



**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: N00004889
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 practices and in accordance with federal or state approved methodologies.



Analytical Supervisor

Lab-Sample Number: N00004889001
Project Name:
Sample Description: KINGSTON WTP
Sampler Project Name: FINISH
Project Site No.:
Station No.:
Date/Time Collected: 08/10/2009 09:10
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: 08/10/2009 11:45
Received By: L Barrociere

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

TEST: Digestion Metals		METHOD: EPA 200.2				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	08/11/2009				W Frye	8/11/2009

TEST: ICP-MS		METHOD: EPA 200.8				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	U	µg/L	0.93	5	M Pattanayek	8/11/2009
Barium	22	µg/L	2.5	5	M Pattanayek	8/11/2009
Beryllium	U	µg/L	0.11	1	M Pattanayek	8/11/2009
Cadmium	U	µg/L	0.41	1	M Pattanayek	8/11/2009
Chromium	U	µg/L	2.0	5	M Pattanayek	8/11/2009
Cobalt	0.13J	µg/L	0.04	1	M Pattanayek	8/11/2009
Lead	0.10J	µg/L	0.10	1	M Pattanayek	8/11/2009
Manganese	U	µg/L	0.42	1	M Pattanayek	8/11/2009
Selenium	U	µg/L	1.3	5	M Pattanayek	8/11/2009
Thallium	0.33J	µg/L	0.03	1	M Pattanayek	8/11/2009
Vanadium	U	µg/L	3.4	5	M Pattanayek	8/11/2009

TEST: Mercury		METHOD: EPA 245.1				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	µg/L	0.029	0.2	A Bass	8/11/2009

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

Lab-Sample Number: N00004889002
Project Name:
Sample Description: KINGSTON WTP
Sampler Project Name: RAW
Project Site No.:
Station No.:
Date/Time Collected: 08/10/2009 09:15
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: 08/10/2009 11:45
Received By: L Barrociere

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

TEST: Digestion Metals		METHOD: EPA 200.2				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	08/11/2009				W Frye	8/11/2009

TEST: ICP-MS		METHOD: EPA 200.8				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	U	µg/L	0.93	5	M Pattanayek	8/11/2009
Barium	26	µg/L	2.5	5	M Pattanayek	8/11/2009
Beryllium	U	µg/L	0.11	1	M Pattanayek	8/11/2009
Cadmium	U	µg/L	0.41	1	M Pattanayek	8/11/2009
Chromium	U	µg/L	2.0	5	M Pattanayek	8/11/2009
Cobalt	0.11J	µg/L	0.04	1	M Pattanayek	8/11/2009
Lead	0.25J	µg/L	0.10	1	M Pattanayek	8/11/2009
Manganese	38	µg/L	0.42	1	M Pattanayek	8/11/2009
Selenium	U	µg/L	1.3	5	M Pattanayek	8/11/2009
Thallium	0.11J	µg/L	0.03	1	M Pattanayek	8/11/2009
Vanadium	U	µg/L	3.4	5	M Pattanayek	8/11/2009

TEST: Mercury		METHOD: EPA 245.1				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	µg/L	0.029	0.2	A Bass	8/11/2009

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

Lab-Sample Number: N00004889003
Project Name:
Sample Description: ROCKWOOD WTP
Sampler Project Name: FINISH
Project Site No.:
Station No.:
Date/Time Collected: 08/10/2009 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: 08/10/2009 11:45
Received By: L Barrociere

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

TEST: Digestion Metals		METHOD: EPA 200.2				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	08/11/2009				W Frye	8/11/2009

