

**QUEENSLAND FLOODS COMMISSION OF INQUIRY**

**SUBMISSIONS ON BEHALF OF TERRENCE MALONE**

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### **1. Introduction**

[1] In the Interim Report of the Commission, the following observations appear:

“A great deal was demanded of the flood engineers over the period of the flood event; they were working in conditions which were stressful, fatiguing and physically uncomfortable. While there is a good deal to be said for operating with a small, tight team in the management of a flood crisis, the demands placed on the four flood engineers in the January event were excessive.”<sup>1</sup>

[2] Nothing that has emerged in the recent bracket of hearings could displace the force of those remarks. Indeed, no attempt was made to do so and, if anything, the feature that the demands placed on each of the engineers were immense was reinforced by the evidence that was received.

[3] It is therefore unfortunate that such a feature – as real and ever present as the Wivenhoe Dam itself - has been overlooked in the submissions of Counsel Assisting. Instead much is sought to be made of alleged deficiencies in record-keeping, in situation reports and in documents generated by others. Failings in memory have been scorned, and short-form entries made in the Flood Event Log (“**Log**”) – and mostly by others – have been treated as holy writ. Then, to trump even that, heavy emphasis has been placed on a series of documents generated during a period when, by all accounts, each engineer was out on his feet - 15 to 17 January 2011. Despite the dam still being in full operational mode, each is now derided for failing to respond with corrections to draft documents, and their failure to do so is now held up as proof that each must be taken to have positively adopted what was written.

[4] It is also difficult to understand why, when evidence consistent with the implementation of W3 was repeatedly highlighted during the hearings, it has not been embraced. Rather than treating such evidence as going in support of the engineers’ position, it seems to have been pushed to one side and tagged as equivocal. Where reasonable explanations were put forward in evidence, they have been treated with disdain. It is as if the burden of proving what occurred fell on the four men.

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<sup>1</sup> Interim Report; Para 2.6.4.

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- [5] It is ironic that, where the overall accusation is reconstruction, each engineer was implored to do just that. Whether it was to deliver up comment on passages from documents authored by others or to interpret conversations to which they had not been a party, each was pressed again and again to do so. But, above all else, each was called upon to explain how his mind was “engaged” at precise, and highly pressurised, moments in time over 12 months ago.
- [6] That, however, was the ultimate test of their veracity because it would have been the easiest thing for each of them to swear that they distinctly recalled strategising exclusively in W3 mode. But why even stop there? After all, what is alleged in the submissions of Counsel Assisting is an elaborate conspiracy to conceal the truth. Why not invent conversations between them to evidence the conscious implementation of W3 on 8 and 9 January? Why not include in those conversations liberal reference to the applicable provisions of the Manual of Operational Procedures for Flood Mitigation at Wivenhoe Dam and Somerset Dam (“**Manual**”).<sup>2</sup> Why, if a conspiracy is what it was, would they not supplement the records and/or sanitise the ones that existed? After all, if Counsel Assisting’s assertions are correct, all four men recognised “by 17 January 2011 at the latest” that the incorrect strategy had been applied and that there was a “need for ... an account to be created to represent compliance with the Manual”.<sup>3</sup> The FOC was still fully operational; it would have been the work of a moment to supplement or sanitise the records. Indeed, if the transitions were so concerning, why detail them so comprehensively in the Flood Event Report (“**Report**”)?<sup>4</sup>
- [7] Of course, it is an odd conspiracy that has been alleged. Counsel Assisting ultimately put it in this way:

“462. Mr Ayre did not, at 8:00 am on 8 January 2011, consciously engage with the requirements of the manual insofar as they related to adoption of strategies.

463. On 8 January and for at least part of 9 January 2011, there had been no conscious engagement of strategy W3.

464. To the extent that it is possible now to work out whether any, and if so which

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<sup>2</sup> Exhibit 21.

<sup>3</sup> Submissions of Counsel Assisting; Paras 469 to 475.

<sup>4</sup> Exhibit 24.

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strategies were engaged, it would seem, on the evidence, that as at 5:53 pm on 8 January 2011, Mr Ayre was operating the dam in strategy W1.

465. There is nothing to suggest that any change to this strategy was made prior to 3:30 pm on Sunday 9 January.

...

467. It is not possible, now, to reach any clear and settled conclusion about the engineers' states of mind as regards strategies prior to the adoption of W4. But all indications are that the engineers were just getting on with the management of the dam, without reference to the manual and without recognising they would need to later explain their actions by reference to the manual."

[8] For this theory to have any substance at all, one would first have to be satisfied that four dedicated, senior engineers would, to a man, decide to throw the Manual out the window and, in so doing, abandon the legal protection which observance of the Manual provides. Secondly, it would need to be established that each man was then prepared to engage in serious criminal conduct to cover up what they in fact did – or didn't do – and, even more to the point, that they would see any need to do that in circumstances where they happened to achieve a near perfect outcome in the operation of the dams.

[9] Moreover, for the contentions of Counsel Assisting to have any credence, it would also have to be accepted that:

- From the moment the Flood Operations Centre ("FOC") was mobilised on 6 January 2011, the whole reason for the engineers' professional being was to manage dam operations in accordance with the Manual – it was their Bible – but, quite independently of each other, each engineer chose not to do so;
- For at least 31 hours over the period in question, hourly reports by email and facsimile and constantly updated real time data streamed into the FOC, all of which served to reinforce the obvious – that the Wivenhoe had risen above 68.5 m and that the dam releases well exceeded the naturally occurring peaks at Lowood and Moggill – but, despite that, the significance of those levels was misinterpreted, ignored or missed; and
- For at least 31 hours over the period in question, those key elements of the incoming data would be written up each hour by a Flood Officer on a whiteboard in the FOC

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and manually entered by the duty engineer on the computer where they would then form the essential ingredients of all the modelling that was undertaken but, again, the significance of those levels was misinterpreted, ignored or missed.

- [10] Incredibly, if the submissions of Counsel Assisting are to be accepted, only three of the four engineers were on duty during the period when it is alleged there had been no “conscious engagement of strategy W3” – the clear suggestion being that they came to their senses at the 15:30 pm meeting on 9 January. If that be so, it is remarkable that the engineer who was never on duty during that period (Mr Ruffini) would so willingly agree to participate in the ruse, and then follow it up with perjured evidence. It is the stuff of grassy knolls.
- [11] Lastly, a great deal of what has now been submitted by Counsel Assisting was not put to Mr Malone when he was – twice – called to give evidence at the recent hearings. Some of it goes beyond what particulars were provided by Counsel Assisting last week. Why the dramatic allegations laid at the feet of Mr Tibaldi and Mr Ayre were not trotted out to Mr Malone (or, for that matter, Mr Ruffini) remains unexplained.
- [12] Of course, before the Commission could be satisfied that any of the allegations are made out, the highest standard of proof would be required.<sup>5</sup> None of the material relied on by Counsel Assisting comes close. Indeed, that the evidence is insufficient to establish the serious allegations that are nonetheless made appears to have been conceded by the submission that “suspicion about the degree of collusion between the four” requires further investigation.<sup>6</sup>
- [13] The fact of the matter is that the W3 Strategy was “consciously engaged” at 8:00 am on 8 January – and that remained the position throughout the period in question. Fortunately for the engineers, there is ample evidence to support that conclusion. Moreover, the evidence is not capable of being properly construed in any other way, and nothing in the material held up by Counsel Assisting affects that result.

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<sup>5</sup> Given the seriousness of the allegations under consideration, the Commission should not find them proven unless there is clear, cogent evidence that permits of no other inference. See: *Briginshaw v Briginshaw* (1938) 60 CLR 336, per Dixon J at 362-3; *Cumming Smith & Co Limited v Western Farmers Cooperative Limited* [1979] VLR 129, 147; *Mahon v Air New Zealand* [1984] AC 808, 820-821.

<sup>6</sup> Submissions of Counsel Assisting; Paras 480 and 481.

