

**Median water table elevation in
Christchurch and surrounding area
after the 4 September 2010 Darfield Earthquake
Version 2**

S. van Ballegooy, S. C. Cox, C. Thurlow,
H. K. Rutter, T. Reynolds, G. Harrington,
J. Fraser, T. Smith

GNS Science Report 2014/18

May 2014

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GNS Science Report 2014/18 May 2014

The following report is an update of the median water table elevation report for Christchurch and surrounding areas released in March 2013 (GNS Report 2013/01). The revision encompasses an extension of the period of groundwater monitoring (4 September 2010 to 30 November 2013) and new surfaces for improved definition of water table fluctuation.

BIBLIOGRAPHIC REFERENCE

S. van Ballegooy, S. C. Cox, C. Thurlow, H. K. Rutter, T. Reynolds, G. Harrington, J. Fraser, T. Smith, 2014. Median water table elevation in Christchurch and surrounding area after the 4 September 2010 Darfield Earthquake: Version 2. GNS Science Report 2014/18, 79 pages plus 8 appendices.

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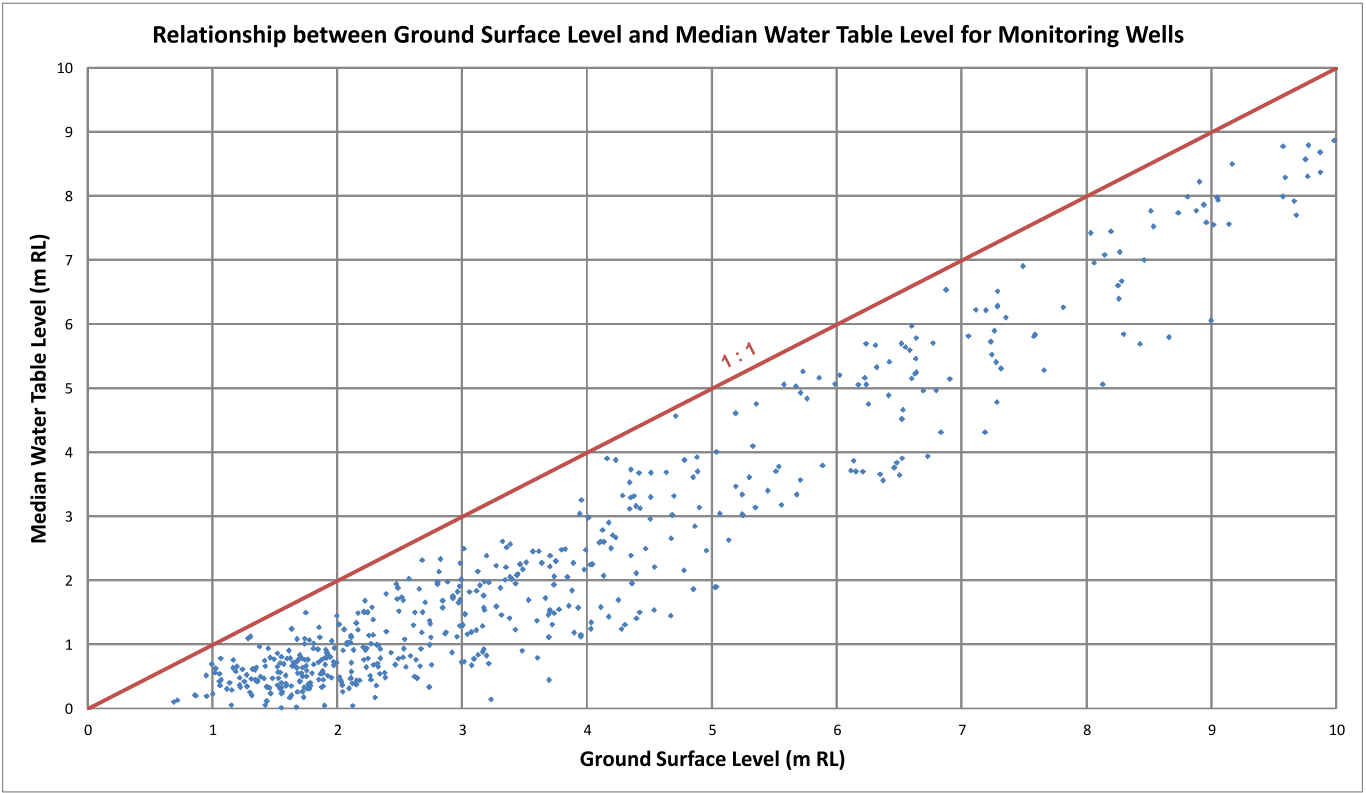
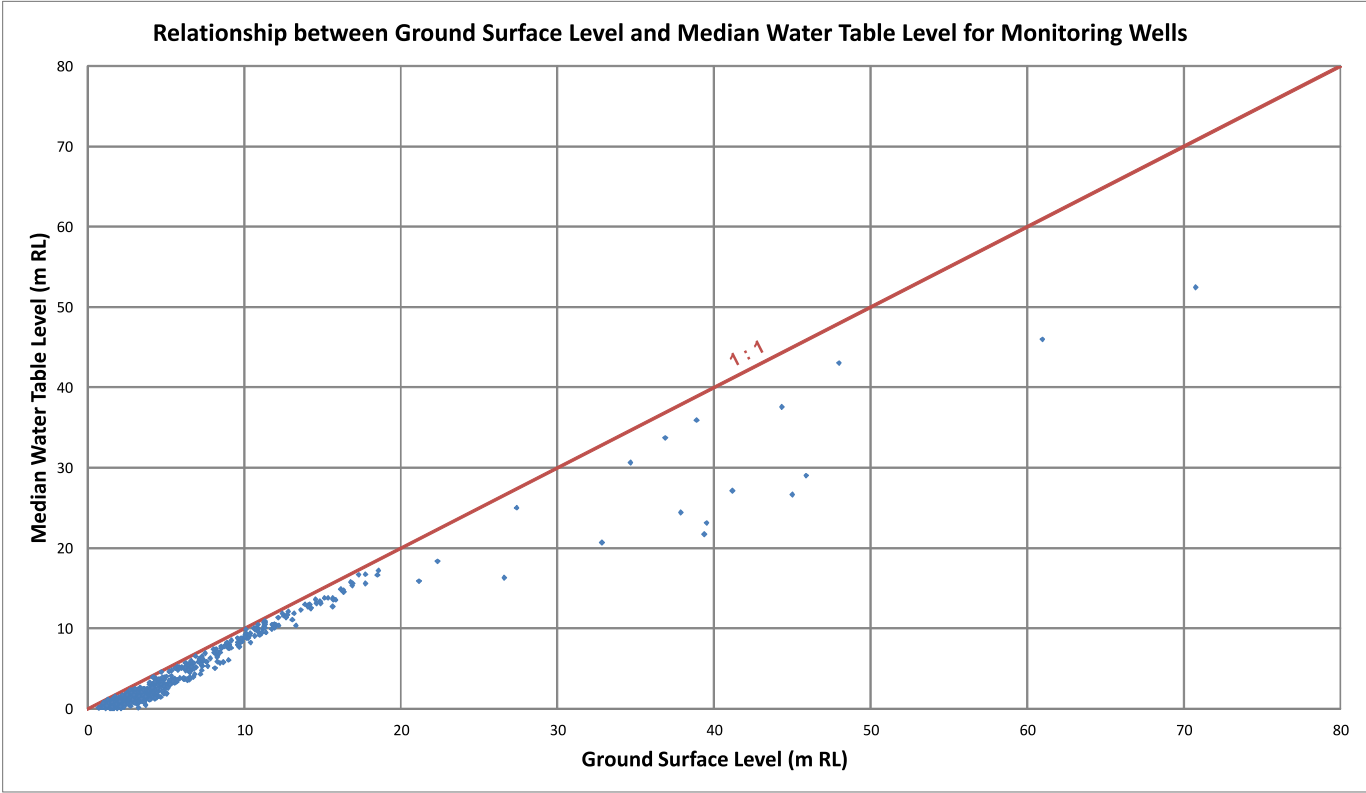
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Titus Smith
Riley Consultants Ltd, PO Box 4355, Christchurch

