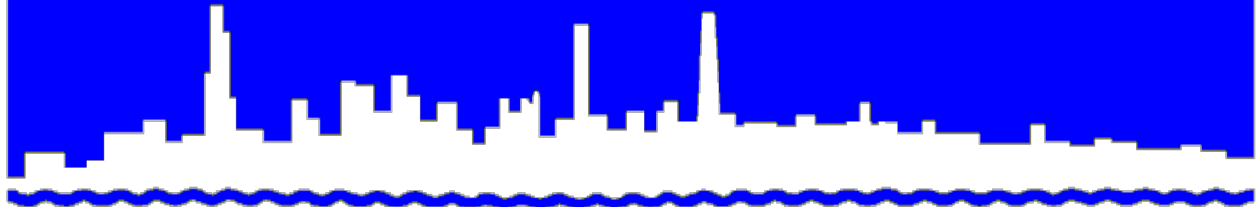


*Protecting Our Water Environment*



***Metropolitan Water Reclamation District of Greater Chicago***

***MONITORING AND RESEARCH  
DEPARTMENT***

***REPORT NO. 21-44***

***RESULTS OF ACUTE TOXICITY TESTING WITH *Ceriodaphnia dubia*  
AND *Pimephales promelas* ON A NOVEMBER 2021 EFFLUENT  
SAMPLE FROM THE CALUMET WATER RECLAMATION PLANT OF  
THE METROPOLITAN WATER RECLAMATION DISTRICT OF  
GREATER CHICAGO***

**November 2021**



RESULTS OF ACUTE TOXICITY TESTING  
WITH *Ceriodaphnia dubia* AND *Pimephales promelas*  
ON A NOVEMBER 2021 EFFLUENT SAMPLE FROM THE  
CALUMET WATER RECLAMATION PLANT  
OF THE METROPOLITAN WATER RECLAMATION DISTRICT (MWRD)

*Prepared for:*

Metropolitan Water Reclamation District of Greater Chicago  
6001 W. Pershing Road  
Cicero, Illinois 60804

*Prepared by:*

EA Engineering, Science, and Technology, Inc., PBC  
231 Schilling Circle  
Hunt Valley, Maryland 21031  
For questions, please contact Michael Chanov  
ph: 410-584-7000

*Results relate only to the items tested or to the samples as received by the laboratory.*

*This report shall not be reproduced, except in full, without written approval of  
EA Engineering, Science, and Technology, Inc., PBC*

*This report contains 8 pages plus 2 attachments*

A handwritten signature in black ink, appearing to read 'Michael K. Chanov II', is positioned above a horizontal line.

Michael K. Chanov II  
Laboratory Director

24 November 2021

Date

## INTRODUCTION

At the request of Metropolitan Water Reclamation District (MWRD), EA Engineering, Science, and Technology performed acute toxicity testing on a composite sample of Outfall 001 final effluent from MWRD's Calumet Water Reclamation Plant in Chicago, Illinois. The effluent composite sample was collected on 15-16 November 2021. The test organisms, *Ceriodaphnia dubia* (water flea) and *Pimephales promelas* (fathead minnow), were exposed to 100, 50, 25, 12.5 and 6.25 percent effluent, and a laboratory water control. The objective of this study was to assess the acute lethality of the effluent sample to the test species, expressed as a 48-hour (*C. dubia*), or 96-hour (*P. promelas*) median lethal concentration (LC50). This toxicity testing was conducted under the Section 10 biomonitoring requirements of Metropolitan Water Reclamation District's discharge permit number IL0028061.

This toxicity testing was conducted following EA's standard operating procedures (EA 2018) which are in accordance with US EPA guidance (2002). The results of the acute toxicity tests were analyzed using the ToxCalc statistical software package (Version 5.0, Tidepool Scientific Software) and followed US EPA guidance (2002). Summaries of sample and test information are presented on pages 5-6 for *C. dubia* and on pages 7-8 for *P. promelas*. Copies of raw data sheets and statistics are included in Attachment I. The Report Quality Assurance Record is included as Attachment II.

