

Project Name

Arundel

Project No.

5104362

Co-ords: 501285.42E - 106770.74N

Hole Type

HSA

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: 3.758 m AOD

Scale

1:50

Client:

National Grid Porperty Holdings

Well diam. (mm)

50

Dates: 29/06/2011-30/06/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.90	2.86		Fine to medium, brown, slightly silty, clayey, gravelly SAND with frequent brick, chalk, clinker, coal and concrete fragments. Gravel fraction is fine to medium, sub-angular to sub-rounded flint. Band of chalk gravels/cobbles from 0.2 to 0.4 m bgl. (MADE GROUND)	
					1.50	2.26		Firm, brown,, silty, gravelly CLAY with occasional brick, chalk and clinker fragments. Gravel fraction is fine to medium, sub-angular to sub-rounded flint. (MADE GROUND)	1
					2.70	1.06		Firm, mottled light brown, pinky, light grey and light yellow, slightly silty CLAY with medium flint gravels, black mottling and occasional pockets of saturated black tar from 1.8 m bgl. Becoming grey/dark grey to black from 2.1 m bgl with frequent chalk, flint and rare brick gravels. Faint hydrocarbon odour from 1.5-1.8 m bgl. Strong hydrocarbon odour from 1.8-2.7 m bgl associated with pockets of black clay saturated with tar. (MADE GROUND)	2
					3.40	0.36		Dark grey/black CLAY and fine to coarse, sub-rounded to sub-angular flint GRAVELS. Strong hydrocarbon odour and saturated with free product from 2.8-3.4 m bgl. (ALLUVIUM)	3
					7.50	-3.74		Grey, becoming light grey/white structureless CHALK in a clay matrix with frequent fine to coarse chalk gravels and cobbles. Pockets of free phase product and black mottling throughout with a moderate to slight hydrocarbon odour. (CHALK)	4
									5
									6
									7
			Type	Results					8
									9

Continued next sheet

Remarks: Collapsed to 10.0m



Project Name
Arundel

Project No.
5104362

Co-ords: 501285.42E - 106770.74N

Hole Type
HSA

Location:
Ford Road, Arundel

Casing diam. (mm)

Level: 3.758 m AOD

Scale
1:50

Client:
National Grid Porperty Holdings

Well diam. (mm)
50

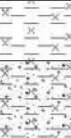
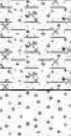
Dates: 29/06/2011-30/06/2011

Logged By
LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					11.00	-7.24		Structureless fine CHALK gravels and occasional chalk cobbles in a soft, light grey matrix with rare flint gravels. Slight hydrocarbon odour. (CHALK)	11
								End of Borehole at 11.00 m	12
									13
									14
									15
									16
									17
									18
									19

Remarks: Collapsed to 10.0m



Project Name Arundel				Project No. 5104362		Co-ords: 501273.79E - 106727.61N		Hole Type HSA	
Location: Ford Road, Arundel				Casing diam. (mm)		Level: 3.437 m AOD		Scale 1:50	
Client: National Grid Porperty Holdings				Well diam. (mm) 50		Dates: 28/06/2011		Logged By LH	
Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.50	2.94		Firm, orange brown, slightly sandy, gravelly CLAY with occasional brick and chalk gravels. Sand fraction is fine. Gravel fraction is fine to coarse, sub-rounded to sub-angular flint. (MADE GROUND)	1
					1.00	2.44		Orange, brown, slightly clayey SILT with occasional sub-rounded to sub-angular, fine to medium flint gravels. (ALLUVIUM)	
					1.90	1.54		Fine to coarse, sub-rounded to angular flint GRAVELS in a pinky-orange brown CLAY matrix with occasional chalk gravels. (ALLUVIUM)	2
					2.80	0.64		Mottled yellow, brown and grey, sandy, clayey SILT. (ALLUVIUM)	
					3.20	0.24		Firm yellow, brown, silty CLAY with frequent chalk gravels and structureless chalky clay. (ALLUVIUM)	3
					4.30	-0.86		Stiff red/brown slightly silty, sandy, gravelly CLAY. Sand fraction is fine. Gravel fraction is fine to coarse sub-rounded to angular flint. (ALLUVIUM)	
					5.10	-1.66		Fine to coarse sub-rounded to angular flint GRAVELS in a red/brown CLAY matrix. (AALUVIUM)	5
					6.20	-2.76		Mottled light brown, orange and light grey slightly sandy, silty CLAY with occasional medium to coarse flint gravels. Sand fraction is fine. (ALLUVIUM)	
								Off-white structureless CHALK comprising fine chalk gravels and solid chalk cobbles in a clay matrix. (CHALK)	6
									8
									9
		Type	Results					End of Borehole at 10.00 m	

Remarks: Collapsed to 9.4m



Project Name
Arundel

Project No.
5104362

Co-ords: 501297.05E - 106741.71N

Hole Type
HSA

Location:
Ford Road, Arundel

Casing diam. (mm)

Level: 3.126 m AOD

Scale
1:50

Client:
National Grid Porperty Holdings

Well diam. (mm)
50

Dates: 28/06/2011-29/06/2011

Logged By
LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					10.40	-7.27		Off-white structureless CHALK comprising fine chalk gravels and solid chalk cobbles in a clay matrix. (CHALK)	
								End of Borehole at 10.40 m	
									11
									12
									13
									14
									15
									16
									17
									18
									19

Remarks: Collapsed to 10.0m



Project Name
Arundel

Project No.
5104362

Co-ords: 501310.22E - 106701.47N

Hole Type
HSA

Location:
Ford Road, Arundel

Casing diam. (mm)

Level: 2.581 m AOD

Scale
1:50

Client:
National Grid Porperty Holdings

Well diam. (mm)
50

Dates: 30/06/2011

Logged By
LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.40	2.18		Stiff, dark brown, slightly sandy, slightly silty, slightly gravelly CLAY with occasional clinker, brick and chalk gravels. Sand fraction is fine. Gravel fraction is fine to coarse, sub-rounded to sub-angular flint. (MADE GROUND)	1
								Brown, slightly silty, slightly clayey SILT with occasional flint, clinker and brick gravels. Sand fraction is fine. (MADE GROUND)	
					1.80	0.78		Stiff red/brown gravelly CLAY. Gravel fraction is fine to coarse sub-rounded to angular flint. Becoming fine to coarse sub-rounded to angular flint GRAVELS in a red/brown clay matrix from 2.8 m bgl. Faint hydrocarbon odour from 3.5-3.65 m bgl. (ALLUVIUM)	2
					3.65	-1.07		Stiff red/brown slightly silty, sandy, gravelly CLAY. Sand fraction is fine. Gravel fraction is fine to coarse sub-rounded to angular flint. (ALLUVIUM)	3
					4.00	-1.42		Mottled light brown, orange and light grey slightly sandy, silty CLAY with occasional medium to coarse flint gravels. Sand fraction is fine. (ALLUVIUM)	4
									5
					6.80	-4.22		Off-white structureless CHALK comprising fine chalk gravels and solid chalk cobbles in a clay matrix. (CHALK)	7
									8
									9

Continued next sheet

Remarks: Collapsed to 10.0m



Project Name Arundel	Project No. 5104362	Co-ords: 501310.22E - 106701.47N	Hole Type HSA
Location: Ford Road, Arundel	Casing diam. (mm)	Level: 2.581 m AOD	Scale 1:50
Client: National Grid Porperty Holdings	Well diam. (mm) 50	Dates: 30/06/2011	Logged By LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					11.00	-8.42		Off-white structureless CHALK comprising fine chalk gravels and solid chalk cobbles in a clay matrix. (CHALK)	11
								End of Borehole at 11.00 m	12
									13
									14
									15
									16
									17
									18
									19

Remarks: Collapsed to 10.0m



Project Name
Arundel

Project No.
5104362

Co-ords: 501337.70E - 106733.99N

Hole Type
HSA

Location:
Ford Road, Arundel

Casing diam. (mm)

Level: 2.596 m AOD

Scale
1:50

Client:
National Grid Porperty Holdings

Well diam. (mm)
50

Dates: 30/06/2011-01/07/2011

Logged By
LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					11.00	-8.40		Off-white structureless CHALK comprising fine chalk gravels and solid chalk cobbles in a clay matrix. (CHALK)	11
								End of Borehole at 11.00 m	12
									13
									14
									15
									16
									17
									18
									19

Remarks: Collapsed to 10.4m



Project Name
Arundel

Project No.
5104362

Co-ords: 501290.77E - 106721.03N

Hole Type
TP

Location:
Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale
1:50

Client:
National Grid Porperty Holdings

Well diam. (mm)

Dates: 15/06/2011

Logged By
LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.40 0.40-0.50	PID ES	0.10 ppm	0.40 0.60 0.90			Stiff, orange-brown sandy, gravelly CLAY with occasional clinker and brick fragments. Sand fraction is fine to medium. Gravel fraction is fine to medium sub-angular to sub-rounded chalk and flint. (MADE GROUND)	
								Black, ashy, slightly clayey, fine to medium SAND with clinker and flint gravels and occasional chalk cobbles. (MADE GROUND)	1
								Firm yellow brown, slightly sandy, gravelly CLAY with occasional chalk gravels and clinker fragments. Sand fraction is fine to coarse. Gravel fraction is fine to coarse sub-rounded to sub-angular flint. (MADE GROUND)	
								Firm to stiff, orange brown, gravelly CLAY. Gravel fraction is fine to coarse sub-angular flint. (ALLUVIUM)	2
					2.50			End of Borehole at 2.50 m	
									3
									4
									5
									6
									7
									8
									9

Remarks:



Project Name
Arundel

Project No.
5104362

Co-ords: 501274.10E - 106724.01N

Hole Type
TP

Location:
Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale
1:50

Client:
National Grid Porperty Holdings

Well diam. (mm)

Dates: 15/06/2011

Logged By
LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.40 0.40-0.50	PID ES	0.30 ppm	0.30			Dark brown, very sandy, gravelly CLAY with frequent brick, chalk and clinker fragments. Sand fraction is fine to medium sand. Gravel fraction is fine to medium, sub-angular to sub-rounded flint. (MADE GROUND)	
					0.80			Orange, brown, slightly clayey SILT with occasional sub-rounded to sub-angular, fine to medium flint gravels. (ALLUVIUM)	1
		1.80 1.80-2.00	PID ES	0.00 ppm	1.60			Fine to coarse, sub-rounded to angular flint GRAVELS in a pinky-orange brown CLAY matrix with occasional chalk gravels. (ALLUVIUM)	
					2.55 2.70			Mottled yellow, brown and grey, sandy, clayey SILT. (ALLUVIUM)	2
								Firm yellow, brown, silty CLAY with frequent chalk gravels and structureless chalky clay. (ALLUVIUM)	3
								End of Borehole at 2.70 m	
									4
									5
									6
									7
									8
									9

Remarks:



Project Name
Arundel

Project No.
5104362

Co-ords: 501296.02E - 106738.83N

Hole Type
TP

Location:
Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale
1:50

Client:
National Grid Porperty Holdings

Well diam. (mm)

Dates: 15/06/2011

Logged By
LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20 0.20-0.30	PID ES	0.20 ppm	0.20 0.40 0.80 1.00 2.30			Firm, dark brown, very sandy, slightly silty, gravelly CLAY with frequent brick, chalk and clinker fragments. Sand fraction is fine. Gravel fraction is fine to coarse sub-angular to sub-rounded flint. (MADE GROUND) Dark brown/black, slightly silty, gravelly, fine SAND with frequent brick and chalk fragments. Gravel fraction is fine to medium, sub-angular to sub-rounded flint. (MADE GROUND) Firm, brown, slightly sandy, slightly silty, gravelly CLAY with frequent brick fragments and occasional clinker and chalk gravels. Sand fraction is fine. Gravel fraction is fine to coarse sub-angular to sub-rounded flint. (MADE GROUND) Firm to stiff, orange brown, gravelly CLAY with occasional chalk gravels. Gravel fraction is fine to coarse, sub-rounded to sub-angular flint (ALLUVIUM) Fine to coarse, sub-rounded to angular flint GRAVELS and COBBLES in an orange brown clay matrix. (ALLUVIUM) End of Borehole at 2.30 m	1 2 3 4 5 6 7 8 9
			Type	Results					

Remarks: Level concrete surface at 0.55m bgl with a brick wall at the southern extent located in the northern extent of the pit. Location moved further south.



Project Name
Arundel

Project No.
5104362

Co-ords: 501312.28E - 106701.78N

Hole Type
TP

Location:
Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale
1:50

Client:
National Grid Porperty Holdings

Well diam. (mm)

Dates: 14/06/2011

Logged By
LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.40 0.40-0.50	PID ES	0.00 ppm	0.50			Firm, brown, very sandy, slightly silty, gravelly CLAY with occasional glass, brick, clinker and chalk fragments. Sand fraction is fine. Gravel fraction is fine to coarse, sub-angular to sub-rounded flint. Fine to coarse flint gravel band at 0.3 to 0.4 m bgl. (MADE GROUND)	
		1.50 1.50-1.60	PID ES	0.10 ppm	0.95			Stiff, light brown, silty, friable CLAY with occasional medium to coarse flint gravels. (ALLUVIUM)	1
					2.50			Fine to very coarse, sub-rounded to angular flint GRAVELS in a light brown/orange silty friable CLAY matrix with rare chalk gravels. (ALLUVIUM)	2
								End of Borehole at 2.50 m	3
									4
									5
									6
									7
									8
									9

Remarks:



Project Name
Arundel

Project No.
5104362

Co-ords: 501338.94E - 106733.07N

Hole Type
TP

Location:
Ford Road, Arundel

Casing diam. (mm)

Level: -

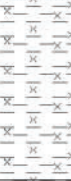
Scale
1:50

Client:
National Grid Porperty Holdings

Well diam. (mm)

Dates: 16/06/2011

Logged By
LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.90 0.90-1.00	PID ES	0.10 ppm	0.05			Tarmac	1
							Brick rubble (including whole bricks) with fine chalk and brick gravels in a fine to coarse grey sand matrix. (MADE GROUND)		
		2.00 2.00-2.10	PID ES	0.00 ppm	1.30			Bands of coarse sand and fine gravel sized clinker gravels and black ash, and a rust brown slightly clayey fine to coarse SAND. (MADE GROUND)	2
							Stiff, mottled orange/brown/light grey, slightly silty CLAY with frequent flint gravels and rootlets. (ALLUVIUM)		
2.50		End of Borehole at 2.50 m							3
								4	
								5	
								6	
								7	
								8	
								9	

Remarks:



Project Name
Arundel

Project No.
5104362

Co-ords: 501260.00E - 106736.88N

Hole Type
TP

Location:
Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale
1:50

Client:
National Grid Porperty Holdings

Well diam. (mm)

Dates: 14/06/2011

Logged By
LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30 0.30-0.40	PID ES	0.30 ppm	0.95 1.10 1.50 2.10 2.80			Dark brown, silty, sandy, gravelly CLAY with frequent brick (including whole bricks), clinker and chalk fragments and occasional concrete fragments. Sand fraction is fine. Gravel fraction is fine to coarse sub-angular to sub-rounded flint. Metal pipe fragments at 0.4 m bgl. (MADE GROUND)	1
		0.80 0.80-0.90	PID ES	0.40 ppm				Concrete approximately 0.1 to 0.2 m thickness.	
								Coarse, light grey, slightly clayey SAND with occasional fine to coarse, sub-angular to rounded flint gravels. (FILL?)	
								Orange, brown, very gravelly CLAY with occasional flint cobbles. Gravel fraction is fine to coarse, sub-rounded to angular flints. (ALLUVIUM)	
		2.60 2.60-2.80	PID ES	0.00 ppm				Mottled, orange and light grey, silty CLAY becoming mottled yellow grey, slightly clayey silt from 2.6 m bgl. (ALLUVIUM)	2
								End of Borehole at 2.80 m	3
									4
									5
									6
									7
									8
									9

Remarks:





HoleBASE 3.1 (Bld 418.4) Standard Borehole Log v2 dated 27th Nov 03

Project Name
Arundel

Project No.
5104362

Co-ords: 501283.70E - 106770.85N

Hole Type
TP

Location:
Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale
1:50

Client:
National Grid Porperty Holdings

Well diam. (mm)

Dates: 14/06/2011

Logged By
LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		1.40 1.40-1.50	PID ES	0.60 ppm	0.90			Fine to medium, brown, slightly silty, clayey, gravelly SAND with frequent brick, chalk, clinker, coal and concrete fragments. Gravel fraction is fine to medium, sub-angular to sub-rounded flint. Band of chalk gravels/cobbles from 0.2 to 0.4 m bgl. (MADE GROUND)	1
					1.90			Firm, brown, silty, gravelly CLAY with occasional brick, chalk and clinker fragments. Gravel fraction is fine to medium, sub-angular to sub-rounded flint. Slight hydrocarbon odour from 1.4-1.9 m bgl. (MADE GROUND)	2
					2.50			Soft to firm, sandy, gravelly CLAY with frequent brick fragments (including whole bricks). Strong hydrocarbon odour from 1.9-2.5 m bgl. Black, hydrocarbon saturated soil from 1.9 m bgl. (MADE GROUND)	3
								End of Borehole at 2.50 m	4
									5
									6
									7
									8
									9

Remarks:





Project Name
Arundel

Project No.
5104362

Co-ords: 501283.67E - 106729.47N

Hole Type
TP

Location:
Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale
1:50

Client:
National Grid Porperty Holdings

Well diam. (mm)

Dates: 14/06/2011

Logged By
LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30 0.30-0.40	PID ES	0.00 ppm				Dark brown, sandy, slightly silty, gravelly CLAY with frequent brick, clinker and occasional chalk gravels. Sand fraction is fine to medium. Gravel fraction is fine to coarse, sub-rounded to sub-angular flint. (MADE GROUND)	1
					1.20			Firm, orange, brown, very sandy, slightly silty, gravelly CLAY with frequent brick and rare clinker gravels. Sand fraction is fine to medium. Gravel fraction is fine to coarse, sub-rounded to sub-angular flint. (MADE GROUND)	
					1.60			Fine to coarse, sub-rounded to angular GRAVELS in orange, brown clay matrix with occasional chalk gravels. (ALLUVIUM)	2
					2.20			Light yellow, brown/grey, slightly clayey, sandy SILT. Sand fraction is fine to medium. (ALLUVIUM)	
					2.50			End of Borehole at 2.50 m	
									3
									4
									5
									6
									7
									8
									9

Remarks:



Project Name
Arundel

Project No.
5104362

Co-ords: 501280.99E - 106746.04N

Hole Type
TP

Location:
Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale
1:50

Client:
National Grid Porperty Holdings

Well diam. (mm)

Dates: 15/06/2011

Logged By
LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.40 0.40-0.50	PID ES	0.20 ppm	0.20 0.50			Fine, dark brown, slightly silty, slightly clayey, gravelly SAND with frequent chalk and brick fragments. Gravel fraction is fine to medium sub-rounded to sub-angular flint. (MADE GROUND) Firm to stiff, light brown, sandy, slightly gravelly CLAY with frequent chalk cobbles, brick (including whole bricks) and clinker fragments. Sand fraction is fine to medium. Gravel fraction is fine to coarse, sub-rounded to sub-angular flint. (MADE GROUND) Firm to stiff, orange, brown, gravelly CLAY with occasional chalk gravels. Gravel fraction is fine to coarse sub-rounded to sub-angular flint. Becoming fine to coarse, sub-rounded to angular flint gravels in an orange brown clay matrix with occasional chalk gravels. (ALLUVIUM)	1
					2.30			End of Borehole at 2.30 m	2
									3
									4
									5
									6
									7
									8
									9

Remarks:



Project Name
Arundel

Project No.
5104362

Co-ords: 501293.14E - 106763.74N

Hole Type
TP

Location:
Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale
1:50

Client:
National Grid Porperty Holdings

Well diam. (mm)

Dates: 15/06/2011

Logged By
LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.90 0.90-1.00	PID ES	0.70 ppm	0.20			Firm, dark brown, slightly silty, gravelly, very sandy CLAY. Sand fraction is fine to medium. Gravel fraction is fine to medium sub-angular to rounded flint (MADE GROUND)	
		1.40 1.40-1.60	PID ES	12.70 ppm	1.10			Bands of fine, light grey brown, slightly silty SAND and GRAVELS and stiff, orange brown, slightly silty, gravelly CLAY with frequent clinker fragments and occasional glass and solidified tar fragments. Gravel fraction is fine to coarse sub-rounded to angular flint. (MADE GROUND)	1
					1.60			Brown, sandy, gravelly CLAY with frequent chalk, clinker and brick fragments. Sand fraction is fine to medium. Gravel fraction is fine to coarse sub-rounded to sub-angular flint. Pockets of saturated tarry soils from 1.3m. Moderate tar odour from 1.3m bgl. Strong tar odour from 1.4m bgl. (MADE GROUND)	2
					2.30			Fine to coarse sub-rounded to sub-angular flint GRAVELS in an orange sandy CLAY matrix with occasional brick and chalk gravels from 1.6-1.7m. Slight hydrocarbon/tar odour and occasional black staining from 1.6-2.0m bgl. (MADE GROUND)	3
								End of Borehole at 2.30 m	4
									5
									6
									7
									8
									9

Remarks: Cast iron pipe identified at shallow depth in southern extent of trial pit - trial pit relocated.



