The development of a large storage area on the opposite (eastern) side of Meeniyan-Mirboo North Rd since at least 2009. This included numerous items (potentially hay bales) and collection of small sheds/structures which has slowly built up.

1.15 V0290 - PARCEL 15

The aerials reviewed for the parcel V0290 are located within report LI-02103 in Appendix C.

Table 1-14: Historical Aerial Photograph Summary for Parcel V0290

Aerial	Colour and Quality	Observations		
Year		On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)	
1967	Black and White, Poor	• There are several buildings including an agricultural (milking) shed and associated stock yards in the southern portion of the land parcel, and a house and shed along the Meeniyan-Mirboo North Road further to the north	 Surrounding region made up of hilly agricultural land with scattered dams, farmhouses, and sheds. North and west of the parcel existed a collection of structures (large farmhouse and sheds). 	
1972	Black and White, Poor	 An additional shed appears to been built to the east of the southern agricultural shed 	Surrounding region remains relatively unchanged.	
1978	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	• Some minor expansion of area in the western corner of the parcel, including two inferred sheds.	
1981	Black and White, Poor	 Poor quality of image makes it difficult to identify any changes. 	 Poor quality of image makes it difficult to identify any changes. 	
1991	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	 Large shed removed from the facility immediately west of the parcel, on the western side of Meeniyan-Mirboo North Rd. Large shed removed from farmhouse cluster to the north of the parcel. 	
2009	Colour, Good	 A third (smaller) shed has been constructued to the south of the agricultural shed in the south of the land parcel. 	 Large shed reappeared on the western side of Meeniyan-Mirboo North Rd adjacent to the current proposed trench alignment. Additional smaller shed constructed in the southern end of the agricultural facility (within the parcel) on the eastern side of Meeniyan-Mirboo North Rd. 	
2011	Colour, Average	Area where current proposed trench alignment located remains relatively unchanged.	Surrounding region remains relatively unchanged.	
2014	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	• Storage area (potentially hay bales) appeared north of the large shed on the western side of Meeniyan- Mirboo North Rd, adjacent to the current proposed trench alignment.	
2020	Colour, Good	• The agricultural sheds in the south of the land parcel have bene replaced with new sheds for milking purposes. Areas of land disturbance surround the sheds	Surrounding region remains relatively unchanged.	
2021*	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	 Continued expansion of agricultural facility within western portion of parcel, including several storage tanks. 	

* Imagery sourced from Aerometrex, 19 Feb 2021

- The area where the current trench alignment is proposed has remained relatively unchanged since 1967, except for some minor logging that took place around 1972.
- The parcel has undergone had some changes since 1967. This has included:

- Expansion of the agricultural facility in the western portion of the parcel, immediately adjacent to the current proposed trench alignment, between 1978 and 2021. This has included construction of several sheds, access tracks for heavy machinery and several storage tanks.
- The surrounding region has seen some minor activity within two notable agricultural areas, one being to the north of the parcel and the other being immediately west of the parcel and current proposed trench alignment. This expansion occurred slowly but consistently from 1967.

1.16 V0306 - PARCEL 16

The aerials reviewed for the parcel V0306 are located within report LI-02104 in Appendix C.

Aerial	Colour and	Observations		
Year	Quality	On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)	
1967	Black and White, Poor	 A large cluster of structures were located where the current proposed project alignment is located. These structures are inferred to be for agricultural activity. 	 Surrounding region consisted hilly, vacant agricultural land scattered with dams, farmhouses, sheds, and agricultural facilities. The parcel was relatively vacant except for the cluster of structures (as identified in the alignment corridor). 	
1972	Black and White, Poor	 Area where current proposed trench alignment located remains relatively unchanged. 	 Surrounding region remains relatively unchanged. 	
1978	Colour, Poor	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
1985	Black and White, Poor	 Area where current proposed trench alignment located remains relatively unchanged. 	 Surrounding region remains relatively unchanged. 	
1991	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	 Surrounding region remains relatively unchanged. 	
2009	Colour, Good	• An additional dam was constructed on the south of the agricultural facility, within the current proposed trench alignment.	 Surrounding region remains relatively unchanged. 	
2011	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	 Surrounding region remains relatively unchanged, except for some minor logging. 	
2014	Colour, Average	• Tree line leading north to Marden Rd has been removed.	 Surrounding region remains relatively unchanged, except for 	
		 Extension and/or additional grain silos have been added to the largest shed in the facility. 	some minor logging.	
2020	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
2021*	Colour, Good	 Several structures removed from the agricultural facility within the current proposed trench alignment. Some materials stored north of the facility. 	 Surrounding region remains relatively unchanged. 	

 Table 1-15: Historical Aerial Photograph Summary for Parcel V0306

* Imagery sourced from Aerometrex, 19 Feb 2021

- The area where the current trench alignment is proposed has had an agricultural sheds with assocaited stock yards present since 1967. It appeared to undergo an expansion in 2014, followed by a reduction in size around 2021.
- The parcel has remained relatively unchanged since 1967 with the exception of some minor development as discussed above.
- Surrounding region has remained relatively unchanged since 1967, expect for some minor logging since 2009.

1.17 V0633 - PARCEL 17

The aerials reviewed for the parcel V0633 are located within report LI-02105 in Appendix C.

Aerial	Colour and	Observations	
Year	Quality	On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)
1972	Black and White, Poor	• The area where the current proposed alignment corridor is located consisted of vacant agricultural land.	 Agricultural facility (inferred to be a poultry farm) present on parcel immediately adjacent to the south of the trench corridor. Surrounding region existed as vacant agricultural land with two farmhouse/shed facilities to the west of parcel and one to the north.
1980	Black and White, Poor	• Unable to discern any detail due to poor quality of image.	• Unable to discern any detail due to poor quality of image.
1991	Colour, Average	Area where current proposed trench alignment located remains relatively unchanged.	• Several structures visible within facility on parcel, adjacent south to the current proposed trench alignment.
2009	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.
2010	Colour, Good	• Area where current proposed trench alignment located remains relatively unchanged.	 Some minor development of agricultural facility within the parcel. North of the parcel consists two large structures with adjacent fields and a large storage tank in the east.
2011	Colour, Average	• Area where current trench alignment is proposed remains relatively unchanged, except for some surface disturbance south of the river.	Surrounding region remains relatively unchanged.
2014	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.
2017	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	 Surrounding region remains relatively unchanged.
2019	Colour, Good	 Google earth image shows several small structures and what may be waste piled in the immediate vicinity of the trench 	Surrounding region remains relatively unchanged.

 Table 1-16: Historical Aerial Photograph Summary for Parcel V0633

Aerial	Colour and Quality	Observations	
Year		On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)
		alignment in the north of the land parcel.	
2020	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.
2021*	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	• Surrounding region remains relatively unchanged, except for the potential of some waste at the surface of the parcel in the northern sections.

* *Imagery sourced from Aerometrex, 19 Feb 2021* The area where the current trench alignment is proposed has remained relatively unchanged since 1972, except for some surface distance of the land immediately south of the river around 2011 and some materials on the surface (potential waste material) around 2021.

- The parcel has contained an agricultural facility (inferred to be a poultry farm) in the central portion since 1972, located immediately south of the current proposed trench alignment. Some minor development of this facility occurred in 2010.
- Surrounding region has remained relatively unchanged since 1972.

1.18 V0353 - PARCEL 18

The aerials reviewed for the parcel V0353 located within report LI-02106 in Appendix C.

Aerial Year	Colour and Quality	Observations		
		On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)	
1972	Black and White, Average	• The area where the current proposed alignment corridor is located consisted of vacant agricultural land with an attached shed and dam.	 The surrounding region is generally vacant agricultural land with some scattered farmhouses, dams and sheds. Several sheds are located within the western portion of the parcel, immediately west of the current proposed trench alignment. 	
1982	Black and White, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
1985	Black and White, Average	• Area where trench alignment is proposed remains relatively unchanged, except for some evidence of surface activity between the dam and shed.	Surrounding region remains relatively unchanged.	
1991	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	 Expansion of the area where agricultural activity is taking place in the western portion of the parcel. Surrounding region remains relatively unchanged. 	
2009	Colour, Good	• Shed appears to have been removed and storage of materials remain in the area where current trench alignment is proposed. Some additional materials were	• Continued expansion of the area where agricultural activity took place in the western portion of the parcel.	

Table 1-17: Historical Aerial Photograph Summary for Parcel V0353

Aerial	Colour and Quality	Observations	
Year		On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)
		present approximately 100m northwest (still within the trench alignment).	
2011	Colour, Poor	 Area where current proposed trench alignment located remains relatively unchanged. 	• Continued expansion of the area where agricultural activity took place in the western portion of the parcel. Several structures have been built. This area now appears connected to the facility immediately west of the parcel.
2015	Colour, Average	• Materials and shed appears to have been removed in the area where the current trench alignment proposed.	Surrounding region remains relatively unchanged.
2019	Colour, Average	• Materials and structure present within the area where the current trench alignment is proposed.	 Some agricultural activity taking place in the western portion of the parcel.
2020	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.
2021*	Colour, Good	• Potential waste and stockpiling of materials evident within the area proposed for the trench alignment. A new shed has been built too.	• Some irregular surface markings are scattered throughout the parcel which could indicate potential waste.

- The area where the current trench alignment is proposed underwent some minor changes since 1972. This has included:
 - The removal of a shed in 2009 and the storage of materials on the surface from 2009 onwards.
 Potential waste and stockpiling of materials are evident in 2021, along with the construction of a new shed in the same location as the former shed.
- The parcel has seen some minor activity since 1972. This includes:
 - Some sheds in 1972 within the western portion of the parcel, that expanded gradually between 1972 and 2011, with several structures being present by 2011. By 2011 this area was connected to a facility immediately adjacent to the west of the parcel.
- Some surface markings were present in 2021 that may indicate potential waste.
- Surrounding region has remained relatively unchanged since 1972.

1.19 V0409 - PARCEL 19

The aerials reviewed for the parcel V0353 located within report LI-02107 in Appendix C.

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Aerial	Colour and	Observations			
Year	Quality	On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)		
1954	Black and White, Average	 The area where the current proposed alignment corridor is located consisted of vacant agricultural land. 	• The parcel and surrounding region generally consisted of vacant agricultural land. A dense woodland		

Aerial	Colour and	Observations					
Year	Quality	On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)				
			was located east and north of the parcel.				
1968	Black and White, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	 Some major logging activity took place north of the parcel. The surrounding region otherwise remains relatively unchanged. 				
1972	Black and White, Good	Area where current proposed trench alignment located remains relatively unchanged.	 Pine plantation where former logging had taken place now present north of the parcel. Some logging present west of the parcel. Two small dams are located immediately adjacent to the south of the parcel. 				
1979	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	 Surrounding region remains relatively unchanged. 				
1985	Black and White, Poor	 Area where current proposed trench alignment located remains relatively unchanged. 	• Significant activity took place immediately north of the parcel with several structures and paths being constructed.				
1989	Colour, Average	 Area where trench alignment is proposed remains relatively unchanged, except for some clearing of land and a path. 	Surrounding region remains relatively unchanged.				
1991	Colour, Average	• Evidence of agricultural activity taking place within the area proposed for the current trench alignment. Probable stock yards have been constructed in this area (approx. 20m east of trench area).	 The parcel contains a road connecting the agricultural activity within the current proposed trench alignment to a shed and paddocks immediately east. Some intensive agricultural activity appears to have taken place to the south of the parcel. 				
2009	Colour, Good	• Area where trench alignment is proposed remains relatively unchanged, except for a small shed located in the northern portion of the parcel.	• Evidence of agricultural activity and planting of crops immediately adjacent to the east of the current proposed trench alignment, within the parcel.				
2015	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	• The parcel has undergone some development of the facility with two new structures present, located immediately adjacent to the east of the current proposed trench alignment.				
2020	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.				
2021*	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.				

* Imagery sourced from Marinus Link Webapp
- The area where the current trench alignment is proposed remained vacant until 1989 when some of the land was cleared and by 1991 some evidence of agricultural activity was present. A small shed was also constructed in the northern portion of the parcel, within the track alignment.
- The parcel was vacant up until 1989, when some land was cleared. By 1991 a path with some sheds with some paddocks was identifiable and by 2009 planting of crops, construction of sheds and paths had taken place. In 2015, the parcel underwent further development with two new structures being built immediately east of the current proposed trench alignment which are probable stock yards.
- Logging of the timber plantation north of the parcel around 1968 and this was followed by the planting of a pine plantation by 1972. Continued logging and clearing of land took place west and north of the parcel which generally stopped by 1989. Since then, the surrounding region has remained relatively unchanged.

1.20 V0156 - PARCEL 20

The aerials reviewed for the quarry on Smiths Road, Driffield are located within report LI-02108 in **Appendix C**. The on-site observations relate to the quarry and the off-site observations relate to the area surrounding the quarry (towards the current proposed trench alignment).

Aerial Year	Colour and Quality	Observations		
		On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)	
1955	Black and White, Poor	• Area where quarry is located was dense bushland.	Surrounding region consists of dense bushland.	
1976	Colour, Average	• Evidence of pine plantations across the entire area.	• Surrounding region consists of pine plantations.	
1982	Black and White, Poor	• Clearing of land in the area where the current quarry is located.	Activity within the region has not changed.	
1991	Colour, Average	• The quarry is now active.	Activity within the region has not changed.	
2009	Colour, Good	• The activity has not changed within the quarry.	• Pine plantations have been cleared to the east.	
2015	Colour, Average	• The activity has not changed within the quarry.	Activity within the region has not changed.	
2017	Colour, Poor	• The activity has not changed within the quarry.	• Pine plantations have been replanted to the east of the quarry.	
2021*	Colour, Good	• The activity has not changed within the quarry.	Activity within the region has not changed.	

Table 0-20: Historical Aerial Photograph Summary for quarry on Smiths Road, Driffield

* Imagery sourced from Aerometrex, 19 Feb 2021

- The area where the quarry is currently located was initially bushland in 1955. By 1976 pine plantations were present across the entire region and by 1982 the land where the quarry is located was cleared. By 1991 the quarry was active and has remained active since then.
- Some pine plantations were cleared in 2009 east of the quarry and have since been replanted.

1.21 V0552 - PARCEL 21

The aerials reviewed for the parcel V0552 are located within report LI-02109 in Appendix C.

Table 0-21: Historical Aerial Photograph Summary for Parcel V0552

Aerial Year	Colour and Quality	Observations		
		On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)	
1950	Black and White, Poor	• The area where the current proposed alignment corridor is located consisted of vacant agricultural land.	• The parcel and surrounding region exist as vacant agricultural land.	
1955	Black and White, Poor	 Area where current proposed trench alignment located remains relatively unchanged. 	 Surrounding region remains relatively unchanged. 	
1968	Black and White, Poor	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
1972	Black and White, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	• Some clearing of land and evidence of a small structure in the central portion of the parcel. The surrounding region otherwise remains relatively unchanged.	
1989	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
1991	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	 Surrounding region remains relatively unchanged. 	
2009	Colour, Poor	• Area where current proposed trench alignment located remains relatively unchanged.	Surrounding region remains relatively unchanged.	
2014	Colour, Average	• Some potential fill material within the proposed trench alignment is present.	Surrounding region remains relatively unchanged.	
2017	Colour, Average	• The area where the potential fill was identified has expanded. The exact makeup of this area is unknown.	• Significant earthworks have taken place within the south-eastern portion of the parcel.	
2019	Colour, Average	• Fill Material and area with blue/green plastic covering now present in South-West of parcel.	• Some blue/green plastic covering located south of the fill material area, within the parcel.	
2021	Colour, Average	• Potential fill material remains within the current proposed trench alignment.	• Some more potential fill material located when the blue/green plastic covering was located, south of the current proposed trench alignment.	

• The area where the proposed trench alignment has remained relatively unchanged since 1950, except for the emplacement of potential fill material in 2014 through to 2021.

- The parcel has remained relatively unchanged since 1950 except for some earthworks taking place in the south-eastern portion of the parcel from 2017 onwards and potential emplacement of fill material in 2021.
- Surrounding region has remained relatively unchanged since 1950 except for some minor development of farmhouses, dams and subdivision of parcels of land, predominantly to the west and southeast.

1.22 V0559 - PARCEL 22

The aerials reviewed for the parcel V0559 are located within report LI-02110 in Appendix C.

Table 1-22: Historical Aerial Photograph Summary for Parcel V0559

Aerial Year	Colour and Quality	Observations		
		On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)	
1950	Black and White, Average	 The area where the current proposed alignment corridor is located consisted of a collection of large trees and vacant agricultural land. Some activity on the surface (ground disturbance) within the trench alignment appears to have taken place within the north western portion of the parcel. 	 The parcel consisted of vacant agricultural land with scattered trees and a farmhouse with attached sheds in the south eastern corner. The surrounding region generally consisted of vacant agricultural land. 	
1968	Black and White, Average	• The ground disturbance is not as evident in the north-western portion of the land parcel.	 Surrounding region remains relatively unchanged. 	
1972	Black and White, Average	• Potential farm dump may be located in area of ground disturbance as waste pile appears to be present	Surrounding region remains relatively unchanged.	
1989	Colour, Average	• Two small structures evident within the current proposed trench alignment.	 Evidence of surface water pooling identified immediately adjacent to the south of the cluster of trees in the current proposed trench alignment. Some minor expansion of the farmhouse and sheds to the southeast of the parcel. Surrounding region remains relatively unchanged. 	
1991	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
2009	Colour, Average	• Evidence of activity (potential waste disposal) and a new shed east of the cluster of trees within current proposed trench alignment.	• Surrounding region remains relatively unchanged, except for some agricultural activity taking place in the eastern portion of the parcel.	
2014		• Activity and shed present within the current proposed trench alignment have now disappeared.	Surrounding region remains relatively unchanged.	
2017	Colour, Good	• White surface disturbance re- appeared within the current proposed trench alignment, in the north western corner of the parcel.	Surrounding region remains relatively unchanged.	
2019	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
2021*	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	

* Imagery sourced from Aerometrex, 19 Feb 2021

• The area where the current trench alignment is proposed has consisted of a collection of trees and some agricultural land since at least 1950. Notable features have included:

- Evidence of activity in the form of white surface disturbance on the surface in 1950, 2009 2014, and 2017 2021. Two temporary structures were constructed in 1989 within this area and were removed by 2014. These surface markings (potential evidence of a farm waste dump) remain in 2021.
- The parcel has remained relatively unchanged since 1950. Notable features have included:
 - o A farmhouse in the south eastern portion of the parcel that underwent some expansion in 1989.
 - Some surface water pooling south of the cluster of trees in the north western corner of the parcel appears to have occurred in 1989. This area has undergone several changes in colouration since 1989.
- Surrounding region has remained relatively unchanged since 1950.

1.23 HAZELWOOD COOLING POND AND PLANT - PARCEL 23

The aerials reviewed for the Hazelwood Cooling Pond and Plant (HCPP) are located within report LI-0211 in **Appendix C**. The on-site observations relate to any changes that have occurred within the current proposed trench alignment due to interactions with the HCPP, south of the HCPP. The off-site observations relate to the area surrounding the current proposed trench alignment that may impact on the current proposed trench alignment as a result of activity associated with the HCPP.

Aerial Year	Colour and Quality	Observations		
		On-site (Alignment Corridor)	Off-site (Outside Alignment Corridor)	
1969	Black and White, Average	• The area where the current proposed trench alignment is located generally consists of of agricultural land with scattered farmhouse.	 The HHCP is present. The surrounding region generally consists of vacant agricultural land. Churchill is present east of the proposed trench alignment. 	
1975	Black and White, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
1981	Black and White, Poor	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
1990	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	• Surrounding region remains relatively unchanged, except for some development on the eastern side of the intersection to Switchback Road and Frasers Road.	
2009	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
2014	Colour, Average	 Area where current proposed trench alignment located remains relatively unchanged. 	Surrounding region remains relatively unchanged.	
2021*	Colour, Good	 Area where current proposed trench alignment located remains relatively unchanged. 	• The surface water levels within the Hazelwood Cooling Pond appears to have reduced. The surrounding region otherwise remains relatively unchanged.	

Table 1-23: Historical Aerial Photograph Summary for Parcel Hazelwood Cooling Pond and Plant

* Imagery sourced from Aerometrex, 19 Feb 2021

- The area where the current trench alignment is proposed has consisted of agricultural land with scattered farmhouses since 1967. Some localised developments have taken place, most notably on the eastern side of the intersection to Switchback Road and Frasers Road. There appears to be little interaction between the cooling pond and the current proposed trench alignment, except for the south eastern corner of the cooling pond where it connects to Eel Hole Creek.
- Surrounding region and the HCCP have remained relatively unchanged since the first aerial in 1967. Most notably the surface water levels of the Hazelwood Cooling Pond appear to have reduced in 2021.

APPENDIX E - SITE WALKOVER PHOTOGRAPHS



CSASS Site walkover, May 2022

Parcel Identifier	Date of Walkover]			
		Observations			
		Current land use	Potentially Contaminating Activities	Surrounding Land features and uses	Visible Site Impacts
V0040	19/05/2022	Private, Agriculture, grazing, pasture	Insecticide Use (drums of Methomyl 225 evident on ground near hay shed) pasture related chemicals	Agricultural land surrounding. Dams to the north and south	Dead trees within plantations to the east and west within the site.
V0041	19/05/2022	Private, Agriculture, grazing, pasture	Remnants of demolished shed including wire reel, wire, tyres, old hay cart, black plastic, corrugated iron and wood. Pasture related chemicals	Agricultural land surrounding. Dams on site and to the north and south.	None evident
V0105	19/05/2022	Government Road, Neals Road Buffalo	Herbicide use and grading on roadsides	Agricultural, residential/commercial, public park, roadway, railway to the east.	Herbicide use on verges.
V0152	19/05/2022	Private, agricultural, grazing, pasture, stockyards	Stockyards, stock dam, small rubbish burn pile (mainly plant material and some laminated wood), graded area with imported gravel fill, pasture related chemicals, discarded used tyres	Roadway to the north (south Gippsland hwy), agricultural land. Racing club 1km to the west.	Dead trees surrounding small dam, bricks evident in imported gravel fill areas, discarded tyres.
V0158	19/05/2022	Private, Agricultural, grazing, pasture, windmill, stockyards	Stockyards, windmill, pasture related chemicals	Roadways to the south (South Gippsland hwy) and east (Mckittericks Rd), agricultural land, residential to the north-west.	Heavy stock use evident
V0174	19/05/2022	V0174 – Roadway and roadside pullout/plantation V0175 – Agriculture, grazing, pasture, dairy, windmill	Stockyards/dairy/sheds, roadside herbicide use, imported fill for roadside pull-out	Agricultural use, roadway to the west (Dumbalk- Stony Creek Rd), residential house to the southwest, dam to the north (appears to be stock use)	Heavy stock use evident in V0175.
V0181	19/05/2022	Private, Agricultural, grazing, pasture	2 Sheds for vehicle, machinery, and motor oil storage, 3 shipping containers, rubbish pile, small gravel stockpile, small burn pile, pasture related chemicals	Private rubbish dump site in parcel directly south, agricultural use in surround areas, including a forested area to the east. Roadway to the west (Dumbalk-Stony Creek Rd), residential house to west of roadway.	Dead trees, rubbish dump site in southern parcel.
V0279	19/05/2022	Private, Agricultural, grazing, pasture, dairy, vegetable garden	Old dairy, rubbish piles, burn piles, imported road fill, pasture cropping	Agricultural use, road (Meeniyan-Mirboo North Road) to the east, residential house to the north.	Rubbish and burn piles.
V0290	19/05/2022	Private, Agricultural, dairy, public roadway (Mirboo North- Meeniyan Road), roadside pull-out	Large operational dairy, imported fill material used for terracing beneath dairy and road fill, pasture related chemicals	Agricultural use, road (Meeniyan-Mirboo North Road)	Operational dairy, imported fill.
V0306	20/05/2022	Leased agricultural grazing, pasture, currently purchased for Lay-Down area by Marinus Link and leased for stock grazing	Dairy, soil stockpiles, rubbish piles, imported gravel fill, pasture related chemicals	Historic Dairy on site including old silos, yards, hardstands from shed, water tank	Historic dairy, imported fill and stockpiles
V0326	20/05/2022	Currently purchased for Lay- Down area by Marinus Link and leased for stock grazing	Historic residential houses (2) containing asbestos, farm sheds (4) containing asbestos, historic dairy containing animal carcasses, rubbish piles, underground septic tank(s?), aboveground fuel tanks, live and non-live ammunition, buried bags of unknown material, old AFFF fire extinguisher,	Agricultural use, road (Meeniyan-Mirboo North Road) to the south	Dead trees, rubbish, red staining on ground, asbestos, animal carcasses, AFFF fire extinguisher, ammunition.
V0552	20/05/2022	Private, agricultural, grazing, pasture	Private quarries potentially backfilled with rubbish, building debris, pasture related chemicals	Agricultural use, silage pit evident to the northeast.	Rubbish evident in quarry piles, building debris
V0559	20/05/2022	Private, agricultural, grazing, pasture	Pasture related chemicals, historic photographs indicated a building which is no longer evident	Agricultural use.	None evident.





