

- (c) says that the operation of Wivenhoe Dam and Somerset Dam on 16 December 2010 was not causative of flooding which occurred in January 2011;
- (d) otherwise denies the allegations.

129. As to paragraph 163 of the Statement of Claim, the State:

- (a) says that on 16 December 2010:
  - (i) the water level in Lake Wivenhoe fell from a peak of approximately EL 67.30 at 15:00 on 13 December 2010 to approximately EL 67.07 at 07:00 on 16 December 2010;
  - (ii) the water level in Lake Wivenhoe subsequently began to rise from after 11:00 to reach approximately EL 67.17 at 06:30 on 17 December 2010;
- (b) otherwise denies the allegations.

130. As to paragraph 163A of the Statement of Claim, the State:

- (a) repeats and relies upon its response to paragraphs 138 to 142 of the Statement of Claim above;
- (b) says that:
  - (i) the BoM 4 day forecast published on 17 December 2010 for 18 December to 21 December 2010:
    - (1) forecast between 50 mm to 150 mm of rainfall in the Wivenhoe and Somerset catchments;
    - (2) to the extent that it forecast rainfall in excess of 100 mm, forecast that rain to affect only a small area in the north of the catchments;
  - (ii) the BoM 8 day PME forecast published on 17 December 2010 for 18 December to 25 December 2010 forecast between 100 mm to 150 mm of rainfall in the Wivenhoe and Somerset catchments;
  - (iii) the BoM 1 day PME forecast published on 17 December for 18 December 2010 predicted between 10 mm and 25 mm of rainfall in the Wivenhoe and Somerset catchments;
- (c) says that the BoM QPFs issued at approximately 11:26 and 16:00 on 17 December 2010 forecast for the Wivenhoe and Somerset catchments an average rainfall of 20 mm to 50 mm for the 24 hour period to 09:00 and 15:00 on 18 December 2010 respectively;
- (d) otherwise denies the allegations.

131. As to paragraph 163B of the Statement of Claim, the State:

- (a) repeats and relies upon its response to paragraphs 138 to 142 of the Statement of Claim above;
- (b) says that:
  - (i) the BoM 4 day PME forecast published on 18 December 2010 for 19 December to 22 December 2010:
    - (1) forecast between 50 mm to 150 mm of rainfall in the Wivenhoe and Somerset catchments;
    - (2) to the extent that it forecast rainfall in excess of 100 mm, forecast that rain to affect only a small area in the north of the catchments;
  - (ii) the BoM 8 day PME forecast published on 18 December 2010 for 19 December to 26 December 2010 forecast between 50 mm to 150 mm of rainfall in the Wivenhoe and Somerset catchments;
  - (iii) the BoM 1 day forecast published on 18 December 2010 for 19 December 2010 forecast between 50 and 100mm of rainfall in the Wivenhoe and Somerset catchments;
- (c) says that the BoM QPFs issued at approximately 10:00 and 16:00 on 18 December 2010 forecast for the Wivenhoe and Somerset catchments an average rainfall of, respectively:
  - (i) 10 mm to 15 mm for the 24 hour period to 09:00 on 19 December 2010;
  - (ii) 25 mm to 35mm for the 24 hour period to 15:00 on 19 December 2010;
- (d) otherwise denies the allegations.

132. As to paragraph 163C of the Statement of Claim, the State:

- (a) repeats and relies upon its response to paragraphs 138 to 142 of the Statement of Claim above;
- (b) says that:
  - (i) the BoM 4 day PME forecast published on 19 December 2010 for 20 December to 23 December 2010:
    - (1) forecast between 5 mm to 100 mm of rainfall in the Wivenhoe and Somerset catchments;

- (2) to the extent that it forecast rainfall in excess of 50 mm, forecast that rain to affect only a small area in the east of the catchments;
  - (ii) the BoM 8 day PME forecast published on 19 December 2010 for 20 December to 27 December 2010 forecast between 25 mm to 100 mm of rainfall in the Wivenhoe and Somerset catchments;
  - (iii) the BoM 1 day PME forecast published on 19 December 2010 for 20 December 2010 predicted between 1 mm and 15 mm of rainfall in the Wivenhoe and Somerset catchments;
- (c) says that the BoM QPFs issued at approximately 10:00 and 16:00 on 19 December 2010 forecast for the Wivenhoe and Somerset catchments an average rainfall of, respectively:
- (i) 40 mm to 50 mm for the 24 hour period to 09:00 on 20 December 2010;
  - (ii) 10 mm to 15mm for the 24 hour period to 15:00 on 20 December 2010;
- (d) otherwise denies the allegations.

133. As to paragraph 163D of the Statement of Claim, the State:

- (a) repeats and relies upon its response to paragraphs 138 to 142 of the Statement of Claim above;
- (b) says that:
  - (i) the BoM 4 day PME forecast published on 20 December 2010 for 21 December to 24 December 2010 predicted 15 mm to 100 mm of rainfall in the Wivenhoe and Somerset catchments;
  - (ii) the BoM 8 day PME forecast published on 20 December 2010 for 21 December to 28 December 2010 predicted 100 mm to 200 mm of rainfall in the Wivenhoe and Somerset catchments;
  - (iii) the BoM 1 day PME forecast published on 20 December 2010 for 21 December 2010 predicted zero to 1 mm of rainfall in the Wivenhoe and Somerset catchments;
- (c) says that the BoM QPFs issued at approximately 10:00 and 16:00 on 20 December 2010 forecast for the Wivenhoe and Somerset catchments zero rainfall for the 24 hour period to 09:00 on 21 December 2010 and the 24 hour period to 15:00 on 21 December 2010 respectively;
- (d) otherwise denies the allegations.

134. As to paragraph 163E of the Statement of Claim, the State:

- (a) repeats and relies upon its response to paragraphs 138 to 142 of the Statement of Claim above;
- (b) says that:
  - (i) the BoM 4 day PME forecast published on 21 December 2010 for 22 December to 25 December 2010:
    - (1) forecast between 25 mm to 150 mm of rainfall in the Wivenhoe and Somerset catchments;
    - (2) to the extent that it forecast rainfall in excess of 100 mm, forecast that rain to affect only a small area in the east of the catchments;
  - (ii) the BoM 8 day PME forecast published on 21 December 2010 for 22 December to 29 December 2010 forecast between 100 mm to 200 mm of rainfall in the Wivenhoe and Somerset catchments;
  - (iii) the BoM 1 day PME forecast published on 21 December 2010 for 22 December 2010 predicted 15 mm to 100mm of rainfall in the Wivenhoe and Somerset catchments;
- (c) says that the BoM QPFs issued at approximately 10:00 and 16:00 on 21 December 2010 forecast for the Wivenhoe and Somerset catchments an average rainfall of, respectively:
  - (i) zero to 2 mm for the 24 hour period to 09:00 on 22 December 2010;
  - (ii) 10 mm to 20mm for the 24 hour period to 15:00 on 22 December 2010;
- (d) otherwise denies the allegations.

135. As to paragraph 163F of the Statement of Claim, the State:

- (a) repeats and relies upon its response to paragraphs 138 to 142 of the Statement of Claim above;
- (b) says that:
  - (i) the BoM 4 day PME forecast published on 22 December 2010 for 23 December to 26 December 2010 forecast between 25 mm to 100 mm of rainfall in the Wivenhoe and Somerset catchments;
  - (ii) the BoM 8 day PME forecast published on 22 December 2010 for 23 December to 30 December 2010:

- (1) forecast 100 mm to 200 mm of rainfall in the Wivenhoe and Somerset catchments;
  - (2) forecast the most intense rainfall to fall outside the Wivenhoe and Somerset catchments in the catchments below Wivenhoe Dam;
  - (iii) the BoM 1 day PME forecast published on 22 December 2010 for 23 December 2010 predicted between 5 mm and 15 mm of rainfall in the Wivenhoe and Somerset catchments;
- (c) says that the BoM QPFs issued at approximately 10:00 and 16:00 on 22 December 2010 forecast for the Wivenhoe and Somerset catchments an average rainfall of 15 mm to 30 mm for the 24 hour period to 09:00 on 23 December 2010 and the 24 hour period to 15:00 on 23 December 2010 respectively;
- (d) otherwise denies the allegations.

136. As to paragraph 163G of the Statement of Claim, the State:

- (a) repeats and relies upon its response to paragraphs 138 to 142 of the Statement of Claim above
- (b) says that:
  - (i) the BoM 4 day PME forecast published on 23 December 2010 for 24 December to 27 December 2010 predicted 50 mm to 150 mm of rainfall in the Wivenhoe and Somerset catchments;
  - (ii) the BoM 8 day PME forecast published on 23 December 2010 for 24 December to 31 December 2010 predicted 100 mm to 200 mm of rainfall in the Wivenhoe and Somerset catchments;
- (c) the BoM 1 day PME forecast published on 23 December 2010 for 24 December 2010 predicted between 5 mm and 50 mm of rainfall in the Wivenhoe and Somerset catchments;
- (d) says that the BoM QPFs issued at approximately 10:00 and 16:00 on 23 December 2010 forecast for the Wivenhoe and Somerset catchments an average rainfall of respectively:
  - (i) 10 mm to 20 mm for the 24 hour period to 09:00 on 24 December 2010;
  - (ii) 5 mm to 10 mm for the 24 hour period to 15:00 on 24 December 2010;
- (e) otherwise denies the allegations.

