

From: Duty Engineer [redacted]
Sent: Monday, 17 January 2011 1:03 PM
To: Peter Allen (peter.allen [redacted] rdrury [redacted])
Subject: Lake level comparison & directive summary
Attachments: WDHeadwaterLevelsJan2011.xls; Strategy-Summary-Log.xls

Rob/Peter

Additional information that may be useful.

Regards

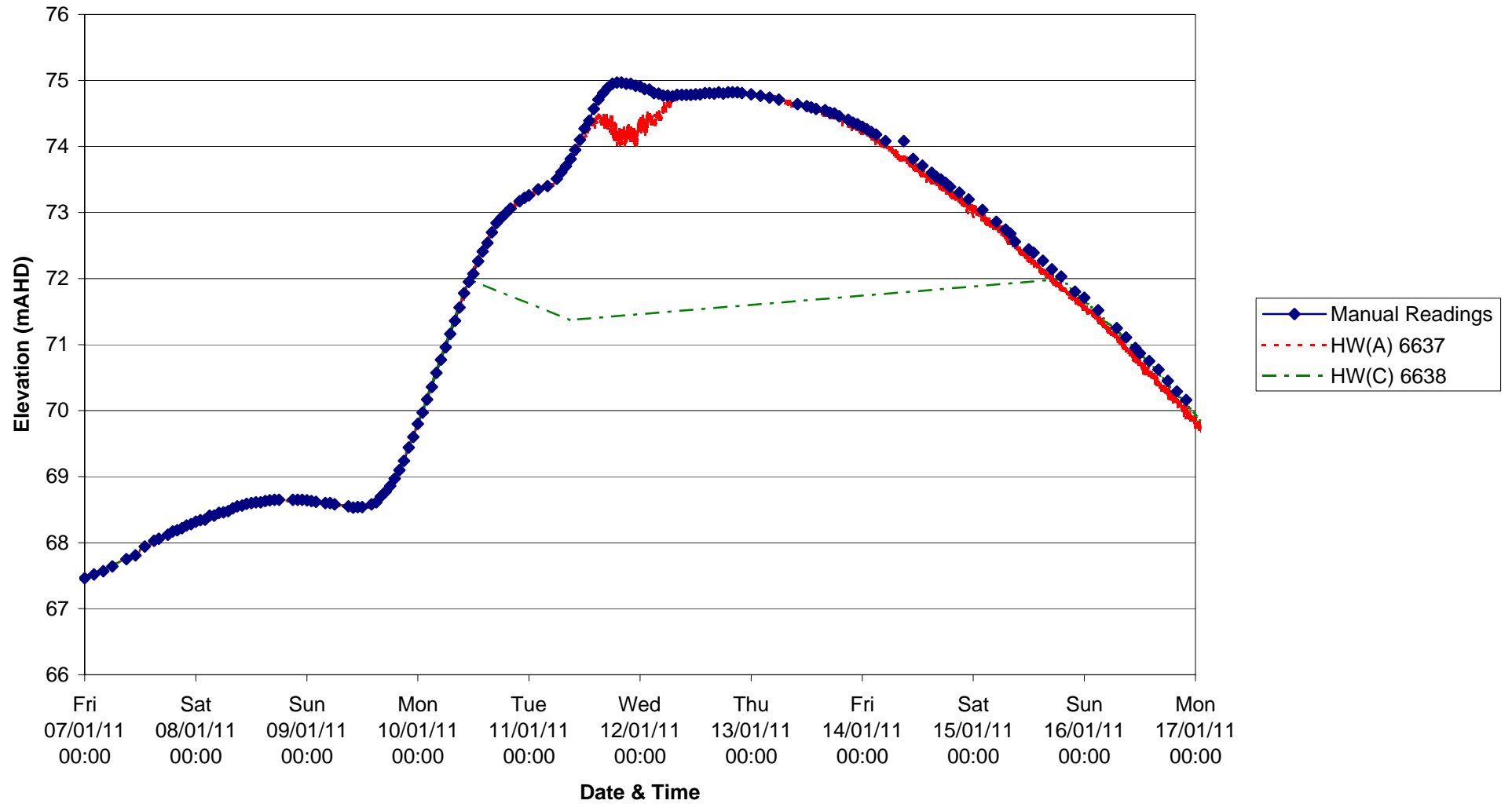
Duty Engineer
Flood Operations Centre

Phone [redacted]
Fax: [redacted]

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QFCI
Date: 6/2/12 JM
Exhibit Number: 1076

Wivenhoe Dam HW : Manual Readings - January 2011



DATE	TIME	ACTION	CATEGORY	INITIALS
Thursday 6/1/2011	7:00 AM	<p>TM duty Engineer. Rainfall and water had been remote monitored to this point in time. TM advises Senior Duty Engineer that Flood Operators are required at both Somerset, Wivenhoe and North Pine Dams. TM arrived at FOC to assess strategies and mobilise FOC, Wivenhoe, Somerset and North Pine Dam.</p> <p>North Pine Dam At 07:00hrs Thursday, North Pine Dam was 39.82m, 0.66m below gate trigger level and having risen 0.18m since 21/2011 due to a combination of base flow and runoff from rain in the last 24 hours. Given the forecast rain, gate operations will commence tonight. MBRG will be advised this morning.</p> <p>Somerset Dam At 07:00hrs Thursday, Somerset Dam was 99.34m, 0.34m above FSL, and rising slowly. The rain in the Stanley River catchment has produced a small amount of runoff in the upper Stanley but there have been significant rises in Kilooy Ck. Further regulator operations will be required later Thursday.</p> <p>Wivenhoe Dam The regulator and hydro were discharging at 50 cumecs to manage baseflow recession from previous flow event. At 07:00hrs Thursday, Wivenhoe Dam was 67.31m and rising slowly. This is 0.31m above FSL and above the gate trigger level of 67.25m. There have been rises recorded at rivers and stream upstream of Wivenhoe Dam. Gates will be opened in the next 24 hours to manage the inflows from the upper Brisbane River and the</p>	Situation Report	MT
		Strategy/WI - Various		
	8:14 AM	<p>Situation Report 0900 04/01/2011 Rainfall - Since 9am Wednesday, there have been widespread falls of 30mm with isolated heavy falls up to 50mm in the Somerset and Wivenhoe catchments. Totals in the North Pine catchment have generally been below 10mm. Falls up to 60mm were recorded in the Leslie Harrison catchment. - The forecast for the next 24 to 48 hours is for totals up to 150mm in SE Qld. - The catchments remain wet and are likely to generate additional runoff in the event of rain.</p> <p>North Pine Dam At 07:00 Thursday, North Pine Dam was 39.82m, 0.66m below gate trigger level and having risen 0.18m since 21/2011 due to a combination of baseflow and runoff from rain in the last 24 hours. - Given the forecast rain, gate operations will commence tonight. MBRG will be advised this morning.</p> <p>Somerset Dam At 07:00 Thursday, Somerset Dam was 99.34m, 0.34m above FSL, and rising slowly. The rain in the Stanley River catchment has produced a small amount of runoff in the upper Stanley but there have been significant rises in Kilooy Ck. Further regulator operations will be required later Thursday.</p>	Situation Report	TM
		<p>Wivenhoe Dam At 07:00 Thursday, Wivenhoe Dam was 67.31m and rising slowly. This is 0.31m above FSL and above the gate trigger level of 67.25m. There have been rises recorded at rivers and stream upstream of Wivenhoe Dam. Gates will be opened in the next 24 hours to manage the inflows from the upper Brisbane River and the outflow from Somerset.</p> <p>Impacts of Wivenhoe Dam Releases - Somerset Regional, Ipswich City and Brisbane City Councils will be advised of the potential for gate operations after a full assessment of the situation this morning. At this stage it is anticipated that peak releases from Wivenhoe will be below 600m³s but this will depend on the forecast rain and flows downstream of the dam. - The expected Wivenhoe release and local flows will at least impact upon Twin Bridges, Savage's Crossing, Kholo Bridge and Colleges Crossing for several days. At this stage, there are not expected to be any adverse impacts upon Fernvale Bridge, Butlers Bridge or M. Crosby Walk Bridge.</p> <p>Leslie Harrison Dam Following the heavy rainfall Wednesday night, gate operations commenced at Leslie Harrison Dam late Wednesday night and are continuing. Given the forecast rainfall, gate operations are expected to continue for the next 24 to 48 hours. The next situation report will be issued at 1800 Thursday 6/1/2011.</p>	Situation Report	
	1:30 PM	<p>Revised Operating Strategy 1800 6/1/2011</p> <p>North Pine - On track to open tonight</p> <p>Somerset/Wivenhoe - No change to current status - expected inflow volume about 45,000m³. Will reach about 99.7m AHD without releases. - Expected inflow volume about 130,000m³ including Somerset. Will reach about 68.3m AHD without releases. - There has been further heavy falls in the Lockyer since 0600 Tuesday and the flow from the Lockyer is going to be larger than initially assessed, possibly as high as 600m³s peaking Saturday. This may cause Butlers without any contribution from Wivenhoe. The opening of the Wivenhoe gates will therefore be delayed until the Lockyer peak eases.</p>	Situation Report	TM
	2:54 PM	<p>Situation Report 1500 06/02/2011 Rainfall - In the 6 hours since 9am Wednesday, there have been general totals around 30mm with isolated heavy falls up to 60mm in the Somerset and Wivenhoe catchments. Totals in the North Pine catchment have generally been between 20 and 30mm. Falls between 20 and 30mm were recorded in the Leslie Harrison catchment. - The forecast for the next 24 to 48 hours is for totals up to 100mm in SE Qld. - The catchments remain wet and are likely to generate additional runoff in the event of rain.</p> <p>North Pine Dam At 14:00 Thursday, North Pine Dam was 39.86m, 0.01m above gate trigger level. Gate operations will commence at 19:00 Thursday and will impact upon Youngs Crossing. MBRG have been advised and will confirm closure of Youngs Crossing prior to gate operations. Given the forecast rainfall during Friday, gate operations may continue into Saturday.</p> <p>Somerset Dam At 07:00 Thursday, Somerset Dam was 99.34m, 0.34m above FSL, and rising slowly. The rain in the Stanley River catchment has produced a small amount of runoff in the upper Stanley but there have been significant rises in Kilooy Ck, adding to the Somerset inflows. Further regulator operations will be required in the next 24 to 48 hours. The estimated event inflow volume into Somerset Dam is 50,000m³.</p>	Situation Report	TM
		<p>Wivenhoe Dam At 07:00 Thursday, Wivenhoe Dam was 67.31m and rising slowly. This is 0.31m above FSL and above the gate trigger level of 67.25m. There have been rises recorded at rivers and stream upstream of Wivenhoe Dam. The estimated event inflow volume into Wivenhoe Dam is 180,000m³ including Somerset Dam outflow. - There has been significant rainfalls in the Lockyer Ck catchment since 0900 Thursday and a peak of about 600m³s is expected from the Lockyer late Friday. Wivenhoe gates will be opened after flood levels in the lower Lockyer subside. At this stage Wivenhoe releases during Saturday may be as high as 1,500m³s and continue for a couple of days.</p> <p>Impacts of Wivenhoe Dam Releases - Somerset Regional, Ipswich City and Brisbane City Councils have been advised of the potential for gate operations during the next 24 hours. - The will at least impact upon Twin Bridges, Savage's Crossing, Kholo Bridge and Colleges Crossing for several days. The relatively high Lockyer flows will at least impact upon Twin Bridges, Savage's Crossing, Kholo</p>	Situation Report	
7/01/11	5:33 PM	<p>Situation Report 1600 09/01/2011 Rainfall - In the 8 hours since 9am Wednesday, there have been general totals around 30mm with isolated heavy falls up to 60mm in the Somerset and Wivenhoe catchments. There have been significant rainfalls in the Lockyer Ck catchment in the last 24 hours with widespread falls of 50mm and isolated falls up to 75mm. Totals in the North Pine catchment have generally been about 30mm. Falls between 20 and 30mm were recorded in the Leslie Harrison catchment. - The forecast for the next 24 to 48 hours is for totals up to 100mm in SE Qld.</p> <p>North Pine Dam At 17:00 Thursday, North Pine Dam was 39.88m, 0.03m above gate trigger level. Gate operations will commence at 18:00 Thursday and will impact upon Youngs Crossing. Morston Bay Regional Council has been advised and will confirm closure of Youngs Crossing prior to gate operations. Given the forecast rainfall during Friday, gate operations may continue into Saturday.</p> <p>Somerset Dam At 17:00 Thursday, Somerset Dam was 99.49m, 0.49m above FSL, and rising slowly. The rain in the Stanley River catchment has produced a small amount of runoff in the upper Stanley but there have been significant rises in Kilooy Ck, adding to the Somerset inflows. Further regulator operations will be required in the next 24 to 48 hours. The estimated event inflow volume into Somerset Dam is 50,000m³.</p> <p>Wivenhoe Dam At 17:00 Thursday, Wivenhoe Dam was 67.35m and rising slowly. This is 0.35m above FSL and above the gate trigger level of 67.25m. Upstream of the dam river levels are still rising at the Univac and Grigors Ck gauges. The estimated event inflow volume into Wivenhoe Dam is 180,000m³ including Somerset Dam outflow. - A peak of about 600m³s is expected from the Lockyer late Friday. At this stage there is some uncertainty associated with this estimate and it may or may not impact Butlers Bridge. Wivenhoe gates will be opened after the impact of Lockyer flows on Butlers Bridge has been ascertained and flood levels in the lower Lockyer subside. At this stage Wivenhoe releases will commence late Friday/early Saturday and may be as high as 1,500m³s, similar to recent events, and continue for a couple of days.</p> <p>Impacts of Downstream of Wivenhoe - Somerset Regional, Ipswich City and Brisbane City Councils have been advised of the potential for gate operations during the next 24 hours. - The relatively high Lockyer flows will adversely impact upon Twin Bridges, Savage's Crossing, Kholo Bridge and Colleges Crossing for several days and may impact upon Butlers Bridge early Saturday. At this stage,</p>	Situation Report	TM

