



**MWH**

**LABORATORIES**

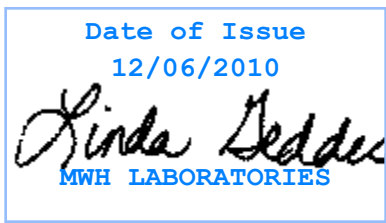
*A Division of MWH Americas, Inc.*

750 Royal Oak Dr., Suite 100  
Monrovia, California, 91016-3629  
Tel: 626 386 1100  
Fax: 626 386 1101  
1 800 566 LABS (1 800 566 5227)

**Laboratory Report**

for

Tronox LLC  
PO Box 55  
Henderson, NV 89009  
Attention: Susan Crowley  
Fax: 702-651-2310



Report#: 342891  
Project: CWA-RCRA  
Group: LV Wash

LXG: Linda Geddes  
Project Manager

Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are Hits Reports, Comments, QC Summary, QC Report and Regulatory Forms. This report shall not be reproduced except in full, without the written approval of the laboratory.

### Acknowledgement of Samples Received

**Tronox LLC**  
 PO Box 55  
 Henderson, NV 89009  
 Attn: Susan Crowley  
 Phone: 702-651-2234

Customer Code: TRONOX  
 Folder #: 342891  
 Project: CWA-RCRA  
 Sample Group: LV Wash  
 Project Manager: Linda Geddes  
 Phone: (626) 386-1163

The following samples were received from you on **September 08, 2010**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using MWH Laboratories.

Sample #	Sample ID	Sample Date
201009080308	LVW UPGRADIENT	Sep 07, 2010 08:15
	@ACOPEDD	Ammonia Nitrogen
	Nitrite Nitrogen by IC	Perchlorate
		Nitrate as Nitrogen by IC
		Total Inorganic Nitrogen-Calc
201009080309	LVW 6.05	Sep 07, 2010 08:47
	@ACOPEDD	Ammonia Nitrogen
	Nitrite Nitrogen by IC	Perchlorate
		Nitrate as Nitrogen by IC
		Total Inorganic Nitrogen-Calc
201009080310	LVW 5.5	Sep 07, 2010 09:00
	@ACOPEDD	Ammonia Nitrogen
	Nitrite Nitrogen by IC	Perchlorate
		Nitrate as Nitrogen by IC
		Total Inorganic Nitrogen-Calc
201009080311	LVW 0.55	Sep 07, 2010 09:30
	Ammonia Nitrogen	Perchlorate
		Total phosphorus as P

#### Test Description

@ACOPEDD -- Gross Alpha by Co-precipitation (Sub)



750 Royal Oaks Drive, Suite #100 Monrovia, CA. 91016.

(626) 386-1100 (800) 566-5227

MWLABS USE ONLY:

LOGIN COMMENTS:

SAMPLES CHECKED/LOGGED IN BY: JS/JS

SAMPLE TEMP, RECEIPT AT LAB: 2<sup>o</sup>

BLUE ICE: FROZEN  PARTIALLY FROZEN THAWED

TO BE COMPLETED BY SAMPLER:

**COMPANY / PROJECT NAME**  
**PROJECT JOB # / P.O.#**  
 CWA-RCRA  
 Bi-Monthly Permit Compliance- Wash Samples  
**TRONOX**  
 Tronox LLC - Henderson Plant  
 PO Box 55  
 Henderson, NV 89009

*Sampler Signature: Michele Brown*  
 (702) 651-2234  
 Susan Crowley

**REFER TO ATTACHED BOTTLE ORDER FOR ANALYSES**  **(check for yes)**

**ANALYSES REQUIRED (mark an 'X' in all tests required for each sample line)**

TIME	DATE	LOCATION	IDENTIFIER, STATE ID#	MATRIX *	GRAB	COMP	Bi-monthly Permit 002	see bottle order	SAMPLER COMMENTS
8:15	9/7/2010		LVW UPGRADE	RSW	X		X		BO #8733
8:47	9/7/2010		LVW 6.05	RSW	X		X		BO #8733
9:00	9/7/2010		LVW 5.5	RSW	X		X		BO #8733
9:30	9/7/2010		LVW 0.55	RSW	X		X		BO #8733

