

Cover Page

Order ID : P4995

Project ID : West Lake

Client : ENTACT

Lab Sample Number

P4995-01
P4995-02

Client Sample Number

001
001

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : _____

Date: 12/4/2024

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

DATA REPORTING QUALIFIERS- INORGANIC

For reporting results, the following “ Results Qualifiers” are used:

J	Indicates the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).
U	Indicates the analyte was analyzed for, but not detected.
ND	Indicates the analyte was analyzed for, but not detected
E	Indicates the reported value is estimated because of the presence of interference
M	Indicates Duplicate injection precision not met.
N	Indicates the spiked sample recovery is not within control limits.
S	Indicates the reported value was determined by the Method of Standard Addition (MSA).
*	Indicates that the duplicate analysis is not within control limits.
+	Indicates the correlation coefficient for the MSA is less than 0.995.
D	Indicates the reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.
M	Method qualifiers “P” for ICP instrument “PM” for ICP when Microwave Digestion is used “CV” for Manual Cold Vapor AA “AV” for automated Cold Vapor AA “CA” for MIDI-Distillation Spectrophotometric “AS” for Semi -Automated Spectrophotometric “C” for Manual Spectrophotometric “T” for Titrimetric “NR” for analyte not required to be analyzed
OR	Indicates the analyte’s concentration exceeds the calibrated range of the instrument for that specific analysis.
Q	Indicates the LCS did not meet the control limits requirements
H	Sample Analysis Out Of Hold Time

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: P4995

Completed

For thorough review, the report must have the following:

GENERAL:

Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)

✓

Check chain-of-custody for proper relinquish/return of samples

✓

Is the chain of custody signed and complete

✓

Check internal chain-of-custody for proper relinquish/return of samples /sample extracts

✓

Collect information for each project id from server. Were all requirements followed

✓

COVER PAGE:

Do numbers of samples correspond to the number of samples in the Chain of Custody on login page

✓

Do lab numbers and client Ids on cover page agree with the Chain of Custody

✓

CHAIN OF CUSTODY:

Do requested analyses on Chain of Custody agree with form I results

✓

Do requested analyses on Chain of Custody agree with the log-in page

✓

Were the correct method log-in for analysis according to the Analytical Request and Chain of Custody

✓

Were the samples received within hold time

✓

Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle

✓

ANALYTICAL:

Was method requirement followed?

✓

Was client requirement followed?

✓

Does the case narrative summarize all QC failure?

✓

All runlogs and manual integration are reviewed for requirements

✓

All manual calculations and /or hand notations verified

✓

QA Review Signature: PRADIP PRAJAPATI

Date: 12/04/2024

LAB CHRONICLE

OrderID:	P4995	OrderDate:	11/25/2024 11:57:36 AM
Client:	ENTACT	Project:	West Lake
Contact:	Bryan Reyes	Location:	L61,VOA Ref. #3 Water

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
P4995-02	001	Water			11/25/24 11:00			11/25/24
			Flash Point	1010B			12/03/24 09:15	
			Hexavalent Chromium	7196A			11/25/24 15:54	
			pH	9040C			11/26/24 09:22	
			Reactive Cyanide	9012B		12/02/24	12/02/24 12:35	
			Reactive Sulfide	9034		11/25/24	11/26/24 08:48	



SAMPLE DATA

Report of Analysis

Client:	ENTACT	Date Collected:	11/25/24 11:00
Project:	West Lake	Date Received:	11/25/24
Client Sample ID:	001	SDG No.:	P4995
Lab Sample ID:	P4995-02	Matrix:	Water
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Flash Point	>212		1	0	0	o F		12/03/24 09:15	1010B
Dissolved Hexavalent Chromium	0.0030	U	1	0.0030	0.010	mg/L		11/25/24 15:54	7196A
pH	7.65	H	1	0	0	pH		11/26/24 09:22	9040C
Reactive Cyanide	0.00099	U	1	0.00099	0.0050	mg/L	12/02/24 10:00	12/02/24 12:35	9012B
Reactive Sulfide	0.43	U	1	0.43	1.00	mg/L	11/25/24 13:50	11/26/24 08:48	9034

Comments: Other method reference for flash point : Pensky-Martens Closed Cup Flash Point ASTM D 93 - IP 34, pH result reported at temperature

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

D = Dilution

Q = indicates LCS control criteria did not meet requirements

H = Sample Analysis Out Of Hold Time

J = Estimated Value

B = Analyte Found in Associated Method Blank

* = indicates the duplicate analysis is not within control limits.

E = Indicates the reported value is estimated because of the presence of interference.

OR = Over Range

N =Spiked sample recovery not within control limits



QC RESULT SUMMARY



284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

Initial and Continuing Calibration Verification

Client: ENTACT

SDG No.: P4995

Project: West Lake

RunNo.: LB133616

Analyte	Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID: ICV Hexavalent Chromium	mg/L	0.499	0.5	100	90-110	11/25/2024
Sample ID: CCV1 Hexavalent Chromium	mg/L	0.504	0.5	101	90-110	11/25/2024
Sample ID: CCV2 Hexavalent Chromium	mg/L	0.500	0.5	100	90-110	11/25/2024

Initial and Continuing Calibration Verification

Client: ENTACT

SDG No.: P4995

Project: West Lake

RunNo.: LB133627

Analyte		Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID:	ICV						
pH		pH	7.01	7	100	90-110	11/26/2024
Sample ID:	CCV1						
pH		pH	2.01	2.00	101	90-110	11/26/2024
Sample ID:	CCV2						
pH		pH	12.02	12.00	100	90-110	11/26/2024

Initial and Continuing Calibration Verification

Client: ENTACT

SDG No.: P4995

Project: West Lake

RunNo.: LB133685

Analyte	Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID: ICV1 Reactive Cyanide	mg/L	0.096	0.099	97	85-115	12/02/2024
Sample ID: CCV1 Reactive Cyanide	mg/L	0.24	0.25	96	90-110	12/02/2024
Sample ID: CCV2 Reactive Cyanide	mg/L	0.24	0.25	96	90-110	12/02/2024
Sample ID: CCV3 Reactive Cyanide	mg/L	0.25	0.25	100	90-110	12/02/2024

Initial and Continuing Calibration Verification

Client: ENTACT

SDG No.: P4995

Project: West Lake

RunNo.: LB133701

Analyte	Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID: ICV						
Flash Point	o F	81.7	81	101	78-84	12/03/2024

Initial and Continuing Calibration Blank Summary

Client: ENTACT

SDG No.: P4995

Project: West Lake

RunNo.: LB133616

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: ICB Hexavalent Chromium	mg/L	< 0.0050	0.0050	U	0.0027	0.01	11/25/2024
Sample ID: CCB1 Hexavalent Chromium	mg/L	< 0.0050	0.0050	U	0.0027	0.01	11/25/2024
Sample ID: CCB2 Hexavalent Chromium	mg/L	< 0.0050	0.0050	U	0.0027	0.01	11/25/2024

Initial and Continuing Calibration Blank Summary

Client: ENTACT

SDG No.: P4995

Project: West Lake

RunNo.: LB133685

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: ICB1 Reactive Cyanide	mg/L	0.0011	0.0025	J	0.00099	0.005	12/02/2024
Sample ID: CCB1 Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.00099	0.005	12/02/2024
Sample ID: CCB2 Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.00099	0.005	12/02/2024
Sample ID: CCB3 Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.00099	0.005	12/02/2024

Preparation Blank Summary

Client: ENTACT

SDG No.: P4995

Project: West Lake

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: LB133616BL							
Hexavalent Chromium	mg/L	< 0.0050	0.0050	U	0.003	0.01	11/25/2024
Sample ID: PB165220BL							
Reactive Sulfide	mg/L	< 0.5000	0.5000	U	0.43	1	11/26/2024
Sample ID: PB165324BL							
Reactive Cyanide	mg/L	< 0.0025	0.0025	U	0.00099	0.005	12/02/2024

Matrix Spike Summary

Client:	ENTACT	SDG No.:	P4995
Project:	West Lake	Sample ID:	P4995-02
Client ID:	001MS	Percent Solids for Spike Sample:	0

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Hexavalent Chromium	mg/L	90-111	0.98		0.0030	U	1.0	2	98		11/25/2024

Matrix Spike Summary

Client:	ENTACT	SDG No.:	P4995
Project:	West Lake	Sample ID:	P4995-02
Client ID:	001MSD	Percent Solids for Spike Sample:	0

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Hexavalent Chromium	mg/L	90-111	0.98		0.0030	U	1.0	2	98		11/25/2024

Duplicate Sample Summary

Client:	ENTACT	SDG No.:	P4995
Project:	West Lake	Sample ID:	P4947-01
Client ID:	A3988DUP	Percent Solids for Spike Sample:	0

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Reactive Sulfide	mg/L	+/-20	0.48	J	0.48	J	1	0		11/26/2024

Duplicate Sample Summary

Client: ENTACT Project: West Lake Client ID: 001DUP	SDG No.: P4995 Sample ID: P4995-02 Percent Solids for Spike Sample: 0
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Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/AD	Qual	Analysis Date
Hexavalent Chromium	mg/L	+/-20	0.0030	U	0.0030	U	1	0		11/25/2024
pH	pH	+/-20	7.65		7.66		1	0.13		11/26/2024
Reactive Cyanide	mg/L	+/-20	0.00099	U	0.00099	U	1	0		12/02/2024
Flash Point	o F	+/-2	>212.0		>212.0		1	0		12/03/2024

Duplicate Sample Summary

Client: ENTACT Project: West Lake Client ID: 001MSD	SDG No.: P4995 Sample ID: P4995-02 Percent Solids for Spike Sample: 0
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Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Hexavalent Chromium	mg/L	+/-20	0.98		0.98		2	0.41		11/25/2024

Laboratory Control Sample Summary

Client: ENTACT

SDG No.: P4995

Project: West Lake

Run No.: LB133616

Analyte	Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID	LB133616BS							
Hexavalent Chromium	mg/L	0.5	0.50		101	1	90-111	11/25/2024



RAW DATA

Analytical Summary Report

Analysis Method: 7196A

ANALYST: rubina

Parameter: ~~Hexavalent Chromium~~

SUPERVISOR REVIEW BY: Iwona

Run Number: LB133616

pH Meter ID: WC pH Meter-1

Reagent/Standard	Lot/Log #
Calibration Std. hexchrome 0.1 ppm	WP110862
Calibration Std. hexchrome 0.05 ppm	WP110861
calibration std. hexchrome 0.01 ppm	WP110859
calibration std. hexchrome 0 ppm	WP110858
hexavalent chromium color reagent	WP110866
5N sulfuric acid	WP110380
Calibration Std Hexachrome 0.025 ppm	WP110860
Hexavalent Chromium ICV-LCS Std	WP110865
Calibration and CCV std HexChrome 0.5PPM	WP110863
Calibration std HexChrome 1.0PPM	WP110864

Intercept: 0.0003

Slope: 0.7817

Regression: 0.999993

Seq	Lab ID	True Value (mg/l)	DF	Initial Vol (ml)	Final Vol (ml)	pH HN03	pH H2SO4	Absorb.at 540nm		Absorbance Difference	Result (mg/L)	%D	Anal Date	Anal Time
								Backgrnd	Color					
1	CAL1	0	1	100	100		1.78	0.000	0.000	0.000	-0.00		11/25/2024	15:40
2	CAL2	0.01	1	100	100		1.90	0.000	0.007	0.007	0.008	-20	11/25/2024	15:41
3	CAL3	0.025	1	100	100		1.85	0.000	0.019	0.019	0.023	-8	11/25/2024	15:42
4	CAL4	0.05	1	100	100		1.84	0.000	0.040	0.040	0.050	0	11/25/2024	15:43
5	CAL5	0.1	1	100	100		1.89	0.000	0.079	0.079	0.100	0	11/25/2024	15:44
6	CAL6	0.5	1	100	100		1.89	0.000	0.393	0.393	0.502	0.4	11/25/2024	15:45
7	CAL7	1	1	100	100		1.90	0.000	0.781	0.781	0.998	-0.2	11/25/2024	15:46

