

SITE ID SLD000612 Groundwater, Ohai Mines A1202  
 PROJECT ID D45:188-633 WAIRAKI MINE SEEPAGE  
 COST CENTRE SLD00004979 Kingett Mitchell & Assoc. Ltd  
 USE CODE  
 COLLECTION DATE: 15-NOV-1994 TIME: 0805 COLLECTED BY: SRC  
 SAMPLE ID SLD941224  
 FILE REF. A1202  
 REGISTERED BY LLO  
 COMPLETION DATE 25-NOV-1994  
 CHECKED BY LLO

COMMENT: Grab sample, collected from outfall pipe in disused mine shaft.  
 Sample appearance: no apparent colour, odour or turbidity.

ANALYSES COMPLETED:	METHOD	LAB	RESULT
DO-18 Dissolved Oxygen	APHA 18ed 4500-O C	SLD	1.2 g/m3
PH-18 pH	APHA 18ed 4500-H	SLD	7.3 pH
COND-18 Conductivity	APHA 18ed 2510	SLD	1.60 mS/cm@25°C
TEMP-18 Temperature	APHA 18ed 2550	SLD	12.8 Deg.C
SS-18 Total Suspended Solids	APHA 18ed 2540 D	SLD	<0.5 g/m3
NOX-1 (Nitrate + Nitrite)-Nitrogen	NWASCO Misc. Pub. No.38 (1982)	SLD	<0.010 g/m3
TDP-18 Total Dissolved Phosphorus	APHA 18ed 4500-F B5,E(mod)	SLD	0.080 g/m3-P
ALKT-18 Alkalinity Total	APHA 18ed 2320B (to pH 4.5)	SLD	970 g/m3 CaCO3
CL-18 Chloride	APHA 18ed 4500-Cl B	SLD	22 g/m3
HDT-18 Hardness (Total)	APHA 18ed 2340 C	SLD	78 g/m3 CaCO3
A270F-3 Absorbance @ 270nm Filtered	# Absorbance @ 270nm, filtered	SLD	0.090 /cm
A420F-1 Absorbance @ 420nm, Filtered	# Absorbance @ 420nm, filtered	SLD	0.003 /cm

# This test is NOT TELARC REGISTERED



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 Method precision and limits of detection are available upon request.

SIGNATORY: L.L. O'Callaghan - Senior Technician  
 DATED: 25/11/94

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# Resource Management Laboratory

Cnr North Rd and Price St  
Private Bag, Invercargill  
Phone (03) 215-6197  
Fax (03) 215-8081

SITE ID SLD001230 ORAUEA STREAM A1202 SAMPLE ID SLD941225  
 D45:201-585 D/S BIRCHWOOD/WAIRIO RD BG FILE REF. A1202  
 SLD00004979 Kinggett Mitchell & Assoc. Ltd REGISTERED BY LLO  
 USE CODE COST CENTRE COMPLETION DATE 25-NOV-1994  
 COLLECTION DATE: 15-NOV-1994 TIME: 1015 CHECKED BY LLO

COLLECTED BY: SRC

COMMENT: Grab sample, collected ~40m downstream of the bridge, from midstream.  
 Sample appearance: no apparent colour, odour or turbidity.

**ANALYSES COMPLETED:**

DO-18	PH-18	COND-18	TEMP-18	SS-18	NOX-1	TDP-18	ALKT-18	CL-18	HDT-18	A270F-3	A420F-1	LAB	RESULT
Dissolved Oxygen	PH	Conductivity	Temperature	Total Suspended Solids	(Nitrate + Nitrite)-Nitrogen	Total Dissolved Phosphorus	Alkalinity Total	Chloride	Hardness (Total)	Absorbance @ 270nm Filtered	Absorbance @ 420nm, Filtered	SLD	11.2 g/m3
												SLD	8.2 PH
												SLD	0.213 mS/cm@25°C
												SLD	10.6 Deg.C
												SLD	9.8 g/m3
												SLD	0.074 g/m3
												SLD	0.034 g/m3-P
												SLD	93 g/m3 CaCO3
												SLD	11 g/m3
												SLD	84 g/m3 CaCO3
												SLD	0.053 /cm
												SLD	0.005 /cm

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SIGNATORY:

*L. O'Callaghan*  
 L.L. O'Callaghan - Senior Technician

DATED:

25/11/94

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# Resource Management Laboratory

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SITE ID SLD001231 ORAUEA STREAM A1202  
D45:172-611 D/S OF TRIBUTARY CONFLUENCE  
PROJECT ID SLD00004979 Kingett Mitchell & Assoc. Ltd  
COST CENTRE  
USE CODE  
COLLECTION DATE: 15-NOV-1994 TIME: 0940 COLLECTED BY: SRC  
SAMPLE ID SLD941226  
FILE REF. A1202  
REGISTERED BY LLO  
COMPLETION DATE 25-NOV-1994  
CHECKED BY LLO

**COMMENT:** Grab sample, collected ~35m downstream of the confluence, from midstream.  
Sample appearance: no apparent colour, odour or turbidity.

**ANALYSES COMPLETED:**

DO-18	PH-18	COND-18	TEMP-18	SS-18	NOX-1	TDP-18	ALKT-18	CL-18	HDT-18	A270F-3	A420F-1
Dissolved Oxygen	pH	Conductivity	Temperature	Total Suspended Solids	(Nitrate + Nitrite)-Nitrogen	Total Dissolved Phosphorus	Alkalinity Total	Chloride	Hardness (Total)	Absorbance @ 270nm Filtered	Absorbance @ 420nm, Filtered
APHA 18ed 4500-O C	APHA 18ed 4500-H	APHA 18ed 2510	APHA 18ed 2550	APHA 18ed 2540 D	NWASCO Misc. Pub. No.38 (1982)	APHA 18ed 4500-P B5,E(mod)	APHA 18ed 2320B (to pH 4.5)	APHA 18ed 4500-Cl B	APHA 18ed 2340 C	# Absorbance @ 270nm, filtered	# Absorbance @ 420nm, filtered
LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD
10.4 g/m3	7.9 pH	0.209 mS/cm@25°C	10.5 Deg.C	4.0 g/m3	0.080 g/m3	0.032 g/m3-P	91 g/m3 CaCO3	11 g/m3	84 g/m3 CaCO3	0.087 /cm	0.008 /cm

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25/11/94



# Resource Management Laboratory

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SITE ID SLD001232 ORAUEA STREAM A1202  
 D45:173-611 U/S OF TRIBUTARY CONFLUENCE  
 PROJECT ID SLD00004979 Kingett Mitchell & Assoc. Ltd  
 COST CENTRE  
 USE CODE  
 COLLECTION DATE: 15-NOV-1994 TIME: 0930 COLLECTED BY: SRC  
 SAMPLE ID SLD941227  
 FILE REF. A1202  
 REGISTERED BY LLO  
 COMPLETION DATE 25-NOV-1994  
 CHECKED BY LLO

COMMENT: Grab sample, collected ~20m upstream of the confluence, from midstream.  
Sample appearance: no apparent colour, odour or turbidity.

### ANALYSES COMPLETED:

DO-18	PH-18	COND-18	TEMP-18	SS-18	NOX-1	TDP-18	ALKT-18	CL-18	HDT-18	A270F-3	A420F-1	LAB	RESULT
Dissolved Oxygen	pH	Conductivity	Temperature	Total Suspended Solids	(Nitrate + Nitrite)-Nitrogen	Total Dissolved Phosphorus	Alkalinity Total	Chloride	Hardness (Total)	Absorbance @ 270nm Filtered	Absorbance @ 420nm, Filtered	SLD	10.4 g/m3
												SLD	8.0 pH
												SLD	0.214 mS/cm@25'C
												SLD	10.6 Deg.C
												SLD	3.6 g/m3
					NWASCO Misc. Pub. No.38 (1982)							SLD	0.052 g/m3
					APHA 18ed 4500-P B5,E(mod)							SLD	0.030 g/m3-P
					APHA 18ed 2320B (to pH 4.5)							SLD	90 g/m3 CaCO3
					APHA 18ed 4500-Cl B							SLD	11 g/m3
					APHA 18ed 2340 C							SLD	82 g/m3 CaCO3
					# Absorbance @ 270nm	Filtered						SLD	0.090 /cm
					# Absorbance @ 420nm,	Filtered						SLD	0.008 /cm

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L.L. O'Callaghan - Senior Technician

DATED:

25/11/94

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SITE ID SLD000611 Groundwater, Ohai Mines A1202  
 PROJECT ID D45:157-637 SAMPLE SITE TP 1  
 COST CENTRE SLD00004979 Kingett Mitchell & Assoc. Ltd  
 USE CODE  
 COLLECTION DATE: 15-NOV-1994 TIME: 0840 COLLECTED BY: SRC  
 SAMPLE ID SLD941228  
 FILE REF. A1202  
 REGISTERED BY LLO  
 COMPLETION DATE 25-NOV-1994  
 CHECKED BY LLO

**COMMENT:** Grab sample, collected from the bleed pipe.  
 Sample appearance: no apparent colour, odour or turbidity.

**ANALYSES COMPLETED:**

DO-18 Dissolved Oxygen  
 PH-18 pH  
 COND-18 Conductivity  
 TEMP-18 Temperature  
 SS-18 Total Suspended Solids  
 NOX-1 (Nitrate + Nitrite)-Nitrogen  
 TDP-18 Total Dissolved Phosphorus  
 ALKT-18 Alkalinity Total  
 CL-18 Chloride  
 HDT-18 Hardness (Total)  
 A270F-3 Absorbance @ 270nm Filtered  
 A420F-1 Absorbance @ 420nm, Filtered