137. As to paragraph 163H of the Statement of Claim, the State:

- (a) repeats and relies upon its response to paragraphs 138 to 142 of the Statement of Claim above;
- (b) says that:
  - (i) the BoM 4 day PME forecast published on 24 December 2010 for 25 December to 28 December 2010 predicted between 100 mm to 300 mm of rainfall in the Wivenhoe and Somerset catchments;
  - (ii) the BoM 8 day PME forecast published on 24 December 2010 for 25 December 2010 to 1 January 2011 predicted 150 mm to 300 mm of rainfall in the Wivenhoe and Somerset catchments;
  - (iii) the BoM 1 day PME forecast published on 24 December 2010 for 25 December 2010 predicted between 1 mm and 10 mm of rainfall in the Wivenhoe and Somerset catchments;
- (c) says that the BoM QPFs issued at approximately 10:00 and 16:00 on 24 December 2010 forecast for the Wivenhoe and Somerset catchments an average rainfall of respectively:
  - (i) 25 mm to 35 mm for the 24 hour period to 09:00 on 25 December 2010;
  - (ii) 20 mm to 30 mm for the 24 hour period to 15:00 on 25 December 2010;
- (d) otherwise denies the allegations.

138. The State admits paragraph 164 of the Statement of Claim.

139. As to paragraph 165 of the Statement of Claim, the State:

- (a) admits the cumulative total of average daily rainfall for the period 17 December 2010 to 24 December 2010:
  - (i) in the Stanley catchment, was approximately 115 mm;
  - (ii) in the Upper Brisbane catchment, was approximately 71 mm;
- (b) says that:
  - (i) most of the rain that fell in the Lake Somerset and Lake Wivenhoe catchments did so in the 36-hour period to 09:00 on 20 December 2010;
  - (ii) from 09:00 on 20 December 2010:
    - (1) to 09:00 on 24 December 2010 no rain fell within the upper Brisbane catchment;

- (2) to 09:00 on 24 December 2010 approximately 14 mm of average rain fell within the Stanley catchment, approximately 11 mm of which fell in the 24 hours to 09:00 on 23 December 2010;
- (3) heavy rain fell in the catchments downstream of Wivenhoe Dam.

140. As to paragraph 166 of the Statement of Claim, the State:

- (a) says that the water level in Lake Wivenhoe rose from approximately EL 67.07 at 11:00 on 16 December 2010 to a peak of approximately EL 68.22 at 03:00 on 21 December 2010 before falling to approximately EL 67.07 at 10:00 on 24 December 2010;
- (b) says that the water level in Lake Somerset:
  - (i) between approximately 06:30 on 17 December and 07:30 on 18 December 2010, rose from approximately EL 99.32 to approximately EL 99.67;
  - (ii) between 07:30 on 18 December and 07:00 on 19 December 2010 fell to approximately EL 99.56;
  - (iii) between 07:00 on 19 December and 16:00 on 19 December 2010 fell slightly before again rising;
  - (iv) reached its maximum level of approximately EL 100.43 at 13:00 in the afternoon of Monday 20 December 2010;
  - (v) between 13:00 on 20 December 2010 and day's end on 21 December 2010 fell to approximately EL 99.84;
- (c) continued to fall from approximately EL 99.84 at 00:00 on 22 December 2010 to approximately EL 99.09 at 08:00 on 23 December 2010 before rising to approximately EL 99.18 at 05:00 on 24 December 2010;
- (d) otherwise denies the allegations.

141. As to paragraph 167 of the Statement of Claim, the State:

- (a) says that:
  - (i) the Mid December event is recorded as having had a start time of 09:00 on 16 December 2010 for the purposes of providing event data;
  - (ii) at about 07:00 on 17 December 2010 Mr Malone issued Situation Report 1 in respect of Wivenhoe and Somerset Dams;
- (b) otherwise admits that the Flood Operations Centre is recorded as having been mobilised at 10:00 on 17 December 2010 for the Mid December event.

142. The State admits paragraph 168 of the Statement of Claim.

143. As to paragraph 169 of the Statement of Claim, the State:

- (a) says that:
  - (i) Mr Ruffini commenced his shift at approximately 16:00 on 17 December 2010;
  - (ii) at all material times on the 17 December 2010 until approximately 18:00, water was being released at 50 m<sup>3</sup>/s through the regulator and hydro at Wivenhoe Dam;
  - (iii) at about 17:30 Mr Ruffini issued Wivenhoe Directive 1 which directed:
    - (1) the closure of the regulator and opening of Gate 3 to 0.5 m at 18:00;
    - (2) the continuation of the release of 13 m<sup>3</sup>/s through the hydro;
    - (3) a total release of 63 m<sup>3</sup>/s;
  - (iv) at all material times throughout 17 December 2010, releases were being made from Somerset Dam at 69 m<sup>3</sup>/s through the regulators;
- (b) otherwise denies the allegations.

144. As to paragraphs 170,170A and 171 of the Statement of Claim, the State:

- (a) admits that the Chief Executive Officer of SEQ Water Grid Manager sent a letter dated 24 December 2010 to the Chief Executive Officer of Seqwater;
- (b) says that the letter materially stated:
  - (i) that the SEQ Water Grid Manager had *"from a water security perspective ...no in principle objection to minor releases"* from the dams and *"no in principle objection to Wivenhoe and Somerset dams being drawn down to 95 per cent of their combined full supply level"*; and
  - (ii) that *"these releases would have a negligible impact on the extent and duration of flooding during a major flood event"*;
- (c) denies that the letter constituted authority to reduce the water level below the FSL of either Lake Somerset or Lake Wivenhoe;
- (d) says that:
  - (i) the SEQ Water Grid Manager did not have the authority to authorise or direct a reduction of the FSL of either dam;



- (ii) neither Seqwater nor SunWater had authority to make releases from Lake Somerset or Lake Wivenhoe which would reduce the water level below FSL in the manner alleged in the Statement of Claim;
  - (iii) the Flood Engineers had no authority to make releases from Lake Somerset or Lake Wivenhoe which would reduce the water level below FSL in the manner alleged in the Statement of Claim;
  - (iv) says that the expression "Temporary Full Supply Level" referred to in the Statement of Claim and the water level attributed to that expression have no meaning, authorisation or relevance to the operation of Wivenhoe Dam or Somerset Dam;
- (e) says that the water supply for the South East Queensland region was reliant upon surface water captured and stored in Wivenhoe, Somerset and North Pine Dams;
- (f) says that between 2000 and approximately May 2009 South East Queensland was affected by a severe drought known as the "Millennium Drought", which created severe water supply shortages in Ipswich, Brisbane and the Gold Coast areas and had necessitated severe restrictions being imposed upon the use of water for domestic and other uses in the areas of Brisbane CC, Gold Coast CC, Ipswich CC, Lockyer Valley Regional Council (RC), Logan CC, Moreton Bay RC, Scenic Rim RC and Somerset RC;
- (g) says that any decision change to the FSL of Wivenhoe Dam or Somerset Dam was a policy decision that would have required input from a number of stakeholders and to have been preceded by thorough technical and economic investigation;
- (h) says that the FSL of Lake Wivenhoe and Lake Somerset had been determined after broad consultation and reflected Government policy;
- (i) says that such investigations as were in the course of being undertaken at the time of the 2011 flood event in part were directed to increasing FSL to provide additional water security and storage;
- (j) otherwise denies the allegations.
145. As to paragraph 172 of the Statement of Claim, the State:
- (a) admits the allegations that releases at Somerset Dam were discontinued at about 13:00 on 24 December 2010;

- (b) admits the radial gates at Wivenhoe Dam were closed by about 13:00 on 24 December 2010;
- (c) says that at Wivenhoe Dam:
  - (i) the closure of the radial gates:
    - (1) allowed the peak flow from Lockyer Creek to pass;
    - (2) was temporary only;
    - (3) enabled downstream communities to gain access to homes and properties before (and for) Christmas Day;
  - (ii) releases continued:
    - (1) initially through the hydro at the rate of 13 m<sup>3</sup>/s from 13:00 on 24 December 2010;
    - (2) upon completion of fish recovery, also through a fully open regulator releasing a total of 50 m<sup>3</sup>/s for the remainder of 24 December and until 09:00 on 26 December 2010;
  - (iii) at 09:00 on the 26 December 2010 the radial gates were re-opened;
- (d) says that after 13:00 on 24 December 2010:
  - (i) the situation (including BoM forecasts) was monitored by the Flood Engineer on duty at the Flood Operations Centre directing operations for North Pine Dam and the on-call Flood Engineer;
  - (ii) at 14:41 on 24 December 2010 Mr Ruffini issued Situation Report 1400;
  - (iii) at 00:13 on 25 December 2010 Mr Tibaldi issued Situation Report 0015;
  - (iv) at 07:25 on 25 December 2010 Mr Malone issued Situation Report 0700;
  - (v) at 08:00 on 25 December 2010 Mr Malone issued Situation Report 0700 confirmation;
  - (vi) at 08:09 on 25 December 2010 Mr Malone issued Situation Report 0700 confirmation and correction;
  - (vii) at 05:53 on 26 December 2010 Mr Tibaldi issued Situation Report 0600;
- (e) otherwise denies the allegations.