**\* MATRIX TYPES:**  
 CFW = Chlor(am)inated Finished Water  
 FW = Other Finished Water

**Reported by Volume:**  
 RGW = Raw Ground Water  
 RSW = Raw Surface Water

**Reported by Weight:**  
 SO = Soil  
 SL = Sludge

**CWW = Chlorinated Waste Water**  
**WW = Other Waste Water**  
**SW = Storm Water**

**SIGNATURE:** *Michele Brown*  
**PRINT NAME:** Michele Brown

**SIGNATURE:** *Joe Sanchez*  
**PRINT NAME:** Joe Sanchez

**RELINQUISHED BY:**  
**RECEIVED BY:**  
**RELINQUISHED BY:**  
**RECEIVED BY:**

**COMPANY/TITLE:** Veolia Water for Tronox LLC  
**DATE:** 9/7/2010  
**TIME:** 12:00PM

**DATE:** 9-8-10  
**TIME:** 1116

**C-O-C#** KH062002

PAGE 1 of 1

Group#
Date Sampled
Date Received

Linda Geddes Your MWHL Project Manager

Client Code TRONOX  
 Project Code CWA-RCRA Bottle Orders  
 Group Name LV Wash  
 PO# / Job#

BO #: 20995

Created By: LXG  
 Order Date: 07/06/2010

Bottle Orders

Ship By:
07/26/2010

Ship Sample Kits to

Veolia Water-Tronox LLC  
 Gate 1  
 560 West Lake Mead Pkwy  
 Henderson, NV 89015  
 Attn: Wendy Prescott  
 Phone: \_\_\_\_\_  
 Fax: \_\_\_\_\_

Send Report to

Tronox LLC  
 PO Box 55  
 Henderson, NV 89009  
 Attn: Susan Crowley  
 Phone: 702-651-2234  
 Fax: 702-651-2310

Billing Address

Tronox LLC  
 PO Box 55  
 Henderson, NV 89009  
 Attn: Susan Crowley  
 Phone: 702-651-2234  
 Fax: 702-651-2310

# of Samples	Tests	Qteline#	Bottles - Qty for each sample, type & preservative if any	UN DOT #
3	ALPHA		1 500ml poly 2ml 18%HNO3+125ml poly/no pres	
3	Ammonia Nitrogen		1 250ml poly 0.5ml H2SO4 (50%)	
1	Ammonia Nitrogen, Total phosphorus as P		1 250ml poly 0.5ml H2SO4 (50%)	
3	Nitrate as Nitrogen by IC, Nitrite Nitrogen by IC, Total Inorganic Nitrogen-Calc		1 125ml poly no preservative	
4	Perchlorate		1 125ml poly CLO4 - no preservative	

Comments

Biweekly Las Vegas Wash T-P, NH3, CLO4 on LVW 0.55 clo4, alpha, no3, no2, n-inor, NH3 on LVW 5.5, LVW 6.05, LVW Upgradient PUT IN LARGER COOLER WITH MORE BLUE ICE DURING SUMMMER MONTHS
---

THIS MEMORANDUM is an acknowledgement that a Bill of Lading has been issued and is not the Original Bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

SHIPPER'S NUMBER: 144446

RECEIVED subject to the classifications and lawfully filed tariffs in effect on the date of the issue of this Bill of Lading.

**From: TRONOX LLC**

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said Carrier (the word Carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another Carrier on the route to said destination. It is mutually agreed, as to each Carrier of all or any said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said Bill of Lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the Shipper and accepted for himself and his assigns.

