STATE OF TENNESSEE
DEPARTMENT OF HEALTH
ENVIRONMENTAL LABORATORIES

TDH: Lab Services JRL
Lab Services - Jackson Regional Lab
Jackson, TN 38301
731-426-0686

TDH: Lab Services KRL
Lab Services - Knoxville Regional Lab
Knoxville, TN 37920
865-549-5201

TDH: Lab Services NCL
Lab Services - Nashville Central Lab
Nashville, TN 37243
615-262-6300

Sent To: Geoff Klein
TDEC-DWS
200 East Race St
Knoxville, TN 37763

Lab ID: N00004002
Nashville Central Laboratory

Sampling Agency: TDEC: Division of Water Supply

Billing Code: 327.39-12

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

Analytical Supervisor

Lab-Sample Number:	N00004002001
Project Name:	
Sample Description:	KINGSTON WTP
Sampler Project Name:	RAW
Project Site No.:	
Station No.:	
Date/Time Collected:	01/14/2009 10:00
Sampler's Name:	GEOFF KLEIN
County:	ROANE - 73
Sample Matrix:	Water
EFO:	Knoxville
Sampling Agency:	TDEC-DWS
Billing Code:	327.39-12
Send Report To:	TDEC-DWS
Agency Invoiced:	TDEC-DWS
Priority Date:	
Date/Time Received:	01/14/2009 12:40
Received By:	L Barrociere

Field Determinations	
pH:	
Chlorine, residual:	
Conductivity:	
Temperature:	
Dissolved Oxygen:	
Other:	
Flow:	CFS

TEST: Alkalinity, Total **METHOD: EPA 310.2**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	50	mg/L	3.8	10	S Burchfield	1/15/2009

TEST: Hardness, Calcium **METHOD: SM 3500-Ca D**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	46	mg/L	0.7	1	M Chen	1/15/2009

J - Estimated value between MDL and MQL
MDL - Method Detection Limit
MQL - Method Quantitation Limit
U - Undetected

Lab-Sample Number:	N00004002002
Project Name:	
Sample Description:	KINGSTON WTP
Sampler Project Name:	FINISH
Project Site No.:	
Station No.:	
Date/Time Collected:	01/14/2009 10:05
Sampler's Name:	GEOFF KLEIN
County:	ROANE - 73
Sample Matrix:	Water
EFO:	Knoxville
Sampling Agency:	TDEC-DWS
Billing Code:	327.39-12
Send Report To:	TDEC-DWS
Agency Invoiced:	TDEC-DWS
Priority Date:	
Date/Time Received:	01/14/2009 12:40
Received By:	L Barrociere

Field Determinations	
pH:	
Chlorine, residual:	
Conductivity:	
Temperature:	
Dissolved Oxygen:	
Other:	
Flow:	CFS

TEST: Alkalinity, Total **METHOD: EPA 310.2**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	44	mg/L	3.8	10	S Burchfield	1/15/2009

TEST: Hardness, Calcium **METHOD: SM 3500-Ca D**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	37	mg/L	0.7	1	M Chen	1/15/2009

J - Estimated value between MDL and MQL
MDL - Method Detection Limit
MQL - Method Quantitation Limit
U - Undetected

Lab-Sample Number:	N00004002003
Project Name:	
Sample Description:	ROCKWOOD WTP
Sampler Project Name:	RAW
Project Site No.:	
Station No.:	
Date/Time Collected:	01/14/2009 10:45
Sampler's Name:	GEOFF KLEIN
County:	ROANE - 73
Sample Matrix:	Water
EFO:	Knoxville
Sampling Agency:	TDEC-DWS
Billing Code:	327.39-12
Send Report To:	TDEC-DWS
Agency Invoiced:	TDEC-DWS
Priority Date:	
Date/Time Received:	01/14/2009 12:40
Received By:	L Barrociere

Field Determinations	
pH:	
Chlorine, residual:	
Conductivity:	
Temperature:	
Dissolved Oxygen:	
Other:	
Flow:	CFS

TEST: Alkalinity, Total **METHOD: EPA 310.2**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	78	mg/L	3.8	10	S Burchfield	1/15/2009

TEST: Hardness, Calcium **METHOD: SM 3500-Ca D**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	53	mg/L	0.7	1	M Chen	1/15/2009

J - Estimated value between MDL and MQL
MDL - Method Detection Limit
MQL - Method Quantitation Limit
U - Undetected

Lab-Sample Number:	N00004002004	**Field Determinations**	
Project Name:		**pH:**	
Sample Description:	ROCKWOOD WTP	**Chlorine, residual:**	
Sampler Project Name:	FINISH	**Conductivity:**	
Project Site No.:		**Temperature:**	
Station No.:		**Dissolved Oxygen:**	
Date/Time Collected:	01/14/2009 10:50	**Other:**	
Sampler's Name:	GEOFF KLEIN	**Flow:**	CFS
County:	ROANE - 73		
Sample Matrix:	Water		
EFO:	Knoxville		
Sampling Agency:	TDEC-DWS		
Billing Code:	327.39-12		
Send Report To:	TDEC-DWS		
Agency Invoiced:	TDEC-DWS		
Priority Date:			
Date/Time Received:	01/14/2009 12:40		
Received By:	L Barrociere		

