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**HYDROGEOLOGY OF THE COLEAMBALLY
IRRIGATION AREA: A BRIEF DESCRIPTION FOR USE
WITH A GROUNDWATER SIMULATION MODEL.**

By S.A. Prathapar, S. Lawson and D.J. Enever

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1 Introduction

The township of Coleambally is located approximately 150 km west of Wagga Wagga between the Murrumbidgee River and Yanco Creek. The Coleambally Irrigation Area (CIA) comprises an area of approximately 79000 ha. The district is supplied almost exclusively via water diverted from the Murrumbidgee River into the Coleambally main channel. The location of the CIA is depicted in Figure 1.

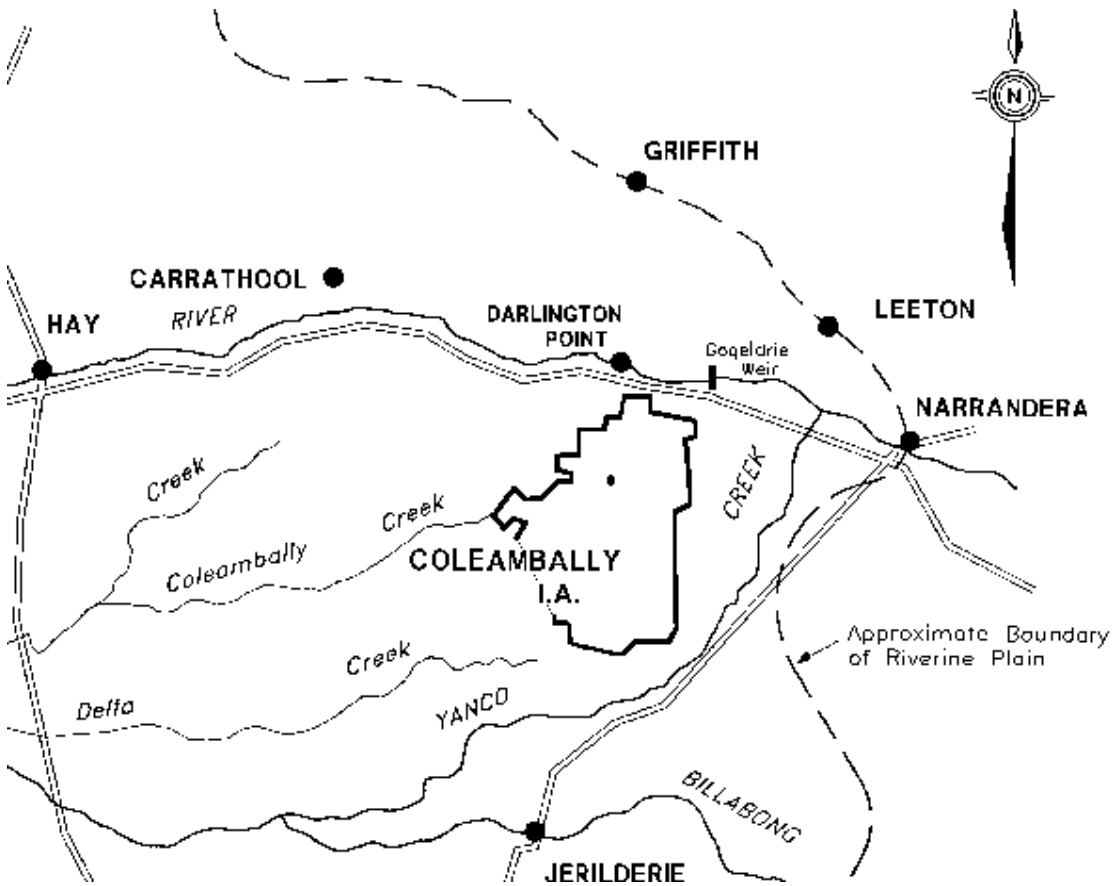
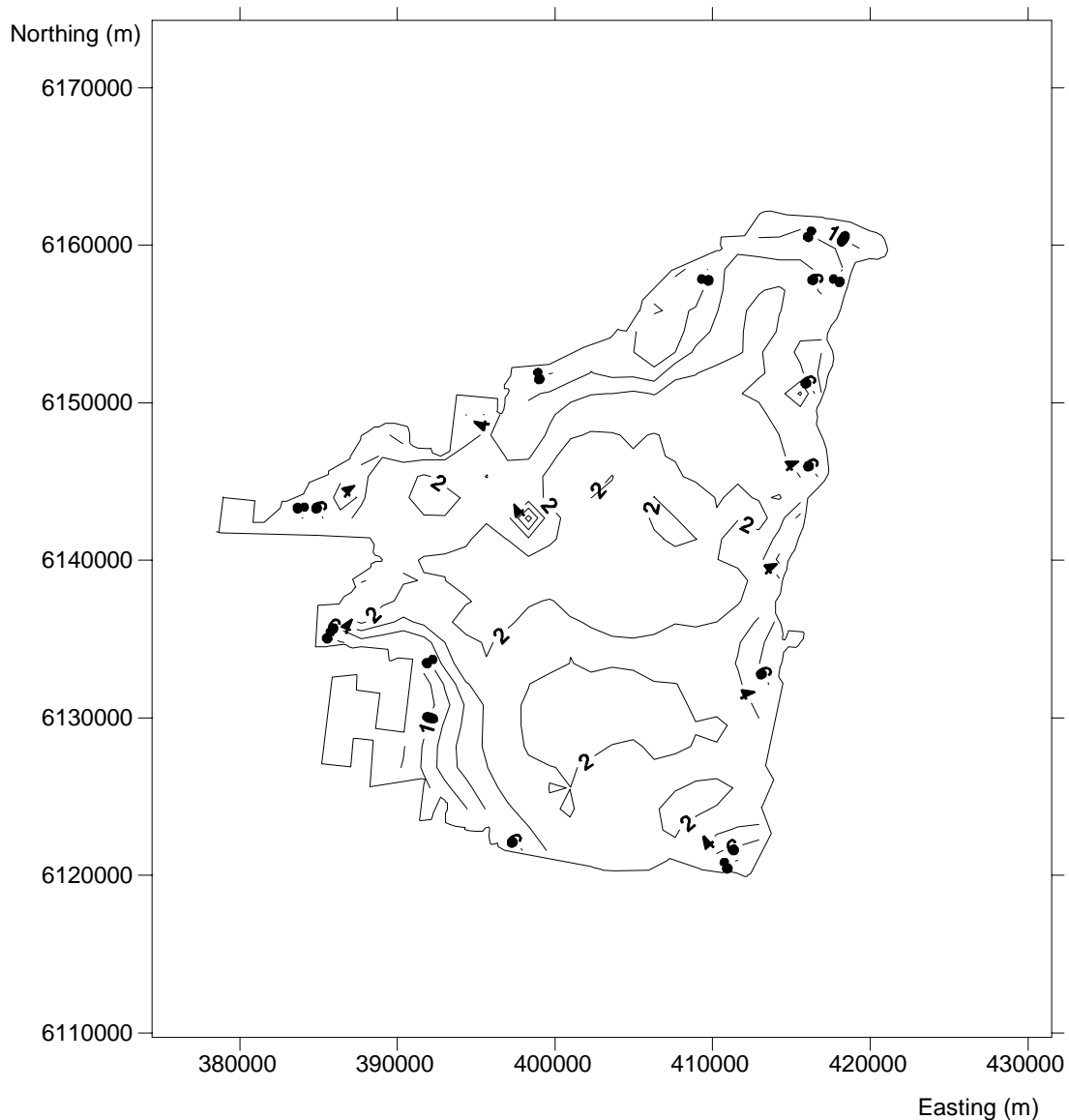


Figure 1. Location of the CIA.

The CIA was the last government controlled area to be developed for irrigation in NSW. The area was originally settled in the 1840's and prior to irrigation was used predominantly as pastoral land. Apart from the long term affects of land clearing on the groundwater system, which are still little understood, groundwater pressures in the CIA can be assumed to have remained relatively

unchanged until the advent of irrigation which was developed between 1960 and 1973. During the first decade of irrigation in the CIA rice farming became the major land use in the district. Rice is a summer crop grown under flooded conditions. Rice farming on unsuitable soil, channel seepage, and irrigation practices in general have been identified as the primary cause of the formation of an extensive groundwater mound underlying the CIA. Figure 2 shows the depth to water table as of September 1994.



**Figure 2. Depth (m) from ground surface to water table in the CIA
September 1994.**

Shallow water tables in the CIA have already led to a loss of agricultural productivity due to salinisation and water logging. The challenge facing natural resource managers is to improve land use practices to preserve the environment whilst maintaining a viable level of productivity. In order to achieve sustainability it is necessary to have a quantitative understanding of the groundwater system.

2 Geology of the Coleambally Irrigation Area.

The CIA is part of the Cainozoic Murray Basin. The pre-Cainozoic bedrock formation underlying the Murray basin was formed by down warping of the Earth's crust due to stretching of Australia's tectonic plate. The basin is largely composed of non-indurated deposits up to 600m thick. It has been subdivided into a number of regions based on geomorphology. One such region is the Riverine Plain located in the south east of the basin. The geomorphic subdivisions of the Murray Basin are shown in Figure 3.

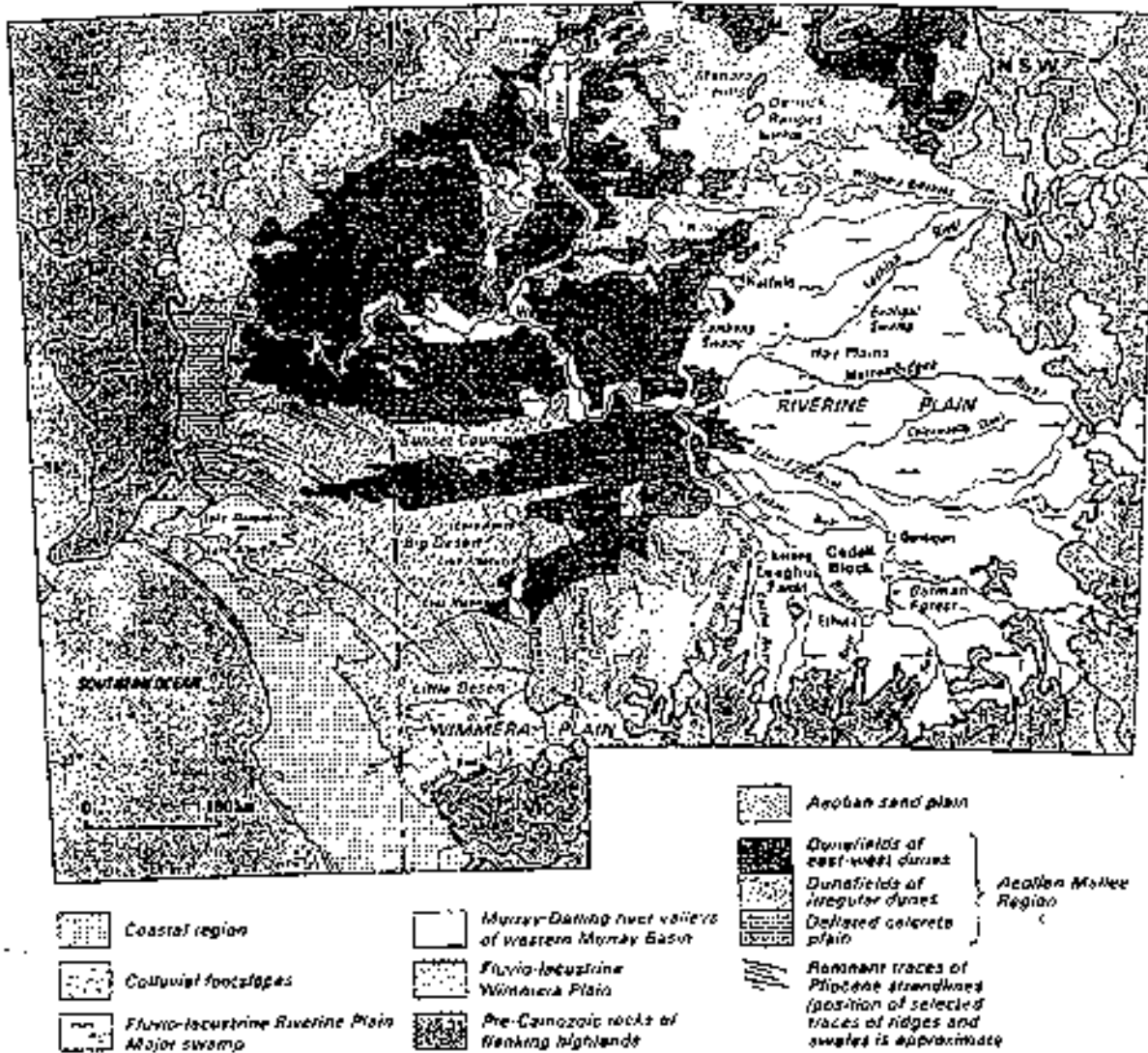


Figure 3. Geomorphic subdivisions of the Murray Basin (After Brown and Stephenson, 1991)

Figure 3. Geomorphic subdivisions of the Murray Basin (After Brown and Stephenson, 1991)

The CIA is located near the central eastern flank of the Riverine Plain in an alluvial fan with its origin located near Narrandera. The highlands to the east and south east of the basin source the rivers which traverse the Riverine Plain. These rivers include the Murray, Murrumbidgee, Lachlan and their tributaries, which generally run in a westerly direction through the plain.