CARRIER <b>Federal Express</b>		Date <b>9/7/10</b>	FROM NO. STATION: STATE <b>Henderson, NV 89015</b>	
MWH LABORATORIES 750 Royal Oaks Avenue, Suite #100 Monrovia, CA 91016-3629 Phone: 626-568-6400			Authorization <b>S. Crowley</b>	
FREIGHT CHARGES <input checked="" type="checkbox"/> Prepaid <input type="checkbox"/> Collect			FULL NAME OF SHIPPER <b>TRONOX LLC</b>	
N/AR			CUSTOMER PO OR REQ'N NO.	
SHIPPED FROM <b>Henderson, NV</b>			CODE NO. WCN IS <b>10181</b>	
If it moves between two ports by water, the law requires that the Bill of Lading shall state whether it is Carrier's or Shippers weight.				
LINE NO.	DESCRIPTION AND CLASSIFICATION	STOCK NO.	TOTAL QUANTITY	
	<b>Bimonthly Las Vegas Wash Samples Upgradient, 6.05, 5.5, 0.55</b>  <b>One ice chest at 25 lbs.</b>  <b>Not Regulated</b>		<b>1 COOLER</b>	Subject to Section 7 of Conditions of applicable Bill of Lading, if this shipment is to be delivered to the Consignee without recourse on the Consignor, the Consignor shall sign the following statement:  The Carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.  <b>TRONOX LLC</b>
The description and weight indicated on this Bill of Lading are correct. Subject to verification by the Governing Weighing and Inspection Bureau according to Agreement.				
TRUCK SHIPMENTS			FOR CHEMICAL EMERGENCY-SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CALL CHEMTREC - DAY OR NIGHT 800-424-9300 483-7616 IN DISTRICT OF COLUMBIA 202-483-7616 FROM OUTSIDE THE CONTINENTAL US.	
PLACARDS OFFERED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			PLACARDS ACCEPTED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
NUMBER OF PACKAGES	GROSS WEIGHT	TARE WEIGHT	NET WEIGHT	
		<b>0</b>		
<b>1</b>	TOTAL GROSS WEIGHT <b>25</b>	TOTAL TARE WEIGHT <b>0</b>	<b>25</b>	"Shippers imprint in lieu of stamp; not a part of Bill of Lading approved by the Interstate Commerce Commission"
NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____				
THIS IS TO CERTIFY THAT THE ABOVE-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.				
TRONOX LLC Shipper permanent post office address of shipper, PO Box 268859, Oklahoma City, OK 73126-8859		PER <b>Carron Williams</b>	AGENT	PER

From: Origin ID: LASA (702) 651-2200  
Tronox  
Tronox  
560 W. Lake Mead Parkway  
Henderson, NV 89015



J10201008090225

Ship Date: 07SEP10  
ActWgt: 25.0 LB  
CAD: 100845654/INET3060

Delivery Address Bar Code



Ref # MSO #144446  
Invoice #  
PO #  
Dept #

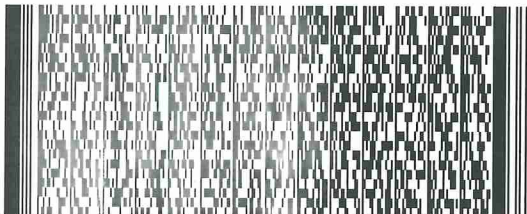
SHIP TO: (626) 568-6400 **BILL SENDER**

**Attn: Sample Receiving  
Montgomery Watson Labs  
750 ROYAL OAKS DR STE 100**

**MONROVIA, CA 91016**

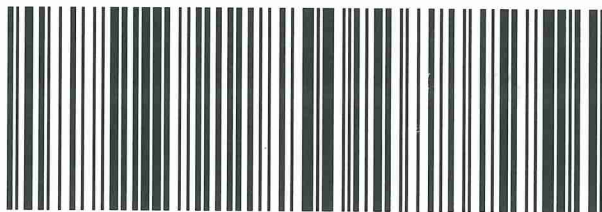
**WED - 08 SEP A1  
PRIORITY OVERNIGHT**

TRK# 7962 2040 0840  
0201



**91016  
CA-US  
BUR**

**QZ WHPA**



508G3/8292/9A24

**After printing this label:**

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
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3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$500, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

December 06, 2010

Ms. Susan Crowley  
Tronox  
PO Box 55  
Henderson, NV 89009

Subject: Case Narrative report 342891

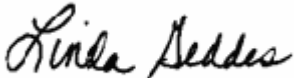
Sample receipt: The samples arrived at MWH Laboratories, Monrovia, CA on September 08, 2010 with proper chain of custody. All containers were received without any visible signs of tampering or breakage at proper temperature. Samples are identified on the acknowledgement, which is part of the report package, along with the chain of custody.

Case Narrative:  
For the MWH Laboratories data the following issues were observed:

Other Observations:

Gross Alpha was submitted by Pace Labs. Please see their case narrative for any issues.

Sincerely,



Linda Geddes  
Project Manager



**MWH**

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1 800 566 LABS (1 800 566 5227)

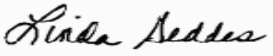
Tronox LLC  
Susan Crowley  
PO Box 55  
Henderson, NV 89009

**Laboratory Comments**  
**Report: #342891**

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**Client specific Comments**

I hereby certify that all laboratory analytical data was generated by a laboratory certified by the NDEP for each constituent and media presented herein.

