B. Lake Wivenhoe water level at 9.00am on 26 December 2010 - EL 67.35 m AHD

Seqwater, Spreadsheet containing Lake Wivenhoe water levels between 1 December 2010 and 31 January 2011, Doc identification number: MAU.500.020.0027.

188 Between 26 December 2010 and 28 December 2010, the Flood Engineers released water from Wivenhoe Dam at rates significantly below the rate of inflow.

PARTICULARS

A. Seqwater, *Report on the Operation of Somerset and Wivenhoe Dam - October to December 2010*, May 2011, pp 94, 100-101.

189 On or about the morning of 28 December 2010, the water level in Lake Wivenhoe exceeded approximately EL 68.5 m AHD, which circumstance required the Flood Engineers to switch transition to Strategy W2 or W3 at Wivenhoe Dam in accordance with the Flood Mitigation Manual.

PARTICULARS

A. Seqwater, *Report on the Operation of Somerset and Wivenhoe Dam - October to December 2010,* May 2011, pp 94, 100-101.

B. Lake Wivenhoe water level at 6.00am on 28 December 2010 - EL 68.53 m AHD

Seqwater, Spreadsheet containing Lake Wivenhoe water levels between 1 December 2010 and 31 January 2011, Doc identification number: MAU.500.020.0027.

C. Lake Wivenhoe water level at 7.12am on 28 December 2010 - EL 68.55 m AHD

Seqwater, Technical Situation Report 2, January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2 March 2011, Appendix F, p 66.

D. Flood Mitigation Manual, section 8.4.

190 The Flood Engineers did not transition to Strategy W2 or W3 until the water level in Lake Wivenhoe reached approximately 68.80 m.

PARTICULARS

A. Seqwater, *Report on the Operation of Somerset and Wivenhoe Dam - October to December 2010,* May 2011, pp 101, 121.

B. Lake Wivenhoe water level at 12.00 pm on 28 December 2010 - EL 68.80 m AHD

Seqwater, Spreadsheet containing Lake Wivenhoe water levels between 1 December 2010 and 31 January 2011, Doc identification number: MAU.500.020.0027.

191 The water levels of Lake Wivenhoe and Lake Somerset continued to rise inoroaoo- until 29 December 2010, eventually reaching a maximum level of approximately EL 69.33 m AHD at Lake Wivenhoe and approximately EL 99.99 m AHD at Lake Somerset.

PARTICULARS

A. Seqwater, *Report on the Operation of Somerset and Wivenhoe Dam - October to December 2010,* May 2011, pp 100-101.

B. Lake Wivenhoe water level at 12.00 pm on 29 December 2010 - EL 69.33 m AHD

Seqwater, Spreadsheet containing Lake Wivenhoe water levels between 1 December 2010 and 31 January 2011, Doc identification number: MAU.500.020.0027.

C. Lake Wivenhoe water level at 12 pm on 29 December 2010 - EL 69.33 m AHD

Seqwater, Technical Situation Report 4, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam,* 2 March 2011, Appendix F, p 69.

D. Lake Somerset water level at 9.20am on 28 December 2010 - EL 100.00 m AHD

Email from damlevels@seqwater.com.au to DG-Ops Dam Levels, DG-Ops duty engineers, DG-ops Dam Levels Central, sent Tuesday, 28 December 2010 at 9.18am; Subject: FW: Somerset Dam.

25 December - 1January Breaches

191A By reason of the matters pleaded at paragraphs 179A- 184A, a reasonably prudent flood engineer responsible for Flood Operations at Somerset Dam and Wivenhoe Dam in the period 25 December 2010 to 1 January 2011:

a) would have complied with the Flood Mitigation Manual:

b) would have commenced Flood Operations and releases as soon as possible and, in any event, before 7:00 am on 26 December 2010;

c) would have implemented and maintained Strategy W2 or Strategy W3 at Wivenhoe Dam for substantially all of the period 25 December 2010 to 1 January 2010:

d) would have implemented and maintained Strategy S2 at Somerset Dam throughout the period 25 December 2010 to 1 January 2011;

e) would have kept the water level in Lake Somerset to no higher than:

i) approximately EL 98.21 m AHD by the end of 1 January 2011; or, alternatively,

ii) Temporary Full Supply Level by the end of 1 January 2011; or, alternatively,

iii) Full Supply Level by the end of 1 January 2011;

f) would have kept the water level in Lake Wivenhoe to no higher than:

i) approximately EL 63.33 m AHD by the end of 1 January 2011; or, alternatively,

ii) Temporary Full Supply Level by the end of 1 January 2011; or, alternatively,

iii) Full Supply Level by the end of 1 January 2011; and

g) would have continued Flood Operations until Lake Somerset and Lake Wivenhoe were no longer likely to exceed their respective Temporary Full Supply Levels, or alternatively, their Full Supply Levels.

PARTICULARS

A. A reasonably prudent flood engineer would have complied with the Flood Mitigation Manual by taking the actions pleaded in paragraphs 191A(b)-(g).

B. Flood Mitigation Manual, sections 1.1, 3.1, 8.4, 8.5, 9.3, 9.4.

C. Christensen Report, Chapter VIII, [645]-[770].

191B In the circumstances pleaded at paragraphs 184A-191A, the Flood Engineers (or one or more of them) failed to do one or more of the things pleaded in paragraph 191A.

191C By reason of the matters pleaded in the preceding paragraph, the Flood Engineers, or one or more of them, breached their duty of care to the plaintiff and other Group Members in the period 25 December 2010 to 1 January 2011 (the **25 December – 1 January Breaches).**

P Events of 2 January 2011

Weather Forecasts

192 On 2 January 2011:

a) the Bureau of Meteorology 4-day forecast for ~~3~~ 2 January to ~~6~~ 5 January 2011 predicted ~~50-100~~ 2-10 mm of rainfall in the Brisbane River Basin, including in the Lake Somerset and Lake Wivenhoe catchment areas; and

b) the Bureau of Meteorology 8-day forecast for ~~3~~ 2 January to 40 9 January 2011 predicted ~~50-100~~ 15-25 mm of rainfall in the Brisbane

River Basin, including in the Lake Somerset and Lake Wiyenhoe catchment areas.

PARTICULARS

A. Bureau of Meteorology, Poor Man's Ensemble forecast issued 2 January ~~2011~~ for period ~~3~~ 2 January to ~~6~~ 5 January 2011.

B. Bureau of Meteorology, Poor Man's Ensemble forecast issued 2 January ~~2011~~ for period ~~3~~ 2 January to 40 9 January 2011.

193 At or around 10:03 am on 2 January 2011, the Bureau of Meteorology issued a QPF predicting rainfall of up to 10 mm in the Lake Somerset and Lake Wivenhoe catchment areas over the following 24 hours.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam,* 2 March 2011, Appendix C, p 160.

194 At or around ~~16:04~~ 4:04 pm on 2 January 2011, the Bureau of Meteorology issued a QPF predicting rainfall of 5-10 mm in the Lake Somerset and Lake Wivenhoe catchment areas over the following 24 hours.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam,* 2 March 2011, Appendix C, p 161.

195 The weather forecasts issued on 2 January 2011 predicted rain in such quantities over the coming days that there was a significant risk that there would be insufficient flood storage capacity in Lake Somerset and Lake Wivenhoe to prevent urban flooding downstream of Wivenhoe Dam unless ~~flood~~ releases were continued at both Somerset Dam and Wivenhoe Dam on 2 January 2011.

Rainfall and Inflows

196 The substantial rainfall over the catchment areas of Lake Somerset and Lake Wivenhoe in December 2010 caused those areas to become saturated with the effect that, by 2 January 2011 at the latest, there was an increased likelihood that further rainfall would result in runoff into Lake Somerset and Lake Wivenhoe rather than be absorbed into the ground.

197 In the 24 hours to 9:00 am on 2 January 2011, there was widespread rainfall throughout the catchment areas for Lake Somerset and Lake Wivenhoe, with up to 50 mm recorded at the headwaters of the Stanley River.

PARTICULARS

A. Seqwater, *Report on the Operation of Somerset and Wivenhoe Dam - October to December 2010,* May 2011, p 88.

B. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam,* 2 March 2011, Appendix F, p 73.

198 This rainfall, and the associated runoff, resulted in ongoing catchment inflows into Lake Somerset and Lake Wivenhoe on 2 January 2011.

PARTICULARS

A. Queensland Floods Commission of Inquiry, Exhibit 1054, Gate Operations Spreadsheet, File name: SDWD-201101090900 (2).xls.

B. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam,* 2 March 2011, Appendix F, p 73.