APPENDIX F: POST-DARFIELD EARTHQUAKE WATER TABLE SURFACES

Figure F.1	Relationship between ground surface level and median water table elevation
Figure F.2	Median water table elevation (reduced level), using longer-term data, including river strings but excluding drawdown points, 2010-2013
Figure F.3	Median water table elevation (reduced level), using longer term data (2010-2013), including river strings and drawdown points (Preferred)
Figure F.4	Depth to median water table, 2010-2013 (Preferred)
Figure F.5	Difference between median and 15th percentile groundwater elevations
Figure F.6	15th percentile water table elevation (reduced level), including river strings and drawdown points
Figure F.7	Depth to 15th percentile water table
Figure F.8	Difference between 85th percentile and median groundwater elevations
Figure F.9	85th percentile water table elevation (reduced level), including river strings and drawdown points
Figure F.10	Depth to 85th percentile water table
Figure F.11	Difference of median water table surfaces: Version 2 (2014) minus Version1 (2013)



Notes:

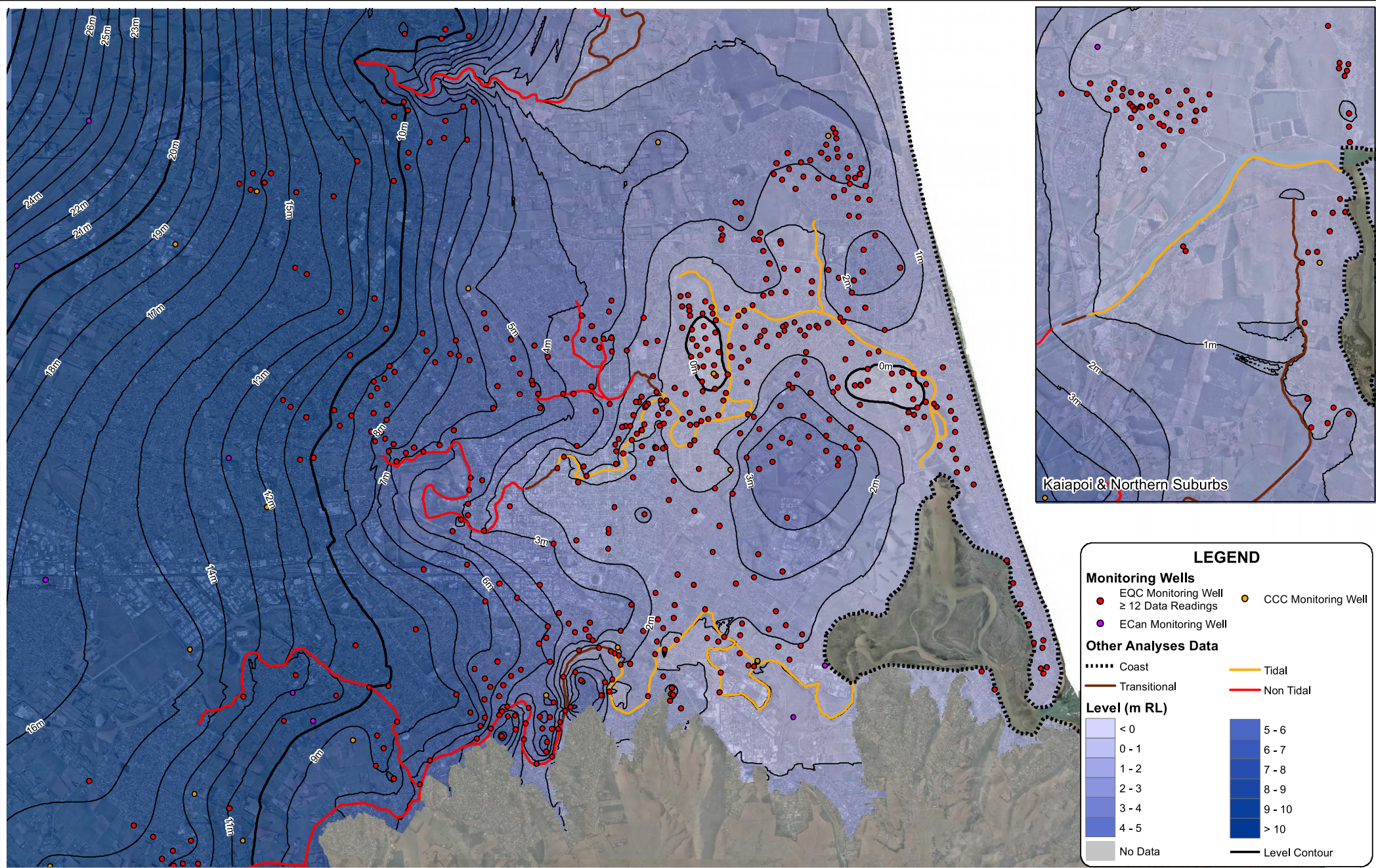


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52020-0200-GWM56		
SCALE (AT A3 SIZE)		
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**CHRISTCHURCH MEDIAN WATER
TABLE ELEVATION REPORT**
Relationship between ground surface level and
median water table level

FIGURE No. Figure F.1

Rev. 0



Notes: Aerial Imagery supplied by New Zealand Aerial Mapping Ltd (2012/02/24).
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A3 SCALE 1:60,000

0 1 2 3 4 (km)