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## **2. Overview of Submissions**

[14] The submissions made by Counsel Assisting are premised – first and last – on an assertion that the engineers were not in Strategy W3 during the relevant period – from 8:00 am on Saturday, 8 January to 15:30 on Sunday, 9 January. In particular, it has been submitted that the engineers failed to “consciously engage” Strategy W3 and that, for this reason, they failed to give primacy to considerations of urban inundation, preferring instead to focus on the downstream bridges. Importantly, the submission is made that they operated the Wivenhoe “without reference to the Manual”.<sup>7</sup>

[15] The approach taken in these submissions is to first underscore some of the objective evidence that demonstrates beyond question that a move to W3 was foreseen before the threshold (68.5 m) was reached at 8:00 am on 8 January, that W3 was “consciously engaged” at that time and that this remained the position throughout the period in question.

[16] The arguments advanced by Counsel Assisting are then dealt with.

## **3. Engagement of the W3 Strategy**

[17] To support the notion that the engineers were doing other than applying Strategy W3 between 8:00 am on Saturday, 8 January 2011 and 15:30 pm on Sunday, 9 January 2011, Counsel Assisting asserts an absence of contemporaneous evidence proving the conscious application of W3 at those times. He also points to various matters which are dealt with later in these submissions.

[18] To the contrary of what Counsel Assisting has submitted, there is a considerable body of contemporaneous evidence which establishes the conscious application of W3 on 8 and 9 January. In the first place, there is the evidence of the engineers themselves.

### **3.1 The Engineers’ Accounts**

[19] The recent bracket of hearings was preceded by media commentary that grew bolder in the damnation of the engineers by the day. The examination of the engineers during the

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<sup>7</sup> Submissions of Counsel Assisting; Para 467.

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hearings was unforgiving. All told, the pressure on each man was colossal.

- [20] Despite that, they did not move a millimetre past their genuine recollection of the events. To the point, their evidence was marked by the feature that not one of them pretended to have a recollection of anything he could not honestly recall.
- [21] As already submitted, it would have been easy for each engineer to have said in evidence that they distinctly recalled specific discussions between them about W3, but to their considerable credit they did not do so.<sup>8</sup>
- [22] Instead, they did their best to assist the Commission with evidence of what they could recall. Importantly, each stood by what had been written in the Report as being an honest account of what strategies had been employed, and when.<sup>9</sup>
- [23] The accounts given by the four men cannot be lightly dismissed. They were each thoroughly examined, not only by Counsel Assisting but also by senior counsel for two of the other parties. If there was a conspiracy to conceal the truth, it is most surprising that one or more of them did not betray the others.
- [24] It is submitted that their evidence, taken as a whole, must be accepted unless there is good reason for disbelieving it. There is no proper basis to doubt that they did other than faithfully give evidence about the Strategy they were applying over the relevant period, with due allowance being made for the whirlwind of events they were being asked to recall. The Commission should so find, it is submitted.

### **3.2 Application of the Manual**

- [25] The opening 12 pages of the submissions of Counsel Assisting are devoted to the proper construction of the Manual,<sup>10</sup> but none of the engineers said they were doing other than applying W3 at the relevant time.<sup>11</sup> Much effort has been put into arguing that “conscious choice” ruled supreme, but scant attention has been given to the automatic provisions of the Manual. In the end, it does not matter because each engineer was undoubtedly strategising

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<sup>8</sup> See: T5387.17 (*Ruffini*).

<sup>9</sup> See: T5134.45 (*Tibaldi*); T5292.49 (*Ayre*); T5356.26 and T5369.1 (*Malone*); T5413.40 (*Ruffini*).  
<sup>10</sup> Exhibit 21.

<sup>11</sup> See: T5069.30 (*Tibaldi*); T5214.56 (*Ayre*); T5296 (*Malone*); T5421.55 (*Ruffini*).

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in the correct way at all times. It should nevertheless be kept in mind that the conduct of the four engineers should not be judged against a legal (as opposed to practical) reading of the Manual. It was, after all, a document “written by engineers for engineers to follow”.<sup>12</sup> It is one thing to reason that the Manual was misapplied, it is another to use that argument to impute dishonest motives on the faith of it.

- [26] That said, the Manual was not some distant, theoretical work; it was drafted by Mr Tibaldi<sup>13</sup> and some of the other engineers had input into it. Each was practised in its application – through previous flood events and simulations. Most recently to the event in question, W3 was engaged in October and December 2010. There can be little doubt that the provisions of the Manual were referred to during the relevant shifts.<sup>14</sup>
- [27] To suggest, as it now has been, that the engineers operated the dams without reference to the Manual is, with respect, an extraordinary proposition. For that to be accepted as true, the Commission would have to be satisfied that Mr Ayre, Mr Tibaldi and Mr Malone presided over a sequence of shifts where each, independently of the other, decided to ignore the Manual, and for reasons which are not explained. It simply defies any reasonable logic to think that any one of them would have been so derelict.
- [28] Some further submissions can usefully be made about the application of the Manual:
- Much was sought to be made about the absence of any express reference to W3 in the Log or in the Situation Reports. At first blush, that might seem to be an odd thing to a lawyer, but none of the peer reviewers (including one who had worked in the FOC as a duty engineer) thought that in the least bit surprising. Proper weight should be given to those opinions;
  - The contemporaneous recording of strategies had never been done in the past. Although that practice has now changed in light of the Interim Findings, the point to be made is that the approach taken by each of the engineers accords with what may be discerned from the entries in the Flood Event Log for the February 1999 flood

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<sup>12</sup> See: T402.36 (*Malone*).

<sup>13</sup> See: T5104. 12 (*Tibaldi*).

<sup>14</sup> See: T5355.46 (*Malone*); T5391.8 (*Ruffini*).



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event,<sup>15</sup> as well as other engineers who previously manned the FOC. As such it by no means can be concluded that the engineers were wrongly strategising simply because they did not state, or record, the obvious;

- In W3, lower level objectives must still be considered when making decisions on water releases.<sup>16</sup> That is not to say that primary consideration is not given to protection of urban areas from inundation, but it explains why the narrative in Situation Reports will sometimes not expressly refer to the primary consideration in circumstances where it has already been accommodated.<sup>17</sup>

### 3.3 Processing Of Incoming Data

[29] As submitted earlier, hour by hour throughout the relevant period, real time data was received in the FOC.<sup>18</sup> On receipt, the critical parts of it – lake levels and flows – were written up on the whiteboard by the Flood Officer.<sup>19</sup> The Duty Engineer would then enter those same levels into his computer and that information was used to form the basis for the modelling which was then undertaken.

[30] The modelling involved a real time system for flood monitoring and forecasting. It consisted of a data capture module, a data analysis module and the gate operations spreadsheet. Various rainfall and water level gauges fed data in real time by radio telemetry to the FOC. Otherwise, manual readings of levels by dam operators were reported by facsimile and email.

[31] Mr Tibaldi explained the process in the following way:

“There's the continuous electronic readout that is received in the flood centre in realtime that measures the water level. To verify that, operators at the dam read a gauge board approximately every one hour and provide a manual reading that can be crosschecked against the electronic data.”<sup>20</sup>

[32] This point was taken up later in Mr Tibaldi's evidence:

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<sup>15</sup> Exhibit 1129.

<sup>16</sup> See: T5115.17 (*Tibaldi*).

<sup>17</sup> T5571.25 to T5571.27 (*McDonald*); T5727.55 to T5728.10 (*Apelt*).

<sup>18</sup> See: T5354.23 (*Malone*).

<sup>19</sup> See: T5435.56 to T5436.45.

<sup>20</sup> See: T5112.54 (*Tibaldi*). And see: T5253.44 (*Ayre*).

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“So the engineer or engineers towards the ends of this event that were on duty would be keenly observing and monitoring the change in lake levels?-- Oh, yes.

