

**TABLE 1.1**  
**GTP Groundwater and Surface Water Chemical Monitoring Program**  
**2008 - 2010**

							Proposed 2008/2009 GTP Chemical Monitoring Program						Comments
Chemical Sampling Locations							Analytical Program						
							Volatile CHCs			Semivolatile CHCs			
Plume Label	Location	Well/ Piezometer ID	All well sample port depths (m)	Scheduled Sample Depths (m)	Shallow depths (if app.)	VC SIM analysis sample ports	Quarterly	Annual (Sept 2008, Sept 2010 etc)	Biennial (Sept 2009, Sept 2011 etc)	Quarterly	Annual (Sept 2008, Sept 2010 etc)	Biennial (Sept 2009, Sept 2011 etc)	
<b>Southern Plumes</b>													
S1/S2	RailCorp	BP95	3, 6, 9, 12, 15, 18, 21	3, 6, 9, 12, 15, 18, 21	3	3	1	7	7		7	7	Quarterly and annual sampling of shallowest port to assess vCHC concentration against CHHRA. Biennial sampling of deeper ports to assess changes in CHC distribution in Rail Corridor and S1/S2. Upgradient of PCA. Additional annual svCHC analysis as per DECC comments August 2008. Annual sampling at 7 ports to commence in September 2009 as per Orca/DECC agreement (October 2008).
S2/S3	Block 1 Southlands	BP23	2, 4, 6, 8, 10, 12, 14, 16, 18, 20	4, 8, 12, 16, 20								5	Biennial sampling to assess changes in CHC distribution at Block 1 Southlands. Upgradient of PCA.
S1/C1	Block 1 Southlands	BP45	2, 4, 6, 8, 10, 12, 14, 16, 18, 20	4, 8, 12, 16, 20					5	5			Biennial sampling to assess changes in CHC distribution at Block 1 Southlands. Upgradient of PCA. Changed to annual monitoring of vCHCs as per DECC comments August 2008.
S1/C1	Block 1 Southlands	BP46	2, 4, 6, 8, 10, 12, 14, 16, 18, 20	4, 8, 12, 16, 20					5	5			Biennial sampling to assess changes in CHC distribution at Block 1 Southlands. Upgradient of PCA. Changed to annual monitoring of vCHCs as per DECC comments August 2008.
S1/S2	Block 1 Southlands	BP47	2, 4, 6, 8, 10, 12, 14, 16, 18, 20	4, 8, 12, 16, 20								5	Biennial sampling to assess changes in CHC distribution at Block 1 Southlands. Upgradient of PCA.
S2	Block 1 Southlands	BP48	2, 4, 6, 8, 10, 12, 14, 16, 18, 20	4, 8, 12, 16, 20								4	Biennial sampling to assess changes in CHC distribution at Block 1 Southlands. Upgradient of PCA.
S2/S3	Block 1 Southlands	BP49	2, 4, 6, 8, 10, 12, 14, 16, 18, 20	4, 8, 12, 16, 20								4	Biennial sampling to assess changes in CHC distribution at Block 1 Southlands. Upgradient of PCA.
S2/S3	Block 1 Southlands	BP50	2, 4, 6, 8, 10, 12, 14, 16, 18, 20	6, 8, 12, 16, 20								5	Biennial sampling to assess changes in CHC distribution at Block 1 Southlands. Upgradient of PCA.
S1/C1	Block 1 Southlands	WG226S	(1-4)	(1-4)				1	1				New to program. Annual sampling of shallowest well to assess vCHC concentration against CHHRA and assess shallow groundwater adjacent to Springvale Drain.
S1/S2	Block 1 Southlands	WG225S	(1-4)	(1-4)				1	1				New to program. Annual sampling of shallowest well to assess vCHC concentration against CHHRA and assess shallow groundwater adjacent to Springvale Drain.
S2/S3	Block 1 Southlands	WG224S	(1-4)	(1-4)				1	1				New to program. Annual sampling of shallowest well to assess vCHC concentration against CHHRA and assess shallow groundwater adjacent to Springvale Drain.
S3	Block 1 Southlands	BP51	3, 6, 9, 12, 15, 18, 21	6, 9, 12, 15, 21								5	Biennial sampling to assess changes in CHC distribution at Block 1 Southlands. Upgradient of PCA.
S3	Botany Road	WG23S/ WG75I	4-6, 12-15	4-6, 12-15	WG23S	WG23S	1	2	2		2	2	Quarterly sampling of shallowest port to assess vCHC concentration against CHHRA. Annual sampling of deeper well to assess changes in CHC distribution on periphery of S2/S3 Plumes. Additional VC-SIM analysis and annual svCHCs analysis included as per DECC comments (August 2008).
S2/S3	Discovery Cove	BP61	4, 6, 8, 10, 12, 14, 16, 18, 20	4, 8, 12, 16, 20	4	4	1	5	5		5	5	Quarterly sampling of shallowest port to assess vCHC concentration against CHHRA. Annual sampling of deeper ports to assess changes in CHC distribution. Upgradient of SCA. Additional annual svCHC analysis as per DECC comments August 2008.
S2/S3	Discovery Cove	BP114	2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24	4,6,10,16,20	4	4	1	5	5			5	Quarterly sampling of shallowest port to assess vCHC concentration against CHHRA. Annual sampling of deeper ports to assess changes in CHC distribution on periphery of S2/S3 Plumes.
S3	Discovery Cove	BP62	4, 6, 8, 10, 12, 14, 16, 18, 20	4, 8, 12, 16, 20		4		5	5				Annual monitoring to assess changes in vCHC distribution on periphery of S3. Biennial sampling to assess changes in svCHC distribution.
S2/S3/C1	Downgradient of Foreshore Road	BP115	3,5,6,5	3,5,6,5	3	3	3	3	3				Quarterly sampling of shallowest well to assess vCHC concentration against CHHRA. Annual sampling of deeper wells to assess changes in CHC distribution. Between SCA and Botany Bay. Increase in sampling ports for quarterly program as per DECC comments August 2008 and decommissioning of other Penrhyn Estuary monitoring locations.
S2/S3/C1	Downgradient of Foreshore Road	BP108	2.25,3.25,4.25	2.25,3.25,4.25									Quarterly monitoring of water quality parameters to assess salinity of groundwater. Between SCA and Botany Bay. Decommissioned in August 2008 (Port Botany expansion project).
S2/S3/C1	Downgradient of Foreshore Road	BP109	2.25,3.25,4.25	2.25,3.25,4.25									Quarterly monitoring of water quality parameters to assess salinity of groundwater. Between SCA and Botany Bay. Decommissioned in August 2008 (Port Botany expansion project).
S2/S3/C1	Downgradient of Foreshore Road	MWF15S/I/D	S, I, D	S, I, D	(/)		3	3	3				Quarterly monitoring of all wells to assess changes in vCHC distribution.
							<b>10</b>	<b>43</b>	<b>71</b>	<b>0</b>	<b>14</b>	<b>64</b>	