199 The rainfall and inflows into Lake Somerset and Lake Wivenhoe on 2 January 2011 increased the risk that, absent ongoing releases from Somerset Dam and Wivenhoe Dam, there would be insufficient flood storage capacity in Lake Somerset and Lake Wivenhoe to prevent urban flooding downstream of Wivenhoe Dam should further rainfall occur in

accordance with, or in excess of, that forecast by the Bureau of Meteorology.

200 Further, as at 2 January 2011:

a) the Brisbane River Basin, including the catchment areas for Lake Somerset and Lake Wivenhoe, had experienced six months of significantly above average rainfall;

b) the Brisbane River Basin, including the catchment areas for Lake Somerset and Lake Wivenhoe, had experienced three months of significantly above average rainfall; and

c) the Brisbane River Basin, including the catchment areas of Lake Somerset and Lake Wivenhoe, had experienced the wettest December on record, with rainfall 200% to 400% above average.

201 The cumulative effect of the rainfall in the Brisbane River Basin over the three months preceding 2 January 2011 made it likely that any further rain on or after 2 January 2011 would have a significant runoff response and result in substantial inflows into Lake Somerset and Lake Wivenhoe.

202 On 2 January 2011, the Flood Engineers knew that the Lake Somerset and Lake Wivenhoe catchments were saturated, and that further rainfall was likely to generate additional runoff ftmeffs and inflows into Lake Somerset and Lake Wivenhoe.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam,* 2 March 2011, Appendix F, p 73.

B. Further particulars may be provided after discovery.

Water Level

203 At or around 9:37 am on 2 January 2011:

a) the water level of Lake Somerset was approximately EL 99.10 m AHD (0.10 m above Full Supply Level) and rising; and

b) the water level at Lake Wivenhoe was approximately EL 67.10 m AHD (0.10 m above Full Supply Level) and rising.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam,* 2 March 2011, Appendix F, p 73.

B. Lake Wivenhoe water level at 9.00am on 2 January 2011 - EL 67.10 m AHD

Seqwater, Spreadsheet containing Lake Wivenhoe water levels between 1 December 2010 and 31 January 2011, Doc identification number: MAU.500.020.0027.

C. Lake Somerset water level at 9.00am on 2 January 2011 - EL 99.11 m AHD

Seqwater, Spreadsheet containing Lake Somerset water levels between 31 December 2010 and 2 January 2011. File name: Somerset I-O V RTI.

204 Lake Wivenhoe and Lake Somerset continued to rise over the course of 2 January 2011.

Flood Operations

205 The Flood Engineers on duty on 2 January 2011 were as follows:

Saturday 1/1/2011 19:00	Sunday 2/1/2011 07:00	Mr Ayre
Sunday 2/1/2011 07:00	Sunday 2/1/2011 09:45	Mr Malone

206 At or before 9:45 am on 2 January 2011, the Flood Engineers (or one or more of them) discontinued ~~flood~~ releases and ended Flood Operations.

PARTICULARS

A. Seqwater, *Report on the Operation of Somerset and Wivenhoe Dam - October to December 2010,* May 2011, p 13.

B. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Appendix F, p 73.

C. Further particulars may be provided after discovery.

207 At the time ~~flood~~ releases and Flood Operations were discontinued on 2 January 2011:

a) Lake Wivenhoe and Lake Somerset were each above their respective Full Supply Levels; and

b) a Flood Event (as defined in paragraph 102 above) was occurring.

208 Immediately upon the cessation of Flood Operations on 2 January 2011, the water levels in Lake Wivenhoe and Lake Somerset began to rise.

2 January 2011 Breaches

209 In the circumstances pleaded in paragraphs 192-204, the cessation of ~~flood~~ releases and Flood Operations on 2 January 2011 created a significant risk:

a) that there would be insufficient flood storage capacity in Lake Somerset and Lake Wivenhoe to store ~~flood~~ inflows should further rainfall occur in accordance with, or in excess of, that forecast by the Bureau of Meteorology; and

b) that, without such capacity, subsequent ~~flood~~ releases would be necessary in volumes that would cause urban flooding downstream of Wivenhoe Dam.

210 [Not used] ~~In the circumstances pleaded in paragraphs 192-204 and 209, a reasonably prudent flood engineer responsible for Flood Operations at Somerset Dam and Wivenhoe Dam on 2 January 2011:~~

a) would have had regard to the flood mitigation ~~objectives~~ in the Flood Mitigation Manual and the priority between them;

b) would have considered the likely ~~effect~~ of continuing inflows in ~~determining~~ whether to ~~cease~~ flood releases and Flood Operations;

c) would have ~~considered~~ the likely effect of continuing rainfall in determining whether to ~~cease~~ flood releases and Flood Operations;

d) would have considered forecast rainfall in determining whether to cease flood releases and Flood ~~Operations;~~

e) would have considered the ~~risk~~ that further rainfall might generate substantial runoff given previous rainfall; and

f) would have considered the risk that a failure to continue Flood Operations and flood releases might result in there being ~~insufficient~~ available capacity in the flood storage ~~compartments~~ of Somerset Dam and Wivenhoe Dam to prevent large scale releases in ~~case~~ of further rain;

g) would have considered the risk that future rainfall may exceed that predicted by the Bureau of Meteorology;

h) would have considered the current ~~water~~ levels of ~~Lake~~ Somerset and Lake Wivenhoe;

i) would have considered the magnitude of forecast rainfall and the likely impact such rainfall would have on dam water levels should it eventuate; and

j) would have considered whether water levels should be reduced ~~below~~ Full Supply ~~Level~~ given past rainfall, ongoing inflows and the likelihood of rainfall in the near future

211 Further, by reason of the matters pleaded at paragraphs 192-204 and 209 209-210, a reasonably prudent flood engineer responsible for Flood Operations at Somerset Dam and Wivenhoe Dam on 2 January 2011:

a) would have complied with the Flood Mitigation Manual;

b) would have continued Flood Operations and releases at Somerset Dam and Wivenhoe Dam after 9:45 am on 2 January 2011;

c) would have implemented Strategy W1 at Wivenhoe Dam;

d) would have implemented Strategy S2 at Somerset Dam;

e) would have caused Somerset Dam and Wivenhoe Dam to release water at rates substantially exceeding the rate of inflow;

f) would have reduced the water level in Lake Somerset to no higher than:

   i) approximately EL 98.22 m AHD by the end of 2 January 2011; or, alternatively,

   ii) approximately EL 98.65 m AHD by the end of 2 January 2011; or, alternatively,

   iii) Temporary Fully Supply Level by the end of 2 January 2011; or, alternatively,

   iv) Full Supply Level by the end of 2 January 2011;

g) would have reduced the water level in Lake Wivenhoe to no higher than:

   i) approximately EL 66.16 m AHD by the end of 2 January 2011; or, alternatively,

   ii) approximately EL 66.55 m AHD by the end of 2 January 2011; or, alternatively,

   iii) Temporary Fully Supply Level by the end of 2 January 2011; or, alternatively,

   iv) Full Supply Level by the end of 2 January 2011; and

h) would have continued Flood Operations until Lake Somerset and Lake Wivenhoe were no longer likely to exceed their respective Temporary Full Supply Levels, or alternatively, Full Supply Levels.

PARTICULARS

A. A reasonably prudent flood engineer would have complied with the Flood Mitigation Manual bv taking the actions pleaded in paragraphs 211(b)-(h).