**METHOD**

APHA 18ed 4500-O C  
 APHA 18ed 4500-H  
 APHA 18ed 2510  
 APHA 18ed 2550  
 APHA 18ed 2540 D  
 NWASCO Misc. Pub. No.38 (1982)  
 APHA 18ed 4500-P B5,E(mod)  
 APHA 18ed 2320B (to pH 4.5)  
 APHA 18ed 4500-Cl B  
 APHA 18ed 2340 C  
 # Absorbance @ 270nm, filtered  
 # Absorbance @ 420nm, filtered

**LAB**

SLD <0.5 g/m3  
 SLD 8.2 pH  
 SLD 11.6 mS/cm@25'C  
 SLD 10.5 Deg.C  
 SLD 1 g/m3  
 SLD <0.010 g/m3  
 SLD 4.0 g/m3-P  
 SLD 3000 g/m3 CaCO3  
 SLD 2470 g/m3  
 SLD 175 g/m3 CaCO3  
 SLD 0.023 /cm  
 SLD 0.000 /cm

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L.L. O'Callaghan - Senior Technician

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**DATED:**

25/11/94

SITE ID SLD000611 Groundwater, Ohai Mines A1202  
 PROJECT ID D45:157-637 SAMPLE SITE TP 1  
 COST CENTRE SLD00004979 Kingett Mitchell & Assoc. Ltd  
 USE CODE  
 COLLECTION DATE: 14-NOV-1994 TIME: 1110 COLLECTED BY: SRC  
 SAMPLE ID SLD941222  
 FILE REF. A1202  
 REGISTERED BY LLO  
 COMPLETION DATE 25-NOV-1994  
 CHECKED BY LLO

COMMENT: Grab sample collected from the bleed pipe.  
 Sample appearance: no apparent colour or turbidity.

**ANALYSES COMPLETED:**

DO-18 Dissolved Oxygen  
 PH-18 pH  
 COND-18 Conductivity  
 TEMP-18 Temperature  
 SS-18 Total Suspended Solids  
 NOX-1 (Nitrate + Nitrite)-Nitrogen  
 TDP-18 Total Dissolved Phosphorus  
 ALKT-18 Alkalinity Total  
 CL-18 Chloride  
 HDT-18 Hardness (Total)  
 A270F-3 Absorbance @ 270nm Filtered  
 A420F-1 Absorbance @ 420nm, Filtered

**METHOD**

APHA 18ed 4500-O C  
 APHA 18ed 4500-H  
 APHA 18ed 2510  
 APHA 18ed 2550  
 APHA 18ed 2540 D  
 NWASCO Misc. Pub. No.38 (1982)  
 APHA 18ed 4500-P B5,E(mod)  
 APHA 18ed 2320B (to pH 4.5)  
 APHA 18ed 4500-Cl B  
 APHA 18ed 2340 C  
 # Absorbance @ 270nm, filtered  
 # Absorbance @ 420nm, filtered

**LAB**

SLD <0.5 g/m3  
 SLD 8.2 pH  
 SLD 11.6 mS/cm@25'C  
 SLD 11.3 Deg.C  
 SLD 3.2 g/m3  
 SLD <0.010 g/m3  
 SLD 2.8 g/m3-P  
 SLD 3100 g/m3 CaCO3  
 SLD 2490 g/m3  
 SLD 175 g/m3 CaCO3  
 SLD 0.023 /cm  
 SLD 0.000 /cm

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L.L. O'Callaghan - Senior Technician  
*L. O'Callaghan*

**DATED:**

25/11/94

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# Resource Management Laboratory

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Private Bag, Invercargill  
Phone (03) 215-6197  
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SITE ID SLD0000000 Undefined  
 PROJECT ID U00:000-000 REFER BELOW  
 COST CENTRE SLD00004979 Kingett Mitchell & Assoc. Ltd  
 USE CODE  
 COLLECTION DATE: 14-NOV-1994 TIME: COLLECTED BY: SRC  
 SAMPLE ID SLD941223  
 FILE REF. A1202  
 REGISTERED BY LLO  
 COMPLETION DATE 25-NOV-1994  
 CHECKED BY LLO

COMMENT: FIELD BLANK relating to Southgas Survey, Ohai.

### ANALYSES COMPLETED:

PH-18 pH  
 COND-18 Conductivity  
 SS-18 Total Suspended Solids  
 NOX-1 (Nitrate + Nitrite)-Nitrogen  
 TDP-18 Total Dissolved Phosphorus  
 ALKT-18 Alkalinity Total  
 CL-18 Chloride  
 HDT-18 Hardness (Total)  
 A270F-3 Absorbance @ 270nm Filtered  
 A420F-1 Absorbance @ 420nm, Filtered

### METHOD

APHA 18ed 4500-H  
 APHA 18ed 2510  
 APHA 18ed 2540 D  
 NWASCO Misc. Pub. No.38 (1982)  
 APHA 18ed 4500-P B5,E(mod)  
 APHA 18ed 2320B (to pH 4.5)  
 APHA 18ed 4500-Cl B  
 APHA 18ed 2340 C  
 # Absorbance @ 270nm, filtered  
 # Absorbance @ 420nm, filtered

### LAB

SLD 8.4 pH  
 SLD 0.0012 mS/cm@25'C  
 SLD <0.5 g/m3  
 SLD <0.010 g/m3  
 SLD <0.005 g/m3-P  
 SLD <5 g/m3 CaCO3  
 SLD <3 g/m3  
 SLD <5 g/m3 CaCO3  
 SLD 0.000 /cm  
 SLD 0.000 /cm

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*L. O'Callaghan*  
 L.L. O'Callaghan - Senior Technician

### DATED:

25/11/94

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**SITE ID** SLD000612 Groundwater, Ohai Mines A1202 **SAMPLE ID** SLD941216  
**PROJECT ID** D45:188-633 WAIRAKI MINE SEEPAGE **FILE REF.** A1202  
**COST CENTRE** SLD00004979 Kingett Mitchell & Assoc. Ltd **REGISTERED BY** LLO  
**USE CODE** **COMPLETION DATE** 25-NOV-1994 **CHECKED BY** LLO  
**COLLECTION DATE:** 11-NOV-1994 **TIME:** 0800 **COLLECTED BY:** SRC

**COMMENT:** Grab sample, collected from outfall pipe in disused mine shaft.  
 Sample appearance: no apparent colour, odour or turbidity.

**ANALYSES COMPLETED:**

DO-18 Dissolved Oxygen  
 PH-18 pH  
 COND-18 Conductivity  
 TEMP-18 Temperature  
 SS-18 Total Suspended Solids  
 NOX-1 (Nitrate + Nitrite)-Nitrogen  
 NH4-4 Ammoniacal Nitrogen  
 TDP-18 Total Dissolved Phosphorus  
 ALKT-18 Alkalinity Total  
 CL-18 Chloride  
 HDT-18 Hardness (Total)  
 A270F-3 Absorbance @ 270nm Filtered  
 A420F-1 Absorbance @ 420nm, Filtered

**METHOD**

APHA 18ed 4500-0 C  
 APHA 18ed 4500-H  
 APHA 18ed 2510  
 APHA 18ed 2550  
 APHA 18ed 2540 D  
 NWASCO Misc. Pub. No.38 (1982)  
 NWASCO Misc. Pub. No.38 (1982)  
 APHA 18ed 4500-P B5,E(mod)  
 APHA 18ed 2320B (to pH 4.5)  
 APHA 18ed 4500-Cl B  
 APHA 18ed 2340 C  
 # Absorbance @ 270nm, filtered  
 # Absorbance @ 420nm, filtered

**LAB**

SLD 1.5 g/m3  
 SLD 7.3 pH  
 SLD 1.60 ms/cm@25'C  
 SLD 12.6 Deg.C  
 SLD <0.5 g/m3  
 SLD <0.010 g/m3  
 SLD 0.92 g/m3-N  
 SLD 0.086 g/m3-P  
 SLD 950 g/m3 CaCO3  
 SLD 22 g/m3  
 SLD 77 g/m3 CaCO3  
 SLD 0.087 /cm  
 SLD 0.004 /cm

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# Resource Management Laboratory

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SITE ID SLD001230 ORAUEA STREAM A1202 SAMPLE ID SLD941217  
 PROJECT ID D45:201-585 D/S BIRCHWOOD/WAIRIO RD BG FILE REF. A1202  
 COST CENTRE SLD00004979 Kingett Mitchell & Assoc. Ltd REGISTERED BY LLO  
 USE CODE COMPLETION DATE 25-NOV-1994 CHECKED BY LLO  
 COLLECTION DATE: 11-NOV-1994 TIME: 0950 COLLECTED BY: SRC

**COMMENT:** Grab sample collected ~40m downstream of the bridge, from midstream.  
Sample appearance: no apparent colour, odour; low turbidity.