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Chemical Sampling Locations							Analytical Program			Semivolatile CHCs			
							Volatile CHCs			Semivolatile CHCs			
Plume Label	Location	Well/ Piezometer ID	All well sample port depths (m)	Scheduled Sample Depths (m)	Shallow depths (if app.)	VC SIM analysis sample ports	Quarterly	Annual (Sept 2008, Sept 2010 etc)	Biennial (Sept 2009, Sept 2011 etc)	Quarterly	Annual (Sept 2008, Sept 2010 etc)	Biennial (Sept 2009, Sept 2011 etc)	
<b>Central EDC Plume</b>													
C1	BIP	BP91	2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30	6, 10, 16, 20, 24, 26, 28, 30				8	8			8	Annual monitoring to assess changes in CHC distribution within C1 Source Area. Upgradient of BIP line.
C1	BIP	BP07	???	6, 8, 10, 12, 14				5	5			5	Annual monitoring to assess changes in CHC distribution within C1 Plume. Upgradient of BIP line.
N4/N5/C1	Downgradient HCB Drum Store	BP80	3, 6, 9, 12, 15, 18, 21, 24, 27, 30	6, 15, 18, 24, 30				5	5			5	Annual monitoring to assess changes in CHC distribution within N4/N5/C1 Plume. Upgradient of BIP line.
C1	Nant Street Tank Farm	BP06	???	6, 10, 12, 16, 18					5				Biennial monitoring to assess changes in CHC distribution within C1 Plume. Upgradient of PCA.
C1	Block 2 Southlands	BP02	4, 6, 8, 12, 14, 16, 18, 20, 22, 24, 26	8, 12, 14, 16, 20				5	5			5	Biennial monitoring to assess changes in CHC distribution within C1 Plume at Block 2 Southlands. Upgradient of PCA. Changed to annual monitoring of vCHCs as per DECC comments August 2008.
C1/S1	Block 2 Southlands	BP03	4, 6, 8, 12, 14, 16, 18, 20, 22, 24, 26	6, 12, 14, 16, 22, 26				6	6		6	6	Biennial monitoring to assess changes in CHC distribution within C1/S1 Plume at Block 2 Southlands. Upgradient of PCA. Changed to annual monitoring of vCHCs and svCHCs as per DECC comments August 2008.
C1	Block 2 Southlands	BP33	4, 6, 8, 12, 14, 16, 18, 20	8, 12, 14, 16, 18				5	5				Biennial monitoring to assess changes in CHC distribution within C1 Plume at Block 2 Southlands. Upgradient of PCA. Changed to annual monitoring of vCHCs as per DECC comments August 2008.
C1	Block 2 Southlands	BP21	4, 6, 8, 12, 14, 16, 18, 20	8, 12, 14, 16, 18				5	5				Biennial monitoring to assess changes in CHC distribution within C1 Plume at Block 2 Southlands. Upgradient of PCA. Changed to annual monitoring of vCHCs as per DECC comments August 2008.
C1/S1	Block 2 Southlands	WG74S/I/D	(4-7) (14-17) (27-30)	(4-7) (14-17) (27-30)					3			3	Biennial monitoring to assess changes in CHC distribution within C1/S1 Plumes at Block 2 Southlands. Upgradient of PCA.
C1/N5	Greenfield Street	BP41	2, 4, 8, 12, 14, 16, 18, 20	2, 4, 8, 12, 14, 16, 18	2	2	3	7	7				Quarterly sampling of shallowest port for comparison to CHHRA. Annual sampling of deeper ports to assess changes in C1/N5 Plume distribution. Upgradient of SCA. Additional shallow ports 4 and 8 m added to quarterly monitoring round as per DECC comments August 2008.
C1/S1	ING Property - Botany Road	BP59	2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30	4, 8, 12, 16, 18, 20, 24, 30	4	4	3	6	8			8	Quarterly sampling of shallowest port for comparison against CHHRA. Annual sampling of deeper ports to assess changes in C1/S1 Plume distribution. Upgradient of SCA. Additional shallow ports 8 and 12 m added to quarterly monitoring round as per DECC comments August 2008. Additional VC SIM analysis included as per DECC comments (August 2008).
C1	Bayview Towers - Botany Road	BP76	2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30	4, 6, 10, 14, 18, 22, 26	4	4	1	7	7				Quarterly sampling of shallowest port for comparison to CHHRA. Annual sampling of deeper ports to assess changes in C1 Plume distribution. Regular monitoring of locations BP59, BP60 and BP77 in vicinity. Upgradient of SCA. Additional VC SIM analysis included as per DECC comments (August 2008).
C1/S1	Botany Golf Course	BP60	4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28	4, 6, 10, 14, 18, 22, 26	4	4	1	7	7			7	Quarterly sampling of shallowest port for comparison to CHHRA. Annual sampling of deeper ports to assess changes in C1/S1 Plume distribution. Upgradient of SCA. <b>March quarterly to include sampling at all ports as per DECC comments August 2008.</b>
S1/C1	Botany Golf Course	WG154S/ WG154D	(4-7) and (17-20)	(4-7) and (17-20)	WG154S	WG154S	1	2	2		2	2	Quarterly sampling of shallowest well for comparison against CHHRA. Annual sampling of deeper ports to assess changes in C1/S1 Plume distribution. Upgradient of SCA. Additional annual svCHC analysis as per DECC comments August 2008.
C1	Botany Golf Course	BP77	2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30	4, 6, 10, 14, 18, 22, 28	4	4	1	7	7				Quarterly sampling of shallowest well for comparison against CHHRA. Annual sampling of deeper ports to assess changes in C1 Plume distribution. Upgradient of SCA. <b>March quarterly to include sampling at all ports as per DECC comments August 2008.</b>
							<b>10</b>	<b>75</b>	<b>85</b>	<b>0</b>	<b>8</b>	<b>49</b>	