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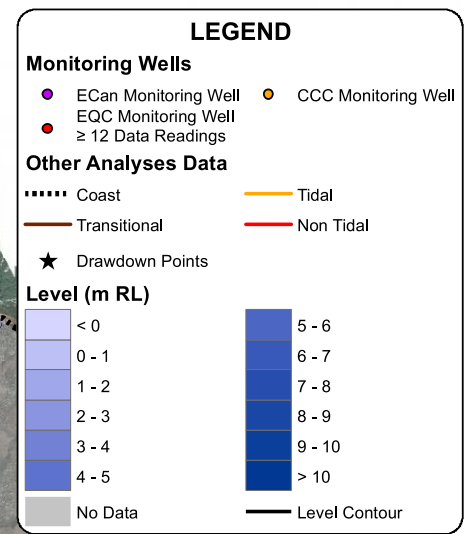
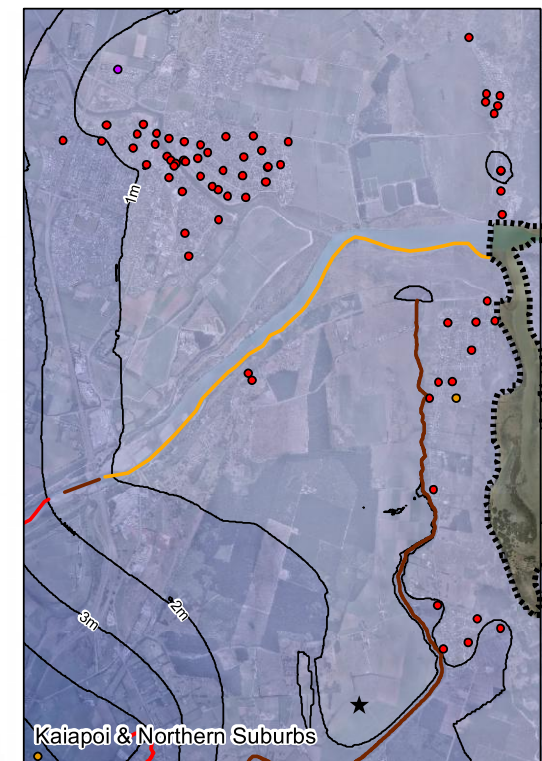
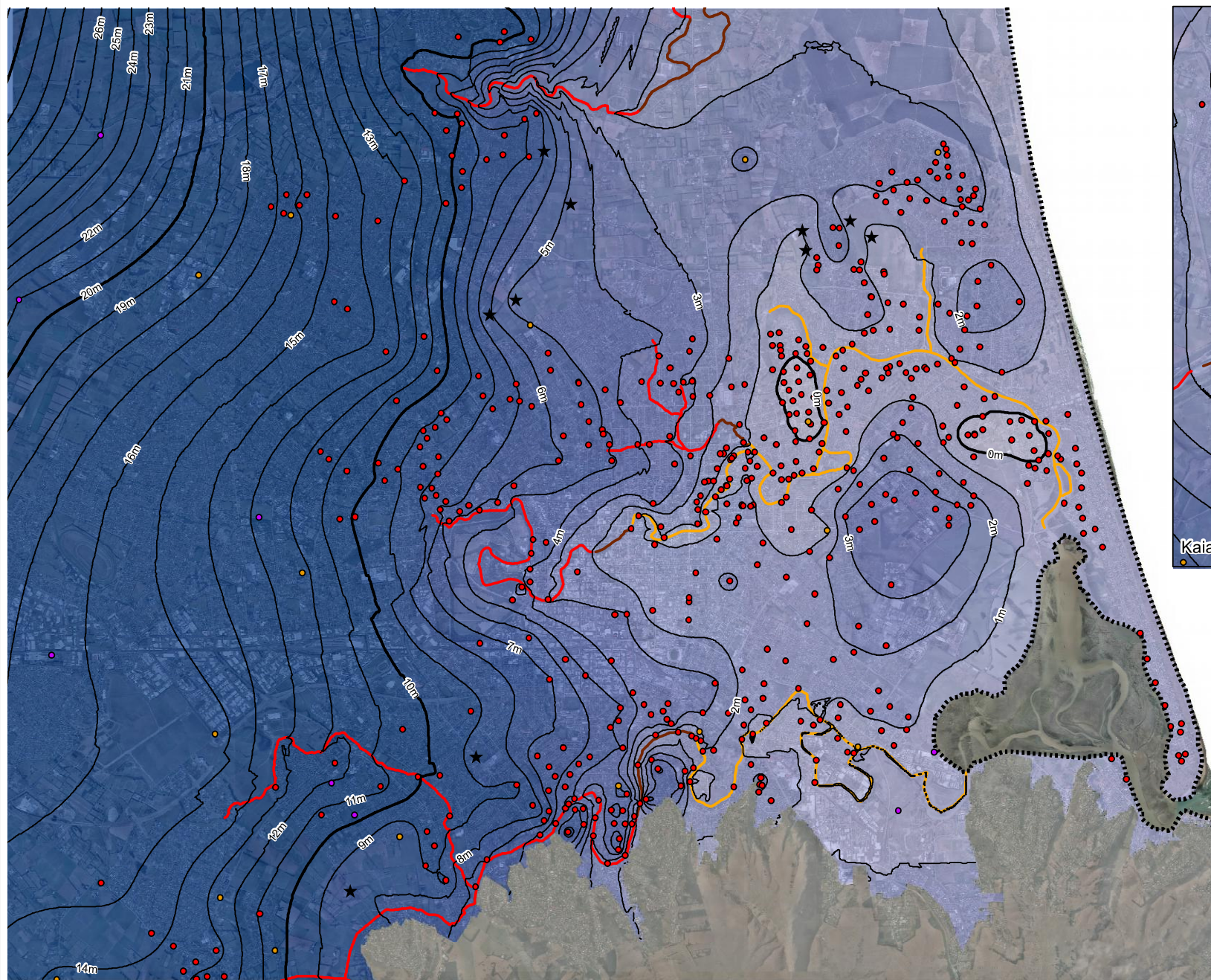
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Ref:	52020-0200	

CHRISTCHURCH MEDIAN WATER TABLE ELEVATION REPORT

Median Water Table Reduced Level (Excluding Drawdown Points)

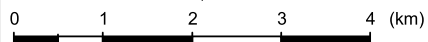
FIGURE No. Figure F.2

Rev.



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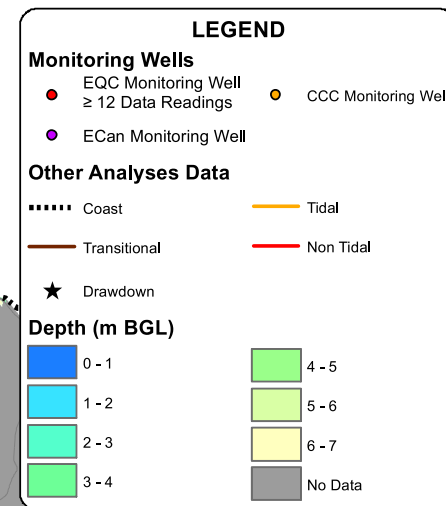
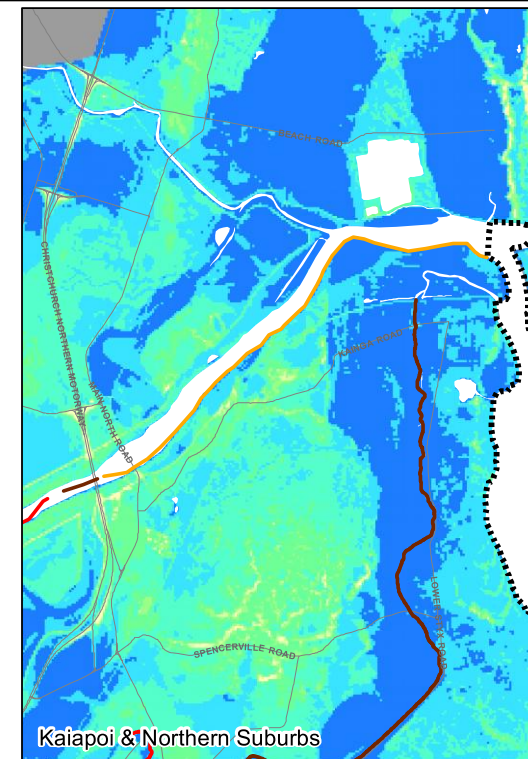
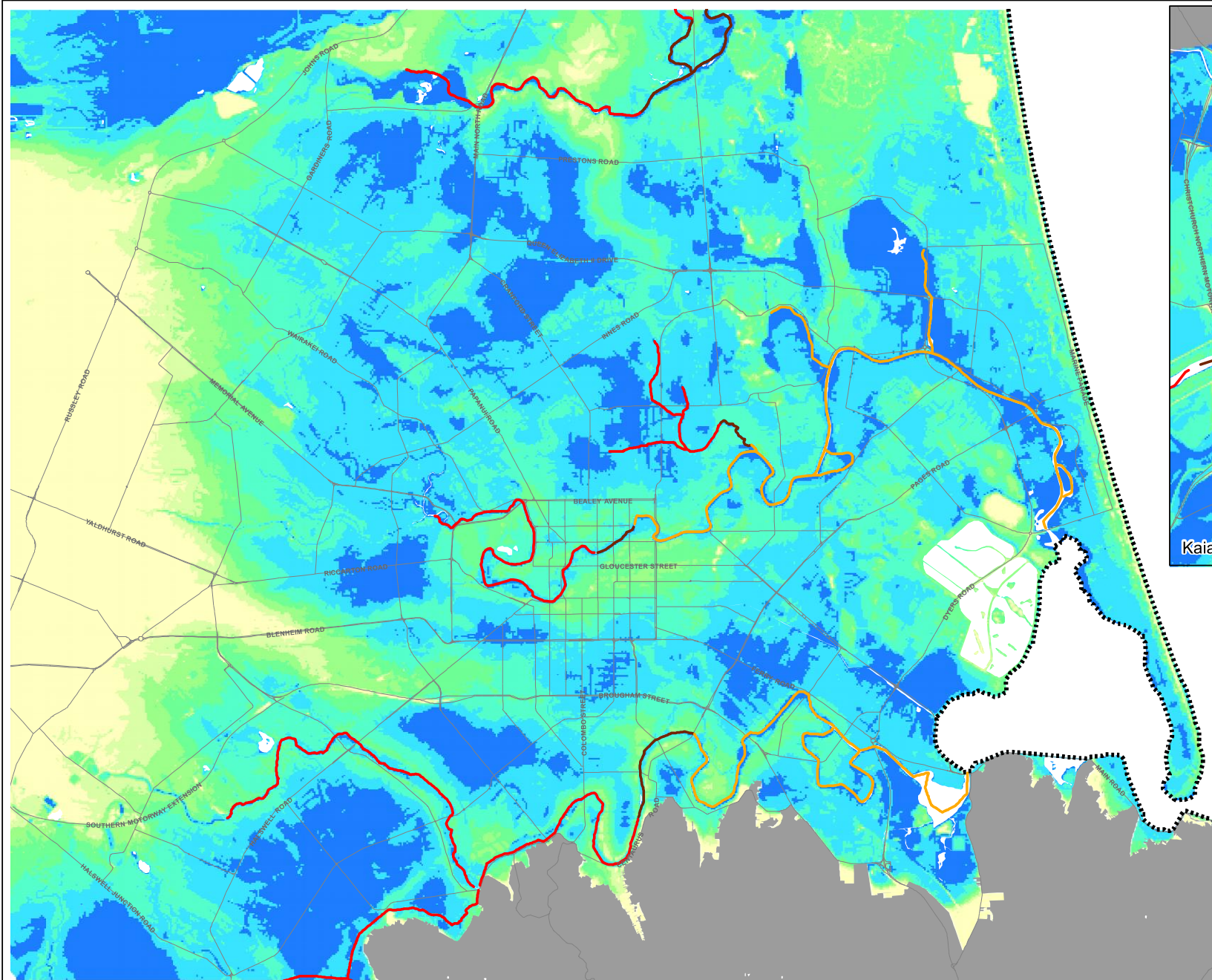