B. Flood Mitigation Manual. sections 1.1. 3.1. 8.4. 8.5. 9.3. 9.4.

C. Christensen Report. Chapter VIII. [771]-[797].

D. Christensen Report. Chapter X, [1194]-[1214].

a) would have reasonably construed the Flood Mitigation Manual;

PARTICULARS

A. A reasonably prudent flood onginoor would havo ~~construed~~ tho Flood Mitigation Manual to roquiro tho Flood Enginoors to ~~use~~ tho woathor ~~forecast~~ information suppliod by tho Buroau of Motoorology in dotormining roloaso stratogios for ~~Somerset~~ Dam and Wivonhoo ~~Dam.~~

B. A reasonably ~~prudent~~ flood ~~engineer~~ would havo construod tho Flood Mitigation Manual to roquiro tho actions ploaded in paragraphs ~~211(b) (d),~~ (g), ~~(j)~~ and ~~(l) (o)~~ below.

b) would havo ~~complied~~ with the roouiromont of tho Flood Mitigation ~~Manual;~~

PARTICULARS

A. A ~~reasonably~~ prudont flood onginoor would havo compliod with tho Flood Mitigation Manual bv taking tho actions ploadod in paragraph ~~211(c) (d). (a).~~ (i) and ~~(l) (o) below.~~

c) would havo ~~made~~ reasonable predictions, and formed roasonablo oxpoctations, with respect to thoso matters in relation to which tho Flood Mitigation Manual required tho Flood Enginoors to ~~make predictions~~ and form oxpoctations, and would havo ~~acted~~ in ~~accordance~~ with thoso ~~predictions~~ and oxpoctations in complying with the requirements of the Flood Mitigation Manual;

d) would have adhered to the dictates of the Flood Mitigation Manual in determining whether to continue Flood Operations and flood releases;

e) would have expected that the water levels in Lake Somerset and Lake Wivenhoe would continue to exceed their respective Full Supply Levels, such that a Flood Event was occurring;

f) would have considered that, according to the terms of the Flood Mitigation Manual, a Flood Event had been ongoing since on or around 2 December 2010;

g) would have continued Flood Operations and flood releases at Somerset Dam and Wivenhoe Dam after 9:45 am on 2 January 2011;

h) would have expected that the water level in Lake Wivenhoe would exceed EL 68.5 m AHD given the existing water level, past rainfall, ongoing inflows and forecast rainfall;

i) would have considered that the Flood Mitigation Manual required the implementation of Strategy W3 at Wivenhoe Dam;

j) would immediately have implemented Strategy W3 in releasing water from Wivenhoe Dam;

k) would have considered that the Flood Mitigation Manual required the implementation of Strategy S2 at Somerset Dam;

l) would immediately have implemented Strategy S2 at Somerset Dam;

m) would have caused Somerset Dam and Wivenhoe Dam to release water at rates substantially exceeding the rate of inflow;

n) would have made sufficient precautionary releases from Somerset Dam and Wivenhoe Dam to ensure that there was sufficient available capacity in the flood storage compartments of Somerset Dam and Wivenhoe Dam to avoid or minimise the risk that large scale releases would be required should further rainfall occur in accordance with, or in excess of, that forecast by the Bureau of Meteorology;

o) would havo continuod Flood Oporations until Lako Somorsot and Lako Wivonhoo woro no longor likoly to ~~oxcood~~ thoir ~~respoctivo~~ Full Supply Levels; and

p) would havo continuod to draw down Lako Somerset and Lako Wivonhoo to 95% of thoir ~~combinod~~ Full Supply Lovols ~~after the~~ Flood Evont had ~~concludod,~~ as permitted by tho authorisation pleaded in paragraph ~~170.~~

212 In the circumstances pleaded at paragraphs 205-211, on 2 January 2011, the Flood Engineers (or one or more of them) failed to do one or more of the things pleaded in paragraph 211. ~~:~~

a) failed to havo rogard to, or to accord ~~sufficient~~ woight to, one or ~~more~~ of tho matters ploadod in paragraph 209; and

b) failed to do ~~one~~ or moro of tho things pleaded in paragraph ~~211.~~

213 By reason of the matters pleaded in the preceding paragraph, the Flood Engineers, or one or more of them, breached their duty of care to the plaintiff and other Group Members on 2 January 2011 (the **2 January Breaches).**

Q Events of 3 January to 5 January 2011

Weather Forecasts

214 On 3 January 2011:

a) the Bureau of Meteorology 4-day forecast for 4 3 January to ~~7~~ 6 January 2011 predicted 100-150 50-100 mm of rainfall in the Brisbane River Basin, including in the Lake Somerset and Lake Wivenhoe catchment areas; and

b) the Bureau of Meteorology 8-day forecast for 4 3 January to ~~11~~ 10 January 2011 predicted §0-200 75-150 mm of rainfall in the Brisbane River Basin, including in the Lake Somerset and Lake Wivenhoe catchment areas.

PARTICULARS

A. Bureau of Meteorology, Poor Man's Ensemble forecast issued 3 January ~~2011~~ for period 4 3 January to ~~7~~ 6 January 2011.

B. Bureau of Meteorology, Poor Man's Ensemble forecast issued 3 January ~~2011~~ for period 4 3 January to ~~11~~ 10 January 2011.

215 On 4 January 2011:

a) the Bureau of Meteorology 4-day forecast for ~~5~~ 4 January to ~~8~~ 7 January 2011 predicted ~~50-100~~ 75-150 mm of rainfall in the Brisbane River Basin, including in the Lake Somerset and Lake Wivenhoe catchment areas; and

b) the Bureau of Meteorology 8-day forecast for § 4 January to ~~12~~ 11 January 2011 predicted ~~100-300~~ 90-150 mm of rainfall in the Brisbane River Basin, including in the Lake Somerset and Lake Wivenhoe catchment areas.

PARTICULARS

A. Bureau of Meteorology, Poor Man's Ensemble forecast issued ~~4~~ January ~~2011~~ for period § 4 January to ~~8~~ 7 January 2011.

B. Bureau of Meteorology, Poor Man's Ensemble forecast issued 4 January ~~2011~~ for period § 4 January to 42 11January 2011.

216 On 5 January 2011:

a) the Bureau of Meteorology 4-day forecast for ~~6~~ 5 January to © 8 January 2011 predicted 50-100 ~~150~~ mm of rainfall in the Brisbane River Basin, including in the Lake Somerset and Lake Wivenhoe catchment areas; and

b) the Bureau of Meteorology 8-day forecast for ~~6~~ 5 January to ~~13~~ 12 January 2011 predicted ~~150-300~~ 100-150 mm of rainfall in the Brisbane River Basin, including in the Lake Somerset and Lake Wivenhoe catchment areas.

PARTICULARS

A. Bureau of Meteorology, Poor Man's Ensemble forecast issued ~~5~~ January ~~2011~~ for period ~~6~~ 5 January to ~~9~~ 8 January 2011.

B. Bureau of Meteorology, Poor Man's Ensemble forecast issued ~~5~~ January ~~2011~~ for period ~~6~~ 5 January to ~~13~~ 12 January 2011.

217 In the period 3 January to 5 January 2011 ~~(inclusive)~~, the Bureau of Meteorology issued QPFs predicting rainfall in the Lake Somerset and Lake Wivenhoe catchment areas as set out in the table below: .

QPF Date	QPF Time	QPF Average Forecast Rainfall for Following 24 Hours
3 January 2011	11:36 am	5-10 mm
3 January 2011	16:00 pm	10-20 mm
4 January 2011	11:30 am	10-20 mm
4 January 2011	4:00 pm	5-15 mm
5 January 2011	10:03 am	20-30 mm
5 January 2011	4:00 pm	30-50 mm

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Appendix C, pp 162-167.

Rainfall and Inflows

218 Between 3 January and 5 January 2011 (inclusive), approximate actual average rainfall in the Lake Somerset and Lake Wivenhoe catchment areas was as set out in the table below:

	Catchment Rainfall
9am on 3 January 2011 - 9am on 4 January 2011	5 mm

9am on 4 January 2011 - 9am on 5 January 2011	0 mm
9am on 5 January 2011 - 9am on 6 January 2011	26 mm

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Section 6.2, p 56 and Appendix C, p 159.

219 This rainfall, and the associated runoff, resulted in ongoing catchment inflows into Lake Somerset and Lake Wivenhoe in the period 3 January to 5 January 2011.

PARTICULARS

A. Christensen Report, [798]-[800], [821]-[822], [837]-[838].

Water Level

220 Between the end of Flood Operations on 2 January 2011 and the morning of 6 January 2011:

a) the water level of Lake Somerset increased from approximately EL 99.10 m AHD to approximately EL 99.34 m AHD; and

b) the water level of Lake Wivenhoe increased from approximately EL 67.10 m AHD to approximately EL 67.31 m AHD.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Appendix E, p 1.

B. Lake Somerset water level at 7.30am on 2 January 2011 - EL 99.10 m AHD

Seqwater, Technical Situation Report 6, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Appendix F, p 73.

C. Lake Wivenhoe water level at 9.00am on 2 January 2011 - EL 67.10 m AHD

Lake Wivenhoe water level at 6.30am on 6 January 2011 - EL 67.31 m AHD

Seqwater, Spreadsheet containing Lake Wivenhoe water levels between 1 December 2010 and 31 January 2011, Doc identification number: MAU.500.020.0027.

221 At all times between 2 January 2011 and 6 January 2011:

a) the water levels in Lake Somerset and Lake Wivenhoe exceeded their respective Full Supply Levels; and

b) a "Flood Event" (as defined in paragraph 102 above) was occurring.