Project Name
Arundel

Project No.
5104362

Co-ords: 501290.67E - 106743.26N

Hole Type
TP

Location:
Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale
1:50

Client:
National Grid Porperty Holdings

Well diam. (mm)

Dates: 15/06/2011

Logged By
LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.60 0.60-0.80	PID ES	0.40 ppm	0.20			Firm, dark brown, very sandy, slightly silty, gravelly CLAY with frequent brick, chalk and clinker fragments. Sand fraction is fine. Gravel fraction is fine to coarse sub-angular to sub-rounded flint. (MADE GROUND)	
					0.80			Firm, brown, very sandy, gravelly CLAY with brick rubble (including whole bricks), concrete, metal and slate. Band of black solidified tar/clinker at 0.7-0.75 m bgl. Slight tarry odour from 0.2-0.8m bgl. (MADE GROUND)	1
					1.30			Firm to stiff, light orange brown, slightly sandy, gravelly CLAY with occasional chalk gravels. Sand fraction is fine. Gravel fraction is fine to coarse sub-rounded to sub-angular flint (MADE GROUND?)	
		2.50 2.50-2.60	PID ES	0.10 ppm	2.60 2.70			Firm to stiff, orange brown, gravelly CLAY with occasional chalk gravels. Becoming pinky orange from 2.0m bgl. Gravel fraction is fine to coarse sub-rounded to sub-angular flint. (ALLUVIUM)	2
								Yellow brown, silty, fine to medium SAND with frequent fine to coarse gravels and cobbles of chalk and pockets of soft putty chalk. (ALLUVIUM)	3
								End of Borehole at 2.70 m	
									4
									5
									6
									7
									8
									9

Remarks: Damp from 2.3



Project Name

Arundel

Project No.

5104362

Co-ords: 501298.90E - 106759.72N

Hole Type

TP

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale

1:50

Client:

National Grid Porperty Holdings

Well diam. (mm)

Dates: 15/06/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.80 0.80-0.90	PID ES	2.40 ppm	0.50			Fine to medium, dark brown, clayey, slightly silty, gravelly SAND with frequent chalk, brick and clinker fragments. Gravel fraction is fine to coarse flint. (MADE GROUND)	
					1.00			Orange brown, slightly silty, sandy, gravelly CLAY with occasional chalk gravels and frequent brick and clinker fragments. Sand fraction is fine. Gravel fraction is fine to coarse flint (MADE GROUND)	1
		1.40 1.40-1.60	PID ES	18.20 ppm	1.25			Firm, orange brown, gravelly CLAY with occasional brick fragments and chalk gravels. Gravel fraction is fine to coarse flint. (MADE GROUND)	
					2.30			Black fine to coarse sub-rounded to sub-angular flint GRAVELS in a CLAY matrix (with pockets of hydrocarbon saturated tarry clay). Strong hydrocarbon/tarry odour from 1.25-2.3m bgl. (MADE GROUND/ALLIUVIUM?)	2
								End of Borehole at 2.30 m	
									3
									4
									5
									6
									7
									8
									9

Remarks: Wet at 2.2m bgl.



Project Name

Arundel

Project No.

5104362

Co-ords: 501304.05E - 106707.34N

Hole Type

TP

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale

1:50

Client:

National Grid Porperty Holdings

Well diam. (mm)

Dates: 14/06/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30 0.30-0.40	PID ES	0.00 ppm	0.55			Light brown, very silty, friable CLAY with occasional flint, chalk and brick gravels. Breeze block and solidified tar at 0.3 m bgl. (MADE GROUND)	
					0.85			Reinforced concrete approximately 0.3 m thickness.	
		1.20 1.20-1.30	PID ES	0.20 ppm	1.40			Firm, light orange brown, silty CLAY with occasional flint gravels. (ALLUVIUM)	1
					2.70			Fine to coarse, sub-rounded to angular flint GRAVELS in an orange/brown, silty, friable CLAY matrix with rare chalk gravels. (ALLUVIUM)	2
								End of Borehole at 2.70 m	3
									4
									5
									6
									7
									8
									9

Remarks:



Project Name
Arundel

Project No.
5104362

Co-ords: 501317.22E - 106729.98N

Hole Type
TP

Location:
Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale
1:50

Client:
National Grid Porperty Holdings

Well diam. (mm)

Dates: 16/06/2011

Logged By
LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.90 0.90-1.00	PID ES	0.10 ppm	0.10			Tarmac	
					0.25			Brick and concrete sub-base.	
					0.40			Fine to medium, light brown clayey SAND with frequent flint gravels and occasional chalk gravels and brick fragments. (MADE GROUND)	
					0.90			Chalk cobbles and bands of light brown clay with fine chalk gravels. (MADE GROUND)	1
					1.10			Stiff orange and dark grey brown CLAY with frequent rootlets, metal and brick fragments and clinker and chalk gravels (MADE GROUND)	
								Firm dark brown, becoming orange brown, slightly silty CLAY with frequent flint, chalk, brick and clinker gravels (MADE GROUND)	
		2.30 2.30-2.50	PID ES	0.00 ppm	2.00			Firm orange brown slightly silty CLAY with frequent flint gravels. (ALLUVIUM)	2
					2.50			End of Borehole at 2.50 m	
									3
									4
									5
									6
									7
									8
									9

Remarks: Three cast iron pipes identified in original trial pit at shallow depth. Trial pit relocated.



Project Name

Arundel

Project No.

5104362

Co-ords: 501257.94E - 106734.82N

Hole Type

HA

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale

1:50

Client:

National Grid Porperty Holdings

Well diam. (mm)

Dates: 13/07/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.30			Soft to firm, brown, slightly sandy, gravelly CLAY with occasional solidified tar fragments. Gravel medium to coarse sub-rounded flint. (MADE GROUND)	
								End of Borehole at 0.30 m	
									1
									2
									3
									4
									5
									6
									7
									8
									9
			Type	Results					

Remarks: Solidified tar/concrete at 0.3 m? HA relocated.



Project Name
Arundel

Project No.
5104362

Co-ords: 501257.94E - 106734.82N

Hole Type
HA

Location:
Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale
1:50

Client:
National Grid Porperty Holdings

Well diam. (mm)
5

Dates: 13/07/2011

Logged By
LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30	PID	0.80 ppm	0.40			Soft to firm, brown, slightly sandy, gravelly CLAY with frequent brick and chalk and occasional coal fragments. Sand fraction is fine to coarse. Gravel fraction is fine to coarse sub-rounded to sub-angular flint. (MADE GROUND)	1
		0.30-0.40	ES		0.60				
		0.90	PID	0.30 ppm	1.20			Soft to firm, brown, silty CLAY with frequent fine to coarse flint gravels, rare brick fragments and occasional coal fragments. (MADE GROUND)	
		0.90-1.00	ES					Soft to firm, orange/pink brown, very gravelly CLAY. Gravel fraction is fine to coarse, sub-rounded to angular flint. Becoming clayey from 0.95 m bgl. (ALLUVIUM)	
End of Borehole at 1.20 m									
									2
									3
									4
									5
									6
									7
									8
									9

Remarks:



Project Name
Arundel

Project No.
5104362

Co-ords: 501285.42E - 106748.09N

Hole Type
HA

Location:
Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale
1:50

Client:
National Grid Porperty Holdings

Well diam. (mm)
5

Dates: 13/07/2011

Logged By
LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30	PID	0.40 ppm	0.25			Soft to firm, brown, slightly sandy, slightly silty, gravelly CLAY with frequent brick and occasional clinker and coal fragments. Sand fraction fine to medium. Gravel fraction is fine to medium sub-angular to sub-rounded flint. (MADE GROUND)	
		0.30-0.40	ES		0.80			Soft to firm, brown, slightly silty, gravelly CLAY with frequent chalk gravels and occasional coal fragments. Gravel fraction is fine to coarse flint. (MADE GROUND)	1
					1.00			Firm red/orange/brown, gravelly CLAY. Gravel fraction fine to coarse flint. (ALLUVIUM)	
								End of Borehole at 1.20 m	
									2
									3
									4
									5
									6
									7
									8
									9

Remarks:



Project Name Arundel	Project No. 5104362	Co-ords: 501293.55E - 106733.99N	Hole Type HA
Location: Ford Road, Arundel	Casing diam. (mm)	Level: -	Scale 1:50
Client: National Grid Porperty Holdings	Well diam. (mm) 5	Dates: 13/07/2011	Logged By LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description								
		Depth (m)	Type	Results												
		0.20	PID ES	0.20 ppm	0.70			Firm, brown, slightly silty, slightly sandy CLAY with frequent brick fragments and flint gravels, and occasional clinker, coal and chalk gravels. Becoming lighter brown from 0.5 m bgl. (MADE GROUND)	1							
		0.20-0.30														
					1.00			Orange CLAY matrix with fine to coarse, sub-rounded to angular flint gravels with rare bricks and clinker fragments. (MADE GROUND)	1							
End of Borehole at 1.20 m																
									2							
									3							
									4							
									5							
									6							
									7							
									8							
									9							

Remarks:



Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.40	PID ES	0.10 ppm	0.02			Soft to firm, dark brown, slightly sandy, silty CLAY with organic matter/leaves. (TOPSOIL)	
		0.40-0.50			0.55			Firm, orange, brown silty friable CLAY with occasional flints and brick fragments. (MADE GROUND) Concrete.	
End of Borehole at 0.55 m									1
									2
									3
									4
									5
									6
									7
									8
									9



Project Name
Arundel

Project No.
5104362

Co-ords: 501315.16E - 106727.51N

Hole Type
HA

Location:
Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale
1:50

Client:
National Grid Porperty Holdings

Well diam. (mm)
5

Dates: 13/07/2011

Logged By
LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	PID	0.20 ppm	0.30			Firm, light brown, slightly silty, gravelly CLAY with occasional clinker and brick fragments. Gravel fraction fine to coarse, sub-rounded to sub-angular flint. (MADE GROUND)	
		0.20-0.30	ES					Firm, light brown CLAY with fine to coarse chalk gravels and frequent flint cobbles. (FILL?)	
		1.00	PID	0.60 ppm	0.75				
		1.00-1.10	ES		0.85			Chalk cobbles.	1
					1.30			Firm light yellow/brown, very sandy CLAY and fine to medium chalk gravels with rare fragments of solidified tar. (MADE GROUND)	
								End of Borehole at 1.30 m	
									2
									3
									4
									5
									6
									7
									8
									9

Remarks:



Lucy Hay
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Analytical Report Number : 11-28269

Replaces Analytical Report Number : 11-28269, issue no. 1

Project / Site name: Arundel Gasworks

Samples received on: 20/06/2011

Your job number:

Samples instructed on: 20/06/2011

Your order number:

Analysis completed by: 07/07/2011

Report Issue Number: 2

Report issued on: 07/07/2011

Samples Analysed: 7 leachate samples - 35 soil samples - 1 water sample

Signed: 

Dr Claire Stone
Quality Manager
For & on behalf of i2 Analytical Ltd.

Signed: 

Thurstan Plummer
Organics Technical Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting

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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180249	180250	180251	180252	180253
Sample Reference	TP102	TP104	TP105	TP108B	TP111
Sample Number	ES1	ES2	ES1	ES1	ES2
Depth (m)	0.40-0.50	1.50-1.60	0.90-1.00	1.40-1.50	1.40-1.60
Date Sampled	15/06/2011	14/06/2011	16/06/2011	14/06/2011	15/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status		

General Inorganics

pH	pH Units	N/A	ISO 17025	7.9	7.8	8.0	7.4	7.8
Electrical Conductivity	µS/cm	10	NONE	< 10	40	140	290	730
Total Cyanide	µg/l	10	ISO 17025	15	< 10	24	240	420
Complex Cyanide	µg/l	25	NONE	< 25	< 25	< 25	240	420
Free Cyanide	µg/l	25	NONE	< 25	< 25	< 25	< 25	< 25
Free Cyanide (Low Level)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
Thiocyanate as SCN	µg/l	30	NONE	< 30	< 30	< 30	< 30	< 30
Sulphate as SO ₄	µg/l	100	ISO 17025	110	2300	27000	80000	220000
Sulphide	ug/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloride	mg/l	4	NONE	< 4.0	< 4.0	< 4.0	4.3	< 4.0
Ammonium as NH ₄	ug/l	15	NONE	88	110	96	71	17000
Total Organic Carbon (TOC)	mg/l	0.1	NONE	6.8	6.8	5.9	6.7	20

Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Butyl Phenols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5
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Speciated PAHs

Naphthalene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	3.8
Acenaphthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	8.0
Fluorene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	9.1
Phenanthrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	4.0
Anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	3.2
Pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	28
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Heavy Metals / Metalloids

Arsenic (dissolved)	ug/l	1.1	ISO 17025	< 1.1	1.1	1.3	3.5	3.6
Cadmium (dissolved)	ug/l	0.1	ISO 17025	0.19	0.23	< 0.10	< 0.10	< 0.10
Chromium (dissolved)	ug/l	0.4	ISO 17025	9.4	6.1	3.0	3.1	2.2
Copper (dissolved)	ug/l	0.7	ISO 17025	14	16	15	17	14
Iron (dissolved)	mg/l	0.004	ISO 17025	5.5	3.3	1.6	0.39	0.40
Lead (dissolved)	ug/l	1	ISO 17025	9.2	5.6	15	18	4.3
Mercury (dissolved)	ug/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	ug/l	0.3	ISO 17025	3.8	3.2	4.5	1.8	1.6
Selenium (dissolved)	ug/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0



Analytical Report Number: 11-28269
Project / Site name: Arundel Gasworks

Lab Sample Number				180249	180250	180251	180252	180253
Sample Reference				TP102	TP104	TP105	TP108B	TP111
Sample Number				ES1	ES2	ES1	ES1	ES2
Depth (m)				0.40-0.50	1.50-1.60	0.90-1.00	1.40-1.50	1.40-1.60
Date Sampled				15/06/2011	14/06/2011	16/06/2011	14/06/2011	15/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status					
Zinc (dissolved)	ug/l	0.4	ISO 17025	11	11	6.9	9.2	3.4



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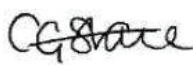
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Analytical Report Number : 11-28864

Project / Site name:	Arundel	Samples received on:	19/07/2011
Your job number:		Samples instructed on:	19/07/2011
Your order number:		Analysis completed by:	01/08/2011
Report Issue Number:	1	Report issued on:	01/08/2011
Samples Analysed:	2 soil samples - 8 water samples		

Signed: 

Dr Claire Stone
Quality Manager
For & on behalf of i2 Analytical Ltd.

Signed: 

Thurstan Plummer
Organics Technical Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting

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Analytical Report Number: 11-28864

Project / Site name: Arundel

Lab Sample Number				184379	184380			
Sample Reference				SPOILHEAP 1	SPOILHEAP 2			
Sample Number				None Supplied	None Supplied			
Depth (m)				None Supplied	None Supplied			
Date Sampled				15/07/2011	15/07/2011			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1			
Moisture Content	%	N/A	NONE	10	5.6			
Total mass of sample received	kg	0.001	NONE	0.42	0.44			
Asbestos Fibre Screen	P/A	N/A	ISO 17025	Absent	Absent			

General Inorganics

pH	pH Units	N/A	MCERTS	7.2	7.4			
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0			
Complex Cyanide	mg/kg	1	NONE	< 1.0	< 1.0			
Free Cyanide	mg/kg	1	NONE	< 1	< 1			
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0			
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	0.028	0.12			
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	17	44			
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20			
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	< 5.0			
Organic Matter	%	0.1	MCERTS	1.3	2.7			
Loss on Ignition @ 450°C	%	0.2	MCERTS	4.2	3.4			

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0			
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0			
Butyl Phenols	µg/kg	1	NONE	< 1.0	< 1.0			
Cresols	µg/kg	1	NONE	< 1.0	< 1.0			
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0			
Phenol	µg/kg	0.1	ISO 17025	< 0.1	< 0.1			
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0			

Total Phenols

Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0	< 7.0			
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	1.2			
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	0.96			
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	3.9			
Fluorene	mg/kg	0.2	MCERTS	< 0.20	3.5			
Phenanthrene	mg/kg	0.2	MCERTS	< 0.20	33			
Anthracene	mg/kg	0.1	MCERTS	< 0.10	11			
Fluoranthene	mg/kg	0.2	MCERTS	0.29	54			
Pyrene	mg/kg	0.2	MCERTS	0.27	45			
Benzo(a)anthracene	mg/kg	0.2	MCERTS	< 0.20	26			
Chrysene	mg/kg	0.05	MCERTS	< 0.05	22			
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.28	29			
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	< 0.20	16			
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.25	29			
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	< 0.20	15			
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	2.9			
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	16			

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.6	310			
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Analytical Report Number: 11-28864

Project / Site name: Arundel

Lab Sample Number				184379	184380			
Sample Reference				SPOILHEAP 1	SPOILHEAP 2			
Sample Number				None Supplied	None Supplied			
Depth (m)				None Supplied	None Supplied			
Date Sampled				15/07/2011	15/07/2011			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	17	13			
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2	< 0.2			
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2			
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	35	32			
Copper (aqua regia extractable)	mg/kg	1	MCERTS	12	23			
Lead (aqua regia extractable)	mg/kg	2	MCERTS	12	28			
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3			
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	19	24			
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0			
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	47	65			

Monoaromatics

Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0			
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0			
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0			
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0			
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0			
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0			

Petroleum Hydrocarbons

TPH7 - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH7 - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH7 - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH7 - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0			
TPH7 - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0			
TPH7 - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0			
TPH7 - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0			
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10			

TPH7 - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH7 - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH7 - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH7 - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	4.6			
TPH7 - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	45			
TPH7 - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	860			
TPH7 - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	2400			
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	3400			



Analytical Report Number: 11-28864

Project / Site name: Arundel

Lab Sample Number				184371	184372	184373	184374	184375
Sample Reference				BH101S	BH102	BH103	BH104	BH105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				15/07/2011	15/07/2011	15/07/2011	15/07/2011	15/07/2011
Time Taken				1150	1000	1100	0910	0830
Analytical Parameter (Water Analysis)				Units	Limit of detection	Accreditation Status		

General Inorganics

pH	pH units	N/A	ISO 17025	7.8	6.9	6.9	7.0	6.9
Electrical Conductivity	µS/cm	10	NONE	3800	840	1100	950	1800
Total Cyanide	µg/l	10	ISO 17025	390	< 10	55	13	400
Complex Cyanide	µg/l	10	NONE	270	< 10	55	13	390
Free Cyanide	µg/l	10	NONE	120	< 10	< 10	< 10	11
Thiocyanate as SCN	µg/l	30	NONE	< 30	< 30	< 30	< 30	< 30
Sulphate as SO ₄	ug/L	45	ISO 17025	650000	35000	110000	58000	630000
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloride	mg/l	4	ISO 17025	240	65	38	81	80
Ammonium as NH ₄	ug/l	15	ISO 17025	400000	270	22000	250	34000
Total Organic Carbon (TOC)	mg/l	0.1	NONE	330	5.5	8.0	3.5	12
Total Suspended Solids	mg/l	5	NONE	38	< 5.0	22	8.0	96

Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	57000	< 0.5	< 0.5	< 0.5	< 0.5
Cresols	µg/l	0.5	NONE	100000	< 0.5	< 0.5	< 0.5	< 0.5
Naphthols	µg/l	0.5	NONE	7700	< 0.5	< 0.5	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	120000	< 0.5	< 0.5	< 0.5	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	280000	< 3.5	< 3.5	< 3.5	< 3.5
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	150	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	130	< 0.01	5.9	< 0.01	0.63
Acenaphthene	µg/l	0.01	ISO 17025	63	< 0.01	7.0	< 0.01	0.45
Fluorene	µg/l	0.01	ISO 17025	47	< 0.01	3.1	< 0.01	0.43
Phenanthrene	µg/l	0.01	ISO 17025	35	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	9.9	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	8.6	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	6.5	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.2	ISO 17025	450	< 0.2	16	< 0.2	1.6
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Heavy Metals / Metalloids

Arsenic (dissolved)	ug/l	1	ISO 17025	67	5.2	20	5.6	5.6
Cadmium (dissolved)	ug/l	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chromium (dissolved)	ug/l	0.4	ISO 17025	14	1.2	< 0.4	0.7	< 0.4
Copper (dissolved)	ug/l	0.7	ISO 17025	4.0	1.5	0.7	3.2	1.6
Iron (dissolved)	mg/l	0.004	ISO 17025	0.86	0.010	0.31	0.009	0.35
Lead (dissolved)	ug/l	1	ISO 17025	3.2	< 1.0	< 1.0	< 1.0	1.5
Mercury (dissolved)	ug/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	ug/l	0.3	ISO 17025	21	1.4	1.5	2.8	15
Selenium (dissolved)	ug/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	ug/l	0.4	ISO 17025	2.2	3.2	0.7	0.6	1.8

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The results included within the report are representative of the samples submitted for analysis.