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Prepared by Tonkin & Taylor Ltd		
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CHRISTCHURCH MEDIAN WATER TABLE ELEVATION REPORT Median Water Table Reduced Level

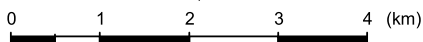
FIGURE No. Figure F.3

Rev.



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A3 SCALE 1:60,000

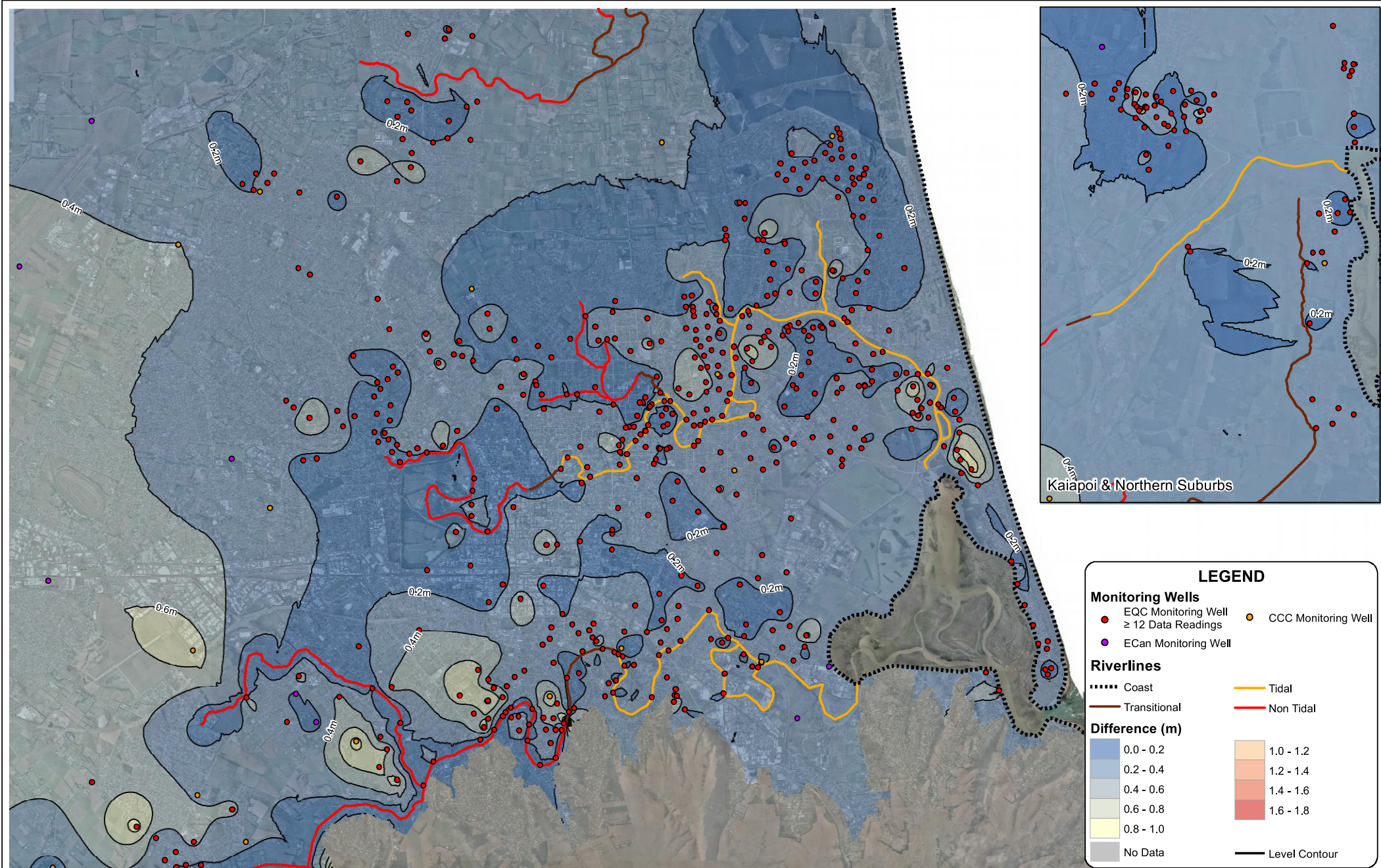


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CHRISTCHURCH MEDIAN WATER TABLE ELEVATION REPORT Depth to Median Water Table