DATE	TIME	ACTION	CATEGORY	INITIALS
7/01/11				
7/01/11	6:07 AM	<p>FOO Situation Report at 06:00 on Friday 7 January 2011</p> <p>Rainfall</p> <ul style="list-style-type: none"> - There have been general totals around 30 to 50 mm with isolated heavy falls up to 75mm in the Somerset and Wivenhoe catchments since the event commenced on Wednesday 5 January 2011. There have been significant rainfalls in the Lockyer Ck catchment in the last 72 hours with widespread falls of 50mm and isolated falls up to 100mm. - Totals in the North Pine catchment have generally been about 35mm. - Falls between 20 and 30mm were recorded in the Leitch Harrison catchment. - The forecast for the next five days is for falls between 100 and 200mm in SE QLD. Given the saturated condition of the catchments further runoff will most likely be generated from this rainfall. <p>North Pine Dam</p> <p>At 0600 Friday, North Pine Dam was at 39.65m, 0.10m below FSL. Gate operations commenced at 1915 on Thursday 6 January and are expected to continue until at least midday Friday 7 January when North Pine Dam is expected to be at 39.40m. These releases have impacted upon Youns Crossings, Marston Bar. Regional Council was advised and they closed Youns Crossings prior to gate operations commencing. Based upon</p> <p>Wivenhoe Dam</p> <ul style="list-style-type: none"> - At 0600 Friday, Wivenhoe Dam was at 67.64m and rising slowly. This is 0.64m above FSL and above the gate trigger level of 67.25m. Upstream of the dam river levels have peaked at the Linville and Gregory Ck gauges. The estimated peak inflow volume into Wivenhoe Dam is 230,000ML including Somerset Dam outflow. - A peak of about 470 cumecs is expected from Lockyer Creek by mid-afternoon on Friday 7 January. At this stage there is some uncertainty associated with this estimate but it may be of sufficient magnitude to inundate Burtons Bridge. - Wivenhoe gate releases will occur after the impact of Lockyer flows on Burtons Bridge has been ascertained and flood levels in the lower Lockyer sub-basin. It is proposed that Wivenhoe releases will commence late Friday/early Saturday and may be as high as 1,200 cumecs, (similar but slightly smaller to recent events), and the releases are expected to continue over the weekend through to Monday or Tuesday. <p>Impacts downstream of Wivenhoe</p> <ul style="list-style-type: none"> - Somerset Regional Council, Ipswich City Council and Brisbane City Council have been advised of the potential for gate operations during the next 24 hours. - The relatively high Lockyer flows will adversely impact upon Tish Bridges, Savaas Crossing, and Catlegs Crossing for several days and may impact upon Burtons Bridge from Friday mid-day and Kholo Bridge later on 	Situation Report	LVB
	12:15 PM	<p>SURep</p> <p>There has been falls between 15 and 30mm in the North Pine catchment in the last 3 hours. This will cause river rises and increased inflows.</p>	Situation Report	TM
7/01/11	12:34 PM	<p>There are no gate movements requested for the next 3 hours</p> <p>Issued Wivenhoe Directive #1</p> <ul style="list-style-type: none"> - 15:00 Open Gate 3 from 0.0 metres to 0.5 metres - 16:00 Open Gate 3 from 0.5 metres to 1.0 metres - 17:00 Open Gate 3 from 1.0 metres to 1.5 metres - 18:00 Open Gate 3 from 1.5 metres to 2.0 metres - 19:00 Open Gate 3 from 2.0 metres to 2.5 metres - 20:00 Open Gate 3 from 2.5 metres to 3.0 metres - 21:00 Open Gate 3 from 2.5 metres to 3.5 metres 	Directive - Strategy W1-C	LVB
7/01/11	6:00 PM	<p>Situation Report 1939 Friday 07/01/2011</p> <p>Rainfall</p> <ul style="list-style-type: none"> - Since 0900 Friday, there has been widespread 20 to 40mm throughout North Pine, Somerset and Wivenhoe catchments with isolated higher totals of 70mm in the upper reaches of the Brisbane R. - Advice from BOM indicates that SE QLD can expect further high rainfall totals over the next 4 days. <p>Saturday: Rain fall at times 15-50mm with higher falls along the coast Sunday: Widespread rain with totals between 60-100mm Monday: Widespread rain again with totals between 50-100mm Tuesday: Rain easing with totals between 25-50mm</p> <p>Given the saturated conditions of the catchments, significant inflows to Sequator dams will be generated, especially following the forecast rainfall on Sunday/Monday.</p> <p>North Pine (Full Supply Level 39.60m AHD)</p> <p>At 1700 Friday, North Pine currently has 5 gates open releasing runoff from rain on Wed/Thursday. Given the very high likelihood of significant runoff during the next 4 days, gates will be kept open to match inflows over</p> <p>Wivenhoe (Full Supply Level 67.00m AHD)</p> <ul style="list-style-type: none"> - At 1700 Friday, Wivenhoe Dam was 68.10 m AHD and rising steadily with one gate open to 1.5 metres and releasing about 168m³/s. River levels upstream of Wivenhoe Dam were rising again, generating further inflow to the dam. It is intended to ramp up the release from Wivenhoe to about 1,200m³/s during the next 18 hours. However, given the high likelihood of significant inflows in the next week, this may be increased later on the weekend. - Since the commencement of the event on 02/01/2011, approximately 140,000ML has flowed into Wivenhoe Dam with a further 160,000ML expected (including Somerset release) based on the recorded rainfall to date. Approximately 24,000ML has been released from Wivenhoe via the hydro and regulator at about 50m³/s. <p>Impacts downstream of Wivenhoe</p> <ul style="list-style-type: none"> - The predicted Wivenhoe release of 1,200m³/s combined with Lockyer flows and local runoff will mean that all crossings downstream of Wivenhoe (Tish Bridges, Savaas Crossing, Burtons Bridge, Kholo Bridge and 	Situation Report	TM
7/01/11	9:53 PM	<p>Issued Wivenhoe Directive #2</p> <ul style="list-style-type: none"> - 01/01/2011 22:00 Open Gate 2 from 0.0 metres to 0.5 metres - 01/01/2011 23:00 Open Gate 4 from 0.0 metres to 0.5 metres - 02/01/2011 00:00 Open Gate 2 from 0.5 metres to 1.0 metres - 02/01/2011 01:00 Open Gate 4 from 0.5 metres to 1.0 metres - 02/01/2011 02:00 Open Gate 1 from 0.0 metres to 0.5 metres - 02/01/2011 03:00 Open Gate 5 from 0.0 metres to 0.5 metres - 02/01/2011 04:00 Open Gate 2 from 1.0 metres to 1.5 metres 	Directive Strategy W1-D	MT
8/01/11	4:55 AM	<p>Issued Wivenhoe Directive #3</p> <ul style="list-style-type: none"> - 02/01/2011 05:00 Open Gate 4 from 1.0 metres to 1.5 metres - 02/01/2011 06:00 Open Gate 1 from 0.5 metres to 1.0 metres - 02/01/2011 07:00 Open Gate 5 from 0.5 metres to 1.0 metres - 02/01/2011 08:00 Open Gate 3 from 3.5 metres to 4.0 metres 	Directive Strategy W1-D	MT
8/01/11	6:00 AM	<p>Issued Wivenhoe Directive #4</p> <ul style="list-style-type: none"> - 02/01/2011 09:00 Open Gate 2 from 1.5 metres to 2.0 metres - 02/01/2011 10:00 Open Gate 4 from 1.5 metres to 2.0 metres - 02/01/2011 11:00 Open Gate 1 from 1.0 metres to 1.5 metres - 02/01/2011 12:00 Open Gate 5 from 1.0 metres to 1.5 metres - 02/01/2011 13:00 Open Gate 2 from 2.0 metres to 2.5 metres - 02/01/2011 14:00 Open Gate 4 from 2.0 metres to 2.5 metres 	Directive Strategy W1-D	AN
8/01/11	11:30 AM	<p>Issued Somerset Directive #3</p> <ul style="list-style-type: none"> - Pistas open Sluice N to 100% at 12:00. 	Directive	AN
9/01/11	12:00 AM	<p>Issued Wivenhoe Directive #5</p> <ul style="list-style-type: none"> - Open Gate 3 from 4.0 metres to 4.5 metres 	Directive - Strategy W1-E	NGA
	4:30 AM	<p>Issued Wivenhoe Directive #5</p> <ul style="list-style-type: none"> - Open Gate 1 from 1.5 metres to 2.0 metres 	Directive Strategy W1-E	NGA
	6:15 AM	<p>FOO Situation Report at 06:00 on Sunday 9 January 2011</p> <p>Rainfall</p> <p>Catchment average rainfall for the past 12 hours is: North Pine Dam (less than 10mm); Somerset Dam (40mm); Wivenhoe Dam (less than 10mm). The bulk of the rain that has fallen in the Somerset Dam catchment has occurred in the last two hours, with recorded falls exceeding 60mm in some areas. The BOM forecast for the next seven days issued at 0450 this morning is:</p> <p>Sunday: Rain periods Monday: Rain periods Tuesday: Rain periods Wednesday: A few showers Thursday: A shower or two Friday: A shower or two Saturday: Misty fra.</p> <p>A severe weather warning remains current for heavy rainfall in the dam catchment areas. The dam catchments are relatively saturated and significant inflows will be generated if the forecast rainfall eventuates.</p> <p>North Pine Dam (Full Supply Level 39.60m AHD)</p> <p>The dam level is currently 39.47 m AHD and steady. Two radial gates remain open to release runoff generated from recent rainfall. Based on rainfall forecasts, the radial gates have been kept open in anticipation of further inflows over the next few days. However, unless significant rain falls today, consideration will be given to closing the gates late this afternoon or early tomorrow morning and discussions to finalise a decision on the timing of Somerset Dam (Full Supply Level 69.00 m AHD)</p> <p>The dam level is currently rising slowly, with the current level being 100.27m AHD. However, the rain that has fallen in the dam catchment over the last two hours (recorded falls exceed 60mm in some areas) will result in significant inflows later today. The current release rate into Wivenhoe Dam is 35,000ML/day. Since the commencement of the event on 02/01/2011 approximately 58,000ML has been released from the dam, with a total of at least 150,000ML to be released based on the currently recorded rainfall. The total release for the event is likely to increase significantly over the next few days based on the current rainfall forecasts. At this stage, releases will continue until at least Tuesday.</p> <p>Wivenhoe Dam (Full Supply Level 67.00 m AHD)</p> <p>The dam level is currently rising slowly, with the current level being 68.55m AHD. River levels upstream of the dam are rising, however further inflows will result from any additional rainfall. The current gate operation strategy will maintain flows of around 1,600m³/s in the mid-Brisbane River. The current release rate from Wivenhoe Dam is 116,000ML/day. Since the commencement of the event on 02/01/2011 approximately 150,000ML</p>	Situation Report	JT
	6:15 AM	<p>Issued Somerset Directive #4</p> <ul style="list-style-type: none"> - Pistas open Sluice X to 100% at 09:00. 	Directive	NGA
	10:30 AM	<p>Issued Wivenhoe Directive #7</p> <ul style="list-style-type: none"> - Open Gate 5 from 1.5 metres to 2.0 metres 	Directive Strategy W1-E	NGA