What happens is that in the gate operations spreadsheet, the manual data must be put in manually. So as you obtain a gauge board reading, you'll actually type that into the spreadsheet. So it's pretty hard not to be aware of the lake level at any time.”

The operational spreadsheet, as you call it, that's a contemporaneous record. It's an ongoing record as you operate the dam?-- Yes.

Is it fair to say that would be one of the more accurate records kept of how the dam is operating?-- Yes.

Because it is contemporaneous?-- Certainly it is, and it's crosscheckable too in terms of the directives and the confirmation of the directives that are received back from the operators and the gauge board. When you've provided with a gauge board reading, it's generally provided either fax or email so you can sort of - there is quite good opportunities to crosscheck the data in that sheet.”<sup>21</sup>

- [33] The operational spreadsheets recorded real time data and, importantly to the evaluation of Counsel Assisting's contentions, incoming data was manually entered by the flood engineer on duty. To the point, real time lake levels and the flows at Lowood and Moggill were recorded hour after hour in this way.
- [34] In circumstances where it was not suggested by Counsel Assisting that the incoming data was not recorded or that any error was made in the recording of that data, the spreadsheets provide the most contemporaneous account of the changing levels and flows. To the point, to suggest that any one of the engineers on duty was in some way ignorant of the lake heights or peak flows at any point in time during the flood event is quite unsustainable. So, too, it is unimaginable that the significance of the heights and flows to the implementation of the strategies under the Manual could be overlooked. These are critical pieces of information in the management of dam operations, and it would be a nonsense to suggest that each engineer was not acutely aware of them.
- [35] Indeed, the determination of which strategy applied at the relevant time would have been the work of a moment.<sup>22</sup> The lake height at Wivenhoe and the peak flows at Moggill and Lowood were such as to permit no other conclusion than that W3 was the applicable

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<sup>21</sup> See: T5113.13 (*Tibaldi*).

<sup>22</sup> See: T5445.20.

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strategy throughout the period in question. This was easily recognised.<sup>23</sup>

[36] Further, it was well understood by the engineers on duty that a move to W2 would have required the releases to be “throttled back” and, had that occurred, there would have been an insufficient volume discharged from the dam to ensure that the drain-down phase was completed within seven days.<sup>24</sup>

[37] It is therefore unthinkable that the significance of the incoming data was missed or ignored by any one engineer, let alone three of them.<sup>25</sup> Specifically, the trigger level for movement to a higher strategy from W1 – 68.5 m – was anticipated by Mr Ruffini and Mr Ayre in advance of that occurring. Thereafter, when the level was passed, it would have been as plain as day to each engineer that the flood storage compartment for W1 had been wholly filled and that what storage remained was reserved for W2 or W3. A glance at the current release rate and the peak flows at Lowood and Moggill would then have put beyond any doubt that W3 was the only strategy “in play”.<sup>26</sup>

### **3.4 Modelling**

[38] Amongst the best contemporaneous evidence available as to how the engineers were strategising are the model runs. Relevantly, the gate operations spreadsheet allowed the engineers to input a specific gate operations strategy and assess the consequences of that strategy for lake level and flows downstream. As such, they are a reliable reflection of the duty engineer’s thinking at the time of each model run.

[39] The following exchange with Mr Tibaldi regarding the gate operations spreadsheet is apposite:

“So Mr Ayre, if he's looking at this document on Saturday morning, would see at a glance what was the current lake level, what was the current releases, what were the flows downstream, he'd have all of that information in front of him?-- You know, there is a clear awareness - you can't be sitting there not knowing what the lake level or the discharges from Wivenhoe. I mean, I can say with certainty that that's clear in every engineer's mind when

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<sup>23</sup> See: T5445.27 and T5452.33.

<sup>24</sup> See: T5401.10

<sup>25</sup> See: T5358.21 (*Malone*).

<sup>26</sup> See: T5355.9 (*Malone*).

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he's on duty at all times because you're just sitting in front of this. That's my belief."<sup>27</sup>

[40] Unfortunately, the model runs were not explored in any detail by Counsel Assisting during the hearings. However, in submissions something adverse is attempted to be made out of them.<sup>28</sup> None of that was put to Mr Ruffini or to Mr Ayre but, more to the point, the submissions are wrong.

[41] The spreadsheet, SDWD-201101071800, contains the modelled flows from 18:00 on 7 January 2011 and this is the data that Mr Ruffini had access to during his overnight shift. The last manual lake height entry was made at 7:00 am on 8 January 2011 when the lake height was 68.48 m. The next column along contains the prediction – 68.5 m. It was, as Mr Ruffini said in evidence, indeed anticipated that the Wivenhoe would rise above the threshold. Further, the metadata for this spreadsheet shows that it was last saved at 8.15 am on 8 January – the precise time when Mr Ayre issued Wivenhoe Directive 4.

[42] In addition,<sup>29</sup> the model run conducted by Mr Ruffini at 7:00 am on 8 January 2011<sup>30</sup> reveals the actual and predicted lake heights remaining above 68.5 m and the predicted natural peak flows at Lowood and Moggill remaining elevated. Without more, W2 was completely ruled out as an available strategy.

[43] In any event, both Professor Apelt and Mr Roads reviewed all of the relevant model runs before concluding that they were consistent with operating in W3.<sup>31</sup>

### **3.5 The 0450 Wivenhoe Directive – 8 January 2011**

[44] As just touched upon, Mr Ruffini was the duty engineer on the shift that terminated at 7:00 am on 8 January. He was well aware that, on his shift, he was preparing for a transition from W1 to W3.<sup>32</sup> He explained:

“The transition point between the two strategies is about hitting the level, the 68.5. At some point you need to start preparing to move from one to the other. So when I came on shift the

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<sup>27</sup> See: T5165.40 (*Tibaldi*) and Exhibit 1054.

<sup>28</sup> Commencing at para 49.

<sup>29</sup> Appendix A1 - Model Results at page 2, Model Run 9.

<sup>30</sup> Exhibit 524, Attachment 34.

<sup>31</sup> See: T5769.11 - 55 (*Roads*); T 5736.51 – 5737.21 (*Apelt*).

<sup>32</sup> See: T5385.54 (*Ruffini*).

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forecast, the predicted - predicted spreadsheet with the rainfall had us - had us hitting - hitting that 68.5. Okay. And that was sort of at the start.”<sup>33</sup>

- [45] After referring to the operational spreadsheets which he said would evidence what he was doing at the time, Mr Ruffini continued:

“Now, when I took over and had that spreadsheet, as I said, it was - the lake level was predicting to get up to 68.5 on that particular model run that Terry had done at that particular time. Now, and in that - in the situation report that he'd sort of written that I read when I handed over to him at that time, in that it talked about - talked about moving towards 1200 CUMECS, I believe, and talked about - talked about, you know, the downstream impacts in terms of some comments on, you know, impacts in Brisbane at, you know, that would occur if we sort of, you know, that sort of strategy had progressed.

During my shift I continued to review that work, so in terms of looking at the modelling and see whether there was any rainfall had fallen or whether there was any - in terms of the - those spreadsheets that I had been given and were looking at and examining with the strategies about whether that was changing or not. So that stuff hadn't really changed, so during that we started to - we started to operate towards that, which is sort of like starting to ramp up from the - I would have to have the exact thing in front of me of the timing, but during my shift I remember we started to ramp up towards those gate openings, and on that particular day I think at handover, off the top of my head, I got up to about 890 CUMECS, I believe, and that was - we were at that stage.”<sup>34</sup>

- [46] The gate-opening directive given by Mr Ruffini to the Wivenhoe dam operator at 04:50 on 8 January 2011 is therefore significant.<sup>35</sup> In it, Mr Ruffini elected to increase the releases. That is quite inconsistent with any thought that a move to the W2 strategy was in prospect. It was entirely consistent with a move to W3.<sup>36</sup>

### **3.6 The Saturday Morning Handover**

- [47] When Mr Ayre commenced his shift at 7:00 am on 8 January, he was well aware that a transition from W1 was in prospect:

“I was aware at the handover that whilst we were still in W1 the lake level was approaching the threshold level of 68.5 and, therefore, we would be transitioning from W1 to W2 or 3.”<sup>37</sup>

- [48] Later in his evidence, the following exchange took place:

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<sup>33</sup> See: T5386.17 (*Ruffini*).