TEST: Alkalinity, Total **METHOD: EPA 310.2**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	69	mg/L	3.8	10	S Burchfield	1/15/2009

TEST: Hardness, Calcium **METHOD: SM 3500-Ca D**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	51	mg/L	0.7	1	M Chen	1/15/2009

J - Estimated value between MDL and MQL
MDL - Method Detection Limit
MQL - Method Quantitation Limit
U - Undetected

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Lab ID: N00004002
Nashville Central Laboratory

Sampling Agency: TDEC: Division of Water Supply

Billing Code: 327.39-12

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

Analytical Supervisor

Lab-Sample Number:	N00004002001	**Field Determinations**	
Project Name:		**pH:**	
Sample Description:	KINGSTON WTP	**Chlorine, residual:**	
Sampler Project Name:	RAW	**Conductivity:**	
Project Site No.:		**Temperature:**	
Station No.:		**Dissolved Oxygen:**	
Date/Time Collected:	01/14/2009 10:00	**Other:**	
Sampler's Name:	GEOFF KLEIN	**Flow:**	CFS
County:	ROANE - 73		
Sample Matrix:	Water		
EFO:	Knoxville		
Sampling Agency:	TDEC-DWS		
Billing Code:	327.39-12		
Send Report To:	TDEC-DWS		
Agency Invoiced:	TDEC-DWS		
Priority Date:			
Date/Time Received:	01/14/2009 12:40		
Received By:	L Barrociere		

TEST: Digestion Metals **METHOD: EPA 200.2**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	01/15/2009				M Pattanayek	1/15/2009

TEST: ICP-MS **METHOD: EPA 200.8**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	1.0J	µg/L	0.93	5	M Pattanayek	1/15/2009
Barium	23	µg/L	2.5	5	M Pattanayek	1/15/2009
Beryllium	U	µg/L	0.11	1	M Pattanayek	1/15/2009
Cadmium	U	µg/L	0.41	1	M Pattanayek	1/15/2009
Chromium	U	µg/L	2.0	5	M Pattanayek	1/15/2009
Cobalt	0.33J	µg/L	0.04	1	M Pattanayek	1/15/2009
Lead	0.74J	µg/L	0.10	1	M Pattanayek	1/15/2009
Manganese	54	µg/L	0.42	1	M Pattanayek	1/15/2009
Selenium	U	µg/L	1.3	5	M Pattanayek	1/15/2009
Thallium	U	µg/L	0.03	1	M Pattanayek	1/15/2009
Vanadium	U	µg/L	3.4	5	M Pattanayek	1/15/2009

TEST: Mercury **METHOD: EPA 245.1**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	µg/L	0.13	0.2	A Wilson	1/15/2009

J - Estimated value between MDL and MQL
MDL - Method Detection Limit
MQL - Method Quantitation Limit
U - Undetected

Lab-Sample Number:	N00004002002	**Field Determinations**	
Project Name:		**pH:**	
Sample Description:	KINGSTON WTP	**Chlorine, residual:**	
Sampler Project Name:	FINISH	**Conductivity:**	
Project Site No.:		**Temperature:**	
Station No.:		**Dissolved Oxygen:**	
Date/Time Collected:	01/14/2009 10:05	**Other:**	
Sampler's Name:	GEOFF KLEIN	**Flow:**	CFS
County:	ROANE - 73		
Sample Matrix:	Water		
EFO:	Knoxville		
Sampling Agency:	TDEC-DWS		
Billing Code:	327.39-12		
Send Report To:	TDEC-DWS		
Agency Invoiced:	TDEC-DWS		
Priority Date:			
Date/Time Received:	01/14/2009 12:40		
Received By:	L Barrociere		

TEST: Digestion Metals — **METHOD: EPA 200.2**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	01/15/2009				M Pattanayek	1/15/2009

TEST: ICP-MS — **METHOD: EPA 200.8**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	U	µg/L	0.93	5	M Pattanayek	1/15/2009
Barium	16	µg/L	2.5	5	M Pattanayek	1/15/2009
Beryllium	U	µg/L	0.11	1	M Pattanayek	1/15/2009
Cadmium	U	µg/L	0.41	1	M Pattanayek	1/15/2009
Chromium	U	µg/L	2.0	5	M Pattanayek	1/15/2009
Cobalt	0.08J	µg/L	0.04	1	M Pattanayek	1/15/2009
Lead	0.11J	µg/L	0.10	1	M Pattanayek	1/15/2009
Manganese	U	µg/L	0.42	1	M Pattanayek	1/15/2009
Selenium	U	µg/L	1.3	5	M Pattanayek	1/15/2009
Thallium	U	µg/L	0.03	1	M Pattanayek	1/15/2009
Vanadium	U	µg/L	3.4	5	M Pattanayek	1/15/2009