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Analytical Report Number: 11-28864

Project / Site name: Arundel

Lab Sample Number				184371	184372	184373	184374	184375
Sample Reference				BH101S	BH102	BH103	BH104	BH105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				15/07/2011	15/07/2011	15/07/2011	15/07/2011	15/07/2011
Time Taken				1150	1000	1100	0910	0830
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

Monoaromatics

Benzene	µg/l	1	ISO 17025	8500	< 1.0	9.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	3000	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	65	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	350	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	230	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic >C5 - C6	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C6 - C8	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C8 - C10	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C12 - C16	µg/l	10	NONE	130	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C16 - C21	µg/l	10	NONE	290	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C21 - C35	µg/l	10	NONE	210	< 10	120	< 10	< 10
TPH7 - Aliphatic (C5 - C35)	µg/l	10	NONE	620	< 10	120	< 10	< 10

TPH7 - Aromatic >C5 - C7	µg/l	10	NONE	8500	< 10	< 10	< 10	< 10
TPH7 - Aromatic >C7 - C8	µg/l	10	NONE	3000	< 10	< 10	< 10	< 10
TPH7 - Aromatic >C8 - C10	µg/l	10	NONE	730	< 10	< 10	< 10	< 10
TPH7 - Aromatic >C10 - C12	µg/l	10	NONE	310	< 10	61	< 10	< 10
TPH7 - Aromatic >C12 - C16	µg/l	10	NONE	3500	< 10	57	< 10	< 10
TPH7 - Aromatic >C16 - C21	µg/l	10	NONE	4400	< 10	78	< 10	< 10
TPH7 - Aromatic >C21 - C35	µg/l	10	NONE	180	< 10	< 10	< 10	< 10
TPH7 - Aromatic (C5 - C35)	µg/l	10	NONE	21000	< 10	200	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

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Analytical Report Number: 11-28864

Project / Site name: Arundel

Lab Sample Number				184376	184377	184378		
Sample Reference				BH101D	FIELD BLANK	TRIP BLANK		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				None Supplied	None Supplied	None Supplied		
Date Sampled				15/07/2011	15/07/2011	15/07/2011		
Time Taken				1245	None Supplied	None Supplied		
Analytical Parameter (Water Analysis)				Units	Limit of detection	Accreditation Status		

General Inorganics

pH	pH units	N/A	ISO 17025	8.1	8.1	7.8		
Electrical Conductivity	µS/cm	10	NONE	3200	< 10	< 10		
Total Cyanide	µg/l	10	ISO 17025	380	< 10	< 10		
Complex Cyanide	µg/l	10	NONE	270	< 10	< 10		
Free Cyanide	µg/l	10	NONE	110	< 10	< 10		
Thiocyanate as SCN	µg/l	30	NONE	< 30	< 30	< 30		
Sulphate as SO ₄	ug/L	45	ISO 17025	570000	1900	1300		
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0		
Chloride	mg/l	4	ISO 17025	300	< 4.0	< 4.0		
Ammonium as NH ₄	ug/l	15	ISO 17025	400000	1300	470		
Total Organic Carbon (TOC)	mg/l	0.1	NONE	370	2.6	1.0		
Total Suspended Solids	mg/l	5	NONE	26	< 5.0	< 5.0		

Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5		
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5		
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	64000	< 0.5	< 0.5		
Cresols	µg/l	0.5	NONE	110000	< 0.5	< 0.5		
Naphthols	µg/l	0.5	NONE	8800	< 0.5	< 0.5		
Phenol	µg/l	0.5	NONE	130000	< 0.5	< 0.5		
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5		

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	320000	< 3.5	< 3.5		
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	290	< 0.01	< 0.01		
Acenaphthylene	µg/l	0.01	ISO 17025	170	< 0.01	< 0.01		
Acenaphthene	µg/l	0.01	ISO 17025	33	< 0.01	< 0.01		
Fluorene	µg/l	0.01	ISO 17025	37	< 0.01	< 0.01		
Phenanthrene	µg/l	0.01	ISO 17025	34	< 0.01	< 0.01		
Anthracene	µg/l	0.01	ISO 17025	10	< 0.01	< 0.01		
Fluoranthene	µg/l	0.01	ISO 17025	4.7	< 0.01	< 0.01		
Pyrene	µg/l	0.01	ISO 17025	3.8	< 0.01	< 0.01		
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		

Total PAH

Total EPA-16 PAHs	µg/l	0.2	ISO 17025	570	< 0.2	< 0.2		
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Heavy Metals / Metalloids

Arsenic (dissolved)	ug/l	1	ISO 17025	58	< 1.0	< 1.0		
Cadmium (dissolved)	ug/l	0.1	ISO 17025	< 0.1	< 0.1	< 0.1		
Chromium (dissolved)	ug/l	0.4	ISO 17025	12	1.0	0.7		
Copper (dissolved)	ug/l	0.7	ISO 17025	3.1	1.1	1.1		
Iron (dissolved)	mg/l	0.004	ISO 17025	0.55	< 0.004	< 0.004		
Lead (dissolved)	ug/l	1	ISO 17025	1.9	< 1.0	< 1.0		
Mercury (dissolved)	ug/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5		
Nickel (dissolved)	ug/l	0.3	ISO 17025	21	1.1	1.1		
Selenium (dissolved)	ug/l	4	ISO 17025	< 4.0	< 4.0	< 4.0		
Zinc (dissolved)	ug/l	0.4	ISO 17025	2.3	< 0.4	< 0.4		

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The results included within the report are representative of the samples submitted for analysis.

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Analytical Report Number: 11-28864

Project / Site name: Arundel

Lab Sample Number				184376	184377	184378		
Sample Reference				BH101D	FIELD BLANK	TRIP BLANK		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				None Supplied	None Supplied	None Supplied		
Date Sampled				15/07/2011	15/07/2011	15/07/2011		
Time Taken				1245	None Supplied	None Supplied		
Analytical Parameter (Water Analysis)				Units	Limit of detection	Accreditation Status		

Monoaromatics

Benzene	µg/l	1	ISO 17025	13000	< 1.0	< 1.0		
Toluene	µg/l	1	ISO 17025	6000	< 1.0	< 1.0		
Ethylbenzene	µg/l	1	ISO 17025	190	< 1.0	< 1.0		
p & m-xylene	µg/l	1	ISO 17025	840	< 1.0	< 1.0		
o-xylene	µg/l	1	ISO 17025	500	< 1.0	< 1.0		
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		

Petroleum Hydrocarbons

TPH7 - Aliphatic >C5 - C6	µg/l	10	NONE	< 10	< 10	< 10		
TPH7 - Aliphatic >C6 - C8	µg/l	10	NONE	< 10	< 10	< 10		
TPH7 - Aliphatic >C8 - C10	µg/l	10	NONE	< 10	< 10	< 10		
TPH7 - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10		
TPH7 - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10		
TPH7 - Aliphatic >C16 - C21	µg/l	10	NONE	170	< 10	< 10		
TPH7 - Aliphatic >C21 - C35	µg/l	10	NONE	100	< 10	< 10		
TPH7 - Aliphatic (C5 - C35)	µg/l	10	NONE	270	< 10	< 10		

TPH7 - Aromatic >C5 - C7	µg/l	10	NONE	13000	< 10	< 10		
TPH7 - Aromatic >C7 - C8	µg/l	10	NONE	6000	< 10	< 10		
TPH7 - Aromatic >C8 - C10	µg/l	10	NONE	1700	< 10	< 10		
TPH7 - Aromatic >C10 - C12	µg/l	10	NONE	350	< 10	< 10		
TPH7 - Aromatic >C12 - C16	µg/l	10	NONE	4600	< 10	< 10		
TPH7 - Aromatic >C16 - C21	µg/l	10	NONE	4100	< 10	< 10		
TPH7 - Aromatic >C21 - C35	µg/l	10	NONE	300	< 10	< 10		
TPH7 - Aromatic (C5 - C35)	µg/l	10	NONE	30000	< 10	< 10		

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number : 11-28864

Project / Site name: Arundel

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and topsoil/loam soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of

a sample is calculated as the % weight of the stones not passing a 2 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
184379	SPOILHEAP 1	None Supplied	None Supplied	Light brown sandy clay with gravel.
184380	SPOILHEAP 2	None Supplied	None Supplied	Light brown clay and sand with gravel and vegetation.

Analytical Report Number : 11-28864

Project / Site name: Arundel

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonium as NH ₄ in soil	Determination of ammonium in soil by extraction with potassium chloride followed by addition of buffer solution followed by ion selective electrode.	In-house method	L035-PL	W	MCERTS
Ammonium as NH ₄ in water	Determination of ammonium in water by addition of buffer solution followed by ion selective electrode.	In-house method	L035-PL	W	ISO 17025
Asbestos Screening in Soil	Screening of samples for Asbestos Fibres in Soil	In-house method based on HSG 248	A001	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L0735-PL	W	MCERTS
BTEX and MTBE in water	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW	In-house method based on USEPA8260	L036-UK	W	ISO 17025
Chloride in water	Determination of chloride in water by titration against silver nitrate.	In-house method	L024-PL	W	ISO 17025
Chloride, water soluble, in soil	Determination of chloride by titration using silver nitrate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L075-PL	D	MCERTS
Complex cyanide in soil	Determination of complex cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080	W	NONE
Electrical conductivity of water	Determination of electrical conductivity in water by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	NONE
Elemental sulphur in soil	Determination of elemental sulphur in soil by extraction in dichloromethane followed by HPLC.	In-house method based on Secondsite Property Holdings Guidance for Assessing and Managing Potential		D	NONE
Free cyanide (Low level) in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080	W	NONE
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L047-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025

Analytical Report Number : 11-28864

Project / Site name: Arundel

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK	W	NONE
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080	W	ISO 17025
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
pH in water	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
Phenols, speciated, in soil, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030	W	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in hexane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L070-UK	W	ISO 17025
Stones content of soil	Stones not passing through a 2 mm sieve is determined gravimetrically and reported as a percentage of the dry weight. Sample results are not corrected for the stone content of the sample.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK	D	NONE
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Sulphate, water soluble, in soil	Determination of water soluble sulphate by extraction with water followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L010-PL	W	NONE
Suspended solids in water	Determined gravimetrically with GFC filtration papers.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L004-UK	W	NONE
Thiocyanate in soil	Determination of thiocyanate in soil by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by spectrophotometer.	In-house method	L049-PL	D	NONE
Thiocyanate in water	Determination of thiocyanate in water by acidification followed by addition of ferric nitrate followed by spectrophotometer.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L049-UK	W	NONE

Analytical Report Number : 11-28864

Project / Site name: Arundel

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080	W	MCERTS
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080	W	ISO 17025
Total organic carbon in water	Determination of total organic carbon in water by the measurement on a non-dispersive infrared analyser of carbon dioxide released by acidification.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE
TPH7 (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-UK	W	NONE
TPHCWG (Soil)	Determination of pentane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180249	180250	180251	180252	180253
Sample Reference				TP102	TP104	TP105	TP108B	TP111
Sample Number				ES1	ES2	ES1	ES1	ES2
Depth (m)				0.40-0.50	1.50-1.60	0.90-1.00	1.40-1.50	1.40-1.60
Date Sampled				15/06/2011	14/06/2011	16/06/2011	14/06/2011	15/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		

Monoaromatics

Benzene	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

TPH7 - Aliphatic >C5 - C6	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C6 - C8	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C8 - C10	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

TPH7 - Aromatic >C5 - C7	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aromatic >C7 - C8	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aromatic >C8 - C10	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	57
TPH7 - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	470
TPH7 - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	1100
TPH7 - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	19



Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180254	180255			
Sample Reference				TP113	TP115			
Sample Number				ES3	ES2			
Depth (m)				1.40-1.60	2.30-2.50			
Date Sampled				15/06/2011	16/06/2011			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		

General Inorganics

pH	pH Units	N/A	ISO 17025	8.4	7.4			
Electrical Conductivity	µS/cm	10	NONE	430	370			
Total Cyanide	µg/l	10	ISO 17025	1500	15			
Complex Cyanide	µg/l	25	NONE	1500	< 25			
Free Cyanide	µg/l	25	NONE	< 25	< 25			
Free Cyanide (Low Level)	µg/l	10	NONE	14	< 10			
Thiocyanate as SCN	µg/l	30	NONE	< 30	< 30			
Sulphate as SO ₄	µg/l	100	ISO 17025	130000	160000			
Sulphide	ug/l	5	NONE	5000	< 5.0			
Chloride	mg/l	4	NONE	11	< 4.0			
Ammonium as NH ₄	ug/l	15	NONE	33000	3200			
Total Organic Carbon (TOC)	mg/l	0.1	NONE	20	2.6			

Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5	< 0.5			
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5			
Butyl Phenols	µg/l	0.5	NONE	77	< 0.5			
Cresols	µg/l	0.5	NONE	10	< 0.5			
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5			
Phenol	µg/l	0.5	NONE	< 0.5	< 0.5			
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5			

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	88	< 3.5			
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Speciated PAHs

Naphthalene	µg/l	0.01	NONE	< 0.01	1.5			
Acenaphthylene	µg/l	0.01	NONE	3.6	< 0.01			
Acenaphthene	µg/l	0.01	NONE	33	< 0.01			
Fluorene	µg/l	0.01	NONE	11	< 0.01			
Phenanthrene	µg/l	0.01	NONE	14	< 0.01			
Anthracene	µg/l	0.01	NONE	7.2	< 0.01			
Fluoranthene	µg/l	0.01	NONE	4.7	< 0.01			
Pyrene	µg/l	0.01	NONE	3.1	< 0.01			
Benzo(a)anthracene	µg/l	0.01	NONE	1.9	< 0.01			
Chrysene	µg/l	0.01	NONE	0.91	< 0.01			
Benzo(b)fluoranthene	µg/l	0.01	NONE	1.3	< 0.01			
Benzo(k)fluoranthene	µg/l	0.01	NONE	0.53	< 0.01			
Benzo(a)pyrene	µg/l	0.01	NONE	1.1	< 0.01			
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01			
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01			
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01			

Total PAH

Total EPA-16 PAHs	µg/l	0.2	NONE	83	1.6			
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Heavy Metals / Metalloids

Arsenic (dissolved)	ug/l	1.1	ISO 17025	2.9	< 1.1			
Cadmium (dissolved)	ug/l	0.1	ISO 17025	0.25	2.9			
Chromium (dissolved)	ug/l	0.4	ISO 17025	6.1	2.0			
Copper (dissolved)	ug/l	0.7	ISO 17025	26	15			
Iron (dissolved)	mg/l	0.004	ISO 17025	5.0	0.43			
Lead (dissolved)	ug/l	1	ISO 17025	90	630			
Mercury (dissolved)	ug/l	0.5	ISO 17025	< 0.5	< 0.5			
Nickel (dissolved)	ug/l	0.3	ISO 17025	9.1	7.3			
Selenium (dissolved)	ug/l	4	ISO 17025	< 4.0	< 4.0			



Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180254	180255			
Sample Reference				TP113	TP115			
Sample Number				ES3	ES2			
Depth (m)				1.40-1.60	2.30-2.50			
Date Sampled				15/06/2011	16/06/2011			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status					
Zinc (dissolved)	ug/l	0.4	ISO 17025	5.5	34			

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180254	180255			
Sample Reference				TP113	TP115			
Sample Number				ES3	ES2			
Depth (m)				1.40-1.60	2.30-2.50			
Date Sampled				15/06/2011	16/06/2011			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/l	1	NONE	< 1.0	< 1.0			
Toluene	µg/l	1	NONE	< 1.0	< 1.0			
Ethylbenzene	µg/l	1	NONE	< 1.0	< 1.0			
p & m-xylene	µg/l	1	NONE	< 1.0	< 1.0			
o-xylene	µg/l	1	NONE	< 1.0	< 1.0			
MTBE (Methyl Tertiary Butyl Ether)	µg/l	10	NONE	< 10	< 10			
TPH7 - Aliphatic >C5 - C6	µg/l	10	NONE	< 10	< 10			
TPH7 - Aliphatic >C6 - C8	µg/l	10	NONE	< 10	< 10			
TPH7 - Aliphatic >C8 - C10	µg/l	10	NONE	< 10	< 10			
TPH7 - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10			
TPH7 - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10			
TPH7 - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10			
TPH7 - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10			
TPH7 - Aromatic >C5 - C7	µg/l	10	NONE	< 10	< 10			
TPH7 - Aromatic >C7 - C8	µg/l	10	NONE	< 10	< 10			
TPH7 - Aromatic >C8 - C10	µg/l	10	NONE	< 10	< 10			
TPH7 - Aromatic >C10 - C12	µg/l	10	NONE	360	< 10			
TPH7 - Aromatic >C12 - C16	µg/l	10	NONE	2400	< 10			
TPH7 - Aromatic >C16 - C21	µg/l	10	NONE	2900	< 10			
TPH7 - Aromatic >C21 - C35	µg/l	10	NONE	240	< 10			

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Analytical Report Number : 11-28269

Replaces Analytical Report Number : 11-28269, issue no. 1

Project / Site name: Arundel Gasworks

Samples received on: 20/06/2011

Your job number:

Samples instructed on: 20/06/2011

Your order number:

Analysis completed by: 07/07/2011

Report Issue Number: 2

Report issued on: 07/07/2011

Samples Analysed: 7 leachate samples - 35 soil samples - 1 water sample

Signed: 

Dr Claire Stone
Quality Manager
For & on behalf of i2 Analytical Ltd.