### ANALYSES COMPLETED:

DO-18 Dissolved Oxygen  
 PH-18 pH  
 COND-18 Conductivity  
 TEMP-18 Temperature  
 SS-18 Total Suspended Solids  
 NOX-1 (Nitrate + Nitrite)-Nitrogen  
 NH4-4 Ammoniacal Nitrogen  
 TDP-18 Total Dissolved Phosphorus  
 ALKT-18 Alkalinity Total  
 CL-18 Chloride  
 HDT-18 Hardness (Total)  
 A270F-3 Absorbance @ 270nm Filtered  
 A420F-1 Absorbance @ 420nm, Filtered

### METHOD

APHA 18ed 4500-O C  
 APHA 18ed 4500-H  
 APHA 18ed 2510  
 APHA 18ed 2550  
 APHA 18ed 2540 D  
 NWASCO Misc. Pub. No.38 (1982)  
 NWASCO Misc. Pub. No.38 (1982)  
 APHA 18ed 4500-P B5,E(mod)  
 APHA 18ed 2320B (to pH 4.5)  
 APHA 18ed 4500-Cl B  
 APHA 18ed 2340 C  
 # Absorbance @ 270nm, filtered  
 # Absorbance @ 420nm, filtered

### LAB

SLD 11.6 g/m3  
 SLD 8.1 pH  
 SLD 0.205 ms/cm@25'C  
 SLD 8.4 Deg.C  
 SLD 7.6 g/m3  
 SLD 0.064 g/m3  
 SLD 0.040 g/m3-N  
 SLD 0.029 g/m3-P  
 SLD 90 g/m3 CaCO3  
 SLD 10 g/m3  
 SLD 81 g/m3 CaCO3  
 SLD 0.071 /cm  
 SLD 0.007 /cm

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**SITE ID** SLD001231 **ORAUEA STREAM** A1202 **SAMPLE ID** SLD941218  
**PROJECT ID** D45:172-611 **D/S OF TRIBUTARY CONFLUENCE** **FILE REF.** A1202  
**COST CENTRE** SLD00004979 **Kingett Mitchell & Assoc. Ltd** **REGISTERED BY** LLO  
**USE CODE** **COLLECTION DATE:** 11-NOV-1994 **TIME:** 0920 **COLLECTED BY:** SRC  
**COMPLETION DATE** 25-NOV-1994 **CHECKED BY** LLO

**COMMENT:** Grab sample collected ~35m downstream of the confluence, from midstream.  
Sample appearance: no apparent colour, odour; low turbidity.

### ANALYSES COMPLETED:

DO-18	PH-18	COND-18	TEMP-18	SS-18	NOX-1	NH4-4	TDP-18	ALKT-18	CL-18	HDT-18	A270F-3	A420F-1
Dissolved Oxygen	pH	Conductivity	Temperature	Total Suspended Solids	(Nitrate + Nitrite)-Nitrogen	Ammoniacal Nitrogen	Total Dissolved Phosphorus	Alkalinity Total	Chloride	Hardness (Total)	Absorbance @ 270nm Filtered	Absorbance @ 420nm, Filtered
APHA 18ed 4500-O C	APHA 18ed 4500-H	APHA 18ed 2510	APHA 18ed 2550	APHA 18ed 2540 D	NWASCO Misc. Pub. No.38 (1982)	NWASCO Misc. Pub. No.38 (1982)	APHA 18ed 4500-P B5,E(mod)	APHA 18ed 2320B (to pH 4.5)	APHA 18ed 4500-Cl B	APHA 18ed 2340 C	# Absorbance @ 270nm, filtered	# Absorbance @ 420nm, filtered
10.6 g/m3	7.9 pH	0.200 mS/cm@25'C	8.5 Deg.C	3.8 g/m3	0.044 g/m3	0.032 g/m3-N	0.028 g/m3-P	84 g/m3 CaCO3	11 g/m3	78 g/m3 CaCO3	0.114 /cm	0.011 /cm

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**SIGNATORY:** L.L. O'Callaghan - Senior Technician

**DATED:** 25/11/94

**SITE ID** SLD001232 **ORAUEA STREAM** A1202 **SAMPLE ID** SLD941219  
**D45:173-611** **U/S OF TRIBUTARY CONFLUENCE** **FILE REF.** A1202  
**SLD00004979** **Kingett Mitchell & Assoc. Ltd** **REGISTERED BY** LLO  
**PROJECT ID** **USE CODE** **COMPLETION DATE** 25-NOV-1994  
**COLLECTION DATE:** 11-NOV-1994 **TIME:** 0910 **COLLECTED BY:** SRC **CHECKED BY** LLO

**COMMENT:** Grab sample collected ~20m upstream of the confluence, from midstream.  
 Sample appearance: no apparent colour, odour; low turbidity.

**ANALYSES COMPLETED:**

DO-18 Dissolved Oxygen  
 PH-18 pH  
 COND-18 Conductivity  
 TEMP-18 Temperature  
 SS-18 Total Suspended Solids  
 NOX-1 (Nitrate + Nitrite)-Nitrogen  
 NH4-4 Ammoniacal Nitrogen  
 TDP-18 Total Dissolved Phosphorus  
 ALKT-18 Alkalinity Total  
 CL-18 Chloride  
 HDT-18 Hardness (Total)  
 A270F-3 Absorbance @ 270nm Filtered  
 A420F-1 Absorbance @ 420nm, Filtered

**METHOD**

APHA 18ed 4500-O C  
 APHA 18ed 4500-H  
 APHA 18ed 2510  
 APHA 18ed 2550  
 APHA 18ed 2540 D  
 NWASCO Misc. Pub. No.38 (1982)  
 NWASCO Misc. Pub. No.38 (1982)  
 APHA 18ed 4500-P B5,E(mod)  
 APHA 18ed 2320B (to pH 4.5)  
 APHA 18ed 4500-C1 B  
 APHA 18ed 2340 C  
 # Absorbance @ 270nm, filtered  
 # Absorbance @ 420nm, filtered

**LAB**

SLD 10.8 g/m3  
 SLD 7.9 pH  
 SLD 0.201 mS/cm@25'C  
 SLD 8.5 Deg.C  
 SLD 6.2 g/m3  
 SLD 0.090 g/m3  
 SLD 0.028 g/m3-N  
 SLD 0.032 g/m3-P  
 SLD 84 g/m3 CaCO3  
 SLD 11 g/m3  
 SLD 76 g/m3 CaCO3  
 SLD 0.122 /cm  
 SLD 0.013 /cm

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 Method precision and limits of detection are available upon request.

**SIGNATORY:**

*L. O'Callaghan*  
 L.L. O'Callaghan - Senior Technician

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**DATED:**

*25/11/94*



# Resource Management Laboratory

Cnr North Rd and Price St  
Private Bag, Invercargill  
Phone (03) 215-6197  
Fax (03) 215-8081

**SITE ID** SLD000611 Groundwater, Ohai Mines A1202 **SAMPLE ID** SLD941220  
**D45:157-637** **SAMPLE SITE TP 1** **FILE REF.** A1202  
**SLD00004979** **Kingett Mitchell & Assoc. Ltd** **REGISTERED BY** LLO  
**PROJECT ID** **USE CODE** **COMPLETION DATE** 25-NOV-1994  
**COLLECTION DATE:** 11-NOV-1994 **TIME:** 0830 **COLLECTED BY:** SRC  
**CHECKED BY** LLO

**COMMENT:** Grab sample collected from the bleed pipe.  
 Sample appearance: no apparent colour or turbidity.  
 Site comments: bore run for ~1 hour prior to sample collection.

ANALYSES COMPLETED:	METHOD	LAB	RESULT
DO-18	Dissolved Oxygen	SLD	<0.5 g/m3
PH-18	pH	SLD	8.2 pH
COND-18	Conductivity	SLD	11.6 mS/cm@25°C
TEMP-18	Temperature	SLD	10.4 Deg.C
SS-18	Total Suspended Solids	SLD	3.2 g/m3
NOX-1	(Nitrate + Nitrite)-Nitrogen	SLD	<0.010 g/m3
NH4-4	Ammoniacal Nitrogen	SLD	4.4 g/m3-N
TDP-18	Total Dissolved Phosphorus	SLD	3.2 g/m3-P
ALKT-18	Alkalinity Total	SLD	3000 g/m3 CaCO3
CL-18	Chloride	SLD	2530 g/m3
HDT-18	Hardness (Total)	SLD	178 g/m3 CaCO3
A270F-3	Absorbance @ 270nm Filtered	SLD	0.024 /cm
A420F-1	Absorbance @ 420nm, Filtered	SLD	0.000 /cm

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**SIGNATORY:** L. O'Callaghan  
 L.L. O'Callaghan - Senior Technician

**DATED:** 25/11/94

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SITE ID SLD0000612 Groundwater, Ohai Mines A1202 SAMPLE ID SLD941216  
 D45:188-633 WAIRAKI MINE SEEPAGE FILE REF. A1202  
 PROJECT ID SLD00004979 Kinggett Mitchell & Assoc. Ltd REGISTERED BY LLO  
 COST CENTRE USE CODE COMPLETION DATE 25-NOV-1994  
 COLLECTION DATE: 11-NOV-1994 TIME: 0800 CHECKED BY LLO

COLLECTED BY: SRC

COMMENT: Grab sample, collected from outfall pipe in disused mine shaft.  
 Sample appearance: no apparent colour, odour or turbidity.