DATE	TIME	ACTION	CATEGORY	INITIALS
	12:30 PM	Issued Somerset Directive #5. • Please open Sluice N to 100% at 13:00 • Please open Sluice J to 100% at 14:00	Directive	NGA
	3:30 PM	Strategy W2 Daily Engineer Conference held at the FOC. Attended by RA, JR, TM with JT on cord phone. At this stage operating at the top end of W1 and the bottom end of W2. Storage approx. 300,000 ML at present (above Wivenhoe) with an additional 500,000 ML expected to flow into the dams from rainfall on the ground. The rainfall system is currently in the NE part of the catchment and expected to travel south over the next 24-36 hours according to the BOM forecasts. This has the potential to significantly increase flows in Lecky's Ck & the Bremer River which potentially could close Female Bridge and Mt Crosby Bridge and increase the risk of flooding in the Lower Brisbane. Releases from Wivenhoe Dam will be maintained at the current level of ~ 1,400 cumecs. If required, releases from Wivenhoe Dam will be reduced to contain the flow in the Mid Brisbane to 1,600 cumecs and 3,000 cumecs in the Lower Brisbane. At this stage it is anticipated that levels below 102.5 in Somerset and 72.5 in Wivenhoe can be attained.	Situation Report - Strategy W2	NGA
	5:51 PM	Situation Report 1703 Sunday 9/1/2011 Rainfall Catchment average rainfall for the past 12 hours is: North Pine Dam (60 mm), Somerset Dam (150 mm), Wivenhoe Dam (80 mm). The bulk of the rain that has fallen in the upper reaches of the Stanley and Brisbane Rivers. The BOM rainfall forecast for the next few days is:- Monday: Very heavy rain periods with totals up to 300mm centred around North Pine. Tuesday: Rain periods with totals up to 150mm centred around North Pine. Wednesday: A few showers less than 10mm. Thursday: A shower or two. Friday: A shower or two. Saturday: Misty fine. A severe weather warning remains current for heavy rainfall in the dam catchment areas. The dam catchments are relatively saturated and significant inflows will be generated if the forecast rainfall eventuates. North Pine Dam (Full Supply Level 89.60 m AHD) The dam level is currently 39.65 m AHD and rising at 1600. Following the rain in the 9 hours, the number of open gates has been increased from 2 to 5 which are expected to remain open for the next 12 hours. Youngs Crossing will remain closed while releases are in progress.	Situation Report - Strategy W2	TM
		Somerset Dam (Full Supply Level 69.00 m AHD) - The dam level is 100.75 m AHD and rising quickly. Estimated peak inflow to the dam is about 3,000 m ³ /s. Five sluice gates are open releasing about 1,100 m ³ /s (95,000 ML/d) into Wivenhoe Dam. At this stage the dam will reach at least 101.5 during early Tuesday morning. - Since the commencement of the event on 02/01/2011 approximately 80,000 ML has been released from the dam, with an event total of at least 250,000 ML based on the recorded rainfall to date. The event total is expected to increase significantly due to the forecast rain in the next 24 to 48 hours. At this stage, releases will continue until at least Wednesday. Wivenhoe Dam (Full Supply Level 87.00 m AHD) - The dam level is currently rising again, with the current level being 63.70 m AHD. Estimated peak inflow to the dam just from the Upper Brisbane R is about 5,000 m ³ /s and, at this stage, the dam will reach at least 72.5 m AHD during Wednesday morning. River levels upstream of the dam are rising quickly with significant inflow being generated from the intense heavy rainfall. The current gate operation strategy will maintain flows of	Situation Report - Strategy W2	
	7:15 PM	FOC called Peter Allen advising him that FOC is now looking at much larger flows and will have to ramp up releases to around 3000 cumecs as early as possible which is likely to have flooding impacts on low-lying areas of Brisbane.	Consequence - Strategy W2 - Transition to W3	BS
	9:01 PM	Strategy W3 Situation Report 2103 9/1/2011 Rainfall - Very heavy rainfall has been recorded in the upper reaches of the Brisbane and Stanley in the last 6 hours with totals up to 100 to 140mm. Totals for the last 24 hours range from 100 to 300mm. - Rainfall of similar magnitude is expected in the 12 to 24 hours, especially around the Bremer/Warrill catchments as the system tracks south. - A severe weather warning remains current for heavy rainfall in the dam catchment areas. Somerset Dam (Full Supply Level 69.00 m AHD) - The dam level is 101.65 m AHD (about 500,000 ML currently in storage) and rising quickly. Peak inflow to the dam is estimated to be about 4,000 m ³ /s based on observed rainfall and could be as high as 5,000 m ³ /s with additional forecast rainfall. Five sluice gates are open releasing about 1,100 m ³ /s (95,000 ML/d) into Wivenhoe Dam. At this stage the dam will reach at least 103.5 early Tuesday morning which will adversely impact areas around Kibby. - Since the commencement of the event on 02/01/2011 approximately 100,000 ML has been released from the dam into Wivenhoe, with an event total of the order of 520,000 ML expected. This may increase due to the Wivenhoe Dam (Full Supply Level 87.00 m AHD) - River levels upstream of the dam are rising quickly with significant inflow being generated from the intense heavy rainfall. Flows in the Brisbane River at Gregor's Ck have already reached 6,700 m ³ /s and the river is still rising. - The dam level is rising again, with the current level being 69.10 m AHD (1,410,000 ML with about 300.00 of food storage). Estimated peak inflow to the dam just from the Upper Brisbane R alone may reach as high as 7,500 m ³ /s and, at this stage, the dam will reach at least 73.0 m AHD during Tuesday morning. Given the rapid increase in inflow volumes, it will be necessary to increase the release from Wivenhoe Monday morning. - The objective for dam operations will be to minimise the impact of urban flooding in areas downstream of the dam and, at this stage, releases will be kept below 3,500 m ³ /s and the combined flows in the lower Brisbane will be limited to 4,000 m ³ /s. This is below the limit of urban damages in the City reaches. - The current release rate from Wivenhoe Dam is 1,400 m ³ /s (120,000 ML/day). Gate opening will start to be increased from noon Monday and the release is expected to increase to at least 2,600 m ³ /s during Tuesday morning.	Situation Report - Strategy W3	TM
10/1/11				
	1:14 AM	FOC Situation Report at 01:09 hrs on Monday 10 January 2011 Rainfall - Very heavy rainfall has been recorded in the Upper Brisbane and Stanley Rivers in the last 12 hours with totals up to 100 to 240mm. Totals for the last 24 hours range from 100 to 300mm. - Rainfall of similar magnitude is expected in the 12 to 24 hours around the downstream catchments as the system tracks south. - A severe weather warning remains current for heavy rainfall in the dam catchment areas. North Pine Dam (Full Supply Level 89.60 m AHD) - The dam level was 39.95 m and steady. Five gates are open releasing 445 m ³ /s. The inflow into the dam since the commencement of the event is 42,000 ML. Estimated event volume is 57,000 ML assuming no further rainfall. Gate operations will continue until at least Tuesday 11 January 2011. Somerset Dam (Full Supply Level 69.00 m AHD) - The dam level is 102.22 m AHD and rising quickly (storing 157,000 ML above FSL). Peak inflow to the dam is estimated to be about 4,200 m ³ /s based on observed rainfall and could be as high as 5,000 m ³ /s with additional forecast rainfall. Five sluice gates are open releasing about 1,100 m ³ /s (95,000 ML/d) into Wivenhoe Dam. At this stage the dam will reach at least 103.5 on Monday afternoon which will adversely impact areas as - Since the commencement of the event on 02/01/2011 approximately 115,000 ML has been released from the dam into Wivenhoe, with an event total of the order of 520,000 ML expected. This is expected to increase due to	Situation Report - Strategy W3	JR
		Wivenhoe Dam (Full Supply Level 87.00 m AHD) - River levels upstream of the dam are rising quickly with significant inflow being generated from the intense heavy rainfall. Flows in the Brisbane River at Gregor's Ck have already reached 7,350 m ³ /s and the river has just peaked at 23:00 on Sunday 9 January. - The dam level is rising quickly, with the current level being 69.60 m AHD (storing 301,000 ML). Estimated peak inflow to the dam just from the Upper Brisbane R alone may reach as high as 8,800 m ³ /s and, at this stage, the dam will reach at least 73.3 m AHD during Tuesday morning. Given the rapid increase in inflow volumes, it will be necessary to increase the release from Wivenhoe during Monday morning. - The objective for dam operations will be to minimise the impact of urban flooding in areas downstream of the dam and, at this stage, releases will be kept below 3,500 m ³ /s and the combined flows in the lower Brisbane will be limited to 4,000 m ³ /s if possible. - Female's Bridge approaches and Mt Crosby Weir Bridge have been inundated and both bridges are now closed or are in the process of being closed. - The current release rate from Wivenhoe Dam is 1,400 m ³ /s (120,000 ML/day). Gate opening will start to be increased during early Monday morning and the release is expected to increase to at least 2,600 m ³ /s.	Situation Report - Strategy W3	