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							Volatile CHCs			Semivolatile CHCs			
Plume Label	Location	Well/ Piezometer ID	All well sample port depths (m)	Scheduled Sample Depths (m)	Shallow depths (if app.)	VC SIM analysis sample ports	Quarterly	Annual (Sept 2008, Sept 2010 etc)	Biennial (Sept 2009, Sept 2011 etc)	Quarterly	Annual (Sept 2008, Sept 2010 etc)	Biennial (Sept 2009, Sept 2011 etc)	
<b>Northern Plumes</b>													
-	North of Plant Site - Collins St	BP87	3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33	6, 9, 15, 18, 27, 30		6			6				Biennial monitoring to assess changes in vCHC concentrations.
N1	Northwest of Plant Site - Queen St	BP86	3, 6, 9, 12, 15, 18, 21	3, 6, 9, 12, 15, 18		3			6				Biennial monitoring to assess changes in vCHC concentrations.
-	Pagewood Public School	BP85	3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39	6, 9, 12, 18, 24, 36		6			6				Biennial monitoring to assess changes in vCHC concentrations.
N1/N2	Pater Street	BP110	3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42	3, 6, 12, 21, 27, 33, 39	3	3			1	7			Annual sampling of shallow groundwater and biennial sampling of the deeper aquifer to assess changes in vCHC distribution within the N1/N2 Plumes downgradient of BIP. Additional VC SIM analysis included as per DECC comments (August 2008).
N4	SRA/Tank Farm	WG68I/ WG68D	(4-7) (10.5-13.5) (26-29)	(4-7) (10.5-13.5) (26-29)					2	2		2	Annual sampling to assess changes in vCHC distribution within the N4/N5 Plumes downgradient of BIP.
N4	SRA/Tank Farm	WG227S	(1-4)	(1-4)	WG227S		1	1	1			1	New to program - replaces WG41S. Quarterly sampling to assess vCHC concentrations adjacent to Springvale Drain. Biennial monitoring of svCHCs.
N3	Mobil Terminal Carpark	WG234S/ WG234I/ WG234D	(6-9) (15-18) (25-28)	(6-9) (15-18) (25-28)	WG234S	WG234S	1	3	3			3	New to program - replaces WG86. Quarterly monitoring of vCHCs in shallowest well for comparison to CHHRA. Annual sampling of vCHCs in deeper wells to assess changes in vCHC distribution within the N3 Plume downgradient of BIP. Biennial monitoring of svCHCs.
N1	Stephen Road	WG231S/ WG231I/ WG231D	(8-11) (16-19) (28-31)	(8-11) (16-19) (28-31)	WG231S	WG231S	1	3	3				New to program - replaces BP78. Quarterly sampling of shallowest well for comparison to CHHRA. Annual sampling of deeper wells to assess changes in vCHC distribution within the N1 Plume downgradient of BIP.
N1	Nuplex	WG229S/ WG229I/ WG229D	(8-11) (19-22) (26.5-29.5)	(8-11) (19-22) (26.5-29.5)	WG229S	WG229S	1	3	3				New to program - replaces BP04. Quarterly monitoring of vCHCs in shallowest well for comparison to CHHRA. Annual monitoring of vCHCs in deeper wells to assess changes in vCHC distribution within the N1 Plume downgradient of BIP.
N2/N3	Nuplex	WG233S/ WG233I/ WG233D	(8-11) (19-22) (29-32)	(8-11) (19-22) (29-32)	WG233S	WG233S	1	3	3				New to program - replaces BP52. Quarterly monitoring of vCHCs in shallowest well for comparison to CHHRA. Annual monitoring of vCHCs in deeper wells to assess changes in vCHC distribution within the N2/N3 Plumes downgradient of BIP. Additional VC SIM analysis included as per DECC comments (August 2008).
N1/N2	Nuplex	WG230S/ WG230I/ WG230D	(8-11) (18-21) (29.5-32.5)	(8-11) (18-21) (29.5-32.5)					3				New to program - replaces BP53. Biennial monitoring to assess changes in vCHC distribution within the N1/N2 Plumes downgradient of BIP. Quarterly monitoring of WG229S and WG233S considered to be sufficient to assess water quality in this area.
N1	Wiggins St/Trevelyan St (Banksmeadow PS)	BP54	3, 6, 9, 12, 15, 18, 21, 24, 27	6, 12, 21, 24, 27	6	6	1	5	5				Quarterly monitoring of vCHCs in shallowest port for comparison to CHHRA. Annual monitoring of vCHCs in deeper ports to assess changes in N1 Plume distribution.
N1	Banksmeadow PS	WG72S/ WG72I/ WG72D	(15-18) (21-24) (29-32)	(15-18) (21-24) (29-32)		WG72S		3	3				Annual monitoring of vCHCs to assess changes in N1 Plume distribution.
N2/N3	Australand access road (Fletcher's property) downgradient of rail corridor.	BP111	3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42	3, 6, 12, 18, 24, 30, 39	3	3	1	1	7			7	Annual monitoring of vCHC in shallowest port for comparison to CHHRA. Biennial monitoring of CHCs in deeper ports to assess changes in N2/N3 Plume distribution downgradient of BIP. Additional VC SIM analysis included as per DECC comments (August 2008).
N3/N4/N5	Northern boundary of Mobil property.	BP112	2, 5, 8, 11, 14, 17	2, 8, 11, 14, 17					5			5	Biennial monitoring of CHCs to assess changes in N3/N4/N5 Plume distribution.
N3/N4/N5	Northern boundary of Mobil property.	WG236	(18.5-21.5)	(18.5-21.5)					1			1	New to program - deeper well to supplement BP112. Biennial monitoring to assess changes in vCHC distribution within the N3/N4/N5 Plumes downgradient of BIP.
N3/N4/N5	Greenfield Street - downgradient Solvay property McPherson Street.	BP113	3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42	3, 6, 15, 18, 24, 30, 36	3	3	1	7	7	7		7	Quarterly monitoring of vCHCs in shallowest port for comparison against CHHRA. Annual monitoring of vCHCs in deeper ports to assess changes in N3/N4/N5 Plume distribution. Upgradient of SCA. Biennial monitoring of svCHCs. Additional annual svCHC analysis as per DECC comments August 2008.
N3	McPherson Street	BP55	3, 6, 9, 12, 15, 18, 21, 24, 27	6, 12, 18, 24, 27	6	6		1	5			5	Annual monitoring of vCHCs in shallowest port for comparison to CHHRA. Biennial monitoring of CHCs in deeper ports to assess changes in N3 Plume distribution in region of the west of PCA. Additional VC SIM analysis included as per DECC comments (August 2008).
N2	McPherson Street	BP56	3, 6, 9, 12, 15, 18, 21, 24, 27, 30	6, 12, 18, 24, 27			1	5	5			5	Quarterly monitoring of vCHCs in shallowest port for comparison to CHHRA. Annual monitoring of vCHCs in deeper ports to assess changes in N2 Plume distribution in region of the west of PCA. Biennial monitoring of svCHCs.

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N1/N2	Stephen Road/Botany Road (Department of Defence)	BP89	3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39	6, 12, 18, 21, 24, 27, 30	6	6	1	7	7				Quarterly monitoring of vCHCs in shallowest port for comparison to CHHRA. Annual monitoring of vCHCs in deeper ports to assess changes in N1/N2 Plume distribution.
N1	Fremlin Street	BP57	3, 6, 9, 12, 15, 18, 21, 24, 27, 30	3, 6, 12, 18, 24, 27	3	3	1	6	6				Quarterly monitoring of vCHCs in shallowest port for comparison to CHHRA. Annual monitoring of vCHCs in deeper ports to assess changes in N1 Plume distribution.
N2/N3	Botany Golf Course	BP58	3, 6, 9, 18, 24, 27	3, 6, 9, 18, 24, 27	3	3	1	6	6				Quarterly monitoring of vCHCs in shallowest port for comparison to CHHRA. Annual monitoring of vCHCs in deeper ports to assess changes in N2/N3 Plume distribution. Upgradient of SCA.
N2/N3	Botany Golf Course	WG88I	12-18m	12-18m				1	1				Annual monitoring of vCHCs to supplement monitoring at BP58. Upgradient of SCA.
N2	Offsite – Botany Golf Course	BP72	1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29	3, 5, 9, 15, 19, 23	3	3	1	6	6				Quarterly monitoring of vCHCs in shallowest port for comparison to CHHRA. Annual monitoring of vCHCs in deeper ports to assess changes in N2 Plume distribution.
N1/N2	Foreshore Road	BP116	3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39	6, 9, 15, 21, 24, 30, 36		6			7				Biennial monitoring of CHCs to assess vCHC concentrations at the periphery of the N1/N2 Plumes upgradient of Botany Bay.
N1	Foreshore Road	WG76S/ WG76D	(4-7) (27-30)	(4-7) (27-30)		WG76S			2				Biennial monitoring of CHCs to assess vCHC concentrations at the periphery of the N1 Plume upgradient of Botany Bay.
							<b>13</b>	<b>64</b>	<b>116</b>	<b>0</b>	<b>7</b>	<b>36</b>	
<b>Other Areas</b>													
-	Chlorine Plant	MWC10S/ID	(6-9) (9-12) (18-21)	(6-9) (9-12) (18-21)		MWC10S			3			3	Biennial monitoring of CHCs.
-	McPherson St	WG30/ MCW12D	(4 - 7) (11-14)	(4 - 7) (11-14)		WG30		2	2			2	Biennial monitoring to assess CHC concentrations to the east of Southern Plumes.
							<b>0</b>	<b>2</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>5</b>	