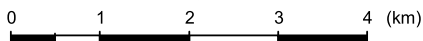
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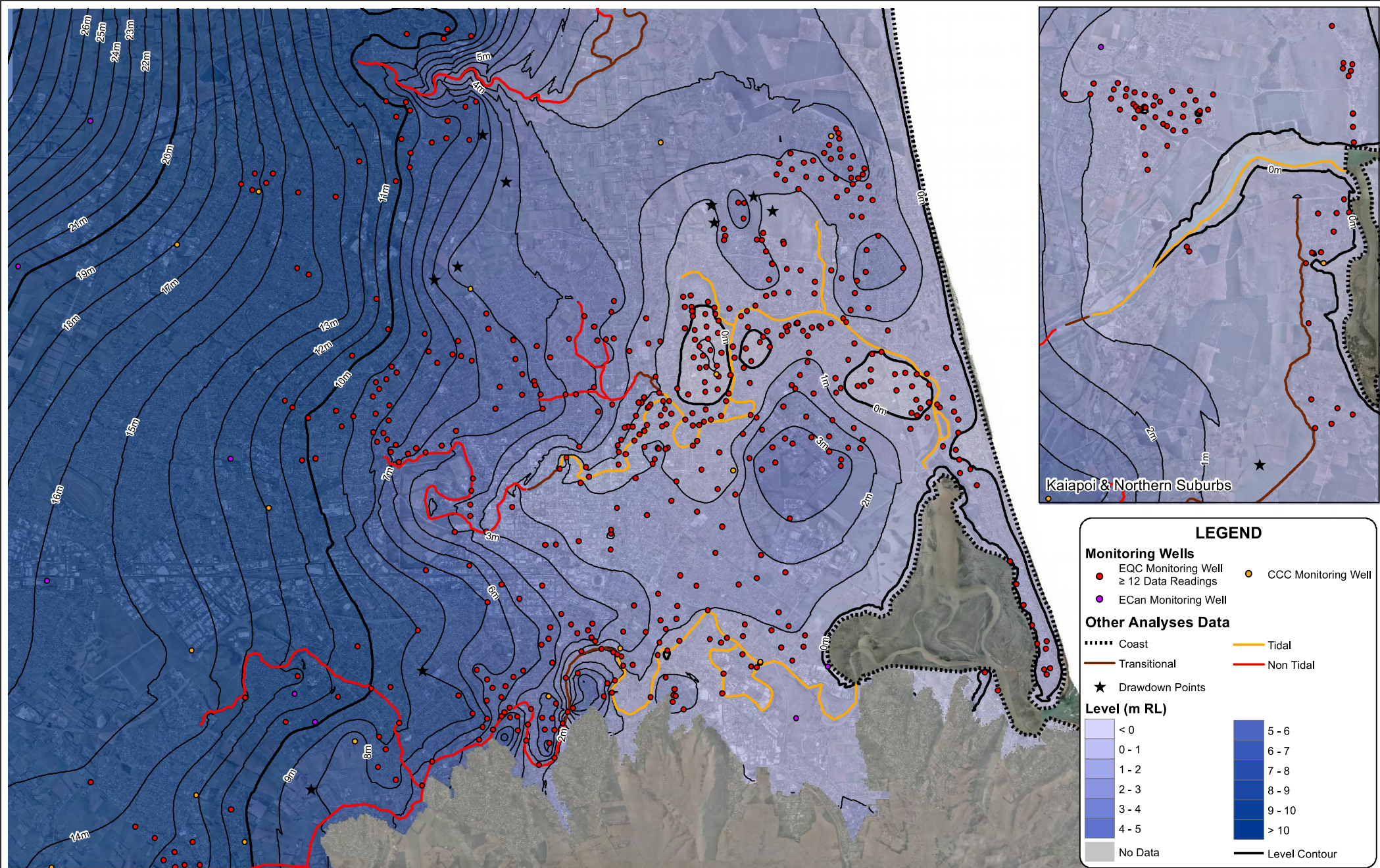


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CHRISTCHURCH MEDIAN WATER TABLE ELEVATION REPORT Difference Between Median and the 15th Percentile Groundwater Elevation

FIGURE No. Figure F.5

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A3 SCALE 1:60,000

0 1 2 3 4 (km)

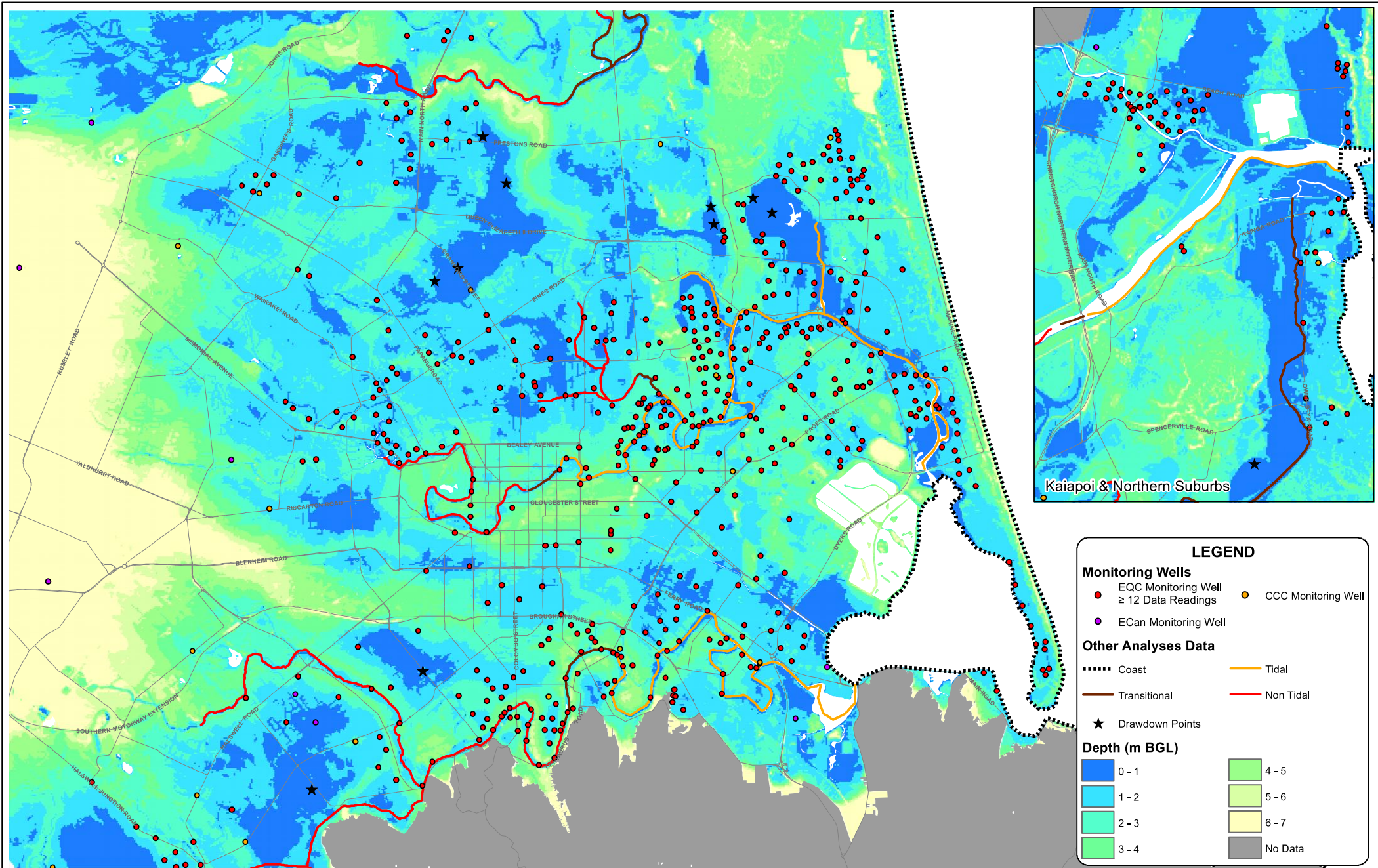


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Prepared by Tonkin & Taylor Ltd		
Ref:	52020-0200	

CHRISTCHURCH MEDIAN WATER TABLE ELEVATION REPORT 15th Percentile Reduced Level

FIGURE No. Figure F.6

Rev.