Analytical Summary Report

Analysis Method: 7196A

ANALYST:rubina

Parameter: Hexavalent Chromium

SUPERVISOR REVIEW BY:Iwona

Run Number: LB133616

pH Meter ID:WC pH Meter-1

Seq	Lab ID	True Value	DF	Initial Vol (ml/gm)	Final Vol (ml)	pH HN03	pH H2SO4	Absorb.at540nm		Absorbance Difference	Intermediate Result (mg/L)	Anal Date	Anal Time
								Backgrnd	Color				
1	ICV	0.5	1	100	100		1.93	0.000	0.390	0.390	0.499	11/25/2024	15:47
2	ICB		1	100	100		1.76	0.000	0.001	0.001	0.001	11/25/2024	15:48
3	CCV1	0.5	1	100	100		1.95	0.000	0.394	0.394	0.504	11/25/2024	15:49
4	CCB1		1	100	100		1.79	0.000	0.000	0.000	0.000	11/25/2024	15:50
5	RL Check	0.01	1	100	100		1.91	0.000	0.008	0.008	0.010	11/25/2024	15:51
6	LB133616BL		1	100	100		1.81	0.000	0.001	0.001	0.001	11/25/2024	15:52
7	LB133616BS	0.5	1	100	100		1.93	0.000	0.394	0.394	0.504	11/25/2024	15:53
8	P4995-02		1	100	100		2.06	0.000	0.001	0.001	0.001	11/25/2024	15:54
9	P4995-02DU		1	100	100		2.06	0.000	0.001	0.001	0.001	11/25/2024	15:55
10	P4995-02MS	1	2	100	100		2.08	0.000	0.385	0.385	0.492	11/25/2024	15:56
11	P4995-02MS	1	2	100	100		2.06	0.000	0.383	0.383	0.490	11/25/2024	15:57
12	CCV2	0.5	1	100	100		1.93	0.000	0.391	0.391	0.500	11/25/2024	15:58
13	CCB2		1	100	100		1.77	0.000	0.000	0.000	0.000	11/25/2024	15:59

WORKLIST(Hardcopy Internal Chain)

15133616

WorkList Name : hex-w-11-25

WorkList ID : 185769

Department : Wet-Chemistry

Date : 11-25-2024 11:39:40

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P4995-02	001	Water	Hexavalent Chromium	Ammonium sulfate buffer	ENTA05	L61	11/25/2024	7198A

Date/Time 11/25/2024 13:20
 Raw Sample Received by: RLY
 Raw Sample Relinquished by: [Signature]

Date/Time 11/25/2024 14:03
 Raw Sample Received by: [Signature]
 Raw Sample Relinquished by: RLY

Analysis Method: 9034

Parameter: Reactive Sulfide

Run Number: LB133626

ANALYST: rubina

SUPERVISOR REVIEW BY: Iwona

Constant: 16000

Normality1: 0.025

Normality2: 0.025

Reagent/Standard	Lot/Log #
SODIUM THIOSULFATE, 0.025N, 4LITRE	W3105
IODINE SOLUTION .025N 1L	W3114
Starch Solution, 4L	W3149

Seq	Lab ID	True Value (mg/l)	DF	Initial Volume (mL)	Final Volume (ml)	T1 (ml)	T2 Initial	T2 Final	T2 Diff. (ml)	T1 - T2 Diff (mL)	Value Corrected With Blank	Result (ppm)	Anal Date	Anal Time
1	PB165220BL		1	50	50	2.00	0.00	1.92	1.92	0.08	0.00	0.00	11/26/2024	08:40
2	P4947-01		1	50	50	2.00	0.00	1.86	1.86	0.14	0.06	0.48	11/26/2024	08:43
3	P4947-01DUP		1	50	50	2.00	0.00	1.86	1.86	0.14	0.06	0.48	11/26/2024	08:46
4	P4995-02		1	50	50	2.00	0.00	1.90	1.90	0.10	0.02	0.16	11/26/2024	08:48

T1 = Titrant1

T2 = Titrant2

T2 Diff = T2 Final - T2 Initial

Value Corrected With Blank = ((T1 - T2 Diff) - Blank Correction(BL))

Result = ((T1 * Normality1) - ((T1 - Value Corrected With Blank) * Normality2)) * Constant / Initial Volume

Analytical Summary Report

Analysis Method: 9040C

Analyst By : jignesh

Parameter: pH

Supervisor Review By : Iwona

Run Number: LB133627

Slope : 98.5

pH Meter ID : WC PH METER-1

Calibration Standards	Chemtech Log#
PH 4 BUFFER SOLUTION	W3107
BUFFER PH 7.00 GREEN 1PINT PK6	W3093
PH 10.01 BUFFER,COLOR CD 475ML	W3094
buffer solution pH 7 yellow	W3071
Buffer Solution, PH2 (500ml)	W3005
Buffer Solution, PH12 (500ml)	W3072

True Value of ICV = 7.00 Control Limits[+/- 0.1].

True Value of CCV1 = 2.00 Control Limits[+/- 0.1].

True Value of CCV2 = 12.00 Control Limits[+/- 0.1].

Seq	LabID	DF	Matrix	Weight (gm)	Volume (ml)	Temperature (°C)	Result (pH)	Anal Date	Anal Time
1	CAL1	1	Water	NA	NA	20.3	4.01	11/26/2024	08:50
2	CAL2	1	Water	NA	NA	20.2	7.00	11/26/2024	08:51
3	CAL3	1	Water	NA	NA	20.3	10.02	11/26/2024	08:53
4	ICV	1	Water	NA	NA	20.3	7.01	11/26/2024	09:00
5	CCV1	1	Water	NA	NA	20.3	2.01	11/26/2024	09:02
6	P4993-01	1	Water	NA	NA	20.4	7.70	11/26/2024	09:15
7	P4995-02	1	Water	NA	NA	20.5	7.65	11/26/2024	09:22
8	P4995-02DUP	1	Water	NA	NA	20.6	7.66	11/26/2024	09:23
9	CCV2	1	Water	NA	NA	20.3	12.02	11/26/2024	09:25

WORKLIST(Hardcopy Internal Chain)

UP 133627

WorkList Name : ph p4995 WorkList ID : 185783 Department : Wet-Chemistry Date : 11-26-2024 08:37:26

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P4993-01	A 1120	Water	pH	Cool 4 deg C	PSEG03	L51	11/25/2024	9040C
P4995-02	A 001	Water	pH	Cool 4 deg C	ENTA05	L61	11/25/2024	9040C

Date/Time 11-26-24 08:45
Raw Sample Received by: HA WWC
Raw Sample Relinquished by: CFM

Date/Time 11-26-24
Raw Sample Received by: CP 82
Raw Sample Relinquished by: JH aue

Test results

Aquakem 7.2AQ1

Page:

CHEMTECH CONSULTING GROUP INC
284 Sheffield Street, Mountainside, NJ 07092

12/2/2024 12:41

Reviewed by : NF Instrument ID : Konelab

Test: Total CN

Sample Id	Result	Dil. 1 +	Response	Errors
ICV1	95.841	0.0	0.071	
ICB1	1.086	0.0	0.002	
CCV1	241.356	0.0	0.177	
CCB1	0.437	0.0	0.002	
PB165323BL	0.389	0.0	0.002	
P5000-04	0.482	0.0	0.002	
P5000-04DUP	-0.285	0.0	0.001	
P5000-08	0.187	0.0	0.002	
P5005-02	0.169	0.0	0.002	
P5025-02	-0.063	0.0	0.002	
P5025-06	0.097	0.0	0.002	
P5026-02	0.108	0.0	0.002	
P5026-06	0.125	0.0	0.002	
P5048-04	0.080	0.0	0.002	
CCV2	239.188	0.0	0.176	
CCB2	0.014	0.0	0.002	
PB165324BL	0.179	0.0	0.002	
P4995-02	0.232	0.0	0.002	
P4995-02DUP	0.221	0.0	0.002	
CCV3	246.490	0.0	0.181	
CCB3	0.627	0.0	0.002	
N	21			
Mean	39.379			
SD	87.4197			
CV%	222.00			

Aquakem v. 7.2AQ1

Results from time period:

Mon Dec 02 11:05:12 2024

Mon Dec 02 12:35:18 2024

Sample Id	Sam/Ctr/c/	Test short r	Test type	Result	Result unit	Result date and time	Stat
0.0PPBCN	A	Total CN	P	0.0809	µg/l	12/2/2024 11:05:12	
5.0PPBCN	A	Total CN	P	4.9413	µg/l	12/2/2024 11:05:13	
10PPBCN	A	Total CN	P	10.4229	µg/l	12/2/2024 11:05:14	
50PPBCN	A	Total CN	P	48.9508	µg/l	12/2/2024 11:05:15	
100PPBCN	A	Total CN	P	98.7166	µg/l	12/2/2024 11:05:16	
250PPBCN	A	Total CN	P	253.0674	µg/l	12/2/2024 11:05:17	
500PPBCN	A	Total CN	P	498.82	µg/l	12/2/2024 11:05:18	
ICV1	S	Total CN	P	95.8412	µg/l	12/2/2024 12:20:59	
ICB1	S	Total CN	P	1.0856	µg/l	12/2/2024 12:21:01	
CCV1	S	Total CN	P	241.3562	µg/l	12/2/2024 12:21:04	
CCB1	S	Total CN	P	0.4371	µg/l	12/2/2024 12:21:06	
PB165323BL	S	Total CN	P	0.3888	µg/l	12/2/2024 12:21:07	
P5000-04	S	Total CN	P	0.4823	µg/l	12/2/2024 12:21:09	
P5000-04DUP	S	Total CN	P	-0.2847	µg/l	12/2/2024 12:28:31	
P5000-08	S	Total CN	P	0.1865	µg/l	12/2/2024 12:28:32	
P5005-02	S	Total CN	P	0.1687	µg/l	12/2/2024 12:28:33	
P5025-02	S	Total CN	P	-0.0632	µg/l	12/2/2024 12:28:34	
P5025-06	S	Total CN	P	0.0967	µg/l	12/2/2024 12:28:35	
P5026-02	S	Total CN	P	0.1076	µg/l	12/2/2024 12:28:36	
P5026-06	S	Total CN	P	0.1254	µg/l	12/2/2024 12:28:37	
P5048-04	S	Total CN	P	0.0801	µg/l	12/2/2024 12:28:38	
CCV2	S	Total CN	P	239.1877	µg/l	12/2/2024 12:28:41	
CCB2	S	Total CN	P	0.0139	µg/l	12/2/2024 12:35:10	
PB165324BL	S	Total CN	P	0.179	µg/l	12/2/2024 12:35:11	
P4995-02	S	Total CN	P	0.2316	µg/l	12/2/2024 12:35:12	
P4995-02DUP	S	Total CN	P	0.2215	µg/l	12/2/2024 12:35:14	
CCV3	S	Total CN	P	246.4903	µg/l	12/2/2024 12:35:17	
CCB3	S	Total CN	P	0.6273	µg/l	12/2/2024 12:35:18	

=====
Calibration results Aquakem 7.2AQ1 Page: 1

CHEMTECH CONSULTING GROUP INC
284 Sheffield Street, Mountainside, NJ 07092

12/2/2024 11:06

Reviewed by : NF Instrument ID : Konelab

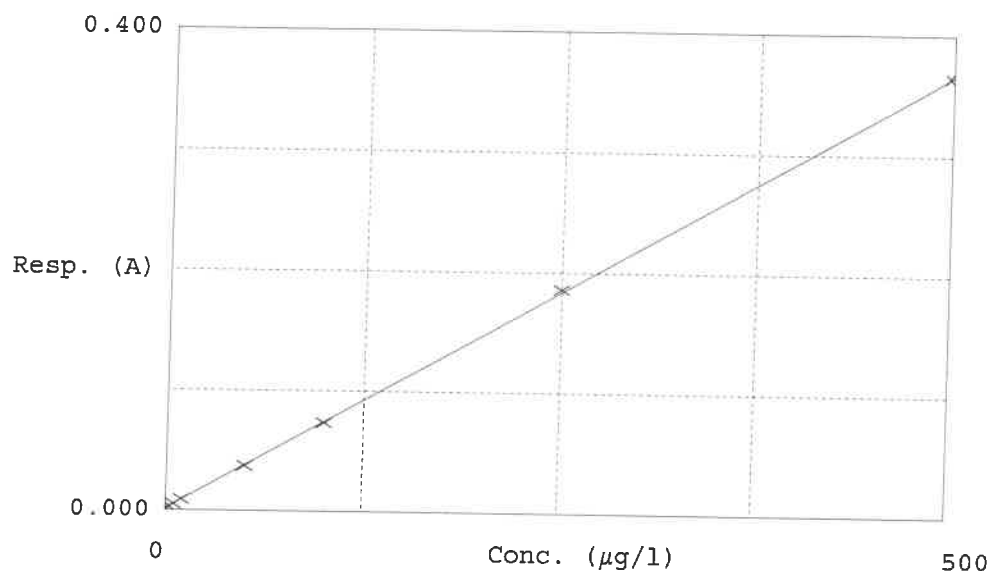
Test Total CN

Accepted 12/2/2024 11:06

Factor 1373
Bias 0.002

Coeff. of det. 0.999933

Errors



	Calibrator	Response	Calc. con.	Conc.	Re Errors
1	0.0PPBCN	0.002	0.0809	0.0000	
2	5.0PPBCN	0.005	4.9413	5.0000	-1.2
3	10PPBCN	0.009	10.4229	10.0000	4.2
4	50PPBCN	0.037	48.9508	50.0000	-2.1
5	100PPBCN	0.074	98.7166	100.0000	-1.3
6	250PPBCN	0.186	253.0674	250.0000	1.2
7	500PPBCN	0.365	498.8200	500.0000	-0.2