Signature: 

**Group Comments**

Analytical results for Alpha by Co-precipitation are submitted by Pace Analytical Services,  
Greensburg, PA





# MWH

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Fax: 626 386 1101  
1 800 566 LABS (1 800 566 5227)

Laboratory  
Hits Report: 342891

**Tronox LLC**  
Susan Crowley  
PO Box 55  
Henderson, NV 89009

Samples Received on:  
09/08/2010

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
		<b>201009080308</b>	<b><u>LVW UPGRADIENT</u></b>			
11/22/2010	21:45	Gross Alpha by Coprecipitation	4.41	15	pCi/L	3
09/08/2010	14:41	Nitrate as Nitrogen by IC	14	10	mg/L	1
09/27/2010	22:37	Perchlorate	22	6	ug/L	4
09/13/2010	11:20	Total Inorganic Nitrogen-Calc	14		mg/L	0.2
		<b>201009080309</b>	<b><u>LVW 6.05</u></b>			
11/22/2010	21:46	Gross Alpha by Coprecipitation	3.01	15	pCi/L	2.9
09/08/2010	15:30	Nitrate as Nitrogen by IC	13	10	mg/L	1
09/27/2010	23:00	Perchlorate	24	6	ug/L	4
09/13/2010	11:20	Total Inorganic Nitrogen-Calc	13		mg/L	0.2
		<b>201009080310</b>	<b><u>LVW 5.5</u></b>			
11/22/2010	21:47	Gross Alpha by Coprecipitation	4.46	15	pCi/L	2.9
09/08/2010	14:53	Nitrate as Nitrogen by IC	13	10	mg/L	1
09/27/2010	23:22	Perchlorate	23	6	ug/L	4
09/13/2010	11:20	Total Inorganic Nitrogen-Calc	13		mg/L	0.2
		<b>201009080311</b>	<b><u>LVW 0.55</u></b>			
09/27/2010	23:44	Perchlorate	80	6	ug/L	4
09/14/2010	13:46	Total phosphorus as P	0.065		mg/L	0.02



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Laboratory Data
Report: 342891

Tronox LLC
Susan Crowley
PO Box 55
Henderson, NV 89009

Samples Received on:
09/08/2010

Table with 11 columns: Prepared, Analyzed, QC Ref #, Method, Analyte, Result, Units, MDL, MRL, SQL, Dilution

LVW UPGRADIENT (201009080308)

Sampled on 09/07/2010 0815

SM 7110C - Gross Alpha by Co-precipitation (Sub)

Table with 11 columns: Prepared, Analyzed, QC Ref #, Method, Analyte, Result, Units, MDL, MRL, SQL, Dilution. Rows for SM 7110C tests.

CALC\_300.0 - Total Inorganic Nitrogen-Calc

Table with 11 columns: Prepared, Analyzed, QC Ref #, Method, Analyte, Result, Units, MDL, MRL, SQL, Dilution. Row for CALC\_300.0 test.

EPA 350.1 - Ammonia Nitrogen

Table with 11 columns: Prepared, Analyzed, QC Ref #, Method, Analyte, Result, Units, MDL, MRL, SQL, Dilution. Row for EPA 350.1 test.

EPA 300.0 - Nitrate, Nitrite by EPA 300.0

Table with 11 columns: Prepared, Analyzed, QC Ref #, Method, Analyte, Result, Units, MDL, MRL, SQL, Dilution. Rows for EPA 300.0 tests.

EPA 314.0 - Perchlorate

Table with 11 columns: Prepared, Analyzed, QC Ref #, Method, Analyte, Result, Units, MDL, MRL, SQL, Dilution. Row for EPA 314.0 test.

LVW 6.05 (201009080309)

Sampled on 09/07/2010 0847

SM 7110C - Gross Alpha by Co-precipitation (Sub)

Table with 11 columns: Prepared, Analyzed, QC Ref #, Method, Analyte, Result, Units, MDL, MRL, SQL, Dilution. Rows for SM 7110C tests.

CALC\_300.0 - Total Inorganic Nitrogen-Calc

Table with 11 columns: Prepared, Analyzed, QC Ref #, Method, Analyte, Result, Units, MDL, MRL, SQL, Dilution. Row for CALC\_300.0 test.

EPA 350.1 - Ammonia Nitrogen

Table with 11 columns: Prepared, Analyzed, QC Ref #, Method, Analyte, Result, Units, MDL, MRL, SQL, Dilution. Row for EPA 350.1 test.

EPA 300.0 - Nitrate, Nitrite by EPA 300.0

Table with 11 columns: Prepared, Analyzed, QC Ref #, Method, Analyte, Result, Units, MDL, MRL, SQL, Dilution. Rows for EPA 300.0 tests.

EPA 314.0 - Perchlorate

Table with 11 columns: Prepared, Analyzed, QC Ref #, Method, Analyte, Result, Units, MDL, MRL, SQL, Dilution. Row for EPA 314.0 test.

