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**Appendix C**

**Data for Stream Water Samples**

Report Number : 21 2212 00

Page

**Manukau City - OLD LANDFILL TESTING**

Location:

RIVERINA AVE

STREAM SAMPLING

Parameter	Units	Results	
Site			
Type of Site		Up stream	Down Stream
Date - of sampling		30.10.99	30.10.99
Time - sampling		8.07am	8.30am
Low tide		6.03am	6.03am
Weather		Fine	Fine
<b>MEASUREMENTS</b>			
pH	-	7.35	7.66
Dissolved Oxygen	mg/l	11.99	11.33
Conductivity	mS/m	Exceeds limits of the portable machine	
Clarity		Opaque	Opaque
Visual Inspection		Tidal	Tidal
<b>SAMPLE Number</b>			
Lab sample No		121AN	122AN
Lab Used		SGS	SGS
Method of collection		Bailer	Bailer

Tested by: SPJ

Date:

30.10.99

Checked by: TR

Date:

8.11.99

Report Number 21 2212 00  
 Page

# Manukau City - OLD LANDFILL TESTING

Location: RIVERINA AVE

## LABORATORY RESULTS

Parameter	Units	Results	
		Up Stream	Down Stream
Site			
Type of Site		Up Stream	Down Stream
<b>SAMPLE</b>			
Lab sample No		121AM	122AM
Method of collection		Bailer	Bailer
Lab Used		SGS	SGS
<b>ANALYSIS</b>			
Boron	mg/L		
Chromium	mg/L		
Copper	mg/L		
Lead	mg/L		
Manganese	mg/L		
Zinc	mg/L		
Iron	mg/L		
Cadmium	mg/L		
TOC	ppm	10.6	11.8
Nitrate - N	mgNO <sub>3</sub> -N/L	0.6	0.4
Nitrite - N	mgNO <sub>2</sub> -N/L	0.01	0.02
Total Ammoniacal Nitrogen	mgNH <sub>3</sub> -N/L	0.8	0.3
Chloride	mg/L	13 450	14 975

Tested by: SPJ Date: 30.10.99  
 Checked by: Date:

Report Number: 21 2212 00

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**Manukau City - OLD LANDFILL TESTING**

Location:

**KINGFISHER PLACE**

STREAM SAMPLING

Parameter	Units	Results	
Site			
Type of Site		Up stream	Down Stream
Date - of sampling		29.10.99	29.10.99
Time - sampling		8.50am	9.15am
Low tide		8.17am	8.17am
Weather		Fine	Fine
<b>MEASUREMENTS</b>			
pH	-	6.54	6.75
Dissolved Oxygen	mg/l	9.82	9.28
Conductivity	mS/m	260.00	378.00
Clarity		Clear	Clear
Visual Inspection		Flow steady	Flow steady
<b>SAMPLE Number</b>			
Lab sample No		113AN	114AN
Lab Used		SGS	SGS
Method of collection		Bailer	Bailer

Tested by: SPJ &amp; DH

Date:

29.10.99

Checked by: TB

Date:

8.11.99

12/11/99

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Report Number 21221200  
Page**Manukau City - OLD LANDFILL TESTING**

Location: KINGFISHER PLACE

## LABORATORY RESULTS

Parameter	Units	Results	
		Up Stream	Down Stream
Site			
Type of Site			
SAMPLE			
Lab sample No		113AN	114AN
Method of collection		Bailer	Bailer
Lab Used		SGS	SGS
ANALYSIS			
Boron	mg/L		
Chromium	mg/L		
Copper	mg/L		
Lead	mg/L		
Manganese	mg/L		
Zinc	mg/L		
Iron	mg/L		
Cadmium	mg/L		
TOC	ppm	7.2	9
Nitrate - N	mgNO <sub>3</sub> -N/L	1.5	1.5
Nitrite - N	mgNO <sub>2</sub> -N/L	0.04	0.04
Total Ammoniacal Nitrogen	mgNH <sub>3</sub> -N/L	0.3	0.8
Chloride	mg/L	730	1170

Tested by: SPJ & DH Date: 29.10.99  
 Checked by: Date:

Report Number : 21 2212 00  
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## Manukau City - OLD LANDFILL TESTING

Location:

PAH ROAD

STREAM SAMPLING

Parameter	Units	Results	
Site			
Type of Site		Up stream	Down Stream
Date - of sampling		28.10.99	28.10.99
Time - sampling		10.30am	11.00am
Low tide		7.55am	7.55am
Weather		Overcast	Overcast
MEASUREMENTS			
pH	-	7.21	7.25
Dissolved Oxygen	mg/l	14.06	13.99
Conductivity	mS/m	24.5	95.6
Clarity		Clear	Clear
Visual Inspection		Flow steady	Flow steady
SAMPLE Number			
Lab sample No		965AM	966AM
Lab Used		SGS	SGS
Method of collection		Bailer	Bailer