## SUMMARY OF RESULTS

The results of the acute toxicity tests indicated that the 15-16 November 2021 Outfall 001 final effluent sample was not acutely toxic to *Ceriodaphnia dubia* or *Pimephales promelas*. The results of these toxicity tests comply with current NELAC standards.

The results of the *C. dubia* acute toxicity test are presented on page 6. After 48 hours, there was 100 percent survival in all of the effluent concentrations and 100 percent survival in the dilution water control. The 48-hour *C. dubia* LC50 for this test was >100 percent effluent (<1.0 TU<sub>a</sub>). In the *P. promelas* acute toxicity test (page 8), at the end of 96 hours there was a minimum of 80 percent survival in all of the effluent concentrations. The laboratory control had 95 percent survival. The resulting 96-hour LC50 for *P. promelas* was >100 percent effluent (<1.0 TU<sub>a</sub>).

In conformance with EA's quality assurance/quality control program, monthly reference toxicant tests using sodium chloride (NaCl) and potassium chloride (KCl) were performed on the in-house cultured test species. The results of the *C. dubia* reference toxicant test was acceptable, with a 48-hour LC50 of 1,916 mg/L NaCl, and acceptable control chart limits of 1,629-2,265 mg/L NaCl. The results of the *P. promelas* reference toxicant test was acceptable, with a 48-hour LC50 of 1,146 mg/L KCl, and acceptable control chart limits of 564-1,250 mg/L KCl.

## REFERENCES

- EA. 2018. EA Ecotoxicology Laboratory Quality Assurance and Standard Operating Procedures Manual. EA Manual ATS-102. Internal document prepared by EA's Ecotoxicology Laboratory, EA Engineering, Science, and Technology, Inc., PBC, Hunt Valley, Maryland.
- US EPA. 2002. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms. Fifth Edition. EPA-821-R-02-012. U.S. Environmental Protection Agency, Office of Water, Washington, D.C.

## SUMMARY OF SAMPLE/TEST INFORMATION

Test: ***Ceriodaphnia dubia* 48-hour static acute toxicity test**

Test Procedure: **EA Protocol CD-AC-05**

Acute assay with water flea (*Ceriodaphnia dubia*)

Client Name: **Metropolitan Water Reclamation District (MWRD)**

Permit Number: **IL0028061**

Receiving Water: **Little Calumet River**

Sample Description: **Outfall 001 Final Effluent**

EA Accession Number: **AT1-840**

Collection Time and Date: 0600, 15 November 2021 to 0600, 16 November 2021

Receipt Time and Date: 0941, 17 November 2021

Dilution Water Description: **Moderately hard synthetic freshwater**

EA Test Number: **TN-21-701**

Test Initiation Time and Date: 1320, 17 November 2021

Test Completion Time and Date: 1305, 19 November 2021

Number of Replicates: **4**

Number of Organisms Per Replicate: **5**

Test Chamber: **30 ml cup**

Volume per Test Chamber: **15 ml**

Feeding: **None**

### Organism Lot Information

Lot Number: N/A

Source: EA's Culture Facility (Hunt Valley, Maryland)

Age: <24 hours old

### Reference Toxicant Test Information

Reference Toxicant: Sodium chloride (NaCl)

Reference Toxicant Information: Lab Chem Lot#F214-24 (Received 9/7/16)

EA Test Number: RT-21-200

Test Date and Time: 1200, 4 November 2021 to 1119, 6 November 2021

Dilution Water: Moderately hard synthetic freshwater

48-hour LC50: 1,916 mg/L NaCl

Laboratory control chart acceptability range for 48-hour LC50: 1,629-2,265 mg/L NaCl

SUMMARY OF SAMPLE/TEST INFORMATION (continued)

Test Species: ***Ceriodaphnia dubia* (water flea)**  
 Sample Description: Outfall 001 Final Effluent – MWRD  
 Sample Date: 15-16 November 2021  
 EA Test Number: TN-21-701

Test Concentration (percent effluent)	48-Hour Survival (percent)
Lab Control	100
6.25	100
12.5	100
25	100
50	100
100	100