222 On or about 5 January 2011, the water level in Lake Wivenhoe exceeded EL 67.25 m AHD.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Appendix E, p 1.

B. Lake Wivenhoe water level at 6.30am on 5 January 2011 - EL 67.23 m AHD

Lake Wivenhoe water level at 6.30am on 6 January 2011 - EL 67.31 m AHD

Seqwater, Spreadsheet containing Lake Wivenhoe water levels between 1 December 2010 and 31 January 2011, Doc identification number: MAU.500.020.0027.

223 By reason of the matters pleaded in the preceding paragraph, by 5 January 2011 at the latest, the Flood Mitigation Manual required ~~flood~~ releases to continue or commence at Wivenhoe Dam.

PARTICULARS

A. Flood Mitigation Manual, sections 8.3, 8.4.

Flood Operations

224 The Flood Engineers did not continue or commence Flood Operations or ~~flood~~ releases in the period 2 January to 5 January 2011.

224A Between 3 January 2011 and 5 January 2011, the person or persons rostered on call as Duty Flood Operations Engineer (as defined in paragraph 99 above) did not mobilise the Flood Operations Centre or commence Flood Operations.

PARTICULARS

A. The plaintiff is presently unaware of which of the Flood Engineers acted as the Duty Flood Engineer during this period. Further particulars may be provided after discovery.

225 The failure by the Flood Engineers to continue or commence Flood Operations and ~~flood~~ releases in the period ~~2~~3 January to 5 January 2011 contravened the Flood Mitigation Manual.

PARTICULARS

A. Flood Mitigation Manual, sections 8.3, 8.4.

3-5 January 2011 Breaches

226 In the circumstances pleaded in paragraphs 214-223, in the period 3 January to 5 January 2011 (inolusivo), there was a significant risk:

a) that, unless Heed releases were immediately commenced at Somerset Dam and Wivenhoe Dam, there would be insufficient flood storage capacity in Lake Somerset and Lake Wivenhoe to store

incoming flows should further rainfall occur in accordance with, or in excess of, that forecast by the Bureau of Meteorology; and

b) that, without such capacity, subsequent ~~flood~~ releases would be necessary in volumes that would cause urban flooding downstream of Wivenhoe Dam.

227 [Not used] Further, in the circumstances pleaded in paragraphs 214 ~~223~~ and 226, a reasonably prudent flood engineer responsible for Flood Operations at Somerset Dam and Wivenhoe Dam in the period 3 January to 5 January 2011 (inclusive):

a) would have had regard to the flood mitigation objectives in the Flood Mitigation Manual and the priority between them;

b) would have considered the likely effect of continuing inflows in determining whether to ~~recommence~~ flood releases and Flood Operations;

c) would have considered the likely effect of continuing rainfall in determining whether to ~~recommence~~ flood releases and Flood Operations;

d) would have considered forecast rainfall in determining whether to ~~recommence~~ flood releases and Flood Operations;

e) would have ~~considered~~ the ~~risk~~ that further rainfall might generate substantial runoff given ~~previous~~ rainfall in determining whether to ~~recommence~~ flood releases and Flood Operations;

f) would have considered the risk that a failure to recommence Flood Operations and flood releases might result in there being insufficient available capacity in the flood storage compartments of Somerset Dam and Wivenhoe Dam to prevent large ~~scale~~ releases in case of further rain;

g) would have considered the risk that future rainfall may exceed that predicted by the Bureau of Meteorology;

h) would have ~~considered~~ the current water levels of Lake ~~Somerset~~ and Lake Wivenhoe;

i) would have considered the magnitude of forecast rainfall and the likely impact such rainfall would have on dam water levels should it eventuate; and

j) would have considered whether water levels in Lake Wivenhoe and Lake Somerset should be ~~reduced~~ below Full Supply Level given past rainfall and the likelihood of rainfall in the near future

228 Further, by reason of the matters pleaded at paragraphs 214-223 and 226 ~~226-227~~, a reasonably prudent flood engineer responsible for Flood Operations at Somerset Dam and Wivenhoe Dam in the period 3 January to 5 January 2011 ~~(inclusive)~~:

a) would have complied with the Flood Mitigation Manual;

b) would have:

i) continued Flood Operations and releases at Somerset Dam and Wivenhoe Dam throughout the period 3-5 January 2011; or, alternatively,

ii) recommenced Flood Operations and releases at Somerset Dam and Wivenhoe Dam in the period 3-5 January 2011;

c) would have implemented and maintained Strategy W3 at Wivenhoe Dam throughout the period 3-5 January 2011;

d) would have implemented and maintained Strategy S2 at Somerset Dam throughout the period 3-5 January 2011;

e) would have caused Somerset Dam and Wivenhoe Dam to release water at rates substantially exceeding the rate of inflow;

f) would have reduced the water level in Lake Somerset to no higher than:

i) approximately EL 96.20 m AHD by the end of 5 January 2011; or, alternatively,

ii) approximately EL 98.58 m AHD by the end of 5 January 2011; or, alternatively,

iii) Temporary Fully Supply Level by the end of 5 January 2011; or, alternatively,

iv) Full Supply Level by the end of 5 January 2011;

g) would have reduced the water level in Lake Wivenhoe to no higher than:

i) approximately EL 64.23 m AHD by the end of 5 January 2011; or, alternatively,

ii) approximately EL 66.56 AHD by the end of 5 January 2011; or, alternatively,

iii) Temporary Fully Supply Level by the end of 5 January 2011; or, alternatively,

iv) Full Supply Level by the end of 5 January 2011; and

h) would have continued Flood Operations until Lake Somerset and Lake Wivenhoe were no longer likely to exceed their respective Temporary Full Supply Levels, or alternatively, their Full Supply Levels.

PARTICULARS

A. A reasonably prudent flood engineer would have complied with the Flood Mitigation Manual by taking the actions pleaded in paragraph 228(b)-(i).

B. Flood Mitigation Manual, sections 1.1, 3.1, 8.4, 8.5, 9.3, 9.4.

C. Christensen Report, Chapter VIII, [798]-[852].

D. Christensen Report, Chapter X, [1215]-[1250], [1251]-[1274].

a) would have reasonably construed the Flood Mitigation Manual;

PARTICULARS

A. A reasonably prudent flood engineer would have construed the Flood Mitigation Manual to require the Flood Engineers to use the ~~weather forecast~~ information supplied by the Bureau of

Motoorology in dotormining roloaso stratogios for Somorsot Dam and Wivonhoo ~~Dam.~~

B. A reasonably prudont flood onginoor would havo construed the Flood Mitigation Manual to roquiro tho actions ploadod in paragraphs 228(b) ~~(c), (h), (k) and (m)~~ (p) ~~below.~~

b) would havo complied with tho roquiromonts of tho Flood Mitigation Manual;

PARTICULARS

A. A roasonably prudont flood onginoor would have compliod with tho Flood Mitigation Manual by taking tho actions ploadod in paragraphs ~~228(c),~~ (h), (k) and (m)-(p) bolow.

c) would have ~~made~~ reasonable predictions, and formed reasonable oxpoctations, with ~~respect~~ to thoso matters in relation to which the Flood Mitigation Manual roquirod tho Flood Enginoors to ~~make~~ predictions and form oxpoctations, and would havo ~~acted~~ in ~~accordance~~ with thoso predictions and oxpoctations in complying with the requirements of the Flood Mitigation Manual;

d) would have ~~expected~~ that the wator lovols in Lake Somerset and Lako Wivenhoe would continue to oxcood thoir ~~respective~~ Full Supply Levels, such that a Flood Event was occurring;

e) would have considorod that, according to tho terms of tho Flood Mitigation Manual, a Flood Evont had boon ongoing ~~since~~ on or around 2 ~~December 2010,~~ or alternatively, ~~since~~ on or around 2 January ~~2011 at~~ the latest;

f) would havo considorod that Flood Operations and flood roloasos ~~were~~ improperly discontinued on 2 January ~~2011;~~

g) would havo considorod that insufficiont roloasos had boon mado from Wivonhoo Dam in tho period 2 January to 5 January ~~2011;~~

h) would have rocommonood Flood Oporations and flood releases at Somerset Dam and Wivenhoe Dam;

i) would have expected that the water level in Lake Wivenhoe would exceed EL 68.5 m AHD given the existing water level, past rainfall, ongoing inflows and forecast rainfall;

j) would have considered that the Flood Mitigation Manual required the implementation of Strategy W3 at Wivenhoe Dam;

k) would immediately have implemented Strategy W3 in releasing water from Wivenhoe Dam;

l) would have considered that the Flood Mitigation Manual required the implementation of Strategy S2 at Somerset Dam;

m) would immediately have implemented Strategy S2 at Somerset Dam;

n) would have caused Somerset Dam and Wivenhoe Dam to release water at rates substantially exceeding the rate of inflow;

o) would have made sufficient precautionary releases from Somerset Dam and Wivenhoe Dam to ensure that there was sufficient available capacity in the flood storage compartments of Somerset Dam and Wivenhoe Dam to avoid or minimise the risk that large scale releases would be required should further rainfall occur in accordance with, or in excess of, that forecast by the Bureau of Meteorology;

p) would have continued Flood Operations until Lake Somerset and Lake Wivenhoe were no longer likely to exceed their respective Full Supply Levels; and

q) would have continued to draw down Lake Somerset and Lake Wivenhoe to 95% of their combined Full Supply Levels after the Flood Event had concluded, as permitted by the authorisation pleaded in paragraph 170.