The eastern boundary of the Riverine Plain is formed by outcropping of the pre-Cainozoic basin bedrock in the foothills of the eastern highlands. This outcrop strikes in a north south line intersecting Narrandera. The fluvio-lacustrine sediments overlying the pre-Cainozoic bedrock increase in thickness from the outcrops in a westerly direction.

The non-indurated sediments which underlie the CIA vary in thickness from 100 to 200 m. The sediments overlying the basin bedrock have been deposited over the last 60 million years via fluvial and lacustrine processes. These deposits have been categorised by Brown and Stephenson (1991) based on age and type of deposition.

In the Coleambally region three basic stratigraphic units have currently been identified and mapped. These are the Renmark Group, the Calivil Formation and the Shepparton Formation.

The Renmark Group is the oldest stratigraphic unit and directly overlies the pre-Cainozoic bedrock. It was deposited during the Palaeocene to Middle Miocene ages. The Renmark Group is the most extensive stratigraphic unit of the basin, forming an almost continuous blanket over the basin bedrock. The base of the Renmark Group consists of light brown or quartz sand (Warina Sand), the upper sequence of the group consists of more argillaceous and carbonaceous sediments (Olney Formation).

The Calivil Formation was deposited during the late Miocene to Pliocene ages and consists predominantly of pale grey coarse to granular quartz sand, with lenses of kaolin and carbonaceous clay. The Calivil Formation is the most transmissive aquifer in the CIA, and is the formation which is tapped by groundwater users around the Darlington Point area (see Figure 1.).

The Shepparton Formation was deposited from the Pliocene age up until present day. It consists of a matrix of clay, silt and silty clay, with lenses of fine to coarse sand and gravel. The clay is silty, variegated, mottled and redbrown, yellow or white in colour.

3 Hydrogeological Properties of CIA Stratigraphic Units

The profile of sediments in the region are a highly variable mixture of sand clay and gravel. It is the variability of soil structure and type rather than the age of deposition that determines the soil hydrogeology. In other words the factors which affect soil hydraulic conductivity and storage coefficients are the factors which determine the aquifer aquitard breakdown of the sediments. Because of the high variability of aquifer parameters with depth and location it is impossible to model all aquifers and aquitards individually.

Generally speaking the Renmark Group and Calivil Formation consist of more extensive and continuous sand units than the Shepparton Formation, and therefore are more transmissive than the Shepparton Formation.

The horizontal hydraulic conductivity of the Renmark Group aquifers averages between 10 and 30 m day⁻¹, but values as high as 100 m day⁻¹ have been reported. The Renmark Group and Calivil Formation aquifers both exhibit distinct heterogeneity with much greater horizontal hydraulic conductivity than vertical hydraulic conductivity. Estimates of vertical hydraulic conductivity in

the Renmark Group have been found by applying a ratio of between 1:20 and 1:100.

The Calivil formation was deposited by the ancestral Murray River system which was established after the middle Miocene marine regression. This formation consists largely of coarse grained sediments, making it the most transmissive strata in the region. Sediment particle size and therefore hydraulic conductivity generally decreases from east to west. The value of $6500 \text{ m}^3 \text{ day}^{-1} \text{ m}^{-1}$ has been reported for the transmissivity of the Calivil Formation near Darlington Point. The thickness of the formation is approximately 50 m in this area therefore the horizontal hydraulic conductivity translates to approximately 130 m day^{-1} . Values of 230 m day^{-1} have been reported in the Victorian part of the formation

The hydraulic conductivity of the Shepparton Formation is highly variable. The sandier parts of the formation exhibit values in the range of 25 to 100 m day^{-1} , averaging about 45 to 50 m day^{-1} . Due to the discontinuous nature of sand lenses within the formation the regional values of hydraulic conductivity are much lower, typically in the range of 2 to 3 m day^{-1} . In many places the formation is so clayey that horizontal connection between sand lenses is hampered causing vertical flow to dominate (Evens and Kellett, 1989).

4 Subdivision of the Shepparton Formation.

The Shepparton Formation was deposited by an extensive stream system which exited the eastern highlands near Narrandera. This stream system is now defunct, however where the streams used to exist there is a greater concentration of coarse grained sediment. These sights are referred to as prior streams. Bore hole records from the area show that the frequency of occurrence of prior streams is greater in the upper 20 m of the Shepparton formation. This observation coupled with the observed difference in water

pressures over a similar range of depth has lead to the conclusion that the Shepparton Formation should be treated as two layers when considering the hydrogeology of the region, where the upper part of the Shepparton Formation will generally exhibit a higher occurrence of prior stream formations than the lower part of the Shepparton Formation. These layers will be referred to as the Upper Shepparton Formation and the Lower Shepparton Formation.

Australian Height Datum (AHD) contours of the Upper Shepparton/Lower Shepparton interface were based on interpretation of over 230 bore logs from the NSW Department of Water Resources (DWR) HYDSYS bore log database (now DLWC Groundwater Data System). Bore logs analysed have been listed in Appendix 1.

The criteria applied to these bore logs (reading from the top of the bore log down) in order to identify a depth at which the hydraulic properties of the Shepparton formation had changed were:

1. there exists at least 8 m of sand within an overall 12 m sequence followed by an uninterrupted 5 m sequence of clay, the break in the formation is the top of that clay sequence. This would indicate a high occurrence of sand in the upper part of the formation followed by a confining sequence of clay,
2. there exists at least 8 m of sand within an overall 12 m sequence but that is not interrupted by clay before a depth of 50 m is reached. This indicates a high occurrence of sand in the upper part of the formation, but no confining sequence to indicate a break in the formation,
3. there does not exist at least 8 m of sand within an overall 12 m sequence. This indicates a low occurrence of sand in the upper part of the formation,
4. bedrock is encountered within 50 m of the natural surface. Near the bedrock outcrop east of the irrigation area the division of the deposits becomes less applicable.

5 Results - Contours of Hydrogeologic Features

Based on the identification of individual stratigraphic units as outlined by Brown and Stephenson (1991), contours of the Renmark/Bedrock, Calivil/Renmark, Shepparton/Calivil and ground surface/Shepparton stratigraphic interfaces were developed by Punthakey et al. (1994) using bore logs kept by the DWR. These contour levels have been retained for the current investigation. Contours of the stratigraphic units based on data from Punthakey et al. (1994) are displayed in Figures. 4, 6, 7 and 8. All contours are based on AHD. Data defining a division in the Shepparton Formation was contoured using SURFER (Golden Software, 1994), this set of contours is displayed in Figure 5.

Appendix 2. contains data describing the reduced level in AHD(m) of the interface of the Upper Shepparton Formation and Lower Shepparton Formation. This data was used to construct the contour plot of Figure 5.

Transects displaying the profile of the sub surface geology in the CIA are depicted in Figure 9. and Figure 10.

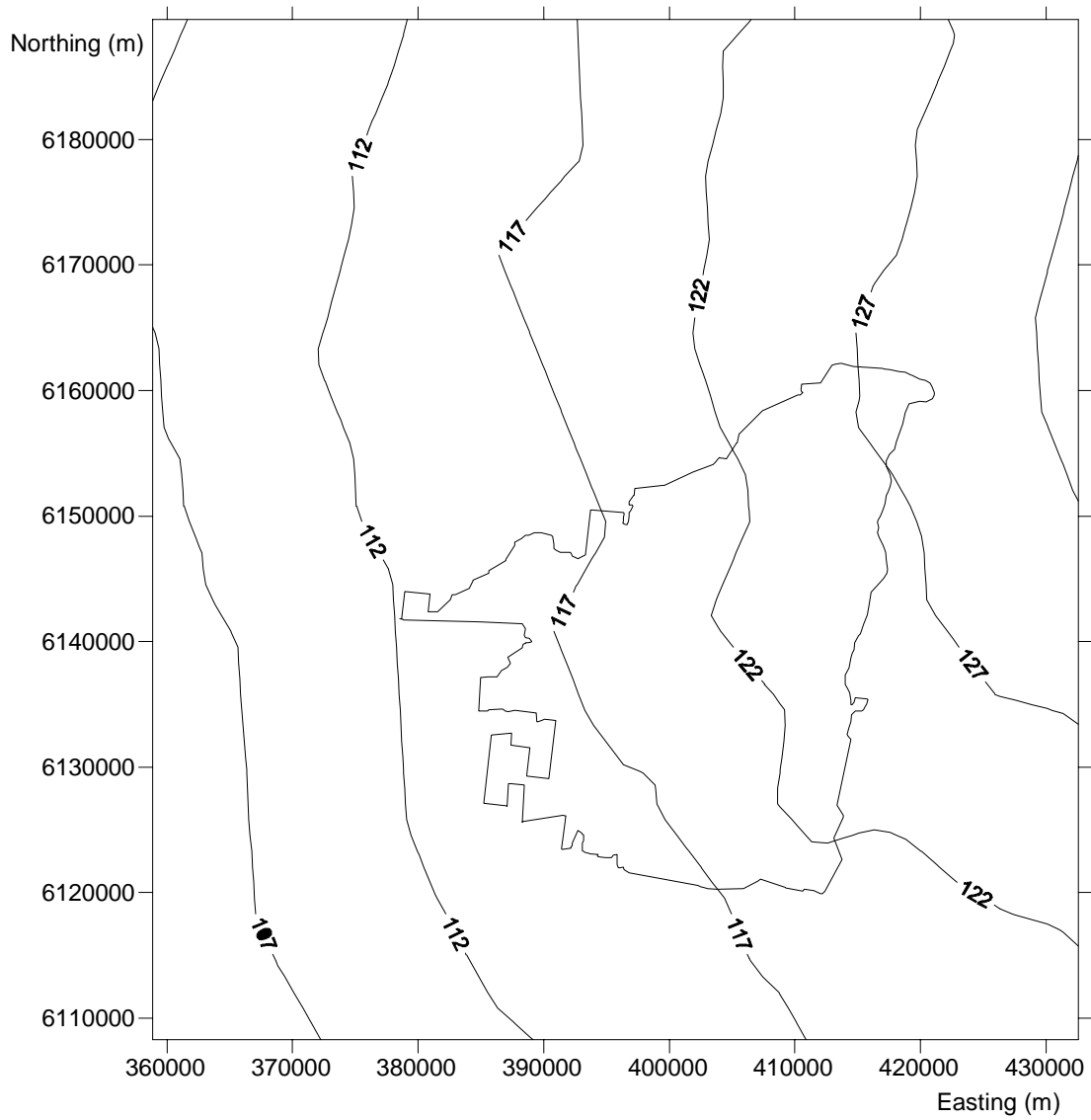


Figure 4. AHD (m) Contours: Natural Surface.

