APPENDIX C
Test Bore Logs
Notes Relating to this Report

GRAPHIC SYMBOLS FOR SOIL & ROCK

SOIL

BITUMINOUS CONCRETE

CONCRETE

TOPSOIL

FILLING

PEAT

CLAY

SILTY CLAY

SILT

SANDY CLAY

GRAVELLY CLAY

SHALY CLAY

CLAYEY SILT

SANDY SILT

SAND

CLAYEY SAND

SILTY SAND

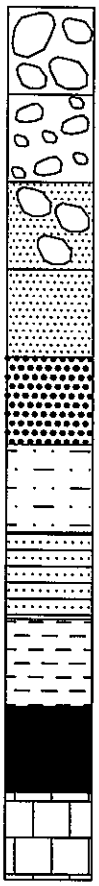
GRAVEL

SANDY GRAVEL

COBBLES/BOULDER

TALUS

SEDIMENTARY ROCK



BOULDER CONGLOMERATE

CONGLOMERATE

CONGLOMERATIC SANDSTONE

SANDSTONE FINE GRAINED

SANDSTONE COARSE GRAINED

SILTSTONE

LAMINITE

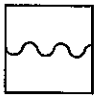
MUDSTONE, CLAYSTONE, SHALE

COAL

LIMESTONE

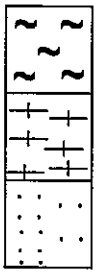
SEAMS

SEAM >10mm



SEAM <10mm

METAMORPHIC ROCK

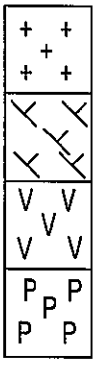


SLATE, PHYLLITE, SCHIST

GNEISS

QUARTZITE

IGNEOUS ROCK



GRANITE

DOLERITE, BASALT

TUFF

PORPHYRY

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 42.5 *
EASTING: 301291
NORTHING: 6245443
DIP/AZIMUTH 90°/--

BORE No: B1
PROJECT No: 71500
DATE: 04 Dec 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
42	0.15	CONCRETE - coarse aggregate, 10mm reo							
		FILLING - brown, sandy silty clay filling, damp, trace rootlets		EA	0.4 0.5		PID<1ppm		
	0.7	CLAY - red brown, silty clay, medium to high plasticity, damp		EA	0.9 1.0		PID<1ppm		
41	1			EA	1.4 1.5		PID<1ppm		
	2			EA	1.9 2.0		PID<1ppm		
40	3			EA	2.9 3.0		PID<1ppm		
	3.0	Bore discontinued at 3.0m - target depth reached							
39	4								
38	5								
37	6								
36	7								
35	8								
34	9								
33									

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** AHP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 3.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: E = Environmental sample. *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 42.5 *
EASTING: 301254
NORTHING: 6245596
DIP/AZIMUTH: 90°/--

BORE No: B2
PROJECT No: 71500
DATE: 04 Dec 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
42	0.15	CONCRETE - coarse aggregate, 10mm reo							
		FILLING - brown, silty clay filling		EA	0.4 0.5		PID<1ppm		
	0.6	CLAY - red brown, silty clay							
41	1			EA	0.9 1.0		PID<1ppm		
				EA	1.4 1.5		PID<1ppm		
40	2			EA	1.9 2.0		PID<1ppm		
	3			EA	2.9 3.0		PID<1ppm		
	3.0	Bore discontinued at 3.0m - target depth reached							
39	4								
38	5								
37	6								
36	7								
35	8								
34	9								
33									

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** AHP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 3.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: E = Environmental sample. Phoenix Aero Club. *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo Ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 38.0 *
EASTING: 301533
NORTHING: 6244976
DIP/AZIMUTH: 90°/--

BORE No: BH1
PROJECT No: 71500
DATE: 27 Nov 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
38	0.3	SILTY CLAY - grey brown, silty clay with organic matter, rootlets and trace gravel		A*	0.1		PID<1ppm		
				A	0.3		PID<1ppm		
37	1	SILTY CLAY - medium plasticity, orange brown, silty clay with trace ironstone gravel, humid			0.5				
				A	1.3		PID<1ppm		
					1.5				
36	2	- moist to wet at 2.0m		A	1.8		PID<1ppm	▼	
	2.0	Bore discontinued at 2.0m - target depth reached			2.0				
35	3								
34	4								
33	5								
32	6								
31	7								
30	8								
29	9								

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** KP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 2.0m

WATER OBSERVATIONS: Free groundwater observed at 2.0m

REMARKS: *Denotes field replicate sample BD3/271109 collected. *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U$_x$	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 38.5 *
EASTING: 301464
NORTHING: 6245018
DIP/AZIMUTH: 90°/--

BORE No: BH2
PROJECT No: 71500
DATE: 27 Nov 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
38	0.3	SILTY CLAY - grey brown, silty clay with some organic matter, rootlets and trace gravel		A	0.1		PID<1ppm		
		SILTY CLAY - medium plasticity, brown silty clay with trace gravel		A	0.3		PID<1ppm		
	1	- moist to wet at 1.0m			0.5				
37	1.2	SILTY CLAY - medium plasticity, orange mottled red, silty clay with trace ironstone gravel		A	1.3		PID<1ppm		
	1.5	Bore discontinued at 1.5m - target depth reached			1.5				
36	2								
35	3								
34	4								
33	5								
32	6								
31	7								
30	8								
29	9								

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** KP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 1.5m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 39.1 *
EASTING: 301436
NORTHING: 6245196
DIP/AZIMUTH: 90°/--

BORE No: BH3
PROJECT No: 71500
DATE: 27 Nov 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
39	0.0	FILLING - grey brown, silty clay filling with some gravel and trace brick fragments, dry		A	0.1		PID<1ppm		
				A	0.3		PID<1ppm		
	0.6	SILTY CLAY - medium plasticity, orange brown mottled grey, silty clay			0.5				
38	1			A	1.3		PID<1ppm		
					1.5				
37	2							▼	
	2.1	SANDY CLAY - yellow brown, fine grained, sandy clay with silt, wet							
36	3			A	2.8		PID<1ppm		
	3.0	Bore discontinued at 3.0m - target depth reached			3.0				
35	4								
34	5								
33	6								
32	7								
31	8								
30	9								

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** KP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 3.0m

WATER OBSERVATIONS: Free groundwater observed at 2.1m

REMARKS: *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 37.8 *
EASTING: 301588
NORTHING: 6244939
DIP/AZIMUTH: 90°/--

BORE No: BH4
PROJECT No: 71500
DATE: 27 Nov 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
37	0.0	FILLING - brown, silty filling with trace fine grained sand, organic matter, rootlets		A	0.1		PID<1ppm		
				A	0.3		PID<1ppm		
	0.6	SILTY CLAY - orange brown mottled grey, silty clay, humid to moist			0.5				
		- damp to wet at 1.5m		A	1.3		PID<1ppm	▼	
36	1.5	Bore discontinued at 1.5m - target depth reached			1.5				

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** KP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 1.5m

WATER OBSERVATIONS: Free groundwater observed at 1.5m

REMARKS: *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U$_x$	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 38.1 *
EASTING: 301601
NORTHING: 6245003
DIP/AZIMUTH: 90°/--

BORE No: BH5
PROJECT No: 71500
DATE: 27 Nov 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
38	0.3	SILTY CLAY - grey brown, silty clay with organic matter, rootlets and trace gravel and sand		A	0.1		PID<1ppm		
				A	0.3		PID<1ppm		
37	1	CLAYEY SAND - orange brown, fine grained, clayey sand			0.5				
	1.5			A	1.3		PID<1ppm		
36	2	Bore discontinued at 1.5m - target depth reached			1.5				
35	3								
34	4								
33	5								
32	6								
31	7								
30	8								
29	9								

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** KP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 1.5m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 38.4 *
EASTING: 301496
NORTHING: 6245104
DIP/AZIMUTH: 90°/--

BORE No: BH6
PROJECT No: 71500
DATE: 27 Nov 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
38	0.3	SILTY CLAY - grey brown, silty clay with organic matter, rootlets and gravel		A*	0.1		PID<1ppm		
				A	0.3		PID<1ppm		
		SILTY CLAY - grey and orange brown, silty clay, humid			0.5				
37		- moist to damp at 1.2m		A	1.3		PID<1ppm		
	1.5	Bore discontinued at 1.5m - target depth reached			1.5				

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** KP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 1.5m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Denotes field replicate sample BD4/271109 collected. *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 39.1 *
EASTING: 301493
NORTHING: 6245149
DIP/AZIMUTH: 90°/--

BORE No: BH7
PROJECT No: 71500
DATE: 01 Dec 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
39	0.1	TOPSOIL - light brown, silty clay topsoil, trace rootlets, humid		E	0.0		PID<1ppm		
					0.1				
		CLAY - light brown, silty clay, humid		E	0.4		PID<1ppm		
					0.5				
38	0.7	CLAY - red brown, silty clay, moist							
	1								1
	1.5	Bore discontinued at 1.5m - target depth reached		E	1.4		PID<1ppm		
					1.5				
37	2								2
36	3								3
35	4								4
34	5								5
33	6								6
32	7								7
31	8								8
30	9								9

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** AHP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 1.5m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: E = Environmental sample. *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 38.3 *
EASTING: 301593
NORTHING: 6245096
DIP/AZIMUTH: 90°/--

BORE No: BH8
PROJECT No: 71500
DATE: 27 Nov 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
38	0.3	SILTY CLAY - orange brown, medium plasticity, silty clay, dry		A	0.1		PID<1ppm		
				A	0.3		PID<1ppm		
	0.6	CLAYEY SAND - orange brown, fine grained clayey sand, dry			0.5				
	1	SANDY CLAY - orange brown, fine grained, sandy clay, moist							1
37				A	1.3		PID<1ppm		
	1.6				1.5				
	2	SILTY CLAY - brown, medium to high plasticity, silty clay, moist							2
36									
	3			A	2.8		PID<1ppm		3
	3.0	Bore discontinued at 3.0m - target depth reached			3.0				
35	4								4
34	5								5
33	6								6
32	7								7
31	8								8
30	9								9
29									

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** KP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 3.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U$_x$	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 38.8 *
EASTING: 301582
NORTHING: 6245245
DIP/AZIMUTH: 90°/--

BORE No: BH9
PROJECT No: 71500
DATE: 01 Dec 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
38	0.2	TOPSOIL - light brown, silty clay topsoil, trace rootlets, humid		E	0.0 0.1		PID<1ppm		
		CLAY - light red brown, silty clay, humid		E	0.4 0.5		PID<1ppm		
	0.9	CLAY - very stiff, red brown, silty clay, humid		E	1.4 1.5		PID<1ppm		
36	2.4	CLAY - brown with some clay mottling, silty clay, moist		E	2.9 3.0		PID<1ppm		
	3.0	Bore discontinued at 3.0m - target depth reached							

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** KP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 3.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: E = Environmental sample. *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 39.4 *
EASTING: 301481
NORTHING: 6245408
DIP/AZIMUTH: 90°/--

BORE No: BH10
PROJECT No: 71500
DATE: 01 Dec 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
39	0.06	ASPHALT- runway and roadbase		E	0.1		PID<1ppm		
	0.3	FILLING - red brown, silty gravelly filling, crushed ironstone, damp			0.2				
	0.5	FILLING - grey brown, silty clay, trace sand, damp		E	0.4		PID<1ppm		
		CLAY - red brown, silty clay			0.5				
38	1.5	Bore discontinued at 1.5m - target depth reached		E	1.4		PID<1ppm		
					1.5				

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** AHP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 1.5m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: E = Environmental sample. *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 40.1 *
EASTING: 301420
NORTHING: 6245256
DIP/AZIMUTH: 90°/--

BORE No: BH11
PROJECT No: 71500
DATE: 27 Nov 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
40	0.3	SILTY CLAY - grey brown, silty clay with organic matter, rootlets and gravel, dry		A	0.1		PID<1ppm		
				A	0.3		PID<1ppm		
39	1	SILTY CLAY - high plasticity, orange brown, silty clay, humid			0.5				
	1.5			A	1.3		PID<1ppm		
		Bore discontinued at 1.5m - target depth reached			1.5				
38	2								
37	3								
36	4								
35	5								
34	6								
33	7								
32	8								
31	9								

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 1.5m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 43.4 *
EASTING: 301260
NORTHING: 6245489
DIP/AZIMUTH: 90°/--

BORE No: BH12
PROJECT No: 71500
DATE: 27 Nov 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
43	0.6	FILLING - grey brown, silty clay filling with gravel, organic matter and rootlets		A*	0.1		PID<1ppm		
				A	0.3		PID<1ppm		
					0.5				
42	2.4	SILTY CLAY - medium plasticity, red brown, silty clay with trace ironstone gravel, humid		A	1.3				
					1.5				
41	3.0	GRAVELLY CLAY - orange and brown, gravelly silty clay		A	2.8		PID<1ppm		
		Bore discontinued at 3.0m - target depth reached			3.0				

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** KP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 3.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Denotes field replicate sample BD2/271109 collected. *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U$_x$	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 43.5 *
EASTING: 301259
NORTHING: 6245502
DIP/AZIMUTH: 90°/--

BORE No: BH13
PROJECT No: 71500
DATE: 27 Nov 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
43	0.3	SILTY CLAY - grey brown, silty clay with some sand, organic matter, rootlets and gravel, dry		A	0.1		PID<1ppm		
					0.2				
		SILTY CLAY - high plasticity, red brown, silty clay with trace ironstone gravel, humid		A	0.3		PID<1ppm		
					0.5				
42				A	1.3		PID<1ppm		
					1.5				
41				A	2.8		PID<1ppm		
40	3.0	Bore discontinued at 3.0m - target depth reached			3.0				
39									
38									
37									
36									
35									
34									

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** KP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 3.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 43.2 *
EASTING: 301279
NORTHING: 6245477
DIP/AZIMUTH: 90°/--

BORE No: BH14
PROJECT No: 71500
DATE: 27 Nov 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
43	0.3	SILTY CLAY - grey brown, silty clay with trace fine grained sand, organic matter, rootlets and gravel		A	0.1		PID<1ppm		
				A	0.3		PID<1ppm		
		SILTY CLAY - orange brown, high plasticity, silty clay, damp			0.5				
42	1								1
				A	1.3		PID<1ppm		
					1.5				
41	2	- dry at 2.0m							2
				A	2.8		PID<1ppm		
40	3	3.0 Bore discontinued at 3.0m - target depth reached			3.0				3
39	4								4
38	5								5
37	6								6
36	7								7
35	8								8
34	9								9

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** KP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 3.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 43.4 *
EASTING: 301269
NORTHING: 6245522
DIP/AZIMUTH: 90°/--

BORE No: BH15
PROJECT No: 71500
DATE: 27 Nov 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
43	0.0	SILTY CLAY - grey brown, silty clay with trace gravel, organic matter and rootlets (topsoil), humid		A*	0.1		PID<1ppm		
				A	0.3		PID<1ppm		
	0.4	SILTY CLAY - orange brown, silty clay with trace gravel, humid			0.5				
	0.8	SILTY CLAY - medium plasticity, orange brown mottled grey, silty clay, humid							
42	1	- highly plastic from 1.2m		A	1.3		PID<1ppm		
					1.5				
41	2								
					2.8				
40	3			A			PID<1ppm		
		- damp at 3.4m (smear zone)		A	3.5		PID<1ppm		
	3.6	Bore discontinued at 3.6m			3.6				
		- target depth reached							
39	4								
38	5								
37	6								
36	7								
35	8								
34	9								

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** KP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 3.6m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Denotes field replicate sample BD1/271109 collected. *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 42.8 *
EASTING: 301238
NORTHING: 6245545
DIP/AZIMUTH: 90°/--

BORE No: BH16
PROJECT No: 71500
DATE: 27 Nov 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
42.8	0.0	SILTY CLAY - grey brown, silty clay with some organic matter (topsoil) and trace rootlets and fine grained sand		A	0.1		PID<1ppm		
				A	0.3				
42.4	0.4	SILTY CLAY - medium to high plasticity, red brown, silty clay with trace ironstone gravel		A	0.4		PID<1ppm		
		- increasing to some ironstone gravel at 0.9m			0.5				
				A	1.3		PID<1ppm		
					1.5				
40.8	2.8	SILTY CLAY - medium plasticity, red brown mottled grey, silty clay with trace ironstone gravel		A	2.8		PID<1ppm		
40.6	3.0	Bore discontinued at 3.0m - target depth reached			3.0				

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** KP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 3.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 42.8 *
EASTING: 301234
NORTHING: 6245572
DIP/AZIMUTH: 90°/--

BORE No: BH17
PROJECT No: 71500
DATE: 27 Nov 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
42	0.3	SILTY CLAY - medium plasticity, red brown, silty clay with trace gravel and organic matter, humid		A	0.1		PID<1ppm		
				A	0.3		PID<1ppm		
		SILTY CLAY - high plasticity, red brown, silty clay with trace ironstone gravel			0.5				
41	1.8			A	1.3		PID<1ppm		
					1.5				
		SILTY CLAY - medium plasticity, orange brown mottled grey, silty clay							
40	3.0			A	2.8		PID<1ppm		
		Bore discontinued at 3.0m - target depth reached			3.0				

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** AHP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 3.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 40.8 *
EASTING: 301393
NORTHING: 6245390
DIP/AZIMUTH: 90°/--

BORE No: BH18
PROJECT No: 71500
DATE: 01 Dec 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
40.8	0.1	FILLING - dark brown, silty clay filling (topsoil), trace rootlets, damp		E	0.0		PID<1ppm		
					0.1				
		FILLING - dark brown, silty clay filling, damp		E	0.4		PID<1ppm		
					0.5				
40	1								1
	1.0	CLAY - brown mottled dark grey, silty clay, moist							
				E	1.4		PID<1ppm		
					1.5				
39	2								2
	2.4	CLAY - red brown mottled grey, silty clay with trace fine gravel, moist							
38	3			E	2.9		PID<1ppm		3
	3.0	Bore discontinued at 3.0m - target depth reached			3.0				
37	4								4
36	5								5
35	6								6
34	7								7
33	8								8
32	9								9
31									

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** AHP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 3.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: E = Environmental sample. *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 41.8 *
EASTING: 301372
NORTHING: 6245574
DIP/AZIMUTH: 90°/--

BORE No: BH19
PROJECT No: 71500
DATE: 01 Dec 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
41	0.1	FILLING - light brown, silty clay filling (topsoil), trace rootlets, humid		E	0.0 0.1		PID<1ppm		
		CLAY - red brown, silty clay, humid		E	0.4 0.5		PID<1ppm		
	1								1
40	1.5	Bore discontinued at 1.5m - target depth reached		E	1.4 1.5		PID<1ppm		
	2								2
39	3								3
38	4								4
37	5								5
36	6								6
35	7								7
34	8								8
33	9								9
32									

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** KP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 1.5m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: E = Environmental sample. *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 43.7 *
EASTING: 301270
NORTHING: 6245732
DIP/AZIMUTH: 90°/--

BORE No: 20
PROJECT No: 71500
DATE: 01 Dec 09
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
43	0.05	TOPSOIL - grey brown, silty clay topsoil with some fine gravel and grass rootlets, moist		A/E	0.1		PID<1ppm		
	0.4	SILTY CLAY - stiff, brown, silty clay, damp to moist		A/E	0.4 0.5		PID<1ppm		
		CLAY - stiff, orange brown and light grey, clay with trace of silt, moist		A/E	0.9		PID<1ppm		
42	1.0	SILTY CLAY - stiff to very stiff, mottled orange light grey, silty clay, moist		S	1.0 1.45		4,6,8 N = 14		
41	2.0	CLAY - very stiff, mottled orange light grey clay, moist		S	2.5 2.95		6,11,13 N = 24		
40	4.0	SILTY CLAY - very stiff, light grey and orange brown, silty clay with trace of fine grained sand and ironstone gravel		S	4.0 4.45		7,9,12 N = 21		
39	5.5	GRAVELLY SILTY CLAY - stiff to very stiff, brown, gravelly (ironstone) silty clay, wet		S	5.5 5.95		5,8,12 N = 20		
37	7	- becoming stiff at 7.0m		S	7.0 7.45		6,6,9 N = 15		
36	8.3	SILTSTONE - very low and low strength, grey brown siltstone			8.5 8.55		PL(A) = 0.8MPa		
35	8.7	SILTSTONE - medium strength, slightly weathered, fragmented to fractured, grey siltstone							
	9	CARBONACEOUS SHALE - extremely low and low to medium strength, highly and slightly weathered, fragmented to fractured, dark grey to black, carbonaceous shale. some very low strength bands		C	9.3		PL(A) = 0.3MPa		
34	9.57				9.8		PL(A) = 0.4MPa		

RIG: Hydropower **DRILLER:** Macquarie Drilling **LOGGED:** SI **CASING:** HW to 4.0m

TYPE OF BORING: Solid flight auger to 4.0m; Rotary to 8.5m; NMLC-Coring to 10.6m

WATER OBSERVATIONS:

REMARKS: E = Environmental sample. *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 43.7 *
EASTING: 301270
NORTHING: 6245732
DIP/AZIMUTH: 90°/--

BORE No: 20
PROJECT No: 71500
DATE: 01 Dec 09
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
33	10.6	SILTSTONE - medium then medium to high strength, slightly weathered, fractured to slightly fractured, light grey to grey siltstone *(continued)*		C	10.4		PL(A) = 1.1MPa		
		Bore discontinued at 10.6m			10.6				
32	11								
31	12								
30	13								
29	14								
28	15								
27	16								
26	17								
25	18								
24	19								

RIG: Hydropower **DRILLER:** Macquarie Drilling **LOGGED:** SI **CASING:** HW to 4.0m
TYPE OF BORING: Solid flight auger to 4.0m; Rotary to 8.5m; NMLC-Coring to 10.6m
WATER OBSERVATIONS:
REMARKS: E = Environmental sample. *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 40.8 *
EASTING: 301435
NORTHING: 6245495
DIP/AZIMUTH: 90°/--

BORE No: 21
PROJECT No: 71500
DATE: 25 Nov 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
40	0.2	FILLING - red brown, crushed sandstone filling		E/A	0.1		PID<1ppm		
		FILLING - grey brown, sandy clay filling with some silt and concrete gravel, moist		E/A	0.5		PID<1ppm		
	0.8	CLAY - stiff, brown clay with some silt and trace of ironstone gravel, moist to wet		E/A	0.8		PID<1ppm		
39	1			E/A	1.0		PID<1ppm		
				S			4,5,7 N = 12		
					1.45				
38	2			S	2.5		3,6,6 N = 12		
					2.95				
37	3							▼	
	3.8	GRAVELLY CLAY - very stiff, brown, gravelly (ironstone) clay, wet		S	4.0		3,8,8 N = 16		
36	4				4.45				
	4.7	SHALY CLAY - hard, orange/yellow brown, shaly clay with ironstone bands		S	5.5		8,15,21 N = 36		
35	5				5.95				
	6								
34	6.8	SHALE/SILTSTONE - very low strength, grey brown shale/siltstone		S	7.0		22,25/50mm refusal		
	7				7.2				
	7.2	SHALE/SILTSTONE - extremely low to very low strength, extremely to highly weathered, light grey brown, shale/siltstone. Some low to medium strength bands			7.55		PL(A) = 0.3MPa		
33	8			C					
32	9								
	9.4	Bore discontinued at 9.4m			9.4				
31									

RIG: Bobcat **DRILLER:** Steve S **LOGGED:** SI **CASING:** HW to 4.0m

TYPE OF BORING: Solid flight auger to 4.0m; Rotary to 7.2m; NMLC-Coring to 9.4m

WATER OBSERVATIONS: Free groundwater observed at 3.8m whilst augering

REMARKS: E = Environmental sample. *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U$_x$	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 42.2 *
EASTING: 301355
NORTHING: 6245748
DIP/AZIMUTH: 90°/--

BORE No: 22
PROJECT No: 71500
DATE: 26 Nov 09
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
42	0.0	FILLING - brown, fine grained, sand filling with some roadbase gravel, humid		A	0.1		PID<1ppm		
				A	0.5		PID<1ppm		
	0.7	SILTY CLAY - stiff, orange brown, silty clay with trace of fine grained sand, moist		A	1.0				
41	1			S	1.3		3,4,8 N = 12		
				A	1.45		PID<1ppm		
					1.5				
40	2								
	2.4	SANDY CLAY - very stiff, brown, fine grained, sandy clay, moist		A	2.5				
				S			3,7,9 N = 16		
39	3				2.95				
	3.5	SANDY SILTY CLAY - very stiff then hard, mottled orange brown and light grey, fine grained, sandy silty clay, moist							
38	4				4.0			▼	
				S			4,10,16 N = 26		
					4.45				
37	5								
		5.5m: becoming hard			5.5				
				S			6,14,23 N = 37		
36	6				5.95				
	7.0	GRAVELLY CLAY - hard, brown, gravelly (ironstone) clay, moist			7.0				
35	7			S			11,20,28 N = 48		
					7.45				
34	8								
	8.4	SHALE - very low strength, light grey brown shale		S	8.5		24,25/90mm refusal		
					8.74				
	8.8	SHALE/SILTSTONE - low then very low to low strength, highly to moderately weathered, light grey brown shale/siltstone			8.8				
33	9			C					
	9.6	SHALE - medium strength, fresh, slightly fractured, grey shale							
				C	9.85		PL(A) = 0.4MPa		

RIG: Bobcat **DRILLER:** Steve S **LOGGED:** SI **CASING:** HW to 4.0m

TYPE OF BORING: Solid flight auger to 4.0m; Rotary to 8.8m; NMLC-Coring to 11.45m

WATER OBSERVATIONS: Free groundwater observed at 4.0m whilst augering

REMARKS: *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 42.2 *
EASTING: 301355
NORTHING: 6245748
DIP/AZIMUTH: 90°/--

BORE No: 22
PROJECT No: 71500
DATE: 26 Nov 09
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
32		SHALE - medium strength, fresh, slightly fractured, grey shale *(continued)*			9.9				
				C	10.4		PL(A) = 0.4MPa		
31	11				11.0		PL(A) = 0.4MPa		11
	11.45	Bore discontinued at 11.45m			11.45				
30	12								12
29	13								13
28	14								14
27	15								15
26	16								16
25	17								17
24	18								18
23	19								19

RIG: Bobcat **DRILLER:** Steve S **LOGGED:** SI **CASING:** HW to 4.0m

TYPE OF BORING: Solid flight auger to 4.0m; Rotary to 8.8m; NMLC-Coring to 11.45m

WATER OBSERVATIONS: Free groundwater observed at 4.0m whilst augering

REMARKS: *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 39.5 *
EASTING: 301497
NORTHING: 6245679
DIP/AZIMUTH: 90°/--

BORE No: BH23
PROJECT No: 71500
DATE:
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
39.5	0.0			E	0.0				
	0.3	TOPSOIL - brown, silty clay topsoil filling, trace rootlets, humid			0.1				
39		CLAY - red brown clay, humid			0.8				
	1			A	1.0				1
38		- moist at 1.0m							
	1.9								
	2	CLAY - grey brown clay, damp		A	2.0				2
37					2.2				
	2.7				2.7				
	3	CLAY - red brown mottled grey clay, damp		A	3.0				3
36	3.0	Bore discontinued at 3.0m - target depth reached							
	4								4
35									
	5								5
34									
	6								6
33									
	7								7
32									
	8								8
31									
	9								9
30									

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** AHP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 3.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: E = Environmental sample. *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 45.0 *
EASTING: 301260
NORTHING: 6245977
DIP/AZIMUTH: 90°/--

BORE No: BH24
PROJECT No: 71500
DATE: 01 Dec 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
45	0.1	FILLING - light brown, silty clay filling (topsoil), trace rootlets, humid		E	0.0 0.1		PID<1ppm		
	0.4	FILLING - light brown, silty clay topsoil filling, humid		E	0.4 0.5		PID<1ppm		
44	1	CLAY - red brown, silty clay, humid							1
	1.5	Bore discontinued at 1.5m - target depth reached		E	1.4 1.5		PID<1ppm		
43	2								2
42	3								3
41	4								4
40	5								5
39	6								6
38	7								7
37	8								8
36	9								9

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** AHP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 1.5m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: E = Environmental sample. *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 42.5 *
EASTING: 301285
NORTHING: 6245437
DIP/AZIMUTH: 90°/--

BORE No: BH25
PROJECT No: 71500
DATE: 27 Nov 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
42	0	FILLING - grey brown, silty clay filling with trace organic matter, rootlets and gravel		A	0.1		PID<1ppm		
				A	0.3		PID<1ppm		
	1				0.5				
	1.3	SILTY CLAY - yellow brown, medium plasticity, silty clay, humid to moist		A	1.3		PID<1ppm		
41	1.5	Bore discontinued at 1.5m - target depth reached			1.5				
	2								
40	3								
39	4								
38	5								
37	6								
36	7								
35	8								
34	9								
33									

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** KP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 1.5m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Next to helicopter bay/shed. *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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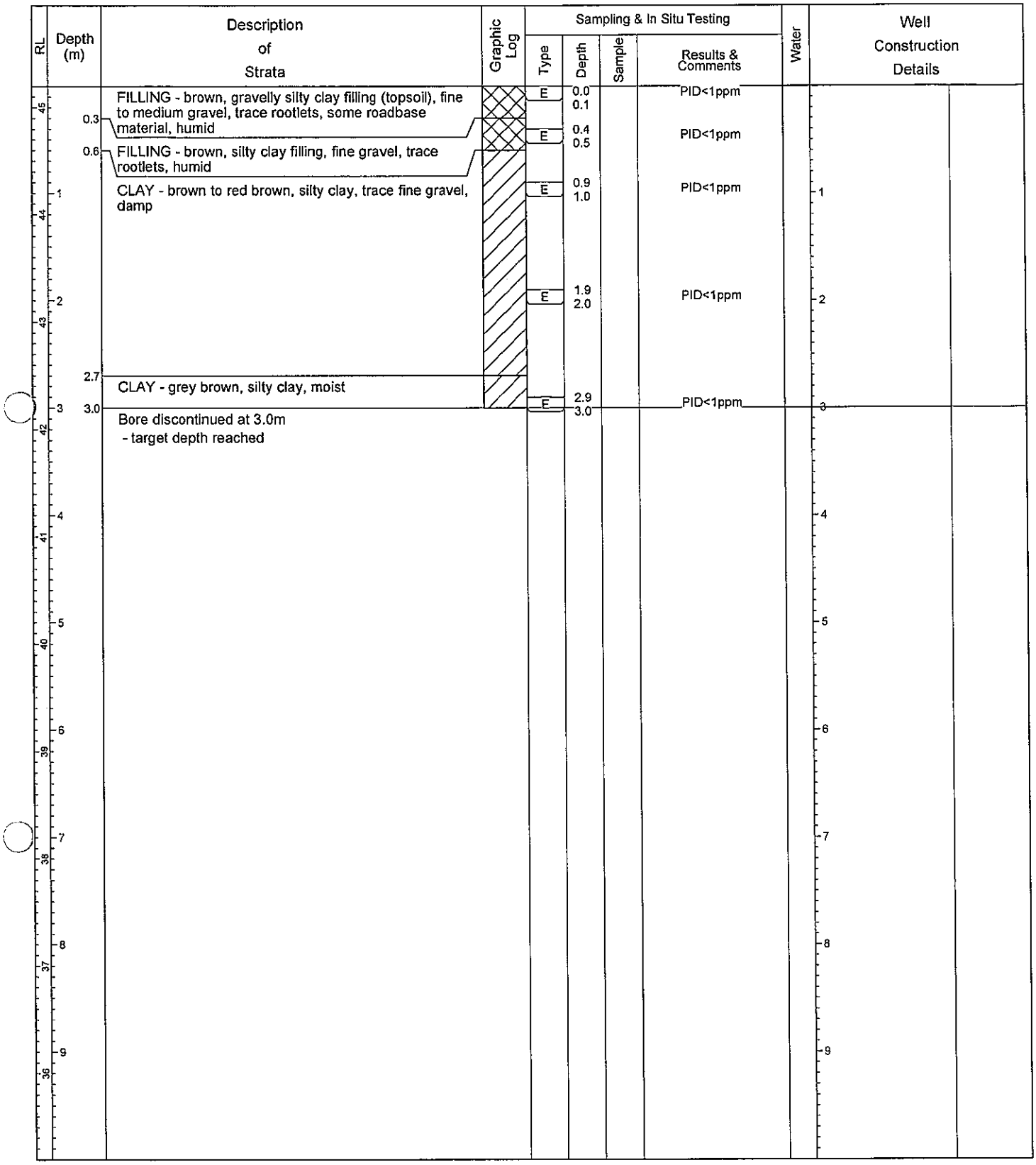
BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 45.2 *
EASTING: 301192
NORTHING: 6246124
DIP/AZIMUTH: 90°/--

BORE No: BH26
PROJECT No: 71500
DATE: 01 Dec 09
SHEET 1 OF 1



RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** AHP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 3.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: E = Environmental sample. *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND			
A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 44.0 *
EASTING: 301284
NORTHING: 6246139
DIP/AZIMUTH: 90°/--

BORE No: BH27
PROJECT No: 71500
DATE: 01 Dec 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
44	0.1	RUNWAY ASPHALT & ROADBASE		E	0.1		PID<1ppm		
		FILLING - red brown, silty gravelly clay filling			0.2				
	0.4	FILLING - very stiff, light brown, sandy silty clay, some fine gravel		E	0.4		PID<1ppm		
43	1				0.5				1
	1.1	FILLING - grey to light brown, silty gravelly clay filling							
				E	1.4		PID<1ppm		
	1.6	CLAY - red brown, silty clay, ironstone gravel			1.5				
42	2								2
41	3			E	2.9		PID<1ppm		
	3.0	Bore discontinued at 3.0m - target depth reached			3.0				3
40	4								4
39	5								5
38	6								6
37	7								7
36	8								8
35	9								9

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** AHP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 3.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: E = Environmental sample. *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo Ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 42.1 *
EASTING: 301321
NORTHING: 6245443
DIP/AZIMUTH: 90°/--