TEST: ICP-MS		METHOD: EPA 200.8				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	U	µg/L	0.93	5	M Pattanayek	8/11/2009
Barium	26	µg/L	2.5	5	M Pattanayek	8/11/2009
Beryllium	U	µg/L	0.11	1	M Pattanayek	8/11/2009
Cadmium	U	µg/L	0.41	1	M Pattanayek	8/11/2009
Chromium	U	µg/L	2.0	5	M Pattanayek	8/11/2009
Cobalt	0.13J	µg/L	0.04	1	M Pattanayek	8/11/2009
Lead	U	µg/L	0.10	1	M Pattanayek	8/11/2009
Manganese	0.63J	µg/L	0.42	1	M Pattanayek	8/11/2009
Selenium	U	µg/L	1.3	5	M Pattanayek	8/11/2009
Thallium	0.054J	µg/L	0.03	1	M Pattanayek	8/11/2009
Vanadium	U	µg/L	3.4	5	M Pattanayek	8/11/2009

TEST: Mercury		METHOD: EPA 245.1				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	µg/L	0.029	0.2	A Bass	8/11/2009

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

Lab-Sample Number: N00004889004
Project Name:
Sample Description: ROCKWOOD WTP
Sampler Project Name: RAW
Project Site No.:
Station No.:
Date/Time Collected: 08/10/2009 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: 08/10/2009 11:45
Received By: L Barrociere

Field Determinations

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

TEST: Digestion Metals		METHOD: EPA 200.2				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	08/11/2009				W Frye	8/11/2009

TEST: ICP-MS		METHOD: EPA 200.8				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	1.2J	µg/L	0.93	5	M Pattanayek	8/11/2009
Barium	29	µg/L	2.5	5	M Pattanayek	8/11/2009
Beryllium	U	µg/L	0.11	1	M Pattanayek	8/11/2009
Cadmium	U	µg/L	0.41	1	M Pattanayek	8/11/2009
Chromium	U	µg/L	2.0	5	M Pattanayek	8/11/2009
Cobalt	0.12J	µg/L	0.04	1	M Pattanayek	8/11/2009
Lead	0.18J	µg/L	0.10	1	M Pattanayek	8/11/2009
Manganese	5.6	µg/L	0.42	1	M Pattanayek	8/11/2009
Selenium	U	µg/L	1.3	5	M Pattanayek	8/11/2009
Thallium	0.046J	µg/L	0.03	1	M Pattanayek	8/11/2009
Vanadium	U	µg/L	3.4	5	M Pattanayek	8/11/2009

TEST: Mercury		METHOD: EPA 245.1				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	µg/L	0.029	0.2	A Bass	8/11/2009

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



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200 East Race St
Knoxville, TN 37763

Lab ID: N00004889
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 practices and in accordance with federal or state approved methodologies.


Analytical Supervisor

Lab-Sample Number: N00004889001
Project Name:
Sample Description: KINGSTON WTP
Sampler Project Name: FINISH
Project Site No.:
Station No.:
Date/Time Collected: 08/10/2009 09:10
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: 08/10/2009 11:45
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	62	mg/L	3.8	10	M Chen	8/11/2009

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	8/11/2009

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

Lab-Sample Number: N00004889002
Project Name:
Sample Description: KINGSTON WTP
Sampler Project Name: RAW
Project Site No.:
Station No.:
Date/Time Collected: 08/10/2009 09:15
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
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Priority Date:
Date/Time Received: 08/10/2009 11:45
Received By: L Barrocieri

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	70	mg/L	3.8	10	M Chen	8/11/2009

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	8/11/2009

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

Lab-Sample Number: N00004889003
Project Name:
Sample Description: ROCKWOOD WTP
Sampler Project Name: FINISH
Project Site No.:
Station No.:
Date/Time Collected: 08/10/2009 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: 08/10/2009 11:45
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	69	mg/L	3.8	10	M Chen	8/11/2009

TEST: Hardness, Calcium		METHOD: SM 3500-Ca D				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	59	mg/L	0.7	1	M Chen	8/11/2009

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

Lab-Sample Number: N00004889004
Project Name:
Sample Description: ROCKWOOD WTP
Sampler Project Name: RAW
Project Site No.:
Station No.:
Date/Time Collected: 08/10/2009 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: 08/10/2009 11:45
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	M Chen	8/11/2009

TEST: Hardness, Calcium		METHOD: SM 3500-Ca D				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	60	mg/L	0.7	1	M Chen	8/11/2009

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