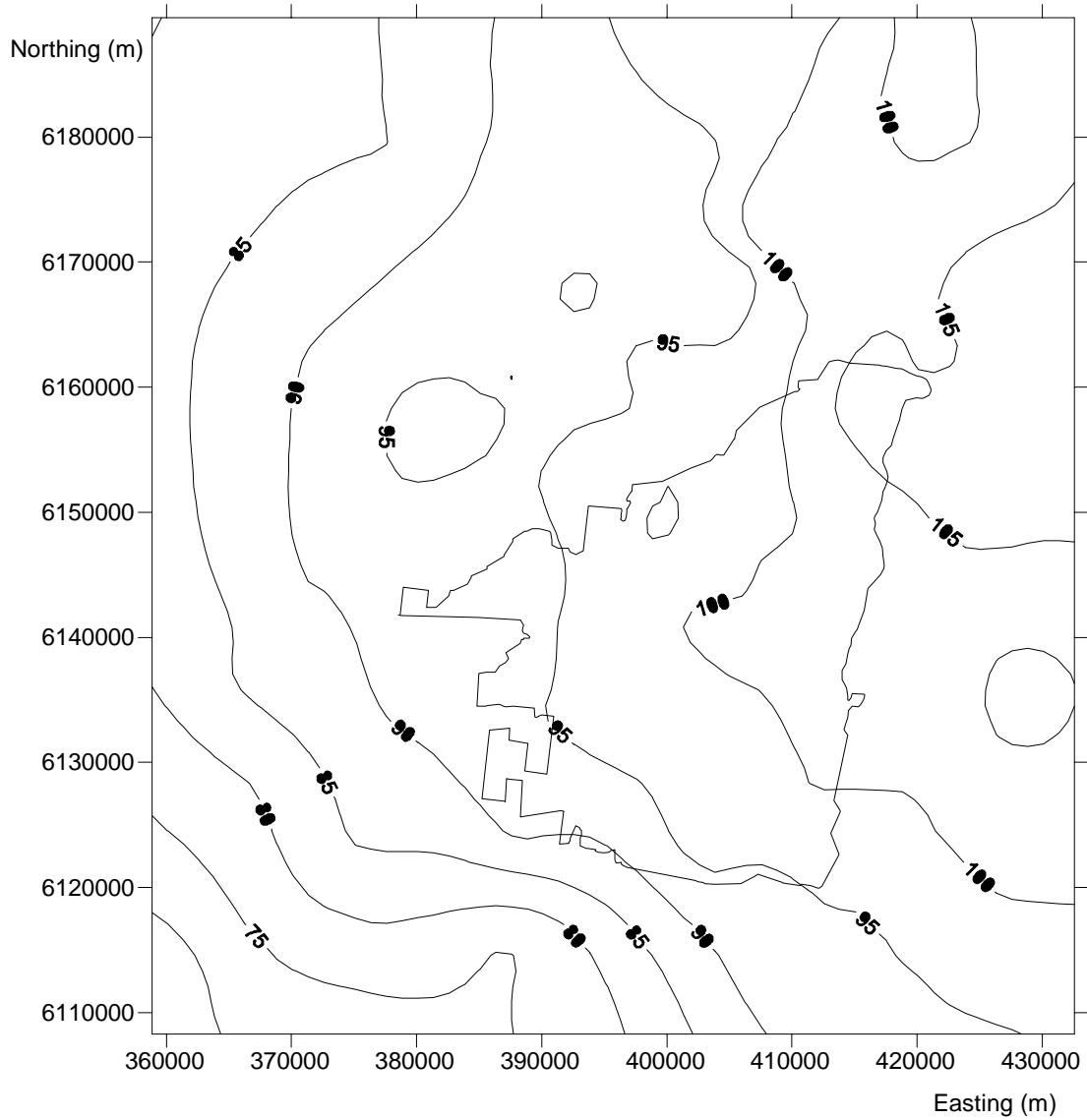


Figure 5. AHD (m) Contours: Top of Lower Shepparton Formation (Bottom of Upper Shepparton Formation).

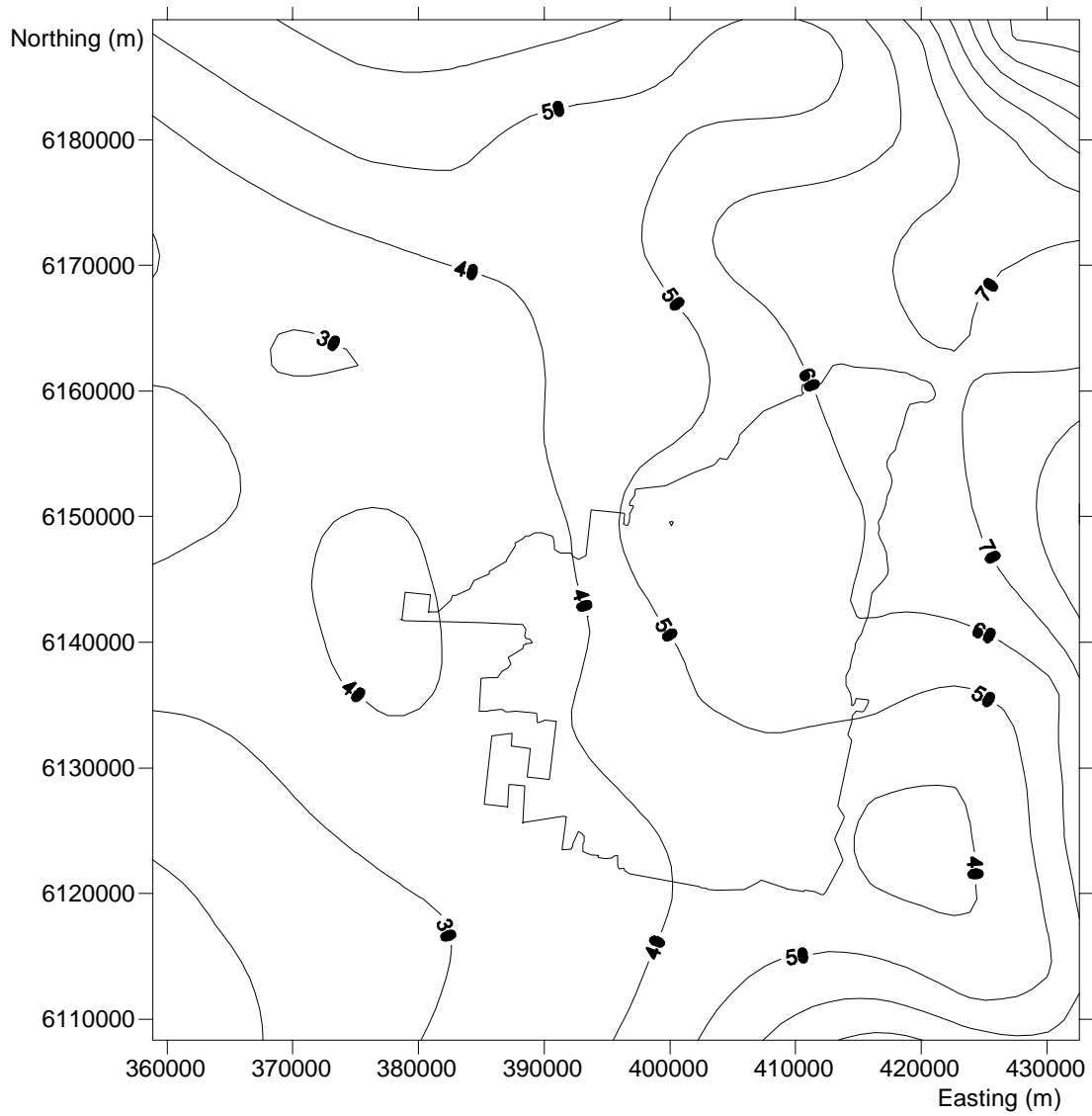


Figure 6. AHD (m) Contours: Top of Calivil Formation (Bottom of Lower Shepparton Formation).

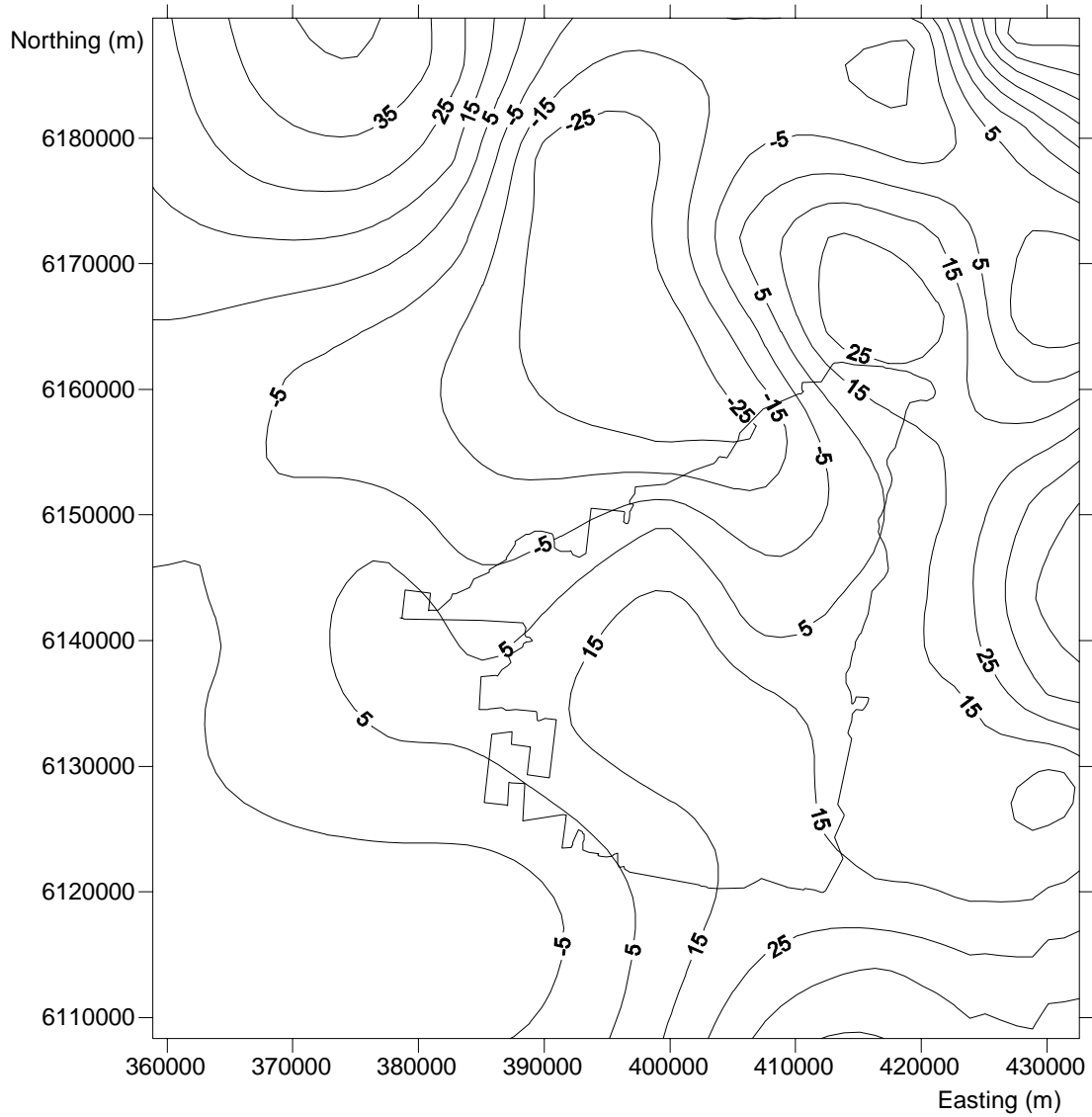


Figure 7. AHD (m) Contours: Top of Renmark Group (Bottom of Calivil Formation).