BORE No: BH28
PROJECT No: 71500
DATE: 27 Nov 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
42	0.3	FILLING - grey brown, silty clay filling with organic matter, gravel and rootlets, humid		A	0.1		PID<1ppm		
				A	0.3		PID<1ppm		
	0.6	FILLING - grey brown, silty clay filling with trace gravel, humid			0.5				
41	1	SILTY CLAY - orange brown, silty clay, medium to high plasticity, moist		A	1.3		PID<1ppm		1
	1.5	SILTY CLAY - red brown, high plasticity, silty clay, moist			1.5				
40	2								2
	2.6	SILTY CLAY - high plasticity, orange mottled grey, silty clay, moist		A	2.8		PID<1ppm		
39	3								3
	3.0	Bore discontinued at 3.0m - target depth reached			3.0				
38	4								4
37	5								5
36	6								6
35	7								7
34	8								8
33	9								9

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** KP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 3.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 43.4 *
EASTING: 301237
NORTHING: 6245533
DIP/AZIMUTH: 90°/--

BORE No: GW1
PROJECT No: 71500
DATE: 26 Nov 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
43	0.3	SILTY CLAY - red brown, silty clay, humid		A	0.1		PID<1ppm		Gatic cover Bentonite
	0.5	SILTY CLAY - red brown, silty clay, humid		A	0.3		PID<1ppm		
		SILTY CLAY - yellow orange, silty clay, damp			0.5				
42	1.0	SILTY CLAY - brown, silty clay with ironstone traces		A	0.8 1.0		PID<1ppm		Backfilled with gravel
				A	1.8		PID<1ppm		
41	2.0	SILTY CLAY - brown, silty clay with some ironstone gravel, damp			2.0				Machine slotted PVC screen
				A	2.8 3.0		PID<1ppm	▼	
40				A	3.9 4.0		PID<1ppm		End cap
	4.1	Bore discontinued at 4.1m - refusal on ironstone band							
39									
38									
37									
36									
35									
34									

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** KP **CASING:** Uncased

TYPE OF BORING: Solid flight auger

WATER OBSERVATIONS: Free groundwater observed at 3.5m

REMARKS: *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 40.1 *
EASTING: 301387
NORTHING: 6245327
DIP/AZIMUTH: 90°/--

BORE No: GW2
PROJECT No: 71500
DATE: 26 Nov 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
40	0.0	FILLING - brown, silty clay filling with some gravel, organic matter and trace sand, dry		A	0.1		PID<1ppm		Gatic cover
				A	0.3		PID<1ppm		
39	0.6	SILTY CLAY - red brown, silty clay with some ironstone gravel, humid			0.5				
				A	1.3		PID<1ppm		Bentonite
					1.5				
38	1.8	SILTY CLAY - yellow brown, silty clay with trace sand and ironstone gravel, moist							Backfilled with gravel
				A	2.8		PID<1ppm		
37					3.0				
36		- damp to wet at 4.0m						▼	Machine slotted PVC screen
				A	4.8		PID<1ppm		
35	5.0	Bore discontinued at 5.0m - refusal			5.0				End cap
34									
33									
32									
31									

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** KP **CASING:** Uncased

TYPE OF BORING: Solid flight auger

WATER OBSERVATIONS: Free groundwater observed at 4.0m

REMARKS: *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo Ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 40.1 *
EASTING: 301398
NORTHING: 6245325
DIP/AZIMUTH: 90°/--

BORE No: GW2A
PROJECT No: 71500
DATE: 02 Dec 09
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
40	0.05	FILLING - grey brown, silty clay topsoil with trace of fine grained sand and grass rootlets (possible topsoil)		A	0.1		PID<1ppm		
				A	0.4 0.45		PID<1ppm		
	0.6	FILLING - grey brown, silty clay filling with some gravel, humid							
39	1	SILTY CLAY - stiff, light brown to red brown, silty clay with some ironstone gravel, damp to moist		A	0.9 1.0		PID<1ppm		
		1.0-1.5m: gravelly (ironstone) silty clay		S			6,6,7 N = 13		
					1.45		PID<1ppm		
38	2.1	SILTY CLAY - stiff, light grey, silty clay, moist							
				S	2.5		3,7,7 N = 14		
37	3				2.95		PID<1ppm		
	3.5	GRAVELLY SILTY CLAY - very stiff, brown, gravelly (ironstone) silty clay, moist to wet							
36	4			S	4.0		5,8,11 N = 19		
					4.45		PID<1ppm		
35	5								
	5.4	SILTY CLAY - very stiff, brown, silty clay with trace of fine grained sand and ironstone gravel, wet		S	5.5		6,9,9 N = 18		
34	6				5.95		PID<1ppm		
33	7			S	7.0		7,8,10 N = 18		
					7.45		PID<1ppm		
32	8.0								
	8.1	SANDSTONE - very low to low strength, brown, fine grained sandstone			8.1 8.2		PL(A) = 0.8MPa		
	8.3	SANDSTONE - medium strength, moderately weathered, fractured, brown, fine grained sandstone							
31	9	SILTSTONE - extremely low to very low strength, extremely to highly then slightly weathered, grey siltstone. Some low to medium strength bands		C	9.15		PL(A) = 0.3MPa		
		9.5-9.8m: carbonaceous shale band			9.75 9.85		PL(A) = 0.1MPa		
				C					

RIG: Bobcat **DRILLER:** Steve S **LOGGED:** SI **CASING:** to 8.0m

TYPE OF BORING: Solid flight auger to 8.1m; NMLC-Coring to 10.15m

WATER OBSERVATIONS: Free groundwater observed at 4.5m whilst augering

REMARKS: *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 40.1 *
EASTING: 301398
NORTHING: 6245325
DIP/AZIMUTH: 90°/--

BORE No: GW2A
PROJECT No: 71500
DATE: 02 Dec 09
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	10.15	Bore discontinued at 10.15m		C	10.15				

RIG: Bobcat **DRILLER:** Steve S **LOGGED:** SI **CASING:** to 8.0m

TYPE OF BORING: Solid flight auger to 8.1m; NMLC-Coring to 10.15m

WATER OBSERVATIONS: Free groundwater observed at 4.5m whilst augering

REMARKS: *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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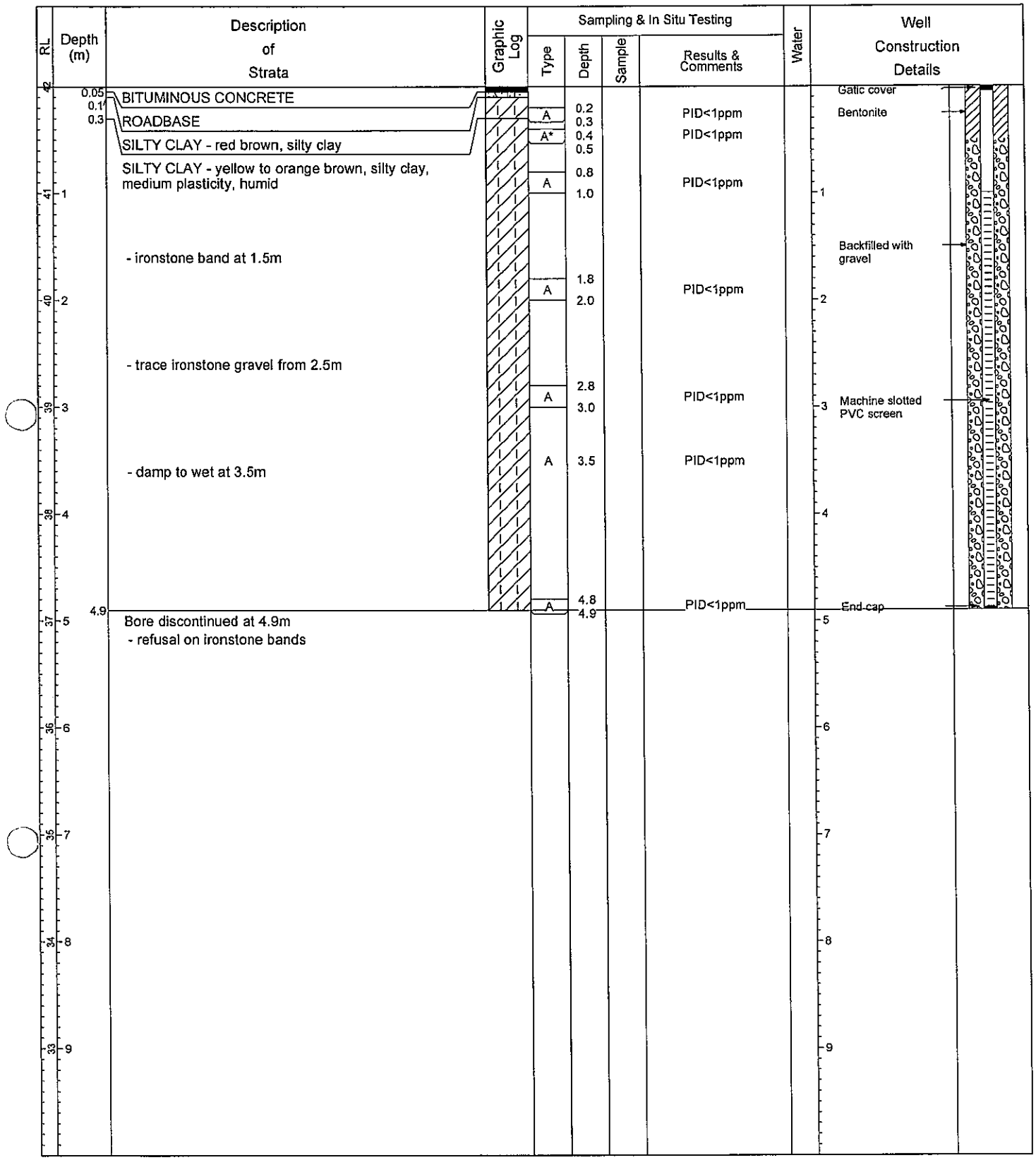
BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 42.0 *
EASTING: 301290
NORTHING: 6245511
DIP/AZIMUTH: 90°/--

BORE No: GW3
PROJECT No: 71500
DATE:
SHEET 1 OF 1



RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** KP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 5.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND			
A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 42.0 *
EASTING: 301290
NORTHING: 6245510
DIP/AZIMUTH: 90°/--

BORE No: GW3A
PROJECT No: 71500
DATE: 01 Dec 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
42	0.05	BITUMINOUS CONCRETE		A	0.1		PID<1ppm		
	0.1	ROADBASE GRAVEL							
		SILTY CLAY - stiff, brown silty clay, moist			0.8				
41	1			A	1.0				
				S			5,6,9 N = 15 PID<1ppm		
	1.5				1.45				
		GRAVELLY SILTY CLAY - stiff to very stiff, brown, gravelly (ironstone) silty clay with some fine grained sand, moist							
40	2								
	2.5				2.5				
		SILTY CLAY - very stiff, light grey and orange brown, silty clay with some fine grained sand and ironstone gravel, moist		S			6,7,10 N = 17 PID<1ppm		
39	3				2.95				
38	4				4.0				
				S			7,9,11 N = 20 PID<1ppm		
					4.45				
37	5								
					5.5				
				S			6,9,11 N = 20 PID<1ppm		
36	6				5.95			▼	
35	7								
	7.0	SILTSTONE - very low to low strength, grey siltstone		S	7.0		60/30mm refusal PID<1ppm		
	7.24				7.03		PL(A) = 0.4MPa		
		SILTSTONE - low to medium strength, highly and highly to moderately weathered, fractured to slightly fractured, grey brown siltstone. Some extremely low strength bands			7.24				
34	8			C					
					8.3		PL(A) = 0.3MPa		
					8.5				
33	8.95	SILTSTONE - extremely low strength, highly weathered, light grey siltstone		C					
	9				9.4		PL(A) = 0.4MPa		
	9.6	SILTSTONE - medium strength, slightly weathered, slightly fractured, grey siltstone							
32	10								
	10.0				10.0				

Bore discontinued at 10.0m

RIG: Hydropower **DRILLER:** Macquarie Drilling **LOGGED:** SI **CASING:**

TYPE OF BORING: Solid flight auger to 7.24m; NMLC-Coring to 10.0m

WATER OBSERVATIONS: Free groundwater observed at 6.0m

REMARKS: *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U$_x$	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 43.8 *
EASTING: 301279
NORTHING: 6245782
DIP/AZIMUTH: 90°/--

BORE No: GW4
PROJECT No: 71500
DATE: 26 Nov 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
43	0	FILLING - brown, silty clay filling with trace gravel, humid		A	0.1		PID<1ppm		Gatic cover
				A	0.3		PID<1ppm		
					0.5				
				A	0.8		PID<1ppm		
	1				1.0				Bentonite
				A	1.3		PID<1ppm		
	1.6				1.5				Backfilled with gravel
42		SILTY CLAY - red brown, medium plasticity, silty clay with trace ironstone gravel, humid		A	1.8		PID<1ppm		
	2				2.0				
	2.5								
41		SILTY CLAY - orange brown mottled grey, medium plasticity, silty clay with trace ironstone gravel, damp		A	2.8		PID<1ppm		
	3				3.0				Machine slotted PVC screen
	3.2	SILTY CLAY - orange brown, silty clay with some sand, damp to wet							
40	4			A	4.4		PID<1ppm		End cap
	4.5	Bore discontinued at 4.5m - target depth reached, refusal on ironstone banding			4.5				
39	5								
38	6								
37	7								
36	8								
35	9								
34									

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** KP **CASING:** Uncased

TYPE OF BORING: Solid flight auger t0 4.5m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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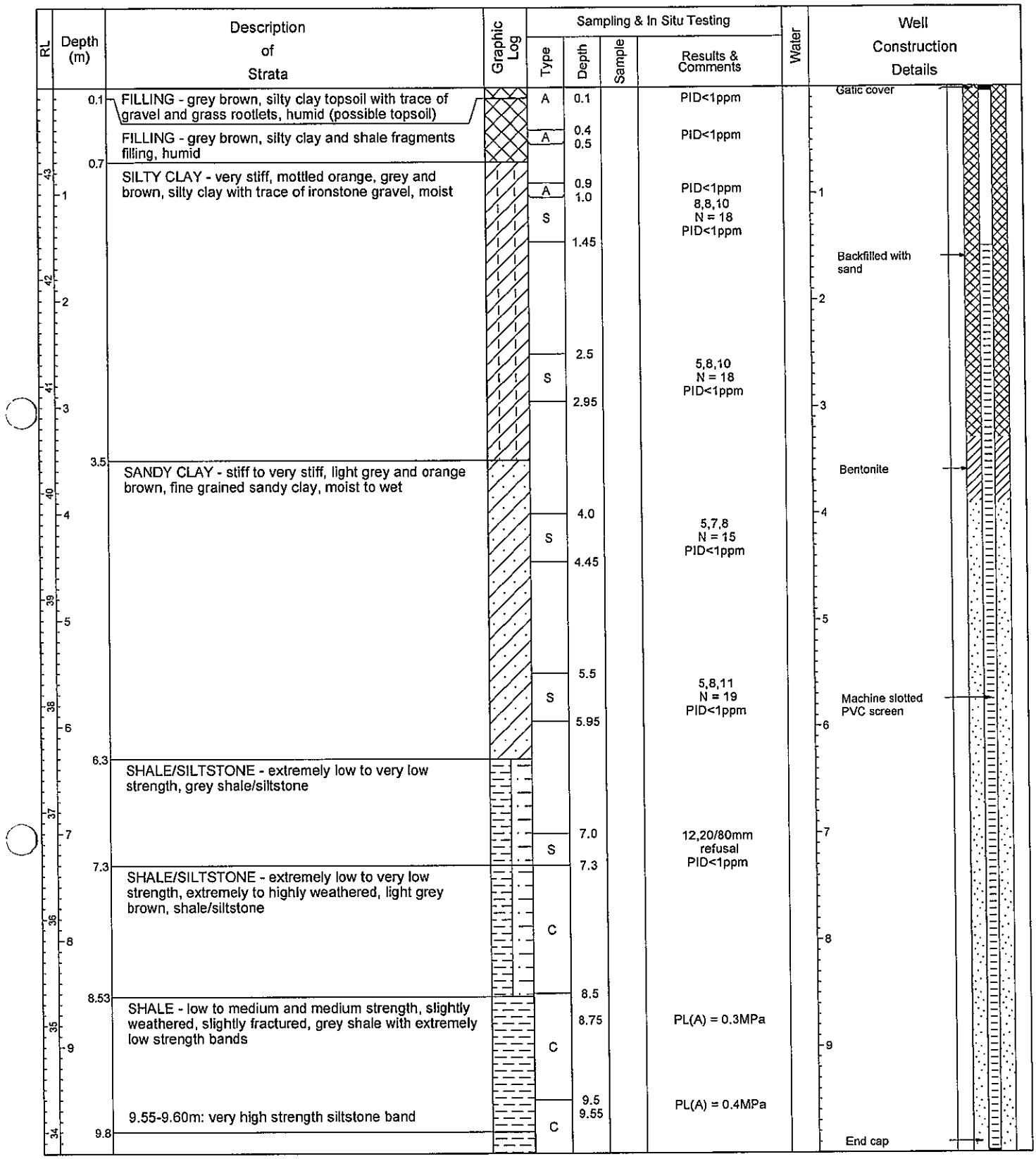
BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 43.8 *
EASTING: 301279
NORTHING: 6245780
DIP/AZIMUTH: 90°/--

BORE No: GW4A
PROJECT No: 71500
DATE: 30 Nov 09
SHEET 1 OF 2



RIG: Hydropower **DRILLER:** Macquarie Drilling **LOGGED:** SI **CASING:**

TYPE OF BORING: Solid flight auger to 7.3m; NMLC-Coring to 10.2m

WATER OBSERVATIONS:

REMARKS: *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 43.8 *
EASTING: 301279
NORTHING: 6245780
DIP/AZIMUTH: 90°/--

BORE No: GW4A
PROJECT No: 71500
DATE: 30 Nov 09
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
33	10.2	SHALE - very low strength, slightly weathered, light grey shale *(continued)*		C	10.2				
		Bore discontinued at 10.2m							
32	11								
31	12								
30	13								
29	14								
28	15								
27	16								
26	17								
25	18								
24	19								

RIG: Hydropower **DRILLER:** Macquarie Drilling **LOGGED:** SI **CASING:**

TYPE OF BORING: Solid flight auger to 7.3m; NMLC-Coring to 10.2m

WATER OBSERVATIONS:

REMARKS: *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 45.0 *
EASTING: 301241
NORTHING: 6245982
DIP/AZIMUTH: 90°/--

BORE No: GW5
PROJECT No: 71500
DATE: 26 Nov 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
45	0.3	SILT - brown silt, dry		A	0.1		PID<1ppm		Gatic cover
	0.5	SILT - brown black silt, dry		A	0.3		PID<1ppm		
44	1	SILTY CLAY - brown, silty clay, humid			0.5				1 Bentonite
	1.5	SILTY CLAY - brown grey, slightly clay, moist		A	1.8		PID<1ppm		
43	2				2.0				2 Backfilled with gravel
	2.4	SILTY CLAY - brown, silty clay, moist		A	2.8		PID<1ppm		
42	3				3.0				3 Machine slotted PVC screen
	3.2	SILTY CLAY - brown, silty clay with trace gravel, damp to wet		A	4.3		PID<1ppm		
41	4								4 End cap
	4.5	Bore discontinued at 4.5m - refusal			4.5				
40	5								5
39	6								6
38	7								7
37	8								8
36	9								9

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** SI **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 4.5m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 45.0 *
EASTING: 301218
NORTHING: 6246075
DIP/AZIMUTH: 90°/--

BORE No: GW5A
PROJECT No: 71500
DATE: 30 Nov 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
45	0.3	FILLING - grey brown, silty clay and shale fragments filling, with some grass rootlets		A	0.1		PID<1ppm		
		SILTY CLAY - stiff, brown to red brown, silty clay with trace of fine grained sand, moist		A	0.4 0.5		PID<1ppm		
44	1			A	0.9 1.0		PID<1ppm		
				S			4,5,7 N = 12		
					1.45		PID<1ppm		
43	2								
	2.0	SILTY CLAY - stiff, grey silty clay, moist to wet		S	2.5		5,6,6 N = 12		
42	3				2.95		PID<1ppm		
	3.7	CLAYEY SAND - loose, brown, fine grained, clayey sand, wet		S	4.0		2,3,4 N = 7		
41	4				4.45		PID<1ppm	▼	
40	5								
	5.0	SILTSTONE - extremely low to very low strength, grey brown siltstone		S	5.5		12,17,26 N = 43		
39	6				5.95		PID<1ppm		
38	7			S	7.0		30/100mm refusal		
	7.1	SANDSTONE - high then high to very high strength, fresh, slightly fractured and unbroken, light grey, fine grained sandstone with some siltstone laminations and bands			7.1 7.2		PID<1ppm PL(A) = 2.5MPa		
37	8				8.05		PL(A) = 3.2MPa		
				C					
36	9				9.05		PL(A) = 5.5MPa		
35	10 10.0				10.0				

Bore discontinued at 10.0m

RIG: Hydropower **DRILLER:** Macquarie Drilling **LOGGED:** SI **CASING:**

TYPE OF BORING: Solid flight auger to 7.1m; NMLC-Coring to 10.0m

WATER OBSERVATIONS: Free groundwater observed at 4.5m whilst augering

REMARKS: *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 38.4 *
EASTING: 301469
NORTHING: 6245350
DIP/AZIMUTH 90°/--

BORE No: GW6
PROJECT No: 71500
DATE: 25 Nov 09
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.02	ROADBASE GRAVEL - with some sand and clay		E/A	0.1		PID<1ppm		
38		FILLING - brown and red brown, silty clay filling, humid to damp		E/A	0.4 0.5		PID<1ppm		
	0.9	SILTY CLAY - stiff, grey brown and brown, silty clay, damp to moist		E/A	0.9 1.0		PID<1ppm		
37	1			S			3,4,6 N = 10		1
					1.45		PID<1ppm		
	2								2
	2.1	CLAY - firm, brown clay, wet		E	2.4 2.5		PID<1ppm		
36				S			2,2,2 N = 4		
	3				2.95		PID<1ppm	▼	3
	3.1	CLAY - very stiff, light brown clay with some ironstone gravel, wet							
35				E	3.9 4.0				
	4			S			2,9,16 N = 25		4
					4.45				
34	4.7	GRAVELLY CLAY - very stiff to hard, red brown, gravelly (ironstone) clay, moist							
	5								5
				S	5.5		9,13,17 N = 30		
33					5.95				
	6								6
32									
	7								7
31	7.5	SILTSTONE - extremely low to very low strength, extremely to highly weathered, light grey, orange brown siltstone with a low to medium strength band at 7.85 to 8.0m			7.5				
	8			C	7.9		PL(A) = 0.3MPa		8
30	8.7	SHALE - very low strength, highly weathered, grey to dark grey, shale with a carbonaceous shale band from 9.02m to 9.3m							
	9				9.05 9.2		PL(A) = 0.1MPa		9
29	9.7	SHALE - medium strength, slightly weathered, slightly fractured, grey shale		C					

RIG: Bobcat **DRILLER:** Steve S **LOGGED:** SI **CASING:** HW to 4.0m

TYPE OF BORING: Solid flight auger to 4.0m; Rotary to 7.5m; NMLC-Coring to 11.1m

WATER OBSERVATIONS: Free groundwater observed at 3.1m whilst augering

REMARKS: *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U$_x$	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 38.4 *
EASTING: 301469
NORTHING: 6245350
DIP/AZIMUTH: 90°/--

BORE No: GW6
PROJECT No: 71500
DATE: 25 Nov 09
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
28	11	SHALE - medium strength, slightly weathered, slightly fractured, grey shale *(continued)*		C	10.15		PL(A) = 0.5MPa		11
					10.8		PL(A) = 0.6MPa		
	11.1	Bore discontinued at 11.1m			11.1				
27	12								12
26	13								13
25	14								14
24	15								15
23	16								16
22	17								17
21	18								18
20	19								19
19									

RIG: Bobcat **DRILLER:** Steve S **LOGGED:** SI **CASING:** HW to 4.0m

TYPE OF BORING: Solid flight auger to 4.0m; Rotary to 7.5m; NMLC-Coring to 11.1m

WATER OBSERVATIONS: Free groundwater observed at 3.1m whilst augering

REMARKS: *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 41.6 *
EASTING: 301380
NORTHING: 6245681
DIP/AZIMUTH: 90°/--

BORE No: GW7
PROJECT No: 71500
DATE: 24 Nov 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
41	0.3	FILLING - light brown, gravelly clay filling with trace of grass rootlets		A/E	0.0		PID<1ppm		
					0.1				
		CLAY - firm to stiff, light grey clay, humid		A/E	0.4		PID<1ppm		
					0.5				
				A/E	0.9		PID<1ppm		
					1.0				
				S			3,5,4 N = 9		
40	1.5	CLAY - very stiff, red brown then light grey brown, clay with some fine ironstone gravel, wet			1.45				
				A	2.5		PID<1ppm		
				S			4,8,11 N = 19		
					2.95				
38	3.8	GRAVELLY CLAY - hard, red brown and brown, gravelly (ironstone) clay, wet							
				S	4.0		8,12,20 N = 32		
					4.45				
				S	5.5		15,17,20 N = 37		
					5.95				
35	6.8	SILTSTONE - extremely low strength, light grey brown siltstone							
	7.3	SILTSTONE - extremely low to very low strength, highly to moderately weathered, light grey, yellow brown, siltstone with a low strength band from 7.6m to 7.9m			7.3				
	7.9				7.7		PL(A) = 0.2MPa		
33	8.3	SHALE - low to medium then medium strength, slightly weathered, slightly fractured, light grey to dark grey shale		C	8.6		PL(A) = 0.3MPa		
					9.2		PL(A) = 0.3MPa		
					9.5		PL(A) = 0.7MPa		
32	9.7	Bore discontinued at 9.7m			9.7				

RIG: Bobcat **DRILLER:** Steve S **LOGGED:** SI **CASING:** HW to 4.0m

TYPE OF BORING: Solid flight auger to 4.0m; Rotary to 7.3m; NMLC-Coring to 9.7m

WATER OBSERVATIONS: Free groundwater observed at 2.0m whilst augering

REMARKS: *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U$_x$	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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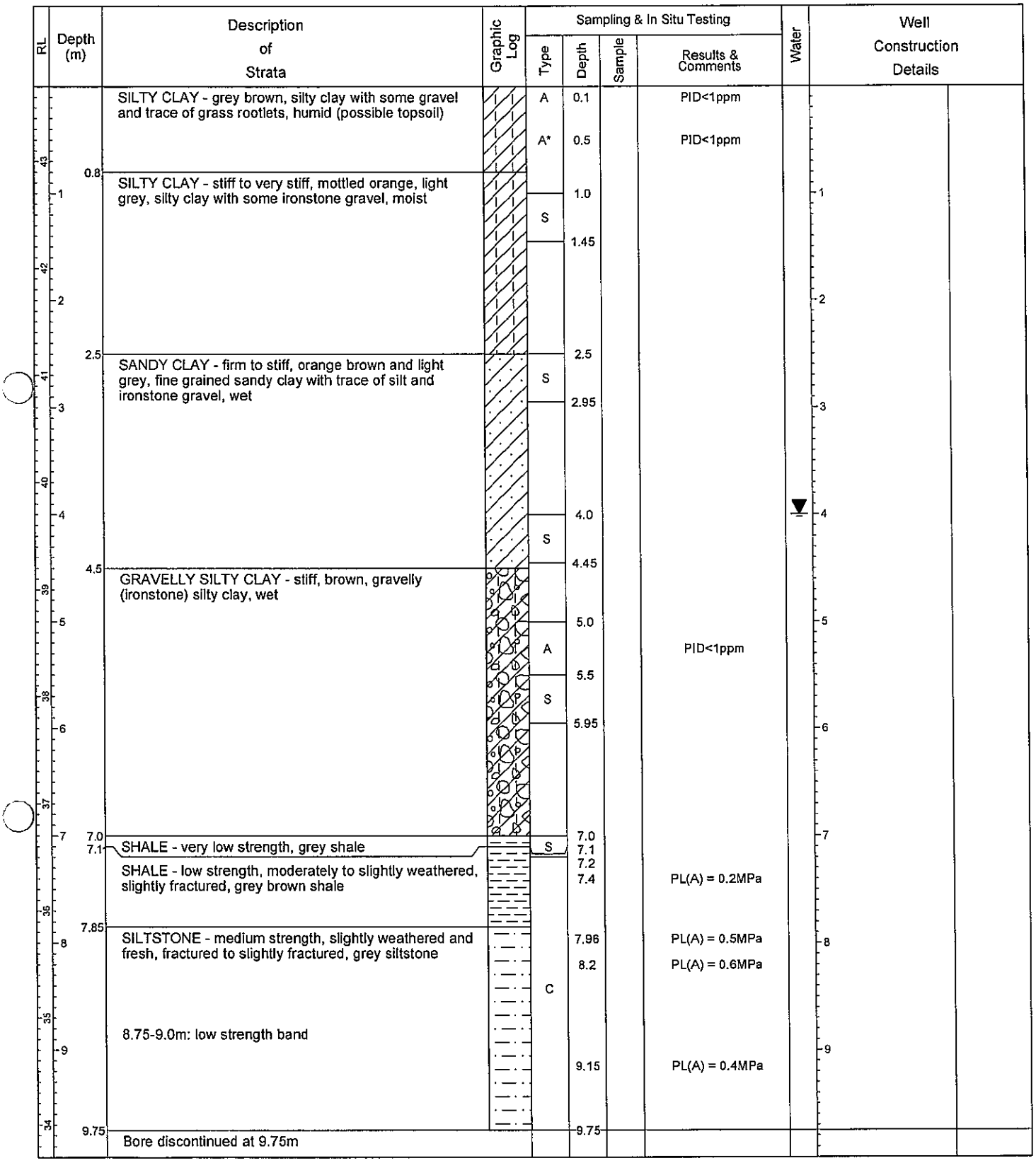
BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 43.7 *
EASTING: 301305
NORTHING: 6245998
DIP/AZIMUTH: 90°/--

BORE No: GW8
PROJECT No: 71500
DATE: 27 Nov 09
SHEET 1 OF 1



RIG: Bobcat **DRILLER:** Steve S **LOGGED:** SI **CASING:** HW to 7.1m

TYPE OF BORING: Solid flight auger to 7.1m; NMLC-Coring to 9.75m

WATER OBSERVATIONS: Free groundwater observed at 4.0m whilst augering

REMARKS: *Denotes field replicate sample BD2/261109 collected. *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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BOREHOLE LOG

CLIENT: Mirvac Investment Pty Ltd
PROJECT: Hoxton Park Airport
LOCATION: Cowpasture Road, Hoxton Park

SURFACE LEVEL: 38.5 *
EASTING: 301636
NORTHING: 6245196
DIP/AZIMUTH: 90°/--

BORE No: GW9
PROJECT No: 71500
DATE: 26 Nov 09
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
38	0.3	SILTY CLAY - grey brown, silty clay with trace rootlets, gravel and organic matter, dry		A	0.1		PID<1ppm		
		SILTY CLAY - grey brown, silty clay with trace gravel		A	0.3		PID<1ppm		
	0.8				0.5				
37	1	SILTY CLAY - red brown, silty clay, damp		A	1.3		PID<1ppm		
					1.5				
36	2.5	SANDY CLAY - orange brown, fine grained, sandy clay with some silt, saturated		A*	2.7		PID<1ppm	▼	
35	3				3.0				
34	4.5	Bore discontinued at 4.5m - target depth reached		A	4.4				
33	5				4.5				
32	6								
31	7								
30	8								
29	9								

RIG: Bobcat **DRILLER:** S Gregor **LOGGED:** KP **CASING:** Uncased

TYPE OF BORING: Solid flight auger to 4.5m

WATER OBSERVATIONS: Free groundwater observed at 2.5m

REMARKS: *Denotes field replicate sample BD3/261109 collected. *Level relative to AHD, SSM167133

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U,	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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DESCRIPTION AND CLASSIFICATION OF ROCKS FOR ENGINEERING PURPOSES

DEGREE OF WEATHERING

Term	Symbol	Definition
Extremely Weathered	EW	Rock substance affected by weathering to the extent that the rock exhibits soil properties - i.e. it can be remoulded and can be classified according to the Unified Classification System, but the texture of the original rock is still evident.
Highly Weathered	HW	Rock substance affected by weathering to the extent that limonite staining or bleaching affects the whole of the rock substance and other signs of chemical or physical decomposition are evident. Porosity and strength may be increased or decreased compared to the fresh rock usually as a result of iron leaching or deposition. The colour and strength of the original fresh rock substance is no longer recognisable.
Moderately Weathered	MW	Rock substance affected by weathering to the extent that staining or discolouration of the rock substance usually by limonite has taken place. The colour of the fresh rock is no longer recognisable.
Slightly Weathered	SW	Rock substance affected by weathering to the extent that partial staining or discolouration of the rock substance usually by limonite has taken place. The colour and texture of the fresh rock is recognisable.
Fresh Stained	Fs	Rock substance unaffected by weathering, but showing limonite staining along joints.
Fresh	Fr	Rock substance unaffected by weathering.

ROCK STRENGTH

Rock strength is defined by the Point Load Strength Index ($I_{S(50)}$) and refers to the strength of the rock substance in the direction normal to the bedding. The test procedure is described by Australian Standard 4133.4.1 - 1993.

Term	Symbol	Field Guide*	Point Load Index $I_{S(50)}$ MPa	Approx Unconfined Compressive Strength q_u ** MPa
Extremely low	EL	Easily remoulded by hand to a material with soil properties	<0.03	< 0.6
Very low	VL	Material crumbles under firm blows with sharp end of pick; can be peeled with a knife; too hard to cut a triaxial sample by hand. SPT will refuse. Pieces up to 3 cm thick can be broken by finger pressure.	0.03-0.1	0.6-2
Low	L	Easily scored with a knife; indentations 1 mm to 3 mm show in the specimen with firm blows of the pick point; has dull sound under hammer. A piece of core 150 mm long 40 mm diameter may be broken by hand. Sharp edges of core may be friable and break during handling.	0.1-0.3	2-6
Medium	M	Readily scored with a knife; a piece of core 150 mm long by 50 mm diameter can be broken by hand with difficulty.	0.3-1.0	6-20
High	H	Can be slightly scratched with a knife. A piece of core 150 mm long by 50 mm diameter cannot be broken by hand but can be broken with pick with a single firm blow, rock rings under hammer.	1 - 3	20-60
Very high	VH	Cannot be scratched with a knife. Hand specimen breaks with pick after more than one blow, rock rings under hammer.	3 - 10	60-200
Extremely high	EH	Specimen requires many blows with geological pick to break through intact material, rock rings under hammer.	>10	> 200

Note that these terms refer to strength of rock material and not to the strength of the rock mass, which may be considerably weaker due to rock defects.