NF

12.02.2024

Analytical Summary Report

Analysis Method: 1010B

Reviewed By: rubina

Parameter: Flash Point

Supervisor Review By: Iwona

Run Number: LB133701

Ambient Barometric Pressure (mmHg): 771.00

Thermometer ID: Flash Point

Barometric Scale ID: 0511064

Reagent/Standard	Lot/Log #
p-xylene (ICV)	W3088

Seq	LabID	True Value °F	DL	Initial Sample °C	Celsius °C	Result °F	Final Result °F	Anal Date	Anal Time
1	ICV	81	1	8	28.00	82.4	81.7	12/03/2024	08:45
2	P4995-02		1	13	100.00	>212.0	>212.0	12/03/2024	09:15
3	P4995-02DUP		1	13	100.00	>212.0	>212.0	12/03/2024	09:45
4	P5031-01		1	14	100.00	>212.0	>212.0	12/03/2024	10:15
5	P5053-01		1	11	100.00	>212.0	>212.0	12/03/2024	10:45

Result = (Celsius * 1.8) + 32

Final Result = Result + (760 - Ambient Barometric Pressure) * 0.06

WORKLIST(Hardcopy Internal Chain)

LB133701

WorkList Name : FP-12-2-

WorkList ID : 185906

Department : Wet-Chemistry

Date : 12-02-2024 17:27:57

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P4995-02	001	Water	Flash Point	Cool 4 deg C	ENTA05	L61	11/25/2024	1010B
P5031-01	286127	Water	Flash Point	Cool 4 deg C	PSEG03	L61	11/27/2024	1010B
P5053-01	34740	Water	Flash Point	Cool 4 deg C	PSEG03	M11	12/02/2024	1010B

Date/Time 12/03/2024 08:35
Raw Sample Received by: RIM
Raw Sample Relinquished by: [Signature]

Date/Time 12/03/2024 11:02
Raw Sample Received by: [Signature]
Raw Sample Relinquished by: RIM

SOP ID : M9030B-Sulfide-12

SDG No : N/A

Matrix : WATER

Pipette ID : WC

Balance ID : N/A

Hood ID : HOOD#1

Block ID : MC-1,MC-2

Weigh By : N/A

Start Digest Date: 11/25/2024 Time : 13:50 Temp : N/A

End Digest Date: 11/25/2024 Time : 15:20 Temp : N/A

Digestion tube ID : M5595

Block Thermometer ID : N/A

Filter paper ID : N/A

Prep Technician Signature: RM

pH Meter ID : N/A

Supervisor Signature: 12

Standard Name	MLS USED	STD REF. # FROM LOG
PBW	50.0ML	W3112
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
0.5M ZINC ACETATE	5.0ML	WP108780
FORMALDEHYDE	2.0ML	W2725
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Extraction Conformance/Non-Conformance Comments:

N/A

11/25/2024 RM

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
	Preparation Group	Analysis Group

Lab Sample ID	Client Sample ID	Initial Vol (ml)	Final Vol (ml)	pH	Sulfide	Oxidizing	Nitrate/ Nitrite	Comment	Prep Pos
P4947-01	A3988	50	50	N/A	N/A	N/A	N/A	N/A	N/A
P4947-01DUP	A3988DUP	50	50	N/A	N/A	N/A	N/A	N/A	N/A
P4995-02	001	50	50	N/A	N/A	N/A	N/A	N/A	N/A
PB165220BL	PBW220	50	50	N/A	N/A	N/A	N/A	N/A	N/A

WORKLIST(Hardcopy Internal Chain)

WorkList Name : rsul-w

WorkList ID : 185717

Department : Distillation

Date : 11-25-2024 08:00:28

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P4947-01	A3988	Water	Reactive Sulfide	Cool 4 deg C	PSEG03	L61	11/21/2024	9034
P4995-02	001	Water	Reactive Sulfide	Cool 4 deg C	ENTA05	L61	11/25/2024	9034

Date/Time 11/25/2024 13:20
Raw Sample Received by: RM CWS
Raw Sample Relinquished by: [Signature]

Date/Time 11/25/2024 14:00
Raw Sample Received by: [Signature]
Raw Sample Relinquished by: RM CWS

SOP ID : N/A

SDG No : N/A Start Digest Date: 12/02/2024 Time : 10:00 Temp : N/A

Matrix : WATER End Digest Date: 12/02/2024 Time : 11:30 Temp : N/A

Pipette ID : N/A

Balance ID : N/A

Hood ID : HOOD#1 Digestion tube ID : M5595 Block Thermometer ID : N/A

Block ID : MC-1, MC-2 Filter paper ID : N/A Prep Technician Signature: NF

Weigh By : N/A pH Meter ID : N/A Supervisor Signature: 12

Standard Name	MLS USED	STD REF. # FROM LOG
PBW	50ML	W3112
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
0.25N NaOH	50ML	WP108640
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

LAB SAMPLE ID	CLIENT SAMPLE ID	Comment

Extraction Conformance/Non-Conformance Comments:

N/A

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
10-02-2024 11:40	NF (WC)	NF (WC)
	Preparation Group	Analysis Group

Lab Sample ID	Client Sample ID	Initial Vol (ml)	Final Vol (ml)	pH	Sulfide	Oxidizing	Nitrate/ Nitrite	Comment	Prep Pos
P4995-02	001	50	50	N/A	N/A	N/A	N/A	N/A	N/A
P4995-02DUP	001DUP	50	50	N/A	N/A	N/A	N/A	N/A	N/A
PB165324BL	PB165324BL	50	50	N/A	N/A	N/A	N/A	N/A	N/A

WORKLIST(Hardcopy Internal Chain)

WorkList Name : RCN W-12022024 WorkList ID : 185889 Department : Distillation Date : 12-02-2024 09:45:35

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P4995-02	001	Water	Reactive Cyanide	Cool 4 deg C	ENTA05	L61	11/25/2024	9012B

Date/Time 12-02-2024, 09:50
Raw Sample Received by: NFJWC
Raw Sample Relinquished by: JFJWC

Date/Time 12-02-2024, 10:40
Raw Sample Received by: JFJWC
Raw Sample Relinquished by: NFJWC

Instrument ID: SPECTROPHOTOMETER-1

Daily Analysis Runlog For Sequence/QC Batch ID # LB133616

Review By	rubina	Review On	11/26/2024 9:17:28 AM
Supervise By	Iwona	Supervise On	11/26/2024 10:48:34 AM
SubDirectory	LB133616	Test	Hexavalent Chromium
STD. NAME	STD REF.#		
ICAL Standard	N/A		
ICV Standard	N/A		
CCV Standard	N/A		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	N/A		
Chk Standard	WP110862,WP110861,WP110859,WP110858,WP110866,WP110380,WP110860,WP110865,WP110863,WP110864		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	CAL1	CAL1	CAL	11/25/24 15:40		rubina	OK
2	CAL2	CAL2	CAL	11/25/24 15:41		rubina	OK
3	CAL3	CAL3	CAL	11/25/24 15:42		rubina	OK
4	CAL4	CAL4	CAL	11/25/24 15:43		rubina	OK
5	CAL5	CAL5	CAL	11/25/24 15:44		rubina	OK
6	CAL6	CAL6	CAL	11/25/24 15:45		rubina	OK
7	CAL7	CAL7	CAL	11/25/24 15:46		rubina	OK
8	ICV	ICV	ICV	11/25/24 15:47		rubina	OK
9	ICB	ICB	ICB	11/25/24 15:48		rubina	OK
10	CCV1	CCV1	CCV	11/25/24 15:49		rubina	OK
11	CCB1	CCB1	CCB	11/25/24 15:50		rubina	OK
12	RL Check	RL Check	SAM	11/25/24 15:51		rubina	OK
13	LB133616BL	LB133616BL	MB	11/25/24 15:52		rubina	OK
14	LB133616BS	LB133616BS	LCS	11/25/24 15:53		rubina	OK
15	P4995-02	001	SAM	11/25/24 15:54		rubina	OK
16	P4995-02DUP	001DUP	DUP	11/25/24 15:55		rubina	OK
17	P4995-02MS	001MS	MS	11/25/24 15:56	1ML WP108658+99.0ML SAMPLE	rubina	OK
18	P4995-02MSD	001MSD	MSD	11/25/24 15:57	1ML WP108658+99.0ML SAMPLE	rubina	OK

Instrument ID: SPECTROPHOTOMETER-1

Daily Analysis Runlog For Sequence/QC Batch ID # LB133616

Review By	rubina	Review On	11/26/2024 9:17:28 AM
Supervise By	Iwona	Supervise On	11/26/2024 10:48:34 AM
SubDirectory	LB133616	Test	Hexavalent Chromium
STD. NAME	STD REF.#		
ICAL Standard	N/A		
ICV Standard	N/A		
CCV Standard	N/A		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	N/A		
Chk Standard	WP110862,WP110861,WP110859,WP110858,WP110866,WP110380,WP110860,WP110865,WP110863,WP110864		

19	CCV2	CCV2	CCV	11/25/24 15:58		rubina	OK
20	CCB2	CCB2	CCB	11/25/24 15:59		rubina	OK

Instrument ID: TITRAMETRIC

Daily Analysis Runlog For Sequence/QC Batch ID # LB133626

Review By	rubina	Review On	11/26/2024 9:18:31 AM
Supervise By	Iwona	Supervise On	11/26/2024 2:52:11 PM
SubDirectory	LB133626	Test	Reactive Sulfide
STD. NAME	STD REF.#		
ICAL Standard	N/A		
ICV Standard	N/A		
CCV Standard	N/A		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	N/A		
Chk Standard	W3105,W3114,W3149		

Sr#	SampleID	ClientID	QcType	Date	Comment	Operator	Status
1	PB165220BL	PB165220BL	MB	11/26/24 08:40		rubina	OK
2	P4947-01	A3988	SAM	11/26/24 08:43		rubina	OK
3	P4947-01DUP	A3988DUP	DUP	11/26/24 08:46		rubina	OK
4	P4995-02	001	SAM	11/26/24 08:48		rubina	OK

Instrument ID: WC PH METER-1

Daily Analysis Runlog For Sequence/QC Batch ID # LB133627

Review By	jignesh	Review On	11/26/2024 8:46:19 AM
Supervise By	Iwona	Supervise On	11/26/2024 10:24:49 AM
SubDirectory	LB133627	Test	pH
STD. NAME	STD REF.#		
ICAL Standard	N/A		
ICV Standard	N/A		
CCV Standard	N/A		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	N/A		
Chk Standard	W3107,W3093,W3094,W3071,W3005,W3072		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	CAL1	CAL1	CAL	11/26/24 08:50		jignesh	OK
2	CAL2	CAL2	CAL	11/26/24 08:51		jignesh	OK
3	CAL3	CAL3	CAL	11/26/24 08:53		jignesh	OK
4	ICV	ICV	ICV	11/26/24 09:00		jignesh	OK
5	CCV1	CCV1	CCV	11/26/24 09:02		jignesh	OK
6	P4993-01	1120	SAM	11/26/24 09:15		jignesh	OK
7	P4995-02	001	SAM	11/26/24 09:22		jignesh	OK
8	P4995-02DUP	001DUP	DUP	11/26/24 09:23		jignesh	OK
9	CCV2	CCV2	CCV	11/26/24 09:25		jignesh	OK