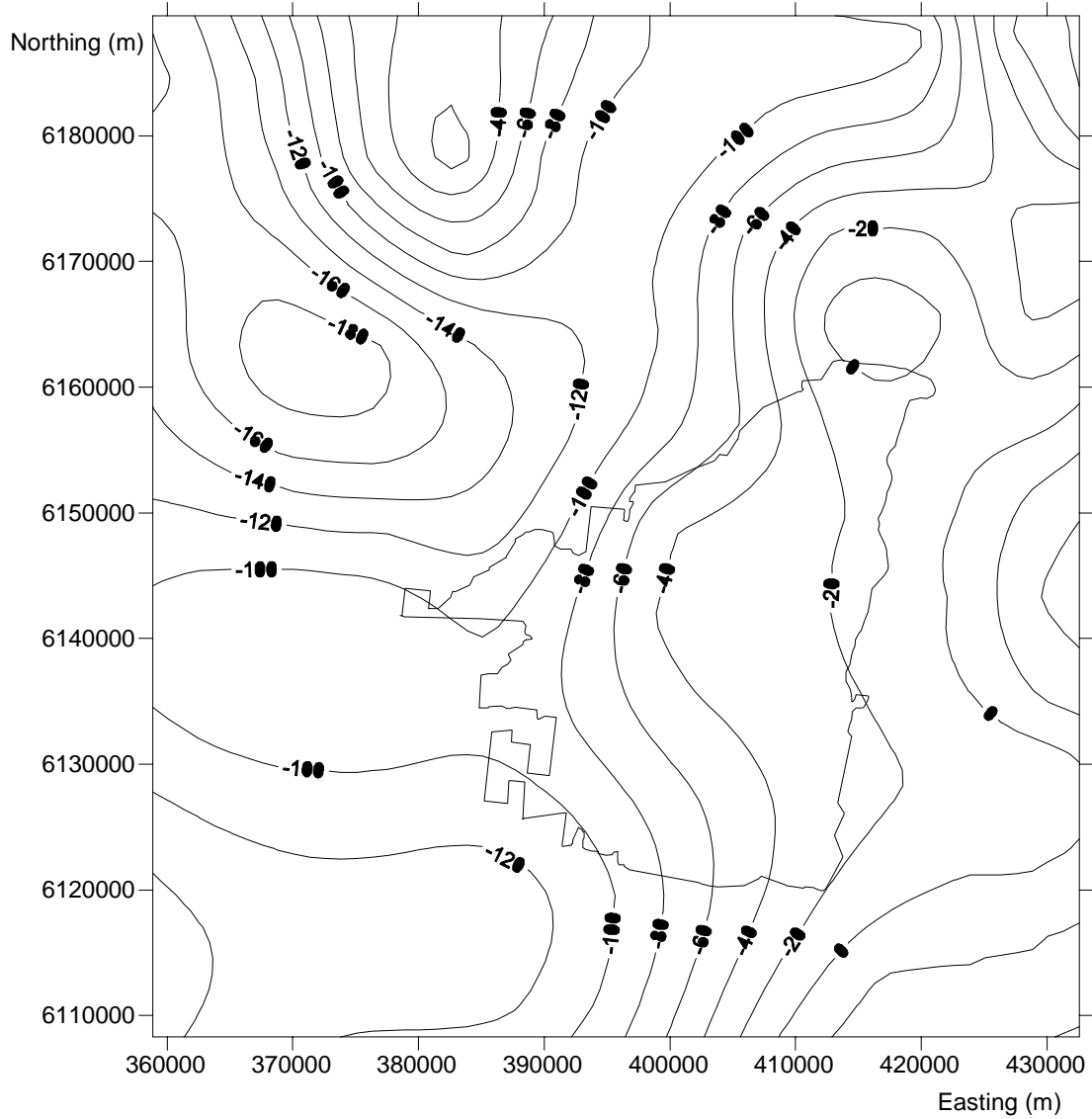


Figure 8. AHD (m) Contours: Bottom of Renmark Group

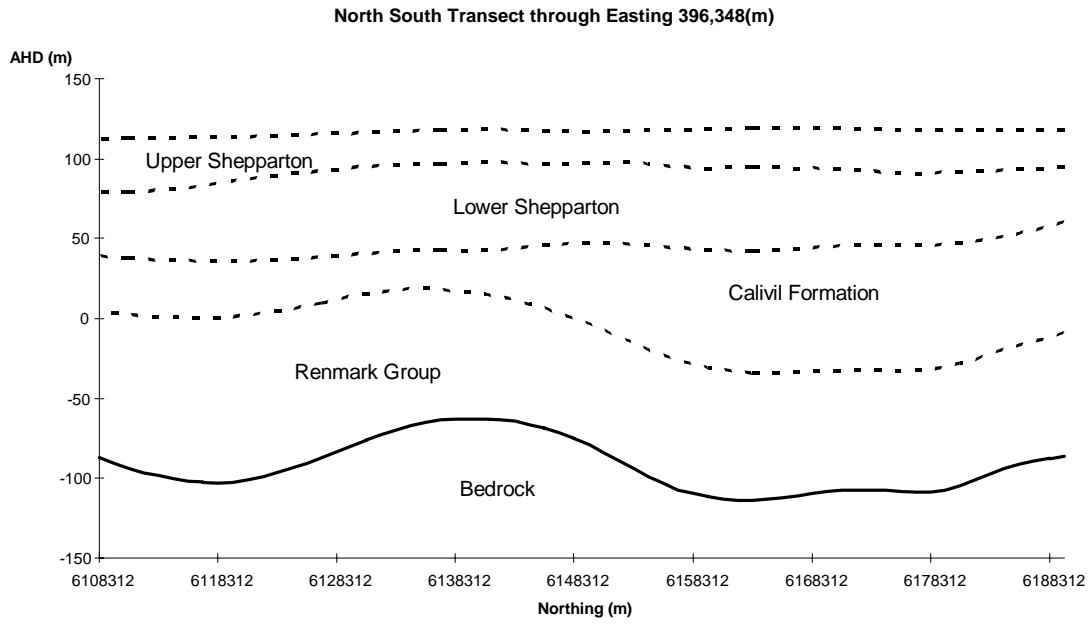


Figure 9. North - South transect of CIA

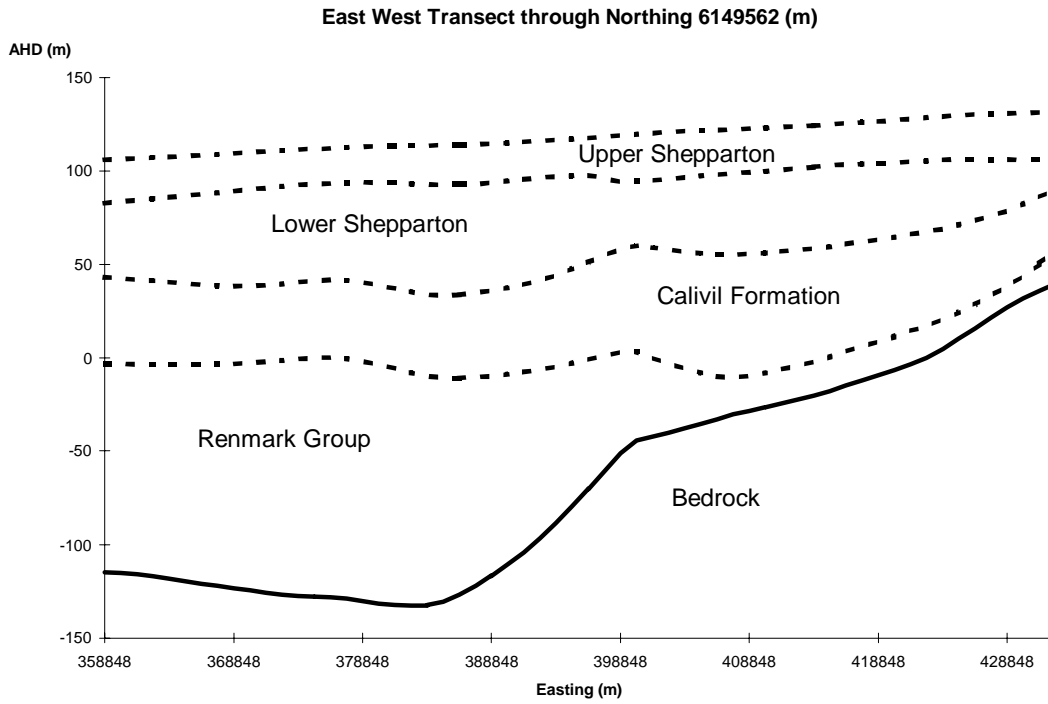


Figure 10. East - West transect of CIA.

6 Conclusion

The CIA hydrogeology has previously been conceptualised as a three layer system including the Renmark Group Calivil Formation and Shepparton Formation. Due to the variation over depth of sand lens occurrence within the Shepparton Formation this unit has been divided into an upper and lower layer for groundwater simulation.

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**Appendix 1. List of NSW DWR bore logs analysed to
determine Upper Shepparton isopachs.**

Bore	Easting	Northing	Drill depth	Map Number	Zone
5693	408300	6112030	55.5	81D1	55
5709	392780	6113340	60.7	81D1	55
5736	373920	6115520	67.4	81C1	55
7122	408320	6123610	54.6	81D1	55
7126	396100	6167025	53.7	70D3	55
7207	365900	6136510	54	70C4	55
7243	386430	6139260	71	70D4	55
7275	391310	6156160	51.2	70D3	55
7333	406780	6145875	68.6	70D4	55
7406	368360	6137020	52.8	70C4	55
7640	425800	6158417	53	71A3	55
7840	399980	6152250	51.2	70D4	55
8587	424717	6179917	55.8	71A3	55
8592	391275	6130260	50.3	70D4	55
8849	407310	6120160	55.9	81D1	55
8878	376890	6119250	57.3	81C1	55
9124	401960	6120240	64.5	81D1	55
10625	376060	6115200	73.5	81C1	55
10708	365560	6150750	59.4	70C4	55
10960	394380	6123370	68.6	81D1	55
10999	380350	6121870	50.3	81C1	55
11038	379760	6121730	54.3	81C1	55
11297	396870	6113280	50.9	81D1	55
11298	394870	6125520	55.2	81D1	55
13779	406650	6115450	52.8	81D1	55
14027	389880	6123610	53.3	81D1	55
15745	388360	6142280	61.3	70D4	55
15871	381600	6137120	61.6	70C4	55
17308	376010	6117500	55.5	81C1	55
17615	371400	6126940	63.4	70C4	55
17636	383560	6140180	50.6	70C4	55
17783	363930	6126540	50.3	70C4	55
17804	383040	6125240	66.5	81C1	55
19389	386520	6139370	63.4	70D4	55
19472	388520	6120580	56.4	81D1	55
19899	391070	6115440	65.5	81D1	55
20030	370010	6138525	67.1	70C4	55
21647	414370	6123360	61.3	80A1	55
21654	417450	6115840	84.1	80A1	55
22304	388220	6108330	50.9	81D1	55
10625	376060	6115200	76.2	81C1	55
22737	416387	6136717	53.7	71A4	55
23038	371650	6117270	53.7	81C1	55
23643	377875	6141190	50.3	70C4	55
23886	406320	6124010	56.7	81D1	55
25586	416175	6123140	59.5	80A1	55
26747	389525	6186520	67.1	70D2	55
27888	403300	6178100	105.2	70D3	55
27889	402730	6180910	99.1	70D3	55

28853	364250	6132680	190.5	70C4	55
29179	404050	6160150	140.2	70D3	55
29217	384900	6160950	133.5	70C3	55
29259	420467	6179187	147.8	71A3	55
29313	403040	6176350	167	70D3	55
29512	406050	6160610	137.2	70D3	55
30282	429180	6161900	138.6	71A3	55
30323	386860	6115260	362.7	81D1	55
30341	404500	6167760	134.1	70D3	55
30348	383100	6176150	140.2	70C3	55
30350	373675	6162110	207.2	70C3	55
30489	416487	6167017	132.3	71A3	55
30716	408010	6173670	137	70D3	55
30920	397350	6147450	135	70D4	55
30920	397350	6147450	122	70D4	55
30946	367800	6126820	137	70C4	55
30959	367000	6128425	184	70C4	55
31029	415050	6116950	53.7	80A1	55
31060	411325	6167087	129.2	71A3	55
31073	403090	6184675	142.7	70D2	55
31310	407560	6171400	55.9	70D3	55
31703	428217	6126717	59.4	71A4	55
31722	403100	6178000	121.9	70D3	55
31723	403700	6179000	121.9	70D3	55
31724	404030	6180750	120.4	70D3	55
31725	402765	6180210	121.3	70D3	55
31769	384725	6158925	129.5	70C3	55
32076	379820	6116580	74.4	81C1	55
32363	386350	6163240	136.3	70D3	55
32377	398480	6129420	72.5	70D4	55
32507	385620	6160050	123.1	70D3	55
32915	384100	6135290	67	70C4	55
33027	402825	6130460	66.5	70D4	55
33262	386190	6161660	130.2	70D3	55
33359	400750	6123380	91.4	81D1	55
33764	397640	6147890	73.2	70D4	55
33765	398725	6148705	65.5	70D4	55
34248	397705	6148130	105.2	70D4	55
35933	410865	6168140	121.9	71A3	55
36040	385190	6141650	348	70C4	55
36275	373750	6162100	334.7	70C3	55
36358	391260	6189220	188	70D2	55
36359	405090	6187000	187	70D2	55
36366	390550	6177750	221	70D3	55
36367	423087	6171525	130	71A3	55
36368	432075	6172700	165	71B3	55
36372	404480	6154900	214	70D3	55
36373	391230	6150360	249	70D4	55
36396	424080	6178900	172	71A3	55
36570	403400	6151300	115	70D4	55
36571	410737	6151665	115	71A4	55
36572	410325	6138965	120	71A4	55

36573	408650	6127825	110	70D4	55
36574	399850	6142325	110	70D4	55
36575	421600	6189170	105	71A2	55
36770	405830	6145925	212.6	70D4	55
36771	406770	6145800	181.5	70D4	55
36773	409745	6144275	192	71A4	55
36774	410480	6143780	192	71A4	55
37306	409367	6167830	125.6	71A3	55
37308	393360	6168000	161.5	70D3	55
37309	393300	6162000	140.2	70D3	55
33262	386190	6161660	110.3	70D3	55
37495	411300	6167010	129.2	71A3	55
37813	403240	6187250	91.4	70D2	55
37862	408125	6173670	122.8	70D3	55
37939	389440	6160600	88.4	70D3	55
37938	389550	6161520	153	70D3	55
37939	389440	6160600	150.9	70D3	55
39270	367230	6127410	69.6	70C4	55
39372	411360	6165245	90	71A3	55
40596	424100	6178875	172	71A3	55
41420	432200	6173250	63.1	71B3	55
41423	422985	6170985	50.6	71A3	55
42512	408880	6183112	121.9	71A2	55
42610	380880	6157115	180.4	70C3	55
49494	378500	6150450	99.1	70C4	55
42757	405450	6165975	140.5	70D3	55
28853	364250	6132680	161.8	70C4	55
42853	415417	6144400	102.1	71A4	55
42890	386640	6139460	96.3	70D4	55
42908	415415	6144487	101.2	71A4	55
42942	422117	6144887	154.5	71A4	55
43915	386880	6140375	61.3	70D4	55
45083	426520	6147800	54.9	71A4	55
45178	427117	6148880	54.9	71A4	55
46896	413587	6147000	59.5	71A4	55
46982	406060	6147740	71.3	70D4	55
47010	400510	6156700	140.2	70D3	55
47191	401450	6166400	128	70D3	55
47207	402700	6163510	125	70D3	55
47328	378260	6140710	152.4	70C4	55
47363	405290	6163000	140.5	70D3	55
47405	399930	6167890	139	70D3	55
47424	385480	6157960	142.3	70C3	55
47431	399110	6160575	137.8	70D3	55
47469	398110	6156170	146.3	70D3	55
47497	398550	6162120	140.2	70D3	55
47505	384260	6147670	73.2	70C4	55
47553	383220	6162300	178	70C3	55
47719	368325	6128900	104.2	70C4	55
47854	383600	6131265	70.4	70C4	55
48268	428750	6123265	62.5	80A1	55
48396	403860	6148665	51.5	70D4	55