215878ML_PhotoSheets_v01_1



Parcel ID: Description: V0041 Former shed and dead tree Date 19/05/2022

Filename: V0041_19-05-2022_Photo_3.jpg



Parcel ID: Description: V0041 Former shed and dead tree

19/05/2022





Filename: V0086_19-05-2022_Photo_1.jpg

Parcel ID: Description: V0086 Former shed and dead tree

19/05/2022



19/05/2022



Parcel ID: V0087

Description:

Possible road side herbicide



Filename: V0097_19-05-2022_Photo_1.jpg



Parcel ID: Description: V0086 Possible road side herbicide

Date 19/05/2022

19-05-2022_Photo_1.jpg

0087



Filename: V0086_19-05-2022_Photo_2.jpg



Parcel ID: V0086 Possible road side herbicide

19/05/2022

Filename: V0087_19-05-2022_Photo_2.jpg

Filename: V0097_19-05-2022_Photo_2.jpg

Filename: V0086_19-05-2022_Photo_3.jpg





Parcel ID: Description: V0097 Tree distress

19/05/2022

Filename: V0097_19-05-2022_Photo_5.jpg

Filename: V0097_19-05-2022_Photo_3.jpg



Parcel ID: Description: V0097 Tree, stump and debris Date: 19/05/2022



Parcel ID: Description: V0097 Water runoff trench

19/05/2022



Parcel ID: Description: V0097 Tree distress

Date: 19/05/2022



Parcel ID: Description: V0097 Tree, stump and debris

Date: 19/05/2022

Filename: V0097_19-05-2022_Photo_8.jpg



Parcel ID: Description: V0097 Water runoff trench





Parcel ID: V0097 Description Vegetation and grass distress

Date: 19/05/2022

Filename: V0097_19-05-2022_Photo_14.jpg

Filename: V0097_19-05-2022_Photo_10.jpg

Filename: V0097_19-05-2022_Photo_12.jpg



Parcel ID: V0097 Cable service location

Parcel ID: Description: V0097 Cable service location



Vegetation distress and dead trees

V0152





V0152_19-05-2022_Photo_15.jpg

Filename: V0152_19-05-2022_Photo_19.jpg

19/05/2022



Parcel ID: V0152 Description: Vegetation distress and dead trees 19/05/2022







215878ML_PhotoSheets_v01_1



19/05/2022

V0158





Description: Stockyard Parcel ID: V0152





Filename: V0152_19-05-2022_Photo_27.jpg



Parcel ID: V0152 Description: Stockyard



Filename: V0152_19-05-2022_Photo_28.jpg



Parcel ID: V0152 Description Tyre stockpile

Date: 19/05/2022

Filename: V0158_19-05-2022_Photo_1.jpg





 Parcel ID:
 Description:
 Date:

 V0158
 Possible ground disturbance and veg. Distress
 19/05/2022



Parcel ID: Description: V0158 Weeds distress





Parcel ID: Description: V0175 Stockyard Date: 19/05/2022



V0175 Dam

19/05/2022



215878ML_PhotoSheets_v01_1



Parcel ID: Description: V0175 Landfill/dump site ?

Date 19/05/2022

Filename: V0175_19-05-2022_Photo_5.jpg



V0181 Shed





Parcel ID: Description: V0181 Dead/burnt trees

Date: 19/05/2022



Parcel ID: Description: V0181 Oil drums

Date: 19/05/2022



Parcel ID: V0181 Description: Burn pile





Parcel ID: Description:

Burn pile

V0181

Filename: V0181_19-05-2022_Photo_6.jpg

19/05/2022

Filename: V0279_19-05-2022_Photo_2.jpg





Date: 19/05/2022



Parcel ID: Description: V0279 Colvert

215878ML_PhotoSheets_v01_1



Filename: V0285_19-05-2022_Photo_1.jpg

19/05/2022

Date: 19/05/2022



Filename: V0285_19-05-2022_Photo_3.jpg



Parcel ID: Description: V0285 Dairy and fill

19/05/2022

Filename: V0279_19-05-2022_Photo_6.jpg

Parcel ID: V0279

Parcel ID: V0285

Description: Dairy and fill

Description:

Shed

Parcel ID: Description: V0285 Dairy and fill



V0306_19-05-2022_Photo_1.jpg Parcel ID: V0306 Description: 19/05/2022 Water tank Filename: V0306_19-05-2022_Photo_3.jpg Parcel ID: Description: V0306 Stockpile Date: 19/05/2022

Parcel ID: V0306

Description: Dump pile

Filename: V0306_19-05-2022_Photo_5.jpg



Parcel ID: Description: V0306 Stockyard concrete



Parcel ID: Description: V0306 Tanks

Filename: V0306_19-05-2022_Photo_13.jpg

19/05/2022

Filename: V0306_19-05-2022_Photo_15.jpg

Date: 19/05/2022 ame: V0306_19-05-2022_Photo_17.jpg



Parcel ID: Description: V0306 Shed interior

Parcel ID: Description: V0306 Sinkhole do

Sinkhole downhill of dairy runoff

Description:

Tanks

Parcel ID:

V0306

19/05/2022



Parcel ID: V0306 Sinkhole downhill of dairy runoff

19/05/2022

ne: V0306_19-05-2022_Photo_12.jpg

Description:





Parcel ID: Description: V0306 Former shed hardstand















Parcel ID: Description: V0326 Concrete

Date: 19/05/2022

Filename: V0326_19-05-2022_Photo_16.jpg



Parcel ID: Description: V0326 Dump pile Date: 19/05/2022





Parcel ID: Description: V0326 House 2







19/05/2022 215878ML_PhotoSheets_v01_1

Date:



Filename: V0326_19-05-2022_Photo_31.jpg

Date: 19/05/2022

Filename: V0326_19-05-2022_Photo_33.jpg

Parcel ID: V0326

Parcel ID: V0326

Description: Dairy & decay

Description: Dairy & decay

Parcel ID:

V0326

Filename: V0326_19-05-2022_Photo_29.jpg





Parcel ID: Description: V0326 Fuel tank

Date: 19/05/2022

Filename: V0326_19-05-2022_Photo_35.jpg



Parcel ID: V0326 Description: Hay shed Date: 19/05/2022



19/05/2022



Parcel ID: Description: V0326 Potential burial

19/05/2022



20/05/2022



Filename: V0478_20-05-2022_Photo_1.jpg



Parcel ID: Description: V0552 Gravel quarry Date: 20/05/2022





Parcel ID: Description: V0552



Filename: V0552_20-05-2022_Photo_4.jpg



Parcel ID: Description: V0552 Landfill/quarry?

Date: 20/05/2022



Filename: V0552_20-05-2022_Photo_9.jpg



Parcel ID: V0552 Description: Gravel quarry 20/05/2022



Filename: V0552_20-05-2022_Photo_5.jpg

Filename: V0552_20-05-2022_Photo_7.jpg



Description:

Landfill

Parcel ID:

Parcel ID:

V0552

Description:

Landfill and rubbish piles

V0552

Filename: V0552_20-05-2022_Photo_10.jpg

20/05/2022

Date: 20/05/2022

Filename: V0552_20-05-2022_Photo_16.jpg

ilename: V0552_20-05-2022_Photo_14.jpg





Description: Building/shed remains

Parcel ID:

V0552

Filename: V0552_20-05-2022_Photo_13.jpg











Parcel ID: Description: V0552





Building/shed remains

Filename: V0552_20-05-2022_Photo_21.jpg

20/05/2022

20/05/2022 Filename: V0552_20-05-2022_Photo_23.jpg

Date:

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Filename: V0552_20-05-2022_Photo_33.jpg

Filename: V0552_20-05-2022_Photo_35.jpg

20/05/2022









Filename: V0552_20-05-2022_Photo_30.jpg

Filename: V0552_20-05-2022_Photo_32.jpg













Parcel ID: Description: V0559





Filename: V0559_20-05-2022_Photo_4.jpg



215878ML_PhotoSheets_v01_1

V0638 -

Filename: V0638_20-05-2022_Photo_2.jpg



Parcel ID: Description: V0638 -

20/05/2022

APPENDIX F - FIELD LOGS

(TŁ		FEY	н	En	viron	me	ntal	Field Lo	og - E	Во	rehole	Bore Sheet	hole	No. of	ALT - 1 1	
Clie	nt:		Marinus Link	Pty Ltd									Project	No.	75	4-MELEN21587	/8ML
Proj	ect:		Marinus Link	- Waratah Bay	y to Haz	elwood Ali	gnmen	t					Date sta	arted:		4/08/2022	
Site	Addr	ess:	Fullertons Rd						_		_		Date co	mpleted	:	22/12/2022	
Drill	mode	el:		Hand Aug	er		Drill m	ounting:	· ·		Ho	le dia (mm): 50	Logg	ed by:	SE	Checked by:	BT
GPS	S Co-(ord:			N/A				GPS Datum:		N//	A R.L. surface (Al	HD):		N/A	Inclination:	N/A
Equ	ipmer	nt used:	Equipment Typ	be (PID or othe	er)			<u> </u>	N/A			Equipment Serial number:			N/A		
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۲				ALT-1/0.5	▼	0.5		CLAY, ł	brown/red colour,	Lp-Mp, N	No oc	dour or staining	•	•			
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Clie	nt:		Marinus Link	Pty Ltd								Projec	t No.		754	4-MELEN21587	8ML
Proj	ect:		Marinus Link	- Waratah Bay	, to Haz	elwood Ali	gnmen	t				Date s	tarted:			4/08/2022	
Site	Addre	ess:	Fullertons Rd	1								Date c	omplet	ted:		22/12/2022	
Drill	mode	el:		Hand Aug	er		Drill m	ounting:	-		Hole dia (mm): 50	Log	ged by:	:	SE	Checked by:	BT
GPS	5 Co-0	ord:		-	N/A			•	GPS Datum:		N/A R.L. surface (A	HD):			N/A	Inclination:	N/A
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AH CP	air cal	nammer ble percus	sive	outflow					Grainsize F _{fine}		^{XW} Extremely Weathered RS Residual Soil		BI	BI	lack	H hard Fbfriable	
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Clie	nt:		Marinus Link	Pty Ltd									Project	No.	75	4-MELEN21587	78ML
Proj	ect:		Marinus Link	- Waratah Bay	y to Haz	elwood Ali	gnmen	t					Date sta	arted:		4/08/2022	
Site	Addre	ess:	Fullertons Rd						_		_		Date co	mpleted	:	22/12/2022	
Drill	mode	el:		Hand Aug	er		Drill m	ounting:	· ·		Hol	e dia (mm): 50	Logg	ed by:	SE	Checked by:	BT
GPS	S Co-o	ord:			N/A	1			GPS Datum:		N/A	A R.L. surface (A	HD):		N/A	Inclination:	N/A
Equ	ipmer	nt used:	Equipment Typ	be (PID or othe	er)			<u> </u>	N/A			Equipment Serial number:			N/A		
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Method	Suppor	Water	construction details	sample ID / type / tests	PID (ppr	depth (m)	nscs	(s chara	secondary) PRIM acteristics, colour, n	ARY soil , seconda ninor con	name ary co npone	e, primary component imponent characteristics, ents	moisture conditior	consist. density	Contan Geologic C	nination, Struct cal Unit & Addi Observations)	ure, tional
HA				ALT-3/0.05	N/A	0.1		LOAM,	brown, fine roots	3			W	F			
+						-	<u> </u>										
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┢				AI T-3/0 5		0.5		Clavev	SII T brown with	slight reg	dln	No odour or staining			Tre	e roots presen	t
				AE 1-3/0.3	· ·	0.0		Olaycy		End D	rillinc			v	ne	e roots preseri	L
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⊢					-								1				
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Initi	al wa	ter level:		N/A		(after			mins.)	Statio	c wate	er level: N/A			(after		mins.)
DT PT SS HS V, T AH CP NML HA NDE	dia pu: sol ho V t air cal .C NM Ha) No	atube sh tube lid stem flig llow stem f bit, TC bit hammer ble percus MLC core and auger on-Destruct	ght auger flight auger sive tive Digging	C casing DF drilling 1 N none Water Inflow outflow initial w ✓ standin	fluid ater level g water le	(after excav evel @ time/o	ation) date		Grading Wg well grade Pg poorly gra Gg gap grade U uniform Grainsize F fine M medium C coarse Plasticity Lp low plastic Mp medium pl. Hp high plastic	ed ided ed ity asticity city	F S H X R I I V	Veathering Terms ^T Fresh ^W Slightly Weathered ^M Moderately Weathered ^W Highly Weathered ^W Extremely Weathered ^S Residual Soil ^O Gry ^M moist ^W wet		Colou R W G P Y BI Br O G B	Ir red white grey purple yellow Black Brown Orange Green Blue	Consistent VSvery soft S soft F firm St stiff VSvery stiff VSvery stiff H hard Fbfriable Density VL loose L loose UV very dens VD very dens	y se se

(TŁ		FEY	н	En	viron	me	ntal	Field Lo	og - E	Во	rehole	Bore Sheet	hole	e١	No. of	ALT - 4 1	
Clie	nt:		Marinus Link	Pty Ltd									Project	No.		754	4-MELEN21587	78ML
Proj	ect:		Marinus Link	- Waratah Bay	y to Haz	elwood Ali	gnmen	t					Date sta	arted:			4/08/2022	
Site	Addr	ess:	Cnr of Nichol	ls Rd and Old	Nicholl	s Rd			_		_		Date co	mplete	ed:		22/12/2022	
Drill	mode	el:		Hand Auge	er		Drill m	ounting:	· ·		Ho	e dia (mm): 50	Logg	ed by:		SE	Checked by:	BT
GPS	S Co-(ord:		/=	N/A	1			GPS Datum:		N//	A R.L. surface (A	HD):			N/A	Inclination:	N/A
Equ	ipmer	nt used:	Equipment Typ	be (PID or othe	er)			<u> </u>	N/A			Equipment Serial number:				N/A		
			Equipment Typ	be (PID or othe	er)		1	۲	N/A			Equipment Serial number:			_	N/A		_
			Drilling in	formation	\sim	1			ΜΔΤ		riai su		1.		4	Comments	onal observatio	NS dence of
Method	Support	Water	construction details	sample ID / type / tests	PID (ppm	depth (m)	nscs	(s chara	secondary) PRIM acteristics, colour r	ARY soil , seconda ninor com	name ary co	e, primary component omponent characteristics, ents	moisture condition	consist. A	nellau	Contarr Geologic O	ination, Struct al Unit & Addi bservations)	tional
ha I				ALT-4/0.05	N/A	0.1		LOAM,	brown, fine roots	3			W	F	N C	Nearby Grass	s distress, adja	acent to
													М	F	Τ			
H														ЦĪ	_			
				ALT-4/0.5	•	0.5		silty CL	AY, brown, Lp, N	o odour o	or sta	ining	+	▼				
						_				End Dr	rilling	9						
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Initi	al wa	ter level.		N/A		(after			mins)	Static	c wat	er level: N/A				(after		mine \
PT SS HS V, T AH CP NML HA NDE	dia pu so ho V I air ca _C NM Ha) No	atube sh tube lid stem flig Ilow stem f bit, TC bit hammer ble percus ALC core and auger on-Destruct	iht auger light auger sive ive Digging	Support C casing DF drilling1 N none Water Inflow Inflow initial w. ∑ standing	fluid ater level g water le	(after excav	ation) late		Grading Wg well grade Pg poorly gra Gg gap grade U uniform Grainsize F fine M medium C coarse Plasticity Lp low plastic Mp medium pl Hp high plastic	ed ided ed ity asticity city	F S M H F	Veathering Terms ⁷ Fresh ³ W Slightly Weathered ³ W Moderately Weathered ⁴ W Highly Weathered ⁴ W Extremely Weathered ⁴ S Residual Soil Mojsture D dry M moist W wet		Col R W G P Y B B F O G B	lour re wi gr pu ye Bi Bi O G Bi	ed hite rey urple ellow lack rown rrange ireen lue	Consistenc VSvery soft S soft F firm St stiff H hard Fbfriable Density I cose L med. den M dense D vp'ery dens	e se

(TŁ	COF	RA TECH	ł.	En	viror	nme	ental	Field Log -	Bor	ehol	e	Borehole No. ASS - 1 Sheet 1 of 1 Project No. 754-MELEN2158 754-MELEN2158			ASS - 1 1		
Clie	nt:		Marinus Link I	Pty Ltd									Project	No.		75	4-MELEN21587	/8ML
Proj	ect:		Marinus Link ·	Waratah Bay	to Haz	elwood A	lignme	nt					Date sta	arted:		_	4/08/2022	
Site	Addre	ess:	Cnr Fish Cree	k - Waratah R	d and V	Varatah R	d			_			Date co	mpletec	d:		4/08/2022	_
Drill	mode	el:		Hand Auge	r		Drill m	ounting:	•	Hole	dia (mm):	50	Logg	ed by:	-	SE	Checked by:	BT
GPS	S Co-c	ord:			N/A	-			GPS Datum:	N/A		R.L. surface (A	HD):			N/A	Inclination:	N/A
Equ	ipmer	nt used:	Equipment Typ	e (PID or othe	r)			N	N/A	E	quipment S	Serial number:				N/A		
			Equipment Typ	e (PID or othe	r)		-		N/A	E	quipment S	Serial number:			_	N/A		
_			Drilling info	ormation		1	_	1	Material	erial sub	stance		1	1		Addit	ional observatio	ns
Method	Support	Water	construction details	sample ID / type / tests	PID (ppm	depth (m)	nscs	(se charao	econdary) PRIMARY so cteristics, colour, secon minor co	il name, dary com	primary co ponent ch ts	omponent naracteristics,	moisture condition	consist. / density	Cor Cor	omments ntaminatio Jnit & Ad	including Evic on, Structure, G ditional Observ	lence of eological ations)
HA					N/A	0		Clayey S	SILT, brown, fine roots				W	VS	S	Saturated	, in water runof	f trench
1				ASS-1/0.1	1			No staini	ing or odours				М			norr	nal soil moistur	е
				ASS-1/0.3				Silty CLA	AY, brown with grey mot	tling, hig	h plasticity	y		S				
\square							L	No staini	ing or odours									
\square													-		-			
\vdash							-								-			
+															-			
\vdash						1												
\vdash				ASS-1/1.0														
				ASS-1/1.1				CLAY, br	rown with orange & grey	mottling	, high pla	sticity						
								No staini	ing or odours									
				ASS-1/1.5														
								Soils wet	t - Water Table?				W					
				100 1/00		2									-			
•				ASS - 1/2.0	•	2			End	Drilling								
						-			End	Drilling								
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		•	•		•									•				
Initi	al wat	ter level:		N/A		(after			mins.) Sta	tic water	level:	N/A				(after		mins.)
DT PT SS HS V, T AH CP NML HA NDE	dia pus sol hol V t air cat C NM Ha	atube sh tube lid stem flig llow stem f pit, TC bit hammer ble percuss MLC core nd auger n-Destruct	iht auger light auger sive ive Digging	C casing DF drilling f N none Water N outflow ✓ outflow ✓ standing	luid ater leve g water le	l (after exca	avation) e/date		Grading Wg well graded Pg poorly graded Gg gap graded U uniform Grainsize F fine M medium C coarse Plasticity Lp low plasticity Hp high plasticity	We Fr SV MV HV XV RS D M M W	eathering T Fresh Slightly W Highly We Extremely Residual S Disture dry moist wet	erms eathered y Weathered athered Weathered Soil		Colo R W G P Y BI Br O G B	red white grey purpl yellov Black Brow Oran Gree Blue	e w k ge n	VSvery soft S soft F firm St stiff VSvery stiff H hard Fbfriable Density VL Very loose L loose M Dense D very dense VD very dense	e e

APPENDIX G - NATA ANALTYICAL RESULTS

Accredited for compliance with ISO/IEC 17025 – Testing NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

NATA Accredited Accreditation Number 1261 Site Number 1254



Environment Testing

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NATA

Coffey Environments Pty Ltd VIC Level 1, 436 Johnston Street Abbotsford VIC 3067



Monika Janiak

Report Project name Project ID Received Date **911789-S** MARINUS LINK 754-MELEN215878ML Aug 05, 2022

Client Sample ID			ASS-1	ALT-1	ALT-2	ALT-3
Sample Matrix			Soil	Soil	Soil	Soil
			M22-	M22-	M22-	M22-
Eurofins Sample No.			Au0012502	Au0012503	Au0012504	Au0012505
Date Sampled			Aug 04, 2022	Aug 04, 2022	Aug 04, 2022	Aug 04, 2022
Test/Reference	LOR	Unit				
Actual Acidity (NLM-3.2)						
pH-KCL (NLM-3.1)	0.1	pH Units	4.8	-	-	-
Titratable Actual Acidity (NLM-3.2)	2	mol H+/t	11	-	-	-
Titratable Actual Acidity (NLM-3.2)	0.003	% pyrite S	0.018	-	-	-
Potential Acidity - Chromium Reducible Sulfur						
Chromium Reducible Sulfur (s-SCr) (NLM-2.1) ^{S04}	0.005	% S	< 0.005	-	-	-
Chromium Reducible Sulfur (a-SCr) (NLM-2.1)	3	mol H+/t	< 3	-	-	-
Extractable Sulfur						
Sulfur - KCI Extractable	0.005	% S	N/A	-	-	-
HCI Extractable Sulfur	0.005	% S	N/A	-	-	-
Retained Acidity (S-NAS)						
Net Acid soluble sulfur (SNAS) NLM-4.1	0.02	% S	N/A	-	-	-
Net Acid soluble sulfur (s-SNAS) NLM-4.1 ^{S02}	0.02	% S	N/A	-	-	-
Net Acid soluble sulfur (a-SNAS) NLM-4.1	10	mol H+/t	N/A	-	-	-
HCI Extractable Sulfur Correction Factor	1	factor	2.0	-	-	-
Acid Neutralising Capacity (ANCbt)						
Acid Neutralising Capacity - (ANCbt) (NLM-5.2)	0.01	% CaCO3	N/A	-	-	-
Acid Neutralising Capacity - (s-ANCbt) (NLM-5.2) ^{S03}	0.02	% S	N/A	-	-	-
Acid Neutralising Capacity - (a-ANCbt) (NLM-5.2)	2	mol H+/t	N/A	-	-	-
ANC Fineness Factor		factor	1.5	-	-	-
Net Acidity (Including ANC)						
CRS Suite - Net Acidity - NASSG (Including ANC)	0.02	% S	< 0.02	-	-	-
CRS Suite - Net Acidity - NASSG (Including ANC)	10	mol H+/t	11	-	-	-
CRS Suite - Liming Rate - NASSG (Including ANC) ^{S01}	1	kg CaCO3/t	< 1	-	-	-
Extraneous Material						
<2mm Fraction	0.005	g	120	-	-	-
>2mm Fraction	0.005	g	49	-	-	-
Analysed Material	0.1	%	71	-	-	-
Extraneous Material	0.1	%	29	-	-	-
% Moisture	1	%	18	26	18	30