229 In the circumstances pleaded in paragraphs 224-228, in the period 3 January to 5 January 2011 (inclusive) the Flood Engineers (or one or more of them) failed to do one or more of the things pleaded in paragraph 228:

a) failed to have regard to, or to accord sufficient weight to, one or more of the matters pleaded in paragraph 227; and

b) tho Flood Enginoors failod to do ono or moro of tho things ploadod in paragraph ~~228.~~

230 In the circumstances pleaded in the preceding paragraph, the Flood Engineers (or one or more of them) breached their duty of care to the plaintiff and other Group Members in the period 3 January to 5 January 2011 ~~(inclusive)~~ (the **3-5 January Breaches).**

R Events of 6 January 2011

Weather Forecasts

231 On 6 January 2011:

a) the Bureau of Meteorology 4-day forecast for 7 6 January to ~~10~~ 9 January 2011 predicted ~~100~~ 200 50-125 mm of rainfall in the Brisbane River Basin, including in the Lake Somerset and Lake Wivenhoe catchment areas; and

b) the Bureau of Meteorology 8-day forecast for 7 6 January to ~~14~~ 13 January 2011 predicted ~~1~~50-300 100-200 mm of rainfall in the Brisbane River Basin, including in the Lake Somerset and Lake Wivenhoe catchment areas.

PARTICULARS

A. Bureau of Meteorology, Poor Man's Ensemble forecast issued 6 January ~~2011~~ for period 7 6 January to 40 9 January 2011.

B. Bureau of Meteorology, Poor Man's Ensemble forecast issuod 6 January ~~2011~~ for period ~~7~~ 6 January to 44 13 January 2011.

232 At or around 8:00 am on 6 January 2011, the Bureau of Meteorology forecast rainfall of up to 150 mm in South East Queensland over the following 24 to 48 hours.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Appendix E, p 1.

233 At or around 10:21 am on 6 January 2011, the Bureau of Meteorology issued a QPF predicting ~~the~~ rainfall of 30-50 mm in the Lake Somerset and Lake Wivenhoe catchment areas over the following 24 hours.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Appendix C, p 168.

234 At or around 4:00 pm on 6 January 2011, the Bureau of Meteorology issued a QPF predicting the rainfall of 20-30 mm in the Lake Somerset and Lake Wivenhoe catchment areas over the following 24 hours.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Appendix C, p 169.

Rainfall and Inflows

235 in the 24 hours to 9:00 am on 6 January 2011, there was widespread rainfall throughout the catchment areas ~~for~~ of Lake Somerset and Lake Wivenhoe, ranging from 20 mm to 56 mm.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam,* 2 March 2011, Section 6.3, p 64.

236 This rainfall, and the associated runoff, resulted in ongoing catchment inflows into Lake Wivenhoe and Lake Somerset continuod throughout the course of 6 January 2011.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Section 9.2, p 154 and Section 9.3, p 169.

Water Level

237 At or around 8:00 am on 6 January 2011:

a) the water level of Lake Somerset was approximately EL 99.34 m AHD (0.34 m above Full Supply Level) and rising; and

b) the water level of Lake Wivenhoe:

i) was approximately EL 67.31 m AHD (0.31 m above Full Supply Level) and rising; and

ii) was above the level at which the Flood Mitigation Manual required ~~flood~~ releases to commence.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Appendix E, p 1.

B. Lake Wivenhoe water level at 6.30am on 6 January 2011 - EL 67.31 m AHD

Seqwater, Spreadsheet containing Lake Wivenhoe water levels between 1 December 2010 and 31 January 2011, Doc identification number: MAU.500.020.0027.

C. Lake Somerset water level at 7.00am on 6 January 2011 - EL 99.34 m AHD

Seqwater, Technical Situation Report 7, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Appendix F, p 74.

D. Lake Wivenhoe water level at 7.00am on 6 January 2011 - EL 67.31 m AHD

Seqwater, Technical Situation Report 7, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam,* 2 March 2011, Appendix F, p 74.

E. Flood Mitigation Manual, sections 1.2, 8.3 and 8.4.

238 Over the course of 6 January 2011:

a) the water level of Lake Somerset increased from approximately EL 99.27 m AHD to approximately EL 99.51 m AHD by day's end; and

b) the water level of Lake Wivenhoe increased from approximately EL 67.22 m AHD to approximately EL 67.45 m AHD by day's end.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Section 9.2, p 154 and Section 9.3, p 169.

B. Lake Wivenhoe water level at 10.00 pm on 6 January 2011 - EL 67.44 m AHD

Seqwater, Spreadsheet containing Lake Wivenhoe water levels between 1 December 2010 and 31 January 2011, Doc identification number: MAU.500.020.0027.

Flood Operations

239 At or around 7:00 am on 6 January 2011, Seqwater, SunWater and the Flood Engineers mobilised the Flood Operations Centre.

240 The Flood Engineers on duty on 6 January 2011 were as follows:

[redacted]		
Thursday 6/1/2011 07:00	Thursday 6/1/2011 19:00	Mr Malone
Thursday 6/1/2011 19:00	Friday 7/1/2011 07:00	Mr Ayre

241 By reason of the matters pleaded at paragraphs 231 -237, at all times after by 8:00 am on 6 January 2011 at the latest, the Flood Mitigation Manual required the Flood Engineers to continue or commence f4eed releases from Somerset Dam and Wivenhoe Dam.

PARTICULARS

A. Flood Mitigation Manual, sections 1.2, 8.3 and 8.4.

242 The Flood Engineers did not continue or commence any flood-releases from Somerset Dam or Wivenhoe Dam after 9:45 am on 6 January 2011.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Sections 9.2 and 9.3, pp 154 and 169.

6 January 2011 Breaches

243 In the circumstances pleaded in paragraphs 231-238, on 6 January 2011, there was a significant risk that:

a) unless ~~flood~~ releases were immediately commenced at Somerset Dam and Wivenhoe Dam, there would be insufficient flood storage capacity in Lake Somerset and Lake Wivenhoe to store incoming flows should further rainfall occur in accordance with, or in excess of, that forecast by the Bureau of Meteorology; and

b) without such capacity, subsequent ~~flood~~ releases would be necessary in volumes that would cause urban flooding downstream of Wivenhoe Dam.

244 [Not used] ~~Further, by reason of the matters ploaded at paragraphs 231-238 and 243, a reasonably prudent flood onginoor responsible for Flood Oporations at Somerset Dam and Wivonhoo Dam on 6 January 2011:~~

a) ~~would have had rogard to the flood mitigation objectives, and the priority between them, in the Flood Mitigation Manual;~~

b) ~~would have considorod the likoly effect of continuing inflows in determining whether to commence flood releases;~~

c) ~~would have considered the likoly effect of continuing rainfall in dotormining whether to commence flood releases;~~

d) would have considered ~~forecast~~ rainfall in determining whether to commence flood releases;

e) would have considered the ~~risk~~ that further rainfall might generate substantial runoff given previous rainfall in determining whether to ~~commence~~ flood releases;

f) would have considered the risk that a failure to ~~commence~~ flood releases might result in there being insufficient available capacity in the flood storage compartments of Somerset Dam and Wivenhoe Dam to prevent large ~~scale~~ releases in case of further rain;

g) would have considered the risk that ~~future~~ rainfall may ~~exceed~~ that predicted by the Bureau of Meteorology;

h) would have considered the ~~current~~ water levels of Lake Somerset and Lake Wivenhoe;

i) would have considered the magnitude of forecast rainfall and the likely impact such rainfall would have on dam water levels should it eventuate; and

j) would have considered whether water levels in Lake Somerset and Lake Wivenhoe should be ~~reduced~~ below Full Supply Level given past rainfall and the likelihood of rainfall in the near future.