Signed: 

Thurstan Plummer
Organics Technical Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting

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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180214	180215	180216	180217	180218
Sample Reference				TP101	TP102	TP102	TP103	TP104
Sample Number				ES1	ES1	ES2	ES1	ES1
Depth (m)				0.40-0.50	0.40-0.50	1.80-2.00	0.20-0.30	0.40-0.50
Date Sampled				15/06/2011	15/06/2011	15/06/2011	15/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	18
Moisture Content	%	N/A	NONE	8.1	12	14	13	8.3
Total mass of sample received	kg	0.001	NONE	0.57	0.73	0.82	0.79	0.75
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent	Absent	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.6	7.8	7.5	7.5	7.0
Total Cyanide	mg/kg	1	MCERTS	3.5	< 1.0	< 1.0	4.6	7.2
Complex Cyanide	mg/kg	1	NONE	3.5	< 1.0	< 1.0	3.5	5.2
Free Cyanide	mg/kg	1	NONE	< 1	< 1	< 1	1	2
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	22	< 5.0	< 5.0	< 5.0	40
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	< 20	< 20
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Organic Matter	%	0.1	MCERTS	2.6	1.9	0.7	7.6	0.2
Loss on Ignition @ 450°C	%	0.2	MCERTS	5.3	2.6	2.3	10	8.1

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	7.9	< 1.0	< 1.0	< 1.0	1.5
Cresols	µg/kg	1	NONE	5.2	< 1.0	< 1.0	< 1.0	< 1.0
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	4.7	< 0.1	< 0.1	0.5	0.8
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

Total Phenols (HPLC)	µg/kg	7	NONE	18	< 7.0	< 7.0	< 7.0	< 7.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	2.5	< 0.05	< 0.05	1.2	2.7
Acenaphthylene	mg/kg	0.2	MCERTS	2.6	< 0.20	< 0.20	0.90	7.0
Acenaphthene	mg/kg	0.1	MCERTS	0.50	< 0.10	< 0.10	0.22	1.4
Fluorene	mg/kg	0.2	MCERTS	2.4	< 0.20	< 0.20	0.58	7.8
Phenanthrene	mg/kg	0.2	MCERTS	24	< 0.20	< 0.20	8.6	48
Anthracene	mg/kg	0.1	MCERTS	9.1	< 0.10	< 0.10	1.7	15
Fluoranthene	mg/kg	0.2	MCERTS	48	< 0.20	< 0.20	21	63
Pyrene	mg/kg	0.2	MCERTS	36	< 0.20	< 0.20	17	48
Benzo(a)anthracene	mg/kg	0.2	MCERTS	35	< 0.20	< 0.20	13	39
Chrysene	mg/kg	0.05	MCERTS	23	< 0.05	< 0.05	14	30
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	28	< 0.10	< 0.10	19	35
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	13	< 0.20	< 0.20	8.7	19
Benzo(a)pyrene	mg/kg	0.1	MCERTS	21	< 0.10	< 0.10	14	30
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	11	< 0.20	< 0.20	10	18
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	3.0	< 0.20	< 0.20	2.0	3.5
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	9.4	< 0.05	< 0.05	9.5	18

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	270	< 1.6	< 1.6	140	390
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180214	180215	180216	180217	180218
Sample Reference				TP101	TP102	TP102	TP103	TP104
Sample Number				ES1	ES1	ES2	ES1	ES1
Depth (m)				0.40-0.50	0.40-0.50	1.80-2.00	0.20-0.30	0.40-0.50
Date Sampled				15/06/2011	15/06/2011	15/06/2011	15/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.3	11	18	26	20
Boron (water soluble)	mg/kg	0.2	MCERTS	0.7	0.4	< 0.2	1.4	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	0.2	0.5	0.3
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	33	29	34	23	27
Copper (aqua regia extractable)	mg/kg	1	MCERTS	130	16	19	91	58
Lead (aqua regia extractable)	mg/kg	2	MCERTS	90	15	14	570	260
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	1.2	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	70	17	35	26	23
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	3.4	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	62	47	65	240	180

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180214	180215	180216	180217	180218
Sample Reference	TP101	TP102	TP102	TP103	TP104
Sample Number	ES1	ES1	ES2	ES1	ES1
Depth (m)	0.40-0.50	0.40-0.50	1.80-2.00	0.20-0.30	0.40-0.50
Date Sampled	15/06/2011	15/06/2011	15/06/2011	15/06/2011	14/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Monoaromatics

Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH7 - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH7 - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10

TPH7 - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	17	< 1.0	< 1.0	14	18
TPH7 - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	40	< 2.0	< 2.0	21	52
TPH7 - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	560	< 10	< 10	180	530
TPH7 - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	1500	< 10	< 10	810	1700
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	2100	< 10	< 10	1000	2300

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180219	180220	180221	180222	180223
Sample Reference				TP104	TP105	TP105	TP106	TP106
Sample Number				ES2	ES1	ES2	ES1	ES2
Depth (m)				1.50-1.60	0.90-1.00	2.00-2.10	0.30-0.40	0.80-0.90
Date Sampled				14/06/2011	16/06/2011	16/06/2011	14/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)								
	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	46	< 0.1	37	20	38
Moisture Content	%	N/A	NONE	7.5	11	9.4	7.7	7.8
Total mass of sample received	kg	0.001	NONE	0.88	0.47	0.65	0.77	0.87
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent	Absent	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.9	6.7	6.6	7.6	7.3
Total Cyanide	mg/kg	1	MCERTS	2.1	41	3.3	9.1	64
Complex Cyanide	mg/kg	1	NONE	2.1	39	3.3	9.1	61
Free Cyanide	mg/kg	1	NONE	< 1	1	< 1	< 1	3
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	0.19	0.35	< 0.0025	1.1
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	40	6.9	< 5.0	36	21
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	< 20	260
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	< 5.0	91	< 5.0	67
Organic Matter	%	0.1	MCERTS	1.3	4.5	1.2	5.0	4.4
Loss on Ignition @ 450°C	%	0.2	MCERTS	3.9	20	5.0	8.0	6.1

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	< 1.0	4.2	< 1.0	< 1.0	< 1.0
Cresols	µg/kg	1	NONE	< 1.0	2.4	< 1.0	< 1.0	< 1.0
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	< 0.1	2.9	< 0.1	0.5	< 0.1
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0	9.5	< 7.0	< 7.0	< 7.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.43	12	0.31	4.7	8.1
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	2.6	< 0.20	8.2	2.0
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	0.78	< 0.10	1.6	0.90
Fluorene	mg/kg	0.2	MCERTS	< 0.20	2.3	0.39	10	4.4
Phenanthrene	mg/kg	0.2	MCERTS	0.37	28	2.4	68	27
Anthracene	mg/kg	0.1	MCERTS	0.15	9.9	0.60	27	5.7
Fluoranthene	mg/kg	0.2	MCERTS	0.84	56	3.9	110	40
Pyrene	mg/kg	0.2	MCERTS	0.81	48	3.0	85	33
Benzo(a)anthracene	mg/kg	0.2	MCERTS	0.59	41	2.0	76	22
Chrysene	mg/kg	0.05	MCERTS	0.62	33	1.3	61	20
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	1.1	42	1.8	89	25
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	0.41	25	0.68	26	12
Benzo(a)pyrene	mg/kg	0.1	MCERTS	1.0	37	1.4	62	18
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	0.86	24	0.78	32	11
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	4.1	< 0.20	6.4	2.4
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.0	25	0.81	30	11

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	8.4	390	19	700	240
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180219	180220	180221	180222	180223
Sample Reference				TP104	TP105	TP105	TP106	TP106
Sample Number				ES2	ES1	ES2	ES1	ES2
Depth (m)				1.50-1.60	0.90-1.00	2.00-2.10	0.30-0.40	0.80-0.90
Date Sampled				14/06/2011	16/06/2011	16/06/2011	14/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	23	29	22	34	23
Boron (water soluble)	mg/kg	0.2	MCERTS	0.3	0.2	3.3	2.2	3.1
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.2	0.3	< 0.2	0.5	0.9
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	57	41	50	25	58
Copper (aqua regia extractable)	mg/kg	1	MCERTS	27	63	47	56	31
Lead (aqua regia extractable)	mg/kg	2	MCERTS	42	1400	24	430	1000
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	0.4	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	40	46	35	26	26
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	93	290	62	210	1800

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180219	180220	180221	180222	180223
Sample Reference				TP104	TP105	TP105	TP106	TP106
Sample Number				ES2	ES1	ES2	ES1	ES2
Depth (m)				1.50-1.60	0.90-1.00	2.00-2.10	0.30-0.40	0.80-0.90
Date Sampled				14/06/2011	16/06/2011	16/06/2011	14/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	8.5
TPH7 - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	59
TPH7 - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	700
TPH7 - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	650
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	1400
TPH7 - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	45	2.5	18	18
TPH7 - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	83	< 2.0	52	33
TPH7 - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	790	10	790	1800
TPH7 - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	2100	22	2900	3100
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	3000	35	3700	5000

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180224	180225	180226	180227	180228
Sample Reference	TP106	TP107	TP107	TP108A	TP108B
Sample Number	ES3	ES1	ES2	ES1	ES1
Depth (m)	2.60-2.80	0.40-0.50	2.40-2.50	0.50-0.60	1.40-1.50
Date Sampled	14/06/2011	14/06/2011	14/06/2011	14/06/2011	14/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	14	13
Total mass of sample received	kg	0.001	NONE	0.80	0.85
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.7	7.8	7.6	7.4	7.4
Total Cyanide	mg/kg	1	MCERTS	5.2	< 1.0	2.3	100	7.9
Complex Cyanide	mg/kg	1	NONE	5.2	< 1.0	2.3	100	7.9
Free Cyanide	mg/kg	1	NONE	< 1	< 1	< 1	< 1	< 1
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	< 0.0025	0.035	0.70	0.88
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	23	12
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	< 20	< 20
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Organic Matter	%	0.1	MCERTS	0.7	1.8	0.7	4.6	2.4
Loss on Ignition @ 450°C	%	0.2	MCERTS	2.4	4.0	2.9	5.1	5.6

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	3.2	< 1.0
Cresols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	2.6	< 1.0
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	1.4	0.6
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0	< 7.0	< 7.0	7.2	< 7.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.96	< 0.05	5.5	1.5
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	0.80	< 0.20	8.9	1.5
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	0.19	< 0.10	0.94	0.31
Fluorene	mg/kg	0.2	MCERTS	< 0.20	0.38	< 0.20	2.8	0.96
Phenanthrene	mg/kg	0.2	MCERTS	< 0.20	2.1	0.37	26	9.2
Anthracene	mg/kg	0.1	MCERTS	< 0.10	0.94	0.20	15	3.3
Fluoranthene	mg/kg	0.2	MCERTS	0.37	5.4	1.2	78	22
Pyrene	mg/kg	0.2	MCERTS	0.32	4.7	1.0	66	18
Benzo(a)anthracene	mg/kg	0.2	MCERTS	0.27	3.6	0.86	58	13
Chrysene	mg/kg	0.05	MCERTS	0.18	3.6	0.59	46	12
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.27	5.4	0.97	76	17
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	< 0.20	2.0	0.37	20	5.8
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.23	4.0	0.73	57	13
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	< 0.20	2.7	0.54	33	8.4
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	0.47	< 0.20	5.7	1.5
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	2.7	0.54	34	8.4

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	1.6	40	7.4	530	130
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180224	180225	180226	180227	180228
Sample Reference				TP106	TP107	TP107	TP108A	TP108B
Sample Number				ES3	ES1	ES2	ES1	ES1
Depth (m)				2.60-2.80	0.40-0.50	2.40-2.50	0.50-0.60	1.40-1.50
Date Sampled				14/06/2011	14/06/2011	14/06/2011	14/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.8	7.3	16	14	16
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	< 0.2	1.0	0.6	1.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.2	0.4	0.4	0.3
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	16	11	28	18	12
Copper (aqua regia extractable)	mg/kg	1	MCERTS	19	45	22	42	37
Lead (aqua regia extractable)	mg/kg	2	MCERTS	11	160	18	320	580
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.4	< 0.3	< 0.3	0.5
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	11	11	35	16	10
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	2.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	28	38	64	150	130

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180224	180225	180226	180227	180228
Sample Reference				TP106	TP107	TP107	TP108A	TP108B
Sample Number				ES3	ES1	ES2	ES1	ES1
Depth (m)				2.60-2.80	0.40-0.50	2.40-2.50	0.50-0.60	1.40-1.50
Date Sampled				14/06/2011	14/06/2011	14/06/2011	14/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	3.7	< 1.0
TPH7 - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	14	< 2.0
TPH7 - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	36	< 8.0
TPH7 - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	54	< 10
TPH7 - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	7.4	< 1.0	23	15
TPH7 - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	6.6	< 2.0	52	19
TPH7 - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	28	< 10	730	190
TPH7 - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	120	< 10	2800	810
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	160	< 10	3600	1000

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180229	180230	180231	180232	180233
Sample Reference	TP109A	TP109B	TP110	TP111	TP111
Sample Number	ES1	ES1	ES1	ES1	ES2
Depth (m)	0.40-0.50	0.30-0.40	0.40-0.50	0.90-1.00	1.40-1.60
Date Sampled	15/06/2011	15/06/2011	15/06/2011	15/06/2011	15/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	33	< 0.1
Moisture Content	%	N/A	NONE	6.3	14
Total mass of sample received	kg	0.001	NONE	0.64	0.64
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.6	7.7	7.6	7.4	7.5
Total Cyanide	mg/kg	1	MCERTS	2.1	< 1.0	< 1.0	49	83
Complex Cyanide	mg/kg	1	NONE	2.1	< 1.0	< 1.0	49	82
Free Cyanide	mg/kg	1	NONE	< 1	< 1	< 1	< 1	1
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	< 0.0025	< 0.0025	< 0.0025	3.1
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	40	9.9	< 5.0	< 5.0	< 5.0
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	< 20	1900
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	460
Organic Matter	%	0.1	MCERTS	4.4	3.4	3.3	1.8	7.9
Loss on Ignition @ 450°C	%	0.2	MCERTS	6.0	9.2	4.5	4.8	6.1

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	2.2	< 1.0	< 1.0	2.0	4.3
Cresols	µg/kg	1	NONE	1.5	< 1.0	< 1.0	2.4	3.4
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	2.1	< 0.1	0.6	3.3	1.6
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0	< 7.0	< 7.0	7.7	9.3
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	10	0.65	1.6	9.1	130
Acenaphthylene	mg/kg	0.2	MCERTS	47	0.25	1.6	4.1	< 0.20
Acenaphthene	mg/kg	0.1	MCERTS	8.2	< 0.10	0.20	1.4	28
Fluorene	mg/kg	0.2	MCERTS	43	0.22	0.72	7.3	140
Phenanthrene	mg/kg	0.2	MCERTS	200	0.93	4.7	24	290
Anthracene	mg/kg	0.1	MCERTS	130	0.39	2.4	13	170
Fluoranthene	mg/kg	0.2	MCERTS	220	2.9	18	37	220
Pyrene	mg/kg	0.2	MCERTS	190	2.6	18	28	150
Benzo(a)anthracene	mg/kg	0.2	MCERTS	250	2.4	15	27	120
Chrysene	mg/kg	0.05	MCERTS	150	2.1	13	18	79
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	250	3.3	21	21	90
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	83	1.1	7.2	9.5	27
Benzo(a)pyrene	mg/kg	0.1	MCERTS	160	2.4	16	15	56
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	87	1.5	9.5	8.2	20
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	24	0.30	2.0	2.2	8.6
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	79	1.4	9.2	7.2	18

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	1900	22	140	230	1600
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180229	180230	180231	180232	180233
Sample Reference				TP109A	TP109B	TP110	TP111	TP111
Sample Number				ES1	ES1	ES1	ES1	ES2
Depth (m)				0.40-0.50	0.30-0.40	0.40-0.50	0.90-1.00	1.40-1.60
Date Sampled				15/06/2011	15/06/2011	15/06/2011	15/06/2011	15/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	21	14	16	15	11
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2	1.1	< 0.2	0.7	2.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.3	0.2	0.4	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	27	24	16	15	25
Copper (aqua regia extractable)	mg/kg	1	MCERTS	36	64	32	66	21
Lead (aqua regia extractable)	mg/kg	2	MCERTS	450	260	130	410	23
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.6	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	34	37	16	20	11
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	1.6	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	100	150	130	58	34

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180229	180230	180231	180232	180233
Sample Reference				TP109A	TP109B	TP110	TP111	TP111
Sample Number				ES1	ES1	ES1	ES1	ES2
Depth (m)				0.40-0.50	0.30-0.40	0.40-0.50	0.90-1.00	1.40-1.60
Date Sampled				15/06/2011	15/06/2011	15/06/2011	15/06/2011	15/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	3.5
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	180
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	170
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.3
TPH7 - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH7 - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH7 - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH7 - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.9
TPH7 - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	14	9.0	14	38	80
TPH7 - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	220	8.7	22	77	1100
TPH7 - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	4700	40	170	590	7400
TPH7 - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	9700	250	810	1400	9100
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	15000	310	1000	2100	18000

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180234	180235	180236	180237	180238
Sample Reference				TP112	TP112	TP113	TP113	TP114
Sample Number				ES1	ES2	ES2	ES3	ES1
Depth (m)				0.60-0.80	2.50-2.60	0.80-0.90	1.40-1.60	0.30-0.40
Date Sampled				15/06/2011	15/06/2011	15/06/2011	15/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	34	38	16	62	< 0.1
Moisture Content	%	N/A	NONE	7.9	9.0	13	5.8	6.2
Total mass of sample received	kg	0.001	NONE	0.82	0.91	0.81	0.88	0.81
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent	Absent	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.5	7.7	7.3	8.5	7.5
Total Cyanide	mg/kg	1	MCERTS	7.2	2.3	85	160	6.0
Complex Cyanide	mg/kg	1	NONE	7.2	2.3	84	150	4.4
Free Cyanide	mg/kg	1	NONE	< 1	< 1	1	7	2
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	< 0.0025	< 0.0025	0.90	< 0.0025
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	< 5.0	25	19	46	7.9
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	5600	< 20
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	730	< 5.0
Organic Matter	%	0.1	MCERTS	3.3	2.2	3.8	1.9	2.3
Loss on Ignition @ 450°C	%	0.2	MCERTS	4.8	3.7	4.7	3.3	3.1

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	2.0	< 1.0	< 1.0	< 1.0	< 1.0
Cresols	µg/kg	1	NONE	3.2	< 1.0	3.4	< 1.0	< 1.0
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	1.8	< 0.1	1.6	0.9	< 0.1
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	12	0.32	3.9	35	0.23
Acenaphthylene	mg/kg	0.2	MCERTS	9.8	< 0.20	5.0	2.1	< 0.20
Acenaphthene	mg/kg	0.1	MCERTS	1.5	< 0.10	0.85	3.8	< 0.10
Fluorene	mg/kg	0.2	MCERTS	10	< 0.20	4.6	22	< 0.20
Phenanthrene	mg/kg	0.2	MCERTS	120	0.35	22	56	< 0.20
Anthracene	mg/kg	0.1	MCERTS	55	0.17	12	21	< 0.10
Fluoranthene	mg/kg	0.2	MCERTS	150	0.88	58	39	0.28
Pyrene	mg/kg	0.2	MCERTS	120	0.72	45	28	0.24
Benzo(a)anthracene	mg/kg	0.2	MCERTS	130	0.58	40	16	< 0.20
Chrysene	mg/kg	0.05	MCERTS	87	0.48	31	12	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	130	0.60	39	13	0.19
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	43	0.25	15	3.6	< 0.20
Benzo(a)pyrene	mg/kg	0.1	MCERTS	78	0.43	30	8.8	0.14
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	46	< 0.20	14	5.0	< 0.20
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	11	< 0.20	3.2	0.78	< 0.20
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	41	< 0.05	13	4.5	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	1000	4.8	340	270	< 1.6
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180234	180235	180236	180237	180238
Sample Reference				TP112	TP112	TP113	TP113	TP114
Sample Number				ES1	ES2	ES2	ES3	ES1
Depth (m)				0.60-0.80	2.50-2.60	0.80-0.90	1.40-1.60	0.30-0.40
Date Sampled				15/06/2011	15/06/2011	15/06/2011	15/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	18	26	19	15	8.8
Boron (water soluble)	mg/kg	0.2	MCERTS	0.2	0.3	0.3	0.4	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.8	< 0.2	0.3	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	19	45	32	33	26
Copper (aqua regia extractable)	mg/kg	1	MCERTS	47	42	34	29	20
Lead (aqua regia extractable)	mg/kg	2	MCERTS	130	17	89	12	18
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	19	78	17	23	20
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	92	120	59	42	71