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							Quarterly	Annual (Sept 2008, Sept 2010 etc)	Biennial (Sept 2009, Sept 2011 etc)	Quarterly	Annual (Sept 2008, Sept 2010 etc)	Biennial (Sept 2009, Sept 2011 etc)	
<b>Penrhyn Estuary</b>													
S2/S3	Offsite - Penrhyn Estuary	BP01		0.75, 1.25, 2, 6, 10	0.75	0.75	5	5	5			5	Quarterly monitoring of vCHCs in shallowest port (0.75 m) for assessment against the CHHRA. Annual monitoring of deeper ports to assess changes in S1/S2/S3 Plume distribution. Biennial monitoring of svCHCs. Increase in sampling ports for quarterly program as per DECC comments August 2008 and decommissioning of other Penrhyn Estuary monitoring locations.
S2/S3	Central mudflat - Middle Estuary	BP42*, BP43*		0.1, 0.5, 2.0	0.1	0.1	6	18	18			3	Quarterly monitoring of vCHCs in shallowest port (0.1 m) at high/low tides for assessment against the CHHRA. Annual monitoring of 0.1, 0.5 and 2.0 m ports. Biennial monitoring of svCHCs. Due to be decommissioned August 2008 (Port Botany expansion project). BP44 was decommissioned prior to September 2008 sampling. Continued sampling of ports until locations have been removed due to the Port Botany expansion.
S1/C1	Northwestern mudflat - Middle Estuary	BP64*, BP65*		0.1, 0.5, 2.0	0.1	0.1	6	18	18			3	Quarterly monitoring of vCHCs in shallowest port (0.1 m) at high/low tides for assessment against the CHHRA. Annual monitoring of 0.1, 0.5 and 2.0 m ports. Biennial monitoring of svCHCs. Due to be decommissioned August 2008 (Port Botany expansion project). BP66 was decommissioned prior to September 2008 sampling. Continued sampling of ports until locations have been removed due to the Port Botany expansion.
							17	41	41	0	0	11	
<b>Surface Water</b>													
Springvale Drain	Upstream of Orica Stormwater Pipe	SW046				SW046	1	1	1			1	Quarterly monitoring of vCHCs for assessment against the CHHRA. Biennial monitoring of svCHCs.
Springvale Drain	Realignment - Springvale Drain Outlet	SW049				SW049	1	1	1			1	Quarterly monitoring of vCHCs. Biennial monitoring of svCHCs.
Springvale Drain	McPherson Street	SW005				SW005	1	1	1			1	Quarterly monitoring of vCHCs for assessment against the CHHRA. Biennial monitoring of svCHCs.
Springvale Drain	Penrhyn Estuary Outlet	SW031*				SW031	2	2	2			2	Quarterly monitoring of vCHCs for assessment against the CHHRA. Biennial monitoring of svCHCs.
Springvale Drain	Penrhyn Estuary SVD channel	SW030				SW030	1	1	1			1	Quarterly monitoring of vCHCs. Biennial monitoring of svCHCs.
Penrhyn Estuary	Old Boat Ramp	SW028*				SW028	2	2	2			2	Quarterly monitoring of vCHCs for assessment against the CHHRA. Biennial monitoring of svCHCs.
Penrhyn Estuary	Opposite Old Boat Ramp	SW060				SW060	1	1	1			1	Quarterly monitoring of vCHCs for assessment against the CHHRA. Biennial monitoring of svCHCs.
Penrhyn Estuary	New Boat Ramp	SW048*				SW048	2	2	2			2	Quarterly monitoring of vCHCs for assessment against the CHHRA. Biennial monitoring of svCHCs.
Botany Golf Course	Pond in Botany Golf Course	SW066				SW066		1	1				Biannual monitoring of vCHCs. Monitoring frequency to be reviewed pending CHC concentrations detected during first two sampling events.
Floodvale Drain	Upstream Southlands	SW052				SW052	1	1	1			1	Quarterly monitoring of vCHCs. Biennial monitoring of svCHCs.
Floodvale Drain	McPherson Street	SW053				SW053	1	1	1			1	Quarterly monitoring of vCHCs. Biennial monitoring of svCHCs.
Penrhyn Estuary	Floodvale Drain Outlet	SW029*				SW029	2	2	2			2	Quarterly monitoring of vCHCs for assessment against the CHHRA. Biennial monitoring of svCHCs.
							15	16	16	0	0	15	
							65	241	334	0	29	180	

\* Samples to be collected at both high tide and low tide  
note: vCHC = volatile chlorinated hydrocarbon compounds; svCHC = semi-volatile chlorinated hydrocarbon compounds

**TABLE 1.1**  
**GTP Groundwater and Surface Water Chemical Monitoring Program**  
**2008 - 2010**

							Proposed 2008/2009 GTP Chemical Monitoring Program						Comments
Chemical Sampling Locations							Analytical Program						
							Volatile CHCs			Semivolatile CHCs			
Plume Label	Location	Well/ Piezometer ID	All well sample port depths (m)	Scheduled Sample Depths (m)	Shallow depths (if app.)	VC SIM analysis sample ports	Quarterly	Annual (Sept 2008, Sept 2010 etc)	Biennial (Sept 2009, Sept 2011 etc)	Quarterly	Annual (Sept 2008, Sept 2010 etc)	Biennial (Sept 2009, Sept 2011 etc)	
<b>Southern Plumes</b>													
S1/S2	RailCorp	BP95	3, 6, 9, 12, 15, 18, 21	3, 6, 9, 12, 15, 18, 21	3	3	1	7	7		7	7	Quarterly and annual sampling of shallowest port to assess vCHC concentration against CHHRA. Biennial sampling of deeper ports to assess changes in CHC distribution in Rail Corridor and S1/S2. Upgradient of PCA. Additional annual svCHC analysis as per DECC comments August 2008. Annual sampling at 7 ports to commence in September 2009 as per Orca/DECC agreement (October 2008).
S2/S3	Block 1 Southlands	BP23	2, 4, 6, 8, 10, 12, 14, 16, 18, 20	4, 8, 12, 16, 20								5	Biennial sampling to assess changes in CHC distribution at Block 1 Southlands. Upgradient of PCA.
S1/C1	Block 1 Southlands	BP45	2, 4, 6, 8, 10, 12, 14, 16, 18, 20	4, 8, 12, 16, 20				5	5			5	Biennial sampling to assess changes in CHC distribution at Block 1 Southlands. Upgradient of PCA. Changed to annual monitoring of vCHCs as per DECC comments August 2008.
S1/C1	Block 1 Southlands	BP46	2, 4, 6, 8, 10, 12, 14, 16, 18, 20	4, 8, 12, 16, 20				5	5			5	Biennial sampling to assess changes in CHC distribution at Block 1 Southlands. Upgradient of PCA. Changed to annual monitoring of vCHCs as per DECC comments August 2008.
S1/S2	Block 1 Southlands	BP47	2, 4, 6, 8, 10, 12, 14, 16, 18, 20	4, 8, 12, 16, 20								5	Biennial sampling to assess changes in CHC distribution at Block 1 Southlands. Upgradient of PCA.
S2	Block 1 Southlands	BP48	2, 4, 6, 8, 10, 12, 14, 16, 18, 20	4, 8, 12, 16, 20								4	Biennial sampling to assess changes in CHC distribution at Block 1 Southlands. Upgradient of PCA.
S2/S3	Block 1 Southlands	BP49	2, 4, 6, 8, 10, 12, 14, 16, 18, 20	4, 8, 12, 16, 20								4	Biennial sampling to assess changes in CHC distribution at Block 1 Southlands. Upgradient of PCA.
S2/S3	Block 1 Southlands	BP50	2, 4, 6, 8, 10, 12, 14, 16, 18, 20	6, 8, 12, 16, 20								5	Biennial sampling to assess changes in CHC distribution at Block 1 Southlands. Upgradient of PCA.
S1/C1	Block 1 Southlands	WG226S	(1-4)	(1-4)				1	1				New to program. Annual sampling of shallowest well to assess vCHC concentration against CHHRA and assess shallow groundwater adjacent to Springvale Drain.
S1/S2	Block 1 Southlands	WG225S	(1-4)	(1-4)				1	1				New to program. Annual sampling of shallowest well to assess vCHC concentration against CHHRA and assess shallow groundwater adjacent to Springvale Drain.
S2/S3	Block 1 Southlands	WG224S	(1-4)	(1-4)				1	1				New to program. Annual sampling of shallowest well to assess vCHC concentration against CHHRA and assess shallow groundwater adjacent to Springvale Drain.
S3	Block 1 Southlands	BP51	3, 6, 9, 12, 15, 18, 21	6, 9, 12, 15, 21								5	Biennial sampling to assess changes in CHC distribution at Block 1 Southlands. Upgradient of PCA.
S3	Botany Road	WG23S/ WG75I	4-6, 12-15	4-6, 12-15	WG23S	WG23S	1	2	2			2	Quarterly sampling of shallowest port to assess vCHC concentration against CHHRA. Annual sampling of deeper well to assess changes in CHC distribution on periphery of S2/S3 Plumes. Additional VC-SIM analysis and annual svCHCs analysis included as per DECC comments (August 2008).
S2/S3	Discovery Cove	BP61	4, 6, 8, 10, 12, 14, 16, 18, 20	4, 8, 12, 16, 20	4	4	1	5	5			5	Quarterly sampling of shallowest port to assess vCHC concentration against CHHRA. Annual sampling of deeper ports to assess changes in CHC distribution. Upgradient of SCA. Additional annual svCHC analysis as per DECC comments August 2008.
S2/S3	Discovery Cove	BP114	2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24	4,6,10,16,20	4	4	1	5	5			5	Quarterly sampling of shallowest port to assess vCHC concentration against CHHRA. Annual sampling of deeper ports to assess changes in CHC distribution on periphery of S2/S3 Plumes.
S3	Discovery Cove	BP62	4, 6, 8, 10, 12, 14, 16, 18, 20	4, 8, 12, 16, 20		4		5	5			5	Annual monitoring to assess changes in vCHC distribution on periphery of S3. Biennial sampling to assess changes in svCHC distribution.
S2/S3/C1	Downgradient of Foreshore Road	BP115	3,5,6,5	3,5,6,5	3	3	3	3	3				Quarterly sampling of shallowest well to assess vCHC concentration against CHHRA. Annual sampling of deeper wells to assess changes in CHC distribution. Between SCA and Botany Bay. Increase in sampling ports for quarterly program as per DECC comments August 2008 and decommissioning of other Penrhyn Estuary monitoring locations.
S2/S3/C1	Downgradient of Foreshore Road	BP108	2.25,3.25,4.25	2.25,3.25,4.25									Quarterly monitoring of water quality parameters to assess salinity of groundwater. Between SCA and Botany Bay. Decommissioned in August 2008 (Port Botany expansion project).
S2/S3/C1	Downgradient of Foreshore Road	BP109	2.25,3.25,4.25	2.25,3.25,4.25									Quarterly monitoring of water quality parameters to assess salinity of groundwater. Between SCA and Botany Bay. Decommissioned in August 2008 (Port Botany expansion project).
S2/S3/C1	Downgradient of Foreshore Road	MWF15S/I/D	S, I, D	S, I, D	(/)		3	3	3				Quarterly monitoring of all wells to assess changes in vCHC distribution.
							<b>10</b>	<b>43</b>	<b>71</b>	<b>0</b>	<b>14</b>	<b>64</b>	