146. As to paragraph 173 of the Statement of Claim, the State:

- (a) repeats and relies upon its response to paragraph 172 of the Statement of Claim above;
  - (b) says that at the times pleaded:
    - (i) the Flood Operations Centre remained mobilised for the purposes of dam operations at the North Pine Dam;
    - (ii) a Flood Engineer was on duty at the Flood Operations Centre;
    - (iii) a Flood Engineer:
      - (1) was on call;
      - (2) was monitoring the circumstances pertaining to Lake Wivenhoe and Lake Somerset, including BoM forecasts;
  - (c) otherwise denies the allegations.
147. As to paragraph 174 of the Statement of Claim, the State:
- (a) repeats and relies upon its responses to paragraphs 170, 170A, 171, 172 and 173 of the Statement of Claim above;
  - (b) says that at 13:00 on 24 December 2010:
    - (i) the level of Lake Wivenhoe was approximately EL 67.08;
    - (ii) the level of Lake Somerset was approximately EL 99.20;
    - (iii) base inflows into Lake Wivenhoe and Lake Somerset were continuing;
  - (c) in relation to sub-paragraph 174(d) says that the highest totals of rainfall in the period 24 hours before 09:00 on 24 December were recorded in the catchments below Wivenhoe Dam, particularly the Lockyer catchment, in which rainfall of between 10 mm and 45 mm was recorded;
  - (d) as to sub-paragraph 174(e):
    - (i) says that the BoM 1 day PME forecast published on 24 December 2010 for 25 December 2010 predicted rainfall of between 1 mm to 10 mm in the Lake Somerset and Lake Wivenhoe catchment areas;
    - (ii) says that the same forecast predicted a higher amount of rainfall in the catchments below Wivenhoe Dam;
  - (e) as to sub-paragraph 174(f):

- (i) says that the BoM 4 day PME forecast published on 24 December for 25 December to 28 December 2010 predicted 100 mm to 300 mm of rainfall for the Lake Wivenhoe and Lake Somerset catchments;
  - (ii) says that the same forecast predicted at least similar amounts of rain in the catchments downstream of Wivenhoe Dam;
- (f) as to sub-paragraph 174(g) says that the BoM 8 day PME forecast published on 24 December 2010 for 25 December 2010 to 1 January 2011 predicted:
- (i) between 150 mm and 300 mm of rainfall in the Lake Wivenhoe and Lake Somerset catchments;
  - (ii) similar amounts of rainfall downstream of the catchments;
- (g) says that on a proper interpretation of the PME forecasts, the majority of the rainfall was forecast to fall in the 5 to 8 day period;
- (h) otherwise denies the allegations.

148. As to paragraph 174A of the Statement of Claim, the State:

- (a) repeats and relies upon its response to paragraphs 163A to 166 and 174 of the Statement of Claim above;
- (b) otherwise denies the allegations.

149. As to paragraph 176 of the Statement of Claim, the State:

- (a) repeats and relies upon its responses to paragraphs 149, 150, 174 and 174A of the Statement of Claim above;
- (b) admits the allegations in sub-paragraphs 176(a) and (d);
- (c) denies the allegation in sub-paragraph 176(b), (c), (e), (f), (g) and (h);
- (d) says that, on 24 December 2010, a reasonably prudent flood engineer would have expected that the Dams would reach FSL over a period of seven days;
- (e) between 24 and 26 December 2010 releases continued, to be made through the regulator and hydro at Wivenhoe Dam at the rate of 50 m<sup>3</sup>/s;
- (f) says that:
  - (i) the Flood Engineers had no authority to reduce the water level below FSL;
  - (ii) there was no basis for a reasonably prudent flood engineer to reduce the water levels below FSL;

- (g) repeats and relies upon the matters pleaded in response to paragraphs 54 to 59 of Statement of Claim;
- (h) otherwise denies the allegations.

150. As to paragraphs 177 and 178 of the Statement of Claim, the State:

- (a) repeats and relies upon its responses to paragraphs 149, 150, 170 to 176 of the Statement of Claim above;
- (b) denies that any conduct of Mr Ruffini was causative of harm to the plaintiff or Group Members;
- (c) says that, in adhering to the flood mitigation strategy which was in place while Mr Ruffini was on duty in the Flood Operations Centre, the conduct of Mr Ruffini was consistent with widely accepted peer professional opinion as competent professional practice in the field of flood mitigation and dam operation;

#### **Particulars**

The State relies on the particulars to paragraph 308 below.

- (d) says that the operation of Wivenhoe Dam and Somerset Dam in the period 16 December 2010 to 24 December 2010 was not causative of flooding which occurred in January 2011;
- (e) otherwise denies the allegations.

151. As to paragraph 179 of the Statement of Claim, the State:

- (a) denies releases from the dams ceased on 24 December 2010 because releases continued to be made through the regulators;
- (b) says that:
  - (i) Lake Somerset rose from approximately EL 99.18 on 24 December to approximately EL 99.54 at 07:00 on 26 December 2010;
  - (ii) Lake Wivenhoe rose from approximately EL 67.07 on 24 December to approximately EL 67.32 at 06:30 on 26 December 2010;
- (c) otherwise admits the allegations.

#### **Events of 25 December 2010 to 1 January 2011**

152. As to paragraph 179A of the Statement of Claim, the State:

- (a) repeats and relies upon its response to paragraphs 138 to 142 and 163H of the Statement of Claim above;

- (b) otherwise denies the allegations.
153. As to paragraph 179B of the Statement of Claim, the State:
- (a) repeats and relies upon its response to paragraphs 138 to 142 of the Statement of Claim above;
  - (b) says that:
    - (i) the BoM 4 day PME forecast published on 25 December 2010 for 26 December to 29 December 2010 predicted rainfall between 100 mm and 200 mm in the Wivenhoe and Somerset Dam catchments;
    - (ii) the BoM 8 day PME forecast published on 25 December 2010 for 25 December 2010 to 2 January 2011 predicted rainfall between 150 mm and 300 mm in the Wivenhoe and Somerset Dam catchments;
    - (iii) the BoM 1 day PME forecast published on 25 December 2010 for 26 December 2010 predicted rainfall between 25 mm and 50 mm in the Wivenhoe and Somerset Dam catchments;
    - (iv) each of the above forecasts predicted the most intense rainfall outside to the east and below the Wivenhoe and Somerset Dam catchments;
  - (c) says that the BoM QPFs issued at approximately 10:00 and 16:00 on 25 December 2010 forecast for the Wivenhoe and Somerset catchments an average rainfall of respectively:
    - (i) 10 mm to 20 mm for the 24 hour period to 09:00 on 26 December 2010;
    - (ii) 40 mm to 60 mm for the 24 hour period to 15:00 on 26 December 2010;
  - (d) otherwise denies the allegations.
154. As to paragraph 179C of the Statement of Claim, the State:
- (a) repeats and relies upon its response to paragraphs 138 to 142 of the Statement of Claim above;
  - (b) admits that the BoM 4 day PME forecast published on 26 December 2010 for 27 December to 30 December 2010 predicted rainfall between 100 mm and 200 mm in the Wivenhoe and Somerset Dam catchments;
  - (c) says that:
    - (i) the BoM 8 day PME forecast published on 26 December 2010 for 27 December 2010 to 3 January 2011 predicted rainfall between 100 mm and 200 mm in the Wivenhoe and Somerset Dam catchments;

- (ii) the BoM 1 day PME forecast published for 27 December 2010 predicted rainfall between 25 mm and 100 mm in the Wivenhoe and Somerset Dam catchments;
  - (iii) each of the above forecasts predicted the most intense rainfall in the catchments downstream of Wivenhoe and Somerset Dam;
- (d) says that the BoM QPFs issued at approximately 10:00 and 16:00 on 26 December 2010 forecast for the Wivenhoe and Somerset catchments an average rainfall of 50 mm to 100 mm for the 24 hour period to 09:00 on 27 December 2010 and for the 24 hour period to 15:00 on 27 December 2010 respectively;
- (e) otherwise denies the allegations.
155. As to paragraph 179D of the Statement of Claim, the State:
- (a) repeats and relies upon its response to paragraphs 138 to 142 of the Statement of Claim above;
  - (b) says that:
    - (i) the BoM 4 day PME forecast published on 27 December 2010 for 28 December to 31 December 2010 predicted rainfall between 15 mm and 50 mm in the Wivenhoe and Somerset Dam catchments;
    - (ii) the BoM 8 day PME forecast published on 27 December 2010 for 28 December to 4 January 2011 predicted rainfall between 25 mm and 100 mm in the Wivenhoe and Somerset Dam catchments
    - (iii) the BoM 1 day PME forecast published on 27 December 2010 for 28 December 2010 predicted rainfall between 5 mm and 50 mm in the Wivenhoe and Somerset Dam catchments;
    - (iv) on the proper interpretation of the 4 and 8 day PME forecasts, the forecast was for most of the rain forecast to fall outside the Wivenhoe Dam and Somerset Dam catchments;
  - (c) says that the BoM QPFs issued at approximately 10:00 and 16:00 on 27 December 2010 forecast for the Wivenhoe and Somerset catchments an average rainfall of respectively:
    - (i) 25 mm to 50 mm for the 24 hour period to 09:00 on 28 December 2010;
    - (ii) 25 mm to 35 mm for the 24 hour period to 15:00 on 28 December 2010;

(b) otherwise denies the allegations.