* The field guide assessment of rock strength may be used for preliminary assessment or when point load testing is not able to be done.

** The approximate unconfined compressive strength (q_u) shown in the table is based on an assumed ratio to the point load index of 20:1. This ratio may vary widely.

STRATIFICATION SPACING

Term	Separation of Stratification Planes
Thinly laminated	<6 mm
Laminated	6 mm to 20 mm
Very thinly bedded	20 mm to 60 mm
Thinly bedded	60 mm to 0.2 m
Medium bedded	0.2 m to 0.6 m
Thickly bedded	0.6 m to 2 m
Very thickly bedded	>2 m

DEGREE OF FRACTURING

This classification applies to diamond drill cores and refers to the spacing of all types of natural fractures along which the core is discontinuous. These include bedding plane partings, joints and other rock defects, but exclude known artificial fractures such as drilling breaks. The orientation of rock defects is measured as an angle relative to a plane perpendicular to the core axis. Note that where possible, recordings of the actual defect spacing or range of spacings is preferred to the general terms given below.

Term	Description
Fragmented	The core consists mainly of fragments with dimensions less than 20 mm.
Highly Fractured	Core lengths are generally less than 20 mm - 40 mm with occasional fragments.
Fractured	Core lengths are mainly 40 mm - 200 mm with occasional shorter and longer sections.
Slightly Fractured	Core lengths are generally 200 mm - 1000 mm with occasional shorter and longer sections.
Unbroken	The core does not contain any fracture.

ROCK QUALITY DESIGNATION (RQD)

This is defined as the ratio of sound (i.e. low strength or better) core in lengths of greater than 100 mm to the total length of the core, expressed in percent. If the core is broken by handling or by the drilling process (i.e. the fracture surfaces are fresh, irregular breaks rather than joint surfaces) the fresh broken pieces are fitted together and counted as one piece.

SEDIMENTARY ROCK TYPES

This classification system provides a standardised terminology for the engineering description of sandstone and shales, particularly in the Sydney area, but the terms and definitions may be used elsewhere when applicable.

Rock Type	Definition
Conglomerate	More than 50% of the rock consists of gravel-sized (greater than 2 mm) fragments
Sandstone:	More than 50% of the rock consists of sand-sized (0.06 to 2 mm) grains
Siltstone:	More than 50% of the rock consists of silt-sized (less than 0.06 mm) granular particles and the rock is not laminated.
Claystone:	More than 50% of the rock consists of clay or sericitic material and the rock is not laminated.
Shale:	More than 50% of the rock consists of silt or clay-sized particles and the rock is laminated.

Rocks possessing characteristics of two groups are described by their predominant particle size with reference also to the minor constituents, eg. clayey sandstone, sandy shale.

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NOTES RELATING TO THIS REPORT

Introduction

These notes have been provided to amplify the geotechnical report in regard to classification methods, specialist field procedures and certain matters relating to the Discussion and Comments section. Not all, of course, are necessarily relevant to all reports.

Geotechnical reports are based on information gained from limited subsurface test boring and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

Description and Classification Methods

The methods of description and classification of soils and rocks used in this report are based on Australian Standard 1726, Geotechnical Site Investigations Code. In general, descriptions cover the following properties - strength or density, colour, structure, soil or rock type and inclusions.

Soil types are described according to the predominating particle size, qualified by the grading of other particles present (eg. sandy clay) on the following bases:

Soil Classification	Particle Size
Clay	less than 0.002 mm
Silt	0.002 to 0.06 mm
Sand	0.06 to 2.00 mm
Gravel	2.00 to 60.00 mm

Cohesive soils are classified on the basis of strength either by laboratory testing or engineering examination. The strength terms are defined as follows.

Classification	Undrained Shear Strength kPa
Very soft	less than 12
Soft	12—25
Firm	25—50
Stiff	50—100
Very stiff	100—200
Hard	Greater than 200

Non-cohesive soils are classified on the basis of relative density, generally from the results of standard penetration tests (SPT) or Dutch cone penetrometer tests (CPT) as below:

Relative Density	SPT "N" Value (blows/300 mm)	CPT Cone Value (q_c — MPa)
Very loose	less than 5	less than 2
Loose	5—10	2—5
Medium dense	10—30	5—15
Dense	30—50	15—25
Very dense	greater than 50	greater than 25

Rock types are classified by their geological names. Where relevant, further information regarding rock classification is given on the following sheet.

Sampling

Sampling is carried out during drilling to allow engineering examination (and laboratory testing where required) of the soil or rock.

Disturbed samples taken during drilling provide information on colour, type, inclusions and, depending upon the degree of disturbance, some information on strength and structure.

Undisturbed samples are taken by pushing a thin-walled sample tube into the soil and withdrawing with a sample of the soil in a relatively undisturbed state. Such samples yield information on structure and strength, and are necessary for laboratory determination of shear strength and compressibility. Undisturbed sampling is generally effective only in cohesive soils.

Details of the type and method of sampling are given in the report.

Drilling Methods.

The following is a brief summary of drilling methods currently adopted by the Company and some comments on their use and application.

Test Pits — these are excavated with a backhoe or a tracked excavator, allowing close examination of the in-situ soils if it is safe to descent into the pit. The depth of penetration is limited to about 3 m for a backhoe and up to 6 m for an excavator. A potential disadvantage is the disturbance caused by the excavation.

Large Diameter Auger (eg. Pengo) — the hole is advanced by a rotating plate or short spiral auger, generally 300 mm or larger in diameter. The cuttings are returned to the surface at intervals (generally of not more than 0.5 m) and are disturbed but usually unchanged in moisture content. Identification of soil strata is generally much more reliable than with continuous spiral flight augers, and is usually supplemented by occasional undisturbed tube sampling.

Continuous Sample Drilling — the hole is advanced by pushing a 100 mm diameter socket into the ground and withdrawing it at intervals to extrude the sample. This is the most reliable method of drilling in soils, since moisture content is unchanged and soil structure, strength, etc. is only marginally affected.

Continuous Spiral Flight Augers — the hole is advanced using 90—115 mm diameter continuous spiral flight augers which are withdrawn at intervals to allow

sampling or in-situ testing. This is a relatively economical means of drilling in clays and in sands above the water table. Samples are returned to the surface, or may be collected after withdrawal of the auger flights, but they are very disturbed and may be contaminated. Information from the drilling (as distinct from specific sampling by SPTs or undisturbed samples) is of relatively lower reliability, due to remoulding, contamination or softening of samples by ground water.

Non-core Rotary Drilling — the hole is advanced by a rotary bit, with water being pumped down the drill rods and returned up the annulus, carrying the drill cuttings. Only major changes in stratification can be determined from the cuttings, together with some information from 'feel' and rate of penetration.

Rotary Mud Drilling — similar to rotary drilling, but using drilling mud as a circulating fluid. The mud tends to mask the cuttings and reliable identification is again only possible from separate intact sampling (eg. from SPT).

Continuous Core Drilling — a continuous core sample is obtained using a diamond-tipped core barrel, usually 50 mm internal diameter. Provided full core recovery is achieved (which is not always possible in very weak rocks and granular soils), this technique provides a very reliable (but relatively expensive) method of investigation.

Standard Penetration Tests

Standard penetration tests (abbreviated as SPT) are used mainly in non-cohesive soils, but occasionally also in cohesive soils as a means of determining density or strength and also of obtaining a relatively undisturbed sample. The test procedure is described in Australian Standard 1289, "Methods of Testing Soils for Engineering Purposes" — Test 6.3.1.

The test is carried out in a borehole by driving a 50 mm diameter split sample tube under the impact of a 63 kg hammer with a free fall of 760 mm. It is normal for the tube to be driven in three successive 150 mm increments and the 'N' value is taken as the number of blows for the last 300 mm. In dense sands, very hard clays or weak rock, the full 450 mm penetration may not be practicable and the test is discontinued.

The test results are reported in the following form.

- In the case where full penetration is obtained with successive blow counts for each 150 mm of say 4, 6 and 7

  as 4, 6, 7
  N = 13

- In the case where the test is discontinued short of full penetration, say after 15 blows for the first 150 mm and 30 blows for the next 40 mm

  as 15, 30/40 mm.

The results of the tests can be related empirically to the engineering properties of the soil.

Occasionally, the test method is used to obtain samples in 50 mm diameter thin walled sample tubes in clays. In such circumstances, the test results are shown on the borelogs in brackets.

Cone Penetrometer Testing and Interpretation

Cone penetrometer testing (sometimes referred to as Dutch cone — abbreviated as CPT) described in this report has been carried out using an electrical friction cone penetrometer. The test is described in Australian Standard 1289, Test 6.4.1.

In the tests, a 35 mm diameter rod with a cone-tipped end is pushed continuously into the soil, the reaction being provided by a specially designed truck or rig which is fitted with an hydraulic ram system. Measurements are made of the end bearing resistance on the cone and the friction resistance on a separate 130 mm long sleeve, immediately behind the cone. Transducers in the tip of the assembly are connected by electrical wires passing through the centre of the push rods to an amplifier and recorder unit mounted on the control truck.

As penetration occurs (at a rate of approximately 20 mm per second) the information is plotted on a computer screen and at the end of the test is stored on the computer for later plotting of the results.

The information provided on the plotted results comprises: —

- Cone resistance — the actual end bearing force divided by the cross sectional area of the cone — expressed in MPa.
- Sleeve friction — the frictional force on the sleeve divided by the surface area — expressed in kPa.
- Friction ratio — the ratio of sleeve friction to cone resistance, expressed in percent.

There are two scales available for measurement of cone resistance. The lower scale (0—5 MPa) is used in very soft soils where increased sensitivity is required and is shown in the graphs as a dotted line. The main scale (0—50 MPa) is less sensitive and is shown as a full line.

The ratios of the sleeve friction to cone resistance will vary with the type of soil encountered, with higher relative friction in clays than in sands. Friction ratios of 1%—2% are commonly encountered in sands and very soft clays rising to 4%—10% in stiff clays.

In sands, the relationship between cone resistance and SPT value is commonly in the range:—

q_c (MPa) = (0.4 to 0.6) N (blows per 300 mm)

In clays, the relationship between undrained shear strength and cone resistance is commonly in the range:—

q_c = (12 to 18) c_u

Interpretation of CPT values can also be made to allow estimation of modulus or compressibility values to allow calculation of foundation settlements.

Inferred stratification as shown on the attached reports is assessed from the cone and friction traces and from experience and information from nearby boreholes, etc. This information is presented for general guidance, but must be regarded as being to some extent interpretive. The test method provides a continuous profile of engineering properties, and where precise information on

soil classification is required, direct drilling and sampling may be preferable.

Hand Penetrometers

Hand penetrometer tests are carried out by driving a rod into the ground with a falling weight hammer and measuring the blows for successive 150 mm increments of penetration. Normally, there is a depth limitation of 1.2 m but this may be extended in certain conditions by the use of extension rods.

Two relatively similar tests are used.

- Perth sand penetrometer — a 16 mm diameter flat-ended rod is driven with a 9 kg hammer, dropping 600 mm (AS 1289, Test 6.3.3). This test was developed for testing the density of sands (originating in Perth) and is mainly used in granular soils and filling.
- Cone penetrometer (sometimes known as the Scala Penetrometer) — a 16 mm rod with a 20 mm diameter cone end is driven with a 9 kg hammer dropping 510 mm (AS 1289, Test 6.3.2). The test was developed initially for pavement subgrade investigations, and published correlations of the test results with California bearing ratio have been published by various Road Authorities.

Laboratory Testing

Laboratory testing is carried out in accordance with Australian Standard 1289 "Methods of Testing Soil for Engineering Purposes". Details of the test procedure used are given on the individual report forms.

Bore Logs

The bore logs presented herein are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable, or possible to justify on economic grounds. In any case, the boreholes represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes, the frequency of sampling and the possibility of other than 'straight line' variations between the boreholes.

Ground Water

Where ground water levels are measured in boreholes, there are several potential problems;

- In low permeability soils, ground water although present, may enter the hole slowly or perhaps not at all during the time it is left open.
- A localised perched water table may lead to an erroneous indication of the true water table.
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report.
- The use of water or mud as a drilling fluid will mask any ground water inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water observations are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Engineering Reports

Engineering reports are prepared by qualified personnel and are based on the information obtained and on current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal (eg. a three storey building), the information and interpretation may not be relevant if the design proposal is changed (eg. to a twenty storey building). If this happens, the Company will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface condition, discussion of geotechnical aspects and recommendations or suggestions for design and construction. However, the Company cannot always anticipate or assume responsibility for:

- unexpected variations in ground conditions — the potential for this will depend partly on bore spacing and sampling frequency
- changes in policy or interpretation of policy by statutory authorities
- the actions of contractors responding to commercial pressures.

If these occur, the Company will be pleased to assist with investigation or advice to resolve the matter.

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, the Company requests that it immediately be notified. Most problems are much more readily resolved when conditions are exposed than at some later stage, well after the event.

Reproduction of Information for Contractual Purposes

Attention is drawn to the document "Guidelines for the Provision of Geotechnical Information in Tender Documents", published by the Institution of Engineers,

Australia. Where information obtained from this investigation is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. The Company would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The Company will always be pleased to provide engineering inspection services for geotechnical aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.

APPENDIX D
Laboratory Results and Chain of Custody Information

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS 35858

Client:
Douglas Partners
96 Hermitage Rd
West Ryde
NSW 2114

Attention: Kurt Plambeck

Sample log in details:

Your Reference:	**71500, West Hoxton**
No. of samples:	40 Soils
Date samples received:	1/12/09
Date completed instructions received:	2/12/09

Analysis Details:
Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by:	7/12/09
Date of Preliminary Report:	Not issued
Issue Date:	7/12/09

NATA accreditation number 2901. This document shall not be reproduced except in full.
This document is issued in accordance with NATA's accreditation requirements.
Accredited for compliance with ISO/IEC 17025.
Tests not covered by NATA are denoted with *.

Results Approved By:

Jacinta Hurst
Operations Manager

Joshua Lim
Chemist

vTPH & BTEX in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-1 GW1/0.1-0.3 25/11/2009 Soil	35858-2 GW1/3.8-4.0 25/11/2009 Soil	35858-3 GW2/0.1-0.3 26/11/2009 Soil	35858-4 GW2/2.8-3.0 26/11/2009 Soil	35858-5 GW4/0.3-0.5 26/11/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
vTPH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
m+p-xylene	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	95	94	85	95	94

vTPH & BTEX in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-6 GW4/2.8-3.0 26/11/2009 Soil	35858-7 GW3/3.5 25/11/2009 Soil	35858-8 GW3/0.4-0.5 25/11/2009 Soil	35858-9 GW5/0.1-0.3 25/11/2009 Soil	35858-10 GW6/0-0.1 25/11/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
vTPH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
m+p-xylene	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	95	97	87	96	95

vTPH & BTEX in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-11 GW7/0.4-0.5 24/11/2009 Soil	35858-12 GW7/0.9-1.0 24/11/2009 Soil	35858-13 GW8/0.3-0.5 26/11/2009 Soil	35858-14 GW9/0.1-0.3 26/11/2009 Soil	35858-15 GW9/2.8-3.0 26/11/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
vTPH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
m+p-xylene	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	93	88	94	88	87

vTPH & BTEX in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-16 BH1/0.1-0.3 27/11/2009 Soil	35858-17 BH2/0.3-0.5 27/11/2009 Soil	35858-18 BH3/0.1-0.3 27/11/2009 Soil	35858-19 BH3/0.3-0.5 27/11/2009 Soil	35858-20 BH4/0.3-0.5 27/11/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
vTPH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
m+p-xylene	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	97	83	93	84	86

vTPH & BTEX in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-21 BH5/0.3-0.5 27/11/2009 Soil	35858-22 BH6/0.1-0.3 27/11/2009 Soil	35858-23 BH8/1.3-1.5 27/11/2009 Soil	35858-24 BH11/0.1-0.3 27/11/2009 Soil	35858-25 BH12/0.1-0.3 27/11/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
vTPH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
m+p-xylene	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	89	88	87	92	91

vTPH & BTEX in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-26 BH13/0.1-0.2 27/11/2009 Soil	35858-27 BH14/0.3-0.5 27/11/2009 Soil	35858-28 BH15/0.1-0.3 27/11/2009 Soil	35858-29 BH15/3.5-3.6 27/11/2009 Soil	35858-30 BH16/0.1-0.3 27/11/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
vTPH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
m+p-xylene	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	105	95	95	91	96

vTPH & BTEX in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-31 BH17/0.1-0.3 27/11/2009 Soil	35858-32 BH14/2.8-3.0 27/11/2009 Soil	35858-33 BH21/0.4-0.5 27/11/2009 Soil	35858-34 BH21/2.4-2.5 25/11/2009 Soil	35858-35 BH25/0.3-0.5 25/11/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	5/12/2009	5/12/2009	5/12/2009	5/12/2009	5/12/2009
vTPH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
m+p-xylene	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	94	92	94	93	92

vTPH & BTEX in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-36 BH28/0.3-0.5 27/11/2009 Soil	35858-37 BH28/2.8-3.0 27/11/2009 Soil
Date extracted	-	3/12/2009	3/12/2009
Date analysed	-	5/12/2009	5/12/2009
vTPH C_6 - C_9	mg/kg	<25	<25
Benzene	mg/kg	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0
m+p-xylene	mg/kg	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	85	95

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	35858-1	35858-2	35858-3	35858-4	35858-5
Your Reference	----------	GW1/0.1-0.3	GW1/3.8-4.0	GW2/0.1-0.3	GW2/2.8-3.0	GW4/0.3-0.5
Date Sampled	----------	25/11/2009	25/11/2009	26/11/2009	26/11/2009	26/11/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
TPH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TPH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TPH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	96	91	109	75	97

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	35858-6	35858-7	35858-8	35858-9	35858-10
Your Reference	----------	GW4/2.8-3.0	GW3/3.5	GW3/0.4-0.5	GW5/0.1-0.3	GW6/0-0.1
Date Sampled	----------	26/11/2009	25/11/2009	25/11/2009	25/11/2009	25/11/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
TPH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TPH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TPH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	79	80	83	87	115

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	35858-11	35858-12	35858-13	35858-14	35858-15
Your Reference	----------	GW7/0.4-0.5	GW7/0.9-1.0	GW8/0.3-0.5	GW9/0.1-0.3	GW9/2.8-3.0
Date Sampled	----------	24/11/2009	24/11/2009	26/11/2009	26/11/2009	26/11/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
TPH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TPH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TPH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	74	98	74	91	91

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	35858-16	35858-17	35858-18	35858-19	35858-20
Your Reference	----------	BH1/0.1-0.3	BH2/0.3-0.5	BH3/0.1-0.3	BH3/0.3-0.5	BH4/0.3-0.5
Date Sampled	----------	27/11/2009	27/11/2009	27/11/2009	27/11/2009	27/11/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
TPH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TPH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TPH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	87	114	98	98	96

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	35858-21	35858-22	35858-23	35858-24	35858-25
Your Reference	----------	BH5/0.3-0.5	BH6/0.1-0.3	BH8/1.3-1.5	BH11/0.1-0.3	BH12/0.1-0.3
Date Sampled	----------	27/11/2009	27/11/2009	27/11/2009	27/11/2009	27/11/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
TPH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TPH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TPH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	94	99	90	96	96

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	35858-26	35858-27	35858-28	35858-29	35858-30
Your Reference	----------	BH13/0.1-0.2	BH14/0.3-0.5	BH15/0.1-0.3	BH15/3.5-3.6	BH16/0.1-0.3
Date Sampled	----------	27/11/2009	27/11/2009	27/11/2009	27/11/2009	27/11/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
TPH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TPH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TPH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	96	87	88	82	85

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	35858-31	35858-32	35858-33	35858-34	35858-35
Your Reference	----------	BH17/0.1-0.3	BH14/2.8-3.0	BH21/0.4-0.5	BH21/2.4-2.5	BH25/0.3-0.5
Date Sampled	----------	27/11/2009	27/11/2009	27/11/2009	25/11/2009	25/11/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
TPH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TPH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TPH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	87	85	85	85	85

sTPH in Soil (C10-C36)			
Our Reference:	UNITS	35858-36	35858-37
Your Reference	----------	BH28/0.3-0.5	BH28/2.8-3.0
Date Sampled	----------	27/11/2009	27/11/2009
Type of sample		Soil	Soil
Date extracted	-	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009
TPH C_{10} - C_{14}	mg/kg	<50	<50
TPH C_{15} - C_{28}	mg/kg	<100	<100
TPH C_{29} - C_{36}	mg/kg	<100	<100
Surrogate o-Terphenyl	%	87	86

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-1 GW1/0.1-0.3 25/11/2009 Soil	35858-2 GW1/3.8-4.0 25/11/2009 Soil	35858-3 GW2/0.1-0.3 26/11/2009 Soil	35858-4 GW2/2.8-3.0 26/11/2009 Soil	35858-5 GW4/0.3-0.5 26/11/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate p-Terphenyl-d_{14}	%	107	101	105	102	102

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-6 GW4/2.8-3.0 26/11/2009 Soil	35858-7 GW3/3.5 25/11/2009 Soil	35858-8 GW3/0.4-0.5 25/11/2009 Soil	35858-9 GW5/0.1-0.3 25/11/2009 Soil	35858-10 GW6/0-0.1 25/11/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	3.7
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.4
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	7.9
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	7.6
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	2.4
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	2.9
Benzo(b+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	5.1
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	3.4
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	2.2
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.4
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	2.2
Surrogate p-Terphenyl-d_{14}	%	107	104	103	101	100

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-11 GW7/0.4-0.5 24/11/2009 Soil	35858-12 GW7/0.9-1.0 24/11/2009 Soil	35858-13 GW8/0.3-0.5 26/11/2009 Soil	35858-14 GW9/0.1-0.3 26/11/2009 Soil	35858-15 GW9/2.8-3.0 26/11/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009	5/12/2009	5/12/2009	5/12/2009
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	0.1	<0.1	0.4	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.2	0.2	<0.1	0.8	<0.1
Pyrene	mg/kg	0.2	0.2	<0.1	0.8	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Chrysene	mg/kg	0.1	0.2	<0.1	0.4	<0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	0.5	<0.2
Benzo(a)pyrene	mg/kg	0.08	0.07	<0.05	0.3	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	0.3	<0.1
Surrogate p-Terphenyl-d_{14}	%	107	101	105	105	104

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-16 BH1/0.1-0.3 27/11/2009 Soil	35858-18 BH3/0.1-0.3 27/11/2009 Soil	35858-19 BH3/0.3-0.5 27/11/2009 Soil	35858-20 BH4/0.3-0.5 27/11/2009 Soil	35858-21 BH5/0.3-0.5 27/11/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	5/12/2009	5/12/2009	5/12/2009	5/12/2009	5/12/2009
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate p-Terphenyl-d_{14}	%	105	104	117	105	105

PAHs in Soil						
Our Reference:	UNITS	35858-22	35858-23	35858-24	35858-25	35858-26
Your Reference	----------	BH6/0.1-0.3	BH8/1.3-1.5	BH11/0.1-0.3	BH12/0.1-0.3	BH13/0.1-0.2
Date Sampled	----------	27/11/2009	27/11/2009	27/11/2009	27/11/2009	27/11/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	5/12/2009	5/12/2009	5/12/2009	5/12/2009	5/12/2009
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.4
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.3
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.7
Phenanthrene	mg/kg	<0.1	0.2	0.3	0.5	8.4
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.8
Fluoranthene	mg/kg	<0.1	0.2	0.3	1	9.2
Pyrene	mg/kg	<0.1	0.2	0.3	1.1	8.0
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	0.4	2.3
Chrysene	mg/kg	<0.1	0.1	0.2	0.6	2.4
Benzo(b+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	0.9	3.6
Benzo(a)pyrene	mg/kg	<0.05	0.07	0.1	0.7	2.8
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	0.4	1.6
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	0.5	1.5
Surrogate p-Terphenyl-d_{14}	%	107	104	107	108	103

PAHs in Soil						
Our Reference:	UNITS	35858-27	35858-28	35858-29	35858-30	35858-32
Your Reference	----------	BH14/0.3-0.5	BH15/0.1-0.3	BH15/3.5-3.6	BH16/0.1-0.3	BH14/2.8-3.0
Date Sampled	----------	27/11/2009	27/11/2009	27/11/2009	27/11/2009	27/11/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	5/12/2009	5/12/2009	5/12/2009	5/12/2009	5/12/2009
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.08	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate p-Terphenyl-d_{14}	%	104	110	109	109	107

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-33 BH21/0.4-0.5 27/11/2009 Soil	35858-34 BH21/2.4-2.5 25/11/2009 Soil	35858-35 BH25/0.3-0.5 25/11/2009 Soil	35858-36 BH28/0.3-0.5 27/11/2009 Soil	35858-37 BH28/2.8-3.0 27/11/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	5/12/2009	5/12/2009	5/12/2009	5/12/2009	5/12/2009
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	0.4	<0.1	0.3	<0.1
Anthracene	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	1.4	<0.1	0.3	<0.1
Pyrene	mg/kg	<0.1	1.5	<0.1	0.3	<0.1
Benzo(a)anthracene	mg/kg	<0.1	0.5	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	0.7	<0.1	0.2	<0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	1.1	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.6	<0.05	0.1	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.4	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	0.4	<0.1	0.1	<0.1
Surrogate p-Terphenyl-d_{14}	%	131	110	107	109	108

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-38 BD1/261109 27/11/2009 Soil	35858-39 BD2/261109 27/11/2009 Soil	35858-40 BD1/271109 27/11/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	5/12/2009	5/12/2009	5/12/2009
Naphthalene	mg/kg	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	0.1
Pyrene	mg/kg	<0.1	<0.1	0.2
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1
Surrogate p-Terphenyl-d_{14}	%	108	111	105

Organochlorine Pesticides in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-1 GW1/0.1-0.3 25/11/2009 Soil	35858-3 GW2/0.1-0.3 26/11/2009 Soil	35858-9 GW5/0.1-0.3 25/11/2009 Soil	35858-10 GW6/0-0.1 25/11/2009 Soil	35858-11 GW7/0.4-0.5 24/11/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	105	101	102	102	100

Organochlorine Pesticides in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-13 GW8/0.3-0.5 26/11/2009 Soil	35858-14 GW9/0.1-0.3 26/11/2009 Soil	35858-16 BH1/0.1-0.3 27/11/2009 Soil	35858-17 BH2/0.3-0.5 27/11/2009 Soil	35858-18 BH3/0.1-0.3 27/11/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	99	100	102	102	103

Organochlorine Pesticides in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-20 BH4/0.3-0.5 27/11/2009 Soil	35858-21 BH5/0.3-0.5 27/11/2009 Soil	35858-22 BH6/0.1-0.3 27/11/2009 Soil	35858-25 BH12/0.1-0.3 27/11/2009 Soil	35858-26 BH13/0.1-0.2 27/11/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	99	96	101	103	105

Organochlorine Pesticides in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-30 BH16/0.1-0.3 27/11/2009 Soil	35858-31 BH17/0.1-0.3 27/11/2009 Soil	35858-33 BH21/0.4-0.5 27/11/2009 Soil	35858-35 BH25/0.3-0.5 25/11/2009 Soil	35858-36 BH28/0.3-0.5 27/11/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	102	98	100	98	101

PCBs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-1 GW1/0.1-0.3 25/11/2009 Soil	35858-3 GW2/0.1-0.3 26/11/2009 Soil	35858-9 GW5/0.1-0.3 25/11/2009 Soil	35858-10 GW6/0-0.1 25/11/2009 Soil	35858-11 GW7/0.4-0.5 24/11/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1221*	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	105	101	102	102	100

PCBs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-13 GW8/0.3-0.5 26/11/2009 Soil	35858-14 GW9/0.1-0.3 26/11/2009 Soil	35858-16 BH1/0.1-0.3 27/11/2009 Soil	35858-17 BH2/0.3-0.5 27/11/2009 Soil	35858-18 BH3/0.1-0.3 27/11/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1221*	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	99	100	102	102	103

PCBs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-20 BH4/0.3-0.5 27/11/2009 Soil	35858-21 BH5/0.3-0.5 27/11/2009 Soil	35858-22 BH6/0.1-0.3 27/11/2009 Soil	35858-25 BH12/0.1-0.3 27/11/2009 Soil	35858-26 BH13/0.1-0.2 27/11/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1221*	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	99	96	101	103	105

PCBs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ---------- 	35858-30 BH16/0.1-0.3 27/11/2009 Soil	35858-31 BH17/0.1-0.3 27/11/2009 Soil	35858-33 BH21/0.4-0.5 27/11/2009 Soil	35858-35 BH25/0.3-0.5 25/11/2009 Soil	35858-36 BH28/0.3-0.5 27/11/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1221*	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	102	98	100	98	101

Total Phenolics in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-8 GW3/0.4-0.5 25/11/2009 Soil	35858-9 GW5/0.1-0.3 25/11/2009 Soil	35858-13 GW8/0.3-0.5 26/11/2009 Soil	35858-15 GW9/2.8-3.0 26/11/2009 Soil	35858-16 BH1/0.1-0.3 27/11/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
Total Phenolics (as Phenol)	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0

Total Phenolics in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-17 BH2/0.3-0.5 27/11/2009 Soil	35858-27 BH14/0.3-0.5 27/11/2009 Soil	35858-28 BH15/0.1-0.3 27/11/2009 Soil	35858-29 BH15/3.5-3.6 27/11/2009 Soil	35858-30 BH16/0.1-0.3 27/11/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
Total Phenolics (as Phenol)	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0

Total Phenolics in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-36 BH28/0.3-0.5 27/11/2009 Soil	35858-37 BH28/2.8-3.0 27/11/2009 Soil
Date extracted	-	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009
Total Phenolics (as Phenol)	mg/kg	<5.0	<5.0

Acid Extractable metals in soil						
Our Reference:	UNITS	35858-1	35858-3	35858-5	35858-8	35858-9
Your Reference	----------	GW1/0.1-0.3	GW2/0.1-0.3	GW4/0.3-0.5	GW3/0.4-0.5	GW5/0.1-0.3
Date Sampled	----------	25/11/2009	26/11/2009	26/11/2009	25/11/2009	25/11/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
Arsenic	mg/kg	7	9	6	6	7
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	20	22	18	20	23
Copper	mg/kg	12	8	9	14	23
Lead	mg/kg	19	30	17	17	28
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	8	10	7	6	20
Zinc	mg/kg	12	16	10	10	56

Acid Extractable metals in soil						
Our Reference:	UNITS	35858-10	35858-11	35858-12	35858-13	35858-14
Your Reference	----------	GW6/0-0.1	GW7/0.4-0.5	GW7/0.9-1.0	GW8/0.3-0.5	GW9/0.1-0.3
Date Sampled	----------	25/11/2009	24/11/2009	24/11/2009	26/11/2009	26/11/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
Arsenic	mg/kg	8	6	6	7	4
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	25	16	16	16	12
Copper	mg/kg	5	10	20	11	13
Lead	mg/kg	22	17	15	22	21
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	2	4	9	8	9
Zinc	mg/kg	10	11	24	15	26

Acid Extractable metals in soil						
Our Reference:	UNITS	35858-16	35858-17	35858-18	35858-20	35858-21
Your Reference	----------	BH1/0.1-0.3	BH2/0.3-0.5	BH3/0.1-0.3	BH4/0.3-0.5	BH5/0.3-0.5
Date Sampled	----------	27/11/2009	27/11/2009	27/11/2009	27/11/2009	27/11/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
Arsenic	mg/kg	7	4	6	6	5
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	16	10	32	13	14
Copper	mg/kg	19	16	21	13	12
Lead	mg/kg	18	12	19	19	15
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	9	4	22	9	6
Zinc	mg/kg	28	15	29	17	14

Acid Extractable metals in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-22 BH6/0.1-0.3 27/11/2009 Soil	35858-23 BH8/1.3-1.5 27/11/2009 Soil	35858-25 BH12/0.1-0.3 27/11/2009 Soil	35858-26 BH13/0.1-0.2 27/11/2009 Soil	35858-28 BH15/0.1-0.3 27/11/2009 Soil
Date digested	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
Arsenic	mg/kg	5	5	7	11	8
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	18	13	20	29	27
Copper	mg/kg	21	20	13	8	8
Lead	mg/kg	15	15	21	24	37
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	11	9	11	6	6
Zinc	mg/kg	20	27	12	11	32

Acid Extractable metals in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-29 BH15/3.5-3.6 27/11/2009 Soil	35858-30 BH16/0.1-0.3 27/11/2009 Soil	35858-31 BH17/0.1-0.3 27/11/2009 Soil	35858-33 BH21/0.4-0.5 27/11/2009 Soil	35858-35 BH25/0.3-0.5 25/11/2009 Soil
Date digested	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
Arsenic	mg/kg	4	10	12	6	5
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	12	23	27	19	15
Copper	mg/kg	19	6	9	12	12
Lead	mg/kg	11	26	33	15	12
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	14	4	7	7	6
Zinc	mg/kg	46	8	22	16	11

Acid Extractable metals in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-36 BH28/0.3-0.5 27/11/2009 Soil	35858-37 BH28/2.8-3.0 27/11/2009 Soil	35858-38 BD1/261109 27/11/2009 Soil	35858-39 BD2/261109 27/11/2009 Soil	35858-40 BD1/271109 27/11/2009 Soil
Date digested	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
Arsenic	mg/kg	6	6	6	6	8
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	20	15	18	14	24
Copper	mg/kg	8	13	12	9	7
Lead	mg/kg	21	14	13	19	34
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	5	5	6	6	5
Zinc	mg/kg	9	18	10	12	24