Sample Maritix Soil Soil Soil Soil Maid Eurolinos Sample Mo. LOR Multi Autorizado	Client Sample ID			ASS-1	ALT-1	ALT-2	ALT-3					
Eurorins Sample No. Name Name </td <td>Sample Matrix</td> <td></td> <td></td> <td>Soil</td> <td>Soil</td> <td>Soil</td> <td>Soil</td>	Sample Matrix			Soil	Soil	Soil	Soil					
Eurofins Sample No. Aug 04.2022 Aug 04.2023 Aug 04.2022 Aug 04.202 Aug 04.202 Aug 04.202 Aug 04.202 Aug 04.202				M22-	M22-	M22-	M22-					
Date Sampled LOR Unit Aug 04, 2022 Aug 04, 2022 Aug 04, 2022 Test/Reference Unit Unit Chiordnees - Total 0.1 mg/kg - <0.01	Eurofins Sample No.			Au0012502	Au0012503	Au0012504	Au0012505					
TaskReimena LOR Unit Image: Constraint of the constraint of thec	Date Sampled			Aug 04, 2022	Aug 04, 2022	Aug 04, 2022	Aug 04, 2022					
Organoshorine Pesticides < <th><<th><<th><<th><<th><<t< td=""><td>Test/Reference</td><td>LOR</td><td>Unit</td><td></td><td></td><td></td><td></td></t<></th></th></th></th></th>	< <th><<th><<th><<th><<t< td=""><td>Test/Reference</td><td>LOR</td><td>Unit</td><td></td><td></td><td></td><td></td></t<></th></th></th></th>	< <th><<th><<th><<t< td=""><td>Test/Reference</td><td>LOR</td><td>Unit</td><td></td><td></td><td></td><td></td></t<></th></th></th>	< <th><<th><<t< td=""><td>Test/Reference</td><td>LOR</td><td>Unit</td><td></td><td></td><td></td><td></td></t<></th></th>	< <th><<t< td=""><td>Test/Reference</td><td>LOR</td><td>Unit</td><td></td><td></td><td></td><td></td></t<></th>	< <t< td=""><td>Test/Reference</td><td>LOR</td><td>Unit</td><td></td><td></td><td></td><td></td></t<>	Test/Reference	LOR	Unit				
Obvious-Total 0.1 mg/kg - < 0.1 < 0.1 < 0.1 4.4*DDD 0.05 mg/kg - < 0.05	Organochlorine Pesticides											
44*DDD 0.05 mg/kg - <0.06	Chlordanes - Total	0.1	ma/ka	-	< 0.1	< 0.1	< 0.1					
A4-DDE 0.05 mg/kg - < 0.05 < 0.05 < 0.05 44-DDT 0.05 mg/kg - < 0.05	4.4'-DDD	0.05	ma/ka	-	< 0.05	< 0.05	< 0.05					
44-DDT 0.05 mg/kg - < 0.05	4.4'-DDE	0.05	ma/ka	-	< 0.05	< 0.05	< 0.05					
a HCH 0.05 mg/kg - < 0.05 < 0.05 < 0.05 < 0.05 Addin 0.05 mg/kg - < 0.05	4.4'-DDT	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05					
Addin 0.05 mg/kg - < 0.05 < 0.05 < 0.05 b-HCH 0.05 mg/kg - < 0.05	a-HCH	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05					
b+HCH 0.05 mg/kg - < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < < <	Aldrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05					
d+HCH 0.05 mg/kg - < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05	b-HCH	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05					
Dieldrin 0.05 mg/kg - < 0.05 < 0.05 < 0.05 Endosulfan II 0.05 mg/kg - < 0.05	d-HCH	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05					
Endosulfan I 0.05 mg/kg - < 0.05 < 0.05 < 0.05 Endosulfan II 0.05 mg/kg - < 0.05	Dieldrin	0.05	ma/ka	-	< 0.05	< 0.05	< 0.05					
Endosulfan II 0.06 mg/kg - < 0.05 < 0.05 < 0.05 Endosulfan sulphate 0.05 mg/kg - < 0.05	Endosulfan I	0.05	ma/ka	-	< 0.05	< 0.05	< 0.05					
Endosulfan sulphate 0.05 mg/kg - < 0.05 < 0.05 < 0.05 Endrin 0.05 mg/kg - < 0.05	Endosulfan II	0.05	ma/ka	-	< 0.05	< 0.05	< 0.05					
Endrin 0.06 mg/kg - < 0.05 < 0.05 < 0.05 Endrin addehyde 0.05 mg/kg - < 0.05	Endosulfan sulphate	0.05	ma/ka	-	< 0.05	< 0.05	< 0.05					
Endrin aldehyde 0.05 mg/kg - < 0.05 < 0.05 < 0.05 < 0.05 Endrin ketone 0.05 mg/kg - < 0.05	Endrin	0.05	ma/ka	-	< 0.05	< 0.05	< 0.05					
Endmin ketone Dots mg/kg - < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05<	Endrin aldehvde	0.05	ma/ka	-	< 0.05	< 0.05	< 0.05					
g+HCH (Lindane) 0.05 mg/kg - < 0.05 $c0.05$ < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 <	Endrin ketone	0.05	ma/ka	-	< 0.05	< 0.05	< 0.05					
Heptachino Imp Rg - < 0.05 0.05 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 <td>g-HCH (Lindane)</td> <td>0.05</td> <td>ma/ka</td> <td>-</td> <td>< 0.05</td> <td>< 0.05</td> <td>< 0.05</td>	g-HCH (Lindane)	0.05	ma/ka	-	< 0.05	< 0.05	< 0.05					
Heptachior epoxide D.05 mg/kg - < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0	Heptachlor	0.05	ma/ka	-	< 0.05	< 0.05	< 0.05					
Hexachiorobenzene 0.05 mg/kg - < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0	Heptachlor epoxide	0.05	ma/ka	-	< 0.05	< 0.05	< 0.05					
Methoxychior 0.05 mg/kg - < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05 < 0.05	Hexachlorobenzene	0.05	ma/ka	-	< 0.05	< 0.05	< 0.05					
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	Methoxychlor	0.05	ma/ka	-	< 0.05	< 0.05	< 0.05					
Advin and Dieldrin (Total)* D.05 mg/kg - < 0.05 < 0.05 < 0.05 DDT + DDE + DDD (Total)* 0.05 mg/kg - < 0.05	Toxaphene	0.5	ma/ka	-	< 0.5	< 0.5	< 0.5					
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Aldrin and Dieldrin (Total)*	0.05	ma/ka	-	< 0.05	< 0.05	< 0.05					
Vic EPA IWRG 621 OCP (Total)* 0.1 mg/kg - 0.1 <0.1 <0.1 Vic EPA IWRG 621 Other OCP (Total)* 0.1 mg/kg - <0.1	DDT + DDE + DDD (Total)*	0.05	ma/ka	-	< 0.05	< 0.05	< 0.05					
Vic EPA IWRG 621 Other OCP (Total)* 0.1 mg/kg - <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 </td <td>Vic EPA IWRG 621 OCP (Total)*</td> <td>0.1</td> <td>ma/ka</td> <td>-</td> <td>< 0.1</td> <td>< 0.1</td> <td>< 0.1</td>	Vic EPA IWRG 621 OCP (Total)*	0.1	ma/ka	-	< 0.1	< 0.1	< 0.1					
Dibutylchlorendate (sur.) 1 % - 99 96 70 Tetrachloro-m-xylene (sur.) 1 % - 121 78 146 Organophosphorus Pesticides - 121 78 146 Azinphos-methyl 0.2 mg/kg - <0.2	Vic EPA IWRG 621 Other OCP (Total)*	0.1	ma/ka	_	< 0.1	< 0.1	< 0.1					
Tetrachlorom-xylene (surr.) 1 % - 121 78 146 Organophosphorus Pesticides . 121 78 146 Organophosphorus Pesticides Azinphos-methyl 0.2 mg/kg - <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2	Dibutylchlorendate (surr.)	1	%	_	99	96	70					
Organophosphorus Pesticides Image: Construct the second seco	Tetrachloro-m-xylene (surr.)	1	%	_	121	78	146					
Azinphos-methyl 0.2 mg/kg - < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	Organophosphorus Pesticides						_					
Table Mary Other Mg/kg - Other Other <t< td=""><td>Azinphos-methyl</td><td>0.2</td><td>ma/ka</td><td>_</td><td>< 0.2</td><td>< 0.2</td><td>< 0.2</td></t<>	Azinphos-methyl	0.2	ma/ka	_	< 0.2	< 0.2	< 0.2					
District District Mg/kg - OIL <	Bolstar	0.2	ma/ka	_	< 0.2	< 0.2	< 0.2					
Distributing One High One <	Chlorfenvinphos	0.2	ma/ka	_	< 0.2	< 0.2	< 0.2					
One One <thone< th=""> <thone< th=""> <thone< th=""></thone<></thone<></thone<>	Chlorovrifos	0.2	ma/ka	_	< 0.2	< 0.2	< 0.2					
Displace No.2 Ng.kg - < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	Chlorpyrifos-methyl	0.2	ma/ka	-	< 0.2	< 0.2	< 0.2					
Demeton-S 0.2 mg/kg - < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 <	Coumaphos	2	ma/ka	-	< 2	< 2	< 2					
Demeton-O 0.2 mg/kg - < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 <	Demeton-S	0.2	ma/ka	-	< 0.2	< 0.2	< 0.2					
Diazinon 0.2 mg/kg - < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 <0	Demeton-Q	0.2	ma/ka	-	< 0.2	< 0.2	< 0.2					
Diamon One Mg/kg Form Form Form Dichlorvos 0.2 mg/kg - < 0.2	Diazinon	0.2	ma/ka	-	< 0.2	< 0.2	< 0.2					
Dimethoate 0.2 mg/kg - < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 <th<< td=""><td>Dichloryos</td><td>0.2</td><td>ma/ka</td><td>-</td><td>< 0.2</td><td>< 0.2</td><td>< 0.2</td></th<<>	Dichloryos	0.2	ma/ka	-	< 0.2	< 0.2	< 0.2					
Disulfotion 0.2 mg/kg - < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 <th< td=""><td>Dimethoate</td><td>0.2</td><td>ma/ka</td><td>-</td><td>< 0.2</td><td>< 0.2</td><td>< 0.2</td></th<>	Dimethoate	0.2	ma/ka	-	< 0.2	< 0.2	< 0.2					
EPN 0.2 mg/kg - < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 </td <td>Disulfoton</td> <td>0.2</td> <td>ma/ka</td> <td>-</td> <td>< 0.2</td> <td>< 0.2</td> <td>< 0.2</td>	Disulfoton	0.2	ma/ka	-	< 0.2	< 0.2	< 0.2					
Ethion 0.2 mg/kg - < 0.2	FPN	0.2	ma/ka	_	< 0.2	< 0.2	< 0.2					
Ethoprop 0.2 mg/kg - < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 <	Ethion	0.2	ma/ka	-	< 0.2	< 0.2	< 0.2					
Ethyl parathion 0.2 mg/kg - < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	Ethoprop	0.2	ma/ka	-	< 0.2	< 0.2	< 0.2					
Fenitrothion 0.2 mg/kg - < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 <t< td=""><td>Ethyl parathion</td><td>0.2</td><td>ma/ka</td><td>-</td><td>< 0.2</td><td>< 0.2</td><td>< 0.2</td></t<>	Ethyl parathion	0.2	ma/ka	-	< 0.2	< 0.2	< 0.2					
Fensulfothion 0.2 mg/kg - < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 <	Fenitrothion	0.2	ma/ka	-	< 0.2	< 0.2	< 0.2					
Fenthion 0.2 mg/kg - < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 <	Fensulfothion	0.2	ma/ka	-	< 0.2	< 0.2	< 0.2					
Malathion 0.2 mg/kg < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 <	Fenthion	0.2	ma/ka	-	< 0.2	< 0.2	< 0.2					
Merphos 0.2 mg/kg < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 <th< td=""><td>Malathion</td><td>0.2</td><td>ma/ka</td><td>-</td><td>< 0.2</td><td>< 0.2</td><td>< 0.2</td></th<>	Malathion	0.2	ma/ka	-	< 0.2	< 0.2	< 0.2					
	Merphos	0.2	ma/ka	-	< 0.2	< 0.2	< 0.2					



Client Sample ID			ASS-1	ALT-1	ALT-2	ALT-3
Sample Matrix			Soil	Soil	Soil	Soil
			M22-	M22-	M22-	M22-
Eurofins Sample No.			Au0012502	Au0012503	Au0012504	Au0012505
Date Sampled			Aug 04, 2022	Aug 04, 2022	Aug 04, 2022	Aug 04, 2022
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Methyl parathion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	-	< 2	< 2	< 2
Naled	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	-	< 2	< 2	< 2
Phorate	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	-	66	60	62
Acid Herbicides						
2.4-D	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
2.4-DB	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
2.4.5-T	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
2.4.5-TP	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Actril (loxynil)	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dicamba	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dichlorprop	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dinitro-o-cresol	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dinoseb	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
МСРА	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
МСРВ	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Месоргор	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Warfarin (surr.)	1	%	-	116	121	99

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled			ALT-4 Soil M22- Au0012506 Aug 04, 2022	DUP-01 Soil M22- Au0012508 Aug 04, 2022
Test/Reference	LOR	Unit		
% Moisture	1	%	10	24
Organochlorine Pesticides				
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05



Client Sample ID			ALT-4	DUP-01
Sample Matrix			Soil	Soil
Eurofins Sample No.			M22- Au0012506	M22- Au0012508
Date Sampled			Aug 04, 2022	Aug 04, 2022
Test/Reference	LOR	Unit		
Organochlorine Pesticides		0		
Endosulfan II	0.05	ma/ka	< 0.05	< 0.05
Endosulfan sulphate	0.05	ma/ka	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	98	99
Tetrachloro-m-xylene (surr.)	1	%	113	116
Organophosphorus Pesticides				
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2
	0.2	mg/kg	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2
Eury paratition	0.2	mg/kg	< 0.2	< 0.2
Fernulfothion	0.2	mg/kg	< 0.2	< 0.2
Ferisulion	0.2	mg/kg	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2
Merchos	0.2	ma/ka	< 0.2	< 0.2
Methyl parathion	0.2	ma/ka	< 0.2	< 0.2
Mevinnhos	0.2	ma/ka	< 0.2	< 0.2
Monocrotophos	2	ma/ka	< 2	< 2
Naled	0.2	ma/ka	< 0.2	< 0.2
Omethoate	2	ma/ka	< 2	< 2
Phorate	0.2	ma/ka	< 0.2	< 0.2
Pirimiphos-methyl	0.2	ma/ka	< 0.2	< 0.2
Pyrazophos	0.2	ma/ka	< 0.2	< 0.2
Ronnel	0.2	mg/ka	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2



Client Sample ID			ALT-4	DUP-01
Sample Matrix			Soil	Soil
Eurofins Sample No.			M22- Au0012506	M22- Au0012508
Date Sampled			Aug 04, 2022	Aug 04, 2022
Test/Reference	LOR	Unit		
Organophosphorus Pesticides				
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	53	53
Acid Herbicides				
2.4-D	0.5	mg/kg	< 0.5	< 0.5
2.4-DB	0.5	mg/kg	< 0.5	< 0.5
2.4.5-T	0.5	mg/kg	< 0.5	< 0.5
2.4.5-TP	0.5	mg/kg	< 0.5	< 0.5
Actril (loxynil)	0.5	mg/kg	< 0.5	< 0.5
Dicamba	0.5	mg/kg	< 0.5	< 0.5
Dichlorprop	0.5	mg/kg	< 0.5	< 0.5
Dinitro-o-cresol	0.5	mg/kg	< 0.5	< 0.5
Dinoseb	0.5	mg/kg	< 0.5	< 0.5
МСРА	0.5	mg/kg	< 0.5	< 0.5
МСРВ	0.5	mg/kg	< 0.5	< 0.5
Месоргор	0.5	mg/kg	< 0.5	< 0.5
Warfarin (surr.)	1	%	129	107



Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Chromium Reducible Sulfur Suite			
Chromium Suite	Brisbane	Aug 09, 2022	6 Week
- Method: LTM-GEN-7070 Chromium Reducible Sulfur Suite			
Extraneous Material	Brisbane	Aug 09, 2022	6 Week
- Method: LTM-GEN-7050/7070			
% Moisture	Melbourne	Aug 05, 2022	14 Days
- Method: LTM-GEN-7080 Moisture			
Organochlorine Pesticides	Melbourne	Aug 05, 2022	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)			
Organophosphorus Pesticides	Melbourne	Aug 05, 2022	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS (USEPA 8270)			
Acid Herbicides	Melbourne	Aug 05, 2022	14 Days
- Method: LTM-ORG-2180 Phenoxy Acid Herbicides			

web: www.eurofins.com.au email: EnviroSales@eurofins.com		fine	Eurofins Environment Testing Australia Pty Ltd ABN: 50 005 085 521												Eurofins Environment Testing NZ Ltd NZBN: 9429046024954		
		.com	Melbourne Geelong Sydr 6 Monterey Road 19/8 Lewalan Street 179 Dandenong South Grovedale Girra VIC 3175 VIC 3216 NSW Tel: +61 3 8564 5000 Tel: +61 3 8564 5000 Tel: NATA# 1261 Site# 1254		Sydney Car 179 Magowar Road Unit Girraween Mitt NSW 2145 AC' Tel: +61 2 9900 8400 Tel: NATA# 1261 Site# 18217		Canb Unit 1 Mitch ACT : Tel: + 7	Canberra Unit 1,2 Dacre Street Mitchell ACT 2911 Tel: +61 2 6113 8091		Brisbane tt 1/21 Smallwood Place Murarrie QLD 4172 1 Tel: +61 7 3902 4600 NATA# 1261 Site# 20794	Newcastle 4/52 Industrial Drive Mayfield East NSW 2304 PO Box 60 Wickham 2293 Tel: +61 2 4968 8448 94 NATA# 1261 Site# 25079	Perth 46-48 Banksia Road Welshpool WA 6106 Tel: +61 8 6253 4444 NATA# 2377 Site# 2370	Auckland 35 O'Rorke Road Penrose, Auckland 1061 Tel: +64 9 526 45 51 IANZ# 1327	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 Tel: 0800 856 450 IANZ# 1290			
Compa Addres	Company Name: Coffey Environments Pty Ltd VIC Address: Level 1, 436 Johnston Street Abbotsford VIC 3067			Order No.: Report #: 911789 Phone: 03 9290 7000 Fax:				Received: Due: Priority: Contact Name:	Aug 5, 2022 11:00 Aug 10, 2022 3 Day Monika Janiak	АМ							
Project Project	t Name: t ID:	MARINUS L 754-MELEN	_INK I215878ML										E	urofins Analytical Ser	vices Manager : H	larry Bacalis	
		Sa	ample Detail				Organochlorine Pesticides	Organophosphorus Pesticides	Acid Herbicides	Chromium Reducible Sulfur Suite	Moisture Set						
Melbour	ne Laborato	ory - NATA # 12	261 Site # 12	54			х	X	х		X						
Brisbane	e Laboratory	y - NATA # 126	51 Site # 2079	94						Х							
External	Laboratory	1	1	1								-					
No S	Sample ID	Sample Date	Sampling Time	Matrix	x LAB	ID						_					
1 AS	S-1	Aug 04, 2022		Soil	M22-Au00	012502				Х	X	-					
2 AL1	T-1	Aug 04, 2022		Soil	M22-Au00	012503	Х	X	Х		X	_					
3 AL1	T-2	Aug 04, 2022		Soil	M22-Au00	012504	Х	X	Х		X						
4 AL	T-3	Aug 04, 2022		Soil	M22-Au00	012505	X	X	X		X	-					
5 ALT	1-4	Aug 04, 2022		Soll	M22-Au00	J12506	X		X		X	-					
		Aug 04, 2022		vvater Soil	M22-Au00	J12507	×				~	-					
/ DUP-01 Aug 04, 2022 Soil M22-Au0012508 Test Counts Image: Counts				6	6	6	1	6									



Internal Quality Control Review and Glossary

General

- 1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- 2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- 3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- 4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- 5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- 6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- 7. Samples were analysed on an 'as received' basis.
- 8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
- 9. This report replaces any interim results previously issued.

Holding Times

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

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA. If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

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

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	μg/L: micrograms per litre
ppm: parts per million	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

АРНА	American Public Health Association
сос	Chain of Custody
СР	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
ТВТО	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WADWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

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

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

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

- 1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- 2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- 3. pH and Free Chlorine analysed in the laboratory Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- 4. Recovery Data (Spikes & Surrogates) where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
- 5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
- 6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.