Rounding on totals after summation.
(c) - indicates calculated results

Sample Quantitation Limit (SQL) =
MDL \* Dilution Factor



# MWH

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Laboratory Data  
Report: 342891

**Tronox LLC**  
Susan Crowley  
PO Box 55  
Henderson, NV 89009

Samples Received on:  
09/08/2010

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MDL	MRL	SQL	Dilution
<b><u>LVW 5.5 (201009080310)</u></b>										<b>Sampled on 09/07/2010 0900</b>
<b>SM 7110C - Gross Alpha by Co-precipitation (Sub)</b>										
11/22/2010	21:47		(SM 7110C)	Alpha, Min Detectable Activity	2.89	pCi/L			0.0000	1
11/22/2010	21:47		(SM 7110C)	Alpha, Two Sigma Error	2.06	pCi/L			0.0000	1
11/22/2010	21:47		(SM 7110C)	Gross Alpha by Coprecipitation	4.46	pCi/L		2.9	0.0000	1
<b>CALC_300.0 - Total Inorganic Nitrogen-Calc</b>										
09/13/2010	11:20		(CALC_300.0)	Total Inorganic Nitrogen-Calc	13	mg/L	0.20	0.2	0.20	1
<b>EPA 350.1 - Ammonia Nitrogen</b>										
09/10/2010	16:31	568845	(EPA 350.1)	Ammonia Nitrogen	0.016J	mg/L	0.0030	0.05	0.0030	1
<b>EPA 300.0 - Nitrate, Nitrite by EPA 300.0</b>										
09/08/2010	14:53	568268	(EPA 300.0)	Nitrate as Nitrogen by IC	13	mg/L	0.0050	1	0.050	10
09/08/2010	14:53	568268	(EPA 300.0)	Nitrite Nitrogen by IC	ND	mg/L	0.0040	0.13	0.040	10
<b>EPA 314.0 - Perchlorate</b>										
09/27/2010	23:22	570690	(EPA 314.0)	Perchlorate	23	ug/L	0.25	4	0.25	1
<b><u>LVW 0.55 (201009080311)</u></b>										<b>Sampled on 09/07/2010 0930</b>
<b>EPA 350.1 - Ammonia Nitrogen</b>										
09/10/2010	16:32	568845	(EPA 350.1)	Ammonia Nitrogen	0.006 J	mg/L	0.0030	0.05	0.0030	1
<b>EPA 314.0 - Perchlorate</b>										
09/27/2010	23:44	570690	(EPA 314.0)	Perchlorate	80	ug/L	0.25	4	0.25	1
<b>SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)</b>										
09/14/2010	13:46	569071	(SM4500-PE/EP A 365.1)	Total phosphorus as P	0.065	mg/L	0.0084	0.02	0.0084	1

Rounding on totals after summation.  
(c) - indicates calculated results

Sample Quantitation Limit (SQL) =  
MDL \* Dilution Factor



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Laboratory  
QC Summary: 342891

Tronox LLC

---

**QC Ref # 568268 - Nitrate, Nitrite by EPA 300.0**

201009080308 LVW UPGRADIENT  
201009080309 LVW 6.05  
201009080310 LVW 5.5

**Analysis Date: 09/08/2010**

Analyzed by: S XK  
Analyzed by: S XK  
Analyzed by: S XK

**QC Ref # 568845 - Ammonia Nitrogen**

201009080308 LVW UPGRADIENT  
201009080309 LVW 6.05  
201009080310 LVW 5.5  
201009080311 LVW 0.55

**Analysis Date: 09/10/2010**

Analyzed by: NJR  
Analyzed by: NJR  
Analyzed by: NJR  
Analyzed by: NJR

**QC Ref # 569071 - Total phosphorus as P (T-P)**

201009080311 LVW 0.55

**Analysis Date: 09/14/2010**

Analyzed by: NJR

**QC Ref # 570690 - Perchlorate**

201009080308 LVW UPGRADIENT  
201009080309 LVW 6.05  
201009080310 LVW 5.5  
201009080311 LVW 0.55

**Analysis Date: 09/27/2010**

Analyzed by: LUPE  
Analyzed by: LUPE  
Analyzed by: LUPE  
Analyzed by: LUPE



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Laboratory  
QC Report: 342891