DATE	TIME	ACTION	CATEGORY	INITIALS
	2:00 AM	Issued Wivenhoe Directive #3. <ul style="list-style-type: none"> Open Gate 1 from 2.0 metres To 2.5 metres At 02:00 Open Gate 5 from 2.0 metres To 2.5 metres At 03:00 Open Gate 3 from 2.5 metres To 3.0 metres At 04:00 Open Gate 4 from 2.5 metres To 3.0 metres At 05:00 Open Gate 2 from 3.0 metres To 3.5 metres At 06:00 	Directive # 3 Strategy W3	BS
	6:30 AM	FOC Situation Report at 06:00 on Monday 10 January 2011 Rainfall <ul style="list-style-type: none"> Moderate to heavy rainfall has been recorded in the Upper Brisbane and Stanley Rivers in the last 12 hours with totals up to 90mm. Totals for the last 24 hours range from 100 to 325mm. All Gages recorded 100mm in the last 12 hours. Rainfall of similar magnitudes is expected in the 12 to 24 hours around the downstream catchments as the system tracks south. A severe weather warning remains current for heavy rainfall in the dam catchment areas. North Pine Dam (Full Supply Level 33.60 m AHD) <ul style="list-style-type: none"> The dam level was 39.97 m and steady. Five gates are open releasing 475 m³/s. The inflow into the dam since the commencement of the event is 52,000 ML. Estimated event volume is 72,000 ML assuming no further rainfall. Gate operations will continue until at least Tuesday 11 January 2011. Somerset Dam (Full Supply Level 59.00 m AHD) <ul style="list-style-type: none"> The dam level at 05:00 was 102.84 m AHD and rising (storing 193,000 ML above FSL). Peak inflow to the dam is estimated to be about 4,200 m³/s based on observed rainfall and could be as high as 5,000 m³/s with additional forecast rainfall. Five sluice gates are open releasing about 1,100 m³/s (66,000 ML/d) into Wivenhoe Dam. At this stage the dam lake level will reach about 103.5 m AHD on Monday afternoon. Areas around Kilooye since the commencement of the event on 02/01/2011 approximately 142,000 ML has been released from the dam into Wivenhoe, with an event total of the order of 520,000 ML expected. This is expected to increase due to 	Situation Report Strategy W3	JR
	6:30 AM	Wivenhoe Dam (Full Supply Level 67.00 m AHD) <ul style="list-style-type: none"> River levels upstream of the dam have peaked and are falling slowly with significant inflow being generated from the intense heavy rainfall. Flows in the Brisbane River at Gregor's Cleve have peaked at 7,350 m³/s at 23:00 on Sunday 9 January. This peak is bigger than January 1974 and February 1999 at this location. The dam level is rising quickly, with the current level being 93.77m AHD (storing 450,000 ML). Estimated peak inflow to the dam just from the Upper Brisbane R is around 8,800 m³/s and, at this stage, the dam will reach at least 73.3 m AHD during Tuesday morning. Given the rapid increase in inflow volumes, it was necessary to start to increase the release from Wivenhoe during Monday morning. The objective for dam operations will be to minimise the impact of urban flooding in areas downstream of the dam and, at this stage, releases will be kept below 3,500 m³/s and the combined flows in the lower Brisbane will be limited to 4,000 m³/s if possible. This is significantly less than the current estimated combined pre-dam peak inflow of 12,000 m³/s. Issued Wivenhoe Directive #2: <ul style="list-style-type: none"> Open Gate 4 from 3.0 metres To 3.5 metres At 07:00 Open Gate 1 from 2.5 metres To 3.0 metres At 08:00 Open Gate 5 from 2.5 metres To 3.0 metres At 09:00 Open Gate 3 from 3.5 metres To 4.0 metres At 10:00 Open Gate 4 from 3.5 metres To 4.0 metres At 11:00 	Directive - Strategy W3	LVB
	8:30 AM	Issued Wivenhoe Directive #10. <ul style="list-style-type: none"> Open Gate 4 from 3.0 metres To 3.5 metres at 07:00 Open Gate 1 from 2.5 metres To 3.0 metres at 08:00 Open Gate 5 from 2.5 metres To 3.0 metres at 09:00 	Directive - Strategy W3	LVB
	2:58 PM	FOC Situation Report at 18:00 on Monday 10 January 2011 Rainfall <ul style="list-style-type: none"> Significant rainfall has fallen in the Wivenhoe Dam catchment over the last 3 hours, with falls exceeding 100mm. This rainfall will significantly increase inflows into the dam. A severe weather warning remains current for heavy rainfall in the dam catchment areas. The QPF issued by BOM at 10:00 estimates rainfalls for the 24 hours to 10:00 Tuesday as North Pine Dam (75mm to 150mm), Wivenhoe/Somerset Dam Catchments (50mm - 100mm). Potentially significant rain moving towards the dam catchments is currently evident on the BOM radar. Somerset Dam (Full Supply Level 59.00 m AHD) <ul style="list-style-type: none"> The dam level is 103.1m AHD and rising. Peak inflow to the dam is estimated to be about 4,200 m³/s. Five sluice gates are open releasing about 1,100 m³/s (66,000 ML/d) into Wivenhoe Dam. At this stage the dam lake level will reach about 103.5m AHD on Monday afternoon. Areas around Kilooye will continue to be adversely affected. Wivenhoe Dam (Full Supply Level 67.00 m AHD) <ul style="list-style-type: none"> The dam level is 72.4m AHD and rising quickly. The rainfall experienced over the last 2 to 3 hours will result in significant further inflows into the dam and releases from the dam will need to be increased in accordance with the forecast rainfall. Five rainfall gates are currently open at the dam releasing about 2,000 m³/s into the Brisbane River and this will need to be increased steadily to an outflow of 2,800 m³/s over the next 9 hours (commencing at 15:00). At this stage the objective for dam operations is currently to minimise the impact of urban flooding in areas downstream of the dam and to keep river flows in the lower Brisbane River below 4,000 m³/s if possible. This is significantly less than the current estimated combined pre-dam peak inflow of 12,000 m³/s. Impacts downstream of Wivenhoe Dam <ul style="list-style-type: none"> The projected Wivenhoe Dam releases combined with Lockyer Creek flows and local runoff will mean that all crossings downstream of Wivenhoe (Twin Bridges, Female, Salvages Crossing, Burtons Bridge, Kholo Bridge) will be impacted by the combined flows of Lockyer Creek, Bremer River, local runoff and releases from Wivenhoe Dam. Outlook <ul style="list-style-type: none"> Heavy rainfall continues throughout South East Queensland and the situation could deteriorate rapidly over the next 24 hours. The flood operation centre will continue to monitor the situation and provide every six hours until 	Situation Report - Strategy W3	TM
	12:07 PM	Spoke with Peter Borrows (Secretary) to answer elaborate on Situation Report and inform him of latest rainfalls currently occurring in the Wivenhoe catchment.	Consequence	LVB
	4:00 PM	Issued Wivenhoe Directive #11. <ul style="list-style-type: none"> Open Gate 2 to 4.0 m at 15:00 Open Gate 4 to 4.0 m at 15:30 Open Gate 3 to 5.0 m at 16:00 Open Gate 1 to 3.5 m at 16:30 Open Gate 5 to 3.5 m at 17:00 Open Gate 2 to 4.5 m at 17:30 Open Gate 4 to 4.5 m at 18:00 Open Gate 1 to 4.0 m at 18:30 Open Gate 5 to 4.0 m at 19:00 Open Gate 1 to 4.5 m at 19:30 	Directive Strategy W3	LVB
	3:15 PM	Had conference call with BOM. They agree with FOC on model discharge results. However, BOM included 6hrs of additional rain which takes the discharge up to 4800 m ³ /s	Consequence	LVB
	6:06 PM	Get weather update from BOM - the forecast now is - still more of the same of what we had today.	Other	LVB
	6:43 PM	FOC Situation Report at 18:00 on Monday 10 January 2011 Rainfall <ul style="list-style-type: none"> Only minor rainfall has been experienced in the North Pine Dam and Somerset Dam catchments with a catchment averages of less than 20mm. However, significant rain has fallen in the Wivenhoe Dam catchment over the last 6 hours, with isolated falls exceeding 100mm. This rainfall has significantly increase inflows into the dam. A severe weather warning remains current for heavy rainfall in the dam catchment areas. The QPF issued by BOM at 10:00 estimates rainfalls for the 24 hours to 10:00 Tuesday as North Pine Dam (65mm to 150mm, with isolated falls to 100mm), Wivenhoe/Somerset Dam Catchments (50mm to 100mm), with isolated falls to 100mm). Potentially significant rain moving towards the dam catchments is currently evident on the BOM radar. North Pine Dam (Full Supply Level 39.60 m AHD) <ul style="list-style-type: none"> The dam level is 39.84m AHD and falling slowly (storing 8,000 ML above FSL). Five gates are open and releasing 382 m³/s. The inflow into the dam since the commencement of the event is 72,000 ML. Estimated event volume is 64,000 ML assuming no further rainfall. Releases from the dam will continue until at least Wednesday 12 January 2011. 	Situation Report	TM