Quality Control Results

Test	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code
Method Blank					
Organochlorine Pesticides					
Chlordanes - Total	mg/kg	< 0.1	0.1	Pass	
4.4'-DDD	mg/kg	< 0.05	0.05	Pass	
4.4'-DDE	mg/kg	< 0.05	0.05	Pass	
4.4'-DDT	mg/kg	< 0.05	0.05	Pass	
a-HCH	mg/kg	< 0.05	0.05	Pass	
Aldrin	mg/kg	< 0.05	0.05	Pass	
b-HCH	mg/kg	< 0.05	0.05	Pass	
d-HCH	mg/kg	< 0.05	0.05	Pass	
Dieldrin	mg/kg	< 0.05	0.05	Pass	
Endosulfan I	mg/kg	< 0.05	0.05	Pass	
Endosulfan II	mg/kg	< 0.05	0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05	0.05	Pass	
Endrin	mg/kg	< 0.05	0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05	0.05	Pass	
Endrin ketone	mg/kg	< 0.05	0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05	0.05	Pass	
Heptachlor	mg/kg	< 0.05	0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05	0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05	0.05	Pass	
Methoxychlor	mg/kg	< 0.05	0.05	Pass	
Toxaphene	mg/kg	< 0.5	0.5	Pass	
Method Blank					
Organophosphorus Pesticides					
Azinphos-methyl	mg/kg	< 0.2	0.2	Pass	
Bolstar	mg/kg	< 0.2	0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2	0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2	0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2	0.2	Pass	
Coumaphos	mg/kg	< 2	2	Pass	
Demeton-S	mg/kg	< 0.2	0.2	Pass	
Demeton-O	mg/kg	< 0.2	0.2	Pass	
Diazinon	mg/kg	< 0.2	0.2	Pass	
Dichlorvos	mg/kg	< 0.2	0.2	Pass	
Dimethoate	mg/kg	< 0.2	0.2	Pass	
Disulfoton	mg/kg	< 0.2	0.2	Pass	
EPN	mg/kg	< 0.2	0.2	Pass	
Ethion	mg/kg	< 0.2	0.2	Pass	
Ethoprop	mg/kg	< 0.2	0.2	Pass	
Ethyl parathion	mg/kg	< 0.2	0.2	Pass	
Fenitrothion	mg/kg	< 0.2	0.2	Pass	
Fensulfothion	mg/kg	< 0.2	0.2	Pass	
Fenthion	mg/kg	< 0.2	0.2	Pass	
Malathion	mg/kg	< 0.2	0.2	Pass	
Merphos	mg/kg	< 0.2	0.2	Pass	
Methyl parathion	mg/kg	< 0.2	0.2	Pass	
Mevinphos	mg/kg	< 0.2	0.2	Pass	
Monocrotophos	mg/kg	< 2	2	Pass	
Naled	mg/kg	< 0.2	0.2	Pass	
Omethoate	mg/kg	< 2	2	Pass	
Phorate	mg/kg	< 0.2	0.2	Pass	



Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Pirimiphos-methyl	mg/kg	< 0.2		0.2	Pass	
Pyrazophos	mg/kg	< 0.2		0.2	Pass	
Ronnel	mg/kg	< 0.2		0.2	Pass	
Terbufos	mg/kg	< 0.2		0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2		0.2	Pass	
Tokuthion	mg/kg	< 0.2		0.2	Pass	
Trichloronate	mg/kg	< 0.2		0.2	Pass	
Method Blank			1	1		
Acid Herbicides	1					
2.4-D	mg/kg	< 0.5		0.5	Pass	
2.4-DB	mg/kg	< 0.5		0.5	Pass	
2.4.5-T	mg/kg	< 0.5		0.5	Pass	
2.4.5-TP	mg/kg	< 0.5		0.5	Pass	
Actril (loxynil)	mg/kg	< 0.5		0.5	Pass	
Dicamba	mg/kg	< 0.5		0.5	Pass	
Dichlorprop	mg/kg	< 0.5		0.5	Pass	
Dinitro-o-cresol	mg/kg	< 0.5		0.5	Pass	
Dinoseb	mg/kg	< 0.5		0.5	Pass	
МСРА	mg/kg	< 0.5		0.5	Pass	
MCPB	mg/kg	< 0.5		0.5	Pass	
Mecoprop	mg/kg	< 0.5		0.5	Pass	
LCS - % Recovery			I I	1		
Actual Acidity (NLM-3.2)					_	
pH-KCL (NLM-3.1)	%	99		80-120	Pass	
Titratable Actual Acidity (NLM-3.2)	%	92		80-120	Pass	
LCS - % Recovery				1	[
Potential Acidity - Chromium Reducible Sulfur	0/	100		00.400	Dees	
Chromium Reducible Sulfur (S-SCr) (NLM-2.1)	%	100		80-120	Pass	
Organachlarina Basticidas						
Chlordanes - Total	%	82		70-130	Pass	
	/0 %	118		70-130	Pass	
4.4'-DDE	/0	86		70-130	Pass	
4 4'-DDT	%	104		70-130	Pass	
а-НСН	%	81		70-130	Pass	
Aldrin	%	78		70-130	Pass	
b-HCH	%	71		70-130	Pass	
d-HCH	%	81		70-130	Pass	
Dieldrin	%	80		70-130	Pass	
Endosulfan I	%	72		70-130	Pass	
Endosulfan II	%	78		70-130	Pass	
Endosulfan sulphate	%	76		70-130	Pass	
Endrin	%	75		70-130	Pass	
Endrin aldehyde	%	92		70-130	Pass	
Endrin ketone	%	85		70-130	Pass	
g-HCH (Lindane)	%	80		70-130	Pass	
Heptachlor	%	73		70-130	Pass	
Heptachlor epoxide	%	78		70-130	Pass	
Hexachlorobenzene	%	78		70-130	Pass	
Methoxychlor	%	93		70-130	Pass	
LCS - % Recovery						
Organophosphorus Pesticides						
Diazinon	%	127		70-130	Pass	
Dimethoate	%	107		70-130	Pass	



Test			Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Ethion			%	127		70-130	Pass	
Fenitrothion			%	88		70-130	Pass	
Methyl parathion			%	82		70-130	Pass	
Mevinphos			%	124		70-130	Pass	
LCS - % Recovery							-	
Acid Herbicides								
2.4-D			%	105		70-130	Pass	
2.4-DB			%	89		70-130	Pass	
2.4.5-T			%	99		70-130	Pass	
2.4.5-TP			%	125		70-130	Pass	
Actril (loxynil)			%	116		70-130	Pass	
Dicamba			%	113		70-130	Pass	
Dichlorprop			%	107		70-130	Pass	
Dinitro-o-cresol			%	121		70-130	Pass	
Dinoseb			%	130		70-130	Pass	
МСРА			%	110		70-130	Pass	
МСРВ			%	102		70-130	Pass	
Месоргор			%	95		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery					-			
Acid Herbicides				Result 1				
МСРА	L22-Au0012140	NCP	%	85		70-130	Pass	
Spike - % Recovery					 -		-	
Organochlorine Pesticides				Result 1				
Chlordanes - Total	M22-Au0012504	CP	%	113		70-130	Pass	
4.4'-DDD	M22-Au0012504	CP	%	101		70-130	Pass	
4.4'-DDE	M22-Au0012504	CP	%	100		70-130	Pass	
4.4'-DDT	M22-Au0012504	CP	%	72		70-130	Pass	
а-НСН	M22-Au0012504	СР	%	103		70-130	Pass	
Aldrin	M22-Au0012504	СР	%	93		70-130	Pass	
b-HCH	M22-Au0012504	CP	%	99		70-130	Pass	
d-HCH	M22-Au0012504	СР	%	96		70-130	Pass	
Dieldrin	M22-Au0012504	CP	%	107		70-130	Pass	
Endosulfan I	M22-Au0012504	СР	%	111		70-130	Pass	
Endosulfan II	M22-Au0012504	СР	%	98		70-130	Pass	
Endosulfan sulphate	M22-Au0012504	СР	%	87		70-130	Pass	
Endrin	M22-Au0012504	СР	%	110		70-130	Pass	
Endrin aldehyde	M22-Au0012504	СР	%	75		70-130	Pass	
Endrin ketone	M22-Au0012504	СР	%	106		70-130	Pass	
g-HCH (Lindane)	M22-Au0012504	СР	%	107		70-130	Pass	
Heptachlor	M22-Au0012504	СР	%	85		70-130	Pass	
Heptachlor epoxide	M22-Au0012504	СР	%	108		70-130	Pass	
Hexachlorobenzene	M22-Au0012504	СР	%	89		70-130	Pass	
Methoxychlor	M22-Au0012504	СР	%	73		70-130	Pass	
Spike - % Recovery				1			-	
Acid Herbicides	1			Result 1				
2.4-D	M22-Au0012504	СР	%	82		70-130	Pass	
Actril (loxynil)	M22-Au0012504	СР	%	88		70-130	Pass	
Dichlorprop	M22-Au0012504	СР	%	101		70-130	Pass	
МСРВ	M22-Au0012504	CP	%	85		70-130	Pass	



Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate							1		
Actual Acidity (NLM-3.2)		I	1	Result 1	Result 2	RPD			
pH-KCL (NLM-3.1)	B22-Au0008468	NCP	pH Units	7.7	7.7	<1	20%	Pass	
Titratable Actual Acidity (NLM-3.2)	B22-Au0008468	NCP	mol H+/t	< 2	< 2	<1	20%	Pass	
Titratable Actual Acidity (NLM-3.2)	B22-Au0008468	NCP	% pyrite S	< 0.003	< 0.003	<1	30%	Pass	
Duplicate					1		1		
Potential Acidity - Chromium Redu	ucible Sulfur	I	1	Result 1	Result 2	RPD			
Chromium Reducible Sulfur (s-SCr) (NLM-2.1)	B22-Au0008468	NCP	% S	< 0.005	< 0.005	<1	20%	Pass	
Chromium Reducible Sulfur (a-SCr) (NLM-2.1)	B22-Au0008468	NCP	mol H+/t	< 3	< 3	<1	30%	Pass	
Duplicate									
Extractable Sulfur				Result 1	Result 2	RPD			
Sulfur - KCI Extractable	B22-Au0008468	NCP	% S	N/A	N/A	N/A	30%	Pass	
HCI Extractable Sulfur	B22-Au0008468	NCP	% S	N/A	N/A	N/A	20%	Pass	
Duplicate									
Retained Acidity (S-NAS)				Result 1	Result 2	RPD			
Net Acid soluble sulfur (SNAS) NLM-4.1	B22-Au0008468	NCP	% S	N/A	N/A	N/A	30%	Pass	
Net Acid soluble sulfur (s-SNAS) NLM-4.1	B22-Au0008468	NCP	% S	N/A	N/A	N/A	30%	Pass	
Net Acid soluble sulfur (a-SNAS)	B22-Au0008468	NCP	mol H+/t	N/A	N/A	N/A	30%	Pass	
Duplicate	B22 / 400000 100		11011171				0070	1 400	
Acid Neutralising Capacity (ANCht)			Result 1	Result 2	RPD			
Acid Neutralising Capacity -	,			rteour i	Ttobult 2	IN D			
(ANCbt) (NLM-5.2)	B22-Au0008468	NCP	% CaCO3	0.79	0.71	11	20%	Pass	
Acid Neutralising Capacity - (s- ANCbt) (NLM-5.2)	B22-Au0008468	NCP	% S	0.25	0.23	11	30%	Pass	
ANC Fineness Factor	B22-Au0008468	NCP	factor	1.5	1.5	<1	30%	Pass	
Duplicate					1		1		
Net Acidity (Including ANC)				Result 1	Result 2	RPD			
CRS Suite - Net Acidity - NASSG (Including ANC)	B22-Au0008468	NCP	% S	< 0.02	< 0.02	<1	30%	Pass	
CRS Suite - Net Acidity - NASSG (Including ANC)	B22-Au0008468	NCP	mol H+/t	< 10	< 10	<1	30%	Pass	
CRS Suite - Liming Rate - NASSG (Including ANC)	B22-Au0008468	NCP	kg CaCO3/t	< 1	< 1	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M22-Au0012502	CP	%	18	17	5.4	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M22-Au0012503	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	M22-Au0012503	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	M22-Au0012503	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	M22-Au0012503	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
а-НСН	M22-Au0012503	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	M22-Au0012503	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	M22-Au0012503	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	M22-Au0012503	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	M22-Au0012503	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	M22-Au0012503	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	M22-Au0012503	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	M22-Au0012503	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	M22-Au0012503	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	M22-Au0012503	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	M22-Au0012503	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	



Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
g-HCH (Lindane)	M22-Au0012503	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	M22-Au0012503	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	M22-Au0012503	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	M22-Au0012503	СР	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	M22-Au0012503	СР	ma/ka	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	M22-Au0012503	CP	ma/ka	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	M22-Au0012503	CP	ma/ka	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	M22-Au0012503	CP	ma/ka	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	M22-Au0012503	CP	ma/ka	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	M22-Au0012503	CP	ma/ka	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	M22-Au0012503	CP	ma/ka	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	M22-Au0012503	CP	ma/ka	< 2	< 2	<1	30%	Pass	
Demeton-S	M22-Au0012503	CP	ma/ka	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	M22-Au0012503	CP	ma/ka	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	M22-Au0012503	CP	mg/kg	< 0.2	< 0.2	~1	30%	Pass	
Dichlonyos	M22-Au0012503		mg/kg	< 0.2	< 0.2	~1	30%	Pass	
Dimethoate	M22-Au0012503	CP	ma/ka	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	M22-Au0012503	CP	ma/ka	< 0.2	< 0.2	<1	30%	Pass	
FPN	M22-Au0012503	CP	ma/ka	< 0.2	< 0.2	<1	30%	Pass	
Ethion	M22-Au0012503	CP	ma/ka	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	M22-Au0012503		mg/kg	< 0.2	< 0.2	~1	30%	Pass	
Ethyl parathion	M22-Au0012503	CP	mg/kg	< 0.2	< 0.2	~1	30%	Pass	
Equiprothion	M22-Au0012503	CP	mg/kg	< 0.2	< 0.2	~1	30%	Pass	
Fensulfothion	M22-Au0012503		mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	M22-Au0012503	CP	mg/kg	< 0.2	< 0.2		30%	Pass	
Malathion	M22-Au0012503		mg/kg	< 0.2	< 0.2	~1	30%	Pass	
Merphos	M22-Au0012503	CP	mg/kg	< 0.2	< 0.2	~1	30%	Pass	
Methyl parathion	M22-Au0012503		mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinnhos	M22-Au0012503	CP	mg/kg	< 0.2	< 0.2	~1	30%	Pass	
Monocrotophos	M22-Au0012503	CP	mg/kg	< 0.2	< 0.2	~1	30%	Pass	
Naled	M22-Au0012503	CP	mg/kg	< 0.2	< 0.2	~1	30%	Pass	
Omethoate	M22-Au0012503	CP	mg/kg	< 0.2	< 0.2	~1	30%	Pass	
Phorate	M22-Au0012503	CP	mg/kg	< 0.2	< 0.2	~1	30%	Pass	
Pirimiphos-methyl	M22-Au0012503	CP	ma/ka	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	M22-Au0012503	CP	ma/ka	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	M22-Au0012503	CP	ma/ka	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	M22-Au0012503	CP	ma/ka	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinnhos	M22-Au0012503	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	M22-Au0012503	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	M22-Au0012503	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
	1022 A000 12000	01	ing/kg	< 0.2	< 0.2		3070	1 433	
Acid Herbicides				Result 1	Result 2	RPD			
2 4-D	M22-Au0012503	CP	ma/ka	< 0.5	< 0.5	<1	30%	Pass	
2.4 DB	M22-Au0012503	CP	ma/ka	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-T	M22-Au0012503	CP	ma/ka	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-TP	M22-Au0012503	CP	ma/ka	< 0.5	< 0.5	<1	30%	Pass	
Actril (loxynil)	M22-Au0012503	CP	ma/ka	< 0.5	< 0.5	<1	30%	Pass	
Dicamba	M22-Au0012503	CP	ma/ka	< 0.5	< 0.5	<1	30%	Pass	
Dichlorprop	M22-Au0012503	CP	ma/ka	< 0.5	< 0.5	<1	30%	Pass	
Dinitro-o-cresol	M22-Au0012503	CP	ma/ka	< 0.5	< 0.5	<1	30%	Pass	
Dinoseb	M22-Au0012503	CP	ma/ka	< 0.5	< 0.5	<1	30%	Pass	
MCPA	M22-Au0012503	CP	ma/ka	< 0.5	< 0.5	<1	30%	Pass	
							/ -		,



Duplicate									
Acid Herbicides				Result 1	Result 2	RPD			
МСРВ	M22-Au0012503	СР	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Месоргор	M22-Au0012503	СР	mg/kg	< 0.5	< 0.5	<1	30%	Pass	



Comments

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

Qualifier Codes/Comments

Code Description

S01	Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO3) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m3 in-situ soil' multiply 'reported results' x 'wet bulk density of soil in t/m3'
S02	Retained Acidity is Reported when the pHKCl is less than pH 4.5
S03	Acid Neutralising Capacity is only required if the pHKCl if greater than or equal to pH 6.5
S04	Acid Sulfate Soil Samples have a 24 hour holding time unless frozen or dried within that period

Authorised by:

Catherine Wilson	Analytical Services Manager
Edward Lee	Senior Analyst-Organic
Joseph Edouard	Senior Analyst-Organic
Mary Makarios	Senior Analyst-Sample Properties
Myles Clark	Senior Analyst-SPOCAS

Glenn Jackson General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

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Coffey Environments Pty Ltd VIC Level 1, 436 Johnston Street Abbotsford VIC 3067





NATA Accredited Accreditation Number 1261 Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention:

Monika Janiak

Report Project name Project ID Received Date **911789-W** MARINUS LINK 754-MELEN215878ML Aug 05, 2022

Client Sample ID Sample Matrix RB-01 Water Eurofins Sample No. Aug 04, 2022 Au0012507 Date Sampled Aug 04, 2022 Test/Reference LOR Unit Organochlorine Pesticides				
Sample Matrix Water Eurofins Sample No. Aug 04, 2022 Test/Reference LOR Unit Organochlorine Pesticides Chlordanes - Total 0.002 mg/L < 0.002 4.4'-DDD 0.0002 mg/L < 0.002 4.4'-DDE < 0.002 4.4'-DD 0.0002 mg/L < 0.0002 4.4'-DDE < 0.0002 4.4'-DDT 0.0002 mg/L < 0.0002 < 0.0002 4.4'-DDT 0.0002 mg/L < 0.0002 A'HCH 0.0002 mg/L < 0.0002 Aldrin 0.0002 mg/L < 0.0002 b-HCH 0.0002 mg/L < 0.0002 <td< th=""><th></th><th></th><th></th><th>RB-01</th></td<>				RB-01
Eurofins Sample No. M22-Au0012507 Date Sampled Aug 04, 2022 Test/Reference LOR Unit Organochlorine Pesticides Chlordanes - Total 0.002 mg/L < 0.002 4.4'-DDD 0.0002 mg/L < 0.002 4.4'-DDE 0.0002 mg/L < 0.0002 4.4'-DDT 0.0002 mg/L < 0.0002 4.4'-DDT 0.0002 mg/L < 0.0002 a-HCH 0.0002 mg/L < 0.0002 a-HCH 0.0002 mg/L < 0.0002 b-HCH 0.0002 mg/L < 0.0002 Endosulfan I 0.0002 mg/L < 0.0002 Endosulfan sulphate 0.0				Water
Eurorins Sample No. Au0012507 Date Sampled Aug 04, 2022 Test/Reference LOR Unit Organochlorine Pesticides				M22-
Date Sampled Aug 04, 2022 Test/Reference LOR Unit Organochlorine Pesticides Unit Chlordanes - Total 0.002 mg/L < 0.002 4.4'-DDD 0.0002 mg/L < 0.0002 4.4'-DDT 0.0002 mg/L < 0.0002 4.4'-DDT 0.0002 mg/L < 0.0002 a-HCH 0.0002 mg/L < 0.0002 a-HCH 0.0002 mg/L < 0.0002 b-HCH 0.0002 mg/L < 0.0002 b-HCH 0.0002 mg/L < 0.0002 d-HCH 0.0002 mg/L < 0.0002 b-HCH 0.0002 mg/L < 0.0002 b-HCH 0.0002 mg/L < 0.0002 bieldrin 0.0002 mg/L < 0.0002 Endosulfan I 0.0002 mg/L < 0.0002 Endosulfan sulphate 0.0002 mg/L < 0.0002 Endrin aldehyde 0.0002 mg/L < 0.0002 g-	0.			Au0012507
Test/Reference LOR Unit Organochlorine Pesticides 0.002 mg/L < 0.002 4.4'-DDD 0.0002 mg/L < 0.0002 4.4'-DDE 0.0002 mg/L < 0.0002 4.4'-DDT 0.0002 mg/L < 0.0002 4.4'-DDT 0.0002 mg/L < 0.0002 a-HCH 0.0002 mg/L < 0.0002 a-HCH 0.0002 mg/L < 0.0002 b-HCH 0.0002 mg/L < 0.0002 b-HCH 0.0002 mg/L < 0.0002 b-HCH 0.0002 mg/L < 0.0002 bieldrin 0.0002 mg/L < 0.0002 Endosulfan I 0.0002 mg/L < 0.0002 Endosulfan sulphate 0.0002 mg/L < 0.0002 Endrin 0.0002 mg/L < 0.0002 Endrin aldehyde 0.0002 mg/L < 0.0002 Endrin ketone 0.0002 mg/L < 0.0002 <td< th=""><th></th><th></th><th></th><th>Aug 04, 2022</th></td<>				Aug 04, 2022
Organochlorine Pesticides Chlordanes - Total 0.002 mg/L < 0.002 4.4 -DDD 0.0002 mg/L < 0.0002 4.4 -DDE 0.0002 mg/L < 0.0002 4.4 -DDT 0.0002 mg/L < 0.0002 4.4 -DDT 0.0002 mg/L < 0.0002 a -HCH 0.0002 mg/L < 0.0002 Aldrin 0.0002 mg/L < 0.0002 b-HCH 0.0002 mg/L < 0.0002 b-HCH 0.0002 mg/L < 0.0002 d-HCH 0.0002 mg/L < 0.0002 b-HCH 0.0002 mg/L < 0.0002 b-HCH 0.0002 mg/L < 0.0002 Endosulfan I 0.0002 mg/L < 0.0002 Endosulfan sulphate 0.0002 mg/L < 0.0002 Endrin 0.0002 mg/L < 0.0002 Endrin ketone 0.0002 mg/L < 0.0002 Heptachlor </td <td></td> <td>LOR</td> <td>Unit</td> <td></td>		LOR	Unit	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	sticides			
4.4'-DDD 0.0002 mg/L < 0.0002		0.002	mg/L	< 0.002
4.4'-DDE 0.0002 mg/L < 0.0002		0.0002	mg/L	< 0.0002
$\begin{array}{llllllllllllllllllllllllllllllllllll$		0.0002	mg/L	< 0.0002
a-HCH 0.0002 mg/L < 0.0002 Aldrin 0.0002 mg/L < 0.0002		0.0002	mg/L	< 0.0002
Aldrin 0.0002 mg/L < 0.0002 b-HCH 0.0002 mg/L < 0.0002		0.0002	mg/L	< 0.0002
b-HCH 0.0002 mg/L < 0.0002 d-HCH 0.0002 mg/L < 0.0002		0.0002	mg/L	< 0.0002
d-HCH 0.0002 mg/L < 0.0002 Dieldrin 0.0002 mg/L < 0.0002		0.0002	mg/L	< 0.0002
Dieldrin 0.0002 mg/L < 0.0002 Endosulfan I 0.0002 mg/L < 0.0002		0.0002	mg/L	< 0.0002
Endosulfan I 0.0002 mg/L < 0.0002 Endosulfan II 0.0002 mg/L < 0.0002		0.0002	mg/L	< 0.0002
Endosulfan II 0.0002 mg/L < 0.0002 Endosulfan sulphate 0.0002 mg/L < 0.0002		0.0002	mg/L	< 0.0002
Endosulfan sulphate 0.0002 mg/L < 0.0002 Endrin 0.0002 mg/L < 0.0002		0.0002	mg/L	< 0.0002
Endrin 0.0002 mg/L < 0.0002 Endrin aldehyde 0.0002 mg/L < 0.0002	9	0.0002	mg/L	< 0.0002
Endrin aldehyde 0.0002 mg/L < 0.0002 Endrin ketone 0.0002 mg/L < 0.0002		0.0002	mg/L	< 0.0002
Endrin ketone 0.0002 mg/L < 0.0002 g-HCH (Lindane) 0.0002 mg/L < 0.0002		0.0002	mg/L	< 0.0002
g-HCH (Lindane) 0.0002 mg/L < 0.0002 Heptachlor 0.0002 mg/L < 0.0002		0.0002	mg/L	< 0.0002
Heptachlor 0.0002 mg/L < 0.0002 Heptachlor epoxide 0.0002 mg/L < 0.0002		0.0002	mg/L	< 0.0002
Heptachlor epoxide 0.0002 mg/L < 0.0002		0.0002	mg/L	< 0.0002
		0.0002	mg/L	< 0.0002
Hexachlorobenzene0.0002mg/L< 0.0002		0.0002	mg/L	< 0.0002
Methoxychlor 0.0002 mg/L < 0.0002		0.0002	mg/L	< 0.0002
Toxaphene 0.005 mg/L < 0.005		0.005	mg/L	< 0.005
Aldrin and Dieldrin (Total)* 0.0002 mg/L < 0.0002	Total)*	0.0002	mg/L	< 0.0002
DDT + DDE + DDD (Total)* 0.0002 mg/L < 0.0002	(Total)*	0.0002	mg/L	< 0.0002
Vic EPA IWRG 621 OCP (Total)* 0.002 mg/L < 0.002	OCP (Total)*	0.002	mg/L	< 0.002
Vic EPA IWRG 621 Other OCP (Total)* 0.002 mg/L < 0.002	Other OCP (Total)*	0.002	mg/L	< 0.002
Dibutylchlorendate (surr.) 1 % 123	surr.)	1	%	123
Tetrachloro-m-xylene (surr.) 1 % 87	e (surr.)	1	%	87
Organophosphorus Pesticides	s Pesticides			
Azinphos-methyl 0.002 mg/L < 0.002		0.002	mg/L	< 0.002
Bolstar 0.002 mg/L < 0.002		0.002	mg/L	< 0.002
Chlorfenvinphos 0.02 mg/L < 0.02		0.02	mg/L	< 0.02
Chlorpyrifos 0.002 mg/L < 0.002		0.002	mg/L	< 0.002
Chlorpyrifos-methyl 0.002 mg/L < 0.002		0.002	mg/L	< 0.002
Coumaphos 0.02 mg/L < 0.02		0.02	mg/L	< 0.02
Demeton-S 0.002 mg/L < 0.002		0.002	mg/L	< 0.002