ANALYSES COMPLETED:	METHOD	LAB	RESULT
DO-18 Dissolved Oxygen	APHA 18ed 4500-O C	SLD	1.5 g/m3
PH-18 pH	APHA 18ed 4500-H	SLD	7.3 pH
COND-18 Conductivity	APHA 18ed 2510	SLD	1.60 mS/cm@25°C
TEMP-18 Temperature	APHA 18ed 2550	SLD	12.6 Deg.C
SS-18 Total Suspended Solids	APHA 18ed 2540 D	SLD	<0.5 g/m3
NOX-1 (Nitrate + Nitrite)-Nitrogen	NWASCO Misc. Pub. No.38 (1982)	SLD	<0.010 g/m3
TDP-18 Total Dissolved Phosphorus	APHA 18ed 4500-P B5,E(mod)	SLD	0.086 g/m3-P
ALKT-18 Alkalinity Total	APHA 18ed 2320B (to pH 4.5)	SLD	950 g/m3 CaCO3
CL-18 Chloride	APHA 18ed 4500-Cl B	SLD	22 g/m3
HDT-18 Hardness (Total)	APHA 18ed 2340 C	SLD	77 g/m3 CaCO3
A270F-3 Absorbance @ 270nm Filtered	# Absorbance @ 270nm, filtered	SLD	0.087 /cm
A420F-1 Absorbance @ 420nm, Filtered	# Absorbance @ 420nm, filtered	SLD	0.004 /cm

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SIGNATORY:

*L.L. O'Callaghan*  
 L.L. O'Callaghan - Senior Technician

DATED:

*25/11/94*



# Resource Management Laboratory

Cnr North Rd and Price St  
Private Bag, Invercargill  
Phone (03) 215-6197  
Fax (03) 215-8081

SITE ID SLD001230 ORAUEA STREAM A1202 SAMPLE ID SLD941217  
PROJECT ID D45:201-585 D/S BIRCHWOOD/WAIRIO RD BG FILE REF. A1202  
COST CENTRE SLD00004979 Kingett Mitchell & Assoc. Ltd REGISTERED BY LLO  
USE CODE COMPLETION DATE 25-NOV-1994 CHECKED BY LLO  
COLLECTION DATE: 11-NOV-1994 TIME: 0950 COLLECTED BY: SRC

COMMENT: Grab sample collected ~40m downstream of the bridge, from midstream.  
Sample appearance: no apparent colour, odour; low turbidity.

ANALYSES COMPLETED:	METHOD	LAB	RESULT
DO-18 Dissolved Oxygen	APHA 18ed 4500-O C	SLD	11.6 g/m3
PH-18 pH	APHA 18ed 4500-H	SLD	8.1 pH
COND-18 Conductivity	APHA 18ed 2510	SLD	0.205 mS/cm@25°C
TEMP-18 Temperature	APHA 18ed 2550	SLD	8.4 Deg.C
SS-18 Total Suspended Solids	APHA 18ed 2540 D	SLD	7.6 g/m3
NOX-1 (Nitrate + Nitrite)-Nitrogen	NWASCO Misc. Pub. No.38 (1982)	SLD	0.064 g/m3
TDP-18 Total Dissolved Phosphorus	APHA 18ed 4500-F B5,E(mod)	SLD	0.029 g/m3-P
ALKT-18 Alkalinity Total	APHA 18ed 2320B (to pH 4.5)	SLD	90 g/m3 CaCO3
CL-18 Chloride	APHA 18ed 4500-Cl B	SLD	10 g/m3
HDT-18 Hardness (Total)	APHA 18ed 2340 C	SLD	81 g/m3 CaCO3
A270F-3 Absorbance @ 270nm Filtered	# Absorbance @ 270nm, filtered	SLD	0.071 /cm
A420F-1 Absorbance @ 420nm, Filtered	# Absorbance @ 420nm, filtered	SLD	0.007 /cm

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SIGNATORY: L.L. O'Callaghan - Senior Technician

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DATED: 25/11/94



# Resource Management Laboratory

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SITE ID SLD001231 ORAUEA STREAM A1202 SAMPLE ID SLD941218  
D45:172-611 D/S OF TRIBUTARY CONFLUENCE FILE REF. A1202  
PROJECT ID SLD00004979 Kingett Mitchell & Assoc. Ltd REGISTERED BY LLO  
COST CENTRE USE CODE COMPLETION DATE 25-NOV-1994 CHECKED BY LLO  
COLLECTION DATE: 11-NOV-1994 TIME: 0920 COLLECTED BY: SRC

COMMENT: Grab sample collected ~35m downstream of the confluence, from midstream.  
Sample appearance: no apparent colour, odour; low turbidity.

ANALYSES COMPLETED:	METHOD	LAB	RESULT
DO-18 Dissolved Oxygen	APHA 18ed 4500-O C	SLD	10.6 g/m3
PH-18 pH	APHA 18ed 4500-H	SLD	7.9 pH
COND-18 Conductivity	APHA 18ed 2510	SLD	0.200 ms/cm@25'C
TEMP-18 Temperature	APHA 18ed 2550	SLD	8.5 Deg.C
SS-18 Total Suspended Solids	APHA 18ed 2540 D	SLD	3.8 g/m3
NOX-1 (Nitrate + Nitrite)-Nitrogen	NWASCO Misc. Pub. No.38 (1982)	SLD	0.044 g/m3
TDP-18 Total Dissolved Phosphorus	APHA 18ed 4500-P B5,E(mod)	SLD	0.028 g/m3-P
ALKT-18 Alkalinity Total	APHA 18ed 2320B (to pH 4.5)	SLD	84 g/m3 CaCO3
CL-18 Chloride	APHA 18ed 4500-Cl B	SLD	11 g/m3
HDT-18 Hardness (Total)	APHA 18ed 2340 C	SLD	78 g/m3 CaCO3
A270F-3 Absorbance @ 270nm Filtered	# Absorbance @ 270nm, filtered	SLD	0.114 /cm
A420F-1 Absorbance @ 420nm, Filtered	# Absorbance @ 420nm, filtered	SLD	0.011 /cm

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SIGNATORY:

*L.L. O'Callaghan*  
L.L. O'Callaghan - Senior Technician

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DATED:

25/11/94

# Resource Management Laboratory

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SITE ID SLD001232 ORAUEA STREAM A1202 SAMPLE ID SLD941219  
 D45:173-611 U/S OF TRIBUTARY CONFLUENCE FILE REF. A1202  
 PROJECT ID SLD00004979 Kingett Mitchell & Assoc. Ltd REGISTERED BY LLO  
 COST CENTRE USE CODE COMPLETION DATE 25-NOV-1994 CHECKED BY LLO  
 COLLECTION DATE: 11-NOV-1994 TIME: 0910 COLLECTED BY: SRC

**COMMENT:** Grab sample collected ~20m upstream of the confluence, from midstream.  
 Sample appearance: no apparent colour, odour; low turbidity.

ANALYSES COMPLETED:	METHOD	LAB	RESULT
DO-18 Dissolved Oxygen	APHA 18ed 4500-O C	SLD	10.8 g/m3
PH-18 pH	APHA 18ed 4500-H	SLD	7.9 pH
COND-18 Conductivity	APHA 18ed 2510	SLD	0.201 mS/cm@25°C
TEMP-18 Temperature	APHA 18ed 2550	SLD	8.5 Deg.C
SS-18 Total Suspended Solids	APHA 18ed 2540 D	SLD	6.2 g/m3
NOX-1 (Nitrate + Nitrite)-Nitrogen	NWASCO Misc. Pub. No.38 (1982)	SLD	0.090 g/m3
TDP-18 Total Dissolved Phosphorus	APHA 18ed 4500-P B5,E(mod)	SLD	0.032 g/m3-P
ALKT-18 Alkalinity Total	APHA 18ed 2320B (to pH 4.5)	SLD	84 g/m3 CaCO3
CL-18 Chloride	APHA 18ed 4500-C1 B	SLD	11 g/m3
HDT-18 Hardness (Total)	APHA 18ed 2340 C	SLD	76 g/m3 CaCO3
A270F-3 Absorbance @ 270nm Filtered	# Absorbance @ 270nm, filtered	SLD	0.122 /cm
A420F-1 Absorbance @ 420nm, Filtered	# Absorbance @ 420nm, filtered	SLD	0.013 /cm

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**DATED:** 25/11/94

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# Resource Management Laboratory

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SITE ID SLD000611 Groundwater, Ohai Mines A1202  
 PROJECT ID D45:157-637 SAMPLE SITE TP 1  
 COST CENTRE SLD00004979 Kingett Mitchell & Assoc. Ltd  
 USE CODE  
 COLLECTION DATE: 11-NOV-1994 TIME: 0830 COLLECTED BY: SRC

SAMPLE ID SLD941220  
 FILE REF. A1202  
 REGISTERED BY LLO  
 COMPLETION DATE 25-NOV-1994  
 CHECKED BY LLO

COMMENT: Grab sample collected from the bleed pipe.  
 Sample appearance: no apparent colour or turbidity.  
 Site comments: bore run for ~1 hour prior to sample collection.