156. As to paragraph 179E of the Statement of Claim, the State:

(a) repeats and relies upon its response to paragraphs 138 to 142 of the Statement of Claim above;

(b) says that:

(i) the BoM 4 day PME forecast published on 28 December 2010 for 29 December to 1 January 2011 predicted rainfall between 1 mm and 25 mm in the Wivenhoe and Somerset Dam catchments;

(ii) the BoM 8 day PME forecast published on 28 December 2010 for 29 December 2010 to 5 January 2011 predicted rainfall between 10 mm and 50 mm in the Wivenhoe and Somerset Dam catchments;

(iii) the BoM 1 day PME forecast published on 28 December 2010 for 29 December 2010 predicted rainfall between 1 mm and 15 mm in the Wivenhoe and Somerset Dam catchments;

(c) says that the BoM QPFs issued at approximately 10:00 and 16:00 on 28 December 2010 forecast for the Wivenhoe and Somerset catchments an average rainfall of 3 mm to 5 mm for the 24 hour period to 09:00 on 29 December 2010 and for the 24 hour period to 15:00 on 29 December 2010 respectively;

(d) otherwise denies the allegations.

157. As to paragraph 179F of the Statement of Claim, the State:

(a) repeats and relies upon its response to paragraphs 138 to 142 of the Statement of Claim above;

(b) says that:

(i) the BoM 4 day PME forecast published on 29 December 2010 for 30 December 2010 to 2 January 2011 predicted rainfall between 1 mm and 10 mm in the Wivenhoe and Somerset Dam catchments;

(ii) the BoM 8 day PME forecast published on 29 December 2010 for 30 December 2010 to 6 January 2011 predicted rainfall between 5 mm and 25 mm in the Wivenhoe and Somerset Dam catchments;



- (iii) the BoM 1 day PME forecast published on 29 December for 30 December 2010 predicted rainfall between zero and 1 mm in the Wivenhoe and Somerset Dam catchments;
- (iv) on the proper interpretation of the 4 and 8 day PME forecasts, the most intense rainfall was forecast to the east of the Wivenhoe and Somerset catchments and off shore;
- (c) says that the BoM QPFs issued at approximately 10:00 and 16:00 on 29 December 2010 forecast for the Wivenhoe and Somerset catchments an average rainfall of respectively:
  - (i) 3 mm to 5 mm for the 24 hour period to 09:00 on 30 December 2010;
  - (ii) less than 2 mm for the 24 hour period to 15:00 on 30 December 2010;
- (d) otherwise denies the allegations.

158. As to paragraph 179G of the Statement of Claim, the State:

- (a) repeats and relies upon its response to paragraphs 138 to 142 of the Statement of Claim above;
- (b) says that:
  - (i) the BoM 4 day PME forecast published on 30 December 2010 for 31 December 2010 to 3 January 2011 predicted rainfall between 5 mm and 15 mm in the Wivenhoe and Somerset Dam catchments
  - (ii) the BoM 8 day PME forecast published on 30 December 2010 for 31 December 2010 to 7 January 2011 predicted rainfall between 10 mm and 25 mm in the Wivenhoe and Somerset Dam catchments;
  - (iii) the BoM 1 day PME forecast published on 30 December 2010 for 31 December 2010 predicted between zero and 1 mm rainfall in the Wivenhoe and Somerset Dam catchments;
- (c) says that the BoM QPFs issued at approximately 10:00 and 16:00 on 30 December 2010 forecast for the Wivenhoe and Somerset catchments an average rainfall of less than 2 mm for the 24 hour period to 09:00 on 31 December 2010 and for the 24 hour period to 15:00 on 31 December 2010 respectively;
- (d) otherwise denies the allegations.

159. As to paragraph 179H of the Statement of Claim, the State:

- (a) repeats and relies upon its response to paragraphs 138 to 142 of the Statement of Claim above;
- (b) says that:
  - (i) the BoM 4 day PME forecast published on 31 December 2010 for 1 January 2011 to 4 January 2011 predicted rainfall between 5 mm and 25 mm in the Wivenhoe and Somerset Dam catchments;
  - (ii) the BoM 8 day PME forecast published on 31 December 2010 for 1 January 2011 to 8 January 2011 predicted rainfall between 5 mm and 25 mm in the Wivenhoe and Somerset Dam catchments;
  - (iii) the BoM 1 day PME forecast published on 31 December 2010 for 1 January 2011 predicted rainfall between 1mm and 5 mm in the Wivenhoe and Somerset Dam catchments;
- (c) says that the BoM QPFs issued at approximately 10:00 and 16:00 on 31 December 2010 forecast for the Wivenhoe and Somerset catchments an average rainfall of less than 5 mm for respectively for the 24 hour period to 09:00 on 1 January 2011 and for the 24 hour period to 15:00 on 1 January 2011 respectively;
- (d) otherwise denies the allegations.

160. As to paragraph 179l of the Statement of Claim, the State:

- (a) repeats and relies upon its response to paragraphs 138 to 142 of the Statement of Claim above;
- (b) says that:
  - (i) the BoM 4 day PME forecast published on 1 January 2011 for 2 January to 5 January 2011 predicted rainfall between 1 mm and 10 mm in the Wivenhoe and Somerset Dam catchments;
  - (ii) the BoM 8 day PME forecast published 1 January 2011 for 2 January to 9 January 2011 predicted rainfall between 15 mm and 25 mm in the Wivenhoe and Somerset Dam catchments;
  - (iii) the BoM 1 day PME forecast published 1 January 2011 for 2 January 2011 predicted rainfall between 1 mm and 5 mm in the Wivenhoe and Somerset Dam catchments;
- (c) says that the BoM QPFs issued at approximately 10:00 and 16:00 on 1 December 2010 forecast for the Wivenhoe and Somerset catchments an

average rainfall of less than 5 mm for the 24 hour period to 09:00 on 2 January 2011 and for the 24 hour period to 15:00 on 2 January 2011 respectively;

(d) otherwise denies the allegations.

161. As to paragraph 180 of the Statement of Claim, the State:

(a) admits that there were further rainfalls over:

(i) the Lake Somerset catchment between 25 December and 30 December 2010;

(ii) the Lake Wivenhoe catchment between 25 December and 29 December 2010;

(b) says that in the period from 09:00 on 29 December 2010 to 09:00 on 1 January 2011:

(i) no further rainfall fell in the Upper Brisbane River catchment;

(ii) light rain only (between approximately 2 mm and 11 mm in total catchment average) fell in the Stanley catchment;

(c) otherwise denies the allegations.

162. As to paragraphs 181 and 182 of the Statement of Claim, the State:

(a) admits that:

(i) in the period from 09:00 on 24 December 2010 to 09:00 on 29 December 2010, there was a total cumulative catchment average rainfall of approximately:

(1) 107 mm in the Stanley catchment;

(2) 80 mm in the Upper Brisbane catchment;

(ii) in the period from 09:00 on 29 December 2010 to 09:00 on 2 January 2011:

(1) a further total of approximately 20 mm of rain fell in the Stanley catchment, making a total cumulative average catchment rainfall for the period from 09:00 on 24 December 2010 to 09:00 on 2 January 2011 in that catchment of approximately 126 mm;

(2) no further rain fell in the Upper Brisbane river catchment, leaving the total cumulative average catchment rainfall for the period from 09:00

on 24 December 2010 to 09:00 on 2 January 2011 in that catchment at approximately 80 mm;

- (b) says that, between 09:00 25 December 2010 and 09:00 28 December 2010, the following total cumulative average catchment rainfalls fell downstream of the dam:
  - (i) approximately 105 mm in the Lockyer Creek catchment;
  - (ii) approximately 169 mm in the Bremer River catchment;
  - (iii) approximately 112 mm in the Lower Brisbane River catchment;
- (c) otherwise denies the allegations.

163. As to paragraph 183 of the Statement of Claim, the State:

- (a) says that the level of Lake Somerset:
  - (i) in the period from 29 December 2010 to 08:00 on 31 December 2010 fell from a peak of approximately EL 99.98 to its FSL of EL 99.0;
  - (ii) thereafter remained at FSL until 1 January 2011;
- (b) otherwise admits the allegations.

164. As to paragraph 184 of the Statement of Claim, the State:

- (a) says that the level of Lake Wivenhoe:
  - (i) in the period from 11:00 on 24 December 2010 to 12:00 on 29 December 2010 rose from approximately EL 67.07 to a peak of approximately EL 69.33;
  - (ii) in the period 12:00 on 29 December 2010 to 03:00 on 31 December 2010 fell from a peak of approximately EL 69.33 to approximately EL 68.47 and continued to fall to approximately EL 67.07 at 09:00 on 2 January 2011;
- (b) otherwise denies the allegations.