245 Further, by reason of the matters pleaded at paragraphs 231 -238 and 243 243-244, a reasonably prudent flood engineer on 6 January 2011:

a) would have complied with the Flood Mitigation Manual;

b) would have commenced or continued Flood Operations and releases on 6 January 2011;

c) would have implemented and maintained Strategy W3 at Wivenhoe Dam;

d) would have implemented and maintained Strategy S2 at Somerset Dam;

e) would have caused Somerset Dam and Wivenhoe Dam to release water at rates substantially exceeding the rate of inflow;

f) would have reduced the water level in Lake Somerset to no higher than:

i) approximately EL 95.75 m AHD by the end of 6 January 2011; or, alternatively,

ii) approximately EL 98.48 m AHD by the end of 6 January 2011; or, alternatively,

iii) Temporary Full Supply Level by the end of 6 January 2011; or, alternatively,

iv) Full Supply Level by the end of 6 January 2011;

g) would have reduced the water level in Lake Wivenhoe to no higher than:

i) approximately EL 63.62 m AHD at the end of 6 January 2011; or, alternatively,

ii) approximately EL 66.76 m AHD at the end of 6 January 2011; or, alternatively,

iii) Temporary Full Supply Level at the end of 6 January 2011; or, alternatively,

iv) Full Supply Level at the end of 6 January 2011; and

h) would have continued Flood Operations until Lake Somerset and Lake Wivenhoe were no longer likely to exceed their respective Temporary Full Supply Levels, or alternatively, Full Supply Levels.

PARTICULARS

A. A reasonably prudent flood engineer would have complied with the Flood Mitigation Manual by taking the actions pleaded in paragraph 245(b)-(h).

B. Flood Mitigation Manual, sections 1.1, 3.1, 8.4, 8.5, 9.3, 9.4.

C. Christensen Report, Chapter VIII, [853]-[871].

D. Christensen Report, Chapter X, [1275]-[1289], [1426]-[1452].

a) would have reasonably construed the Flood Mitigation Manual;

PARTICULARS

A. A reasonably prudent flood engineer would have construed the Flood Mitigation Manual to require the Flood Engineers to use the weather forecast information supplied by the Bureau of Meteorology in determining release strategies for Somerset Dam and Wivenhoe Dam.

B. A reasonably prudent flood engineer would have construed the Flood Mitigation Manual to require the actions pleaded in paragraphs 245(b)-(c), (h), (k) and (m)-(p) below.

b) would have complied with the requirements of the Flood Mitigation Manual;

PARTICULARS

A. A reasonably prudent flood engineer would have complied with the Flood Mitigation Manual by taking the actions pleaded in paragraphs 245(c), (h), (k) and (m)-(p) below.

c) would have made reasonable predictions, and formed reasonable expectations, with respect to those matters in relation to which the Flood Mitigation Manual required the Flood Engineers to make predictions and form expectations, and would have acted in accordance with those predictions and expectations in complying with the requirements of the Flood Mitigation Manual;

d) would have expected that the water levels in Lake Somerset and Lake Wivenhoe would continue to exceed their respective Full Supply Levels, such that a Flood Event was occurring;

e) would have considered that, according to the terms of the Flood Mitigation Manual, a Flood Event had been ongoing since on or around 2 December 2010, or alternatively, since on or around 2 January 2011 at the latest;

f) would have considered that Flood Operations and flood releases were improperly discontinued on 2 January 2011;

g) would have considered that insufficient releases had been made from Wivenhoe Dam in the period 2 January to 6 January 2011;

h) would have commenced flood releases at Somerset Dam and Wivenhoe Dam;

i) would have expected that the water level in Lake Wivenhoe would exceed EL 68.5 m AHD given the existing water level, past rainfall, ongoing inflows and forecast rainfall;

j) would have considered that the Flood Mitigation Manual required the implementation of Strategy W3 at Wivenhoe Dam;

k) would immediately have implemented Strategy W3 in releasing water from Wivenhoe Dam;

l) would have considered that the Flood Mitigation Manual required the implementation of Strategy S2 at Somerset Dam;

m) would immediately have implemented Strategy S2 at Somerset Dam;

n) would have caused Somerset Dam and Wivenhoe Dam to release water at rates substantially exceeding the rate of inflow;

o) would have made sufficient precautionary releases from Somerset Dam and Wivenhoe Dam to ensure that there was sufficient available capacity in the flood storage compartments of Somerset Dam and Wivenhoe Dam to avoid or minimise the risk that large scale releases would be required should further rainfall occur in accordance with, or in excess of, that forecast by the Bureau of Meteorology;

p) would have continued Flood Operations until Lake Somerset and Lake Wivenhoe were no longer likely to exceed their respective Full Supply Levels; and

q) would have continued to draw down Lake Somerset and Lake Wivenhoe to 95% of their combined Full Supply Levels after the

Flood Event had ~~concluded, as permitted~~ by the authorisation pleaded in paragraph ~~170.~~

246 In the circumstances pleaded in paragraphs 239-245, on 6 January 2011 the Flood Engineers (or one or more of them) failed to do one or more of the things pleaded in paragraph 245. ~~:~~

a) ~~failed to have regard to, or to accord sufficient weight to, one or more of the matters~~ pleaded in paragraph ~~244;~~ and

b) ~~the Flood Engineers failed to do one or more of the things pleaded in paragraph 245.~~

247 In the circumstances pleaded in the preceding paragraph, the Flood Engineers (or one or more of them) breached their duty of care to the plaintiff and other Group Members on 6 January 2011 (the **6 January Breaches).**

S Events of 7 January 2011

Weather Forecasts

248 On 7 January 2011:

a) the Bureau of Meteorology 4-day forecast for ~~€~~ 7 January to ~~11~~ 10 January 2011 predicted 200~~-400~~ 50-150 mm of rainfall in the Brisbane River Basin, including in the Lake Somerset and Lake Wivenhoe catchment areas; and

b) the Bureau of Meteorology 8-day forecast for ~~8~~ 7 January to ~~15~~ 14 January 2011 predicted 200~~-400~~ 75-200 mm of rainfall in the Brisbane River Basin, including in the Lake Somerset and Lake Wivenhoe catchment areas.

PARTICULARS

A. Bureau of Meteorology, Poor Man's Ensemble forecast ~~issued~~ 8 January ~~2011~~ for period ~~8~~ 7 January to ~~11~~ 10 January 2011.

B. Bureau of Meteorology, Poor Man's Ensemble forecast issuod ~~8~~ January ~~2011~~ for period ~~8~~ 7 January to 4~~§~~ 14 January 2011.

249 At or around 10:03 am on 7 January 2011, the Bureau of Meteorology issued a QPF predicting rainfall of 20-30 mm in the Lake Somerset and Lake Wivenhoe catchment areas over the following 24 hours.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Appendix C, p 170.

250 At or around 4:04 pm on 7 January 2011, the Bureau of Meteorology issued a QPF predicting ~~the~~ rainfall of 20-30 mm in the Lake Somerset and Lake Wivenhoe catchment areas over the following 24 hours.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Appendix C p 171.

Rainfall and Inflows

251 In the 24 hours to 9:00 am on 7 January 2011, there was widespread rainfall throughout the catchment areas for Lake Somerset and Lake Wivenhoe, ranging from 10 mm to 30 mm.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Section 6.3, p 65.

252 Catchment inflows into Lake Wivenhoe and Lake Somerset continued in significant volumes throughout the course of 7 January 2011.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Section 9.2, pp 154-155 and Section 9.3, p 169.

Water Level

253 At or around 6:07 am on 7 January 2011:

a) the water level of Lake Somerset was approximately EL 99.59 m AHD; and

b) the water level of Lake Wivenhoe was approximately EL 67.64 m AHD.

PARTICULARS

A. *Seqwater, January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Appendix E, p 7.

B. Lake Somerset water level at 6.00am on 7 January 2011 - EL 99.59 m AHD

Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, p 169.

C. Lake Wivenhoe water level at 6.00am on 7 January 2011 - EL 67.64 m AHD

Seqwater, Spreadsheet containing Lake Wivenhoe water levels between 1 December 2010 and 31 January 2011, Doc identification number: MAU.500.020.0027.

254 At all times during the morning of 7 January 2011, the water level in Lake Wivenhoe was above the level at which the Flood Mitigation Manual required releases from Wivenhoe Dam to commence.