<sup>34</sup> See: T5386.37 (*Ruffini*).

<sup>35</sup> Wivenhoe Directive 3; Report; Appendix L, page 4.

<sup>36</sup> See: T5190.30 (*Ayre*).

<sup>37</sup> See: T5183.18 (*Ayre*).

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“And you've given evidence yesterday and in your earlier statements that you were conscious that the water level had gone over 68.5 and, therefore, you were required to apply a higher strategy?-- Yes.

“And you also said in evidence yesterday that during that day, you appreciated your primary consideration had to be protection of urban inundation?-- Yes.

And do you have a natural recollection of those being your thoughts on Saturday, the 8th, while acting as a flood officer?-- Yes. I suppose having done the previous Thursday night shift and also having talked to Terry Malone when the event was being mobilised and, indeed, when Terry first proposed a strategy at the start of the event, I was very much aware that the sequencing they were putting in place was going to be designed to meet the objective as such.

So it's your sworn evidence to the Commission that during your shift on the Saturday, after 8 a.m., you were conscious that you had to apply a higher strategy?-- Yes. I was conscious that we were looking at the objective of optimising the protection of urban areas.

And that you did apply the higher strategy in managing the dam during your shift?-- I believe I did, yes.”<sup>38</sup>

[49] At handover, the imminent rise of the Wivenhoe past 68.5 m was undoubtedly discussed. According to Mr Ayre, Mr Ruffini told him, “I've put in a projection, have a look and see what you think.”<sup>39</sup> Importantly, Mr Ayre was aware that a couple of hours earlier Mr Ruffini had issued the directive to increase flows higher than that of the naturally occurring peaks at Lowood and Moggill. To the point, the Situation Report of Saturday 8 January 2011 at 6:32 am<sup>40</sup> records that Wivenhoe Dam was at 68.45 m and rising steadily with all five gates open and releasing about 890 cumecs. Ruffini recorded in that Situation Report that it was intended to ramp up the releases from Wivenhoe to 1,200 cumecs by midday on the next day.

### **3.7 The 0815 Wivenhoe Directive – 8 January 2011**

[50] On commencing his shift, Mr Ayre's choice of strategy once the lake level rose above the W1 flood storage compartment was mandated by the Manual – either W2 or W3.<sup>41</sup> The then current rate of releases from the dam exceeded the peak flows at Lowood and Moggill.

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<sup>38</sup> See: T5277.3 (*Ayre*).

<sup>39</sup> See: T5265 (*Ayre*).

<sup>40</sup> Situation Report 8 Appendix E, Report on the Operation of Somerset Dam and Wivenhoe Dam of 2 March 2011.

<sup>41</sup> Page 26. And see: See: T5154.5 (*Tibaldi*); T5259.20 (*Ayre*).

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- [51] He plainly chose to apply W3, and indisputable evidence that Mr Ayre was thereafter consciously strategising in W3 may be found in the decisions he made regarding gate releases within 15 minutes of the lake level rising above 68.5 m.
- [52] In the first place, he chose not to reduce the releases below the peak flows at Lowood and Moggill. That was a different tack to that taken in the December 2010 flood event when the flows were cut back at the same point. This alone meant that he could not possibly be in W2 and it is absurd to think he did not then appreciate that. As Mr Tibaldi said, “given that he had done it two weeks earlier – by not doing that, straightaway you think he's got an awareness that he's moving into W3”.<sup>42</sup>
- [53] But, more than that, Mr Ayre decided to increase the the releases<sup>43</sup> and, again, as Mr Tibaldi said, this was “significant”,<sup>44</sup> the flows were being “ramped up well above the limit that's allowed under W2”.<sup>45</sup> Moreover, the releases are entirely appropriate under the W3 strategy.<sup>46</sup>
- [54] That submitted, it of course is not the case that – once a move from W1 to W3 is made – the maximum release under W3 should be actioned.<sup>47</sup> Put another way, it is wrong to think that when “you hit W3 and immediately you let a wall of water go”.<sup>48</sup> Rather, what is required is a graduated move towards larger releases. Undeniably, to immediately move to radically increased releases would be a completely irresponsible decision in all of the circumstances because it would have caused lower-level flooding around Brisbane.<sup>49</sup>
- [55] At the time, the lake height was only marginally above the 68.5 m threshold and, had the releases been radically increased, the engineers would stand accused of failing to consider lower level objectives. As Mr Malone put it, the guiding principle is, “First do no harm”.<sup>50</sup> In this instance, protection against urban inundation was able to be achieved and releases were able to be kept at a non-destructive level. This allowed thought to be given to the

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<sup>42</sup> See: T5089.26 (*Tibaldi*).

<sup>43</sup> Wivenhoe Directive 4; Report; Appendix L; page 5.

<sup>44</sup> See: T5089.44 (*Tibaldi*).

<sup>45</sup> See: T5092.21 (*Tibaldi*).

<sup>46</sup> See: T5141.52 (*Tibaldi*).

<sup>47</sup> See: T5380.54 (*Malone*).

<sup>48</sup> See: T5097.11 (*Tibaldi*).

<sup>49</sup> See: T5115.28 and T5116.1 and T5121.49 (*Tibaldi*); T5261.1 (*Ayre*).

<sup>50</sup> See: T5357.18 (*Malone*).

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bridges.<sup>51</sup> But the fact these lower objectives were considered does not mean that W3 was not being implemented. Protection against urban inundation was able to be achieved at that time with little effort.

### **3.8 The 1130 Somerset Directive – 8 January 2011**

[56] At 9:00 am, Mr Ayre undertook another model run. That was updated an hour later. Then, at 11:30 am, he issued Somerset Directive 3. In it, the following appears:

“Somerset Dam is expected to peak around mid-day at about EL 100.48 m. As we have exceeded EL 100.45 m (fixed crest level), but Wivenhoe Dam is still rising we will need to implement Strategy S2.

The Strategy is aimed at maximising the benefits of the mitigation storage in both Somerset and Wivenhoe dams. Consequently we will endeavour to follow the target line as defined in the manual.”<sup>52</sup>

[57] The significance of this Directive cannot be understated. It provides incontrovertible evidence that, at 11:30 am on 8 January, Mr Ayre:

- Was intent on maximising the benefits of the flood mitigation capacity of both the Wivenhoe and the Somerset;
- Had considered the Manual and selected the applicable strategy; and
- Had applied the Manual in directing the gate releases which he had.

[58] Without more, the existence of this Directive makes a mockery of any suggestion that Mr Ayre was not operating the dams with reference to the Manual. Plainly he was. In fact, what he was doing is precisely what is reflected in the following passage from the Interim Report:

“On 8 January, Somerset, still operated under its second strategy focussed on minimising impacts below Wivenhoe Dam, held water back to allow the runoff from the upper Brisbane River catchment to run through Wivenhoe. From 8.00 am on 9 January, the sluice gates were progressively opened to move the dam levels back to the target operating line (a best case relationship between the level at Wivenhoe and the level at Somerset).”<sup>53</sup>

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<sup>51</sup> See: T5351.17 (*Malone*).

<sup>52</sup> Report; Appendix L; page 66.

<sup>53</sup> Interim Report; Para 2.7.3.



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- [59] Otherwise, it is clear from the Situation Reports what Mr Ayre was doing throughout Saturday. The lake level at Wivenhoe rose slowly, from 68.52 m to 68.65 m at 17:00. The level stabilised at 68.65 m until 11.00 pm and then decreased slowly, recording 68.54 m at 12.00 pm on 9 January. There was only moderate rainfall in the catchments upstream of the dams, and there was sufficient storage capacity in the dams to cope with the rainfall then forecast by the Bureau over the coming days. In such circumstances, and without renouncing urban inundation as the primary objective, the two bridges which remained opened (Fernvale Bridge and Mt Crosby Weir Bridge) might be able to be kept open.