165. As to paragraphs 184A, 184B and 185 of the Statement of Claim, the State:

- (a) repeats and relies upon its response to paragraphs 172 and 173 of the Statement of Claim above;
- (b) otherwise denies the allegations.

166. The State admits paragraph 186 of the Statement of Claim.

167. As to paragraph 187 of the Statement of Claim, the State:

- (a) says that on 26 December 2010:
  - (i) at or around 9:00am:
    - (1) the level of Lake Wivenhoe was approximately EL 67.32;
    - (2) the level of Lake Somerset was approximately EL 99.54;
  - (ii) at 08:30 Mr Ayre issued Wivenhoe Directive No 1 which directed the closure of the regulator and the progressive opening of Gate 3 from 0.5 m at 09:00 to 3.5 m releasing about 350 m<sup>3</sup>/s at 10:30;
  - (iii) by 10:30 Lake Wivenhoe was releasing water at a total of 363 m<sup>3</sup>/s (including the hydro release of 13 m<sup>3</sup>/s);
  - (iv) at 08:45 Mr Ayre issued Somerset Directive No 1 which directed the opening of the two regulators at Lake Somerset by 10:30;
  - (v) by 10:30 Lake Somerset was releasing water at a total of about 139 m<sup>3</sup>/s;
- (b) admits the water releases were consistent with Strategy W1 at Wivenhoe Dam and Strategy S2 at Somerset Dam;
- (c) otherwise denies the allegations.

168. As to paragraph 188 of the Statement of Claim, the State:

- (a) admits that between about 18:00 on 26 December and 28 December 2010, the rate of releases from Wivenhoe Dam was below the rate of inflow;
- (b) otherwise denies the allegations.

169. The State admits paragraph 189 of the Statement of Claim.

170. As to paragraph 190 of the Statement of Claim, the State:

- (a) says that:
  - (i) before Mr Ruffini commenced his shift at 19:00 on 28 December 2010, the Flood Engineers had transitioned to, and were operating under, Strategy W3;
  - (ii) throughout his shift from 19:00 on 28 December to 07:00 on 29 December 2010 Mr Ruffini directed the operation of the dams in accordance with the general strategy determined by the Senior Flood Operations Engineer;
  - (iii) the conditions for using Strategy W2 were not satisfied;
- (b) otherwise denies the allegations.

171. As to paragraph 191 of the Statement of Claim, the State:

- (a) repeats its responses to paragraphs 183 and 184 of the Statement of Claim above;
- (b) says that the level of:
  - (i) Lake Somerset fell from a maximum of approximately EL 99.99 to approximately EL 98.99 (below FSL) by 12:30 on 31 December 2010;
  - (ii) Lake Wivenhoe fell from a maximum of approximately EL 69.33 to approximately EL 67.07 by 09:00 on 2 January 2011
- (c) otherwise admits the allegations.

172. As to paragraph 191A of the Statement of Claim, the State:

- (a) repeats and relies upon its responses to paragraphs 149, 150, 179A to 184A of the Statement of Claim above;
- (b) says that, in the period from 09:00 on 29 December 2010 to 09:00 on 2 January 2011:
  - (i) a total of 20 mm average catchment rain fell in the Stanley catchment;
  - (ii) no rain fell in the Upper Brisbane catchment;
- (c) admits the allegations in sub-paragraph 191A(a);
- (d) says that flood operations and water releases were occurring at all material times from 25 December 2010;
- (e) as to sub-paragraph (c):
  - (i) says that:
    - (1) during the period referred to Mr Ruffini was on duty during the following times:
      - (a) 19:00 on 28 December to 07:00 on 29 December 2010;
      - (b) 19:00 on 30 December to 07:00 on 31 December 2010;
      - (c) 19:00 on 31 December 2010 to 07:00 on 1 January 2011;
    - (2) by the time Mr Ruffini came on shift at 19:00 on 28 December 2010, Strategy W3 had been implemented;

- (3) Mr Ruffini directed the operations of the dams during each of his shifts in accordance with the general strategy determined by the Senior Flood Operations Engineer;
- (ii) denies the conditions for the implementation of Strategy W2 ever existed during the period 25 December 2010 to 1 January 2011;
- (f) admits the allegations in sub-paragraph 191A(d);
- (g) as to sub-paragraphs 191A(e), (f) and (g):
  - (i) says that:
    - (1) between 31 December 2010 to the end of 1 January 2011 the level of Lake Somerset was at or below FSL;
    - (2) in the period from 13:00 on 29 December 2010 to 09:00 on 2 January 2011 the water level in Lake Wivenhoe was reducing, having fallen from approximately EL 69.33 to approximately EL 67.07;
    - (3) at the time Mr Ruffini came on duty at 19:00 on 31 December 2010 the overall strategy for management of the operation of Wivenhoe Dam set by the Senior Flood Operations Engineer was to commence shut down procedures by late 31 December 2010 with the expectation that gates would be fully closed by 09:00 on 2 January 2011;
    - (4) during the course of his shift from 19:00 on 31 December 2010 to 07:00 on 1 January 2011, Mr Ruffini:
      - (a) directed the operation of the dam in accordance with the general strategy determined by the Senior Flood Operations Engineer including by issuing Wivenhoe Directives 16 and 17 which commenced gate closure operations;
      - (b) was not authorised by the Flood Operations Manual to depart from the general strategy determined by the Senior Flood Operations Engineer;
    - (5) at the end of Mr Ruffini's shift at 07:00 on 1 January 2011:
      - (a) Somerset Dam was at FSL;
      - (b) the settings of Gates 1 to 5 at Wivenhoe Dam were 1.5 m, 2.0 m, 4.0 m, 2.0 m and 1.5 m respectively releasing about 1,090 m<sup>3</sup>/s with the hydro releasing a further 13 m<sup>3</sup>/s;

- (c) the level of Lake Wivenhoe was approximately EL 67.43 and falling;
- (6) at 09:00 on 2 January 2011 the water level in Lake Wivenhoe was approximately EL 67.07;
- (7) at the end of 1 January 2011 releases were continuing to be made from Wivenhoe Dam through Gates 2 and 3 at settings of 0.5 m and 3.5 m respectively;
- (8) it was reasonable to expect that Wivenhoe Dam would reach FSL over a period of not more than seven days;
- (9) the flood operations pleaded above:
  - (a) were in accordance with the Flood Mitigation Manual;
  - (b) mitigated flooding in accordance with the objects of the Flood Mitigation Manual;
- (ii) denies a reasonably prudent flood engineer would have reduced the level of Lake Somerset or Lake Wivenhoe to below FSL;
- (iii) says that:
  - (1) the Flood Engineers had no authority to reduce the water level below FSL;
  - (2) there was no basis for a reasonably prudent flood engineer to reduce the water levels below FSL;
- (h) says that, in adhering to the flood mitigation strategy which was in place while Mr Ruffini was on duty in the Flood Operations Centre, the conduct of Mr Ruffini was consistent with widely accepted peer professional opinion as competent professional practice in the field of flood mitigation and dam operation;

#### **Particulars**

The State relies on the particulars to paragraph 308 of the Defence below.

- (i) says that the operation of Wivenhoe Dam and Somerset Dam in the period 16 December 2010 to 1 January 2011 was not causative of flooding which occurred following 9 January 2011;
  - (j) otherwise denies the allegations in paragraph 191A of the Statement of Claim.
173. The State denies the allegations in paragraphs 191B and 191C of the Statement of Claim.



### Events of 2 January 2011

174. As to paragraph 192 of the Statement of Claim, the State:

- (a) repeats and relies upon its response to paragraphs 138 to 142 of the Statement of Claim above;
- (b) says that:
  - (i) the BoM 4 day PME forecast published on 2 January 2011 for 3 January to 6 January 2011 predicted rainfall between 50 mm and 100 mm in the Wivenhoe and Somerset Dam catchments;
  - (ii) the BoM 8 day PME forecast published on 2 January 2011 for 3 January to 10 January 2011 predicted rainfall between 50 mm and 150 mm in the Wivenhoe and Somerset Dam catchments;
- (c) the BoM 1 day PME forecast published for 3 January 2011 predicted rainfall between zero mm and 5 mm in the Wivenhoe and Somerset Dam catchments;
- (d) otherwise denies the allegations.

175. As to paragraph 193 of the Statement of Claim, the State:

- (a) admits that, at or around 10:03 on 2 January 2011, BoM issued a QPF stating the forecast of catchment average rainfall for the Somerset and Wivenhoe Dam catchments "for the 24 hour period to 9am Monday 5-10 mm";
- (b) otherwise does not admit the allegation.

176. The State admits paragraph 194 of the Statement of Claim.

177. As to paragraph 195 of the Statement of Claim, the State:

- (a) as to Wivenhoe Dam, says that on 2 January 2011:
  - (i) the water level:
    - (1) was at 09:00, approximately EL 67.07;
    - (2) had reduced to that level from a peak of approximately EL 69.33 at 13:00 on 29 December 2010;
  - (ii) a reasonably prudent flood engineer would have expected the water level to continue to reduce to FSL;
- (b) as to Somerset Dam, says that:
  - (i) between 08:00 on 31 December 2010 until at or about 09:00 on 1 January 2011 was at or below FSL;

(ii) on 1 January 2011 the level was, at 09:30, approximately EL 99.00;

(c) otherwise denies the allegations.