TEST: Mercury — **METHOD: EPA 245.1**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	µg/L	0.13	0.2	A Wilson	1/15/2009

J - Estimated value between MDL and MQL
MDL - Method Detection Limit
MQL - Method Quantitation Limit
U - Undetected

Lab-Sample Number:	N00004002003	**Field Determinations**	
Project Name:		**pH:**	
Sample Description:	ROCKWOOD WTP	**Chlorine, residual:**	
Sampler Project Name:	RAW	**Conductivity:**	
Project Site No.:		**Temperature:**	
Station No.:		**Dissolved Oxygen:**	
Date/Time Collected:	01/14/2009 10:45	**Other:**	
Sampler's Name:	GEOFF KLEIN	**Flow:**	CFS
County:	ROANE - 73		
Sample Matrix:	Water		
EFO:	Knoxville		
Sampling Agency:	TDEC-DWS		
Billing Code:	327.39-12		
Send Report To:	TDEC-DWS		
Agency Invoiced:	TDEC-DWS		
Priority Date:			
Date/Time Received:	01/14/2009 12:40		
Received By:	L Barrociere		

TEST: Digestion Metals **METHOD: EPA 200.2**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	01/15/2009				M Pattanayek	1/15/2009

TEST: ICP-MS **METHOD: EPA 200.8**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	U	µg/L	0.93	5	M Pattanayek	1/15/2009
Barium	28	µg/L	2.5	5	M Pattanayek	1/15/2009
Beryllium	U	µg/L	0.11	1	M Pattanayek	1/15/2009
Cadmium	U	µg/L	0.41	1	M Pattanayek	1/15/2009
Chromium	U	µg/L	2.0	5	M Pattanayek	1/15/2009
Cobalt	0.08J	µg/L	0.04	1	M Pattanayek	1/15/2009
Lead	0.14J	µg/L	0.10	1	M Pattanayek	1/15/2009
Manganese	9.0	µg/L	0.42	1	M Pattanayek	1/15/2009
Selenium	U	µg/L	1.3	5	M Pattanayek	1/15/2009
Thallium	U	µg/L	0.03	1	M Pattanayek	1/15/2009
Vanadium	5.8	µg/L	3.4	5	M Pattanayek	1/15/2009

TEST: Mercury **METHOD: EPA 245.1**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	µg/L	0.13	0.2	A Wilson	1/15/2009

J - Estimated value between MDL and MQL
MDL - Method Detection Limit
MQL - Method Quantitation Limit
U - Undetected

Lab-Sample Number:	N00004002004	**Field Determinations**	
Project Name:		**pH:**	
Sample Description:	ROCKWOOD WTP	**Chlorine, residual:**	
Sampler Project Name:	FINISH	**Conductivity:**	
Project Site No.:		**Temperature:**	
Station No.:		**Dissolved Oxygen:**	
Date/Time Collected:	01/14/2009 10:50	**Other:**	
Sampler's Name:	GEOFF KLEIN	**Flow:**	CFS
County:	ROANE - 73		
Sample Matrix:	Water		
EFO:	Knoxville		
Sampling Agency:	TDEC-DWS		
Billing Code:	327.39-12		
Send Report To:	TDEC-DWS		
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Priority Date:			
Date/Time Received:	01/14/2009 12:40		
Received By:	L Barrociere		

TEST: Digestion Metals — **METHOD: EPA 200.2**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	01/15/2009				M Pattanayek	1/15/2009

TEST: ICP-MS — **METHOD: EPA 200.8**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	U	µg/L	0.93	5	M Pattanayek	1/15/2009
Barium	27	µg/L	2.5	5	M Pattanayek	1/15/2009
Beryllium	U	µg/L	0.11	1	M Pattanayek	1/15/2009
Cadmium	U	µg/L	0.41	1	M Pattanayek	1/15/2009
Chromium	U	µg/L	2.0	5	M Pattanayek	1/15/2009
Cobalt	0.05J	µg/L	0.04	1	M Pattanayek	1/15/2009
Lead	U	µg/L	0.10	1	M Pattanayek	1/15/2009
Manganese	2.1	µg/L	0.42	1	M Pattanayek	1/15/2009
Selenium	U	µg/L	1.3	5	M Pattanayek	1/15/2009
Thallium	U	µg/L	0.03	1	M Pattanayek	1/15/2009
Vanadium	5.5	µg/L	3.4	5	M Pattanayek	1/15/2009

TEST: Mercury — **METHOD: EPA 245.1**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	µg/L	0.13	0.2	A Wilson	1/15/2009

J - Estimated value between MDL and MQL
MDL - Method Detection Limit
MQL - Method Quantitation Limit
U - Undetected