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180234	180235	180236	180237	180238
Sample Reference				TP112	TP112	TP113	TP113	TP114
Sample Number				ES1	ES2	ES2	ES3	ES1
Depth (m)				0.60-0.80	2.50-2.60	0.80-0.90	1.40-1.60	0.30-0.40
Date Sampled				15/06/2011	15/06/2011	15/06/2011	15/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	15	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	13	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH7 - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH7 - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH7 - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.1	< 0.1
TPH7 - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	7.5	< 1.0	15	15	< 1.0
TPH7 - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	73	< 2.0	97	280	< 2.0
TPH7 - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	1600	< 10	850	850	< 10
TPH7 - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	3800	< 10	2400	640	< 10
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	5400	< 10	3400	1800	< 10

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180239	180240	180241	180242	180243
Sample Reference				TP115	TP115	VP200B	VP200B	VP201
Sample Number				ES1	ES2	ES1	ES2	ES1
Depth (m)				0.90-1.00	2.30-2.50	0.30-0.40	0.90-1.00	0.30-0.40
Date Sampled				16/06/2011	16/06/2011	13/06/2011	13/06/2011	13/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	40	21	21	< 0.1
Moisture Content	%	N/A	NONE	10	12	11	10	11
Total mass of sample received	kg	0.001	NONE	0.58	0.69	0.82	0.87	0.91
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent	Absent	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.9	5.1	6.8	6.9	7.7
Total Cyanide	mg/kg	1	MCERTS	12	< 1.0	6.1	1.5	< 1.0
Complex Cyanide	mg/kg	1	NONE	12	< 1.0	6.1	1.5	< 1.0
Free Cyanide	mg/kg	1	NONE	< 1	< 1	< 1	< 1	< 1
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	5.3	< 0.0025	< 0.0025	< 0.0025
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	20	12	< 5.0	25	< 5.0
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	< 20	< 20
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	44	< 5.0	< 5.0	< 5.0
Organic Matter	%	0.1	MCERTS	1.7	0.9	2.2	1.2	1.7
Loss on Ignition @ 450°C	%	0.2	MCERTS	6.3	5.0	4.0	3.5	3.0

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cresols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.82	0.19	0.47	0.26	0.33
Acenaphthylene	mg/kg	0.2	MCERTS	0.77	< 0.20	< 0.20	< 0.20	< 0.20
Acenaphthene	mg/kg	0.1	MCERTS	0.22	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.2	MCERTS	0.47	< 0.20	< 0.20	< 0.20	< 0.20
Phenanthrene	mg/kg	0.2	MCERTS	3.6	< 0.20	1.5	0.29	1.6
Anthracene	mg/kg	0.1	MCERTS	1.1	< 0.10	0.71	< 0.10	0.40
Fluoranthene	mg/kg	0.2	MCERTS	9.8	< 0.20	4.0	0.37	2.3
Pyrene	mg/kg	0.2	MCERTS	8.1	< 0.20	3.2	0.30	1.8
Benzo(a)anthracene	mg/kg	0.2	MCERTS	6.3	< 0.20	2.3	< 0.20	1.1
Chrysene	mg/kg	0.05	MCERTS	5.3	< 0.05	2.4	< 0.05	1.3
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	8.8	< 0.10	2.6	< 0.10	1.2
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	2.9	< 0.20	1.3	< 0.20	0.72
Benzo(a)pyrene	mg/kg	0.1	MCERTS	6.4	< 0.10	1.9	< 0.10	0.66
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	5.3	< 0.20	1.3	< 0.20	0.47
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	0.85	< 0.20	< 0.20	< 0.20	< 0.20
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	5.8	< 0.05	1.5	< 0.05	0.79

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	67	< 1.6	23	< 1.6	13
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180239	180240	180241	180242	180243
Sample Reference				TP115	TP115	VP200B	VP200B	VP201
Sample Number				ES1	ES2	ES1	ES2	ES1
Depth (m)				0.90-1.00	2.30-2.50	0.30-0.40	0.90-1.00	0.30-0.40
Date Sampled				16/06/2011	16/06/2011	13/06/2011	13/06/2011	13/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	18	16	12	14	14
Boron (water soluble)	mg/kg	0.2	MCERTS	0.6	1.2	0.4	0.9	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	29	43	18	38	21
Copper (aqua regia extractable)	mg/kg	1	MCERTS	60	32	34	34	25
Lead (aqua regia extractable)	mg/kg	2	MCERTS	140	17	390	14	76
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	0.7	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	26	28	15	33	22
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	220	51	57	80	54

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180239	180240	180241	180242	180243
Sample Reference				TP115	TP115	VP200B	VP200B	VP201
Sample Number				ES1	ES2	ES1	ES2	ES1
Depth (m)				0.90-1.00	2.30-2.50	0.30-0.40	0.90-1.00	0.30-0.40
Date Sampled				16/06/2011	16/06/2011	13/06/2011	13/06/2011	13/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH7 - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH7 - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH7 - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	7.5	< 1.0	4.2	< 1.0	< 1.0
TPH7 - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	44	< 2.0	12	< 2.0	< 2.0
TPH7 - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	200	< 10	25	< 10	< 10
TPH7 - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	290	< 10	69	< 10	< 10
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	540	< 10	110	< 10	< 10

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180244	180245	180246	180247	180248
Sample Reference	VP202	VP203C	VP203C	VP204	VP204
Sample Number	ES1	ES1	ES2	ES1	ES2
Depth (m)	0.20-0.30	0.30-0.40	1.00-1.10	0.20-0.30	1.00-1.10
Date Sampled	13/06/2011	13/06/2011	13/06/2011	13/06/2011	13/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	17	45
Moisture Content	%	N/A	NONE	11	5.7
Total mass of sample received	kg	0.001	NONE	0.80	0.79
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.6	7.5	7.8	6.0	7.7
Total Cyanide	mg/kg	1	MCERTS	< 1.0	5.1	2.6	< 1.0	6.6
Complex Cyanide	mg/kg	1	NONE	< 1.0	5.1	2.6	< 1.0	6.6
Free Cyanide	mg/kg	1	NONE	< 1	< 1	< 1	< 1	< 1
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	93	< 5.0
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	< 20	< 20
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Organic Matter	%	0.1	MCERTS	6.4	3.3	1.8	2.9	2.3
Loss on Ignition @ 450°C	%	0.2	MCERTS	5.8	6.9	3.6	3.8	3.6

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	< 1.0	1.7	< 1.0	< 1.0	< 1.0
Cresols	µg/kg	1	NONE	< 1.0	2.1	< 1.0	< 1.0	1.1
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	1.0	1.1	< 0.1	< 0.1	0.8
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	23	2.6	0.37	2.0	0.86
Acenaphthylene	mg/kg	0.2	MCERTS	40	6.9	< 0.20	0.69	0.76
Acenaphthene	mg/kg	0.1	MCERTS	12	1.4	0.11	3.8	0.53
Fluorene	mg/kg	0.2	MCERTS	55	7.5	0.30	3.8	0.88
Phenanthrene	mg/kg	0.2	MCERTS	360	63	2.2	35	12
Anthracene	mg/kg	0.1	MCERTS	140	20	0.67	12	4.0
Fluoranthene	mg/kg	0.2	MCERTS	370	120	3.3	60	25
Pyrene	mg/kg	0.2	MCERTS	300	96	2.6	51	21
Benzo(a)anthracene	mg/kg	0.2	MCERTS	230	59	1.5	28	12
Chrysene	mg/kg	0.05	MCERTS	170	47	1.1	23	8.9
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	230	70	1.4	35	15
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	77	25	0.82	9.1	3.8
Benzo(a)pyrene	mg/kg	0.1	MCERTS	150	53	1.3	26	10
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	94	33	0.77	16	7.4
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	21	6.1	< 0.20	3.0	1.0
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	90	32	0.88	20	8.3

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	2400	650	17	330	130
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180244	180245	180246	180247	180248
Sample Reference				VP202	VP203C	VP203C	VP204	VP204
Sample Number				ES1	ES1	ES2	ES1	ES2
Depth (m)				0.20-0.30	0.30-0.40	1.00-1.10	0.20-0.30	1.00-1.10
Date Sampled				13/06/2011	13/06/2011	13/06/2011	13/06/2011	13/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	18	21	12	8.6	9.7
Boron (water soluble)	mg/kg	0.2	MCERTS	0.3	0.2	< 0.2	2.1	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	0.3	< 0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	16	24	34	23	15
Copper (aqua regia extractable)	mg/kg	1	MCERTS	960	46	16	16	26
Lead (aqua regia extractable)	mg/kg	2	MCERTS	190	270	15	23	65
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.3	0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	17	20	14	15	10
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	220	220	48	43	54

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180244	180245	180246	180247	180248
Sample Reference				VP202	VP203C	VP203C	VP204	VP204
Sample Number				ES1	ES1	ES2	ES1	ES2
Depth (m)				0.20-0.30	0.30-0.40	1.00-1.10	0.20-0.30	1.00-1.10
Date Sampled				13/06/2011	13/06/2011	13/06/2011	13/06/2011	13/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH7 - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH7 - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH7 - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	180	7.3	2.7	6.9	7.1
TPH7 - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	830	65	7.3	50	35
TPH7 - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	5100	1000	13	520	270
TPH7 - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	8000	2600	47	1300	450
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	14000	3600	70	1900	760

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Analytical Report Number : 11-28269

Replaces Analytical Report Number : 11-28269, issue no. 1

Project / Site name: Arundel Gasworks

Samples received on: 20/06/2011

Your job number:

Samples instructed on: 20/06/2011

Your order number:

Analysis completed by: 07/07/2011

Report Issue Number: 2

Report issued on: 07/07/2011

Samples Analysed: 7 leachate samples - 35 soil samples - 1 water sample

Signed: 

Dr Claire Stone
Quality Manager
For & on behalf of i2 Analytical Ltd.

Signed: 

Thurstan Plummer
Organics Technical Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting

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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180213				
Sample Reference				SW1				
Sample Number				ES1				
Depth (m)				None Supplied				
Date Sampled				Deviating				
Time Taken				None Supplied				
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

General Inorganics

pH	pH units	N/A	ISO 17025	7.2				
Electrical Conductivity	µS/cm	10	NONE	670				
Total Cyanide	µg/l	10	ISO 17025	< 10				
Complex Cyanide	ug/l	10	NONE	< 10				
Free Cyanide	µg/l	10	NONE	< 10				
Thiocyanate as SCN	µg/l	30	NONE	< 30				
Sulphate as SO ₄	ug/L	45	ISO 17025	25000				
Sulphide	µg/l	5	NONE	< 5.0				
Chloride	mg/l	4	ISO 17025	80				
Ammonium as NH ₄	ug/l	15	ISO 17025	180				
Total Organic Carbon (TOC)	mg/l	0.1	NONE	8.0				
Total Suspended Solids	mg/l	5	NONE	< 5.0				

Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5				
Resorcinol	µg/l	0.5	NONE	< 0.5				
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5				
Cresols	µg/l	0.5	NONE	< 0.5				
Naphthols	µg/l	0.5	NONE	< 0.5				
Phenol	µg/l	0.5	NONE	< 0.5				
Trimethylphenol	µg/l	0.5	NONE	< 0.5				

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	< 3.5				
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01				
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01				
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01				
Fluorene	µg/l	0.01	ISO 17025	< 0.01				
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01				
Anthracene	µg/l	0.01	ISO 17025	< 0.01				
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Pyrene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01				
Chrysene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01				
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01				
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01				

Total PAH

Total EPA-16 PAHs	µg/l	0.2	ISO 17025	< 0.2				
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Heavy Metals / Metalloids

Cadmium (dissolved)	ug/l	0.1	ISO 17025	< 0.1				
Chromium (dissolved)	ug/l	0.4	ISO 17025	1.3				
Copper (dissolved)	ug/l	0.7	ISO 17025	14				
Iron (dissolved)	mg/l	0.004	ISO 17025	0.038				
Lead (dissolved)	ug/l	1	ISO 17025	2.1				
Mercury (dissolved)	ug/l	0.5	ISO 17025	< 0.5				
Nickel (dissolved)	ug/l	0.3	ISO 17025	0.8				
Selenium (dissolved)	ug/l	4	ISO 17025	< 4.0				
Zinc (dissolved)	ug/l	0.4	ISO 17025	6.9				



Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180213				
Sample Reference				SW1				
Sample Number				ES1				
Depth (m)				None Supplied				
Date Sampled				Deviating				
Time Taken				None Supplied				
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

Monoaromatics

Benzene	µg/l	1	ISO 17025	< 1.0				
Toluene	µg/l	1	ISO 17025	< 1.0				
Ethylbenzene	µg/l	1	ISO 17025	< 1.0				
p & m-xylene	µg/l	1	ISO 17025	< 1.0				
o-xylene	µg/l	1	ISO 17025	< 1.0				
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0				

Petroleum Hydrocarbons

TPH7 - Aliphatic >C5 - C6	µg/l	10	NONE	< 10				
TPH7 - Aliphatic >C6 - C8	µg/l	10	NONE	< 10				
TPH7 - Aliphatic >C8 - C10	µg/l	10	NONE	< 10				
TPH7 - Aliphatic >C10 - C12	µg/l	10	NONE	< 10				
TPH7 - Aliphatic >C12 - C16	µg/l	10	NONE	< 10				
TPH7 - Aliphatic >C16 - C21	µg/l	10	NONE	< 10				
TPH7 - Aliphatic >C21 - C35	µg/l	10	NONE	< 10				
TPH7 - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10				

TPH7 - Aromatic >C5 - C7	µg/l	10	NONE	< 10				
TPH7 - Aromatic >C7 - C8	µg/l	10	NONE	< 10				
TPH7 - Aromatic >C8 - C10	µg/l	10	NONE	< 10				
TPH7 - Aromatic >C10 - C12	µg/l	10	NONE	< 10				
TPH7 - Aromatic >C12 - C16	µg/l	10	NONE	< 10				
TPH7 - Aromatic >C16 - C21	µg/l	10	NONE	< 10				
TPH7 - Aromatic >C21 - C35	µg/l	10	NONE	< 10				
TPH7 - Aromatic (C5 - C35)	µg/l	10	NONE	< 10				

U/S = Unsuitable Sample I/S = Insufficient Sample

Project No :	11F59A	Project code:	ARUNDEL	Turnaround:	STD	11F59A	Project code:	ARUNDEL	Turnaround:	STD
Lab ID:	11F59A01A	11F59A02A	11F59A03A	11F59A05A	11F59A06A	11F59A07A	0718BLA2			
Client ID :	VP203	VP200	VP202	VP204	VP201	TRIP BLANK	BLANK			
Bottle No :	G0147823	F069645	E057543	G0147070	E069262	G0161240	BLANK0718A			
Matrix :	AIR	AIR	AIR	AIR	AIR	AIR	AIR			
Volume/Weight :	Whole tube	Whole tube	Whole tube	Whole tube	Whole tube	Whole tube	Whole tube			
Scaling Factor :	1.0	1.0	1.0	1.0	1.0	1.0	1.0			
Lab QC No:	0718	0718	0718	0718	0718	0718	0718			
<u>ALIPHATICS (ng/Tube)</u>										

C5-C6	240	71	204	-	-	-	-
>C6-C8	-	-	145	-	1060	-	-
>C8-C10	357	389	-	602	899	-	-
>C10-C12	1271	1716	25	555	100	-	-
>C12-C16	-	-	-	-	-	-	-
>C16-C21	-	-	-	-	-	-	-
>C21-C35	-	-	-	-	-	-	-

AROMATICS (ng/Tube)

C5-C7	13	23	80	1000	4600	-	-
>C7-C8	400	140	2300	3500	13000	20	-
>C8-C10	1166	1040	2415	22228	38922	-	-
>C10-C12	-	55	-	851	160	-	-
>C12-C16	-	-	-	-	-	-	-
>C16-C21	-	-	-	-	-	-	-
>C21-C35	-	-	-	-	-	-	-

Key: - = Not detected

ALIPHATICS (ng/Tube)

AROMATICS (ng/Tube)

CHEMEX ENVIRONMENTAL INTERNATIONAL
VOLATILE ORGANICS IN AIR

Project No :	11F59A	Project code:	ARUNDEL			Turnaround:	STD
21 Jul 11 14:33							
Lab Sample ID :	11F59A01A	11F59A02A	11F59A03A	11F59A05A	11F59A06A	11F59A07A	
Client ID :	VP203	VP200	VP202	VP204	VP201	TRIP BLANK	
Bottle No :	G0147823	F069645	E057543	G0147070	E069262	G0161240	
Matrix :	AIR	AIR	AIR	AIR	AIR	AIR	
Volume/Weight :	Whole tube	Whole tube	Whole tube	Whole tube	Whole tube	Whole tube	
Scaling Factor :	1.0	1.0	1.0	1.0	1.0	1.0	

COMPOUND	Concentration ng/Tube					
Dichlorodifluoromethane_____	<15	<15	<15	<15	<15	<15
Chloromethane_____	<5	<5	<5	<5	<5	<5
Vinyl chloride_____	<5	<5	<5	<5	<5	<5
Bromomethane_____	<5	<5	<5	<5	<5	<5
Chloroethane_____	<5	<5	<5	<5	<5	<5
Trichlorofluoromethane_____	<5	<5	<5	<5	<5	<5
Acetone_____	<50	<50	<50	<50	<50	<50
Diethyl ether_____	<10	<10	<10	<10	<10	<10
1,1-Dichloroethene_____	<5	<5	<5	<5	<5	<5
Carbon disulfide_____	<4	<4	<4	<4	<4	<4
Allyl chloride_____	<10	<10	<10	<10	<10	<10
Methylene chloride_____	<5	<5	<5	<5	<5	<5
Trans-1,2-dichloroethene_____	<5	<5	<5	<5	<5	<5
tert-butyl methyl ether_____	79	<5	67	<5	<5	<5
1,1-Dichloroethane_____	<5	<5	<5	<5	<5	<5
2-Butanone_____	<50	<50	<50	<50	<50	<50
cis-1,2-Dichloroethene_____	<5	<5	<5	<5	<5	<5
2,2-Dichloropropane_____	<5	<5	<5	<5	<5	<5
Chloroform_____	26	11	<4	<4	<4	<4
Tetrahydrofuran_____	<100	<100	<100	<100	<100	<100
1,1,1-Trichloroethane_____	<4	<4	<4	<4	<4	<4
1,2-Dichloroethane_____	<5	<5	<5	<5	<5	<5
1-Chlorobutane_____	<5	<5	<5	<5	<5	<5
1,1-Dichloropropene_____	<5	<5	<5	<5	<5	<5
Benzene_____	13	23	80	1000	4600	<4
Carbon tetrachloride_____	<5	<5	<5	<5	<5	<5
2-Nitropropane_____	<10	<10	<10	<10	<10	<10
Methyl methacrylate_____	<10	<10	<10	<10	<10	<10
2-Hexanone_____	<15	<15	<15	<15	<15	<15
4-Methyl-2-pentanone_____	<25	<25	<25	<25	<25	<25
1,2-Dichloropropane_____	<5	<5	<5	<5	<5	<5
Trichloroethene_____	<5	<5	<5	<5	<5	<5
Dibromomethane_____	<5	<5	<5	<5	<5	<5
Bromodichloromethane_____	<5	<5	<5	<5	<5	<5
trans-1,3-Dichloropropene_____	<5	<5	<5	<5	<5	<5
cis-1,3-Dichloropropene_____	<5	<5	<5	<5	<5	<5
Toluene_____	400	140	2300	3500	13000	20