48696	411837	6159167	52	71A3	55
49139	360240	6112440	144	81B1	55
49494	378500	6150450	58.7	70C4	55
49762	418987	6160275	61.3	71A3	55
49847	426580	6121640	96	80A1	55
49848	423160	6119800	93	80A1	55
49850	424140	6109500	84.1	80A1	55
50184	374380	6123570	77.7	81C1	55
50645	402560	6169835	70	70D3	55
50672	380850	6140500	58.6	70C4	55
50809	405610	6143640	54.7	70D4	55
47854	383600	6131265	88.4	70C4	55
51060	367440	6115260	50.7	81C1	55
51131	401025	6136770	58	70D4	55
51225	405720	6139860	63	70D4	55
52301	417025	6116575	51.8	80A1	55
52403	426835	6140825	53.4	71A4	55
52437	405950	6167800	52.9	70D3	55
52475	365800	6160000	54.3	70C3	55
52477	361950	6164900	66	70B3	55
53367	383380	6163760	156.7	70C3	55
53405	420460	6179180	118.9	71A3	55
53406	423480	6176500	129.5	71A3	55
53434	398290	6135480	106	70D4	55
53452	388480	6165710	159	70D3	55
53546	422000	6140220	129.9	71A4	55
53559	422750	6141065	141	71A4	55
53560	393040	6160610	154	70D3	55
53561	399640	6163510	149	70D3	55
53678	404300	6169550	145	70D3	55
53688	392040	6151425	169	70D4	55
53755	386200	6163000	174	70D3	55
54779	402820	6147860	69	70D4	55
54830	368170	6128680	120	70C4	55
54904	428080	6135900	52.4	71A4	55
54905	425490	6143660	62.9	71A4	55
55189	413560	6147060	55	71A4	55
55195	411240	6167450	53	71A3	55
55577	380650	6131700	122.8	70C4	55
55642	364903	6120714	61.3	81C1	55
56910	406050	6108750	59.7	81D1	55
57774	398840	6178250	163	70D3	55
57825	409156	6169343	149	71A3	55
57868	419950	6182062	137.3	71A2	55
57869	392715	6186637	155	70D2	55
57871	390475	6186000	173	70D2	55
57874	395025	6176735	137	70D3	55
57879	395050	6153250	172	70D4	55
57880	395060	6153360	164	70D4	55
57885	386750	6159375	231	70D3	55
57979	401315	6175840	168	70D3	55
58731	432580	6166465	64	71B3	55

59008	421760	6175150	136.9	71A3	55
59085	392950	6158690	163	70D3	55
59113	427410	6161865	128	71A3	55
59198	423975	6178770	137.6	71A3	55
59200	390775	6150260	140	70D4	55
59201	413025	6167090	133	71A3	55
59225	387420	6115600	144.8	81D1	55
60022	391715	6171500	153.9	70D3	55
60041	399440	6169130	128	70D3	55
60157	407125	6171980	63	70D3	55
60265	385840	6159820	232	70D3	55
60321	379050	6178515	185	70C3	55
60346	389515	6155885	147.9	70D3	55
60390	394220	6155325	103.7	70D3	55
60412	389970	6152240	160	70D4	55
33262	386190	6161660	192	70D3	55
53755	386200	6163000	163	70D3	55
60954	361020	6110650	73.2	81B1	55
62049	387935	6124750	192	81D1	55
62115	409880	6161620	108.5	71A3	55
62150	410975	6168150	149	71A3	55
62307	403250	6166140	147	70D3	55
62337	410715	6163940	108.8	71A3	55
62337	410715	6163940	116.4	71A3	55
62338	406300	6170300	147	70D3	55
62339	406080	6169000	160	70D3	55
62421	375360	6128610	168	70C4	55
63047	367715	6123575	176	81C1	55
63076	378450	6167090	206	70C3	55
63084	406900	6162190	115.2	70D3	55
63528	367200	6109975	52.4	81C1	55
64678	400680	6163815	82.3	70D3	55

**Appendix 2. Reduced level of Upper/Lower
Shepparton interface.**

AHD (m) of Uper Shepparton Lower Shepparton Interface.

Easting (m)

Northing (m)

	358848	360098	361348	362598	363848	365098	366348
6189562	79.78	80.12	80.46	80.8	81.13	81.47	81.8
6188312	79.95	80.29	80.63	80.96	81.29	81.61	81.93
6187062	80.13	80.47	80.8	81.13	81.45	81.77	82.08
6185812	80.33	80.66	80.99	81.31	81.62	81.93	82.23
6184562	80.53	80.86	81.19	81.51	81.81	82.11	82.41
6183312	80.74	81.08	81.4	81.72	82.02	82.32	82.6
6182062	80.97	81.3	81.63	81.94	82.25	82.54	82.82
6180812	81.16	81.55	81.88	82.19	82.49	82.78	83.06
6179562	81.24	81.74	82.14	82.46	82.76	83.05	83.33
6178312	81.33	81.83	82.33	82.74	83.05	83.35	83.63
6177062	81.43	81.94	82.45	82.94	83.37	83.67	83.95
6175812	81.54	82.07	82.59	83.09	83.54	83.85	84.14
6174562	81.67	82.21	82.74	83.25	83.73	84.06	84.37
6173312	81.92	82.36	82.9	83.44	83.94	84.28	84.61
6172062	82.24	82.65	83.08	83.63	84.17	84.53	84.88
6170812	82.57	83	83.42	83.84	84.4	84.79	85.16
6169562	82.9	83.34	83.79	84.22	84.64	85.06	85.47
6168312	82.99	83.43	83.87	84.31	84.87	85.47	85.94
6167062	82.99	83.45	83.91	84.49	85.12	85.74	86.36
6165812	82.99	83.47	84.05	84.7	85.36	86.01	86.65
6164562	82.98	83.56	84.24	84.92	85.59	86.27	86.94
6163312	83.02	83.72	84.42	85.12	85.82	86.52	87.22
6162062	83.15	83.87	84.59	85.31	86.03	86.75	87.47
6160812	83.27	84	84.74	85.49	86.16	86.81	87.55
6159562	83.37	84.12	84.88	85.59	86.18	86.84	87.61
6158312	83.46	84.23	84.97	85.57	86.18	86.85	87.64
6157062	83.52	84.29	84.91	85.53	86.15	86.83	87.64
6155812	83.57	84.19	84.82	85.46	86.1	86.78	87.6
6154562	83.44	84.07	84.71	85.36	86.01	86.71	87.55
6153312	83.4	84.06	84.71	85.38	86.05	86.75	87.61
6152062	83.28	84.05	84.72	85.39	86.07	86.76	87.62
6150812	83.06	83.89	84.69	85.36	86.05	86.73	87.6
6149562	82.82	83.65	84.48	85.31	85.99	86.67	87.53
6148312	82.56	83.39	84.22	85.05	85.88	86.57	87.41
6147062	82.28	83.12	83.94	84.77	85.58	86.4	87.21
6145812	82.1	82.95	83.79	84.61	85.42	86.08	86.81
6144562	81.95	82.81	83.65	84.47	85.15	85.72	86.38
6143312	81.78	82.65	83.5	84.24	84.85	85.4	85.97
6142062	81.58	82.47	83.28	83.96	84.59	85.14	85.68
6140812	81.36	82.22	82.96	83.68	84.37	84.97	85.55
6139562	81.06	81.83	82.61	83.39	84.16	84.87	85.55
6138312	80.71	81.51	82.34	83.19	84.07	84.92	85.73
6137062	80.34	81.15	82	82.89	83.85	84.86	85.79
6135812	79.9	80.7	81.54	82.43	83.38	84.39	85.31
6134562	79.4	80.17	80.97	81.81	82.68	83.57	84.41
6133312	78.84	79.57	80.32	81.09	81.85	82.64	83.43
6132062	78.24	78.93	79.63	80.33	81.01	81.72	82.44
6130812	77.62	78.27	78.93	79.57	80.2	80.83	81.47
6129562	76.98	77.61	78.23	78.84	79.43	79.99	80.53
6128312	76.35	76.95	77.55	78.15	78.72	79.25	79.74
6127062	75.71	76.3	76.9	77.5	78.09	78.66	79.25
6125812	75.07	75.67	76.27	76.89	77.51	78.15	78.83
6124562	74.43	75.03	75.65	76.3	76.97	77.67	78.41
6123312	73.67	74.37	75.03	75.7	76.41	77.17	77.96
6122062	72.85	73.54	74.35	75.09	75.84	76.64	77.48
6120812	72.01	72.7	73.52	74.4	75.25	76.07	76.94
6119562	71.15	71.82	72.66	73.57	74.54	75.48	76.37
6118312	70.26	70.92	71.77	72.71	73.71	74.76	75.77
6117062	69.36	69.99	70.85	71.83	72.87	73.95	75.03
6115812	68.56	69.11	69.92	70.95	72.05	73.16	74.24
6114562	67.81	68.29	69.07	70.11	71.29	72.43	73.51
6113312	67.14	67.43	68.37	69.51	70.63	71.79	72.86
6112062	66.8	66.99	68.08	69.23	70.27	71.27	72.31
6110812	66.88	67.44	68.34	69.16	70.07	70.98	71.86
6109562	67	67.61	68.35	69.09	69.89	70.72	71.54
6108312	67.04	67.61	68.26	68.95	69.67	70.41	71.11

AHD (m) of Uper Shepparton Lower Shepparton Interface.

Easting (m)

Northing (m)