Client Sample ID			RB-01
Sample Matrix			Water
			M22-
Eurofins Sample No.			Au0012507
Date Sampled			Aug 04, 2022
Test/Reference	LOR	Unit	
Organophosphorus Pesticides			
Demeton-O	0.002	mg/L	< 0.002
Diazinon	0.002	mg/L	< 0.002
Dichlorvos	0.002	mg/L	< 0.002
Dimethoate	0.002	mg/L	< 0.002
Disulfoton	0.002	mg/L	< 0.002
EPN	0.002	mg/L	< 0.002
Ethion	0.002	mg/L	< 0.002
Ethoprop	0.002	mg/L	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002
Fenitrothion	0.002	mg/L	< 0.002
Fensulfothion	0.002	mg/L	< 0.002
Fenthion	0.002	mg/L	< 0.002
Malathion	0.002	mg/L	< 0.002
Merphos	0.002	mg/L	< 0.002
Methyl parathion	0.002	mg/L	< 0.002
Mevinphos	0.002	mg/L	< 0.002
Monocrotophos	0.002	mg/L	< 0.002
Naled	0.002	mg/L	< 0.002
Omethoate	0.02	mg/L	< 0.02
Phorate	0.002	mg/L	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02
Pyrazophos	0.002	mg/L	< 0.002
Ronnel	0.002	mg/L	< 0.002
Terbufos	0.002	mg/L	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002
Tokuthion	0.002	mg/L	< 0.002
Trichloronate	0.002	mg/L	< 0.002
Triphenylphosphate (surr.)	1	%	118
Acid Herbicides	•		
2.4-D	0.001	mg/L	< 0.01
2.4-DB	0.001	mg/L	< 0.01
2.4.5-T	0.001	mg/L	< 0.01
2.4.5-TP	0.001	mg/L	< 0.01
Actril (loxynil)	0.001	mg/L	< 0.01
Dicamba	0.001	mg/L	< 0.01
Dichlorprop	0.001	mg/L	< 0.01
Dinitro-o-cresol	0.001	mg/L	< 0.01
Dinoseb	0.001	mg/L	< 0.01
МСРА	0.001	mg/L	< 0.01
МСРВ	0.001	mg/L	< 0.01
Месоргор	0.001	mg/L	< 0.01
Warfarin (surr.)	0.001	%	Q09int



Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Organochlorine Pesticides	Melbourne	Aug 08, 2022	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)			
Organophosphorus Pesticides	Melbourne	Aug 08, 2022	7 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS (USEPA 8270)			
Acid Herbicides	Melbourne	Aug 07, 2022	14 Days
- Method: LTM-ORG-2180 Phenoxy Acid Herbicides			

	AUKO	fine	Eurofins Envi	ironment T 5 521	Festing Australia F	Pty Ltd								Eurofins ARL Pty Ltd ABN: 91 05 0159 898	nent Testing NZ Ltd 4	
web: v email:	veb: www.eurofins.com.au amail: EnviroSales@eurofins.com		Melbourne Geelong Sydney 6 Monterey Road 19/8 Lewalan Street 179 Mag Dandenong South Grovedale Girrawe VIC 3175 VIC 3216 NSW 21 Tel: +61 3 8564 5000 Tel: +61 3 8564 5000 Tel: +61 NATA# 1261 Site# 1254 NATA# 1261 Site# 1254 NATA#		Sydney 179 Mago Girraweer NSW 214 Tel: +61 2 NATA# 12	Sydney 179 Magowar Road Girraween NSW 2145 Tel: +61 2 9900 8400 NATA# 1261 Site# 18217		Canberra Unit 1,2 Dacre Street Mitchell ACT 2911 Tel: +61 2 6113 8091 17		e Stree 13 809	Brisbane ot 1/21 Smallwood Place Murarrie QLD 4172 1 Tel: +61 7 3902 4600 NATA# 1261 Site# 20794	Newcastle 4/52 Industrial Drive Mayfield East NSW 2304 PO Box 60 Wickham 2293 Tel: +61 2 4968 8448 NATA# 1261 Site# 25079	Perth 46-48 Banksia Road Welshpool WA 6106 Tel: +61 8 6253 4444 NATA# 2377 Site# 2370	Auckland 35 O'Rorke Road Penrose, Auckland 1061 Tel: +64 9 526 45 51 IANZ# 1327	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 Tel: 0800 856 450 IANZ# 1290	
Co Ao	ompany Name: ddress:	Coffey Envi Level 1, 436 Abbotsford VIC 3067	ronments Pty 5 Johnston St	Ltd VIC reet				O Re Pi Fa	rder N eport none: ax:	lo.: #:	((911789 03 9290 7000		Received: Due: Priority: Contact Name:	Aug 5, 2022 11:00 Aug 10, 2022 3 Day Monika Janiak	АМ
Pr Pr	oject Name: oject ID:	MARINUS L 754-MELEN	_INK I215878ML										E	urofins Analytical Ser	vices Manager : H	arry Bacalis
		Sa	ample Detail				Organochlorine Pesticides	Organophosphorus Pesticides	Acid Herbicides	Chromium Reducible Sulfur Suite	Moisture Set					
Mel	bourne Laborate	ory - NATA # 1	261 Site # 12	54			х	х	х		х	1				
Bris	sbane Laborator	y - NATA # 126	61 Site # 2079	94						Х						
Exte	ernal Laboratory	/										_				
No	Sample ID	Sample Date	Sampling Time	Matri	ix LAB	ID						_				
1	ASS-1	Aug 04, 2022		Soil	M22-Au00	012502				X	X	_				
2	ALT-1	Aug 04, 2022		Soil	M22-Au00	012503	Х	X	Х		X	-				
3	ALT-2	Aug 04, 2022		Soil	M22-Au00	012504	Х	X	Х		X	-				
4	ALT-3	Aug 04, 2022		Soil	M22-Au00	012505	X	X	X		X	-				
5	ALI-4	Aug 04, 2022		Soll	M22-Au00	012506	X		X		X	-				
0		Aug 04, 2022		vvater	M22-Au00	012507	×			<u> </u>		-				
/ Tes	t Counts	Muy 04, 2022	I	301		012008	6	6	6	1	6	-				



Internal Quality Control Review and Glossary

General

- 1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- 2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- 3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- 4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- 5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- 6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- 7. Samples were analysed on an 'as received' basis.
- 8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
- 9. This report replaces any interim results previously issued.

Holding Times

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

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA. If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

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

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	μg/L: micrograms per litre
ppm: parts per million	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

АРНА	American Public Health Association
сос	Chain of Custody
СР	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
ТВТО	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

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

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

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

- 1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- 2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- 3. pH and Free Chlorine analysed in the laboratory Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- 4. Recovery Data (Spikes & Surrogates) where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
- 5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
- 6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.



Quality Control Results

Test	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code
Method Blank			 -		
Organochlorine Pesticides					
Chlordanes - Total	mg/L	< 0.002	0.002	Pass	
4.4'-DDD	mg/L	< 0.0002	0.0002	Pass	
4.4'-DDE	mg/L	< 0.0002	0.0002	Pass	
4.4'-DDT	mg/L	< 0.0002	0.0002	Pass	
a-HCH	mg/L	< 0.0002	0.0002	Pass	
Aldrin	mg/L	< 0.0002	0.0002	Pass	
b-HCH	mg/L	< 0.0002	0.0002	Pass	
d-HCH	mg/L	< 0.0002	0.0002	Pass	
Dieldrin	mg/L	< 0.0002	0.0002	Pass	
Endosulfan I	mg/L	< 0.0002	0.0002	Pass	
Endosulfan II	mg/L	< 0.0002	0.0002	Pass	
Endosulfan sulphate	mg/L	< 0.0002	0.0002	Pass	
Endrin	mg/L	< 0.0002	0.0002	Pass	
Endrin aldehyde	mg/L	< 0.0002	0.0002	Pass	
Endrin ketone	mg/L	< 0.0002	0.0002	Pass	
g-HCH (Lindane)	mg/L	< 0.0002	0.0002	Pass	
Heptachlor	mg/L	< 0.0002	0.0002	Pass	
Heptachlor epoxide	mg/L	< 0.0002	0.0002	Pass	
Hexachlorobenzene	mg/L	< 0.0002	0.0002	Pass	
Methoxychlor	mg/L	< 0.0002	0.0002	Pass	
Toxaphene	mg/L	< 0.005	0.005	Pass	
Method Blank					
Organophosphorus Pesticides					
Azinphos-methyl	mg/L	< 0.002	0.002	Pass	
Bolstar	mg/L	< 0.002	0.002	Pass	
Chlorfenvinphos	mg/L	< 0.02	0.02	Pass	
Chlorpyrifos	mg/L	< 0.002	0.002	Pass	
Chlorpyrifos-methyl	mg/L	< 0.002	0.002	Pass	
Coumaphos	mg/L	< 0.02	0.02	Pass	
Demeton-S	mg/L	< 0.002	0.002	Pass	
Demeton-O	mg/L	< 0.002	0.002	Pass	
Diazinon	mg/L	< 0.002	0.002	Pass	
Dichlorvos	mg/L	< 0.002	0.002	Pass	
Dimethoate	mg/L	< 0.002	0.002	Pass	
Disulfoton	mg/L	< 0.002	0.002	Pass	
EPN	mg/L	< 0.002	0.002	Pass	
Ethion	mg/L	< 0.002	0.002	Pass	
Ethoprop	mg/L	< 0.002	0.002	Pass	
Ethyl parathion	mg/L	< 0.002	0.002	Pass	
Fenitrothion	mg/L	< 0.002	0.002	Pass	
Fensulfothion	mg/L	< 0.002	0.002	Pass	
Fenthion	mg/L	< 0.002	0.002	Pass	
Malathion	mg/L	< 0.002	0.002	Pass	
Merphos	mg/L	< 0.002	0.002	Pass	
Methyl parathion	mg/L	< 0.002	0.002	Pass	
Mevinphos	ma/L	< 0.002	0.002	Pass	
Monocrotophos	ma/L	< 0.002	0.002	Pass	
Naled	ma/L	< 0.002	0.002	Pass	
Omethoate	ma/L	< 0.02	0.02	Pass	
Phorate	mg/L	< 0.002	0.002	Pass	



Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Pirimiphos-methyl	mg/L	< 0.02		0.02	Pass	
Pyrazophos	mg/L	< 0.002		0.002	Pass	
Ronnel	mg/L	< 0.002		0.002	Pass	
Terbufos	mg/L	< 0.002		0.002	Pass	
Tetrachlorvinphos	mg/L	< 0.002		0.002	Pass	
Tokuthion	mg/L	< 0.002		0.002	Pass	
Trichloronate	mg/L	< 0.002		0.002	Pass	
Method Blank		T	1 1	1	-	
Acid Herbicides						
2.4-D	mg/L	< 0.001		0.001	Pass	
2.4-DB	mg/L	< 0.001		0.001	Pass	
2.4.5-T	mg/L	< 0.001		0.001	Pass	
2.4.5-TP	mg/L	< 0.001		0.001	Pass	
Actril (loxynil)	mg/L	< 0.001		0.001	Pass	
Dicamba	mg/L	< 0.001		0.001	Pass	
Dichlorprop	mg/L	< 0.001		0.001	Pass	
Dinitro-o-cresol	mg/L	< 0.001		0.001	Pass	
Dinoseb	mg/L	< 0.001		0.001	Pass	
МСРА	mg/L	< 0.001		0.001	Pass	
МСРВ	mg/L	< 0.001		0.001	Pass	
Месоргор	mg/L	< 0.001		0.001	Pass	
LCS - % Recovery		-	I I		-	
Organochlorine Pesticides						
Chlordanes - Total	%	95		70-130	Pass	
4.4'-DDD	%	87		70-130	Pass	
4.4'-DDE	%	95		70-130	Pass	
4.4'-DDT	%	86		70-130	Pass	
a-HCH	%	90		70-130	Pass	
Aldrin	%	89		70-130	Pass	
b-HCH	%	84		70-130	Pass	
d-HCH	%	81		70-130	Pass	
Dieldrin	%	110		70-130	Pass	
Endosulfan I	%	85		70-130	Pass	
	%	95		70-130	Pass	
Endosulfan sulphate	%	70		70-130	Pass	
	%	111		70-130	Pass	
	%	85		70-130	Pass	
	%	86		70-130	Pass	
G-HCH (Lindane)	%	98		70-130	Pass	
	<u>%</u>	87		70-130	Pass	
	%	90		70-130	Pass	
Methowychlor	%	75		70-130	Pass	
	70	73		70-130	F d 55	
Organophosphorus Posticidos		[
Digzinon	0/_	102		70-130	Pass	
Dimethoate	0/2	07		70-130	Dass	
Ethion	0/2	128		70-130	Dass	
Methyl parathion	/0 0/_	118		70-130	Paee	
Mevinnhos	/0	101		70-130	Pace	
I CS - % Recovery	/0			10-100	1 0 3 3	
Acid Herbicides						
24-D	%	98		70-130	Pass	
2.4-DB	%	107		70-130	Pass	
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					,



Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
2.4.5-T	%	90		70-130	Pass	
2.4.5-TP	%	103		70-130	Pass	
Actril (loxynil)	%	90		70-130	Pass	
Dicamba	%	87		70-130	Pass	
Dichlorprop	%	90		70-130	Pass	
Dinitro-o-cresol	%	91		70-130	Pass	
Dinoseb	%	81		70-130	Pass	
МСРА	%	87		70-130	Pass	
МСРВ	%	106		70-130	Pass	
Месоргор	%	88		70-130	Pass	



Comments

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

Qualifier Codes/Comments

Code Description Q09 The Surrogate recovery is outside of the recommended acceptance criteria due to matrix interference. Acceptance criteria were met for all other QC

Authorised by:

Catherine Wilson Edward Lee Joseph Edouard

Analytical Services Manager Senior Analyst-Organic Senior Analyst-Organic

Glenn Jackson General Manager

Final Report - this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

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	C	HAIN OF CUS	TODY sting ABN 50 0	RECORD 05 085 521		Sydney L 179 Magow +61 2 9900	aboratory var Road, G) 8400 En	iπaween, № viroSample≯	W 2145 ISW@eumi	ins.com		Brisbane Unit 1/21 S +61 7 3902	Laborator mailwood P 4600 En	y lace, Murami viroSampleC	e, QLD 4172 LD@eurofin	2 Is.com		Perth Lab 46-48 Bank +61 8 6253	oratory sia Road, V 4444 Env	velshpool, V viroSampleV	VA 6106 VA@eurc	ofins.com)			Melb 6 Mor +61 3	ourne nterey I 8564	Laboratory Road Dandenong South V 5000 EnviroSampleVic	/IC 3175 @eurofins.com
Com	opany	Tetra Tech	Call	hy	Proje	ct Nº	754	-Me	LGN	215	878	ML	Project	Manager	Mor	ika	3	anc	ak		S	ample	r(s)		SE	-	T	20	
Add	iress				Project	Name	MAI (SU)	2110	15	LIN	k		EDD F ESdat, E	Format QuIS etc	Esd	at					Han Ema	ided ov	ver by nvoice	JC M	She Ionih	sne She	Jer Jer	Ellis Inak Etelia	kch-com echican
Contac	ct Name	Shane	ellis		"Total" or "F		Suite	de		7.2											Ema	ail for R	esults	M S	lon.k hanz	a.) . (E	11:	an Q her	tech.com
Pho	ne №	0428 2	388	044	ses se specify to attract (des	2	bic													с	hänge o	ontainer	type &	size if ne	ecessary	1	Default will be	5 days if not ticked.
Special I Purcha	Directions se Order	~			Analy Analy metals are requested, plea SUTE code must be used	Pesticio	Reducibl.	Acid Her													olastic	Plastic	lastic her Glace	DA vial	AS Bottle	or HDPE)	964, WA Guidelines)	Overnight (rep Same day 2 days 5 days (Stand	+Surcharge will apply porting by 9am)+
Quot	e ID №	~			Where	1CP	Ę	1×	-												500mL F	250mL F		40ml VC	OmL PF/	(Glass	stos AS49	Other()
Ne		Client Sample ID		Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	00/	Chrom	Precaro															200		20	Jar	Other (Asbe	Sample / Dangerous Goo	Comments ods Hazard Warning
1	ASS	-1-		4/8	5		X					-														1	1	Acid Sul	Creeze
2	ALT -	1	1	.4/8	5	X		X			14															1		1	
3	ALT -	-2		4/8	5	x		×									-									1			
4	ALT -	- 3		4/8	5	×		×																		1			
5	ALT	-4		4/8	5	×	No.	×																		1			
6	RB -	01		4/8	5	×		X															1	2					
7	Jup	-01		4/8	5	×		X																		1			
8	,																												
9							12																						
10												-																	
				Total	Counts													0											
Method of	r Shipment	Courier (#) 🗹	Hand Delivered	-	Po	stal	Na	me	She	one	GIIi	5.	Signa	ature	0	L		~ 0		Date)		5/	8		Time	10:45
Labora	tory Use C	Received By Received By	2010	in How	mil	SYD I	BNE I MEI	PER	ADL NTL	DRW	Sign	ature	Ø	2			Dat	te	05	08.2	L	Time	}		1-0	0		Temperature Report No.	10.2-0.

Eurofins Environment Testing Australia Pty Ltd EnviroSales@eurofins.com

c

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | Environment Testing Standard Terms and Conditions unless agreed otherwise. A copy is available on request.

911789 Jake

3



Eurofins Environment Testing Australia Pty Ltd

ABN: 50 0	ABN: 50 005 085 521										
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Sample Receipt Advice

Coffey Environments Pty Ltd VIC
Monika Janiak
MARINUS LINK
754-MELEN215878ML
3 Day
Aug 5, 2022 11:00 AM
911789

Sample Information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table. 1
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace. J
- X Split sample sent to requested external lab.
- X Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager: Harry Bacalis on phone : or by email: HarryBacalis@eurofins.com Results will be delivered electronically via email to Monika Janiak - MONIKA.JANIAK@tetratech.com. Note: A copy of these results will also be delivered to the general Coffey Environments Pty Ltd VIC email address.

Global Leader - Results you can trust

web: www.eurofins.com.au email: EnviroSales@eurofins.com		ABN: 50 005 08	f ironment Testi i 5 521	ng Australia Pty Lto		ABN: 91 05 0159 898	NZBN: 9429046024954								
		Melbourne 6 Monterey Roa Dandenong Sou VIC 3175 Tel: +61 3 8564 NATA# 1261 Sit	Sydnu valan Street 179 M le Girrav 5 NSW 3 8564 5000 Tel: +1 261 Site# 1254 NATA	Sydney 179 Magowar Road Girraween NSW 2145 Tel: +61 2 9900 8400 NATA# 1261 Site# 182			oerra 1,2 Daci iell 2911 -61 2 61	re Stree 13 809	Brisbane Net t1/21 Smallwood Place 4/5 Murarrie Ma QLD 4172 PO 1 Tel: +61 7 3902 4600 Tel NATA# 1261 Site# 20794 NA PO	ewcastle 52 Industrial Drive ayfield East NSW 2304 D Box 60 Wickham 2293 II: +61 2 4968 8448 NTA# 1261 Site# 25079	Perth 46-48 Banksia Road Welshpool WA 6106 Tel: +61 8 6253 4444 NATA# 2377 Site# 2370	Auckland 35 O'Rorke Road Penrose, Auckland 1061 Tel: +64 9 526 45 51 IANZ# 1327	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 Tel: 0800 856 450 IANZ# 1290		
Company Name: Coffey Environments Pty Ltd VIC Address: Level 1, 436 Johnston Street Abbotsford VIC 3067						O R P F	rder I eport hone: ax:	No.: #:	9	911789 03 9290 7000		Received: Due: Priority: Contact Name:	Aug 5, 2022 11:00 Aug 10, 2022 3 Day Monika Janiak	АМ	
Project Name:MARINUS LINKProject ID:754-MELEN215878ML												E	urofins Analytical Ser	vices Manager : H	arry Bacalis
Sample Detail						Organochlorine Pesticides	Organophosphorus Pesticides	Acid Herbicides	Chromium Reducible Sulfur Suite	Moisture Set					
Mell	oourne Laborate	ory - NATA # 1	261 Site # 12	54		Х	X	Х		Х					
Bris	bane Laborator	y - NATA # 126	51 Site # 207	94					Х						
Exte	rnal Laboratory	/		1							_				
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID										
1	ASS-1	Aug 04, 2022		Soil	M22-Au001250	2			Х	Х	-				
2	ALT-1	Aug 04, 2022		Soil	M22-Au001250	3 X	X	Х		X	-				
3	ALT-2	Aug 04, 2022		Soil	M22-Au001250	4 X	X	Х		X	-				
4	ALT-3	Aug 04, 2022		Soil	M22-Au001250	15 X	X	Х		X	4				
5	ALT-4	Aug 04, 2022		Soil	M22-Au001250	6 X	X	X		X	4				
6 RB-01 Aug 04, 2022 Water M22-Au0012507					07 X	X	X			-					
7 DUP-01 Aug 04, 2022 Soil M22-Au0012508						18 X	X	X		X					
Test	Counts					6	6	6	1	6					



Tetra Tech Coffey Pty Ltd VIC Level 11, 2 Riverside Quay, Southbank VIC 3006



Bryden Tiddy (Tetratech)

Report Project name Project ID Received Date **952717-S** MARINUS LINK 754-MELEN215878ML Dec 22, 2022

Client Sample ID			ALT-1 / 0.05	ALT-2 / 0.05	ALT-3 / 0.05	ALT-4 / 0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M22- De0052773	M22- De0052774	M22- De0052775	M22- De0052776
Date Sampled			Dec 22, 2022	Dec 22, 2022	Dec 22, 2022	Dec 22, 2022
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
а-НСН	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	119	118	108	125
Tetrachloro-m-xylene (surr.)	1	%	90	146	67	62
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

NATA Accredited Accreditation Number 1261 Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.