CHEMEX ENVIRONMENTAL INTERNATIONAL
VOLATILE ORGANICS IN AIR

Project No :		11F59A	Project code:		ARUNDEL		Turnaround:	STD
21 Jul 11	14:33							
Lab Sample ID :		11F59A01A	11F59A02A	11F59A03A	11F59A05A	11F59A06A	11F59A07A	
Client ID :		VP203	VP200	VP202	VP204	VP201	TRIP BLANK	
Bottle No :		G0147823	F069645	E057543	G0147070	E069262	G0161240	
Matrix :		AIR	AIR	AIR	AIR	AIR	AIR	
Volume/Weight :		Whole tube	Whole tube	Whole tube	Whole tube	Whole tube	Whole tube	
Scaling Factor :		1.0	1.0	1.0	1.0	1.0	1.0	
COMPOUND		Concentration ng/Tube						
1,1,2-Trichloroethane_____		<5	<5	<5	<5	<5	<5	
1,3-Dichloropropane_____		<5	<5	<5	<5	<5	<5	
Ethyl methacrylate_____		<10	<10	<10	<10	<10	<10	
Dibromochloromethane_____		<5	<5	<5	<5	<5	<5	
1,2-Dibromoethane_____		<5	<5	<5	VP204	<5	<5	
Tetrachloroethene_____		<5	<5	<5	<5	<5	<5	
Chlorobenzene_____		<4	<4	<4	<4	<4	<4	
1,1,1,2-Tetrachloroethane____		<5	<5	<5	<5	<5	<5	
Ethylbenzene_____		94	54	420	1600	5800	<4	
m&p-Xylene_____		330	210	1200	5100	12000	<7.5	
Styrene_____		<5	<5	13	360	970	<5	
Bromoform_____		<5	<5	<5	<5	<5	<5	
o-Xylene_____		130	93	370	2800	6100	<4	
1,1,2,2-Tetrachloroethane_____		<5	<5	<5	<5	<5	<5	
1,2,3-Trichloropropane_____		<5	<5	<5	<5	<5	<5	
Isopropylbenzene_____		8	<4.5	<4.5	150	420	<4.5	
trans-1,4-Dichloro-2-butene_		<10	<10	<10	<10	<10	<10	
Bromobenzene_____		<5	<5	<5	<5	<5	<5	
2-Chlorotoluene_____		<5	<5	<5	<5	<5	<5	
n-Propylbenzene_____		48	53	72	4100	4400	<5	
4-Chlorotoluene_____		<5	<5	<5	<5	<5	<5	
1,3,5-Trimethylbenzene_____		49	54	74	2500	4100	<5	
Pentachloroethane_____		<10	<10	<10	<10	<10	<10	
1,2,4-Trimethylbenzene_____		160	190	230	3400	4500	<5	
tert-Butylbenzene_____		<5	<5	<5	<5	180	<5	
1,3-Dichlorobenzene_____		<5	<5	<5	<5	<5	<5	
sec-Butylbenzene_____		<5	<5	<5	<5	<5	<5	
1,4-Dichlorobenzene_____		<5	<5	<5	<5	<5	<5	
4-Isopropyltoluene_____		<5	<5	<5	<5	<5	<5	
1,2-Dichlorobenzene_____		<5	<5	<5	<5	<5	<5	
n-Butylbenzene_____		<4.5	<4.5	<4.5	<4.5	<4.5	<4.5	
Hexachloroethane_____		<10	<10	<10	<10	<10	<10	
1,2-Dibromo-3-chloropropane		-	-	-	-	-	-	
1,2,4-Trichlorobenzene_____		-	-	-	-	-	-	
Naphthalene_____		<500	<500	<500	<500	<500	<500	
1,2,3-Trichlorobenzene_____		-	-	-	-	-	-	
Hexachlorobutadiene_____		<100	<100	<100	<100	<100	<100	

CHEMEX ENVIRONMENTAL INTERNATIONAL
VOLATILE ORGANICS IN AIR

Project No : 11F59A Project code: ARUNDEL Turnaround: STD

21 Jul 11 14:33

Lab Sample ID : 0718BLA2
Client ID : BLANK
Bottle No : BLANK0718A
Matrix : AIR
Volume/Weight : Whole tube
Scaling Factor : 1.0

COMPOUND	Concentration ng/Tube
Dichlorodifluoromethane_____	<15
Chloromethane_____	<5
Vinyl chloride_____	<5
Bromomethane_____	<5
Chloroethane_____	<5
Trichlorofluoromethane_____	<5
Acetone_____	<50
Diethyl ether_____	<10
1,1-Dichloroethene_____	<5
Carbon disulfide_____	<4
Allyl chloride_____	<10
Methylene chloride_____	<5
Trans-1,2-dichloroethene_____	<5
tert-butyl methyl ether_____	<5
1,1-Dichloroethane_____	<5
2-Butanone_____	<50
cis-1,2-Dichloroethene_____	<5
2,2-Dichloropropane_____	<5
Chloroform_____	<4
Tetrahydrofuran_____	<100
1,1,1-Trichloroethane_____	<4
1,2-Dichloroethane_____	<5
1-Chlorobutane_____	<5
1,1-Dichloropropene_____	<5
Benzene_____	<4
Carbon tetrachloride_____	<5
2-Nitropropane_____	<10
Methyl methacrylate_____	<10
2-Hexanone_____	<15
4-Methyl-2-pentanone_____	<25
1,2-Dichloropropane_____	<5
Trichloroethene_____	<5
Dibromomethane_____	<5
Bromodichloromethane_____	<5
trans-1,3-Dichloropropene_____	<5
cis-1,3-Dichloropropene_____	<5
Toluene_____	<5

CHEMEX ENVIRONMENTAL INTERNATIONAL
VOLATILE ORGANICS IN AIR

Project No :	11F59A	Project code:	ARUNDEL	Turnaround:	STD
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21 Jul 11 14:33

Lab Sample ID :	0718BLA2
Client ID :	BLANK
Bottle No :	BLANK0718A
Matrix :	AIR
Volume/Weight :	Whole tube
Scaling Factor :	1.0

COMPOUND	Concentration ng/Tube
1,1,2-Trichloroethane_____	<5
1,3-Dichloropropane_____	<5
Ethyl methacrylate_____	<10
Dibromochloromethane_____	<5
1,2-Dibromoethane_____	<5
Tetrachloroethene_____	<5
Chlorobenzene_____	<4
1,1,1,2-Tetrachloroethane_____	<5
Ethylbenzene_____	<4
m&p-Xylene_____	<7.5
Styrene_____	<5
Bromoform_____	<5
o-Xylene_____	<4
1,1,2,2-Tetrachloroethane_____	<5
1,2,3-Trichloropropane_____	<5
Isopropylbenzene_____	<4.5
trans-1,4-Dichloro-2-butene_____	<10
Bromobenzene_____	<5
2-Chlorotoluene_____	<5
n-Propylbenzene_____	<5
4-Chlorotoluene_____	<5
1,3,5-Trimethylbenzene_____	<5
Pentachloroethane_____	<10
1,2,4-Trimethylbenzene_____	<5
tert-Butylbenzene_____	<5
1,3-Dichlorobenzene_____	<5
sec-Butylbenzene_____	<5
1,4-Dichlorobenzene_____	<5
4-Isopropyltoluene_____	<5
1,2-Dichlorobenzene_____	<5
n-Butylbenzene_____	<4.5
Hexachloroethane_____	<10
1,2-Dibromo-3-chloropropane_____	-
1,2,4-Trichlorobenzene_____	-
Naphthalene_____	<500
1,2,3-Trichlorobenzene_____	-
Hexachlorobutadiene_____	<100



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Analytical Report Number : 11-28269

Replaces Analytical Report Number : 11-28269, issue no. 1

Project / Site name:	Arundel Gasworks	Samples received on:	20/06/2011
Your job number:		Samples instructed on:	20/06/2011
Your order number:		Analysis completed by:	07/07/2011
Report Issue Number:	2	Report issued on:	07/07/2011
Samples Analysed:	7 leachate samples - 35 soil samples - 1 water sample		

Signed: 

Dr Claire Stone
Quality Manager
For & on behalf of i2 Analytical Ltd.

Signed: 

Thurstan Plummer
Organics Technical Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Analytical Report Number: 11-28269
Project / Site name: Arundel Gasworks

Lab Sample Number	180214				180215	180216	180217	180218
Sample Reference	TP101				TP102	TP102	TP103	TP104
Sample Number	ES1				ES1	ES2	ES1	ES1
Depth (m)	0.40-0.50				0.40-0.50	1.80-2.00	0.20-0.30	0.40-0.50
Date Sampled	15/06/2011				15/06/2011	15/06/2011	15/06/2011	14/06/2011
Time Taken	None Supplied				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	18
Moisture Content	%	N/A	NONE	8.1	12	14	13	8.3
Total mass of sample received	kg	0.001	NONE	0.57	0.73	0.82	0.79	0.75
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent	Absent	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.6	7.8	7.5	7.5	7.0
Total Cyanide	mg/kg	1	MCERTS	3.5	< 1.0	< 1.0	4.6	7.2
Complex Cyanide	mg/kg	1	NONE	3.5	< 1.0	< 1.0	3.5	5.2
Free Cyanide	mg/kg	1	NONE	< 1	< 1	< 1	1	2
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	22	< 5.0	< 5.0	< 5.0	40
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	< 20	< 20
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Organic Matter	%	0.1	MCERTS	2.6	1.9	0.7	7.6	0.2
Loss on Ignition @ 450°C	%	0.2	MCERTS	5.3	2.6	2.3	10	8.1

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	7.9	< 1.0	< 1.0	< 1.0	1.5
Cresols	µg/kg	1	NONE	5.2	< 1.0	< 1.0	< 1.0	< 1.0
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	4.7	< 0.1	< 0.1	0.5	0.8
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

Total Phenols (HPLC)	µg/kg	7	NONE	18	< 7.0	< 7.0	< 7.0	< 7.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	2.5	< 0.05	< 0.05	1.2	2.7
Acenaphthylene	mg/kg	0.2	MCERTS	2.6	< 0.20	< 0.20	0.90	7.0
Acenaphthene	mg/kg	0.1	MCERTS	0.50	< 0.10	< 0.10	0.22	1.4
Fluorene	mg/kg	0.2	MCERTS	2.4	< 0.20	< 0.20	0.58	7.8
Phenanthrene	mg/kg	0.2	MCERTS	24	< 0.20	< 0.20	8.6	48
Anthracene	mg/kg	0.1	MCERTS	9.1	< 0.10	< 0.10	1.7	15
Fluoranthene	mg/kg	0.2	MCERTS	48	< 0.20	< 0.20	21	63
Pyrene	mg/kg	0.2	MCERTS	36	< 0.20	< 0.20	17	48
Benzo(a)anthracene	mg/kg	0.2	MCERTS	35	< 0.20	< 0.20	13	39
Chrysene	mg/kg	0.05	MCERTS	23	< 0.05	< 0.05	14	30
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	28	< 0.10	< 0.10	19	35
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	13	< 0.20	< 0.20	8.7	19
Benzo(a)pyrene	mg/kg	0.1	MCERTS	21	< 0.10	< 0.10	14	30
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	11	< 0.20	< 0.20	10	18
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	3.0	< 0.20	< 0.20	2.0	3.5
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	9.4	< 0.05	< 0.05	9.5	18

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	270	< 1.6	< 1.6	140	390
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180214	180215	180216	180217	180218
Sample Reference				TP101	TP102	TP102	TP103	TP104
Sample Number				ES1	ES1	ES2	ES1	ES1
Depth (m)				0.40-0.50	0.40-0.50	1.80-2.00	0.20-0.30	0.40-0.50
Date Sampled				15/06/2011	15/06/2011	15/06/2011	15/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.3	11	18	26	20
Boron (water soluble)	mg/kg	0.2	MCERTS	0.7	0.4	< 0.2	1.4	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	0.2	0.5	0.3
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	33	29	34	23	27
Copper (aqua regia extractable)	mg/kg	1	MCERTS	130	16	19	91	58
Lead (aqua regia extractable)	mg/kg	2	MCERTS	90	15	14	570	260
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	1.2	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	70	17	35	26	23
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	3.4	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	62	47	65	240	180

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180214	180215	180216	180217	180218
Sample Reference	TP101	TP102	TP102	TP103	TP104
Sample Number	ES1	ES1	ES2	ES1	ES1
Depth (m)	0.40-0.50	0.40-0.50	1.80-2.00	0.20-0.30	0.40-0.50
Date Sampled	15/06/2011	15/06/2011	15/06/2011	15/06/2011	14/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Monoaromatics

Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH7 - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH7 - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10

TPH7 - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	17	< 1.0	< 1.0	14	18
TPH7 - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	40	< 2.0	< 2.0	21	52
TPH7 - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	560	< 10	< 10	180	530
TPH7 - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	1500	< 10	< 10	810	1700
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	2100	< 10	< 10	1000	2300

Analytical Report Number: 11-28269
Project / Site name: Arundel Gasworks

Lab Sample Number				180219	180220	180221	180222	180223
Sample Reference				TP104	TP105	TP105	TP106	TP106
Sample Number				ES2	ES1	ES2	ES1	ES2
Depth (m)				1.50-1.60	0.90-1.00	2.00-2.10	0.30-0.40	0.80-0.90
Date Sampled				14/06/2011	16/06/2011	16/06/2011	14/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	46	< 0.1	37	20	38
Moisture Content	%	N/A	NONE	7.5	11	9.4	7.7	7.8
Total mass of sample received	kg	0.001	NONE	0.88	0.47	0.65	0.77	0.87
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent	Absent	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.9	6.7	6.6	7.6	7.3
Total Cyanide	mg/kg	1	MCERTS	2.1	41	3.3	9.1	64
Complex Cyanide	mg/kg	1	NONE	2.1	39	3.3	9.1	61
Free Cyanide	mg/kg	1	NONE	< 1	1	< 1	< 1	3
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	0.19	0.35	< 0.0025	1.1
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	40	6.9	< 5.0	36	21
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	< 20	260
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	< 5.0	91	< 5.0	67
Organic Matter	%	0.1	MCERTS	1.3	4.5	1.2	5.0	4.4
Loss on Ignition @ 450°C	%	0.2	MCERTS	3.9	20	5.0	8.0	6.1

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	< 1.0	4.2	< 1.0	< 1.0	< 1.0
Cresols	µg/kg	1	NONE	< 1.0	2.4	< 1.0	< 1.0	< 1.0
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	< 0.1	2.9	< 0.1	0.5	< 0.1
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0	9.5	< 7.0	< 7.0	< 7.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.43	12	0.31	4.7	8.1
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	2.6	< 0.20	8.2	2.0
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	0.78	< 0.10	1.6	0.90
Fluorene	mg/kg	0.2	MCERTS	< 0.20	2.3	0.39	10	4.4
Phenanthrene	mg/kg	0.2	MCERTS	0.37	28	2.4	68	27
Anthracene	mg/kg	0.1	MCERTS	0.15	9.9	0.60	27	5.7
Fluoranthene	mg/kg	0.2	MCERTS	0.84	56	3.9	110	40
Pyrene	mg/kg	0.2	MCERTS	0.81	48	3.0	85	33
Benzo(a)anthracene	mg/kg	0.2	MCERTS	0.59	41	2.0	76	22
Chrysene	mg/kg	0.05	MCERTS	0.62	33	1.3	61	20
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	1.1	42	1.8	89	25
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	0.41	25	0.68	26	12
Benzo(a)pyrene	mg/kg	0.1	MCERTS	1.0	37	1.4	62	18
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	0.86	24	0.78	32	11
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	4.1	< 0.20	6.4	2.4
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.0	25	0.81	30	11

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	8.4	390	19	700	240
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180219	180220	180221	180222	180223
Sample Reference				TP104	TP105	TP105	TP106	TP106
Sample Number				ES2	ES1	ES2	ES1	ES2
Depth (m)				1.50-1.60	0.90-1.00	2.00-2.10	0.30-0.40	0.80-0.90
Date Sampled				14/06/2011	16/06/2011	16/06/2011	14/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	23	29	22	34	23
Boron (water soluble)	mg/kg	0.2	MCERTS	0.3	0.2	3.3	2.2	3.1
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.2	0.3	< 0.2	0.5	0.9
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	57	41	50	25	58
Copper (aqua regia extractable)	mg/kg	1	MCERTS	27	63	47	56	31
Lead (aqua regia extractable)	mg/kg	2	MCERTS	42	1400	24	430	1000
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	0.4	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	40	46	35	26	26
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	93	290	62	210	1800

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180219	180220	180221	180222	180223
Sample Reference				TP104	TP105	TP105	TP106	TP106
Sample Number				ES2	ES1	ES2	ES1	ES2
Depth (m)				1.50-1.60	0.90-1.00	2.00-2.10	0.30-0.40	0.80-0.90
Date Sampled				14/06/2011	16/06/2011	16/06/2011	14/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Monoaromatics								
Benzene				µg/kg	1	MCERTS	< 1.0	< 1.0
Toluene				µg/kg	1	MCERTS	< 1.0	< 1.0
Ethylbenzene				µg/kg	1	MCERTS	< 1.0	< 1.0
p & m-xylene				µg/kg	1	MCERTS	< 1.0	< 1.0
o-xylene				µg/kg	1	MCERTS	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)				µg/kg	1	MCERTS	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	8.5
TPH7 - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	59
TPH7 - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	700
TPH7 - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	650
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	1400

TPH7 - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	45	2.5	18	18
TPH7 - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	83	< 2.0	52	33
TPH7 - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	790	10	790	1800
TPH7 - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	2100	22	2900	3100
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	3000	35	3700	5000

Analytical Report Number: 11-28269
Project / Site name: Arundel Gasworks

Lab Sample Number	180224				180225	180226	180227	180228
Sample Reference	TP106				TP107	TP107	TP108A	TP108B
Sample Number	ES3				ES1	ES2	ES1	ES1
Depth (m)	2.60-2.80				0.40-0.50	2.40-2.50	0.50-0.60	1.40-1.50
Date Sampled	14/06/2011				14/06/2011	14/06/2011	14/06/2011	14/06/2011
Time Taken	None Supplied				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	26	< 0.1
Moisture Content	%	N/A	NONE	14	13	12	7.1	12
Total mass of sample received	kg	0.001	NONE	0.80	0.85	0.98	0.81	0.81
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent	Absent	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.7	7.8	7.6	7.4	7.4
Total Cyanide	mg/kg	1	MCERTS	5.2	< 1.0	2.3	100	7.9
Complex Cyanide	mg/kg	1	NONE	5.2	< 1.0	2.3	100	7.9
Free Cyanide	mg/kg	1	NONE	< 1	< 1	< 1	< 1	< 1
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	< 0.0025	0.035	0.70	0.88
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	23	12
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	< 20	< 20
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Organic Matter	%	0.1	MCERTS	0.7	1.8	0.7	4.6	2.4
Loss on Ignition @ 450°C	%	0.2	MCERTS	2.4	4.0	2.9	5.1	5.6

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	3.2	< 1.0
Cresols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	2.6	< 1.0
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	1.4	0.6
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0	< 7.0	< 7.0	7.2	< 7.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.96	< 0.05	5.5	1.5
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	0.80	< 0.20	8.9	1.5
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	0.19	< 0.10	0.94	0.31
Fluorene	mg/kg	0.2	MCERTS	< 0.20	0.38	< 0.20	2.8	0.96
Phenanthrene	mg/kg	0.2	MCERTS	< 0.20	2.1	0.37	26	9.2
Anthracene	mg/kg	0.1	MCERTS	< 0.10	0.94	0.20	15	3.3
Fluoranthene	mg/kg	0.2	MCERTS	0.37	5.4	1.2	78	22
Pyrene	mg/kg	0.2	MCERTS	0.32	4.7	1.0	66	18
Benzo(a)anthracene	mg/kg	0.2	MCERTS	0.27	3.6	0.86	58	13
Chrysene	mg/kg	0.05	MCERTS	0.18	3.6	0.59	46	12
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.27	5.4	0.97	76	17
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	< 0.20	2.0	0.37	20	5.8
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.23	4.0	0.73	57	13
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	< 0.20	2.7	0.54	33	8.4
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	0.47	< 0.20	5.7	1.5
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	2.7	0.54	34	8.4