	367598	368848	370098	371348	372598	373848	375098
6189562	82.13	82.47	82.81	83.16	83.52	83.89	84.29
6188312	82.25	82.58	82.9	83.23	83.58	83.94	84.32
6187062	82.39	82.69	83	83.32	83.64	83.98	84.35
6185812	82.53	82.82	83.12	83.41	83.71	84.03	84.36
6184562	82.69	82.97	83.24	83.52	83.79	84.08	84.38
6183312	82.87	83.14	83.39	83.64	83.89	84.14	84.41
6182062	83.08	83.33	83.57	83.8	84.02	84.24	84.46
6180812	83.32	83.56	83.79	84	84.2	84.38	84.55
6179562	83.59	83.83	84.05	84.25	84.43	84.59	84.72
6178312	83.89	84.14	84.36	84.56	84.73	84.89	85.01
6177062	84.21	84.45	84.67	84.87	85.05	85.2	85.34
6175812	84.42	84.68	84.91	85.13	85.33	85.51	85.69
6174562	84.66	84.94	85.2	85.44	85.67	85.89	86.11
6173312	84.93	85.23	85.51	85.79	86.05	86.31	86.67
6172062	85.22	85.55	85.86	86.17	86.47	86.84	87.32
6170812	85.53	85.88	86.23	86.57	86.96	87.47	87.99
6169562	85.88	86.27	86.66	87.04	87.57	88.11	88.66
6168312	86.37	86.8	87.22	87.63	88.18	88.76	89.34
6167062	86.87	87.32	87.77	88.22	88.79	89.41	90.01
6165812	87.3	87.85	88.33	88.81	89.4	90.04	90.65
6164562	87.61	88.28	88.88	89.38	90	90.66	91.16
6163312	87.92	88.61	89.31	89.95	90.58	91.11	91.66
6162062	88.18	88.9	89.61	90.32	91	91.55	92.16
6160812	88.29	89.03	89.78	90.52	91.27	92.02	92.65
6159562	88.37	89.14	89.92	90.69	91.48	92.28	93.1
6158312	88.43	89.22	90.02	90.83	91.64	92.47	93.3
6157062	88.45	89.26	90.08	90.9	91.74	92.57	93.42
6155812	88.43	89.26	90.09	90.93	91.76	92.6	93.44
6154562	88.4	89.25	90.1	90.95	91.79	92.63	93.44
6153312	88.46	89.32	90.18	91.03	91.86	92.67	93.46
6152062	88.49	89.36	90.21	91.06	91.88	92.66	93.41
6150812	88.47	89.34	90.21	91.05	91.85	92.61	93.31
6149562	88.4	89.29	90.16	91	91.79	92.51	93.09
6148312	88.28	89.18	90.08	90.93	91.7	92.33	92.76
6147062	88.06	88.96	89.9	90.78	91.52	92	92.39
6145812	87.61	88.48	89.5	90.53	91.18	91.6	91.98
6144562	87.07	87.81	88.8	90.13	90.6	91.08	91.51
6143312	86.52	86.99	87.62	88.81	89.79	90.46	90.97
6142062	86.15	86.44	86.72	87.98	89.1	89.88	90.45
6140812	86.06	86.44	86.93	87.77	88.69	89.42	90.14
6139562	86.17	86.65	87.12	87.79	88.52	89.25	89.92
6138312	86.48	87.02	87.45	87.91	88.48	89.11	89.75
6137062	86.6	87.2	87.46	87.85	88.35	88.94	89.56
6135812	86.08	86.68	87.1	87.55	88.08	88.66	89.3
6134562	85.22	85.9	86.49	87.05	87.65	88.28	88.93
6133312	84.27	85.03	85.74	86.42	87.11	87.79	88.48
6132062	83.28	84.11	84.92	85.72	86.5	87.25	87.96
6130812	82.29	83.18	84.09	85	85.86	86.68	87.42
6129562	81.31	82.27	83.31	84.31	85.25	86.13	86.9
6128312	80.49	81.53	82.64	83.69	84.71	85.64	86.43
6127062	80.08	81.08	82.14	83.15	84.27	85.25	86.04
6125812	79.72	80.73	81.79	82.87	83.98	84.98	85.74
6124562	79.32	80.35	81.43	82.55	83.68	84.74	85.42
6123312	78.81	79.79	80.89	82.01	83.15	84.27	84.88
6122062	78.36	79.27	80.26	81.35	82.41	83.34	83.97
6120812	77.85	78.76	79.68	80.6	81.55	82.38	83.02
6119562	77.28	78.2	79.1	79.92	80.64	81.36	82
6118312	76.68	77.59	78.47	79.27	79.82	80.24	80.79
6117062	76.02	76.88	77.71	78.47	78.82	79.05	79.43
6115812	75.22	76.02	76.72	77.27	77.54	77.62	78.06
6114562	74.46	75.18	75.78	76.21	76.46	76.61	76.92
6113312	73.78	74.42	74.94	75.31	75.57	75.75	75.95
6112062	73.19	73.76	74.2	74.53	74.77	74.95	75.1
6110812	72.71	73.17	73.53	73.82	74.04	74.21	74.33
6109562	72.21	72.57	72.89	73.15	73.37	73.53	73.65
6108312	71.7	71.97	72.25	72.52	72.74	72.92	73.05

AHD (m) of Uper Shepparton Lower Shepparton Interface.

Easting (m)

Northing (m)

	376348	377598	378848	380098	381348	382598	383848
6189562	84.71	85.16	85.78	86.46	87.16	87.89	88.64
6188312	84.73	85.17	85.78	86.46	87.18	87.92	88.69
6187062	84.74	85.17	85.76	86.44	87.17	87.93	88.71
6185812	84.73	85.15	85.72	86.4	87.14	87.91	88.71
6184562	84.72	85.11	85.66	86.34	87.09	87.88	88.7
6183312	84.71	85.06	85.58	86.26	87.03	87.84	88.69
6182062	84.7	85	85.48	86.17	86.96	87.82	88.7
6180812	84.73	84.96	85.37	86.07	86.92	87.83	88.75
6179562	84.84	84.96	85.25	86	86.95	87.91	88.86
6178312	85.1	85.17	85.27	86.14	87.14	88.11	89.06
6177062	85.45	85.58	85.98	86.68	87.55	88.44	89.35
6175812	85.86	86.21	86.7	87.34	88.1	88.9	89.75
6174562	86.46	86.91	87.43	88.04	88.73	89.48	90.25
6173312	87.13	87.62	88.15	88.75	89.4	90.09	90.8
6172062	87.82	88.33	88.88	89.47	90.08	90.73	91.38
6170812	88.51	89.05	89.6	90.18	90.77	91.37	91.98
6169562	89.21	89.77	90.23	90.64	91.19	91.74	92.28
6168312	89.91	90.41	90.8	91.18	91.55	92.07	92.56
6167062	90.56	90.97	91.37	91.74	92.09	92.41	92.84
6165812	91.1	91.54	91.94	92.31	92.64	92.92	93.16
6164562	91.65	92.11	92.53	92.9	93.2	93.44	93.63
6163312	92.2	92.69	93.13	93.5	93.78	93.97	94.09
6162062	92.74	93.28	93.75	94.13	94.39	94.52	94.54
6160812	93.28	93.86	94.39	94.8	95.04	95.11	95.01
6159562	93.77	94.41	95.01	95.49	95.74	95.76	95.54
6158312	94.15	94.88	95.56	96.17	96.46	96.34	96.02
6157062	94.28	95.14	95.91	96.64	96.98	96.55	96.18
6155812	94.27	95.09	95.88	96.51	96.59	96.33	95.97
6154562	94.24	94.99	95.67	96.04	96.04	95.85	95.54
6153312	94.2	94.87	95.3	95.53	95.46	95.26	95
6152062	94.1	94.6	94.9	95.01	94.85	94.61	94.36
6150812	93.86	94.26	94.5	94.48	94.21	93.9	93.63
6149562	93.5	93.83	93.98	93.91	93.56	93.16	92.81
6148312	93.11	93.36	93.45	93.36	92.96	92.44	91.91
6147062	92.72	92.94	93.01	93	92.9	92.37	91.8
6145812	92.32	92.57	92.75	92.83	92.73	92.54	92.09
6144562	91.9	92.29	92.66	92.75	92.66	92.48	92.31
6143312	91.45	92.04	92.62	92.67	92.61	92.45	92.21
6142062	91.07	91.64	92.18	92.49	92.6	92.48	92.03
6140812	90.73	91.19	91.82	92.4	92.68	92.66	92.21
6139562	90.51	91.05	91.66	92.25	92.53	92.53	92.13
6138312	90.37	90.97	91.57	92.11	92.39	92.24	91.8
6137062	90.2	90.84	91.44	91.95	92.27	92.11	91.82
6135812	89.96	90.62	91.26	91.72	91.85	91.83	91.93
6134562	89.61	90.29	90.96	91.46	91.25	91.3	91.75
6133312	89.15	89.8	90.38	90.72	90.68	90.84	91.45
6132062	88.63	89.25	89.76	90.14	90.41	90.7	91.23
6130812	88.1	88.69	89.2	89.64	90.07	90.45	90.96
6129562	87.57	88.15	88.66	89.13	89.63	90.05	90.59
6128312	87.09	87.63	88.11	88.56	89.06	89.52	90.1
6127062	86.65	87.12	87.53	87.93	88.38	88.82	89.44
6125812	86.25	86.61	86.92	87.23	87.59	87.94	88.61
6124562	85.75	85.97	86.14	86.33	86.61	86.91	87.54
6123312	85.09	85.2	85.25	85.31	85.52	85.84	86.36
6122062	84.27	84.36	84.31	84.18	84.33	84.59	84.96
6120812	83.42	83.49	83.33	83.14	83.13	83.22	83.4
6119562	82.54	82.58	82.26	82	81.86	81.78	81.67
6118312	81.25	81.28	81	80.71	80.5	80.24	79.84
6117062	79.8	79.85	79.64	79.36	79.14	78.85	78.39
6115812	78.45	78.52	78.38	78.14	77.91	77.58	77.07
6114562	77.26	77.35	77.27	77.1	76.87	76.55	76.04
6113312	76.21	76.32	76.3	76.19	76.02	75.77	75.36
6112062	75.32	75.45	75.48	75.43	75.34	75.2	74.93
6110812	74.55	74.7	74.78	74.81	74.8	74.78	74.64
6109562	73.88	74.06	74.19	74.29	74.37	74.46	74.28
6108312	73.29	73.51	73.69	73.86	74.02	74.2	74.11

AHD (m) of Uper Shepparton Lower Shepparton Interface.

Easting (m)

	385098	386348	387598	388848	390098	391348	392598
6189562	89.4	90.17	90.93	91.65	92.15	92.6	93.02
6188312	89.47	90.27	91.05	91.65	92.14	92.55	92.93
6187062	89.52	90.33	91.01	91.63	92.13	92.46	92.79
6185812	89.54	90.24	90.88	91.5	91.97	92.29	92.59
6184562	89.54	90.16	90.71	91.27	91.72	92.05	92.33
6183312	89.54	90.18	90.63	91.07	91.49	91.81	92.05
6182062	89.57	90.24	90.69	91.04	91.33	91.61	91.78
6180812	89.64	90.35	90.8	91.16	91.38	91.47	91.55
6179562	89.77	90.51	90.98	91.36	91.59	91.57	91.36
6178312	89.97	90.73	91.2	91.61	91.91	91.8	91.39
6177062	90.24	91	91.44	91.82	92.07	91.92	91.56
6175812	90.59	91.31	91.71	92	92.13	92.08	91.89
6174562	91.01	91.7	92.02	92.25	92.4	92.48	92.39
6173312	91.5	92.14	92.42	92.65	92.9	93.02	93.01
6172062	92.02	92.63	92.89	93.24	93.51	93.67	93.72
6170812	92.57	93.13	93.51	93.83	94.09	94.29	94.37
6169562	92.81	93.31	93.8	94.14	94.43	94.68	94.85
6168312	93.04	93.5	93.94	94.37	94.7	94.99	95.3
6167062	93.27	93.67	94.05	94.41	94.78	95.08	95.26
6165812	93.5	93.83	94.13	94.4	94.66	94.92	95.03
6164562	93.78	94	94.2	94.35	94.48	94.64	94.77
6163312	94.19	94.26	94.31	94.28	94.27	94.38	94.5
6162062	94.55	94.55	94.54	94.23	94.03	94.16	94.3
6160812	94.73	94.69	94.95	94.29	93.99	94.09	94.2
6159562	95.06	94.81	94.71	94.41	94.18	94.19	94.25
6158312	95.78	95.24	94.73	94.46	94.32	94.37	94.48
6157062	95.86	95.3	94.7	94.41	94.38	94.62	94.88
6155812	95.58	95.09	94.6	94.35	94.47	94.99	95.45
6154562	95.2	94.82	94.52	94.57	94.9	95.5	96.15
6153312	94.73	94.49	94.38	94.7	95.23	95.95	96.76
6152062	94.16	94.05	94.1	94.61	95.3	96.17	97.03
6150812	93.48	93.48	93.64	94.28	95.08	96.01	96.87
6149562	92.67	92.78	93.04	93.75	94.6	95.5	96.36
6148312	91.8	92.04	92.4	93.16	94.06	95	95.89
6147062	91.66	91.85	92.15	92.89	93.82	94.8	95.71
6145812	91.8	91.73	91.87	92.56	93.55	94.62	95.61
6144562	91.95	91.59	91.5	92.13	93.29	94.53	95.65
6143312	92.02	91.41	91	91.61	93.16	94.63	95.85
6142062	91.29	91.11	90.82	91.43	93.5	94.99	96.16
6140812	91.19	91.08	91.42	92.32	94.04	95.28	96.31
6139562	91.06	90.15	91.22	92.5	93.89	95.11	96.13
6138312	91.17	90.77	91.5	92.73	93.95	95.05	95.99
6137062	91.54	91.62	92.22	93.17	94.19	95.12	95.93
6135812	91.94	92.17	92.82	93.68	94.52	95.25	95.92
6134562	92.11	92.54	93.2	94.13	94.81	95.34	95.87
6133312	92.03	92.64	93.38	94.25	94.76	95.13	95.65
6132062	91.84	92.49	93.17	93.77	93.98	94.41	95.13
6130812	91.57	92.21	92.79	93.23	93.31	93.36	94.14
6129562	91.22	91.86	92.42	92.81	92.84	92.86	93.31
6128312	90.79	91.5	92.1	92.51	92.59	92.66	92.88
6127062	90.25	91.1	91.84	92.28	92.31	92.29	92.4
6125812	89.55	90.58	91.57	92.01	91.78	91.61	91.62
6124562	88.47	89.57	90.84	91.12	90.56	90.39	90.42
6123312	87.11	88.02	88.79	89.02	88.82	88.9	89.09
6122062	85.5	86.04	86.51	86.81	86.99	87.27	87.69
6120812	83.62	83.89	84.23	84.59	84.97	85.47	86.12
6119562	81.6	81.67	81.91	82.29	82.81	83.5	84.35
6118312	79.54	79.44	79.6	80.02	80.65	81.48	82.5
6117062	77.88	77.54	77.63	78.11	78.78	79.7	80.92
6115812	76.46	75.75	75.85	76.54	77.19	78.04	79.58
6114562	75.48	74.92	75.01	75.68	76.38	77.33	78.76
6113312	74.98	74.78	74.99	75.47	76.19	77.16	78.28
6112062	74.73	74.72	74.99	75.56	76.24	77.05	77.95
6110812	74.59	74.69	75	75.54	76.29	76.95	77.74
6109562	74.33	74.52	74.87	75.41	76.13	76.85	77.6
6108312	74.1	74.34	74.74	75.28	75.97	76.64	77.42

Northing (m)

AHD (m) of Uper Shepparton Lower Shepparton Interface.