178. As to paragraph 196 of the Statement of Claim, the State:

(a) admits that, because of the rainfall that had occurred in December 2010, there was a likelihood that there would be an increase in runoff from catchments above and below Wivenhoe Dam and Somerset Dam;

(b) otherwise denies the allegations.

179. As to paragraph 197 of the Statement of Claim, the State:

(a) denies that, in the 24 hours to 09:00 on 2 January 2011, there was "widespread" rainfall throughout the catchment areas for Lake Wivenhoe and Lake Somerset;

(b) says that such rain as did fall:

(i) was not widespread;

(ii) did not fall in the Middle Brisbane catchment area, except for an isolated fall of 6 mm in the north western region;

(iii) was light only in the upper Brisbane catchment;

(c) admits that, in the 24 hours to 09:00 on 2 January 2011, rainfall of approximately 8 mm to approximately 29 mm was recorded in the Somerset catchment with higher totals of up to approximately 50 mm in the headwaters of the Stanley and Pine Rivers;

(d) otherwise denies the allegations.

180. The State admits paragraph 198 of the Statement of Claim.

181. As to paragraph 199 of the Statement of Claim, the State denies the rainfall on 2 January 2011 and the associated runoff into Lake Somerset or Lake Wivenhoe increased the alleged (or any) risk that there would be insufficient storage capacity in those Lakes.

182. The State does not admit the allegations in paragraph 200 of the Statement of Claim.

183. The State denies the allegations in paragraphs 201 and 202 of the Statement of Claim.

184. As to paragraphs 203 and 204 of the Statement of Claim, the State:

(a) as to sub-paragraph 203(a), admits that at or around 06:30 on 2 January 2011, the level of Lake Somerset was approximately EL 99.10 and thereafter rose slowly to reach a level of approximately EL 99.34 at 06:30 on 6 January 2011;

- (b) as to sub-paragraph 203(b):
  - (i) says that, at or around 09.00 on 2 January 2011, the level of Lake Wivenhoe was approximately EL 67.07 and thereafter rose slowly to a level of approximately EL 67.28 on at 07:00 on 6 January 2011;
  - (ii) says that:
    - (1) at 09:00 on 2 January 2011 the gates at Wivenhoe Dam were closed for fish recovery but the hydro remained open;
    - (2) upon completion of fish recovery, a regulator was opened fully to manage continuing low inflows into Wivenhoe Dam;
- (c) otherwise denies the allegations.

185. The State admits paragraph 205 of the Statement of Claim.

186. As to paragraphs 206, 207 and 208 of the Statement of Claim, the State:

- (a) says that Mr Ruffini was not on duty in the Flood Operations Centre between 07:00 on 1 January 2011 and 19:00 on 7 January 2011;
- (b) admits that as at 09:45 on 2 January 2011:
  - (i) the gates on the Dams were closed;
  - (ii) the Dams were above FSL;
- (c) says that, as at 09:45 on 2 January 2011:
  - (i) inflows into the Dams largely comprised base flows;
  - (ii) the inflows were, and were reasonably able to be managed, by use of the regulators in each dam;
  - (iii) use of the regulators was reasonably capable of bringing each dam to FSL within seven days on the facts as then known to the Flood Engineers;
  - (iv) no relevant flood warnings issued by BoM were current;
  - (v) BoM had not predicted any rain over the coming days of such quantity as to have caused a reasonably prudent flood engineer to have considered there to be other than sufficient flood capacity in the Lake Somerset and Lake Wivenhoe flood compartments;
- (d) repeats and relies upon the response pleaded in response to paragraphs 203 and 204 of the Statement of Claim below;

- (e) says that, at 09:00 on 2 January 2011, a reasonably prudent flood engineer would have expected, on the facts then known to the Flood Engineers, the level of the Dams to draw down through the regulators to FSL within seven days in accordance with the Flood Mitigation Manual;
- (f) otherwise denies the allegations.

187. As to paragraph 209 of the Statement of Claim, the State:

- (a) denies the allegations;
- (b) repeats and relies upon its responses to paragraphs 192 to 204 of the Statement of Claim above.

188. As to paragraphs 211, 211 A, 211B and 212 of the Statement of Claim, the State:

- (a) repeats and relies upon the matters pleaded in response to paragraphs 54, 136A, 136B, 149, 150, 192 to 209 of the Statement of Claim above;
- (b) admits a reasonably prudent flood engineer responsible for flood operations at Somerset Dam and Wivenhoe Dam on 2 January 2011 would have complied with the Flood Mitigation Manual;
- (c) as to sub-paragraphs 211 (b), (c), (d), (e), (h) and 211B:
  - (i) says that the Flood Engineers did continue to make releases from Somerset Dam and Wivenhoe Dam after 09:45 on 2 January 2011 through use of the regulators and hydro at the following rates:
    - (1) at Somerset, approximately 34 m<sup>3</sup>/s;
    - (2) at Wivenhoe, approximately 50 m<sup>3</sup>/s;
  - (ii) says that on 2 January 2011:
    - (1) there were only light falls of rain up to approximately 30 mm in the Somerset catchment in the 24 hours to 09:00 on 2 January 2011;
    - (2) the QPF for the Somerset and Wivenhoe catchments:
      - (a) issued at 10:00 was for less than 5 mm to 10 mm for the 24 hour period to 09:00 on 3 January 2011;
      - (b) issued at 16:00 was for 5 mm to 10 mm over the 24 hour period to 15:00 on 3 January 2011;
  - (iii) says that the rainfall forecast in the QPFs referred to in the preceding sub-paragraph was unlikely to cause any or any significant runoff;

- (iv) says that BoM forecast for South East Queensland over the forthcoming week was for light showers, with a chance of isolated storms on Wednesday and Thursday;
  - (v) repeats and relies upon the matters pleaded in response to paragraphs 138 to 142 of the Statement of Claim above;
  - (vi) says that the BoM forecasts were not such as to have caused a reasonably prudent flood engineer to adopt any strategy different from the strategy the Flood Engineers adopted;
  - (vii) says that a reasonably prudent flood engineer would not have construed the Flood Mitigation Manual to require the actions pleaded in sub-paragraphs 211 (b) to (h);
  - (viii) says that the levels of Lake Somerset and Lake Wivenhoe remained below the trigger level for any gate operations under the Flood Mitigation Manual;
  - (ix) says that the Flood Engineers had no authority to reduce the level of the dams below FSL;
  - (x) says that:
    - (1) the Flood Engineers has no authority to reduce the water levels below FSL;
    - (2) there was no basis for a reasonably prudent flood engineer to reduce the water levels below FSL;
- (d) says that Mr Ruffini:
- (i) was not involved in selection of loss rates in the RTFM prior to 19.00 on 7 January 2011;
  - (ii) could not have reduced the Somerset Dam and Wivenhoe Dam water levels in the manner pleaded in paragraph 211B because he was not on duty as a Flood Engineer between 07:00 on 1 January 2011 and 19.00 on 7 January 2011;
- (e) as to paragraph 211A and sub-paragraph 211 B(a) says that the dam operations between 16 December 2010 and 2 January 2011 had no causative relevance to the flooding which occurred subsequent to 9 January 2011;
- (f) otherwise denies the allegations.

189. As to paragraph 213 of the Statement of Claim, the State:

- (a) denies the allegations;
- (b) repeats and relies upon its responses to paragraphs 211 to 212 of the Statement of Claim above;
- (c) says that Mr Ruffini was not on duty as a Flood Engineer at any time on 2 January 2011.

#### **Events of 3 January to 5 January 2011**

190. As to paragraph 214 of the Statement of Claim, the State:

- (a) repeats and relies upon its response to paragraphs 138 to 142 of the Statement of Claim above;
- (b) says that:
  - (i) the BoM PME 4 day PME forecast published on 3 January 2011 for 4 January to 7 January 2011 predicted rainfall of between 50 mm and 150 mm in the Wivenhoe and Somerset catchments;
  - (ii) the BoM PME 8 day PME forecast published on 3 January 2011 for 4 January to 11 January 2011 predicted rainfall of between 50 mm and 150 mm in the Wivenhoe and Somerset catchments;
  - (iii) on a proper interpretation of the 4 and 8 day forecasts, the majority of the rainfall was predicted for next four days;
- (c) says that the BoM 1 day PME forecast published on 3 January 2011 for 4 January 2011 was for rain of between zero and 5 mm in the Wivenhoe and Somerset catchments;
- (d) otherwise denies the allegations.

191. As to paragraph 215 of the Statement of Claim, the State:

- (a) repeats and relies upon its response to paragraphs 138 to 142 of the Statement of Claim above;
- (b) says that:
  - (i) the BoM 4 day PME forecast published on 4 January 2011 for 5 January to 8 January 2011 predicted rainfall between 25 mm and 100 mm in the Wivenhoe and Somerset catchments;
  - (ii) the BoM 8 day PME forecast published on 4 January for 5 January to 12 January 2011 predicted rainfall between 50 mm and 150 mm in the Wivenhoe and Somerset catchments;

(iii) the BoM 1 day PME forecast published 4 January 2011 for 5 January 2011 predicted rainfall of between 5 mm and 15 mm;

(c) otherwise denies the allegations.