Tronox LLC

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
<b>QC Ref# 568268 - Nitrate, Nitrite by EPA 300.0 by EPA 300.0</b>					<b>Analysis Date: 09/08/2010</b>				
LCS1	Nitrate as Nitrogen by IC		2.5	2.57	mg/L	103	(90-110)		
LCS2	Nitrate as Nitrogen by IC		2.5	2.57	mg/L	103	(90-110)	20	0.0
MBLK	Nitrate as Nitrogen by IC			<0.10	mg/L				
MRL_CHK	Nitrate as Nitrogen by IC		0.05	0.0502	mg/L	100	(50-150)		
MRLLW	Nitrate as Nitrogen by IC		0.013	0.0123	mg/L	98	(50-150)		
MS_201009070137	Nitrate as Nitrogen by IC	7.0	1.3	9.63	mg/L	106	(80-120)		
MS_201009080208	Nitrate as Nitrogen by IC	9.6	1.3	12.3	mg/L	109	(80-120)		
MSD_201009070137	Nitrate as Nitrogen by IC	7.0	1.3	9.66	mg/L	107	(80-120)	20	0.94
MSD_201009080208	Nitrate as Nitrogen by IC	9.6	1.3	12.2	mg/L	107	(80-120)	20	1.9
LCS1	Nitrite Nitrogen by IC		1.0	0.987	mg/L	99	(90-110)		
LCS2	Nitrite Nitrogen by IC		1.0	0.988	mg/L	99	(90-110)	20	0.10
MBLK	Nitrite Nitrogen by IC			<0.10	mg/L				
MRL_CHK	Nitrite Nitrogen by IC		0.05	0.0447	mg/L	89	(50-150)		
MRLLW	Nitrite Nitrogen by IC		0.013	0.0114	mg/L	91	(50-150)		
MS_201009070137	Nitrite Nitrogen by IC	ND	0.5	0.971	mg/L	97	(80-120)		
MS_201009080208	Nitrite Nitrogen by IC	ND	0.5	1.02	mg/L	102	(80-120)		
MSD_201009070137	Nitrite Nitrogen by IC	ND	0.5	0.997	mg/L	100	(80-120)	20	2.6
MSD_201009080208	Nitrite Nitrogen by IC	ND	0.5	1.01	mg/L	101	(80-120)	20	0.99
<b>QC Ref# 568845 - Ammonia Nitrogen by EPA 350.1</b>					<b>Analysis Date: 09/10/2010</b>				
LCS1	Ammonia Nitrogen		1.0	1.06	mg/L	106	(90-110)		
LCS2	Ammonia Nitrogen		1.0	1.07	mg/L	107	(90-110)	20	0.94
MBLK	Ammonia Nitrogen			<0.05	mg/L				
MRL_CHK	Ammonia Nitrogen		0.05	0.0400	mg/L	80	(50-150)		
MS_201009090363	Ammonia Nitrogen	0.24	1.0	1.25	mg/L	101	(90-110)		
MS2_201009090368	Ammonia Nitrogen	0.17	1.0	1.17	mg/L	100	(90-110)		
MSD_201009090363	Ammonia Nitrogen	0.24	1.0	1.24	mg/L	100	(90-110)	20	1.3
<b>QC Ref# 569071 - Total phosphorus as P (T-P) by SM4500-PE/EPA 365.1</b>					<b>Analysis Date: 09/14/2010</b>				
LCS1	Total phosphorus as P		0.4	0.367	mg/L	92	(90-110)		
LCS2	Total phosphorus as P		0.4	0.370	mg/L	93	(90-110)	20	0.81
MBLK	Total phosphorus as P			<0.02	mg/L				
MRL_CHK	Total phosphorus as P		0.02	0.0180	mg/L	90	(50-150)		
MS_201009090209	Total phosphorus as P	0.34	0.4	0.756	mg/L	105	(90-110)		
MS2_201009100263	Total phosphorus as P	ND	0.4	0.374	mg/L	91	(90-110)		
MSD_201009090209	Total phosphorus as P	0.34	0.4	0.760	mg/L	106	(90-110)	20	0.95
<b>QC Ref# 570690 - Perchlorate by EPA 314.0</b>					<b>Analysis Date: 09/27/2010</b>				

Spike recovery is already corrected for native results.  
 Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.  
 Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.  
 (S) Indicates surrogate compound.  
 (I) Indicates internal standard compound.  
 RPD not calculated for LCS2 when different a concentration than LCS1 is used  
 RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)



# MWH

## LABORATORIES

A Division of MWH Americas, Inc.