### **3.9 Mr Tibaldi's Shift – 19:00 8 January to 07:00 9 January 2011**

- [60] Mr Tibaldi was next on shift. He recalled the following when giving evidence:

“You can see the lake levels, both Wivenhoe and Somerset, were falling at that point, and they were falling as if we could go back into W1 at that point. Because if they dropped below 68.5, we would have fallen back into W1. In terms of what strategy we were in, whether - I couldn't say if it was in the forefront of my mind or not if I put my mind to it. I could easily see that we weren't in strategy W1 because it was over 68.5, and I could easily see we weren't in strategy W2, if I had checked, because of the fact that we were just releasing too much water. As I said, whether that was in my mind at that time, I couldn't say. But certainly there's no question at that time, even though we're in strategy W3 - as we're allowed to, and as the manual requires - that we were protecting the bridges - the two highest bridges.”<sup>54</sup>

- [61] Situation Report 10 sent at 6:15 am recorded that the Wivenhoe Dam was currently falling slowly with the lake level being 68.58 m. It was noted that the river levels upstream of the dam were receding, but that further inflows would result from any additional rainfall. It records that the current gate operation strategy was to maintain flows of around 1,600 cumecs in the mid-Brisbane River and that the current release rate from Wivenhoe Dam was 116,000 megalitres.
- [62] The dam releases at that time combined with the Lockyer flows and local run off meant that all low level crossings downstream of Wivenhoe including Twin Bridges; Savages Crossing; Burtons Bridge; Kholi Bridge and Colleges Crossing, would be adversely impacted until at least Wednesday, 12 January 2011. It is noted that at this point in time, the Fernvale and Mt Crosby Weir Bridges were not expected to be affected but that a

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<sup>54</sup> See: T5052.3 and T5105.42 (*Tibaldi*).

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revision in that prediction might be required if the predicted rainfall totals eventuated, in which event high releases from Wivenhoe Dam might be considered necessary. In other words, “We will keep those two bridges open for the moment but we cannot guarantee that will remain the position”. Why it could not be guaranteed was that protection against urban inundation was the highest priority.

#### **3.10 Mr Malone’s Shift – 07:00 to 19:00 9 January 2011**

[63] By checking his emails before commencing his shift on Sunday morning, Mr Malone knew what the dam level was before he arrived at the FOC.<sup>55</sup> He knew it had exceeded 68.5 m.<sup>56</sup> When asked what situation he was presented with on arrival, he said:

“At that time I recall that we - the situation was there had been not a lot of rain overnight. The water level had gone up, and we’d been able to drain a little bit. So the net result over 24 hours was basically the same. We had managed to retain the dam at just over 68.5. So that meant to me that we were still in strategy W3.”<sup>57</sup>

[64] When asked whether he could recall thinking that he was in W3, he could not do so but he “would have appreciated the fact that (they) were in W3”.<sup>58</sup> As to this, he had been the duty engineer during two prior flood events when W3 was implemented.<sup>59</sup>

[65] Further, he specifically recalled managing the dam operations to minimise flooding to the lower Brisbane area:

“Because even from the Friday we were aware that the potential for heavy rainfall was going to occur sometime in the beginning of next week, and I think from that point in time all the activities I undertook were in the expectation of what we should do to manage these huge inflows we were expecting in the next couple of days. And obviously the way we managed it would be - have a significant impact on minimising floods in the lower Brisbane River.”<sup>60</sup>

...

My major concern on Sunday was how we were going to manage these expected huge volumes of inflows over the next coming days to minimise impacts of urban damage. That

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<sup>55</sup> See: T5360.23 (*Malone*).

<sup>56</sup> See: T5360.51 (*Malone*).

<sup>57</sup> See: T5360.18 (*Malone*).

<sup>58</sup> See: T5355.30 (*Malone*).

<sup>59</sup> See: T5361.35 (*Malone*).

<sup>60</sup> See: T5361.59 (*Malone*).

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was the purpose of our job.”<sup>61</sup>

- [66] Otherwise, everything Mr Malone did on his shift reflected an application of W3. Model runs were conducted at 7:00 am, he called the Bureau at 8:40 am for an updated weather forecast, he updated the model at 9:00 am, he increased the releases from the Wivenhoe at 10:30 am and he did another model run at 12:00 noon at the same time as Mr Ayre called a meeting of the engineers to discuss what appeared to be a dramatically worsening rainfall position.
- [67] The impetus for that meeting was the forecast of heavy rain over the coming days. In particular, the three day forecast predicted average falls of 140 millimetres in the Somerset catchment and 170 millimetres in the Wivenhoe catchment. A large volume of water was therefore expected to flow into the dam and cause the lake level to rise to between 70.5 m and 71.8 m.
- [68] Based on those forecasts, Mr Malone calculated that a lower limit of about 800,000 megalitres and an upper limit of about 1.5 million megalitres would be the expected flow into the dams from the Somerset-Wivenhoe catchments in the coming days. These would be huge inflows, and he well appreciated that.<sup>62</sup>

### **3.11 Release Rates**

- [69] An examination of the release rates over the relevant period reveals that they were wholly appropriate for W3.<sup>63</sup> In addition, the timing of those releases was consistent with the application of W3.<sup>64</sup>
- [70] As to this, it was not suggested by Counsel Assisting that different rates of releases ought to have been adopted throughout the period in question. It would be foolhardy for him to have attempted to do so, because the expert evidence is uniformly to the effect that the releases were such as to achieve “close to the best possible flood mitigation result for the

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<sup>61</sup> See: T5362.10 (*Malone*).

<sup>62</sup> Ibid.

<sup>63</sup> See: T5140.10 to T5154.3 (*Tibaldi*); T5278.7.13 to 5280.14 (*Ayre*).

<sup>64</sup> See: T5151.22 (*Tibaldi*);

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January 2011 flood event”.<sup>65</sup>

#### **4. Counsel Assisting’s Arguments**

[71] Before moving to a consideration of some of the arguments advanced by Counsel Assisting in his submissions, the point made at the outset of these submissions - that the demands placed on each of the engineers during the flood event were immense – should not be overlooked. Any assessment of what was then said or recorded, or not said or recorded, needs to be considered in that light. It is submitted that it would be unreasonable to expect that any of the engineers will now have a particularly good recollection of the events or the documents canvassed at the hearings.

[72] Particular reliance is placed by Counsel Assisting on drafts prepared between 15 and 17 January 2011. At that time, the dams were still in operational mode. Mr Malone was the duty engineer on 15 January. By that time he had managed to make it home the previous evening but, otherwise, he had slept in the FOC since the previous Tuesday.

[73] Mr Tibaldi explained their general state:

“I hadn't really slept for a week, even up to that point. Like a lot of people affected by the - a lot of people would have been in that situation. In terms of - you know, operating at a level that I can write, you know, something of that nature realistically I wasn't at that level at that time. You know, I just can't remember those two days apart from the incident I recalled yesterday.”<sup>66</sup>

[74] This, from Mr Ayre:

“Well, that was the first day I had actually had off in 10 days of operations. So, I'd done a series of night shifts from the Sunday night through to the Friday night. The first time I went home was actually the Friday morning after I finished that shift. Saturday, I was scheduled to be off for the entire day, but I was called back to the flood room for the 2 o'clock teleconference. So, I was feeling still pretty fatigued at that time, as I recall.

...

I would have been lucky to have had about 20 hours sleep in the week from Sunday to Friday.”<sup>67</sup>

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<sup>65</sup> See: Review of Hydraulic Modelling dated 20 July 2011. And see: T5338.18-32 (*Babister*).

<sup>66</sup> See: T5160.20 (*Tibaldi*).

<sup>67</sup> See: T5277.13 (*Ayre*).