Client Sample ID			ALT-1 / 0.05	ALT-2 / 0.05	ALT-3 / 0.05	ALT-4 / 0.05
Sample Matrix			Soil	Soil	Soil	Soil
			M22-	M22-	M22-	M22-
Eurofins Sample No.			De0052773	De0052774	De0052775	De0052776
Date Sampled			Dec 22, 2022	Dec 22, 2022	Dec 22, 2022	Dec 22, 2022
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	120	148	140	74
Acid Herbicides						
2.4-D	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-DB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-T	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-TP	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Actril (loxynil)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dicamba	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dinitro-o-cresol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dinoseb	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
MCPA	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
МСРВ	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Mecoprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Warfarin (surr.)	1	%	92	91	78	91
	I					
% Moisture	1	%	9.0	21	72	35



Client Sample ID			QC101 221222
Sample Matrix			Soil
			M22-
Eurofins Sample No.			De0052777
Date Sampled			Dec 22, 2022
Test/Reference	LOR	Unit	
Organochlorine Pesticides			
Chlordanes - Total	0.1	mg/kg	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05
а-НСН	0.05	mg/kg	< 0.05
Aldrin	0.05	mg/kg	< 0.05
b-HCH	0.05	mg/kg	< 0.05
d-HCH	0.05	mg/kg	< 0.05
Dieldrin	0.05	mg/kg	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05
Endrin	0.05	mg/kg	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05
Heptachlor	0.05	mg/kg	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05
Toxaphene	0.5	mg/kg	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1
Dibutylchlorendate (surr.)	1	%	117
Tetrachloro-m-xylene (surr.)	1	%	104
Organophosphorus Pesticides			
Azinphos-methyl	0.2	mg/kg	< 0.2
Bolstar	0.2	mg/kg	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2
Coumaphos	2	mg/kg	< 2
Demeton-S	0.2	mg/kg	< 0.2
Demeton-O	0.2	mg/kg	< 0.2
Diazinon	0.2	mg/kg	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2
Dimethoate	0.2	mg/kg	< 0.2
Disulfoton	0.2	mg/kg	< 0.2
EPN	0.2	mg/kg	< 0.2
Ethion	0.2	mg/kg	< 0.2
Ethoprop	0.2	mg/kg	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2
Fenitrothion	0.2	mg/ka	< 0.2
Fensulfothion	0.2	mg/ka	< 0.2
Fenthion	0.2	mg/kg	< 0.2
Malathion	0.2	mg/kg	< 0.2
Merphos	0.2	mg/kg	< 0.2



Client Sample ID Sample Matrix			QC101_221222 Soil M22-
Eurofins Sample No.			De0052777
Date Sampled			Dec 22, 2022
Test/Reference	LOR	Unit	
Organophosphorus Pesticides			
Methyl parathion	0.2	mg/kg	< 0.2
Mevinphos	0.2	mg/kg	< 0.2
Monocrotophos	2	mg/kg	< 2
Naled	0.2	mg/kg	< 0.2
Omethoate	2	mg/kg	< 2
Phorate	0.2	mg/kg	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2
Ronnel	0.2	mg/kg	< 0.2
Terbufos	0.2	mg/kg	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2
Tokuthion	0.2	mg/kg	< 0.2
Trichloronate	0.2	mg/kg	< 0.2
Triphenylphosphate (surr.)	1	%	144
Acid Herbicides			
2.4-D	0.5	mg/kg	< 0.5
2.4-DB	0.5	mg/kg	< 0.5
2.4.5-T	0.5	mg/kg	< 0.5
2.4.5-TP	0.5	mg/kg	< 0.5
Actril (loxynil)	0.5	mg/kg	< 0.5
Dicamba	0.5	mg/kg	< 0.5
Dichlorprop	0.5	mg/kg	< 0.5
Dinitro-o-cresol	0.5	mg/kg	< 0.5
Dinoseb	0.5	mg/kg	< 0.5
MCPA	0.5	mg/kg	< 0.5
МСРВ	0.5	mg/kg	< 0.5
Месоргор	0.5	mg/kg	< 0.5
Warfarin (surr.)	1	%	91
% Moisture	1	%	24



Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Organochlorine Pesticides	Melbourne	Dec 22, 2022	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)			
Organophosphorus Pesticides	Melbourne	Dec 22, 2022	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS (USEPA 8270)			
Acid Herbicides	Melbourne	Dec 22, 2022	14 Days
- Method: LTM-ORG-2180 Phenoxy Acid Herbicides			
% Moisture	Melbourne	Dec 22, 2022	14 Days
- Method: LTM-GEN-7080 Moisture			

the our of inc			Eurofins Env ABN: 50 005 08	ironment T	esting Australia P			Eurofins ARL Pty Ltd ABN: 91 05 0159 898	Eurofins Environment Testing NZ Ltd NZBN: 9429046024954						
web: w email: I	web: www.eurofins.com.au email: EnviroSales@eurofins.com		Melbourne 6 Monterey Road Dandenong South VIC 3175 Tel: +61 3 8564 5000 NATA# 1261 Site# 1254		elong 8 Lewalan Street ovedale 2 3216 : +61 3 8564 5000 TA# 1261 Site# 1254	Sydney 179 Magowar Road Girraween NSW 2145 Tel: +61 2 9900 8400 NATA# 1261 Site# 182		ad 3400 e# 1821	Canb Unit 1 Mitch ACT 2 Tel: + 7	erra ,2 Dacı ell 2911 61 2 61	Brisbane re Street 1/21 Smallwood Place Murarrie QLD 4172 13 8091 Tel: +61 7 3902 4600 NATA# 1261 Site# 20794	Newcastle 4/52 Industrial Drive Mayfield East NSW 2304 PO Box 60 Wickham 2293 Tel: +61 2 4968 8448 4 NATA# 1261 Site# 25079	Perth 46-48 Banksia Road Welshpool WA 6106 Tel: +61 8 6253 4444 NATA# 2377 Site# 2370	Auckland 35 O'Rorke Road Penrose, Auckland 1061 Tel: +64 9 526 45 51 IANZ# 1327	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 Tel: 0800 856 450 IANZ# 1290
Company Name: Tetra Tech Coffey Pty Ltd VIC Address: Level 11, 2 Riverside Quay, Southbank VIC 3006 Project Name: MARINUS LINK Project Image: MARINUS LINK							O Re Pi Fa	rder N eport hone: ax:	lo.: #:	952717 03 9290 7000		Received: Due: Priority: Contact Name:	Dec 22, 2022 12:5 Dec 28, 2022 2 Day Bryden Tiddy (Tetr	5 PM ratech)	
Pro	oject ID:	754-MELEN	215878ML									Euro	ofins Analytical Servic	es Manager : Sav	ini Suduweli
Sample Detail				Organochlorine Pesticides	Organophosphorus Pesticides	Acid Herbicides	Moisture Set								
Melb	ourne Laborato	ory - NATA # 12	261 Site # 12	54			Х	X	X	X	-				
No	Sample ID	Sample Date	Sampling Time	Matri	ix LAB	ID									
1	ALT-1 / 0.05	Dec 22, 2022		Soil	M22-De00)52773	Х	х	Х	х					
2	ALT-2 / 0.05	Dec 22, 2022		Soil	M22-De00)52774	Х	x	х	х	-				
3	ALT-3 / 0.05	Dec 22, 2022		Soil	M22-De00)52775	Х	X	Х	X	-				
4	ALT-4 / 0.05	Dec 22, 2022		Soil	M22-De00)52776	Х	X	Х	X	-				
5 6	QC101_22122 2 QC301_22122	Dec 22, 2022 Dec 22, 2022		Soil Water	M22-De00 M22-De00)52777)52778	X X	x x	X X	x					
Test	2 Image: Comparison of Compa						6	6	6	5					



Internal Quality Control Review and Glossary

General

- 1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- 2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- 3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- 4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- 5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- 6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- 7. Samples were analysed on an 'as received' basis.
- 8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
- 9. This report replaces any interim results previously issued.

Holding Times

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

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA. If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

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

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

••••••		
mg/kg: milligrams per kilogram	mg/L: milligrams per litre	μg/L: micrograms per litre
ppm: parts per million	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

АРНА	American Public Health Association
сос	Chain of Custody
СР	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
твто	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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

Results <10 times the LOR: No Limit

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

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

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

- 1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- 2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- 3. pH and Free Chlorine analysed in the laboratory Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- 4. Recovery Data (Spikes & Surrogates) where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
- 5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
- 6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.



Quality Control Results

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Organochlorine Pesticides				Result 1				
Chlordanes - Total	M22-De0052774	CP	%	108		70-130	Pass	
4.4'-DDD	M22-De0052774	CP	%	120		70-130	Pass	
4.4'-DDE	M22-De0052774	CP	%	117		70-130	Pass	
4.4'-DDT	M22-De0052774	CP	%	117		70-130	Pass	
а-НСН	M22-De0052774	CP	%	93		70-130	Pass	
Aldrin	M22-De0052774	CP	%	100		70-130	Pass	
b-HCH	M22-De0052774	CP	%	107		70-130	Pass	
d-HCH	M22-De0052774	CP	%	101		70-130	Pass	
Dieldrin	M22-De0052774	CP	%	104		70-130	Pass	
Endosulfan I	M22-De0052774	CP	%	115		70-130	Pass	
Endosulfan II	M22-De0052774	CP	%	105		70-130	Pass	
Endosulfan sulphate	M22-De0052774	CP	%	120		70-130	Pass	
Endrin	M22-De0052774	CP	%	95		70-130	Pass	
Endrin aldehyde	M22-De0052774	CP	%	122		70-130	Pass	
Endrin ketone	M22-De0052774	CP	%	100		70-130	Pass	
g-HCH (Lindane)	M22-De0052774	CP	%	103		70-130	Pass	
Heptachlor	M22-De0052774	CP	%	116		70-130	Pass	
Heptachlor epoxide	M22-De0052774	CP	%	95		70-130	Pass	
Hexachlorobenzene	M22-De0052774	CP	%	93		70-130	Pass	
Methoxychlor	M22-De0052774	CP	%	110		70-130	Pass	



Comments

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

Authorised by:

Callum McEwan Joseph Edouard Edward Lee Analytical Services Manager Senior Analyst-Organic Senior Analyst-Organic

Glenn Jackson General Manager

Final Report - this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



Tetra Tech Coffey Pty Ltd VIC Level 11, 2 Riverside Quay, Southbank VIC 3006



NATA Accredited Accreditation Number 1261 Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention:

Bryden Tiddy (Tetratech)

Report Project name Project ID Received Date **952717-W** MARINUS LINK 754-MELEN215878ML Dec 22, 2022

	1		[
Client Sample ID			QC301_221222
Sample Matrix			Water
Frankfurg Original No.			M22-
Eurofins Sample No.			De0052778
Date Sampled			Dec 22, 2022
Test/Reference	LOR	Unit	
Organochlorine Pesticides			
Chlordanes - Total	0.002	mg/L	< 0.002
4.4'-DDD	0.0002	mg/L	< 0.0002
4.4'-DDE	0.0002	mg/L	< 0.0002
4.4'-DDT	0.0002	mg/L	< 0.0002
а-НСН	0.0002	mg/L	< 0.0002
Aldrin	0.0002	mg/L	< 0.0002
b-HCH	0.0002	mg/L	< 0.0002
d-HCH	0.0002	mg/L	< 0.0002
Dieldrin	0.0002	mg/L	< 0.0002
Endosulfan I	0.0002	mg/L	< 0.0002
Endosulfan II	0.0002	mg/L	< 0.0002
Endosulfan sulphate	0.0002	mg/L	< 0.0002
Endrin	0.0002	mg/L	< 0.0002
Endrin aldehyde	0.0002	mg/L	< 0.0002
Endrin ketone	0.0002	mg/L	< 0.0002
g-HCH (Lindane)	0.0002	mg/L	< 0.0002
Heptachlor	0.0002	mg/L	< 0.0002
Heptachlor epoxide	0.0002	mg/L	< 0.0002
Hexachlorobenzene	0.0002	mg/L	< 0.0002
Methoxychlor	0.0002	mg/L	< 0.0002
Toxaphene	0.005	mg/L	< 0.005
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002
Dibutylchlorendate (surr.)	1	%	117
Tetrachloro-m-xylene (surr.)	1	%	132
Organophosphorus Pesticides			
Azinphos-methyl	0.002	mg/L	< 0.002
Bolstar	0.002	mg/L	< 0.002
Chlorfenvinphos	0.02	mg/L	< 0.02
Chlorpyrifos	0.002	mg/L	< 0.002
Chlorpyrifos-methyl	0.002	mg/L	< 0.002
Coumaphos	0.02	mg/L	< 0.02
Demeton-S	0.002	mg/L	< 0.002



Client Sample ID			QC301_221222
Sample Matrix			Water
Eurofins Sample No			M22-
Date Sampled			Dec 22, 2022
	LOP	Lloit	200 22, 2022
Organonhosphorus Pesticides	LON	Onit	
Domoton Q	0.002	ma/l	< 0.002
Diazinon	0.002	mg/L	< 0.002
	0.002	mg/L	< 0.002
Dictionvos	0.002	mg/L	< 0.002
Disulfaton	0.002	mg/L	< 0.002
	0.002	mg/L	< 0.002
Ethion	0.002	mg/L	< 0.002
Etheorem	0.002	mg/L	< 0.002
Ethopiop Ethyl perethian	0.002	mg/L	< 0.002
	0.002	mg/L	< 0.002
	0.002	mg/∟	< 0.002
	0.002	mg/L	< 0.002
	0.002	mg/L	< 0.002
	0.002	mg/L	< 0.002
Merphos	0.002	mg/L	< 0.002
Methyl parathion	0.002	mg/L	< 0.002
Mevinphos	0.002	mg/L	< 0.002
Monocrotophos	0.002	mg/L	< 0.002
Naled	0.002	mg/L	< 0.002
Omethoate	0.02	mg/L	< 0.02
Phorate	0.002	mg/L	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02
Pyrazophos	0.002	mg/L	< 0.002
Ronnel	0.002	mg/L	< 0.002
	0.002	mg/L	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002
	0.002	mg/L	< 0.002
Trichloronate	0.002	mg/L	< 0.002
Triphenylphosphate (surr.)	1	%	129
Acid Herbicides			
2.4-D	0.001	mg/L	< 0.001
2.4-DB	0.001	mg/L	< 0.001
2.4.5-T	0.001	mg/L	< 0.001
2.4.5-TP	0.001	mg/L	< 0.001
Actril (loxynil)	0.001	mg/L	< 0.001
Dicamba	0.001	mg/L	< 0.001
Dichlorprop	0.001	mg/L	< 0.001
Dinitro-o-cresol	0.001	mg/L	< 0.001
Dinoseb	0.001	mg/L	< 0.001
MCPA	0.001	mg/L	< 0.001
МСРВ	0.001	mg/L	< 0.001
Месоргор	0.001	mg/L	< 0.001
Warfarin (surr.)	0.001	%	68



Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Organochlorine Pesticides	Melbourne	Dec 22, 2022	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)			
Organophosphorus Pesticides	Melbourne	Dec 22, 2022	7 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS (USEPA 8270)			
Acid Herbicides	Melbourne	Dec 22, 2022	14 Days
- Method: LTM-ORG-2180 Phenoxy Acid Herbicides			

	ouro:	fine	Eurofins Env ABN: 50 005 08	ironment 5 521	Testing Australia	Pty Ltd							Eurofins ARL Pty Ltd ABN: 91 05 0159 898	Eurofins Environn NZBN: 942904602495	nent Testing NZ Ltd
web: w email:	ww.eurofins.com.au	.com	Melbourne 6 Monterey Roa Dandenong Sou VIC 3175 Tel: +61 3 8564 NATA# 1261 Sit	G d 19 th G 5000 Te e# 1254 Na	ieelong 9/8 Lewalan Street irovedale IC 3216 el: +61 3 8564 5000 ATA# 1261 Site# 1254	Sydney 179 Mago Girraweer NSW 214 Tel: +61 2 NATA# 12	war Ro 5 2 9900 8 261 Site	oad 3400 ∌# 1821	Canb Unit 1 Mitche ACT 2 Tel: +	erra ,2 Dacr ell 2911 61 2 61	Brisbane 1/21 Smallwood Place Murarrie QLD 4172 13 8091 Tel: +61 7 3902 4600 NATA# 1261 Site# 20794	Newcastle 4/52 Industrial Drive Mayfield East NSW 2304 PO Box 60 Wickham 2293 Tel: +61 2 4968 8448 4 NATA# 1261 Site# 25079	Perth 46-48 Banksia Road Welshpool WA 6106 Tel: +61 8 6253 4444 NATA# 2377 Site# 2370	Auckland 35 O'Rorke Road Penrose, Auckland 1061 Tel: +64 9 526 45 51 IANZ# 1327	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 Tel: 0800 856 450 IANZ# 1290
Co Ac Pr	ompany Name: Idress: oject Name:	Tetra Tech (Level 11, 2 l Southbank VIC 3006 MARINUS L 754-MELEN	Coffey Pty Lta Riverside Qu INK	d VIC ay,				O Re Pl Fa	rder N eport none: ax:	lo.: #:	952717 03 9290 7000		Received: Due: Priority: Contact Name:	Dec 22, 2022 12:5 Dec 28, 2022 2 Day Bryden Tiddy (Teti	5 PM ratech)
		734-IVILLEN										Euro	ofins Analytical Servic	es Manager : Sav	ini Suduweli
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3	ALT-3 / 0.05	Dec 22, 2022		Soil	M22-De0	052775	Х	Х	Х	Х	-				
4	ALT-4 / 0.05	Dec 22, 2022		Soil	M22-De0	052776	Х	X	Х	Х	-				
5	QC101_22122 2	Dec 22, 2022		Soil	M22-De0	052777	х	x	x	x	-				
0	2	Dec 22, 2022		vvater	IVIZZ-Deu	052778	Х	X	Х						
Test	Counts						6	6	6	5					



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NOTE: pH duplicates are reported as a range not as RPD

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Quality Control Results

Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank						
Acid Herbicides	_					
2.4-D	mg/L	< 0.001		0.001	Pass	
2.4-DB	mg/L	< 0.001		0.001	Pass	
2.4.5-T	mg/L	< 0.001		0.001	Pass	
2.4.5-TP	mg/L	< 0.001		0.001	Pass	
Actril (loxynil)	mg/L	< 0.001		0.001	Pass	
Dicamba	mg/L	< 0.001		0.001	Pass	
Dichlorprop	mg/L	< 0.001		0.001	Pass	
Dinitro-o-cresol	mg/L	< 0.001		0.001	Pass	
Dinoseb	mg/L	< 0.001		0.001	Pass	
МСРА	mg/L	< 0.001		0.001	Pass	
МСРВ	mg/L	< 0.001		0.001	Pass	
Месоргор	mg/L	< 0.001		0.001	Pass	
LCS - % Recovery						
Acid Herbicides						
2.4-D	%	102		70-130	Pass	
2.4-DB	%	94		70-130	Pass	
2.4.5-T	%	84		70-130	Pass	
2.4.5-TP	%	115		70-130	Pass	
Actril (loxynil)	%	103		70-130	Pass	
Dicamba	%	91		70-130	Pass	
Dichlorprop	%	98		70-130	Pass	
Dinitro-o-cresol	%	111		70-130	Pass	
Dinoseb	%	98		70-130	Pass	
МСРА	%	92		70-130	Pass	
МСРВ	%	87		70-130	Pass	
Месоргор	%	93		70-130	Pass	



Comments

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

Authorised by:

Callum McEwan Edward Lee Joseph Edouard Analytical Services Manager Senior Analyst-Organic Senior Analyst-Organic

Glenn Jackson General Manager

Final Report - this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

	TTO A TECH	onsigning Offici	ce:	1		0	fice:							the state of the							
TEC	DEFEY	R	eport Results	to: Bryde	n. Tidayle	KIVALEC	Mobi	e:	-427201	2493		Email: Maria + 1845 by remarch 6									
	and and the	I	nvoices to:			Phone: 9406 1000						Email:									
oject No: 34	- MELENZIS878 ML	Task No:					Analysis Reque									1					
ject Name:	Marinas Link	Laboratory: Exc	rofins				2	-3													
mpler's Name:	AS, EW	Project Manager:	ML				10	10 50													
ote number (if	different to current quoted prices):	20001 5			11.0		0	27													
ecial Instruction	ns: Plage form bud	QC201~ 4	2122	2 70 1	142		2	0×0													
ab Batch Ref	Sample ID	Sample Date	Tîme	Matrix (Soiletc)	Container Type & Preservative*	T-A-T (specify)	00	Phen								NOTES	DTES				
	A1+-110.05	22/12/22	AM	S	15	48hr	×	×													
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	Alt-310.05						11					_	_	-	-						
	412-4/0.05						11				_	-	-	-	-						
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	QC201-221222			1			11			-	_	_	-	-	-	PLAK	OVWER IN AL				
	QC301-221222		1	W	14		1	1		-	-	-	-	-	-						
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							1									0					
RELINQUISHED BY						RECEIV	ED BY					Sample Receipt Advice: (Lab Use Only)									
ame: Date:				Name:			Date	:				All Samples Recieved in Good Condition									
Coffey Time:						Time:						All Documentation is in Proper Order									
me:	Date	:	→	Name: Date:								Sam	oles R	eceive	d Prop	erly Chilled					
npany:	Time		Company: Time:						Lab.	Ref/B	latch l	lo.									

#9152717 22/12 h

Chain of custody Issued: 5 April 2022 UNCONTROLLED WHEN PRINTED

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

T	ETRA TECH		Consigning Off Report Results	ice: to: Bryde	n. Tiddy@	- Mobile:						tehneur	tch.						
roject No: 30	+- MELENZIS878 ML	Task No:	invoices to.				T	ne.	34(00 100	Anal	lysis	Requ	iest Se	ctio	n		-	
roject Name: ampler's Name: uote number (if pecial Instructio	Marinas Link AS, EW different to current quoted prices): ns: Plaga Jor Ward	Laboratory: 6. Project Manager: QC201 ~ 7	ML 22122	2 to A	ths		000/0	bicides									C ()) P	Y
Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soiletc)	Container Type & Preservative*	T-A-T (specify)	00-	Pheno									NC	TES	
	Alt-2/0.05 Alt-2/0.05 Alt-3/0.05 Alt-3/0.05 Alt-4/0.05 QC101-221222 QC201-221222 QC301-221222	22412/22	Am		13	48 hr	*		D T C T	ATE: ME: OUR EMP		2/// 2/35 2:10 ATU	ε ρυ ORE CHI	۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲. ۲	.8	× (iii)	PLase f 1-3 6-1 > NO -5255	ONNOV O	1 to AL
	RELINQUISHED BY					RECEIV	ED BY					Sar	mple	Receipt	t Adv	vice:	(Lab Use Only)		
ame:	Date:			Name:			Date	9:				All	Samp	les Rec	ieve	d in G	Good Condition		
Coffey Time: Company:							Time	e:		_		All	Docu	mentat	ion i	s in P	roper Order		
Name: Date: Company: Time: Company:							Date Time	e:				Sar	nples b. Ref,	Receiv /Batch	ed Pr No.	roper	rly Chilled	1	

#952717 22/mm

Chain of custody Issued: 5 April 2022 UNCONTROLLED WHEN PRINTED



Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521							
Melbourne	Geelong	Sydney					
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Newcastle 4/52 Industrial Drive Mayfield East NSW 2304 PO Box 60 Wickham 2293 Tel: +61 2 4968 8448 NATA# 1261 Site# 20794 NATA# 1261 Site# 25079

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EnviroSales@eurofins.com

NZBN: 9429046024954 Auckland 35 O'Rorke Road Auckland 1061 Tel: +64 9 526 45 51 IANZ# 1327

Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 Tel: 0800 856 450 IANZ# 1290

Sample Receipt Advice

Company name:	Tetra Tech Coffey Pty Ltd VIC
Contact name:	Bryden Tiddy (Tetratech)
Project name:	MARINUS LINK
Project ID:	754-MELEN215878ML
Turnaround time:	2 Day
Date/Time received	Dec 22, 2022 12:55 PM
Eurofins reference	952717

Sample Information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table. 1
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- 1 Split sample sent to requested external lab.
- X Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager: Savini Suduweli on phone : or by email: SaviniSuduweli@eurofins.com Results will be delivered electronically via email to Bryden Tiddy (Tetratech) - bryden.tiddy@tetratech.com. Note: A copy of these results will also be delivered to the general Tetra Tech Coffey Pty Ltd VIC email address.