192. As to paragraph 216 of the Statement of Claim, the State:

(a) repeats and relies upon its response to paragraphs 138 to 142 of the Statement of Claim above;

(b) says that:

(i) the BoM 4 day PME forecast published on 5 January for 6 January to 9 January 2011 predicted rainfall between 25 mm and 150 mm in the Wivenhoe and Somerset catchments;

(ii) the BoM 8 day PME forecast published on 5 January for 6 January to 13 January 2011 predicted rainfall between 25 mm and 200 mm in the Wivenhoe and Somerset catchments;

(iii) upon a proper interpretation of the BOM PME forecasts the most intense rain was predicted to fall outside the Wivenhoe and Somerset catchments and in the catchment below Wivenhoe Dam;

(c) says that the BoM 1 day PME forecast published on 5 January 2011 for 6 January 2011 predicted rainfall of between 25 mm and 50 mm in the Wivenhoe and Somerset catchments;

(d) otherwise denies the allegations.

193. As to paragraphs 217 and 218 of the Statement of Claim, the State:

(a) says that a more complete table of the approximate actual average rainfall is set out in the table below;

Date/time	24 hour catchment Ave actual rainfall (mm)
03/01/11 09:00	5
03/01/11 15:00	4
04/01/11 09:00	0
04/01/11 15:00	2
05/01/11 09:00	26

05/01/11 15:00	44
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(b) otherwise admits the allegations.

194. As to paragraph 219 of the Statement of Claim, the State:

- (a) says that any such inflows were low and did not themselves justify a change to the arrangements then in place;
- (b) otherwise denies the allegations.

195. As to paragraphs 220 and 221 of the Statement of Claim, the State:

- (a) says that:
  - (i) the water level of Lake Somerset increased from approximately EL 99.10 on 06:30 on 2 January 2011 and to approximately EL 99.34 at 06:30 on 6 January 2011;
  - (ii) the water level of Lake Wivenhoe increased from approximately EL 67.07 at 09:00 on 2 January to approximately EL 67.28 at 07:00 on 6 January 2011;
  - (iii) the rise in water level in the Dams occurred slowly;
  - (iv) there was no significant rainfall in the 24 hours to 09:00 on 5 January 2011;
  - (v) in the 24 hours to 09:00 on 6 January 2011, catchment average rainfalls were approximately:
    - (1) Upper Brisbane 27 mm;
    - (2) Stanley 21 mm;
    - (3) Lockyer Creek 30 mm;
    - (4) Bremer 28 mm;

(b) otherwise denies the allegations.

196. As to paragraph 222 of the Statement of Claim, the State:

- (a) admits that at 06:30 on 6 January 2011, the level of Lake Wivenhoe was approximately EL 67.28;
- (b) says that no level taken on 5 January and before 06:30 on 6 January 2011 showed the level of Lake Wivenhoe to exceed EL 67.20.

197. As to paragraph 223 of the Statement of Claim, the State:



- (a) admits that, upon the level of Lake Wivenhoe reaching EL 67.25, Strategy W1A was triggered under the Flood Mitigation Manual;
- , (b) says that:
  - (i) as a result of the rainfall over the night of 5 January 2011 and further falls up to a total of approximately 150 mm expected during the forthcoming two days, the Flood Operations Centre was mobilised at 07:42 on 6 January 2011;
  - (ii) the Flood Mitigation Manual does not impose any minimum release obligation;
- (c) otherwise denies the allegations.

198. As to paragraphs 224, 224A and 225 of the Statement of Claim, the State:

- (a) says that, during the period 2 to 5 January 2011:
  - (i) releases continued through the regulators;
  - (ii) the circumstances were under constant surveillance by the Flood Engineers on duty at the Flood Operations Centre for North Pine Dam and the on call Flood Engineer;
  - (iii) the level of Wivenhoe did not exceed EL 67.25, the trigger level for Strategy W1A;
- (b) otherwise denies the allegations.

199. As to paragraph 226 of the Statement of Claim, the State:

- (a) repeats and relies upon its responses to paragraphs 214 to 223 of the Statement of Claim above;
- (b) says that:
  - (i) Lake Wivenhoe, at the start of the period 2 January 2011, had:
    - (1) a level of approximately EL 67.07
    - (2) a remaining temporary flood storage capacity of about 900,000 ML to EL 74;
  - (ii) Lake Wivenhoe, at the end of the period 5 January 2011 had:
    - (1) a water level of approximately EL 67.20
    - (2) a remaining temporary flood storage capacity of about 880,000 ML to EL 74;

- (iii) Lake Somerset at the start of the period 2 January 2011 had:
  - (1) a water level of approximately EL 99.10;
  - (2) a remaining temporary flood storage capacity of about 364,000 ML to EL 105.5;
- (iv) Lake Somerset at the end of the period 5 January 2011 had:
  - (1) a water level of approximately EL 99.28;
  - (2) a remaining temporary flood storage capacity of about 353,000 ML to EL 105.5;
- (v) in the period between 2 January and 5 January 2011, Lake Wivenhoe and Lake Somerset had a combined flood storage capacity of at least 1,200,000 ML;
- (vi) there was no, or no significant, risk of the matters referred to in sub-paragraphs 226(a) and (b) during the period 3 to 5 January 2011;
- (c) in relation to claims alleged against Mr Ruffini, repeats and relies upon the matters pleaded in response to paragraphs 142A and 142B of the Statement of Claim;
- (d) otherwise denies the allegations.

200. As to paragraphs 228, 228A and 228B of the Statement of Claim, the State:

- (a) repeats and relies upon its responses to paragraphs 54, 136A, 136B, 149, 150, 214 to 226 of the Statement of Claim above;
- (b) admits the allegations in sub-paragraph 228(a);
- (c) says that Mr Ruffini was not on duty as a Flood Engineer during the period 3 January 2011 to 5 January 2011;
- (d) as to sub-paragraph 228(b):
  - (i) says that the Flood Engineers did in fact continue flood releases at Somerset Dam and Wivenhoe Dam during such period, other than at the time of fish recovery, through the regulators:
    - (1) from Wivenhoe at the rate of 50 m<sup>3</sup>/s;
    - (2) from Somerset at the rate of 35 m<sup>3</sup>/s;
  - (ii) such operations were sufficient to deal with the events between 3 and 5 January 2011;

- (iii) a reasonably prudent flood engineer would have reasonably expected such operations to bring the water levels in Lake Somerset and Lake Wivenhoe down to their respective FSLs within a period of seven days allowed for by the Flood Mitigation Manual;
- (e) as to sub-paragraph 228(c):
  - (i) denies the allegations;
  - (ii) says that:
    - (1) a reasonably prudent flood engineer would not have:
      - (a) expected the level in Lake Wivenhoe to exceed EL 68.50 at any time during such period;
      - (b) considered the conditions for choosing Strategy W3 in the Flood Mitigation Manual to have been triggered;
      - (c) implemented Strategy W3;
    - (2) the conditions for the implementation of Strategy W3 under the Flood Mitigation Manual did not exist during such period;
- (f) as to sub-paragraph 228(d):
  - (i) says that the Flood Engineers did in fact continue flood releases at Somerset Dam;
  - (ii) says that such releases:
    - (1) were sufficient to deal with the events between 3 and 5 January 2011;
    - (2) were consistent with Strategy S2;
- (g) says that the release of water at rates exceeding the rate of inflow was contrary to the Flood Mitigation Manual;
- (h) says that Mr Ruffini:
  - (i) was not involved in selection of loss rates in the RTFM prior to 19.00 on 7 January 2011;
  - (ii) could not have reduced the Somerset Dam and Wivenhoe Dam water levels in the manner pleaded in paragraph 228B because he was not on duty as a Flood Engineer between 07:00 on 1 January 2011 and 19.00 on 7 January 2011;

- (i) as to paragraph 228B:
  - (i) denies the allegations;
  - (ii) says:
    - (1) the Flood Engineers had no authority to reduce the water level below FSL;
    - (2) there was no basis for a reasonably prudent flood engineer to reduce the water levels below FSL;
- (j) says that during the period 3 to 5 January 2011:
  - (i) the actual rainfall and forecast rainfall during such period was not such as to cause a reasonably prudent flood engineer to have acted in the manner alleged in sub-paragraphs 228A and 228B;
  - (ii) no rain of significance fell in the 24 hours to 09:00 on Wednesday 5 January 2011;
  - (iii) at no time immediately before 5 January 2011 did information exist by way of warnings or otherwise from BoM which ought reasonably to have caused the Flood Engineers to form the views or to have made the releases alleged;
- (k) otherwise denies the allegations.

201. As to paragraphs 229 and 230 of the Statement of Claim, the State:

- (a) repeats and relies upon its responses to paragraphs 224 to 228B of the Statement of Claim;
- (b) says that the dam operations between 16 December 2010 and 5 January 2011 had no causative relevance to the flooding which occurred subsequent to 9 January 2011;
- (c) denies the allegations.