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[75] In a similar vein, when asked why, when a colleague sent him a document, he did not open it, Mr Ruffini said:

“Well, in the context of the timing of what that was, it's at the end of the event, you know, we were pretty bugged, I've got a whole lot of - you know, I am under pressure to get the gauging stations that had been destroyed in the flood back in operation, I have got a site that's been under water and, you know, fairly destroyed. So I am under pressure to get that, you know, up and running, cleaned out, get the spare parts moving out and getting the network up and operating. So at this particular point in time I have got a whole lot of other pressing things. So while, you know, in the context of this this might be important for SEQ Water, my mind and my tensions are actually - you know, were getting all this pressure that - you know, the wet season's still on, get the gauging stations out and running and we've got to get the spare parts, we've got to get those stations up and running. So it means I've got to get the site up at Rocklea, up and operating and that gear out. So a lot of energy and focus at that time is, you know, poured into that task. Now, I know you say, "Oh, it's a little slack. A colleague sends you a document," but like, you know, I am exhausted, I've been working for over a month and, you know, we have got to get that - I am under pressure to get that other stuff done.

...

Quite frankly, you know, during the event people are asking us to produce stuff and do that when you have still got full dams and things like that, just put a real lot of undue pressure on the team to do things that you knew there were going to be bloody errors in. So, you know, this craziness about that -which is why, you know, in my statement I said, "Look, for God sakes in future let's have some proforma staff. Let's have, you know, briefings so people" - you know, before that. So they have training, they understand what we put in it so that we don't have this crazy situation where you get people who have been flogged for over two months are asked at short notice to do stuff when you know there is going to be bloody mistakes in it.”<sup>68</sup>

#### **4.1 Situation Report – 17:53 on 8 January 2011**

[76] A copy of the Situation Report prepared by Mr Ayre at 17:53 pm on Saturday, 8 January<sup>69</sup> was not included in Appendix E, although it is referred to in Appendix M. Nothing sinister can be attributed to the omission; it having been overlooked by Ms De Marchi.<sup>70</sup>

[77] The reference in the body of that report to the application of the W2 strategy appears in the context of a forecast scenario over “the next few days”. Mr Ayre made it clear when giving evidence that it was precisely that.<sup>71</sup> In no way can it be interpreted to reflect what was the

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<sup>68</sup> See: T5412.51 (*Ruffini*).

<sup>69</sup> Exhibit 1047.

<sup>70</sup> See: T5176.13 (*Tibaldi*).

<sup>71</sup> See: T5183.

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then current operating strategy.

- [78] The feasibility of a move from W3 to W1 and, then, to W2 was of course explored at considerable length during the hearings.<sup>72</sup> Such transitions were certainly in prospect if, as then forecasted, more rain fell in the Bremer and Lockyer catchments. In that event, releases from the Wivenhoe might be reduced to “piggy-back” on the flood peaks from those catchments and, in the process, not add to the urban inundation that might be caused by those peaks.
- [79] The fact is that the rain system was forecasted to be moving south, and there was certainly adequate flood storage capability in the Wivenhoe at that time to achieve what Mr Ayre had in mind.
- [80] But, in any event, the reference appears in what clearly was a prognostication.<sup>73</sup> It is not helpful to judge such observations by what actually occurred or by measuring the probabilities of such a scenario occurring. It is submitted that the Commission should go no further than to determine whether the suggested transitions were possible. They were.<sup>74</sup>

#### **4.2 The 15:30 Conference – 9 January 2011**

- [81] Mr Tibaldi was not present in the FOC at the time, but joined by telephone.<sup>75</sup> The whole purpose of the conference was to discuss how best to manage what was then expected to be a huge influx of water. To the point, the primary consideration was protection against urban inundation.<sup>76</sup> As Mr Malone said, if they “could possibly avoid urban damage, that was foremost in (their) minds.”<sup>77</sup>
- [82] Mr Ablitt would appear to have been the author of the first sentence of the entry in the Log.<sup>78</sup> The provenance of the balance of the entry is unexplained on the evidence but, in any event, the part of the entry focussed on by Counsel Assisting – “At this stage operating

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<sup>72</sup> See: T5183.10 to T5186.43 (*Ayre*).

<sup>73</sup> See: T5188.25 (*Ayre*).

<sup>74</sup> See: T5052.41 to T5053.15 and T5054.2 to T5055.4 and T5107.33 (*Tibaldi*); T5184.8 and 5276.1 (*Ayre*); T5299.50 (*Malone*); T5400.7 (*Ruffini*).

<sup>75</sup> See: T5057.26 (*Tibaldi*).

<sup>76</sup> See: T5366.1 (*Malone*); T5438.30 (*Ruffini*).

<sup>77</sup> See: T5367.34 (*Malone*).

<sup>78</sup> See: T5402.12 (*Ruffini*).

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at the top end of W1 and the bottom end of W2” – does not support the conclusion that the engineers were not strategising in W3.

[83] In the first place, the phrase must be read in context. The entry proceeds to speak of the volume of water “above Wivenhoe” and thus well above the 68.5 m threshold for W1 strategies.<sup>79</sup> It also speaks of the potential for significantly increased flows in the Lockyer and Bremer and, with that, the potential for the Fernvale and Mt Crosby Weir Bridges to be closed down. Most importantly, it speaks of the “risk of flooding in Lower Brisbane”. It then goes on to detail the possible release strategy – a reduction of the releases to contain the flow at two specific urban inundation points – the “Mid-Brisbane” and the “Lower Brisbane”. This, it is submitted, is the language of concern over urban inundation.<sup>80</sup>

[84] Secondly, the phrase describes a point in time, which has been reached in a “stage”. It is not by its terms to be taken to have been referring to a particular operating strategy.

- To suggest it does ignores that only one strategy can be engaged at any one time,<sup>81</sup> and to think that any one of the engineers might have thought two strategies could be pressed into service at once is risible;
- Neither strategy could be implemented at that time because the lake height had moved past 68.5 m and was on the rise) and the stated release rate (1,400 cumecs) well exceeded the naturally occurring peaks at Lowood and Moggill;
- It could be that the reference was to what was being achieved under the W3 strategy at that time, namely, the top objective under W1 of keeping bridges open and the bottom end of W2;
- It may also be a reference to the size of the releases at that time;<sup>82</sup>
- Alternatively, it may refer to the dam level or storage capacity.<sup>83</sup>

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<sup>79</sup> See: T5436.40 (*Ruffini*).

<sup>80</sup> See: T5157.10 (*Tibaldi*).

<sup>81</sup> See: T5297.2 (*Malone*).

<sup>82</sup> See: T5301.10 (*Malone*).

<sup>83</sup> See: T5301.35 (*Malone*).

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- [85] Mr Ayre believed it was a phrase that might have been used by Mr Ruffini,<sup>84</sup> but Mr Ruffini could not recall saying it.<sup>85</sup> In any event, as Mr Ayre explained, it was obvious that they were in W3:

“I think all he was trying to describe was the phase that we'd been operating up to and that we were able to store water in the dam at that point and make releases in a manner that optimised the protection, but also had the benefit of keeping the high-level bridges open. And it is at this point, I think consciously I knew we were in W3 and there was a change of circumstance. Terry's model had indicated that we now had over a million megalitres of water in system upstream of Wivenhoe Dam as opposed to the previous 30-odd hours where we were managing around 400,000 megalitres.”<sup>86</sup>

...

(M)y expectation at that stage was that, given the volume of water that we're now dealing with, we will have to make releases that were going to be perhaps the largest that have been ever made out of Wivenhoe in its history.”<sup>87</sup>

- [86] Mr Malone could not recall the phrase having been used during the conference but said that, in any event, it was understandable.<sup>88</sup> He did not read it as indicating the strategy that the engineers were then working under; he read it as signifying the point at which they were operating the dam.<sup>89</sup> In particular, he stated:

“The only thing I can suggest - and I'm prophesising here - that at that time, we'd only just started to get the heavy rainfall, the onset, and we were looking at the volume in the dam and the volumes we were modelling were only going to take up a very small percentage of the volume available for temporary flood storage.