48-Hour LC50 (percent effluent): **>100 (TU<sub>a</sub> <1.0)**

Water Quality Parameters on Test Solutions	Range
Temperature (°C):	24.0 – 25.4
pH:	7.6 – 8.0
Dissolved Oxygen (mg/L):	8.1 – 9.4
Conductivity (µS/cm):	322 – 1,048

Water Quality Parameters Measured on Sample Upon Receipt	Outfall 001 (AT1-840)
Temperature (°C):	2.4
pH:	7.7
Total Residual Chlorine (mg/L):	<0.01
Alkalinity (mg/L as CaCO <sub>3</sub> ):	164
Hardness (mg/L as CaCO <sub>3</sub> ):	224
Conductivity (µS/cm):	978

## SUMMARY OF SAMPLE/TEST INFORMATION

Test: ***Pimephales promelas* 96-hour static renewal acute toxicity test**

Test Procedure: **EA Protocol FH-AC-05**

Acute assay with fathead minnows (*Pimephales promelas*)

Client Name: **Metropolitan Water Reclamation District (MWRD)**

Permit Number: **IL0028061**

Receiving Water: **Little Calumet River**

Sample Description: **Outfall 001 Final Effluent**

EA Accession Number: **AT1-840**

Collection Time and Date: 0600, 15 November 2021 to 0600, 16 November 2021

Receipt Time and Date: 0941, 17 November 2021

Dilution Water Description: **Moderately hard synthetic freshwater**

EA Test Number: **TN-21-700**

Test Initiation Time and Date: 1335, 17 November 2021

Test Completion Time and Date: 1312, 21 November 2021

Number of Replicates: **2**

Number of Organisms Per Replicate: **10**

Test Chamber: **1-L beaker**

Volume per Test Chamber: **250 ml**

Feeding: **0.2 mL *Artemia* nauplii at 48 Hours**

### Organism Lot Information

Lot Number: FH1-11/12-13

Source: EA's Culture Facility (Hunt Valley, Maryland)

Age: 4-5 days old (hatched within a 24-hour period)

### Reference Toxicant Test Information

Reference Toxicant: Potassium chloride (KCl)

Reference Toxicant Information: GFS Chemicals Lot#19430079 (Received 10/20/20)

EA Test Number: RT-21-202

Test Date and Time: 1316, 4 November 2021 to 1303, 6 November 2021

Dilution Water: Moderately hard synthetic freshwater

48-hour LC50: 1,146 mg/L KCl

Laboratory control chart acceptability range for 48-hour LC50: 564-1,250 mg/L KCl



SUMMARY OF SAMPLE/TEST INFORMATION (continued)

Test Species: ***Pimephales promelas* (fathead minnow)**  
 Sample Description: Outfall 001 Final Effluent – MWRD  
 Sample Date: 15-16 November 2021  
 EA Test Number: TN-21-700

<u>Test Concentration (percent effluent)</u>	<u>48-Hour Survival (percent)</u>	<u>96-Hour Survival (percent)</u>
Lab Control	100	95
6.25	100	80
12.5	100	100
25	100	95
50	100	95
100	100	100

96-Hour LC50 (percent effluent): **>100 (TU<sub>a</sub> <1.0)**

<u>Water Quality Parameters on Test Solutions</u>	<u>Range</u>
Temperature (°C):	24.0 – 26.0
pH:	7.6 – 8.5
Dissolved Oxygen (mg/L):	7.2 – 9.0
Conductivity (µS/cm):	322 – 971

## **ATTACHMENT I**

Data Sheets and Statistics  
(18 pages)

EA Ecotoxicology Laboratory  
231 Schilling Circle  
Hunt Valley, Maryland 21031  
Telephone: 410-584-7000  
Fax: 410-584-1057



Client: MWRD GC Project No.: 4652-126-1  
NPDES Number: IL0029061 Client Purchase Order Number: 3111991  
City/State Collected: Chicago, IL

Sample Shipped By: (circle) UPS Other: \_\_\_\_\_  
Fed. Ex. \_\_\_\_\_  
Tracking #: 1Z 274 494 84 9224  
9732