DATE	TIME	ACTION	CATEGORY	INITIALS
		<p>Wivenhoe Dam (Full Supply Level 67.00 m AHD)</p> <ul style="list-style-type: none"> The dam level is 72.82m AHD and rising quickly. Releases from the dam have been increased over the last 3 hours in accordance with Flood Mitigation procedures and to ensure that a flow plug is not initiated. The initiation of a flow plug will result in an uncontrolled outflow from the dam of 2,000m³/s being added to the gate release outflow. Outflows into the Brisbane River from both Lockyer Creek and the Bremer River are also increasing. The flash flooding experienced in the upper areas of Lockyer Creek has been exacerbated and are not expected to significantly increase Brisbane River flows above the current projection of 4000m³/s at Moggill. Five radial gates are currently open at the dam releasing about 2,400m³/s into the Brisbane River and this will need to be increased steadily to an outflow of 2,800m³/s. At this stage, the dam will reach about 73.8m AHD during Tuesday morning. The objective for dam operations is currently to minimise the impact of urban flooding in areas downstream of the dam and to keep river flows in the lower Brisbane River below 4,000m³/s if possible. This is significantly less than the current estimated combined pre-dam peak inflow of 12,000m³/s. If further rainfall occurs, dam releases may need to be increased further and this may result in river flows in the lower Brisbane River approx <p>Impacts downstream of Wivenhoe Dam</p> <p>The projected Wivenhoe Dam releases combined with Lockyer Creek flows and local runoff will mean that all crossings downstream of Wivenhoe (Twin Bridges, Female, Saviges Crossing, Burton's Bridge, Kholo Bridge, Water levels in the lower Brisbane River will be impacted by the combined flows of Lockyer Creek, Bremer River, local runoff and releases from Wivenhoe Dam.</p> <p>Outlook</p> <p>Heavy rainfall continues throughout South East Queensland and the situation could deteriorate rapidly over the next 24 hours. The flood operation centre will continue to monitor the situation and provide every 6 hours</p>	Station Report - Strategy W3	
	20:00 PM	<p>Peter Baddeley (BoM) called to advise of situation regarding flows in Lockyer. Estimated very heavy localised rainfall (eg. 600mm in few hours) on Toowoomba escarpment to cause observed flood flooding. Will monitor via Glenore Grove gauging station.</p>	Correspondence	JW
	21:00 PM	<p>Spoke to Peter Allen regarding strategies for reducing Wivenhoe releases to mitigate latest event in Lockyer. Peter endorsed variation to manual to operate at minimum gate settings to create gap to slow peak of flash flood to pass. Also endorsed concept allowing Wivenhoe HW to rise above 74 m AHD today.</p>	Correspondence	JW
	20:20 PM	Spoke to Peter Baddeley (BoM) regarding reducing Wivenhoe release to accommodate peak of Lockyer flash flood.	Correspondence	JW
	11:20 PM	Spoke to Rob Druce to give situation update. Rob agreed that it possible to reduce flow from Wivenhoe to accommodate Lockyer flash flood peak.	Correspondence	JW
	11:59 PM	<p>FOO Situation Report at 00:00 Tuesday 11 January 2011</p> <p>Rainfall</p> <ul style="list-style-type: none"> Rainfall continues in the North Pine Dam, Somerset Dam and Wivenhoe Dam catchments with falls of generally less than 20mm since 18:00 today. However, some isolated falls in the Upper Brisbane River of up to 110 mm have been recorded at Morningside in this time. This rainfall will increase inflows into the dam. A severe weather warning remains current for heavy rainfall in the dam catchment areas. The ODF issued by BoM at 16:00 estimates rainfalls for the 24 hours to 10:00 Tuesday as North Pine Dam (25mm to 50mm, with isolated falls to 100mm), Wivenhoe/Somerset Dam Catchments (25mm to 50mm, with isolated falls to 100mm). <p>North Pine Dam (Full Supply Level 29.60 m AHD)</p> <p>The dam level is 39.80m AHD and rising slowly (storing 4,400ML above FSL). Five gates are open, releasing 153 m³/s. The inflow into the dam since the commencement of the event is 74,000 ML. Estimated event volume is 84,000 ML, assuming no further rainfall. Releases from the dam will continue until at least Wednesday 12 January 2011.</p> <p>Somerset Dam (Full Supply Level 69.00 m AHD)</p> <p>The dam level is 103.40m AHD and falling slowly. Peak inflow to the dam is estimated to be about 4,200 m³/s. Total discharge into Wivenhoe Dam is currently 1700m³/s and this discharge will decrease slowly in the next</p>	Station Report	RA
		<p>Wivenhoe Dam (Full Supply Level 67.00 m AHD)</p> <ul style="list-style-type: none"> The dam level is 73.22m AHD and rising at about 50 mm/hour. Releases from the dam have been held at a rate of 2,750 m³/s since 19:30 hours. Outflows into the Brisbane River from both Lockyer Creek and the Bremer River are also increasing. The BoM has provided further advice about the flash flooding experienced in the upper areas of Lockyer Creek. The rainfall responsible for this event was not observed at any rainfall stations but it is considered to be very significant. Flood levels in the Lockyer Creek catchment will exceed maximum recorded levels in some stations in the upper catchment. This flow may result in increases in Brisbane River levels below the junction of Lockyer Creek. Five radial gates are currently open at the dam releasing about 2,750m³/s into the Brisbane River. At this stage, the dam will reach about 73.8m AHD during Tuesday afternoon. The objective for dam operations is currently to minimise the impact of urban flooding in areas downstream of the dam and to keep river flows in the lower Brisbane River below 4,000m³/s if possible. This is significantly less than the current estimated combined pre-dam peak inflow of 12,000m³/s. If further rainfall occurs, dam releases may need to be increased further and this may result in river flows in the lower Brisbane River approx <p>Impacts downstream of Wivenhoe Dam</p> <p>The projected Wivenhoe Dam releases combined with Lockyer Creek flows and local runoff will mean that all crossings downstream of Wivenhoe (Twin Bridges, Female, Saviges Crossing, Burton's Bridge, Kholo Bridge, Water levels in the lower Brisbane River will be impacted by the combined flows of Lockyer Creek, Bremer River, local runoff and releases from Wivenhoe Dam.</p> <ul style="list-style-type: none"> The BoM will provide further information regarding the magnitude of the flash flood event occurring in Lockyer Creek early Tuesday morning. Consideration will be given to modifying the releases from Wivenhoe Dam to the <p>Outlook</p> <p>Heavy rainfall continues throughout South East Queensland and the situation could deteriorate over the next 24 hours. The flood operation centre will continue to monitor the situation and provide situation reports every 6h</p>	Station Report - Strategy W3	
11/01/11				
	4:30 AM	<p>Issued Somerset Directive #3.</p> <ul style="list-style-type: none"> Please close Sluice J at 05:00 Please close Sluice N at 06:00 Please close Sluice K at 07:00 	Directive	JW
	5:15 AM	<p>Spoke to Peter Baddeley (BoM) regarding reducing Wivenhoe releases to accommodate peak of Lockyer flash flood. Update: Consensus was that reducing release from Wivenhoe would no longer be feasible due to exacerbation of Lockyer peak and significant additional rainfall in upper Brisbane during the night.</p>	Correspondence	JW
	6:12 AM	<p>FOO Situation Report at 06:00 on Tuesday 11 January 2011</p> <p>Rainfall</p> <ul style="list-style-type: none"> Rainfall continues in the North Pine Dam, Somerset Dam and Wivenhoe Dam catchments. Isolated falls in the Upper Brisbane River of up to 125 mm have been recorded with widespread falls of 40 to 70 mm in the Somerset Dam catchment. This rainfall will increase inflows into the dam. There has also been 20 to 60 mm in the Lockyer Creek catchment in the last 12 hours with falls of up to 30 mm in the Bremer River. A severe weather warning remains current for heavy rainfall in the dam catchment areas. The ODF issued by BoM at 16:00 estimates rainfalls for the 24 hours to 10:00 Tuesday as North Pine Dam (25mm to 50mm, with isolated falls to 100mm), Wivenhoe/Somerset Dam Catchments (25mm to 50mm, with isolated falls to 100mm). <p>North Pine Dam (Full Supply Level 29.60 m AHD)</p> <p>The dam level is 39.80m AHD and has commenced rising again (storing 4,400ML above FSL). Five gates are open releasing 177 m³/s. The inflow into the dam since the commencement of the event is 77,000 ML. Estimated event volume is 83,000 ML, assuming no further rainfall. Releases from the dam will continue until at least Wednesday 12 January 2011.</p> <p>Somerset Dam (Full Supply Level 69.00 m AHD)</p> <p>The dam level is 103.27m AHD and falling slowly. Peak inflow to the dam is estimated to be about 4,200 m³/s. Total discharge into Wivenhoe Dam is currently 1400 m³/s and this discharge will be decreased in the next 24 hours. The dam level peaked at 103.52m AHD at 19:00 on Monday 10 January 2011, (unless further significant rainfall is experienced). Areas around Nilcol will continue to be adversely affected.</p>	Station Report	
		<p>Wivenhoe Dam (Full Supply Level 67.00 m AHD)</p> <ul style="list-style-type: none"> The dam level is 73.51m AHD and rising at about 25 mm/hour. Releases from the dam have been held at a rate of 2,750 m³/s since 19:30 hours on Monday 10 January 2011. Outflows into the Brisbane River from both Lockyer Creek and the Bremer River are also increasing. The BoM has provided further advice about the flash flooding experienced in the upper areas of Lockyer Creek. The rainfall responsible for this event was not observed at any rainfall stations but it is considered to be extreme. Flood levels in the Lockyer Creek catchment will exceed maximum recorded levels in some stations in the upper catchment. This flow will result in increases in Brisbane River levels below the junction of Lockyer Creek. Five radial gates are currently open at the dam releasing about 2,750m³/s into the Brisbane River. At this stage, the dam will reach just over 74.0m AHD during Tuesday evening. Above EL 74.0m AHD the objective for dam operations is to maintain the security of the dam and minimise downstream flood flows if possible. 	Station Report - Strategy W3/W4	
	8:00 AM	<p>Issued Wivenhoe Directive #12.</p> <ul style="list-style-type: none"> Open Gate 5 to 4.5 m at 06:00 Open Gate 2 and 4 to 5.0 m at 06:30 Open Gate 3 to 5.5 m at 09:00 	Directive - Strategy W3/W4	DP
	8:10 AM	<p>JT called Peter Allen to advise of current Wivenhoe situation - Will exceed EL74m. Increasing gate opening to a minimum of 3700 m³/s and gate operations will progress. Advicing transition from strategy W3 to W4</p>	Correspondence - Strategy W3/W4	DP