In terms of the way we manage the dam, it's all about managing the volumes of inflow and outflow. Now, to manage the strategy within W1, we have available to us a volume of about 170,000 megalitres. This represents about 15 per cent of the total temporary flood storage. So, we still had at this particular point in time about 85 per cent of a temporary flood storage available for minimising the impact of urban flooding.

I'm just saying that at that stage both W2 and W3 talk about the primary consideration being the minimisation of urban flooding. At this stage, we had still most of the temporary flood storage available to us to manage that. So, we could very well have been in the bottom of both W2 and W3.”<sup>90</sup>

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84 See: T5193.29 (*Ayre*).

85 See: T5402.7 (*Ruffini*).

86 See: T5193.41 (*Ayre*).

87 See: T5194.30 (*Ayre*).

88 See: T5301.20 (*Malone*).

89 See: T5301.25 (*Malone*).

90 See: T5302.20 (*Malone*).



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[87] There is much force in that view. The engineers often thought in terms of volumes. For example, Mr Tibaldi remarked on the significance of Wivenhoe rising above 68.5 m in this way:

“Yeah, it's an important trigger to show you that the first section of the flood compartment, you know, the section set aside for rural protection, is full, and then you're now looking at the decision as to whether - when you're going to ramp up to the limit of damaging floods. And yes, that is important.”<sup>91</sup>

[88] The full supply level for the Wivenhoe was 67 m. Above that, to the level of 68.5 m, is flood storage capacity reserved for W1 – a volume of approximately 170,000 megalitres.<sup>92</sup> Between 68.5 m and the trigger level for W4 (74 m), the flood storage compartment is reserved for W2 and W3 – a volume of approximately 742,000 megalitres.<sup>93</sup> Simply, the volume of water the engineers had to manage during the relevant period far exceeded the volume available to manage the bridges – 170,000 megalitres – and that alone informed them that they were in either W2 or W3.<sup>94</sup> A glance at the peak flows for Lowood and Moggill told the rest – W3.<sup>95</sup> Relevantly to the meaning of the entry, the dam level was at a point that was hovering around the transition mark between the top end of W1 and, to any person ignorant of the peak flows, the bottom end of W3.

[89] In the end, it is an exercise in conjecture to ascribe meaning to the entry and, even more to the point, it was not demonstrated that any of the engineers authored it. It cannot sensibly be advanced as evidence that goes in support of Counsel Assisting's contentions.

### **4.3 The Summary of the Manual**

[90] It is clear that, on the afternoon of 15 January, Mr Borrows requested the engineers to prepare a briefing note for the Minister, and that this requirement was relayed by Mr Drury.<sup>96</sup>

[91] Mr Malone's sole contribution to that exercise was to put together a Summary of the

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<sup>91</sup> See: T5087.40 (*Tibaldi*).

<sup>92</sup> See: T5378.36 (*Malone*); T5435.55 (*Ruffini*).

<sup>93</sup> See: T5378.44 (*Malone*).

<sup>94</sup> See: T5379.47 (*Malone*).

<sup>95</sup> See: T5380.8 (*Malone*).

<sup>96</sup> See: Exhibit 23.

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Manual.<sup>97</sup> To do so, he copied most of the body of the document from other documents concerning the dam such as the Manual.<sup>98</sup> He then inserted the text that appears in italics.<sup>99</sup> That represented his understanding of how the dam had been operated but, because he had not been on duty at all times considered in the document, he thought it appropriate for the other engineers to review his document.<sup>100</sup>

[92] There were four such entries in italics; only two of which he had personal knowledge of because he was the duty engineer at those times.<sup>101</sup> Those entries (mobilisation of the FOC and implementation of the W4 Strategy) are completely accurate. He was not the duty engineer at the times reflected by the other two entries and, as such, they represent his attempt to cobble together the transition times for W1 to W2 and W2 to W3. To do so, he had regard to the lake level at Wivenhoe but he could not recall looking at the peak flows at Lowood and Moggill.<sup>102</sup> Shortly stated, he could not have definitively stated whether W2 ought to have been engaged at any time without doing so and, in any event, he left it to the other engineers to review what he had written.

[93] It is also clear that Mr Malone had not consulted any of the other engineers regarding the two entries prior to emailing it. He drafted the Summary in “a very short space of time”<sup>103</sup> – and then forwarded the document to the other engineers for correction if necessary. He was still in “operational mode”,<sup>104</sup> and very much anticipated that it would be corrected:

“JT – bring out the red pen”.<sup>105</sup>

[94] That said, it is clear that the two entries were made in error.<sup>106</sup> The document was only ever a draft and it was not sent under any different pretence. What was recorded was provisional and in no sense can it be said that it was representative of a wider, collective view of the engineers. Although Mr Malone’s understanding at the time was that he did not believe the

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<sup>97</sup> See: T5303.32 (*Malone*).

<sup>98</sup> See: T5305.1 and T5381.20 (*Malone*).

<sup>99</sup> See: T5305.29 and T5381.30 (*Malone*).

<sup>100</sup> See: T5303.46 (*Malone*).

<sup>101</sup> See: T5381.52 (*Malone*).

<sup>102</sup> See: T5382.19 (*Malone*).

<sup>103</sup> See: T5305.1 (*Malone*).

<sup>104</sup> See: T5306.7 (*Malone*).

<sup>105</sup> See: Exhibit 1050. See: T5303.52 to T5304.23 (*Malone*); T5196.20 (*Ayre*).

<sup>106</sup> See: T529040 (*Ayre*).

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other engineers had decided that W2 had been bypassed, he made the point when examined about this issue that this was only his impression and it did not correlate with the understanding of the other engineers “because they were actually there at the time”.<sup>107</sup>

#### 4.4 The Strategy Summary Log

[95] The evidence failed to establish the provenance of the Strategy Summary document.<sup>108</sup> All that can be concluded with any certainty is that it was emailed by a person named “Rob” to Mr Tibaldi at 18:57 on 15 January. It is likely the sender was Mr Drury<sup>109</sup> but, even if that is so, it is unlikely Mr Drury prepared the document. It is more probably the work of a Flood Officer.<sup>110</sup>

[96] Whilst the document was clearly based on the Log, the version attached to that email has entries appearing in the category column which purport to affix a strategy label to the substantive entries from the Log. It also includes new, highlighted rows which attempt to highlight the transition times between strategies.

[97] It is riddled with obvious errors<sup>111</sup> and plainly represents an attempt by someone not directly involved in the implementation of the Strategies under the Manual during the flood event.

[98] Furthermore, its contents are directly contradicted by the objective evidence to which reference has already been made, as well as the Manual Summary prepared by Mr Malone. In no sense may it be concluded that any one of the engineers prepared it, contributed to it or adopted it as an accurate record of the transition times. For those reasons, it cannot be relied on in support of the contention that the engineers, or any one of them, misapplied the Manual.

[99] In addition, it must be said that the Log from which most of the entries appear to have been taken is an unreliable source of information concerning the precise content of conversations, or meetings – let alone strategies. It was the responsibility of the Flood

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<sup>107</sup> See: T5329.22 (*Malone*).

<sup>108</sup> Exhibit 1053; T5287.7.36 (*Ayre*); T5307.36 (*Malone*).

<sup>109</sup> See: T5595.15 to T5597.25 and Exhibit 1093; T5200.56 (*Ayre*).

<sup>110</sup> See: T5251.31 (*Ayre*).

<sup>111</sup> See: T5135.10 (*Tibaldi*); T5247.30 (*Ayre*).