Moisture						
Our Reference:	UNITS	35858-1	35858-2	35858-3	35858-4	35858-5
Your Reference	----------	GW1/0.1-0.3	GW1/3.8-4.0	GW2/0.1-0.3	GW2/2.8-3.0	GW4/0.3-0.5
Date Sampled	----------	25/11/2009	25/11/2009	26/11/2009	26/11/2009	26/11/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Moisture	%	15	14	28	17	12

Moisture						
Our Reference:	UNITS	35858-6	35858-7	35858-8	35858-9	35858-10
Your Reference	----------	GW4/2.8-3.0	GW3/3.5	GW3/0.4-0.5	GW5/0.1-0.3	GW6/0-0.1
Date Sampled	----------	26/11/2009	25/11/2009	25/11/2009	25/11/2009	25/11/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Moisture	%	14	14	18	19	9.5

Moisture						
Our Reference:	UNITS	35858-11	35858-12	35858-13	35858-14	35858-15
Your Reference	----------	GW7/0.4-0.5	GW7/0.9-1.0	GW8/0.3-0.5	GW9/0.1-0.3	GW9/2.8-3.0
Date Sampled	----------	24/11/2009	24/11/2009	26/11/2009	26/11/2009	26/11/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Moisture	%	11	14	11	6.0	18

Moisture						
Our Reference:	UNITS	35858-16	35858-17	35858-18	35858-19	35858-20
Your Reference	----------	BH1/0.1-0.3	BH2/0.3-0.5	BH3/0.1-0.3	BH3/0.3-0.5	BH4/0.3-0.5
Date Sampled	----------	27/11/2009	27/11/2009	27/11/2009	27/11/2009	27/11/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Moisture	%	14	19	11	9.1	8.6

Moisture						
Our Reference:	UNITS	35858-21	35858-22	35858-23	35858-24	35858-25
Your Reference	----------	BH5/0.3-0.5	BH6/0.1-0.3	BH8/1.3-1.5	BH11/0.1-0.3	BH12/0.1-0.3
Date Sampled	----------	27/11/2009	27/11/2009	27/11/2009	27/11/2009	27/11/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Moisture	%	6.9	16	16	9.7	6.2

Moisture						
Our Reference:	UNITS	35858-26	35858-27	35858-28	35858-29	35858-30
Your Reference	----------	BH13/0.1-0.2	BH14/0.3-0.5	BH15/0.1-0.3	BH15/3.5-3.6	BH16/0.1-0.3
Date Sampled	----------	27/11/2009	27/11/2009	27/11/2009	27/11/2009	27/11/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Moisture	%	6.2	15	8.5	13	6.0

Moisture						
Our Reference:	UNITS	35858-31	35858-32	35858-33	35858-34	35858-35
Your Reference	----------	BH17/0.1-0.3	BH14/2.8-3.0	BH21/0.4-0.5	BH21/2.4-2.5	BH25/0.3-0.5
Date Sampled	----------	27/11/2009	27/11/2009	27/11/2009	25/11/2009	25/11/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Moisture	%	10	10	12	16	18

Moisture						
Our Reference:	UNITS	35858-36	35858-37	35858-38	35858-39	35858-40
Your Reference	----------	BH28/0.3-0.5	BH28/2.8-3.0	BD1/261109	BD2/261109	BD1/271109
Date Sampled	----------	27/11/2009	27/11/2009	27/11/2009	27/11/2009	27/11/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Moisture	%	7.7	14	21	14	6.7

Asbestos ID - soils						
Our Reference:	UNITS	35858-1	35858-3	35858-5	35858-8	35858-9
Your Reference	----------	GW1/0.1-0.3	GW2/0.1-0.3	GW4/0.3-0.5	GW3/0.4-0.5	GW5/0.1-0.3
Date Sampled	----------	25/11/2009	26/11/2009	26/11/2009	25/11/2009	25/11/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
Sample Description	-	approx 40g soil	approx 40g soil	approx 40g soil	approx 40g soil	approx 40g soil
Asbestos ID in soil	-	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg
Trace Analysis	-	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected

Asbestos ID - soils						
Our Reference:	UNITS	35858-10	35858-11	35858-13	35858-14	35858-16
Your Reference	----------	GW6/0-0.1	GW7/0.4-0.5	GW8/0.3-0.5	GW9/0.1-0.3	BH1/0.1-0.3
Date Sampled	----------	25/11/2009	24/11/2009	26/11/2009	26/11/2009	27/11/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
Sample Description	-	approx 40g soil	approx 40g soil	approx 40g soil	approx 40g soil	approx 40g soil
Asbestos ID in soil	-	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg
Trace Analysis	-	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected

Asbestos ID - soils						
Our Reference:	UNITS	35858-17	35858-18	35858-19	35858-20	35858-22
Your Reference	----------	BH2/0.3-0.5	BH3/0.1-0.3	BH3/0.3-0.5	BH4/0.3-0.5	BH6/0.1-0.3
Date Sampled	----------	27/11/2009	27/11/2009	27/11/2009	27/11/2009	27/11/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
Sample Description	-	approx 40g soil	approx 40g soil	approx 40g soil	approx 40g soil	approx 40g soil
Asbestos ID in soil	-	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg
Trace Analysis	-	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected

Asbestos ID - soils Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-25 BH12/0.1-0.3 27/11/2009 Soil	35858-26 BH13/0.1-0.2 27/11/2009 Soil	35858-30 BH16/0.1-0.3 27/11/2009 Soil	35858-31 BH17/0.1-0.3 27/11/2009 Soil	35858-33 BH21/0.4-0.5 27/11/2009 Soil
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
Sample Description	-	approx 40g soil	approx 40g soil	approx 40g soil	approx 40g soil	approx 40g soil
Asbestos ID in soil	-	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg
Trace Analysis	-	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected

Asbestos ID - soils Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35858-35 BH25/0.3-0.5 25/11/2009 Soil	35858-36 BH28/0.3-0.5 27/11/2009 Soil
Date analysed	-	4/12/2009	4/12/2009
Sample Description	-	approx 40g soil	approx 40g soil
Asbestos ID in soil	-	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg
Trace Analysis	-	Respirable fibres not detected	Respirable fibres not detected

Method ID	Methodology Summary
GC.16	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS.
GC.3	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.
GC.12 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
GC-5	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
GC-6	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
LAB.30	Total Phenolics - determined colorimetrically following disitillation.
Metals.20 ICP-AES	Determination of various metals by ICP-AES.
Metals.21 CV-AAS	Determination of Mercury by Cold Vapour AAS.
LAB.8	Moisture content determined by heating at 105 deg C for a minimum of 4 hours.
ASB.1	Qualitative identification of asbestos type fibres in bulk using Polarised Light Microscopy and Dispersion Staining Techniques.

QUALITY CONTROL vTPH & BTEX in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			03/12/2009	35858-1	3/12/2009 || 3/12/2009	LCS-2	03/12/2009
Date analysed	-			04/12/2009	35858-1	4/12/2009 || 4/12/2009	LCS-2	04/12/2009
vTPH C_6 - C_9	mg/kg	25	GC.16	<25	35858-1	<25 || <25	LCS-2	89%
Benzene	mg/kg	0.5	GC.16	<0.5	35858-1	<0.5 || <0.5	LCS-2	81%
Toluene	mg/kg	0.5	GC.16	<0.5	35858-1	<0.5 || <0.5	LCS-2	89%
Ethylbenzene	mg/kg	1	GC.16	<1.0	35858-1	<1.0 || <1.0	LCS-2	90%
m+p-xylene	mg/kg	2	GC.16	<2.0	35858-1	<2.0 || <2.0	LCS-2	92%
o-Xylene	mg/kg	1	GC.16	<1.0	35858-1	<1.0 || <1.0	LCS-2	97%
Surrogate aaa-Trifluorotoluene	%		GC.16	103	35858-1	95 || 92 || RPD: 3	LCS-2	100%

QUALITY CONTROL sTPH in Soil (C10-C36)	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			3/12/09	35858-1	3/12/2009 || 3/12/2009	LCS-2	3/12/09
Date analysed	-			4/12/09	35858-1	4/12/2009 || 4/12/2009	LCS-2	4/12/09
TPH C_{10} - C_{14}	mg/kg	50	GC.3	<50	35858-1	<50 || <50	LCS-2	88%
TPH C_{15} - C_{28}	mg/kg	100	GC.3	<100	35858-1	<100 || <100	LCS-2	106%
TPH C_{29} - C_{36}	mg/kg	100	GC.3	<100	35858-1	<100 || <100	LCS-2	103%
Surrogate o-Terphenyl	%		GC.3	96	35858-1	96 || 82 || RPD: 16	LCS-2	90%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			03/12/2009	35858-1	3/12/2009 || 3/12/2009	LCS-2	03/12/2009
Date analysed	-			04/12/2009	35858-1	4/12/2009 || 4/12/2009	LCS-2	04/12/2009
Naphthalene	mg/kg	0.1	GC.12 subset	<0.1	35858-1	<0.1 || <0.1	LCS-2	95%
Acenaphthylene	mg/kg	0.1	GC.12 subset	<0.1	35858-1	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	0.1	GC.12 subset	<0.1	35858-1	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	GC.12 subset	<0.1	35858-1	<0.1 || <0.1	LCS-2	95%
Phenanthrene	mg/kg	0.1	GC.12 subset	<0.1	35858-1	<0.1 || <0.1	LCS-2	100%
Anthracene	mg/kg	0.1	GC.12 subset	<0.1	35858-1	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	0.1	GC.12 subset	<0.1	35858-1	<0.1 || <0.1	LCS-2	87%
Pyrene	mg/kg	0.1	GC.12 subset	<0.1	35858-1	<0.1 || <0.1	LCS-2	101%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Benzo(a)anthracene	mg/kg	0.1	GC.12 subset	<0.1	35858-1	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	0.1	GC.12 subset	<0.1	35858-1	<0.1 || <0.1	LCS-2	106%
Benzo(b+k)fluoranthene	mg/kg	0.2	GC.12 subset	<0.2	35858-1	<0.2 || <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	GC.12 subset	<0.05	35858-1	<0.05 || <0.05	LCS-2	112%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	GC.12 subset	<0.1	35858-1	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	GC.12 subset	<0.1	35858-1	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	GC.12 subset	<0.1	35858-1	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%		GC.12 subset	108	35858-1	107 || 106 || RPD: 1	LCS-2	103%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			3/12/2009	35858-1	3/12/2009 || 3/12/2009	LCS-2	3/12/2009
Date analysed	-			3/12/2009	35858-1	3/12/2009 || 3/12/2009	LCS-2	3/12/2009
HCB	mg/kg	0.1	GC-5	<0.1	35858-1	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	GC-5	<0.1	35858-1	<0.1 || <0.1	LCS-2	103%
gamma-BHC	mg/kg	0.1	GC-5	<0.1	35858-1	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	GC-5	<0.1	35858-1	<0.1 || <0.1	LCS-2	107%
Heptachlor	mg/kg	0.1	GC-5	<0.1	35858-1	<0.1 || <0.1	LCS-2	95%
delta-BHC	mg/kg	0.1	GC-5	<0.1	35858-1	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	GC-5	<0.1	35858-1	<0.1 || <0.1	LCS-2	98%
Heptachlor Epoxide	mg/kg	0.1	GC-5	<0.1	35858-1	<0.1 || <0.1	LCS-2	91%
gamma-Chlordane	mg/kg	0.1	GC-5	<0.1	35858-1	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	GC-5	<0.1	35858-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	GC-5	<0.1	35858-1	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	GC-5	<0.1	35858-1	<0.1 || <0.1	LCS-2	106%
Dieldrin	mg/kg	0.1	GC-5	<0.1	35858-1	<0.1 || <0.1	LCS-2	101%
Endrin	mg/kg	0.1	GC-5	<0.1	35858-1	<0.1 || <0.1	LCS-2	100%
pp-DDD	mg/kg	0.1	GC-5	<0.1	35858-1	<0.1 || <0.1	LCS-2	103%
Endosulfan II	mg/kg	0.1	GC-5	<0.1	35858-1	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	GC-5	<0.1	35858-1	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	GC-5	<0.1	35858-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	GC-5	<0.1	35858-1	<0.1 || <0.1	LCS-2	104%
Methoxychlor	mg/kg	0.1	GC-5	<0.1	35858-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		GC-5	103	35858-1	105 || 102 || RPD: 3	LCS-2	103%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			3/12/2009	35858-1	3/12/2009 || 3/12/2009	LC-2	3/12/2009
Date analysed	-			3/12/2009	35858-1	3/12/2009 || 3/12/2009	LC-2	3/12/2009
Arochlor 1016	mg/kg	0.1	GC-6	<0.1	35858-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1221*	mg/kg	0.1	GC-6	<0.1	35858-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1232	mg/kg	0.1	GC-6	<0.1	35858-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1242	mg/kg	0.1	GC-6	<0.1	35858-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1248	mg/kg	0.1	GC-6	<0.1	35858-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1254	mg/kg	0.1	GC-6	<0.1	35858-1	<0.1 || <0.1	LC-2	94%
Arochlor 1260	mg/kg	0.1	GC-6	<0.1	35858-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		GC-6	103	35858-1	105 || 102 || RPD: 3	LC-2	89%

QUALITY CONTROL Total Phenolics in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			3/12/2009	35858-8	3/12/2009 || 3/12/2009	LCS-1	3/12/2009
Date analysed	-			4/12/2009	35858-8	4/12/2009 || 4/12/2009	LCS-1	4/12/2009
Total Phenolics (as Phenol)	mg/kg	5	LAB.30	<5.0	35858-8	<5.0 || <5.0	LCS-1	92%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date digested	-			03/12/09	35858-1	3/12/2009 || 3/12/2009	LCS-1	03/12/09
Date analysed	-			04/12/09	35858-1	4/12/2009 || 4/12/2009	LCS-1	04/12/09
Arsenic	mg/kg	4	Metals.20 ICP-AES	<4	35858-1	7 || 7 || RPD: 0	LCS-1	101%
Cadmium	mg/kg	0.5	Metals.20 ICP-AES	<0.5	35858-1	<0.5 || <0.5	LCS-1	102%
Chromium	mg/kg	1	Metals.20 ICP-AES	<1	35858-1	20 || 22 || RPD: 10	LCS-1	104%
Copper	mg/kg	1	Metals.20 ICP-AES	<1	35858-1	12 || 11 || RPD: 9	LCS-1	107%
Lead	mg/kg	1	Metals.20 ICP-AES	<1	35858-1	19 || 22 || RPD: 15	LCS-1	102%
Mercury	mg/kg	0.1	Metals.21 CV-AAS	<0.1	35858-1	<0.1 || <0.1	LCS-1	99%
Nickel	mg/kg	1	Metals.20 ICP-AES	<1	35858-1	8 || 8 || RPD: 0	LCS-1	106%
Zinc	mg/kg	1	Metals.20 ICP-AES	<1	35858-1	12 || 14 || RPD: 15	LCS-1	102%

QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank
Date prepared	-			3/12/09
Date analysed	-			3/12/09
Moisture	%	0.1	LAB.8	<0.10

QUALITY CONTROL Asbestos ID - soils	UNITS	PQL	METHOD	Blank
Date analysed	-			[NT]

QUALITY CONTROL vTPH & BTEX in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	35858-11	3/12/2009 || 3/12/2009	LCS-3	03/12/2009
Date analysed	-	35858-11	4/12/2009 || 4/12/2009	LCS-3	04/12/2009
vTPH C_6 - C_9	mg/kg	35858-11	<25 || <25	LCS-3	92%
Benzene	mg/kg	35858-11	<0.5 || <0.5	LCS-3	96%
Toluene	mg/kg	35858-11	<0.5 || <0.5	LCS-3	90%
Ethylbenzene	mg/kg	35858-11	<1.0 || <1.0	LCS-3	88%
m+p-xylene	mg/kg	35858-11	<2.0 || <2.0	LCS-3	92%
o-Xylene	mg/kg	35858-11	<1.0 || <1.0	LCS-3	107%
Surrogate aaa-Trifluorotoluene	%	35858-11	93 || 94 || RPD: 1	LCS-3	88%
QUALITY CONTROL sTPH in Soil (C10-C36)	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	35858-11	3/12/2009 || 3/12/2009	LCS-3	3/12/09
Date analysed	-	35858-11	4/12/2009 || 4/12/2009	LCS-3	4/12/09
TPH C_{10} - C_{14}	mg/kg	35858-11	<50 || <50	LCS-3	100%
TPH C_{15} - C_{28}	mg/kg	35858-11	<100 || <100	LCS-3	111%
TPH C_{29} - C_{36}	mg/kg	35858-11	<100 || <100	LCS-3	106%
Surrogate o-Terphenyl	%	35858-11	74 || 93 || RPD: 23	LCS-3	94%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	35858-11	3/12/2009 || 3/12/2009	LCS-3	03/12/2009
Date analysed	-	35858-11	4/12/2009 || 4/12/2009	LCS-3	05/12/2009
Naphthalene	mg/kg	35858-11	<0.1 || <0.1	LCS-3	94%
Acenaphthylene	mg/kg	35858-11	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	35858-11	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	35858-11	<0.1 || <0.1	LCS-3	96%
Phenanthrene	mg/kg	35858-11	0.1 || 0.1 || RPD: 0	LCS-3	100%
Anthracene	mg/kg	35858-11	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	35858-11	0.2 || 0.2 || RPD: 0	LCS-3	88%
Pyrene	mg/kg	35858-11	0.2 || 0.2 || RPD: 0	LCS-3	103%
Benzo(a)anthracene	mg/kg	35858-11	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	35858-11	0.1 || 0.1 || RPD: 0	LCS-3	104%

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Benzo(b+k)fluoranthene	mg/kg	35858-11	<0.2 || <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	35858-11	0.08 || 0.05 || RPD: 46	LCS-3	108%
Indeno(1,2,3-c,d)pyrene	mg/kg	35858-11	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	35858-11	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	35858-11	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%	35858-11	107 || 109 || RPD: 2	LCS-3	106%
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	35858-21	3/12/2009 || 3/12/2009	35858-3	3/12/2009
Date analysed	-	35858-21	3/12/2009 || 3/12/2009	35858-3	3/12/2009
HCB	mg/kg	35858-21	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	35858-21	<0.1 || <0.1	35858-3	100%
gamma-BHC	mg/kg	35858-21	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	35858-21	<0.1 || <0.1	35858-3	105%
Heptachlor	mg/kg	35858-21	<0.1 || <0.1	35858-3	89%
delta-BHC	mg/kg	35858-21	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	35858-21	<0.1 || <0.1	35858-3	96%
Heptachlor Epoxide	mg/kg	35858-21	<0.1 || <0.1	35858-3	89%
gamma-Chlordane	mg/kg	35858-21	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	35858-21	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	35858-21	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	35858-21	<0.1 || <0.1	35858-3	105%
Dieldrin	mg/kg	35858-21	<0.1 || <0.1	35858-3	100%
Endrin	mg/kg	35858-21	<0.1 || <0.1	35858-3	99%
pp-DDD	mg/kg	35858-21	<0.1 || <0.1	35858-3	102%
Endosulfan II	mg/kg	35858-21	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	35858-21	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	35858-21	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	35858-21	<0.1 || <0.1	35858-3	103%
Methoxychlor	mg/kg	35858-21	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%	35858-21	96 || 101 || RPD: 5	35858-3	102%

QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	35858-21	3/12/2009 || 3/12/2009	35858-3	3/12/2009
Date analysed	-	35858-21	3/12/2009 || 3/12/2009	35858-3	3/12/2009
Arochlor 1016	mg/kg	35858-21	<0.1 || <0.1	[NR]	[NR]
Arochlor 1221*	mg/kg	35858-21	<0.1 || <0.1	[NR]	[NR]
Arochlor 1232	mg/kg	35858-21	<0.1 || <0.1	[NR]	[NR]
Arochlor 1242	mg/kg	35858-21	<0.1 || <0.1	[NR]	[NR]
Arochlor 1248	mg/kg	35858-21	<0.1 || <0.1	[NR]	[NR]
Arochlor 1254	mg/kg	35858-21	<0.1 || <0.1	35858-3	91%
Arochlor 1260	mg/kg	35858-21	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%	35858-21	96 || 101 || RPD: 5	35858-3	90%
QUALITY CONTROL Total Phenolics in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	35858-9	3/12/2009
Date analysed	-	[NT]	[NT]	35858-9	4/12/2009
Total Phenolics (as Phenol)	mg/kg	[NT]	[NT]	35858-9	#
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	35858-16	3/12/2009 || 3/12/2009	LCS-2	03/12/09
Date analysed	-	35858-16	4/12/2009 || 4/12/2009	LCS-2	04/12/09
Arsenic	mg/kg	35858-16	7 || 7 || RPD: 0	LCS-2	101%
Cadmium	mg/kg	35858-16	<0.5 || <0.5	LCS-2	103%
Chromium	mg/kg	35858-16	16 || 17 || RPD: 6	LCS-2	105%
Copper	mg/kg	35858-16	19 || 16 || RPD: 17	LCS-2	109%
Lead	mg/kg	35858-16	18 || 21 || RPD: 15	LCS-2	101%
Mercury	mg/kg	35858-16	<0.1 || <0.1	LCS-2	98%
Nickel	mg/kg	35858-16	9 || 9 || RPD: 0	LCS-2	105%
Zinc	mg/kg	35858-16	28 || 26 || RPD: 7	LCS-2	102%
QUALITY CONTROL vTPH & BTEX in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	35858-21	3/12/2009 || 3/12/2009	35858-3	03/12/2009
Date analysed	-	35858-21	4/12/2009 || 4/12/2009	35858-3	04/12/2009
vTPH C_6 - C_9	mg/kg	35858-21	<25 || <25	35858-3	76%
Benzene	mg/kg	35858-21	<0.5 || <0.5	35858-3	76%
Toluene	mg/kg	35858-21	<0.5 || <0.5	35858-3	74%
Ethylbenzene	mg/kg	35858-21	<1.0 || <1.0	35858-3	75%
m+p-xylene	mg/kg	35858-21	<2.0 || <2.0	35858-3	77%
o-Xylene	mg/kg	35858-21	<1.0 || <1.0	35858-3	80%
Surrogate aaa-Trifluorotoluene	%	35858-21	89 || 103 || RPD: 15	35858-3	79%

QUALITY CONTROL sTPH in Soil (C10-C36)	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	35858-21	3/12/2009 || 3/12/2009	35858-2	3/12/09
Date analysed	-	35858-21	4/12/2009 || 4/12/2009	35858-2	4/12/09
TPH C_{10} - C_{14}	mg/kg	35858-21	<50 || <50	35858-2	82%
TPH C_{15} - C_{28}	mg/kg	35858-21	<100 || <100	35858-2	98%
TPH C_{29} - C_{36}	mg/kg	35858-21	<100 || <100	35858-2	95%
Surrogate o-Terphenyl	%	35858-21	94 || 97 || RPD: 3	35858-2	83%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	35858-21	3/12/2009 || 3/12/2009	35858-3	03/12/2009
Date analysed	-	35858-21	5/12/2009 || 5/12/2009	35858-3	04/12/2009
Naphthalene	mg/kg	35858-21	<0.1 || <0.1	35858-3	92%
Acenaphthylene	mg/kg	35858-21	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	35858-21	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	35858-21	<0.1 || <0.1	35858-3	90%
Phenanthrene	mg/kg	35858-21	<0.1 || <0.1	35858-3	94%
Anthracene	mg/kg	35858-21	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	35858-21	<0.1 || <0.1	35858-3	84%
Pyrene	mg/kg	35858-21	<0.1 || <0.1	35858-3	97%
Benzo(a)anthracene	mg/kg	35858-21	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	35858-21	<0.1 || <0.1	35858-3	101%
Benzo(b+k)fluoranthene	mg/kg	35858-21	<0.2 || <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	35858-21	<0.05 || <0.05	35858-3	102%
Indeno(1,2,3-c,d)pyrene	mg/kg	35858-21	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	35858-21	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	35858-21	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%	35858-21	105 || 108 || RPD: 3	35858-3	101%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	35858-29	3/12/2009 || 3/12/2009	35858-3	03/12/09
Date analysed	-	35858-29	4/12/2009 || 4/12/2009	35858-3	04/12/09
Arsenic	mg/kg	35858-29	4 || <4	35858-3	93%
Cadmium	mg/kg	35858-29	<0.5 || <0.5	35858-3	91%
Chromium	mg/kg	35858-29	12 || 10 || RPD: 18	35858-3	97%
Copper	mg/kg	35858-29	19 || 14 || RPD: 30	35858-3	99%
Lead	mg/kg	35858-29	11 || 8 || RPD: 32	35858-3	89%
Mercury	mg/kg	35858-29	<0.1 || <0.1	35858-3	105%
Nickel	mg/kg	35858-29	14 || 12 || RPD: 15	35858-3	93%
Zinc	mg/kg	35858-29	46 || 39 || RPD: 16	35858-3	89%
QUALITY CONTROL vTPH & BTEX in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	35858-22	03/12/2009
Date analysed	-	[NT]	[NT]	35858-22	04/12/2009
vTPH C_6 - C_9	mg/kg	[NT]	[NT]	35858-22	94%
Benzene	mg/kg	[NT]	[NT]	35858-22	99%
Toluene	mg/kg	[NT]	[NT]	35858-22	101%
Ethylbenzene	mg/kg	[NT]	[NT]	35858-22	87%
m+p-xylene	mg/kg	[NT]	[NT]	35858-22	92%
o-Xylene	mg/kg	[NT]	[NT]	35858-22	96%
Surrogate aaa-Trifluorotoluene	%	[NT]	[NT]	35858-22	96%
QUALITY CONTROL sTPH in Soil (C10-C36)	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	35858-32	3/12/2009 || 3/12/2009	35858-22	3/12/09
Date analysed	-	35858-32	4/12/2009 || 4/12/2009	35858-22	4/12/09
TPH C_{10} - C_{14}	mg/kg	35858-32	<50 || <50	35858-22	98%
TPH C_{15} - C_{28}	mg/kg	35858-32	<100 || <100	35858-22	111%
TPH C_{29} - C_{36}	mg/kg	35858-32	<100 || <100	35858-22	103%
Surrogate o-Terphenyl	%	35858-32	85 || 86 || RPD: 1	35858-22	95%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	35858-32	3/12/2009 || 3/12/2009	35858-22	03/12/2009
Date analysed	-	35858-32	5/12/2009 || 5/12/2009	35858-22	05/12/2009
Naphthalene	mg/kg	35858-32	<0.1 || <0.1	35858-22	90%
Acenaphthylene	mg/kg	35858-32	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	35858-32	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	35858-32	<0.1 || <0.1	35858-22	93%
Phenanthrene	mg/kg	35858-32	<0.1 || <0.1	35858-22	96%
Anthracene	mg/kg	35858-32	<0.1 || <0.1	[NR]	[NR]

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Fluoranthene	mg/kg	35858-32	<0.1 || <0.1	35858-22	84%
Pyrene	mg/kg	35858-32	<0.1 || <0.1	35858-22	98%
Benzo(a)anthracene	mg/kg	35858-32	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	35858-32	<0.1 || <0.1	35858-22	101%
Benzo(b+k)fluoranthene	mg/kg	35858-32	<0.2 || <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	35858-32	<0.05 || <0.05	35858-22	111%
Indeno(1,2,3-c,d)pyrene	mg/kg	35858-32	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	35858-32	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	35858-32	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%	35858-32	107 || 107 || RPD: 0	35858-22	104%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	[NT]	[NT]	35858-30	03/12/09
Date analysed	-	[NT]	[NT]	35858-30	04/12/09
Arsenic	mg/kg	[NT]	[NT]	35858-30	90%
Cadmium	mg/kg	[NT]	[NT]	35858-30	88%
Chromium	mg/kg	[NT]	[NT]	35858-30	95%
Copper	mg/kg	[NT]	[NT]	35858-30	100%
Lead	mg/kg	[NT]	[NT]	35858-30	87%
Mercury	mg/kg	[NT]	[NT]	35858-30	99%
Nickel	mg/kg	[NT]	[NT]	35858-30	93%
Zinc	mg/kg	[NT]	[NT]	35858-30	89%

Report Comments:

Phenolics in soil:#spike recovery failed due to matrix interferences.
Asbestos: A portion of the supplied sample was sub-sampled for asbestos according to Envirolab procedures. We cannot guarantee that this sub-sample is indicative of the entire sample.
Envirolab recommends supplying 30-40g of sample in it's own container.
Asbestos was analysed by Approved Identifier: Joshua Lim
INS: Insufficient sample for this test NT: Not tested PQL: Practical Quantitation Limit <: Less than >: Greater than
RPD: Relative Percent Difference NA: Test not required LCS: Laboratory Control Sample NR: Not requested

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria:

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the sample batch were within laboratory acceptance criteria.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable. Surrogates: 60-140% is acceptable for general organics and 10-140% for SVOC and speciated phenols.