Instrument ID: KONELAB

Daily Analysis Runlog For Sequence/QC Batch ID # LB133685

Review By	Niha	Review On	12/3/2024 10:28:17 AM
Supervise By	Iwona	Supervise On	12/3/2024 1:21:24 PM
SubDirectory	LB133685	Test	Reactive Cyanide
STD. NAME	STD REF.#		
ICAL Standard	WP110906,WP110907,WP110908,WP110909,WP110910,WP110911,WP110912		
ICV Standard	WP110904		
CCV Standard	WP110907		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	N/A		
Chk Standard	WP109068,WP110103,WP110905		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	0.0PPBCN	0.0PPBCN	CAL1	12/02/24 11:05		Niha	OK
2	5.0PPBCN	5.0PPBCN	CAL2	12/02/24 11:05		Niha	OK
3	10PPBCN	10PPBCN	CAL3	12/02/24 11:05		Niha	OK
4	50PPBCN	50PPBCN	CAL4	12/02/24 11:05		Niha	OK
5	100PPBCN	100PPBCN	CAL5	12/02/24 11:05		Niha	OK
6	250PPBCN	250PPBCN	CAL6	12/02/24 11:05		Niha	OK
7	500PPBCN	500PPBCN	CAL7	12/02/24 11:05		Niha	OK
8	ICV1	ICV1	ICV	12/02/24 12:20		Niha	OK
9	ICB1	ICB1	ICB	12/02/24 12:21		Niha	OK
10	CCV1	CCV1	CCV	12/02/24 12:21		Niha	OK
11	CCB1	CCB1	CCB	12/02/24 12:21		Niha	OK
12	PB165323BL	PB165323BL	MB	12/02/24 12:21		Niha	OK
13	P5000-04	MH-745	SAM	12/02/24 12:21		Niha	OK
14	P5000-04DUP	MH-745DUP	DUP	12/02/24 12:28		Niha	OK
15	P5000-08	MH-733	SAM	12/02/24 12:28		Niha	OK
16	P5005-02	STOCK-PILE	SAM	12/02/24 12:28		Niha	OK
17	P5025-02	SOIL-WEST	SAM	12/02/24 12:28		Niha	OK
18	P5025-06	SOIL-EAST	SAM	12/02/24 12:28		Niha	OK

Instrument ID: KONELAB

Daily Analysis Runlog For Sequence/QC Batch ID # LB133685

Review By	Niha	Review On	12/3/2024 10:28:17 AM
Supervise By	Iwona	Supervise On	12/3/2024 1:21:24 PM
SubDirectory	LB133685	Test	Reactive Cyanide
STD. NAME	STD REF.#		
ICAL Standard	WP110906,WP110907,WP110908,WP110909,WP110910,WP110911,WP110912		
ICV Standard	WP110904		
CCV Standard	WP110907		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	N/A		
Chk Standard	WP109068,WP110103,WP110905		

19	P5026-02	SOIL-1-HAM	SAM	12/02/24 12:28		Niha	OK
20	P5026-06	SOIL-1-HAM	SAM	12/02/24 12:28		Niha	OK
21	P5048-04	MH-746-WC	SAM	12/02/24 12:28		Niha	OK
22	CCV2	CCV2	CCV	12/02/24 12:28		Niha	OK
23	CCB2	CCB2	CCB	12/02/24 12:35		Niha	OK
24	PB165324BL	PB165324BL	MB	12/02/24 12:35		Niha	OK
25	P4995-02	001	SAM	12/02/24 12:35		Niha	OK
26	P4995-02DUP	001DUP	DUP	12/02/24 12:35		Niha	OK
27	CCV3	CCV3	CCV	12/02/24 12:35		Niha	OK
28	CCB3	CCB3	CCB	12/02/24 12:35		Niha	OK

Instrument ID: IGN-1

Daily Analysis Runlog For Sequence/QC Batch ID # LB133701

Review By	rubina	Review On	12/3/2024 11:28:53 AM
Supervise By	Iwona	Supervise On	12/3/2024 11:29:22 AM
SubDirectory	LB133701	Test	Flash Point
STD. NAME	STD REF.#		
ICAL Standard	N/A		
ICV Standard	N/A		
CCV Standard	N/A		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	N/A		
Chk Standard	W3088		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	ICV	ICV	ICV	12/03/24 08:45		rubina	OK
2	P4995-02	001	SAM	12/03/24 09:15		rubina	OK
3	P4995-02DUP	001DUP	DUP	12/03/24 09:45		rubina	OK
4	P5031-01	286127	SAM	12/03/24 10:15		rubina	OK
5	P5053-01	34740	SAM	12/03/24 10:45		rubina	OK

Prep Standard - Chemical Standard Summary

Order ID : P4995

Test : Flash Point,Hexavalent Chromium,pH,Reactive Cyanide,Reactive Sulfide

Prepbatch ID : PB165220,PB165324,

Sequence ID/Qc Batch ID: LB133616,LB133626,LB133627,LB133685,LB133701,

Standard ID :

WP108640,WP108658,WP108659,WP108780,WP109068,WP109549,WP110103,WP110380,WP110857,WP110858,W
P110859,WP110860,WP110861,WP110862,WP110863,WP110864,WP110865,WP110866,WP110903,WP110904,WP11
0905,WP110906,WP110907,WP110908,WP110909,WP110910,WP110911,WP110912,

Chemical ID :

E3657,E3830,M5673,M5929,W2651,W2652,W2668,W2725,W2882,W2926,W2979,W3005,W3019,W3071,W3072,W30
88,W3093,W3094,W3105,W3107,W3112,W3114,W3138,W3139,W3149,W3154,



<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
11	Sodium hydroxide absorbing solution 0.25 N	WP108640	07/05/2024	01/05/2025	Rubina Mughal	WETCHEM_S CALE_4 (WC SC-4)	None	Iwona Zarych 07/08/2024
<u>FROM</u> 21.00000L of W3112 + 210.00000gram of E3657 = Final Quantity: 21.000 L								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1993	HEXAVALENTCHROMIUM STOCK STD 1, 50PPM	WP108658	07/09/2024	01/09/2025	Rubina Mughal	WETCHEM_SCALE_5 (WC SC-5)	None	Iwona Zarych 07/09/2024
<u>FROM</u>	0.14140gram of W2651 + 1000.00000ml of W3112 = Final Quantity: 1000.000 ml							



<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1994	HEXAVALENTCHROMIUM STOCK STD 2, 50PPM	WP108659	07/09/2024	01/09/2025	Rubina Mughal	WETCHEM_S CALE_5 (WC SC-5)	None	Iwona Zarych 07/09/2024
<u>FROM</u> 0.14140gram of W2652 + 1000.00000ml of W3112 = Final Quantity: 1000.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
160	0.5M ZINC ACETATE	WP108780	07/22/2024	12/08/2024	Rubina Mughal	WETCHEM_SCALE_5 (WC SC-5)	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 07/23/2024
<u>FROM</u> 0.88900L of W3112 + 1.00000ml of M5929 + 110.00000gram of W2926 = Final Quantity: 1000.000 ml								



<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
607	PYRIDINE-BARBITURIC ACID	WP109068	08/06/2024	12/08/2024	Niha Farheen Shaik	WETCHEM_S CALE_5 (WC SC-5)	None	Iwona Zarych 08/07/2024
<u>FROM</u> 145.00000ml of W3112 + 15.00000gram of W2882 + 15.00000ml of M5929 + 75.00000ml of W3019 = Final Quantity: 250.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3371	Cyanide LCS Spike Solution, 5PPM	WP109549	09/06/2024	01/05/2025	Niha Farheen Shaik	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 09/06/2024
<u>FROM</u> 1.00000ml of W3138 + 199.00000ml of WP108640 = Final Quantity: 200.000 ml								

Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
539	CN BUFFER	WP110103	10/08/2024	04/08/2025	Rubina Mughal	WETCHEM_SCALE_5 (WC SC-5)	None	Iwona Zarych 10/08/2024

FROM 138.00000gram of W2668 + 862.00000ml of W3112 = Final Quantity: 1000.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
126	5N sulfuric acid	WP110380	10/24/2024	04/24/2025	Rubina Mughal	None	None	Iwona Zarych 10/24/2024

FROM 140.00000ml of M5673 + 860.00000ml of W3112 = Final Quantity: 1.000 L



<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1103	HEX CHROME INTERMEDIATE STD SOURCE 1 (5PPM)	WP110857	11/25/2024	11/26/2024	Rubina Mughal	None	WETCHEM_FIPETTE_3 (WC)	Iwona Zarych 11/25/2024
<u>FROM</u> 9.00000ml of W3112 + 1.00000ml of WP108658 = Final Quantity: 10.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
110	calibration std. hexchrome 0 ppm	WP110858	11/25/2024	11/26/2024	Rubina Mughal	None	None	Iwona Zarych 11/25/2024
<u>FROM</u> 100.00000ml of W3112 = Final Quantity: 100.000 ml								



<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
109	calibration std. hexchrome 0.01 ppm	WP110859	11/25/2024	11/26/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 11/25/2024
<u>FROM</u> 99.80000ml of W3112 + 0.20000ml of WP110857 = Final Quantity: 100.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3800	Calibration Std Hexachrome 0.025 ppm	WP110860	11/25/2024	11/26/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 11/25/2024
<u>FROM</u> 99.50000ml of W3112 + 0.50000ml of WP110857 = Final Quantity: 100.000 ml								

Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
108	Calibration Std. hexchrome 0.05 ppm	WP110861	11/25/2024	11/26/2024	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Iwona Zarych 11/25/2024
FROM 99.00000ml of W3112 + 1.00000ml of WP110857 = Final Quantity: 100.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
107	Calibration Std. hexchrome 0.1 ppm	WP110862	11/25/2024	11/26/2024	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Iwona Zarych 11/25/2024
FROM 99.80000ml of W3112 + 0.20000ml of WP108658 = Final Quantity: 100.000 ml								

Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3808	Calibration and CCV std HexChrome 0.5PPM	WP110863	11/25/2024	11/26/2024	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Iwona Zarych 11/25/2024
FROM 99.00000ml of W3112 + 1.00000ml of WP108658 = Final Quantity: 100.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3809	Calibration std HexChrome 1.0PPM	WP110864	11/25/2024	11/26/2024	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Iwona Zarych 11/25/2024
FROM 98.00000ml of W3112 + 2.00000ml of WP108658 = Final Quantity: 100.000 ml								

Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3804	Hexavalent Chromium ICV-LCS Std	WP110865	11/25/2024	11/26/2024	Rubina Mughal	None	WETCHEM_F IPETTE_3 (WC)	Iwona Zarych 11/25/2024
FROM 99.00000ml of W3112 + 1.00000ml of WP108659 = Final Quantity: 100.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
114	hexavalent chromium color reagent	WP110866	11/25/2024	12/02/2024	Rubina Mughal	WETCHEM_S CALE_5 (WC SC-5)	None	Iwona Zarych 11/25/2024
FROM 0.25000gram of W2979 + 50.00000ml of E3830 = Final Quantity: 50.000 ml								

Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3456	Cyanide Intermediate Working Std, 5PPM	WP110903	12/02/2024	12/03/2024	Niha Farheen Shaik	None	WETCHEM_FIPETTE_3 (WC)	Iwona Zarych 12/02/2024

FROM 0.25000ml of W3154 + 49.75000ml of WP108640 = Final Quantity: 50.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
2168	RCN ICV STD, 100 PPB	WP110904	12/02/2024	12/03/2024	Niha Farheen Shaik	None	WETCHEM_FIPETTE_3 (WC)	Iwona Zarych 12/02/2024