DATE	TIME	ACTION	CATEGORY	INITIALS
9:00 AM		Issued Wivenhoe Directive #13 • Open Gates 2 and 4 to 6.5 m at 09:30 • Open Gates 1 and 5 to 5.5 m at 10:00 • Open Gate 3 to 6.0 m at 10:30 • Open Gates 2 and 4 to 6.0 m at 11:00 • Open Gates 1 and 5 to 6.0 m at 11:30	Directive - Strategy WAW4	DP
9:09 AM		JT called SEQ Water (Seawater) (J's Minister) advised that Wivenhoe has lost power, possibly blown high voltage fuses. JO to resolve issue.	Correspondence	DP
9:13 AM		Emergency called. All incoming power has been lost at Wivenhoe	Correspondence	DP
10:29 AM		Stan from SEQ Water called TM. In conference with Bardon Maker. Internal questioning of release strategy. Internal discussion regarding current approved strategy. Preparing a briefing note.	Correspondence	DP
11:07 AM		Peter Burrows (Seawater) requested update on situation.	Correspondence	DP
11:38 AM		JT called Peter Burrows and advised that releases at Wivenhoe will be ramped up to 4000cumecs and strategy will be revised on an hourly basis. In reality releasing slightly less than the Flood Ops manual.	Correspondence	DP
12:00 PM		Strategy WAA Issued Wivenhoe Directive #14 • Open Gates 2, 3 and 4 to 6.5 m at 12:00 • Open Gates 1 and 5 to 6.5 m at 12:30 • Open Gate 3 to 7.0 m at 13:00	Directive Strategy WAA	DP
12:11 PM		S&Rep 1200 11H/2011 Somerset/Wivenhoe • Our current strategy revolves around trying to prevent initiation of the first fuse plug at EL 75.6m. If this happens we will get a rapid increase of about 2,000m ³ /s in outflow from the dam in addition to the gate release which could be as high as 4,500 to 5,000m ³ /s at the time. However, it may be that fuse plug initiation might provide a lower outflow than increasing the gate outflow to protect it. In this case, we would adopt an alternate scenario. • Sluices have been closed at Somerset and this will result in high upstream water levels affecting K'rooy. • With no further rainfall, Wivenhoe will approach 75.0m AHD and there will be an attempt to limit the dam outflow to 4,500m ³ /s, however this strategy currently being revised on an hourly basis. The release will be 4,000m ³ /s by 1300. • With 50mm rainfall in the Stanley and Upper Brisbane in the next 12 to 24 hours, the release will need to be significantly increased to be in the order 6,000m ³ /s. • It should be noted that the flow in the lower Brisbane River in 1974 was about 8,500m ³ /s. • Wivenhoe has lost incoming main power and are on backup power. Energy are attempting to rectify. North Pine Inflows and outflows are increasing very rapid and will exceed 2,000m ³ /s.	Situation Report - Strategy WAW/W4B	
1:00 PM		Issued Wivenhoe Directive #15 • Open Gates 1, 2, 3, 4 and 5 to 7.0 m at 13:15	Directive Strategy WAA	DP
1:00 PM		Issued Wivenhoe Directive #15 • Open Gates 1, 2, 3, 4 and 5 to 7.5 m.	Directive Strategy WAA	DP
1:20 PM		Peter Burrows (Seawater) called and requested the FOC request the BOM to consider if Wivenhoe is releasing 6000cumecs.	Correspondence	DP
1:50 PM		SEQ Water is continually revising release strategy, could be as high as 6500cumecs by tonight. If dam stabilise, then estimates may be reduce. TM also passed on information for BOM to consider the effects at Brisbane if Wivenhoe releases 6000cumecs.	Situation Report Strategy WAA/W4B	DP
2:00 PM		Issued Wivenhoe Directive #17 • Open Gates 1, 2, 3, 4 and 5 to 8.0 m	Directive Strategy WAA	DP
2:15 PM		Issued Wivenhoe Directive #18 • Open Gates 1, 2, 3, 4 and 5 to 8.5 m	Directive Strategy WAA	DP
3:14 PM		Peter Burrows (Seawater) called to discuss the proposed release of 10,000cumecs. JT and TM explained release strategy is constantly being revised.	Correspondence Strategy	DP
3:15 PM		Issued Wivenhoe Directive #18 • Open Gates 1, 2, 3, 4 and 5 to 9.0 m	Directive Strategy WAA	DP
3:30 PM		Issued Wivenhoe Directive #20 • Open Gates 1, 2, 3, 4 and 5 to 9.5 m.	Directive Strategy WAA	DP
3:43 PM		Peter Baddeley & Jimmy Stewart had a conference with JT, JR, TM and RA about current release strategy and possible maximum release scenario of 10000m ³ /s. This would be of a similar magnitude to the 1831 event (~8.3m in Brisbane Port Office).	Correspondence	DP
4:15 PM		Issued Wivenhoe Directive #21. • Open Gates 1, 2, 3, 4 and 5 to 10.0 m	Directive Strategy WAA	DP
4:33 PM		Phone call with TM and Peter Burrows. Discussed that given flood the riverbanks flood in Brisbane is similar to 1974 flood event, the no-dam flood would be significantly larger without Wivenhoe.	Correspondence	DP
4:41 PM		Phone call. PA requested more technical information in the status reports related by Duty Engineers. PA will send through an example of the technical data requested in the report.	Correspondence	DP
4:45 PM		Issued Wivenhoe Directive #22. • Open Gates 1, 2, 3, 4 and 5 to 10.5 m	Directive Strategy WAA	DP
5:15 PM		Issued Wivenhoe Directive #23. • Open Gates 1, 2, 3, 4 and 5 to 11.0 m	Directive Strategy WAA	DP
5:22 PM		Emergency (BOM). TM and JR discussed current Wivenhoe inflows and articulated outflows. TM confirmed that 7500cumecs is still fairly early tonight.	Correspondence	DP
5:45 PM		Rob Drury asking Tamara Enayati to hold off releasing water from Sutherland Creek.	Correspondence	DP
6:00 PM		Issued Wivenhoe Directive #24. • Open Gates 1, 2, 3, 4 and 5 to 12.0 m	Directive Strategy WAA	DP
6:00 PM		Situation Report 1800 11 January 2011 In the last twelve hours lots of up to 30mm have fallen in the area around Wivenhoe Dam. In the last hour, rainfalls between 15 and 30mm have been recorded in the same area. At 1800, the BOM advised that falls between 50 to 100mm are still forecast for the 24hrs to 1600 Wednesday 12 January 2011 for the North Pine and Somerset Wivenhoe catchments. • At 1730 Wivenhoe Dam was 74.92m AHD and rising slowly and releasing about 6,700m ³ /s. • The current expectation is that the dam will reach a steady state (outflow equals inflow) within the next 3 hours without further or significant rainfall. At this time, release from the dam will be about 6,000m ³ /s. • If there is no further rainfall, it may be possible to then slowly reduce the release overnight. • The dam is expected to peak below 75.5m AHD which is 100mm below the first fuse plug initiation level. • Note that the automatic recorder as indicated on the BOM website is affected by drawdown and is not reflecting the actual lake level and tendency. • The Flood Operations Centre is continuing to monitor rainfalls and water levels through the Brisbane and Pine catchments and reviewing operating strategy every 30 minutes. The FOC is also maintaining close contact with	Situation Report Strategy WAA/W4B	TM
6:07 PM		Recap of current release strategy amongst Duty Engineers. Current Wivenhoe scenario: 74.9 m - all gates at 12m. Won't go to 13m settings until level reaches 75.0 m AHD.	Correspondence Strategy WAA	DP
7:30 PM		Doug Gray (Wivenhoe Dam) called to report that Wivenhoe level 74.97m AHD is holding.	Correspondence	AN
8:25 PM		Joe Weisner rang to advise that the high voltage feeder to Wivenhoe will not be restored for the duration of this event. JT advised that Wivenhoe is operating successfully on the generator, and they have a fair bit of diesel. There are still 2 other backups to operate the outlet.	Correspondence	AN
8:30 PM		Doug Gray (Wivenhoe Dam) called to advise that Wivenhoe's level is 5mm down.	Correspondence	AN
8:30 PM		Issued Somerset Directive #7. • Fully Open Sluice 1 at 10:30	Directive	AN