ANALYSES COMPLETED:	METHOD	LAB	RESULT
DO-18	Dissolved Oxygen	SLD	<0.5 g/m3
PH-18	PH	SLD	8.2 pH
COND-18	Conductivity	SLD	11.6 mS/cm@25°C
TEMP-18	Temperature	SLD	10.4 Deg.C
SS-18	Total Suspended Solids	SLD	3.2 g/m3
NOX-1	(Nitrate + Nitrite)-Nitrogen	SLD	<0.010 g/m3
TDP-18	Total Dissolved Phosphorus	SLD	3.2 g/m3-P
ALKT-18	Alkalinity Total	SLD	3000 g/m3 CaCO3
CL-18	Chloride	SLD	2530 g/m3
HDT-18	Hardness (Total)	SLD	178 g/m3 CaCO3
A270F-3	Absorbance @ 270nm Filtered	SLD	0.024 /cm
A420F-1	Absorbance @ 420nm, Filtered	SLD	0.000 /cm

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 DATED: 25/11/94

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SITE ID SLD000612 Groundwater, Ohai Mines A1202 SAMPLE ID SLD941200  
 PROJECT ID D45:188-633 WAIRAKI MINE SEEPAGE FILE REF. A1202  
 COST CENTRE SLD00004979 Kingett Mitchell & Assoc. Ltd REGISTERED BY LLO  
 USE CODE COMPLETION DATE 25-NOV-1994 CHECKED BY LLO  
 COLLECTION DATE: 9-NOV-1994 TIME: 0800 COLLECTED BY: SRC

COMMENT: Grab sample, collected from outfall pipe in disused mine shaft.  
 Sample appearance: no apparent colour, odour or turbidity.

**ANALYSES COMPLETED:**

DO-18	PH-18	COND-18	TEMP-18	SS-18	NOX-1	TDP-18	ALKT-18	CL-18	HDT-18	A270F-3	A420F-1
Dissolved Oxygen	pH	Conductivity	Temperature	Total Suspended Solids	(Nitrate + Nitrite)-Nitrogen	Total Dissolved Phosphorus	Alkalinity Total	Chloride	Hardness (Total)	Absorbance @ 270nm Filtered	Absorbance @ 420nm, Filtered
APHA 18ed 4500-O C	APHA 18ed 4500-H	APHA 18ed 2510	APHA 18ed 2550	APHA 18ed 2540 D	NWASCO Misc. Pub. No.38 (1982)	APHA 18ed 4500-P B5,E(mod)	APHA 18ed 2320B (to pH 4.5)	APHA 18ed 4500-Cl B	APHA 18ed 2340 C	# Absorbance @ 270nm, filtered	# Absorbance @ 420nm, filtered
LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD
RESULT 1.3 g/m3	RESULT 7.3 pH	RESULT 1.63 ms/cm@25'C	RESULT 12.7 Deg.C	RESULT <0.5 g/m3	RESULT <0.010 g/m3	RESULT 0.086 g/m3-P	RESULT 960 g/m3 CaCO3	RESULT 22 g/m3	RESULT 78 g/m3 CaCO3	RESULT 0.089 /cm	RESULT 0.004 /cm

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*L.L. O'Callaghan*  
 L.L. O'Callaghan - Senior Technician

DATED:

25/11/94

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# Resource Management Laboratory

Chr North Rd and Price St  
Private Bag, Invercargill  
Phone (03) 215-6197  
Fax (03) 215-8081

SITE ID	SLD001230	ORAUEA STREAM	A1202	SAMPLE ID	SLD941201
PROJECT ID	D45:201-585	D/S BIRCHWOOD/WAIRIO RD BG		FILE REF.	A1202
COST CENTRE	SLD00004979	Kingett Mitchell & Assoc. Ltd		REGISTERED BY	LLO
USE CODE				COMPLETION DATE	25-NOV-1994
COLLECTION DATE:	9-NOV-1994	TIME: 0855	COLLECTED BY: SRC	CHECKED BY	LLO

**COMMENT:** Grab sample collected ~40m downstream of the bridge, from midstream.  
Sample appearance: no apparent colour, odour; low turbidity.

### ANALYSES COMPLETED:

DO-18	PH-18	COND-18	TEMP-18	SS-18	NOX-1	TDP-18	ALKT-18	CL-18	HDT-18	A270F-3	A420F-1
Dissolved Oxygen	pH	Conductivity	Temperature	Total Suspended Solids	(Nitrate + Nitrite)-Nitrogen	Total Dissolved Phosphorus	Alkalinity Total	Chloride	Hardness (Total)	Absorbance @ 270nm Filtered	Absorbance @ 420nm, Filtered
APHA 18ed 4500-O C	APHA 18ed 4500-H	APHA 18ed 2510	APHA 18ed 2550	APHA 18ed 2540 D	NWASCO Misc. Pub. No.38 (1982)	APHA 18ed 4500-P B5,E(mod)	APHA 18ed 2320B (to pH 4.5)	APHA 18ed 4500-Cl B	APHA 18ed 2340 C	# Absorbance @ 270nm, filtered	# Absorbance @ 420nm, filtered
LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD
RESULT 11.4 g/m3	RESULT 8.1 pH	RESULT 0.212 mS/cm@25'C	RESULT 7.6 Deg.C	RESULT 7.8 g/m3	RESULT 0.074 g/m3	RESULT 0.032 g/m3-P	RESULT 91 g/m3 CaCO3	RESULT 11 g/m3	RESULT 82 g/m3 CaCO3	RESULT 0.069 /cm	RESULT 0.006 /cm

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**DATED:** 25/11/94

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# Resource Management Laboratory

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SITE ID SLD001231 ORAUEA STREAM A1202 SAMPLE ID SLD941202  
 PROJECT ID D45:172-611 D/S OF TRIBUTARY CONFLUENCE FILE REF. A1202  
 COST CENTRE SLD00004979 Kingett Mitchell & Assoc. Ltd REGISTERED BY LLO  
 USE CODE COMPLETION DATE 25-NOV-1994 CHECKED BY LLO  
 COLLECTION DATE: 9-NOV-1994 TIME: 1015 COLLECTED BY: SRC

COMMENT: Grab sample collected ~35m downstream of the confluence, from midstream.  
Sample appearance: no apparent colour, odour; low turbidity.

ANALYSES COMPLETED:	METHOD	LAB	RESULT
DO-18 Dissolved Oxygen	APHA 18ed 4500-O C	SLD	10.8 g/m3
PH-18 pH	APHA 18ed 4500-H	SLD	7.9 pH
COND-18 Conductivity	APHA 18ed 2510	SLD	0.208 mS/cm@25°C
TEMP-18 Temperature	APHA 18ed 2550	SLD	9.0 Deg.C
SS-18 Total Suspended Solids	APHA 18ed 2540 D	SLD	4.4 g/m3
NOX-1 (Nitrate + Nitrite)-Nitrogen	NWASCO Misc. Pub. No.38 (1982)	SLD	0.10 g/m3
TDP-18 Total Dissolved Phosphorus	APHA 18ed 4500-P B5,E(mod)	SLD	0.039 g/m3-P
ALKT-18 Alkalinity Total	APHA 18ed 2320B (to pH 4.5)	SLD	87 g/m3 CaCO3
CL-18 Chloride	APHA 18ed 4500-Cl B	SLD	10 g/m3
HDT-18 Hardness (Total)	APHA 18ed 2340 C	SLD	78 g/m3 CaCO3
A270F-3 Absorbance @ 270nm Filtered	# Absorbance @ 270nm, filtered	SLD	0.107 /cm
A420F-1 Absorbance @ 420nm, Filtered	# Absorbance @ 420nm, filtered	SLD	0.011 /cm

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 DATED: 25/11/94

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# Resource Management Laboratory

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SITE ID SLD001232 ORAUQA STREAM A1202 SAMPLE ID SLD941203  
D45:173-611 U/S OF TRIBUTARY CONFLUENCE FILE REF. A1202  
PROJECT ID SLD00004979 Kingett Mitchell & Assoc. Ltd REGISTERED BY LLO  
COST CENTRE USE CODE COMPLETION DATE 25-NOV-1994 CHECKED BY LLO  
COLLECTION DATE: 9-NOV-1994 TIME: 1025 COLLECTED BY: SRC

COMMENT: Grab sample collected ~20m upstream of the confluence, from midstream.  
Sample appearance: no apparent colour, odour; low turbidity.

### ANALYSES COMPLETED:

DO-18	PH-18	COND-18	TEMP-18	SS-18	NOX-1	TDP-18	ALKT-18	CL-18	HDT-18	A270F-3	A420F-1
Dissolved Oxygen	pH	Conductivity	Temperature	Total Suspended Solids	(Nitrate + Nitrite)-Nitrogen	Total Dissolved Phosphorus	Alkalinity Total Chloride	Hardness (Total)	Absorbance @ 270nm Filtered	Absorbance @ 420nm, Filtered	
APHA 18ed 4500-O C	APHA 18ed 4500-H	APHA 18ed 2510	APHA 18ed 2550	APHA 18ed 2540 D	NWASCO Misc. Pub. No.38 (1982)	APHA 18ed 4500-P B5,E(mod)	APHA 18ed 2320B (to pH 4.5)	APHA 18ed 4500-Cl B	# Absorbance @ 270nm, filtered	# Absorbance @ 420nm, filtered	
SLD	SLD	SLD	SLD	SLD	SLD	SLD	SLD	SLD	SLD	SLD	SLD
11.0 g/m3	7.9 pH	0.207 mS/cm@25'C	9.0 Deg.C	4.2 g/m3	0.048 g/m3	0.026 g/m3-P	88 g/m3 CaCO3	11 g/m3	79 g/m3 CaCO3	0.109 /cm	0.012 /cm

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*L.L. O'Callaghan*  
L.L. O'Callaghan - Senior Technician

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DATED:

25/11/94



# Resource Management Laboratory

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Private Bag, Invercargill  
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SITE ID SLD000611 Groundwater, Ohai Mines A1202  
D45:157-637 SAMPLE SITE TP 1  
PROJECT ID SLD00004979 Kingett Mitchell & Assoc. Ltd  
COST CENTRE  
USE CODE  
COLLECTION DATE: 9-NOV-1994 TIME: 0930 COLLECTED BY: SRC  
SAMPLE ID SLD941204  
FILE REF. A1202  
REGISTERED BY LLO  
COMPLETION DATE 25-NOV-1994  
CHECKED BY LLO

COMMENT: Grab sample collected from the bleed pipe.  
Sample appearance: no apparent colour, odour; low turbidity.  
Site comments: bore run for 1 hr prior to sample collection.