Global Leader - Results you can trust

web: www.eurofins.com.au email: EnviroSales@eurofins.com		line	Eurofins Environment Testing Australia Pty Ltd ABN: 50 005 085 521											Eurofins Environment Testing NZ Ltd NZBN: 9429046024954		
		com	Melbourne Geelong Sydney 6 Monterey Road 19/8 Lewalan Street 179 Mago Dandenong South Grovedale Girrawee VIC 3175 VIC 3216 NSW 214 Tel: +61 3 8564 5000 Tel: +61 3 8564 5000 Tel: +61 3 8564 5000 NATA# 1261 Site# 1254 NATA# 1261 Site# 1254 NATA# 1		Sydney 179 Mago Girraween NSW 2145 Tel: +61 2 NATA# 12	v Canberra gowar Road Unit 1,2 Dacre sen Mitchell 145 ACT 2911 1 2 9900 8400 Tel: +61 2 611 1261 Site# 18217		erra ,2 Dacre ell 2911 61 2 611:	Brisbane Street 1/21 Smallwood Place Murarrie QLD 4172 8091 Tel: +61 7 3902 4600 NATA# 1261 Site# 2075	Newcastle 4/52 Industrial Drive Mayfield East NSW 2304 PO Box 60 Wickham 2293 Tel: +61 2 4968 8448 94 NATA# 1261 Site# 25079	Perth 46-48 Banksia Road Welshpool WA 6106 Tel: +61 8 6253 4444 NATA# 2377 Site# 2370	Auckland 35 O'Rorke Road Penrose, Auckland 1061 Tel: +64 9 526 45 51 IANZ# 1327	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 Tel: 0800 856 450 IANZ# 1290			
Company N Address:	lame:	Tetra Tech (Level 11, 2 l Southbank VIC 3006	Coffey Pty Lte Riverside Qu	d VIC ay,				Oi Re Pl Fa	rder N eport none: ax:	lo.: #:	952717 03 9290 7000		Received: Due: Priority: Contact Name:	Dec 22, 2022 12:5 Dec 28, 2022 2 Day Bryden Tiddy (Tetr	5 PM atech)	
Project Nan Project ID:	ne:	MARINUS L 754-MELEN	.INK 1215878ML									Euro	ofins Analytical Servic	ces Manager : Savi	ni Suduweli	
		Sa	ample Detail				rganochlorine Pesticides	rganophosphorus Pesticides	cid Herbicides	loisture Set						
lelbourne La	aborato	ry - NATA # 12	261 Site # 12	54			Х	Х	Х	Х						
xternal Labo	oratory le ID	Sample Date	Sampling	Matrix	LAB	ID										
ALT-1 / (0.05	Dec 22, 2022	TITLE	Soil	M22-De00	52773	Х	Х	х	х						
ALT-2 / (0.05	Dec 22, 2022		Soil	M22-De00	52774	Х	Х	х	х						
ALT-3 / (0.05	Dec 22, 2022		Soil	M22-De00	52775	Х	Х	х	Х						
ALT-4 / (0.05	Dec 22, 2022		Soil	M22-De00	52776	Х	Х	Х	Х						
QC101_ 2	22122	Dec 22, 2022		Soil	M22-De00	52777	х	х	х	х						
QC301_ 2	22122	Dec 22, 2022		Water	M22-De00	52778	х	х	x							
est Counts							6	6	6	5						



CERTIFICATE OF ANALYSIS

Work Order	EM2225908	Page	: 1 of 5
Client	E TETRA TECH COFFEY PTY LTD	Laboratory	Environmental Division Melbourne
Contact	: Maria Leris	Contact	: Graeme Jablonskas
Address	: LEVEL 1 436 JOHNSTON STREET	Address	: 4 Westall Rd Springvale VIC Australia 3171
	ABBOTSFORD VIC, AUSTRALIA 3067		
Telephone	:	Telephone	: +6138549 9609
Project	: Mavinus Link	Date Samples Received	: 23-Dec-2022 10:30
Order number	:	Date Analysis Commenced	: 30-Dec-2022
C-O-C number	:	Issue Date	: 10-Jan-2023 09:12
Sampler	: AS, EW		Hac-MRA NATA
Site	:		
Quote number	: EN/222		Accorditation No. 935
No. of samples received	: 1		Accredited for compliance with
No. of samples analysed	:1		ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

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

Signatories	Position	Accreditation Category
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Andrew Lu	VOC Section Supervisor	Melbourne Inorganics, Springvale, VIC
Andrew Lu	VOC Section Supervisor	Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key: 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

^ = This result is computed from individual analyte detections at or above the level of reporting

ø = ALS is not NATA accredited for these tests.

 \sim = Indicates an estimated value.

- EP202: Particular samples required dilution due to matrix interferences. LOR values have been adjusted accordingly.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above LOR.



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	QC201_221222				
	Sampling date / time		22-Dec-2022 00:00					
Compound	CAS Number	LOR	Unit	EM2225908-001				
				Result				
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content		1.0	%	18.9				
EP068A: Organochlorine Pesticides ((OC)							
alpha-BHC	319-84-6	0.05	mg/kg	<0.05				
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05				
beta-BHC	319-85-7	0.05	mg/kg	<0.05				
gamma-BHC	58-89-9	0.05	mg/kg	<0.05				
delta-BHC	319-86-8	0.05	mg/kg	<0.05				
Heptachlor	76-44-8	0.05	mg/kg	<0.05				
Aldrin	309-00-2	0.05	mg/kg	<0.05				
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05				
^ Total Chlordane (sum)		0.05	mg/kg	<0.05				
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05				
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05				
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05				
Dieldrin	60-57-1	0.05	mg/kg	<0.05				
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05				
Endrin	72-20-8	0.05	mg/kg	<0.05				
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05				
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05				
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05				
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05				
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05				
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2				
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05				
Methoxychlor	72-43-5	0.2	mg/kg	<0.2				
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05				
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5	0.05	mg/kg	<0.05				
	0-2							
EP068B: Organophosphorus Pesticio	des (OP)							
Dichlorvos	62-73-7	0.05	mg/kg	<0.05				
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05				
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2				
Dimethoate	60-51-5	0.05	mg/kg	<0.05				
Diazinon	333-41-5	0.05	mg/kg	<0.05				
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05				

Page : 4 of 5 Work Order : EM2225908 Client : TETRA TECH COFFEY PTY LTD Project : Mavinus Link



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID	QC201_221222						
	Sampling date / time		22-Dec-2022 00:00						
Compound CAS Number	LOR	Unit	EM2225908-001						
			Result						
EP068B: Organophosphorus Pesticides (OP) - Continued									
Parathion-methyl 298-00-0	0.2	mg/kg	<0.2						
Malathion 121-75-5	0.05	mg/kg	<0.05						
Fenthion 55-38-9	0.05	mg/kg	<0.05						
Chlorpyrifos 2921-88-2	0.05	mg/kg	<0.05						
Parathion 56-38-2	0.2	mg/kg	<0.2						
Pirimphos-ethyl 23505-41-1	0.05	mg/kg	<0.05						
Chlorfenvinphos 470-90-6	0.05	mg/kg	<0.05						
Bromophos-ethyl 4824-78-6	0.05	mg/kg	<0.05						
Fenamiphos 22224-92-6	0.05	mg/kg	<0.05						
Prothiofos 34643-46-4	0.05	mg/kg	<0.05						
Ethion 563-12-2	0.05	mg/kg	<0.05						
Carbophenothion 786-19-6	0.05	mg/kg	<0.05						
Azinphos Methyl 86-50-0	0.05	mg/kg	<0.05						
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
4-Chlorophenoxy acetic acid 122-88-3	0.02	mg/kg	<0.04						
2.4-DB 94-82-6	0.02	mg/kg	<0.04						
Dicamba 1918-00-9	0.02	mg/kg	<0.04						
Mecoprop 93-65-2	0.02	mg/kg	<0.04						
MCPA 94-74-6	0.02	mg/kg	<0.04						
2.4-DP 120-36-5	0.02	mg/kg	<0.04						
2.4-D 94-75-7	0.02	mg/kg	<0.04						
Triclopyr 55335-06-3	0.02	mg/kg	<0.04						
2.4.5-TP (Silvex) 93-72-1	0.02	mg/kg	<0.04						
2.4.5-T 93-76-5	0.02	mg/kg	<0.04						
МСРВ 94-81-5	0.02	mg/kg	<0.04						
Picloram 1918-02-1	0.02	mg/kg	<0.04						
Clopyralid 1702-17-6	0.02	mg/kg	<0.04						
Fluroxypyr 69377-81-7	0.02	mg/kg	<0.04						
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE 21655-73-2	0.05	%	99.1						
EP068T: Organophosphorus Pesticide Surrogate									
DEF 78-48-8	0.05	%	91.9						
EP202S: Phenoxyacetic Acid Herbicide Surrogate									
2.4-Dichlorophenyl Acetic Acid 19719-28-9	0.02	%	51.6						



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery	Limits (%)
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	62	128
EP068T: Organophosphorus Pesticide Surrogate	e		
DEF	78-48-8	40	139
EP202S: Phenoxyacetic Acid Herbicide Surrogat	te		
2.4-Dichlorophenyl Acetic Acid	19719-28-9	45	139

Inter-Laboratory Testing

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry) 14913 (Biology).

(SOIL) EP202A: Phenoxyacetic Acid Herbicides by LCMS

(SOIL) EP202S: Phenoxyacetic Acid Herbicide Surrogate



QUALITY CONTROL REPORT

Work Order	: EM2225908	Page	: 1 of 7	
Client	: TETRA TECH COFFEY PTY LTD	Laboratory	: Environmental Division M	elbourne
Contact	: Maria Leris	Contact	: Graeme Jablonskas	
Address	: LEVEL 1 436 JOHNSTON STREET ABBOTSFORD VIC, AUSTRALIA 3067	Address	: 4 Westall Rd Springvale \	/IC Australia 3171
Telephone	:	Telephone	: +6138549 9609	
Project	: Mavinus Link	Date Samples Received	: 23-Dec-2022	ANNUM.
Order number	:	Date Analysis Commenced	: 30-Dec-2022	Mill Million
C-O-C number	:	Issue Date	: 10-Jan-2023	NATA
Sampler	: AS, EW			Hac-MRA NATA
Site	:			
Quote number	: EN/222			Accorditation No. 935
No. of samples received	: 1			Accredited for compliance with
No. of samples analysed	: 1			ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

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

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

Signatories	Position	Accreditation Category
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Andrew Lu	VOC Section Supervisor	Melbourne Inorganics, Springvale, VIC
Andrew Lu	VOC Section Supervisor	Melbourne Organics, Springvale, VIC
Andrew Lu Andrew Lu	VOC Section Supervisor VOC Section Supervisor	Melbourne Inorganics, Springvale, VIC Melbourne Organics, Springvale, VIC



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

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 L	Duplicate (DUP) Report		
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA055: Moisture Cor	ntent (Dried @ 105-110°C)(QC Lot: 4797263)							
EM2225906-001	Anonymous	EA055: Moisture Content		0.1	%	18.0	16.2	10.2	0% - 20%
EM2225906-018	Anonymous	EA055: Moisture Content		0.1	%	10.7	11.2	4.7	0% - 20%
EP068A: Organochic	orine Pesticides (OC) (QC L	.ot: 4797236)							
EM2225782-002	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit

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Project	: Mavinus Link



Sub-Matrix: SOIL						Laboratory L	Duplicate (DUP) Report		
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP068B: Organophos	phorus Pesticides (OP) (Q	C Lot: 4797236)							
EM2225782-002	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP202A: Phenoxyace	tic Acid Herbicides by LCM	S (QC Lot: 4802971)							
EP2217516-001	Anonymous	EP202: 4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4-DB	94-82-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Dicamba	1918-00-9	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Mecoprop	93-65-2	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: MCPA	94-74-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4-DP	120-36-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4-D	94-75-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Triclopyr	55335-06-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4.5-T	93-76-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: MCPB	94-81-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Picloram	1918-02-1	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Clopyralid	1702-17-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Fluroxypyr	69377-81-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
ES2246849-004	Anonymous	EP202: 4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4-DB	94-82-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Dicamba	1918-00-9	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Mecoprop	93-65-2	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: MCPA	94-74-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4-DP	120-36-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit

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Sub-Matrix: SOIL		Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QC Lot: 4802971) - continued									
ES2246849-004	Anonymous	EP202: 2.4-D	94-75-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Triclopyr	55335-06-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: 2.4.5-T	93-76-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: MCPB	94-81-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Picloram	1918-02-1	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Clopyralid	1702-17-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP202: Fluroxypyr	69377-81-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit



Method Blank (MB) and Laboratory Control Sample (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: SOIL				Method Blank (MB)		Laboratory Control Spike (LCS) Report		
				Report	Spike Spike Recovery (%) Acc		Acceptable	Limits (%)
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot:	: 4797236)							
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	100	71.8	126
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	103	72.2	125
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	100	70.0	124
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	102	69.1	124
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	99.3	69.2	125
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	92.6	66.6	122
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	103	68.8	123
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	100	67.2	124
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	99.4	66.0	126
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	80.6	70.2	126
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	99.5	72.1	124
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	98.4	68.0	122
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	102	68.9	124
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	96.5	55.8	130
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	104	67.9	124
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	98.8	72.0	127
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	113	66.3	131
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	130	62.4	131
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	91.7	55.4	130
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	92.2	68.8	128
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	90.3	55.5	132
EP068B: Organophosphorus Pesticides (OP)(QC	Lot: 4797236)							
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	79.3	65.6	127
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	87.7	63.0	129
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	69.6	10.0	136
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	59.4	58.3	128
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	85.5	69.0	122
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	97.0	68.0	122
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	100.0	59.6	124
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	125	63.8	128
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	98.9	71.1	124
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	99.9	67.4	126
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	99.1	57.9	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	101	66.2	123

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Project	: Mavinus Link



Sub-Matrix: SOIL				Method Blank (MB)	Laboratory Control Spike (LCS) Report				
				Report	Spike	Spike Recovery (%)	Acceptable	e Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High	
EP068B: Organophosphorus Pesticides (OP)	(QCLot: 4797236) - continue	d							
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	92.2	59.8	123	
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	94.9	65.4	127	
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	88.4	52.1	128	
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	108	65.2	122	
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	90.4	63.2	124	
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	86.8	65.9	127	
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	65.2	43.1	131	
EP202A: Phenoxyacetic Acid Herbicides by L	.CMS (QCLot: 4802971)								
EP202: 4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	<0.02	0.1 mg/kg	67.7	54.4	128	
EP202: 2.4-DB	94-82-6	0.02	mg/kg	<0.02	0.1 mg/kg	70.1	45.5	130	
EP202: Dicamba	1918-00-9	0.02	mg/kg	<0.02	0.1 mg/kg	70.0	51.7	135	
EP202: Mecoprop	93-65-2	0.02	mg/kg	<0.02	0.1 mg/kg	71.1	60.0	130	
EP202: MCPA	94-74-6	0.02	mg/kg	<0.02	0.1 mg/kg	76.1	56.8	131	
EP202: 2.4-DP	120-36-5	0.02	mg/kg	<0.02	0.1 mg/kg	77.2	50.0	141	
EP202: 2.4-D	94-75-7	0.02	mg/kg	<0.02	0.1 mg/kg	70.6	68.5	131	
EP202: Triclopyr	55335-06-3	0.02	mg/kg	<0.02	0.1 mg/kg	70.3	50.8	141	
EP202: 2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	<0.02	0.1 mg/kg	76.3	40.8	126	
EP202: 2.4.5-T	93-76-5	0.02	mg/kg	<0.02	0.1 mg/kg	72.5	57.4	139	
EP202: MCPB	94-81-5	0.02	mg/kg	<0.02	0.1 mg/kg	66.6	38.9	137	
EP202: Picloram	1918-02-1	0.02	mg/kg	<0.02	0.1 mg/kg	58.3	48.7	129	
EP202: Clopyralid	1702-17-6	0.02	mg/kg	<0.02	0.1 mg/kg	59.8	49.4	106	
EP202: Fluroxypyr	69377-81-7	0.02	mg/kg	<0.02	0.1 mg/kg	74.1	53.2	128	

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				Matrix Spike (MS) Report				
				Spike	SpikeRecovery(%)	Acceptable L	imits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
EP068A: Organochlorine Pesticides (OC) (QCLot: 4797236)								
EM2225782-039	Anonymous	EP068: gamma-BHC	58-89-9	0.5 mg/kg	119	51.4	139	
		EP068: Heptachlor	76-44-8	0.5 mg/kg	116	49.1	130	
		EP068: Aldrin	309-00-2	0.5 mg/kg	124	38.4	135	
		EP068: Dieldrin	60-57-1	0.5 mg/kg	122	58.4	136	
		EP068: Endrin	72-20-8	0.5 mg/kg	122	33.0	146	
		EP068: 4.4`-DDT	50-29-3	0.5 mg/kg	119	20.0	133	
EP068B: Organoph	osphorus Pesticides (OP) (QCLot: 4797236)							

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Sub-Matrix: SOIL	b-Matrix: SOIL					Matrix Spike (MS) Report				
				Spike	SpikeRecovery(%)	Acceptable L	imits (%)			
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High			
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4797236) - continued										
EM2225782-039 Anonymous	Anonymous	EP068: Diazinon	333-41-5	0.5 mg/kg	119	65.1	135			
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	124	56.3	127			
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	117	55.0	133			
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	111	55.1	133			
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	104	43.8	128			
EP202A: Phenoxya	EP202A: Phenoxyacetic Acid Herbicides by LCMS (QCLot: 4802971)									
EP2217516-001	Anonymous	EP202: Mecoprop	93-65-2	0.1 mg/kg	73.9	60.0	140			
		EP202: MCPA	94-74-6	0.1 mg/kg	66.4	57.0	143			
		EP202: 2.4-D	94-75-7	0.1 mg/kg	71.4	68.0	139			
		EP202: Triclopyr	55335-06-3	0.1 mg/kg	63.9	51.0	145			
		EP202: 2.4.5-T	93-76-5	0.1 mg/kg	64.9	57.0	142			
		EP202: Picloram	1918-02-1	0.1 mg/kg	60.9	49.0	138			
		EP202: Clopyralid	1702-17-6	0.1 mg/kg	53.6	49.0	149			



QA/QC Compliance Assessment to assist with Quality Review						
Work Order	: EM2225908	Page	: 1 of 4			
Client	: TETRA TECH COFFEY PTY LTD	Laboratory	: Environmental Division Melbourne			
Contact	: Maria Leris	Telephone	: +6138549 9609			
Project	: Mavinus Link	Date Samples Received	: 23-Dec-2022			
Site	:	Issue Date	: 10-Jan-2023			
Sampler	: AS, EW	No. of samples received	: 1			
Order number	:	No. of samples analysed	: 1			

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.

Summary of Outliers

Outliers : Quality Control Samples

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

- <u>NO</u> Method Blank value outliers occur.
- <u>NO</u> Duplicate outliers occur.
- <u>NO</u> Laboratory Control outliers occur.
- <u>NO</u> Matrix Spike outliers occur.
- For all regular sample matrices, <u>NO</u> surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

• Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

• <u>NO</u> Quality Control Sample Frequency Outliers exist.


Outliers : Analysis Holding Time Compliance

Matrix: SOIL						
Method	Ex	traction / Preparation			Analysis	
Container / Client Sample ID(s)	Date extracted	Due for extraction	Days	Date analysed	Due for analysis	Days
			overdue			overdue
EP202A: Phenoxyacetic Acid Herbicides by LCMS						
Soil Glass Jar - Unpreserved						
QC201_221222	06-Jan-2023	05-Jan-2023	1			

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for 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.

Evaluation: \mathbf{x} = Holding time breach ; \mathbf{v} = Within holding time.

Matrix: SOIL				Evaluation	: × = Holding time	breach ; 🗸 = Withi	n holding time.
Method	Sample Date	Ex	traction / Preparation			Analysis	
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)						05 1 0000	
QC201_221222	22-Dec-2022				30-Dec-2022	05-Jan-2023	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068)							
QC201_221222	22-Dec-2022	30-Dec-2022	05-Jan-2023	1	04-Jan-2023	08-Feb-2023	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068)							
QC201_221222	22-Dec-2022	30-Dec-2022	05-Jan-2023	1	04-Jan-2023	08-Feb-2023	\checkmark
EP202A: Phenoxyacetic Acid Herbicides by LCMS							
Soil Glass Jar - Unpreserved (EP202)							
QC201_221222	22-Dec-2022	06-Jan-2023	05-Jan-2023	32	09-Jan-2023	15-Feb-2023	✓



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	n: × = Quality Co	ontrol frequency n	ot within specification ; \checkmark = Quality Control frequency within specification.
Quality Control Sample Type		Co	ount		Rate (%)	^	Quality Control Specification
Analytical Methods	Method	QC	Reaular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	6	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Pesticides by GCMS	EP068	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	1	11	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Pesticides by GCMS	EP068	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	1	11	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Pesticides by GCMS	EP068	1	6	16.67	5.00	1	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	1	11	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard



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	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM Schedule B(3).
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	SOIL	In house: LCMS (Electrospray in negative mode). Residues of acid herbicides are extracted from soil samples under the alkaline condition. An aliquot of the alkaline aqueous phase is taken and acidified before a SPE cleanup. After eluting off from the SPE cartridge, residues of acid herbicides are dissolved in HPLC mobile phase prior to instrument analysis.
Preparation Methods	Method	Matrix	Method Descriptions
Extraction for Phenoxy Acid Herbicides in Soils.	EP202-PR	SOIL	In-House: Alkaline extract followed by SPE clean up of acidified portion of the sample extract.
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.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST 0 P () P () Page ____ of ____

			Consigning Off	fice:	a lais			am			-	44.00		In Orah
TE	OFFEY		Report Results	to: Bryde	n. Tidly @	Khrateci	Mobi	le:	427202493		Email	: Ma	110.	Teris w remerch. co
			nvoices to:				Phon	e:	9406 1000	1.1.5	Email			
roject No: 30	+- MELEN215878 MI	Task No:							Ana	alysis Ri	eques	st Sect	ion	
roject Name:	Maximus Lipe	Laboratory: E	wofin:	S			0	SS -						
ampler's Name:	AS, EN	Project Manager:	ML				Q	100						
luote number (if	different to current quoted prices):				A		0	20	1 1 1 1					
pecial Instructio	ns: please for would	QC201~	22122	2 10 1	945	-	2	040						
Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soiletc)	Container Type & Preservative*	T-A-T (specify)	00	Phen						NOTES
	A12-110.05	22/12/22	AM	S	15	48hr	×	×						
	A11-7,10:05	1	1	1			11					2	-	
	Alt-310.05						11						_	
	A11-410.05									_		_	-	-
· · · · · · · · · · · · · · · · · · ·	QC101-221222						11			_		-	_	1 1 1 10
T	QC201-221222						11			_			-	please forward to ALS
	QC301-221222		1	w	1		14	1				_	1	
					Environmenta	I Division				-		-	_	
					Melbourne Work Order B	oference				22/11			-	
_					FM222	25908	53		DATE:	17:55	DIA		-	
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	RELINQUISHED BY	1					1			Sar	nple R	Receipt	Advice	: (Lab Use Only)
lame:	Dat	e:		Name: F	-0		Date	: 23/12		All	Sampl	les Reci	leved in	Good Condition
Coffey	Tim	ie:		Company:	ALS		Time	1=30		All	Docur	nentati	ion is in	Proper Order
Name:	Dat	e:	7	Name:			Date	ei .		Sar	nples	Receive	ed Prop	erly Chilled
Company:	Tim	ne:		Company:			Tim	e:		Lab	o. Ref/	Batch M	No.	1112001
Container Type	& Preservation Codes: P - Plastic, G- G	lass Bottle, J - Glass Jar	, V- Vial, Z - Z	iplock bag, N - N	litric Acid Preserved, C -	Hydrochloric A	id Pre	served, S - Sulphu	ric Acid Preserved, I - Ic	ce,				
ST - Sodium Thio	sulfate, NP - No Preservative								14	_	-		1	
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														Region . S
hain of custody													-	100