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	1.6	40	7.4	530	130
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180224	180225	180226	180227	180228
Sample Reference				TP106	TP107	TP107	TP108A	TP108B
Sample Number				ES3	ES1	ES2	ES1	ES1
Depth (m)				2.60-2.80	0.40-0.50	2.40-2.50	0.50-0.60	1.40-1.50
Date Sampled				14/06/2011	14/06/2011	14/06/2011	14/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.8	7.3	16	14	16
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	< 0.2	1.0	0.6	1.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.2	0.4	0.4	0.3
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	16	11	28	18	12
Copper (aqua regia extractable)	mg/kg	1	MCERTS	19	45	22	42	37
Lead (aqua regia extractable)	mg/kg	2	MCERTS	11	160	18	320	580
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.4	< 0.3	< 0.3	0.5
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	11	11	35	16	10
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	2.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	28	38	64	150	130

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180224	180225	180226	180227	180228
Sample Reference				TP106	TP107	TP107	TP108A	TP108B
Sample Number				ES3	ES1	ES2	ES1	ES1
Depth (m)				2.60-2.80	0.40-0.50	2.40-2.50	0.50-0.60	1.40-1.50
Date Sampled				14/06/2011	14/06/2011	14/06/2011	14/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	3.7	< 1.0
TPH7 - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	14	< 2.0
TPH7 - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	36	< 8.0
TPH7 - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	54	< 10

TPH7 - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	7.4	< 1.0	23	15
TPH7 - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	6.6	< 2.0	52	19
TPH7 - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	28	< 10	730	190
TPH7 - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	120	< 10	2800	810
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	160	< 10	3600	1000

Analytical Report Number: 11-28269
Project / Site name: Arundel Gasworks

Lab Sample Number				180229	180230	180231	180232	180233
Sample Reference				TP109A	TP109B	TP110	TP111	TP111
Sample Number				ES1	ES1	ES1	ES1	ES2
Depth (m)				0.40-0.50	0.30-0.40	0.40-0.50	0.90-1.00	1.40-1.60
Date Sampled				15/06/2011	15/06/2011	15/06/2011	15/06/2011	15/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	33	< 0.1	26	24	< 0.1
Moisture Content	%	N/A	NONE	6.3	14	5.9	10	16
Total mass of sample received	kg	0.001	NONE	0.64	0.64	0.81	0.79	0.88
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent	Absent	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.6	7.7	7.6	7.4	7.5
Total Cyanide	mg/kg	1	MCERTS	2.1	< 1.0	< 1.0	49	83
Complex Cyanide	mg/kg	1	NONE	2.1	< 1.0	< 1.0	49	82
Free Cyanide	mg/kg	1	NONE	< 1	< 1	< 1	< 1	1
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	< 0.0025	< 0.0025	< 0.0025	3.1
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	40	9.9	< 5.0	< 5.0	< 5.0
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	< 20	1900
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	460
Organic Matter	%	0.1	MCERTS	4.4	3.4	3.3	1.8	7.9
Loss on Ignition @ 450°C	%	0.2	MCERTS	6.0	9.2	4.5	4.8	6.1

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	2.2	< 1.0	< 1.0	2.0	4.3
Cresols	µg/kg	1	NONE	1.5	< 1.0	< 1.0	2.4	3.4
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	2.1	< 0.1	0.6	3.3	1.6
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0	< 7.0	< 7.0	7.7	9.3
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	10	0.65	1.6	9.1	130
Acenaphthylene	mg/kg	0.2	MCERTS	47	0.25	1.6	4.1	< 0.20
Acenaphthene	mg/kg	0.1	MCERTS	8.2	< 0.10	0.20	1.4	28
Fluorene	mg/kg	0.2	MCERTS	43	0.22	0.72	7.3	140
Phenanthrene	mg/kg	0.2	MCERTS	200	0.93	4.7	24	290
Anthracene	mg/kg	0.1	MCERTS	130	0.39	2.4	13	170
Fluoranthene	mg/kg	0.2	MCERTS	220	2.9	18	37	220
Pyrene	mg/kg	0.2	MCERTS	190	2.6	18	28	150
Benzo(a)anthracene	mg/kg	0.2	MCERTS	250	2.4	15	27	120
Chrysene	mg/kg	0.05	MCERTS	150	2.1	13	18	79
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	250	3.3	21	21	90
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	83	1.1	7.2	9.5	27
Benzo(a)pyrene	mg/kg	0.1	MCERTS	160	2.4	16	15	56
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	87	1.5	9.5	8.2	20
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	24	0.30	2.0	2.2	8.6
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	79	1.4	9.2	7.2	18

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	1900	22	140	230	1600
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180229	180230	180231	180232	180233
Sample Reference				TP109A	TP109B	TP110	TP111	TP111
Sample Number				ES1	ES1	ES1	ES1	ES2
Depth (m)				0.40-0.50	0.30-0.40	0.40-0.50	0.90-1.00	1.40-1.60
Date Sampled				15/06/2011	15/06/2011	15/06/2011	15/06/2011	15/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	21	14	16	15	11
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2	1.1	< 0.2	0.7	2.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.3	0.2	0.4	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	27	24	16	15	25
Copper (aqua regia extractable)	mg/kg	1	MCERTS	36	64	32	66	21
Lead (aqua regia extractable)	mg/kg	2	MCERTS	450	260	130	410	23
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.6	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	34	37	16	20	11
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	1.6	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	100	150	130	58	34

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180229	180230	180231	180232	180233
Sample Reference				TP109A	TP109B	TP110	TP111	TP111
Sample Number				ES1	ES1	ES1	ES1	ES2
Depth (m)				0.40-0.50	0.30-0.40	0.40-0.50	0.90-1.00	1.40-1.60
Date Sampled				15/06/2011	15/06/2011	15/06/2011	15/06/2011	15/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	3.5
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	180
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	170
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.3
TPH7 - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH7 - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH7 - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH7 - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.9
TPH7 - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	14	9.0	14	38	80
TPH7 - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	220	8.7	22	77	1100
TPH7 - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	4700	40	170	590	7400
TPH7 - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	9700	250	810	1400	9100
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	15000	310	1000	2100	18000

Analytical Report Number: 11-28269
Project / Site name: Arundel Gasworks

Lab Sample Number	180234				180235	180236	180237	180238
Sample Reference	TP112				TP112	TP113	TP113	TP114
Sample Number	ES1				ES2	ES2	ES3	ES1
Depth (m)	0.60-0.80				2.50-2.60	0.80-0.90	1.40-1.60	0.30-0.40
Date Sampled	15/06/2011				15/06/2011	15/06/2011	15/06/2011	14/06/2011
Time Taken	None Supplied				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	34	38	16	62	< 0.1
Moisture Content	%	N/A	NONE	7.9	9.0	13	5.8	6.2
Total mass of sample received	kg	0.001	NONE	0.82	0.91	0.81	0.88	0.81
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent	Absent	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.5	7.7	7.3	8.5	7.5
Total Cyanide	mg/kg	1	MCERTS	7.2	2.3	85	160	6.0
Complex Cyanide	mg/kg	1	NONE	7.2	2.3	84	150	4.4
Free Cyanide	mg/kg	1	NONE	< 1	< 1	1	7	2
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	< 0.0025	< 0.0025	0.90	< 0.0025
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	< 5.0	25	19	46	7.9
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	5600	< 20
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	730	< 5.0
Organic Matter	%	0.1	MCERTS	3.3	2.2	3.8	1.9	2.3
Loss on Ignition @ 450°C	%	0.2	MCERTS	4.8	3.7	4.7	3.3	3.1

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	2.0	< 1.0	< 1.0	< 1.0	< 1.0
Cresols	µg/kg	1	NONE	3.2	< 1.0	3.4	< 1.0	< 1.0
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	1.8	< 0.1	1.6	0.9	< 0.1
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	12	0.32	3.9	35	0.23
Acenaphthylene	mg/kg	0.2	MCERTS	9.8	< 0.20	5.0	2.1	< 0.20
Acenaphthene	mg/kg	0.1	MCERTS	1.5	< 0.10	0.85	3.8	< 0.10
Fluorene	mg/kg	0.2	MCERTS	10	< 0.20	4.6	22	< 0.20
Phenanthrene	mg/kg	0.2	MCERTS	120	0.35	22	56	< 0.20
Anthracene	mg/kg	0.1	MCERTS	55	0.17	12	21	< 0.10
Fluoranthene	mg/kg	0.2	MCERTS	150	0.88	58	39	0.28
Pyrene	mg/kg	0.2	MCERTS	120	0.72	45	28	0.24
Benzo(a)anthracene	mg/kg	0.2	MCERTS	130	0.58	40	16	< 0.20
Chrysene	mg/kg	0.05	MCERTS	87	0.48	31	12	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	130	0.60	39	13	0.19
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	43	0.25	15	3.6	< 0.20
Benzo(a)pyrene	mg/kg	0.1	MCERTS	78	0.43	30	8.8	0.14
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	46	< 0.20	14	5.0	< 0.20
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	11	< 0.20	3.2	0.78	< 0.20
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	41	< 0.05	13	4.5	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	1000	4.8	340	270	< 1.6
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180234	180235	180236	180237	180238
Sample Reference				TP112	TP112	TP113	TP113	TP114
Sample Number				ES1	ES2	ES2	ES3	ES1
Depth (m)				0.60-0.80	2.50-2.60	0.80-0.90	1.40-1.60	0.30-0.40
Date Sampled				15/06/2011	15/06/2011	15/06/2011	15/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	18	26	19	15	8.8
Boron (water soluble)	mg/kg	0.2	MCERTS	0.2	0.3	0.3	0.4	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.8	< 0.2	0.3	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	19	45	32	33	26
Copper (aqua regia extractable)	mg/kg	1	MCERTS	47	42	34	29	20
Lead (aqua regia extractable)	mg/kg	2	MCERTS	130	17	89	12	18
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	19	78	17	23	20
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	92	120	59	42	71

Analytical Report Number: 11-28269
Project / Site name: Arundel Gasworks

Lab Sample Number				180234	180235	180236	180237	180238
Sample Reference				TP112	TP112	TP113	TP113	TP114
Sample Number				ES1	ES2	ES2	ES3	ES1
Depth (m)				0.60-0.80	2.50-2.60	0.80-0.90	1.40-1.60	0.30-0.40
Date Sampled				15/06/2011	15/06/2011	15/06/2011	15/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Monoaromatics								
Benzene				µg/kg	1	MCERTS	< 1.0	< 1.0
Toluene				µg/kg	1	MCERTS	< 1.0	< 1.0
Ethylbenzene				µg/kg	1	MCERTS	< 1.0	< 1.0
p & m-xylene				µg/kg	1	MCERTS	< 1.0	< 1.0
o-xylene				µg/kg	1	MCERTS	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)				µg/kg	1	MCERTS	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH7 - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH7 - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10

TPH7 - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.1	< 0.1
TPH7 - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	7.5	< 1.0	15	15	< 1.0
TPH7 - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	73	< 2.0	97	280	< 2.0
TPH7 - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	1600	< 10	850	850	< 10
TPH7 - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	3800	< 10	2400	640	< 10
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	5400	< 10	3400	1800	< 10

Analytical Report Number: 11-28269
Project / Site name: Arundel Gasworks

Lab Sample Number	180239				180240	180241	180242	180243
Sample Reference	TP115				TP115	VP200B	VP200B	VP201
Sample Number	ES1				ES2	ES1	ES2	ES1
Depth (m)	0.90-1.00				2.30-2.50	0.30-0.40	0.90-1.00	0.30-0.40
Date Sampled	16/06/2011				16/06/2011	13/06/2011	13/06/2011	13/06/2011
Time Taken	None Supplied				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	40	21	21	< 0.1
Moisture Content	%	N/A	NONE	10	12	11	10	11
Total mass of sample received	kg	0.001	NONE	0.58	0.69	0.82	0.87	0.91
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent	Absent	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.9	5.1	6.8	6.9	7.7
Total Cyanide	mg/kg	1	MCERTS	12	< 1.0	6.1	1.5	< 1.0
Complex Cyanide	mg/kg	1	NONE	12	< 1.0	6.1	1.5	< 1.0
Free Cyanide	mg/kg	1	NONE	< 1	< 1	< 1	< 1	< 1
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	5.3	< 0.0025	< 0.0025	< 0.0025
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	20	12	< 5.0	25	< 5.0
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	< 20	< 20
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	44	< 5.0	< 5.0	< 5.0
Organic Matter	%	0.1	MCERTS	1.7	0.9	2.2	1.2	1.7
Loss on Ignition @ 450°C	%	0.2	MCERTS	6.3	5.0	4.0	3.5	3.0

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cresols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.82	0.19	0.47	0.26	0.33
Acenaphthylene	mg/kg	0.2	MCERTS	0.77	< 0.20	< 0.20	< 0.20	< 0.20
Acenaphthene	mg/kg	0.1	MCERTS	0.22	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.2	MCERTS	0.47	< 0.20	< 0.20	< 0.20	< 0.20
Phenanthrene	mg/kg	0.2	MCERTS	3.6	< 0.20	1.5	0.29	1.6
Anthracene	mg/kg	0.1	MCERTS	1.1	< 0.10	0.71	< 0.10	0.40
Fluoranthene	mg/kg	0.2	MCERTS	9.8	< 0.20	4.0	0.37	2.3
Pyrene	mg/kg	0.2	MCERTS	8.1	< 0.20	3.2	0.30	1.8
Benzo(a)anthracene	mg/kg	0.2	MCERTS	6.3	< 0.20	2.3	< 0.20	1.1
Chrysene	mg/kg	0.05	MCERTS	5.3	< 0.05	2.4	< 0.05	1.3
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	8.8	< 0.10	2.6	< 0.10	1.2
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	2.9	< 0.20	1.3	< 0.20	0.72
Benzo(a)pyrene	mg/kg	0.1	MCERTS	6.4	< 0.10	1.9	< 0.10	0.66
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	5.3	< 0.20	1.3	< 0.20	0.47
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	0.85	< 0.20	< 0.20	< 0.20	< 0.20
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	5.8	< 0.05	1.5	< 0.05	0.79

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	67	< 1.6	23	< 1.6	13
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180239	180240	180241	180242	180243
Sample Reference				TP115	TP115	VP200B	VP200B	VP201
Sample Number				ES1	ES2	ES1	ES2	ES1
Depth (m)				0.90-1.00	2.30-2.50	0.30-0.40	0.90-1.00	0.30-0.40
Date Sampled				16/06/2011	16/06/2011	13/06/2011	13/06/2011	13/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	18	16	12	14	14
Boron (water soluble)	mg/kg	0.2	MCERTS	0.6	1.2	0.4	0.9	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	29	43	18	38	21
Copper (aqua regia extractable)	mg/kg	1	MCERTS	60	32	34	34	25
Lead (aqua regia extractable)	mg/kg	2	MCERTS	140	17	390	14	76
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	0.7	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	26	28	15	33	22
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	220	51	57	80	54

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180239	180240	180241	180242	180243
Sample Reference				TP115	TP115	VP200B	VP200B	VP201
Sample Number				ES1	ES2	ES1	ES2	ES1
Depth (m)				0.90-1.00	2.30-2.50	0.30-0.40	0.90-1.00	0.30-0.40
Date Sampled				16/06/2011	16/06/2011	13/06/2011	13/06/2011	13/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH7 - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH7 - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10

TPH7 - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	7.5	< 1.0	4.2	< 1.0	< 1.0
TPH7 - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	44	< 2.0	12	< 2.0	< 2.0
TPH7 - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	200	< 10	25	< 10	< 10
TPH7 - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	290	< 10	69	< 10	< 10
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	540	< 10	110	< 10	< 10

Analytical Report Number: 11-28269
Project / Site name: Arundel Gasworks

Lab Sample Number	180244				180245	180246	180247	180248
Sample Reference	VP202				VP203C	VP203C	VP204	VP204
Sample Number	ES1				ES1	ES2	ES1	ES2
Depth (m)	0.20-0.30				0.30-0.40	1.00-1.10	0.20-0.30	1.00-1.10
Date Sampled	13/06/2011				13/06/2011	13/06/2011	13/06/2011	13/06/2011
Time Taken	None Supplied				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	17	45	41	< 0.1	29
Moisture Content	%	N/A	NONE	11	5.7	4.1	5.1	6.9
Total mass of sample received	kg	0.001	NONE	0.80	0.79	0.82	0.88	0.84
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent	Absent	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.6	7.5	7.8	6.0	7.7
Total Cyanide	mg/kg	1	MCERTS	< 1.0	5.1	2.6	< 1.0	6.6
Complex Cyanide	mg/kg	1	NONE	< 1.0	5.1	2.6	< 1.0	6.6
Free Cyanide	mg/kg	1	NONE	< 1	< 1	< 1	< 1	< 1
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	93	< 5.0
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	< 20	< 20
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Organic Matter	%	0.1	MCERTS	6.4	3.3	1.8	2.9	2.3
Loss on Ignition @ 450°C	%	0.2	MCERTS	5.8	6.9	3.6	3.8	3.6

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	< 1.0	1.7	< 1.0	< 1.0	< 1.0
Cresols	µg/kg	1	NONE	< 1.0	2.1	< 1.0	< 1.0	1.1
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	1.0	1.1	< 0.1	< 0.1	0.8
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	23	2.6	0.37	2.0	0.86
Acenaphthylene	mg/kg	0.2	MCERTS	40	6.9	< 0.20	0.69	0.76
Acenaphthene	mg/kg	0.1	MCERTS	12	1.4	0.11	3.8	0.53
Fluorene	mg/kg	0.2	MCERTS	55	7.5	0.30	3.8	0.88
Phenanthrene	mg/kg	0.2	MCERTS	360	63	2.2	35	12
Anthracene	mg/kg	0.1	MCERTS	140	20	0.67	12	4.0
Fluoranthene	mg/kg	0.2	MCERTS	370	120	3.3	60	25
Pyrene	mg/kg	0.2	MCERTS	300	96	2.6	51	21
Benzo(a)anthracene	mg/kg	0.2	MCERTS	230	59	1.5	28	12
Chrysene	mg/kg	0.05	MCERTS	170	47	1.1	23	8.9
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	230	70	1.4	35	15
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	77	25	0.82	9.1	3.8
Benzo(a)pyrene	mg/kg	0.1	MCERTS	150	53	1.3	26	10
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	94	33	0.77	16	7.4
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	21	6.1	< 0.20	3.0	1.0
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	90	32	0.88	20	8.3

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	2400	650	17	330	130
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180244	180245	180246	180247	180248
Sample Reference				VP202	VP203C	VP203C	VP204	VP204
Sample Number				ES1	ES1	ES2	ES1	ES2
Depth (m)				0.20-0.30	0.30-0.40	1.00-1.10	0.20-0.30	1.00-1.10
Date Sampled				13/06/2011	13/06/2011	13/06/2011	13/06/2011	13/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	18	21	12	8.6	9.7
Boron (water soluble)	mg/kg	0.2	MCERTS	0.3	0.2	< 0.2	2.1	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	0.3	< 0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	16	24	34	23	15
Copper (aqua regia extractable)	mg/kg	1	MCERTS	960	46	16	16	26
Lead (aqua regia extractable)	mg/kg	2	MCERTS	190	270	15	23	65
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.3	0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	17	20	14	15	10
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	220	220	48	43	54

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180244	180245	180246	180247	180248
Sample Reference				VP202	VP203C	VP203C	VP204	VP204
Sample Number				ES1	ES1	ES2	ES1	ES2
Depth (m)				0.20-0.30	0.30-0.40	1.00-1.10	0.20-0.30	1.00-1.10
Date Sampled				13/06/2011	13/06/2011	13/06/2011	13/06/2011	13/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH7 - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH7 - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10

TPH7 - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	180	7.3	2.7	6.9	7.1
TPH7 - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	830	65	7.3	50	35
TPH7 - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	5100	1000	13	520	270
TPH7 - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	8000	2600	47	1300	450
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	14000	3600	70	1900	760



Analytical Report Number: 11-28269
Project / Site name: Arundel Gasworks

Lab Sample Number				180213				
Sample Reference				SW1				
Sample Number				ES1				
Depth (m)				None Supplied				
Date Sampled				Deviating				
Time Taken				None Supplied				
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