Tested by: SPJ

Date: 28.10.99

Checked by: TB

Date: 0.11.99

Report Number : 21 2212 00

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**Manukau City - OLD LANDFILL TESTING**

Location:

**PAH ROAD****LABORATORY RESULTS**

Parameter	Units	Results	
		Up Stream	Down Stream
Site			
Type of Site		Up Stream	Down Stream
<b>SAMPLE</b>			
Lab sample No		965AN	966AN
Method of collection		Bailer	Bailer
Lab Used		SGS	SGS
<b>ANALYSIS</b>			
Boron	mg/L	0.024	0.099
Chromium	mg/L	0.0011	0.0015
Copper	mg/L	0.0034	0.0033
Lead	mg/L	0.0011	0.0012
Manganese	mg/L	0.118	0.32
Zinc	mg/L	0.011	0.017
Iron	mg/L	0.88	1.55
Cadmium	mg/L	<0.00005	<0.00005
TOC	ppm	10.8	12.2
Nitrate - N	mgNO <sub>3</sub> -N/L	0.9	1
Nitrite - N	mgNO <sub>2</sub> -N/L	0.03	0.24
Total Ammoniacal Nitrogen	mgNH <sub>3</sub> -N/L	<0.2	<0.2
Chloride	mg/L	35	295

Tested by:

SPJ

Date:

28.10.99

Checked by:

Date:

Report Number : 21 2212 00

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**Manukau City - OLD LANDFILL TESTING**

Location:

**ROBERT ALLAN PARK**

STREAM SAMPLING

Parameter	Units	Results	
Site			
Type of Site		Up stream	Down Stream
Date - of sampling		26.10.999	26.10.99
Time - sampling		3.50pm	4.05pm
Low tide		3.28pm	3.28pm
Weather		Overcast	Overcast
<b>MEASUREMENTS</b>			
pH	-	7.03	7.21
Dissolved Oxygen	mg/l	7.94	8.24
Conductivity	mS/m	1883	Out of range
Clarity		Clear	Clear
Visual Inspection		Odourless	Odourless
<b>SAMPLE Number</b>			
Lab sample No		086AN	087AN
Lab Used		SGS	SGS
Method of collection		Bailer	Bailer

Tested by: SPJ

Date: 26.10.99

Checked by: TB

Date: 8-11-99



Report Number  
Page

## Manukau City - OLD LANDFILL TESTING

Location:

**ROBERT ALLAN PARK**

### LABORATORY RESULTS

Parameter	Units	Results	
		Up Stream	Down Stream
Site			
Type of Site		Up Stream	Down Stream
SAMPLE			
Lab sample No		088AN	087AN
Method of collection		Bailer	Bailer
Lab Used		SGS	SGS
ANALYSIS			
Boron	mg/L	1.67	1.94
Chromium	mg/L	<0.005	<0.005
Copper	mg/L	0.006	0.007
p	mg/L	0.002	0.002
Manganese	mg/L	0.443	0.340
Zinc	mg/L	0.080	0.07
Iron	mg/L	0.9	0.7
Cadmium	mg/L	<0.0005	<0.0005
TOC	ppm	14.0	12.5
Nitrate - N	mgNO <sub>3</sub> -N/L	0.7	0.8
Nitrite - N	mgNO <sub>2</sub> -N/L	0.04	0.02
Total Ammoniacal Nitrogen	mgNH <sub>3</sub> -N/L	<0.2	<0.2
Chloride	mg/L	665	720

Tested by:

SPJ

Date:

26.10.99

Checked by:

Date:

Report Number

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# Manukau City - OLD LANDFILL TESTING

Location: **HILLS ROAD - MAYFIELD PARK**

## LABORATORY RESULTS

Parameter	Units	Results	
		Up Stream	Down Stream
Site			
Type of Site		Up Stream	Down Stream
<b>SAMPLE</b>			
Lab sample No		987AM	988AM
Method of collection		Bailer	Bailer
Lab Used		SGS	SGS
<b>ANALYSIS</b>			
Boron	mg/L	0.058	0.093
Chromium	mg/L	0.0023	0.0019
Copper	mg/L	0.0039	0.0039
Lead	mg/L	0.0014	0.0017
Manganese	mg/L	0.0613	0.0712
Zinc	mg/L	0.024	0.028
Iron	mg/L	1.15	1.19
Cadmium	mg/L	<0.00005	<0.00005
TOC	ppm	3.6	3.9
Nitrate - N	mgNO <sub>3</sub> -N/L	1.5	2.2
Nitrite - N	mgNO <sub>2</sub> -N/L	0.03	0.04
Total Ammoniacal Nitrogen	mgNH <sub>3</sub> -N/L	0.8	0.3
Chloride	mg/L	95	185
Salinity	mg/L	172	334