ANALYSES COMPLETED:	METHOD	LAB	RESULT
DO-18 Dissolved Oxygen	APHA 18ed 4500-O C	SLD	<0.5 g/m3
PH-18 pH	APHA 18ed 4500-H	SLD	8.2 pH
COND-18 Conductivity	APHA 18ed 2510	SLD	11.8 mS/cm@25°C
TEMP-18 Temperature	APHA 18ed 2550	SLD	9.9 Deg.C
SS-18 Total Suspended Solids	APHA 18ed 2540 D	SLD	2.2 g/m3
NOX-1 (Nitrate + Nitrite)-Nitrogen	NWASCO Misc. Pub. No.38 (1982)	SLD	<0.010 g/m3
TDP-18 Total Dissolved Phosphorus	APHA 18ed 4500-P B5,E(mod)	SLD	4.0 g/m3-P
ALKT-18 Alkalinity Total	APHA 18ed 2320B (to pH 4.5)	SLD	3100 g/m3 CaCO3
CL-18 Chloride	APHA 18ed 4500-Cl B	SLD	2490 g/m3
HDT-18 Hardness (Total)	APHA 18ed 2340 C	SLD	175 g/m3 CaCO3
A270F-3 Absorbance @ 270nm Filtered	# Absorbance @ 270nm, filtered	SLD	0.026 /cm
A420F-1 Absorbance @ 420nm, Filtered	# Absorbance @ 420nm, filtered	SLD	0.000 /cm

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SIGNATORY: L.L. O'Callaghan Senior Technician  
DATED: 25/11/94

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# Resource Management Laboratory

Cnr North Rd and Price St  
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SITE ID SLD0000612 Groundwater, Ohai Mines A1202  
D45:188-633 WAIRAKI MINE SEEPAGE  
PROJECT ID SLD00004979 Kingett Mitchell & Assoc. Ltd  
COST CENTRE  
USE CODE  
COLLECTION DATE: 7-NOV-1994 TIME: 0815 COLLECTED BY: SRC  
SAMPLE ID SLD941193  
FILE REF. A1202  
REGISTERED BY LLO  
COMPLETION DATE 25-NOV-1994  
CHECKED BY LLO

COMMENT: Grab sample, from outfall pipe from disused mine shaft.  
Sample appearance: clear.

### ANALYSES COMPLETED:

DO-18	PH-18	COND-18	TEMP-18	SS-18	NOX-1	TDP-18	ALKT-18	CL-18	HDT-18	A270F-3	A420F-1
Dissolved Oxygen	pH	Conductivity	Temperature	Total Suspended Solids	(Nitrate + Nitrite)-Nitrogen	Total Dissolved Phosphorus	Alkalinity Total	Chloride	Hardness (Total)	Absorbance @ 270nm Filtered	Absorbance @ 420nm, Filtered
APHA 18ed 4500-0 C	APHA 18ed 4500-H	APHA 18ed 2510	APHA 18ed 2550	APHA 18ed 2540 D	NWASCO Misc. Pub. No.38 (1982)	APHA 18ed 4500-P B5,E(mod)	APHA 18ed 2320B (to pH 4.5)	APHA 18ed 4500-Cl B	APHA 18ed 2340 C	# Absorbance @ 270nm, filtered	# Absorbance @ 420nm, filtered
LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD
RESULT 1.5 g/m3	RESULT 7.5 pH	RESULT 1.61 mS/cm@25°C	RESULT 12.5 Deg.C	RESULT <0.5 g/m3	RESULT <0.010 g/m3	RESULT 0.076 g/m3-P	RESULT 980 g/m3 CaCO3	RESULT 22 g/m3	RESULT 77 g/m3 CaCO3	RESULT 0.088 /cm	RESULT 0.005 /cm

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SIGNATORY:

L.L. O'Callaghan - Senior Technician  
*L.L. O'Callaghan*

DATED:

25/11/94



# Resource Management Laboratory

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SITE ID SLD001230 ORAUEA STREAM A1202 SAMPLE ID SLD941194  
D45:201-585 D/S BIRCHWOOD/WAIRIO RD BG FILE REF. A1202  
PROJECT ID SLD00004979 Kingett Mitchell & Assoc. Ltd REGISTERED BY LLO  
COST CENTRE USE CODE COMPLETION DATE 25-NOV-1994 CHECKED BY LLO  
COLLECTION DATE: 7-NOV-1994 TIME: 0850 COLLECTED BY: SRC

COMMENT: Grab sample, collected ~40m downstream of the bridge, from midstream.  
Sample appearance: slight turbidity.

ANALYSES COMPLETED:	METHOD	LAB	RESULT
DO-18 Dissolved Oxygen	APHA 18ed 4500-O C	SLD	10.4 g/m3
PH-18 pH	APHA 18ed 4500-H	SLD	8.0 pH
COND-18 Conductivity	APHA 18ed 2510	SLD	0.214 mS/cm@25°C
TEMP-18 Temperature	APHA 18ed 2550	SLD	9.5 Deg.C
SS-18 Total Suspended Solids	APHA 18ed 2540 D	SLD	9.0 g/m3
NOX-1 (Nitrate + Nitrite)-Nitrogen	NWASCO Misc. Pub. No.38 (1982)	SLD	0.098 g/m3
TDP-18 Total Dissolved Phosphorus	APHA 18ed 4500-P B5,E(mod)	SLD	0.032 g/m3-P
ALKT-18 Alkalinity Total	APHA 18ed 2320B (to pH 4.5)	SLD	92 g/m3 CaCO3
CL-18 Chloride	APHA 18ed 2340 C	SLD	11 g/m3
HDT-18 Hardness (Total)	# Absorbance @ 270nm, filtered	SLD	83 g/m3 CaCO3
A270F-3 Absorbance @ 270nm Filtered	# Absorbance @ 420nm, filtered	SLD	0.064 /cm
A420F-1 Absorbance @ 420nm, Filtered	# Absorbance @ 420nm, filtered	SLD	0.007 /cm

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SIGNATORY: L.L. O'Callaghan Senior Technician  
DATED: 25/11/94





# Resource Management Laboratory

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SITE ID SLD001231 ORAUEA STREAM A1202 SAMPLE ID SLD941195  
D45:172-611 D/S OF TRIBUTARY CONFLUENCE FILE REF. A1202  
PROJECT ID SLD00004979 Kingett Mitchell & Assoc. Ltd REGISTERED BY LLO  
COST CENTRE USE CODE COMPLETION DATE 25-NOV-1994 CHECKED BY LLO  
COLLECTION DATE: 7-NOV-1994 TIME: 0920 COLLECTED BY: SRC

COMMENT: Grab sample, collected ~35m downstream of the confluence, from midstream.  
Sample appearance: slight turbidity.

ANALYSES COMPLETED:	METHOD	LAB	RESULT
DO-18 Dissolved Oxygen	APHA 18ed 4500-O C	SLD	9.4 g/m3
PH-18 pH	APHA 18ed 4500-H	SLD	7.9 pH
COND-18 Conductivity	APHA 18ed 2510	SLD	0.206 ms/cm@25°C
TEMP-18 Temperature	APHA 18ed 2550	SLD	11.5 Deg.C
SS-18 Total Suspended Solids	APHA 18ed 2540 D	SLD	5.4 g/m3
NOX-1 (Nitrate + Nitrite)-Nitrogen	NWASCO Misc. Pub. No.38 (1982)	SLD	0.13 g/m3
TDP-18 Total Dissolved Phosphorus	APHA 18ed 4500-P B5,E(mod)	SLD	0.039 g/m3-P
ALKT-18 Alkalinity Total	APHA 18ed 2320B (to pH 4.5)	SLD	85 g/m3 CaCO3
CL-18 Chloride	APHA 18ed 4500-Cl B	SLD	11 g/m3
HDT-18 Hardness (Total)	APHA 18ed 2340 C	SLD	78 g/m3 CaCO3
A270F-3 Absorbance @ 270nm Filtered	# Absorbance @ 270nm, filtered	SLD	0.108 /cm
A420F-1 Absorbance @ 420nm, Filtered	# Absorbance @ 420nm, filtered	SLD	0.010 /cm

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DATED: 25/11/94

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SITE ID SLD001232 ORAUVA STREAM A1202 SAMPLE ID SLD941196  
 D45:173-611 U/S OF TRIBUTARY CONFLUENCE FILE REF. A1202  
 PROJECT ID SLD00004979 Kingett Mitchell & Assoc. Ltd REGISTERED BY LLO  
 COST CENTRE USE CODE COMPLETION DATE 25-NOV-1994 CHECKED BY LLO  
 COLLECTION DATE: 7-NOV-1994 TIME: 0950 COLLECTED BY: SRC

COMMENT: Grab sample, collected ~20m upstream of the confluence, from midstream.  
 Sample appearance: slight turbidity.