**TABLE 1.1**  
**GTP Groundwater and Surface Water Chemical Monitoring Program**  
**2008 - 2010**

							Proposed 2008/2009 GTP Chemical Monitoring Program						Comments
Chemical Sampling Locations							Analytical Program			Semivolatile CHCs			
							Volatile CHCs			Semivolatile CHCs			
Plume Label	Location	Well/ Piezometer ID	All well sample port depths (m)	Scheduled Sample Depths (m)	Shallow depths (if app.)	VC SIM analysis sample ports	Quarterly	Annual (Sept 2008, Sept 2010 etc)	Biennial (Sept 2009, Sept 2011 etc)	Quarterly	Annual (Sept 2008, Sept 2010 etc)	Biennial (Sept 2009, Sept 2011 etc)	
<b>Central EDC Plume</b>													
C1	BIP	BP91	2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30	6, 10, 16, 20, 24, 26, 28, 30				8	8			8	Annual monitoring to assess changes in CHC distribution within C1 Source Area. Upgradient of BIP line.
C1	BIP	BP07	???	6, 8, 10, 12, 14				5	5			5	Annual monitoring to assess changes in CHC distribution within C1 Plume. Upgradient of BIP line.
N4/N5/C1	Downgradient HCB Drum Store	BP80	3, 6, 9, 12, 15, 18, 21, 24, 27, 30	6, 15, 18, 24, 30				5	5			5	Annual monitoring to assess changes in CHC distribution within N4/N5/C1 Plume. Upgradient of BIP line.
C1	Nant Street Tank Farm	BP06	???	6, 10, 12, 16, 18					5				Biennial monitoring to assess changes in CHC distribution within C1 Plume. Upgradient of PCA.
C1	Block 2 Southlands	BP02	4, 6, 8, 12, 14, 16, 18, 20, 22, 24, 26	8, 12, 14, 16, 20				5	5			5	Biennial monitoring to assess changes in CHC distribution within C1 Plume at Block 2 Southlands. Upgradient of PCA. Changed to annual monitoring of vCHCs as per DECC comments August 2008.
C1/S1	Block 2 Southlands	BP03	4, 6, 8, 12, 14, 16, 18, 20, 22, 24, 26	6, 12, 14, 16, 22, 26				6	6		6	6	Biennial monitoring to assess changes in CHC distribution within C1/S1 Plume at Block 2 Southlands. Upgradient of PCA. Changed to annual monitoring of vCHCs and svCHCs as per DECC comments August 2008.
C1	Block 2 Southlands	BP33	4, 6, 8, 12, 14, 16, 18, 20	8, 12, 14, 16, 18				5	5				Biennial monitoring to assess changes in CHC distribution within C1 Plume at Block 2 Southlands. Upgradient of PCA. Changed to annual monitoring of vCHCs as per DECC comments August 2008.
C1	Block 2 Southlands	BP21	4, 6, 8, 12, 14, 16, 18, 20	8, 12, 14, 16, 18				5	5				Biennial monitoring to assess changes in CHC distribution within C1 Plume at Block 2 Southlands. Upgradient of PCA. Changed to annual monitoring of vCHCs as per DECC comments August 2008.
C1/S1	Block 2 Southlands	WG74S/I/D	(4-7) (14-17) (27-30)	(4-7) (14-17) (27-30)					3			3	Biennial monitoring to assess changes in CHC distribution within C1/S1 Plumes at Block 2 Southlands. Upgradient of PCA.
C1/N5	Greenfield Street	BP41	2, 4, 8, 12, 14, 16, 18, 20	2, 4, 8, 12, 14, 16, 18	2	2	3	7	7				Quarterly sampling of shallowest port for comparison to CHHRA. Annual sampling of deeper ports to assess changes in C1/N5 Plume distribution. Upgradient of SCA. Additional shallow ports 4 and 8 m added to quarterly monitoring round as per DECC comments August 2008.
C1/S1	ING Property - Botany Road	BP59	2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30	4, 8, 12, 16, 18, 20, 24, 30	4	4	3	6	8			8	Quarterly sampling of shallowest port for comparison against CHHRA. Annual sampling of deeper ports to assess changes in C1/S1 Plume distribution. Upgradient of SCA. Additional shallow ports 8 and 12 m added to quarterly monitoring round as per DECC comments August 2008. Additional VC SIM analysis included as per DECC comments (August 2008).
C1	Bayview Towers - Botany Road	BP76	2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30	4, 6, 10, 14, 18, 22, 26	4	4	1	7	7				Quarterly sampling of shallowest port for comparison to CHHRA. Annual sampling of deeper ports to assess changes in C1 Plume distribution. Regular monitoring of locations BP59, BP60 and BP77 in vicinity. Upgradient of SCA. Additional VC SIM analysis included as per DECC comments (August 2008).
C1/S1	Botany Golf Course	BP60	4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28	4, 6, 10, 14, 18, 22, 26	4	4	1	7	7			7	Quarterly sampling of shallowest port for comparison to CHHRA. Annual sampling of deeper ports to assess changes in C1/S1 Plume distribution. Upgradient of SCA. <b>March quarterly to include sampling at all ports as per DECC comments August 2008.</b>
S1/C1	Botany Golf Course	WG154S/ WG154D	(4-7) and (17-20)	(4-7) and (17-20)	WG154S	WG154S	1	2	2		2	2	Quarterly sampling of shallowest well for comparison against CHHRA. Annual sampling of deeper ports to assess changes in C1/S1 Plume distribution. Upgradient of SCA. Additional annual svCHC analysis as per DECC comments August 2008.
C1	Botany Golf Course	BP77	2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30	4, 6, 10, 14, 18, 22, 28	4	4	1	7	7				Quarterly sampling of shallowest well for comparison against CHHRA. Annual sampling of deeper ports to assess changes in C1 Plume distribution. Upgradient of SCA. <b>March quarterly to include sampling at all ports as per DECC comments August 2008.</b>
							10	75	85	0	8	49	