LEGEND

Monitoring Wells

- EQC Monitoring Well ≥ 12 Data Readings
- CCC Monitoring Well
- ECan Monitoring Well

Other Analyses Data

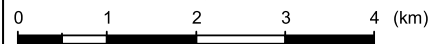
- Coast
- Transitional
- Tidal
- Non Tidal
- Drawdown Points

Depth (m BGL)

0 - 1	4 - 5
1 - 2	5 - 6
2 - 3	6 - 7
3 - 4	No Data

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A3 SCALE 1:60,000

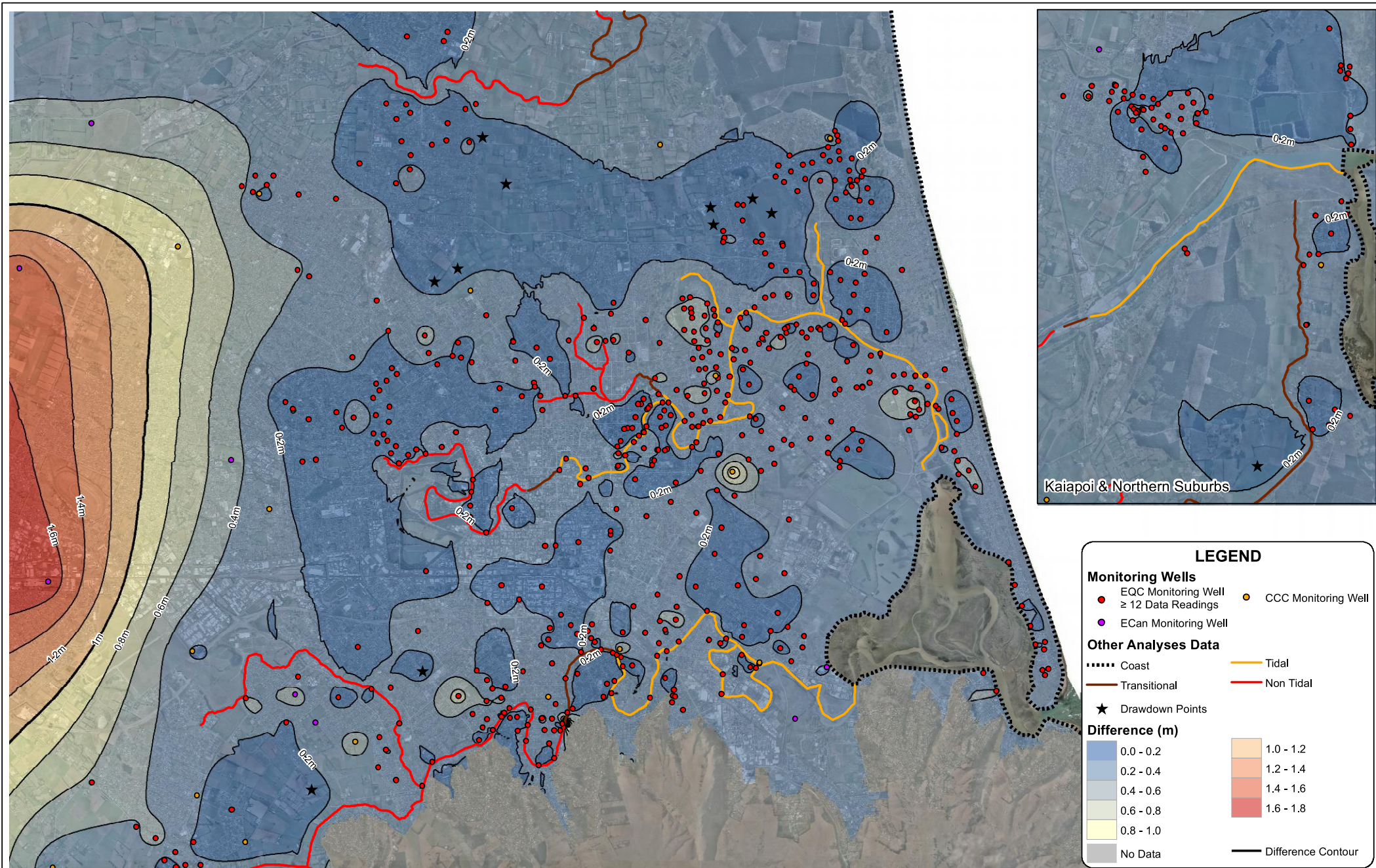


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APPROVED		
ARCFILE 52020-0200-GWM90		
SCALE (AT A3 SIZE) 1:60,000		
PROJECT No. 52020-0200		

CHRISTCHURCH MEDIAN WATER TABLE ELEVATION REPORT Depth to 15th Percentile Water Table

FIGURE No. Figure F.7

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A3 SCALE 1:60,000

0 1 2 3 4 (km)