750 Royal Oak Dr., Suite 100  
Monrovia, California, 91016-3629  
Tel: 626 386 1100  
Fax: 626 386 1101  
1 800 566 LABS (1 800 566 5227)

Laboratory  
QC Report: 342891

Tronox LLC  
(continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS1	Perchlorate		25	25.4	ug/L	102	(85-115)		
LCS2	Perchlorate		25	22.7	ug/L	91	(85-115)	15	11
MBLK	Perchlorate			<4	ug/L				
MRL_CHK	Perchlorate		4.0	3.87	ug/L	97	(75-125)		
MRLW	Perchlorate		2.0	2.01	ug/L	100	(50-150)		
MS_201009150057	Perchlorate	ND	25	24.9	ug/L	99	(80-120)		
MSD_201009150057	Perchlorate	ND	25	25.2	ug/L	101	(80-120)	15	1.6

Spike recovery is already corrected for native results.

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.

Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

(S) Indicates surrogate compound.

14/23

(I) Indicates internal standard compound.

RPD not calculated for LCS2 when different a concentration than LCS1 is used

RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)

November 23, 2010

Ms. Jaclyn L. Contreras  
MWH Americas, Inc.  
Royal Oaks Dr.  
Suite 100  
Monrovia, CA 910163629

RE: Project: PACE-PA 342891  
Pace Project No.: 3037416

Dear Ms. Contreras:

Enclosed are the analytical results for sample(s) received by the laboratory on November 17, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jacquelyn Collins

jacquelyn.collins@pacelabs.com  
Project Manager

Enclosures

cc: Mr. Aleksandar D. Tomovich, MWH Americas, Inc.

**REPORT OF LABORATORY ANALYSIS**

15/23

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## CERTIFICATIONS

Project: PACE-PA 342891  
Pace Project No.: 3037416

### Pennsylvania Certification IDs

1638 Roseytown Road Suites 2,3&4, Greensburg, PA 15601

Alabama Certification #: 41590  
Arizona Certification #: AZ0734  
Arkansas Certification  
California/NELAC Certification #: 04222CA  
Colorado Certification  
Connecticut Certification #: PH 0694  
Delaware Certification  
Florida/NELAC Certification #: E87683  
Guam/PADEP Certification  
Hawaii/PADEP Certification  
Idaho Certification  
Illinois/PADEP Certification  
Indiana/PADEP Certification  
Iowa Certification #: 391  
Kansas/NELAC Certification #: E-10358  
Kentucky Certification #: 90133  
Louisiana/NELAC Certification #: LA080002  
Louisiana/NELAC Certification #: 4086  
Maine Certification #: PA0091  
Maryland Certification #: 308  
Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification  
Missouri Certification #: 235  
Montana Certification #: Cert 0082  
Nevada Certification  
New Hampshire/NELAC Certification #: 2976  
New Jersey/NELAC Certification #: PA 051  
New Mexico Certification  
New York/NELAC Certification #: 10888  
North Carolina Certification #: 42706  
Oregon/NELAC Certification #: PA200002  
Pennsylvania/NELAC Certification #: 65-00282  
Puerto Rico Certification #: PA01457  
South Dakota Certification  
Tennessee Certification #: TN2867  
Texas/NELAC Certification #: T104704188-09 TX  
Utah/NELAC Certification #: ANTE  
Virgin Island/PADEP Certification  
Virginia Certification #: 00112  
Washington Certification #: C1941  
West Virginia Certification #: 143  
Wisconsin/PADEP Certification  
Wyoming Certification #: 8TMS-Q

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: PACE-PA 342891

Pace Project No.: 3037416

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3037416001	201009080308	Water	09/07/10 08:15	11/17/10 10:30
3037416002	201009080309	Water	09/07/10 08:47	11/17/10 10:30
3037416003	201009080310	Water	09/07/10 09:00	11/17/10 10:30

### REPORT OF LABORATORY ANALYSIS

17/23

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### SAMPLE ANALYTE COUNT

Project: PACE-PA 342891

Pace Project No.: 3037416

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3037416001	201009080308	SM 7110C	SJH	1	PASI-PA
3037416002	201009080309	SM 7110C	SJH	1	PASI-PA
3037416003	201009080310	SM 7110C	SJH	1	PASI-PA

### REPORT OF LABORATORY ANALYSIS

18/23

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## PROJECT NARRATIVE

Project: PACE-PA 342891  
Pace Project No.: 3037416

---

**Method:** SM 7110C  
**Description:** 7110C Gross Alpha  
**Client:** MWH Laboratories  
**Date:** November 23, 2010

**General Information:**

3 samples were analyzed for SM 7110C. All samples were received in acceptable condition with any exceptions noted below.

**Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

**Method Blank:**

All analytes were below the report limit in the method blank with any exceptions noted below.

**Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

**Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

**Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

**Additional Comments:**

This data package has been reviewed for quality and completeness and is approved for release.

## REPORT OF LABORATORY ANALYSIS

19/23

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### ANALYTICAL RESULTS

Project: PACE-PA 342891  
Pace Project No.: 3037416

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	SM 7110C	<b>4.41 ± 2.11 (2.97)</b>	pCi/L	11/22/10 21:45	12587-46-1	

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	SM 7110C	<b>3.01 ± 1.83 (2.91)</b>	pCi/L	11/22/10 21:46	12587-46-1	

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	SM 7110C	<b>4.46 ± 2.06 (2.89)</b>	pCi/L	11/22/10 21:47	12587-46-1	

### QUALITY CONTROL DATA

Project: PACE-PA 342891

Pace Project No.: 3037416

QC Batch: RADC/6766

Analysis Method: SM 7110C

QC Batch Method: SM 7110C

Analysis Description: 7110C Gross Alpha

Associated Lab Samples: 3037416001, 3037416002, 3037416003

METHOD BLANK: 240239

Matrix: Water

Associated Lab Samples: 3037416001, 3037416002, 3037416003

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Gross Alpha	0.556 ± 0.939 (2.09)	pCi/L	11/22/10 13:29	

## QUALIFIERS

Project: PACE-PA 342891

Pace Project No.: 3037416

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty

(MDC) - Minimum Detectable Concentration

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

# Quality Control Sample Performance Assessment



Test: Gross Alpha  
 Analyst: SJH  
 Date: 11/23/2010  
 Worklist: 6766  
 DW  
 Matrix (DW, W, F, Solid):

Method Blank Assessment	
MB concentration:	0.229
M/B Counting Uncertainty:	0.482
MB MDC:	1.121
MB Numerical Performance Indicator:	0.93
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
Count Date:	11/22/2010
Spike I.D.:	08-026
Spike Concentration (pCi/mL):	30.198
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.200
Target Conc. (pCi/L, g, F):	15.099
Uncertainty (Calculated):	0.947
Result (pCi/L, g, F):	15.179
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	2.481
Numerical Performance Indicator:	0.06
Percent Recovery:	100.53%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass

23/23

Duplicate Sample Assessment	
Sample I.D.:	LCS
Duplicate Sample I.D.:	LCSD
Sample Result (pCi/L, g, F):	15.179
Sample Duplicate Result (pCi/L, g, F):	2.481
Sample Duplicate Result (pCi/L, g, F):	15.126
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	2.493
Are sample and/or duplicate results below MDC?	NO
Duplicate Numerical Performance Indicator:	0.030
Duplicate RPD:	0.35%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

*Handwritten signature and date: 11/23/10*

Sample Matrix Spike Control Assessment	
Sample Collection Date:	11/3/2010
Sample I.D.:	3521596010
Sample MS I.D.:	3521596010MS
Sample MSD I.D.:	
Spike I.D.:	08-026
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	30.198
Spike Volume Used in MS (mL):	0.20
Spike Volume Used in MSD (mL):	
MS Aliquot (L, g, F):	0.050
MS Target Conc. (pCi/L, g, F):	120.793
MSD Aliquot (L, g, F):	
MSD Target Conc. (pCi/L, g, F):	
Spike uncertainty (calculated):	7.576
Sample Result:	18.292
Sample Result Counting Uncertainty (pCi/L, g, F):	2.576
Sample Matrix Spike Result:	100.933
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	13.683
Sample Matrix Spike Duplicate Result:	
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	-4.717
MS Numerical Performance Indicator:	68.42%
MSD Numerical Performance Indicator:	
MS Percent Recovery:	N/A
MSD Percent Recovery:	
MS Status vs Numerical Indicator:	
MSD Status vs Numerical Indicator:	
MS Status vs Recovery:	Pass
MSD Status vs Recovery:	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
Sample I.D.:	
Sample MS I.D.:	
Sample MSD I.D.:	
Sample Matrix Spike Result:	
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
Sample Matrix Duplicate Result Counting Uncertainty (pCi/L, g, F):	
Duplicate Numerical Performance Indicator:	
MS/MSD Duplicate RPD:	
MS/MSD Duplicate Status vs Numerical Indicator:	
MS/MSD Duplicate Status vs RPD:	