DATE	TIME	ACTION	CATEGORY	INITIALS
	8:35 PM	Peter Burrows (Sequater) called FOC to speak with all duty engineers on the operating strategies for Wivenhoe releases.	Correspondence Strategy WCA	AN
	8:55 PM	Peter Burrows (Sequater) rang asking about possibly reducing releases. TM advised that we are seriously considering it, but this would have little effect on the levels in Brisbane River. Peter would like technical reports every hour throughout the night.	Correspondence	AN
	9:00 PM	Drainage Phase Issued Wivenhoe Directive #25 • Close Gates 1, 2, 3, 4 and 5 to 11.0 m	Directive Drainage Phase	AN
	9:25 PM	The last directive to lower the Wivenhoe gates to 11m should have been 11.5m. A new directive to raise to 11.5m was issued.	Directive	AN
	9:30 PM	Mal Lane (North Pine Dam) called. They are still behind in gate closures.	Correspondence	AN
	9:30 PM	Issued Wivenhoe Directive #26 • Close Gates 1, 2, 3, 4 and 5 to 11.5 m	Directive	AN
	9:40 PM	JW called Doug Grogg (Wivenhoe Dam) to obtain a current level. EL 74.97 Gates have been raised to 11.5m.	Correspondence	AN
	10:15 AM	Issued North Pine Directive #21a • Gate B: Close to Increment 4 at 22:30 • Gate D: Close to Increment 4 at 22:45 • Gate A: Close to Increment 4 at 23:00 • Gate E: Close to Increment 4 at 23:15 • Gate C: Close to Increment 4 at 23:30 • Gate B: Close to Increment 3 at 23:45	Directive	AN
	10:35 PM	Doug Grogg (Wivenhoe Dam) called to report lake level of 74.84-AHD @ 10:30hrs.	Correspondence	AN
	11:00 PM	Doug Grogg (Wivenhoe Dam) called to report lake level of 74.92-AHD @ 11:00hrs.	Correspondence	AN
	11:00 AM	Issued Wivenhoe Directive #27 - note directive #26 was a duplicate and not sent • Close Gates 5, 1, 4, 2 and 3 to 10.0 m	Directive	AN
12/01/11	11:30 PM	JW called Doug Grogg (Wivenhoe Dam) to obtain a current level. EL 74.97 Gates have been raised to 11.5m.	Correspondence	AN
	12:00 AM	Issued North Pine Directive #22 • Gate D: Close to Increment 3 at 00:15 • Gate A: Close to Increment 3 at 00:30 • Gate E: Close to Increment 3 at 00:45 • Gate C: Close to Increment 3 at 01:00 • Gate B: Close to Increment 2 at 01:15	Directive	AN
	12:30 AM	Doug Grogg (Wivenhoe Dam) called to report lake level of 74.68-AHD @ 12:30hrs.	Correspondence	AN
	1:00 AM	John Thornton (SunWater) called to provide Emer contact details; Steve, phone number 0418 166 814. Steve indicated that he didn't believe 178 Turbot St would be disconnected from power grid in the morning.	Correspondence	JW
	1:15 AM	RA rang Doug Grogg (Wivenhoe Dam) advising need directive. We want to get releases down as quick as possible while still lowering lake levels. Advised that we may possibly have a communications problem in the morning if power to 178 Turbot St is not.	Correspondence	AN
	1:15 AM	Issued Wivenhoe Directive #29 • Close Gates 5, 1, 4, 2 and 3 to 9.0 m	Directive	AN
	2:00 AM	Issued North Pine Directive #23 • Gate D: Close to Increment 2 at 02:15 • Gate A: Close to Increment 2 at 02:30 • Gate E: Close to Increment 2 at 02:45 • Gate C: Close to Increment 2 at 03:00	Directive	AN
	2:10 AM	James Charalambous (BOC) rang enquiring about a release strategy. A directive will be issued at about 3:00am. Talked about the activities of the last 24 hours.	Correspondence	AN
	3:10 AM	RA rang Mal Lane (NPH) and advised no changes to gate settings planned for the next hour or so.	Correspondence	AN
	3:15 AM	Issued Wivenhoe Directive #30 • Close Gates 5, 1, 4, 2 and 3 to 8.0 m	Directive	AN
	3:30 AM	Brett Munn (SEQ Water) rang enquiring about levels at Mt Crosby.	Correspondence	AN
	3:50 AM	RA called Chris Lahar (BSP) advising him that low-on flows are not as much as earlier anticipated, the releases from Wivenhoe are less than previously possible.	Correspondence	AN
	4:05 AM	Ian Douglas, C/O of Leeward Police, rang enquiring about the Wivenhoe flow plug. JW advised that there is no danger of the flow plug failing, and that current releases from Wivenhoe Dam are about 4,000 cumecs.	Correspondence	AN
	4:15 AM	Issued North Pine Directive #24 • Gate B: Close to Increment 1 at 04:30 • Gate D: Close to Increment 1 at 04:45 • Gate A: Close to Increment 1 at 05:00 • Gate E: Close to Increment 1 at 05:15	Directive	AN
	4:30 AM	Issued Wivenhoe Directive #31 • Close Gates 5, 1, 4, 2 and 3 to 7.0 m	Directive	AN
	5:30 AM	Issued Wivenhoe Directive #32 • Close Gates 5, 1, 4, 2 and 3 to 6.0 m	Directive	AN
	5:30 AM	Issued Wivenhoe Directive #33 • Close Gates 5, 1, 4, 2 and 3 to 6.0 m	Directive	AN
	5:49 AM	Situation Report 0520 Wed 12/01/2011 - No significant rain has fallen over the catchments in the past twelve hours. Less than 10 to 15 millimeters of rainfall is expected over the next 24-48 hours. - Wivenhoe Dam peaked on the 11th January, Tuesday night at 19:00 at 74.97 mAHD with a corresponding discharge of 7,450 m ³ /s. The releases have now been scaled back to 4,300-m ³ /s at 05:00 am. Wivenhoe Dam is currently 74.77 m AHD and falling slowly. - The releases from Wivenhoe Dam will be temporarily reduced to 2,500 m ³ /s to allow the peak of Lecky Creek to enter the Brisbane River, after which they will be increased to a maximum of 3,500 m ³ /s. This release will then be maintained to drain the food storage component within the required 7 days. - Somerset Dam is at 106.10 mAHD and slowly rising. The dam is discharging 1,230 m ³ /s over the spillway. The dam is expected to peak this morning near its current level. Sluice gates will be utilised to assist the draining of the food storage compartment commencing on Thursday. - The combined food event volume in Somerset and Wivenhoe Dams is estimated to be in excess of 2 million megalitres. - North Pine Dam is currently releasing 105 m ³ /s through five gates. At 17:00 the lake was 39.78 mAHD. The event has a volume of around 200,000 ML. The peak discharge from the dam was 2,600 m ³ /s. This is being maintained to drain the food storage component within the required 7 days. - The Flood Operations Centre is continuing to monitor rainfalls and water levels through the Brisbane and Pine catchments and reviewing operating strategy every 30 minutes. The FOC is also maintaining close contact with - The next report will be issued at 08:00 12 January 2011.	Situation Report	RA
	7:15 AM	Issued Wivenhoe Directive #34 • Close Gates 1 and 5 to 9.5 m • Close Gates 2 and 4 to 4.0 m	Directive	KH
	7:57 AM	Situation Report 0520 Wed 12/01/2011 (Rains) - No significant rain has fallen over the catchments in the past twelve hours. Less than 10 to 15 millimeters of rainfall is expected over the next 24-48 hours. - Somerset/Wivenhoe - Somerset Dam has peaked at 106.11 mAHD at 06:00 on 12 January 2011 and the dam is discharging 1,230 m ³ /s over the spillway. Sluice gates will be utilised to assist the draining of the food storage compartment commencing later Wednesday. - Wivenhoe Dam peaked at 74.97 mAHD at 19:00 on 11 January 2011 with a corresponding discharge of 7,450 m ³ /s. Wivenhoe Dam was 74.75 m AHD at 07:30 and generally falling slowly. - The releases from Wivenhoe Dam have been temporarily reduced to 2,500 m ³ /s at 07:30 to allow the peak of Lecky Creek to enter the Brisbane River. After the downstream peak in the lower Brisbane River has passed, releases will be increased to a maximum of 3,500 m ³ /s. This release will then be maintained to drain the food storage component within the required 7 days. - The combined food event volume in Somerset and Wivenhoe Dams is estimated to be in excess of 2 million megalitres. - North Pine Dam is currently releasing 105 m ³ /s through five gates. At 17:00 the lake was 39.78 mAHD. The event has a volume of around 200,000 ML. The peak discharge from the dam was 2,600 m ³ /s. This is being maintained to drain the food storage component within the required 7 days. - The Flood Operations Centre is continuing to monitor rainfalls and water levels through the Brisbane and Pine catchments and reviewing operating strategy every 30 minutes. The FOC is maintaining close contact with - The next report will be issued at 12:00 12 January 2011.	Situation Report	TM
	8:30 AM	Issued North Pine Directive #25 • Gate E: Open to Increment 2 at 08:45	Directive	KH
	10:15 AM	Issued Somerset Directive #3 • Fully Open Sluice 1 at 10:30	Directive	KH

