

**MCNEILL DRILLING**Specialist in Drilling, Piling, Water Pumping and Irrigation
Drilling since 1978

pattersonpitts 23.01.02

23 January 2001

Patterson Pitts Partners (Cromwell) LTD
P.O Box 84
CROMWELL

FACSIMILE: 03 445 1812

ATTENTION: Peter Dymock

Dear Peter

RE: Geoff Bews Production Bore – Shortcut Road Cromwell

Please find enclosed the completed bore log data pertaining to the production bore installed for Geoff at Cromwell. The electrical cabling diameter for our large test pump prevented us from installing that particular unit in this casing. Therefore it was test pumped with a smaller capacity pump at staged discharges to determine the theoretical drawdown at 30 litres per second. This equated to 1.5 metres or a pumping water level of 16.10 metres. With the 4.50 metre stainless steel screen the drawdown has been minimised to produce a reliable source of groundwater for this development. I am confident this bore will provide 30 litres per second.

A water quality sample was taken and is presently being analysed. I will forward these results once received.

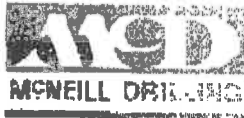
Please contact us if you require any further information.

Yours faithfully

Graeme Stewart
DRILLING MANAGER

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WATER BORE/WELL SUMMARY FORM

CLIENTS NAME: Geoff Bews	RESOURCE CONSENT NO:
FULL ADDRESS: Shortcut Road CROMWELL	BORE SIZE: 300mm
RAPID NO:	START DATE: 9 / 01 / 2001
GRID REFERENCE:	FINISH DATE: 22 / 01 / 2001
DRILLER: Dave Aburn	
MEASURED FROM: Ground Level	MACHINE: Franks
TOTAL DEPTH BORE: 37-220	DRILL METHOD: Cable Tool
TOP LEADER: 32-220	
SWL: 14.6	
SCREEN: SLOT: 2.5mm	LENGTH: 4.500m
TYPE: Stainless Steel	SIZE: 270mm
PVC SLOTTED: TOP: -	BASE: -
SCREEN/LEADER/SUMP: 5.000m	SUMP SIZE: -
TOTAL CASING USED: 33.000	
PUMPED AT: 15 litres per second	
TEST PUMP PERIOD: 4 HOURS MIN	
DRAWDOWN FROM SWL: 0.59m	
PUMP INTAKE: 21.000 Ground Level	
BACTERIAL WATER TEST: Yes Invercargill	
CHEMICAL WATER TEST: Yes	
EXTRA NOTES: Pumping at 10 litres per second, drawdown = 0.35m	
Pumping at 5 litres per second, drawdown = 0.09m	
BORE LOG:	
0.00 - 0.6 - Sandy Soil	
0.6 - 2.2 - Schist Gravels	
2.2 - 4.1 - Sandy Gravels Cobbles	
4.1-11.7 - Sandy Gravels Cobbles	
11.7 - 13.8 - Very Sandy Gravels	
13.8 -16.9 - Sandy Gravels Cobble	
16.9- 24.7 - Large Cobbles Sandy Gravels	
24.7-27.5 - Sandy Gravels Cobbles	
27.5-29.3 - Large Cobbles Sandy Gravels	
29.3-31.0 - Cobbles Sandy Gravels	
31.0-33.5 - Large Cobbles Sandy Gravels	
33.5-37.4 - Boulders Cobbles Sandy Gravels	



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REG No. 1279

PUMPING TEST DATA SHEET

Project GEOFF BEWS
 Name of abstraction well GEOFF BEWS
 Name of observation well N/A Location SHORTCUT ROAD
 Distance of observation well from abstraction well N/A Location CROMWELL
 Depth 37.22 METRES Diameter 300 mm
 Lining details: casing STEEL API SEAMLESS LINE PIPE
 perforations*/screen* BWR STAINLESS STEEL SCREEN
 Date of test: Start 22.01.02 Finish 22.01.02
 Pump: Type SP45-9 Depth of pump inlet 21.00 METRES
 Initial water level 14.600 above*/below* datum
 Datum point GROUND LEVEL above*/below* ground level
 Ground level (OD) Datum point (OD)
 Units of measurement: T = MINUTES Q = LITRES/SECOND S = METRES
 Observers DAVE A BURN
 Remarks

Date	Actual time	Elapsed time (t) (min)	Water level *above/ below datum (m)	Change in water level (s)	Q	Remarks
22.01	8.30		14.60		0	
	8.31	1	15.16	0.56	15	
	8.32	2	15.18	0.02	15	
	8.33	3	15.17	0.01	15	
	8.35	5	15.18	0.01	15	
	8.40	10	15.20	0.02	15	
	8.45	15	15.20	-	15	
	8.55	25	15.20	-	15	
	9.05	35	15.20	-	15	
	9.15	45	15.19	0.01	15	
	9.30	60	15.19	-	15	
	9.45	75	15.19	-	15	
	10.00	90	15.19	-	15	
	10.15	105	15.19	-	15	
	10.30	120	15.19	-	15	

27/1/98

Date	Actual time	Elapsed time (r) (min)	Water level *above/below datum (m)	Change in water level (s)	Q	Remarks
22-01	10.31	121	14.95	+0.24	10	PUMP DISCHARGE ADJUSTED
	10.32	122	14.94	+0.01	10	
	10.33	123	14.95	+0.01	10	
	10.35	125	14.95	-	10	
	10.45	135	14.95	-	10	
	10.50	140	14.94	+0.01	10	
	11.00	150	14.94	-	10	
	11.10	160	14.95	+0.01	10	
	11.20	170	14.94	+0.01	10	
	11.30	180	14.94	-	10	
	11.31	181	14.70	+0.24	5	PUMP DISCHARGE ADJUSTED
	11.32	182	14.69	+0.01	5	
	11.33	183	14.69	-	5	
	11.34	184	14.69	-	5	
	11.35	185	14.70	+0.01	5	
	11.40	190	14.69	+0.01	5	
	11.45	195	14.69	-	5	
	11.50	200	14.69	-	5	
	12.00	210	14.69	-	5	
	12.15	225	14.69	-	5	
	12.30	240	14.69	-	5	