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CERTIFICATE OF ANALYSIS 35840

Client:
Douglas Partners
96 Hermitage Rd
West Ryde
NSW 2114

Attention: Kurt Plambeck

Sample log in details:

Your Reference:	**71500, West Hoxton**
No. of samples:	15 Soils
Date samples received:	02/12/09
Date completed instructions received:	02/12/09

Analysis Details:
Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by:	7/12/09
Date of Preliminary Report:	Not issued
Issue Date:	7/12/09

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Results Approved By:

Jacinta Hurst
Operations Manager

Joshua Lim
Chemist

vTPH & BTEX in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35840-1 BH7/0-0.1 1/12/2009 Soil	35840-2 BH9/0.4-0.5 1/12/2009 Soil	35840-3 BH10/0.4-0.5 1/12/2009 Soil	35840-4 BH18/0.4-0.5 1/12/2009 Soil	35840-5 BH19/0-0.1 1/12/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
vTPH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
m+p-xylene	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	95	94	109	105	104

vTPH & BTEX in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35840-6 BH20/0.4-0.5 1/12/2009 Soil	35840-7 BH22/0-0.1 1/12/2009 Soil	35840-8 BH23/0-0.1 1/12/2009 Soil	35840-9 BH24/0-0.1 1/12/2009 Soil	35840-10 BH24/0.4-0.5 1/12/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
vTPH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
m+p-xylene	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	97	108	109	108	93

vTPH & BTEX in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35840-11 BH26/0.4-0.5 1/12/2009 Soil	35840-12 BH27/0.1-0.2 1/12/2009 Soil	35840-13 BH27/1.4-1.5 1/12/2009 Soil	35840-14 Fuel Tank/0-0.1 1/12/2009 Soil	35840-15 Fuel Tank/0.9-1 1/12/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
vTPH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
m+p-xylene	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	107	90	90	92	112

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	35840-1	35840-2	35840-3	35840-4	35840-5
Your Reference	----------	BH7/0-0.1	BH9/0.4-0.5	BH10/0.4-0.5	BH18/0.4-0.5	BH19/0-0.1
Date Sampled	----------	1/12/2009	1/12/2009	1/12/2009	1/12/2009	1/12/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
TPH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TPH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TPH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	82	84	82	81	81

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	35840-6	35840-7	35840-8	35840-9	35840-10
Your Reference	----------	BH20/0.4-0.5	BH22/0-0.1	BH23/0-0.1	BH24/0-0.1	BH24/0.4-0.5
Date Sampled	----------	1/12/2009	1/12/2009	1/12/2009	1/12/2009	1/12/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
TPH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TPH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TPH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	82	82	81	85	82

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	35840-11	35840-12	35840-13	35840-14	35840-15
Your Reference	----------	BH26/0.4-0.5	BH27/0.1-0.2	BH27/1.4-1.5	Fuel Tank/0-0.1	Fuel Tank/0.9-1
Date Sampled	----------	1/12/2009	1/12/2009	1/12/2009	1/12/2009	1/12/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
TPH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TPH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TPH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	80	85	83	90	86

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35840-1 BH7/0-0.1 1/12/2009 Soil	35840-2 BH9/0.4-0.5 1/12/2009 Soil	35840-3 BH10/0.4-0.5 1/12/2009 Soil	35840-4 BH18/0.4-0.5 1/12/2009 Soil	35840-5 BH19/0-0.1 1/12/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	5/12/2009	5/12/2009	5/12/2009	5/12/2009	5/12/2009
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	3.2	0.2
Anthracene	mg/kg	<0.1	<0.1	<0.1	0.3	<0.1
Fluoranthene	mg/kg	<0.1	0.1	0.1	4.5	0.2
Pyrene	mg/kg	<0.1	0.1	0.1	4.0	0.2
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	1.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	0.1	1.4	0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	2.1	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	1.6	0.08
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	1.0	<0.1
Surrogate p-Terphenyl-d_{14}	%	106	107	107	102	107

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35840-6 BH20/0.4-0.5 1/12/2009 Soil	35840-7 BH22/0-0.1 1/12/2009 Soil	35840-8 BH23/0-0.1 1/12/2009 Soil	35840-9 BH24/0-0.1 1/12/2009 Soil	35840-10 BH24/0.4-0.5 1/12/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	5/12/2009	5/12/2009	5/12/2009	5/12/2009	5/12/2009
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	0.1	0.2	<0.1	<0.1
Pyrene	mg/kg	<0.1	0.1	0.2	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	0.1	0.1	<0.1	<0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.07	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate p-Terphenyl-d_{14}	%	108	111	105	112	108

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35840-11 BH26/0.4-0.5 1/12/2009 Soil	35840-12 BH27/0.1-0.2 1/12/2009 Soil	35840-13 BH27/1.4-1.5 1/12/2009 Soil	35840-14 Fuel Tank/0-0.1 1/12/2009 Soil	35840-15 Fuel Tank/0.9-1 1/12/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	5/12/2009	5/12/2009	5/12/2009	5/12/2009	5/12/2009
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	0.1	0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	0.3	0.3	<0.1	<0.1
Pyrene	mg/kg	0.1	0.3	0.3	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	0.2	0.2	<0.1	<0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	0.3	0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.2	0.1	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.2	0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	0.2	0.1	<0.1	<0.1
Surrogate p-Terphenyl-d_{14}	%	109	105	105	109	111

Organochlorine Pesticides in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35840-1 BH7/0-0.1 1/12/2009 Soil	35840-5 BH19/0-0.1 1/12/2009 Soil	35840-6 BH20/0.4-0.5 1/12/2009 Soil	35840-8 BH23/0-0.1 1/12/2009 Soil	35840-9 BH24/0-0.1 1/12/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	104	109	100	101	101

Organochlorine Pesticides in soil		
Our Reference:	UNITS	35840-12
Your Reference	----------	BH27/0.1-0.2
Date Sampled	----------	1/12/2009
Type of sample		Soil
Date extracted	-	3/12/2009
Date analysed	-	3/12/2009
HCB	mg/kg	<0.1
alpha-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Surrogate TCLMX	%	100

PCBs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35840-1 BH7/0-0.1 1/12/2009 Soil	35840-5 BH19/0-0.1 1/12/2009 Soil	35840-6 BH20/0.4-0.5 1/12/2009 Soil	35840-8 BH23/0-0.1 1/12/2009 Soil	35840-9 BH24/0-0.1 1/12/2009 Soil
Date extracted	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1221*	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	104	109	100	101	101

PCBs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35840-12 BH27/0.1-0.2 1/12/2009 Soil
Date extracted	-	3/12/2009
Date analysed	-	3/12/2009
Arochlor 1016	mg/kg	<0.1
Arochlor 1221*	mg/kg	<0.1
Arochlor 1232	mg/kg	<0.1
Arochlor 1242	mg/kg	<0.1
Arochlor 1248	mg/kg	<0.1
Arochlor 1254	mg/kg	<0.1
Arochlor 1260	mg/kg	<0.1
Surrogate TCLMX	%	100

Total Phenolics in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ---------- 	35840-1 BH7/0-0.1 1/12/2009 Soil	35840-5 BH19/0-0.1 1/12/2009 Soil	35840-6 BH20/0.4-0.5 1/12/2009 Soil	35840-8 BH23/0-0.1 1/12/2009 Soil	35840-12 BH27/0.1-0.2 1/12/2009 Soil
Date extracted	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
Total Phenolics (as Phenol)	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0

Acid Extractable metals in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35840-1 BH7/0-0.1 1/12/2009 Soil	35840-2 BH9/0.4-0.5 1/12/2009 Soil	35840-3 BH10/0.4-0.5 1/12/2009 Soil	35840-4 BH18/0.4-0.5 1/12/2009 Soil	35840-5 BH19/0-0.1 1/12/2009 Soil
Date digested	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
Arsenic	mg/kg	5	5	6	6	8
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	14	17	24	16	19
Copper	mg/kg	11	28	17	19	7
Lead	mg/kg	17	20	15	17	25
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	7	14	8	12	6
Zinc	mg/kg	15	31	19	28	10

Acid Extractable metals in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35840-6 BH20/0.4-0.5 1/12/2009 Soil	35840-7 BH22/0-0.1 1/12/2009 Soil	35840-8 BH23/0-0.1 1/12/2009 Soil	35840-9 BH24/0-0.1 1/12/2009 Soil	35840-10 BH24/0.4-0.5 1/12/2009 Soil
Date digested	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
Arsenic	mg/kg	6	6	5	7	13
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	17	16	13	19	26
Copper	mg/kg	11	18	14	16	30
Lead	mg/kg	12	15	20	20	30
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	4	7	9	8	13
Zinc	mg/kg	10	23	26	25	47

Acid Extractable metals in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35840-11 BH26/0.4-0.5 1/12/2009 Soil	35840-12 BH27/0.1-0.2 1/12/2009 Soil	35840-13 BH27/1.4-1.5 1/12/2009 Soil	35840-14 Fuel Tank/0-0.1 1/12/2009 Soil	35840-15 Fuel Tank/0.9-1 1/12/2009 Soil
Date digested	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
Arsenic	mg/kg	5	5	5	5	7
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	25	19	25	12	14
Copper	mg/kg	29	3	4	9	24
Lead	mg/kg	20	13	16	17	18
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	30	3	5	4	10
Zinc	mg/kg	48	6	10	13	37

Moisture Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35840-1 BH7/0-0.1 1/12/2009 Soil	35840-2 BH9/0.4-0.5 1/12/2009 Soil	35840-3 BH10/0.4-0.5 1/12/2009 Soil	35840-4 BH18/0.4-0.5 1/12/2009 Soil	35840-5 BH19/0-0.1 1/12/2009 Soil
Date prepared	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Moisture	%	7.2	13	21	17	6.5

Moisture Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35840-6 BH20/0.4-0.5 1/12/2009 Soil	35840-7 BH22/0-0.1 1/12/2009 Soil	35840-8 BH23/0-0.1 1/12/2009 Soil	35840-9 BH24/0-0.1 1/12/2009 Soil	35840-10 BH24/0.4-0.5 1/12/2009 Soil
Date prepared	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Moisture	%	19	10	8.4	4.2	7.7

Moisture Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35840-11 BH26/0.4-0.5 1/12/2009 Soil	35840-12 BH27/0.1-0.2 1/12/2009 Soil	35840-13 BH27/1.4-1.5 1/12/2009 Soil	35840-14 Fuel Tank/0-0.1 1/12/2009 Soil	35840-15 Fuel Tank/0.9-1 1/12/2009 Soil
Date prepared	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Date analysed	-	3/12/2009	3/12/2009	3/12/2009	3/12/2009	3/12/2009
Moisture	%	11	7.2	12	6.8	10

Asbestos ID - soils Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35840-1 BH7/0-0.1 1/12/2009 Soil	35840-3 BH10/0.4-0.5 1/12/2009 Soil	35840-4 BH18/0.4-0.5 1/12/2009 Soil	35840-8 BH23/0-0.1 1/12/2009 Soil	35840-12 BH27/0.1-0.2 1/12/2009 Soil
Date analysed	-	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
Sample Description	-	approx 40g soil	approx 40g clay	approx 40g soil	approx 40g soil	approx 40g soil
Asbestos ID in soil	-	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg
Trace Analysis	-	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected

Method ID	Methodology Summary
GC.16	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS.
GC.3	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.
GC.12 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
GC-5	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
GC-6	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
LAB.30	Total Phenolics - determined colorimetrically following disitillation.
Metals.20 ICP-AES	Determination of various metals by ICP-AES.
Metals.21 CV-AAS	Determination of Mercury by Cold Vapour AAS.
LAB.8	Moisture content determined by heating at 105 deg C for a minimum of 4 hours.
ASB.1	Qualitative identification of asbestos type fibres in bulk using Polarised Light Microscopy and Dispersion Staining Techniques.

QUALITY CONTROL vTPH & BTEX in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			3/12/09	35840-1	3/12/2009 || 3/12/2009	LCS-4	3/12/09
Date analysed	-			4/12/2009	35840-1	4/12/2009 || 4/12/2009	LCS-4	4/12/2009
vTPH C_6 - C_9	mg/kg	25	GC.16	<25	35840-1	<25 || <25	LCS-4	83%
Benzene	mg/kg	0.5	GC.16	<0.5	35840-1	<0.5 || <0.5	LCS-4	74%
Toluene	mg/kg	0.5	GC.16	<0.5	35840-1	<0.5 || <0.5	LCS-4	78%
Ethylbenzene	mg/kg	1	GC.16	<1.0	35840-1	<1.0 || <1.0	LCS-4	82%
m+p-xylene	mg/kg	2	GC.16	<2.0	35840-1	<2.0 || <2.0	LCS-4	90%
o-Xylene	mg/kg	1	GC.16	<1.0	35840-1	<1.0 || <1.0	LCS-4	93%
Surrogate aaa-Trifluorotoluene	%		GC.16	75	35840-1	95 || 111 || RPD: 16	LCS-4	91%

QUALITY CONTROL sTPH in Soil (C10-C36)	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			3/12/2009	35840-1	3/12/2009 || 3/12/2009	LCS-4	3/12/2009
Date analysed	-			3/12/2009	35840-1	3/12/2009 || 3/12/2009	LCS-4	3/12/2009
TPH C_{10} - C_{14}	mg/kg	50	GC.3	<50	35840-1	<50 || <50	LCS-4	83%
TPH C_{15} - C_{28}	mg/kg	100	GC.3	<100	35840-1	<100 || <100	LCS-4	99%
TPH C_{29} - C_{36}	mg/kg	100	GC.3	<100	35840-1	<100 || <100	LCS-4	96%
Surrogate o-Terphenyl	%		GC.3	84	35840-1	82 || 84 || RPD: 2	LCS-4	84%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			3/12/2009	35840-1	3/12/2009 || 3/12/2009	LCS-5	3/12/2009
Date analysed	-			5/12/2009	35840-1	5/12/2009 || 5/12/2009	LCS-5	5/12/2009
Naphthalene	mg/kg	0.1	GC.12 subset	<0.1	35840-1	<0.1 || <0.1	LCS-5	87%
Acenaphthylene	mg/kg	0.1	GC.12 subset	<0.1	35840-1	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	0.1	GC.12 subset	<0.1	35840-1	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	GC.12 subset	<0.1	35840-1	<0.1 || <0.1	LCS-5	95%
Phenanthrene	mg/kg	0.1	GC.12 subset	<0.1	35840-1	<0.1 || <0.1	LCS-5	100%
Anthracene	mg/kg	0.1	GC.12 subset	<0.1	35840-1	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	0.1	GC.12 subset	<0.1	35840-1	<0.1 || <0.1	LCS-5	89%
Pyrene	mg/kg	0.1	GC.12 subset	<0.1	35840-1	<0.1 || <0.1	LCS-5	103%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Benzo(a)anthracene	mg/kg	0.1	GC.12 subset	<0.1	35840-1	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	0.1	GC.12 subset	<0.1	35840-1	<0.1 || <0.1	LCS-5	104%
Benzo(b+k)fluoranthene	mg/kg	0.2	GC.12 subset	<0.2	35840-1	<0.2 || <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	GC.12 subset	<0.05	35840-1	<0.05 || <0.05	LCS-5	116%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	GC.12 subset	<0.1	35840-1	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	GC.12 subset	<0.1	35840-1	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	GC.12 subset	<0.1	35840-1	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%		GC.12 subset	111	35840-1	106 || 106 || RPD: 0	LCS-5	104%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			3/12/09	35840-1	3/12/2009 || 3/12/2009	LCS-4	3/12/09
Date analysed	-			3/12/09	35840-1	3/12/2009 || 3/12/2009	LCS-4	3/12/09
HCB	mg/kg	0.1	GC-5	<0.1	35840-1	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	GC-5	<0.1	35840-1	<0.1 || <0.1	LCS-4	101%
gamma-BHC	mg/kg	0.1	GC-5	<0.1	35840-1	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	GC-5	<0.1	35840-1	<0.1 || <0.1	LCS-4	117%
Heptachlor	mg/kg	0.1	GC-5	<0.1	35840-1	<0.1 || <0.1	LCS-4	84%
delta-BHC	mg/kg	0.1	GC-5	<0.1	35840-1	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	GC-5	<0.1	35840-1	<0.1 || <0.1	LCS-4	96%
Heptachlor Epoxide	mg/kg	0.1	GC-5	<0.1	35840-1	<0.1 || <0.1	LCS-4	89%
gamma-Chlordane	mg/kg	0.1	GC-5	<0.1	35840-1	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	GC-5	<0.1	35840-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	GC-5	<0.1	35840-1	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	GC-5	<0.1	35840-1	<0.1 || <0.1	LCS-4	115%
Dieldrin	mg/kg	0.1	GC-5	<0.1	35840-1	<0.1 || <0.1	LCS-4	98%
Endrin	mg/kg	0.1	GC-5	<0.1	35840-1	<0.1 || <0.1	LCS-4	94%
pp-DDD	mg/kg	0.1	GC-5	<0.1	35840-1	<0.1 || <0.1	LCS-4	109%
Endosulfan II	mg/kg	0.1	GC-5	<0.1	35840-1	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	GC-5	<0.1	35840-1	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	GC-5	<0.1	35840-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	GC-5	<0.1	35840-1	<0.1 || <0.1	LCS-4	103%
Methoxychlor	mg/kg	0.1	GC-5	<0.1	35840-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		GC-5	100	35840-1	104 || 104 || RPD: 0	LCS-4	97%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			3/12/09	35840-1	3/12/2009 || 3/12/2009	LCS-4	3/12/09
Date analysed	-			3/12/09	35840-1	3/12/2009 || 3/12/2009	LCS-4	3/12/09
Arochlor 1016	mg/kg	0.1	GC-6	<0.1	35840-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1221*	mg/kg	0.1	GC-6	<0.1	35840-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1232	mg/kg	0.1	GC-6	<0.1	35840-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1242	mg/kg	0.1	GC-6	<0.1	35840-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1248	mg/kg	0.1	GC-6	<0.1	35840-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1254	mg/kg	0.1	GC-6	<0.1	35840-1	<0.1 || <0.1	LCS-4	96%
Arochlor 1260	mg/kg	0.1	GC-6	<0.1	35840-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		GC-6	100	35840-1	104 || 104 || RPD: 0	LCS-4	96%

QUALITY CONTROL Total Phenolics in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			4/12/09	[NT]	[NT]	LCS-4	4/12/09
Date analysed	-			4/12/09	[NT]	[NT]	LCS-4	4/12/09
Total Phenolics (as Phenol)	mg/kg	5	LAB.30	<5.0	[NT]	[NT]	LCS-4	88%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date digested	-			04/12/09	35840-1	4/12/2009 || 4/12/2009	LCS-6	04/12/09
Date analysed	-			04/12/09	35840-1	4/12/2009 || 4/12/2009	LCS-6	04/12/09
Arsenic	mg/kg	4	Metals.20 ICP-AES	<4	35840-1	5 || 6 || RPD: 18	LCS-6	99%
Cadmium	mg/kg	0.5	Metals.20 ICP-AES	<0.5	35840-1	<0.5 || <0.5	LCS-6	102%
Chromium	mg/kg	1	Metals.20 ICP-AES	<1	35840-1	14 || 16 || RPD: 13	LCS-6	103%
Copper	mg/kg	1	Metals.20 ICP-AES	<1	35840-1	11 || 8 || RPD: 32	LCS-6	108%
Lead	mg/kg	1	Metals.20 ICP-AES	<1	35840-1	17 || 19 || RPD: 11	LCS-6	98%
Mercury	mg/kg	0.1	Metals.21 CV-AAS	<0.1	35840-1	<0.1 || <0.1	LCS-6	97%
Nickel	mg/kg	1	Metals.20 ICP-AES	<1	35840-1	7 || 6 || RPD: 15	LCS-6	103%
Zinc	mg/kg	1	Metals.20 ICP-AES	<1	35840-1	15 || 12 || RPD: 22	LCS-6	99%

QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank
Date prepared	-			3/12/09
Date analysed	-			3/12/09
Moisture	%	0.1	LAB.8	<0.10

QUALITY CONTROL Asbestos ID - soils	UNITS	PQL	METHOD	Blank
Date analysed	-			[NT]

QUALITY CONTROL vTPH & BTEX in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	35840-12	3/12/2009 || 3/12/2009	35840-5	3/12/09
Date analysed	-	35840-12	4/12/2009 || 4/12/2009	35840-5	4/12/2009
vTPH C_6 - C_9	mg/kg	35840-12	<25 || <25	35840-5	86%
Benzene	mg/kg	35840-12	<0.5 || <0.5	35840-5	65%
Toluene	mg/kg	35840-12	<0.5 || <0.5	35840-5	85%
Ethylbenzene	mg/kg	35840-12	<1.0 || <1.0	35840-5	88%
m+p-xylene	mg/kg	35840-12	<2.0 || <2.0	35840-5	97%
o-Xylene	mg/kg	35840-12	<1.0 || <1.0	35840-5	98%
Surrogate aaa-Trifluorotoluene	%	35840-12	90 || 115 || RPD: 24	35840-5	112%
QUALITY CONTROL sTPH in Soil (C10-C36)	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	35840-12	3/12/2009 || 3/12/2009	35840-5	3/12/2009
Date analysed	-	35840-12	3/12/2009 || 3/12/2009	35840-5	3/12/2009
TPH C_{10} - C_{14}	mg/kg	35840-12	<50 || <50	35840-5	82%
TPH C_{15} - C_{28}	mg/kg	35840-12	<100 || <100	35840-5	98%
TPH C_{29} - C_{36}	mg/kg	35840-12	<100 || <100	35840-5	93%
Surrogate o-Terphenyl	%	35840-12	85 || 85 || RPD: 0	35840-5	84%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	35840-12	3/12/2009 || 3/12/2009	35840-5	3/12/2009
Date analysed	-	35840-12	5/12/2009 || 5/12/2009	35840-5	5/12/2009
Naphthalene	mg/kg	35840-12	<0.1 || <0.1	35840-5	93%
Acenaphthylene	mg/kg	35840-12	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	35840-12	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	35840-12	<0.1 || <0.1	35840-5	94%
Phenanthrene	mg/kg	35840-12	0.1 || 0.1 || RPD: 0	35840-5	96%
Anthracene	mg/kg	35840-12	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	35840-12	0.3 || 0.3 || RPD: 0	35840-5	86%
Pyrene	mg/kg	35840-12	0.3 || 0.3 || RPD: 0	35840-5	99%
Benzo(a)anthracene	mg/kg	35840-12	0.1 || 0.1 || RPD: 0	[NR]	[NR]
Chrysene	mg/kg	35840-12	0.2 || 0.2 || RPD: 0	35840-5	99%

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Benzo(b+k)fluoranthene	mg/kg	35840-12	0.3 || 0.3 || RPD: 0	[NR]	[NR]
Benzo(a)pyrene	mg/kg	35840-12	0.2 || 0.2 || RPD: 0	35840-5	101%
Indeno(1,2,3-c,d)pyrene	mg/kg	35840-12	0.2 || 0.2 || RPD: 0	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	35840-12	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	35840-12	0.2 || 0.2 || RPD: 0	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%	35840-12	105 || 105 || RPD: 0	35840-5	104%
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	35840-5	3/12/09
Date analysed	-	[NT]	[NT]	35840-5	3/12/09
HCB	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	[NT]	[NT]	35840-5	102%
gamma-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	[NT]	[NT]	35840-5	97%
Heptachlor	mg/kg	[NT]	[NT]	35840-5	92%
delta-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	[NT]	[NT]	35840-5	99%
Heptachlor Epoxide	mg/kg	[NT]	[NT]	35840-5	91%
gamma-Chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	[NT]	[NT]	35840-5	118%
Dieldrin	mg/kg	[NT]	[NT]	35840-5	98%
Endrin	mg/kg	[NT]	[NT]	35840-5	118%
pp-DDD	mg/kg	[NT]	[NT]	35840-5	110%
Endosulfan II	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	[NT]	[NT]	35840-5	110%
Methoxychlor	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%	[NT]	[NT]	35840-5	100%

QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	35840-5	3/12/09
Date analysed	-	[NT]	[NT]	35840-5	3/12/09
Arochlor 1016	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1221*	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1232	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1242	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1248	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1254	mg/kg	[NT]	[NT]	35840-5	94%
Arochlor 1260	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%	[NT]	[NT]	35840-5	94%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	35840-12	4/12/2009 || 4/12/2009	LCS-7	04/12/09
Date analysed	-	35840-12	4/12/2009 || 4/12/2009	LCS-7	04/12/09
Arsenic	mg/kg	35840-12	5 || 5 || RPD: 0	LCS-7	97%
Cadmium	mg/kg	35840-12	<0.5 || <0.5	LCS-7	99%
Chromium	mg/kg	35840-12	19 || 23 || RPD: 19	LCS-7	101%
Copper	mg/kg	35840-12	3 || 2 || RPD: 40	LCS-7	105%
Lead	mg/kg	35840-12	13 || 15 || RPD: 14	LCS-7	97%
Mercury	mg/kg	35840-12	<0.1 || <0.1	LCS-7	100%
Nickel	mg/kg	35840-12	3 || 2 || RPD: 40	LCS-7	101%
Zinc	mg/kg	35840-12	6 || 5 || RPD: 18	LCS-7	97%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	[NT]	[NT]	35840-5	04/12/09
Date analysed	-	[NT]	[NT]	35840-5	04/12/09
Arsenic	mg/kg	[NT]	[NT]	35840-5	96%
Cadmium	mg/kg	[NT]	[NT]	35840-5	92%
Chromium	mg/kg	[NT]	[NT]	35840-5	99%
Copper	mg/kg	[NT]	[NT]	35840-5	104%
Lead	mg/kg	[NT]	[NT]	35840-5	91%
Mercury	mg/kg	[NT]	[NT]	35840-5	102%
Nickel	mg/kg	[NT]	[NT]	35840-5	96%
Zinc	mg/kg	[NT]	[NT]	35840-5	92%

Report Comments:

Asbestos: A portion of the supplied sample was sub-sampled for asbestos according to Envirolab procedures. We cannot guarantee that this sub-sample is indicative of the entire sample.
Envirolab recommends supplying 30-40g of sample in it's own container.
Asbestos was analysed by Approved Identifier: Joshua Lim
INS: Insufficient sample for this test NT: Not tested PQL: Practical Quantitation Limit <: Less than >: Greater than
RPD: Relative Percent Difference NA: Test not required LCS: Laboratory Control Sample NR: Not requested

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria:

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the sample batch were within laboratory acceptance criteria.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable. Surrogates: 60-140% is acceptable for general organics and 10-140% for SVOC and speciated phenols.

LabMark
ENVIRONMENTAL LABORATORIES

CUSTOMER CENTRIC - ANALYTICAL CHEMISTS

FINAL CERTIFICATE OF ANALYSIS - ENVIRONMENTAL DIVISION

Laboratory Report No:	E045950	Cover Page 1 of 3 plus Sample Results
Client Name:	Douglas Partners	
Client Reference:	West Hoxton	
Contact Name:	Kurt Plambeck	
Chain of Custody No:	na	Date Received: 03/12/2009
Sample Matrix:	SOIL	Date Reported: 09/12/2009

This Final Certificate of Analysis consists of sample results, DQI's, method descriptions, laboratory definitions, and internationally recognised NATA accreditation and endorsement. The DQO compliance relates specifically to QA/QC results as performed as part of the sample analysis, and may provide an indication of sample result quality. Transfer of report ownership from Labmark to the client shall only occur once full & final payment has been settled and verified. All report copies may be retracted where full payment has not occured within the agreed settlement period.

QUALITY ASSURANCE CRITERIA

Accuracy:	matrix spike:	1 in first 5-20, then 1 every 20 samples
	lcs, crm, method:	1 per analytical batch
	surrogate spike:	addition per target organic method
Precision:	laboratory duplicate:	1 in first 5-10, then 1 every 10 samples
	laboratory triplicate:	re-extracted & reported when duplicate RPD values exceed acceptance criteria
Holding Times:	soils, waters:	Refer to LabMark Preservation & THT table VOC's 14 days water / soil VAC's 7 days water or 14 days acidified VAC's 14 days soil SVOC's 7 days water, 14 days soil Pesticides 7 days water, 14 days soil Metals 6 months general elements Mercury 28 days
Confirmation:	target organic analysis:	GC/MS, or confirmatory column
Sensitivity:	EQL:	Typically 2-5 x Method Detection Limit (MDL)

QUALITY CONTROL GLOBAL ACCEPTANCE CRITERIA (GAC)

Accuracy:	spike, lcs, crm surrogate:	general analytes 70% - 130% recovery phenol analytes 50% - 130% recovery organophosphorous pesticide analytes 60% - 130% recovery phenoxy acid herbicides, organotin 50% - 130% recovery
	anion/cation bal:	+/- 10% (0-3 meq/l), +/- 5% (>3 meq/l)
Precision:	method blank:	not detected >95% of the reported EQL
	duplicate lab RPD (metals):	0-30% (>10xEQL), 0-75% (5-10xEQL) 0-100% (<5xEQL)
	duplicate lab RPD:	0-50% (>10xEQL), 0-75% (5-10xEQL) 0-100% (<5xEQL)

QUALITY CONTROL ANALYTE SPECIFIC ACCEPTANCE CRITERIA (ASAC)

Accuracy:	spike, lcs, crm surrogate:	analyte specific recovery data <3xsd of historical mean
Uncertainty:	spike, lcs:	measurement calculated from historical analyte specific control charts

RESULT ANNOTATION

Data Quality Objective	s:	matrix spike recovery	p:	pending	bcs: batch specific lcs
Data Quality Indicator	d:	laboratory duplicate	lcs:	laboratory control sample	bmb: batch specific mb
Estimated Quantitation Limit	t:	laboratory triplicate	crm:	certified reference material	
not applicable	r:	RPD relative % difference	mb:	method blank	

Simon Mills
Quality Control (Report signatory)
simon.mills@labmark.com.au

Geoff Weir
Authorising Chemist (NATA signatory)
geoff.weir@labmark.com.au

Jeremy Truong
Authorising Chemist (NATA signatory)
jeremy.truong@labmark.com.au

NEPC GUIDELINE COMPLIANCE - DQO

1. GENERAL

A. Results relate specifically to samples as received. Sample results are not corrected for matrix spike, lcs, or surrogate recovery data.

B. EQL's are matrix dependant and may be increased due to sample dilution or matrix interference.

C. Laboratory QA/QC samples are specific to this project.

D. Inter-laboratory proficiency results are available upon request. NATA accreditation details available at www.nata.asn.au.

E. VOC spikes & surrogates added to samples during extraction, SVOC spikes & surrogates added prior to extraction.

F. Recovery data outside GAC limits shall be investigated and compared to ASAC (historical mean +/- 3sd). If recovery data <20%, then the relevant results for that compound are considered not reliable.

G. Recovery data (ms, surrogate, crm, lcs) outside ASAC limits shall initiate an investigative action. Anomolous QC data is examined in conjunction with other QC samples and a final decision whether to accept or reject results is provided by the professional judgement of the senior analyst. The USEPA-CLP National Functional Guidelines are referred to for specific recommendations.

H. Extraction (preparation) date refers to the date that sample preparation was initiated. Note that certain methods not requiring sample preparation (eg. VOCs in water, etc) may report a common extraction and analysis date.

I. LabMark shall maintain an official copy of this Certificate of Analysis for all tracable reference purposes.

2. CHAIN OF CUSTODY (COC) & SAMPLE RECEIPT NOTICE (SRN) REQUIREMENTS

A. SRN issued to client upon sample receipt & login verification.

B. Preservation & sampling date details specified on COC and SRN, unless noted.

C. Sample Integrity & Validated Time of Sample Receipt (VTSR) Holding Times verified (preservation may extend holding time, refer to preservation chart).

3. NATA ACCREDITED METHODS

A. NATA accreditation held for each in-house method and sample matrix type reported, unless noted below (Refer to subcontracted test reports for NATA accreditation status).

B. NATA accredited in-house laboratory methods are referenced from NEPC, ASTM, modified USEPA / APHA documents. Corporate Accreditation No. 13542.

C. Subcontracted analyses: Refer to Sample Receipt Notice and additional DQO comments.

Laboratory Report: E045950

Cover Page 3 of 3

4. QA/QC FREQUENCY COMPLIANCE TABLE SPECIFIC TO THIS REPORT

Matrix: **SOIL**

Page:	Method:	Totals:	#d	%d-ratio	#t	#s	%s-ratio
1	Polyaromatic Hydrocarbons (PAH)	3	0	0%	0	0	0%
2	Acid extractable metals (M7)	3	0	0%	0	0	0%
3	Acid extractable metals - mercury	3	0	0%	0	0	0%
4	Moisture	3	--	--	--	--	--

GLOSSARY:

#d	number of discrete duplicate extractions/analyses performed.
%d-ratio	NEPC guideline for laboratory duplicates is 1 in 10 samples (min 10%).
#t	number of triplicate extractions/analyses performed.
#s	number of spiked samples analysed.
%s-ratio	USEPA guideline for laboratory matrix spikes is 1 in 20 samples (min 5%).

5. ADDITIONAL COMMENTS SPECIFIC TO THIS REPORT

A. All tests were conducted by LabMark Environmental Sydney, NATA accreditation No. 13542, unless indicated below.

Laboratory QA/QC data shall relate specifically to this report, and may provide an indication of site specific sample result quality. LabMark DOES NOT report NON-RELEVANT BATCH QA/QC data. Acceptance of this self assessment certificate does not preclude any requirement for a QA/QC review by a accredited contaminated site EPA auditor, when and wherever necessary. Laboratory QA/QC self assessment references available upon request.

LabMark
ENVIRONMENTAL LABORATORIES

Laboratory Report No: E045950
Client Name: Douglas Partners
Contact Name: Kurt Plambeck
Client Reference: West Hoxton 71500

Date: 09/12/09
This report supercedes reports issued on: N/A

Final
Certificate
of Analysis

Laboratory Identification		239635	239636	239637	lcs	mb					
Sample Identification		BD3/271109	BD4/271109	BD3/261109	QC	QC					
Depth (m)		--	--	--	--	--					
Sampling Date recorded on COC		27/11/09	27/11/09	26/11/09	--	--					
Laboratory Extraction (Preparation) Date		4/12/09	4/12/09	4/12/09	4/12/09	4/12/09					
Laboratory Analysis Date		5/12/09	5/12/09	5/12/09	4/12/09	4/12/09					
Method : E007.2											
Polyaromatic Hydrocarbons (PAH)	**EQL**										
Naphthalene	0.5	<0.5	<0.5	<0.5	119%	<0.5					
Acenaphthylene	0.5	<0.5	<0.5	<0.5	120%	<0.5					
Acenaphthene	0.5	<0.5	<0.5	<0.5	117%	<0.5					
Fluorene	0.5	<0.5	<0.5	<0.5	118%	<0.5					
Phenanthrene	0.5	<0.5	<0.5	<0.5	118%	<0.5					
Anthracene	0.5	<0.5	<0.5	<0.5	118%	<0.5					
Fluoranthene	0.5	<0.5	<0.5	<0.5	119%	<0.5					
Pyrene	0.5	<0.5	<0.5	<0.5	118%	<0.5					
Benz(a)anthracene	0.5	<0.5	<0.5	<0.5	119%	<0.5					
Chrysene	0.5	<0.5	<0.5	<0.5	89%	<0.5					
Benzo(b)&(k)fluoranthene	1	<1	<1	<1	126%	<1					
Benzo(a) pyrene	0.5	<0.5	<0.5	<0.5	125%	<0.5					
Indeno(1,2,3-c,d)pyrene	0.5	<0.5	<0.5	<0.5	127%	<0.5					
Dibenz(a,h)anthracene	0.5	<0.5	<0.5	<0.5	123%	<0.5					
Benzo(g,h,i)perylene	0.5	<0.5	<0.5	<0.5	126%	<0.5					
Sum of reported PAHs	--	--	--	--	--	--					
2-FBP (Surr @ 5mg/kg)	--	*83%*	*100%*	*89%*	*96%*	*88%*					
TP-d14 (Surr @ 5mg/kg)	--	*84%*	*110%*	*97%*	*105%*	*88%*					

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E007.2: 8-10g soil extracted with 20ml DCM/Acetone/Hexane (10:45:45). Analysis by GC/MS.

Laboratory Identification		239635	239636	239637	crm	lcs	mb				
Sample Identification		BD3/271109	BD4/271109	BD3/261109	QC	QC	QC				
Depth (m)		--	--	--	--	--	--				
Sampling Date recorded on COC		27/11/09	27/11/09	26/11/09	--	--	--				
Laboratory Extraction (Preparation) Date		4/12/09	4/12/09	4/12/09	4/12/09	4/12/09	4/12/09				
Laboratory Analysis Date		5/12/09	5/12/09	5/12/09	4/12/09	4/12/09	4/12/09				
Method : E022.2											
Acid extractable metals (M7)	**EQL**										
Arsenic	1	7	5	6	103%	99%	<1				
Cadmium	0.1	<0.1	<0.1	<0.1	97%	96%	<0.1				
Chromium	1	16	15	12	110%	105%	<1				
Copper	2	15	18	18	101%	103%	<2				
Nickel	1	8	9	11	107%	97%	<1				
Lead	2	20	14	14	96%	97%	<2				
Zinc	5	25	19	35	100%	94%	<5				

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E022.2: 0.5g digested in nitric/hydrochloric acid. Analysis by ICP-MS.

Laboratory Identification		239635	239636	239637	crm	lcs	mb				
Sample Identification		BD3/271109	BD4/271109	BD3/261109	QC	QC	QC				
Depth (m)		--	--	--	--	--	--				
Sampling Date recorded on COC		27/11/09	27/11/09	26/11/09	--	--	--				
Laboratory Extraction (Preparation) Date		4/12/09	4/12/09	4/12/09	4/12/09	4/12/09	4/12/09				
Laboratory Analysis Date		7/12/09	7/12/09	7/12/09	4/12/09	4/12/09	4/12/09				
Method : E026.2											
Acid extractable metals - mercury	**EQL**										
Mercury	0.05	0.11	0.08	0.05	99%	119%	<0.05				

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E026.2: 0.5g digested with nitric/hydrochloric acid. Analysis by CV-ICP-MS or FIMS.

Laboratory Identification		239635	239636	239637							
Sample Identification		BD3/271109	BD4/271109	BD3/261109							
Depth (m)		--	--	--							
Sampling Date recorded on COC		27/11/09	27/11/09	26/11/09							
Laboratory Extraction (Preparation) Date		4/12/09	4/12/09	4/12/09							
Laboratory Analysis Date		7/12/09	7/12/09	7/12/09							
Method : E005.2											
Moisture	**EQL**										
Moisture	--	11	11	17							

Results expressed in % w/w unless otherwise specified

Comments:

E005.2: Moisture by gravimetric analysis. Results are in % w/w.