**TABLE 1.1**  
**GTP Groundwater and Surface Water Chemical Monitoring Program**  
**2008 - 2010**

							Proposed 2008/2009 GTP Chemical Monitoring Program						Comments
Chemical Sampling Locations							Analytical Program			Semivolatile CHCs			
							Volatile CHCs			Semivolatile CHCs			
Plume Label	Location	Well/ Piezometer ID	All well sample port depths (m)	Scheduled Sample Depths (m)	Shallow depths (if app.)	VC SIM analysis sample ports	Quarterly	Annual (Sept 2008, Sept 2010 etc)	Biennial (Sept 2009, Sept 2011 etc)	Quarterly	Annual (Sept 2008, Sept 2010 etc)	Biennial (Sept 2009, Sept 2011 etc)	
<b>Northern Plumes</b>													
-	North of Plant Site - Collins St	BP87	3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33	6, 9, 15, 18, 27, 30		6			6				Biennial monitoring to assess changes in vCHC concentrations.
N1	Northwest of Plant Site - Queen St	BP86	3, 6, 9, 12, 15, 18, 21	3, 6, 9, 12, 15, 18		3			6				Biennial monitoring to assess changes in vCHC concentrations.
-	Pagewood Public School	BP85	3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39	6, 9, 12, 18, 24, 36		6			6				Biennial monitoring to assess changes in vCHC concentrations.
N1/N2	Pater Street	BP110	3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42	3, 6, 12, 21, 27, 33, 39	3	3			1	7			Annual sampling of shallow groundwater and biennial sampling of the deeper aquifer to assess changes in vCHC distribution within the N1/N2 Plumes downgradient of BIP. Additional VC SIM analysis included as per DECC comments (August 2008).
N4	SRA/Tank Farm	WG68I/ WG68D	(4-7) (10.5-13.5) (26-29)	(4-7) (10.5-13.5) (26-29)					2	2		2	Annual sampling to assess changes in vCHC distribution within the N4/N5 Plumes downgradient of BIP.
N4	SRA/Tank Farm	WG227S	(1-4)	(1-4)	WG227S		1	1	1			1	New to program - replaces WG41S. Quarterly sampling to assess vCHC concentrations adjacent to Springvale Drain. Biennial monitoring of svCHCs.
N3	Mobil Terminal Carpark	WG234S/ WG234I/ WG234D	(6-9) (15-18) (25-28)	(6-9) (15-18) (25-28)	WG234S	WG234S	1	3	3			3	New to program - replaces WG86. Quarterly monitoring of vCHCs in shallowest well for comparison to CHHRA. Annual sampling of vCHCs in deeper wells to assess changes in vCHC distribution within the N3 Plume downgradient of BIP. Biennial monitoring of svCHCs.
N1	Stephen Road	WG231S/ WG231I/ WG231D	(8-11) (16-19) (28-31)	(8-11) (16-19) (28-31)	WG231S	WG231S	1	3	3				New to program - replaces BP78. Quarterly sampling of shallowest well for comparison to CHHRA. Annual sampling of deeper wells to assess changes in vCHC distribution within the N1 Plume downgradient of BIP.
N1	Nuplex	WG229S/ WG229I/ WG229D	(8-11) (19-22) (26.5-29.5)	(8-11) (19-22) (26.5-29.5)	WG229S	WG229S	1	3	3				New to program - replaces BP04. Quarterly monitoring of vCHCs in shallowest well for comparison to CHHRA. Annual monitoring of vCHCs in deeper wells to assess changes in vCHC distribution within the N1 Plume downgradient of BIP.
N2/N3	Nuplex	WG233S/ WG233I/ WG233D	(8-11) (19-22) (29-32)	(8-11) (19-22) (29-32)	WG233S	WG233S	1	3	3				New to program - replaces BP52. Quarterly monitoring of vCHCs in shallowest well for comparison to CHHRA. Annual monitoring of vCHCs in deeper wells to assess changes in vCHC distribution within the N2/N3 Plumes downgradient of BIP. Additional VC SIM analysis included as per DECC comments (August 2008).
N1/N2	Nuplex	WG230S/ WG230I/ WG230D	(8-11) (18-21) (29.5-32.5)	(8-11) (18-21) (29.5-32.5)					3				New to program - replaces BP53. Biennial monitoring to assess changes in vCHC distribution within the N1/N2 Plumes downgradient of BIP. Quarterly monitoring of WG229S and WG233S considered to be sufficient to assess water quality in this area.
N1	Wiggins St/Trevelyan St (Banksmeadow PS)	BP54	3, 6, 9, 12, 15, 18, 21, 24, 27	6, 12, 21, 24, 27	6	6	1	5	5				Quarterly monitoring of vCHCs in shallowest port for comparison to CHHRA. Annual monitoring of vCHCs in deeper ports to assess changes in N1 Plume distribution.
N1	Banksmeadow PS	WG72S/ WG72I/ WG72D	(15-18) (21-24) (29-32)	(15-18) (21-24) (29-32)		WG72S		3	3				Annual monitoring of vCHCs to assess changes in N1 Plume distribution.
N2/N3	Australand access road (Fletcher's property) downgradient of rail corridor.	BP111	3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42	3, 6, 12, 18, 24, 30, 39	3	3	1	1	7			7	Annual monitoring of vCHC in shallowest port for comparison to CHHRA. Biennial monitoring of CHCs in deeper ports to assess changes in N2/N3 Plume distribution downgradient of BIP. Additional VC SIM analysis included as per DECC comments (August 2008).
N3/N4/N5	Northern boundary of Mobil property.	BP112	2, 5, 8, 11, 14, 17	2, 8, 11, 14, 17					5			5	Biennial monitoring of CHCs to assess changes in N3/N4/N5 Plume distribution.
N3/N4/N5	Northern boundary of Mobil property.	WG236	(18.5-21.5)	(18.5-21.5)					1			1	New to program - deeper well to supplement BP112. Biennial monitoring to assess changes in vCHC distribution within the N3/N4/N5 Plumes downgradient of BIP.
N3/N4/N5	Greenfield Street - downgradient Solway property McPherson Street.	BP113	3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42	3, 6, 15, 18, 24, 30, 36	3	3	1	7	7	7		7	Quarterly monitoring of vCHCs in shallowest port for comparison against CHHRA. Annual monitoring of vCHCs in deeper ports to assess changes in N3/N4/N5 Plume distribution. Upgradient of SCA. Biennial monitoring of svCHCs. Additional annual svCHC analysis as per DECC comments August 2008.
N3	McPherson Street	BP55	3, 6, 9, 12, 15, 18, 21, 24, 27	6, 12, 18, 24, 27	6	6		1	5			5	Annual monitoring of vCHCs in shallowest port for comparison to CHHRA. Biennial monitoring of CHCs in deeper ports to assess changes in N3 Plume distribution in region of the west of PCA. Additional VC SIM analysis included as per DECC comments (August 2008).
N2	McPherson Street	BP56	3, 6, 9, 12, 15, 18, 21, 24, 27, 30	6, 12, 18, 24, 27			1	5	5			5	Quarterly monitoring of vCHCs in shallowest port for comparison to CHHRA. Annual monitoring of vCHCs in deeper ports to assess changes in N2 Plume distribution in region of the west of PCA. Biennial monitoring of svCHCs.