**PLEASE READ SAMPLING INSTRUCTIONS ON BACK OF FORM**

Accession Number (office use only)	Grab	Composite	Collection		Sample Description (including Site, Station Number, and Outfall Number)	Number/Volume of Container
			Start Date/Time	End Date/Time		
ATI-840		<input checked="" type="checkbox"/>	11/15/21 0600	11/16/21 0600	Calumet WRP Final Effluent	1 gallon

Sampled By: <u>Paula Brinkman Lowe</u>	Date/Time <u>11/16/21 0853</u>	Received By: <u>Brian Schmitt</u>	Date/Time <u>11/16/21 0856</u>
Sampler's Printed Name: <u>Paula Brinkman Lowe</u>	Title: <u>SERT</u>	Relinquished By: <u>Brian Schmitt</u>	Date/Time <u>11/16/21 0857</u>
Relinquished By: <u>Paula Brinkman Lowe</u>	Date/Time <u>11/16/21 0854</u>	Received By Laboratory: <u>Morgan C.</u>	Date/Time <u>0941 11/17/21</u>

Was Sample Chilled During Collection?  Yes /  No

Comments:

Sample Collection Parameters

Visual Description: Clear, Green  
Temperature (°C): 7.0  
pH: 7.16  
TRC (mg/L): 0  
Other:



SAMPLE CHECK-IN  
FOR TESTING

Client: MWRD GC

EA Accession Number: ATI-840

Parameter	Acceptable Range	Measurement*	Meter	Date	Time	Initials
Temperature (°C)	≤4	2.4	T-22	11/17/21	0946	MT
Is ice present?	—	YES	N/A	↓	↓	↓
pH	6.0-9.0	7.7	681			
TRC (mg/L)	<0.01	<0.01	AT-01			
Visual Description	—	Clear	N/A			

\*If outside acceptable range, contact project manager.

**OTHER PARAMETERS IF REQUIRED (SEE STUDY PLAN):**

Parameter	Acceptable Range	(✓)	Meter	Date	Time	Initials
Ammonia (preserve aliquot)	—		N/A			

Parameter	Acceptable Range	Measurement*	Meter	Date	Time	Initials
Dissolved Oxygen (mg/L)	—					
Salinity (ppt)	—					



# TOXICITY TEST SET-UP BENCH SHEET

Project Number: 70019.TOX

Client: MWRD

QC Test Number: TN-21-701

## TEST ORGANISM INFORMATION

Common Name: <u>Water flea</u>	Adults Isolated (Time, Date): <u>11/16/21 1350</u>
Scientific Name: <u>C. dubia</u>	Neonates Pulled & Fed (Time, Date): <u>11/17/21 1050</u>
Lot Number: <u>N/A</u>	Acclimation: <u>&lt;24hrs</u> Age: <u>&lt;24 hrs</u>
Source: <u>EA</u>	Culture Water (T/S): <u>24.3</u> °C <u>0</u> ppt

## TEST INITIATION

Date	Time	Initials	Activity
11/17/21	1045	MT	Dilutions Made
↓	↓	↓	Test Vessels Filled
	<del>1327</del> 1320	<del>MT</del> MT	Organisms Transferred
↓	1327	MT	Head Counts

## TEST SET-UP

Sample Number: AT1-840

Dilution Number: 01-774

Test Concentration	Volume Test Material	Final Volume
Control	0 ml	200 ml
6.25%	12.5 ml	↓
12.5%	25 ml	
25%	50 ml	
50%	100 ml	
100%	200 ml	

Day 11/17/21





# ACUTE TOXICITY TEST DATA SHEET

Project Number: 70019\_TOX  
 Client: MWRD  
 QC Test Number: TN-21-101  
 Test Material: Effluent  
 Accession Number: AT-840  
 Dilution Water: Mod Hard  
 Accession Number: DK-774

TEST ORGANISM  
 Common Name: Water flea  
 Scientific Name: C. dubia

TARGET VALUES  
 Temp: 25±1 °C DO: >4.0 mg/L  
 pH: 6.0-9.0 Salinity: 0 ppt  
 Photoperiod: 16 L, 8 d Light Intensity: 50 - 100 fc  
 Test Duration: 48 hrs