255 Over the course of 7 January 2011:

a) the water level of Lake Somerset increased from approximately EL 99.52 m AHD (0.52 m above Full Supply Level) to approximately EL 100.28 m AHD (1.28 m above Full Supply Level) by day's end; and

b) the water level of Lake Wivenhoe increased from approximately EL 67.46 m AHD (0.46 m above Full Supply Level) to approximately EL 68.28 m AHD (1.28 m above Full Supply Level) by day's end.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Section 9.2, p 154-155 and Section 9.3, p 169.

B. Lake Wivenhoe water level at 12.00 am on 7 January 2011 - EL 67.46 m AHD

Lake Wivenhoe water level at 10.00 pm on 7 January 2011 - EL 68.26 m AHD

Seqwater, Spreadsheet containing Lake Wivenhoe water levels between 1 December 2010 and 31 January 2011, Doc identification number: MAU.500.020.0027.

Flood Operations

256 The Flood Engineers on duty on 7 January 2011 were as follows:

Shift Start Time		
Thursday 6/1/2011 19:00	Friday 7/1/2011 07:00	Mr Ay re
Friday 7/1/2011 07:00	Friday 7/1/2011 19:00	Mr Malone
Friday 7/1/2011 19:00	Saturday 8/1/2011 07:00	Mr Ruffini

257 The Flood Engineers did not commence ~~flood~~ releases from Wivenhoe Dam until approximately 3:00 pm on 7 January 2011.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Section 9.2, p 155 and Appendix L, p 1.

258 Once the Flood Engineers commenced ~~flood~~ releases from Wivenhoe Dam they did so:

a) operating under Strategy W1; or alternatively

b) at rates consistent with Strategy W1.

259 The Flood Engineers continued to operate under Strategy W1, or continued to release water from Wivenhoe Dam at rates consistent with Strategy W1, throughout the remainder of 7 January 2011.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Section 9.2, p 155 and Appendix L, pp 1-3.

260 Even after the Flood Engineers commenced Heed releases from Wivenhoe Dam, rates of inflow into Lake Wivenhoe substantially exceeded rates of outflow throughout the remainder of 7 January 2011.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Section 9.2, p 155.

261 The Flood Engineers did not commence ~~flood~~ releases from Somerset Dam until approximately 7:00 pm on 7 January 2011.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Section 9.3, p 169 and Appendix L, p 65.

262 Once the Flood Engineers commenced Heed releases from Somerset Dam they did so:

a) operating under Strategy S1; or alternatively

b) at rates consistent with Strategy S1.

263 The Flood Engineers continued to operate under Strategy S1, or continued to release water from Somerset Dam at rates consistent with Strategy S1, throughout the remainder of 7 January 2011.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Section 9.3, p 169.

264 Even after the Flood Engineers commenced ~~flood~~ releases from Somerset Dam, rates of inflow substantially exceeded rates of outflow throughout the remainder of 7 January 2011.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Section 9.3, p 169.

7 January 2011 Breaches

265 In the circumstances pleaded in paragraphs 248-255, on 7 January 2011, there was a substantial risk:

a) that, unless ~~flood~~ releases were commenced at Somerset Dam and Wivenhoe Dam:

i) in accordance with Strategy S2 and Strategy W3 respectively; and, or alternatively,

ii) at rates substantially in excess of the rate of inflow;

there would be insufficient flood storage capacity in Lake Somerset and Lake Wivenhoe to store incoming flows should further rainfall

occur in accordance with, or in excess of, that forecast by the Bureau of Meteorology; and

b) that, without such capacity, subsequent Heed releases would be necessary in volumes that would cause urban flooding downstream of Wivenhoe Dam.

266 [Not usedl ~~Further,~~ in tho oiroumstancos pleaded at paragraphs ~~248~~ 255 and 265~~,~~ a reasonably prudont flood engineer responsible for Flood Oporations at Somorsot Dam and Wivonhoe Dam on 7 January ~~2011:~~

a) would havo had rogard to tho flood mitigation objectives, and tho priority between them, in the Flood Mitigation Manual;

b) would havo considored tho likoly offoct of continuing inflows in determining whether to commence flood releases and at what rates;

c) would havo considorod tho likoly ~~effect~~ of continuing rainfall in dotormining whether to commence flood releases and at what rates;

d) would havo considorod forecast rainfall in determining whothor to commence flood releases and at what rates;

e) would havo considered tho risk that furthor rainfall might generate substantial runoff given provious rainfall in dotormining whothor to commence flood releases and at what rates;

f) would havo considered tho risk that a failuro to ~~commence~~ flood roloasos might result in thoro being insufficiont available capacity in tho flood storago ~~compartments~~ of Somorsot Dam and Wivonhoo Dam to prevent large scale releases in case of further rain;

g) would havo considorod tho ~~risk~~ that future rainfall may oxcood that predicted by the Bureau of Meteorology;

h) would havo considorod tho current wator lovols of Lako Somorsot and Lake Wivenhoe; and

i) would havo considered tho ~~magnitude~~ of ~~forecast~~ rainfall and tho likoly impact such rainfall would havo on dam wator lovols should it ~~eventuate.~~

267 Further, by reason of the matters pleaded at paragraphs 248-255 and 265 ~~265-266~~, a reasonably prudent flood engineer responsible for Flood Operations at Somerset Dam and Wivenhoe Dam on 7 January 2011:

a) would have complied with the Flood Mitigation Manual;

b) would have commenced releases at Somerset Dam and Wivenhoe Dam as soon as possible, and in any event, earlier than 3:00 pm;

c) would have implemented and maintained Strategy W3 at Wivenhoe Dam;

d) would have implemented Strategy S2 at Somerset Dam until approximately 7:00 pm and then adopted Strategy S3;

e) would have caused Somerset Dam to release water at rates approximating the rate of inflow;

f) would have caused Wivenhoe Dam to release water at rates exceeding the rate of inflow;

g) would have reduced the water level in Lake Somerset to no higher than:

i) approximately EL 96.38 m AHD by the end of 7 January 2011; or, alternatively,

ii) approximately EL 99.41 m AHD by the end of 7 January 2011; or, alternatively,

iii) Temporary Full Supply Level by the end of 7 January 2011; or, alternatively,

iv) Full Supply Level by the end of 7 January 2011; and

h) would have reduced the water level in Lake Wivenhoe to no higher than:

i) approximately EL 63.34 m AHD at the end of 7 January 2011; or, alternatively,

ii) approximately EL 67.44 m AHD at the end of 7 January 2011; or, alternatively.

iii) Temporary Full Supply Level at the end of 7 January 2011; or, alternatively,

iv) Full Supply Level at the end of 7 January 2011.

PARTICULARS

A. A reasonably prudent flood engineer would have complied with the Flood Mitigation Manual by taking the actions pleaded in paragraph 267(b)-(h).

B. Flood Mitigation Manual, sections 1.1, 3.1, 8.4, 8.5, 9.3, 9.4.

C. Christensen Report, Chapter VIII, [872]-[906].

D. Christensen Report, Chapter X, [1290]-[1325], [1453]-[1475], [1573]-[1602].

a) would have reasonably construed the Flood Mitigation Manual;

PARTICULARS

A. A reasonably prudent flood engineer would have construed the Flood Mitigation Manual to require the Flood Engineers to use the ~~weather~~ forecast information supplied by the Bureau of Meteorology in determining release strategies for Somerset Dam and Wivenhoe ~~Dam.~~

B. A reasonably prudent flood engineer would have construed the Flood Mitigation Manual to require the actions pleaded in paragraphs 267(b)-(e), (g), (j), and (l)-(n) below.

b) would have complied with the Flood Mitigation Manual;

PARTICULARS

A. A reasonably prudent flood engineer would have complied with the Flood Mitigation Manual by taking the actions pleaded in paragraphs ~~267(e), (g), (j),~~ and ~~(l)-(n) below.~~

c) would have made reasonable predictions, and ~~formed~~ reasonable expectations, with ~~respect~~ to those matters in relation to which the Flood Mitigation Manual required the Flood Engineers to ~~make~~

predictions and form expectations, and would have acted in accordance with those predictions and expectations in complying with the requirements of the Flood Mitigation Manual;

d) would have considered that, according to the terms of the Flood Mitigation Manual, a Flood Event had been ongoing since on or around 2 December 2010, or alternatively, since on or around 2 January 2011 at the latest;

e) would have considered that Flood Operations and flood releases were improperly discontinued on 2 January 2011;

f) would have considered that insufficient releases had been made from Wivenhoe Dam in the period 2 January to 7 January 2011;

g) would have commenced flood releases at Somerset Dam and Wivenhoe Dam as soon as possible, and in any event, earlier than 3:00 pm;

h) would have expected that the water level in Lake Wivenhoe would exceed EL 68.5 m AHD" given the existing water level, past rainfall, ongoing inflows and forecast rainfall;

i) would have considered that the Flood Mitigation Manual required the implementation of Strategy W3 at Wivenhoe Dam;

j) would immediately have implemented Strategy W3 in releasing water from Wivenhoe Dam;

k) would have considered that the Flood Mitigation Manual required the implementation of Strategy S2 at Somerset Dam;

l) would immediately have implemented Strategy S2 at Somerset Dam;

m) would have caused Somerset Dam and Wivenhoe Dam to release water at rates substantially exceeding the rate of inflow; and

n) would have continued Flood Operations until Lake Somerset and Lake Wivenhoe were no longer likely to exceed their respective Full Supply Levels.