ANALYSES COMPLETED:	METHOD	LAB	RESULT
DO-18 Dissolved Oxygen	APHA 18ed 4500-O C	SLD	9.8 g/m3
PH-18 pH	APHA 18ed 4500-H	SLD	7.9 pH
COND-18 Conductivity	APHA 18ed 2510	SLD	0.204 mS/cm@25°C
TEMP-18 Temperature	APHA 18ed 2550	SLD	11.3 Deg.C
SS-18 Total Suspended Solids	APHA 18ed 2540 D	SLD	4.2 g/m3
NOX-1 (Nitrate + Nitrite)-Nitrogen	NWASCO Misc. Pub. No.38 (1982)	SLD	0.052 g/m3
TDP-18 Total Dissolved Phosphorus	APHA 18ed 4500-P B5,E(mod)	SLD	0.028 g/m3-P
ALKT-18 Alkalinity Total	APHA 18ed 2320B (to pH 4.5)	SLD	85 g/m3 CaCO3
CL-18 Chloride	APHA 18ed 4500-Cl B	SLD	11 g/m3
HDT-18 Hardness (Total)	APHA 18ed 2340 C	SLD	78 g/m3 CaCO3
A270F-3 Absorbance @ 270nm Filtered	# Absorbance @ 270nm, filtered	SLD	0.107 /cm
A420F-1 Absorbance @ 420nm, Filtered	# Absorbance @ 420nm, filtered	SLD	0.011 /cm

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SIGNATORY: *L.L. O'Callaghan*  
 L.L. O'Callaghan - Senior Technician

DATED: 25/11/94



# Resource Management Laboratory

Cnr North Rd and Price St  
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SITE ID SLD0000611 Groundwater, Ohai Mines A1202  
 PROJECT ID D45:157-637 SAMPLE SITE TP 1  
 COST CENTRE SLD00004979 Kingett Mitchell & Assoc. Ltd  
 USE CODE  
 COLLECTION DATE: 4-NOV-1994 TIME: 1240 COLLECTED BY: SRC  
 SAMPLE ID SLD941189  
 FILE REF. A1202  
 REGISTERED BY LLO  
 COMPLETION DATE 25-NOV-1994  
 CHECKED BY LLO

COMMENT: Grab sample, collected from the bore outlet pipe.  
 Site comments: bore run for 1hr 20 mins prior to sample collection.

ANALYSES COMPLETED:	METHOD	LAB	RESULT
DO-18 Dissolved Oxygen	APHA 18ed 4500-0 C	SLD	<0.5 g/m3
PH-18 pH	APHA 18ed 4500-H	SLD	8.3 pH
COND-18 Conductivity	APHA 18ed 2510	SLD	11.6 mS/cm@25°C
TEMP-18 Temperature	APHA 18ed 2550	SLD	* Deg.C
SS-18 Total Suspended Solids	APHA 18ed 2540 D	SLD	4.6 g/m3
NOX-1 (Nitrate + Nitrite)-Nitrogen	NWASCO Misc. Pub. No.38 (1982)	SLD	<0.010 g/m3
TDP-18 Total Dissolved Phosphorus	APHA 18ed 4500-P B5,E(mod)	SLD	3.6 g/m3-P
ALKT-18 Alkalinity Total	APHA 18ed 2320B (to pH 4.5)	SLD	3000 g/m3 CaCO3
CL-18 Chloride	APHA 18ed 4500-Cl B	SLD	2450 g/m3
HDT-18 Hardness (Total)	APHA 18ed 2340 C	SLD	177 g/m3 CaCO3
A270F-3 Absorbance @ 270nm Filtered	# Absorbance @ 270nm, filtered	SLD	0.020 /cm
A420F-1 Absorbance @ 420nm, Filtered	# Absorbance @ 420nm, filtered	SLD	0.000 /cm

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SIGNATORY: L.L. O'Callaghan - Senior Technician  
 DATED: 25/11/94



# Resource Management Laboratory

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SITE ID SLD001230 ORAUEA STREAM A1202 SAMPLE ID SLD941149  
 D45:201-585 D/S BIRCHWOOD/WAIRIO RD BG FILE REF. A1202  
 PROJECT ID SLD00004979 Kingett Mitchell & Assoc. Ltd REGISTERED BY LLO  
 COST CENTRE USE CODE COMPLETION DATE 25-NOV-1994  
 COLLECTION DATE: 31-OCT-1994 TIME: 1400 COLLECTED BY: SRC CHECKED BY LLO

COMMENT: Midstream sample, collected ~40m downstream of the bridge. Grab sample.  
Sample appearance: slight turbidity.

ANALYSES COMPLETED:	METHOD	LAB	RESULT
DO-18 Dissolved Oxygen	APHA 18ed 4500-O C	SLD	11.2 g/m3
PH-18 pH	APHA 18ed 4500-H	SLD	8.7 pH
COND-18 Conductivity	APHA 18ed 2510	SLD	0.195 mS/cm@25°C
TEMP-18 Temperature	APHA 18ed 2550	SLD	14.2 Deg.C
SS-18 Total Suspended Solids	APHA 18ed 2540 D	SLD	7.5 g/m3
NOX-1 (Nitrate + Nitrite)-Nitrogen	NWASCO Misc. Pub. No.38 (1982)	SLD	0.095 g/m3
TDP-18 Total Dissolved Phosphorus	APHA 18ed 4500-P B5,E(mod)	SLD	0.028 g/m3-P
ALKT-18 Alkalinity Total	APHA 18ed 2320B (to pH 4.5)	SLD	83 g/m3 CaCO3
CL-18 Chloride	APHA 18ed 4500-Cl B	SLD	11 g/m3
HDT-18 Hardness (Total)	APHA 18ed 2340 C	SLD	76 g/m3 CaCO3
A270F-3 Absorbance @ 270nm Filtered	# Absorbance @ 270nm, filtered	SLD	0.082 /cm
A420F-1 Absorbance @ 420nm, Filtered	# Absorbance @ 420nm, filtered	SLD	0.012 /cm

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SIGNATORY: *L. O'Callaghan*  
L.L. O'Callaghan - Senior Technician

DATED: 25/11/94

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# Resource Management Laboratory

Chr North Rd and Price St  
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SITE ID	SLD0000612	Groundwater, Ohai Mines A1202	SAMPLE ID	SLD941150
PROJECT ID	D45:188-633	WAIRAKI MINE SEEPAGE	FILE REF.	A1202
COST CENTRE	SLD00004979	Kingett Mitchell & Assoc. Ltd	REGISTERED BY	LLO
USE CODE			COMPLETION DATE	25-NOV-1994
COLLECTION DATE:	31-OCT-1994	TIME: 1515	CHECKED BY	LLO
			COLLECTED BY:	SRC

COMMENT: Grab sample, from pipe outfall from disused mine shaft.  
Sample appearance: clear.

### ANALYSES COMPLETED:

DO-18	PH-18	COND-18	TEMP-18	SS-18	NOX-1	TDP-18	ALKT-18	CL-18	HDT-18	A270F-3	A420F-1
Dissolved Oxygen	pH	Conductivity	Temperature	Total Suspended Solids	(Nitrate + Nitrite)-Nitrogen	Total Dissolved Phosphorus	Alkalinity Total	Chloride	Hardness (Total)	Absorbance @ 270nm Filtered	Absorbance @ 420nm, Filtered
APHA 18ed 4500-O C	APHA 18ed 4500-H	APHA 18ed 2510	APHA 18ed 2550	APHA 18ed 2540 D	NWASCO Misc. Pub. No.38 (1982)	APHA 18ed 4500-P B5,E(mod)	APHA 18ed 2320B (to pH 4.5)	APHA 18ed 4500-Cl B	APHA 18ed 2340 C	# Absorbance @ 270nm, filtered	# Absorbance @ 420nm, filtered
LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD	LAB SLD
RESULT 1.4 g/m3	RESULT 7.3 pH	RESULT 1.60 mS/cm@25'C	RESULT 12.8 Deg.C	RESULT <0.5 g/m3	RESULT <0.010 g/m3	RESULT 0.070 g/m3-P	RESULT 910 g/m3 CaCO3	RESULT 22 g/m3	RESULT 78 g/m3 CaCO3	RESULT 0.068 /cm	RESULT 0.003 /cm

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L.L. O'Callaghan - Senior Technician

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DATED: 25/11/94



# Resource Management Laboratory

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SITE ID SLD001231 ORAUEA STREAM A1202 SAMPLE ID SLD941151  
 PROJECT ID D45:172-611 D/S OF TRIBUTARY CONFLUENCE FILE REF. A1202  
 COST CENTRE SLD00004979 Kingett Mitchell & Assoc. Ltd REGISTERED BY LLO  
 USE CODE COMPLETION DATE 25-NOV-1994 CHECKED BY LLO  
 COLLECTION DATE: 31-OCT-1994 TIME: 1630 COLLECTED BY: SRC

COMMENT: Grab sample, collected ~35m downstream of the confluence, from the TLB.  
Sample appearance: slight turbidity.