General Inorganics

pH	pH units	N/A	ISO 17025	7.2				
Electrical Conductivity	µS/cm	10	NONE	670				
Total Cyanide	µg/l	10	ISO 17025	< 10				
Complex Cyanide	µg/l	10	NONE	< 10				
Free Cyanide	µg/l	10	NONE	< 10				
Thiocyanate as SCN	µg/l	30	NONE	< 30				
Sulphate as SO ₄	ug/L	45	ISO 17025	25000				
Sulphide	µg/l	5	NONE	< 5.0				
Chloride	mg/l	4	ISO 17025	80				
Ammonium as NH ₄	ug/l	15	ISO 17025	180				
Total Organic Carbon (TOC)	mg/l	0.1	NONE	8.0				
Total Suspended Solids	mg/l	5	NONE	< 5.0				

Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5				
Resorcinol	µg/l	0.5	NONE	< 0.5				
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5				
Cresols	µg/l	0.5	NONE	< 0.5				
Naphthols	µg/l	0.5	NONE	< 0.5				
Phenol	µg/l	0.5	NONE	< 0.5				
Trimethylphenol	µg/l	0.5	NONE	< 0.5				

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	< 3.5				
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01				
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01				
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01				
Fluorene	µg/l	0.01	ISO 17025	< 0.01				
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01				
Anthracene	µg/l	0.01	ISO 17025	< 0.01				
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Pyrene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01				
Chrysene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01				
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01				
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01				

Total PAH

Total EPA-16 PAHs	µg/l	0.2	ISO 17025	< 0.2				
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Heavy Metals / Metalloids

Cadmium (dissolved)	ug/l	0.1	ISO 17025	< 0.1				
Chromium (dissolved)	ug/l	0.4	ISO 17025	1.3				
Copper (dissolved)	ug/l	0.7	ISO 17025	14				
Iron (dissolved)	mg/l	0.004	ISO 17025	0.038				
Lead (dissolved)	ug/l	1	ISO 17025	2.1				
Mercury (dissolved)	ug/l	0.5	ISO 17025	< 0.5				
Nickel (dissolved)	ug/l	0.3	ISO 17025	0.8				
Selenium (dissolved)	ug/l	4	ISO 17025	< 4.0				
Zinc (dissolved)	ug/l	0.4	ISO 17025	6.9				



Analytical Report Number: 11-28269
Project / Site name: Arundel Gasworks

Lab Sample Number				180213				
Sample Reference				SW1				
Sample Number				ES1				
Depth (m)				None Supplied				
Date Sampled				Deviating				
Time Taken				None Supplied				
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

Monoaromatics

Benzene	µg/l	1	ISO 17025	< 1.0				
Toluene	µg/l	1	ISO 17025	< 1.0				
Ethylbenzene	µg/l	1	ISO 17025	< 1.0				
p & m-xylene	µg/l	1	ISO 17025	< 1.0				
o-xylene	µg/l	1	ISO 17025	< 1.0				
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0				

Petroleum Hydrocarbons

TPH7 - Aliphatic >C5 - C6	µg/l	10	NONE	< 10				
TPH7 - Aliphatic >C6 - C8	µg/l	10	NONE	< 10				
TPH7 - Aliphatic >C8 - C10	µg/l	10	NONE	< 10				
TPH7 - Aliphatic >C10 - C12	µg/l	10	NONE	< 10				
TPH7 - Aliphatic >C12 - C16	µg/l	10	NONE	< 10				
TPH7 - Aliphatic >C16 - C21	µg/l	10	NONE	< 10				
TPH7 - Aliphatic >C21 - C35	µg/l	10	NONE	< 10				
TPH7 - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10				
TPH7 - Aromatic >C5 - C7	µg/l	10	NONE	< 10				
TPH7 - Aromatic >C7 - C8	µg/l	10	NONE	< 10				
TPH7 - Aromatic >C8 - C10	µg/l	10	NONE	< 10				
TPH7 - Aromatic >C10 - C12	µg/l	10	NONE	< 10				
TPH7 - Aromatic >C12 - C16	µg/l	10	NONE	< 10				
TPH7 - Aromatic >C16 - C21	µg/l	10	NONE	< 10				
TPH7 - Aromatic >C21 - C35	µg/l	10	NONE	< 10				
TPH7 - Aromatic (C5 - C35)	µg/l	10	NONE	< 10				

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180249	180250	180251	180252	180253
Sample Reference	TP102	TP104	TP105	TP108B	TP111
Sample Number	ES1	ES2	ES1	ES1	ES2
Depth (m)	0.40-0.50	1.50-1.60	0.90-1.00	1.40-1.50	1.40-1.60
Date Sampled	15/06/2011	14/06/2011	16/06/2011	14/06/2011	15/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status		

General Inorganics

pH	pH Units	N/A	ISO 17025	7.9	7.8	8.0	7.4	7.8
Electrical Conductivity	µS/cm	10	NONE	< 10	40	140	290	730
Total Cyanide	µg/l	10	ISO 17025	15	< 10	24	240	420
Complex Cyanide	µg/l	25	NONE	< 25	< 25	< 25	240	420
Free Cyanide	µg/l	25	NONE	< 25	< 25	< 25	< 25	< 25
Free Cyanide (Low Level)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
Thiocyanate as SCN	µg/l	30	NONE	< 30	< 30	< 30	< 30	< 30
Sulphate as SO ₄	µg/l	100	ISO 17025	110	2300	27000	80000	220000
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloride	mg/l	4	NONE	< 4.0	< 4.0	< 4.0	4.3	< 4.0
Ammonium as NH ₄	µg/l	15	NONE	88	110	96	71	17000
Total Organic Carbon (TOC)	mg/l	0.1	NONE	6.8	6.8	5.9	6.7	20

Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Butyl Phenols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5
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Speciated PAHs

Naphthalene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	3.8
Acenaphthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	8.0
Fluorene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	9.1
Phenanthrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	4.0
Anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	3.2
Pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	28
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Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	< 1.1	1.1	1.3	3.5	3.6
Cadmium (dissolved)	µg/l	0.1	ISO 17025	0.19	0.23	< 0.10	< 0.10	< 0.10
Chromium (dissolved)	µg/l	0.4	ISO 17025	9.4	6.1	3.0	3.1	2.2
Copper (dissolved)	µg/l	0.7	ISO 17025	14	16	15	17	14
Iron (dissolved)	mg/l	0.004	ISO 17025	5.5	3.3	1.6	0.39	0.40
Lead (dissolved)	µg/l	1	ISO 17025	9.2	5.6	15	18	4.3
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	3.8	3.2	4.5	1.8	1.6
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0



Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180249	180250	180251	180252	180253
Sample Reference				TP102	TP104	TP105	TP108B	TP111
Sample Number				ES1	ES2	ES1	ES1	ES2
Depth (m)				0.40-0.50	1.50-1.60	0.90-1.00	1.40-1.50	1.40-1.60
Date Sampled				15/06/2011	14/06/2011	16/06/2011	14/06/2011	15/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status					
Zinc (dissolved)	ug/l	0.4	ISO 17025	11	11	6.9	9.2	3.4



Analytical Report Number: 11-28269
Project / Site name: Arundel Gasworks

Lab Sample Number				180249	180250	180251	180252	180253
Sample Reference				TP102	TP104	TP105	TP108B	TP111
Sample Number				ES1	ES2	ES1	ES1	ES2
Depth (m)				0.40-0.50	1.50-1.60	0.90-1.00	1.40-1.50	1.40-1.60
Date Sampled				15/06/2011	14/06/2011	16/06/2011	14/06/2011	15/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C5 - C6	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C6 - C8	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C8 - C10	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aromatic >C5 - C7	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aromatic >C7 - C8	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aromatic >C8 - C10	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	57
TPH7 - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	470
TPH7 - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	1100
TPH7 - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	19



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Project / Site name: Arundel Gasworks

Lab Sample Number				180254	180255			
Sample Reference				TP113	TP115			
Sample Number				ES3	ES2			
Depth (m)				1.40-1.60	2.30-2.50			
Date Sampled				15/06/2011	16/06/2011			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		

General Inorganics

pH	pH Units	N/A	ISO 17025	8.4	7.4			
Electrical Conductivity	µS/cm	10	NONE	430	370			
Total Cyanide	µg/l	10	ISO 17025	1500	15			
Complex Cyanide	µg/l	25	NONE	1500	< 25			
Free Cyanide	µg/l	25	NONE	< 25	< 25			
Free Cyanide (Low Level)	µg/l	10	NONE	14	< 10			
Thiocyanate as SCN	µg/l	30	NONE	< 30	< 30			
Sulphate as SO ₄	µg/l	100	ISO 17025	130000	160000			
Sulphide	µg/l	5	NONE	5000	< 5.0			
Chloride	mg/l	4	NONE	11	< 4.0			
Ammonium as NH ₄	µg/l	15	NONE	33000	3200			
Total Organic Carbon (TOC)	mg/l	0.1	NONE	20	2.6			

Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5	< 0.5			
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5			
Butyl Phenols	µg/l	0.5	NONE	77	< 0.5			
Cresols	µg/l	0.5	NONE	10	< 0.5			
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5			
Phenol	µg/l	0.5	NONE	< 0.5	< 0.5			
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5			

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	88	< 3.5			
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Speciated PAHs

Naphthalene	µg/l	0.01	NONE	< 0.01	1.5			
Acenaphthylene	µg/l	0.01	NONE	3.6	< 0.01			
Acenaphthene	µg/l	0.01	NONE	33	< 0.01			
Fluorene	µg/l	0.01	NONE	11	< 0.01			
Phenanthrene	µg/l	0.01	NONE	14	< 0.01			
Anthracene	µg/l	0.01	NONE	7.2	< 0.01			
Fluoranthene	µg/l	0.01	NONE	4.7	< 0.01			
Pyrene	µg/l	0.01	NONE	3.1	< 0.01			
Benzo(a)anthracene	µg/l	0.01	NONE	1.9	< 0.01			
Chrysene	µg/l	0.01	NONE	0.91	< 0.01			
Benzo(b)fluoranthene	µg/l	0.01	NONE	1.3	< 0.01			
Benzo(k)fluoranthene	µg/l	0.01	NONE	0.53	< 0.01			
Benzo(a)pyrene	µg/l	0.01	NONE	1.1	< 0.01			
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01			
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01			
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01			

Total PAH

Total EPA-16 PAHs	µg/l	0.2	NONE	83	1.6			
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Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	2.9	< 1.1			
Cadmium (dissolved)	µg/l	0.1	ISO 17025	0.25	2.9			
Chromium (dissolved)	µg/l	0.4	ISO 17025	6.1	2.0			
Copper (dissolved)	µg/l	0.7	ISO 17025	26	15			
Iron (dissolved)	mg/l	0.004	ISO 17025	5.0	0.43			
Lead (dissolved)	µg/l	1	ISO 17025	90	630			
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5			
Nickel (dissolved)	µg/l	0.3	ISO 17025	9.1	7.3			
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0			



Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180254	180255			
Sample Reference				TP113	TP115			
Sample Number				ES3	ES2			
Depth (m)				1.40-1.60	2.30-2.50			
Date Sampled				15/06/2011	16/06/2011			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status					
Zinc (dissolved)	ug/l	0.4	ISO 17025	5.5	34			



Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180254	180255			
Sample Reference				TP113	TP115			
Sample Number				ES3	ES2			
Depth (m)				1.40-1.60	2.30-2.50			
Date Sampled				15/06/2011	16/06/2011			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		
Monoaromatics								
Benzene	µg/l	1	NONE	< 1.0	< 1.0			
Toluene	µg/l	1	NONE	< 1.0	< 1.0			
Ethylbenzene	µg/l	1	NONE	< 1.0	< 1.0			
p & m-xylene	µg/l	1	NONE	< 1.0	< 1.0			
o-xylene	µg/l	1	NONE	< 1.0	< 1.0			
MTBE (Methyl Tertiary Butyl Ether)	µg/l	10	NONE	< 10	< 10			
TPH7 - Aliphatic >C5 - C6	µg/l	10	NONE	< 10	< 10			
TPH7 - Aliphatic >C6 - C8	µg/l	10	NONE	< 10	< 10			
TPH7 - Aliphatic >C8 - C10	µg/l	10	NONE	< 10	< 10			
TPH7 - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10			
TPH7 - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10			
TPH7 - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10			
TPH7 - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10			
TPH7 - Aromatic >C5 - C7	µg/l	10	NONE	< 10	< 10			
TPH7 - Aromatic >C7 - C8	µg/l	10	NONE	< 10	< 10			
TPH7 - Aromatic >C8 - C10	µg/l	10	NONE	< 10	< 10			
TPH7 - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10			
TPH7 - Aromatic >C12 - C16	µg/l	10	NONE	2400	< 10			
TPH7 - Aromatic >C16 - C21	µg/l	10	NONE	2900	< 10			
TPH7 - Aromatic >C21 - C35	µg/l	10	NONE	240	< 10			

Analytical Report Number : 11-28269

Project / Site name: Arundel Gasworks

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and topsoil/loam soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content

of a sample is calculated as the % weight of the stones not passing a 2 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
180214	TP101	ES1	0.40-0.50	Brown clay and gravel with vegetation.
180215	TP102	ES1	0.40-0.50	Light brown clay and gravel with brick.
180216	TP102	ES2	1.80-2.00	Light brown clay and sand.
180217	TP103	ES1	0.20-0.30	Black topsoil and gravel.
180218	TP104	ES1	0.40-0.50	Light brown topsoil and clay with stones and vegetation.
180219	TP104	ES2	1.50-1.60	Light brown clay and sand with stones and vegetation.
180220	TP105	ES1	0.90-1.00	Brown topsoil and gravel with vegetation.
180221	TP105	ES2	2.00-2.10	Light brown topsoil and gravel with stones.
180222	TP106	ES1	0.30-0.40	Brown topsoil and gravel with stones.
180223	TP106	ES2	0.80-0.90	Brown topsoil and sand with gravel and stones.
180224	TP106	ES3	2.60-2.80	Light brown clay.
180225	TP107	ES1	0.40-0.50	Light brown clay and gravel.
180226	TP107	ES2	2.40-2.50	Light brown clay and sand.
180227	TP108A	ES1	0.50-0.60	Brown topsoil and sand with gravel and stones.
180228	TP108B	ES1	1.40-1.50	Brown topsoil and gravel with brick.
180229	TP109A	ES1	0.40-0.50	Brown clay and gravel with stones and vegetation.
180230	TP109B	ES1	0.30-0.40	Brown clay and gravel with vegetation.
180231	TP110	ES1	0.40-0.50	Brown topsoil and gravel with stones and vegetation.
180232	TP111	ES1	0.90-1.00	Light brown topsoil and clay with gravel and stones.
180233	TP111	ES2	1.40-1.60	Brown topsoil and clay with brick and stones.
180234	TP112	ES1	0.60-0.80	Brown topsoil and clay with brick.
180235	TP112	ES2	2.50-2.60	Light brown clay and gravel with stones.
180236	TP113	ES2	0.80-0.90	Light brown topsoil and clay with stones.
180237	TP113	ES3	1.40-1.60	Light brown clay and gravel with stones.
180238	TP114	ES1	0.30-0.40	Light brown topsoil and clay with vegetation.
180239	TP115	ES1	0.90-1.00	Brown clay and gravel.
180240	TP115	ES2	2.30-2.50	Light brown clay and gravel with stones.
180241	VP200B	ES1	0.30-0.40	Brown topsoil and clay with gravel and vegetation.
180242	VP200B	ES2	0.90-1.00	Light brown clay and gravel with stones.
180243	VP201	ES1	0.30-0.40	Brown clay and gravel with brick and plastic.
180244	VP202	ES1	0.20-0.30	Brown topsoil and gravel with gravel and stones.
180245	VP203C	ES1	0.30-0.40	Brown topsoil and clay with gravel and stones.
180246	VP203C	ES2	1.00-1.10	Light brown topsoil and clay with gravel and stones.
180247	VP204	ES1	0.20-0.30	Brown topsoil and clay with gravel.
180248	VP204	ES2	1.00-1.10	Light brown sandy clay with gravel and stones.

Analytical Report Number : 11-28269

Project / Site name: Arundel Gasworks

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonium as NH ₄ in leachate	Determination of ammonium in leachate by addition of buffer solution followed by ion selective electrode.	In-house method	L035-PL	W	NONE
Ammonium as NH ₄ in soil	Determination of ammonium in soil by extraction with potassium chloride followed by addition of buffer solution followed by ion selective electrode.	In-house method	L035-PL	W	MCERTS
Ammonium as NH ₄ in water	Determination of ammonium in water by addition of buffer solution followed by ion selective electrode.	In-house method	L035-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in leachates	Determination of BTEX and MTBE in leachates by headspace GC-MS.	In-house method based on USEPA8260	L036-UK	W	NONE
BTEX and MTBE in soil	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073S-PL	W	MCERTS
BTEX and MTBE in water	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW	In-house method based on USEPA8260	L036-UK	W	ISO 17025
Chloride in leachate	Determination of chloride in leachate by titration against silver nitrate.	In-house method	L024-PL	W	NONE
Chloride in water	Determination of chloride in water by titration against silver nitrate.	In-house method	L024-PL	W	ISO 17025
Chloride, water soluble, in soil	Determination of chloride by titration using silver nitrate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L075-PL	D	MCERTS
Complex cyanide in leachate	Determination of complex cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080	W	NONE
Electrical conductivity of leachate	Determination of electrical conductivity in leachate by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-UK	W	NONE
Electrical conductivity of water	Determination of electrical conductivity in water by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	NONE
Elemental sulphur in soil	Determination of elemental sulphur in soil by extraction in dichloromethane followed by HPLC.	In-house method based on Secondsite Property Holdings Guidance for Assessing and Managing Potential		D	NONE
Fibrous Material in soil screening	Screening of samples for fibrous material by microscopy.	In-house method based on HSG 248	A001	W	ISO 17025

Analytical Report Number : 11-28269

Project / Site name: Arundel Gasworks

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Free cyanide in leachate	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080	W	NONE
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L047-PL	D	MCERTS
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK	W	NONE
Monohydric phenols in leachate	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080	W	ISO 17025
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080	W	ISO 17025
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
pH in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-UK	W	ISO 17025
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
pH in water	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
Phenols, speciated, in leachate, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030	W	NONE
Speciated EPA-16 PAHs in leachate	Determination of PAH compounds in leachate by extraction in hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L070-UK	W	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS

Analytical Report Number : 11-28269

Project / Site name: Arundel Gasworks

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in hexane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L070-UK	W	ISO 17025
Stones content of soil	Stones not passing through a 2 mm sieve is determined gravimetrically and reported as a percentage of the dry weight. Sample results are not corrected for the stone content of the sample.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK	D	NONE
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Sulphate, water soluble, in soil	Determination of water soluble sulphate by extraction with water followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
Sulphide in leachate	Determination of sulphide in leachate by ion selective electrode.	In-house method	L010-PL	W	NONE
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L010-UK	W	NONE
Suspended solids in water	Determined gravimetrically with GFC filtration papers.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L004-UK	W	NONE
Thiocyanate in leachate	Determination of thiocyanate in leachate by acidification followed by addition of ferric nitrate followed by spectrophotometer.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L049-UK	W	NONE
Thiocyanate in soil	Determination of thiocyanate in soil by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by spectrophotometer.	In-house method	L049-PL	D	NONE
Thiocyanate in water	Determination of thiocyanate in water by acidification followed by addition of ferric nitrate followed by spectrophotometer.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L049-UK	W	NONE
Total cyanide in leachate	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080	W	ISO 17025
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080	W	ISO 17025
Total organic carbon in leachate	Determination of total organic carbon in leachate by the measurement on a non-dispersive infrared analyser of carbon dioxide released by acidification.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE
Total organic carbon in water	Determination of total organic carbon in water by the measurement on a non-dispersive infrared analyser of carbon dioxide released by acidification.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE

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Project / Site name: Arundel Gasworks

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
TPH7 (Leachates)	Determination of dichloromethane extractable hydrocarbons in leachate by GC-MS, speciation by interpretation.	In-house method	L070-UK	W	NONE
TPH7 (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-UK	W	NONE
TPHCWG (Soil)	Determination of pentane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.