268 In the circumstances pleaded in paragraphs 256-267, on ~~6~~ 7 January 2011 the Flood Engineers (or one or more of them) failed to do one or more of the things pleaded in paragraph 267. ~~:~~

a) ~~failed to have regard to, or to accord sufficient weight to, one or more of the matters pleaded in paragraph 266; and~~

b) ~~the Flood Engineers failed to do one or more of the things pleaded in paragraph 267.~~

269 In the circumstances pleaded in the preceding paragraph, the Flood Engineers (or one or more of them) breached their duty of care to the plaintiff and other Group Members on 7 January 2011 (the **7 January Breaches).**

T Events of 8 January 2011

Weather Forecasts

270 On 8 January 2011:

a) the Bureau of Meteorology 4-day forecast for ~~9~~ 8 January to ~~12~~ 11 January 2011 predicted 200-400 100-300 mm of rainfall in the Brisbane River Basin, including in the Lake Somerset and Lake Wivenhoe catchment areas; and

b) the Bureau of Meteorology 8-day forecast for ~~9~~ 8 January to 46 15 January 2011 predicted 200-400 100-320 mm of rainfall in the Brisbane River Basin, including in the Lake Somerset and Lake Wivenhoe catchment areas.

PARTICULARS

A. Bureau of Meteorology, Poor Man's Ensemble forecast issued 8 January 2011 for period ~~9~~ 8 January to 46 11 January 2011.

B. Bureau of Meteorology, Poor Man's Ensemble forecast issued 8 January 2011 for period ~~9~~ 8 January to ~~12~~ 15 January 2011.

271 At or around 6:00 pm on 7 January 2011, the Flood Engineers were notified that the Bureau of Meteorology was predicting further high rainfall totals for South East Queensland over the following four days as follows:

a) Saturday, 8 January 2011: 15 to 50 mm rainfall;

b) Sunday, 9 January 2011: 50-100 mm widespread rainfall;

c) Monday, 10 January 2011: 50-100 mm widespread rainfall; and

d) Tuesday, 11 January 2011: 25-50 mm rainfall.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam,* 2 March 2011, Appendix E, p 10.

272 At or around 10:03 am on 8 January 2011, the Bureau of Meteorology issued a QPF predicting rainfall of 30-50 mm in the Lake Somerset and Lake Wivenhoe catchment areas over the following 24 hours.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Appendix C, p 172.

273 At or around 4:00 pm on 8 January 2011, the Bureau of Meteorology issued a QPF predicting rainfall of 30-50 mm in the Lake Somerset and Lake Wivenhoe catchment areas over the following 24 hours.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Appendix C, p 173.

Rainfall and Inflows

274 In the 24 hours to 9:00 am on 8 January 2011, there was widespread rainfall throughout the catchment areas for Lake Somerset and Lake Wivenhoe, with as much as 100 mm of rainfall in some areas.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Section 6.3, p 66.

275 Catchment inflows into Lake Wivenhoe and Lake Somerset continued in significant volumes throughout the course of 8 January 2011.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Section 9.2, pp 155-156 and Section 9.3, pp 169-170.

Water Level

276 At or around 6:32 am on 8 January 2011:

a) the water level of Lake Somerset was approximately EL 100.42 m AHD and rising steadily; and

b) the water level at Lake Wivenhoe was approximately EL 68.45 m AHD and rising steadily.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam,* 2 March 2011, Appendix E, pp 13-14.

B. Lake Somerset water level at 6.00am on 8 January 2011 - EL 100.43 m AHD

Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, p 170.

C. Lake Wivenhoe water level at 6.00am on 8 January 2011 - EL 68.46 m AHD

Seqwater, Spreadsheet containing Lake Wivenhoe water levels between 1 December 2010 and 31 January 2011, Doc identification number: MAU.500.020.0027.

D. Lake Somerset water level at 5.00am on 8 January 2011 - EL 100.42 m AHD

Seqwater, Technical Situation Report 8, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Appendix F, p 76.

E. Lake Wivenhoe water level at 6.00am on 8 January 2011 - EL 68.45 m AHD

Seqwater, Technical Situation Report 8, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam,* 2 March 2011, Appendix F, p 77.

277 At or around 8:00 am on 8 January 2011, the water level in Lake Wivenhoe rose to exceed approximately EL 68.50 m AHD.

PARTICULARS

A. Lake Wivenhoe water level at 8.00am on 8 January 2011 - EL 68.52 m AHD

Seqwater, Spreadsheet containing Lake Wivenhoe water levels between 1 December 2010 and 31 January 2011, Doc identification number: MAU.500.020.0027.

B. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Section 9.2, p155.

278 Over the course of 8 January 2011:

a) the water level of Lake Somerset increased from approximately EL 100.31 m AHD (1.31 m above Full Supply Level) to approximately

EL 100.46 m AHD (1.46 m above Full Supply Level), before reducing to approximately EL 100.33 m AHD (1.33 m above Full Supply Level) at by day's end; and

b) the water level of Lake Wivenhoe increased from approximately EL 68.32 m AHD (1.32 m above Full Supply Level) to approximately EL 68.65 m AHD (1.65 m above Full Supply Level) by day's end.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Section 9.2, pp 155-156 and Section 9.3, p 170.

B. Lake Wivenhoe water level at 12.00am on 8 January 2011 - EL 68.32 m AHD

Lake Wivenhoe water level at 11.00 pm on 8 January 2011 - EL 68.65 m AHD

Seqwater, Spreadsheet containing Lake Wivenhoe water levels between 1 December 2010 and 31 January 2011, Doc identification number: MAU.500.020.0027.

Flood Operations

279 The Flood Engineers on duty on 8 January 2011 were as follows:

Shift Start Time	Finish Tir	Flood Operations Engineer
Friday 7/1/2011 19:00	Saturday 8/1/2011 07:00	Mr Ruffini
Sat 8/1/2011 07:00	Saturday 8/1/2011 19:00	Mr Ayre
Sat 8/1/2011 19:00	Sunday 9/1/2011 07:00	Mr Tibaldi

280 Throughout Mr Ruffini's shift on 8 January 2011, Mr Ruffini:

a) operated Wivenhoe Dam under Strategy W1, or maintained a release strategy at Wivenhoe Dam consistent with Strategy W1;

b) did not implement Strategy W3 at Wivenhoe Dam;

c) operated Somerset Dam under Strategy S1, or maintained a release strategy at Somerset Dam consistent with Strategy S1; and

d) did not implement a release strategy at Somerset Dam consistent with Strategy S2.

281 Throughout Mr Ayre's shift on 8 January 2011, Mr Ayre:

a) operated Wivenhoe Dam under Strategy W1, or maintained a release strategy at Wivenhoe Dam consistent with Strategy W1; and

b) did not implement Strategy W3 at Wivenhoe Dam.

282 At or around 11:30 am, Mr Ayre directed that the release strategy at Somerset Dam be changed from Strategy S1 to Strategy S2.

PARTICULARS

A. Seqwater, *January 2011 Flood Event: Report on the Operation of Somerset Dam and Wivenhoe Dam, 2* March 2011, Section 9.3, p 170 and Appendix L, p 66.

283 The decision by Mr Ayre to increase substantially the rate of outflow from Somerset Dam while not implementing a corresponding increase in the rate of outflow from Wivenhoe Dam increased the risk that there would be insufficient flood storage capacity in Lake Wivenhoe to store incoming flows should further rainfall occur in accordance with, or in excess of, that forecast by the Bureau of Meteorology.

284 [Not used] On 8 January 2011, the Flood Engineers did not substantially reduce the water level in Lake Wivenhoe.

8 January 2011 Breaches

285 In the circumstances pleaded in paragraphs 270-278, on 8 January 2011, there was a substantial risk:

a) that, unless Heed releases were commenced at Somerset Dam and Wivenhoe Dam: