[redacted]

From: Duty Engineer [redacted]
Sent: Monday, 17 January 2011 6:06 PM
To: 'john.ruffini [redacted]
Subject: FW: Lake level comparison & directive summary
Attachments: WDHeadwaterLevelsJan2011.xls; Strategy-Summary-Log.xls

Duty Engineer
Flood Operations Centre

Phone [redacted]

Fax:

From: Duty Engineer [redacted]
Sent: Monday, 17 January 2011 1:03 PM
To: Peter Allen (peter.aller [redacted] rdrury [redacted]
Subject: Lake level comparison & directive summary

Rob/Peter

Additional information that may be useful.

Regards

Duty Engineer
Flood Operations Centre

Phone: [redacted]

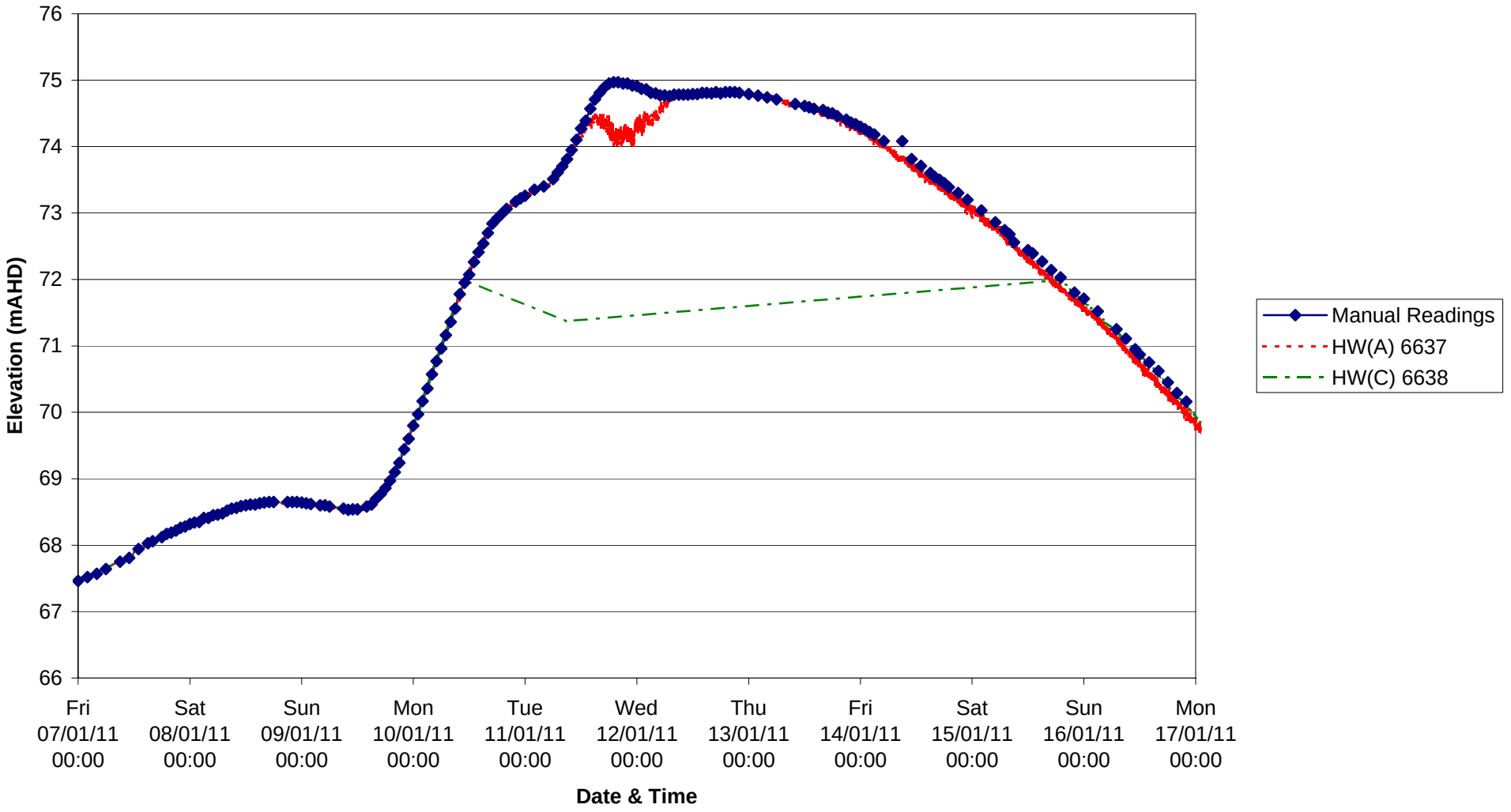
Fax:

QFCI

Date: 6/2/12 JM

Exhibit Number: 1077

Wivenhoe Dam HW : Manual Readings - January 2011



DATE	TIME	ACTION	CATEGORY	INITIALS
Thursday 6/1/20	7.00 AM	TM duty Engineer. Rainfall and water had been remote monitored to this point in time. TM advises Senior Duty Engineer that Flood Operations are required at both Somerset, Wivenhoe and North Pine Dams. TM arrived at FOC to assess strategies and mobilises FOC, Wivenhoe, Somerset and North Pine Dam. North Pine Dam At 07.00hrs Thursday, North Pine Dam was 39.60m, 0.05m below gate trigger level and having risen 0.18m since 2/1/2011 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. MBRC will be advised this morning. 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 Kilcoy Ck. Further regulator operations will be required later Thursday. 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 nex	Situation Report	MT
		Strategy W1 - Various		
	8.14 AM	**Situation Report 0800 06/01/2011** 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. North Pine Dam - At 0700 Thursday, North Pine Dam was 39.60m, 0.05m below gate trigger level and having risen 0.18m since 2/1/2011 due to a combination of baseflow and runoff from rain in the last 24 hours. - Given the forecast rain, gate operations will commence tonight. MBRC will be advised this morning. Somerset Dam - At 0700 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 Kilcoy Ck. Further regulator operations will be required later Thursday.	Situation Report	TM
		Wivenhoe Dam - At 0700 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. 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 500m3/s 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, Savages Crossing, Kholo Bridge and Colleges Crossing for several days. At this stage, there are not expected to be any adverse impacts upon Fernvale Bridge, Burtons Bridge or Mt Crosby Weir Bridge. 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.	Situation Report	
	1:30 PM	**Revised Operating Strategy 1200 6/1/2011** North Pine - On track to open tonight Somerset/Wivenhoe - No change to current status – expected inflow volume about 45,000ML. Will reach about 99.7m AHD without releases. - Expected inflow volume about 130,000ML including Somerset. Will reach about 68.3m AHD without releases. - There has been further heavy falls in the Lockyer since 0900 Thursday and the flow from the Lockyer is going to be larger than initially assessed, possibly as high as 600m3/s peaking Saturday. This may close Burtons without any contribution from Wivenhoe. The opening of the Wivenhoe gates will therefore be delayed until the Lockyer peak passes.	Situation Report	TM
	2:54 PM	**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. North Pine Dam At 1400 Thursday, North Pine Dam was 39.66m, 0.01m above gate trigger level. Gate operations will commence at 1900 Thursday and will impact upon Youngs Crossing. MBRC 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. Somerset Dam At 0700 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 Kilcoy Ck, adding to the Somerset inflows. Further regulator/sluice operations will be required in the next 24 to 48 hours. The estimated	Situation Report	TM
		Wivenhoe Dam - At 0700 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 160,000ML including Somerset Dam outflow. - There has been significant rainfalls in the Lockyer Ck catchment since 0900 Thursday and a peak of about 600m3/s 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 1,500m3/s and continue for a couple of days. 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, Savages Crossing, Kholo Bridge and Colleges Crossing for several days. The relatively high Lockyer flows will at least impact upon Twin Bridges, Savages Crossing, Kholo Bridge and Colleges Crossing for several days and may impact upon Burtons Bridge early Saturday. At this stage, there are not expected to be any a	Situation Report	

DATE	TIME	ACTION	CATEGORY	INITIALS
7/01/11				
	6.33 PM	**Situation Report 1800 06/01/2011** 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. 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. North Pine Dam At 1700 Thursday, North Pine Dam was 39.68m, 0.03m above gate trigger level. Gate operations will commence at 1900 Thursday and will impact upon Youngs Crossing. Moreton 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. Somerset Dam At 1700 Thursday, Somerset Dam was 99.45m, 0.45m above FSL and rising slowly. The rain in the Stanley River catchment has produced a small amount of runoff in the upper	Situation Report	TM
		Wivenhoe Dam - At 1700 Thursday, Wivenhoe Dam was 67.39m and rising slowly. This is 0.39m above FSL and above the gate trigger level of 67.25m. Upstream of the dam river levels are still rising at the Linville and Gregors Ck gauges. The estimated event inflow volume into Wivenhoe Dam is 160,000ML including Somerset Dam outflow. - A peak of about 600m3/s 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 Burtons Bridge. Wivenhoe gates will be opened after the impact of Lockyer flows on Burtons 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 1,500m3/s, similar to recent events, and continue for a couple of days. 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, Savages Crossing, Kholo Bridge and Colleges Crossing for several days and may impact upon Burtons	Situation Report	
7/01/11				
7/01/11	6:07 AM	**FOC Situation Report at 06:00 on Friday 7 January 2011** Rainfall - 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 Leslie Harrison catchment. - The forecast for the next five days is for totals between 100 and 200mm in SE Qld. Given the saturated condition of the catchments further runoff will most likely be generated from this rainfall. North Pine Dam At 0600 Friday, North Pine Dam was at 39.48m, 0.12m below FSL. Gate operations commenced at 1915 on Thursday 6 January and are expected to continue until at least mid-day Friday 7 January when North Pine Dam is expected to be at 39.40m. These releases have impacted upon Youngs Crossing. Moreton Bay Regional Council was advised and they closed Youngs Crossing prior to gate operations commencing. Based upon the forecast rainfall, gate operations may continue into Saturday, but at this stage it is anticipated that gate o	Situation Report	LVB
		Wivenhoe Dam - 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 Gregors Ck gauges. The estimated event 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 subside. 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 though to Monday or Tuesday. Impacts of Downstream of Wivenhoe - Somerset Regional Council, Ipswich City Council and Brisbane City Council have been advised of the potential for gate operations during the next 24 hours.	Situation Report	
	######	SitRep There has been falls between 15 and 30mm in the North Pine catchment in the last 3 hours. This will cause renew rises and increased inflows. There are no gate movements projected for the next 3 hours	Situation Report	TM
7/01/11	######	Issued Wivenhoe Directive #1. • 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	**Situation Report 1800 Friday 07/01/2011** Rainfall - 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. Saturday. Rain light at times 15-50mm with higher falls along the coast Sunday. Widespread rain with totals between 50-100mm Monday. Widespread rain again with totals between 50-100mm Tuesday. Rain easing with totals between 25-50mm Given the saturated conditions of the catchments, significant inflows to Seqwater dams will be generated, especially following the forecast rainfall on Sunday/Monday. North Pine (Full Supply Level 39.60 m AHD) - 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	Situation Report	TM
		Wivenhoe (Full Supply Level 67.00 m AHD) - 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 24,600ML has been released from Wivenhoe via the hydro and regulator at about 50m3/s. Impacts downstream of Wivenhoe - The projected Wivenhoe release of 1,200m3/s combined with Lockyer flows and local runoff will mean that all crossings downstream of Wivenhoe (Twin Bridges, Savages Crossing, Burtons Bridge, Kholo Bridge and Colleges Crossing) will be adversely impacted for several days. At this stage Fernvale and Mt Crosby Weir Bridge are not expected to be affected.	Situation Report	
7/01/11	9:53 PM	Issued Wivenhoe Directive #2. • 07/01/2011 22:00 Open Gate 2 from 0.0 metres to 0.5 metres • 07/01/2011 23:00 Open Gate 4 from 0.0 metres to 0.5 metres • 08/01/2011 00:00 Open Gate 2 from 0.5 metres to 1.0 metres • 08/01/2011 01.00 Open Gate 4 from 0.5 metres to 1.0 metres • 08/01/2011 02:00 Open Gate 1 from 0.0 metres to 0.5 metres • 08/01/2011 03:00 Open Gate 5 from 0.0 metres to 0.5 metres • 08/01/2011 04.00 Open Gate 2 from 1.0 metres to 1.5 metres	Directive Strategy W1-D	MT
8/01/11	4.55 AM	Issued Wivenhoe Directive #3. • 08/01/2011 05:00 Open Gate 4 from 1.0 metres to 1.5 metres • 08/01/2011 06.00 Open Gate 1 from 0.5 metres to 1.0 metres • 08/01/2011 07.00 Open Gate 5 from 0.5 metres to 1.0 metres • 08/01/2011 08:00 Open Gate 3 from 3.5 metres to 4.0 metres	Directive Strategy W1-D	MT
8/01/11	8.00 AM	Issued Wivenhoe Directive #4. • 08/01/2011 09:00 Open Gate 2 from 1.5 metres to 2.0 metres • 08/01/2011 10:00 Open Gate 4 from 1.5 metres to 2.0 metres • 08/01/2011 11:00 Open Gate 1 from 1.0 metres to 1.5 metres • 08/01/2011 12:00 Open Gate 5 from 1.0 metres to 1.5 metres • 08/01/2011 13:00 Open Gate 2 from 2.0 metres to 2.5 metres • 08/01/2011 14.00 Open Gate 4 from 2.0 metres to 2.5 metres	Directive Strategy W1-D	AN

DATE	TIME	ACTION	CATEGORY	INITIALS
8/01/11	######	Issued Somerset Directive #3. • Please open Sluice M to 100% at 12:00.	Directive	AN
9/01/11	######			
	1:00 AM	Issued Wivenhoe Directive #5. • Open Gate 3 from 4.0 metres to 4.5 metres	Directive - Strategy W1-E	NGA
	4:30 AM	Issued Wivenhoe Directive #6. • Open Gate 1 from 1.5 metres to 2.0 metres	Directive Strategy W1-E	NGA
	6.15 AM	**FOC Situation Report at 06:00 on Sunday 9 January 2011** Rainfall Catchment average rainfall for the past 12 hours is; North Pine Dam (less than 10 mm); Somerset Dam (40 mm); Wivenhoe Dam (less than 10 mm). 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:- Sunday. Rain periods. Monday. Rain periods. Tuesday. Rain periods. Wednesday A few showers. Thursday A shower or two. Friday A shower or two. Saturday Mostly fine. A severe whether 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 39.60 m AHD)	Situation Report	JT
		Somerset Dam (Full Supply Level 99.00 m AHD) The dam level is currently falling 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 02/01/2011approximately 56,000ML 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. Wivenhoe Dam (Full Supply Level 67.00 m AHD) The dam level is currently falling slowly, with the current level being 68.58m AHD. River levels upstream of the dam are receding, 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 02/01/2011approximately 150,000ML has been released from the dam, with a total of at least 450,000ML to be released based on the currently rec	Situation Report	
	8.15 AM	Issued Somerset Directive #4. • Please open Sluice K to 100% at 09.00.	Directive	NGA
	######	Issued Wivenhoe Directive #7. • Open Gate 5 from 1.5 metres to 2.0 metres	Directive Strategy W1-E	NGA
	######	Issued Somerset Directive #5. • Please open Sluice N to100% at 13.00 • Please open Sluice J to 100% at 14.00	Directive	NGA
		Strategy W2		
	3.30 PM	Duty Engineer Conference held at the FOC. Attended by RA, JR, TM with JT on conf phone. At this stage operating at the top end of W1 and the bottom end of W2.Storing 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 N-E 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 Lockyer Ck & the Bremer River which potentially could close Fermvale 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 72.6 in Wivenhoe can be attained.	Situation Report - Strategy W2	NGA
	5:51 PM	**Situation Report 1700 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 (60 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 Mostly fine. A severe whether 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 39.60 m AHD)	Situation Report - Strategy W2	TM
		Somerset Dam (Full Supply Level 99.00 m AHD) - The dam level is 100.75 m AHD and rising quickly. Estimated peak inflow to the dam is about 3,000m3/s. Five sluice gates are open releasing about 1,100m3/s (95,000Ml/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 02/01/2011approximately 80,000ML has been released from the dam, with an event total of at least 320,000ML 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 67.00 m AHD) - The dam level is currently rising again, with the current level being 68.70m AHD. Estimated peak inflow to the dam just from the Upper Brisbane R is about 5,000m3/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 around 1,600m3/s in the mid Brisbane River for the next 24 hours. This maximum temporarily reducing releas	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 by as early as midnight which is likely to have flooding impacts on low-lying areas of Brisbane.	Correspondence - Strategy W2 - transition to W3	BS

DATE	TIME	ACTION	CATEGORY	INITIALS
		Strategy W3		
	9:04 PM	**Situation Report 2100 9/01/2011** Rainfall - Very heavy rainfall has been recorded in the upper reaches of the Brisbane and Stanley in the last 6 hours with totals up 100 to 140mm. Totals for the last 24 hours range from 100 to 300mm. - Rainfall of similar magnitudes 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 99.00 m AHD) - The dam level is 101.68 m AHD (about 500,000ML currently in storage) and rising quickly. Peak inflow to the dam is estimated to be about 4,000 m3/s based on observed rainfall and could be as high as 5,000m3/s with additional forecast rainfall. Five sluice gates are open releasing about 1,100m3/s (95,000M/d) into Wivenhoe Dam. At this stage the dam will reach at least 103.5 early Tuesday morning which will adversely impact areas around Kilcoy. - Since the commencement of the event on 02/01/2011approximately 100,000ML has been released from the dam into Wivenhoe, with an event total of the order of 520,000ML	Situation Report - Strategy W3	TM
		Wivenhoe Dam (Full Supply Level 67.00 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 6,700m3/s and the river is still rising. - The dam level is rising again, with the current level being 69.10m AHD (1,410,000ML with about 300,00 of flood storage). Estimated peak inflow to the dam just from the Upper Brisbane R alone may reach as high as 7,500m3/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 3,500m3/s and the combined flows in the lower Brisbane will be limited to 4,000m3/s. This is below the limit of urban damages in the City reaches. - The current release rate from Wivenhoe Dam is 1,400m3/s (120,000ML/day). Gate opening will start to be increased from noon Monday and the release is expected increase to at	Situation Report - Strategy W3	
10/01/11				
	1:14 AM	**FOC Situation Report at 01:00 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 100 to 240mm. Totals for the last 24 hours range from 100 to 300mm. - 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 39.60 m AHD) - The dam level was 39.95 m and steady. Five gates are open releasing 445 m3/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 99.00 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 m3/s based on observed rainfall and could be as high as 5,000m3/s with additional forecast rainfall. Five sluice gates are open releasing about 1,100m3/s (95,000M/d) into Wivenhoe Dam. At this stage the dam will reach at least - Since the commencement of the event on 02/01/2011approximately 115,000ML has been released from the dam into Wivenhoe, with an event total of the order of 520,000ML expect	Situation Report - Strategy W3	JR
		Wivenhoe Dam (Full Supply Level 67.00 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 7,350m3/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 69.60m AHD (storing 301,000 ML). Estimated peak inflow to the dam just from the Upper Brisbane R alone may reach as high as 8,600m3/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 3,500m3/s and the combined flows in the lower Brisbane will be limited to 4,000m3/s if possible. - Fernvale Bridge approaches and Mt Crosby West Bridge have been inundated and both bridges are now closed or are in the process of being closed.	Situation Report - Strategy W3	
	2:00 AM	Issued Wivenhoe Directive #8. • 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 2 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 # 8 Strategy W3	BS
	6:30 AM	**FOC Situation Report at 06:00 on Monday 10 January 2011** Rainfall - Moderate to heavy rainfall has been recorded in the Upper Brisbane and Stanley Rivers in the last 12 hours with totals up to 90 mm. Totals for the last 24 hours range from 100 to 325mm. - Mt Glorious recorded 100 mm 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 39.60 m AHD) - 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 99.00 m AHD) - 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 5,000m3/s with additional forecast rainfall. Five sluice gates are open releasing about 1,100m3/s (95,000M/d) into Wivenhoe Dam. At this stage the dam lake level - Since the commencement of the event on 02/01/2011approximately 142,000ML has been released from the dam into Wivenhoe, with an event total of the order of 520,000ML expect	Situation Report Strategy W3	JR
		Wivenhoe Dam (Full Supply Level 67.00 m AHD) - 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 Ck have peaked at 7,350m3/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 70.77m AHD (storing 450,000 ML). Estimated peak inflow to the dam just from the Upper Brisbane R is around 8,600m3/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 3,500m3/s and the combined flows in the lower Brisbane will be limited to 4,000m3/s if possible. This is significantly less than the current estimated combined pre-dam peak inflow of 12,000 m3/s	Situation Report - Strategy W3	
	6:30 AM	Issued Wivenhoe Directive #9. • 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 2 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

DATE	TIME	ACTION	CATEGORY	INITIALS
	8:30 AM	Issued Wivenhoe Directive #10. • 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 12:00 on Monday 10 January 2011** Rainfall 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 99.00 m AHD) The dam level is 103.41m AHD and rising. Peak inflow to the dam is estimated to be about 4,200 m3/s. Five sluice gates are open releasing about 1,100m3/s (95,000ML/day) into Wivenhoe Dam. At this stage the dam lake level will reach about 103.5m AHD on Monday afternoon. Areas around Kilcoy will continue to be adversely affected. Wivenhoe Dam (Full Supply Level 67.00 m AHD) - The dam level is 72.41m 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 n - Five radial gates are currently open at the dam releasing about 2,000m3/s into the Brisbane River and this will need to be increased steadily to an outflow of 2,600m3/s over the next 9 - 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 4,000r Impacts downstream of Wivenhoe Dam - The projected Wivenhoe Dam releases combined with Lockyer Creek flows and local runoff will mean that all crossings downstream of Wivenhoe (Twin Bridges, Fernvale, Savages Cr - 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. Outlook 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 sit	Situation Report - Strategy W3	TM
	######	Spoke with Peter Borrows (Seqwater) to answer elaborate on Situation Report and inform him of large rainfalls currently occurring in the Wivenhoe catchment.	Correspondence	LVB
	4.00 PM	Issued Wivenhoe Directive #11. • 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 FCC on model discharge results. However, BoM included 6hrs of additional rain which takes the discharge to 4600m3/s	Correspondence	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 - 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 (25mm to 50mm, with isolated falls to 100mm); Wivenhoe/Somerset Dam Catchments (25mm to 50mm, 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) - The dam level is 39.84m AHD and falling slowly (storing 9,000ML above FSL). Five gates are open and releasing 362 m3/s. The inflow into the dam since the commencement of the	Situation Report	TM
		Wivenhoe Dam (Full Supply Level 67.00 m AHD) - The dam level is 72.92m 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 fuse plug is not initiated. The initiation of a fuse plug will result in a rapid 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 have been examined 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 2,600m3/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 increas Impacts downstream of Wivenhoe Dam The projected Wivenhoe Dam releases combined with Lockyer Creek flows and local runoff will mean that all crossings downstream of Wivenhoe (Twin Bridges, Fernvale, Savages Cro - 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. Outlook 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 sit	Situation Report Strategy W3	
	20.00 PM	Peter Baddley (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.	Correspondence	JW
	21.00 PM	Spoke to Peter Allan regarding strategies for reducing Wivenhoe release to mitigate latest event in Lockyer. Peter endorsed variation to manual to operate at minimum gate settings to create gap to allow peak of flash flood to pass. Also endorsed concept allowing Wivenhoe HW to rise above 74 mAHD briefly.	Correspondence	JW
	20.20 PM	Spoke to Peter Baddley (BoM) regarding reducing Wivenhoe release to accommodate peak of Lockyer flash flood.	Correspondence	JW
	######	Spoke to Rob Drury to give situation update. Rob agreed that if possible to reduce flow from Wivenhoe to accommodate Lockyer flash flood peak.	Correspondence	JW
	######	**FOC Situation Report at 00:00 Tuesday 11 January 2011** Rainfall - 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 Monsildale 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 QPF 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). North Pine Dam (Full Supply Level 39.60 m AHD) The dam level is 39.60m AHD and falling 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. Somerset Dam (Full Supply Level 99.00 m AHD) 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 disch	Situation Report	RA

DATE	TIME	ACTION	CATEGORY	INITIALS
		Wivenhoe Dam (Full Supply Level 67.00 m AHD) - 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 increas Impacts downstream of Wivenhoe Dam - The projected Wivenhoe Dam releases combined with Lockyer Creek flows and local runoff will mean that all crossings downstream of Wivenhoe (Twin Bridges, Fernvale, Savages Cr - 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. - The BoM will provide further information regarding the magnitude of the flash flood event occuring in Lockyer Creek early Tuesday morning. Consideration will be given to modifying t Outlook 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	Situation Report - Strategy W3	
11/01/11				
	4:30 AM	Issued Somerset Directive #6. • 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	Spoke to Peter Baddiley (BoM) regarding reducing Wivenhoe release to accommodate peak of Lockyer flash flood. Update: Consensus was that reducing release from Wivenhoe would no longer be feasible due to attenuation of Lockyer peak and significant additional rainfall in upper Brisbane during the night.	Correspondence	JW
	6.12 AM	FOG Situation Report at 06:00 on Tuesday 11 January 2011 Rainfall - 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 QPF 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). North Pine Dam (Full Supply Level 39.60 m AHD) The dam level is 39.60m 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 88,000 ML assuming no further rainfall. Releases from the dam will continue until at least Wednesday 12 January 2011. Somerset Dam (Full Supply Level 99.00 m AHD) - 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 dis - The dam level peaked at 103.52m AHD at 19:00 on Monday 10 January 2011, (unless further significant rainfall is experienced). Areas around Kilcoy will continue to be adversely affe	Situation Report	
		Wivenhoe Dam (Full Supply Level 67.00 m AHD) - 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. - If further rainfall occurs, dam releases may need to be increased further and this may result in river flows in the lower Brisbane River approaching or exceeding 5,000m3/s	Situation Report - Strategy W3/W4	
	8:00 AM	Issued Wivenhoe Directive #12. • Open Gate 5 to 4.5 m at 08:00 • Open Gates 2 and 4 to 5.0 m at 08:30 • Open Gate 3 to 5.5 m at 09:00	Directive - Strategy W3/W4	DP
	8:10 AM	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. Advising transition from strategy W3 to W4	Correspondence - Strategy W3/W4	DP
	9:00 AM	Issued Wivenhoe Directive #13. • Open Gates 2 and 4 to 5.5 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 W3/W4	DP
	9:09 AM	JT called SEQWater maintenance (Jo Misner) advised that Wivenhoe has lost power, possibly blown high voltage fuses. JO to resolve issue.	Correspondence	DP
	9.13 AM	Energex called. All incoming power has been lost at Wivenhoe.	Correspondence	DP
	######	Stan from SEQWater called TM. In conference with Barton Maher. Internal questioning of release strategy. Internal discussion regarding current approved strategy. Preparing a briefing note.	Correspondence	DP
	######	Peter Borrows (Seqwater) requested update on situation.	Correspondence	DP

DATE	TIME	ACTION	CATEGORY	INITIALS
	######	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
		Strategy W4A		
	######	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 W4A	DP
	######	SitRep 1200 11/1/2011 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 2,000m3/s in outflow from the dam in addition to the gate release which could be as high as 4,500 to 5,000m3/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 Kilcoy. - With no further rainfall, Wivenhoe will approach 75.0m AHD and there will be an attempt to limit the dam outflow to 4,500m3/s, however this strategy currently being reviewed on an hour by hour basis. The release will be 4,000m3/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 6,000m3/s. - It should be noted that the flow in the lower Brisbane River in 1974 was about 9,500m3/s - Wivenhoe has lost incoming mains power and are on backup power. Energex are attempting to rectify. North Pine Inflows and outflows are increasing very rapid and will exceed 2,000m3/s.	Situation Report - Strategy W4A/W4B	
	1:00 PM	Issued Wivenhoe Directive #15. • Open Gates 1,2, 4 and 5 to 7.0 m at 13.15	Directive Strategy W4A	DP
	1:00 PM	Issued Wivenhoe Directive #16. • Open Gates 1,2, 3, 4 and 5 to 7.5 m	Directive Strategy W4A	DP
	1:26 PM	Peter Burrows (Seqwater) called and requested the FOC request the BoM to consider if Wivenhoe is releasing 9000cumecs.	Correspondence	DP
	1:55 PM	SEQWater 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 9000cumecs.	Situation Report Strategy W4A/W4B	DP
	2:00 PM	Issued Wivenhoe Directive #17. • Open Gates 1,2, 3, 4 and 5 to 8.0 m	Directive Strategy W4A	DP
	2:15 PM	Issued Wivenhoe Directive #18. • Open Gates 1,2, 3, 4 and 5 to 8.5 m	Directive Strategy W4A	DP
	3:14 PM	Peter Burrows (Seqwater) 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 #19. • Open Gates 1,2, 3, 4 and 5 to 9.0 m	Directive Strategy W4A	DP
	3:30 PM	Issued Wivenhoe Directive #20. • Open Gates 1,2, 3, 4 and 5 to 9.5 m	Directive Strategy W4A	DP
	3:49 PM	Peter Baddley & Jimmy Stewart had a conference with JT, JR, TM and RA about current release strategy and possible maximum release scenario of 10000m3/s. This would be of a similar magnitude to the 1893 event (~8.36m 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 W4A	DP
	4:33 PM	Phone call with TM and Peter Burrows. Discussed that even though the magnitude flood in Brisbane is similar to 1974 flood event, the no-dam flood would be significantly larger without Wivenhoe.	Correspondence	DP
	4:41 PM	Peter Allen phone call. PA requested more technical information in the status reports released 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 W4A	DP
	5:15 PM	Issued Wivenhoe Directive #23. • Open Gates 1,2, 3, 4 and 5 to 11.0 m	Directive Strategy W4A	DP
	5:22 PM	Jimmy Stewart (BoM), TM and JR discussed current Wivenhoe inflows and anticipated outflows. TM confirmed that 7500cumecs is still likely early tonight.	Correspondence	DP
	5:48 PM	Rob Drury asking Tarong Energy to hold off releasing water from Spityard Creek.	Correspondence	DP
	6:00 PM	Issued Wivenhoe Directive #24. • Open Gates 1,2, 3, 4 and 5 to 12.0 m	Directive Strategy W4A	DP
	6:00 PM	**Situation Report 1800 11 January 2011** -In the last twelve hours totals of up to 370mm 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 1600, 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 6,700m3/s. - The current expectation is that the dam will reach a steady state (outflow equals inflow) within the next 3 hours without further significant rainfall. At this time, release from the dam will be about 8,000 m3/s. - If there is no further rainfall, it may be possible to then slowly reduce this release overnight. - The dam is expected to peak below 75.5m AHD which is 100mmm 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 re/design operating strategy every 30 minutes. The EO	Situation Report Strategy W4A/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 W4A	DP
	7:30 PM	Doug Grigg (Wivenhoe Dam) called to report that Wivenhoe Level 74.97mAHD is holding	Correspondence	AN
	8:25 PM	Joe Meisner 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 gates.	Correspondence	AN
	8:30 PM	Doug Grigg (Wivenhoe Dam) called to advise that Wivenhoe's level is 5mm down.	Correspondence	AN
	8:30 PM	Issued Somerset Directive #7. • Fully Open Sluice L at 10.30.	Directive	AN
	8:35 PM	Peter Burrows (Seqwater) called FOC to speak with all duty engineers on the operating strategies for Wivenhoe releases.	Correspondence Strategy W4A	AN

DATE	TIME	ACTION	CATEGORY	INITIALS
	8:55 PM	Peter Burrows (Seqwater) 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
		Drainage Phase		
	9:00 PM	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 Grigg (Wivenhoe Dam) to obtain a current level. EL 74.97 Gates have been raised to 11.5m.	Correspondence	AN
	######	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
	######	Doug Grigg (Wivenhoe Dam) called to report lake level of 74.94mAHD @ 10.30hrs.	Correspondence	AN
	######	Doug Grigg (Wivenhoe Dam) called to report lake level of 74.92mAHD @ 11.00hrs.	Correspondence	AN
	######	Issued Wivenhoe Directive #27 - note directive #28 was a duplicate and not sent • Close Gates 5,1,4,2 and 3 to 10.0 m	Directive	AN
12/01/11	######	JW called Doug Grigg (Wivenhoe Dam) to obtain a current level. EL 74.97 Gates have been raised to 11.5m.	Correspondence	AN
	######	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
	######	Doug Grigg (Wivenhoe Dam) called to report lake level of 74.88mAHD @ 12:30hrs.	Correspondence	AN
	1:00 AM	John Thornton (SunWater) called to provide Energex contact details; Steve, phone number 0418 186 814. Steve indicated that he didn't believe 179 Turbot St would be disconnected from power grid in the morning.	Correspondence	JW
	1:15 AM	RA rang Doug Grigg (Wivenhoe Dam) advising next 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 179 Turbot Street is cut.	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 (BCC) rang enquiring about a release strategy. Advised one will be issued at about 3:00am. Talked about the activities of the last 24 hours.	Correspondence	AN
	3:10 AM	JR rang Mal Lane (NPD) 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 Myatt (SEQWater Mt Crosby WTP) called enquiring about levels at Mt Crosby.	Correspondence	AN
	3:50 AM	RA called Chris Lahey (BoM) advising him that because inflows are not as much as earlier anticipated, the releases from Wivenhoe are less than previously suggested.	Correspondence	AN
	4:05 AM	Ian Douglas, OIC of Lowood Police, rang enquiring about the Wivenhoe fuse plug. JW advised that there is no danger of the fuse plug failing, and that current releases from Wivenhoe Dam are about 4,900 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 5.0 m	Directive	AN
	5:49 AM	**Situation Report 0600 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 m3/s. The release have now been scaled back to 4,300m3/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 m3/s to allow the peak of Lockyer Creek to enter the Brisbane River, after which they will be increased to maximum of 3,500 m3/s. This release will then be maintained to drain the flood storage component within the required 7 days. - Somerset Dam is at 105.10 mAHD and slowly rising. The dam is discharging 1,230 m3/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 flood storage compartment commencing on Thursday. - The combined flood event volume in Somerset and Wivenhoe Dams is estimated to be in excess of 2 million megalitres. - North Pine Dam is currently releasing 105 m3/s through five gates. At 17:00 the lake was 39.78 mAHD. The event has a volume of around 200,000 M/L. The peak discharge from the - 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 FO - The next report will be issued at 09:00 12 January 2011.	Situation Report	RA
	7:15 AM	Issued Wivenhoe Directive #34. • Close Gates 1 and 5 to 3.5 m • Close Gates 2 and 4 to 4.0 m	Directive	KH

DATE	TIME	ACTION	CATEGORY	INITIALS
	7.57 AM	Situation Report 0800 Wed 12/01/2011 Rainfall - 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 105.11 mAHD at 06:00 on 12 January 2011 and the dam is discharging 1,230 m3/s over the spillway. Sluice gates will be utilised to assist the draining of the flood 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 m3/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 m3/s at 07:30 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 3,500 m3/s. This release will then be maintained to drain the flood storage component within the required 7 days. - The combined flood event volume in Somerset and Wivenhoe Dams is estimated to be in excess of 2 million megalitres. North Pine At 07:00 North Pine Dam was 39.78 mAHD falling and releasing about 105 m3/s. North Pine has peaked at 41.11 mAHD at 14:00 on 11 January 1974 with peak release of 2,800 m3/s. Strategy - 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 FO - 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
	######	Issued Somerset Directive #3. • Fully Open Sluice L at 10:30	Directive	KH
	######	Peter Baddiley, Rob Vertessey, Jim Stevenson from BoM visited FOC to liaise with the Duty Engineers.	Correspondence	NGA
	2.15 PM	Issued North Pine Directive #26. • Gate E: Close to increment 1 at 14:15	Directive	NGA
	2:45 PM	Issued North Pine Directive #27. • Gate C: Close to increment 1 at 14:45	Directive	NGA
	3:00 PM	Situation Report 1500 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 fin the next 4 days. Somerset/Wivenhoe - Somerset Dam has peaked at 105.11 mAHD at 06:00 on 12 January 2011. One sluice was opened at 1030 12 January 2011 and the dam is discharging 1,440 m3/s. Sluice gates will be utilised to drain of the flood storage compartment during the next 5 days. - Wivenhoe Dam peaked at 74.97 mAHD at 19:00 on 11 January 2011 with a corresponding discharge of 7,450 m3/s. Wivenhoe Dam was 74.81 m AHD at 15:00 and steady. - The releases from Wivenhoe Dam have been temporarily reduced to 2,500 m3/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 3,500 m3/s. This release will then be maintained to drain the flood storage component within the required 7 days. - The combined flood 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 mAHD falling with all gates open 1 increment, releasing about 60 m3/s. North Pine peaked at 41.11 mAHD at 14:00 on 11 January 1974 with peak Strategy 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 The next report will be issued at 18:00 12 January 2011.	Situation Report	TM
	4.20 PM	Ken Morris (BCC) called FOC and had phone conference with Duty Engs. He was seeking update for briefing with Lord Mayor.	Correspondence	NGA
	6:00 PM	Situation Report 1800 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 fin the next 4 days. Somerset/Wivenhoe - Somerset Dam has peaked at 105.11 mAHD at 06:00 on 12 January 2011. One sluice was opened at 1030 12 January 2011. Somerset Dam was 104.87 mAHD at 1700 12 January 2011 and discharging 1,410 m3/s. Sluice gates will be utilised to drain of the flood storage compartment during the next 5 days. - Wivenhoe Dam peaked at 74.97 mAHD at 19:00 on 11 January 2011 with a corresponding discharge of 7,450 m3/s. Wivenhoe Dam was 74.82 m AHD at 17:00 and steady. - The release from Wivenhoe Dam was reduced to 2,500 m3/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 m3/s. The release is expected to commence Thursday and then be maintained at this level to drain the flood storage component within the required 7 days. The releases will not result in any renewed rises at downstream locations. The combined flood event volume in Somerset and Wivenhoe Dams is estimated to be 2.6 million megalitres.	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 fin the next 4 days. Somerset/Wivenhoe - Somerset Dam peaked at 105.11 mAHD at 06:00 on Wednesday 12 January 2011. The current level is 104.34 mAHD. One sluice was opened at 10:30 on 12 January 2011 and the dam is currently discharging 1,130 m3/s. Sluice gates will be utilised to drain of the flood storage compartment during the next 5 days. - Wivenhoe Dam peaked at 74.97 mAHD at 19:00 on Tuesday 11 January 2011 with a corresponding discharge of 7,450 m3/s. Wivenhoe Dam was 74.72 m AHD at 06:00 and commence to fall slowly. - The releases from Wivenhoe Dam have been temporarily reduced to 2,500 m3/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 Gauge early Thursday morning. Releases from Wivenhoe Dam will be managed to achieve a level four of around 2,500 m3/s	Situation Report	RA
		North Pine At 05:00 North Pine Dam was 39.70 mAHD falling with all gates open 1 increment, releasing about 60 m3/s. North Pine peaked at 41.11 mAHD at 14:00 on Tuesday 11 January 2011 with peak release of 2,800 m3/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 rainfalls and water levels throughout the Brisbane and Pine River catchments and reviewing operating strategy. The FOC will continue to maintain close contact with warning agencies and local councils. - The next report will be issued at 18:00 on Thursday 13 January 2011.	Situation Report	

DATE	TIME	ACTION	CATEGORY	INITIALS
	######	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
	######	Somerset directive #10 issued • Fully Open Sluice K at 13:00.	Directive	JW
	2.15 PM	Phone call from Steve Roso, MBRC. Advice as follows: * damage to Gympie Rd abutments * No evacuations * No suburban flooding * Not aware of any over floor flooding. Pine Shire had 0.75m freeboard	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 (MBRC) was advised that NPD gates 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 5am tomorrow. Water level in North Pine Dam will be frequently monitored against the predictive model results, and gate opening will be adjusted accordingly if required	Correspondence	DP
	8.15 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 3 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				
	2.10 AM	Rob Ayre called Shane Watson to advise commencement of shut down of gates in accordance with Directive #30. Please undertake the following gate operations commencing at 03:15 on Friday 14 January 2011. The interval between gate operations is to be 15 minutes. • Gate A: Close to 1 increment at 03:15 • Gate E: Close to 1 increment at 03:30 • Gate C: Close to 1 increment at 03:45 • Fully Close Gate B at 04:00 • Fully Close Gate D at 04:15 • Fully Close Gate A at 04:30 • Fully Close Gate E at 04:45 • Fully Close Gate C at 05:00	Directive	DP
	5.13 AM	Fax received from North Pine Dam confirming closure of all gates.	Correspondence	DP
	5.15 AM	Rob Ayre called MBRC to advise that North Pine Dam has closed the final gate at 5am.	Correspondence	DP
	5.16 AM	Malcom from North Pine Dam called to confirm that all gates are closed, and Young's Crossing should be passable within 2 hours. Lake Kurwongbah level is 20.43 m.	Correspondence	DP
		Murray Dunstan rang from North Pine. The dam ceased flood operations at 5.00am this morning and fish recovery and clean-up has been completed. Approx. 31 lung fish were rescued. Quite a number of dead lung fish and other species. Erosion damage downstream of the dam is severe with loss of vegetation, stripped and fallen trees, bank erosion, and many dead fish caught within the root ball of fallen trees. Murray is organising back hoes and front end loader machinery to clear the debris between the NP dam wall and Grant Street.	Correspondance	NGA
15/01/11	2.15 AM	Wivenhoe directive #40 issued • Open Gate 5 from 5.5 metres to 6.0 metres at 02:30.	Directive	KH
	######	Wivenhoe directive #41 issued Open Gate 3 from 6.0m to 6.5m at 10.30.	Directive	AN