LabMark
ENVIRONMENTAL LABORATORIES

Quality, Service, Support

Report Date : 4/12/2009
Report Time : 12:29:56PM

Sample Receipt Notice (SRN) for E045950

Client Details		Laboratory Reference Information	
		Please have this information ready when contacting Labmark.	
Client Name:	Douglas Partners	**Laboratory Report:**	**E045950**
Client Phone:	02 9809 0666	**Quotation Number:**	- Not provided, standard prices apply
Client Fax:	02 98094095	**Laboratory Address:**	Unit 1, 8 Leighton Pl. Asquith NSW 2077
Contact Name:	Kurt Plambeck		
Contact Email:	plambeckk@douglaspartners.com.au	**Phone:**	61 2 9476 6533
Client Address:	96 Hermitage Road West Ryde NSW 2114	**Fax:**	61 2 9476 8219
		Sample Receipt Contact:	Ros Schacht
Project Name:	West Hoxton	**Email:**	Ros.Schacht@labmark.com.au
Project Number:	71500	**Reporting Contact:**	Leanne Boag
CoC Serial Number:	- Not provided -	**Email:**	leanne.boag@labmark.com.au
Purchase Order:	- Not provided -		
Surcharge:	No surcharge applied (results by 6:30pm on due date)		
Sample Matrix:	SOIL		
Date Sampled (earliest date):	26/11/2009	**NATA Accreditation:**	13542
Date Samples Received:	03/12/2009	**TGA GMP License:**	185-336 (Sydney)
Date Sample Receipt Notice issued:	04/12/2009	**APVMA License:**	6105 (Sydney)
Date Preliminary Report Due:	10/12/2009	**AQIS Approval:**	NO356 (Sydney)
Client TAT Request Date:	10/12/2009	**AQIS Entry Permit:**	200521534 (Sydney)

Reporting Requirements: Electronic Data Download required: No

Invoice Number: 09EA7243

Sample Condition: COC received with samples. Report number and lab ID's defined on COC.
Samples received in good order .
Samples received with cooling media: Ice bricks .
Samples received chilled.
Security seals not used .
Sample container & chemical preservation suitable .

Comments: Sample BD3/271109 tested and reported as per client request.

Holding Times: Date received allows for sufficient time to meet Technical Holding Times.

Preservation: Chemical preservation of samples satisfactory for requested analytes.

Important Notes:
LabMark shall responsibly dispose of spent customer soil and water samples which includes the disintegration of the sample label. A sample disposal fee of $1.00 is applicable on all samples received by the laboratory regardless of whether they have undergone analytical testing. Sample disposal of environmental samples shall be 31 days (water) and 3 months (soil, HN03 preserved samples) after laboratory receipt, unless otherwise requested in writing by the client. Samples requested to be held in non-refrigerated storage shall incur $5.00/ sample/ 3 months. Additional refrigerated storage shall incur $30/ sample/ 3 months. Combination prices apply only if requested. Transfer of report ownership from LabMark to the client shall occur once full and final payment has been settled and verified. All report copies may be retracted where full payment does not occur within the agreed settlement period.

Analysis comments:

Subcontracted Analyses:

Thank you for choosing Labmark to analyse your project samples.
Additional information on www.labmark.com.au

LabMark
ENVIRONMENTAL LABORATORIES

Quality, Service, Support

Report Date : 4/12/2009
Report Time : 12:29:56PM

Sample Receipt Notice (SRN) for E045950

The table below represents LabMark's understanding and interpretation of the customer supplied sample COC request (refer to SRN comments section on first page for external subcontracting method details). Please confirm that your COC request has been entered correctly. Due to THT and TAT requirements, testing shall commence immediately as per this table, unless the customer intervenes with a correction prior to testing.

GRID REVIEW TABLE

No.	Date	Depth	Client Sample ID	Requested Analysis: Acid extractable metals - mercury	Acid extractable metals (M7)	Moisture	Polyaromatic Hydrocarbons (PAH)	PREP Not Reported
239635	27/11		BD3/271109	●	●	●	●	●
239636	27/11		BD4/271109	●	●	●	●	●
239637	26/11		BD3/261109	●	●	●	●	●
			Totals:	3	3	3	3	3

'PREP Not Reported' refers to an internal laboratory instruction - client confirmation of this parameter is not required.

Thank you for choosing Labmark to analyse your project samples.
Additional information on www.labmark.com.au

LabMark
ENVIRONMENTAL LABORATORIES

Quality, Service, Support

Report Date : 4/12/2009
Report Time : 12:29:56PM

Sample **Receipt** Notice (SRN) for E045950

No.	Date	Depth	Client Sample ID	Requested Analysis: M8 - M7-T_S
239635	27/11		BD3/271109	●
239636	27/11		BD4/271109	●
239637	26/11		BD3/261109	●
			Totals:	3

Thank you for choosing Labmark to analyse your project samples.
Additional information on www.labmark.com.au

PLEASE FORWARD ON TO LABMARK FOR INTERLAB ANALYSIS

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY

Project Name: West Haxton
Project No: 71500 Sampler: Kurt Plambeck / Alistair Hyde Page
Project Mgr: RT Mob. Phone: 0414 716 907
Email: kurt.plambeck@douglaspartners.com.au
Date Required: 7/12/09 Lab Quote No.

To: Envirolab Services
12 Ashley Street, Chatswood NSW 2068
Attn: Tania Notaras
Phone: 02 9910 6200 Fax: 02 9910 6201
Email: tnotaras@envirolabservices.com.au

Lab ID	Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W - water	Container type	Analytes: Heavy Metals	BTEX/ TPH	OCPs/ PCBs	PAH	Phenols	Asbestos							Other	Notes
239635	BD2/271109		label wedged BD2/271109		S	G	✓			✓										
239636	BD4/271109						✓			✓										
239637	BD3/271109						✓			✓										

Lab Report No. E045950
Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114 Phone: (02) 9809 0666 Fax: (02) 9809 4095

Relinquished by: D Haxton	Signed:	Date & Time: 2/12/09 1pm	Received By: SR	Date & Time:	3/12/09 @ 5:30pm
Relinquished by:	Signed:	Date & Time:	Received By:	Date & Time:	

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS 35987

Client:
Douglas Partners
96 Hermitage Rd
West Ryde
NSW 2114

Attention: David Holden

Sample log in details:

Your Reference:	**71500, Hoxton Park Airport**
No. of samples:	2 Soils
Date samples received:	07/12/09
Date completed instructions received:	07/12/09

Analysis Details:
Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by:	10/12/09
Date of Preliminary Report:	Not issued
Issue Date:	10/12/09

NATA accreditation number 2901. This document shall not be reproduced except in full.
This document is issued in accordance with NATA's accreditation requirements.
Accredited for compliance with ISO/IEC 17025.
Tests not covered by NATA are denoted with *.

Results Approved By:

Joshua Lim
Chemist

vTPH & BTEX in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35987-1 B1/0.4-0.5 4/12/2009 Soil	35987-2 B2/0.4-0.5 4/12/2009 Soil
Date extracted	-	9/12/2009	9/12/2009
Date analysed	-	10/12/2009	10/12/2009
vTPH C_6 - C_9	mg/kg	<25	<25
Benzene	mg/kg	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0
m+p-xylene	mg/kg	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	91	81

sTPH in Soil (C10-C36) Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35987-1 B1/0.4-0.5 4/12/2009 Soil	35987-2 B2/0.4-0.5 4/12/2009 Soil
Date extracted	-	9/12/2009	9/12/2009
Date analysed	-	10/12/2009	10/12/2009
TPH C_{10} - C_{14}	mg/kg	<50	<50
TPH C_{15} - C_{28}	mg/kg	<100	<100
TPH C_{29} - C_{36}	mg/kg	<100	<100
Surrogate o-Terphenyl	%	91	87

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ---------- 	35987-1 B1/0.4-0.5 4/12/2009 Soil	35987-2 B2/0.4-0.5 4/12/2009 Soil
Date extracted	-	9/12/2009	9/12/2009
Date analysed	-	10/12/2009	10/12/2009
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1
Surrogate p-Terphenyl-d_{14}	%	71	66

Organochlorine Pesticides in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ---------- 	35987-1 B1/0.4-0.5 4/12/2009 Soil	35987-2 B2/0.4-0.5 4/12/2009 Soil
Date extracted	-	9/12/2009	9/12/2009
Date analysed	-	9/12/2009	9/12/2009
HCB	mg/kg	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1
Surrogate TCLMX	%	121	123

Acid Extractable metals in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ---------- 	35987-1 B1/0.4-0.5 4/12/2009 Soil	35987-2 B2/0.4-0.5 4/12/2009 Soil
Date digested	-	9/12/2009	9/12/2009
Date analysed	-	10/12/2009	10/12/2009
Arsenic	mg/kg	10	6
Cadmium	mg/kg	<0.5	<0.5
Chromium	mg/kg	26	19
Copper	mg/kg	14	30
Lead	mg/kg	23	13
Mercury	mg/kg	0.1	<0.1
Nickel	mg/kg	5	12
Zinc	mg/kg	13	22

Moisture Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ---------- 	35987-1 B1/0.4-0.5 4/12/2009 Soil	35987-2 B2/0.4-0.5 4/12/2009 Soil
Date prepared	-	9/12/2009	9/12/2009
Date analysed	-	9/12/2009	9/12/2009
Moisture	%	17	22

Asbestos ID - soils Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ---------- -	35987-1 B1/0.4-0.5 4/12/2009 Soil	35987-2 B2/0.4-0.5 4/12/2009 Soil
Date analysed	-	10/12/2009	10/12/2009
Sample Description	-	approx 40g clay	approx 30g clay
Asbestos ID in soil	-	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg
Trace Analysis	-	Respirable fibres not detected	Respirable fibres not detected

Method ID	Methodology Summary
GC.16	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS.
GC.3	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.
GC.12 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
GC-5	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Metals.20 ICP-AES	Determination of various metals by ICP-AES.
Metals.21 CV-AAS	Determination of Mercury by Cold Vapour AAS.
LAB.8	Moisture content determined by heating at 105 deg C for a minimum of 4 hours.
ASB.1	Qualitative identification of asbestos type fibres in bulk using Polarised Light Microscopy and Dispersion Staining Techniques.

QUALITY CONTROL vTPH & BTEX in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			9/12/2009	[NT]	[NT]	LCS-5	9/12/2009
Date analysed	-			10/12/09	[NT]	[NT]	LCS-5	10/12/09
vTPH C_6 - C_9	mg/kg	25	GC.16	<25	[NT]	[NT]	LCS-5	94%
Benzene	mg/kg	0.5	GC.16	<0.5	[NT]	[NT]	LCS-5	74%
Toluene	mg/kg	0.5	GC.16	<0.5	[NT]	[NT]	LCS-5	95%
Ethylbenzene	mg/kg	1	GC.16	<1.0	[NT]	[NT]	LCS-5	97%
m+p-xylene	mg/kg	2	GC.16	<2.0	[NT]	[NT]	LCS-5	103%
o-Xylene	mg/kg	1	GC.16	<1.0	[NT]	[NT]	LCS-5	106%
Surrogate aaa-Trifluorotoluene	%		GC.16	100	[NT]	[NT]	LCS-5	99%

QUALITY CONTROL sTPH in Soil (C10-C36)	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			9/12/2009	[NT]	[NT]	LCS-6	9/12/2009
Date analysed	-			10/12/09	[NT]	[NT]	LCS-6	10/12/09
TPH C_{10} - C_{14}	mg/kg	50	GC.3	<50	[NT]	[NT]	LCS-6	83%
TPH C_{15} - C_{28}	mg/kg	100	GC.3	<100	[NT]	[NT]	LCS-6	97%
TPH C_{29} - C_{36}	mg/kg	100	GC.3	<100	[NT]	[NT]	LCS-6	88%
Surrogate o-Terphenyl	%		GC.3	86	[NT]	[NT]	LCS-6	85%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			9/12/2009	[NT]	[NT]	LCS-1	9/12/2009
Date analysed	-			10/12/09	[NT]	[NT]	LCS-1	10/12/09
Naphthalene	mg/kg	0.1	GC.12 subset	<0.1	[NT]	[NT]	LCS-1	83%
Acenaphthylene	mg/kg	0.1	GC.12 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	0.1	GC.12 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	0.1	GC.12 subset	<0.1	[NT]	[NT]	LCS-1	95%
Phenanthrene	mg/kg	0.1	GC.12 subset	<0.1	[NT]	[NT]	LCS-1	96%
Anthracene	mg/kg	0.1	GC.12 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	0.1	GC.12 subset	<0.1	[NT]	[NT]	LCS-1	83%
Pyrene	mg/kg	0.1	GC.12 subset	<0.1	[NT]	[NT]	LCS-1	94%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Benzo(a)anthracene	mg/kg	0.1	GC.12 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	0.1	GC.12 subset	<0.1	[NT]	[NT]	LCS-1	98%
Benzo(b+k)fluoranthene	mg/kg	0.2	GC.12 subset	<0.2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	GC.12 subset	<0.05	[NT]	[NT]	LCS-1	97%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	GC.12 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	GC.12 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	GC.12 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%		GC.12 subset	114	[NT]	[NT]	LCS-1	71%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			9/12/2009	[NT]	[NT]	LCS-6	9/12/2009
Date analysed	-			9/12/2009	[NT]	[NT]	LCS-6	9/12/2009
HCB	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-6	116%
gamma-BHC	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-6	114%
Heptachlor	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-6	104%
delta-BHC	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-6	112%
Heptachlor Epoxide	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-6	106%
gamma-Chlordane	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-6	116%
Dieldrin	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-6	119%
Endrin	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-6	109%
pp-DDD	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-6	114%
Endosulfan II	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-6	122%
Methoxychlor	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		GC-5	117	[NT]	[NT]	LCS-6	120%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date digested	-			09/12/09	[NT]	[NT]	LCS-1	09/12/09
Date analysed	-			10/12/09	[NT]	[NT]	LCS-1	10/12/09
Arsenic	mg/kg	4	Metals.20 ICP-AES	<4	[NT]	[NT]	LCS-1	100%
Cadmium	mg/kg	0.5	Metals.20 ICP-AES	<0.5	[NT]	[NT]	LCS-1	104%
Chromium	mg/kg	1	Metals.20 ICP-AES	<1	[NT]	[NT]	LCS-1	103%
Copper	mg/kg	1	Metals.20 ICP-AES	<1	[NT]	[NT]	LCS-1	107%
Lead	mg/kg	1	Metals.20 ICP-AES	<1	[NT]	[NT]	LCS-1	108%
Mercury	mg/kg	0.1	Metals.21 CV-AAS	<0.1	[NT]	[NT]	LCS-1	108%
Nickel	mg/kg	1	Metals.20 ICP-AES	<1	[NT]	[NT]	LCS-1	104%
Zinc	mg/kg	1	Metals.20 ICP-AES	<1	[NT]	[NT]	LCS-1	103%

QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank
Date prepared	-			9/12/2009
Date analysed	-			9/12/2009
Moisture	%	0.1	LAB.8	<0.10

QUALITY CONTROL Asbestos ID - soils	UNITS	PQL	METHOD	Blank
Date analysed	-			[NT]

Report Comments:

Asbestos: A portion of the supplied sample was sub-sampled for asbestos according to Envirolab procedures. We cannot guarantee that this sub-sample is indicative of the entire sample.
Envirolab recommends supplying 30-40g of sample in it's own container.
Asbestos was analysed by Approved Identifier: Joshua Lim
INS: Insufficient sample for this test NT: Not tested PQL: Practical Quantitation Limit <: Less than >: Greater than
RPD: Relative Percent Difference NA: Test not required LCS: Laboratory Control Sample NR: Not requested

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria:

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the sample batch were within laboratory acceptance criteria.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable. Surrogates: 60-140% is acceptable for general organics and 10-140% for SVOC and speciated phenols.

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CERTIFICATE OF ANALYSIS 35984

Client:
Douglas Partners
96 Hermitage Rd
West Ryde
NSW 2114

Attention: David Holden

Sample log in details:

Your Reference:	**71500, Hoxton Park Airport**
No. of samples:	11 Waters
Date samples received:	07/12/09
Date completed instructions received:	07/12/09

Analysis Details:
Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by:	10/12/09
Date of Preliminary Report:	prelim 10/12/09
Issue Date:	11/12/09

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Accredited for compliance with ISO/IEC 17025.
Tests not covered by NATA are denoted with *.

Results Approved By:

Joshua Lim
Chemist

vTPH & BTEX in Water Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35984-1 GW2 4/12/2009 Water	35984-2 GW3 4/12/2009 Water	35984-3 GW4 4/12/2009 Water	35984-4 GW5 4/12/2009 Water	35984-5 GW6 4/12/2009 Water
Date extracted	-	10/12/2009	10/12/2009	10/12/2009	10/12/2009	10/12/2009
Date analysed	-	10/12/2009	10/12/2009	10/12/2009	10/12/2009	10/12/2009
TPH C_6 - C_9	µg/L	<10	<10	<10	<10	<10
Benzene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
m+p-xylene	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
o-xylene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate Dibromofluoromethane	%	97	96	84	94	96
Surrogate toluene-d8	%	100	101	99	100	100
Surrogate 4-BFB	%	97	98	97	96	97

vTPH & BTEX in Water Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35984-6 GW7 4/12/2009 Water	35984-7 GW8 4/12/2009 Water	35984-8 GW9 4/12/2009 Water	35984-9 OW1 4/12/2009 Water	35984-10 OW2 4/12/2009 Water
Date extracted	-	10/12/2009	10/12/2009	10/12/2009	10/12/2009	10/12/2009
Date analysed	-	10/12/2009	10/12/2009	10/12/2009	10/12/2009	10/12/2009
TPH C_6 - C_9	µg/L	<10	<10	<100	<10	<10
Benzene	µg/L	<1.0	<1.0	<10	<1.0	<1.0
Toluene	µg/L	<1.0	<1.0	<10	<1.0	<1.0
Ethylbenzene	µg/L	<1.0	<1.0	<10	<1.0	<1.0
m+p-xylene	µg/L	<2.0	<2.0	<20	<2.0	<2.0
o-xylene	µg/L	<1.0	<1.0	<10	<1.0	<1.0
Surrogate Dibromofluoromethane	%	95	95	95	95	95
Surrogate toluene-d8	%	100	100	100	101	100
Surrogate 4-BFB	%	97	96	96	97	97

vTPH & BTEX in Water		
Our Reference:	UNITS	35984-11
Your Reference	----------	BD1/041209
Date Sampled	----------	4/12/2009
Type of sample		Water
Date extracted	-	10/12/2009
Date analysed	-	10/12/2009
TPH C_6 - C_9	µg/L	<10
Benzene	µg/L	<1.0
Toluene	µg/L	<1.0
Ethylbenzene	µg/L	<1.0
m+p-xylene	µg/L	<2.0
o-xylene	µg/L	<1.0
Surrogate Dibromofluoromethane	%	92
Surrogate toluene-d8	%	100
Surrogate 4-BFB	%	96

sTPH in Water (C10-C36)						
Our Reference:	UNITS	35984-1	35984-2	35984-3	35984-4	35984-5
Your Reference	----------	GW2	GW3	GW4	GW5	GW6
Date Sampled	----------	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	9/12/2009	9/12/2009	9/12/2009	9/12/2009	9/12/2009
Date analysed	-	9/12/2009	9/12/2009	9/12/2009	9/12/2009	9/12/2009
TPH C_{10} - C_{14}	µg/L	<50	<50	<50	<50	<50
TPH C_{15} - C_{28}	µg/L	<100	<100	<100	<100	<100
TPH C_{29} - C_{36}	µg/L	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	102	107	97	105	96

sTPH in Water (C10-C36)						
Our Reference:	UNITS	35984-6	35984-7	35984-8	35984-9	35984-10
Your Reference	----------	GW7	GW8	GW9	OW1	OW2
Date Sampled	----------	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	9/12/2009	9/12/2009	9/12/2009	9/12/2009	9/12/2009
Date analysed	-	9/12/2009	9/12/2009	9/12/2009	9/12/2009	9/12/2009
TPH C_{10} - C_{14}	µg/L	<50	<50	<50	<50	<50
TPH C_{15} - C_{28}	µg/L	<100	<100	<100	<100	<100
TPH C_{29} - C_{36}	µg/L	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	94	107	109	101	103

sTPH in Water (C10-C36)		
Our Reference:	UNITS	35984-11
Your Reference	----------	BD1/041209
Date Sampled	----------	4/12/2009
Type of sample		Water
Date extracted	-	9/12/2009
Date analysed	-	9/12/2009
TPH C_{10} - C_{14}	µg/L	<50
TPH C_{15} - C_{28}	µg/L	<100
TPH C_{29} - C_{36}	µg/L	<100
Surrogate o-Terphenyl	%	111

PAHs in Water Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35984-1 GW2 4/12/2009 Water	35984-2 GW3 4/12/2009 Water	35984-3 GW4 4/12/2009 Water	35984-4 GW5 4/12/2009 Water	35984-5 GW6 4/12/2009 Water
Date extracted	-	9/12/2009	9/12/2009	9/12/2009	9/12/2009	9/12/2009
Date analysed	-	10/12/2009	10/12/2009	10/12/2009	10/12/2009	10/12/2009
Naphthalene	µg/L	<1	<1	<1	<1	<1
Acenaphthylene	µg/L	<1	<1	<1	<1	<1
Acenaphthene	µg/L	<1	<1	<1	<1	<1
Fluorene	µg/L	<1	<1	<1	<1	<1
Phenanthrene	µg/L	<1	2.4	<1	<1	<1
Anthracene	µg/L	<1	<1	<1	<1	<1
Fluoranthene	µg/L	<1	1.6	<1	<1	<1
Pyrene	µg/L	<1	1.4	<1	<1	<1
Benzo(a)anthracene	µg/L	<1	<1	<1	<1	<1
Chrysene	µg/L	<1	<1	<1	<1	<1
Benzo(b+k)fluoranthene	µg/L	<2	<2	<2	<2	<2
Benzo(a)pyrene	µg/L	<1	<1	<1	<1	<1
Indeno(1,2,3-c,d)pyrene	µg/L	<1	<1	<1	<1	<1
Dibenzo(a,h)anthracene	µg/L	<1	<1	<1	<1	<1
Benzo(g,h,i)perylene	µg/L	<1	<1	<1	<1	<1
Surrogate p-Terphenyl-d_{14}	%	100	111	102	107	80

PAHs in Water Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35984-6 GW7 4/12/2009 Water	35984-7 GW8 4/12/2009 Water	35984-8 GW9 4/12/2009 Water	35984-9 OW1 4/12/2009 Water	35984-10 OW2 4/12/2009 Water
Date extracted	-	9/12/2009	9/12/2009	9/12/2009	9/12/2009	9/12/2009
Date analysed	-	10/12/2009	10/12/2009	10/12/2009	10/12/2009	10/12/2009
Naphthalene	µg/L	<1	<1	<1	<1	<1
Acenaphthylene	µg/L	<1	<1	<1	<1	<1
Acenaphthene	µg/L	<1	<1	<1	<1	<1
Fluorene	µg/L	<1	<1	<1	<1	<1
Phenanthrene	µg/L	<1	<1	<1	<1	<1
Anthracene	µg/L	<1	<1	<1	<1	<1
Fluoranthene	µg/L	<1	<1	<1	<1	<1
Pyrene	µg/L	<1	<1	<1	<1	<1
Benzo(a)anthracene	µg/L	<1	<1	<1	<1	<1
Chrysene	µg/L	<1	<1	<1	<1	<1
Benzo(b+k)fluoranthene	µg/L	<2	<2	<2	<2	<2
Benzo(a)pyrene	µg/L	<1	<1	<1	<1	<1
Indeno(1,2,3-c,d)pyrene	µg/L	<1	<1	<1	<1	<1
Dibenzo(a,h)anthracene	µg/L	<1	<1	<1	<1	<1
Benzo(g,h,i)perylene	µg/L	<1	<1	<1	<1	<1
Surrogate p-Terphenyl-d_{14}	%	74	88	109	102	111

PAHs in Water Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ---------- 	35984-11 BD1/041209 4/12/2009 Water
Date extracted	-	9/12/2009
Date analysed	-	10/12/2009
Naphthalene	µg/L	<1
Acenaphthylene	µg/L	<1
Acenaphthene	µg/L	<1
Fluorene	µg/L	<1
Phenanthrene	µg/L	<1
Anthracene	µg/L	<1
Fluoranthene	µg/L	<1
Pyrene	µg/L	<1
Benzo(a)anthracene	µg/L	<1
Chrysene	µg/L	<1
Benzo(b+k)fluoranthene	µg/L	<2
Benzo(a)pyrene	µg/L	<1
Indeno(1,2,3-c,d)pyrene	µg/L	<1
Dibenzo(a,h)anthracene	µg/L	<1
Benzo(g,h,i)perylene	µg/L	<1
Surrogate p-Terphenyl-d_{14}	%	110

Total Phenolics in Water						
Our Reference:	UNITS	35984-1	35984-2	35984-3	35984-4	35984-5
Your Reference	----------	GW2	GW3	GW4	GW5	GW6
Date Sampled	----------	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	11/12/2009	11/12/2009	11/12/2009	11/12/2009	11/12/2009
Date analysed	-	11/12/2009	11/12/2009	11/12/2009	11/12/2009	11/12/2009
Total Phenolics (as Phenol)	mg/L	<0.050	<0.050	<0.050	0.37	<0.050

Total Phenolics in Water						
Our Reference:	UNITS	35984-6	35984-7	35984-8	35984-9	35984-10
Your Reference	----------	GW7	GW8	GW9	OW1	OW2
Date Sampled	----------	4/12/2009	4/12/2009	4/12/2009	4/12/2009	4/12/2009
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	11/12/2009	11/12/2009	11/12/2009	11/12/2009	11/12/2009
Date analysed	-	11/12/2009	11/12/2009	11/12/2009	11/12/2009	11/12/2009
Total Phenolics (as Phenol)	mg/L	<0.050	<0.050	<0.050	<0.050	0.49

Total Phenolics in Water		
Our Reference:	UNITS	35984-11
Your Reference	----------	BD1/041209
Date Sampled	----------	4/12/2009
Type of sample		Water
Date extracted	-	11/12/2009
Date analysed	-	11/12/2009
Total Phenolics (as Phenol)	mg/L	<0.050

HM in water - dissolved Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35984-1 GW2 4/12/2009 Water	35984-2 GW3 4/12/2009 Water	35984-3 GW4 4/12/2009 Water	35984-4 GW5 4/12/2009 Water	35984-5 GW6 4/12/2009 Water
Date prepared	-	9/12/2009	9/12/2009	9/12/2009	9/12/2009	9/12/2009
Date analysed	-	10/12/2009	10/12/2009	10/12/2009	10/12/2009	10/12/2009
Arsenic-Dissolved	µg/L	<1	<1	<1	<1	<1
Cadmium-Dissolved	µg/L	<0.1	0.1	0.2	<0.1	0.1
Chromium-Dissolved	µg/L	<1	<1	<1	<1	<1
Copper-Dissolved	µg/L	<1	<1	<1	<1	<1
Lead-Dissolved	µg/L	<1	<1	<1	<1	<1
Mercury-Dissolved	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel-Dissolved	µg/L	3	6	11	<1	18
Zinc-Dissolved	µg/L	14	32	17	5	16

HM in water - dissolved Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35984-6 GW7 4/12/2009 Water	35984-7 GW8 4/12/2009 Water	35984-8 GW9 4/12/2009 Water	35984-9 OW1 4/12/2009 Water	35984-10 OW2 4/12/2009 Water
Date prepared	-	9/12/2009	9/12/2009	9/12/2009	9/12/2009	9/12/2009
Date analysed	-	10/12/2009	10/12/2009	10/12/2009	10/12/2009	10/12/2009
Arsenic-Dissolved	µg/L	<1	<1	<1	<1	<1
Cadmium-Dissolved	µg/L	<0.1	<0.1	<0.1	<0.1	0.2
Chromium-Dissolved	µg/L	<1	<1	<1	1	<1
Copper-Dissolved	µg/L	1	6	3	7	<1
Lead-Dissolved	µg/L	<1	<1	<1	<1	<1
Mercury-Dissolved	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel-Dissolved	µg/L	3	2	8	3	2
Zinc-Dissolved	µg/L	13	12	20	10	1

HM in water - dissolved Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35984-11 BD1/041209 4/12/2009 Water
Date prepared	-	9/12/2009
Date analysed	-	10/12/2009
Arsenic-Dissolved	µg/L	<1
Cadmium-Dissolved	µg/L	0.2
Chromium-Dissolved	µg/L	<1
Copper-Dissolved	µg/L	<1
Lead-Dissolved	µg/L	<1
Mercury-Dissolved	µg/L	<0.5
Nickel-Dissolved	µg/L	2
Zinc-Dissolved	µg/L	<1

Miscellaneous Inorganics Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35984-1 GW2 4/12/2009 Water	35984-2 GW3 4/12/2009 Water	35984-3 GW4 4/12/2009 Water	35984-4 GW5 4/12/2009 Water	35984-5 GW6 4/12/2009 Water
Date prepared	-	8/12/2009	8/12/2009	8/12/2009	8/12/2009	8/12/2009
Date analysed	-	9/12/2009	9/12/2009	9/12/2009	9/12/2009	9/12/2009
pH	pH Units	7.2	6.9	6.9	6.9	6.9
Calcium - Dissolved	mg/L	17	44	45	160	58
Magnesium - Dissolved	mg/L	140	640	300	580	290
Hardness by calculation	mgCaCO3 /L	620	2,700	1,300	2,800	1,300

Miscellaneous Inorganics Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35984-6 GW7 4/12/2009 Water	35984-7 GW8 4/12/2009 Water	35984-8 GW9 4/12/2009 Water	35984-9 OW1 4/12/2009 Water	35984-10 OW2 4/12/2009 Water
Date prepared	-	8/12/2009	8/12/2009	8/12/2009	8/12/2009	8/12/2009
Date analysed	-	9/12/2009	9/12/2009	9/12/2009	9/12/2009	9/12/2009
pH	pH Units	6.2	7.1	6.4	6.8	6.8
Calcium - Dissolved	mg/L	1.9	33	38	28	50
Magnesium - Dissolved	mg/L	5.7	130	180	180	380
Hardness by calculation	mgCaCO3 /L	28	620	840	810	1,700

Miscellaneous Inorganics Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	35984-11 BD1/041209 4/12/2009 Water
Date prepared	-	8/12/2009
Date analysed	-	9/12/2009
pH	pH Units	6.9
Calcium - Dissolved	mg/L	53
Magnesium - Dissolved	mg/L	390
Hardness by calculation	mgCaCO3 /L	1,700

Method ID	Methodology Summary
GC.16	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS.
GC.3	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.
GC.12 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
LAB.30	Total Phenolics - determined colorimetrically following disitillation.
Metals.22 ICP-MS	Determination of various metals by ICP-MS.
Metals.21 CV-AAS	Determination of Mercury by Cold Vapour AAS.
LAB.1	pH - Measured using pH meter and electrode in accordance with APHA 20th ED, 4500-H+.
Metals.20 ICP-AES	Determination of various metals by ICP-AES.