Tested by: SPJ Date: 26.10.99  
 Checked by: TB Date: 3.11.99

Report Number : 21 2212 00

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**Manukau City - OLD LANDFILL TESTING**

Location: ORUARANGI ROAD

STREAM SAMPLING

Parameter	Units	Results	
		Up stream	Down Stream
Site			
Type of Site			
Date - of sampling		20.10.99	20.10.99
Time - sampling		2.00pm	2.15pm
Low tide		1.09pm	1.09pm
Weather		Fine	Fine
<b>MEASUREMENTS</b>			
pH	-	7.34	7.40
Dissolved Oxygen	mg/l	10.24	8.62
Conductivity	mS/m	34.5	35.0
Clarity		Clear	Clear
Visual Inspection		No flow	flow
<b>SAMPLE Number</b>			
Lab sample No		064AN	065AN
Lab Used		SGS	SGS
Method of collection		Bailer	Bailer

Tested by: TB &amp; RT

Checked by: TB

Date: 20.10.99

Date: 8.11.99

Report Number : 21 2212 00

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**Manukau City - OLD LANDFILL TESTING**

Location:

**ORUARANGI ROAD****LABORATORY RESULTS**

Parameter	Units	Results	
		Up Stream	Down Stream
Site			
Type of Site		Up Stream	Down Stream
<b>SAMPLE</b>			
Lab sample No		064AN	065AN
Method of collection		Bailer	Bailer
Lab Used		SGS	SGS
<b>ANALYSIS</b>			
Boron	mg/L	0.055	0.057
Chromium	mg/L	<0.0005	<0.0005
Copper	mg/L	0.0031	0.0032
Lead	mg/L	0.0004	0.0003
Manganese	mg/L	0.0735	0.0759
Zinc	mg/L	0.016	0.016
Iron	mg/L	0.37	0.36
Cadmium	mg/L	<0.00005	<0.00005
TOC	ppm	13.6	13.6
Nitrate - N	mgNO <sub>3</sub> -N/L	0.2	0.2
Nitrite - N	mgNO <sub>2</sub> -N/L	<0.01	<0.01
Total Ammoniacal Nitrogen	mgNH <sub>3</sub> -N/L	<0.2	0.6
Chloride	mg/L	53	46

Tested by: TB

Date:

20.10.99

Checked by:

Date:

10/11/99

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Report Number: 21 2212 00

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**Manukau City - OLD LANDFILL TESTING**

Location:

**HARANIA AVE**

STREAM SAMPLING

Parameter	Units	Results	
Site			
Type of Site		Up stream	Down Stream
Date - of sampling		19.10.99	19.10.99
Time - sampling		11.15am	11.45am
Low tide		11.58am	11.58am
Weather		Fine	Fine
<b>MEASUREMENTS</b>			
pH	-	6.32	6.91
Dissolved Oxygen	mg/l	7.52	8.03
Conductivity	mS/m	25.90	44.30
Clarity		Clear	Clear
Visual Inspection		No flow	Slight flow
<b>SAMPLE Number</b>			
Lab sample No		044AN	045AN
Lab Used		SGS	SGS
Method of collection		Bailer	Bailer

Tested by: TB

Date: 19.10.99

Checked by: TB

Date: 8.11.99

Report Number  
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## Manukau City - OLD LANDFILL TESTING

Location: **HARANIA PARK**

### LABORATORY RESULTS

Parameter	Units	Results	
		Up Stream	Down Stream
Site			
Type of Site		Up Stream	Down Stream
<b>SAMPLE</b>			
Lab sample No		044AN	045AN
Method of collection		Bailer	Bailer
Lab Used		SGS	SGS
<b>ANALYSIS</b>			
Boron	mg/L	0.041	0.076
Chromium	mg/L	0.0006	<0.0005
Copper	mg/L	0.0094	0.0058
Lead	mg/L	0.0007	0.0007
Manganese	mg/L	0.0742	0.0313
Zinc	mg/L	0.041	0.060
Iron	mg/L	0.26	0.15
Cadmium	mg/L	0.00008	<0.00005
TOC	ppm	4.6	7.6
Nitrate - N	mgNO <sub>3</sub> -N/L	10.1	4.4
Nitrite - N	mgNO <sub>2</sub> -N/L	0.02	0.01
Total Ammoniacal Nitrogen	mgNH <sub>3</sub> -N/L	<0.2	<0.2
Chloride	mg/L	28	64