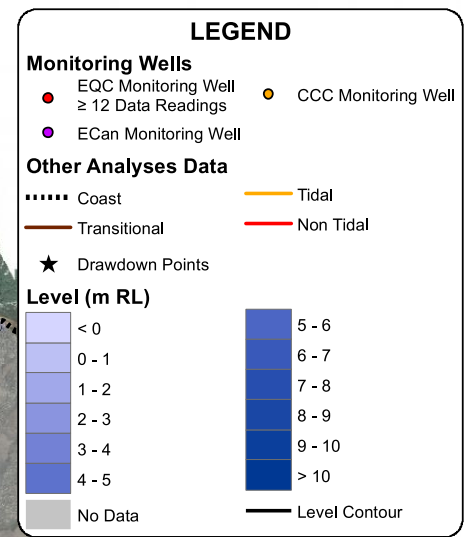
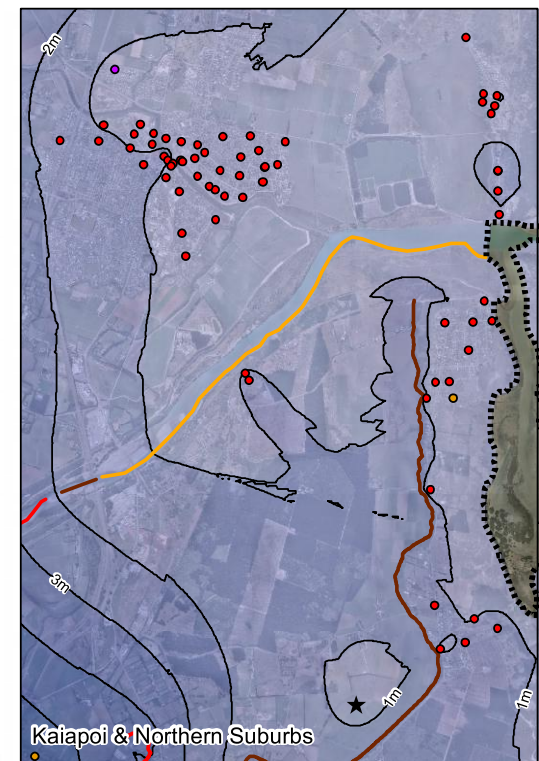
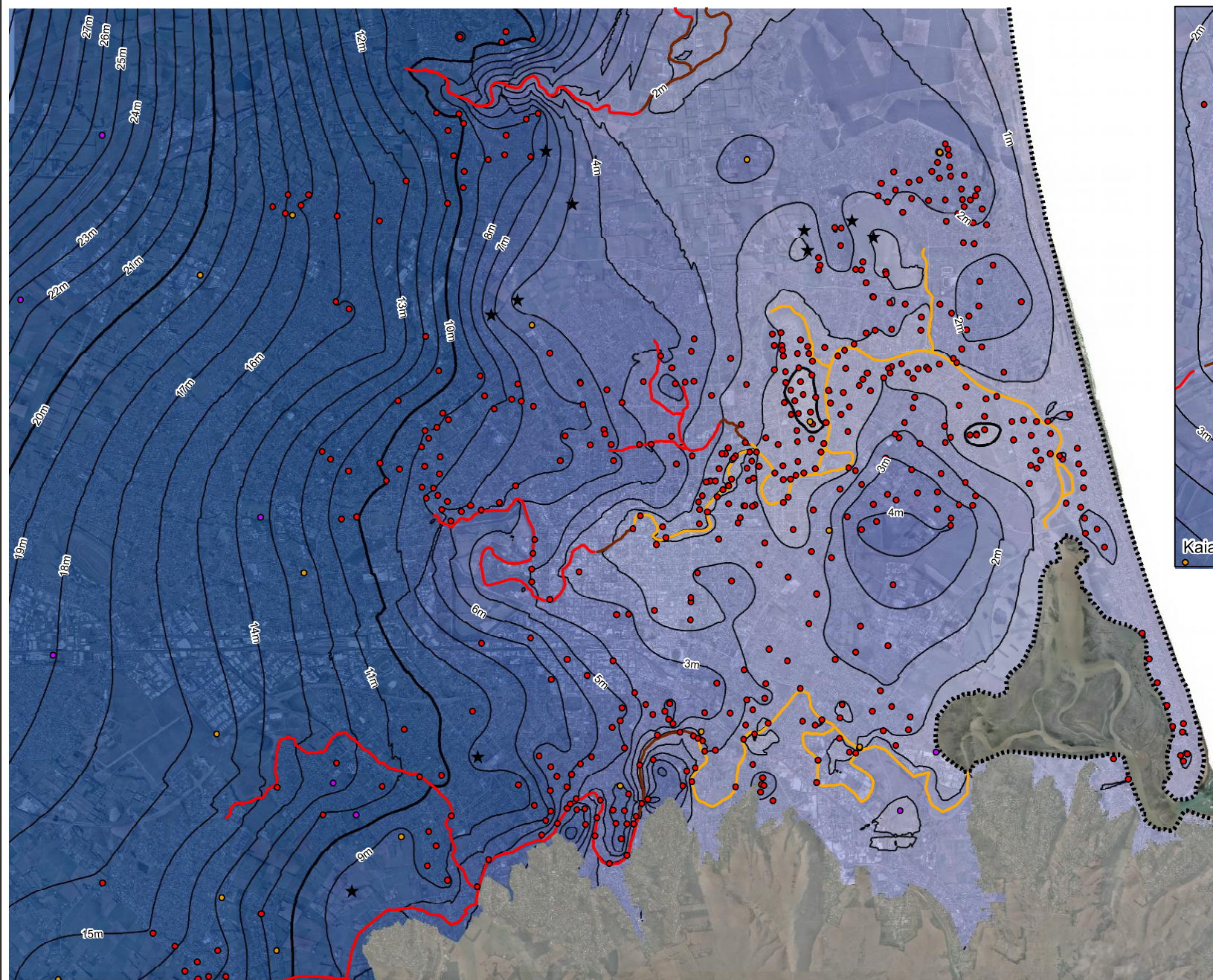
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Ref:	52020-0200	

CHRISTCHURCH MEDIAN WATER TABLE ELEVATION REPORT Difference Between Median and the 85th Percentile Groundwater Elevation

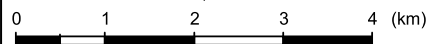
FIGURE No. Figure F.8

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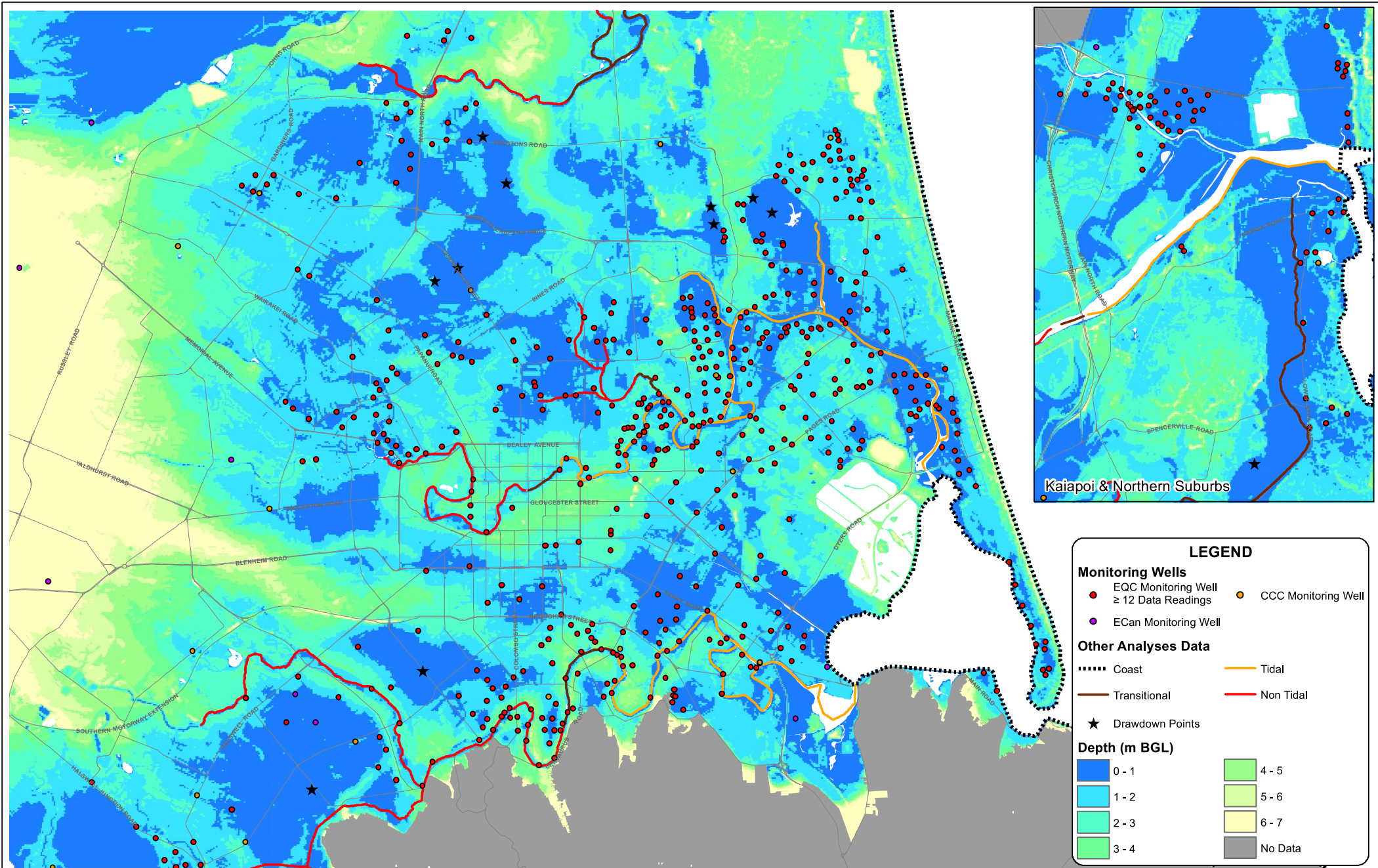