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**GTP Groundwater and Surface Water Chemical Monitoring Program**  
**2008 - 2010**

							Proposed 2008/2009 GTP Chemical Monitoring Program						Comments
Chemical Sampling Locations							Analytical Program						
							Volatile CHCs			Semivolatile CHCs			
Plume Label	Location	Well/ Piezometer ID	All well sample port depths (m)	Scheduled Sample Depths (m)	Shallow depths (if app.)	VC SIM analysis sample ports	Quarterly	Annual (Sept 2008, Sept 2010 etc)	Biennial (Sept 2009, Sept 2011 etc)	Quarterly	Annual (Sept 2008, Sept 2010 etc)	Biennial (Sept 2009, Sept 2011 etc)	
N1/N2	Stephen Road/Botany Road (Department of Defence)	BP89	3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39	6, 12, 18, 21, 24, 27, 30	6	6	1	7	7				Quarterly monitoring of vCHCs in shallowest port for comparison to CHHRA. Annual monitoring of vCHCs in deeper ports to assess changes in N1/N2 Plume distribution.
N1	Fremlin Street	BP57	3, 6, 9, 12, 15, 18, 21, 24, 27, 30	3, 6, 12, 18, 24, 27	3	3	1	6	6				Quarterly monitoring of vCHCs in shallowest port for comparison to CHHRA. Annual monitoring of vCHCs in deeper ports to assess changes in N1 Plume distribution.
N2/N3	Botany Golf Course	BP58	3, 6, 9, 18, 24, 27	3, 6, 9, 18, 24, 27	3	3	1	6	6				Quarterly monitoring of vCHCs in shallowest port for comparison to CHHRA. Annual monitoring of vCHCs in deeper ports to assess changes in N2/N3 Plume distribution. Upgradient of SCA.
N2/N3	Botany Golf Course	WG88I	12-18m	12-18m				1	1				Annual monitoring of vCHCs to supplement monitoring at BP58. Upgradient of SCA.
N2	Offsite – Botany Golf Course	BP72	1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29	3, 5, 9, 15, 19, 23	3	3	1	6	6				Quarterly monitoring of vCHCs in shallowest port for comparison to CHHRA. Annual monitoring of vCHCs in deeper ports to assess changes in N2 Plume distribution.
N1/N2	Foreshore Road	BP116	3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39	6, 9, 15, 21, 24, 30, 36		6			7				Biennial monitoring of CHCs to assess vCHC concentrations at the periphery of the N1/N2 Plumes upgradient of Botany Bay.
N1	Foreshore Road	WG76S/ WG76D	(4-7) (27-30)	(4-7) (27-30)		WG76S			2				Biennial monitoring of CHCs to assess vCHC concentrations at the periphery of the N1 Plume upgradient of Botany Bay.
							<b>13</b>	<b>64</b>	<b>116</b>	<b>0</b>	<b>7</b>	<b>36</b>	
<b>Other Areas</b>													
-	Chlorine Plant	MWC10S/ID	(6-9) (9-12) (18-21)	(6-9) (9-12) (18-21)		MWC10S			3			3	Biennial monitoring of CHCs.
-	McPherson St	WG30/ MCW12D	(4-7) (11-14)	(4-7) (11-14)		WG30		2	2			2	Biennial monitoring to assess CHC concentrations to the east of Southern Plumes.
							<b>0</b>	<b>2</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>5</b>	

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2008 - 2010

							Proposed 2008/2009 GTP Chemical Monitoring Program						Comments
Chemical Sampling Locations							Analytical Program						
							Volatile CHCs			Semivolatile CHCs			
Plume Label	Location	Well/ Piezometer ID	All well sample port depths (m)	Scheduled Sample Depths (m)	Shallow depths (if app.)	VC SIM analysis sample ports	Quarterly	Annual (Sept 2008, Sept 2010 etc)	Biennial (Sept 2009, Sept 2011 etc)	Quarterly	Annual (Sept 2008, Sept 2010 etc)	Biennial (Sept 2009, Sept 2011 etc)	
<b>Penrhyn Estuary</b>													
S2/S3	Offsite - Penrhyn Estuary	BP01		0.75, 1.25, 2, 6, 10	0.75	0.75	5	5	5			5	Quarterly monitoring of vCHCs in shallowest port (0.75 m) for assessment against the CHHRA. Annual monitoring of deeper ports to assess changes in S1/S2/S3 Plume distribution. Biennial monitoring of svCHCs. Increase in sampling ports for quarterly program as per DECC comments August 2008 and decommissioning of other Penrhyn Estuary monitoring locations.
S2/S3	Central mudflat - Middle Estuary	BP42*, BP43*		0.1, 0.5, 2.0	0.1	0.1	6	18	18			3	Quarterly monitoring of vCHCs in shallowest port (0.1 m) at high/low tides for assessment against the CHHRA. Annual monitoring of 0.1, 0.5 and 2.0 m ports. Biennial monitoring of svCHCs. Due to be decommissioned August 2008 (Port Botany expansion project). BP44 was decommissioned prior to September 2008 sampling. Continued sampling of ports until locations have been removed due to the Port Botany expansion.
S1/C1	Northwestern mudflat - Middle Estuary	BP64*, BP65*		0.1, 0.5, 2.0	0.1	0.1	6	18	18			3	Quarterly monitoring of vCHCs in shallowest port (0.1 m) at high/low tides for assessment against the CHHRA. Annual monitoring of 0.1, 0.5 and 2.0 m ports. Biennial monitoring of svCHCs. Due to be decommissioned August 2008 (Port Botany expansion project). BP66 was decommissioned prior to September 2008 sampling. Continued sampling of ports until locations have been removed due to the Port Botany expansion.
							17	41	41	0	0	11	
<b>Surface Water</b>													
Springvale Drain	Upstream of Orica Stormwater Pipe	SW046				SW046	1	1	1			1	Quarterly monitoring of vCHCs for assessment against the CHHRA. Biennial monitoring of svCHCs.
Springvale Drain	Realignment - Springvale Drain Outlet	SW049				SW049	1	1	1			1	Quarterly monitoring of vCHCs. Biennial monitoring of svCHCs.
Springvale Drain	McPherson Street	SW005				SW005	1	1	1			1	Quarterly monitoring of vCHCs for assessment against the CHHRA. Biennial monitoring of svCHCs.
Springvale Drain	Penrhyn Estuary Outlet	SW031*				SW031	2	2	2			2	Quarterly monitoring of vCHCs for assessment against the CHHRA. Biennial monitoring of svCHCs.
Springvale Drain	Penrhyn Estuary SVD channel	SW030				SW030	1	1	1			1	Quarterly monitoring of vCHCs. Biennial monitoring of svCHCs.
Penrhyn Estuary	Old Boat Ramp	SW028*				SW028	2	2	2			2	Quarterly monitoring of vCHCs for assessment against the CHHRA. Biennial monitoring of svCHCs.
Penrhyn Estuary	Opposite Old Boat Ramp	SW060				SW060	1	1	1			1	Quarterly monitoring of vCHCs for assessment against the CHHRA. Biennial monitoring of svCHCs.
Penrhyn Estuary	New Boat Ramp	SW048*				SW048	2	2	2			2	Quarterly monitoring of vCHCs for assessment against the CHHRA. Biennial monitoring of svCHCs.
Botany Golf Course	Pond in Botany Golf Course	SW066				SW064		1	1				Biannual monitoring of vCHCs. Monitoring frequency to be reviewed pending CHC concentrations detected during first two sampling events.
Floodvale Drain	Upstream Southlands	SW052				SW052	1	1	1			1	Quarterly monitoring of vCHCs. Biennial monitoring of svCHCs.
Floodvale Drain	McPherson Street	SW053				SW053	1	1	1			1	Quarterly monitoring of vCHCs. Biennial monitoring of svCHCs.
Penrhyn Estuary	Floodvale Drain Outlet	SW029*				SW029	2	2	2			2	Quarterly monitoring of vCHCs for assessment against the CHHRA. Biennial monitoring of svCHCs.
							15	16	16	0	0	15	
							65	241	334	0	29	180	