Tested by: TB Date: 19.10.99  
Checked by: Date:

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Report Number: 21 2212 00  
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## Manukau City - OLD LANDFILL TESTING

Location:

OLD QUARRY ROAD

STREAM SAMPLING

Parameter	Units	Results	
Site			
Type of Site		Up stream	Down Stream
Date - of sampling		19.10.99	19.10.99
Time - sampling		12.00pm	12.30pm
Low tide		11.58am	11.58am
Weather		Fine	Fine
MEASUREMENTS			
pH		7.07	7.00
Dissolved Oxygen	mg/l	9.70	9.24
Conductivity	mS/m	26.30	27.90
Clarity		Clear	Clear
Visual Inspection		Flow	Slight flow
SAMPLE Number			
Lab sample No		046AN	047AN
Lab Used		SGS	SGS
Method of collection		Bailer	Bailer

Tested by: TB  
Checked by: TB

Date: 19.10.99  
Date: 8.11.99

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Page**Manukau City - OLD LANDFILL TESTING**

Location:

**OLD QUARRY ROAD****LABORATORY RESULTS**

Parameter	Units	Results	
		Up Stream	Down Stream
Site			
Type of Site		Up Stream	Down Stream
<b>SAMPLE</b>			
Lab sample No		046AN	047AN
Method of collection		Bailer	Bailer
Lab Used		SGS	SGS
<b>ANALYSIS</b>			
Boron	mg/L	0.037	0.038
Chromium	mg/L	<0.005	<0.0005
Copper	mg/L	0.0019	0.0020
Lead	mg/L	0.0007	0.0005
Manganese	mg/L	0.0169	0.0176
Zinc	mg/L	0.025	0.026
Iron	mg/L	0.2	0.22
Cadmium	mg/L	<0.00005	<0.00005
TOC	ppm	6.7	72
Nitrate - N	mgNO <sub>3</sub> -N/L	0.3	0.2
Nitrite - N	mgNO <sub>2</sub> -N/L	<0.01	<0.01
Total Ammoniacal Nitrogen	mgNH <sub>3</sub> -N/L	<0.2	<0.2
Chloride	mg/L	28	25

Tested by:

TB

Date:

19.10.99

Checked by:

Date:



Report Number : 21 2212 00

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# Manukau City - OLD LANDFILL TESTING

Location:

ELM PARK

STREAM SAMPLING

Parameter	Units	Results	
Site			
Type of Site		Up stream	Down Stream
Date - of sampling		12.10.99	12.10.99
Time - sampling		2.35pm	2.55pm
Low tide		4.16pm	4.16pm
Weather		Overcast	Overcast
<b>MEASUREMENTS</b>			
pH		7.08	7.12
Dissolved Oxygen	mg/l	8.50	8.40
Conductivity	mS/m	39.50	72.10
Clarity		Clear	Clear
Visual Inspection		Flow steady	Flow steady
<b>SAMPLE Number</b>			
Lab sample No		992AM	993AM
Lab Used		SGS	SGS
Method of collection		Bailer	Bailer

Tested by: SPJ  
 Checked by: TB

Date: 12.10.99  
 Date: 8.11.99

Report Number

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# Manukau City - OLD LANDFILL TESTING

Location: **ELM PARK**

## LABORATORY RESULTS

Parameter	Units	Results	
		Up Stream	Down Stream
Site			
Type of Site			
<b>SAMPLE</b>			
Lab sample No		992AM	993AM
Method of collection		Bailer	Bailer
Lab Used		SGS	SGS
<b>ANALYSIS</b>			
Boron	mg/L	0.33	0.060
Chromium	mg/L	0.0006	0.0013
Copper	mg/L	0.0027	0.0047
Lead	mg/L	0.0007	0.0019
Manganese	mg/L	0.0897	0.102
Zinc	mg/L	0.048	0.059
Iron	mg/L	0.72	1.01
Cadmium	mg/L	<0.00005	<0.00005
TOC	ppm	7.2	4.7
Nitrate - N	mgNO <sub>3</sub> -N/L	4.6	4.8
Nitrite - N	mgNO <sub>2</sub> -N/L	0.02	0.02
Total Ammoniacal Nitrogen	mgNH <sub>3</sub> -N/L	<0.2	<0.2
Chloride	mg/L	25	100
Salinity	mg/L	45	181