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CHRISTCHURCH MEDIAN WATER TABLE ELEVATION REPORT 85th Percentile Reduced Level

FIGURE No. Figure F.9

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LEGEND

Monitoring Wells

- EQC Monitoring Well ≥ 12 Data Readings
- CCC Monitoring Well
- ECan Monitoring Well

Other Analyses Data

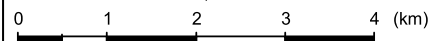
- Coast
- Tidal
- Transitional
- Non Tidal
- ★ Drawdown Points

Depth (m BGL)

0 - 1	4 - 5
1 - 2	5 - 6
2 - 3	6 - 7
3 - 4	No Data

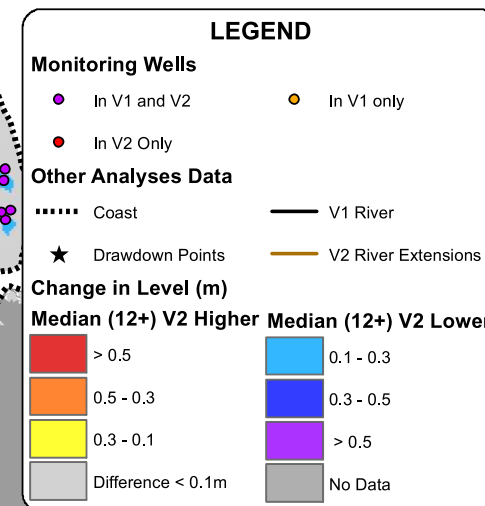
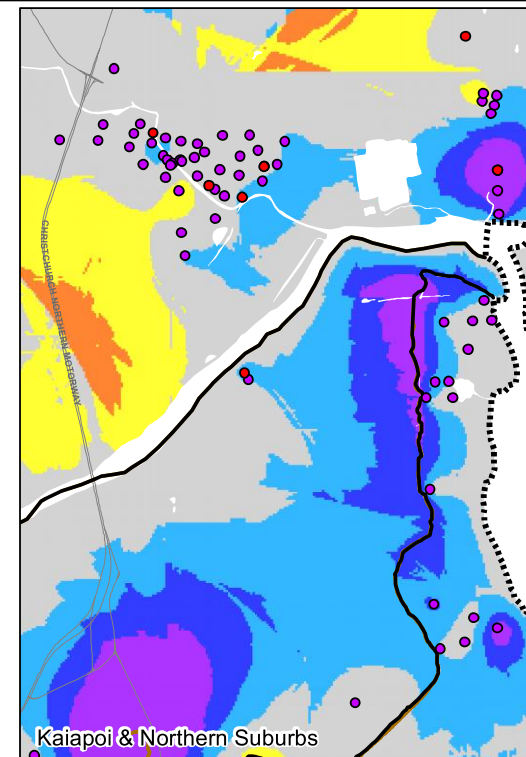
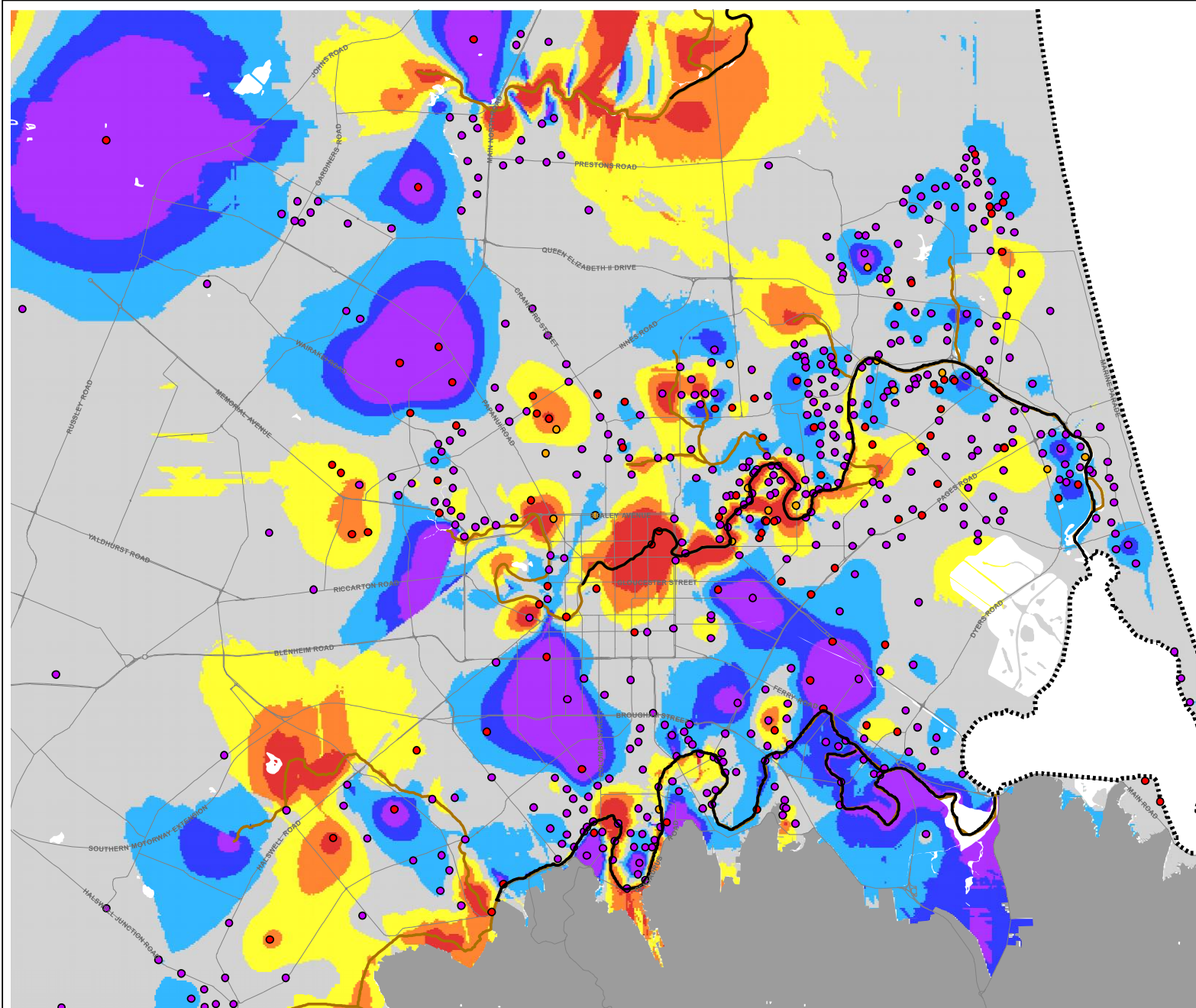
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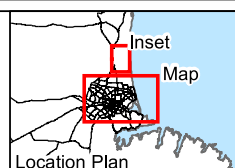
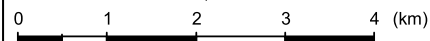
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PROJECT No. 52020-0200		

**CHRISTCHURCH MEDIAN WATER
TABLE ELEVATION REPORT**
 Depth to 85th Percentile Water Table



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A3 SCALE 1:60,000



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SCALE (AT A3 SIZE)	1:60,000	
PROJECT No.	52020-0200	

**CHRISTCHURCH MEDIAN WATER
TABLE ELEVATION REPORT**
Difference between Median (12+) Version 2 (April 2014) and Median (9+) Version 1 (March 2013)

FIGURE No. Figure F.11

Rev.



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