QUALITY CONTROL vTPH & BTEX in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			10/12/2009	[NT]	[NT]	LCS-W1	10/12/2009
Date analysed	-			10/12/2009	[NT]	[NT]	LCS-W1	10/12/2009
TPH C_6 - C_9	µg/L	10	GC.16	<10	[NT]	[NT]	LCS-W1	101%
Benzene	µg/L	1	GC.16	<1.0	[NT]	[NT]	LCS-W1	97%
Toluene	µg/L	1	GC.16	<1.0	[NT]	[NT]	LCS-W1	100%
Ethylbenzene	µg/L	1	GC.16	<1.0	[NT]	[NT]	LCS-W1	100%
m+p-xylene	µg/L	2	GC.16	<2.0	[NT]	[NT]	LCS-W1	103%
o-xylene	µg/L	1	GC.16	<1.0	[NT]	[NT]	LCS-W1	101%
Surrogate Dibromofluoromethane	%		GC.16	95	[NT]	[NT]	LCS-W1	96%
Surrogate toluene-d8	%		GC.16	101	[NT]	[NT]	LCS-W1	100%
Surrogate 4-BFB	%		GC.16	96	[NT]	[NT]	LCS-W1	99%

QUALITY CONTROL sTPH in Water (C10-C36)	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			9/12/2009	[NT]	[NT]	LCS-W2	9/12/2009
Date analysed	-			9/12/2009	[NT]	[NT]	LCS-W2	9/12/2009
TPH C_{10} - C_{14}	µg/L	50	GC.3	<50	[NT]	[NT]	LCS-W2	77%
TPH C_{15} - C_{28}	µg/L	100	GC.3	<100	[NT]	[NT]	LCS-W2	99%
TPH C_{29} - C_{36}	µg/L	100	GC.3	<100	[NT]	[NT]	LCS-W2	94%
Surrogate o-Terphenyl	%		GC.3	95	[NT]	[NT]	LCS-W2	97%

QUALITY CONTROL PAHs in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			9/12/09	[NT]	[NT]	LCS-W2	9/12/09
Date analysed	-			10/12/09	[NT]	[NT]	LCS-W2	10/12/09
Naphthalene	µg/L	1	GC.12 subset	<1	[NT]	[NT]	LCS-W2	87%
Acenaphthylene	µg/L	1	GC.12 subset	<1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	µg/L	1	GC.12 subset	<1	[NT]	[NT]	[NR]	[NR]
Fluorene	µg/L	1	GC.12 subset	<1	[NT]	[NT]	LCS-W2	88%
Phenanthrene	µg/L	1	GC.12 subset	<1	[NT]	[NT]	LCS-W2	90%
Anthracene	µg/L	1	GC.12 subset	<1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	µg/L	1	GC.12 subset	<1	[NT]	[NT]	LCS-W2	75%

QUALITY CONTROL PAHs in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Pyrene	µg/L	1	GC.12 subset	<1	[NT]	[NT]	LCS-W2	85%
Benzo(a)anthracene	µg/L	1	GC.12 subset	<1	[NT]	[NT]	[NR]	[NR]
Chrysene	µg/L	1	GC.12 subset	<1	[NT]	[NT]	LCS-W2	100%
Benzo(b+k)fluoranthene	µg/L	2	GC.12 subset	<2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	µg/L	1	GC.12 subset	<1	[NT]	[NT]	LCS-W2	100%
Indeno(1,2,3-c,d)pyrene	µg/L	1	GC.12 subset	<1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	µg/L	1	GC.12 subset	<1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	µg/L	1	GC.12 subset	<1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%		GC.12 subset	105	[NT]	[NT]	LCS-W2	101%

QUALITY CONTROL Total Phenolics in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			11/12/09	35984-1	11/12/2009 || 11/12/2009	LCS-W1	11/12/09
Date analysed	-			11/12/09	35984-1	11/12/2009 || 11/12/2009	LCS-W1	11/12/09
Total Phenolics (as Phenol)	mg/L	0.05	LAB.30	<0.050	35984-1	<0.050 || <0.050	LCS-W1	88%

QUALITY CONTROL HM in water - dissolved	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			9/12/09	35984-1	9/12/2009 || 9/12/2009	LCS-W1	9/12/09
Date analysed	-			10/12/09	35984-1	10/12/2009 || 10/12/2009	LCS-W1	10/12/09
Arsenic-Dissolved	µg/L	1	Metals.22 ICP-MS	<1	35984-1	<1 || <1	LCS-W1	106%
Cadmium-Dissolved	µg/L	0.1	Metals.22 ICP-MS	<0.1	35984-1	<0.1 || <0.1	LCS-W1	108%
Chromium-Dissolved	µg/L	1	Metals.22 ICP-MS	<1	35984-1	<1 || <1	LCS-W1	94%
Copper-Dissolved	µg/L	1	Metals.22 ICP-MS	<1	35984-1	<1 || <1	LCS-W1	96%
Lead-Dissolved	µg/L	1	Metals.22 ICP-MS	<1	35984-1	<1 || <1	LCS-W1	111%
Mercury-Dissolved	µg/L	0.5	Metals.21 CV-AAS	<0.5	35984-1	<0.5 || <0.5	LCS-W1	118%
Nickel-Dissolved	µg/L	1	Metals.22 ICP-MS	<1	35984-1	3 || 3 || RPD: 0	LCS-W1	104%
Zinc-Dissolved	µg/L	1	Metals.22 ICP-MS	<1	35984-1	14 || 16 || RPD: 13	LCS-W1	98%

QUALITY CONTROL Miscellaneous Inorganics	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			8/12/2009	35984-1	8/12/2009 || 8/12/2009	LCS-W1	8/12/2009
Date analysed	-			8/12/09	35984-1	9/12/2009 || 9/12/2009	LCS-W1	09/12/09
pH	pH Units		LAB.1	[NT]	35984-1	7.2 || 7.2 || RPD: 0	LCS-W1	102%
Calcium - Dissolved	mg/L	0.03	Metals.20 ICP-AES	<0.03	35984-1	17 || 17 || RPD: 0	LCS-W1	105%
Magnesium - Dissolved	mg/L	0.03	Metals.20 ICP-AES	<0.03	35984-1	140 || 140 || RPD: 0	LCS-W1	102%
Hardness by calculation	mgCaCO3/L	1	Metals.20 ICP-AES	<1	35984-1	620 || 620 || RPD: 0	[NR]	[NR]

QUALITY CONTROL Total Phenolics in Water	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	35984-11	11/12/2009 || 11/12/2009	35984-2	11/12/09
Date analysed	-	35984-11	11/12/2009 || 11/12/2009	35984-2	11/12/09
Total Phenolics (as Phenol)	mg/L	35984-11	<0.050 || <0.050	35984-2	90%

QUALITY CONTROL HM in water - dissolved	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	35984-11	9/12/2009 || 9/12/2009	35984-2	9/12/09
Date analysed	-	35984-11	10/12/2009 || 10/12/2009	35984-2	10/12/09
Arsenic-Dissolved	µg/L	35984-11	<1 || <1	35984-2	108%
Cadmium-Dissolved	µg/L	35984-11	0.2 || 0.2 || RPD: 0	35984-2	116%
Chromium-Dissolved	µg/L	35984-11	<1 || <1	35984-2	112%
Copper-Dissolved	µg/L	35984-11	<1 || <1	35984-2	84%
Lead-Dissolved	µg/L	35984-11	<1 || <1	35984-2	108%
Mercury-Dissolved	µg/L	35984-11	<0.5 || <0.5	35984-2	118%
Nickel-Dissolved	µg/L	35984-11	2 || 2 || RPD: 0	35984-2	106%
Zinc-Dissolved	µg/L	35984-11	<1 || <1	35984-2	94%

QUALITY CONTROL Miscellaneous Inorganics	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	35984-11	8/12/2009 || 8/12/2009	35984-2	09/12/09
Date analysed	-	35984-11	9/12/2009 || 9/12/2009	35984-2	09/12/09
pH	pH Units	35984-11	6.9 || 6.9 || RPD: 0	[NR]	[NR]
Calcium - Dissolved	mg/L	35984-11	53 || 53 || RPD: 0	35984-2	106%
Magnesium - Dissolved	mg/L	35984-11	390 || 400 || RPD: 3	35984-2	108%
Hardness by calculation	mgCaCO3/L	35984-11	1700 || 1800 || RPD: 6	[NR]	[NR]

Report Comments:

Total Petroleum Hydrocarbons in water:PQL has been raised due to the sample matrix requiring dilution.(too much sediment).

Asbestos was analysed by Approved Identifier: Not applicable for this job

INS: Insufficient sample for this test NT: Not tested PQL: Practical Quantitation Limit <: Less than >: Greater than

RPD: Relative Percent Difference NA: Test not required LCS: Laboratory Control Sample NR: Not requested

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria:

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the sample batch were within laboratory acceptance criteria.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable. Surrogates: 60-140% is acceptable for general organics and 10-140% for SVOC and speciated phenols.

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CHAIN OF CUSTODY

Project Name: West Hoxton
Project No: 71500 Sampler: Kurt Plambeck / Alistair Hyde Page
Project Mgr: RT Mob. Phone: 0414 716 907
Email: kurt.plambeck@douglaspartners.com.au
Date Required: 7/12/09 Lab Quote No.

To: Envirolab Services
12 Ashley Street, Chatswood NSW 2068
Attn: Tania Notaras
Phone: 02 9910 6200 Fax: 02 9910 6201
Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W - water	Container type	Analytes: Heavy Metals	BTEX/ TPH	OCPs/ PCBs	PAH	Phenols	Asbestos							Other	Notes
BH7	0-0.1	1	1/12/09	S	glass	✓	✓	✓	✓	✓	✓								
BH9	0.4-0.5	2	1/12	S	G	✓	✓		✓										
BH 10	0.4-0.5	3	1/12	S	G	✓	✓		✓		✓								
BH 18	0.4-0.5	4	1/12	S	G	✓	✓		✓		✓								
BH 19	0-0.1	5	1/12	S	G	✓	✓	✓	✓	✓									
BH 20	0.4-0.5	6	1/12	S	G	✓	✓	✓	✓	✓									
BH 22	0-0.1	7	1/12	S	G	✓	✓		✓										
BH 23	0-0.1	8	1/12	S	G	✓	✓	✓	✓	✓	✓								
BH 24	0-0.1	9	1/12	S	G	✓	✓	✓	✓										
BH 24	0.4-0.5	10	1/12	S	G	✓	✓		✓										
BH 26	0.4-0.5	11	1/12	S	G	✓	✓		✓										
BH 27	0.1-0.2	12	1/12	S	G	✓	✓	✓	✓	✓	✓								

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: 9910 6200
Job No: 35840
Date received: 2/12/09
Time received: 1
Received by: SS
Temp. Cool/Ambient
Cooling: Ice/Ice pack
Security: Intact/Broken/None

Lab Report No.
Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114
Phone: (02) 9809 0666
Fax: (02) 9809 4095
Relinquished by: Caitlyn Fella Signed: Caitlyn Fella Date & Time: 2/12 12 noon Received By: SS Date & Time: 2/12/9
Relinquished by: Signed: Date & Time: Received By: Date & Time:

Douglas Partners
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CHAIN OF CUSTODY

Project Name: West Haxton
Project No: 71500 Sampler: Kurt Plambeck / Alistair Hyde Page
Project Mgr: RT Mob. Phone: 0414 716 907
Email: kurt.plambeck@douglaspartners.com.au
Date Required: 7/12/09 Lab Quote No.

To: Envirolab Services
12 Ashley Street, Chatswood NSW 2068
Attn: Tania Notaras
Phone: 02 9910 6200 Fax: 02 9910 6201
Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W - water	Container type	Analytes: Heavy Metals	BTEX/ TPH	OCPs/ PCBs	PAH	Phenols	Asbestos							Other	Notes
BH27	1.4-1.5	13	1/12	S	G	✓	✓		✓										
Fill	0.0-1	14	1/12	S	G	✓	✓		✓										
Fill	0.9-1	15	1/12	S	G	✓	✓		✓										

Lab Report No.
Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114
Phone: (02) 9809 0666
Fax: (02) 9809 4095

Relinquished by: Caitlyn Fadda Signed: Caitlyn Fadda Date & Time: 7/12 12noon Received By: Date & Time:
Relinquished by: Signed: Date & Time: Received By: Date & Time:

Douglas Partners
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CHAIN OF CUSTODY

Project Name: West Hoxton
Project No: 71500 Sampler: Kurt Plambeck / Alistair Hyde Page
Project Mgr: RT Mob. Phone: 0414 716 907
Email: kurt.plambeck@douglaspartners.com.au
Date Required: 7/12/09 Lab Quote No.

To: Envirolab Services
12 Ashley Street, Chatswood NSW 2068
Attn: Tania Notaras
Phone: 02 9910 6200 Fax: 02 9910 6201
Email: tnotaras@envirolabservices.com.au

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: 9910 6200

Job No: 35858
Date received: 2/12/09
Time received: 3:30
Received by: JHie
Temp: Cool/Ambient
Security: Intact/Broken/None

Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W - water	Container type	Analytes: Heavy Metals	BTEX/ TPH	OCPs/ PCBs	PAH	Phenols	Asbestos							Other	Notes
GW1	0.1-0.3	1	25/11	S	G	✓	✓	✓	✓		✓								Sample Condition 1/12/09
GW1	3.8-4.0	2	25/11				✓		✓										
GW2	0.1-0.3	3	26/11			✓	✓	✓	✓		✓								
GW2	2.8-3.0	4	26/11				✓		✓										
GW4	0.3-0.5	5	26/11			✓	✓		✓		✓								
GW4	2.8-3.0	6	26/11				✓		✓										
GW3	3.5	7	25/11				✓		✓										
GW3	0.4-0.5	8	25/11			✓	✓		✓	✓	✓								
GW5	0.1-0.3	9	25/11			✓	✓	✓	✓	✓	✓								
GW6	0-0.1	10	25/11			✓	✓	✓	✓		✓								
GW7	0.4-0.5	11	24/11			✓	✓	✓	✓		✓								
GW7	0.9-1.0	12	24/11			✓	✓		✓										

Lab Report No.
Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114 Phone: (02) 9809 0666 Fax: (02) 9809 4095
Relinquished by: D. Hooden Signed: Date & Time: 2/12/09 1pm Received By: JHie Date & Time: 2/12/09 3:30
Relinquished by: Signed: Date & Time: Received By: Date & Time:

Page ___ of ___

Form COC Rev0/November 2006

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY

Project Name: West Hoxton
Project No: 71500 Sampler: Kurt Plambeck / Alistair Hyde Page
Project Mgr: RT Mob. Phone: 0414 716 907
Email: kurt.plambeck@douglaspartners.com.au
Date Required: 7/12/09 Lab Quote No.

To: Envirolab Services
12 Ashley Street, Chatswood NSW 2068
Attn: Tania Notaras
Phone: 02 9910 6200 Fax: 02 9910 6201
Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W - water	Container type	Analytes: Heavy Metals	BTEX/ TPH	OCPs/ PCBs	PAH	Phenols	Asbestos							Other	Notes
GW8	0.3-0.5	13	26/11	S	G	✓	✓	✓	✓	✓	✓								
GW9	0.1-0.3	14	26/11			✓	✓	✓	✓		✓								
GW9	2.8-3.0	15	26/11				✓		✓	✓									
BH1	0.1-0.3	16	27/11			✓	✓	✓	✓	✓	✓								
BH2	0.3-0.5	17	27/11			✓	✓	✓		✓	✓								
BH3	0.1-0.3	18	27/11			✓	✓	✓	✓		✓								
BH3	0.3-0.5	19	27/11				✓		✓		✓								
BH4	0.2-0.5	20	27/11			✓	✓	✓	✓		✓								
BH5	0.3-0.5	21	27/11			✓	✓	✓	✓										
BH6	0.1-0.3	22	27/11			✓	✓	✓	✓		✓								
BH8	1.3-1.5	23	27/11			✓	✓	✓	✓		✓								
BH11	0.1-0.3	24	27/11	↓	↓		✓		✓										

Lab Report No.
Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114
Phone: (02) 9809 0666
Fax: (02) 9809 4095

Relinquished by: J. HOLDEN	Signed:	Date & Time: 2/12/09 1p	Received By:	Date & Time:	2/12/09 3:30
Relinquished by:	Signed:	Date & Time:	Received By:	Date & Time:	

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY

Project Name: West Haxton
Project No: 71500 Sampler: Kurt Plambeck / Alistair Hyde Page
Project Mgr: RT Mob. Phone: 0414 716 907
Email: kurt.plambeck@douglaspartners.com.au
Date Required: 7/12/09 Lab Quote No.

To: Envirolab Services
12 Ashley Street, Chatswood NSW 2068
Attn: Tania Notaras
Phone: 02 9910 6200 Fax: 02 9910 6201
Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W - water	Container type	Analytes: Heavy Metals	BTEX/ TPH	OCPs/ PCBs	PAH	Phenols	Asbestos							Other	Notes
BH12	0.1-0.3	25	27/11	S	G	✓	✓	—	✓		✓								
BH13	0.1-0.2	26	27/11			✓	✓	✓	—		✓								
BH14	0.3-0.5	27	27/11				✓		✓	✓									
BH15	0.1-0.3	28	27/11			✓	✓		✓	✓									
BH15	3.5-3.6	29	27/11			✓	✓		✓	✓									
BH16	0.1-0.3	30	27/11			✓	✓	✓	✓	✓	✓								
BH17	0.1-0.3	31	27/11			✓	✓	✓			✓								
BH14	2.8-3.0	32	27/11				✓		✓										
BH21	0.4-0.5	33	25/11			✓	✓	✓	✓		✓								
BH21	2.4-2.5	34	25/11			—	✓		✓										
BH25	0.3-0.5	35	27/11			✓	✓	✓	✓		✓								
DH28	0.3-0.5	36	27/11	✓	✓	✓	✓	✓	✓	✓	✓								

Lab Report No.
Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114
Phone: (02) 9809 0666
Fax: (02) 9809 4095
Relinquished by: D. HOLDEN Signed: Date & Time: 2/12/09 Received By: Date & Time: 2/12/09 3:30
Relinquished by: Signed: Date & Time: Received By: Date & Time:

Page ___ of ___

Form COC Rev0/November 2006

Douglas Partners
Geotechnics - Environment - Groundwater

CHAIN OF CUSTODY

Project Name: West Haxton
Project No: 71500 Sampler: Kurt Plambeck / Alistair Hyde Page
Project Mgr: RT Mob. Phone: 0414 716 907
Email: Kurt.Plambeck@douglaspartners.com.au
Date Required: 7/12/09 Lab Quote No.

To: Envirolab Services
12 Ashley Street, Chatswood NSW 2068
Attn: Tania Notaras
Phone: 02 9910 6200 Fax: 02 9910 6201
Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W - water	Container type	Analytes: Heavy Metals	BTEX/ TPH	OCPs/ PCBs	PAH	Phenols	Asbestos							Other	Notes
BH 28	2.8-3.0	37	27/1	S	G	✓	✓		✓	✓									
BD1/28	1109	38				✓			✓										
BD2/28	1109	39				✓			✓										
BD1/27	1109	40				✓			✓										
~~BD3/?~~	~~1109~~																		

Lab Report No.
Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114
Phone: (02) 9809 0666
Fax: (02) 9809 4095

Relinquished by: D HOLDEN Signed: Date & Time: 2/12/09 Received By: Date & Time: 2/12/09 3:30
Relinquished by: Signed: Date & Time: Received By: Date & Time:

PLEASE FORWARD ON TO ENVIROLAB FOR INTERLAB ANALYSIS

Douglas Partners
Geotechnics - Environment - Groundwater

CHAIN OF CUSTODY

Project Name: West Hoxton
Project No: 71500 Sampler: Kurt Plambeck / Alistair Hyde Page
Project Mgr: RT Mob. Phone: 0414 716 907
Email: kurt.plambeck@douglaspartners.com.au
Date Required: 7/12/09 Lab Quote No.

To: Envirolab Services
12 Ashley Street, Chatswood NSW 2068
Attn: Tania Notaras
Phone: 02 9910 6200 Fax: 02 9910 6201
Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W - water	Container type	Analytes: Heavy Metals	BTEX/ TPH	OCPs/ PCBs	PAH	Phenols	Asbestos						Other	Notes
BD2/271109				S	G	✓			✓									
BD4/271109						✓			✓									
BD3/261109						✓			✓									

Lab Report No.
Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114
Phone: (02) 9809 0666
Fax: (02) 9809 4095
Relinquished by: D Hasler Signed: Date & Time: 2/12/09 1p Received By: Date & Time:
Relinquished by: Signed: Date & Time: Received By: Date & Time:

Douglas Partners
Geotechnics - Environment - Groundwater

CHAIN OF CUSTODY

Project Name: Hoxton Park Airport
Project No: 71500.. Sampler: AHP/DH
Project Mgr: RT Mob. Phone:98090666
Email: David Holden/AHP/ Ronnie Tong
Date Required: **4 DAY TURNAROUND**... Lab Quote No. .....

To: Envirolab Services
12 Ashley Street, Chatswood NSW 2068
Attn: Aileen
Phone: 02 9910 6200 Fax: 02 9910 6201
Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W – water	Container type	Analytes: Heavy Metals	BTEX/ TPH	PAH	Phenols	Hardness	P/A							Other	Notes
GW2		1	4/12/09	W	bottles	✓	✓	✓	✓	✓	✓								
GW3		2	4/12/09	W	bottles														
GW4		3	4/12/09	W	bottles														
GW5		4	4/12/09	W	bottles														
GW6		5	4/12/09	W	bottles														
GW7		6	4/12/09	W	bottles														
GW8		7	4/12/09	W	bottles														
GW9		8	4/12/09	W	bottles														
OW1		9	4/12/09	W	bottles														
OW2		10	4/12/09	W	bottles														
BD1/041209		11	4/12/09	W	bottles	↓	↓	↓	↓	↓	↓								

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: 9910 6200

Job No: 35984
Date received: 7/12/09
Time received: 4:30 pm
Received by: lcf
Temp: Cool/Ambient
Cooling: Icepack
Security: Intact/Broken/None

Lab Report No. .....

Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114

Phone: (02) 9809 0666
Fax: (02) 9809 4095

Relinquished by:	Signed:	Date & Time:	Received By: Lyle Hallinan	Date & Time: 7/12/09
Relinquished by:	Signed:	Date & Time:	Received By:	Date & Time:

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Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY

Project Name: Hoxton Park Airport.....
Project No: 71500.. Sampler: AHP/DH .....
Project Mgr: RT Mob. Phone:98090666 .....
Email: David Holden/AHP/ Ronnie Tong .....
Date Required: **4 DAY TURNAROUND**... Lab Quote No. .....

To: Envirolab Services
12 Ashley Street, Chatswood NSW 2068
Attn: Aileen
Phone: 02 9910 6200 Fax: 02 9910 6201
Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W - water	Container type	Analytes: Heavy Metals	BTEX/ TPH	PAH	Phenols	OCP	PCB	Asbestos					Other	Notes
B1	0.4-0.5	1	04/12/09	S	jar	•	•	•		•		•						
B2	0.4-0.5	2	04/12/09	S	jar	•	•	•		•		•						

8 samples extra

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: 9910 6200
Job No: 31987
Date received: 4/12/09
Time received: 6pm
Received by: GS
Temp: Cool/Ambient
Cooling: Ice/icepack
Security: Intact/Broken/None

Lab Report No. .....
Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114
Phone: (02) 9809 0666
Fax: (02) 9809 4095

Relinquished by:	Signed:	Date & Time:	Received By: Simon	Date & Time: 4/12/09
Relinquished by:	Signed:	Date & Time:	Received By:	Date & Time:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

SAMPLE RECEIPT ADVICE

Client:

Douglas Partners
96 Hermitage Rd
West Ryde NSW 2114

ph: 02 9809 0666
Fax: 02 9809 4095

Attention: David Holden

Sample log in details:

Your reference:	**71500, Hoxton Park Airport**
Envirolab Reference:	**35984**
Date received:	07/12/09
Date results expected to be reported:	**11/12/09**

Samples received in appropriate condition for analysis:	YES
No. of samples provided	11 Waters
Turnaround time requested:	Standard
Temperature on receipt	Cool
Cooling Method:	Ice

Comments:

Samples will be held for 1 month for water samples and 2 months for soil samples from date of receipt of samples.

Contact details:

Please direct any queries to Aileen Hie or Jacinta Hurst
ph: 02 9910 6200 fax: 02 9910 6201
email: ahie@envirolabservices.com.au or jhurst@envirolabservices.com.au

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

SAMPLE RECEIPT ADVICE

Client:

Douglas Partners
96 Hermitage Rd
West Ryde NSW 2114

ph: 02 9809 0666
Fax: 02 9809 4095

Attention: Kurt Plambeck

Sample log in details:

Your reference:	**71500, West Hoxton**
Envirolab Reference:	**35840**
Date received:	02/12/09
Date results expected to be reported:	**7/12/09**

Samples received in appropriate condition for analysis:	YES
No. of samples provided	15 Soils
Turnaround time requested:	72hr
Temperature on receipt	Cool
Cooling Method:	Ice Pack

Comments:

Samples will be held for 1 month for water samples and 2 months for soil samples from date of receipt of samples.

Contact details:

Please direct any queries to Aileen Hie or Jacinta Hurst
ph: 02 9910 6200 fax: 02 9910 6201
email: ahie@envirolabservices.com.au or jhurst@envirolabservices.com.au

APPENDIX E
Calibration Certificates

Service Department
BIOLAB (Aust) Pty Ltd
121 Beringarra Avenue
Malaga WA 6090
Phone: 08 9262 7555 Fax: 08 9248 6585

Calibration Certificate and Service Report

Instrument Details

Company: Douglas Partners Pty Ltd	
Instrument: **MiniRAE 2000 PID**	Biolab Ref: 68491
Serial Number: **110-003382**	Instrument ID: DP400

Service Report

Item	Test	Fail	Pass	Comments
Battery Pack	Rechargeable		-	Alkaline battery adapter fitted.
			-	
Switch/Keypad	Operation		✓	
Display	Operation		✓	
Filter	Condition		✓	
	Seal		✓	
Pump	Operation		✓	Serviced
	Flow		✓	
PCB	Condition		✓	
Connectors	Condition		✓	
Lamp Type	**10.6eV**		✓	Cleaned sensor and lamp.
Sensor	Operation		✓	
Alarms	Audible/Visual		✓	
	Settings		✓	
Software	Version		✓	
Datalogger	Operation		✓	

Certificate of Calibration

This is to certify that the above instrument has been calibrated in accordance with the calibration procedures as recommended in the instruments service manual with the following results:

Sensor	Calibration Gas & Concentration		Certified	Gas Bottle No.	Instrument Reading	
					Zero	Span
PID	Isobutylene	100ppm	NIST	106883	0.0	100

Calibrated and serviced by: _____ Date: 19/11/2009 Cal Due: 19/05/2010
Nunzio Corvaia

Douglas Partners
Geotechnics • Environment • Groundwater

Douglas Partners Pty Ltd
ABN 75 053 980 117
96 Hermitage Road
West Ryde NSW 2114
Australia

PO Box 472
West Ryde NSW 1685
Phone (02) 9809 0666
Fax (02) 9809 4095
www.douglaspartners.com.au

FIELD PID CALIBRATION RECORD

Unit ID. DP400

Date of Calibration. Isobutylene

Calibration Gas. 1/12/09

Concentration Recorded. 98

Calibrated by. KP

Battery Charged Yes/No

Lamp OK (Yes/No)

Operated by. KP

Signed.

Douglas Partners
Geotechnics • Environment • Groundwater

Douglas Partners Pty Ltd
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Australia

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www.douglaspartners.com.au

FIELD PID CALIBRATION RECORD

Unit ID....DP400.....

Date of Calibration....25/11/09.....

Calibration Gas....Isobutylene.....

Concentration Recorded....98.....

Calibrated by....KP.....

Battery Charged (Yes)/No.....

Lamp OK (Yes)/No).....

Operated by....KP.....

Signed....KP.....

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West Ryde NSW 2114
Australia

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West Ryde NSW 1685
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Fax (02) 9809 4095
www.douglaspartners.com.au

FIELD PID CALIBRATION RECORD

Unit ID..DP400.....

Date of Calibration..26/11/09.....

Calibration Gas..Isobutylene.....

Concentration Recorded..100.....

Calibrated by...KP.....

Battery Charged (Yes)/No.....

Lamp OK (Yes)/No)_.....

Operated by..KP.....

Signed....KP.....

Douglas Partners
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Douglas Partners Pty Ltd
ABN 75 053 980 117
96 Hermitage Road
West Ryde NSW 2114
Australia

PO Box 472
West Ryde NSW 1685
Phone (02) 9809 0666
Fax (02) 9809 4095
www.douglaspartners.com.au

FIELD PID CALIBRATION RECORD

Unit ID..DP400.....

Date of Calibration..4/12/09.....

Calibration Gas..Isobutylene.....

Concentration Recorded..98.....

Calibrated by..ICP.....

Battery Charged Yes/No.....

Lamp OK (Yes/No)_.....

Operated by..ICP.....

Signed.....

Douglas Partners
Geotechnics • Environment • Groundwater

Douglas Partners Pty Ltd
ABN 75 053 980 117
96 Hermitage Road
West Ryde NSW 2114
Australia

PO Box 472
West Ryde NSW 1685
Phone (02) 9809 0666
Fax (02) 9809 4095
www.douglaspartners.com.au

FIELD PID CALIBRATION RECORD

Unit ID...DP100.....

Date of Calibration...27/11/09.....

Calibration Gas...Isobutylene.....

Concentration Recorded...99.....

Calibrated by...KP.....

Battery Charged (Yes/No.....

Lamp OK (Yes/No)_.....

Operated by...KP.....

Signed.....

ENVIROEQUIP

Your Environmental Equipment Supplier

GA2000 - SERVICE REPORT

COMPANY	Douglas Partners		
CONTACT	Wen-Fei Yuen/Kathy Romanis		
EQUIPMENT	GA2000	**SERIAL NO.**	GA05712
QUOTE NO.	N/A	**RECEIVED**	16/03/09

REQUEST/PROBLEM DESCRIPTION
CH4 reading 1.0% in fresh air

This Gas Meter has been performance checked / calibrated* as follows:

Calibration	Cal Value	Reading	Cal Value	Reading	Pass?
CH4	50% vol	49.8%	0.00% vol	0.00%	Y
CH4 LEL -check	50% LEL (2.5%CH4)	2.4%			Y
H2s	25ppm	26ppm	0ppm	0ppm	Y
O2	21.0% vol	20.9%	0.00% vol	0.00 %	Y
CO	100ppm	99ppm	0ppm	0ppm	Y
CO2	40% vol	41.2%			Y
Operations Check					
Cleaned/checked Y	☐ In line Filter Check Y		☐ Charged 100 %		

* Calibration gas traceability information is available upon request.

COMMENTS/ADDITIONAL REPAIRS/SERVICES PERFORMED
- Readings could be residual from previous. Sensor is in good condition.

SERVICED BY	Principe Antonio	**COMPLETED**	18/03/09
SIGNATURE			

Level 1, 4 Talavera Road, North Ryde NSW 2113 Australia
Telephone: +61 2 8817 4244 **Free Call (interstate): 1-800-675-756**
Fax: +61 2 9889 4622
Email: rentals.syd@enviroequip.com **Internet: www.enviroequip.com**

APPENDIX F
Groundwater Field Notes

7.90 − 3.44 = 34.46 × 7.2 = 8.92 3 12 20 3 2 12

Douglas Partners
Geotechnics · Environment · Groundwater

GROUNDWATER FIELD SHEET

Project Details/ Conditions	
Project Name	Hoxton Park Airport
Project Number	71500.00
Location	JET St Hoxton
Bore Installation Details	
Date/Time	
Bore/ Standpipe ID	Old Well near GW3. - ~~GW2~~ GW1
Relative Level	
Ground Water Level	
Bore Depth	7.90m
Installed By	
Bore Development Details	
Date/Time	5/12 12.40
Ground Water Level	3.44 (7.90) depth
Estimated Bore Volume	32 L
Total Volume Purged	~~PD~~ PRM
Equipment	Bailer
Purged By	DJH
Bore Purge Details	
Date/Time	4/12 11:20am
Ground Water Level	4.5
Estimated Bore Volume	
Total Volume Purged	
Equipment	
Purged By	

Low Flow/Purge Testing

Volume/ time	Water Quality Parameters				
	DO	Level	pH	Turb	Temp
1	0.04	0	6.44	OVER10	25.0
2	0.06	0	6.40	685 (NTU)	24.9
3	0.07	0	6.38	654 (NTU)	11
4	0.06	0	6.37	629	11
5	0.07	0	6.38	666	11

Groundwater Sampling	
Date/Time	4/12/09 11:20am
Weather Conditions	Fine
Sample ID	OW1
Sample Appearance	TURBID
Filtration performed	Yes - HM Field Filter
QA/QC Samples	—
Sampling Containers	2 vial., 1 amber, 1L Plastic, 2 plastic 250mL (HM, Phenols)
Comments/ Observations	
Sampled By	DJH

Douglas Partners
Geotechnics · Environment · Groundwater

78.37 - 3.58 = 14.79 x 7.2 = 1958 / 3.3530 = 34.4 88

GROUNDWATER FIELD SHEET

Project Details/ Conditions	
Project Name	HOXTON PARK AIRPORT
Project Number	71500.00
Location	WEST HOXTON

Bore Installation Details	
Date/Time	
Bore/ Standpipe ID	old well further from GW3 - GW2
Relative Level	
Ground Water Level	
Bore Depth	8.37
Installed By	

Bore Development Details	
Date/Time	3/12/09 1pm
Ground Water Level	3.58.
Estimated Bore Volume	33L.
Total Volume Purged	60L
Equipment	SAIL
Purged By	DH

Bore Purge Details	
Date/Time	4/12 12.50pm
Ground Water Level	3.54 (GW2)
Estimated Bore Volume	
Total Volume Purged	
Equipment	
Purged By	

Low Flow/Purge Testing

Volume/ time min	Water Quality Parameters				
	DO	Conduct	pH	turb	temp
0	0.38	15.44	6.96	"	27.5
1	0.2	16.415	6.79	"	26.7
2	0.2	17.3	6.63	"	25.5
3	0.18	17.6	6.56	"	24.7
4	0.17	17.8	6.53	"	24.1
5	0.2	17.91	6.51	"	23.8
6	0.17	18.0	6.5	"	23.3

Groundwater Sampling	
Date/Time	4/12/09 11.50am
Weather Conditions	Fine
Sample ID	GW2
Sample Appearance	/
Filtration performed	Yes - HM - Field Filter.
QA/QC Samples	BD1 / 041209.
Sampling Containers	[2 vials, 1 amber, 1L Plastic, 2 plastic 250mL (HM, Phenols)] (x2 for BD)
Comments/ Observations	
Sampled By	DHL.

Douglas Partners
Geotechnics · Environment · Groundwater

GROUNDWATER FIELD SHEET

Project Details/ Conditions	
Project Name	HORTON PARK AIRPORT
Project Number	71500.00
Location	WEST HORTON.
Bore Installation Details	
Date/Time	
Bore/ Standpipe ID	GW 1
Relative Level	
Ground Water Level	
Bore Depth	3.97
Installed By	
Bore Development Details	
Date/Time	3/12/09 1:10pm
Ground Water Level	DRY
Estimated Bore Volume	DRY.
Total Volume Purged	DRY
Equipment	BAIL
Purged By	PH
Bore Purge Details	
Date/Time	
Ground Water Level	
Estimated Bore Volume	
Total Volume Purged	
Equipment	
Purged By	

Low Flow/Purge Testing

Volume/ time	Water Quality Parameters				

NO SAMPLE TAKEN (WELL DRY).