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Officers to maintain the Log.<sup>112</sup> They only ever heard one side of any telephone conversation, and entries were not always made contemporaneously with the event recorded.<sup>113</sup> Indeed, at one point, two separate Logs were being run in parallel, with the entries in each to later be merged by Ms De Marchi.<sup>114</sup>

- [100] In any event, Mr Tibaldi has no recollection of receiving the document, or of on-forwarding it.<sup>115</sup> Mr Malone had no recollection of seeing the document, let alone contributing to it.<sup>116</sup> He could not recall receiving the email and that is hardly surprising given that he had been on shift since 7:00 am that morning. He could certainly not recall responding to it.<sup>117</sup> Although Mr Ruffini recalled receiving the document,<sup>118</sup> he did not consider it.<sup>119</sup> At best, he may have “glanced at it”.<sup>120</sup> His impression was that others would attend to the preparation of it.<sup>121</sup> Mr Ayre<sup>122</sup> was unsure as to who created it. It was a “possibility” that Mr Ayre called upon a Flood Officer to do so,<sup>123</sup> but this is unlikely.<sup>124</sup>

#### **4.5 The Tibaldi/Ayre Conversation**

- [101] Counsel Assisting also points to Mr Malone’s presence during a conversation between Mr Tibaldi and Mr Ayre during the period when Mr Tibaldi was drafting the Report. It was submitted that this conversation was about “how (Mr Tibaldi) might resolve a ‘dilemma’ he had as to whether the flood engineers had been operating the dam in Strategy W2”.
- [102] The conversation was not about that. As Mr Tibaldi said, they “certainly weren’t in W2 at that point in time, the release rates were just too high”.<sup>125</sup> The problem was the flowchart in the Manual<sup>126</sup> which did not seem to allow for a transition from W1 to W3.<sup>127</sup> It was not a

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<sup>112</sup> See: T5065.24 (*Tibaldi*).

<sup>113</sup> See: T5179.1 (*Ayre*).

<sup>114</sup> See: T5181.47 (*Ayre*).

<sup>115</sup> See: T5065.11 to T5066.25 (*Tibaldi*) and Exhibits 1051 and 1052.

<sup>116</sup> See: T5207.36.

<sup>117</sup> See: T538.45 to T539.2.

<sup>118</sup> See: T5407.49 (*Ruffini*).

<sup>119</sup> See: T5408.1 (*Ruffini*).

<sup>120</sup> See: T5407.12 (*Ruffini*).

<sup>121</sup> See: T5412.20 to 5413.15.

<sup>122</sup> See: T 5201.1 and following.

<sup>123</sup> See: T 5201.10 (*Ayre*).

<sup>124</sup> See: T5242. 38 – 55 (*Ayre*).

<sup>125</sup> See: T5034.42 (*Tibaldi*).

<sup>126</sup> See: T5034.58 and T5093.6 (*Tibaldi*).

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dilemma about what strategy had been used. Mr Tibaldi was perplexed because he had drafted the flowchart.<sup>128</sup>

[103] Mr Tibaldi described it in the following way;

“I guess fairly early on it was clear to me - it might not be reflected in the drafts there, but it was clear to me we had gone from Strategy W1 to W3. I was concerned about that because even though it ultimately reduced the final peak level of the flood, I was concerned because I thought it could have been a breach of the manual. If - there's a flow chart on page 23 of the manual that I developed and under the conditions that were operating in the flood at that time it appeared that going from W1 to W3 was not in accordance with our flowchart and that - as I said, even though it did reduce – ultimately provide a better result, I was concerned about a breach at that time.”<sup>129</sup>

[104] Mr Ayre recalled a comment being made by Mr Tibaldi to the effect that they were not in strategy W2, and Mr Ayre agreed.<sup>130</sup> As Mr Ayre explained:

“Well, I think he was just - John - that was the first time John realised it. He wasn't on shift at that time.”<sup>131</sup>

[105] Nothing can be drawn from that exchange apart from confirmation that Mr Ayre well knew that he had applied W3.

#### **4.6 Compilation of the Flood Event Report**

[106] It is clear that Mr Tibaldi undertook the initial drafting of the Report.<sup>132</sup> In respect of the sections of the Report relevant to the recent hearings of the Commission, Mr Malone checked some of the data,<sup>133</sup> and provided a number of tables for inclusion.<sup>134</sup>

[107] It has been asserted by Counsel Assisting that the method adopted for the preparation of the Report was flawed. More to the point, it has been asserted that the methodology resulted in a “post facto reconstruction” of the relevant events.

[108] It is true that Mr Tibaldi did not seek the personal recollections of the other three engineers

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<sup>127</sup> See: T5035.38 (*Tibaldi*).

<sup>128</sup> See: T5036.31 and T5110.27 (*Tibaldi*).

<sup>129</sup> See: T5033.21 and T5055.11-53 (*Tibaldi*).

<sup>130</sup> See: T5207.48 (*Ayre*).

<sup>131</sup> See: T5207.56 (*Ayre*).

<sup>132</sup> See: T5023.10 (*Tibaldi*). Up to Draft 21; T5178.10 (*Tibaldi*). And see: T5205.20 (*Ayre*); T5413.19 (*Ruffini*).

<sup>133</sup> See: T5024.1 (*Tibaldi*); T5309.25 (*Malone*).

<sup>134</sup> Malone's last statement - Exhibit 1075;

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as to which Strategies they applied when preparing his draft,<sup>135</sup> but he certainly did once a workable draft was in existence. At that point, each of the other engineers was called upon for comment and none disagreed with the transition times.<sup>136</sup> As Mr Ruffini said, Mr Tibaldi asked them to confirm the accuracy of what he had written.<sup>137</sup>

[109] Mr Ayre did his own “forensics on the parts of the event (he) was familiar with”.<sup>138</sup> Mr Malone also “concentrated on the particular parts (he) contributed”.<sup>139</sup> Mr Ruffini looked at the contemporaneous material – spreadsheets, situation reports and the like.<sup>140</sup> In so acting, each engineer could only comment on what had been written concerning the transition information relevant to their own shifts, but do that they most assuredly did.

[110] There is nothing wrong with Mr Tibaldi going first to the contemporaneous records to prepare an initial draft. In fact, where one person was effectively charged with the task of preparing a draft, it is difficult to imagine how that task could be approached in any other way. Indeed, given the rapidly changing, highly stressed environment in which the engineers worked, it would be surprising if, had they been approached at the outset to recall what occurred and when, that they would not have wanted to examine the records themselves.<sup>141</sup>

[111] To the extent that the draft prepared by Mr Tibaldi concerned events in relation to which he did not have personal knowledge, it was of course a reconstruction of events.<sup>142</sup> But that does not lead to an inaccurate report provided the other persons who had personal knowledge of the other events are consulted regarding the accuracy of the draft, and that plainly occurred.<sup>143</sup>

## 5. Conclusion

[112] In the Interim Report of the Commission, the following was recorded regarding the four

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<sup>135</sup> See: T5025.29 (*Tibaldi*).

<sup>136</sup> See: T5159.57 to T5160.10 (*Tibaldi*); T5209.4 (*Ayre*); T5414.27 (*Ruffini*).

<sup>137</sup> See: T5414.56 (*Ruffini*).

<sup>138</sup> See: T5209.10 (*Ayre*).

<sup>139</sup> See: T5326.57 (*Malone*).

<sup>140</sup> See: T5415.6 (*Ruffini*).

<sup>141</sup> See: T5076.49 and T5083.30 (*Tibaldi*).

<sup>142</sup> See: T5037.42 (*Tibaldi*).

<sup>143</sup> See: T5083.4 (*Tibaldi*).

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flood engineers:

“These four men have been acting in this high-pressure role, some for many years, without any additional payment and with little recognition. Nothing in the evidence heard or the material received by the Commission suggested anything other than that they are diligent and competent and acted in good faith throughout the flood event.”<sup>144</sup>

[113] It is submitted that there is nothing to displace those findings. Further, given the extent to which each engineer’s personal and professional reputations have been so publicly called into question, it is respectfully submitted that the fullest possible vindication of their positions should be made in the Findings.



Martin Burns SC  
16 February 2012

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<sup>144</sup> Interim Report; Para 2.6.