TEST TYPE:  Static  Flowthrough  
 Renewal /  Non-renewal

Test Container: 30 ml cup  
 Test Volume: 15 ml

Concentration	Rep	Number of Live Organisms				Temperature (°C)			pH			Dissolved Oxygen (mg/L)			Conductivity (µS/cm)									
		0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96			
25%	A	5	5	5		24.6	24.2	25.3	7.9	7.7	7.8	8.3	9.0	8.5										
	B	5	5	5																				
	C	5	5	5																				
	D	5	5	5																				
50%	A	5	5	5		24.6	24.1	25.3	7.8	7.7	7.7	8.3	8.8	8.5										
	B	5	5	5																				
	C	5	5	5																				
	D	5	5	5																				
100%	A	5	5	5		25.1	24.2	25.4	7.7	7.6	7.7	8.3	8.8	8.5										
	B	5	5	5																				
	C	5	5	5																				
	D	5	5	5																				
Meter Number																								
Time																								
Initials																								

(C)MT 11/16/10



## TOXICOLOGY LABORATORY BENCH SHEET

Project Number: 70019.TOX

Client: MWRD

QC Test Number: TN-21-701

Date/Time/Initials

Comments/Activity





# RANDOMIZATION CHART

Project Number: 70019.TOX

Client: MWRD

QC Test Number: TN-21-701

5	4	1	3	6	2
1	5	3	2	4	6
6	2	4	1	5	3
4	1	2	6	3	5



# TOXICOLOGY LABORATORY BENCH SHEET - TESTING LOCATION

Project Number: 70019.TOX

Client: MWRD

QC Test Number: TN-21-701

Day	Testing Location	Date	Time	Initials
0	17	11/17/21	1329	MT
1	17	11/18/21	1145	MT
2	17	11/19/21	1311	MT
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				



## TOXICOLOGY LABORATORY CORRECTION BENCH SHEET

Project Number: 70019.TOX

Client: MWRD

QC Test Number: TN-21-701

### Correction Explanations

---

- (a) Technician Error-Mathematical
- (b) Technician Error-Manual Data Recording
- (c) Technician Error-Head Count Observation
- (d) Technician Error-Overwrite
- (e) Technician Error-Missing Data
- (f) Technician Error-Lost Organism
- (g) Technician Error-Transcription Error
- (h) Technician Error-Other:
- (i) Meter Malfunction



# TOXICITY TEST SET-UP BENCH SHEET

Project Number: 70019.TOX

Client: MWRD

QC Test Number: TN-21-700

## TEST ORGANISM INFORMATION

Common Name: Fathead minnow Adults Isolated (Time, Date): \_\_\_\_\_  
 Scientific Name: P. promelas Neonates Pulled & Fed (Time, Date): \_\_\_\_\_  
 Lot Number: FH1 11/12-13 Acclimation: <24 hrs Age: 4-5 days  
 Source: 146 EA Culture Water (T/S): 25.4 °C 0 ppt

(6) MT 11/23/21

## TEST SET-UP

### TEST INITIATION

Date	Time	Initials	Activity
11/17/21	1045	MT	Dilutions Made
	↓	↓	Test Vessels Filled
	1335	MT	Organisms Transferred
	↓	↓	Head Counts
	1345	ALJ	

### CONCENTRATION SERIES

Test Concentration	Volume Test Material	Final Volume
Control	0 ml	500 ml
6.25%	31.25 ml	↓
12.5%	62.5 ml	
25%	125 ml	
50%	250 ml	
100%	500 ml	

Comments:

## INTERMEDIATE DILUTION PREPARATION AND FEEDING

### DILUTION PREPARATION

Day	Date	Time	Initials	Sample / Diluent
0	11/17/21	1045	MT	AT1-840 LD1-774
1				
2	11/19/21	0935	MT	AT1-840 LD1-776
3				
4				
5				
6				

### FEEDING

Food: <i>Artemia</i>			
Day	Time, Initials, Amount	Time, Initials, Amount	Time, Initials, Amount
0			
1			
2		1203 MT	3 drops
3			
4			
5			
6			