FROM 1.00000ml of WP109549 + 49.00000ml of WP108640 = Final Quantity: 50.000 ml



<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1582	Chloramine T solution, 0.014M	WP110905	12/02/2024	12/03/2024	Niha Farheen Shaik	WETCHEM_S CALE_5 (WC SC-5)	None	Iwona Zarych 12/02/2024
<u>FROM</u>	0.08000gram of W3139 + 20.00000ml of W3112 = Final Quantity: 20.000 ml							

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
4	Calibration standard 500 ppb	WP110906	12/02/2024	12/03/2024	Niha Farheen Shaik	None	None	Iwona Zarych 12/02/2024
<u>FROM</u> 45.00000ml of WP108640 + 5.00000ml of WP110903 = Final Quantity: 50.000 ml								



<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3761	Calibration-CCV CN Standard 250 ppb	WP110907	12/02/2024	12/03/2024	Niha Farheen Shaik	None	WETCHEM_FIPETTE_3 (WC)	Iwona Zarych 12/02/2024
<u>FROM</u>	2.50000ml of WP110903 + 47.50000ml of WP108640 = Final Quantity: 50.000 ml							

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
6	Calibration Standard 100 ppb	WP110908	12/02/2024	12/03/2024	Niha Farheen Shaik	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 12/02/2024
<u>FROM</u>	1.00000ml of WP110903 + 49.00000ml of WP108640 = Final Quantity: 50.000 ml							



<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
7	Calibration Standard 50 ppb	WP110909	12/02/2024	12/03/2024	Niha Farheen Shaik	None	WETCHEM_FIPETTE_3 (WC)	Iwona Zarych 12/02/2024
<u>FROM</u> 0.50000ml of WP110903 + 49.50000ml of WP108640 = Final Quantity: 50.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
8	Calibration Standard 10 ppb	WP110910	12/02/2024	12/03/2024	Niha Farheen Shaik	None	WETCHEM_FIPETTE_3 (WC)	Iwona Zarych 12/02/2024
<u>FROM</u>	1.00000ml of WP110906 + 49.00000ml of WP108640 = Final Quantity: 50.000 ml							



<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
9	Calibration Standard 5 ppb	WP110911	12/02/2024	12/03/2024	Niha Farheen Shaik	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 12/02/2024
<u>FROM</u>	0.50000ml of WP110906 + 49.50000ml of WP108640 = Final Quantity: 50.000 ml							

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
167	0 ppb CN calibration std	WP110912	12/02/2024	12/03/2024	Niha Farheen Shaik	None	None	Iwona Zarych 12/02/2024
<u>FROM</u> 50.00000ml of WP108640 = Final Quantity: 50.000 ml								

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	PC19510-5 / Sodium Hydroxide Pellets 2.5 Kg, Pk of 4	23B1556310	12/31/2025	12/04/2023 / Rajesh	12/01/2023 / Rajesh	E3657

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9254-03 / Acetone, Ultra Resi (cs/4x4L)	24H2762008	05/18/2025	11/18/2024 / Rajesh	11/15/2024 / Rajesh	E3830

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9673-33 / Sulfuric Acid, Instra-Analyzed (cs/6c2.5L)	23D2462010	03/20/2028	09/21/2023 / mohan	09/05/2023 / mohan	M5673

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L)	22G2862015	12/08/2024	06/24/2024 / Al-Terek	06/07/2024 / Al-Terek	M5929

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	AA13450-36 / Potassium Dichromate, 500g(NEW)	T15F019	01/24/2030	01/24/2020 / apatel	01/24/2020 / apatel	W2651

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	P188-500 / Potassium Dichromate, 500g(new-2nd lot)	194664	01/24/2030	01/24/2020 / apatel	01/24/2020 / apatel	W2652

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	J3818-5 / SODIUM PHOSPHATE, MONOBAS/HYD, CRYST, ACS, 2.5 KG	0000225799	12/03/2025	04/05/2021 / Alexander	02/10/2020 / apatel	W2668

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	EMD-FX0410-5 / FORMALDEHYDE SOLUTION 450ML	60045	06/22/2025	08/19/2024 / lwona	06/22/2020 / apatel	W2725

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	EM-BX0035-3 / Barbituric Acid, 100 gms	1.00132.0100	04/30/2025	12/07/2021 /	11/30/2021 / apatel	W2882

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	J4296-1 / ZINC ACETATE, DIHYD, CRYST, ACS, 500G	383058	07/05/2027	07/05/2022 / ketankumar	07/05/2022 / ketankumar	W2926

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	31390 / 1,5-Diphenylcarbazide	MKCR6636	12/09/2027	12/09/2022 / lwona	12/09/2022 / lwona	W2979

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	AL13850-1 / Buffer Solution, PH2 (500ml)	4212E45	12/31/2024	01/31/2023 / lwona	01/31/2023 / lwona	W3005

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
SIGMA ALDRICH	270970-1L / Pyridine 1L	SHBQ2113	04/03/2028	04/03/2023 / lwona	04/03/2023 / lwona	W3019

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	AL14455-3 / buffer solution pH 7 yellow	4308H30	07/31/2025	01/02/2024 / JIGNESH	12/06/2023 / lwona	W3071

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	AL14940-1 / Buffer Solution, PH12 (500ml)	2310P21	04/30/2025	01/02/2024 / JIGNESH	12/07/2023 / lwona	W3072

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	TCX0014-500ML / p-xylene	Y348K-RX	03/20/2029	09/19/2024 / rubina	03/20/2024 / lwona	W3088

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	566002 / BUFFER PH 7.00 GREEN 1PINT PK6	44001f99	12/31/2025	04/03/2024 / jignesh	04/02/2024 / jignesh	W3093

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	1601-1 / PH 10.01 BUFFER,COLOR CD 475ML	4310g83	03/31/2025	04/03/2024 / jignesh	04/02/2024 / jignesh	W3094

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	AL69870-8 / SODIUM THIOSULFATE,0.025N,4LIT RE	4403S13	09/30/2025	04/22/2024 / Iwona	04/22/2024 / Iwona	W3105

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	AL14055-3 / PH 4 BUFFER SOLUTION	AL14055-3	02/27/2026	09/05/2024 / jignesh	05/13/2024 / jignesh	W3107

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	DIW / DI Water	Daily Lab-Certified	07/03/2029	07/03/2024 / Iwona	07/03/2024 / Iwona	W3112

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	AL35830-4 / IODINE SOLUTION .025N 1L	2405D89	05/31/2025	07/10/2024 / Iwona	07/10/2024 / Iwona	W3114

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	LC135457 / Cyanide Standard, 1000 PPM, Second Source	44080060	01/30/2025	09/06/2024 / Iwona	08/28/2024 / Iwona	W3138

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	JTE494-6 / CHLORAMINE-T BAKER 250GM	10239484	09/09/2029	09/09/2024 / Iwona	09/09/2024 / Iwona	W3139

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	AL70850-8 / Starch Solution, 4L	4408P62	08/31/2026	10/16/2024 / Iwona	10/16/2024 / Iwona	W3149

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	RC2543-4 / CYANIDE STD 1000PPM 4OZ	LOT	06/30/2025	12/02/2024 / Iwona	12/02/2024 / Iwona	W3154

Product No.: 13450
Product: Potassium dichromate, ACS, 99.0% min
Lot No.: T15F019

Test	Limits	Results
Appearance	Orange-red crystals	Orange-red crystals
Identification	To Pass	Passes
Purity	99.0 % min	99.67 %
Insoluble matter	0.005 % max	0.004 %
Loss on drying	0.05 % max	0.03 %
Chloride	0.001 % max	< 0.001 %
Sulfate	0.005 % max	< 0.005 %
Iron	0.001 % max	< 0.001 %
Calcium	0.003 % max	0.0012 %
Sodium	0.02 % max	0.0047 %

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This is to certify that units of the lot number above were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Thermo Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Products are for research use or further manufacturing. Not for direct administration to humans or animals. It is the responsibility of the purchaser, formulator or those performing further manufacturing to determine suitability based upon the intended use of the end product. Products are tested to meet the analytical requirements of the noted grade. The above information is the actual analytical results obtained.

W3071
Rec 12/6/23

Certificate of Analysis 12

Buffer, Reference Standard, pH 7.00 ± 0.01 at 25°C (Color Coded Yellow)

Lot Number: 4308H30

Product Number: 1551

Manufacture Date: AUG 09, 2023

Expiration Date: JUL 2025

The certified value for this product is confirmed in independent testing by a second qualified chemist.

The NIST traceable pH value is certified to ±0.01 at 25 °C only. All other pH values at their corresponding temperatures are accurate to ± 0.05.

°C	0	5	10	15	20	25	30	35	40	45	50
pH	7.12	7.09	7.06	7.04	7.02	7.00	6.99	6.98	6.98	6.97	6.97

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Sodium Phosphate Dibasic	7558-79-4	ACS
Potassium Dihydrogen Phosphate	7778-77-0	ACS
Preservative	Proprietary	
Yellow Dye	Proprietary	
Sodium Hydroxide	1310-73-2	Reagent

Test	Specification	Result
Appearance	Yellow liquid	Passed

*Not a certified value.

Test	Certified Value	Uncertainty	NIST SRM#
pH at 25°C (Method: SQCP027, SQCP033)	7.002	0.02	186-I-g, 186-II-g, 191d

Specification	Reference
Commercial Buffer Solutions	ASTM (D 1293 B)
Buffer A	ASTM (D 5464)
Buffer A	ASTM (D 5128)

pH measurements were performed in our Batesville, IN laboratory under ISO/IEC 17025 accreditation (ANAB Certificate L2387.02) and are certified traceable to National Institute of Standards and Technology (NIST) Standard Reference Material as indicated above via an unbroken chain of comparisons. The uncertainty is calculated from the uncertainty of the measurement variation from sample to sample, the uncertainty in the NIST Standard Reference Material, and the uncertainty of the measurement process. The uncertainty is multiplied by k=2, corresponding to 95% coverage in a normal distribution. Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
1551-2.5	10 L Cubitainer®	24 months
1551-5	20 L Cubitainer®	24 months

Recommended Storage: 15°C - 30°C (59°F - 86°F)



Paul Brandon (08/09/2023)

Production Manager

This document is designed to comply with ISO Guide 31 "Reference Materials --
Contents of Certificates and Labels."

This product was tested in an ISO 17025 Accredited Laboratory

This test report shall not be reproduced, except in full, without the written approval of Ricca Chemical Company.

W3019
Rec 4/3/23

3050 Spruce Street, Saint Louis, MO 63103, USA

Website: www.sigmaaldrich.comEmail USA: techserv@sial.comOutside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name:

Pyridine - anhydrous, 99.8%

Product Number:

270970

Batch Number:

SHBQ2113

Brand:

SIAL

CAS Number:

110-86-1

MDL Number:

MFCD00011732

Formula:

C₅H₅N

Formula Weight:

79.10 g/mol

Quality Release Date:

15 DEC 2022



Test	Specification	Result
Appearance (Color)	Colorless	Colorless
Appearance (Form)	Liquid	Liquid
Infrared Spectrum	Conforms to Structure	Conforms
Purity (GC)	≥ 99.75 %	99.99 %
Water (by Karl Fischer)	≤ 0.003 %	0.002 %
Residue on Evaporation	≤ 0.0005 %	< 0.0001 %


Larry Coers, Director
Quality Control
Sheboygan Falls, WI US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.



**RICCA CHEMICAL COMPANY®**

1841 Broad Street
Pocomoke City, MD 21851
<http://www.riccachemical.com>
1-888-GO-RICCA
customerservice@riccachemical.com

W 3072
REC. 12/01/23
12

Certificate of Analysis

Buffer, Reference Standard, pH 12.00 ± 0.01 at 25°C**Lot Number: 2310P21****Product Number: 1615****Manufacture Date: OCT 24, 2023****Expiration Date: APR 2025**

The certified value for this product is confirmed in independent testing by a second qualified chemist.

°C	15	20	25	30	35	40
pH	12.35	12.17	11.99	11.78	11.62	11.46

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Potassium Chloride	7447-40-7	ACS
Sodium Hydroxide	1310-73-2	Reagent

Test	Specification	Result
Appearance	Colorless liquid	Passed

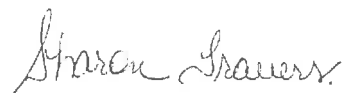
*Not a certified value.

Test	Certified Value	Uncertainty	NIST SRM#
pH at 25°C (Method: SQCP027, SQCP033)	12.005	0.02	186-I-g, 186-II-g, 191d

pH measurements were performed in our Pocomoke City, MD laboratory under ISO/IEC 17025 accreditation (ANAB Certificate L2387.01) and are certified traceable to National Institute of Standards and Technology (NIST) Standard Reference Material as indicated above via an unbroken chain of comparisons. The uncertainty is calculated from the uncertainty of the measurement variation from sample to sample, the uncertainty in the NIST Standard Reference Material, and the uncertainty of the measurement process. The uncertainty is multiplied by k=2, corresponding to 95% coverage in a normal distribution. Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
1615-1	4 L natural poly	18 months
1615-16	500 mL clear PET-G	18 months
1615-32	1 L natural poly	18 months
1615-5	20 L Cubitainer®	18 months

Recommended Storage: 15°C - 30°C (59°F - 86°F)



Sharon Travers (10/24/2023)

Operations Manager

This document is designed to comply with ISO Guide 31 "Reference Materials --
Contents of Certificates and Labels."

This product was tested in an ISO 17025 Accredited Laboratory

This test report shall not be reproduced, except in full, without the written approval of Ricca Chemical Company.



Certificate of Analysis

Date of Release: 2/26/2020

Name: Formaldehyde Solution
GR ACS
Meets ACS Specifications

Item No: FX0410 all size codes

Lot / Batch No: 60045

Country of Origin: USA

Characteristic	Requirement		Results	Units
	Min.	Max.		
Assay	36.5	38.0	36.71	%
Chloride (Cl)		5	<5	ppm
Color (APHA)		10	<10	
Form			Passes test	
Heavy metals (as Pb)		5	<5	ppm
Iron (Fe)		5	0.6	ppm
Residue after ignition		0.005	<0.0050	%
Sulfate (SO ₄)		0.002	<0.0020	%
Titration acid		0.006	<0.0060	meq/g

Heather Sinn,

Quality Control Manager

This document has been produced electronically and is valid without a signature.

EMD Millipore Corporation, an affiliate of Merck KGaA, Darmstadt, Germany
290 Concord Road
Billerica, MA 01821
U.S.A

The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the U.S. and Canada.



Certificate of Analysis

1 Reagent Lane
Fair Lawn, NJ 07410
201.796.7100 tel
201.796.1329 fax

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System
Standard ISO9001:2015 by SAI Global Certificate Number CERT – 0120632

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Thermo Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Products are for research use or further manufacturing. Not for direct administration to humans or animals. It is the responsibility of the final formulator and end user to determine suitability based upon the intended use of the end product. Products are tested to meet the analytical requirements of the noted grade. The following information is the actual analytical results obtained.

Catalog Number	P188	Quality Test / Release Date	08/12/2019
Lot Number	194664		
Description	POTASSIUM DICHROMATE, A.C.S.		
Country of Origin	United States	Suggested Retest Date	Aug/2024
Chemical Origin	Inorganic-non animal		
BSE/TSE Comment	No animal products are used as starting raw material ingredients, or used in processing, including lubricants, processing aids, or any other material that might migrate to the finished product.		
Chemical Comment			

N/A			
Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	Fine, orange-red crystals
ASSAY	%	>= 99	99.2
CALCIUM	%	<= 0.003	<0.003
CHLORIDE	%	<= 0.001	<0.001
LOSS ON DRYING @ 105 C	%	<= 0.05	<0.05
SULFATE (SO4)	%	<= 0.005	<0.005
INSOLUBLE MATTER	%	<= 0.005	0.003
IRON (Fe)	%	<= 0.001	<0.001
SODIUM (Na)	%	<= 0.02	<0.02
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST

Jerusa Bailey-Wyche

Quality Assurance Specialist - Certificate of Analysis Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.
If there are any questions with this certificate, please call at (800) 227-6701.

*Based on suggested storage condition.



Certificate of Analysis

Sodium Hydroxide (Pellets)

Material: 0583
Grade: ACS GRADE
Batch Number: 23B1556310

Chemical Formula: NaOH
Molecular Weight: 40
CAS #: 1310-73-2
Appearance:

Manufacture Date: 12/14/2022
Expiration Date: 12/31/2025

Storage: Room Temperature

Pellets

TEST	SPECIFICATION	ANALYSIS	DISPOSITION
Calcium	$\leq 0.005 \%$	$< 0.005 \%$	PASS
Chloride	$\leq 0.005 \%$	0.002 %	PASS
Heavy Metals	$\leq 0.002 \%$	$< 0.002 \%$	PASS
Iron	$\leq 0.001 \%$	$< 0.001 \%$	PASS
Magnesium	$\leq 0.002 \%$	$< 0.002 \%$	PASS
Mercury	$\leq 0.1 \text{ ppm}$	$< 0.1 \text{ ppm}$	PASS
Nickel	$\leq 0.001 \%$	$< 0.001 \%$	PASS
Nitrogen Compounds	$\leq 0.001 \%$	$< 0.001 \%$	PASS
Phosphate	$\leq 0.001 \%$	$< 0.001 \%$	PASS
Potassium	$\leq 0.02 \%$	$< 0.02 \%$	PASS
Purity	$\geq 97.0 \%$	99.2 %	PASS
Sodium Carbonate	$\leq 1.0 \%$	0.5 %	PASS
Sulfate	$\leq 0.003 \%$	$< 0.003 \%$	PASS

Internal ID #: 710

Signature

We certify that this batch conforms to the specifications listed.

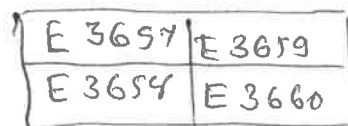
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Leona Edwardson, Quality Control Sr. Manager - Solon
VWR Chemicals, LLC.
28600 Fountain Parkway, Solon OH 44139 USA

Additional Information

Analysis may have been rounded to significant digits in specification limits.

Product meets analytical specifications of the grades listed.



Acetone
BAKER RESI-ANALYZED® Reagent
For Organic Residue Analysis



Material No.: 9254-03

Batch No.: 24H2762008

Manufactured Date: 2024-04-18

Expiration Date: 2027-04-18

Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay ((CH ₃) ₂ CO) (by GC, corrected for water)	>= 99.4 %	100.0 %
Color (APHA)	<= 10	5
Residue after Evaporation	<= 1.0 ppm	0.0 ppm
Substances Reducing Permanganate	Passes Test	Passes Test
Titration Acid (µeq/g)	<= 0.3	0.2
Titration Base (µeq/g)	<= 0.6	<0.1
Water (H ₂ O)	<= 0.5 %	<0.1 %
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	<= 5	1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	<= 10	1

For Laboratory, Research, or Manufacturing Use

MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: United States

Packaging Site: Phillipsburg Mfg Ctr & DC

Recd. by RP on 11/15/24

E 3830

Jamie Croak
Director Quality Operations, Bioscience Production

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

Avantor Performance Materials LLC

Sulfuric Acid
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis
Low Selenium

 **avantor**™



Material No.: 9673-33
Batch No.: 23D2462010
Manufactured Date: 2023-03-22
Retest Date: 2028-03-20
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
ACS – Assay (H ₂ SO ₄)	95.0 – 98.0 %	96.1 %
Appearance	Passes Test	Passes Test
ACS – Color (APHA)	≤ 10	5
ACS – Residue after Ignition	≤ 3 ppm	< 1 ppm
ACS – Substances Reducing Permanganate (as SO ₂)	≤ 2 ppm	< 2 ppm
Ammonium (NH ₄)	≤ 1 ppm	1 ppm
Chloride (Cl)	≤ 0.1 ppm	< 0.1 ppm
Nitrate (NO ₃)	≤ 0.2 ppm	< 0.1 ppm
Phosphate (PO ₄)	≤ 0.5 ppm	< 0.1 ppm
Trace Impurities – Aluminum (Al)	≤ 30.0 ppb	< 5.0 ppb
Arsenic and Antimony (as As)	≤ 4.0 ppb	< 2.0 ppb
Trace Impurities – Boron (B)	≤ 10.0 ppb	8.5 ppb
Trace Impurities – Cadmium (Cd)	≤ 2.0 ppb	< 0.3 ppb
Trace Impurities – Chromium (Cr)	≤ 6.0 ppb	< 0.4 ppb
Trace Impurities – Cobalt (Co)	≤ 0.5 ppb	< 0.3 ppb
Trace Impurities – Copper (Cu)	≤ 1.0 ppb	< 0.1 ppb
Trace Impurities – Gold (Au)	≤ 10.0 ppb	0.5 ppb
Heavy Metals (as Pb)	≤ 500.0 ppb	< 100.0 ppb
Trace Impurities – Iron (Fe)	≤ 50.0 ppb	1.3 ppb
Trace Impurities – Lead (Pb)	≤ 0.5 ppb	< 0.5 ppb
Trace Impurities – Magnesium (Mg)	≤ 7.0 ppb	0.8 ppb
Trace Impurities – Manganese (Mn)	≤ 1.0 ppb	< 0.4 ppb
Trace Impurities – Mercury (Hg)	≤ 0.5 ppb	< 0.1 ppb
Trace Impurities – Nickel (Ni)	≤ 2.0 ppb	0.3 ppb
Trace Impurities – Potassium (K)	≤ 500.0 ppb	< 2.0 ppb
Trace Impurities – Selenium (Se)	≤ 50.0 ppb	< 0.1 ppb
Trace Impurities – Silicon (Si)	≤ 100.0 ppb	31.5 ppb
Trace Impurities – Silver (Ag)	≤ 1.0 ppb	< 0.3 ppb

>>> Continued on page 2 >>>

Sulfuric Acid
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis
Low Selenium



Material No.: 9673-33
Batch No.: 23D2462010

Test	Specification	Result
Trace Impurities – Sodium (Na)	≤ 500.0 ppb	5.4 ppb
Trace Impurities – Strontium (Sr)	≤ 5.0 ppb	< 0.2 ppb
Trace Impurities – Tin (Sn)	≤ 5.0 ppb	< 0.8 ppb
Trace Impurities – Zinc (Zn)	≤ 5.0 ppb	0.4 ppb

For Laboratory, Research, or Manufacturing Use

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

A handwritten signature in cursive script that reads 'James T Ethier'.
Jamie Ethier
Vice President Global Quality



Certificate of Analysis

1.00132.0000 Barbituric acid for analysis EMSURE®
Batch N020065932

	Spec. Values		Batch Values	
Assay (acidimetric)	≥ 99	%	99.6	%
Identity (IR-spectrum)	passes test		passes test	
Chloride (Cl)	≤ 40	ppm	≤ 40	ppm
Heavy metals (as Pb)	≤ 50	ppm	≤ 50	ppm
Fe (Iron)	≤ 10	ppm	≤ 10	ppm
Sulfated ash	≤ 0.1	%	≤ 0.1	%
Loss on Drying (105 °C)	≤ 0.1	%	≤ 0.1	%
Suitability as reagent (for cyanide determination)	passes test		passes test	

Date of release (DD.MM.YYYY) 17.04.2020
Minimum shelf life (DD.MM.YYYY) 30.04.2025

Ioannis Chartomatsidis
Responsible laboratory manager quality control

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Sodium Phosphate, Monobasic, Monohydrate,
Crystal
BAKER ANALYZED® A.C.S. Reagent

(sodium dihydrogen phosphate, monohydrate)



Material No.: 3818-05
Batch No.: 0000225799
Manufactured Date: 2018/12/05
Retest Date: 2025/12/03
Revision No: 1

Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

Test	Specification	Result
Assay ($\text{NaH}_2\text{PO}_4 \cdot \text{H}_2\text{O}$)	98.0 – 102.0 %	99.5
pH of 5% Solution at 25°C	4.1 – 4.5	4.3
Insoluble Matter	≤ 0.01 %	< 0.01
Chloride (Cl)	≤ 5 ppm	< 5
ACS – Sulfate (SO_4)	≤ 0.003 %	< 0.003
Calcium (Ca)	≤ 0.005 %	< 0.005
Potassium (K)	≤ 0.01 %	< 0.01
Heavy Metals (as Pb)	≤ 0.001 %	< 0.001
Trace Impurities – Iron (Fe)	≤ 0.001 %	< 0.001

For Laboratory, Research or Manufacturing Use
Meets Reagent Specifications for testing USP/NF monographs