Tested by: SPJ Date: 12.10.99

Checked by: TB Date: 8.11.99

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Report Number: 21 2212 00  
Page**Manukau City - OLD LANDFILL TESTING**

Location:

**BAIRDS ROAD**

STREAM SAMPLING

Parameter	Units	Results	
Site			
Type of Site		Up stream	Down Stream
Date - of sampling		11.10.99	11.10.99
Time - sampling		1.20pm	2.05pm
Low tide		3.35pm	3.35pm
Weather		Fine	Fine
<b>MEASUREMENTS</b>			
pH	-	6.15	6.42
Dissolved Oxygen	mg/l	6.20	6.10
Conductivity	mS/m	19.71	14.41
Clarity		Clear	Clear
Visual Inspection		Flowing	Flowing
<b>SAMPLE Number</b>			
Lab sample No		989AM	990AM
Lab Used		SGS	SGS
Method of collection		Bailer	Bailer

Tested by: SPJ

Date: 11.10.99

Checked by: TB

Date: 8.11.99

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12:33

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**Manukau City - OLD LANDFILL TESTING**

Location:

**BAIRDS ROAD****LABORATORY RESULTS**

Parameter	Units	Results	
		Up Stream	Down Stream
Site			
Type of Site		Up Stream	Down Stream
<b>SAMPLE</b>			
Lab sample No		989AM	990AM
Method of collection		Bailer	Bailer
Lab Used		SGS	SGS
<b>ANALYSIS</b>			
Boron	mg/L	0.056	0.056
Chromium	mg/L	0.0009	0.0008
Copper	mg/L	0.0048	0.0037
Lead	mg/L	0.002	0.0014
Manganese	mg/L	0.107	0.104
Zinc	mg/L	0.074	0.074
Iron	mg/L	0.86	0.79
Cadmium	mg/L	0.00008	0.00005
TOC	ppm	6.2	6.4
Nitrate - N	mgNO <sub>3</sub> -N/L	2.5	2.6
Nitrite - N	mgNO <sub>2</sub> -N/L	0.01	0.02
Total Ammoniacal Nitrogen	mgNH <sub>3</sub> -N/L	0.6	0.3
Chloride	mg/L	15	15
Salinity	mg/L	27	27

Tested by:

SPJ

Date:

11.10.99

Checked by:

TB

Date:

8.11.99

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Report Number : 21 2212 00

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**Manukau City - OLD LANDFILL TESTING**

Location:

**COXHEAD PARK**

STREAM SAMPLING

Parameter	Units	Results	
Site			
Type of Site		Up stream	Down Stream
Date - of sampling		11.10.99	11.10.99
Time - sampling		3.00PM	3.20PM
Low tide		N/A	N/A
Weather		Fine	Fine
<b>MEASUREMENTS</b>			
pH	-	6.78	6.80
Dissolved Oxygen	mg/l	8.40	8.60
Conductivity	mS/m	17.25	17.76
Clarity		Clear	Clear
Visual Inspection		Flowing	Flowing
<b>SAMPLE Number</b>			
Lab sample No		967AM	968AM
Lab Used		SGS	SGS
Method of collection		Bailer	Bailer

Tested by: SPJ

Date: 11.10.99

Checked by: TB

Date: 11.10.99

Report Number  
Page

## Manukau City - OLD LANDFILL TESTING

Location: **COXHEAD PARK**

### LABORATORY RESULTS

Parameter	Units	Results	
		Up Stream	Down Stream
Site			
Type of Site		Up Stream	Down Stream
<b>SAMPLE</b>			
Lab sample No		967AM	968AM
Method of collection		Bailer	Bailer
Lab Used		SGS	SGS
<b>ANALYSIS</b>			
Boron	mg/L	0.045	0.046
Chromium	mg/L	0.0008	0.0007
Copper	mg/L	0.0014	0.0012
Lead	mg/L	0.0005	0.0003
Manganese	mg/L	0.0378	0.0384
Zinc	mg/L	0.032	0.032
Iron	mg/L	0.26	0.22
Cadmium	mg/L	<0.00005	<0.00005
TOC	ppm	1.6	2.2
Nitrate - N	mgNO <sub>3</sub> -N/L	3.1	3.6
Nitrite - N	mgNO <sub>2</sub> -N/L	0.01	0.01
Total Ammoniacal Nitrogen	mgNH <sub>3</sub> -N/L	0.3	0.8
Chloride	mg/L	15	15
Salinity	mg/L	27	27

Tested by: SPJ Date: 11.10.99  
Checked by: TB Date: 0.11.99