\* Samples to be collected at both high tide and low tide  
note: vCHC = volatile chlorinated hydrocarbon compounds; svCHC = semi-volatile chlorinated hydrocarbon compounds

**TABLE 1.2**  
**GTP Quarterly Hydraulic Containment Water Level Monitoring Locations**  
**September 2008**

Location ID	Location Description	Well Type	Well Construction Type	Easting	Northing	R.L. (AHD)	R.L. (AHD)	Aquifer Layer
				MGA56		(toc)	(ground)	
WG48	BIP	Monitoring Well	50 mm PVC	335237.7	6241969.7	8.55	8.55	1
MWC09D	BIP - Chlor-Alkali plant	Monitoring Well	50 mm PVC	335827.8	6241079.7	11.26	11.39	2B/2C
MWC09S	BIP - Chlor-Alkali plant	Monitoring Well	50 mm PVC	335828.7	6241080.6	11.27	11.38	1
MWC11D	BIP - Chlor-Alkali plant	Monitoring Well	50 mm PVC	335617.7	6240908.2	10.51	10.62	2B/2C
MWC11I	BIP - Chlor-Alkali plant	Monitoring Well	50 mm PVC	335617.9	6240908.9	10.47	10.62	2A
MWC11S	BIP - Chlor-Alkali plant	Monitoring Well	50 mm PVC	335618.1	6240909.5	10.48	10.62	1
WG83I	BIP - EDC Storage Tanks	Monitoring Well	50 mm PVC	335574.2	6241698.8	10.18	10.26	2B
WG83S	BIP - EDC Storage Tanks	Monitoring Well	50 mm PVC	335574.6	6241699.1	10.19	10.25	1
WG49	BIP - Polypropylene Plant	Monitoring Well	50 mm PVC	335406.2	6242115.3	11.82	11.82	1
WG117	BIP - Rosella	Monitoring Well	50 mm PVC	335234.3	6241957.9	9.29	8.71	1
WG124	BIP - Rosella	Monitoring Well	50 mm PVC	335357.5	6241769.7	8.69	8.69	1
WG208D	BIP - Solvents Plant	Monitoring Well	50 mm PVC	335577.9	6241341.6	9.76	--	2C
WG208S	BIP - Solvents Plant	Monitoring Well	50 mm PVC	335577.9	6241341.7	9.74	--	1/2A
WG91S	BIP - Vinyls Plant	Monitoring Well	50 mm PVC	335646.8	6241656.2	10.25	--	1
WG21	Block 1 Southlands	Monitoring Well	50 mm PVC	335314.6	6241083.2	4.08	4.08	1
WG70D	Block 1 Southlands	Monitoring Well	50 mm PVC	335342.2	6241242.8	6.14	5.10	2C
WG82D	Block 1 Southlands	Monitoring Well	50 mm PVC	335235.0	6241322.9	5.93	4.95	2
WG82S	Block 1 Southlands	Monitoring Well	50 mm PVC	335233.5	6241323.0	5.91	4.96	1
WG141	Block 1 Southlands (BP24)	Monitoring Well	50 mm PVC	335354.6	6241161.7	6.68	5.96	2B/2C
WG162D	Block 2 Southlands	Monitoring Well	50 mm PVC	334898.8	6241122.4	4.57	4.62	2C
WG162I	Block 2 Southlands	Monitoring Well	25 mm PVC	334899.3	6241123.4	4.51	4.62	2B
WG162S	Block 2 Southlands	Monitoring Well	25 mm PVC	334899.3	6241123.4	4.55	4.62	2A
WG171I	Block 2 Southlands	Monitoring Well	25 mm PVC	335067.7	6241348.2	4.35	3.63	2A
WG171S	Block 2 Southlands	Monitoring Well	25 mm PVC	335067.7	6241348.2	4.38	3.63	1
WG61	Block 2 Southlands	Monitoring Well	50 mm PVC	334936.6	6241339.3	3.80	3.24	2C
WG64	Block 2 Southlands	Monitoring Well	50 mm PVC	334939.7	6241339.8	3.86	3.31	1
WG200D	HCW Waste Encapsulation	Monitoring Well	25 mm PVC	335644.1	6242357.5	18.78	18.44	2A/2B
WG200S	HCW Waste Encapsulation	Monitoring Well	25 mm PVC	335644.1	6242357.5	18.79	18.44	1
WG202D	HCW Waste Encapsulation	Monitoring Well	25 mm PVC	335793.5	6242151.5	18.68	--	2A/2B
WG202S	HCW Waste Encapsulation	Monitoring Well	25 mm PVC	335793.5	6242151.5	18.87	--	1
WG93D	HCW Waste Encapsulation	Monitoring Well	50 mm PVC	335606.0	6242234.2	13.91	14.01	2A/2B
WG93I	HCW Waste Encapsulation	Monitoring Well	50 mm PVC	335606.1	6242234.2	13.90	14.01	2A
WG93S	HCW Waste Encapsulation	Monitoring Well	50 mm PVC	335606.9	6242234.1	14.80	14.01	1
WG94S	HCW Waste Encapsulation	Monitoring Well	50 mm PVC	335663.1	6242257.5	22.25	21.61	1
WG95S	HCW Waste Encapsulation	Monitoring Well	50 mm PVC	335651.8	6242318.9	22.03	21.42	1
WG96D	HCW Waste Encapsulation	Monitoring Well	50 mm PVC	335544.9	6242305.4	14.79	14.90	2A/2B
WG96I	HCW Waste Encapsulation	Monitoring Well	50 mm PVC	335545.0	6242305.4	14.80	14.90	2A
WG96S	HCW Waste Encapsulation	Monitoring Well	50 mm PVC	335537.8	6242305.0	14.97	--	1
WG41S	Nant St Tank Farm	Monitoring Well	50 mm PVC	335140.7	6241614.0	4.97	4.45	1
WG68D	Nant St Tank Farm	Monitoring Well	50 mm PVC	335114.1	6241643.3	5.39	4.42	2C
WG68I	Nant St Tank Farm	Monitoring Well	50 mm PVC	335114.1	6241646.1	5.48	4.45	2B
WG215D	North-eastern extremities	Monitoring Well	50 mm PVC	336144.4	6241759.7	22.30	22.35	2B/2C
WG216D	North-eastern extremities	Monitoring Well	50 mm PVC	336111.9	6242124.0	19.65	19.73	2B/2C
WG216S	North-eastern extremities	Monitoring Well	50 mm PVC	336111.9	6242123.9	19.64	19.73	1
WG229D	Nuxex	Monitoring Well	32 mm PVC					2C/3
WG229S	Nuxex	Monitoring Well	32 mm PVC					1
WG72D	Offsite - Banksmeadow PS	Monitoring Well	50 mm PVC	334379.8	6241482.1	16.24	15.84	2C/3
WG72I	Offsite - Banksmeadow PS	Monitoring Well	50 mm PVC	334376.6	6241476.4	16.13	15.76	2B
WG72S	Offsite - Banksmeadow PS	Monitoring Well	50 mm PVC	334378.6	6241478.3	16.24	15.82	1
WG155D	Offsite - Discovery Cove	Monitoring Well	50 mm PVC	334984.9	6240800.6	4.01	4.08	2B/2C
WG155S	Offsite - Discovery Cove	Monitoring Well	50 mm PVC	334984.6	6240800.1	4.05	4.12	1
WG228D	Offsite - Pater Street	Monitoring Well	32 mm PVC					2C/3
WG228S	Offsite - Pater Street	Monitoring Well	32 mm PVC					1
WG231D	Offsite - Stephens Road	Monitoring Well	32 mm PVC					2C/3
WG231I	Offsite - Stephens Road	Monitoring Well	32 mm PVC					2A/2B
WG231S	Offsite - Stephens Road	Monitoring Well	32 mm PVC					1

Note: These locations are in addition to GTP transducer and water level logger hydraulic monitoring locations