

Information Request Response

Reference:	26.2 - Information in relation to Santos water monitoring bore surface locations in Australian Height Datum (AHD)
Request:	In the EIS (Appendix G4 – Water baseline report) Table 4-1, the Hydraulic Head for the monitoring bores/wells is given as AHD (Australian Height Datum), that alone is enough to cause many people to give up. AHD is the height above sea level. If people want to know the SWL (Standing Water Level) in the bores/wells, they need the ground level AHD, and this is not provided.
Background:	<p>Table 4-1 lists the 50 groundwater monitoring bores that constitute the baseline monitoring locations for groundwater hydraulic head in the Narrabri Gas Project area.</p> <p>The table contains a simple statistical summary of the spread (minimum and maximum values) and central tendency (mean and median values) of measurements of hydraulic head in each bore.</p> <p>Additional information on the screened intervals of the bores is contained in Appendix C of the EIS and hydrographs for individual monitoring bores listed in Table 4-1 are presented in sections 4.1.1 to 4.1.3, and the locations of the bores are shown in Figure 3-1 to Figure 3-3 in Section 3 of the EIS.</p>
Response:	<p>The National Mapping Council has adopted the Australian Height Datum (AHD) as the datum to which all vertical control for mapping is to be referred. AHD is the common geodetic datum for altitude measurement in Australia.</p> <p>Where reference is made in the tables included in the Narrabri Gas Project EIS to mAHD, the value represents the height of the groundwater (in metres) above approximate mean sea level.</p> <p>Santos' objective is to monitor water levels over time against the previous water level measured and the AHD measurements facilitate this monitoring effort. This is consistent with other water modelling and reporting frameworks.</p> <p>Santos monitoring is not correlated for water levels relevant to surface. However, there are commercially available data sources which can provide AHD data for surface locations across Australia.</p>
Briefing Officer:	Neale House Manager, Environment and Water
Date:	22/06/2017