Country of Origin: IN
Packaging Site: Paris Mfg Ctr & DC


Jamie Ethier
Vice President Global Quality

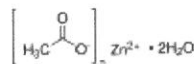
For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

Certificate of Analysis

Product Name:


Zinc acetate dihydrate - ACS reagent, $\geq 98\%$

Product Number: 383058
Batch Number: MKCQ9159
Brand: SIGALD
CAS Number: 5970-45-6
MDL Number: MFCD00066961
Formula: $C_4H_6O_4Zn \cdot 2H_2O$
Formula Weight: 219.51 g/mol
Quality Release Date: 06 JAN 2022



W2926
Open 7/5/22
received
on 7/5/22

Test	Specification	Result
Appearance (Color)	White	White
Appearance (Form)	Powder or Crystal or Chunk(s)	Powder
Infrared Spectrum	Conforms to Structure	Conforms
Insoluble Matter	$\leq 0.005 \%$	0.003 %
Calcium (Ca)	$\leq 0.005 \%$	0.003 %
Chloride (Cl)	$\leq 5 \text{ ppm}$	$< 5 \text{ ppm}$
Iron (Fe)	$\leq 5 \text{ ppm}$	$< 5 \text{ ppm}$
Potassium (K)	$\leq 0.01 \%$	0.00 %
Magnesium (Mg)	$\leq 0.005 \%$	0.003 %
Sodium (Na)	$\leq 0.05 \%$	0.03 %
Lead (Pb)	$\leq 0.002 \%$	$< 0.001 \%$
pH	6.0 - 7.0	6.1
Sulfate (SO ₄)	$\leq 0.005 \%$	$< 0.005 \%$
Complexometric EDTA	98.0 - 101.0 %	100.3 %
Meets ACS Requirements	Meets Requirements	Meets Requirements


Larry Coers, Director
Quality Control
Milwaukee, WI US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.



W 2979

Rec: 12/09/22

exp. 12/09/27

Product Name:

1,5-Diphenylcarbazide - ACS reagent

Product Number:

259225

Batch Number:

MKCR6636

Brand:

SIAL

CAS Number:

140-22-7

MDL Number:

MFCD00003013

Formula:

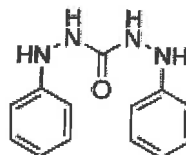
C₁₃H₁₄N₄O

Formula Weight:

242.28 g/mol


Quality Release Date:

02 JUN 2022



Certificate of Analysis

Test	Specification	Result
Appearance (Color)	Conforms to Requirements	Pink
Off-White to Pink, Light Purple or Tan		
Appearance (Form)	Powder or Chunks	Powder
Melting Point	173.0 - 176.0 °C	173.0 °C
Infrared Spectrum	Conforms to Structure	Conforms
Residue on ignition (Ash)	≤ 0.05 %	0.01 %
15 minutes, 800 Degrees Celsius		
Solubility	Pass	Pass
Sensitivity Test	Pass	Pass
Meets ACS Requirements	Current ACS Specification	Conforms



Larry Coers, Director
Quality Control
Milwaukee, WI US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.





RICCA CHEMICAL COMPANY®

W 3005

REC- 1/31/23

12

1490 Lammers Pike

Batesville, IN 47006

<http://www.riccachemical.com>

1-888-GO-RICCA

customerservice@riccachemical.com

Certificate of Analysis

Buffer, Reference Standard, pH 2.00 ± 0.01 at 25°C

Lot Number: 4212E45

Product Number: 1493

Manufacture Date: DEC 20, 2022

Expiration Date: DEC 2024

The certified value for this product is confirmed in independent testing by a second qualified chemist.

The NIST traceable pH value is certified to ±0.01 at 25 °C only. All other pH values at their corresponding temperatures are accurate to ± 0.05.

°C	10	15	20	25	30	35	40	45	50
pH	1.93	1.98	1.98	2.00	2.01	2.03	2.03	2.04	2.04

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Potassium Chloride	7447-40-7	ACS
Hydrochloric Acid	7647-01-0	ACS

Test	Specification	Result
Appearance	Colorless liquid	Passed

*Not a certified value.

Test	Certified Value	Uncertainty	NIST SRM#
pH at 25°C (Method: SQCP027, SQCP033)	2.000	0.02	185i, 186-I-g, 186-II-g

pH measurements were performed in our Batesville, IN laboratory under ISO/IEC 17025 accreditation (ANAB Certificate L2387.02) and are certified traceable to National Institute of Standards and Technology (NIST) Standard Reference Material as indicated above via an unbroken chain of comparisons. The uncertainty is calculated from the uncertainty of the measurement variation from sample to sample, the uncertainty in the NIST Standard Reference Material, and the uncertainty of the measurement process. The uncertainty is multiplied by k=2, corresponding to 95% coverage in a normal distribution. Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
1493-1	4 L natural poly	24 months
1493-16	500 mL natural poly	24 months
1493-32	1 L natural poly	24 months
1493-5	20 L Cubitainer®	24 months

Recommended Storage: 15°C - 30°C (59°F - 86°F)



Paul Brandon (12/20/2022)

Production Manager

This Certificate of Analysis is designed to comply with ISO Guide 31 "Reference Materials -- Contents of Certificates and Labels."

This product was tested in an ISO 17025 Accredited Laboratory

This test report shall not be reproduced, except in full, without the written approval of Ricca Chemical Company.



W3084-W3088 Received on 3/20/24 by IZ

Certificate of Analysis

03/20/2024(JST)

TOKYO CHEMICAL INDUSTRY CO.,LTD.

T-PLUS Nihonbashi-Kodemmacho

16-12 Nihonbashi-kodemmacho, Chuo-ku, Tokyo 103-0001, Japan

Chemical Name: p-Xylene		
Product Number: X0014 CAS RN: 106-42-3	Lot: Y348K	

Tests	Results	Specifications
Appearance	Colorless clear liquid	Colorless to Almost colorless clear liquid
Purity(GC)	99.7 %	min. 99.0 %

TCI Lot numbers are 4-5 characters in length. Characters listed after the first 4-5 characters are control numbers for internal purpose only.

The contents of the specifications are subject to change without advance notice. The specification values displayed here are the most up to date values. There may be cases where the product labels display a different specification, however, the product quality still meets the latest specification.

Customer Service:

TCI AMERICA

Tel: +1-800-423-8616 / +1-503-283-1681

Fax: +1-888-520-1075 / +1-503-283-1987

E-mail: Sales-US@TCIchemicals.com

Takuya Nishioka
Quality Assurance Department Manager

**RICCA CHEMICAL COMPANY®**

1490 Lammers Pike

Batesville, IN 47006

<http://www.riccachemical.com>

1-888-GO-RICCA

customerservice@riccachemical.com

Certificate of Analysis

W3093
004121
04/03/2024
16

Buffer, Reference Standard, pH 7.00 ± 0.01 at 25°C (Color Coded Yellow)**Lot Number:** 4401F99**Product Number:** 1551**Manufacture Date:** JAN 08, 2024**Expiration Date:** DEC 2025

The certified value for this product is confirmed in independent testing by a second qualified chemist.

The NIST traceable pH value is certified to ±0.01 at 25 °C only. All other pH values at their corresponding temperatures are accurate to ± 0.05.

°C	0	5	10	15	20	25	30	35	40	45	50
pH	7.12	7.09	7.06	7.04	7.02	7.00	6.99	6.98	6.98	6.97	6.97

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Sodium Phosphate Dibasic	7558-79-4	ACS
Potassium Dihydrogen Phosphate	7778-77-0	ACS
Preservative	Proprietary	
Yellow Dye	Proprietary	
Sodium Hydroxide	1310-73-2	

Test	Specification	Result
Appearance	Yellow liquid	Passed

*Not a certified value.

Test	Certified Value	Uncertainty	NIST SRM#
pH at 25°C (Method: SQCP027, SQCP033)	7.004	0.02	186-I-g, 186-II-g, 191d

Specification	Reference
Commercial Buffer Solutions	ASTM (D 1293 B)
Buffer A	ASTM (D 5464)
Buffer A	ASTM (D 5128)

pH measurements were performed in our Batesville, IN laboratory under ISO/IEC 17025 accreditation (ANAB Certificate L2387.02) and are certified traceable to National Institute of Standards and Technology (NIST) Standard Reference Material as indicated above via an unbroken chain of comparisons. The uncertainty is calculated from the uncertainty of the measurement variation from sample to sample, the uncertainty in the NIST Standard Reference Material, and the uncertainty of the measurement process. The uncertainty is multiplied by k=2, corresponding to 95% coverage in a normal distribution. Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
1551-1	4 L natural poly	24 months
1551-1CT	4 L Cubitainer®	24 months
1551-2.5	10 L Cubitainer®	24 months
1551-5	20 L Cubitainer®	24 months

Recommended Storage: 15°C - 30°C (59°F - 86°F)



Paul Brandon (01/08/2024)

Production Manager

This document is designed to comply with ISO Guide 31 "Reference Materials --
Contents of Certificates and Labels."

This product was tested in an ISO 17025 Accredited Laboratory

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Certificate of Analysis

Buffer, Reference Standard, pH 10.00 ± 0.01 at 25°C (Color Coded Blue)

Lot Number: 4310G83

Product Number: 1601

Manufacture Date: OCT 09, 2023

Expiration Date: MAR 2025

The certified value for this product is confirmed in independent testing by a second qualified chemist.

The NIST traceable pH value is certified to ±0.01 at 25 °C only. All other pH values at their corresponding temperatures are accurate to ± 0.05.

°C	0	5	10	15	20	25	30	35	40	50
pH	10.31	10.23	10.17	10.11	10.05	10.00	9.95	9.91	9.87	9.81

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Sodium Carbonate	497-19-8	ACS
Sodium Bicarbonate	144-55-8	ACS
Sodium Hydroxide	1310-73-2	Reagent
Preservative	Proprietary	
Blue Dye	Proprietary	

Test	Specification	Result
Appearance	Blue liquid	Passed

*Not a certified value.

Test	Certified Value	Uncertainty	NIST SRM#
pH at 25°C (Method: SQCP027, SQCP033)	10.003	0.02	186-I-g, 186-II-g, 191d

Specification	Reference
Commercial Buffer Solutions	ASTM (D 1293 B)
Buffer C	ASTM (D 5464)
Buffer C	ASTM (D 5128)

pH measurements were performed in our Batesville, IN laboratory under ISO/IEC 17025 accreditation (ANAB Certificate L2387.02) and are certified traceable to National Institute of Standards and Technology (NIST) Standard Reference Material as indicated above via an unbroken chain of comparisons. The uncertainty is calculated from the uncertainty of the measurement variation from sample to sample, the uncertainty in the NIST Standard Reference Material, and the uncertainty of the measurement process. The uncertainty is multiplied by k=2, corresponding to 95% coverage in a normal distribution. Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
1601-16	500 mL natural poly	18 months
1601-5	20 L Cubitainer®	18 months

Recommended Storage: 15°C - 30°C (59°F - 86°F)



Paul Brandon (10/09/2023)

Production Manager

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This product was tested in an ISO 17025 Accredited Laboratory

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Certificate of Analysis

Sodium Thiosulfate, 0.0250 Normal (N/40)

Lot Number: 4403S13

Product Number: 7900

Manufacture Date: MAR 29, 2024

Expiration Date: SEP 2025

This product is specially formulated to increase its stability. A preservative is added to prevent bacterial contamination. However, all Sodium Thiosulfate solutions are subject to slow chemical deterioration and should be restandardized periodically.