Groundwater Sampling	
Date/Time	
Weather Conditions	
Sample ID	
Sample Appearance	
Filtration performed	
QA/QC Samples	
Sampling Containers	
Comments/ Observations	
Sampled By	

Douglas Partners
Geotechnics · Environment · Groundwater

GROUNDWATER FIELD SHEET

Project Details/ Conditions	
Project Name	Horton Park Airport
Project Number	74500.00
Location	West Horton
Bore Installation Details	
Date/Time	
Bore/ Standpipe ID	GW2
Relative Level	
Ground Water Level	
Bore Depth	4.98m
Installed By	
Bore Development Details	
Date/Time	3/12/09
Ground Water Level	2.22 4.98 dbgl
Estimated Bore Volume	20L
Total Volume Purged	DRY
Equipment	Bail
Purged By	D.H
Bore Purge Details	
Date/Time	4/12/09 3.00pm
Ground Water Level	2.2m
Estimated Bore Volume	
Total Volume Purged	
Equipment	
Purged By	

Low Flow/Purge Testing

Volume/ time	Water Quality Parameters				
	EC	COND	PH	TURB	TEMP
0	0.61	9.99	7.02	331	22.1
1	0.47	10.08	6.78	310	21.6
2	0.44	9.96	6.68	332	21.2
3	0.43	9.87	6.64	337	21.0
4	0.43	9.74	6.61	302	20.9
5	0.43	9.74	6.59	331	20.9

Groundwater Sampling	
Date/Time	4/12/09 3:00pm.
Weather Conditions	FINE
Sample ID	GW2
Sample Appearance	
Filtration performed	Yes - HM - Field Filter.
QA/QC Samples	
Sampling Containers	2 vials, 1L Amber 1L plastic 2 plastic 250mL (HM, Phenols)
Comments/ Observations	
Sampled By	DH

4.97 –
3.33
1.64 x
7.2
3 2 5
11 4 8
11.808
3

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GROUNDWATER FIELD SHEET

Project Details/ Conditions	
Project Name	Hoxton Park Airport
Project Number	71500
Location	~~GW3~~ West Hoxton

Bore Installation Details	
Date/Time	
Bore/ Standpipe ID	GW3
Relative Level	
Ground Water Level	
Bore Depth	4.97
Installed By	

Bore Development Details	
Date/Time	3/12 12:30
Ground Water Level	3.33 (4.97 depth)
Estimated Bore Volume	12L
Total Volume Purged	
Equipment	Bailer
Purged By	DIH

Bore Purge Details	
Date/Time	4/12 11 AM
Ground Water Level	2.5 m
Estimated Bore Volume	
Total Volume Purged	
Equipment	
Purged By	

Low Flow/Purge Testing

Volume/ time	Water Quality Parameters				
	DO ppm	Conductivity mS	pH	Turb	Temp °C
0	0.47	24.6	6.73	OVER	24.2
1	0.43	24.7	6.57	"	23.9
2	6.44	24.7	6.43	"	23.7
3	0.40	24.9	6.28	"	23.5
4	0.39	24.8	6.23	"	23.4
5	0.38	24.8	6.23	"	24.0

Groundwater Sampling	
Date/Time	4/12/09 11 am
Weather Conditions	Fine
Sample ID	GW3
Sample Appearance	Turbid
Filtration performed	Yes - (HM) - Field Filter
QA/QC Samples	–
Sampling Containers	2 vial, 1 amber, 1L plastic 2 plastic 250ml (HM, Phenols)
Comments/ Observations	
Sampled By	DIH

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GROUNDWATER FIELD SHEET

Project Details/ Conditions	
Project Name	Hoxton Park Airport
Project Number	71580.00
Location	

Bore Installation Details	
Date/Time	
Bore/ Standpipe ID	GW4
Relative Level	
Ground Water Level	
Bore Depth	8.1m
Installed By	

Bore Development Details	
Date/Time	3/12/09
Ground Water Level	~~4.15~~
Estimated Bore Volume	~~28~~
Total Volume Purged	
Equipment	Bailer
Purged By	DH

Bore Purge Details	
Date/Time	4/12/09 12:20 pm
Ground Water Level	4.15
Estimated Bore Volume	
Total Volume Purged	
Equipment	
Purged By	

Low Flow/Purge Testing

Volume/ time		Water Quality Parameters				
		DO %	COND	PH	TURB	TEMP
	0	0.09	18.89	6.69	OVRNG	24.4
	1	0.1	19.35	6.54	"	23.0
	2	0.09	19.35	6.52	"	23.9
	3	0.10	19.4	6.49	"	22.8
	4	0.11	19.46	6.49	"	22.7
	5	0.11	19.47	6.49	"	22.6

Groundwater Sampling	
Date/Time	4/12/09 12:20pm
Weather Conditions	Fine
Sample ID	GW4
Sample Appearance	Turbid
Filtration performed	Yes - HM - Field Filter
QA/QC Samples	—
Sampling Containers	2 vial · 1 amber, 1L plastic, 2 plastic 250mL (HM, Phenols)
Comments/ Observations	—
Sampled By	DH

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5 9 8.82
− 3.58
32.44
× 7.2
488
17080
217.568

GROUNDWATER FIELD SHEET

Project Details/ Conditions	
Project Name	Hoxton Park Airport
Project Number	71500.00
Location	West Hoxton
Bore Installation Details	
Date/Time	
Bore/ Standpipe ID	GW5
Relative Level	
Ground Water Level	
Bore Depth	
Installed By	
Bore Development Details	
Date/Time	3/12/09
Ground Water Level	3.88 6.02 deep
Estimated Bore Volume	18
Total Volume Purged	Dry
Equipment	Bailer
Purged By	DH
Bore Purge Details	
Date/Time	4/12/09 12:45
Ground Water Level	4.3m
Estimated Bore Volume	
Total Volume Purged	
Equipment	
Purged By	

Low Flow/Purge Testing

Volume/ time	DO	conduct	pH	turb	temp
0	3.0	19.62	7.15		25.6
1	0.13	21.16	6.7		23.1
2	0.13	21.14	6.64		22.5
3	0.17	21.21	6.58		22.0
4	0.19	20.75	6.55		21.3
5	0.29	20.85	6.53		21.0

Groundwater Sampling	
Date/Time	4/12/09 12:45
Weather Conditions	Fine
Sample ID	GW5
Sample Appearance	Turbid
Filtration performed	Yes ~~in~~-Field Filter
QA/QC Samples	—
Sampling Containers	2 vial, 1L plastic, 1L Amber, 2 plastic 250mL (HM, Phenols)
Comments/ Observations	
Sampled By	DH

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GROUNDWATER FIELD SHEET

Project Details/ Conditions	
Project Name	HORTON PARK AIRPORT
Project Number	71500
Location	WEST HORTON

Bore Installation Details	
Date/Time	
Bore/ Standpipe ID	GW6
Relative Level	
Ground Water Level	4.77m
Bore Depth	
Installed By	

Bore Development Details	
Date/Time	3/12/09
Ground Water Level	2.07 4.77 deep
Estimated Bore Volume	20L
Total Volume Purged	60L
Equipment	BAIL
Purged By	DIH

Bore Purge Details	
Date/Time	4/12/09 2:30
Ground Water Level	2.3 —
Estimated Bore Volume	8
Total Volume Purged	
Equipment	
Purged By	

Low Flow/Purge Testing

Volume/ time	Water Quality Parameters				
	GAL	COND	PH	TURB	TEMP.
0	0.4	4.04	5.91	CLEAR	22.1
1	0.43	12.3	5.95	"	22P
2	0.39	13.06	5.93	"	21.1
3	0.34	13.22	5.95	"	21.0
4	0.30	13.42	5.90	"	20.9
5	0.29	13.51	6.06	797	20.8
6	0.28	13.61	6.2	723	20.6
	0.27	13.64	6.2	720	20.6

Groundwater Sampling	
Date/Time	4/12/09 2.30pm.
Weather Conditions	Fine
Sample ID	GW6
Sample Appearance	Turbid
Filtration performed	Yes, HM — Field Filter.
QA/QC Samples	—
Sampling Containers	2 vial, 1L plastic, 1L Amber, 2x250ml (HM, Phenols)
Comments/ Observations	
Sampled By	DIH

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7.15
-1.59

GROUNDWATER FIELD SHEET

Project Details/ Conditions	
Project Name	HORTON PARK AIRPORT
Project Number	71500.00
Location	WEST HORTON.

Bore Installation Details	
Date/Time	
Bore/ Standpipe ID	GW7
Relative Level	
Ground Water Level	
Bore Depth	7.15
Installed By	

Bore Development Details	
Date/Time	3/12/09
Ground Water Level	1.59 7.15 dup
Estimated Bore Volume	40L
Total Volume Purged	120L
Equipment	BAIL
Purged By	DH

Bore Purge Details	
Date/Time	
Ground Water Level	1.60m
Estimated Bore Volume	
Total Volume Purged	
Equipment	
Purged By	

Low Flow/Purge Testing

Volume/ time	Water Quality Parameters				
	ORP	COND(DS)	PH	TURB	TEMP.
0	0.24	951	7.76	136	22.4
1	0.17	662	7.18	124	22.1
2	0.16	492	6.45	122	21.8
3	0.17	381	5.88	136	21.7
4	5.19	354	5.71	156	21.6
5	0.22	340	5.71	153	21.6
6	0.22	332	5.76	158	21.6
7	0.2	327	5.71	160	21.6

Groundwater Sampling	
Date/Time	4/12/09 1.45pm
Weather Conditions	Fine
Sample ID	GW7.
Sample Appearance	Turbid
Filtration performed	Yes HM - Field Filter
QA/QC Samples	—
Sampling Containers	2 vial, 1L amber, 1L plastic, 2 plastic 250mL (Nun, Phenols)
Comments/ Observations	
Sampled By	DH

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5.89
−3.13
12326
7.2
452
17760
176.212
3
3.6
8.6

GROUNDWATER FIELD SHEET

Project Details/ Conditions	
Project Name	HORTON PARK AIRPORT
Project Number	71500.00
Location	WEST HORTON,

Bore Installation Details	
Date/Time	
Bore/ Standpipe ID	GW8
Relative Level	
Ground Water Level	
Bore Depth	5.39m
Installed By	

Bore Development Details	
Date/Time	3/12/09
Ground Water Level	3.13 5.89 approx
Estimated Bore Volume	16
Total Volume Purged	Dry
Equipment	Bailer
Purged By	DH

Bore Purge Details	
Date/Time	4/12/09 1:05pm
Ground Water Level	3.1m
Estimated Bore Volume	
Total Volume Purged	
Equipment	
Purged By	

Low Flow/Purge Testing

Volume/ time	Water Quality Parameters				
	DO	Cond.	pH	TURB	TEMP
0	6.27	9.16	7.21	CLR/TU	21.6
1	6.22	73.8	7.06	"	21.0
2	6.19	8.89	7.01	"	20.8
3	6.2	8.94	7.0	"	20.7
4	6.2	8.98	6.97	"	20.6
5	6.2	8.92	6.95	"	20.4
6	6.2	8.99	6.95	"	20.4

Groundwater Sampling	
Date/Time	4/12/09 1:15pm
Weather Conditions	Fine
Sample ID	GW8
Sample Appearance	Turbid
Filtration performed	Yes - HM - Field Filter
QA/QC Samples	-
Sampling Containers	2 vial, 1 amber, 1L plastic, 2 plastic 250ml (HM, Phenols)
Comments/ Observations	
Sampled By	DH

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32.55
1.345 x
7.2
290
10150
10.440

GROUNDWATER FIELD SHEET

Project Details/ Conditions	
Project Name	HOXTON PARK AIRPORT.
Project Number	71500
Location	WEST HOXTON
Bore Installation Details	
Date/Time	
Bore/ Standpipe ID	GW 9
Relative Level	
Ground Water Level	
Bore Depth	4m.
Installed By	
Bore Development Details	
Date/Time	4/12/09 9:30 am
Ground Water Level	2.55
Estimated Bore Volume	11L
Total Volume Purged	~~3~~ 5L
Equipment	Bail
Purged By	DIH
Bore Purge Details	
Date/Time	
Ground Water Level	2.6m
Estimated Bore Volume	
Total Volume Purged	
Equipment	
Purged By	

Low Flow/Purge Testing

Volume/ time	Water Quality Parameters				
NOT ENOUGH WATER TO ALLOW FOR LOW FLOW / PURGE + PARAMETERS ALONG WITH SAMPLING.					

Groundwater Sampling	
Date/Time	4/12/09 3:30pm.
Weather Conditions	Fine
Sample ID	GW9
Sample Appearance	Turbid
Filtration performed	Yes - HM - Field filtered.
QA/QC Samples	-
Sampling Containers	2 vial, 1L plastic, 1L Amber. 2 plastic 250ml (HM, PHENOLS)
Comments/ Observations	
Sampled By	DIH.

APPENDIX G
Quality Assurance/Quality Control Procedures and Results

QA/QC PROCEDURES AND RESULTS

Data Quality Objectives

The scope of the Limited Phase 2 Contamination assessment has been devised broadly in accordance with the seven step data quality objective process, as defined in Australian Standard "*Guide to the Sampling and Investigation of Potentially Contaminated Soil Part 1: Non-volatile and semi-volatile compounds* (AS 4482.1 – 1997). The DQO process is outlined as follows:

(1) State the Problem

The "problem" is to assess the overall contamination status of the site within a limited pre-sale due diligence period, and to determine if the site is suitable or can be rendered suitable for the proposed development.

(2) Identify the Decision

The suitability of the site for redevelopment and the scope of the required remedial works will be assessed against the SAC and GIL provided in Section 10.

(3) Identify Inputs to the Decision

The primary inputs in assessing the requirements for assessing the suitability of the site for the proposed development will be:

- Available site Information regarding site history, activities undertaken on the site and the surrounding area;
- Results of previous investigations;
- Results from the current round of investigation as detailed in the scope of works;
- The local geology, topography and hydrology;
- Potential contaminants;
- Published guidelines for assessing soil and groundwater quality;

- Field observations/measurements, field mapping and analytical results.

(4) Define the Boundary of the Assessment

The site is identified as a 40 ha section of the Hoxton Park Airport that is proposed to form the site of a proposed two warehouse redevelopment. The site is presented in the Drawing 1, Appendix A.

(5) Develop a Decision Rule

The decision rule is the comparison of the analytical results against relevant published guideline criteria including:

i) NSW DECC *Guidelines for the NSW Site Auditor Scheme 2nd edition* (2006);

ii) NSW DECC *Guidelines for Assessing Service Station Sites (1994);*

iii) ANZECC *Guidelines for Fresh and Marine Water Quality* ANZECC (2000) for the protection of 95% of species; and

iv) Other screening references including Commonwealth legislation – the *Airports Act* (1997), *Airport (Environment Protection) Schedule 2 Water Pollution Accepted Limits: Table 1.03*).

These assessment criteria will be used to evaluate whether the site is compatible with redevelopment into commercial/industrial style warehouse from a contamination standpoint.

(6) Specify Acceptable Limits on Decision Errors

In order to ensure the quality of the soil and groundwater data, appropriate and adequate quality assurance and quality control (QA/QC) measures and evaluations should be incorporated into the validation sampling and testing regime.

A field and laboratory QA/QC regime, comprising the collection and analysis of Inter-laboratory duplicate / replicate samples, Intra-laboratory duplicate / replicate samples will be implemented to meet the requirements associated with the following data quality indicators (DQIs).

- conformance with specified holding times;

- accuracy of spiked samples within the laboratory's acceptable range (typically 70-130% for inorganic contaminants and greater for some organic contaminants);
- field and laboratory duplicates and replicates samples will have a precision average of +/- 30% relative percent difference (RPD) for inorganic analytes and +/- 50% RPD for organic analytes;
- field replicates will be collected at a frequency of 10% of all samples; and
- no evidence of significant cross contamination during sampling or handling activities.

(7) Optimise the Design for Obtaining Data

The purpose of the current investigation is to provide representative information across the entire site. The sampling programme has therefore adopted a combination of a systematic approach as well as targeted bores for areas of environmental concern. The sampling locations are provided in Drawings 1 to 4, Appendix A.

Procedures for the collection of environmental samples, as described in Section 9, were developed prior to undertaking the assessment phase of works, which were in line with NSW EPA guidelines and current industry practice. DP employs NATA-accredited analytical laboratories to conduct sample analysis. Envirolab Services Pty Ltd was employed to conduct primary sample analysis and Labmark Pty Ltd was employed to conduct interlaboratory sample analysis.

It is therefore considered that the data quality of assessment was of a satisfactory standard.

Quality assurance and control formed an integral part of this assessment. The results of the QA/QC assessments are detailed below.

The Data Quality Indicators (DQI's) have been addressed as follows in Table G1.

Table G1 – DQIs and Evaluation Procedures

DQI	Evaluation Procedure
Documentation completeness	Completion of field and laboratory documentation including chain of custody, test bore reports.
Data completeness	Sampling at an appropriate density as per the requirements of the *Sampling Design Guidelines.* Bearing in mind the limited nature and time frame of the assessment, plus the overall low potential for contamination throughout much of the site a sampling density of approximately 50% of the requirement of the *Sampling Design Guideline* was adopted, analysis of appropriate contaminants, analysis of appropriate soil horizons, analysis of appropriate QA samples etc
Data comparability	Use of NATA accredited analytical methods, use of consistent sampling technique, commitment to equipment decontamination, field sample storage techniques etc.
Data representativeness	Sampling from targeted areas and a broad grid pattern across the site in order to obtain samples representative of contamination present. In addition some of the bores were targeted to assess known areas of potential environmental concern
Precision and accuracy for sampling and analysis	Use of NATA accredited analytical methods, achievement of 30-50% RPD for replicate analysis (as appropriate) and achievement of laboratory QC criteria.

As indicated above, the DQIs for sampling and analysis were achieved and the quality of the data satisfactorily meets the objectives of the current assessment.

Q1 - FIELD QUALITY ASSURANCE AND QUALITY CONTROL

The field QC procedures for sampling as prescribed in Douglas Partners *Field Procedures Manual* were followed at all times during the assessment.

Q1.1 Sampling Team

Field sampling was undertaken by experienced DP field staff including Environmental Scientists Kurt Plambeck, Alistair Hyde Page and David Holden. Soil samples were collected on 25 to 27 November, 1 December and 4 December 2009. Groundwater development was conducted 3 December 2009 on and groundwater sampling was conducted on 4 December 2009. Sampling was undertaken during fine and overcast weather conditions.

Q1.2 Sample Collection

Sample collection procedures and dispatch for soil and groundwater are reported in Section 9.3.

Q1.3 Logs

Logs for each sampling location were recorded in the field. The individual samples were recorded on the field logs along with the sample identity, location, depth, initials of sampler, duplicate locations, duplicate type, and site observations. Analysis to be performed on each sample and the dispatch courier were recorded on the COC, Appendix D. Test Bore Logs are presented in Appendix C. Groundwater sampling and development details were recorded in field sheets which are presented in Appendix F.

Q1.4 Chain of Custody

Chain of custody information was recorded on the Chain of Custody (COC) sheets and accompanied samples to the analytical laboratory. Signed copies of COCs are presented in Appendix D, following the laboratory reports.

Q1.5 Sample Splitting Techniques

Replicate samples were collected in the field as a measure of accuracy, precision and repeatability of the results. Field replicate samples for soil were collected from the same location and an identical depth to the primary sample. Equal portions of the primary sample

were placed into the sampling jars and sealed. The sample was not homogenised in a bowl and then split to prevent the loss of volatiles from the soil. Replicate samples were labelled with a DP identification number, recorded on DP bore logs, so as to conceal their relationship to their primary sample from the analysing laboratory. Groundwater replicate collection involved filling two sample containers by decanting approximately equal portions of the primary sample.

Q1.6 Duplicate Frequency

Field sampling comprised replicate sampling, at a rate of approximately one duplicate sample for every twenty original samples for intra-laboratory analysis, one duplicate/triplicate sample for every twenty samples for inter-laboratory analysis, trip spikes, trip blanks and a rinsate sample from the groundwater pump during groundwater sampling.

Q1.7 Field Blank Results

A field blank is a sample taken as an indication to demonstrate correct field handling. This is further discussed in Section Q1.9.

Q1.8 Background Sample

A background sample is representative of natural background soil conditions. Background samples were not applicable as part of this assessment as the land at the site and in the surrounding area have been developed over a significant period of time and not in a natural state.

Q1.9 Rinsate Samples

Decontamination was carried out between groundwater sampling events and on augurs between test bores. New tubing was used to sample each groundwater well however the tube within the pump was non disposable. Decontamination of all non-disposable soil and groundwater sampling equipment involved a “triple rinse” procedure i.e. a rinse of all particulates in were first rinsed in tap water followed a decontamination using a 3% Decon 90 solution and a final rinse in deionised water.

No rinsate samples were collected during the investigation, however the low levels of contaminants found in both soil and groundwater indicate that cross-contamination of the samples was extremely unlikely and that therefore the decontamination procedures were adequate.

Q1.10 Trip Spikes

According to *the NSW EPA Guidelines for Consultants Reporting on Contaminated Sites (1997)*, laboratory prepared trip spikes are to be taken into the field, subjected to the same preservation methods as the field samples, then analysed, for the purposes of determining the losses in volatile organics incurred prior to reaching the laboratory.

The practicalities of trip spikes are currently being debated and a detailed procedure is yet to be finalised. Discussions with the laboratory indicated that trip spikes are generally prepared as aqueous solutions. The current assessment did not include the analysis of trip spikes, however samples were maintained at 4^{o}C in the field, during transport and at the laboratory, sample jars/bottles were filled to limited air/head space and sample lids were securely fastened. Furthermore samples were analysed within recommended holding times. It is therefore considered that the potential for volatile loss was minimal.

Q1.11 Trip Blanks

Laboratory prepared soil and water trip blanks are used to assess cross-contamination of samples. Trip blanks were not analysed as part of this assessment, however, there was no evidence of cross-contamination in the soil and/or groundwater samples based on the low levels detected. It is therefore considered that cross contamination had not occurred during the course of the round trip from the site to the laboratory.

Q1.12 Field Instrument Calibration

The groundwater parameters were measured with a 90FL-T water quality meter. The water quality meter was calibrated at Enviroequip and the pH meter was calibrated prior to use in the field with pH buffer solutions of 4 and 10. The calibration certificate can be found in Appendix E.

All soil samples were screened for the presence of Total Photo-Ionisable Compounds (TOPIC) using a calibrated Photo-Ionisation Detector (PID). The PID was calibrated at Enviroequip and in the field with Isobutylene gas. The calibration certificate and daily calibration records can be found in Appendix E.

Q1.13 Relative Percentage Difference

A measure of the consistency of results for field samples is derived by the calculation of relative percentage differences (RPDs) for duplicate samples. A RPD of ± 30% is generally considered typically acceptable for inorganic analytes by EPA, although in general a wider RPD range (50%) may be acceptable for organic analytes.

Q1.13.1 Intra-Laboratory Analysis

Intra-laboratory duplicates were conducted as an internal check of the reproductively within the primary laboratory (Envirolab Pty Ltd) and as a measure of consistency of sampling techniques. Replicate samples were collected at a rate of approximately one replicate sample for every ten original samples collected and also analysed at a rate of 5% of primary samples analysed.

The comparative results of analysis between original and duplicate samples are summarised in the tables below.

Table Q1 – Intra-laboratory Results Heavy Metals

	As	Cd	Cr[1]	Cu	Pb	Hg	Ni	Zn	B(a)P	Total PAH
GW3/0.4-0.5	6	<0.5	20	14	17	<0.1	6	10	<0.05	<0.1
BD1/261109[4]	6	<0.5	18	12	13	<0.1	6	10	<0.05	<0.1
Difference	0	0	2	2	4	0	0	0	0	0
RPD (%)	0	**0**	**11**	**15**	**27**	**0**	**0**	**0**	**0**	**0**
GW8/0.3-0.5	7	<0.5	16	11	22	<0.1	8	15	<0.05	<0.1
BD2/261109[4]	6	<0.5	14	9	19	<0.1	6	12	<0.05	<0.1
Difference	1	0	2	2	3	0	2	3	0	0
RPD (%)	**15**	**0**	**13**	**20**	**15**	**0**	**29**	**22**	**0**	**0**
BH15/0.1-0.3	8	<0.5	27	8	37	<0.1	6	32	0.08	0.68
BD1/271109[4]	8	<0.5	24	7	34	<0.1	5	24	0.05	0.45
Difference	0	0	3	1	3	0	1	8	0.03	0.23
RPD (%)	**0**	**0**	**12**	**13**	**8**	**0**	**18**	**29**	**46**	**41**
OW2	<1	<0.1	<1	<1	<1	<0.1	2	1	<1	<0.1
BD1 041209[3]	<1	0.2	<1	<1	<1	<0.1	2	<1	<1	0.2
Difference	0	0	0	0	0	0	0	0	0	0.1
RPD (%)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**67**

Table Q2 – Intra-laboratory TPH, BTEX, phenols

	C6-C9	C10-C36	Benzene	Toluene	Ethyl benzene	xylenes	phenols
OW2	<10	<250	<1	<1	<1	<3	470
BD1 041209[3]	<10	<250	<1	<1	<1	<3	<50
Difference	0	0	0	0	0	0	420
RPD (%)	0	**0**	**0**	**0**	**0**	**0**	**162**

Most of calculated RPD values were within the acceptable range of ± 30 for inorganic analytes (± 50% for organic) for the sample and its duplicates with the exception of those shaded. However, this is not considered to be of concern due to:

- The low actual differences in the concentrations of the replicate pairs;
- Replicates, rather than homogenised duplicates were used to avoid volatile loss;
- Some of the duplicate samples being collected in filling material which is heterogeneous in nature, therefore differences are representative of the material and not the result inconsistencies in the sampling technique or laboratory precision; and
- Most of the recorded concentrations being at/ close to the practical quantitation limit.
- All other QA/QC parameters met the DQI's

It is therefore considered that the results indicate an acceptable consistency between the samples and their duplicates and indicate that suitable field sampling methodology was adopted and laboratory precision was achieved.

Q1.13.2 Inter-Laboratory Analysis

Inter-laboratory duplicates were conducted as a check of the reproductively of results between the primary laboratory (Envirolab Pty Ltd) and a secondary laboratory (Labmark Pty Ltd) and as a measure of consistency of sampling techniques. Inter-laboratory duplicates were collected at a rate at least one replicate sample for every 5 original samples collected and also analysed at a rate of 5% of primary samples analysed. Primary chemicals of concern were analysed at a higher frequency to other chemicals.

The comparative results of analysis between original and inter-laboratory duplicates are summarised in the tables below. Note that where the laboratory PQL are different and both

samples are below PQL (or one sample is below PQL and other has a recorded detection below the other lab PQL) the difference and RPD has been given as zero (0).

Table Q3 - Inter-laboratory Results

	As	Cd	Cr[1]	Cu	Pb	Hg	Ni	Zn	B(a)P	Total PAH
GW9/2.8-3.0	-	-	-	-	-	-	-	-	<0.05	<0.1
BD3261109[9]	-	-	-	-	-	-	-	-	<0.5	<0.5
Difference	-	-	-	-	-	-	-	-	0	0
RPD (%)	-	-	**-**	**-**	**-**	**-**	**-**	**-**	**0**	**0**
BH6/0.1-0.3	7	<0.5	16	19	18	<0.1	9	28	<0.05	<0.1
BD4/271109[9]	7	<0.1	16	15	20	0.11	8	25	<0.5	<0.5
Difference	0	0	0	4	2	0.01	1	3	0	0
RPD (%)	**0**	**0**	**0**	**24**	**11**	**10**	**12**	**11**	**0**	**0**
BH1/0.1-0.3	5	<0.5	18	21	15	<0.1	11	20	<0.05	<0.1
BD3/271109[9]	5	<0.1	15	18	14	0.08	9	19	<0.5	<0.5
Difference	0	0	3	3	1	0	2	1	0	0
RPD (%)	**0**	**0**	**18**	**15**	**7**	**0**	**20**	**5**	**0**	**0**

All of calculated RPD values were within the acceptable range of □ 30 for inorganic analytes (□50% for organic). It is therefore considered that the results indicate an acceptable consistency between the samples and their duplicates and indicate that suitable field sampling methodology was adopted and laboratory precision was achieved.

Q2 - LABORATORY QUALITY ASSURANCE AND QUALITY CONTROL

Q2.1 Chain of Custody

Chain of custody information was recorded on the Chain of Custody (COC) sheets and accompanied samples to the analytical laboratory. COCs contained receipt date and time and the identity of samples. Signed copies of COCs are presented in Appendix D, following the laboratory reports.

Q2.2 Holding Times

A review of the laboratory report sheets and chain-of-custody documentation indicated that holding times were met, as summarised in the table below.

Table Q4 - Holding Times

Matrix	Analyte	Recommended maximum holding time	Holding time met
Soil	Heavy Metals: As, Cd, Cr, Cu, Pb, Hg, Ni, Zn	6 months	Yes
	TPH C_6-C_9	14 days	Yes
	TPH C_{10}-C_{36}	14 days	Yes
	BTEX	14 days	Yes
	PAH	14 days	Yes
	OCP	14 days	Yes
	PCB	14 days	Yes
	Phenols	14 days	Yes
	pH	7 days	Yes
	Asbestos	Nil	yes
Water	Metals	6 months	yes
	TPH C_6-C_9	14 days	yes
	TPH C_{10}-C_{36}	7 days	yes
	BTEX	14 days	yes
	PAH	7 days	yes
	pH	6 hours	yes
	hardness	28 days	yes

Q2.3 Analytical Laboratory

Samples were submitted to the following laboratories for analysis:

- Primary Laboratory: Envirolab Services Pty Ltd (Chatswood);
- Secondary Laboratory: Labmark Environmental Laboratories (Asquith)

Both laboratories are NATA accredited. Envirolab's accreditation number is 2901 and is accredited for compliance with ISO/IEC 17025. Envirolab tests comply with NATA and NEPM. In house procedures are employed by Envirolab in the absence of documented standards.

Labmark's NATA accreditation number is: 13542. NATA accredited in-house laboratory methods are referenced from NEPC, ASTM, modified USEPA/ APHA documents.

Q2.4 Analytical Methods

The laboratory analytical methods are provided on the laboratory certificates in Appendix D and summarised below in Tables Q5 and Q6.

Table Q5 - Soil Analysis

Analyte	Limit of Reporting (mg/kg) Envirolab/labmark	Envirolab Reference Method	Labmark Reference Method
Heavy Metals Cd, Cr, Cu, Pb, Ni, Zn	1.0/0.1-5.0	Metals.20 ICP-AES	E022.2 digested in nitric/hydrochloric acid, analysis by ICP-MS
Arsenic (As)	4.0/1.0	Metals.20 ICP-AES	E022.2 digested in nitric/hydrochloric acid, analysis by ICP-MS
Mercury (Hg)	0.10/0.05	Metals.21 ICP-AAS	E026.2 digested in nitric/hydrochloric acid, analysis by CV-ICP-MS or FIMS
VOC	0.5-10/0.5-5.0	GC.14	E016.2 methanol extraction, analysis by P&T/GC/MS
TPH C_6-C_9	25/10	GC.16	E029.2/E016.2 methanol extraction, analysis by P&T/GC/FID/MSD
TPH C_{10}-C_{36}	250/250	GC.3	E006.2 DCM/Acetone/Hexane (10:45:45) extraction, analysis by GC/FID
BTEX	0.5-2/0.2-1.0	GC.14	E002.2 methanol extraction, analysis by P&T/GC/PID/MSD
OCP	0.1/0.05	GC-5	E013.2 DCM/Acetone/Hexane (10:45:45) extraction, analysis by GC/dual ECD
PCB	0.1/0.5	GC-6	E013.2 DCM/Acetone/Hexane (10:45:45) extraction, analysis by GC/dual ECD
PAH	0.05-0.1/0.5-1.0	GC.12 subset	E007.2 DCM/Acetone/Hexane (10:45:45) extraction, analysis by GC/MS
Phenols	1-10/0.5-1.0	GC.12	E008.2 DCM/Acetone/Hexane (10:45:45) extraction, analysis by GC/MS
Asbestos	qualitative identification	AS4964-2004, qualitative identification using Polarised Light Microscopy and Dispersion Staining Techniques.	Not analysed

Table Q6 - Groundwater Analysis

Analyte	Limit of Reporting (µg/L) Envirolab/labmark	Envirolab Reference Method
Heavy Metals, As, Cd, Cr, Cu, Pb, Ni, Zn	0.1-1.0/0.5-5.0	Metals.22 ICP-MS
Mercury (Hg)	0.5-0.1	Metals.21 CV-AAS
BTEX	1-2/5-10	GC.13
TPH C_6-C_9	10/50	GC.16
TPH C_{10}-C_{36}	250/250	GC.3
PAH	0.1-0.2	GC.12 subset
pH	0.1	LAB.1

The following QA/QC procedures were conducted by the laboratory. The results are included in the laboratory reports in Appendix D.

Q2.5 Surrogate Spike

This sample is prepared by adding a known amount of surrogate, which behaves similarly to the analyte, prior to analysis to each sample. The recovery result indicates the proportion of the known concentration of the surrogate that is detected during analysis. These results are within acceptance limits as specified in Envirolab Services, indicating that the extraction technique was effective.

The laboratory acceptance criteria for surrogate samples is generally 60-140% for organics; and 10-140% for SVOC and speciated phenols.

Q2.6 Practical Quantitation Limits - PQLs

The PQL is the lowest quantity of an analyte which can be detected during the analysis. PQLs at different analytical laboratories can differ based on the analytical techniques.

Q2.7 Reference and Daily Check Sample Results - Laboratory Control Sample (LCS)

This sample comprises spiking either a standard reference material or a control matrix (such as a blank of sand or water) with a known concentration of specific analytes. The LCS is then analysed and results compared against each other to determine how the laboratory has performed with regard to sample preparation and analytical procedure. LCSs are analysed at a frequency of 1 in 20, with a minimum of one analysed per batch.

The laboratory acceptance criteria for LCS samples is generally 70-130% for inorganics/ metals; and 60-140% for organics; and 10-140% for SVOC and speciated phenols.

Q2.8 Laboratory Duplicate Results

These are additional portions of a sample which are analysed in exactly the same manner as all other samples. The laboratory acceptance criteria for duplicate samples is: in cases where the level is <5xPQL – any RPD is acceptable; and in cases where the level is >5xPQL – 0-50% RPD is acceptable.

Q2.9 Laboratory Blank Results

The laboratory blank, sometimes referred to as the method blank or reagent blank is the sample prepared and analysed at the beginning of every analytical run, following calibration of the analytical apparatus. This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, it can be determined by processing solvents and reagents in exactly the same manner as for samples. Laboratory blanks are analysed at a frequency of 1 in 20, with a minimum of one per batch.

Q2.10 Matrix Spike

This is a sample duplicate prepared by adding a known amount of analyte prior to analysis, and then treated exactly the same as all other samples. The recovery result indicates the proportion of the known concentration of the analyte that is detected during analysis. The laboratory acceptance criteria for matrix spike samples is generally 70-130% for inorganics/metals; and 60-140% for organics; and 10-140% for SVOC and speciated phenols.

Q2.11 Results of Laboratory QA

The laboratory QA for surrogate spikes, LCS, laboratory duplicate results, method blanks and matrix spikes were generally within the acceptance standards. There were, however a few comments made in the laboratory reports which are summarised in Table Q7 below.

Table Q7 - Laboratory QA Comments

Laboratory Report	Comment
ELS 35840	No comments
ELS 35858	Phenols in soil spike recovery failed due to matrix interference
ELS 35984	PQL of TPH raised due to sample matrix requiring dilution (due to high sediment)
ELS 35987	No comments
Labmark E045950	No comments

It was therefore considered that an acceptable level of laboratory precision and consistency was achieved and that surrogate spikes, LCS, laboratory duplicate results, method blanks and matrix spike results were of an acceptable level.