Table 4-1 Summary of baseline data for groundwater head

Bore	Owner	Unit	Water Source	Hydraulic Head, m AHD						
				No. of Records	Start Date	End Date	Min.	Max.	Mean	Median
DWH8AQGMCF04	Santos	Maules Creek Fm	GOB	361	6/15	6/16	389.9	391.1	390.4	390.4
DWH8AQGPOR03	Santos	Porcupine Fm	GOB	361	6/15	6/16	353.3	364.2	356.7	354.6
BWD6	Santos	Porcupine Fm	GOB	427	5/15	6/16	354.2	369.7	362.3	362.6
GW036546-3	DPI	Black Jack	GOB	152	5/86	7/14	230.9	240.4	237.2	237.0
DWH8AQGDGY01	Santos	Digby Fm	GOB	361	6/15	6/16	329.3	330.1	329.7	329.7
TULPRDGY02	Santos	Digby Fm	GOB	481	4/14	9/15	245.0	248.8	248.5	248.6
GW036546-1	Santos	Digby Fm	GOB	151	5/86	7/14	233.6	240.4	238.4	238.3
GW036546-2	DPI	Napperby Fm	GOB	152	5/86	7/14	231.0	240.4	237.2	237.0
GW036497-1	DPI	Napperby Fm	GOB	164	6/84	2/15	254.3	257.3	255.8	255.8
BWD28QGPUR01	Santos	Purlawaugh Fm	GAB	809	3/14	6/16	278.5	279.5	278.9	278.9
DWH14PRPUR03	Santos	Purlawaugh Fm	GAB	392	3/14	6/15	236.3	237.2	236.8	236.9
BHN14PRUPS02	Santos	Pilliga Ss	GAB	453	3/14	8/15	225.4	226.7	226.5	226.6
BWD26PRLPS02	Santos	Pilliga Ss	GAB	300	3/14	3/15	247.4	248.3	248.1	248.1
BWD26PRUPS01	Santos	Pilliga Ss	GAB	507	12/13	7/15	247.5	248.0	247.9	248.0
BWD27PRLPS03	Santos	Pilliga Ss	GAB	485	3/14	9/15	253.6	254.2	254.0	254.1
BWD27PRUPS02	Santos	Pilliga Ss	GAB	460	3/14	9/15	253.1	253.7	253.5	253.5
BWD28QGLPS01	Santos	Pilliga Ss	GAB	809	3/14	6/16	284.6	290.3	286.4	285.1
BWD28QGUPS01	Santos	Pilliga Ss	GAB	819	3/14	6/16	270.2	283.2	281.7	282.1
DWH14PRLPS02	Santos	Pilliga Ss	GAB	463	3/14	9/15	234.5	235.2	235.0	235.0
DWH14PRUPS01	Santos	Pilliga Ss	GAB	530	12/13	9/15	235.6	236.0	235.8	235.8
DWH3PRLPS02	Santos	Pilliga Ss	GAB	412	3/14	5/15	249.1	249.8	249.7	249.7
DWH3PRUPS01	Santos	Pilliga Ss	GAB	493	12/13	5/15	249.0	250.1	249.8	249.8
NYOPRUPS02	Santos	Pilliga Ss	GAB	251	3/14	4/15	204.0	210.1	204.1	204.0
GW030310-2	DPI	Pilliga Ss	GAB	325	3/74	8/14	179.8	199.1	194.4	195.9
GW030121-3	DPI	Pilliga Ss	GAB	334	4/71	8/14	193.9	208.2	203.8	204.4
GW030400-1	DPI	Pilliga Ss	GAB	321	11/73	1/15	208.1	220.8	212.0	212.1
GW030889-1	DPI	Pilliga Ss	GAB	7	4/82	6/14	164.9	173.9	170.0	172.9
GW098011-1	DPI	Pilliga Ss	GAB	2436	12/12	3/15	305.2	305.4	305.3	305.3
GW021266-4	DPI	Orallo Fm	GAB	1011	6/73	8/14	128.0	186.7	171.2	177.1
BHN14PRORA01	Santos	Orallo Fm	GAB	506	2/14	8/15	215.2	217.1	216.4	216.3
NYOPRORA01	Santos	Orallo Fm	GAB	52	1/15	4/15	203.9	210.1	204.3	204.1
GW025343-2	DPI	Mooga Ss	GAB	1059	1/70	8/14	171.9	179.8	175.2	174.9
GW025338-3	DPI	Mooga Ss	GAB	1071	12/69	8/14	168.1	181.5	174.9	174.6
GW025340-3	DPI	Mooga Ss	GAB	1068	4/70	8/14	169.8	179.8	173.9	173.3
GW021266-3	DPI	Namoi alluvium	ULNA	1005	6/73	8/14	164.4	185.8	179.5	181.1
GW021437-2	DPI	Namoi alluvium	ULNA	1116	5/68	8/14	178.3	185.2	181.9	182.1
GW025338-1	DPI	Namoi alluvium	ULNA	1071	12/69	8/14	170.9	181.8	175.5	174.9
GW025338-2	DPI	Namoi alluvium	ULNA	1071	12/69	8/14	162.3	181.6	174.4	174.2
GW025340-1	DPI	Namoi alluvium	ULNA	1068	4/70	8/14	169.7	180.5	173.7	172.9
GW025340-2	DPI	Namoi alluvium	ULNA	1074	4/70	8/14	169.5	180.5	173.7	172.9
GW025343-1	DPI	Namoi alluvium	ULNA	1059	4/70	8/14	171.8	179.7	175.2	174.8
GW030070-1	DPI	Namoi alluvium	ULNA	343	8/70	8/14	182.9	192.7	188.7	189.3
GW030070-2	DPI	Namoi alluvium	ULNA	354	8/70	8/14	172.3	190.2	185.4	187.1
GW030070-3	DPI	Namoi alluvium	ULNA	354	8/70	8/14	171.6	190.1	185.3	186.9
GW030310-1	DPI	Namoi alluvium	ULNA	323	3/74	8/14	183.1	195.9	192.5	193.3
GW030117-1	DPI	Namoi alluvium	ULNA	320	6/72	8/14	199.6	204.2	202.7	202.7
GW030117-2	DPI	Namoi alluvium	ULNA	285	6/72	8/14	201.7	204.6	202.8	202.8
GW030278-1	DPI	Namoi alluvium	ULNA	390	4/72	1/15	213.0	222.0	216.7	216.8
GW036005-2	DPI	Namoi alluvium	ULNA	309	9/74	8/14	211.8	227.2	223.7	225.2
GW036092-1	DPI	Namoi alluvium	ULNA	297	12/74	8/14	231.0	234.4	232.4	232.5

GOB – Gunnedah–Oxley Basin MDB Groundwater Source; GAB - Great Artesian Basin Surat and Southern Recharge Groundwater Sources; ULNA – Upper and Lower Namoi Alluvium Source

Note: screened intervals of bores are listed in Appendix C