Easting (m)

	393848	395098	396348	397598	398848	400098	401348
6189562	93.73	94.49	95.28	96.15	97.15	98.18	98.33
6188312	93.59	94.33	95.1	95.92	96.81	97.88	98.19
6187062	93.39	94.09	94.84	95.64	96.5	97.44	98.11
6185812	93.12	93.78	94.48	95.24	96.07	96.98	97.74
6184562	92.8	93.41	94.05	94.74	95.51	96.34	97.06
6183312	92.44	92.99	93.56	94.17	94.84	95.57	96.18
6182062	92.08	92.54	93.03	93.56	94.13	94.73	95.21
6180812	91.72	92.08	92.5	92.96	93.45	93.94	94.3
6179562	91.37	91.64	92	92.43	92.88	93.31	93.62
6178312	91.07	91.19	91.56	92.02	92.48	92.91	93.32
6177062	91.17	90.81	91.27	91.8	92.3	92.78	93.31
6175812	91.57	91.33	91.42	91.81	92.3	92.83	93.49
6174562	92.21	92.07	92.06	92.14	92.44	92.96	93.66
6173312	92.92	92.82	92.76	92.77	92.82	93.06	93.65
6172062	93.67	93.56	93.47	93.42	93.38	93.33	93.43
6170812	94.3	94.13	93.96	93.87	93.77	93.49	93.19
6169562	94.76	94.44	94.16	94.07	94.08	93.7	92.92
6168312	95.21	94.55	94.12	94.04	94.12	93.78	92.54
6167062	95.08	94.43	93.85	93.95	93.95	93.39	92.06
6165812	94.85	94.46	94.16	94.19	94.06	93.46	92.36
6164562	94.76	94.6	94.62	94.68	94.65	94.31	93.76
6163312	94.61	94.71	94.86	95.07	95.24	95.16	94.97
6162062	94.44	94.62	94.88	95.23	95.55	95.58	95.67
6160812	94.32	94.5	94.79	95.17	95.49	95.73	96.03
6159562	94.3	94.37	94.7	95.08	95.38	95.67	96.01
6158312	94.54	94.54	94.84	95.11	95.28	95.47	95.75
6157062	95.07	95.2	95.31	95.32	95.25	95.18	95.4
6155812	95.77	96.01	96	95.71	95.37	95.15	95.24
6154562	96.74	97.12	96.84	96.2	95.56	95.17	95.3
6153312	97.61	98.43	97.47	96.46	95.55	95.14	95.27
6152062	97.75	98.07	97.49	96.38	95.4	94.91	95.17
6150812	97.51	97.82	97.4	96.21	95.07	94.73	95.09
6149562	97.07	97.6	97.73	96.05	94.24	94.42	95.1
6148312	96.63	97.11	97.07	95.91	94.31	94.74	95.52
6147062	96.43	96.8	96.68	96.14	95.64	95.76	96.32
6145812	96.4	96.88	97.01	96.87	96.7	96.86	97.26
6144562	96.56	97.2	97.58	97.75	97.8	97.87	98.19
6143312	96.87	97.67	98.22	98.65	98.83	98.95	99.07
6142062	97.21	98.1	98.7	99.25	99.56	99.8	99.96
6140812	97.26	98.06	98.52	99.02	99.39	99.69	99.97
6139562	97.01	97.76	98.22	98.41	98.81	99.2	99.61
6138312	96.79	97.47	97.91	98.08	98.22	98.61	99.09
6137062	96.63	97.22	97.6	97.71	97.86	98.06	98.46
6135812	96.51	97.02	97.35	97.35	97.47	97.75	97.94
6134562	96.38	96.84	97.18	97.22	97.36	97.55	97.63
6133312	96.13	96.55	96.93	97.07	97.25	97.34	97.22
6132062	95.65	96.05	96.49	96.71	97.03	97.15	96.72
6130812	94.84	95.36	95.87	96.1	96.43	96.55	96.36
6129562	93.92	94.55	95.12	95.33	95.53	95.98	96.15
6128312	93.21	93.69	94.34	94.66	95.17	95.78	96.19
6127062	92.65	93	93.54	94.2	95.01	95.78	96.39
6125812	91.82	92.2	92.73	93.61	94.6	95.57	96.42
6124562	90.62	91.08	91.77	92.79	93.94	95.12	96.31
6123312	89.32	89.89	90.73	91.83	93.07	94.33	95.52
6122062	88.25	88.86	89.63	90.73	92	93.25	94.39
6120812	86.85	87.59	88.41	89.51	90.79	92.03	93.16
6119562	85.19	86.09	87.04	88.18	89.48	90.72	91.85
6118312	83.58	84.69	85.79	86.91	88.26	89.53	90.67
6117062	82.22	83.5	84.56	85.73	87.13	88.43	89.59
6115812	81.07	82.32	83.44	84.64	86.07	87.4	88.61
6114562	80.12	81.34	82.48	83.66	85.11	86.47	87.72
6113312	79.43	80.58	81.68	82.82	84.27	85.64	86.92
6112062	78.96	80.01	81.05	82.11	83.54	84.9	86.2
6110812	78.63	79.58	80.53	81.51	82.91	84.25	85.54
6109562	78.39	79.24	80.12	81	82.35	83.67	84.94
6108312	78.2	78.97	79.77	80.58	81.86	83.14	84.39

Northing (m)

AHD (m) of Uper Shepparton Lower Shepparton Interface.

Easting (m)

Northing (m)

	402598	403848	405098	406348	407598	408848	410098
6189562	98.28	98.45	98.62	98.71	98.77	98.96	99.17
6188312	98.57	98.92	99	99.04	99.08	99.25	99.46
6187062	98.84	99.22	99.22	99.25	99.28	99.45	99.66
6185812	98.39	98.77	98.89	98.97	99.2	99.37	99.56
6184562	97.71	98.11	98.33	98.67	99.08	99.37	99.55
6183312	96.7	97.19	97.72	98.34	98.94	99.38	99.66
6182062	95.62	96.27	97.14	98.02	98.84	99.45	99.84
6180812	94.6	95.48	96.63	97.81	98.87	99.65	100.14
6179562	93.98	94.81	96.31	97.82	99.11	100.03	100.57
6178312	93.65	94.57	96.42	98.17	99.64	100.62	101.03
6177062	94.03	95.27	97.05	98.9	100.48	101.5	101.82
6175812	94.48	95.94	97.85	99.84	101.59	102.61	102.72
6174562	94.7	96.23	98.28	100.68	102.88	103.8	103.5
6173312	94.57	96.01	98.07	100.72	103.5	104.29	103.76
6172062	94.04	95.16	97.01	99.61	102.26	103.29	103.22
6170812	93.29	93.91	95.28	97.48	100.05	101.39	101.95
6169562	92.48	92.54	93.3	94.83	97.52	99.56	100.68
6168312	91.79	91.83	92.53	93.72	96.21	98.39	99.72
6167062	91.16	91.52	92.87	94.29	96.03	97.79	99.07
6165812	91.47	91.85	93.73	95	96.23	97.56	98.58
6164562	93.38	93.51	94.42	95.47	96.53	97.66	98.93
6163312	95.22	95.2	95.59	96.28	97.16	98.19	99.4
6162062	95.94	96.3	96.61	97.05	97.76	98.7	99.82
6160812	96.43	96.81	97.26	97.72	98.31	99.11	100.1
6159562	96.43	96.92	97.39	98	98.72	99.44	100.33
6158312	96.15	96.69	97.24	97.91	98.77	99.75	100.73
6157062	95.84	96.41	97	97.69	98.57	99.73	101.08
6155812	95.65	96.01	96.61	97.26	98.08	99.4	100.93
6154562	95.66	95.9	96.3	96.98	97.76	99.16	100.71
6153312	95.68	95.98	96.38	96.92	97.88	99.11	100.45
6152062	95.71	96.11	96.62	97.22	97.92	99.05	100.24
6150812	95.77	96.28	96.91	97.59	98.28	98.99	100
6149562	95.9	96.5	97.27	98.02	98.67	99.24	99.81
6148312	96.35	96.97	97.87	98.72	99.21	99.63	100.02
6147062	97.04	97.63	98.36	99.19	99.7	100.02	100.29
6145812	97.82	98.24	98.69	99.49	100.1	100.39	100.64
6144562	98.62	98.88	99.14	99.72	100.36	100.76	101.06
6143312	99.42	99.63	99.73	100.18	100.77	101.19	101.52
6142062	100.21	100.48	100.72	101.04	101.36	101.65	101.92
6140812	100.31	100.84	101.34	101.59	101.68	101.8	102
6139562	100.06	100.69	101.51	101.89	101.82	101.84	101.96
6138312	99.6	100.23	100.97	101.5	101.68	101.71	101.86
6137062	98.96	99.53	100.2	100.7	101.05	101.43	101.68
6135812	98.22	98.68	99.22	99.65	100.11	100.72	101.35
6134562	97.64	97.79	98.26	98.71	99.27	99.95	100.7
6133312	97.04	97.32	97.8	98.32	98.91	99.58	100.38
6132062	96.65	96.87	97.38	97.92	98.5	99.19	100.1
6130812	96.12	96.44	97.02	97.55	98.1	98.87	99.76
6129562	96.14	96.37	96.85	97.27	97.84	98.52	99.4
6128312	96.41	96.57	96.86	97.27	97.65	98.14	99.07
6127062	96.73	96.85	97.13	97.4	97.63	98.01	98.76
6125812	96.86	96.85	96.69	96.78	97	97.37	97.93
6124562	96.92	96.68	96.41	96.18	96.3	96.64	97.11
6123312	96.19	96.18	95.92	95.66	95.55	95.79	96.25
6122062	95.2	95.46	95.22	94.9	94.78	94.93	95.36
6120812	94.18	94.7	94.37	93.97	93.83	94.24	94.71
6119562	92.82	93.38	93.4	93.21	93.22	93.78	94.36
6118312	91.63	92.29	92.64	92.86	93.17	93.68	94.28
6117062	90.59	91.38	91.99	92.5	93.04	93.64	94.18
6115812	89.67	90.59	91.39	92.12	92.85	93.51	94.07
6114562	88.85	89.88	90.82	91.72	92.54	93.26	93.96
6113312	88.11	89.21	90.26	91.23	92.06	92.9	93.77
6112062	87.42	88.58	89.67	90.58	91.48	92.39	93.31
6110812	86.78	87.96	89.09	90.04	90.96	91.86	92.71
6109562	86.17	87.36	88.51	89.46	90.37	91.24	92.04
6108312	85.61	86.78	87.93	88.87	89.76	90.6	91.37

AHD (m) of Uper Shepparton Lower Shepparton Interface.