### ANALYSES COMPLETED:

DO-18	PH-18	COND-18	TEMP-18	SS-18	NOX-1	TDP-18	ALKT-18	CL-18	HDT-18	A270F-3	A420F-1	LAB	RESULT
Dissolved Oxygen	pH	Conductivity	Temperature	Total Suspended Solids	(Nitrate + Nitrite)-Nitrogen	Total Dissolved Phosphorus	Alkalinity Total Chloride	Hardness (Total)	Absorbance @ 270nm Filtered	Absorbance @ 420nm, Filtered		SLD	13.4 g/m3
												SLD	8.6 pH
												SLD	0.176 mS/cm@25'C
												SLD	14.6 Deg.C
												SLD	5.4 g/m3
												SLD	0.61 g/m3
												SLD	0.032 g/m3-P
												SLD	70 g/m3 CaCO3
												SLD	11 g/m3
												SLD	66 g/m3 CaCO3
												SLD	0.124 /cm
												SLD	0.014 /cm

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scope of the laboratory's terms of registration.

SIGNATORY:

L.L. O'Callaghan - Senior Technician  
*L. O'Callaghan*

DATED:

25/11/94



# Resource Management Laboratory

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SITE ID SLD001232 ORAUEA STREAM A1202 SAMPLE ID SLD941153  
D45:173-611 U/S OF TRIBUTARY CONFLUENCE FILE REF. A1202  
PROJECT ID SLD00004979 Kingett Mitchell & Assoc. Ltd REGISTERED BY LLO  
COST CENTRE USE CODE COMPLETION DATE 25-NOV-1994 CHECKED BY LLO

COLLECTION DATE: 31-OCT-1994 TIME: 1815 COLLECTED BY: SRC

COMMENT: Grab sample, collected ~20m upstream of the confluence, from midstream.  
Sample appearance: slight turbidity.

ANALYSES COMPLETED:	METHOD	LAB	RESULT
DO-18 Dissolved Oxygen	APHA 18ed 4500-O C	SLD	12.3 g/m3
PH-18 pH	APHA 18ed 4500-H	SLD	8.7 pH
COND-18 Conductivity	APHA 18ed 2510	SLD	0.178 mS/cm@25°C
TEMP-18 Temperature	APHA 18ed 2550	SLD	15.2 Deg.C
SS-18 Total Suspended Solids	APHA 18ed 2540 D	SLD	4.6 g/m3
NOX-1 (Nitrate + Nitrite)-Nitrogen	NWASCO Misc. Pub. No.38 (1982)	SLD	0.017 g/m3
TDP-18 Total Dissolved Phosphorus	APHA 18ed 4500-P B5,E(mod)	SLD	0.024 g/m3-P
ALKT-18 Alkalinity Total	APHA 18ed 2320B (to pH 4.5)	SLD	70 g/m3 CaCO3
CL-18 Chloride	APHA 18ed 4500-Cl B	SLD	11 g/m3
HDT-18 Hardness (Total)	APHA 18ed 2340 C	SLD	67 g/m3 CaCO3
A270F-3 Absorbance @ 270nm Filtered	# Absorbance @ 270nm, filtered	SLD	0.139 /cm
A420F-1 Absorbance @ 420nm, Filtered	# Absorbance @ 420nm, filtered	SLD	0.017 /cm

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SIGNATORY: L.L. O'Callaghan - Senior Technician

DATED: 25/11/94

Tests marked "NOT TELARC REGISTERED" in this report are outside

SITE NO	SAMPLE	DATE	TIME	DO-18 g/m3	PH-18 PH	COND-18 mS/cm@25	TEMP-18 Deg.C	SS-18 g/m3	NOX-1 g/m3	TDP-18 g/m3-P	ALKT-18 g/m3	CL-18 g/m3	HDT-18 g/m3
Groundwater, Ohai Mines A1202 SAMPLE SITE TP 1													
000611	SLD941189	941104	1240	<0.5	8.3	11.6	N/R	4.6	<0.010	3.6	3000	2450	177
000611	SLD941204	941109	0930	<0.5	8.2	11.8	9.9	2.2	<0.010	4.0	3100	2490	175
000611	SLD941220	941111	0830	<0.5	8.2	11.6	10.4	3.2	<0.010	3.2	3000	2530	178
000611	SLD941222	941114	1110	<0.5	8.2	11.6	11.3	3.2	<0.010	2.8	3100	2490	175
000611	SLD941228	941115	0840	<0.5	8.2	11.6	10.5	1	<0.010	4.0	3000	2470	175
Groundwater, Ohai Mines A1202 WAIRAKI MINE SEEPAGE													
000612	SLD941150	941031	1515	1.4	7.3	1.60	12.8	<0.5	<0.010	0.070	910	22	78
000612	SLD941193	941107	0815	1.5	7.5	1.61	12.5	<0.5	<0.010	0.076	980	22	77
000612	SLD941200	941109	0800	1.3	7.3	1.63	12.7	<0.5	<0.010	0.086	960	22	78
000612	SLD941216	941111	0800	1.5	7.3	1.60	12.6	<0.5	<0.010	0.086	950	22	77
000612	SLD941224	941115	0805	1.2	7.3	1.60	12.8	<0.5	<0.010	0.080	970	22	78
ORAUQA STREAM A1202 D/S BIRCHWOOD/WAIRIO RD BG													
001230	SLD941149	941031	1400	11.2	8.7	0.195	14.2	7.5	0.095	0.028	83	11	76
001230	SLD941194	941107	0850	10.4	8.0	0.214	9.5	9.0	0.098	0.032	92	11	83
001230	SLD941201	941109	0855	11.4	8.1	0.212	7.6	7.8	0.074	0.032	91	11	82
001230	SLD941217	941111	0950	11.6	8.1	0.205	8.4	7.6	0.064	0.029	90	10	81
001230	SLD941225	941115	1015	11.2	8.2	0.213	10.6	9.8	0.074	0.034	93	11	84
ORAUQA STREAM A1202 U/S OF TRIBUTARY CONFLUENCE													
001232	SLD941153	941031	1815	12.3	8.7	0.178	15.2	4.6	0.017	0.024	70	11	67
001232	SLD941196	941107	0950	9.8	7.9	0.204	11.3	4.2	0.052	0.028	85	11	78
001232	SLD941203	941109	1025	11.0	7.9	0.207	9.0	4.2	0.048	0.026	88	11	79
001232	SLD941219	941111	0910	10.8	7.9	0.201	8.5	6.2	0.090	0.032	84	11	76
001232	SLD941227	941115	0930	10.4	8.0	0.214	10.6	3.6	0.052	0.030	90	11	82
ORAUQA STREAM A1202 D/S OF TRIBUTARY CONFLUENCE													
001231	SLD941151	941031	1630	13.4	8.6	0.176	14.6	5.4	0.061	0.032	70	11	66
001231	SLD941195	941107	0920	9.4	7.9	0.206	11.5	5.4	0.13	0.039	85	11	78
001231	SLD941202	941109	1015	10.8	7.9	0.208	9.0	4.4	0.10	0.039	87	10	78
001231	SLD941218	941111	0920	10.6	7.9	0.200	8.5	3.8	0.044	0.028	84	11	78
001231	SLD941226	941115	0940	10.4	7.9	0.209	10.5	4.0	0.080	0.032	91	11	84



SITE NO SAMPLE DATE TIME A270F-3 A420F-1  
/cm /cm

Groundwater, Ohai Mines A1202 SAMPLE SITE TP 1  
000611 SLD941189 941104 1240 0.020 0.000  
000611 SLD941204 941109 0930 0.026 0.000  
000611 SLD941220 941111 0830 0.024 0.000  
000611 SLD941222 941114 1110 0.023 0.000  
000611 SLD941228 941115 0840 0.023 0.000

Groundwater, Ohai Mines A1202 WAIRAKI MINE SEEPAGE  
000612 SLD941150 941031 1515 0.068 0.003  
000612 SLD941193 941107 0815 0.088 0.005  
000612 SLD941200 941109 0800 0.089 0.004  
000612 SLD941216 941111 0800 0.087 0.004  
000612 SLD941224 941115 0805 0.090 0.003

ORAUEA STREAM A1202 D/S BIRCHWOOD/WAIRIO RD BG  
001230 SLD941149 941031 1400 0.082 0.012  
001230 SLD941194 941107 0850 0.064 0.007  
001230 SLD941201 941109 0855 0.069 0.006  
001230 SLD941217 941111 0950 0.071 0.007  
001230 SLD941225 941115 1015 0.053 0.005

ORAUEA STREAM A1202 U/S OF TRIBUTARY CONFLUENCE  
001232 SLD941153 941031 1815 0.139 0.017  
001232 SLD941196 941107 0950 0.107 0.011  
001232 SLD941203 941109 1025 0.109 0.012  
001232 SLD941219 941111 0910 0.122 0.013  
001232 SLD941227 941115 0930 0.090 0.008

ORAUEA STREAM A1202 D/S OF TRIBUTARY CONFLUENCE  
001231 SLD941151 941031 1630 0.124 0.014  
001231 SLD941195 941107 0920 0.108 0.010  
001231 SLD941202 941109 1015 0.107 0.011  
001231 SLD941218 941111 0920 0.114 0.011  
001231 SLD941226 941115 0940 0.087 0.008