DATE	TIME	ACTION	CATEGORY	INITIALS
	12:55 PM	Patric Backley, Rob Vansteij, Jim Stevenson from BOM visited FOC to talk with the Duty Engineers.	Correspondence	NGA
	2:15 PM	Issued North Pine Directive #26. • Gate E, Close to Forecast 1 at 14:15	Directive	NGA
	2:45 PM	Issued North Pine Directive #27. • Gate C, Close to Forecast 1 at 14:45	Directive	NGA
	3:00 PM	Situation Report 1600 Wed 12/01/2011 Rainfall Rainfall in the last 12 hours is generally below 5mm with a couple of 10mm falls in the Stanley and North Pine catchments. There is no significant rain expected in the next 4 days. Somerset/Wivenhoe • Somerset Dam has peaked at 105.11 mAHND at 06:00 on 12 January 2011. One sluice was opened at 1030 12 January 2011 and the dam is discharging 1,440 m ³ s. Sluice gates will be utilised to drain the food storage compartment during the next 5 days. • Wivenhoe Dam peaked at 74.97 mAHND at 19:00 on 11 January 2011 with a corresponding discharge of 7,450 m ³ s. Wivenhoe Dam was 74.61 m AHND at 15:00 and steady. • The releases from Wivenhoe Dam have been temporarily reduced to 2,500 m ³ s at 07:30 12 January 2011 to allow the peak of Lockyer Creek to enter the Brisbane River. After the downstream peak in the lower Brisbane River has passed, releases will be increased to maximum of 3,600 m ³ s. This release will then be maintained to drain the food storage component within the required 7 days. • The combined food event volume in Somerset and Wivenhoe Dams is estimated to be in excess of 2 million megalitres. North Pine At 15:00 North Pine Dam was 39.74 mAHND falling with all gates open 1 increment, releasing about 80 m ³ s. North Pine peaked at 41.11 mAHND at 14:00 on 11 January 2011 with peak release of 2,800 m ³ s. The event has a volume of around 200,000 ML. It is expected that all gates will be closed on Friday. Strategy The Flood Operations Centre is continuing to monitor rainfall and water levels through the Brisbane and Pine catchments and reviewing operating strategy every 30 minutes. The FOC is maintaining close contact with the Brisbane and Pine Councils. The next report will be issued at 18:00 12 January 2011.	Situation Report	TM
	4:20 PM	Ken Morris (PCO) called FOC and had phone conference with Dave Enos. He was seeking updates for briefing with Lord Mayor.	Correspondence	NGA
	6:00 PM	Situation Report 1600 Wed 12/01/2011 Rainfall Rainfall in the last 12 hours is generally below 5mm with a couple of 10mm falls in the Stanley and North Pine catchments. There is no significant rain expected in the next 4 days. Somerset/Wivenhoe • Somerset Dam has peaked at 105.11 mAHND at 06:00 on 12 January 2011. One sluice was opened at 1030 12 January 2011. Somerset Dam was 104.87 mAHND at 17:00 12 January 2011 and discharging 1,410 m ³ s. Sluice gates will be utilised to drain the food storage compartment during the next 5 days. • Wivenhoe Dam peaked at 74.97 mAHND at 19:00 on 11 January 2011 with a corresponding discharge of 7,450 m ³ s. Wivenhoe Dam was 74.62 m AHND at 17:00 and steady. • The releases from Wivenhoe Dam have been temporarily reduced to 2,500 m ³ s at 07:30 12 January 2011 to allow the peak of Lockyer Creek to enter the Brisbane River and this release has been maintained since. After the downstream peak in the lower Brisbane River has passed, releases will be increased to maximum of 3,500 m ³ s. This release is expected to commence Thursday and then be maintained at this level to drain the food storage component within the required 7 days. North Pine At 06:00 North Pine Dam was 39.70 mAHND falling with all gates open 1 increment, releasing about 80 m ³ s. North Pine peaked at 41.11 mAHND at 14:00 on Tuesday 11 January 2011 with peak release of 2,800 m ³ s. The event has a volume of around 200,000 ML. It is expected that all gates will be closed on Friday. Strategy The Flood Operations Centre is continuing to monitor rainfall and water levels throughout the Brisbane and Pine River catchments and reviewing operating strategy. The FOC will continue to maintain close contact with the Brisbane and Pine Councils and local councils. The next report will be issued at 18:00 on Thursday 13 January 2011.	Situation Report	TM
13/01/11				
	5:43 AM	Situation Report 0600 13 January 2011 Rainfall Rainfall in the last 12 hours is generally below 5mm with isolated falls of up to 15mm in the Stanley, Lockyer and Pine River catchments. There is no significant rain expected in the next 4 days. Somerset/Wivenhoe • Somerset Dam peaked at 105.11 mAHND at 06:00 on Wednesday 12 January 2011. The current level is 104.34 mAHND. One sluice was opened at 10:30 on 12 January 2011 and the dam is currently discharging 1,130 m ³ s. Sluice gates will be utilised to drain the food storage compartment during the next 5 days. • Wivenhoe Dam peaked at 74.97 mAHND at 19:00 on Tuesday 11 January 2011 with a corresponding discharge of 7,450 m ³ s. Wivenhoe Dam was 74.72 m AHND at 09:00 and commencing to fall slowly. • The releases from Wivenhoe Dam have been temporarily reduced to 2,500 m ³ s at 07:30 on Wednesday 12 January 2011 to allow the peak of Lockyer Creek to enter the Brisbane River. The Brisbane River has peaked at the Port Office Gauging station Thursday morning. Releases from Wivenhoe Dam will be managed to achieve a target flow of around 3,500 m ³ s at 10:00. This release will then be maintained to drain the food storage component within the required 7 days. North Pine At 06:00 North Pine Dam was 39.70 mAHND falling with all gates open 1 increment, releasing about 80 m ³ s. North Pine peaked at 41.11 mAHND at 14:00 on Tuesday 11 January 2011 with peak release of 2,800 m ³ s. The event has a volume of around 200,000 ML. It is expected that all gates will be closed on Friday. Strategy The Flood Operations Centre is continuing to monitor rainfall and water levels throughout the Brisbane and Pine River catchments and reviewing operating strategy. The FOC will continue to maintain close contact with the Brisbane and Pine Councils and local councils. The next report will be issued at 18:00 on Thursday 13 January 2011.	Situation Report	RA
	12:30 PM	Wivenhoe directive #35 issued • Open Gate 2 from 4.0 metres to 4.5 metres at 1300. • Open Gate 4 from 4.0 metres to 4.5 metres at 1400.	Directive	JW
	12:30 PM	Somerset directive #10 issued • Fully Open Sluice K at 13:00.	Directive	JW
	2:15 PM	Phone call from Steve Ross, MSRC. Advice as follows: • damage to Olympic Rd abutments • No inundations • No suburban flooding • Not aware of any over floor flooding. Pine Shiba had 0.75m floodboard	Correspondence	JW
	2:30 PM	Wivenhoe directive #36 issued • Open Gate 1 from 3.5 metres to 4.0 metres at 1500. • Open Gate 5 from 3.5 metres to 4.0 metres at 1600. • Open Gate 1 from 4.0 metres to 4.5 metres at 1700. • Open Gate 5 from 4.0 metres to 4.5 metres at 1800.	Correspondence	JW
	4:45 PM	Judy (MSRC) was advised that NPD orles will be closed at 0500 Friday	Correspondence	TM
	6:00 PM	Wivenhoe directive #37 issued • Open Gate 2 from 4.5 metres to 5.0 metres at 1830. • Open Gate 4 from 4.5 metres to 5.0 metres at 1900. • Open Gate 1 from 4.5 metres to 5.0 metres at 1930. • Open Gate 5 from 4.5 metres to 5.0 metres at 2000. • Open Gate 3 from 5.0 metres to 5.5 metres at 2030.	Directive	JW
	7:51 PM	Rob called Mal Lane (North Pine Dam) to discuss the current drainage strategy to close all gates by Sun tomorrow. Water level in North Pine Dam will be frequently monitored against the predictive model results, and gate openings will be adjusted accordingly if required.	Correspondence	DP
	6:15 PM	Wivenhoe directive #38 issued • Open Gate 2 from 5.0 metres to 5.5 metres at 2100. • Open Gate 4 from 5.0 metres to 5.5 metres at 2200. • Open Gate 1 from 5.0 metres to 5.5 metres at 2300. • Open Gate 5 from 5.0 metres to 5.5 metres at 2000. • Open Gate 3 from 5.5 metres to 6.0 metres at 0100 on 14/1/11 • Open Gate 5 from 5.5 metres to 6.0 metres at 0200 • Open Gate 3 from 5.5 metres to 6.0 metres at 0300	Directive	DP
	8:28 PM	Somerset directive #11 issued • Fully Open Sluice N at 21:00.	Directive	DP
14/01/11				