Easting (m)

	411348	412598	413848	415098	416348	417598	418848
6189562	99.38	99.57	99.85	100.2	100.11	99.96	99.82
6188312	99.66	99.86	100.04	100.28	100.2	100.03	99.88
6187062	99.86	100.04	100.2	100.34	100.22	100.02	99.83
6185812	99.79	99.99	100.15	100.28	100.16	99.93	99.71
6184562	99.74	99.96	100.12	100.24	100.11	99.85	99.6
6183312	99.84	99.98	100.14	100.24	100.1	99.79	99.52
6182062	100.08	100.19	100.22	100.29	100.13	99.77	99.59
6180812	100.43	100.54	100.53	100.42	100.23	99.96	99.69
6179562	100.86	100.95	100.89	100.73	100.48	100.17	99.8
6178312	101.29	101.33	101.22	101.02	100.76	100.44	100.09
6177062	101.81	101.76	101.59	101.37	101.1	100.83	100.56
6175812	102.51	102.18	101.95	101.71	101.47	101.25	101.07
6174562	103.07	102.65	102.25	102	101.81	101.65	101.68
6173312	103.29	102.89	102.55	102.24	102.07	102.1	102.25
6172062	103.01	102.78	102.56	102.35	102.4	102.51	102.74
6170812	102.18	102.24	102.23	102.37	102.82	102.94	103.15
6169562	101.28	101.63	101.97	102.61	103.18	103.39	103.57
6168312	100.47	101.14	102.07	102.85	103.53	103.81	103.99
6167062	100.22	101.18	102.23	103.15	103.91	104.21	104.36
6165812	99.79	101.24	102.52	103.55	104.33	104.63	104.7
6164562	100.11	101.56	102.92	104	104.76	104.97	104.87
6163312	100.64	101.99	103.36	104.5	105.24	105.32	105
6162062	101.03	102.41	103.94	105.24	106	105.83	105.21
6160812	101.3	102.83	104.54	106.1	106.94	106.41	105.33
6159562	101.36	103.2	105.15	106.83	107.26	106.86	106.06
6158312	101.99	103.99	105.45	106.61	107.07	106.99	106.47
6157062	102.47	103.93	105.17	106.11	106.65	106.89	106.72
6155812	102.36	103.51	104.48	105.36	105.99	106.4	106.67
6154562	102.14	102.96	103.75	104.71	105.38	105.84	106.22
6153312	101.54	102.26	103.34	104.24	104.87	105.31	105.74
6152062	101.21	102.12	103.17	103.9	104.43	104.8	105.23
6150812	100.87	101.77	102.76	103.58	103.97	104.26	104.66
6149562	100.49	101.26	102.19	103.1	103.5	103.8	104.13
6148312	100.37	100.82	101.5	102.38	103.03	103.44	103.72
6147062	100.48	100.56	100.82	101.96	102.71	103.15	103.38
6145812	100.83	101	101.37	102.1	102.7	103	103.11
6144562	101.32	101.62	102.07	102.68	102.9	103	102.98
6143312	101.83	102.18	102.6	103.01	103.15	103.06	102.98
6142062	102.21	102.55	102.9	103.17	103.27	103.18	102.89
6140812	102.28	102.63	102.97	103.23	103.32	103.39	103.1
6139562	102.26	102.66	103.05	103.35	103.63	103.68	103.38
6138312	102.19	102.64	103.1	103.65	104.02	104.04	103.68
6137062	102.06	102.53	103.18	103.89	104.5	104.37	103.95
6135812	101.78	102.39	103.12	103.85	104.4	104.44	104.1
6134562	101.5	102.21	102.94	103.65	104.19	104.43	103.85
6133312	101.31	102.02	102.74	103.45	104.07	104.02	103.35
6132062	101.04	101.74	102.46	103.16	103.4	103.19	102.67
6130812	100.72	101.41	102.11	102.47	102.4	102.22	101.87
6129562	100.37	101.05	101.48	101.46	101.4	101.29	101.07
6128312	100.04	100.53	100.48	100.44	100.41	100.38	100.32
6127062	99.59	99.56	99.43	99.34	99.33	99.39	99.65
6125812	98.61	98.53	98.3	98.14	98.14	98.45	99.07
6124562	97.69	97.57	97.22	96.93	96.98	97.68	98.52
6123312	96.82	96.72	96.29	95.88	95.97	97	98.02
6122062	96	96.01	95.62	95.57	95.82	96.6	97.53
6120812	95.27	95.43	95.44	95.5	95.78	96.34	97.05
6119562	94.91	95.2	95.34	95.37	95.62	96.07	96.63
6118312	94.72	94.96	95.03	95.09	95.35	95.76	96.24
6117062	94.57	94.79	94.77	94.69	95.07	95.44	95.84
6115812	94.52	94.75	94.72	94.69	94.85	95.04	95.46
6114562	94.55	94.8	94.73	94.66	94.7	94.86	95.14
6113312	94.62	94.82	94.64	94.53	94.52	94.63	94.83
6112062	94.15	94.48	94.43	94.37	94.4	94.5	94.68
6110812	93.42	93.88	94.13	94.23	94.31	94.43	94.6
6109562	92.71	93.22	93.6	93.91	94.12	94.27	94.44
6108312	92.03	92.58	93.03	93.41	93.77	94.05	94.24

Northing (m)

AHD (m) of Uper Shepparton Lower Shepparton Interface.

Easting (m)

Northing (m)

	420098	421348	422598	423848	425098	426348	427598
6189562	99.71	99.68	99.93	100.22	106.36	114.48	120.18
6188312	99.74	99.64	99.59	99.87	104.85	114.34	121.83
6187062	99.67	99.54	99.53	99.79	101.22	109.37	115.06
6185812	99.52	99.44	99.52	99.77	100.12	102.7	107.62
6184562	99.42	99.43	99.49	99.73	100.1	100.52	101
6183312	99.44	99.41	99.47	99.7	100.08	100.54	101.05
6182062	99.46	99.41	99.46	99.69	100.08	100.57	101.14
6180812	99.47	99.42	99.52	99.73	100.11	100.66	101.3
6179562	99.41	99.43	99.63	99.95	100.21	100.9	101.59
6178312	99.77	99.77	100.12	100.46	100.86	101.42	102.04
6177062	100.38	100.52	100.81	101.17	101.59	102.09	102.63
6175812	101.12	101.31	101.6	101.96	102.37	102.82	103.29
6174562	101.83	102.07	102.39	102.76	103.17	103.59	103.99
6173312	102.47	102.77	103.14	103.55	103.96	104.36	104.71
6172062	103.03	103.4	103.83	104.29	104.73	105.13	105.44
6170812	103.49	103.9	104.4	104.92	105.44	105.89	106.15
6169562	103.83	104.27	104.8	105.4	106.05	106.64	106.87
6168312	104.2	104.5	105.04	105.68	106.42	107.24	107.45
6167062	104.51	104.74	105.1	105.73	106.44	107.08	107.29
6165812	104.74	104.87	105.18	105.63	106.26	106.77	107
6164562	104.71	104.65	104.89	105.37	105.94	106.42	106.68
6163312	104.63	104.29	104.56	105.15	105.74	106.23	106.52
6162062	104.76	104.51	104.71	105.21	105.74	106.2	106.51
6160812	105.06	105.03	105.16	105.49	105.92	106.34	106.62
6159562	105.51	105.45	105.57	105.83	106.21	106.59	106.8
6158312	105.94	105.77	105.92	106.15	106.5	106.87	106.96
6157062	106.38	106.22	106.25	106.4	106.57	106.74	106.87
6155812	106.6	106.49	106.48	106.55	106.64	106.69	106.71
6154562	106.49	106.6	106.6	106.63	106.67	106.69	106.67
6153312	106.08	106.41	106.62	106.64	106.67	106.66	106.64
6152062	105.6	105.96	106.32	106.6	106.62	106.61	106.58
6150812	105.05	105.45	105.84	106.23	106.54	106.53	106.47
6149562	104.53	104.96	105.42	105.87	106.24	106.23	106.16
6148312	103.99	104.41	104.93	105.48	105.8	105.78	105.7
6147062	103.52	103.71	104.21	104.85	105.15	105.13	105.07
6145812	103.1	103.05	103.23	103.83	104.29	104.38	104.37
6144562	102.84	102.6	102.61	103.04	103.49	103.63	103.53
6143312	102.81	102.61	102.56	102.7	102.87	102.82	102.67
6142062	102.69	102.46	102.3	102.22	102.19	102.02	101.83
6140812	102.56	102.25	102	101.76	101.58	101.27	101.04
6139562	102.78	102.13	101.69	101.35	101.05	100.68	100.35
6138312	103.02	102.3	101.56	101.01	100.6	100.13	99.68
6137062	103.24	102.49	101.71	100.91	100.25	99.65	98.99
6135812	103.42	102.69	101.92	101.11	100.29	99.43	98.51
6134562	103.22	102.51	101.78	101.02	100.24	99.48	98.87
6133312	102.79	102.2	101.57	100.94	100.32	99.75	99.34
6132062	102.28	101.84	101.38	100.91	100.46	100.06	99.78
6130812	101.7	101.46	101.18	100.88	100.6	100.36	100.17
6129562	101.1	101.05	100.95	100.83	100.71	100.61	100.53
6128312	100.5	100.63	100.7	100.73	100.76	100.8	100.99
6127062	100.15	100.46	100.68	100.86	101.03	101.22	101.42
6125812	99.79	100.39	100.69	100.94	101.2	101.47	101.71
6124562	99.42	100.13	100.6	100.91	101.22	101.54	101.82
6123312	98.96	99.66	100.21	100.72	101.1	101.45	101.79
6122062	98.41	99.12	99.72	100.28	100.81	101.2	101.51
6120812	97.82	98.54	99.18	99.76	100.29	100.78	101.08
6119562	97.21	97.87	98.49	99.06	99.57	100.03	100.32
6118312	96.74	97.22	97.77	98.32	98.82	99.26	99.55
6117062	96.29	96.73	97.14	97.6	98.07	98.5	98.79
6115812	95.87	96.26	96.63	96.97	97.34	97.74	98.04
6114562	95.47	95.81	96.14	96.44	96.72	97	97.31
6113312	95.09	95.37	95.66	95.93	96.18	96.4	96.63
6112062	94.91	95.17	95.44	95.7	95.95	96.15	96.23
6110812	94.8	95.03	95.27	95.51	95.74	95.78	95.83
6109562	94.65	94.86	95.09	95.32	95.37	95.4	95.43
6108312	94.45	94.67	94.89	94.96	95	95.03	95.04

AHD (m) of Uper Shepparton Lower Shepparton Interface.

		Easting (m)			
		428848	430098	431348	432598
Northing (m)	6189562	121.93	122.34	122.62	123.03
	6188312	121.15	120.89	120.67	121.01
	6187062	116.78	117.3	117.81	118.52
	6185812	110.56	112.31	113.69	115.02
	6184562	103.94	106.57	108.77	110.8
	6183312	101.59	102.14	103.57	106.21
	6182062	101.72	102.3	102.86	103.41
	6180812	101.92	102.52	103.09	103.63
	6179562	102.22	102.81	103.37	103.9
	6178312	102.64	103.2	103.72	104.21
	6177062	103.15	103.65	104.12	104.56
	6175812	103.74	104.17	104.57	104.94
	6174562	104.38	104.73	105.04	105.41
	6173312	105.02	105.3	105.54	105.84
	6172062	105.65	105.82	106	105.98
	6170812	106.22	106.22	106.24	106.11
	6169562	106.72	106.5	106.34	106.14
	6168312	107.02	106.64	106.33	106.05
	6167062	107.03	106.65	106.25	105.84
	6165812	106.92	106.65	106.31	105.95
	6164562	106.72	106.61	106.46	106.3
	6163312	106.65	106.66	106.64	106.58
	6162062	106.68	106.76	106.82	106.82
	6160812	106.78	106.89	106.98	107.02
	6159562	106.93	107.03	107.13	107.19
	6158312	107.04	107.12	107.22	107.34
	6157062	106.95	107.04	107.14	107.26
	6155812	106.82	106.91	107.01	107.14
	6154562	106.64	106.74	106.85	106.98
	6153312	106.58	106.53	106.64	106.78
	6152062	106.51	106.45	106.41	106.53
	6150812	106.38	106.3	106.25	106.19
	6149562	106.03	105.94	105.86	105.69
	6148312	105.58	105.49	105.29	105.14
	6147062	105.01	104.82	104.66	104.56
	6145812	104.23	104.09	103.99	103.94
	6144562	103.41	103.33	103.29	103.29
	6143312	102.59	102.56	102.58	102.65
	6142062	101.77	101.8	101.89	102.02
	6140812	101	101.07	101.22	101.43
	6139562	100.28	100.39	100.61	100.89
	6138312	99.58	99.76	100.09	100.44
	6137062	98.9	99.27	99.7	100.13
	6135812	98.5	99.03	99.5	99.93
	6134562	98.75	99.05	99.42	99.88
	6133312	99.2	99.31	99.61	100.04
	6132062	99.64	99.7	99.98	100.3
	6130812	100.08	100.21	100.39	100.61
	6129562	100.61	100.69	100.79	100.91
	6128312	101.11	101.13	101.14	101.18
6127062	101.54	101.47	101.41	101.38	
6125812	101.74	101.65	101.56	101.49	
6124562	101.92	101.75	101.57	101.47	
6123312	102.05	101.79	101.52	101.33	
6122062	101.67	101.58	101.38	101.18	
6120812	101.2	101.18	101.06	100.89	
6119562	100.44	100.46	100.41	100.3	
6118312	99.68	99.74	99.73	99.8	
6117062	98.93	99.01	99.14	99.29	
6115812	98.19	98.36	98.59	98.77	
6114562	97.52	97.8	98.04	98.25	
6113312	96.96	97.26	97.52	97.76	
6112062	96.56	96.86	97.14	97.39	
6110812	96.16	96.47	96.75	96.95	
6109562	95.76	96.07	96.32	96.41	
6108312	95.36	95.65	95.77	95.88	