# ACUTE TOXICITY TEST DATA SHEET

Project Number: 70019.TOX  
 Client: MWRD  
 QC Test Number: TN-21-100  
 Test Material: Effluent  
 Accession Number: AT1-840  
 Dilution Water: Mod Hard  
 Accession Number: 601-774

## TEST ORGANISM

Common Name: Fathead minnow  
 Scientific Name: *P. promelas*

## TARGET VALUES

Temp: 25±1 °C DO: >4.0 mg/L  
 pH: 6.0-9.0 Salinity: 0 ppt  
 Photoperiod: 16L, 8d Light Intensity: 50 - 100 fc

Beginning Date: 11/17/21 Time: 1335  
 Ending Date: 11/21/21 Time: 1312  
 TEST TYPE:  Static  Flowthrough  
 Renewal  Non-renewal

Test Container: 1 L Beaker  
 Test Volume: 250 ml  
 Test Duration: 96 hrs

Concentration	Rep	Number of Live Organisms					Temperature (°C)					pH					Dissolved Oxygen (mg/L)					Conductivity (µS/cm)				
		0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
Control	A	10	10	10	10	9	24.0	24.5	24.0			8.0	7.9	8.4			8.3	7.9	9.0			322	318	326		
	B	10	10	10	10	10																				
6.25%	A	10	10	10	10	10	24.0	24.7	24.0			8.0	7.8	8.3			8.4	7.8	8.9			362	369	360		
	B	10	10	10	10	8																				
12.5%	A	10	10	10	10	10	24.3	24.8	24.4			8.0	7.8	8.3			8.3	7.8	8.6			402	407	400		
	B	10	10	10	10	10																				
25%	A	10	10	10	10	9	24.6	26.0	24.4			7.9	7.8	8.2			8.3	7.7	8.6			484	489	482		
	B	10	10	10	10	10																				
50%	A	10	10	10	10	10	24.6	26.0	24.5			7.8	7.7	8.1			8.3	7.3	8.6			647	654	631		
	B	10	10	10	10	9																682				
100%	A	10	10	10	10	10	25.1	26.0	24.6			7.7	7.8	7.9			8.3	7.3	8.7			969	954	957		
	B	10	10	10	10	10																				
Meter Number							680	680	681			680	680	681			680	680	681			680	680	681		
Time		1645	1407	1322	1517	1312	1056	1144	1003			1056	1144	1003			1056	1144	1003			1056	1144	1003		
Initials		AM	MT	MT	MT	AM	MT	MT	MT		MT	MT	MT	MT		MT	MT	MT	MT			MT	MT	MT		

© MWRD 11/18/21



# ACUTE TOXICITY TEST DATA SHEET - OLD SOLUTIONS

Project Number: 70019\_TOX TEST ORGANISM: Fathead minnow Beginning Date: 11/17/21 Time: 1335  
 Client: MWRD Common Name: P. promelas Ending Date: 11/21/21 Time: 1312  
 QC Test Number: TN-21-100 Scientific Name: P. promelas TEST TYPE: Static Flowthrough  
 Test Material: Effluent TARGET VALUES: Renewal / Non-renewal  
 Accession Number: AT1-840 Temp: 25±1 °C DO: >4.0 mg/L Test Container: 1 L Beaker  
 Dilution Water: Mod Hard pH: 6.0 - 9.0 Salinity: 0 ppt Test Volume: 250 ml  
 Accession Number: LD1-774 Photoperiod: 16 L, 8 d Light Intensity: 50 - 100 fc Test Duration: 96 hrs