Chain of custody Issued: 5 April 2022 UNCONTROLLED WHEN PRINTED

APPENDIX H - TABULATED ANALYTICAL RESULTS

				Physical		CRS SPOCAS												
				Parameters	CRS					SPC	CAS				Partic	le Size	Inorg	anics
				Moisture Content (dried @ 103°C)	CRS Suite - Liming Rate	CRS Suite - Net Acidity - NASSG (Including ANC)	CRS Suite Net Acidity - NASSG (Including ANC)	ANC Fineness Factor	Chromium Reducible Sulfur	Chromium Reducible Sulphur	HCl Extractable Sulfur Correction Factor	pH (KCI)	sulfidic - Titratable Actual Acidity	Titratable Actual Acidity	<2mm Fraction	>2mm Fraction	Extraneous Material	Analysed Material
				%	KG CACO3/T	MOL H+/T	% S	-	%S	mole H+/t	FACTOR	-	%S	mole H+/t	G	G	%	%
EQL				1	1	10	0.02		0.005	3	1	0.1	0.003	2	0.005	0.005	0.1	0.1
NEPM 2013 Table 1A(1) HI	Ls Comm/Ind D Soil																	
NEPM 2013 Table 1B(5) EII	- Areas of Ecological Signific	cance																
Vic EPA Publication 655.1 -	Sands to Loamy Sands					18	0.03											
Field ID	Location Code	Date	Lab Report Number															
Soil Sampling																		
ALT-1/0.05	ALT-1	22/12/2022	952717	9														
ALT-1/0.5	ALT-1	4/08/2022	911789	26														
ALT-2/0.05	ALT-2	22/12/2022	952717	21														
ALT-2/0.5	ALT-2	4/08/2022	911789	18														
ALT-3/0.05	ALT-3	22/12/2022	952717	72														
ALT-3/0.5	ALT-3	4/08/2022	911789	30														
ALT-4/0.05	ALT-4	22/12/2022	952717	35														
ALT-4/0.5	ALT-4	4/08/2022	911789	10														
Acid Sulfate Soil Sampling																		
ASS-1	ASS-1	4/08/2022	911789	18	<1	11	< 0.02	1.5	< 0.005	<3	2.0	4.8	0.018	11	120	49	29	71
Quality Control Results																		
DUP-01/0.5	ALT-1	4/08/2022	911789	24														
RPD %	Primary Lab Replicate RPD			8%														
QC101_221222	ALT-2/0.05	22/12/2022	952717	24														
RPD %	Primary Lab Replicate RPD			13%														
QC201_221222	ALT-2/0.05	22/12/2022	952717	18.9														
RPD %	Secondary Lab Replicate RI	PD		11%														
RB-01	Rinsate Blank	4/08/2022	911789															
QC301_221222	Rinsate Blank	22/12/2022	952717															



				0	CP	Benzenes	ted s Phenols Phenoxy-Acid Herbicides															
				M Organochlorine M pesticides EPAVic	ଅ Other organochlorine ଅ pesticides EPAVic	He kachlorobenzene Bay/ag	Bay (6-Dinitro-2- Bay methylphenol	ය 2,4,5-Trichlorophenoxy කී Acetic Acid	a a 2,4,5-TP (Silvex)	BA May Hedonal (2,4 D)	8% 8% 2,4-Dichlorprop	공 4-(2,4- 전 Dichlorophenoxy)butyri 쪽 c Acid (2,4-DB)	mg/kg	d Dinose mg/kg	및 2-Methyl-4- (행 chlorophenoxyacetic acid	a 2-Methyl-4- ² Chlorophenoxy ² Butanoic Acid	d ostoosa W mg/kg	Made and the sector of the sec	mg/kg	Bic lo ram Mg/kg	Clopyralid w8/k8	Fluroxypyr mg/kg
EQL				0.1	0.1	0.05	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.04	0.04	0.04	0.04	0.04
NEPM 2013 Table 1A(1) H	ILs Comm/Ind D Soil					80		5,000		9,000					5,000	5,000	5,000					
NEPM 2013 Table 1B(5) El	L - Areas of Ecological Signific	cance																				
VIC EPA Publication 655.1	- Sands to Loamy Sands	Data	Lab Report Number																			1
Field ID Soil Compling	Location Code	Date	Lab Report Number																		-	
3011 3ampling	ALT-1	22/12/2022	952717	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-				
ALT-1/0.05	ALT-1	4/08/2022	911789	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-				-
ALT=2/0.05	ΔIT-2	22/12/2022	952717	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					
ALT-2/0.5	ALT-2	4/08/2022	911789	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-			-	
ALT-3/0.05	ALT-3	22/12/2022	952717	<0.1	<0.1	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-		-	-	· .
ALT-3/0.5	ALT-3	4/08/2022	911789	< 0.1	<0.1	< 0.05	< 0.5	< 0.5	<0.5	< 0.5	<0.5	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-			-	-
ALT-4/0.05	ALT-4	22/12/2022	952717	< 0.1	<0.1	< 0.05	< 0.5	< 0.5	< 0.5	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	-
ALT-4/0.5	ALT-4	4/08/2022	911789	< 0.1	< 0.1	< 0.05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	-
Acid Sulfate Soil Sampling	r																					1
ASS-1	ASS-1	4/08/2022	911789																			1
Quality Control Results																						
DUP-01/0.5	ALT-1	4/08/2022	911789	<0.1	<0.1	< 0.05	<0.5	<0.5	<0.5	< 0.5	<0.5	<0.5	<0.5	<0.5	< 0.5	< 0.5	< 0.5	-		-	-	-
RPD %	Primary Lab Replicate RPD			0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	-	-	-	-
QC101_221222	ALT-2/0.05	22/12/2022	952717	<0.1	<0.1	< 0.05	<0.5	<0.5	<0.5	< 0.5	<0.5	<0.5	<0.5	<0.5	< 0.5	< 0.5	< 0.5	-		-	-	-
RPD %	Primary Lab Replicate RPD			0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	-	-	-	-
QC201_221222	ALT-2/0.05	22/12/2022	952717	<0.1	<0.1	< 0.05	-	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	-	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
RPD %	Secondary Lab Replicate RF	PD		0%	0%	0%	-	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	-	-	-	-
RB-01	Rinsate Blank	4/08/2022	911789	< 0.002	< 0.002	< 0.0002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	<0.001	< 0.001	<0.001	-		-	-	-
QC301_221222	Rinsate Blank	22/12/2022	952717	< 0.002	< 0.002	< 0.0002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	-	-	-	-	-

														Organochlor	ine Pesticides										
				4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-внс	chlordane	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endrin aldehyde	Endrin ketone	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.5
NEPM 2013 Table 1A(1) H	ILs Comm/Ind D Soil						45		530				3,600							100		50		2,500	160
NEPM 2013 Table 1B(5) E	L - Areas of Ecological Signifi	cance										3												4	
Vic EPA Publication 655.1	 Sands to Loamy Sands 																								
Field ID	Location Code	Date	Lab Report Number																						
Soil Sampling																								T T	
ALT-1/0.05	ALT-1	22/12/2022	952717	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	< 0.05	<0.05	< 0.05	<0.5
ALT-1/0.5	ALT-1	4/08/2022	911789	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.1	< 0.05	< 0.05	< 0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
ALT-2/0.05	ALT-2	22/12/2022	952717	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	< 0.05	<0.05	< 0.05	<0.5
ALT-2/0.5	ALT-2	4/08/2022	911789	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	< 0.05	<0.05	< 0.05	<0.5
ALT-3/0.05	ALT-3	22/12/2022	952717	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.1	< 0.05	<0.05	< 0.05	<0.05	< 0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
ALT-3/0.5	ALT-3	4/08/2022	911789	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
ALT-4/0.05	ALT-4	22/12/2022	952717	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	< 0.05	<0.05	< 0.05	<0.5
ALT-4/0.5	ALT-4	4/08/2022	911789	<0.05	<0.05	<0.05	<0.05	< 0.05	<0.1	< 0.05	< 0.05	< 0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
Acid Sulfate Soil Sampling	3																						<u>ا</u> ـــــــــــا		
ASS-1	ASS-1	4/08/2022	911789																				<u>ا</u> ـــــــــــا		
Quality Control Results																							<u>ا</u> ـــــــــــا		
DUP-01/0.5	ALT-1	4/08/2022	911789	<0.05	< 0.05	<0.05	< 0.05	< 0.05	<0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	< 0.05	< 0.05	<0.05	< 0.05	<0.5
RPD %	Primary Lab Replicate RPD			0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
QC101_221222	ALT-2/0.05	22/12/2022	952717	<0.05	<0.05	<0.05	< 0.05	<0.05	<0.1	< 0.05	< 0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
RPD %	Primary Lab Replicate RPD			0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
QC201_221222	ALT-2/0.05	22/12/2022	952717	<0.05	< 0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.2	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	< 0.05	< 0.05	<0.05	<0.2	
RPD %	Secondary Lab Replicate R	PD		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-
RB-01	Rinsate Blank	4/08/2022	911789	< 0.0002	< 0.0002	< 0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	< 0.0002	<0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	<0.0002	<0.0002	<0.005
QC301_221222	Rinsate Blank	22/12/2022	952717	< 0.0002	< 0.0002	< 0.0002	< 0.0002	<0.0002	<0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	<0.005



													0	rganophosph	orous Pesticid	es									
				Azinophos methyl	Bolstar (Sulprofos)	Chlorfenvinphos	Chlorpyrifos	Chlorpy rifos-methyl	Coumaphos	Demeton-O	Demeton-S	Diazino n	Dichlorvos	Disuffoton	Dimethoate	Ethoprop	Ethion	Fenitrothion	Fensulfothion	Fenthion	EPN	Merphos	Malathion	Methyl parathion	Mevinphos (Phosdrin)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.2	0.2	0.2	0.2	0.2	2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
NEPM 2013 Table 1A(1)	HLs Comm/Ind D Soil						2,000																		
NEPM 2013 Table 1B(5)	EIL - Areas of Ecological Signifi	icance																							
Vic EPA Publication 655.1	- Sands to Loamy Sands	-																							
Field ID	Location Code	Date	Lab Report Number																						
Soil Sampling									-																
ALT-1/0.05	ALT-1	22/12/2022	952717	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
ALT-1/0.5	ALT-1	4/08/2022	911789	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
ALT-2/0.05	ALT-2	22/12/2022	952717	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
ALT-2/0.5	ALT-2	4/08/2022	911789	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
ALT-3/0.05	ALT-3	22/12/2022	952717	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
ALT-3/0.5	ALT-3	4/08/2022	911789	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
ALT-4/0.05	ALT-4	22/12/2022	952717	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
ALT-4/0.5	ALT-4	4/08/2022	911789	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Acid Sulfate Soil Samplin	g																							L	
ASS-1	ASS-1	4/08/2022	911789																					L	
Quality Control Results																								L	
DUP-01/0.5	ALT-1	4/08/2022	911789	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
RPD %	Primary Lab Replicate RPD)		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
QC101_221222	ALT-2/0.05	22/12/2022	952717	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
RPD %	Primary Lab Replicate RPD)		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
QC201_221222	ALT-2/0.05	22/12/2022	952717	< 0.05	-	<0.05	<0.05	< 0.05	-	-	< 0.05	<0.05	<0.05	-	<0.05	-	< 0.05	-	-	<0.05	-	-	<0.05	<0.2	-
RPD %	Secondary Lab Replicate R	PD		0%	-	0%	0%	0%	-	-	0%	0%	0%	-	0%	-	0%	-	-	0%	-	-	0%	0%	
RB-01	Rinsate Blank	4/08/2022	911789	< 0.002	< 0.002	<0.02	< 0.002	< 0.002	< 0.02	< 0.002	< 0.002	< 0.002	< 0.002	<0.002	<0.002	<0.002	<0.002	<0.002	< 0.002	< 0.002	< 0.002	< 0.002	<0.002	< 0.002	<0.002
QC301_221222	Rinsate Blank	22/12/2022	952717	< 0.002	< 0.002	<0.02	< 0.002	< 0.002	< 0.02	< 0.002	< 0.002	< 0.002	< 0.002	<0.002	<0.002	<0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002

											Organophosp	phorous Pesti	cides							
				Monocrotophos	Naled (Dibrom)	Omethoate	Phorate	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	Actril (loxynil)	Parathion	Pirimiphos-methyl	Tokuthion	Pirimphos-ethyl	Bromophos-ethyl	Fenamiphos	Carbophenothion
[mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				2	0.2	2	0.2	0.2	0.2	0.2	0.2	0.2	0.5	0.2	0.2	0.2	0.05	0.05	0.05	0.05
NEPM 2013 Table 1A(1)	HILs Comm/Ind D Soil			_															4	
NEPM 2013 Table 1B(5) E	EIL - Areas of Ecological S	Significance																	4	
Vic EPA Publication 655.1	L - Sands to Loamy Sand	s .																		
Field ID	Location Code	Date	Lab Report Number																	
Soil Sampling	417.4	22/12/2022	052747		-0.2	-2	.0.2	.0.2	-0.2	-0.2	.0.2	-0.2	-0.5	.0.2	.0.2	.0.2	1	1		1
ALT-1/0.05	ALT-1	22/12/2022	952/1/	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	-	-		-
ALT-1/0.5	ALT-1	4/08/2022	911/89	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2			<u> </u>	
ALT-2/0.05	ALT-2	22/12/2022	952/1/	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	-	-		-
ALT-2/0.5	ALT-2	4/08/2022	911/89	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	-	-	<u> </u>	-
ALT-3/0.05	ALT-3	22/12/2022	952/17	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	-	-	<u> </u>	-
ALT-3/0.5	ALT-3	4/08/2022	911789	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2			<u> </u>	
ALT-4/0.05	ALT-4	22/12/2022	952/17	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	-	-	<u> </u>	-
Acid Sulfate Soil Samplin	ALI-4	4/06/2022	511/85	< <u>2</u>	NU.2	< <u>2</u>	<0.2	<0.2	NU.2	NU.2	<0.z	NU.2	<0.5	<0.z	NU.2	<0.2				
Acc 1	NCC 1	4/08/2022	011790																+	
Quality Control Results	A33-1	4/00/2022	511785																-	
DUP-01/0 5	ΔI T-1	4/08/2022	911789	0	<0.2	0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2				
BPD %	Primary Lab Replicate	e RPD	511705	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%				
00101 221222	ALT-2/0.05	22/12/2022	952717	0	<0.2	52	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2				
RPD %	Primary Lab Replicate	e RPD	552717	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%				
OC201 221222	ALT-2/0.05	22/12/2022	952717	<0.2	-	-	-	-	-	-	-			<0.2		< 0.05	< 0.05	< 0.05	<0.05	<0.05
RPD %	Secondary Lab Replic	ate RPD		0%		-			-	-				0%		0%		-	T -	-
RB-01	Rinsate Blank	4/08/2022	911789	< 0.002	< 0.002	< 0.02	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.001	< 0.002	< 0.02	< 0.002	-	-	-	-
OC301 221222	Rinsate Blank	22/12/2022	952717	< 0.002	< 0.002	< 0.02	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.001	< 0.002	< 0.02	< 0.002	-	-	-	-

APPENDIX I - DATA VALIDATION REPORT



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1. QUALITY CONTROL

1.1 INTRODUCTION

The steps in the sampling and analysis process are subject to natural and inherent variability, and this can affect the results produced, and the overall quality of the data sets generated. In order to minimise the effect of this, standard procedures are used for works carried out in the field, and in the laboratory. The use of such procedures represents one aspect of the quality assurance process. To measure the effectiveness of the quality assurance process, quality control samples can be tested, and other quality control tests can be conducted during the analysis of samples taken in the field.

Quality control (QC) samples and tests can be used to assess both the accuracy and the precision of the results produced.

Measures of ACCURACY provide information on how close to the true result is the reported result. For practical reasons, measures of accuracy are usually confined to the laboratory steps in the overall process.

Measures of PRECISION provide information on the variability in the results. Precision can be assessed as:

- "repeatability" or intra-laboratory variation the degree of variation in a result when the same laboratory analyses a sample (or blind replicate) several times, and;
- "reproducibility" or inter-laboratory variation the degree of variation in a result when a different laboratory separately analyses a sample.

In addition, blank samples can be used to assess whether extraneous materials and factors have contributed to the results obtained from the sampling and analysis process.

QC testing can be conducted covering all steps of the process (referred to as Field QC in this report), or just one portion of the process, such as the laboratory steps (referred to as Laboratory QC in this report).

Field Quality Control

Precision of the sample collection, transport and analysis process is measured by the relative percent difference (RPD) between duplicate results. Acceptance targets for laboratory duplicates are dependent on matrix type, contaminant type and contaminant concentrations. Australian Standard AS 4482.1 – 2005 (Guide to the investigation and sampling of sites with potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds) provides the following guidance on the acceptable limits of precision for soil samples.

Typical relative percent difference is 30% - 50% of mean concentration of analyte. This variation can be expected to be higher for organic analysis than for inorganics, and for low concentration of analytes.

Noting this guidance, Tetra Tech Coffey Environments has adopted the following acceptance criteria for RPD results on replicate samples for soil (metals, metalloids and organics):

- 30% for concentrations more than 10 times the laboratory limit of reporting (LOR), and;
- 50% for concentrations less than 10 times the LOR.

For groundwater samples, the acceptance targets for a range of contaminants are listed in Table A. These have been based on acceptable RPD limits for laboratory replicate analysis (American Public Health Association (APHA), 1992). Because groundwater is a homogenous medium, sample heterogeneity (which is



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a potential major contributor to variability in soil samples) would not be expected to play a part in the variability in the sampling and analysis of groundwaters. Hence, the use of laboratory-based acceptance targets can be supported.

Table A – RPD Acceptance	Targets for Contaminant /	Analyte Classes i	n Groundwater	Samples
Tuble A IN D Acceptance	raigets for containmant,	Analyte Olasses I		oumpies

Contaminant/analyte classes	Acceptable RPD for concentrations more than 20 times the LOR	Acceptable RPD for concentrations less than 20 times the LOR
Volatile and semi-volatile organic compounds (including petroleum hydrocarbons), phenols, organochlorine pesticides, organophosphorus pesticides and herbicides	20%	40%
Metals and other inorganics	10%	25%

For blanks, Tetra Tech Coffey's approach is that the concentration of any contaminant should be less than the LOR in all blank samples.

1.2 LABORATORY QUALITY CONTROL

Laboratories are accredited by the National Association of Testing Authorities, Australia (NATA) on the basis of their ability to provide quantitative evidence of their ability and competence to produce reliable results against recognised benchmarks NATA accredited laboratories are able to demonstrate the ability to produce reliable, repeatable results for a range of parameters within a range of sample matrices. Each laboratory method used undergoes a validation process before it is adopted by the laboratory and accredited by NATA. As part of the validation process, the precision and accuracy of the method are established.

In addition, laboratories conduct their own quality control testing to indicate their performance on each reported batch of samples. The results of this testing are compared with the validated precision and accuracy.

Precision of results is measured by the Relative Percent Difference (RPD) between replicate samples selected within the laboratory. RPD is calculated in the same way as described above for Field QC.

Accuracy of results is assessed in a number of ways:

- **Reference materials**, with known concentrations of analytes are analysed with the batch of samples. The results of this analysis are compared with the established concentrations in the reference material.
- **Spike additions**. Known amounts of targeted analytes are added to the samples to be analysed, and the spiked samples are processed through the analytical process. The amount of spiked material is measured as the recovery of the added amount reported in the final result.
- **Surrogate spikes**. Known amounts of chemical compounds with similar properties to the targeted analytes are added to the samples to be analysed, and the spiked samples are processed through the analytical process. The amount of spiked material is measured as the recovery of the added amount reported in the final result.

Schedule B(3) of the National Environment Protection Measure (NEPM) for contaminated sites states that, in general, at least 70% recovery should be achievable from a reference method. Additionally, standard methods prepared by international agencies such as the US EPA and APHA, frequently have performance data such as expected spike recovery incorporated within the method. Where these vary from the 70% figure indicated in the NEPM Schedule, they are noted in the discussion of results which follows this introduction.



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Based on the above, Tetra Tech Coffey has adopted 70% - 130% as the default acceptable range for spike recovery and surrogates spike recovery results, and as the default acceptance limits for the difference between analysis results and the expected result for reference materials.

2. FIELD SAMPLING QC PROGRAMME

2.1 PRECISION / ACCURACY

		Yes	No (Comment below)
1.	Was a NATA registered laboratory used?	\boxtimes	
2.	Did the laboratory perform the requested tests?	\boxtimes	
3.	Were the laboratory methods adopted NATA endorsed?	\boxtimes	
4.	Were the appropriate test procedures followed?	\boxtimes	
5.	Were the reporting limits satisfactory?	\boxtimes	
6.	Was the NATA Seal on the reports?	\boxtimes	
7.	Were the reports signed by an authorised person?	\boxtimes	

Comments

Nil.

Precision/Accuracy of the Laboratory Report	Satisfactory	Unsatisfactory
	Partially Satisfactory	

2.2 SAMPLE HANDLING

		Yes	No (Comment below)
1.	Were the sample holding times met?	\boxtimes	
2.	Were the samples in proper custody between the field and reaching the laboratory?	\boxtimes	
3.	Were the samples properly and adequately preserved? <i>This includes keeping the samples chilled, where applicable.</i>	\boxtimes	
4.	Were the samples received by the laboratory in good condition?	\boxtimes	



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Comments

Samples undergoing acid sulfate soils analysis frozen within six (6) hours to minimise impacts of oxidation.

Sample Handling was:	Satisfactory	Unsatisfactory
	Partially Satisfactory	

3. FIELD QA/QC

3.1 FIELD QA/QC SUMMARY

This sampling event occurred over a period of 1 days (04/08/22) and a total of seven (7) samples including primary and QA/AC samples, as summarised in the table below.

Sample Type		Number of Samples
Primary Samples		9
QA/QC Samples	Equipment Rinsates (at least 1/day/matrix/equipment)	2
	Other (Field Blanks)	-
	Trip Blanks (at least 1/day or sampling event)	N/A
	Field Duplicates (at least 1 in 20 samples)	2
	Field Triplicates (at least 1 in 20 samples)	1

3.2 FIELD DUPLICATES

		Yes	No (Comment below)
A.	Were an <u>Adequate Number</u> of field duplicates analysed for each chemical (min. 10%)?	\boxtimes	
В.	Were RPDs within Control Limits?	\boxtimes	

Comments

All analytes were reported below the limit of reporting for both primary and replicate samples, resulting in an RPD ranging between 0 to 13%.



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3.3 EQUIPMENT RINSATES

	Yes	No
		(Comment below)
A. Were an adequate number of Equipment Rinsates collected?	\boxtimes	
B. Were the Equipment Rinsates free of contaminants?	\boxtimes	

Comments

Nil.

Field QA/QC was:	Satisfactory	Unsatisfactory
	Partially Satisfactory	



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4. LABORATORY INTERNAL QUALITY CONTROL PROCEDURES

4.1 LABORATORY QUALITY CONTROL PROCEDURES

As noted in Section 1.3, laboratories conduct their own quality control testing to indicate their performance on each reported batch of samples. The following section assesses the adequacy of these procedures.

		Yes	No (Comment below)
1.	Were the laboratory blanks/reagents blanks free of contamination?	\boxtimes	
2.	Were the spike recoveries within control limits?	\boxtimes	
3.	Were the RPDs of the laboratory duplicates within control limits?	\boxtimes	
4.	Were the surrogate recoveries within control limits?	\boxtimes	
Comr	nents		

Nil.

5. The laboratory internal QA/QC was:	Satisfactory	Unsatisfactory
	Partially Satisfactory	



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DATA USABILITY 5.

- 1. Data Directly Usable
- 2. Data Usable with the following corrections/modifications (see comment below)
- 3. Data Not Usable.

Comments

Nil.

QA/QC Report Prepared by

QA/QC Report Reviewed by:

Bryden Tiddy

Shane Ellis

(Reviewer)

TETRA TECH

 \boxtimes