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Sodium Thiosulfate Pentahydrate	10102-17-7	ACS
Organic Preservative	Proprietary	
Sodium Carbonate	497-19-8	ACS

Test	Specification	Result	NIST SRM#
Appearance	Colorless liquid	Passed	
Assay (vs. Potassium Iodate/Starch)	0.02499-0.02501 N at 20°C	0.02501 N at 20°C	136

Specification	Reference
Standard Sodium Thiosulfate Solution, 0.0250 N	APHA (4500-S2- F)
Standard Sodium Thiosulfate Titrant	APHA (4500-O D)
Standard Sodium Thiosulfate Titrant	APHA (4500-O E)
Standard Sodium Thiosulfate Titrant	APHA (4500-O F)
Standard Sodium Thiosulfate Titrant, 0.025 N	APHA (4500-CI B)
Standard Sodium Thiosulfate Titrant	APHA (4500-O C)
Standard Sodium Thiosulfate Titrant, 0.025 M	APHA (5530 C)
Standard Sodium Thiosulfate Solution (0.025 N)	EPA (SW-846) (9031)
Standard Sodium Thiosulfate solution (0.025 N)	EPA (SW-846) (9034)

Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
7900-1	4 L natural poly	18 months
7900-16	500 mL natural poly	18 months
7900-1CT	4 L Cubitainer®	18 months
7900-32	1 L natural poly	18 months

Recommended Storage: 15°C - 30°C (59°F - 86°F)



Paul Brandon (03/29/2024)

Production Manager

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Contents of Certificates and Labels."

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Certificate of Analysis

Buffer, Reference Standard, pH 4.00 ± 0.01 at 25°C (Color Coded Red)

Lot Number: 4403F90

Product Number: 1501

Manufacture Date: MAR 09, 2024

Expiration Date: FEB 2026

The certified value for this product is confirmed in independent testing by a second qualified chemist.

The NIST Traceable pH value is certified to ±0.01 at 25 °C only. All other pH values at their corresponding temperatures are accurate to ± 0.05.

°C	0	5	10	15	20	25	30	35	40	45	50
pH	4.00	4.00	4.00	4.00	4.00	4.00	4.01	4.02	4.03	4.04	4.06

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Potassium Acid Phthalate	877-24-7	Buffer
Preservative	Proprietary	Commercial
Red Dye	Proprietary	Purified

Test	Specification	Result
Appearance	Red liquid	Passed

*Not a certified value.

Test	Certified Value	Uncertainty	NIST SRM#
pH at 25°C (Method: SQCP027, SQCP033)	4.000	0.02	185i, 186-I-g, 186-II-g

Specification	Reference
Commercial Buffer Solutions	ASTM (D 1293 B)
Buffer B	ASTM (D 5464)
Buffer B	ASTM (D 5128)

pH measurements were performed in our Batesville, IN laboratory under ISO/IEC 17025 accreditation (ANAB Certificate L2387.02) and are certified traceable to National Institute of Standards and Technology (NIST) Standard Reference Material as indicated above via an unbroken chain of comparisons. The uncertainty is calculated from the uncertainty of the measurement variation from sample to sample, the uncertainty in the NIST Standard Reference Material, and the uncertainty of the measurement process. The uncertainty is multiplied by k=2, corresponding to 95% coverage in a normal distribution. Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
1501-2.5	10 L Cubitainer®	24 months
1501-32	1 L natural poly	24 months
1501-5	20 L Cubitainer®	24 months

Recommended Storage: 15°C - 30°C (59°F - 86°F)



Paul Brandon (03/09/2024)

Production Manager

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This product was tested in an ISO 17025 Accredited Laboratory

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Certificate of Analysis

Iodine (Iodine-Iodide), 0.0250 Normal (N/40), 1 mL = 0.4008 mg S²⁻**Lot Number:** 2405D89**Product Number:** 3975**Manufacture Date:** MAY 10, 2024**Expiration Date:** MAY 2025

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Potassium Iodide	7681-11-0	ACS
Iodine	7553-56-2	ACS

Test	Specification	Result	NIST SRM#
Appearance	Dark brown liquid	Passed	
Assay (vs. Sodium Thiosulfate/Starch)	0.02498-0.02502 N at 20°C	0.02502 N at 20°C	136

Specification	Reference
Standard Iodine Solution, 0.0250 N	APHA (4500-S2- F)
Iodine Solution (approximately 0.025 N)	EPA (SW-846) (9031)
Standard Iodine Solution, 0.0250 N	EPA (376.1)
Iodine Solution (approximately 0.025 N)	EPA (SW-846) (9034)

Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
3975-1	4 L amber glass	12 months
3975-16	500 mL amber glass	12 months
3975-32	1 L amber glass	12 months

Recommended Storage: 15°C - 30°C (59°F - 86°F)

Jose Pena (05/10/2024)
Operations Manager

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Part of TCP Analytical Group

Jackson's Pointe Commerce Park- Building 1000
1010 Jackson's Pointe Court, Zelienople, PA 16063

Certificate of Analysis

Cyanide Standard 1000 ppm (1ml = 1mg CN)

Product Code: **LC13545**

Manufacture Date: August 01, 2024

Lot Number: **44080060**

Expiration Date: January 30, 2025

Test	Specification	Result
Appearance (clarity)	clear solution	clear solution
Appearance (color)	colorless	colorless
Concentration (CN)	0.990 - 1.010mg/mL	1.008mg/mL
Concentration (CN)	990 - 1,010ppm	1,008ppm
Traceable to NIST SRM	Report	999b

Intended Use - Product is intended for use in manufacturing procedures and laboratory procedures and protocols.

Storage Information - Unless noted on the product label, store the product under normal lab conditions in its tightly closed, original container. Do not pipet directly from the container or return unused portions to the container.

Instructions for Handling and Use - Please refer to the associated product label and Safety Data Sheet (SDS) for information regarding safety and handling of this product.

Preparation - All products are manufactured and tested according to established, documented procedures and methodology. Production documentation records manufacturing data, raw material traceability and testing history on a per lot basis. Balances, thermometers, and glassware are calibrated before first use and on a regular schedule with references traceable to NIST standards.

The suffix of the product code may differ from what is on your product label. The suffix will designate the size and be associated with a numeric digit(s). Visit LabChem.com for more information

Suffix	1	2	3/3S/36/36S	4/4C	5	6	7	8	9	20	44	200	246	486
Size	500mL or g	1L or 1kg	2.5L/2.5L Coated/6x2.5L/6x2.5L Coated	4L	20L	10L	125mL	25g	100g	20x20mL	4x4L	200L	24x6mL	48x6mL

Michael Monteleone

Michael Monteleone
Chemistry Supervisor - Quality Control

ISO9001:2015 Registration #0306-01

2024080113:32:16bsturges-0-0

W3139 Received on 9/9/24 by IZ

Product No.: A12044
Product: Chloramine-T trihydrate, 98%
Lot No.: 10239484

Appearance:	White powder
Melting Point:	166°C(dec)
Assay (Iodometric titration):	100.5%
Identification (FTIR):	Conforms

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This document has been electronically generated and does not require a signature.

Products are processed under ISO 9001:2015 quality management systems and samples are tested for conformance to the noted specifications. Certain data may have been supplied by third parties. We disclaim the implied warranties of merchantability and fitness for a particular purpose, and the accuracy of third party data or information associated with the product. Products are for research and development use only. Products are not for direct administration to humans or animals. It is the responsibility of the final formulator or end user to determine suitability, and to qualify and/or validate each product for its intended use.

Certificate of Analysis

Starch Indicator, 0.5% (w/v), Mercury Free, for Iodometric Titrations

Lot Number: 4408P62

Product Number: 8000

Manufacture Date: AUG 28, 2024

Expiration Date: AUG 2026

This product is Mercury-free.

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Starch, soluble	9005-84-9	ACS
Salicylic Acid	69-72-7	ACS

Test	Specification	Result
Appearance	White translucent liquid	Passed
Suitability for Use	Colorless (Iodine absent) - Blue (Iodine present)	Passed

Specification	Reference
Starch Solution	APHA (4500-S2- F)
Starch Indicator Solution	APHA (4500-CI B)
Starch Indicator	APHA (4500-SO32- B)
Starch indicator solution	APHA (2350 B)
Starch indicator solution	APHA (2350 E)
Starch Solution	APHA (510 B)
Starch Solution	APHA (5530 C)
Starch Indicator	APHA (4500-CI C)
Starch Indicator	EPA (345.1)

Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
8000-1	4 L natural poly	24 months
8000-16	500 mL natural poly	24 months
8000-32	1 L natural poly	24 months

Recommended Storage: 15°C - 30°C (59°F - 86°F)

A handwritten signature in blue ink that reads "Paul Brandon". The signature is fluid and cursive, with the first name "Paul" and last name "Brandon" clearly distinguishable.

Paul Brandon (08/28/2024)
Production Manager

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SHIPPING DOCUMENTS

CHEMTECH

CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 • Fax (908) 789-8922
www.chemtech.net

CHEMTECH PROJECT NO. **P4998**
QUOTE NO. _____
COC Number **2041832**

CLIENT INFORMATION

REPORT TO BE SENT TO:

COMPANY: **ENTACT**
ADDRESS: **150 Bay street**
CITY **Jersey City** STATE: **NJ** ZIP: **07302**
ATTENTION: **Bryan Reyes**
PHONE: **609 418 3784** FAX: _____

CLIENT PROJECT INFORMATION

PROJECT NAME: **Westlake**
PROJECT NO.: **E9074** LOCATION: **Piscataway**
PROJECT MANAGER: **Bryan Reyes**
e-mail: **breyes@entact.com**
PHONE: **609 418 3784** FAX: _____

CLIENT BILLING INFORMATION

BILL TO: **ENTACT** PO#: **E9074**
ADDRESS: **150 Bay street**
CITY **Jersey City** STATE: **NJ** ZIP: **07302**
ATTENTION: **Bryan Reyes** PHONE: **609 418 3784**

ANALYSIS

DATA TURNAROUND INFORMATION

FAX (RUSH) _____ DAYS*
HARDCOPY (DATA PACKAGE): _____ DAYS*
EDD: _____ DAYS*
*TO BE APPROVED BY CHEMTECH
STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

☐ Level 1 (Results Only) ☐ Level 4 (QC + Full Raw Data)
☐ Level 2 (Results + QC) ☐ NJ Reduced ☐ US EPA CLP
☐ Level 3 (Results + QC) ☐ NYS ASP A ☐ NYS ASP B
+ Raw Data ☐ Other _____
☐ EDD FORMAT _____

1 RCRA TCLP
2 RCRA Ignitability
3 RCRA Reactivity
4 RCRA Corrosivity
5 PCBs
6 Total VOCs
7
8
9

PRESERVATIVES

COMMENTS

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES										← Specify Preservatives A-HCl D-NaOH B-HNO3 E-ICE C-H2SO4 F-OTHER
			COMP	GRAB	DATE	TIME		1	2	3	4	5	6	7	8	9	
1. 001		Water			11/25	11:00	1										
2. 002		Water			11/25	11:00	1										
3. 003		Water			11/25	11:00	1										
4. 004		Water			11/25	11:00	1										
5. 005		Water			11/25	11:01	1										
6. 006		Water			11/25	11:01	1										
7.																	
8.																	
9.																	
10.																	

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:	Conditions of bottles or coolers at receipt: <input type="checkbox"/> COMPLIANT <input type="checkbox"/> NON COMPLIANT <input type="checkbox"/> COOLER TEMP _____ °C
1. Bryan Reyes	11/25 11:20	1. 	Comments: _____
RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:	
2.		2. 	
RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:	
3. 	11-25-24	3. 	

Page _____ of _____

CLIENT: ☐ Hand Delivered ☐ Other _____
CHEMTECH: ☐ Picked Up ☐ Field Sampling

Shipment Complete
☐ YES ☐ NO



284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Laboratory Certification

Certified By	License No.
CAS EPA CLP Contract	68HERH20D0011
Connecticut	PH-0830
DOD ELAP (ANAB)	L2219
Maine	2024021
Maryland	296
New Hampshire	255424 Rev 1
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	525-24-234-08441
Texas	T104704488

LOGIN REPORT/SAMPLE TRANSFER

Order ID : P4995	ENTA05	Order Date : 11/25/2024 11:57:36 AM	Project Mgr :
Client Name : ENTACT		Project Name : West Lake	Report Type : Analytical Summary 1
Client Contact : Bryan Reyes		Receive DateTime : 11/25/2024 12:00:00 AM 12:15	EDD Type : Excel NJ
Invoice Name : ENTACT		Purchase Order :	Hard Copy Date :
Invoice Contact : Bryan Reyes			Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
P4995-01	001	Water	11/25/2024	11:01	VOC-TCLVOA-10		8260D		10 Bus. Days

Relinquished By: 

Date / Time : 11-25-24 1235

Received By: 

Date / Time : 11/25/24 12:35

Storage Area : VOA Refridgerator Room