Concentration	Rep	Number of Live Organisms	Temperature (°C)			pH			Dissolved Oxygen (mg/L)			Conductivity (µS/cm)						
			24	48	72	96	24	48	72	96	24	48	72	96				
Control	A		25.5	24.7	24.5	25.9	7.9	7.7	8.5	8.4	7.9	7.5	8.0	8.1	326	331	333	334
	B																	
6.25%	A		25.7	24.7	25.7	26.0	7.8	7.7	8.4	8.3	7.8	7.8	7.7	7.9	369	371	368	368
	B																	
12.5%	A		25.8	25.2	25.9	26.0	7.8	7.7	8.4	8.3	7.8	7.8	7.3	7.6	407	408	408	406
	B																	
25%	A		26.0	25.5	26.0	26.0	7.8	7.7	8.3	8.2	7.7	7.7	7.3	7.7	489	485	488	487
	B																	
50%	A		26.0	25.6	26.0	26.0	7.7	7.6	8.3	8.1	7.3	7.7	7.2	7.7	652	637	641	640
	B																	
100%	A		26.0	25.6	26.0	26.0	7.8	7.6	8.1	8.1	7.3	7.6	7.2	7.6	954	964	971	968
	B																	
Meter Number			680	681	680	680	680	681	680	680	680	680	680	680	680	681	680	680
Time			1144	0943	1310	1303	1144	0943	1310	1303	1144	0943	1310	1303	1144	0943	1310	1303
Initials			MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT	MT

© 2021 MWRD  
 12/21/21



## TOXICOLOGY LABORATORY BENCH SHEET

Project Number: 70019.TOX

Client: MWRD

QC Test Number: TN-21-100

Date/Time/Initials

Comments/Activity



# RANDOMIZATION CHART

Project Number: 70019.TOX

Client: MWRD

QC Test Number: TN-21-700

5	4	1	3	6	2
1	5	3	2	4	6





# TOXICOLOGY LABORATORY BENCH SHEET - TESTING LOCATION

Project Number: 70019.TOX

Client: MWRD

QC Test Number: TN-21-300

Day	Testing Location	Date	Time	Initials
0	17	11/17/21	1100	MT
1	17	11/18/21	1145	MT
2	17	11/19/21	0955	MT
3	17	11/20/21	1330	-V
4	17	11/21/21	1310	AG
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				



## TOXICOLOGY LABORATORY CORRECTION BENCH SHEET

Project Number: 70019.TOX

Client: MWRD

QC Test Number: TN-21-700

### Correction Explanations

---

- (a) Technician Error-Mathematical
- (b) Technician Error-Manual Data Recording
- (c) Technician Error-Head Count Observation
- (d) Technician Error-Overwrite
- (e) Technician Error-Missing Data
- (f) Technician Error-Lost Organism
- (g) Technician Error-Transcription Error
- (h) Technician Error-Other:
- (i) Meter Malfunction



## **ATTACHMENT II**

Report Quality Assurance Record  
(2 pages)



# REPORT QUALITY ASSURANCE RECORD

Client: MWRD Project Number: 70019.TOX  
 Author: Rachael Brooks EA Report Number: 869.5

## REPORT CHECKLIST

<u>QA/QC ITEM</u>	<u>REVIEWER</u>	<u>DATE</u>
1. Samples collected, transported, and received according to study plan requirements.	<u>Rachael Brooks</u>	<u>11/22/21</u>
2. Samples prepared and processed according to study plan requirements.	<u>Rachael Brooks</u>	<u>11/22/21</u>
3. Data collected using calibrated instruments and equipment.	<u>Rachael Brooks</u>	<u>11/22/21</u>
4. Calculations checked:	- Hand calculations checked	<u>Rachael Brooks</u>
	- Documented and verified statistical procedure used.	<u>Rachael Brooks</u>
5. Data input/statistical analyses complete and correct.	<u>Jessie M Reddy</u>	<u>11/23/2021</u>
6. Reported results and facts checked against original sources.	<u>Jessie M Reddy</u>	<u>11/23/2021</u>
7. Data presented in figures and tables correct and in agreement with text.	<u>Jessie M Reddy</u>	<u>11/23/2021</u>
8. Results reviewed for compliance with study plan requirements.	<u>Rachael Brooks</u>	<u>11/22/21</u>

<u>AUTHOR</u>	<u>DATE</u>
<u>Rachael Brooks</u>	<u>11/24/21</u>
<u>[Signature]</u>	<u>11/24/21</u>
PROJECT MANAGER	DATE
<u>Jessie M Reddy</u>	<u>11/23/2021</u>
QUALITY CONTROL OFFICER	DATE
<u>[Signature]</u>	<u>11/24/21</u>
SENIOR TECHNICAL OFFICER	DATE