#### **Events of 6 January 2011**

202. As to paragraph 231 of the Statement of Claim, the State:

- (a) repeats and relies upon its response to paragraphs 138 to 142 of the Statement of Claim above;
- (b) says that the BoM 4 day PME forecast published on 6 January 2011 for 7 January to 10 January 2011:

- (i) forecast rainfall between 25 mm and 150 mm in Wivenhoe and Somerset catchments;
  - (ii) to the extent that it forecast rainfall of between 100 mm to 150 mm in the Wivenhoe and Somerset catchments, forecast that rain to affect only a small area in the southeast of the catchments;
  - (iii) forecast most intense rain to fall outside the Wivenhoe and Somerset catchments in the catchments below Wivenhoe Dam;
- (c) says that the BoM 8 day PME forecast published on 6 January for 7 January to 14 January 2011:
- (i) forecast rainfall between 25 mm to 200 mm of rainfall in Wivenhoe and Somerset catchments;
  - (ii) to the extent that it forecast rainfall of between 100 mm and 200 mm in the Wivenhoe and Somerset catchments, forecast that rain to affect only an area in the south east of the catchments;
  - (iii) forecast the most intense rain was forecast to fall outside of the Wivenhoe and Somerset catchments in the catchments below Wivenhoe Dam;
- (d) says that the BoM 1 day PME forecast published on 6 January 2011 for 7 January 2011 forecast rainfall of between 15 mm to 50 mm in the Wivenhoe and Somerset catchments;
- (e) says that the SILO Access Model 72 forecast for the period 6 to 8 January 2011 was:
- (i) 85 mm for the Somerset catchment;
  - (ii) 51 mm for the Wivenhoe catchment;
- (f) otherwise denies the allegations.

203. The State admits paragraph 232 of the Statement of Claim.

204. The State admits paragraph 233 of the Statement of Claim.

205. The State admits paragraph 234 of the Statement of Claim.

206. As to paragraphs 235 and 236 of the Statement of Claim, the State:

- (a) says that:

- (i) in the 24 hours to 09:00 on 6 January 2011 there had been heavy widespread rainfall in the catchments downstream of the Wivenhoe Dam including in the Lockyer Creek catchment;
- (ii) after 09:00 during 6 January 2011 further significant rainfall occurred in the catchments downstream of Wivenhoe Dam, including further heavy falls in the Lockyer Creek catchment;
- (iii) at 10:48 BoM issued a Flood Warning notifying the Flood Engineers that heavy rainfall during the morning was expected to lead to fast rises in the Lockyer and Warrill Creek catchments and along the Bremer River with further rises likely while rainfall continues;
- (iv) at 14:28 BoM issued a Flood Warning notifying the Flood Engineers that rainfall of up to 60 mm had been received in Lockyer Creek in the six hours to 14:00 resulting in fast rises along Lockyer Creek;
- (v) at 17:26 BoM issued a further Flood Warning notifying that heavy rainfall was continuing to cause fast river rises in the Lockyer and Warrill Creek catchments and along the Bremer River;
- (vi) the heavy falls in the Lockyer Creek catchment were expected to:
  - (1) result in higher than expected inflows from the Lockyer Creek catchment;
  - (2) result in a peak of such inflows up to 600 m<sup>3</sup>/s late on Friday 7 January 2011;
  - (3) adversely impact upon Twin Bridges, Savages Crossing, Kholo Bridge, Colleges Crossing and Burton's Bridge;
- (b) otherwise admits the allegations.

207. As to paragraph 237 of the Statement of Claim, the State:

- (a) denies the allegations in sub-paragraph 237(b)(ii);
- (b) says that, properly construed, the Flood Mitigation Manual did not require flood releases to commence or a minimum flood release to occur in the circumstances stated or at all;
- (c) otherwise admits the allegations.

208. The State admits paragraph 238 of the Statement of Claim.

209. The State admits paragraph 239 of the Statement of Claim.

210. The State admits paragraph 240 of the Statement of Claim.

211. As to paragraph 240A of the Statement of Claim, the State:

- (a) says that Mr Ruffini did not select or input loss rates into the RTFM prior to coming on duty at 19:00 on 7 January 2011;
- (b) says that the selection of initial and continuing loss rates were based upon the exercise of professional engineering judgement taking into account the matters pleaded in response to paragraph 136B of the Statement of Claim.
- (c) otherwise does not admit the allegation.

212. As to paragraph 241 of the Statement of Claim, the State:

- (a) says that Sections 8.3 and 8.4 of the Flood Mitigation Manual relevantly provided as set out in response to paragraphs 54 to 59 of the Statement of Claim above;
- (b) says that, properly construed, the Flood Mitigation Manual did not require flood releases to commence or a minimum flood release to occur in the circumstances stated or at all;
- (c) otherwise denies the allegations.

213. As to paragraph 242 of the Statement of Claim, the State:

- (a) says that after 09:45 on 6 January 2011, the Flood Engineers did in fact continue flood releases through the regulators:
  - (i) at Wivenhoe at the rate of approximately 50 m<sup>3</sup>/s;
  - (ii) at Somerset at the rate of approximately 35 m<sup>3</sup>/s;
- (b) otherwise denies the allegations.

214. As to paragraph 243 of the Statement of Claim, the State:

- (a) repeats and relies upon its response to paragraphs 142A, 142B and 231 to 238 of the Statement of Claim above;
- (b) says that:
  - (i) Lake Wivenhoe at the end of 6 January 2011, had:
    - (1) a level of approximately EL 67.41
    - (2) a remaining temporary flood storage capacity of about 860,000 ML to EL 74;
  - (ii) Lake Somerset had:

- (1) a water level of approximately EL 99.51;
- (2) a remaining temporary flood storage capacity of about 346,000 ML to EL 105.5;
- (iii) as at the end of 6 January 2011, Lake Wivenhoe and Lake Somerset had a combined remaining temporary flood storage capacity of at least 1,200,000 ML;
- (c) otherwise denies the allegations.

215. As to paragraph 245 of the Statement of Claim, the State:

- (a) repeats and relies upon its responses to paragraphs 54, 136A, 136B, 149, 150, 231 to 243 of the Statement of Claim above;
- (b) admits the allegations in sub-paragraph 245(a);
- (c) says that Mr Ruffini was not on duty as a Flood Engineer on 6 January 2011;
- (d) as to sub-paragraph 245(b):
  - (i) says the Flood Engineers did in fact continue flood releases at Somerset Dam and Wivenhoe Dam during such period through the regulators:
    - (1) from Wivenhoe at the rate of 50 m<sup>3</sup>/s;
    - (2) from Somerset at the rate of 35 m<sup>3</sup>/s;
  - (ii) says that:
    - (1) during the morning of 6 January 2011 the intention of the Flood Engineer was to commence radial gate opening at Wivenhoe Dam at 18:00 with one gate progressively opened to 2.5 m by 22:00;
    - (2) following receipt of the BoM Flood Warning at 10:48 and later at 14:28 notifying that rainfall of up to 60 mm had been received in Lockyer Creek in the six hours to 14:00 resulting in fast rises along Lockyer Creek, it was decided not to commence radial gate opening until after the peak of inflows from Lockyer Creek had passed;
    - (3) such decision not to commence radial gate openings was affirmed after receipt of the BoM Flood Warning at 17:26;
    - (4) such decision and operations as occurred were reasonable and sufficient to deal with the events on 6 January 2011 having regard:



- (a) to the higher than expected inflows from Lockyer Creek with an estimated peak of up to 600 m<sup>3</sup>/s late on 7 January 2011;
  - (b) the intention to commence releases from the radial gates at Wivenhoe Dam after the peak of inflows from the Lockyer Creek had passed either late on 7 January or early in the morning of 8 January 2011;
- (5) a reasonably prudent flood engineer would have reasonably expected such operations to bring the water levels in both Lake Somerset and Lake Wivenhoe down to FSL within a period of seven days as provided for by the Flood Mitigation Manual;
- (e) as to sub-paragraph 245(c):
  - (i) denies the allegations;
  - (ii) says that over the period from 07:00 on 6 January to 00:00 on 7 January 2011 the level in Lake Wivenhoe rose from approximately EL 67.28 to approximately EL 67.43;
- (f) says that:
  - (i) at 12:00 on 6 January 2011 the Flood Engineer then on duty produced hydrographs modelling inflows using the FLOOD-Ops RTFM and produced Operations Spreadsheets (**SDWD-201101061200**) which:
    - (1) identified the general dam operations in place during 6 January 2011;
    - (2) predicted that Wivenhoe Dam would peak at EL 68.35 at 16:00 on 11 January 2011 and then drain down to FSL on the dam operations in place at the time;
    - (3) predicted that Somerset Dam would peak at EL 99.75 at 20:00 on 7 January 2011 and then drain down to FSL on the dam operations in place at the time;
  - (ii) at 15:00 on 6 January 2011 the Flood Engineer then on duty had produced hydrographs modelling inflows using the FLOOD-Ops RTFM and produced Operations Spreadsheets (**SDWD-201101061500**) which:
    - (1) identified the general dam operations in place during 6 January 2011;